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# 1. COMPONENTS

## 1.1 GENERAL



**Bulbs**

| | | | |
|---|---|---|---|
| Headlight (main beam) | | halogen | 70 W |
| Headlight (dipped beam) | | halogen | 70 W |
| Parking light | | spherical bulb | 5 W |
| Rear light | | spherical bulb | 2 x 5 W |
| Rear fog lamp | | spherical bulb | 21 W |
| Reversing light | | spherical bulb | 21 W |
| Stop light | | spherical bulb | 21 W |
| Direction indicator lamp | | spherical bulb | 21 W |
| Marker light | | spherical bulb | 5 W |
| Side marker light | | special type | 3 W |
| Combilamp: | fog lamp | halogen | 70 W |
| | spotlight | halogen | 70 W |
| Interior lighting | | spherical bulb | 10 and 21 W |
| Bunk light | | spherical bulb | 10 W |
| Stepwell lighting | | spherical bulb | 5 W |
| Marker light | | spherical bulb | 5 W |
| Work lamp: | white | halogen lamp | 70 W |
| | yellow | spherical bulb | 35 W |

| Max. current and wire diameter ($mm^2$) | | | | |
|---|---|---|---|---|
| **Wire diameter** | **< 2 m** | **2 - 4 m** | **4 - 8 m** | **> 8 m** |
| 1 | 9 | 5 | 4 | |
| 1.5 | 22.5 | 13.5 | 7.5 | 6 |
| 2.5 | 37.5 | 22.5 | 12.5 | 10 |
| 4 | 60 | 36 | 20 | 16 |
| 6 | 90 | 54 | 30 | 24 |
| 10 | 150 | 90 | 50 | 40 |
| 16 | 240 | 144 | 80 | 64 |
| 25 | 375 | 225 | 125 | 100 |
| 35 | 525 | 315 | 175 | 140 |
| 50 | 750 | 450 | 250 | 200 |
| 70 | 1050 | 630 | 350 | 280 |
| 95 | 1425 | 855 | 475 | 380 |
| 120 | 1800 | 1080 | 600 | 480 |

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**Alternator**

**NCB1**

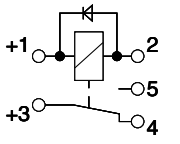
| | |
|---|---|
| Max. current | 80 A |
| Rated voltage | 28 V |

**NCB2**

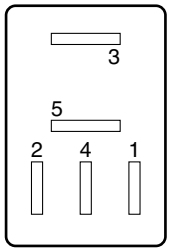
| | |
|---|---|
| Max. current | 100 A |
| Rated voltage | 28 V |

**Micro relay**

| | |
|---|---|
| Maximum cut in current making connection between points 3 and 5: | 10 A |
| Maximum cut out current breaking connection between points 3 and 4: | 5 A |



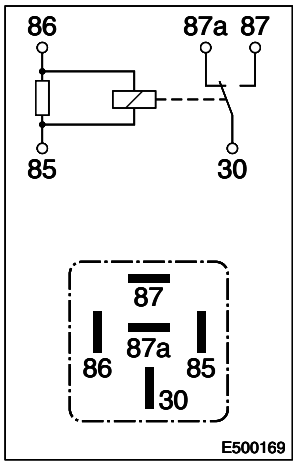
E500146



E500147

**Mini relay**

| | |
|---|---|
| Maximum cut in current making connection between points 30 and 87: | 20 A |
| Maximum cut out current breaking connection between points 30 and 87a: | 10 A |



E500169

**Handheld transmitter CDS**

| | |
|---|---|
| Battery type (2x) | CR1620, 3 V |

## 1.2 TIGHTENING TORQUES



**Tightening torques**

| | |
|---|---|
| Drive pulley | 80 Nm ± 5 Nm |
| B+ connection | 15 Nm |
| Chassis earth connection | 65 Nm |

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# 1. FAULT FINDING

The following test equipment and tools can be used to trace faults.

1. The best instrument for this is a digital multimeter. This instrument can be used to measure voltages, currents and resistances avoiding reading errors, and it can be used to trace virtually any faults.
2. Many, but not all, faults are easily traced by means of warning lamps. Failures caused by poor earthing cannot normally be detected by a warning lamp or buzzer.

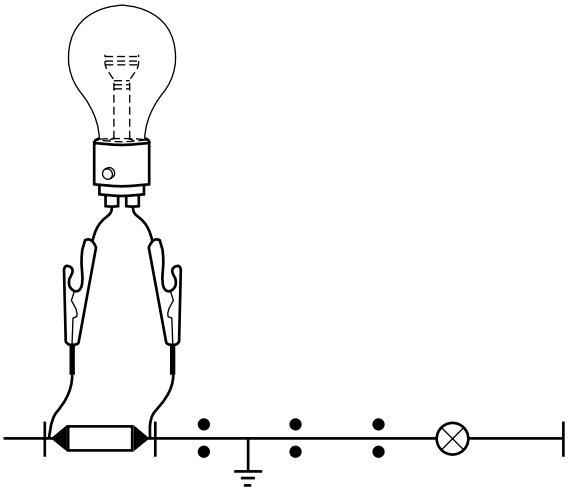
The most frequently occurring faults are:

a. short circuit
b. open circuits
c. earthing problems (poor earthing due to corrosion).

1

## 1.1 SHORT CIRCUITS

A short circuit is caused by a positive wire shorting to earth somewhere. In most cases this will cause a fuse to blow.
To remedy this failure, use a test lamp of approximately 70W. First check the diagram to see which consumers are connected to the fuse in question, and then switch them all off.
Remove the fuse and connect the test lamp in its place. Now switch each of the consumers on and off one by one. If the lamp comes on very brightly when a consumer is switched on, the fault is almost certainly in the wiring of that consumer. Now check the diagram to see via which connectors the consumer is connected.
Now disconnect the first wiring connection (as seen from the fuse).
If the lamp is still bright, the fault is between the fuse and this wiring connection.

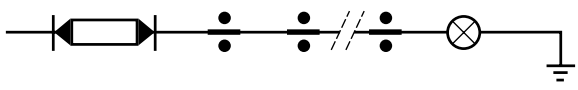


W 5 03 013

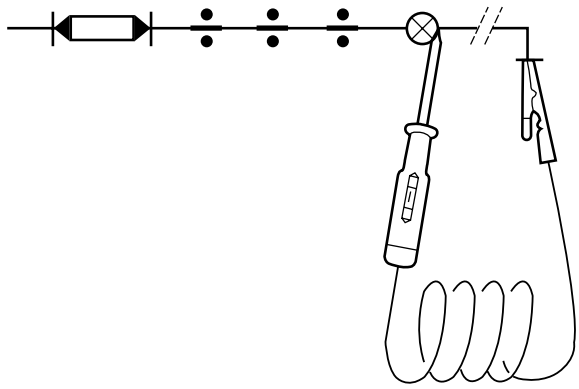
If, however, the lamp goes out, the fault is somewhere further on in the wiring.
Now reconnect the connectors and disconnect the next wiring connection. If the lamp is still bright, the failure is between these two wiring connections.
However, if the lamp goes out again, the fault-finding procedure must be continued.
The faulty wiring section can be found in this way.

## 1.2 OPEN CIRCUIT

Suppose a consumer is not functioning. The fault may be in the consumer itself, or there may be an open circuit in the wiring.
First switch on the consumer. Then check the consumer for voltage using a test lamp. If no voltage is found, first check whether the fuse is still intact.
If there is voltage at the fuse, check the wiring from the fuse to the consumer. This means every wiring connection must be checked.
Stop at the first wiring connection that has no voltage. The open circuit will be between this connection and the previous one.
However, if there was a voltage at the consumer, there may still be an open circuit in the negative (earth) wiring. Check this using a test lamp.
Ensure that the relevant circuit is switched on.
Connect one end of the test lamp to earth and the other end to the earth connection of the component to be checked.
If the test lamp lights up, the earth connection of the component is interrupted. If the test lamp does **not** light up, the earth connection will in many cases be in good condition.
If both the positive and negative connections are in good order, the consumer in question must be replaced.



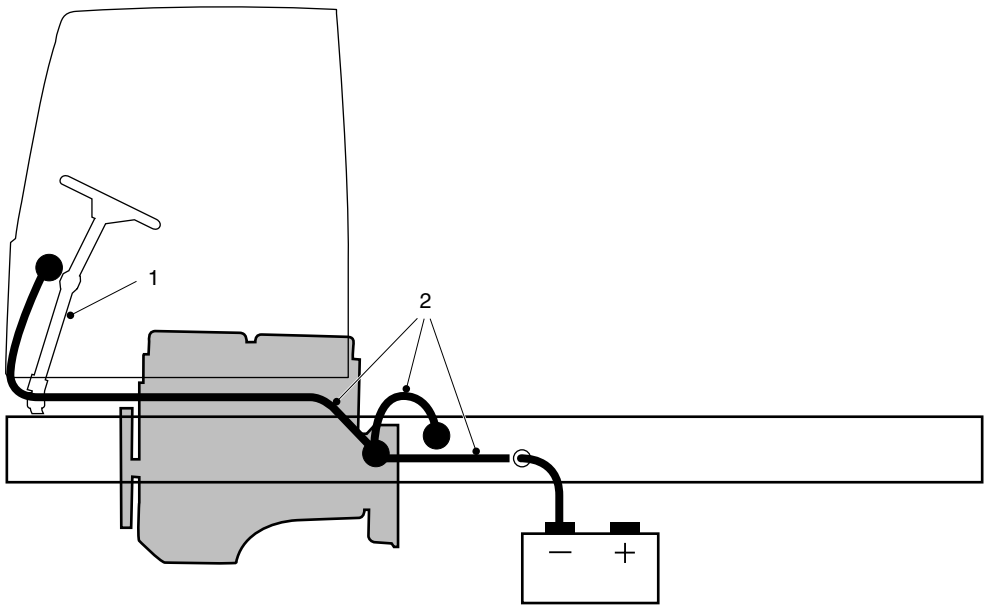
W 5 03 015



W 5 03 016

## 1.3 EARTHING PROBLEMS

Earthing problems are mainly caused by corrosion between the contact surfaces of electrical connections.
A poor earth connection of the main earth circuit (2) between cab and chassis may result in a current through the steering shaft (1).




E502316

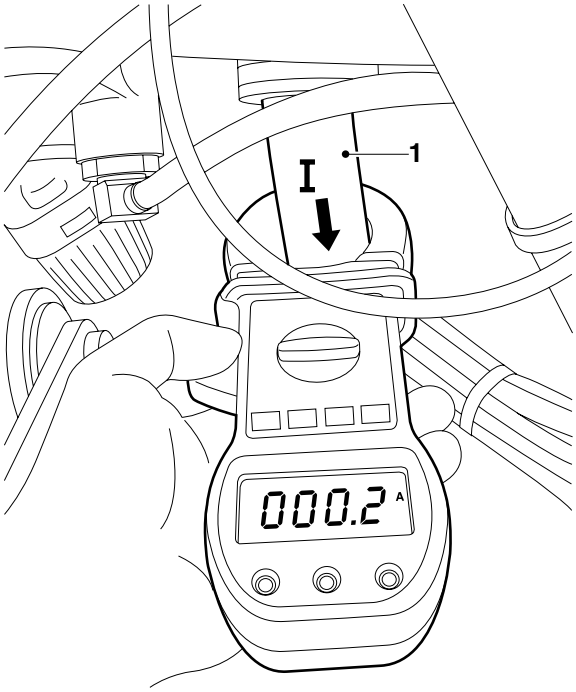
To check this main earth connection, two complementary tests must be carried out.
- A current measurement using a current probe.
- A voltage loss measurement using a multimeter.

A current probe, which is a special tool (DAF no. 1453183), must be used for a current measurement; this measures the current through the steering shaft (1).

**The current measurements have to be carried out while the cab is in the driving position.**

**INSPECTION 1, MEASURING THE SYSTEM CURRENT**

1. Open the grille.
2. Switch on vehicle ignition and as many consumers as possible, e.g.:
   - dipped beam
   - heater fan in position 4
   - spotlights, etc.
3. Use the current probe to check whether the power consumption through the battery cable at the battery is between 20 A and 40 A. Switch on extra consumers if this is not the case until the power consumption is between 20 A and 40 A.
4. Then measure the system current through the steering shaft (1) using the probe. Make sure that the current probe is placed in the right position (direction of current) and its jaws are closed around the steering shaft.
5. Depending on the measured current value, the following actions need to be carried out:



E502267

| Measured current value | Measures to be taken |
|---|---|
| < 2.0 A | - The main earth connections are in good order, end of inspection 1. Continue with inspection 2. |
| ≥ 2.0 A and < 5.0 A | - Inspect - and if necessary repair - all main earth connections from the cab to the negative battery terminal between the following points:<br>- battery earth and cab earth<br>- cab earth and flywheel housing earth<br>- flywheel housing earth and chassis earth<br>- chassis earth and battery earth<br><br>**Note:**<br>A voltage loss measurement must be carried out to identify which earthing point is in poor condition. This measurement is described later on in this procedure.<br>- The current value through the steering shaft must be less than 2.0 A after repair. Otherwise one or more earth connections are not yet in good order and the main earth connections must be inspected again and if necessary repaired.<br>- If the current value is < 2.0 A, the main earth connections are in good order: end of inspection 1. Continue with inspection 2. |
| ≥ 5.0 A | - Inspect - and if necessary repair - all main earth connections from the cab to the negative battery terminal between the following points:<br>- battery earth and cab earth<br>- cab earth and flywheel housing earth<br>- flywheel housing earth and chassis earth<br>- chassis earth and battery earth<br><br>**Note:**<br>A voltage loss measurement must be carried out to identify which earthing point is in poor condition. This measurement is described later on in this procedure.<br><br>- The current value through the steering shaft must be less than 2.0 A after repair. Otherwise one or more main earth connections are not yet in good order and the earth connections must be inspected again and if necessary repaired.<br><br>- If the current value is < 2.0 A, the earth connections are in good order.<br><br>**Note:**<br>A high current through the steering shaft can affect the mechanical condition of the steering shaft bearing. |

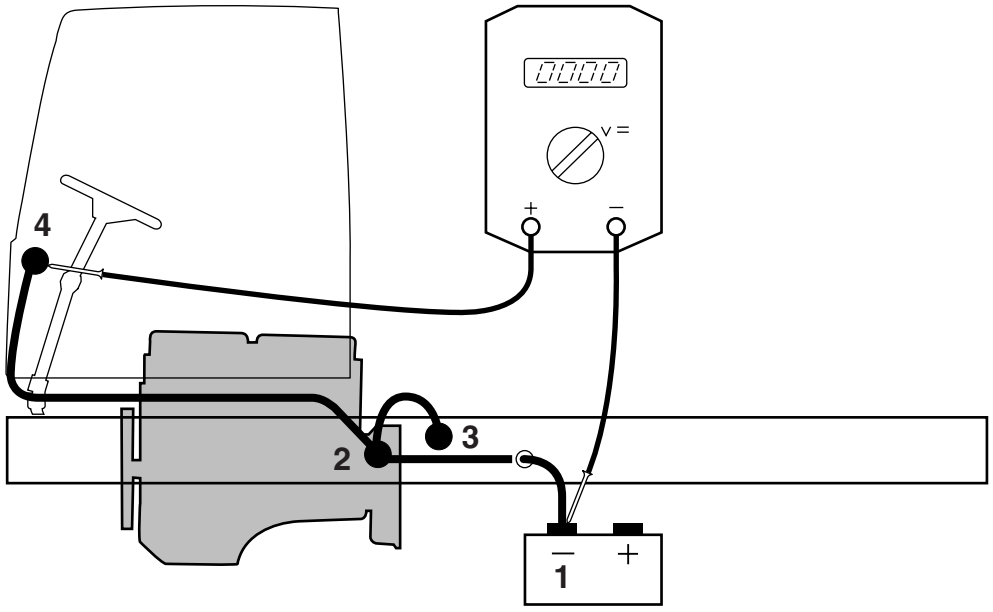
**INSPECTION 2, MEASURING THE STARTING CURRENT**

Measure the starting current through the steering shaft while starting, using the current probe.
This measurement must be carried out with the probe's "Max Hold" function. Make sure that the current probe is placed in the right position (direction of current) and its jaws are closed around the steering shaft.

| Measured current value | Measures to be taken |
|---|---|
| < 5.0 A | - Main earth connections are in good condition; end of inspection 2: vehicle is OK. |
| ≥ 5.0 A | - Inspect - and if necessary repair - all main earth connections from the cab to the negative battery terminal between the following points:<br>- battery earth and cab earth<br>- cab earth and flywheel housing earth<br>- flywheel housing earth and chassis earth<br>- chassis earth and battery earth<br><br>**Note:**<br>A voltage loss measurement must be carried out to identify which earthing point is in poor condition. This measurement is described later on in this procedure.<br><br>- The starting current value through the steering shaft must be less than 5.0 A after repair. Otherwise one or more main earth connections are not yet in good order and the main earth connections must be inspected again and if necessary repaired.<br><br>- If the current value is < 5.0 A, the earth connections are in good order; end of inspection 2: vehicle is OK. |

1

**MEASURING VOLTAGE LOSS**




E502269

1 negative battery terminal
2 flywheel housing
3 chassis
4 bulkhead lead-through connector

To find out whether a specific earthing point has a good earth connection, measure the voltage loss between the negative battery terminal and this earthing point.

The figure shown is an example; the actual course of the earth connection may differ somewhat depending on vehicle type and production date.
The consumers that were switched when the current was measured should now be switched on as well, i.e. the power consumption should be between 20 A and 40 A.
If the earth connection is good, the voltage loss should be less than 0.5 V.

# 2. BATTERIES

## 2.1 FAULT-FINDING TABLE

| SYMPTOM: NEW BATTERY HEATS UP CONSIDERABLY DURING FILLING | |
|---|---|
| **Possible cause** | **Remedy** |
| Inadequate formation because of storage in unsuitable or damp conditions over a long period | Allow to cool<br>Charge fully<br>Check the relative density |

| SYMPTOM: BATTERY ACID LEAKING FROM THE PLUG HOLES | |
|---|---|
| **Possible cause** | **Remedy** |
| Battery overfilled | Siphon off some of the fluid |
| Overcharging | Check the charger and repair if necessary |

| SYMPTOM: ELECTROLYTE LEVEL TOO LOW | |
|---|---|
| **Possible cause** | **Remedy** |
| Leaking battery | Replace the battery |
| Excessive gas development due to charging current being set too high | Check/repair the charger |

| SYMPTOM: RELATIVE DENSITY TOO LOW (<1.240) STARTING TROUBLE | |
|---|---|
| **Possible cause** | **Remedy** |
| Power consumer left on by mistake | Charge the battery |
| Insufficient charging | Check/repair the charger |
| Short circuit in the charging circuit | Check the charging circuit |

| SYMPTOM: DENSITY IS TOO HIGH (>1.290) | |
|---|---|
| **Possible cause** | **Remedy** |
| Topped up with acid instead of distilled water | Siphon off the fluid and fill with distilled water<br>If necessary, repeat this after mixing (charging) |

1

| SYMPTOM: STARTING TROUBLE<br>POOR STARTING TEST RESULT<br>POWER FAILS UNDER LOAD | |
|---|---|
| **Possible cause** | **Remedy** |
| - Discharged battery | Charge the battery |
| - Worn battery (plates corroded and worn away) | Replace the battery |
| - Defective battery (“dead cell”) | Replace the battery |
| - Battery too small | Replace with battery of a higher capacity |
| - Battery sulphated (plates have hardened) | Replace the battery |

| SYMPTOM: BURNT-IN BATTERY TERMINALS | |
|---|---|
| **Possible cause** | **Remedy** |
| - Clamps not securely fitted, or poor contact | Have the battery terminals repaired, fit the clamps properly or replace the clamps if necessary |

| SYMPTOM: 1 OR 2 CELLS BUBBLE EXCESSIVELY UNDER HIGH LOADS (STARTING OR STARTING TEST) | |
|---|---|
| **Possible cause** | **Remedy** |
| - Defective cells | Replace the battery |
| - Leaking cell partition | Replace the battery |

| SYMPTOM: BATTERY DISCHARGES VERY FAST (DOES NOT RETAIN POWER) | |
|---|---|
| **Possible cause** | **Remedy** |
| - Insufficient charging | Check the charging. Is the charging time (driving time) sufficient? |
| - Short circuit in charging circuit | Check the charging circuit |
| - Major self-discharging, for example due to contamination | Clean the battery |
| - Battery sulphated (on examining the plates, they are found to be hard and, in some cases, whitened) | Replace the battery |

| SYMPTOM: SHORT BATTERY LIFE | |
|---|---|
| **Possible cause** | **Remedy** |
| - Wrong type of battery chosen (for example in the case of tail lifts) | Install Super Heavy Duty or semi-traction battery |
| - Often too deeply discharged | Intermediate charging with rectifier |
| - No recharging after deep discharge (white deposits) | Always charge the battery after deep discharge |

| SYMPTOM: BATTERY HOT DURING OPERATION WITH EXCESSIVE WATER CONSUMPTION | |
|---|---|
| **Possible cause** | **Remedy** |
| - Overcharging or<br>- charging voltage too high | Check the charger (voltage regulator) |

| SYMPTOM: BATTERY HAS EXPLODED | |
|---|---|
| **Possible cause** | **Remedy** |
| - Fire or sparks during or just after charging | Ensure good ventilation and exercise due caution as regards fire and sparks |
| - Short-circuiting by tools | Be careful where tools are put down |
| - Internal defect (loose connection) | Replace the battery |

| SYMPTOM: DEFECTIVE ALTERNATOR AND/OR DIODES (RADIO AND OTHER POLARITY-SENSITIVE EQUIPMENT NOT WORKING) | |
|---|---|
| **Possible cause** | **Remedy** |
| - Reversed battery polarity or incorrect charging | Discharge the battery and charge in the correct direction<br>If necessary, replace the battery |

| SYMPTOM: BATTERY IS INACTIVE (NO VOLTAGE) | |
|---|---|
| **Possible cause** | **Remedy** |
| - Internal open circuit | Replace the battery |
| - Battery very deeply discharged | Charge the battery and test it; replace if necessary |

## 2.2 SERVICE LIFE

The service life of a battery is significantly shortened if it used “cyclically”.
This means that the batteries are used a lot without being charged.
For example when using a tail lift, cab heater, microwave oven or cooler box.
This is why batteries in commercial vehicles and vehicles used for international transport often fail prematurely (within 1.5 years).

The battery must be charged whenever the voltage measured across the battery falls below 12.5V. If the battery is not charged, the “sulphating process” will begin.
This is a chemical reaction in the battery that produces lead sulphate. Lead sulphate adheres to the battery plates and can cause short-circuiting between the plates, reducing the capacity of the battery.
However, most lead sulphate breaks down when the battery is recharged.
If a battery is used (discharged) while it is not being charged by the alternator, short-circuiting between the battery plates will occur sooner.
This reduces the capacity and consequently the service life of the battery.


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# 3. ALTERNATOR

## 3.1 FAULT-FINDING TABLE

| SYMPTOM: ALTERNATOR NOT PRODUCING POWER WHEN IDLING | |
|---|---|
| **Possible cause** | **Remedy** |
| Open circuit in connection 15 on alternator | Repair connection 15 |
| Connection 15 on alternator short-circuited to earth | Repair connection 15 |
| Internal defect | Replace regulator |

| SYMPTOM: ALTERNATOR WARNING (YELLOW) | |
|---|---|
| **Possible cause** | **Remedy** |
| Open circuit in “S” connection | Measure the regulated alternator voltage with as many consumers as possible switched on and with the engine turning above idling speed |
| Open circuit in “L” connection | Check/repair wiring |
| Open circuit in connection 15 | Increase the engine speed to approx. 1500 rpm. If voltage is now present, check connection 15 on the alternator |
| Voltage difference between “B+” and “S” connections is greater than 2.5V | Check all contacts between alternator and batteries (contact resistors). Internal battery resistance too high |
| Voltage too low < 16V | Check alternator drive. Check wiring on contact resistors. Check regulated voltage |
| Open circuit in voltage regulator | Replace voltage regulator |

| SYMPTOM: ALTERNATOR VOLTAGE HIGH (RED) | |
|---|---|
| **Possible cause** | **Remedy** |
| Voltage too high > 31V | Measure voltage |
| Internal defect | Replace regulator/alternator |

# 4. XENON LIGHTING

## 4.1 FAULT-FINDING TABLE

| SYMPTOM: XENON LIGHTING NOT WORKING ON ONE SIDE | |
|---|---|
| **Possible cause** | **Remedy** |
| Faulty dipped beam fuse | Check fuse |
| No power to the ballast unit on the faulty side | Check the power supply to the ballast unit |
| Faulty xenon bulb | Replace xenon bulb |
| Faulty ignition unit | Replace ignition unit |
| Faulty wiring between the ballast unit and the ignition unit | Check the wiring |
| Faulty ballast unit | Replace ballast unit |
| Ignition unit connector not connected properly | Check connector |

| SYMPTOM: XENON LIGHTING NOT WORKING ON BOTH SIDES | |
|---|---|
| **Possible cause** | **Remedy** |
| Faulty fuse | Check fuse |
| Faulty light switch (C622) | Check light switch |
| Faulty relay (G001) | Check relay |
| Faulty wiring | Check the wiring |

| SYMPTOM: COLOUR DIFFERENCE AFTER NEW BULB IS FITTED | |
|---|---|
| **Possible cause** | **Remedy** |
| Bulb of a different make fitted | Bulbs of the same make should preferably be fitted on both left and right |

1


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2


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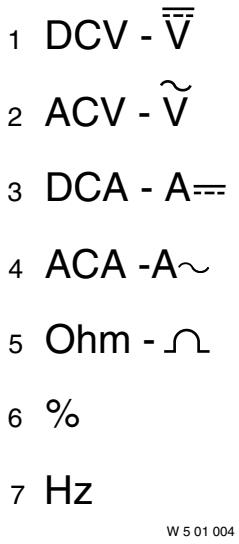
# 1. GENERAL

## 1.1 MULTIMETER

Various measurement options can be selected on the Fluke 87 multimeter.

**Units of measurement**
The multimeter should be set to the range for the unit of measurement required.
For example, voltage range, current range, or resistance range.
The units of measurement are indicated by symbols on the meter. The following symbols are used:

1. DC voltage
2. AC voltage
3. DC current
4. AC current
5. Resistance
6. Duty cycle
7. Frequency



W 5 01 004

## 1.2 SCOPEMETER

Diagnostics in modern electronic systems is becoming steadily more complex.
Using a multimeter on its own is not always sufficient to diagnose a fault.

The scopemeter allows complex signals to be measured.

2

Practical examples of complex signals are:

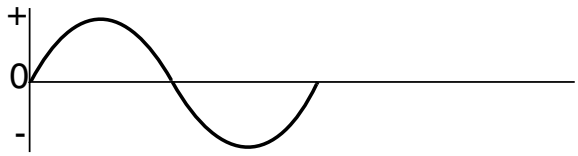
- PWM signals
- signal deformation
- CAN-bus-signals


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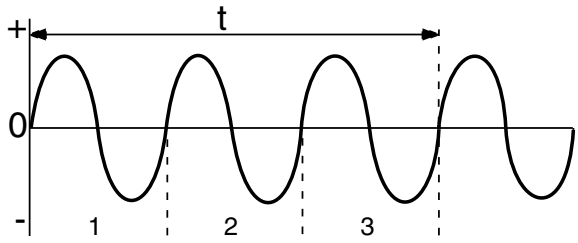
## 1.3 SIGNAL MEASUREMENTS

**Sine-wave signal (AC voltage)**
This signal changes polarity regularly in relation to the “0” line.

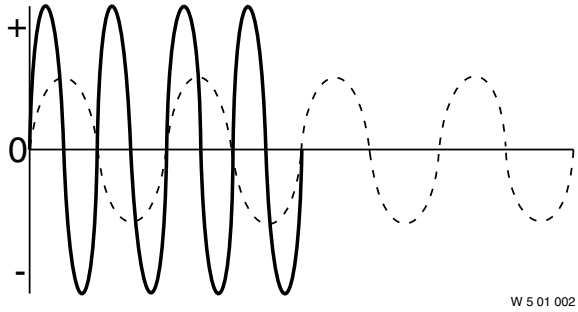
Frequency
The frequency is shown in Hertz (Hz).
The number of complete sines per second is the frequency of the signal (3 Hz in the diagram).




Voltage
If the number of sines per second increases, not just the frequency increases but also the voltage.

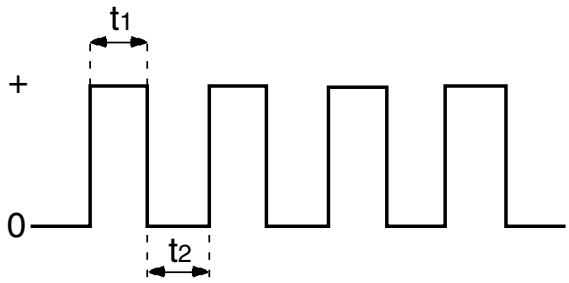



**Measuring a sine wave signal**
The sine wave signal can be measured in the following ways using a multimeter:
- Multimeter in the frequency position (Hz). This measures the number of complete sines per second.
- Multimeter in the AC voltage position. This measures the average value of the supplied voltage.



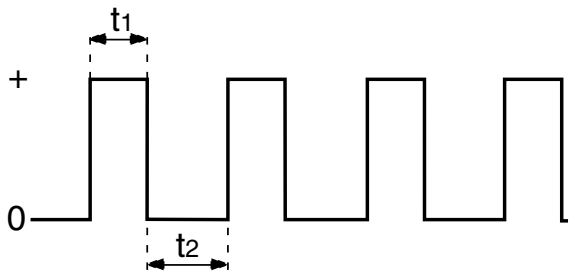

**Sine wave signals in the vehicle**
- Wheel speed sensor output signal.
- Engine speed sensor output signal.

**Square wave signals**
Square wave signals are signals with only two voltage levels, both of which have the same duration in principle (t1 is equal to t2).




2

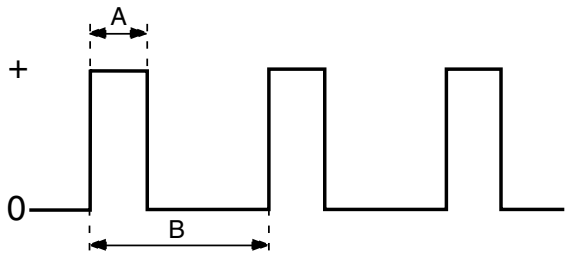
If there is a difference between the duration for the two levels (t1 is not equal to t2), the signal is also called a ”pulse train“.



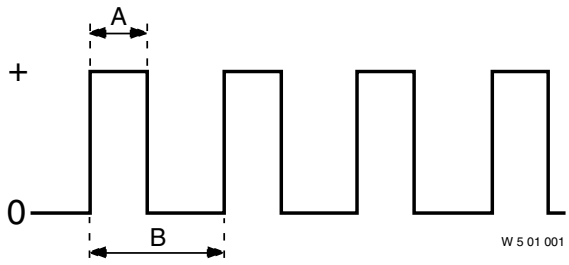

Duty cycle
The duty cycle is the ratio between the two voltage levels, expressed as a percentage.

$$\frac{A}{B} \times 100\%$$

The voltage level ratio of a “pulse train” may change (for example, when the vehicle speed increases).
If the number of pulses per unit of time increases, the duty cycle reading will rise.




Voltage
An increase in the number of pulses per unit of time will not only lead to a higher duty cycle ratio but also to a higher mean voltage.



**Measuring a square wave signal**
The square wave signal can be measured in the following ways using a multimeter:
- Multimeter in the duty cycle position (%). This measures the voltage level ratio.

- Multimeter in the DC voltage position. This measures the average value of the supplied voltage.

**Square wave signals in the vehicle**
- Speed sensor output signal
- Vehicle speed signal to electronic units

2

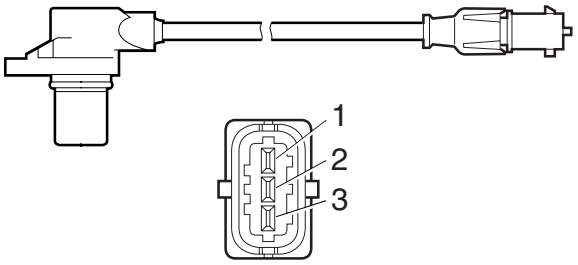

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# 2. DESCRIPTION OF COMPONENTS

## 2.1 INDUCTIVE SENSOR

The vehicle has a number of inductive sensors, such as:

- wheel speed sensor
- engine speed sensor
- camshaft sensor



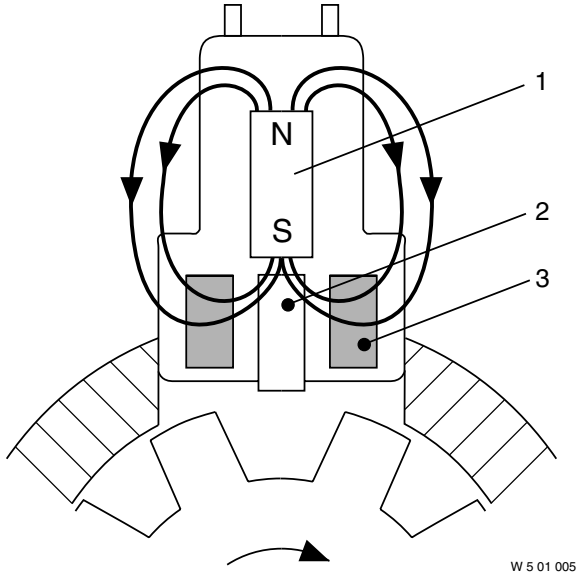
i400442

**Recording engine speed**
The engine speed is recorded via the crankshaft position sensor. The crankshaft position sensor output signal is a sine wave signal with a frequency corresponding to the number of holes in the pulse disc and the crankshaft rotation frequency.
The signal is converted in the electronic unit into a message that is sent via the CAN network. The VIC sends this message to the DIP, which then activates the rev counter.

**Engine speed sensor operating principles**
The inductive sensor consists of a permanent magnet (1), a core (2) and a coil (3).
When the inductive sensor is situated between two teeth, the lines of force of the magnetic field will run directly from the north pole to the south pole via the housing.

The moment a tooth approaches the inductive sensor, the lines of force of the magnetic field will run from the north pole to the south pole via the housing, the teeth of the toothed wheel and the core.
As more lines of force are now running through the core, a more powerful magnetic field is obtained.
As a result of this change in the magnetic field, an AC voltage is generated in the coil.

The value of the AC voltage generated depends on the speed of +rotation of the toothed wheel and the air gap between sensor (core) and tooth.



W 5 01 005

## 2.2 VEHICLE SPEED SENSOR

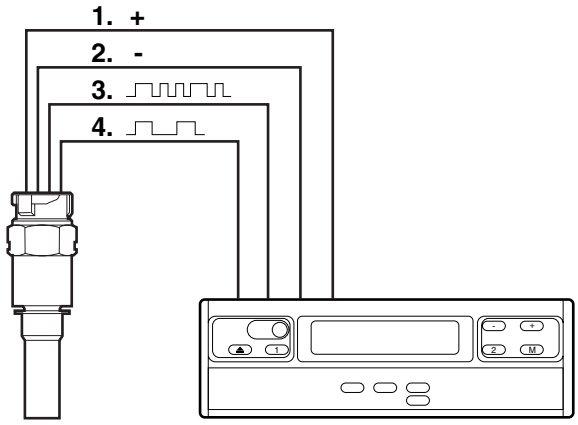
The vehicle speed sensor has two connections for output signals. The “real-time” speed signal, generated by a Hall IC, is sent via the first connection,
A data signal (bi-directional signal) is sent via the other connection, data being exchanged between the MTCO and the speed sensor.
The MTCO requests data from the sensor.
The sensor sends the coded data to the MTCO in sequence, and the MTCO checks the accuracy of this data.
The coded signal consists of the following data:

- Serial number of the sensor
- “Master key” (the same as that of the MTCO)
- Coded speed signal

The MTCO compares the coded speed signal to the “real-time” speed signal.
The MTCO sends commands and data to the sensor at 10 second intervals.

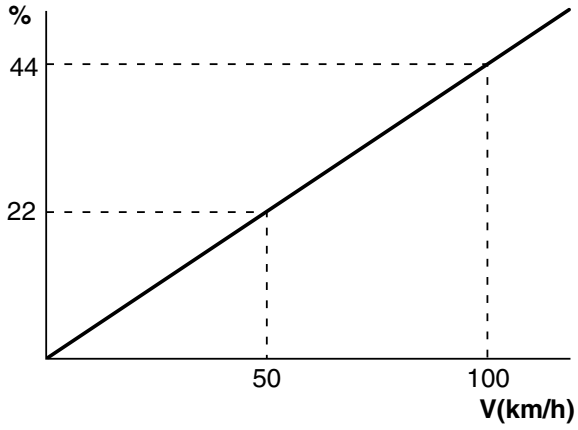
Speed data for the CAN-system is sent via MTCO-outputs A6 and A7.

Speed data for the UPEC-system and ECAS-system is sent for UPEC via output B7 and for ECAS via output B6; these are duty-cycle signals.



E501055

**Duty cycle speed signal**
The speed signal sent via the vehicle speed sensor to the MTCO is processed by the MTCO and sent as a message via the CAN network.
The speed signal is also converted into a duty cycle signal. This signal is used by electronic units that do not receive/read the vehicle speed signal message via the CAN network.
This diagram shows the linear characteristic of the duty cycle (%) in relation to the vehicle speed (V).
This graph applies to all vehicle models.



E501057


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**Inspection**
The duty cycle signal (square wave voltage) can be checked using a multimeter that is set to the DC voltage or duty cycle range or using a scopemeter.

## 2.3 TEMPERATURE SENSORS

The vehicle has a number of temperature sensors, such as:
- coolant temperature sensor
- inlet air temperature sensor
- fuel temperature sensor
- ambient air temperature sensor

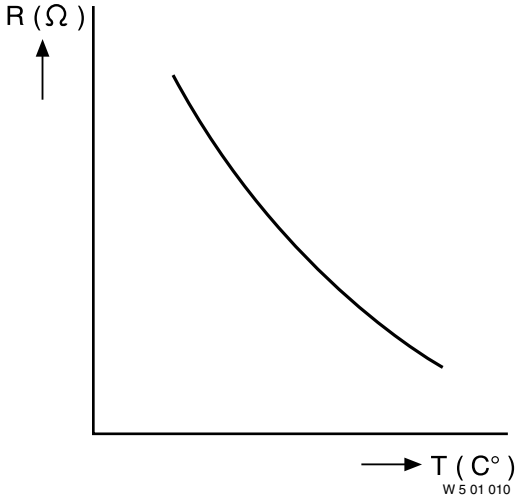


These sensors are temperature-sensitive resistors.
Large changes in the resistance of these sensors are perceptible when the temperature rises or drops.

There are two types of temperature sensor:
- NTC resistor (Negative Temperature Coefficient).
- PTC resistor (Positive Temperature Coefficient).

**NTC resistor**
In an NTC resistor, the resistance value reduces when the temperature rises.

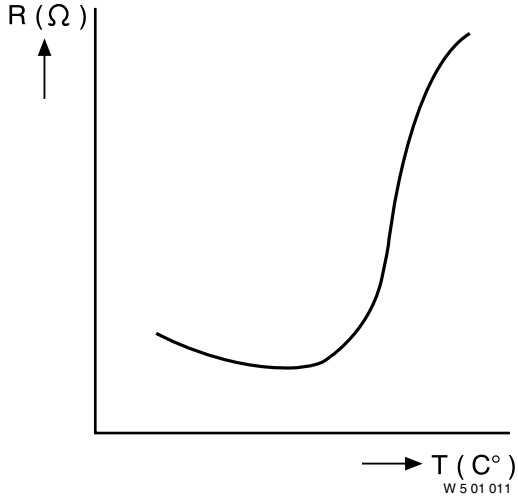
Application:
- measuring coolant temperature.




**PTC resistor**
In a PTC resistor, the resistance value increases when the temperature rises.

In contrast to the NTC resistor, there will be a large change in resistance within a small temperature range in the PTC resistor.

Application:
- measuring air temperature when cab heater is on





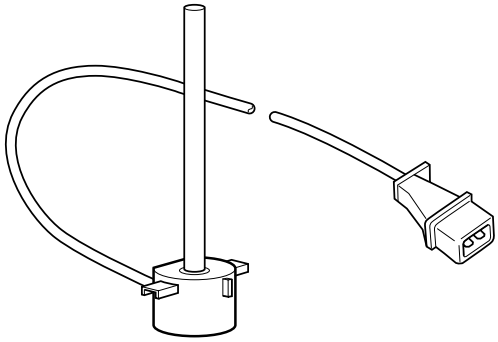
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**Inspection**
The temperature sensors can be checked using a multimeter that is set to the resistance range.

## 2.4 FLUID LEVEL SENSORS

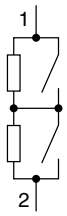
The vehicle has a number of fluid level sensors, such as:
- cooling system fluid level sensor
- engine oil level sensor

**Coolant level sensor**
The coolant level sensor consists of two microswitches (reed switches), connected in parallel with two resistors.
These microswitches are influenced by a magnetic field positioned outside the sensor.
If the coolant level drops, the microswitches will be closed by a float fitted with a fixed magnet.



E501433

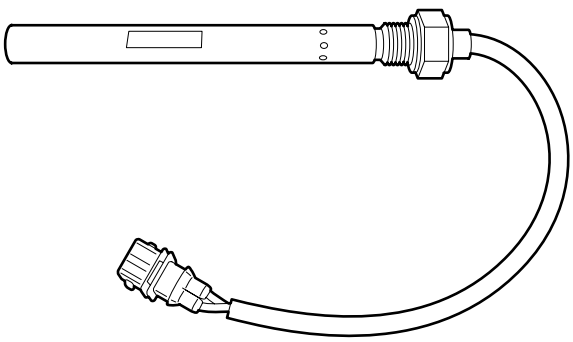
The “alarm switch” detects that the coolant level is too low and short circuits the parallel switched resistor.
The “daily inspection” switch detects that the coolant needs to be topped up and short circuits the parallel switched resistor.
The VIC uses the resistance value to detect the status of the microswitches.
As a result the instrument display is activated by the VIC.




E501434

**Note:**
The VIC will only send a message to the instruments display during the startup phase if the “daily inspection” switch is closed during the startup phase.

**Engine oil level sensor**
The operation of the engine oil level sensor is based on a resistance measurement.
When the contact is switched on, a current is sent through the sensor from the VIC control unit for a specific period of time.
Applying this current briefly in this way ensures that the sensor is properly warmed up.
When the level is being measured the resistance value is influenced by the quantity of oil in the sump.



E501146

**Inspection**
The engine oil level sensor can be checked with a multimeter set to the resistance range.
The resistance value is between 20.5 and 23.5 Ohms, measured at 20°C.
The maximum current strength of 200mA may not be exceeded when the resistance value is measured.

## 2.5 PRESSURE SENSORS

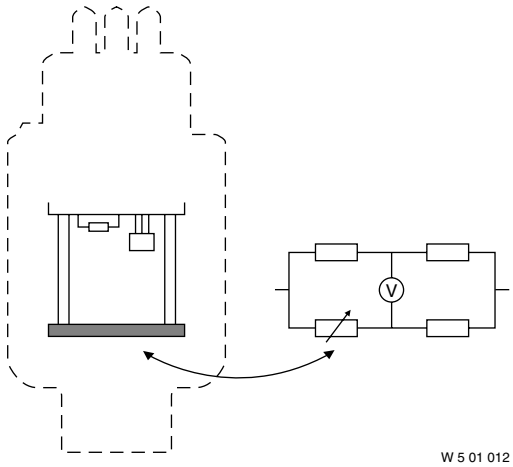
The vehicle has a number of pressure sensors, such as:

- Pressure sensor to record bellows pressure for ECAS.
- Pressure sensor on the air supply unit.

There is a diaphragm made of semi-conducting material (silicon) in the pressure sensor.
When pressure is applied to the diaphragm, it will be deflected.
Deflection of the diaphragm leads to a change in the resistance of the semi-conducting material.

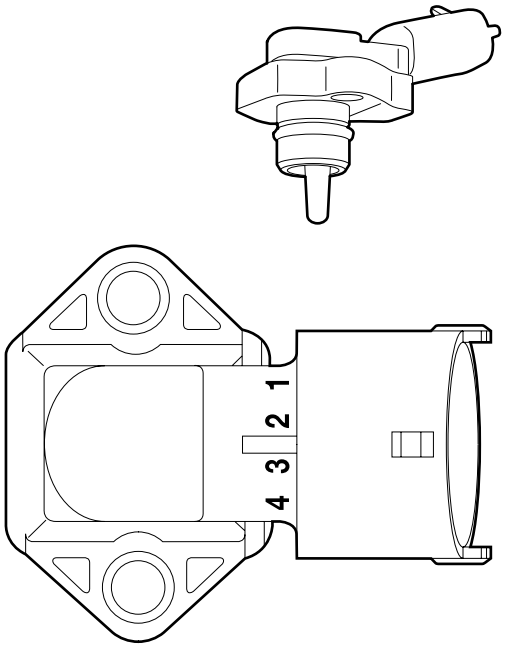
The diaphragm is part of a what is known as a bridge circuit.
Deflection of the diaphragm unbalances the bridge circuit, which changes the output signal.
The output voltage is in direct proportion to the pressure applied (deflection of the diaphragm).

**Inspection**
The output voltage can be checked using a multimeter set to the DC voltage range.



**Pressure sensor for monitoring boost pressure.**
A piëzo pressure sensor is used to check the boost pressure. This sensor consists of an electronic circuit and a pressure recording element.
The pressure recording element records changes in pressure; these changes in pressure are converted into an electrical voltage. The electronic circuit amplifies this voltage to create a usable output signal.

**Inspection**
The output voltage can be checked using a multimeter set to the DC voltage range.



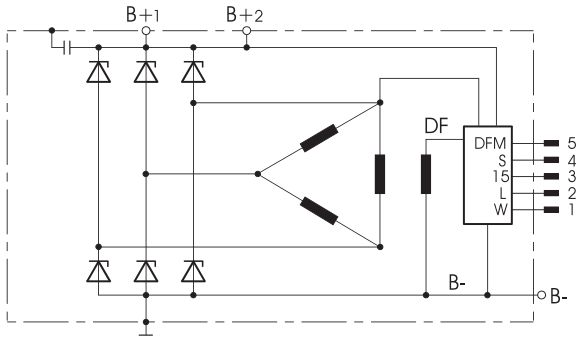

i 400441

## 2.6 ALTERNATOR

The compact alternator is a lightweight alternator with two internal cooling fans. The electronic controller also controls pre-excitation of the alternator. The function of the exciter diodes has also been taken over by the controller. The alternator generates high currents in the lower speed range.

B connection to terminal 30 on the starter motor
15 voltage after ignition
S sens connection on the controller
L connection to VIC

**B connection**
The alternator has two B+ connections that are connected to each other internally. B+1 is connected to terminal 30 on the starter motor. B+2 is **NOT** connected. B- (earth) is connected to the alternator housing.




E501373

**Connection 15**
When the ignition has been turned on (contact made), power is supplied to the alternator via connection 15 (1010). The controller uses this power to activate pre-excitation (self-energising). If there is an open circuit in this connection, the alternator will not produce any power until it reaches a speed of about 5000 rpm. This corresponds to an engine speed of around 1500 rpm. The alternator will energise itself when it reaches this speed.

**Sens connection**
The sens connection can be used to compensate for voltage losses in B+. There are voltage differences between the alternator and the battery. Voltage regulation can be improved if these voltage variations can be controlled. The sens connection is connected to terminal 30 on the starter motor.

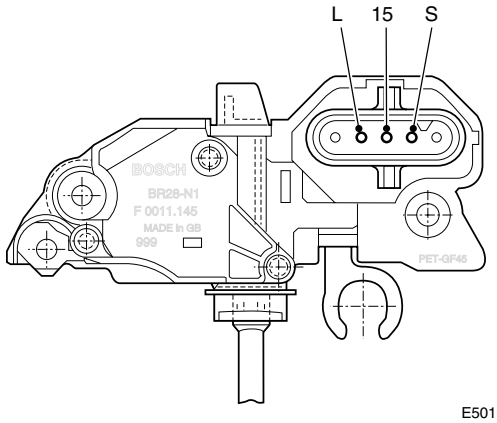
**L connection**
The L connection is connected to the VIC electronic unit.
This connection is used to activate a fault message in the master display via the VIC, if necessary.

L voltage high: no fault
L voltage low: fault

The following faults can be detected via the “L” connection:
- Voltage too low (< 16V)
- Open circuit in connection 15 (1010)
- Open circuit in “S” connection
- Open circuit in “L” connection

These faults are indicated by the yellow “Alternator fault” warning.

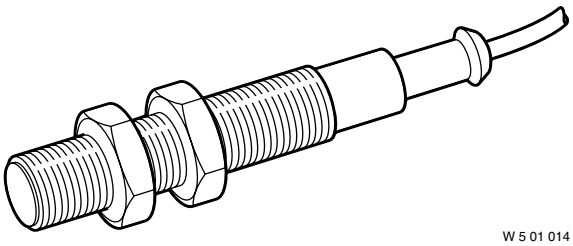
Too high a voltage (red warning) can be recognised by too high a voltage (>31 V) on the VIC electronic unit.



E501129

## 2.7 PROXIMITY SENSORS

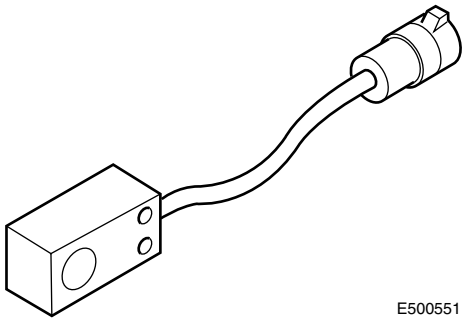
The vehicle has a number of proximity sensors, such as:
- sensor under the clutch pedal for engine management
- cab lock sensor
- mechanical rear axle lifting-gear



W 5 01 014



**Inductive proximity sensor**
An alternating electromagnetic field is generated by a pulsating current in a coil (oscillation).
If a metal object is introduced into the electromagnetic field, eddy currents will occur in that metal object.
These eddy currents will “damp” the magnetic field in the coil, so that the current in the coil changes.
This change results in an output voltage.



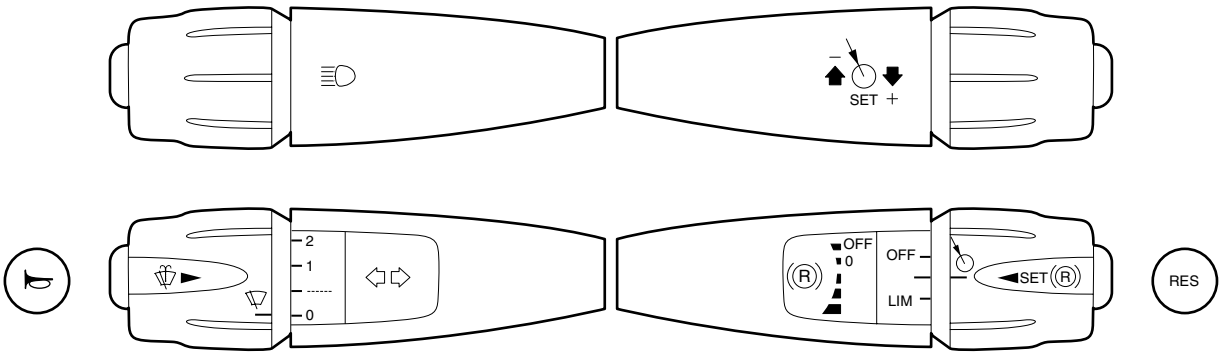
E500551

**Inspection**
Placing a metal object in front of the sensor (inductive sensor) makes it possible to check the output voltage using a multimeter set to the direct voltage range.

## 2.8 STEERING COLUMN SWITCH

The steering column switches in the CF vehicle series have been re-designed.
Both the design and the functionality have changed.
The advantages of the new switches are:

- They are short-circuit proof
- Use of reed switches ensures a longer service life
- The intarder function has been integrated into the right hand switch; consequently there are two switches on the steering column
- All cruise-control and engine speed control functions have been integrated into the right hand steering column switch




E501135

There are always two stalks on the steering column.

The left hand stalk has one model. Its functions are:
- Left/right direction indicator
- Main/dipped beam
- Horn
- Windscreen wiper speed/intermittent/wash



The right hand stalk has two models:
- With intarder function
- Without intarder function

The functions of the right hand stalk are as follows:

Model 1:
Cruise control function (speed up/slow down/memory)
Engine speed control (speed up/slow down/fixed speed PTO)

Model 2:
Same functions as version 1
Intarder intarder/V-constant function

# 3. DIAGNOSTICS

## 3.1 DIAGNOSTICS IN ELECTRICAL SYSTEMS

DAVIE XD is used to carry out diagnostics. This tool has a two-channel scope and a multimeter function.
DAVIE XD is also used to read data from electronic systems. When a fault arises, it offers the option of selecting a ”guided” diagnosis that goes through a series of measurement steps to help locate the cause of the problem.

Refer to the user manual for a full description of the operation and capabilities of DAVIE XD.

2


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# 1. GENERAL

The increasing application of electronics in vehicles means a much broader range of connectors, contacts and wiring is being used. Be sure to pay special attention to this during repairs, so as to avoid unnecessary faults.

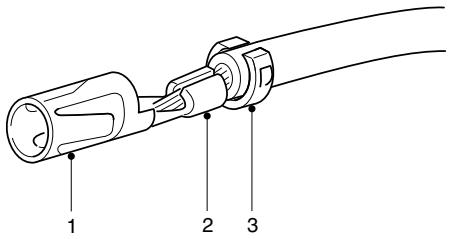
## 1.1 CONNECTOR

A connector is a removable connection between two or more electrical wires or components. The female contacts are on one side and the male contacts on the other side. This way they can be connected and disconnected.
The connector should protect the contacts against unwanted electrical connections and external influences. It also ensures the proper connection of the applicable contacts.

## 1.2 CONTACT

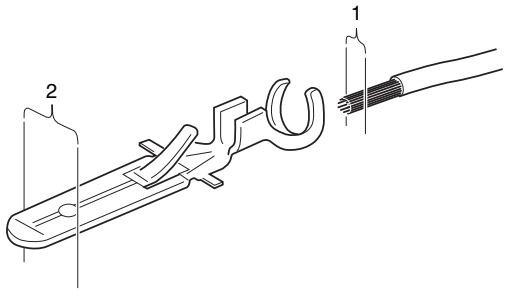
A connector has one or more contacts. These contacts are available in various sizes and models.
However, they all have the same design:

The mating part (1) enables the electrical connection between the contacts.
The contact press part (2) is the electrical connection between the stripped part of the wire and the contact.
The relief part (or pull relief) (3) relieves the contact press part from mechanical wear. The insulation relief is placed over the insulating sheath and/or the SCAT.




E501479

With contacts, three dimensions are important: the diameter (1) of the wire to be connected, the size of the contact press part (2), which is linked to the wire diameter, and the size of the mating part (3).

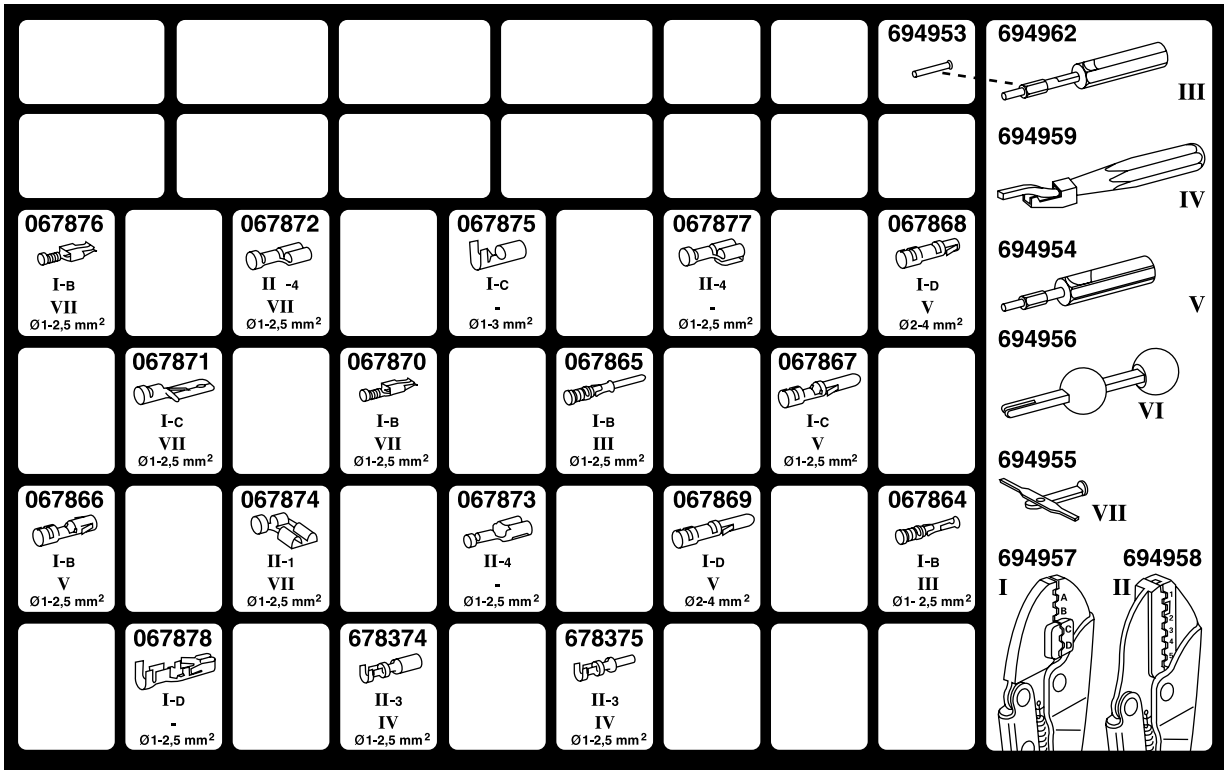



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## 1.3 CONTACT KITS

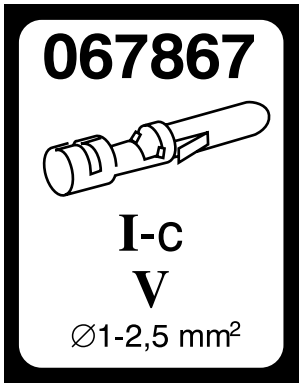
**Contact kit A**
Contact kit A (DAF No. 0694960) is available for the contacts, except SCAT contacts and micro-timer contacts.

There is a sticker on the inside of the kit to facilitate selection of the contact, contact crimping tool and ejector tool.




W 5 03 019

At the top the DAF no. of the contact is shown.
Roman numerals I and II, shown below the illustrations, refer to the contact crimping tool to be used.
The numeral or letter added to Roman numeral I or II indicates the hole in the contact crimping tool in which the contact is to be placed.
Roman numerals III to VII refer to the type of ejector tool to be used for removing the contact from the connector.
The information at the bottom refers to the core section suitable for the contact.




W 5 03 018

**Contact kit B**
Additional contact crimping and ejector tools are required for SCAT contacts and for micro-timer contacts. Contact kit B (DAF No. 1240065) is available for this purpose.
There is a sticker on the inside of the kit to facilitate selection of the contact, contact crimping tool and ejector tool (to be used in the same way as for contact kit A).

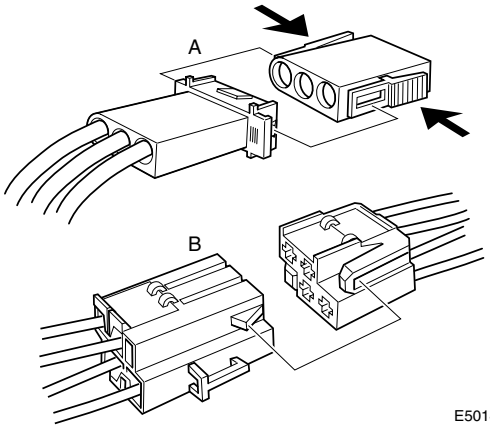
**Note:**
The proper ejector and the proper contact crimping tool for each contact can also be found through 'Parts Rapido'.

# 2. REMOVAL AND INSTALLATION

## 2.1 REMOVAL AND INSTALLATION, CONNECTORS

**Unlocking the connectors**
The connectors can often be locked with one another or with a component. They can be divided into:

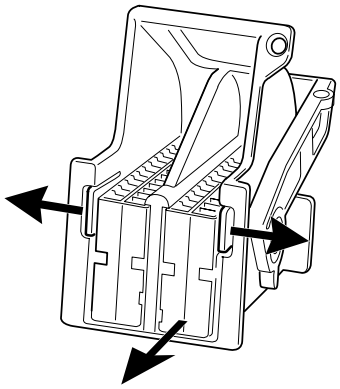
A. Active locking.
This means that the lock must be activated. With this type a lock must often be pressed.
B. Passive locking.
Opens when the parts are pulled apart with a certain force.



E501480

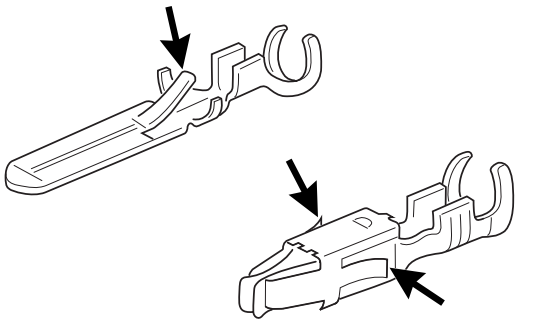
**Two connectors in one housing**
These connectors consist of two separate connectors. To remove the contacts first remove the connectors from the connector housing. Push the locking lip aside before removal. The connector can then be slid out of the connector housing.

Examples:
- Connector for VIC electronic unit


E501484

## 2.2 REMOVAL AND INSTALLATION, CONTACTS

**Contact lock**
There are various types of contact locks. A few examples are given below. When a lock is applied, individually for each contact, this is called a primary lock. An extra general lock for several contacts in a connector is a secondary lock.

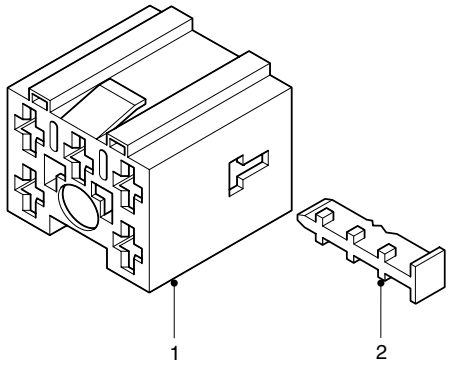


E501481

**Primary contact lock**
To keep an individual contact in the connector in place, a contact is often furnished with one or more locking bolts. This is a primary lock. These locking bolts should never be damaged, with a view to pressing and ejecting the contacts.

3

**Secondary contact lock**
This type of lock is normally used on 2 and 3-row connectors.
For connectors (1) with a locking lip (2) first remove the lip before removing the contacts. This is a secondary lock. The locking lip is on the side of the connector and can usually be recognised from a colour that is different from the colour of the connector.
The lip is removed entirely. Now the contacts can be removed using the proper ejector tool by unlocking the primary lock.

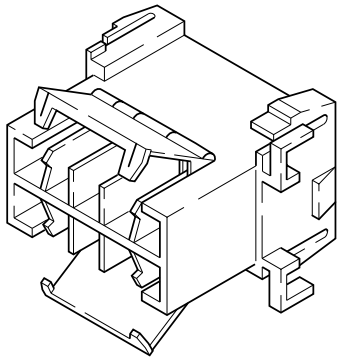



E501483

Examples:
- Cab connectors
- Electronic unit connectors

The contacts may also be locked secondarily by the lower part of the connector. After tilting this lower part, the contacts can be removed by unlocking the primary lock using the proper ejector tool.
This type of lock is used only on 2-row connectors.

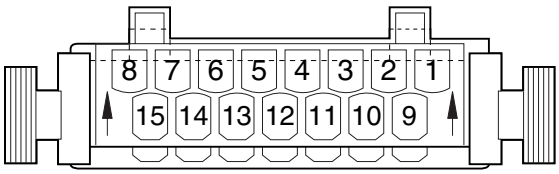
Examples:
- MTCO connector



E501497

A different type of secondary lock is formed by two sliding parts of the connector.
The upper half (on the wire insert side) and the lower half form the extra contact lock.

To unlock this secondary contact lock the upper half of the connector must be pushed away slightly in the direction of the arrows on the connector housing.
The contacts can then be removed from the connector using the proper ejector tool.




E500475

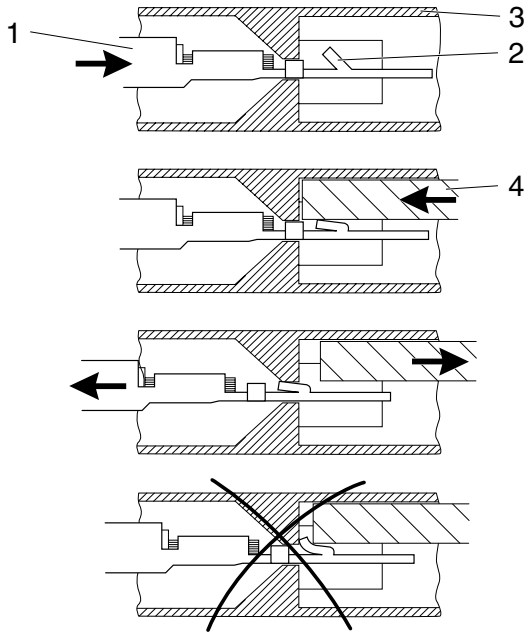
After any installation of wires with contacts, the connector must be pressed into the lock again. If this is not done it will not fit into the counterpart.

Application examples:
- Connector, CDS electronic unit
- Connector, ECAS-2/3 electronic unit
- Connector for UPEC electronic unit

**Ejecting contacts**
For repair or extension of the wiring a contact may have to be replaced or added. Using special ejector tools a contact can be removed from the connector without being damaged.
For the proper ejector tools, see 'Parts Rapido'.

1. Push the wire with contact forwards (1). The locking bolt (2) is now free from the connector (3).
2. Push the proper ejector tool (4) into the front of the connector. This will push the locking bolt (2) down.
3. The contact can now be removed by gently pulling the wire.

**Note:**
If the wire is pulled before the ejector tool pushes the locking bolt down, the contact will only be fixed in the connector even more.




E501482

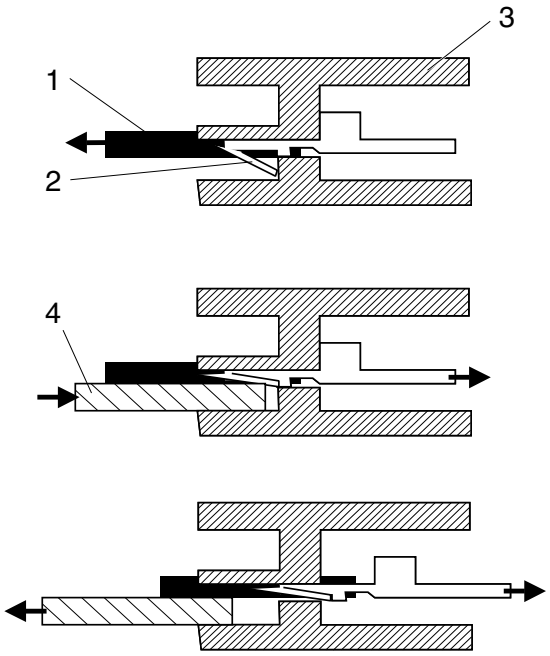
Contacts are also used in which the locking bolt (2) is on the rear of the connector (3).

1. Pull the wire and contact backwards (1). The locking bolt (2) is now free from the connector (3).
2. Push the proper ejector tool (4) into the back of the connector. This will push the locking bolt (2) up.
3. The contact can now be removed by gently pushing the wire forwards.

**Note:**
Here the locking bolt works exactly the opposite to the usual connectors.

Application examples:
- EMAS pressure sensor connector
- Accelerator sensor connector, CF series / XF series

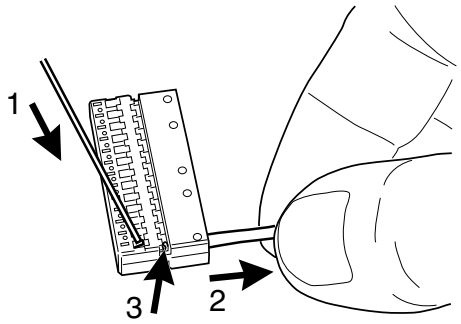
For each contact a specific ejector tool is required.
The proper ejector tool for each contact can be found through 'Parts Rapido'.




E501696

**An MQS (Micro Quadlock System) contact lock**
Before the contact can be removed, the lock must be unlocked with a needle-shaped object.

1. First press the lock at the end of the connector (1). At the same time gently pull the wire (2) until resistance is felt.
2. Then press the second lock (3) and again gently pull the wire (2).
3. The contact can now be removed from the connector.



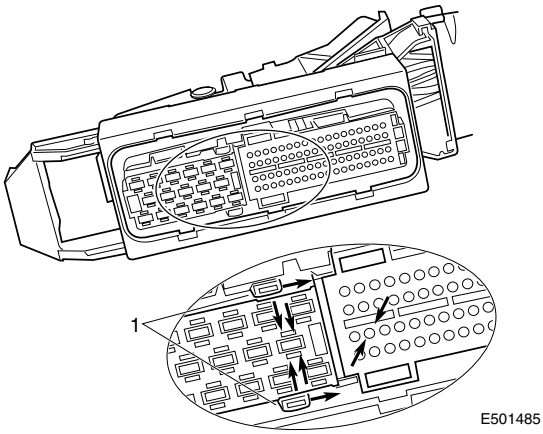
E501486

**Note:**
This type of contact is locked twice and must therefore be unlocked twice.

Application examples:
- Connector for VIC electronic unit

**Removing contacts from the Bosch 89-pin connector**
To remove a contact from this connector proceed as follows:

1. Fold the protective cover around the wiring harness down by pushing the lock outwards.
2. Now push the two outer halves of the protective cover outwards and then upwards. The protective cover can now be removed.
3. The pink secondary contact lock (1) must be slid to the centre of the connector to enable the contacts to be removed.
4. The contacts can now be removed using the proper ejection tool.

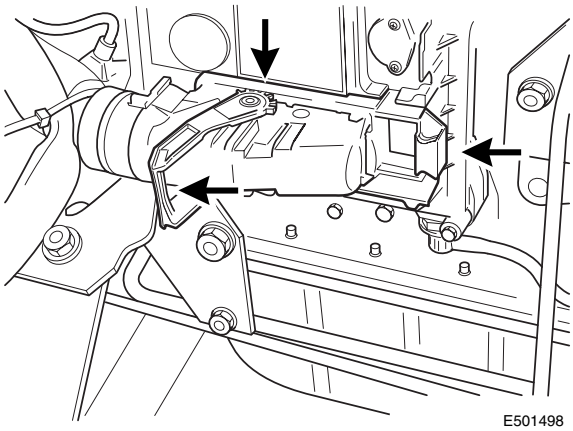


E501485

**Note:**
The larger contacts are locked with four locking bolts. The smaller contacts are locked with two locking bolts.
Always unlock the locks when adding contacts!

**Fitting the Bosch 89-pin connector**
When refitting the protective cover, ensure that the siphon and slide are both in the 'unlocked' position.
If they are not, the connector, when fitted, will not be locked correctly on the electronic unit. As a result, the contact between the connector and the electronic unit may be bad.

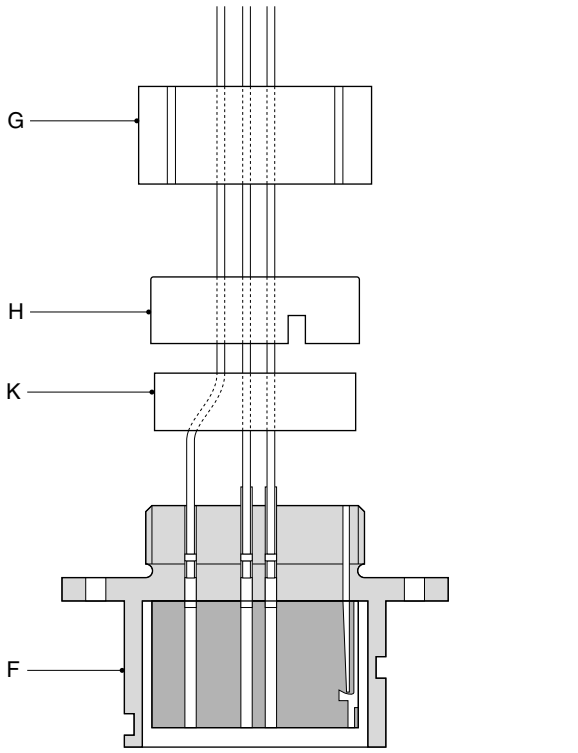
Application examples:
- Connector, ECS-DC3 electronic unit


E501498

3

**Removing 39-pin connector contacts**
1. Loosen union G.
2. Push pressure ring H and seal K back slightly over the wiring.
3. Then eject the contacts from connector housing F using a special ejector tool from contact kit A or B.

**Fitting 39-pin connector contacts**
1. Fit union G, pressure ring H over the wiring.
2. Fit new contacts to the wires using the correct tool.
3. Insert the wires and contacts through seal K.
4. Press the contacts to their definitive positions in connector housing F.
5. Press seal K against connector housing F.
6. Position pressure ring H so that the two ridges on the side of connector housing F fall into the pressure ring recesses.
7. Tighten union G by hand.



E500477

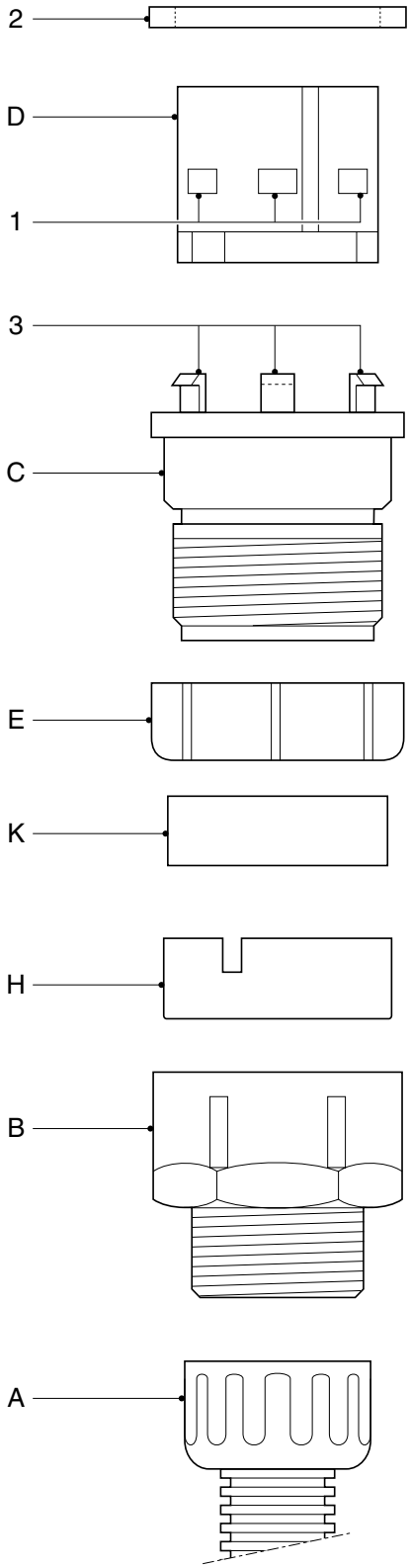
**Note:**
- Pressure ring H has contact numbers (their purpose is to enable the contacts to be positioned correctly). These contact numbers must be in the same position as the contact numbers on the connector housing.
- When an incorrectly positioned wire is removed the seal will leak. If a new wire is not inserted a sealing plug should be fitted.

**Removing contacts from 39-pin connector counterpart**

1. Loosen end union nut A and tapered coupling nut B and push these as far as possible back over the insulation pipe.
2. Push pressure ring H and seal K as far as possible back over the wiring harness.
3. Push union E back over the wiring harness.
4. Carefully remove the sealing ring (2).
5. Carefully loosen the locking lugs (3) in connector housing F.
6. Remove centring sleeve D from connector housing C.
7. Then eject the contacts from connector housing C using a special ejector tool from contact kit A or B.

**Fitting contacts in 39-pin connector counterpart**

1. Push end union nut A and tapered coupling nut B as far as possible back over the insulation pipe.
2. Fit the centring sleeve D in connector housing C so that all openings are positioned opposite each another.
3. Check that all locking lugs (3) are positioned in the lock openings (1).
4. Insert the wires without contacts through pressure ring H and seal K.
5. Fit new contacts to the wires using the correct tool.
6. Feed the cable harness through tapered coupling nut B.
7. Press seal K against connector housing C.
8. Position pressure ring H so that the two ridges on the side of connector housing C fall into the pressure ring recesses.
9. Press the connector pins into their correct positions in connector housing C.
10. Fit sealing ring (2) around centring sleeve D and press it until the stop of connector housing C.




E500478

**Note:**
- When carrying out the last two steps it is important not to twist the cable harness as this can lead to serious damage (wire breakage).
- Tighten the respective union nuts by hand. Do not use tools (pliers) to do this.

11. Screw tapered coupling nut B onto connector housing C.

12. Screw end union nut A (with insulation pipe) onto tapered coupling nut B.

3

## 2.3 FITTING CONTACTS TO ELECTRICAL WIRES

The increasing application of electronics in vehicles means a much broader range of connectors, contacts and wiring is being used. The result of this is that more attention has to be paid to making and repairing connections. The following criteria should be taken into account:

1. Wires with a reduced insulation thickness, with retention of the mechanical properties, for use with core sections from 0.5 to 2.5 $mm^2$.

2. Wires with a normal insulation thickness, for use with core sections from 4 to 120 $mm^2$.

3. Wires for various temperature ranges:
   T1: from −40°C to +70°C
   (in cab and chassis) and
   T2: from −40°C to +100°C
   (in engine compartment and gearbox)

**Note:**
In view of the mechanical strength required, the minimum permissible core section is 1 $mm^2$, with the exception of cab wiring. At certain points this may be 0.5 $mm^2$.

To ensure the reliability of systems and connections, the following points should be observed when repairs or extensions are made to the wiring:

A. Always choose the following:
   - the correct type of contact
   - the correct wire diameter for the contact used
   - the correct type of contact material (tin-plated, silver-plated or gold-plated)

B. Use the right tool for the job. Wire ends are always clamped to a contact. Special crimping tools have been developed for this purpose.

**Note:**
Connections will only be reliable if these crimping tools are used and the contact is fitted in the correct hole.

C. Strip the correct length of wire. Always use stripping pliers.
   The rule of thumb is:
   stripped length = length of shrink-sleeve + 1 mm.

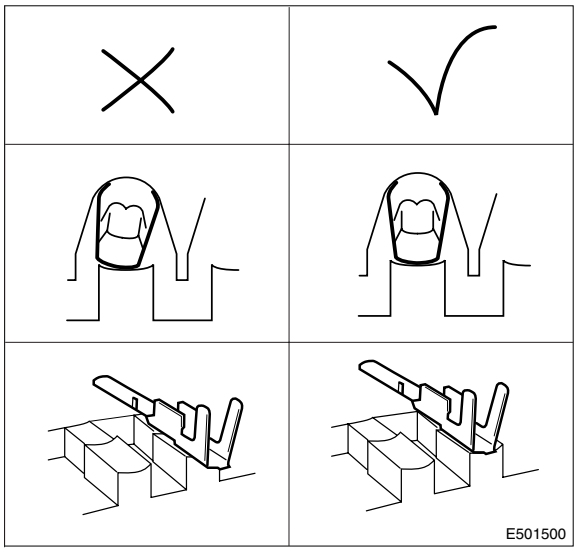
   Make sure that the core is not damaged during stripping or problems may occur after some time.

**Note:**
A good connection will only be obtained if points A, B and C are complied with. This implies that both the copper core and the insulation are firmly clamped in place.

**Crimping wire to a contact**
Choose the right crimping tool and place the contact in the correct hole.

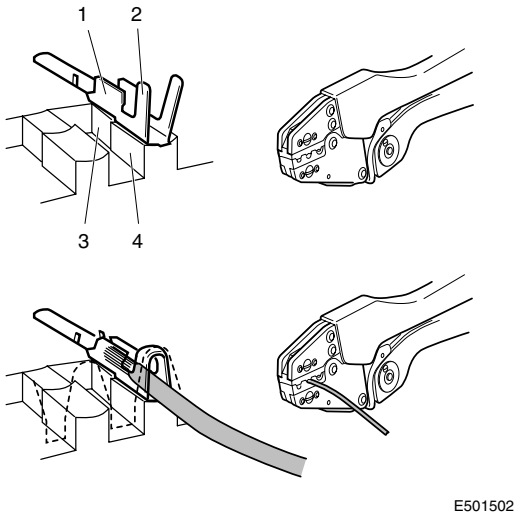
**Note:**
The proper crimping tool for each contact can be found through 'Parts Rapido'.

The contact may never be in a twisted, slanting or slid position (X) in the press clamp opening.





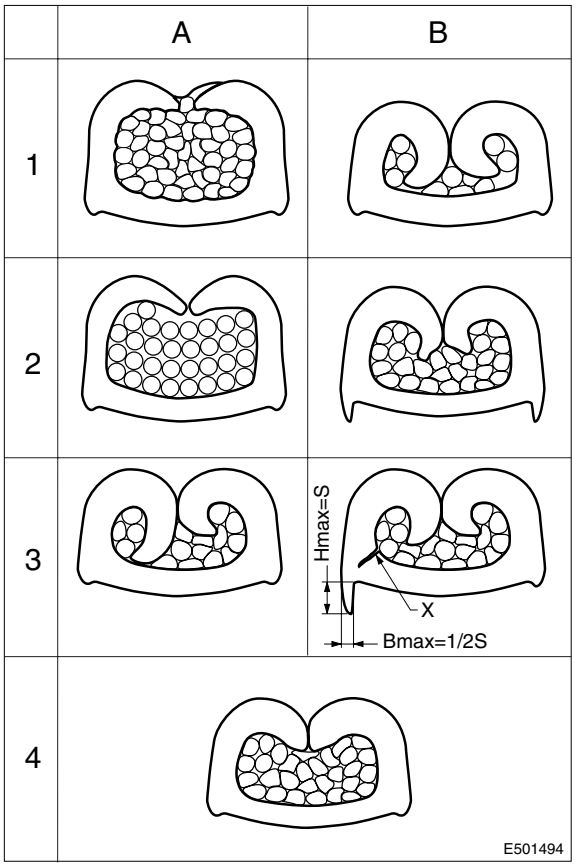

1. Place the wire in the contact.
2. The stripped wire part, the copper conductor must be in the contact press part (1).
   The wire insulation must be in the relief part (2).
3. Check again whether the wire is in the correct position in the contact (1 and 2) and press the contact press part (3 and 4) together.
4. Do not interrupt the contact pressing before the tool is completely compressed in the end position. Only then is full contact pressure reached and the tool can be opened.



**Copper connection**

1A. Wire diameter too large
1B. Wire diameter too small
2A. Crimp height too great (hole in crimping tool too large)
2B. Crimp height too small (hole in crimping tool too small)
3A. Asymmetric crimping
3B. Asymmetric crimping
4. Proper contact crimping

S = material thickness
x = cracking




1A. There is a risk that copper conductors could stick out, which would adversely affect the fixed position of the other copper conductors.
This may result in a short circuit and loose contact.

1B. The contact may crack and the copper conductors may not be sufficiently fixed in the contact.

2A. Copper conductors are not sufficiently fixed in the contact. The wire will come loose of the contact.

2B. The contact will be damaged. The contact may crack after some time and the wire will then come loose from the contact.

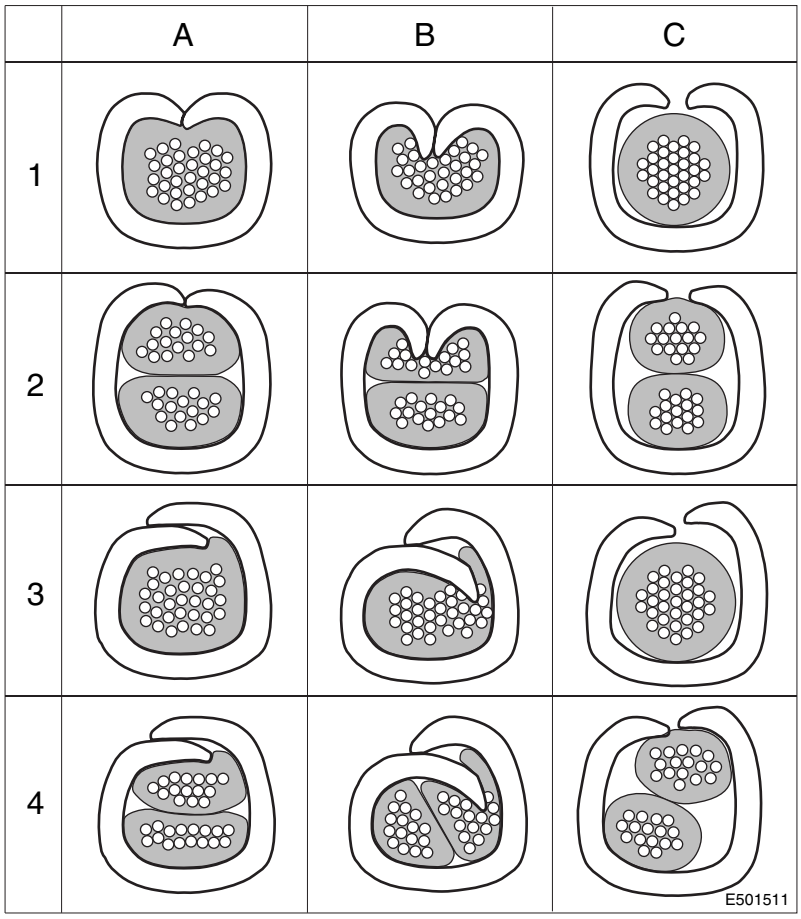
3A and B The contact will be damaged and the copper conductors are not fully fixed in the contact. The wire may come loose. The height of any bulge on the contact may not exceed the material thickness of the contact. The width of this bulge may not exceed half the material thickness.

**Insulation connection**
Different types of crimping are allowed:
1. Normal crimping; the two sides of the relief part fully engage the insulation.
2. Double crimping; two wires are clamped in one contact.
3. Overlap crimping; the two sides of the relief part engage one another slightly.
4. Double overlap crimping; two wires are clamped in one contact, the two sides of the relief part engaging one another slightly.

A. If the insulation connection is correct, the wire is clamped in the relief part with the correct pressure and the insulation is not broken.

B. If the contact pressure is too high the insulation could break, possibly causing a short circuit.
This may for instance be caused by:
- using the wrong crimping tool
- using an improper hole in the crimping tool (too small)
- a defect in the crimping tool delaying the interruption of the contact pressing.

C. If the contact pressure is not sufficient the insulation may not be clamped and the wire may come loose. This will interrupt the electrical connection but may also result in a short circuit.
This may for instance be caused by:
- using the wrong crimping tool
- using an improper hole in the crimping tool (too big)
- interrupting the contact pressing prematurely.

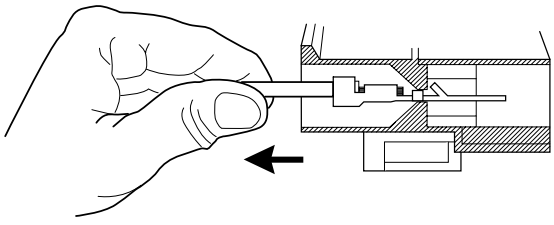



1. Normal crimping
2. Double crimping
3. Overlap crimping
4. Double overlap crimping

A. Good insulation connection
B. The insulation is broken
C. The insulation is not secured

With double crimping the thinnest wire is always at the bottom.

A connection can be checked by gently pulling the wire after the contact is placed in the connector. The lock of the locking bolt in the connector should then be felt.



E501501

**Examples of wire-contact connections**

A. Wire not sufficiently slid forwards.
The wire is not sufficiently slid forwards to ensure a proper current transfer and pull relief.

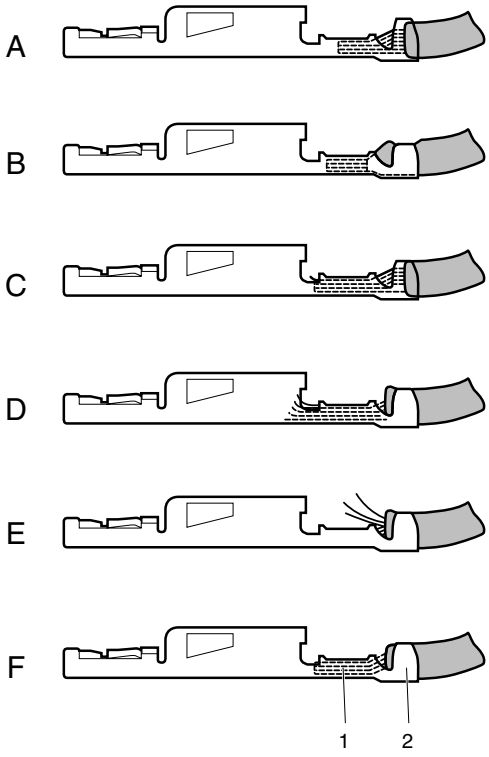
B. Stripped part of the wire too short.
The stripped part of the wire is too short to ensure a proper current transfer whereas a part of the insulation is clamped underneath the contact press part.

C. Wire too far backwards.
If the stripped part of the wire is too long and the wire is placed correctly relative to the contact press part, the pull relief will cover too little of the wire.

D. Wire too far forwards.
If the stripped part of the wire is too long and the wire is placed correctly relative to the pull relief, the copper conductors at the front will stick out too far past the contact press part.

E. Copper conductors not clamped.
Copper conductors not clamped may cause a short circuit to other wires nearby.

F. This is a correct connection.



E501499

## 2.4 FITTING A SCAT SEAL

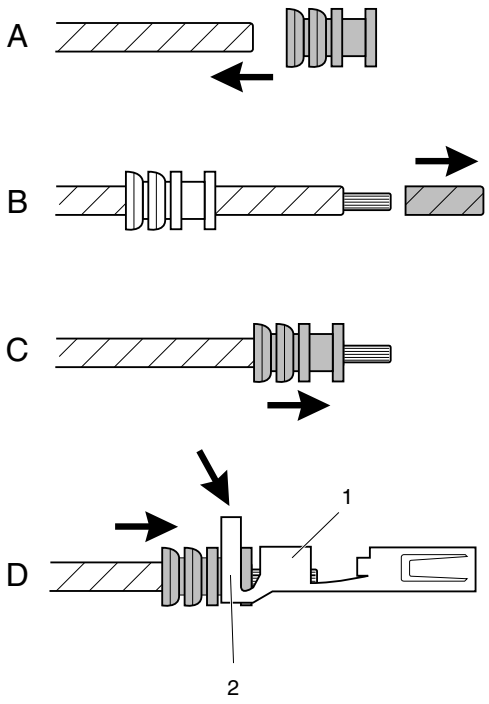
SCATs are used in places where wires are exposed to heavy conditions (environment or application of the vehicle), with the risk of water entering the connector.

The SCAT seal, which is made of silicone, prevents corrosion inside the connector and keeps the seal properties intact in the event of temperature changes.

The SCAT seal is pressed around the wire with the relief part of the contact.

The SCATs are available in various colours and sizes.

1. Select the right SCAT for the wire, contact and connector.
2. Slide the SCAT onto an unstripped wire (A).
3. Slide the SCAT far enough onto the wire and strip the wire to the proper length (B).
4. Slide the SCAT back to the tip of the stripped wire so that the copper just sticks out of the SCAT (C).
5. Place the contact in the proper manner (D) around the SCAT (2) and the stripped wire (1).
6. Now crimp the contact around the SCAT and the wire using the proper crimping tool.




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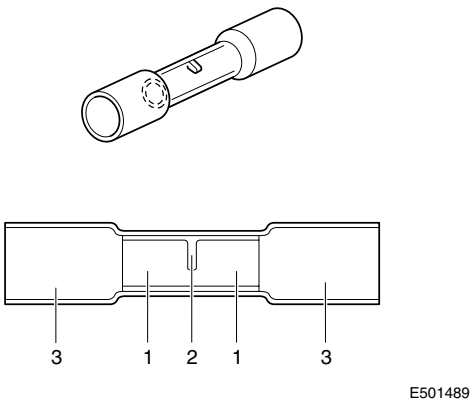
## 2.5 FITTING AN ELECTRICAL BUFFER CONNECTION

A buffer connection is made when at least two wire ends must be connected to one another. This may be required because of a wire repair or if a wire is to be added to a connection.

**Note:**
When adding a new wire to an existing wire, both wires must be of the same thickness.
If part of the existing wire is to be removed, try to make sure that the wire number can still easily be found on the wire.

3

The contact crimping part (1) is the electrical connection to the stripped wire part. The central stop (2) is a limiter, preventing the wire to be connected from being inserted too far. The insulation is a crimp insulating sleeve with glue layer (3), which, after heating by a blow drier, will offer protection against unwanted electrical contact and corrosion.

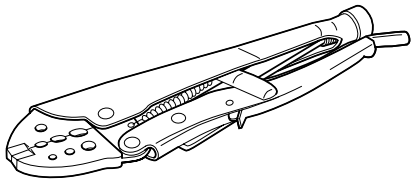



There are three different buffer connectors available: red, blue and yellow. Depending on the wire thicknesses to be connected (and possibly the number of wires to be connected) a specific colour must be used.

- red diameter 0.25 - 0.75 $mm^2$
- blue diameter 1.0 - 2.5 $mm^2$
- yellow diameter 4.0 - 6.0 $mm^2$

**Connecting more than two wires to one another is not recommended. The glue layer of the crimping insulation is not sufficient to seal all resulting gaps. So this is certainly not permitted outside the cab.**

It is very important to carry out contact crimping in the correct way to prevent electrical faults. For cold fusion a contact crimping tool is required. This tool creates a cold fusion between wire and buffer connector.



E501491



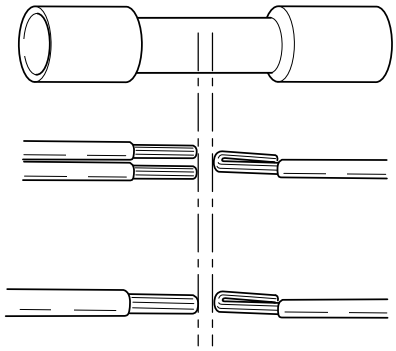
**Fitting the contact crimp connector**

1. Select the right buffer connector for the wires to be connected.

**Note:**
If three wires of the same diameter have to be connected after all, choose a buffer connector that is the same diameter as two of the wires. The single wire on the other side must be stripped to double length and folded double. The same applies when a wire is used on one side that is twice the diameter of the other.

2. Strip the wire to a length of 4 to 5 mm.

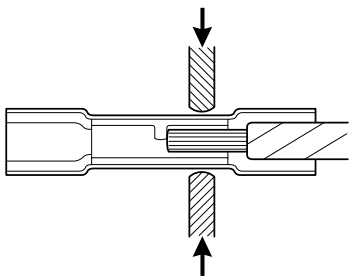
**Note:**
The stripped wire end may **not** be twisted.



E501490

3. Choose the proper contact crimping tool on the basis of the buffer connector and wire diameter, and check the holes to be used.
4. Place the buffer connector in the hole of the tool and clamp it gently so the buffer connector will remain in the hole.
5. Slide the stripped wire ends into the side of the buffer connector that is engaged by the contact crimping tool.

**Note:**
The wire insulation may not be slid into the contact part of the buffer connector.



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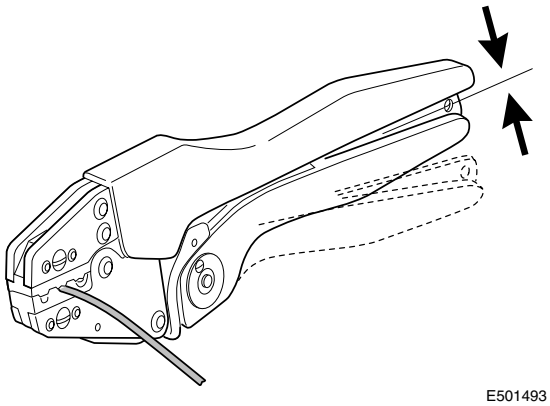
6. Compress the contact crimping tool: Do not interrupt the contact crimping before the tool is completely compressed to the end position. Only then is full contact crimping completed and the tool can be opened.
7. Repeat this for the other ends of the buffer connector.
8. Check the contact crimping for damage and pull the wires to ensure they are properly fixed.

**Note:**
Improper contact crimping means a bad connection, which may cause failures.



**Avoid breathing in the vapours produced when heating the crimping insulation.**

9. Heat the crimping insulation to fix it properly to the wire insulation. Ensure that the insulation does not get burnt. If the insulation gets burnt it will become brittle and easily break or crack.



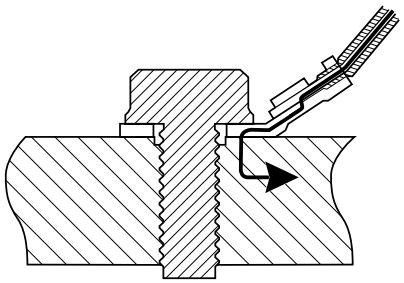
E501493

## 2.6 REMOVAL AND INSTALLATION, EARTH WIRE

When a failure occurs in an electrical system, one of the first things to be checked is the earth connection, with particular attention being paid to earth connections on the chassis.

**Points for special attention when checking earth connection on chassis**
If an earth connection has been removed and is being re-installed, pay attention to the following:

- The bolt, nut, earth strip and washers must be cleaned (e.g. using a steel brush or sand paper). If a component is corroded, it must be replaced by a new one.
- Clean all dirt and paint from the area around the engine/chassis earth connection on both sides of the chassis member so that the bare metal is visible.
- Clean all dirt and paint from the area around the battery/chassis earth connection on the inside of the chassis member so that the bare metal is visible.
- On the earth strip side, the cleaned area must be larger than the contact area of the earth strip.
- On the nut side, the cleaned area must be larger than the contact surface of the nut.
- After fitting the earth connection, a protective zinc primer should be applied to both sides of it and it should be painted.

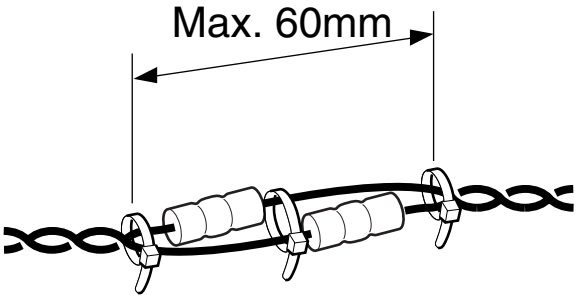


E501495

## 2.7 REPAIRING CAN NETWORK WIRING

When repairing or replacing the CAN wiring, the original twisted lengths and diameters of the wiring must be taken into consideration. A 10% tolerance in the twisted length of the wiring is permitted. Winding density 40-50 turns/m.

When repairing the wiring, the winding density must be maintained, with the provision that it is permissible for the wiring at the point of repair to have no twists over a maximum length of 60 mm. When the wiring is being repaired, it must be secured in a wire tie at the end and in the middle.



E500977

**Replacing CAN wire**

1. Measure the length of the original wire when untwisted.
2. Measure the diameter of the original wire. Always take a wire of the same diameter or, if this is not available, of the next size.
3. Preferably choose a wire of the same colour as the original wire.
4. Follow the routing of the original wire and install the wire in the original way.

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# 1. SAFETY INSTRUCTIONS

## 1.1 BATTERIES

- The sulphuric acid in the batteries is an aggressive and poisonous liquid. While working on batteries, wear protective clothing, gloves and safety goggles.
  In case of contact with clothes, skin or eyes, wash immediately with copious amounts of water. Consult a doctor in case of contact with the eyes or skin.
- Always remove the earth lead first before working on batteries.
  When connecting battery leads, always connect the earth lead last.
- Always handle batteries carefully and hold them upright.
- When topping up batteries, never allow the electrolyte level to rise more than 10 mm above the plates or above the level indicator.
- Never put tools or other materials, which could accidentally short circuit the battery poles, down on the batteries or in the vicinity of batteries. Short-circuited battery poles may cause the battery to explode.
- Secure the batteries well after completing the work, but not too tightly.

## 1.2 BATTERY CHARGING

- An explosive gas mixture may be released during battery charging. Only charge batteries in a well-ventilated area.
- Never smoke or allow naked flames or sparks in the vicinity of the battery.
- Allow frozen batteries to thaw before charging.
- Switch the charger off before the leads to the battery are disconnected.

# 2. CHARGING BATTERIES

## 2.1 GENERAL

- A battery may only be charged using DC current. Connect the positive pole of the battery to the positive terminal (+) of the charger, and the negative pole of the battery to the negative terminal (–) of the charger. The cell sealing plugs may remain on the battery during charging (with the exception of fast charging).
  The cell voltage will rise during charging. This increase in voltage depends on the charging current applied and the temperature. During normal charging, the cell voltage will rise from about 2 volts/cell to about 2.65 volts/cell. If a charging voltage of about 2.35 to 2.4 volts/cell (about 14.2 volts in a 12V battery) is exceeded, this will initiate active gas development.
  As a consequence of the rise in voltage during charging, the charging current will gradually fall, as a rule.
  Overcharging will reduce the service life of a battery.

- If the charging of the battery is continued after it has been fully charged (even with a low current), this will lead to corrosion (corrosive attack) of the grids of the positive battery plates. This type of wear leads to premature redundancy of the battery.
  Depending on the capacity of the charger, the normal charging time is between 8 and 15 hours.
  If during charging, the temperature of the battery acid exceeds 55°C, charging should be stopped. High temperatures reduce the service life of the battery.

- A battery should be considered to be charged when the charge voltage stops rising for a period 2 hours and the acid density (relative density) has reached the nominal value (for example 1.28 kg/dm$^3$) and it rises no further.
- A charged battery must be used immediately. If this is not possible, maintain the battery as described in the “Storage of batteries” section.
- A discharged battery must be charged as soon as possible. If a discharged battery is not recharged, the battery plates may become sulphated (i.e. they may become hard), which will lead to permanent loss of capacity.
- Never disconnect the battery terminals when the engine is running to prevent damage to electronic components.
- Connect the positive lead (+) of the battery charger to the positive terminal (+) of the battery first and then the negative lead (–) to the negative terminal (–).
- Switch off the battery charger before disconnecting the battery charger leads, to avoid sparking and to eliminate the risk of explosion.
- To disconnect, release the negative terminal (–) first and then the positive terminal (+).

## 2.2 METHODS OF CHARGING



**Always disconnect the battery terminals before charging.**

**Normal charging**
- Normal charging is done to partially or fully restore discharged batteries to full capacity. In most cases, a charging current of $^1/_{20}$ to $^1/_{10}$ of the capacity is selected.

- It is important to reduce the charging current during gas development and to switch the charger off when the battery is charged.

**Fast charging**
- With this method, multiples of the normal charge current (approx. 3 to 5 times) are used to achieve an acceptable charge condition in the shortest possible time.

- Before fast charging, remove the battery leads to prevent damage to the electronic components.

- Remove the cell sealing plugs so that the released gases can easily escape.

- To prevent overcharging, switch to a lower charging current when the cell voltage is reached (2.35 to 2.4 volts/cell).

  **Note:**
  If possible, avoid fast charging. Only use it in exceptional cases. Fast charging causes battery overloading, which reduces the service life of the battery.

**Buffer charging**

- With this method, the consumer and the charger are both connected to the battery. The charger delivers sufficient current to ensure that the battery remains virtually fully charged. The battery will deliver peak currents to the consumer.

- Buffer charging is best done at a constant (stabilised) voltage.

**Trickle charging**

- A fully charged battery that is not used for some time, will start to discharge of its own accord. It may discharge at a rate of 0.1% to 1% per day. Trickle charging compensates for such discharges.

- The charging current for trickle charging should be around 0.1 A per 100 Ah.



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# 3. STORAGE OF BATTERIES

## 3.1 GENERAL

Before storing batteries, take the following steps:

1. Remove the battery terminals.
2. Clean the battery terminals and top of the batteries.
3. Grease the battery terminals with petroleum jelly.
4. Check the charging condition of the batteries, and charge them if necessary. See section “Checking batteries”.
5. Check the electrolyte level; this should be approx. 10 mm above the plates or up to the level indicator, if present.
   If necessary, top the batteries up with distilled water.



## 3.2 STORAGE UP TO FOUR WEEKS.

If batteries (whether as separate units or fitted in a vehicle) are not going to be used for an extended period of time not exceeding four weeks, the following measures should be taken:

1. Do **not** connect the battery leads to the batteries.
2. Check the charging condition of the batteries regularly, particularly if the batteries are stored in low temperature conditions. See section “Checking batteries”.
   If the voltage falls below 12.4 volts, or if the relative density of the electrolyte in one or more of the cells is less than 1.23 kg/dm$^3$, the battery must be charged.

   **Note:**
   The lower the relative density of the electrolyte, the higher the risk of the battery freezing.

## 3.3 STORAGE FOR MORE THAN FOUR WEEKS

If the batteries will not be used for more than four weeks, the following measures should be taken:

1. Remove the batteries from the vehicle and store them in a frost-free, dry, cool and well-ventilated room.
2. Check the charging of the batteries regularly, at least once every four weeks. See section “Checking batteries”.
   If the voltage falls below 12.4 volts, or if the relative density of the electrolyte in one or more of the cells is less than 1.23 kg/dm$^3$, the battery must be charged.
3. Limit the storage period to a maximum of three months. The longer the period of storage, the greater the permanent loss of capacity.

# 4. CHECKING BATTERIES

## 4.1 VISUAL INSPECTION

- A white dividing line at $^1/_3$ of the plate height (this can be seen through transparent battery boxes) indicates that the battery has been left in a deeply discharged condition.
- If the electrolyte is brown and the battery consumes a lot of fluid, this indicates that the battery is overcharged.
- If the electrolyte is turbid and milky and the cells have a white deposit, the battery has become damaged due to insufficient charging (deep discharge).



## 4.2 CHECKING THE CHARGING CONDITION

**Relative density**

- The charging and discharging of the battery leads to a chemical reaction in the battery, which involves sulphuric acid. The sulphuric acid concentration drops as the battery discharges.
  The concentration, measured as relative density (kg/dm$^3$) is a useful indicator in determining the charging condition of the battery.
- An acidimeter can be used to check the charging condition.
  Relative density at 27°C in kg/dm$^3$

| | | |
|---|---|---|
| Charged battery | : | 1.28 |
| Half-charged battery | : | 1.20 |
| Discharged battery | : | 1.10 |

- Measurement corrections are necessary if temperatures are significantly lower or higher. For every 10°C lower temperature, subtract 0.007 points from the measured value. For every 10°C higher temperature, add 0.007 points.
  In batteries that are in good condition, the relative density should be the same in all the cells. The difference between the highest and lowest relative density must not exceed 0.03 kg/dm$^3$.

**Note:**
If the relative density in one of the cells is much lower than in the other cells it may be caused by cell closure. If the relative relative density of two adjacent cells is much lower than in the other cells, this indicates a leakage in the cell partition. In both cases, the battery must be replaced.

**Voltage**

- The charging condition of the batteries can be measured using a sensitive, preferably digital voltmeter. This method can only be used 1 to 2 hours after full completion of charging or discharging. Measure the absolute rest voltage (the positive and negative terminals of the battery must be removed).
  The charging condition of the battery can be calculated using the formula: Voltage per cell = relative density ($kg/dm^3$)+0.84.

  For example:
  For a fully charged battery, the relative density per cell is 1.28 $kg/dm^3$. The voltage per cell is therefore 1.28 + 0.84 = 2.12 V.
  A 12V battery has 6 cells. The total voltage for a charged battery is 6 x 2.12 = 12.72 V.
  The voltage of a half-charged battery is approx. 12.24 V.
  The voltage of a discharged battery is approx. 11.75 V.

## 4.3 CHECKING USING A BATTERY TESTER

- The general condition of the battery can be checked quickly using a battery tester. For this check, a load is applied to the battery, and then the discharge voltage at the battery terminals is measured. The load applied to the battery must be at least 3 times the capacity of the battery.

- As a rule, the test can be carried out when the battery is sufficiently charged (relative density 1.25 - 1.28 kg/dm$^3$).
  At normal temperatures (10-20°C), the charging voltage for a properly charged battery must be 10 volts after 10 seconds.
  In the case of a partially discharged battery (relative density 1.25 kg/dm$^3$), the reading should be at least 9 volts.
  It is important that the voltage is measured directly at the battery poles.

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# 1. CONNECTION OF ACCESSORIES

## 1.1 RESERVE WIRES

**Additional wiring**
In the roof console on the driver's side there is a 12-pin, black connector (connector no. 597) with two reserve wires (res 1 and res 2) that are connected to connector 581.

The following signals are available there:

**Pin layout of connector 597:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | | |
| 2 | 1154 | Power supply before contact |
| 3 | 1258 | Power supply after contact |
| 4 | 2102 | "Left tail light" signal |
| 5 | 2103 | "Right tail light" signal |
| 6 | 2122 | "Main beam" signal |
| 7 | 2630 | Instrument lighting |
| 8 | | |
| 9 | | |
| 10 | res 1 | Reserve 1 |
| 11 | res 2 | Reserve 2 |
| 12 | M | Earth |

**NOTE:** The power supply **before** contact is fuse-protected via fuse E142. The power supply **after** contact is fuse-protected via fuse E163. Both 25A. The power supply to the cooler box and connector 656 (if present) is also via fuse E142.

A black 6-pin connector (connector 581) that is connected to connector no. 597 is fitted level with the top connector attachment partition on the driver's side.

**Pin layout of connector 581:**

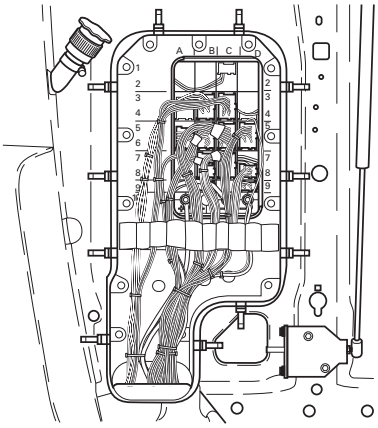
| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 3649 | Ultrasonic/radar earth |
| 2 | 3650 | Ultrasonic/radar input signal |
| 3 | 3651 | Ultrasonic/radar power supply |
| 4 | 3654 | Ultrasonic/radar input signal |
| 5 | res 1 | Reserve 1 |
| 6 | res 2 | Reserve 2 |




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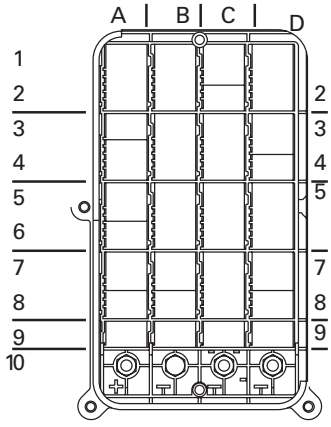
## 1.2 DASHBOARD LEAD-THROUGH CONNECTORS, GENERAL

A number of connectors are fitted in the bulkhead connector lead-through at the front of the cab. A number of earth wires and the main power supply wire are also led through at this point.



E501059

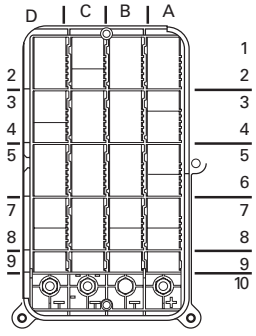
Seen from the outside looking inwards, the bulkhead connector lead-through appears as follows.




E501060

Seen from the inside looking outwards, the bulkhead connector lead-through appears as follows.

In the descriptions of the various connectors in the bulkhead connector lead-through, the view is always from the cab.




E501093

6

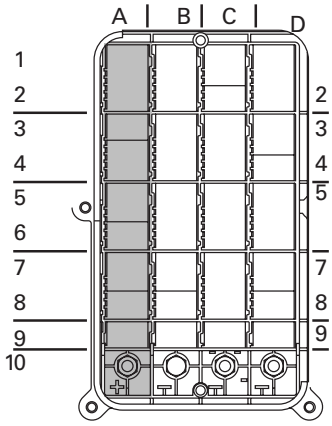
## 1.3 OVERVIEW OF THE BULKHEAD LEAD-THROUGH CONNECTOR FUNCTIONS

The panel with the bulkhead lead-through connectors is divided into four columns. Connectors of the same colour are in the same column.

**Layout of bulkhead lead-through connectors: ≥ 0E581142**

**Column A: Colour: Yellow**

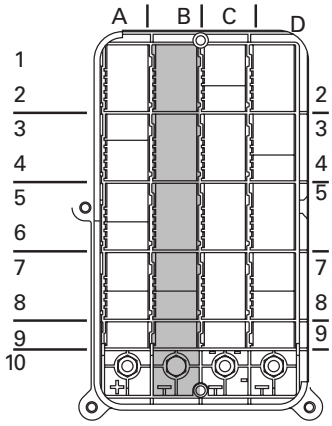
| Row number | Function | Number of pins |
|---|---|---|
| 1 - 2 | EMAS | 21 |
| 3 | Not in use | |
| 4 | Application connector, engine speed control | 12 |
| 5 | Fuel filter | 6 |
| 6 | Cab heater | 12 |
| 7 | Chassis wiring, rear | 6 |
| 8 | 2nd PTO | 12 |
| 9 | Thermoline | 6 |
| 10 | Power supply before contact (1000) | 1 |



E501435

**Column B: Colour: Grey**

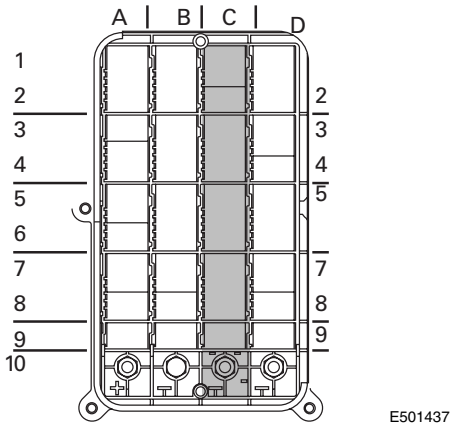
| Row number | Function | Number of pins |
|---|---|---|
| 1 - 2 | Allison or AS Tronic gearbox | 21 |
| 3 | AGS | 6 |
| 4 | Cab tilt protection | 12 |
| 5 - 6 | ABS or EBS, rear axle | 21 |
| 7 | ECAS, front axle | 6 |
| 8 | ECAS, rear axle | 12 |
| 9 | ABS, drawn vehicle | 6 |
| 10 | Earth | 1 |



E501436

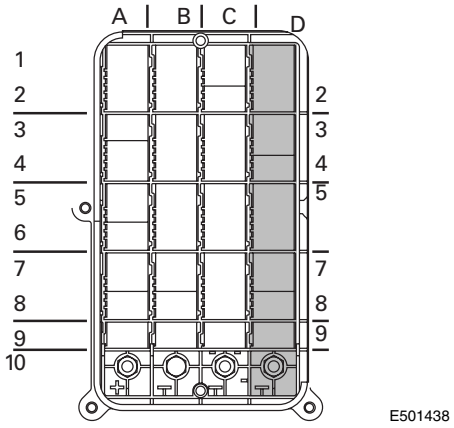
**Column C: Colour: Green**

| Row number | Function | Number of pins |
|---|---|---|
| 1 - 2 | Engine wiring | 21 |
| 3 - 4 | Engine wiring (colour: violet) | 21 |
| 5 | ABS or EBS, drawn vehicle | 6 |
| 6 | Drawn vehicle | 12+- |
| 7 - 8 | ABS or EBS, front axle | 21 |
| 9 | Mechanical lifting axle, FAS/FAG | 6 |
| 10 | Earth | 1 |




**Column D: Colour: Blue**

| Row number | Function | Number of pins |
|---|---|---|
| 1 - 2 | Superstructure connector | 21 |
| 3 | Refuse collection vehicle | 12 |
| 4 | Main switch | 6 |
| 5 - 6 | Chassis wiring, front/ MTCO wiring/3rd PTO | 21 |
| 7 | Not in use | |
| 8 | Intarder | 12 |
| 9 | Cab lock | 6 |
| 10 | Earth | 1 |




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## 1.4 CONNECTION OF ACCESSORIES VIA THE ACCESSORIES CONNECTOR

A 6-pin green accessories connector (connector no. 580 = A027) that is connected to the dashboard wiring harness has been fitted below the central PCB.

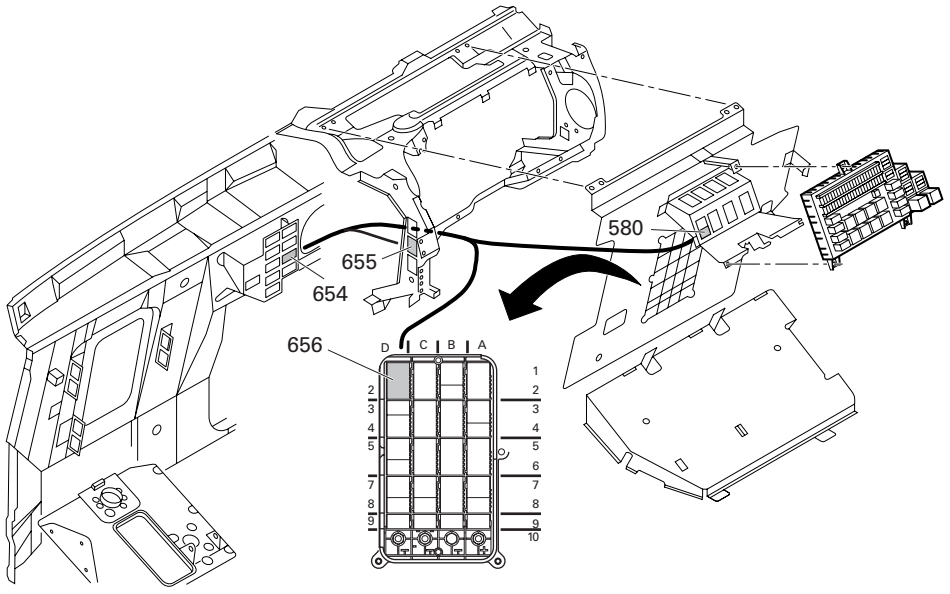
The following signals are available there:

**Pin layout, wiring harness connector 580:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 1154 | Power supply before contact |
| 2 | 1258 | Power supply after contact |
| 3 | 3412 | “Cab locking” signal |
| 4 | 3157 | “Engine running” signal |
| 5 | M | Earth |
| 6 | M | Earth |

**ATTENTION:** The power supply **before** contact is fuse-protected via fuse E142. The power supply **after** contact is fuse-protected via fuse E163. Both 25A. The power supply to the spotlights, rotating beam and cooler box (among others) is also via fuse E142.

Application connector 656 for superstructure functions (with 12 reserve wires) is optional. Only if this option is selected is a cable harness fitted from the connector under the PCB (connector no. 580) to the connector lead-through (connector no. 656) and to the connector behind the radio panel cover (connector no. 654) and the connector behind the heater panel cover (connector no. 655).




**Pin layout, wiring harness connector 656:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | M | Earth |
| 2 | M | Earth |
| 3 | | |
| 4 | 3412 | “Cab locking” signal |
| 5 | res 1 | Panic switch signal |
| 6 | res 2 | Reserve 2 |
| 7 | res 3 | Reserve 3 |
| 8 | res 4 | Reserve 4 |
| 9 | res 5 | Reserve 5 |
| 10 | res 6 | Reserve 6 |
| 11 | res 7 | Reserve 7 |
| 12 | res 8 | Reserve 8 |
| 13 | res 9 | Reserve 9 |
| 14 | res 10 | Reserve 10 |
| 15 | res 11 | Reserve 11 |
| 16 | res 12 | Reserve 12 |
| 17 | | |
| 18 | | |
| 19 | 3157 | “Engine running” signal |
| 20 | 1154 | Power supply before contact |
| 21 | 1258 | Power supply after contact |

**ATTENTION:** The power supply **before** contact is fuse-protected via fuse E142. The power supply **after** contact is fuse-protected via fuse E163. Both 25 A. The power supply to the cooler box and connector 597 (if present) is also via fuse E142. The power supply to connector 597 is also via fuse E163.

**Pin layout, wiring harness connector 654:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 3772 | Panic switch signal |
| 2 | res 2 | Reserve 2 |
| 3 | res 3 | Reserve 3 |
| 4 | res 4 | Reserve 4 |
| 5 | res 5 | Reserve 5 |
| 6 | res 6 | Reserve 6 |
| 7 | | |
| 8 | | |
| 9 | | |



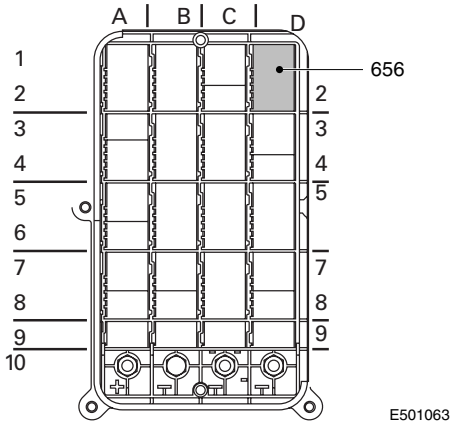
**Pin layout, wiring harness connector 655:**

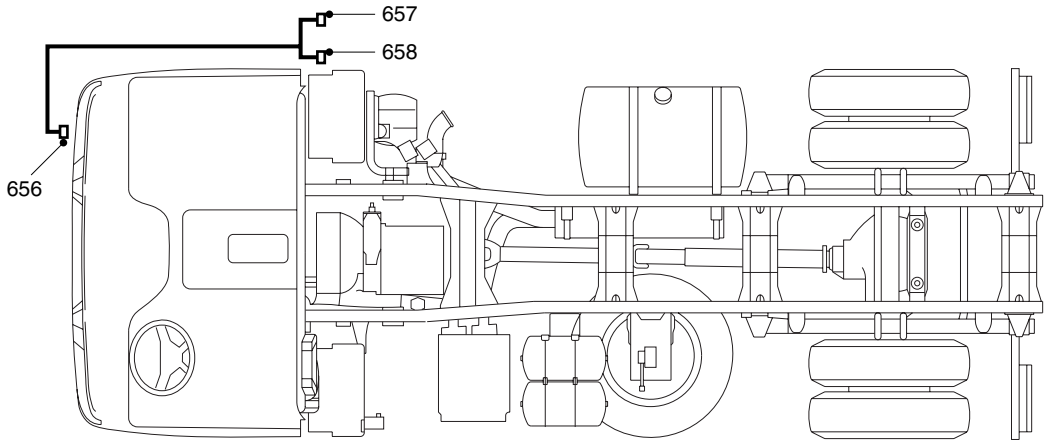
| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | res 7 | Reserve 7 |
| 2 | res 8 | Reserve 8 |
| 3 | res 9 | Reserve 9 |
| 4 | res 10 | Reserve 10 |
| 5 | res 11 | Reserve 11 |
| 6 | res 12 | Reserve 12 |

## 1.5 BULKHEAD LEAD-THROUGH CONNECTOR FOR SUPERSTRUCTURE FUNCTIONS APPLICATION CONNECTOR

Application connectors for superstructure functions are optional. Bulkhead lead-through connector 656 is present only if this option has been selected.

Bulkhead lead-through connector 656 is connected to a wiring harness outside the cab for application connectors 657 and 658.




**Pin layout, wiring harness connector 656:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | M1 | Earth |
| 2 | M2 | Earth |
| 3 | | |
| 4 | 3412 | “Cab locking” signal |
| 5 | 3772 | Panic switch signal |
| 6 | res 2 | Radio compartment reserve wire 2 |
| 7 | res 3 | Radio compartment reserve wire 3 |
| 8 | res 4 | Radio compartment reserve wire 4 |
| 9 | res 5 | Radio compartment reserve wire 5 |

| Pin no. | Wire no. | Description |
|---|---|---|
| 10 | res 6 | Radio compartment reserve wire 6 |
| 11 | res 7 | Heater panel reserve wire 7 |
| 12 | res 8 | Heater panel reserve wire 8 |
| 13 | res 9 | Heater panel reserve wire 9 |
| 14 | res 10 | Heater panel reserve wire 10 |
| 15 | res 11 | Heater panel reserve wire 11 |
| 16 | res 12 | Heater panel reserve wire 12 |
| 17 | 3700 | CAN-L (leads to bulkhead lead-through) |
| 18 | 3701 | CAN-H (leads to bulkhead lead-through) |
| 19 | 3157 | “Engine running” signal |
| 20 | 1154 | Power supply before contact |
| 21 | 1258 | Power supply after contact |

**ATTENTION:** The power supply **before** contact is fuse-protected via fuse E142. The power supply **after** contact is fuse-protected via fuse E163. Both 25 A. The power supply to the cooler box and connector 597 (if present) is also via fuse E142. The power supply to connector 597 is also via fuse E163.



Connectors 657 and 658 are under the cab on the co-driver’s side in SL and SH cabs or behind the cab on the co-driver’s side in D cabs.

**Pin layout, wiring harness connector 657:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | res 1 | Panic switch signal |
| 2 | res 2 | Reserve wire 2 |
| 3 | res 3 | Reserve wire 3 |
| 4 | res 4 | Reserve wire 4 |
| 5 | res 5 | Reserve wire 5 |
| 6 | res 6 | Reserve wire 6 |
| 7 | res 7 | Reserve wire 7 |
| 8 | res 8 | Reserve wire 8 |
| 9 | res 9 | Reserve wire 9 |
| 10 | res 10 | Reserve wire 10 |
| 11 | res 11 | Reserve wire 11 |
| 12 | res 12 | Reserve wire 12 |

**Pin layout, wiring harness connector 658:**

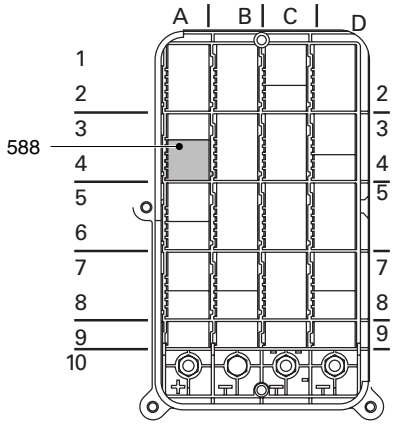
| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 1154 | Power supply before contact |
| 2 | 1258 | Power supply after contact |
| 3 | 3157 | “Engine running” signal |
| 4 | 3412 | “Cab locking” signal |
| 5 | 3700 | CAN-L |
| 6 | 3701 | CAN-H |
| 7 | M | Earth |
| 8 | M | Earth |

**ATTENTION:** The power supply **before** contact is fuse-protected via fuse E142. The power supply **after** contact is fuse-protected via fuse E163. Both 25A. The power supply to the cooler box and to connector 597 is also via fuse E142. The power supply to connector 597 is also via fuse E163.

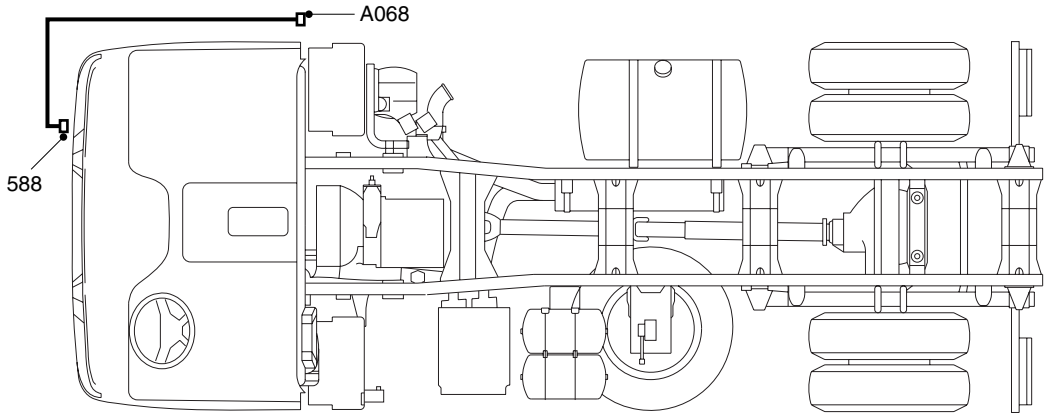
## 1.6 BULKHEAD LEAD-THROUGH CONNECTOR FOR ENGINE SPEED CONTROL APPLICATION CONNECTOR

An application connector for engine speed control is optional: (connector A068).

Bulkhead lead-through connector 588 is connected to a wiring harness outside the cab for application connector A068.




E501032




E501031

Connector A068 is under the cab on the co-driver's side in SL and SH cabs or behind the cab on the co-driver's side in D cabs.

**Pin layout, wiring harness connector A068:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | M | Earth |
| 2 | 9029 | Engine emergency cut-out |
| 3 | 3003 | “Engine speed” signal |
| 4 | 3039 | “Vmax special application” signal |
| 5 | 3141 | “SET -” signal (NOT for ECS-DC3) |
| 6 | 3142 | “SET +” signal (NOT for ECS-DC3) |
| 7 | 3143 | “Engine speed control permitted” signal |
| 8 | 3144 | “SET N variable” signal (NOT for ECS-DC3) |
| 9 | 3145 | “N2” signal |
| 10 | 3146 | “N3” signal |
| 11 | 4594 | PTO remote control |
| 12 | 1240 | Power supply after contact |

In the bulkhead lead-through the wiring harness from connector A068 is connected to the dashboard wiring harness via connector no. 588 at location A4.

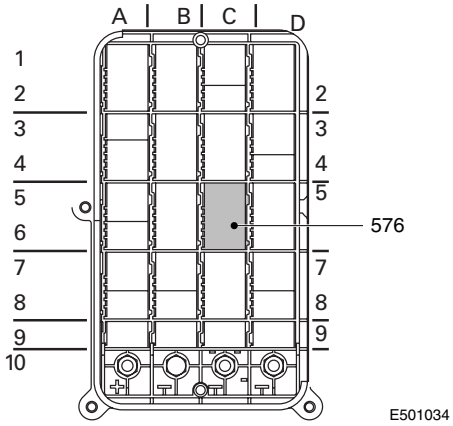
**Pin layout, wiring harness connector 588:**

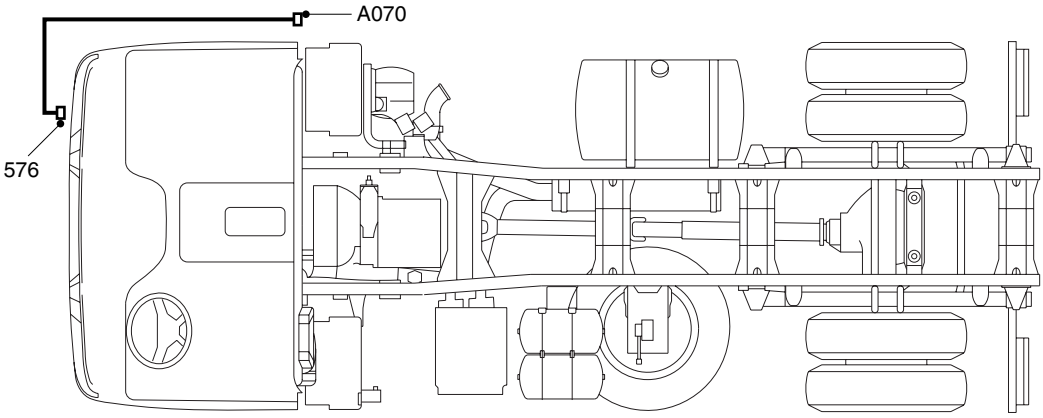
| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | M | Earth |
| 2 | 9029 | Engine emergency cut-out |
| 3 | 3003 | “Engine speed” signal |
| 4 | 3039 | “Vmax special application” signal |
| 5 | 3141 | “SET -” signal (NOT for ECS-DC3) |
| 6 | 3142 | “SET +” signal (NOT for ECS-DC3) |
| 7 | 3143 | “Engine speed control permitted” signal |
| 8 | 3144 | “N variable” signal (NOT for ECS-DC3) |
| 9 | 3145 | “N2” signal |
| 10 | 3146 | “N3” signal |
| 11 | 4594 | PTO remote control |
| 12 | 1240 | Power supply after contact |

## 1.7 BULKHEAD LEAD-THROUGH CONNECTOR FOR CHASSIS WIRING APPLICATION CONNECTOR

Application connector A070. This is only fitted on FA vehicles.

Bulkhead lead-through connector 576 is connected to a wiring harness outside the cab for chassis wiring application connector A070.




Connector A070 is under the cab on the co-driver's side in SL and SH cabs or behind the cab on the co-driver's side in D cabs.

**Pin layout, wiring harness connector A070:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 1113 | Power supply before contact |
| 2 | 2102 2155 | Superstructure lighting |
| 3 | 4601 | “Stop light” signal |
| 4 | 4591 | “Reversing light” signal |
| 5 | 1264 3651 | Alarm, power supply |
| 6 | 3659 | Alarm, superstructure/drawn vehicle |
| 7 | 3660 | Alarm, superstructure/drawn vehicle |
| 8 | M | Earth |

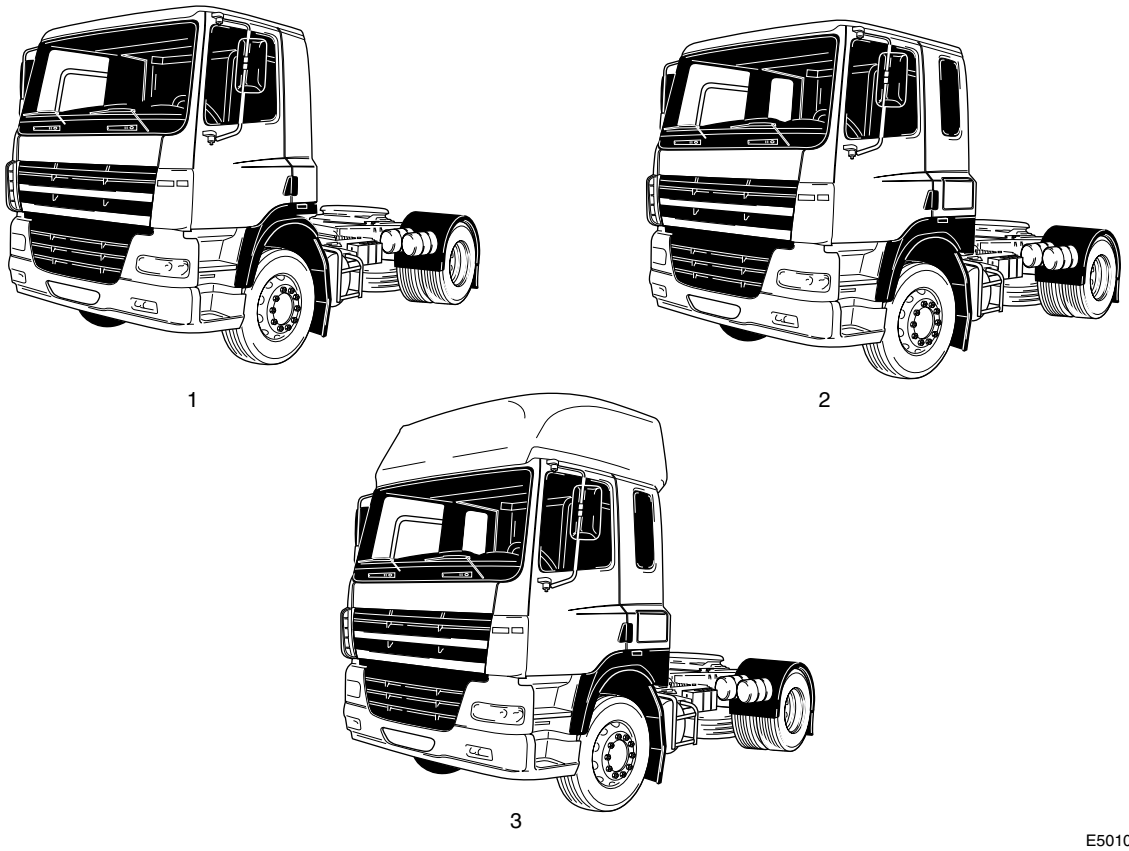
In the bulkhead lead-through the wiring harness from connector A070 is connected to the dashboard wiring harness via connector no. 576 at location C5/6.

**Pin layout, wiring harness connector 576:**

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 9005 | Earth |
| 2 | 3651 | Superstructure/drawn vehicle alarm power supply |
| 3 | 4591 | “Reversing light” signal |
| 4 | 2036 | “Left turn” signal |
| 5 | 2037 | “Right turn” signal |
| 6 | 2008 | “Left turn” signal (semi-trailer) |
| 7 | 2009 | “Right turn” signal (semi-trailer) |
| 8 | 2102 | Left town light |
| 9 | 2103 | Right town light |
| 10 | 2152 | “Rear fog lamp” signal |
| 11 | 2155 | Work lamp |
| 12 | 4601 | “Stop light” signal |
| 13 | 3408 | “Differential lock” signal |
| 14 | 4517 | “Differential lock” signal |
| 15 | 4518 | Differential lock (inter-axle) |
| 16 | 3503 | “Fuel level” signal |
| 17 | 4935 | “Cab heater” signal |
| 18 | 4936 | “Cab heater” signal |
| 19 | 1113 | Power supply before contact |
| 20 | 3659 | Alarm, superstructure/drawn vehicle |
| 21 | 3660 | Alarm, superstructure/drawn vehicle |

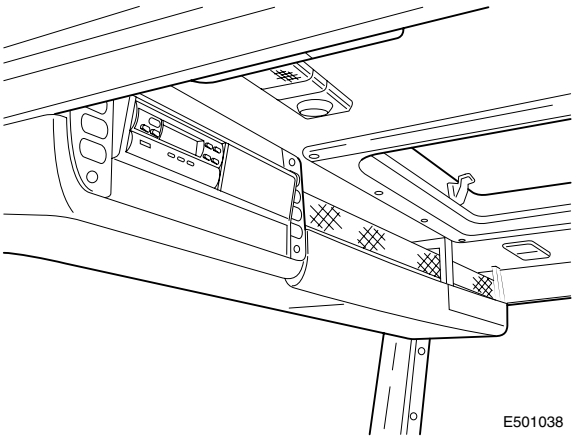
## 1.8 OVERVIEW OF CONNECTION POINTS IN ROOF CONSOLE

**Cab versions**

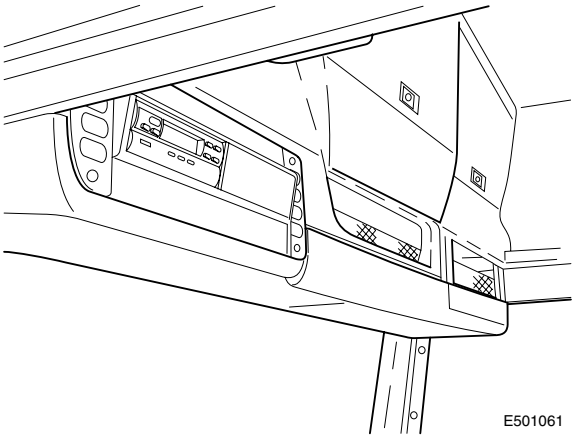



1. D cab
2. SL cab
3. SH cab

Roof console, D and SL cabs




Roof console, SH cab



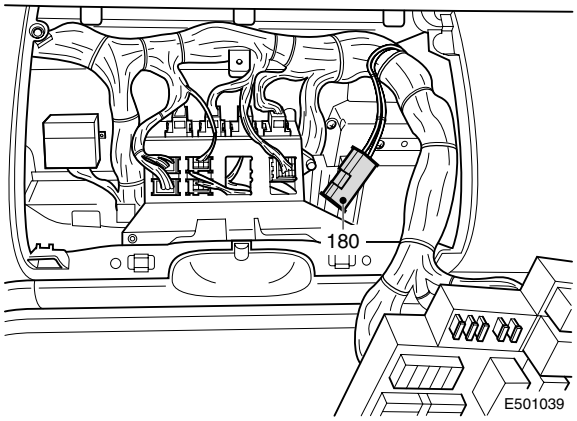

The following connectors are standard in all three cab types:

1: black connector with wires 1264 and 3482 for alarm/immobiliser LED (if NO alarm system is fitted).
2: connector B026 (1108 and M) for the 12V connector for audio equipment (for example CB transmitter).
3: connector no. 597 for 12-pin connector with various signals.

## 1.9 40 A CONNECTOR

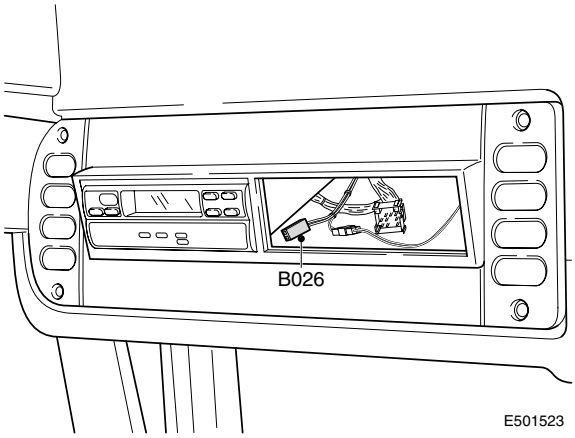
This connector (180) is a 2-pin connector. The supply voltage for this connector is branched from the power supply before contact via fuse E168. This fuse is fitted as standard in a fuse holder on the edge of the central PCB.

A contact block can be connected to this connector, resulting in a central connection point for power supply and earth.



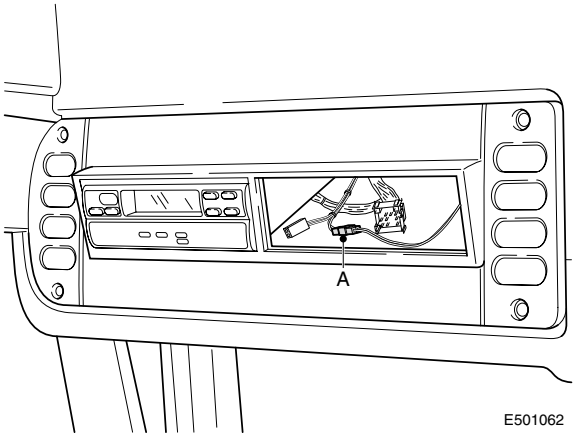

## 1.10 CONNECTOR FOR 12 V CONNECTION IN ROOF CONSOLE

In the roof console there is a white 2-pin connector (B026). This is intended for connecting a CB set.
This connector contains wires 1108 and earth.



## 1.11 CONNECTOR FOR ALARM/IMMOBILISER LED IN ROOF CONSOLE

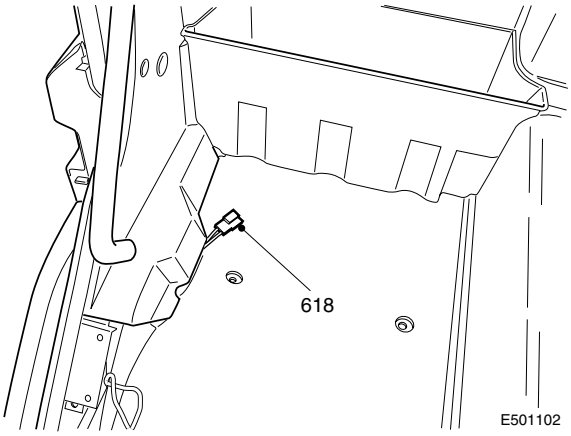
In the roof console there is a black 2-pin connector (A). This is for connecting an alarm LED.
This alarm LED is fitted as standard if the vehicle does **not** have an alarm system. This connector contains wires 1264 and 3482.




## 1.12 CONNECTOR FOR COOLER BOX

The wiring for the cooler box has been fitted as standard ready for use behind the door pillar trim (connector no. 618) on the co-driver's side. This connector contains the following wires: 1154 and M.
The cooler box (if present) is connected here to the connector on the co-driver's side.
The lighting for the tool compartment is connected here to the connector on the driver's side.

**ATTENTION:** The power supply before contact is fuse-protected via fuse E142 (25A). The power supply for the superstructure functions bulkhead lead-through connector (if present), spotlights and rotating beams is also via these fuses.

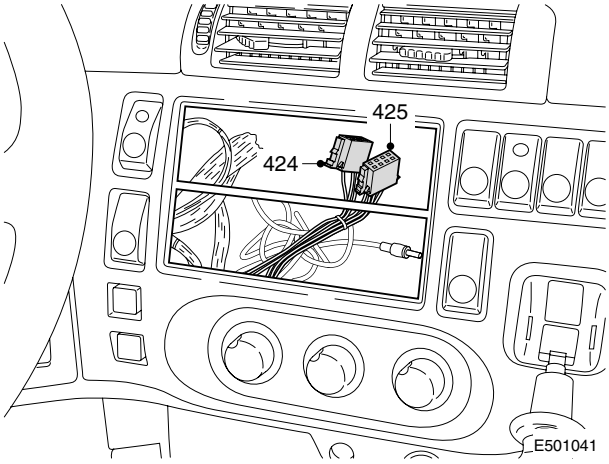


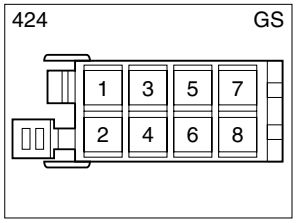

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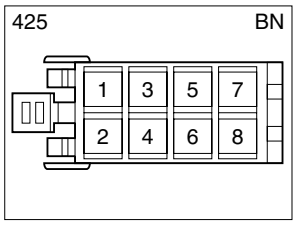
## 1.13 CONNECTORS FOR CONNECTING THE RADIO

**Radio connection**
Behind the radio panel there is a connector (connector no. 424) (to ISO standard) for the radio connection; this connector is provided with a 12 V/10 A (20 A) power supply before contact (1108) and earth. The wiring to the door, A-pillar and rear wall for the loudspeakers (connector 425) has also been fitted as standard ready for use. If tweeters are fitted, a separating filter should be fitted.

Connectors for connecting the radio.



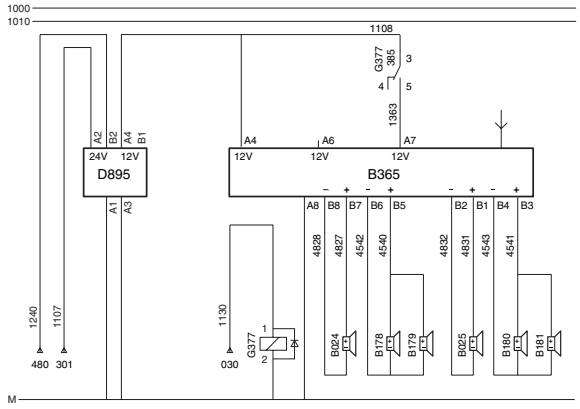

424 Power supply to radio
425 Loudspeakers for radio

## DISPLAY LIGHTING DIMMING

### VDO Dayton and Grundig radio

If the radio has display lighting (search lighting), it can switch on at the same time as the vehicle lights are switched on. The display lighting can be dimmed by connecting relay G231 in accordance with the diagram.

Relay G231 should be connected to search lighting wire 2630.




E501969

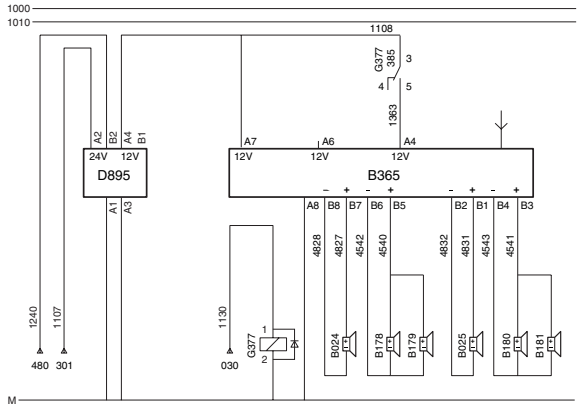
### VDO Dayton radio station memory

Wire 1130 is switched by the ignition/starter switch “accessories” position. Relay G377 then switches and, as a result, the radio is connected to the 12 V power supply through wire 1108.

### Grundig radio station memory

Wire 1130 is switched by the ignition/starter switch “accessories” position.
Relay G377 then switches and, as a result, the radio is connected to the 12 V power supply through wire 1108.

Wires 1108 and 1363 in connector no. 424 (the “ISO connector”) must be reversed (see illustration).



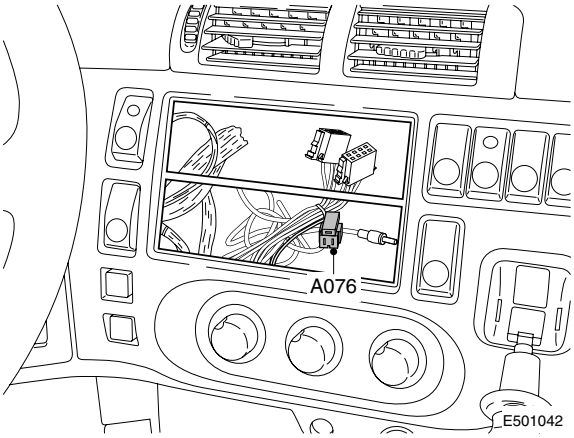

E501970

The wiring for the speakers in the rear wall of the SL and SH cabs has been fitted in the speaker positions ready for use.
The wiring for tweeters has been fitted ready for use in the A-pillar under the dashboard.

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## 1.14 CONNECTOR FOR CONNECTING THE TELEPHONE

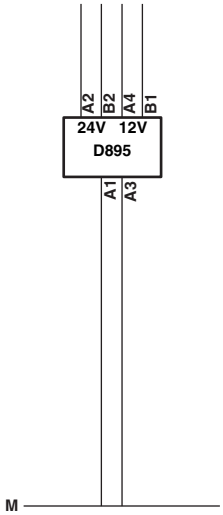
**Telephone connection**
There is space for a telephone connection on the right side of the radio panel.
A white 3-pin connector (A076) is fitted behind the radio panel as standard.



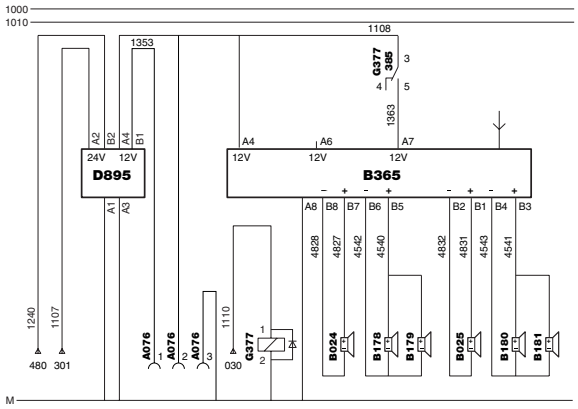

| Pin no. | Wire no. | Description |
|---|---|---|
| 1 | 1108 | Power supply before contact (12 V) |
| 2 | 1353 | Power supply before contact (12V/25mA) |
| 3 | M | Earth |

## TELEPHONE STATION MEMORY IN COMBINATION WITH 24V/12V 10A OR 20A CONVERTER

This converter is available in two versions:
24V/12V (10A + 25mA) or:
24V/12V (20A + 25mA)
They are connected in the same way.




E500726




E501011

The converter has two separate inputs and outputs:

| 24V input | 12V output | Max. current strength |
|---|---|---|
| A2 | A4 | 10 or 20 A |
| B2 | B1 | 25mA |

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| **3.** | **READING CIRCUIT DIAGRAMS** | 1-1 | 200404 |
| **4.** | **READING SECTION DIAGRAMS** | 1-1 | 200404 |

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© 200404

# 1. GENERAL

## 1.1 LIST OF ABBREVIATIONS

| Abbreviation | Explanation | Translation/description |
|---|---|---|
| ABS/ASR-D | Anti Blocking System/Anti Slip Control - version D | Antiblokkeersysteem/Antislipregeling, versie D |
| ACH-E | Additional Cab Heater - Eberspächer | Standverwarming - Eberspächer |
| ACH-W | Additional Cab Heater - Webasto | Standverwarming - Webasto |
| AGC-A | Automatic Gearbox Control - Allison | Besturing automatische versnellingsbak - Allison |
| AGS | Automatic Greasing System | Automatisch smeersysteem |
| AIRCO | Air conditioning | Airconditioning |
| ALS-S | Alarm system Scorpion | Alarmsysteem Scorpion |
| ASR | Anti Slip Control | Antislipregeling |
| CAN | Controller Area Network | Controller Area Network |
| CCU | CAN Connection Unit | CAN-verbindingsunit |
| CDB | Central Distribution Board | Centraalkast CF-serie |
| CDS | Central door locking | Centrale portiervergrendeling |
| CXB | CAN extension box | CAN-extensiebox |
| ECS-DC3 | Engine Control System - DAF/Cummins | Motormanagementsysteem DAF/Cummins |
| DAVIE XD | DAF Vehicle Investigation Equipment version XD | DAF-voertuigdiagnose-apparaat versie XD |
| DEB | DAF Engine Brake | DAF-motorrem |
| DIP-4 | DAF Instrument Pack | DAF-instrumentenpaneel |
| DVB | Connection | Doorverbinding |

| Abbreviation | Explanation | Translation/description |
|---|---|---|
| EBS | Electronic Brake System | Elektronisch remsysteem |
| ECAS-2 | Electronically Controlled Air Suspension - version 2 | Elektronisch geregeld luchtveersysteem - versie 2 |
| ECAS3 | Electronically Controlled Air Suspension system - version 3 | Elektronisch geregeld luchtveersysteem - versie 3 |
| ECS-DC3 | Engine Control System - DAF/Cummins | Motormanagementsysteem DAF/Cummins |
| EMAS | Electronically controlled multi axle steering | Elektronisch geregelde naloop assturing |
| EVS | Electronic Vehicle Steering system | Elektronisch voertuigstuursysteem |
| NMV | Engine specific power take off | Motor-PTO |
| NRM | Noise reduction module | Geluidsreducerende module |
| PTO | Power Take Off | Krachtafnemer |
| RAS-EC | Rear Axle Steering - Electronically Controlled | Electronisch geregelde naloop assturing |
| Tacho MTCO | Modular Tachograph | Modulaire tachograaf |
| UPEC | Unit Pump Electronically Controlled | Elektronisch gestuurde pompunit |
| VIC | Vehicle Intelligence Centre | Voertuig intelligente centrale |
| VLG/ ADR/ GGVS/ PETREG/ RTMDR | Overland transport of hazardous substances | Vervoer gevaarlijke stoffen |

# 2. MARKING OF ELECTRICAL WIRING

## INTRODUCTION

This standard sets out specifications for the uniform use of markings on electrical wiring.

The marking system consists of a numerical system and a colour coding system, which ensure a clear wiring layout and prevents faulty connections and manufacturing errors.

The marking system does not apply to vehicles subject to special conditions, such as military vehicles.

**Numerical and colour coding**
Each numerical code consists of four digits, the first of which refers to the main group and to the colour.

**Main groups**

| | |
|---|---|
| Power supply (red) | |
| 1000 to 1099 | Voltage generation |
| 1100 to 1199 | Power supplies before ignition |
| 1200 to 1499 | Power supplies after ignition |
| Lighting (yellow) | |
| 2000 to 2099 | Direction indicator lights and alarm light |
| 2100 to 2599 | Vehicle external lights |
| 2600 to 2999 | Vehicle interior lighting |
| Warning and inspection functions (blue) | |
| 3000 to 3399 | Engine functions |
| 3400 to 3999 | Vehicle functions |
| Consumers (black) | |
| 4000 to 4499 | Starting, stopping, engine, glow functions |
| 4500 to 5499 | Vehicle functions |
| 5500 to 5999 | Automatic transmission |
| Special applications (colour as desired) | |
| 6000 to 6999 | |
| Earth connections (white) | |
| Not marked | |
| 9000 to 9499 | Test and signal earth |

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I-CAN wiring (twisted)

| | |
|---|---|
| 3565 | CAN-L (yellow) |
| 3566 | CAN-H (grey) |

V-CAN wiring (twisted)

| | |
|---|---|
| 3700 | CAN-L (yellow) |
| 3701 | CAN-H (blue) |

**Notes:**
- The “M” with serial number coding on earth wiring is used for production-related reasons.
- In the case of straight splicing of the wiring (cascading), the numerical codes are shown on each separate wire followed by a serial letter.

**Earth connections**
The application of electronic systems has made it necessary to divide the earth connections into groups. There is a distinction to be made between two different types of earth connection:
- switching earth
- test and signal earth.

The switching earth is the conventional type of earth.
The test and signal earth is used exclusively for electronic systems.
The wiring colour for both types of earth is white, but the test and signal earth wiring is marked with numerical codes (from 9000 to 9500).

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## NEVER USE THE TEST AND SIGNAL EARTH WHEN FITTING AN ELECTRICAL COMPONENT

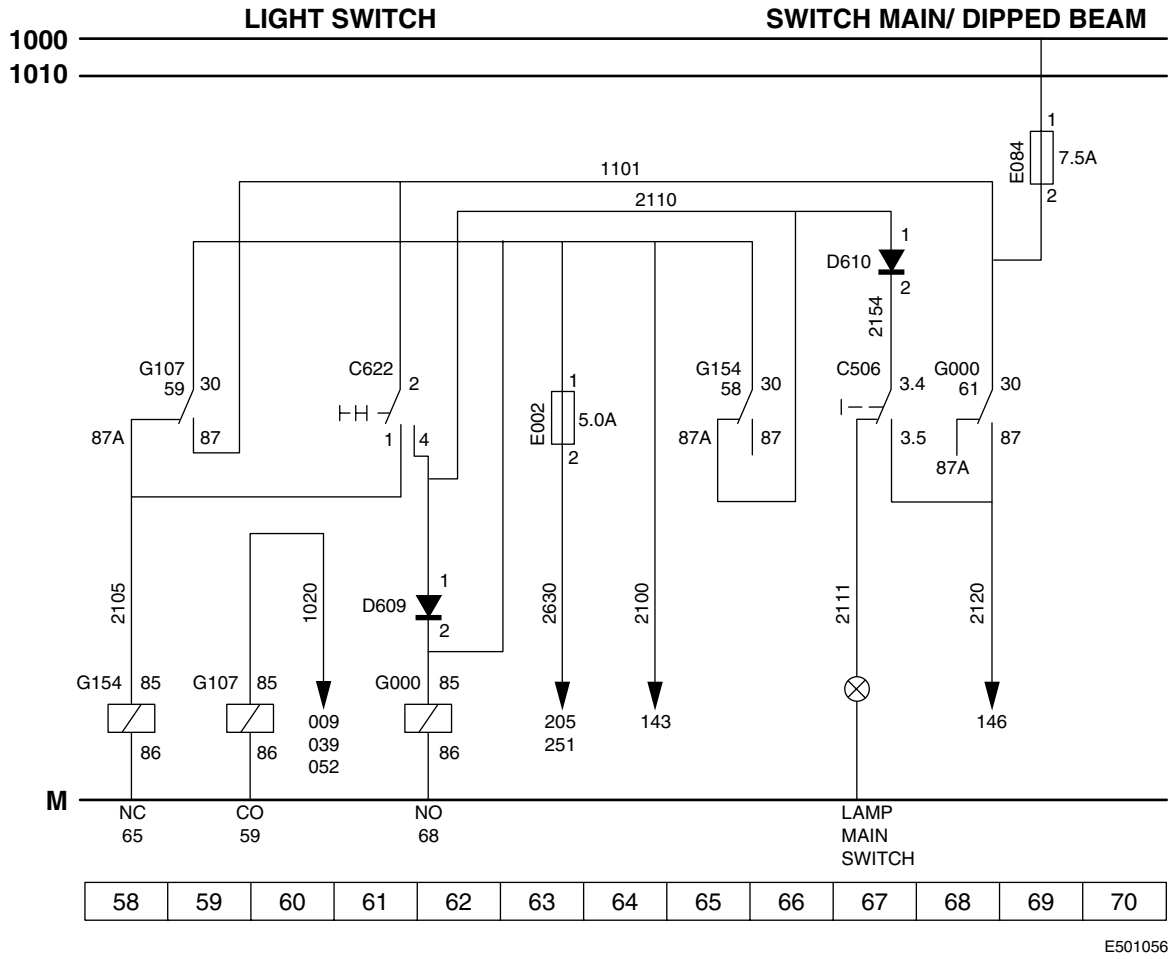
If you do this, electronic components may not work correctly.
If an electronic component needs to be connected, the earth for this system must be connected to the central earth connection in the cab.
The connection point is located in the dashboard connector lead-through.

**Abbreviations used in colour coding**

| Colour | Abbre-viation | Colour | Abbre-viation |
|---|---|---|---|
| red | rd | yellow | gl |
| brown | bn | white | wt |
| green | gn | grey | gs |
| blue | bw | black | zt |
| orange | oe | | |

## 3. READING CIRCUIT DIAGRAMS

The circuit diagram is intended to show the various circuits in the simplest way possible. Symbols are used to do this.




1. "1000" and "1010" is shown at the top left of the diagram.
   These stand for:
   1000 = supply before ignition.
   1010 = supply after ignition.

2. "M" is shown at the bottom left of the diagram.
   This stands for:
   M = earth connection.

3. To make it easier to find your way around the circuit diagram, a “search bar” is included at the bottom, which contains numbers.
   These numbers are called location numbers.

   In the legend to the circuit diagram, the description of the basic code (ECN) is followed by the relevant location number. This means that a specific component can immediately be located in the diagram.

4. There is an arrow above location numbers 60, 63, 64, and 68 in the diagram example. Below this arrow is a number. This number refers to the location number on the search bar where you can find the relevant wire number.

5. Beneath the “M” (earth connection) line are found the “NC” codes relating to relay G154, the “CO” codes relating to relay G107, and “NO” codes relating to relay G000.
   These codes stand for:
   **NC** = **n**ormally **c**losed (= break contact)
   **CO** = **c**hange **o**ver (= changeover contact)
   **NO** = **n**ormally **o**pen (= make contact)

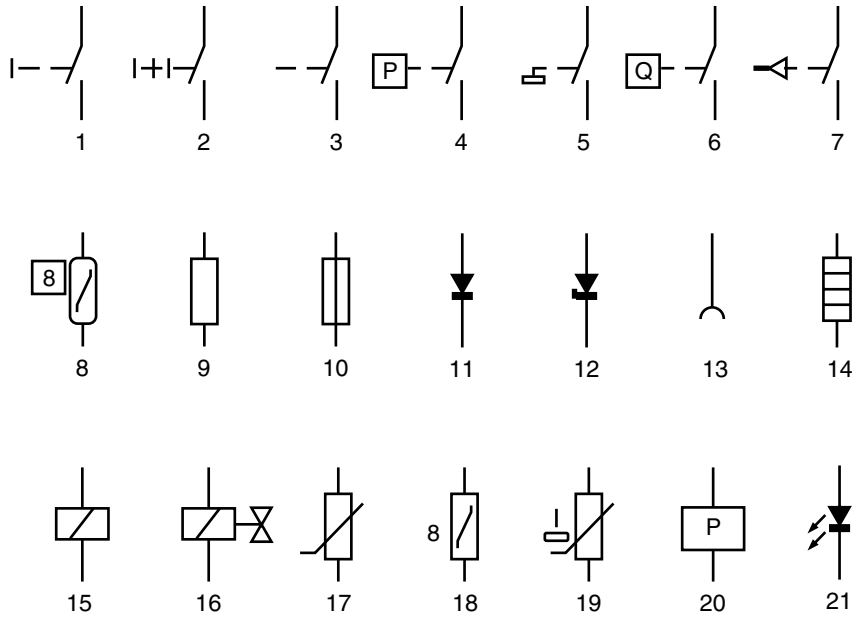
   These contacts can be found at the location numbers shown beneath the codes “NC”, “CO” and “NO”.

   At the relay contacts shown in the diagram, you will also find the location numbers indicating the relay coil locations.

6. In the circuit diagram, you will find the basic codes (for example, E002). What these codes stand for can be found in the legend to the relevant circuit diagram.

7. If the wire numbers remain unchanged, these will not be repeated in the circuit diagram.
   For example, in the sample diagram, wire 1101 is connected to connection point 87 of relay contact G107, but also to connection point 2 of component C622.
   Wire 2100 (at location number 64) is connected to connection point 30 of relay G154, but also to connection point 85 of relay G000 etc.

**Symbols used**




E500135

1. Switch, manually operated
2. Switch, manually operated (multi-position)
3. Switch, manually operated (spring-loaded)
4. Switch, pressure-controlled (pneumatic or hydraulic)
5. Switch, float position
6. Switch, liquid flow
7. Pressure switch
8. Switch, temperature-dependent
9. Resistor
10. Fuse
11. Diode
12. Zener diode
13. Contact socket (for example, for trailer connection)
14. Heating element
15. Relay
16. Electropneumatic valve
17. Resistor, voltage-dependent
18. Resistor, temperature-dependent
19. Resistor, fluid level-dependent
20. Microprocessor
21. LED

7

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# 4. READING SECTION DIAGRAMS

## EXPLANATION OF THE ITEM NUMBERS IN THE SECTION DIAGRAMS

In the section diagram only information functional in this section diagram is shown in detail.

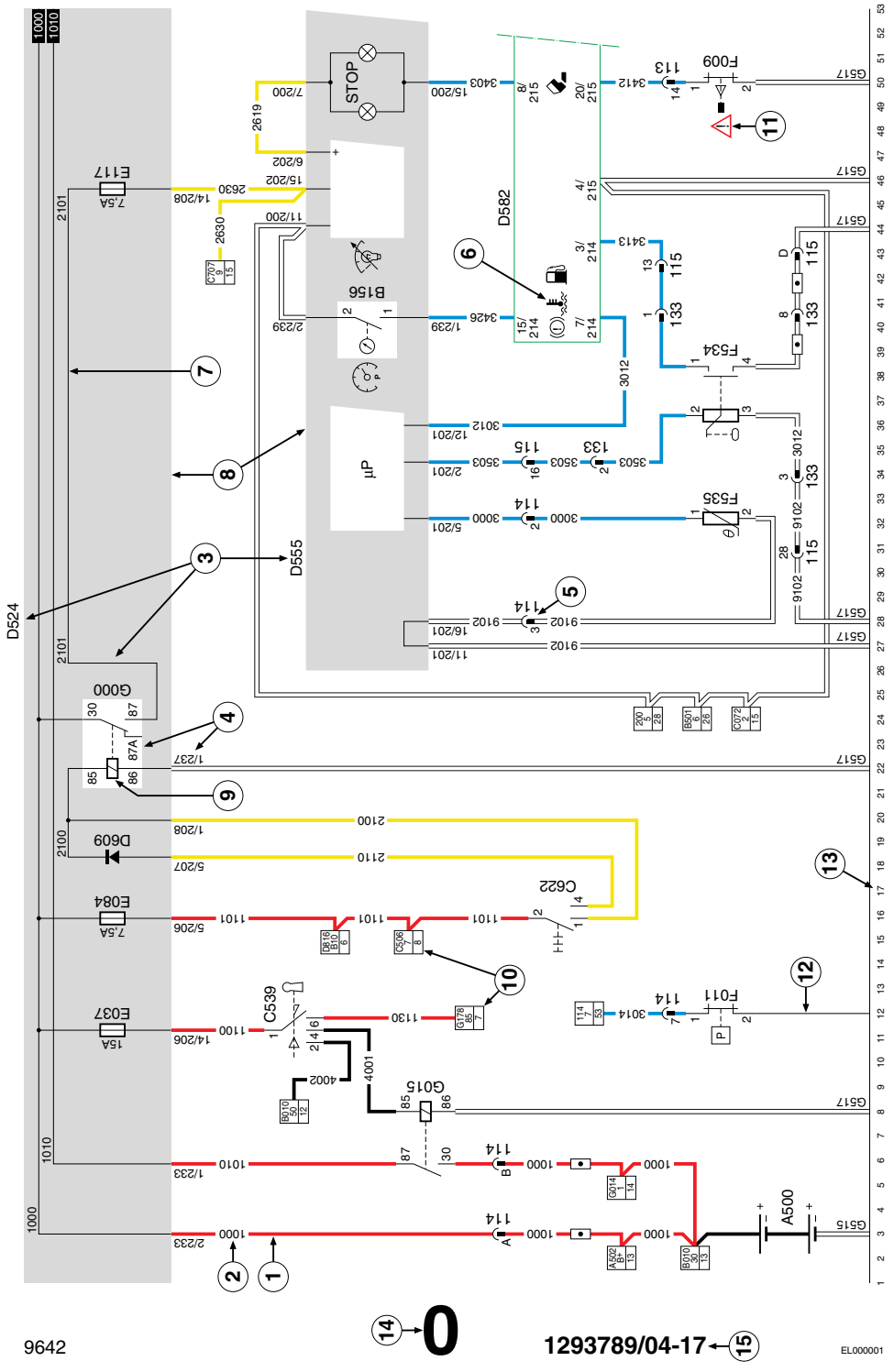
1. The wiring is shown in the same colours as the wiring in the vehicle.
2. The wire numbers are as they are printed on the wiring in the vehicle.
   Suffixes to wire numbers, such as A, B, C etc., have been omitted.
3. Basic code of a component. For component descriptions, see the legend to the diagram. For more information, see the relevant section diagram.
4. Number of the wire connection point or the PCB track on the component.
5. The basic code of the connector and the connection point on this connector.
6. The symbols indicate which system or component is being referred to (in most cases, the symbol is also shown on the lens of the warning lamp or the switch).
7. PCB tracks.
8. The central box and the instrument panel PCBs are grey.
9. Removable components are shown in white.

10. Reference to the component with connection point and to the section (section diagram) which gives further information about this component.

| |
|---|
| G178<br>85 |
| 7 |

| | | |
|---|---|---|
| G178 | = | Basic code number of the component |
| 85 | = | Connection point on the component |
| 7 | = | Reference to section diagram 7 |

11. **ATTENTION!** The vehicle may differ here, because of different specifications. Always consult the legend to the diagram.
12. The housing of this component is connected to earth. The line shown is not a wire, therefore.
13. Search bar numbers.
14. Section diagram number as well as section number.
15. Relation to the circuit diagram.


STOP
μP
D582
D555
D524
B156
F009
F534
F535
F011
C622
C539
E117
E084
E037
D609
G000
G015
A500
1293789/04-17
9642
EL000001

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| 1.2 | Location of components in relation to circuit diagram 1358030/26 | 1-2 | 200430 |



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# 1. GENERAL LOCATION OF COMPONENTS

## 1.1 INTRODUCTION

This main group contains an overview of components that do **not** occur in a system manual.
The location of system components is shown in the appropriate system manual.

There is a sticker in the central box indicating what relays, diodes and fuses can be found on the PCB.

## 1.2 LOCATION OF COMPONENTS IN RELATION TO CIRCUIT DIAGRAM 1358030/26

Column 1 = basic codes of component
Column 2 = description
Column 3 = location
Column 4 = page number reference

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| A000 | Drawn vehicle socket (7-pin) | Chassis rear end | 5 |
| A001 | Rear fog lamp/reversing light socket (7-pin) | Behind cab | 5 |
| A004 | Plug socket, ABS/EBS, drawn vehicle (7-pin) | Chassis rear end | 5 |
| A007 | 24V socket (2-pin) | Under radio panel, driver's side | 8 |
| A021 | Diagnostics socket (16-pin) | Under step-up bracket, co-driver's side | 1 |
| A076 | Telephone socket | Behind radio panel cover | 4 |
| A097 | FMS socket (21-pin) | Dashboard lead-through, location A1/2 | 10 |
| A098 | FMS socket (18-pin) | Under foot plate, co-driver's side | 10 |
| A510 | Alarm system battery | Under foot plate, co-driver's side | 2 |
| B015 | 4-speed heater fan | Middle of dashboard | 6 |
| B026 | CB set | In roof console, driver's side | 4 |
| B071 | Mechanical lifting-gear lifting valve | On mechanical lifting-gear pump, between side members behind driven axle | 9 |
| B072 | Mechanical lifting-gear lowering valve | On mechanical lifting-gear pump, between side members behind driven axle | 9 |
| B176 | Reversing buzzer | In rearmost chassis cross member | 3 |
| B182 | Water separator fuel heating element | Next to side member, driver's side next to battery pack | 5 |
| B241 | Fuel filter/water separator heating element sensor | Rear of cab, driver's side | 5 |
| B243 | Cross-axle differential lock control valve | In chassis side member, above rear axle, driver's side | 3 |
| B251 | Neutral position buzzer, tilting cab | Against side member, front of stepwell, co-driver's side | 3 |
| B378 | Heating element for fuel filter/water separator | Under cab rear, driver's side | 5 |
| C622 | Lighting switch | Dashboard panel, driver's side | 10 |
| C704 | Mechanical lifting-gear switch | Dashboard, radio panel | 9 |

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| C716 | Rotating beam switch | Roof console, driver's side | 10 |
| C725 | Work lamp switch | Dashboard, instrument panel | 10 |
| C727 | Fog lamp switch, front/rear | Dashboard, instrument panel | 10 |
| C735 | Nightlight switch, interior | Dashboard, central console | 10 |
| C736 | Roof hatch switch | Dashboard, central console | 10 |
| C737 | ASR switch | Dashboard, central console | 10 |
| C739 | Mechanical lifting-gear switch | Dashboard, radio panel | 10 |
| C740 | ECAS switch, normal level | Dashboard, radio panel | 10 |
| C742 | Traction assistance switch | Dashboard, radio panel | 10 |
| C744 | Drop glass switch, co-driver's side (driver's side door) | Dashboard, central console | 10 |
| C748 | Operating switch, cross-axle differential lock | Dashboard, radio panel | 10 |
| C750 | PTO operating switch | Dashboard, instrument panel | 10 |
| C751 | PTO operating switch | Dashboard, instrument panel | 10 |
| C760 | Air conditioning switch | Dashboard, radio panel | 10 |
| C763 | Instrument lighting dimming potentiometer | Dashboard, instrument panel | 10 |
| C764 | Potentiometer for headlight height adjustment | Dashboard, instrument panel | 10 |
| C765 | Switch for warning lamps | Dashboard, central console | 10 |
| C773 | Fog lamp switch, rear | Dashboard, instrument panel | 10 |
| C774 | Central door locking switch | Dashboard, central console | 10 |
| C778 | Switch for Eberspächer cab heater | Dashboard, central console | 10 |
| C802 | Recirculation valve switch | Dashboard, radio panel | 10 |
| C813 | Spotlight switch, roof | Roof console, driver's side | 10 |
| C814 | Reversing buzzer switch | Roof console, driver's side | 10 |
| C835 | Switch to turn off interior detection | Dashboard, central console | 10 |
| C836 | Switch to turn off superstructure/drawn vehicle loadspace detection | Dashboard, central console | 10 |

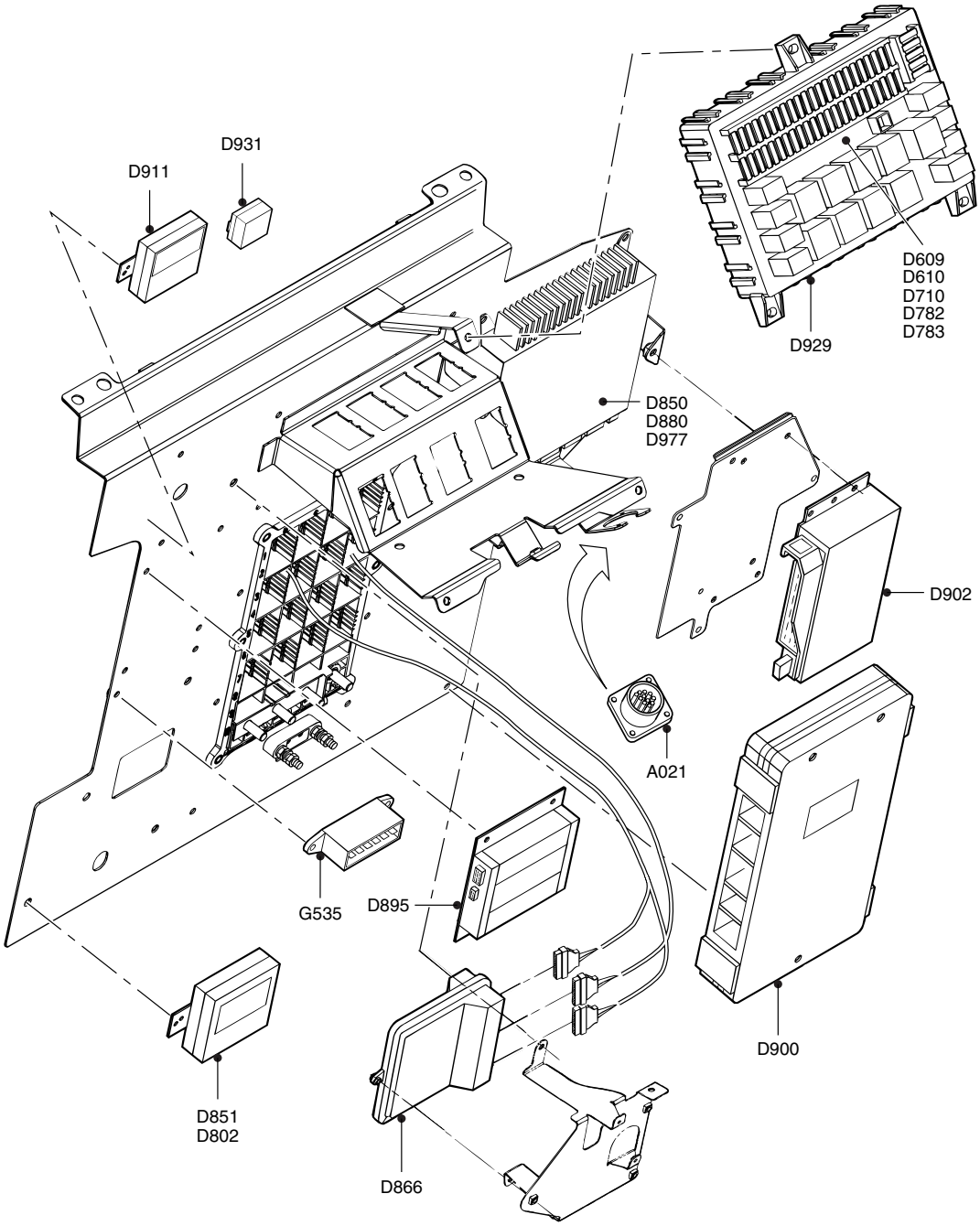
| 1 | 2 | 3 | 4 |
|---|---|---|---|
| C837 | Interior lighting switch | Dashboard, central console | 10 |
| C840 | Four-wheel drive switch | Dashboard, instrument panel | 10 |
| C844 | Eberspächer cab heater switch with timer unit | Dashboard, central console | 10 |
| C853 | Cab main switch | Dashboard, central console | 10 |
| C854 | Chassis main switch | In side member housing, driver's side | 5 |
| C858 | Interior spot lighting switch | Roof console, driver's side | 10 |
| C859 | Interior lighting switch, driver's side roof console | Roof console, driver's side | 10 |
| C889 | Tail lift switch | Dashboard, central console | 10 |
| C890 | Third brake integration switch | Dashboard, radio panel | 10 |
| D503 | Electronic unit, mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D529 | Remote control, ECAS | Left of seat console, driver's side | 6 |
| D609 | Light switch diode | On PCB print track, central box | 1 |
| D610 | Diode, main beam/dipped beam | On PCB print track, central box | 1 |
| D611 | Diode for valve damping, lowering mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D612 | Diode for valve damping, lifting mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D613 | Diode for pump relay damping, mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D622 | Diode for mechanical lifting gear, lifting lock | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D623 | Diode for mechanical lifting gear, lowering lock | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| D710 | Interior lighting diode to prevent feedback to driver's side switch | On PCB print track, central box | 1 |
| D715 | Alarm system LED | Underside of roof console | 2 |
| D782 | Diode to prevent door locking feedback, driver's side | On PCB print track, central box | 1 |
| D783 | Interior lighting diode, driver's side | On PCB print track, central box | 1 |
| D802 | ECAS-2 (6x2) electronic unit | Front of attachment plate, central box | 1 |

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| D814 | UPEC electronic unit | Against engine block, driver's side | 7 |
| D850 | Electronic unit for ABS/ASR, D model | Front of attachment plate, central box | 1 |
| D851 | Electronic unit, ECAS-3 (4x2) | Front of attachment plate, central box | 1 |
| D855 | Electronic unit for water separator | Under dashboard radio panel, driver's side | 6 |
| D866 | Electronic unit, AGC-A4 automatic gearbox control | On attachment plate under PCB, central box | 1 |
| D871 | Electronic unit, cab heater | In front of storage compartment, behind co-driver's seat | 6 |
| D880 | EBS electronic unit | Front of attachment plate, central box | 1 |
| D895 | Electronic unit for (10A) converter with power supply for radio memory | On attachment plate under PCB, central box | 1 |
| D900 | VIC electronic unit | On attachment plate under PCB, central box | 1 |
| D901 | Electronic unit for Hydronic 10 cab heater | Behind cab, co-driver's side | 5 |
| D902 | Electronic unit for ZF intarder EST42 | On attachment plate under PCB, central box | 1 |
| D903 | electronic unit, ECS-DC3 | Against engine block, driver's side | 7 |
| D904 | Menu Control Switch, MCS | Dashboard, radio panel | 10 |
| D905 | Electronic unit for central door locking | Behind tachograph in roof console, driver's side | 4 |
| D909 | Electronic unit, alarm system, ultrasonic | In roof console, driver's side | 2 |
| D910 | Electronic unit, battery charger | Under foot rest, co-driver's side | 2 |
| D911 | Electronic unit, ALS-S alarm system | On attachment plate under PCB, central box | 1 |
| D912 | Electronic unit, immobiliser | Against steering column near ignition/starter switch | 2 |
| D924 | Electronic unit for main switch | Chassis side member, driver's side | 5 |
| D929 | Central PCB | Central box, co-driver's side | 1 |
| D931 | LED unit, immobiliser | On attachment plate under PCB, central box | 1 |
| D969 | CAN Data Manager, CDM | Under foot rest, co-driver's side | 6 |
| D977 | Electronic unit, EBS-2 | On attachment plate under PCB, central box | 1 |
| E112 | Fuse, glow warning lamp | Above glow plug relay | 7 |

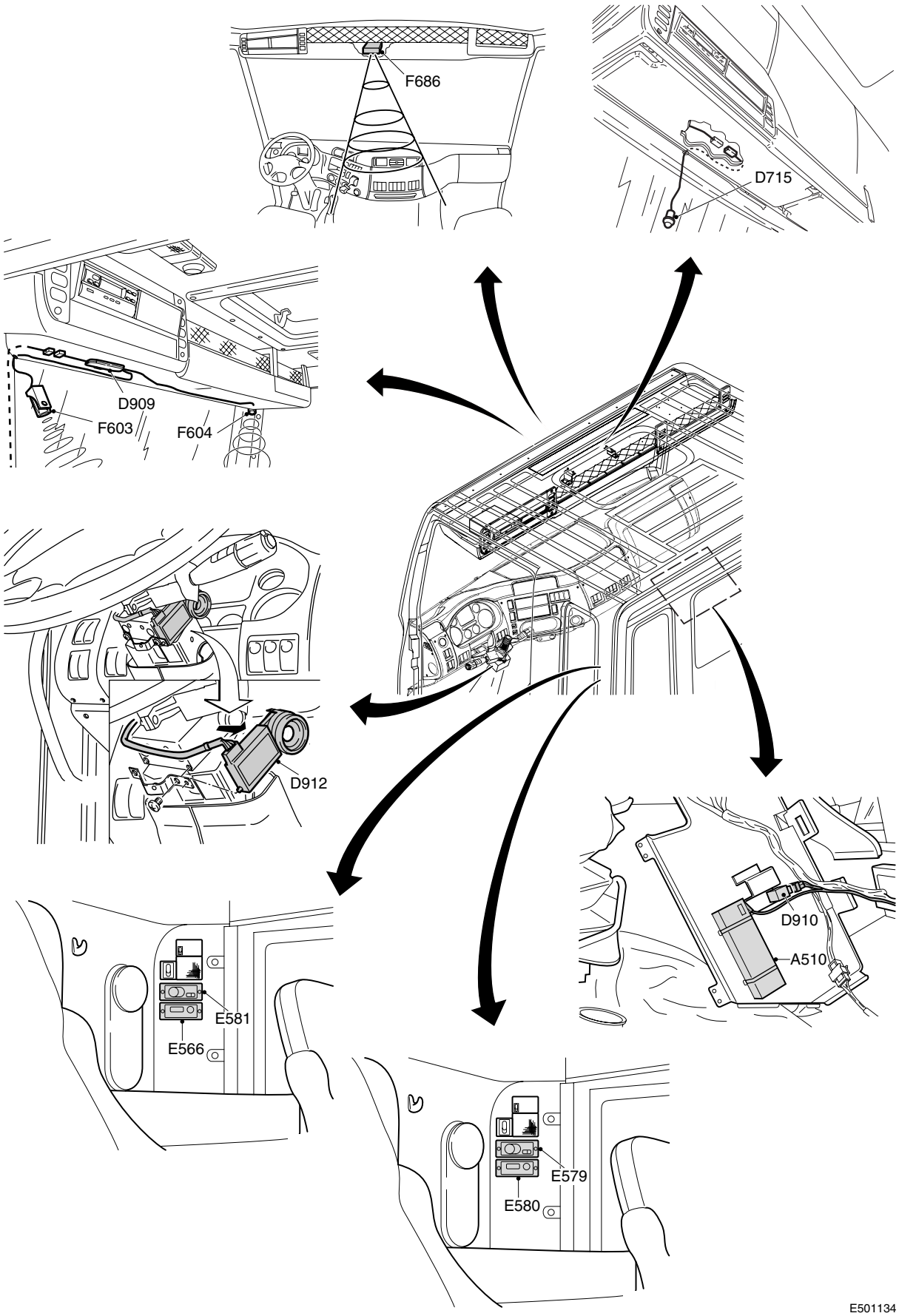
| 1 | 2 | 3 | 4 |
|---|---|---|---|
| E153 | Fuse, main switch for timer/engine stop/main switch power supply | In main switch electronic unit (D924) | 5 |
| E279 | Fuse, airbag and seat belt tensioner/voltage regulation generator | Next to main switch (if there is a main switch)<br>Above starter motor relay (if there is **NO** main switch) | 5 |
| E286 | Main fuse | On engine block bracket, driver's side, or on bracket above front of gearbox (for Allison gearbox) | 7 |
| E501* | Reversing light operating switch | Gearbox, driver's side | 3 |
| E501** | Reversing light operating switch | Gearbox, driver's side | 3 |
| E507 | Proximity switch for axle-load protection lifting gear (10 tons) | Next to distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| E509 | Air conditioning operating switch, high/low pressure | In evaporator pipe, on outside of cab, co-driver's side | 8 |
| E511 | Stop light operating switch | Behind radio panel cover | 4 |
| E524 | Mechanical lifting-gear operating switch, oil pressure limit switch | On mechanical lifting-gear pump, between side members behind driven axle | 9 |
| E561 | Low-range switch | Gearbox, driver's side | 3 |
| E564 | Engine brake operating switch | On floor plate, driver's side | 6 |
| E566 | Operating switch, cab heater thermostat | In rear wall, driver's side | 2 |
| E569* | Neutral position switch, gearbox | Gearbox, driver's side | 3 |
| E569** | Neutral position switch, gearbox | Gearbox, driver's side | 3 |
| E570 | Proximity switch, clutch PTO N10 | Above clutch pedal | 4 |
| E575 | Clutch pedal proximity switch | Next to clutch pedal, left-hand side | 4 |
| E579 | Operating switch for thermostat/cab heater, fan, Eberspächer (water) | In rear wall, driver's side | 2 |
| E580 | Operating switch for thermostat/cab heater, fan, Eberspächer (timer) | In rear wall, driver's side | 2 |

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| E581 | Cab heater timer unit | In rear wall, driver's side | 2 |
| E584 | Proximity switch for axle-load protection lifting gear (7.5 tons) | Next to distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| E592 | Reversing light operating switch | Gearbox, driver's side | 3 |
| E593 | Neutral position switch | Gearbox, driver's side | 3 |
| E595 | Low-range switch | Gearbox, driver's side | 3 |
| F000 | Parking brake switch | Behind radio panel cover | 4 |
| F006 | Control switch for differential lock, 1st differential | In chassis side member, above rear axle, co-driver's side | 3 |
| F087 | Control switch, gearbox PTO | Gearbox, driver's side | 3 |
| F097 | Proximity switch for trailing axle mechanical lifting gear | Next to distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| F120 | Gearbox switch for gate 3-4 | Gearbox, driver's side | 3 |
| F533 | Speed sensor | Gearbox, driver's side | 3 |
| F603 | Ultrasonic transmitter | Under roof console, driver's side | 2 |
| F604 | Ultrasonic receiver | Under roof console, co-driver's side | 2 |
| F651 | Ambient temperature sensor | Behind bumper, driver's side | 3 |
| F652 | Air pressure sensor | On APU unit, under cab, co-driver's side | 6 |
| F656 | Coolant level sensor | Rear of expansion tank | 3 |
| F673 | Engine oil level and temperature sensor | In engine oil sump, driver's side | 8 |
| F676 | Lifting cylinder sensor, cab | Along cab tilting cylinder in side member, co-driver's side | 8 |
| F686 | Alarm system radar sensor | In roof console, driver's side | 2 |
| G014 | Glow plug relay | Against engine block, driver's side | 7 |
| G052 | Motor relay, mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| G066 | Takeover relay, mechanical lifting gear | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| G257 | Recirculation valve relay | Right-hand side of heater unit | 6 |
| G258 | Recirculation valve relay | Right-hand side of heater unit | 6 |
| G267 | Air conditioning relay | Right-hand side of heater unit | 6 |

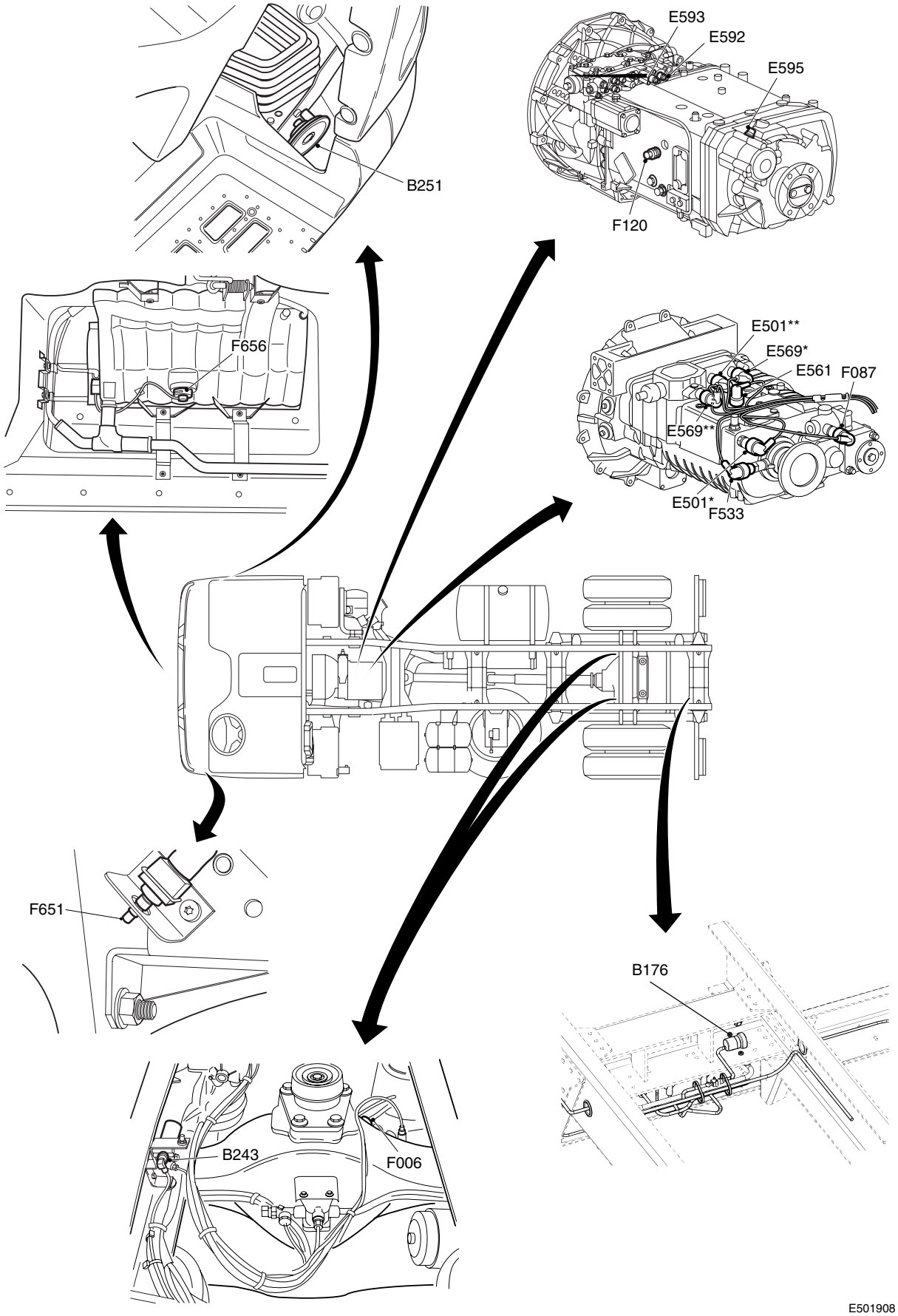
| 1 | 2 | 3 | 4 |
|---|---|---|---|
| G279 | Air conditioning relay | Right-hand side of heater unit | 6 |
| G299 | Relay, roof spotlights | In roof console, driver's side | 8 |
| G367 | Main switch relay, power supply | In main switch electronic unit (D924) | 5 |
| G368 | Main switch relay, earth | In main switch electronic unit (D924) | 5 |
| G380 | Relay, mechanical lifting axle upwards | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| G381 | Relay, mechanical lifting axle (7.5 tons) | In distribution box, inside of chassis on co-driver's side, front of driven axle | 9 |
| G535 | CAN distribution block | On attachment plate under PCB, central box | 1 |

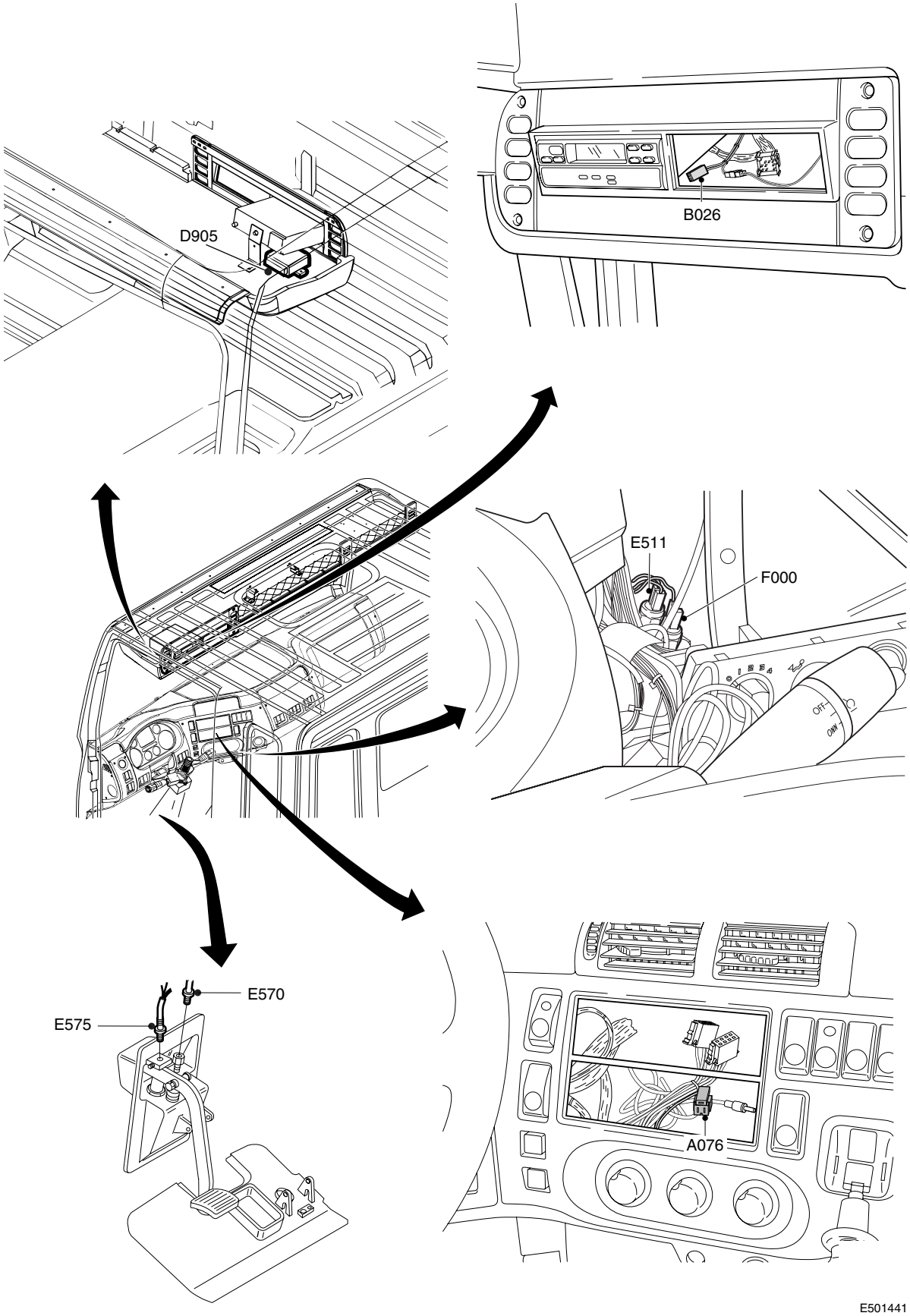

D931
D911
D609
D610
D710
D782
D783
D929
D850
D880
D977
D902
A021
G535
D895
D900
D851
D802
D866

E501914


F686
D715
D909
F603
F604
D912
D910
A510
E581
E566
E579
E580
E501134

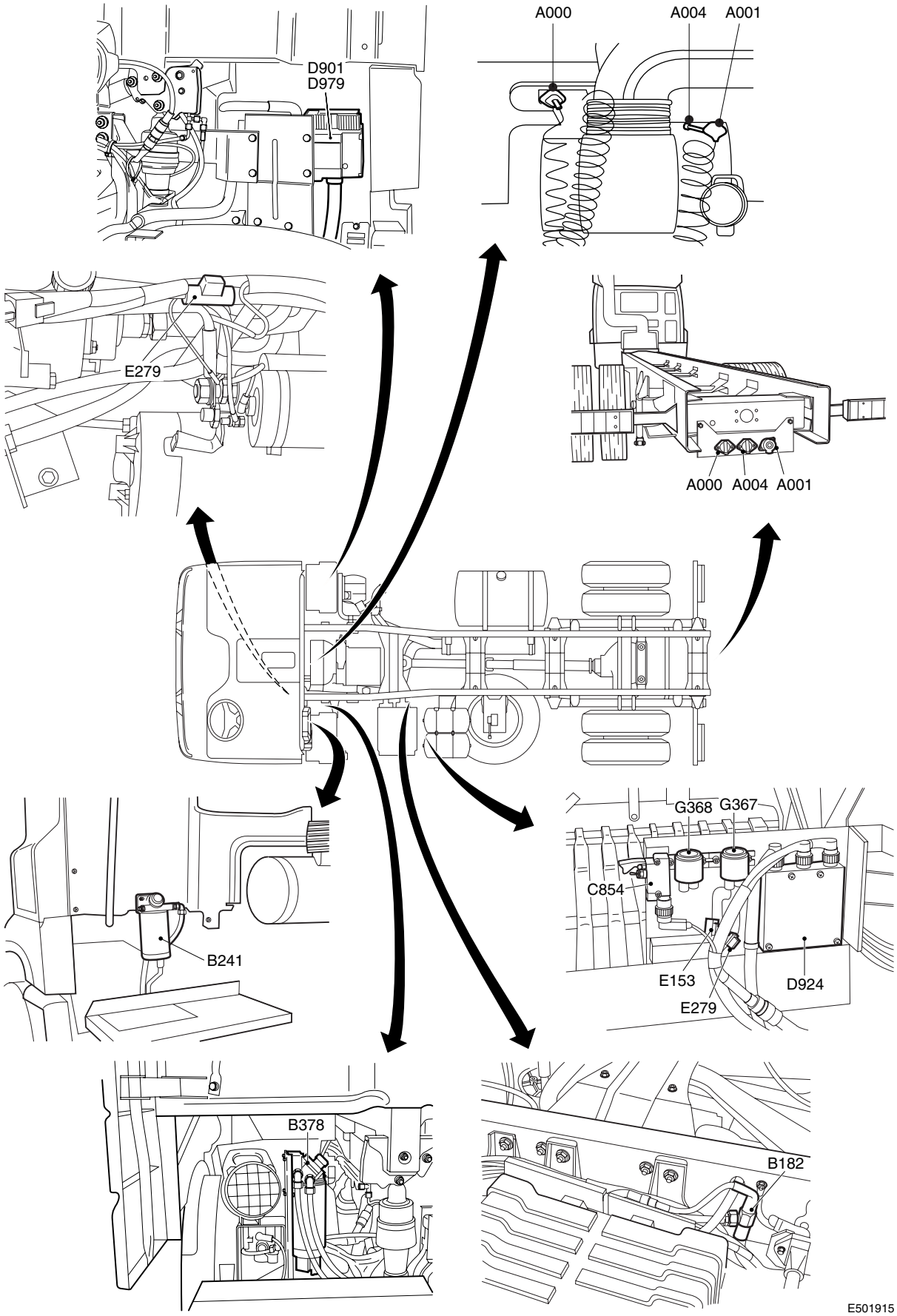
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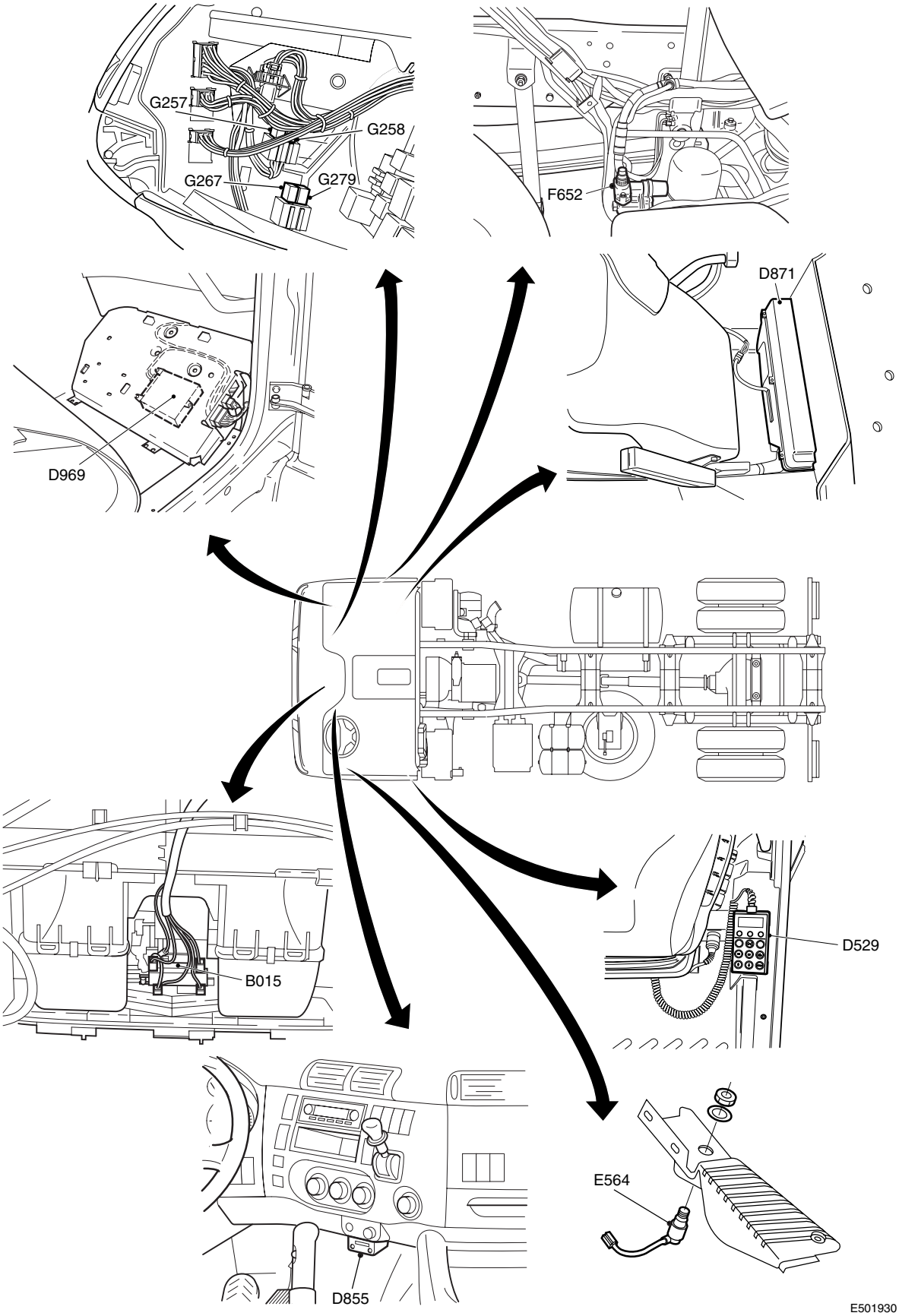

B251
E593
E592
E595
F120
F656
E501**
E569*
E561
F087
E569**
E501*
F533
F651
B176
B243
F006
E501908



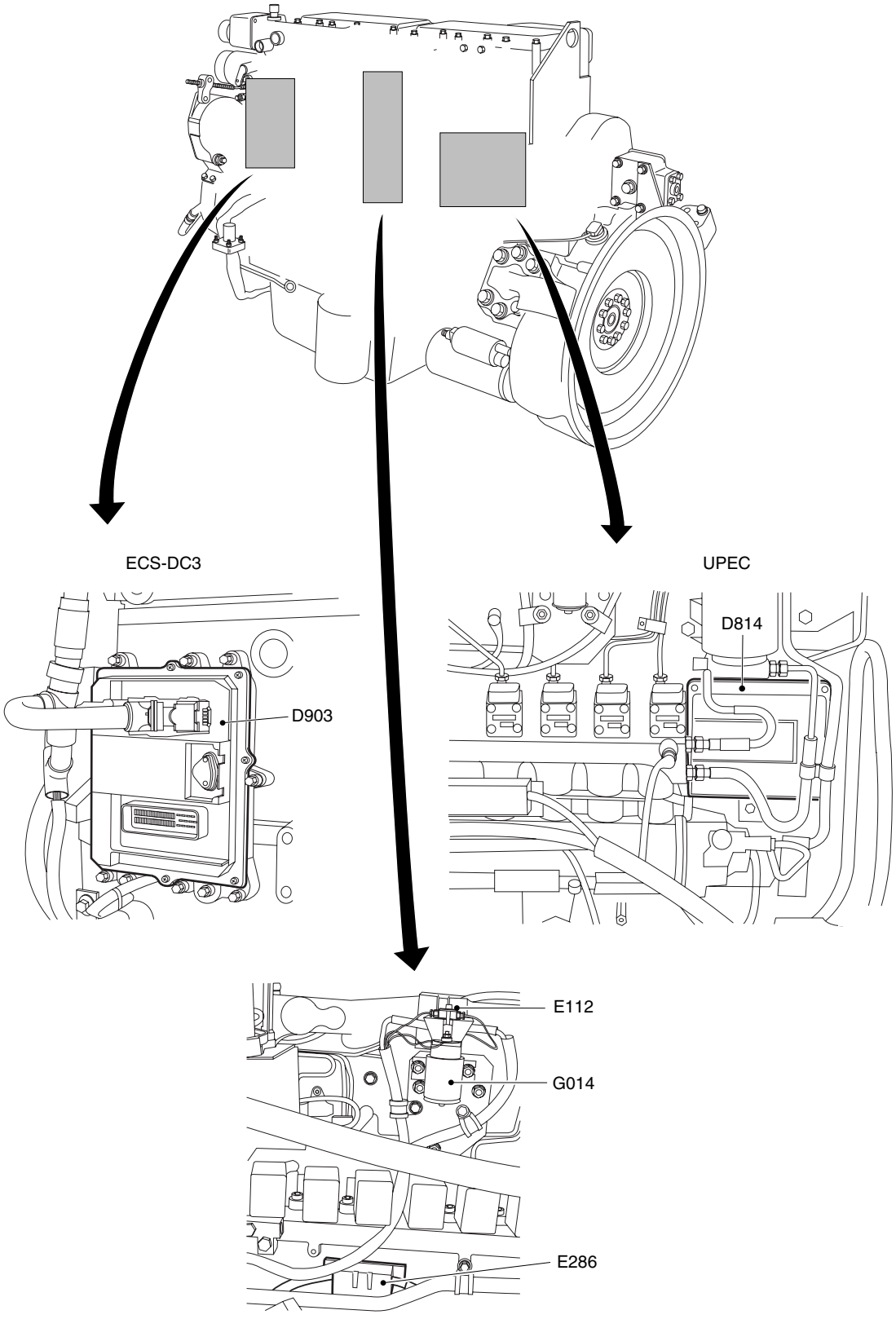

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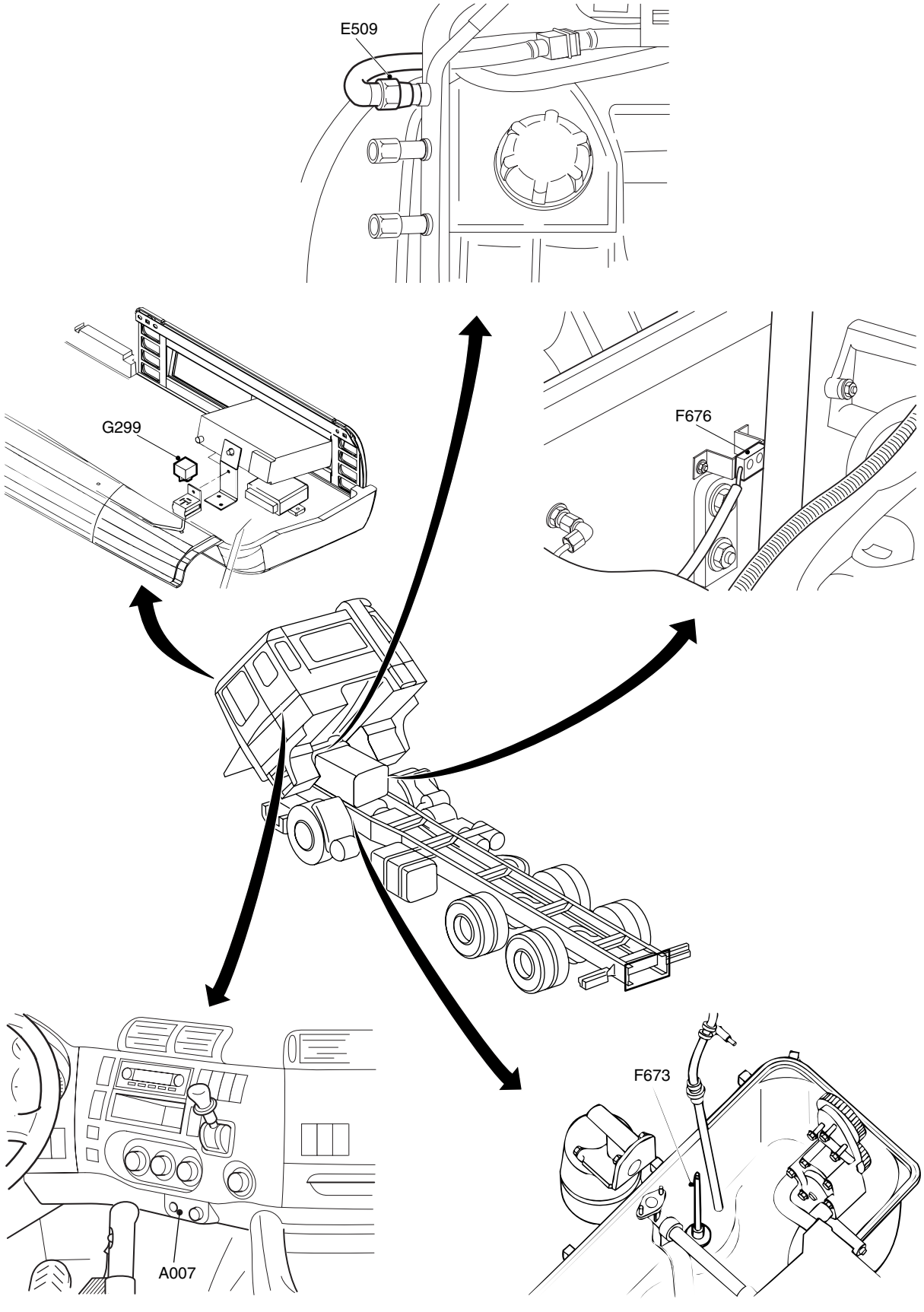

D901
D979
A000
A004
A001
E279
A000
A004
A001
B241
G368
G367
C854
E153
D924
E279
B378
B182
E501915


G257
G258
G267
G279
F652
D871
D969
B015
D529
E564
D855
E501930

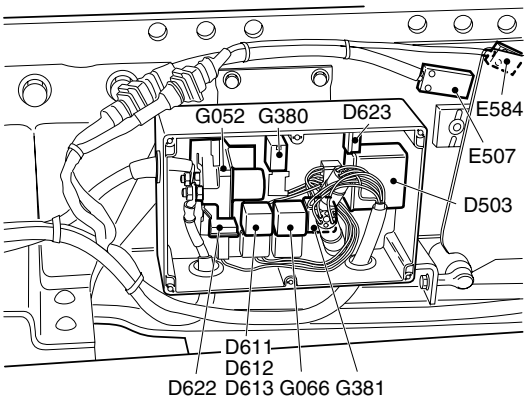
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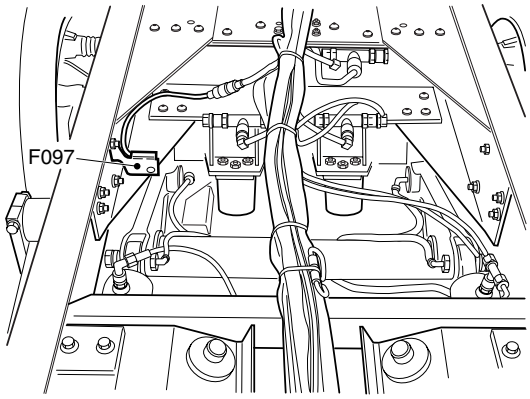


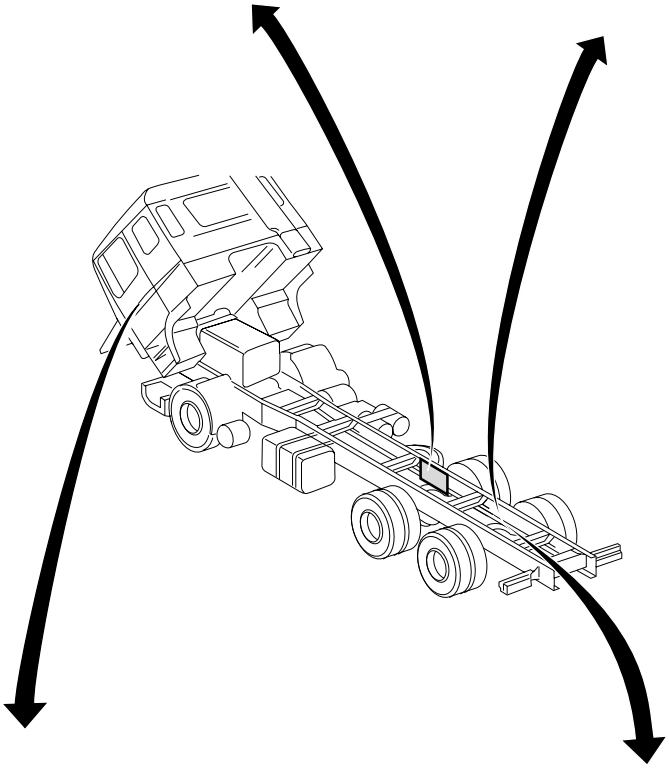

E501169

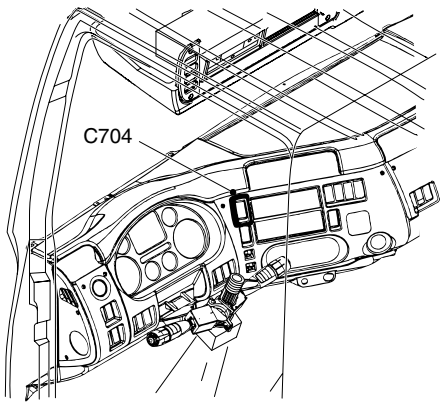


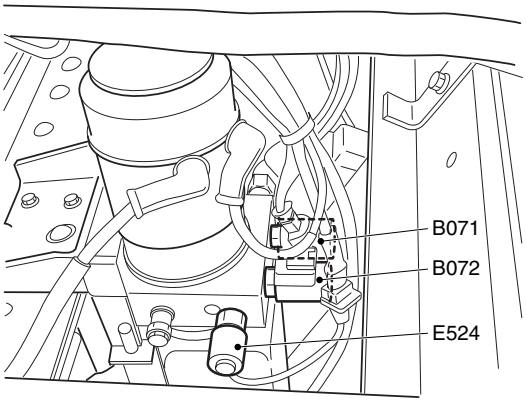

E501170


G052
G380
D623
E584
E507
D503
D611
D612
D622
D613
G066
G381


F097

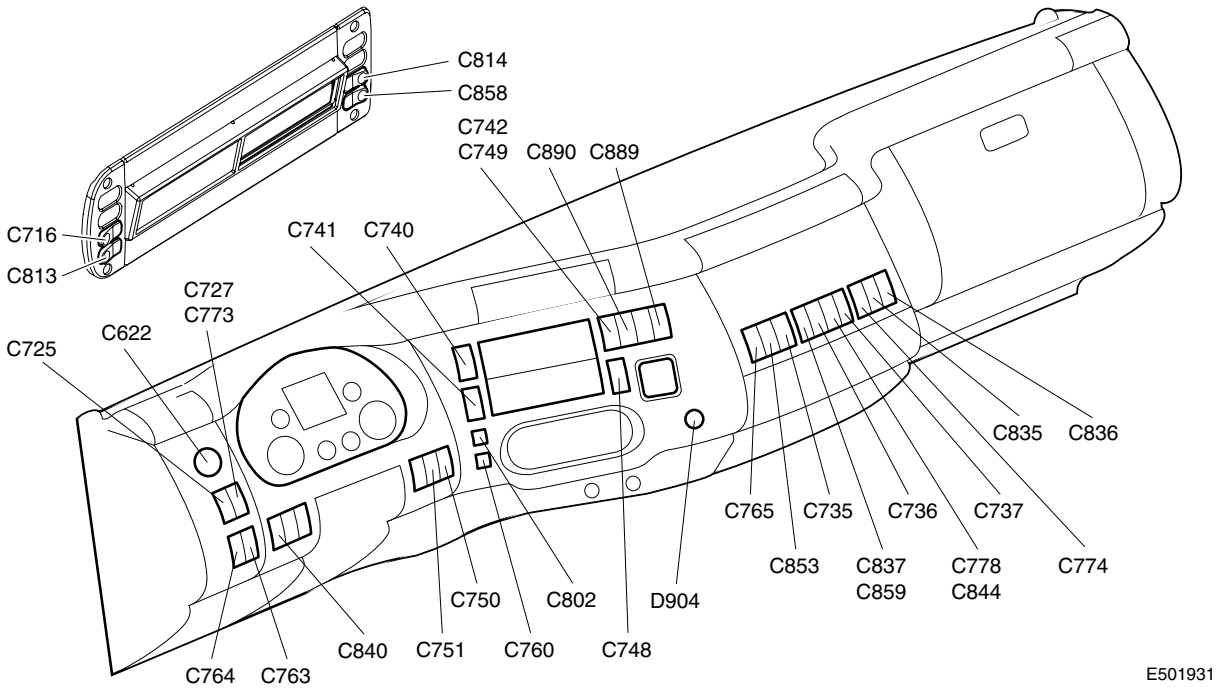



C704

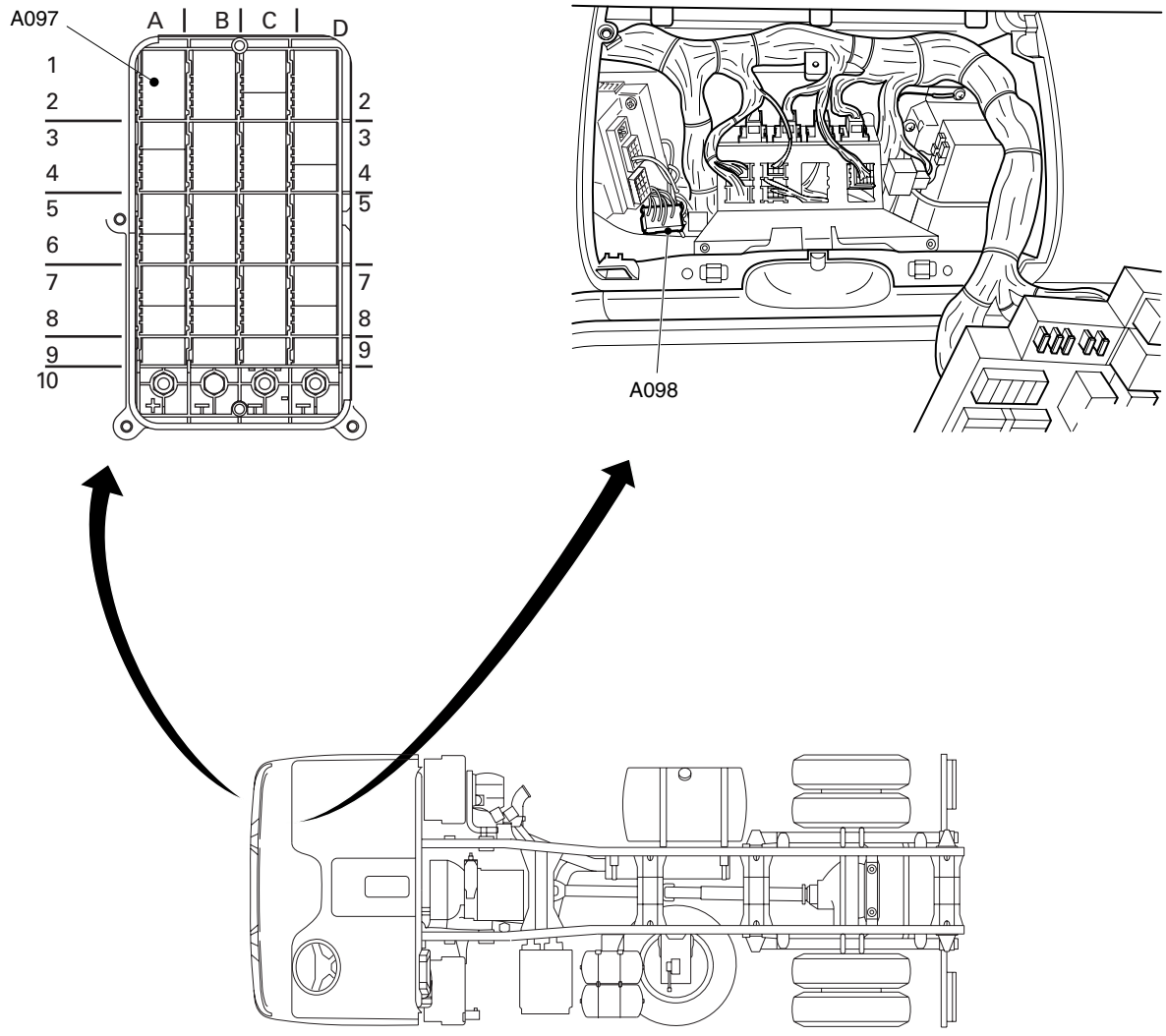

B071
B072
E524

E501476

8


C814
C858
C742
C749
C890
C889
C716
C813
C741
C740
C727
C773
C622
C725
C835
C836
C765
C735
C736
C737
C853
C837
C859
C778
C844
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C750
C802
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C840
C751
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C748
C764
C763
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E502116

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| **1.** | **LOCATION OF CONNECTORS** | 1-1 | 200430 |
| 1.1 | List of connectors | 1-1 | 200430 |
| 1.2 | Drawings showing location of connectors | 1-11 | 200430 |

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# 1. LOCATION OF CONNECTORS

## 1.1 LIST OF CONNECTORS

Column 1 = Connector coding
Column 2 = Number of connection points on connector
Column 3 = Colour of connector
Column 4 = Description of connector, if applicable
Column 5 = Location of connector in the vehicle
Column 6 = Reference to page number (see “Drawings showing location of connectors”)

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 116 | 7 | Black | Chassis wiring harness for mechanical lifting axle | In distribution box, inside of chassis on co-driver’s side, front of driven rear axle | 33 |
| 122 | 6 | White | Time relay, mechanical lifting gear | On electronic unit, mechanical lifting gear | 36 |
| 143 | 4 | Black | Stepwell lighting | Under cab, driver’s side | 16 |
| 144 | 4 | Black | Stepwell lighting | Under cab, co-driver’s side | 16 |
| 216 | 16 | Black | Diagnostics | Bottom right, central box | 27 |
| 222 | 6 | Blue | Steering column ignition switch | Behind radio panel cover | 2 |
| 231 | 5 | Black | Light switch | On light switch, left-hand side of steering column | 34 |
| 251 | 3 | White | Engine brake switch | On foot panel engine brake switch | 35 |
| 269 | 14 | Black | Eberspächer Airtronic cab heater thermostat unit | Rear wall corner, driver’s side | 11 |
| 284 | 12 | Black | Chassis substructure | Under cab, driver’s side | 28 |
| 288 | 12 | Black | Chassis substructure | Under cab, co-driver’s side | 28 |
| 294 | 35 | Black | UPEC engine management (A connector) | On UPEC electronic unit against engine block, driver’s side | 15 |
| 295 | 35 | Black | UPEC engine management (B connector) | On UPEC electronic unit against engine block, driver’s side | 15 |
| 307 | 9 | Black | Remote control, ECAS | Below seat, driver’s side | 34 |
| 340 | 35 | Black | ECAS-2 (6x2) electronic unit connector | On ECAS-2 (6x2) electronic unit | 17 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 390 | 8 | Black | AS Tronic gearbox | Right-hand side of gearbox | 28 |
| 391 | 8 | Black | AS Tronic gearbox | Right-hand side of gearbox | 28 |
| 392 | 6 | Yellow | Reversing buzzer wiring | Dashboard lead-through, location A7 | 6 |
| 393 | 21 | Yellow | FAG dashboard wiring harness, ECAS 2 + front axle air suspension + EMAS + mechanical lifting gear | Connector partition under PCB, central box | 27 |
| 397 | 12 | Black | Heater wiring | Right-hand side of heater unit | 13 |
| 400 | 35 | Grey | PCB connector | Rear of PCB, central box - A connector | 1 |
| 401 | 35 | Black | PCB connector | Rear of PCB, central box - B connector | 1 |
| 402 | 35 | Grey | PCB connector | Rear of PCB, central box - C connector | 1 |
| 403 | 35 | Black | PCB connector | Rear of PCB, central box - D connector | 1 |
| 407 | 6 | Yellow | Clutch pedal sensor | Behind radio panel cover | 2 |
| 416 | 1 | White | PCB connector, power supply before contact | Rear of PCB, central box | 1 |
| 417 | 1 | Brown | PCB connector, power supply after contact | Rear of PCB, central box | 1 |
| 424 | 8 | Grey | Power supply to radio | Behind radio panel | 9 |
| 425 | 8 | Brown | Loudspeakers | Behind radio panel | 9 |
| 446 | 25 | Black | Electronic unit connector, ECAS-3 (4x2) | On electronic unit, ECAS-3 (4x2) | 17 |
| 453 | 18 | Black | A connector, ABS/ASR-D electronic unit | On ABS/ASR-D electronic unit, central box | 9 |
| 454 | 6 | Black | B connector, ABS/ASR-D electronic unit | On ABS/ASR-D electronic unit, central box | 9 |
| 455 | 9 | Black | C connector, ABS/ASR-D electronic unit | On ABS/ASR-D electronic unit, central box | 9 |
| 456 | 15 | Black | D connector, ABS/ASR-D electronic unit | On ABS/ASR-D electronic unit, central box | 9 |
| 482 | 18 | Black | Eberspächer Airtronic cab heater | On Airtronic cab heater unit | 13 |
| 483 | 12 | Black | Eberspächer Airtronic cab heater | Connector partition under PCB, central box | 3 |
| 491 | 4 | Black | PTO valve | On gearbox, right rear | 23 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 499 | 12 | Black | ABS chassis wiring harness | In front of driven rear axle | 17 |
| 527 | 14 | Black | Eberspächer Hydronic 10 cab heater thermostat unit | On thermostat unit, driver's side rear wall corner | 12 |
| 529 | 3 | White | Continuous lighting | Behind lighting switch panel, driver's side | 34 |
| 533 | 2 | White | Eberspächer Hydronic 10 cab heater, temperature sensor | On cab rear wall | 12 |
| 546 | 8 | Black | Gearbox | Right-hand side of gearbox | 14 |
| 553 | 16 | Grey | Door wiring, driver's side | Door pillar, driver's side | 18 |
| 554 | 21 | Yellow | Roof wiring | Connector partition, behind left-hand steering column cover | 2 |
| 555 | 21 | Black | Tachograph roof wiring | Connector partition, behind left-hand steering column cover | 2 |
| 556 | 9 | Yellow | Door-sill wiring | Connector partition, behind left-hand steering column cover | 2 |
| 557 | 6 | Green | Engine speed remote control | Connector partition, behind left-hand steering column cover | 2 |
| 559 | 18 | Black | Substructure, driver's side | Connector partition, behind right-hand steering column cover | 2 |
| 560 | 9 | Blue | Substructure, EBS valve | Connector partition, behind right-hand steering column cover | 2 |
| 561 | 12 | Yellow | Steering column - B connector | Behind radio panel cover | 2 |
| 562 | 6 | Green | Immobiliser | Behind radio panel cover | 2 |
| 563 | 14 | Black | Instrument panel | Rear of DIP-4 | 11 |
| 564 | 9 | Green | PTO instrument panel | Behind radio panel cover | 2 |
| 565 | 6 | Black | Instrument panel, 4x4 | Behind radio panel cover | 2 |
| 566 | 18 | Black | Steering column - A connector | Behind radio panel cover | 2 |
| 567 | 6 | Yellow | Radio panel | Behind radio panel cover | 3 |
| 568 | 21 | Black | Air conditioning feed-through | Behind radio panel cover | 2 |
| 569 | 2 | Yellow | Air conditioning pressure switch | Above coolant expansion tank, co-driver's side | 21 |
| 570 | 21 | Yellow | Heater panel | Right-hand side of heater panel | 3 |
| 571 | 9 | Blue | Instrument lighting/roof hatch switch | Right-hand side of heater panel | 3 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 572 | 21 | Yellow | Substructure, co-driver's side | Right-hand side of foot plate, co-driver's side | 4 |
| 573 | 9 | Black | Door-sill wiring | Right-hand side of foot plate, co-driver's side | 4 |
| 574 | 21 | Green | Alarm system | Connector partition under PCB, central box | 3 |
| 577 | 21 | Blue | Lead-through connector, rear chassis wiring / UPEC/ECS-DC3 application connector (A070) | Dashboard lead-through, location D5/6 | 5 |
| 580 | 6 | Green | Superstructure accessories | Connector partition under PCB, central box | 3 |
| 581 | 6 | Black | Roof wiring | Next to connector partition, behind left-hand steering column cover | 2 |
| 582 | 12 | Black | Eberspächer Hydronic 10 cab heater | Connector partition under PCB, central box | 3 |
| 583 | 12 | Blue | Intarder | Connector partition under PCB, central box | 4 |
| 584 | 21 | Black | EBS | Connector partition under PCB, central box | 3 |
| 585 | 21 | Black | ABS | Connector partition under PCB, central box | 3 |
| 586 | 21 | Black | Brake lining | Connector partition under PCB, central box | 3 |
| 588 | 12 | Yellow | UPEC/ECS-DC3 application connector (A068) | Dashboard lead-through, location A4 | 5 |
| 590 | 2 | Black | ABS, drawn vehicle | Dashboard lead-through, location B9 | 5 |
| 591 | 16 | Grey | Door wiring | Door pillar, driver's side | 18 |
| 592 | 9 | Black | A connector, VIC electronic unit | Central box | 7 |
| 593 | 24 | Black | B connector, VIC electronic unit | Central box | 7 |
| 594 | 52 | Black | C connector, VIC electronic unit | Central box | 7 |
| 595 | 40 | Black | D connector, VIC electronic unit | Central box | 7 |
| 596 | 9 | Black | E connector, VIC electronic unit | Central box | 7 |
| 597 | 12 | Black | Roof wiring | Roof console, driver's side | 6 |
| 598 | 8 | White | A connector | On rear of tachograph | 7 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 599 | 8 | Yellow | B connector | On rear of tachograph | 7 |
| 600 | 16 | Black | Electronic unit, CDS-3 | Roof console, driver's side | 10 |
| 601 | 6 | Black | Interior alarm/loadspace detection | Right-hand side of heater panel | 3 |
| 602 | 6 | Green | Alarm system siren | Under instrument panel | 10 |
| 603 | 12 | Black | Electronic unit, ASL-S, A connector | Central box | 20 |
| 604 | 21 | Black | Electronic unit, ASL-S, B connector | Central box | 20 |
| 605 | 21 | Black | Chassis wiring harness | In cable duct above front wheel, co-driver's side (only FT type) | 20 |
| 606 | 3 | Black | Roof spotlights | Behind spotlights on roof, outside cab, driver's side | 25 |
| 607 | 18 | Black | Allison gear selector | Behind radio panel cover | 4 |
| 608 | 21 | Grey | EBS chassis | Dashboard lead-through, location B5/6 | 5 |
| 609 | 21 | Green | EBS substructure | Dashboard lead-through, location C7/8 | 5 |
| 610 | 21 | Grey | ABS chassis | Dashboard lead-through, location B5/6 | 5 |
| 611 | 21 | Green | ABS substructure | Dashboard lead-through, location C7/8 | 5 |
| 612 | 18 | Black | A connector, EBS electronic unit | Central box | 14 |
| 613 | 15 | Black | B connector, EBS electronic unit | Central box | 14 |
| 614 | 9 | Black | C connector, EBS electronic unit | Central box | 14 |
| 615 | 12 | Black | D connector, EBS electronic unit | Central box | 14 |
| 616 | 6 | Black | E connector, EBS electronic unit | Central box | 14 |
| 618 | 2 | Black | Cooler box door-sill wiring | Next to co-driver's seat, behind cover | 13 |
| 619 | 2 | Black | Storage compartment door-sill wiring | Next to driver's seat, behind cover | 24 |
| 620 | 12 | Blue | ZF intarder | Dashboard lead-through, location D8 | 5 |
| 621 | 9 | Blue | Eberspächer Airtronic cab heater wiring | Behind co-driver's seat | 13 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 622 | 88 | Black | Electronic unit, intarder EST-42 | Central box | 25 |
| 623 | 12 | Black | Roof wiring, spotlights, SH cab | In roof console, driver's side | 6 |
| 624 | 2 | Black | Fuel heater extension cable | Behind fuel tank, driver's side Special vehicle model | 19 |
| 625 | 4 | Black | Fuel level sensor extension cable | Behind cab in side member. Special vehicle model | 19 |
| 626 | 21 | Blue | Gearbox wiring feed-through | Manual gearbox chassis wiring, location D5/6 | 5 |
| 627 | 12 | Grey | Chassis wiring, ECAS-2 (6x2) | Dashboard lead-through, location B8 | 6 |
| 628 | 8 | Black | ECS-DC3 engine harness wiring | Front of engine block | 19 |
| 630 | 9 | Blue | Eberspächer Airtronic cab heater wiring | Right-hand side of foot plate, co-driver's side | 4 |
| 632 | 12 | Black | Timer for Eberspächer Airtronic cab heater | Rear wall corner, driver's side | 11 |
| 633 | 12 | Black | Timer for Eberspächer Hydronic 10 cab heater | Rear wall corner, driver's side | 12 |
| 634 | 12 | Black | Chassis wiring, ECAS-3 (4x2) | Dashboard lead-through, location B8 | 6 |
| 635 | 6 | Black | Air-sprung front axle | Dashboard lead-through, location B7 | 5 |
| 636 | 7 | Black | Air pressure sensor wiring | Under cab, co-driver's side | 26 |
| 637 | 12 | Black | Gearbox | On the right next to gearbox | 33 |
| 638 | 6 | Blue | Main switch | Dashboard lead through, location D4 | 5 |
| 639 | 8 | Black | Main switch | Between battery pack and chassis side member, driver's side | 26 |
| 643 | 4 | Black | PTO | On gearbox | 33 |
| 644 | 18 | Blue | Allison transmission | Connector partition under PCB, central box | 4 |
| 646 | 4 | Black | Coolant level sensor | Next to coolant expansion tank, driver's side | 21 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 647 | 89 | Black | On ECS-DC3 electronic unit | On ECS-DC3 electronic unit against engine block, driver's side | 22 |
| 648 | 21 | Grey | Allison gearbox | Dashboard lead-through, location B1/2 | 6 |
| 649 | 12 | Green | Allison gearbox | Dashboard lead-through, location B4 | 6 |
| 650 | 8 | Black | Allison gearbox | On gearbox, middle rear | 22 |
| 651 | 8 | Black | ECAS chassis wiring harness | Above cross member, in front of driven rear axle | 15 |
| 654 | 9 | Blue | Accessories connector | Behind radio panel cover | 3 |
| 655 | 6 | Yellow | Accessories connector | Right-hand side of heater panel | 3 |
| 656 | 21 | Blue | Accessories connector | Dashboard lead-through, location D1/2 | 5 |
| 657 | 12 | Black | Bodybuilder application connector | Depending on type of cab: under cab or behind cab, co-driver's side | 24 |
| 658 | 8 | Black | Bodybuilder application connector | Depending on type of cab: under cab or behind cab, co-driver's side | 24 |
| 659 | 3 | Black | Alarm system extension cable | Rear of cab, driver's side | 30 |
| 660 | 6 | Black | Alarm system charger | Under foot plate, co-driver's side | 12 |
| 661 | 8 | Black | Chassis wiring harness for mechanical lifting axle | In cable duct above front wheel, co-driver's side | 32 |
| 662 | 7 | Black | Chassis wiring harness for mechanical lifting axle | In distribution box, inside of chassis on co-driver's side, front of driven rear axle | 33 |
| 663 | 6 | Green | FAS/FTS dashboard wiring harness | Dashboard lead-through, location C9 | 5 |
| 666 | 6 | Green | Fuel pre-heating | Right-hand side of heater panel | 4 |
| 667 | 2 | Black | Thermoline fuel pre-heating | Dashboard lead-through, location A9 | 6 |
| 668 | 4 | Black | Air conditioning compressor | Against engine under cab, co-driver's side | 8 |
| 669 | 4 | Black | Work lamp | Against bridge piece, rear of cab | 8 |
| 672 | 6 | Black | Intermediate connector for radar alarm system | In roof console, driver's side | 21 |

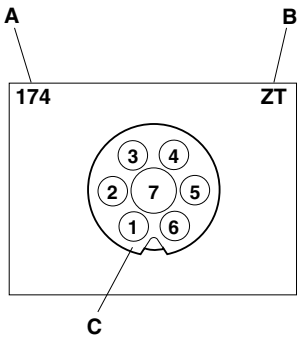
| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 673 | 6 | Black | Intermediate connector for ultrasonic alarm system | In roof console, driver's side | 21 |
| 674 | 21 | Yellow | EMAS chassis wiring | Dashboard lead-through, location A1/2 | 6 |
| 676 | 18 | Blue | EMAS electronic unit, B connector | Under foot plate, co-driver's side | 30 |
| 677 | 15 | Black | EMAS electronic unit, C connector | Under foot plate, co-driver's side | 30 |
| 679 | 7 | Green | EMAS valve block | EMAS steering cylinder control valve block (B386) | 29 |
| 680 | 7 | Grey | EMAS valve block | EMAS steering cylinder control valve block (B386) | 29 |
| 681 | 6 | Yellow | Mann & Hummel water separator or fuel filter/water separator (Fleetguard) | Dashboard lead-through, location A5 | 6 |
| 682 | 36 | Black | On ECS-DC3 electronic unit | On ECS-DC3 electronic unit against engine block, driver's side | 22 |
| 683 | 16 | Black | On ECS-DC3 electronic unit | On ECS-DC3 electronic unit against engine block, driver's side | 22 |
| 684 | 4 | Black | EMAS chassis wiring intermediate connector | On front axle angle sensor on steering box | 31 |
| 685 | 4 | Black | EMAS chassis wiring intermediate connector | On trailing axle angle sensor | 31 |
| 686 | 4 | Black | EMAS valve block | EMAS fluid flow control valve block (B372) | 31 |
| 687 | 21 | Green | Application connector, Allison gearbox (A074) | Connector partition under PCB, central box | 4 |
| 688 | 3 | Black | FAS/FTS chassis wiring harness | Above distribution box, above driven rear axle, co-driver's side | 33 |
| 689 | 3 | Black | FAS/FTS chassis wiring harness | Above distribution box, above driven rear axle, co-driver's side | 33 |
| 690 | 4 | Black | FAS/FTS chassis wiring harness | In front of lifting axle cross member, co-driver's side | 32 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 691 | 2 | Black | FAS/FTS chassis wiring harness | Behind lifting cylinder, in front of lifting axle | 32 |
| 860 | 21 | Yellow | ECAS-2 (4x2) dashboard wiring harness + front axle air suspension | Connector partition under PCB, central box | 27 |
| 861 | 21 | Yellow | ECAS-2 (6x2) dashboard wiring harness + EMAS | Connector partition under PCB, central box | 27 |
| 862 | 21 | Yellow | ECAS-2 (6x2) dashboard wiring harness + front axle air suspension | Connector partition under PCB, central box | 27 |
| 865 | 2 | Black | Accessories connection | Under central PCB, central box | 8 |
| 868 | 9 | Violet | AS Tronic gear lever unit wiring | In connector partition behind radio panel | 27 |
| 869 | 21 | Black | AS Tronic chassis wiring | Dashboard lead-through, location B1/2 | 5 |
| 871 | 18 | White | EMAS electronic unit A connector | Under foot plate, co-driver's side | 30 |
| 872 | 18 | Grey | EMAS electronic unit D connector | Under foot plate, co-driver's side | 30 |
| 873 | 39 | Black | Rear light chassis wiring, drawn vehicle plugs | On cross member behind rear axle (only FA type) | 29 |
| 879 | 15 | Black | AS Tronic gear lever unit wiring | On AS Tronic gear lever unit | 34 |
| 880 | 20 | Black | AS Tronic gearbox | On AS Tronic electronic unit, gearbox | 35 |
| 882 | 21 | Yellow | Lifting gear wiring | Connector partition under PCB, central box | 27 |
| 883 | 9 | Yellow | CDM wiring | Connector partition under PCB, central box | 4 |
| 884 | 18 | Black | CDM unit, A connector | On CDM electronic unit, under foot plate, co-driver's side | 36 |
| 911 | 7 | Grey | Windscreen wiper motor | Above coolant expansion tank, driver's side | 35 |
| 913 | 21 | Violet | PEC/XEC/CE engine wiring | Dashboard lead-through, location C3/4 | 5 |
| 914 | 21 | Green | PEC/XEC/CE engine wiring | Dashboard lead-through, location C1/2 | 5 |
| 915 | 12 | Green | Connector, accessories and drawn vehicle | Dashboard lead-through, location C6 | 5 |
| 916 | 21 | Yellow | Chassis wiring harness | Dashboard lead-through, location A7/8 | 5 |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 918 | 12 | Yellow | Eberspächer Hydronic 10 cab heater | Dashboard lead-through, location A6 | 5 |
| 919 | 6 | Grey | Grease lubrication wiring harness | Dashboard lead-through, location B3 | 6 |
| 920 | 12 | Black | Eberspächer Hydronic 10 cab heater | On cab heater unit | 23 |
| 921 | 6 | Green | ABS/EBS, drawn vehicle | Dashboard lead-through, location C5 | 6 |
| 922 | 15 | Black | CDM unit, B connector | On CDM electronic unit, central box | 36 |
| 923 | 8 | Brown | Tachograph, D connector | On rear of tachograph | 7 |
| 924 | 2 | Black | Chassis wiring harness | Left side marking | 19 |
| 925 | 2 | Black | Chassis wiring harness | Right side marking | 19 |
| 927 | 12 | Grey | Dashboard wiring harness | Dashboard lead-through, location B4 | 5 |
| 928 | 6 | Grey | Wiring harness, air-sprung front axle | Dashboard lead-through, location B7 | 6 |
| 929 | 12 | Black | Chassis wiring harness | ECAS wiring harness | 23 |
| 930 | 6 | Black | Dashboard wiring harness | Behind radio panel cover | 27 |
| 931 | 6 | Blue | Dashboard wiring harness | Dashboard lead-through, location D7 | 6 |
| 948 | 2 | Black | Stepwell lighting | Under cab, driver's side | 37 |
| 949 | 2 | Black | Stepwell lighting | Under cab, co-driver's side | 37 |
| 950 | 6 | Violet | Radio panel | Behind radio panel cover | 2 |
| 951 | 6 | Violet | Radio panel | Behind radio panel cover | 3 |

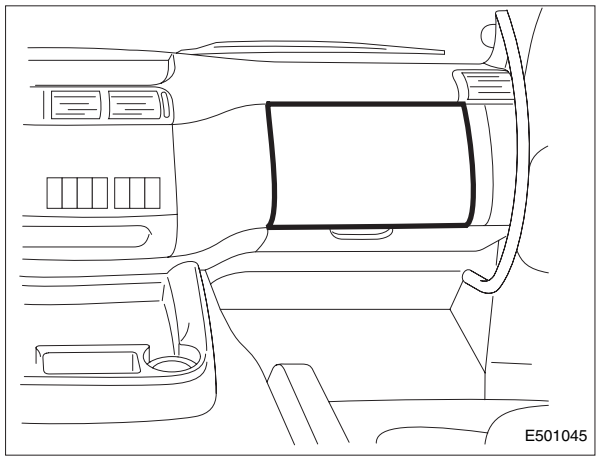
## 1.2 DRAWINGS SHOWING LOCATION OF CONNECTORS

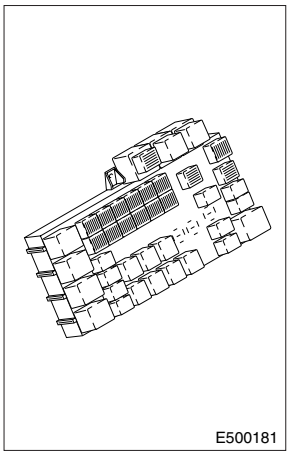
Explanation of connector drawings
A : Connector coding
B : Colour of connector
BN = brown
BW = blue
GL = yellow
GS = grey
OE = orange
RD = red
VI = violet
WT = white
ZT = black
C : List of pin numbers on connector
The pin numbers on the connector are viewed from the wire input side.

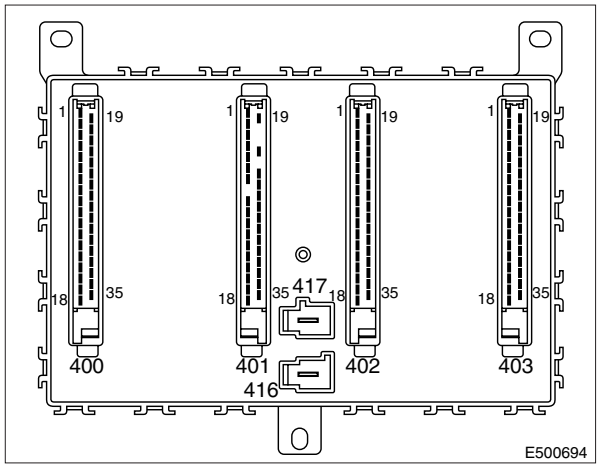


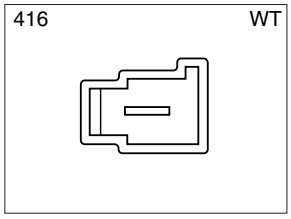
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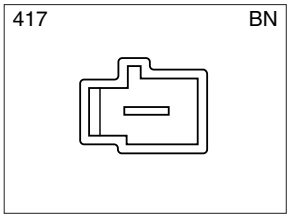
© 200430

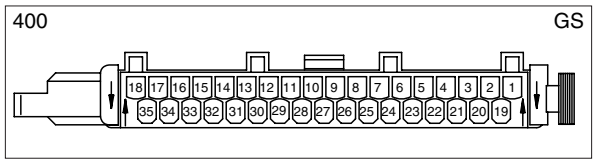

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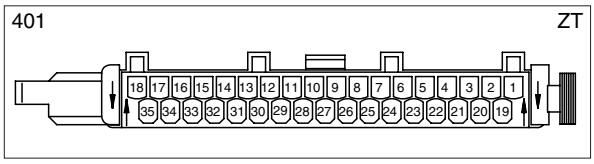

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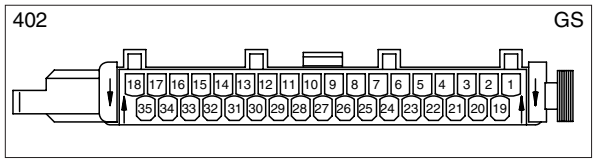

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E500694

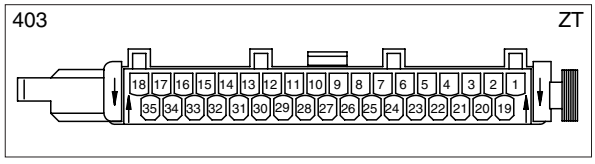

416
WT


417
BN


400
GS
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35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19

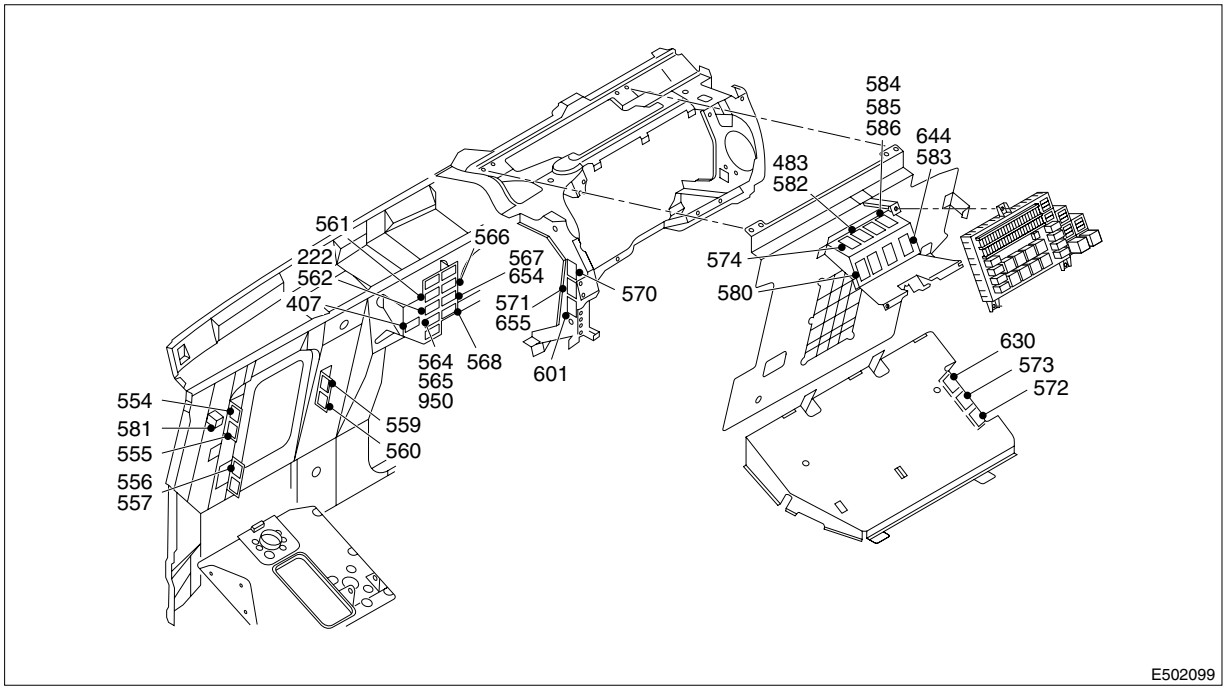

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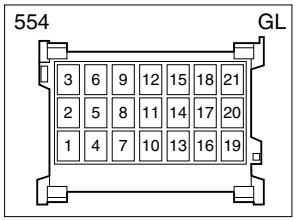

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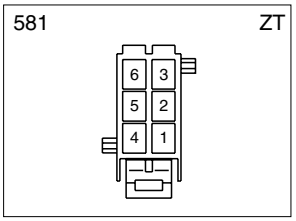

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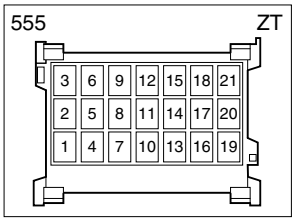
**E501179**

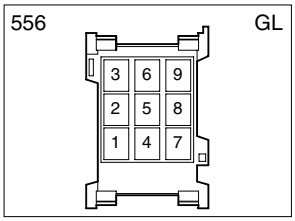
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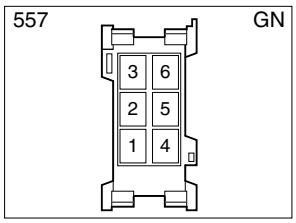

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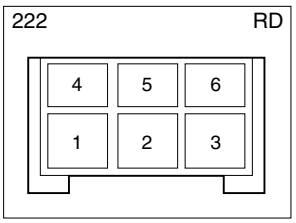

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2 5 8 11 14 17 20
1 4 7 10 13 16 19

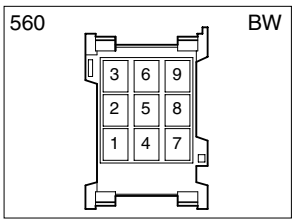

581
ZT
6 3
5 2
4 1

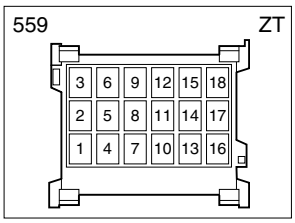

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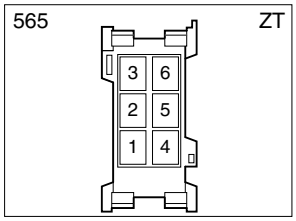

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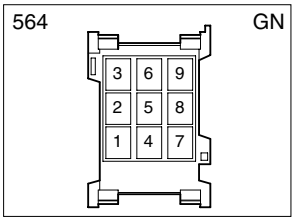

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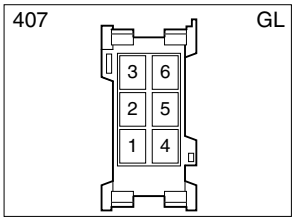

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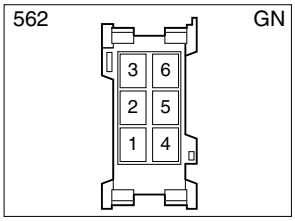

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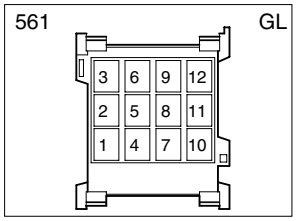

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ZT
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1 4 7 10 13 16

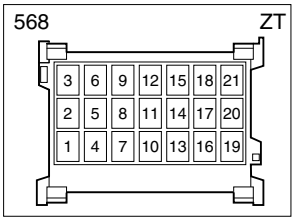

565
ZT
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2 5
1 4

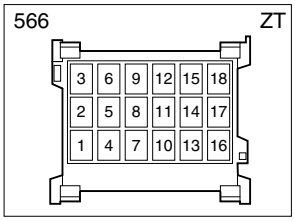

564
GN
3 6 9
2 5 8
1 4 7

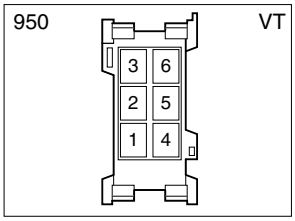

407
GL
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1 4


562
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3 6
2 5
1 4


561
GL
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2 5 8 11
1 4 7 10

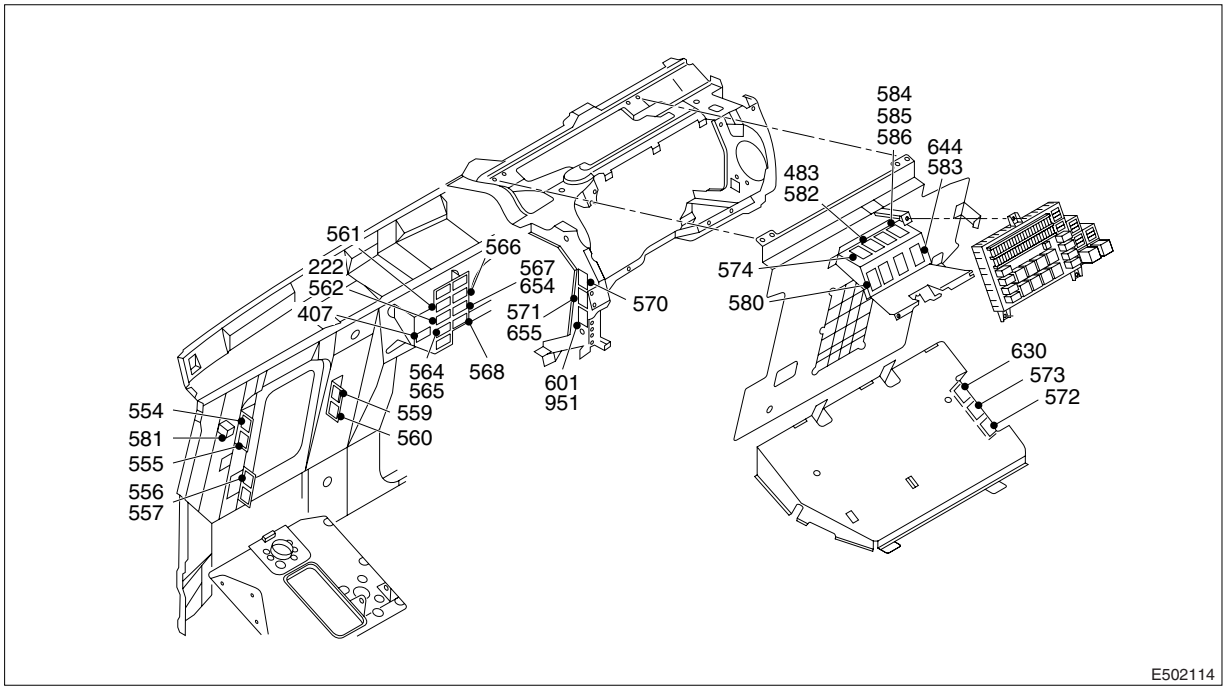

568
ZT
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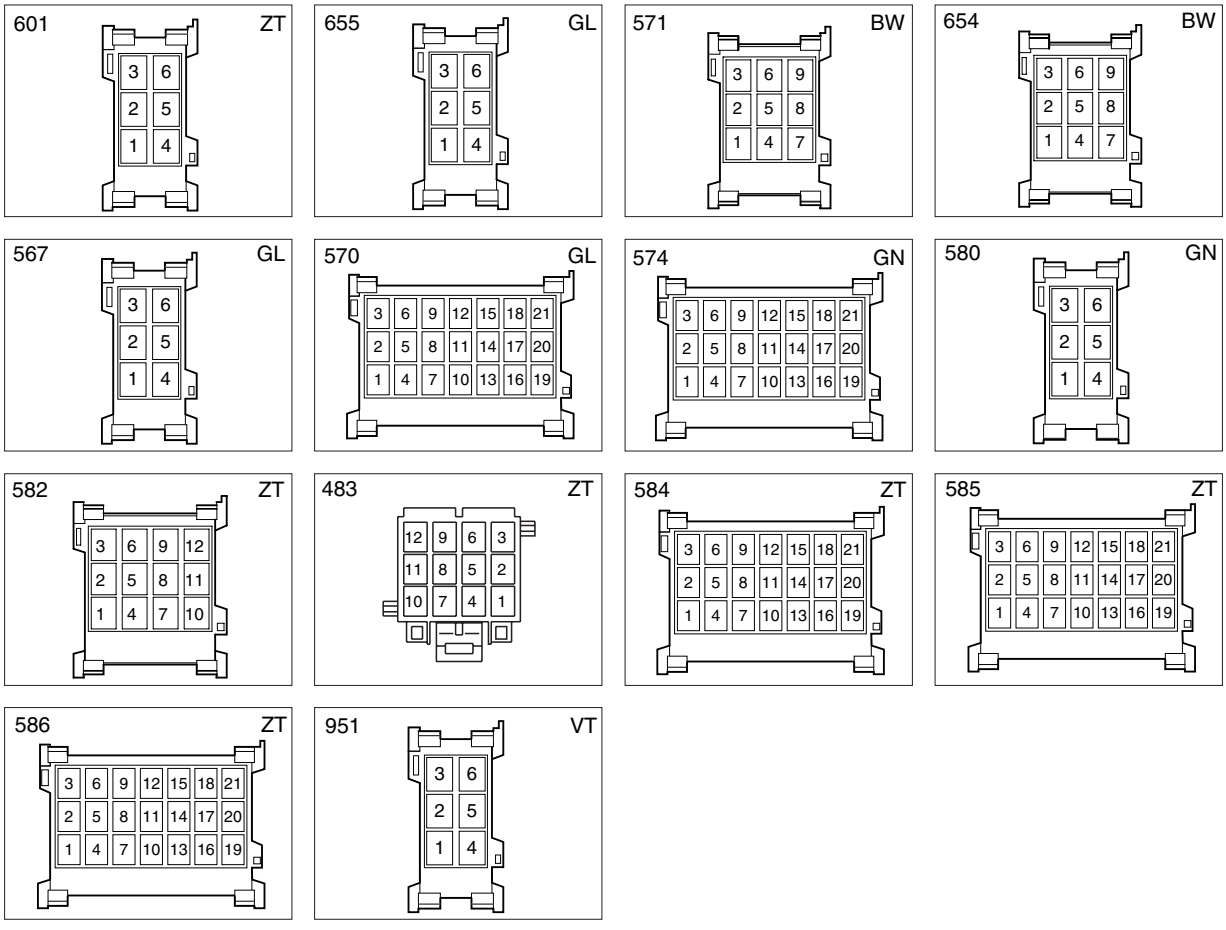

566
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2 5 8 11 14 17
1 4 7 10 13 16


950
VT
3 6
2 5
1 4

**E502100**

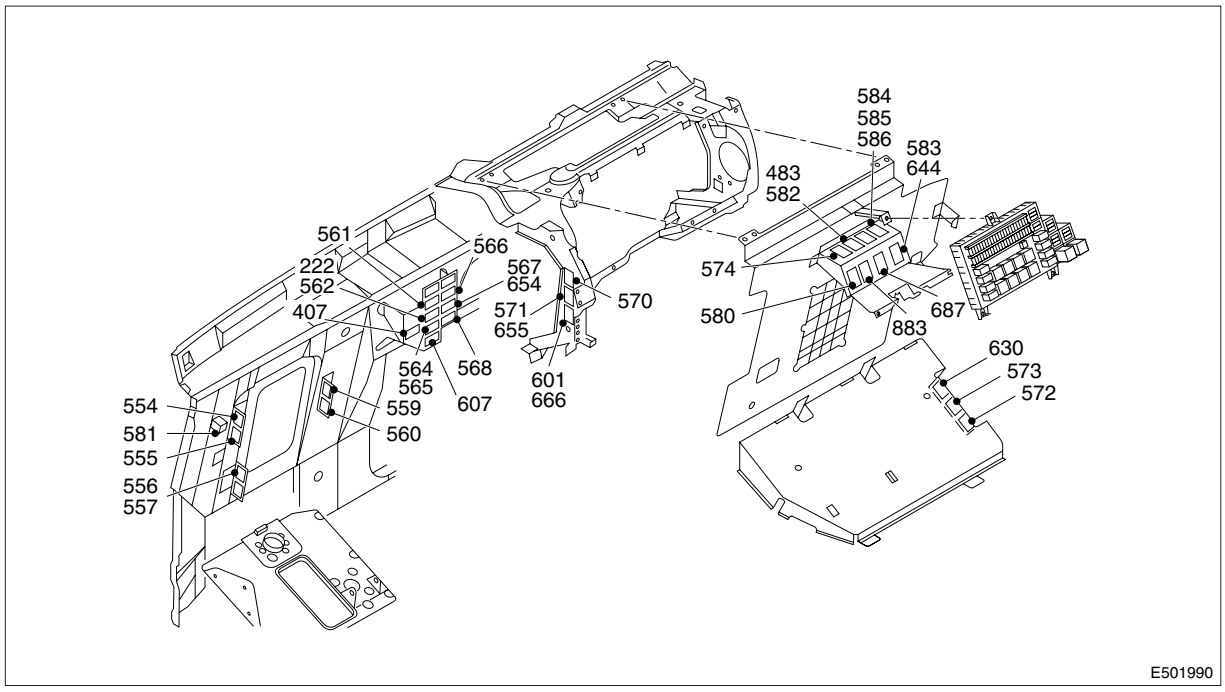
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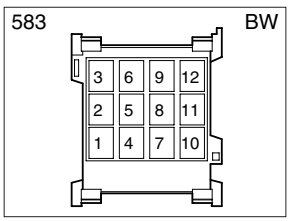

584
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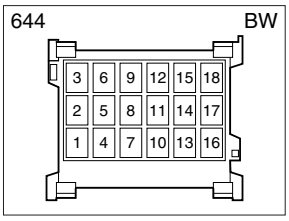

601 ZT
3 6
2 5
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655 GL
3 6
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571 BW
3 6 9
2 5 8
1 4 7
654 BW
3 6 9
2 5 8
1 4 7
567 GL
3 6
2 5
1 4
570 GL
3 6 9 12 15 18 21
2 5 8 11 14 17 20
1 4 7 10 13 16 19
574 GN
3 6 9 12 15 18 21
2 5 8 11 14 17 20
1 4 7 10 13 16 19
580 GN
3 6
2 5
1 4
582 ZT
3 6 9 12
2 5 8 11
1 4 7 10
483 ZT
12 9 6 3
11 8 5 2
10 7 4 1
584 ZT
3 6 9 12 15 18 21
2 5 8 11 14 17 20
1 4 7 10 13 16 19
585 ZT
3 6 9 12 15 18 21
2 5 8 11 14 17 20
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586 ZT
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2 5 8 11 14 17 20
1 4 7 10 13 16 19
951 VT
3 6
2 5
1 4

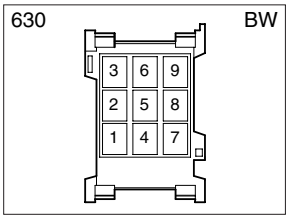
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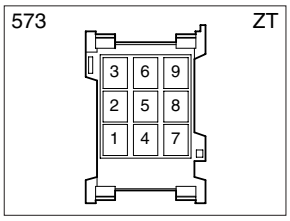
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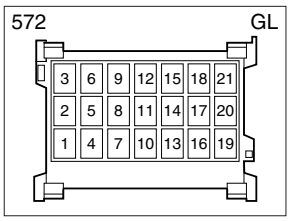

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572
E501990

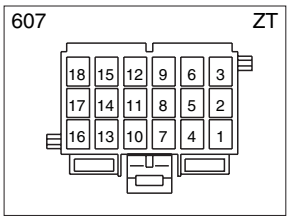

583
BW
3 6 9 12
2 5 8 11
1 4 7 10

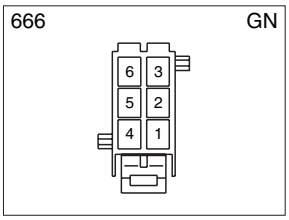

644
BW
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2 5 8 11 14 17
1 4 7 10 13 16

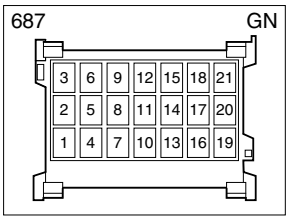

630
BW
3 6 9
2 5 8
1 4 7

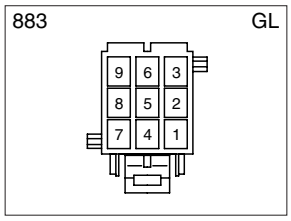

573
ZT
3 6 9
2 5 8
1 4 7


572
GL
3 6 9 12 15 18 21
2 5 8 11 14 17 20
1 4 7 10 13 16 19


607
ZT
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17 14 11 8 5 2
16 13 10 7 4 1

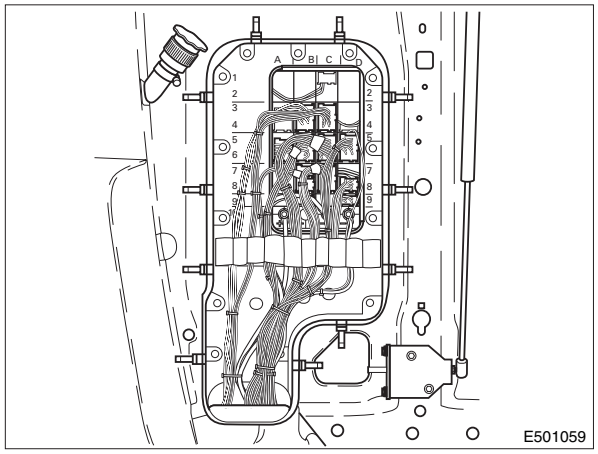

666
GN
6 3
5 2
4 1

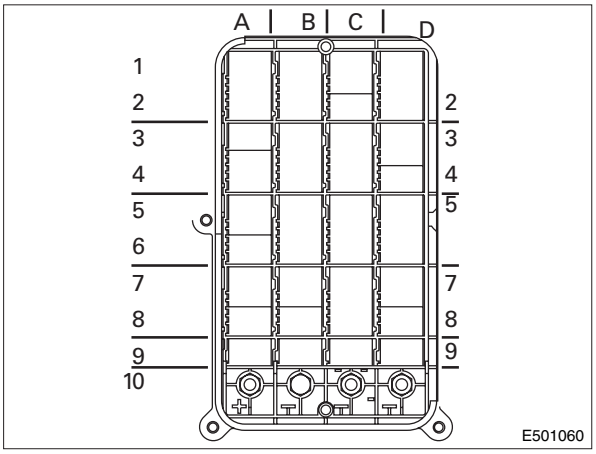

687
GN
3 6 9 12 15 18 21
2 5 8 11 14 17 20
1 4 7 10 13 16 19

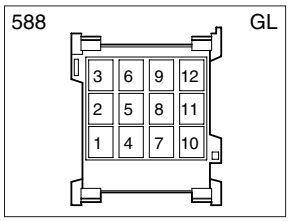

883
GL
9 6 3
8 5 2
7 4 1

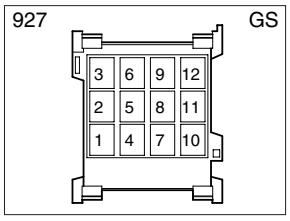
**E501991**

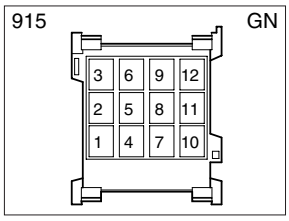
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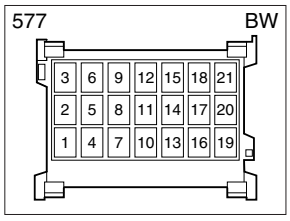

E501059

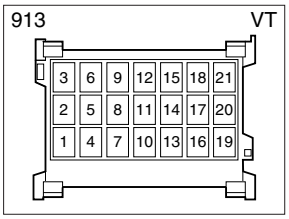

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E501060

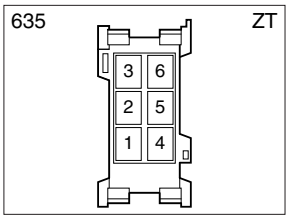

588
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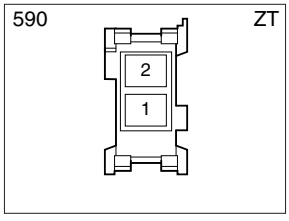

927
GS
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2 5 8 11
1 4 7 10

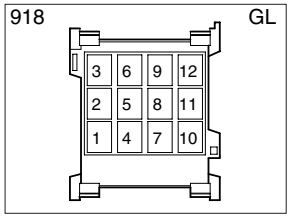

915
GN
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2 5 8 11
1 4 7 10

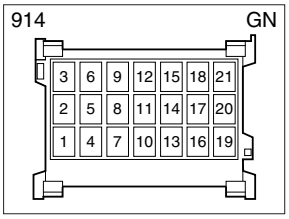

577
BW
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2 5 8 11 14 17 20
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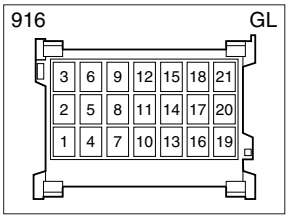

913
VT
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2 5 8 11 14 17 20
1 4 7 10 13 16 19

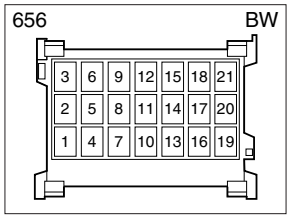

635
ZT
3 6
2 5
1 4

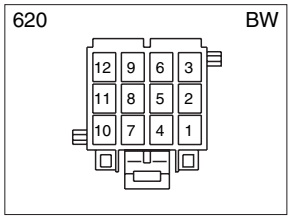

590
ZT
2
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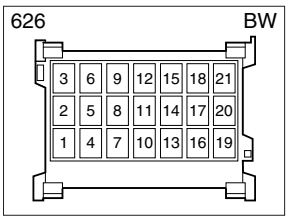

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1 4 7 10

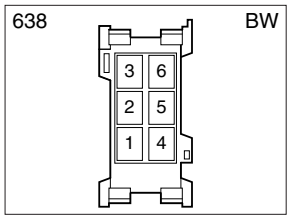

914
GN
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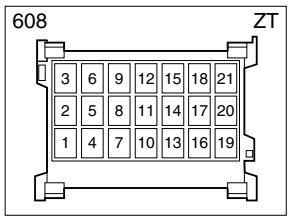

916
GL
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2 5 8 11 14 17 20
1 4 7 10 13 16 19

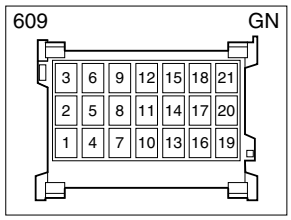

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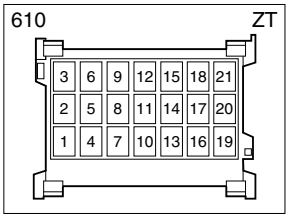

620
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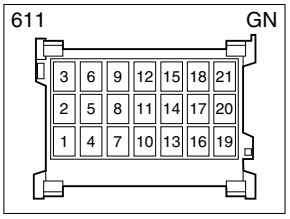

626
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1 4 7 10 13 16 19

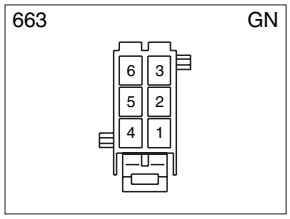

638
BW
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1 4

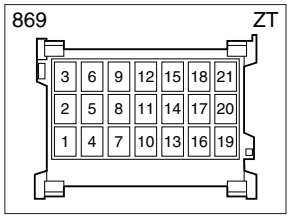

608
ZT
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1 4 7 10 13 16 19


609
GN
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610
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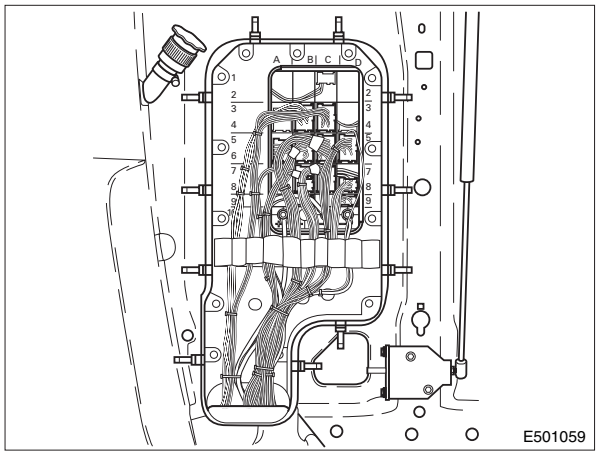

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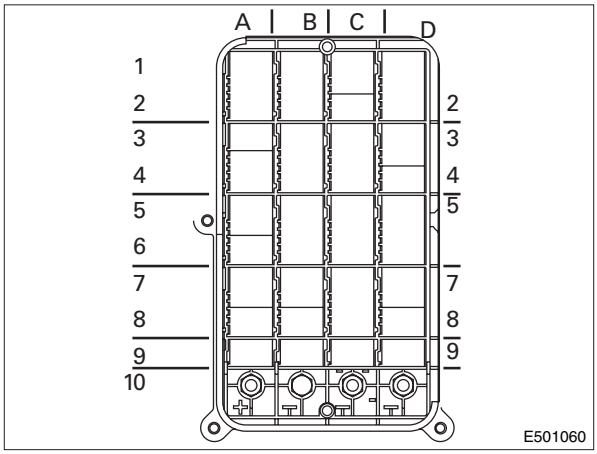

663
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869
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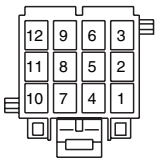
**E501992**

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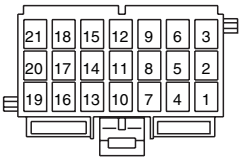


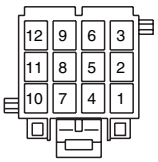

627 ZT



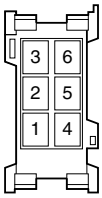

648 ZT



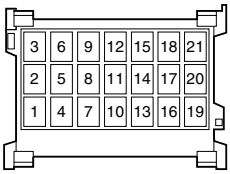

649 GN



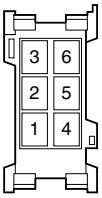

919 GS



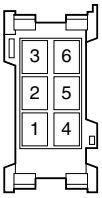

674 GL



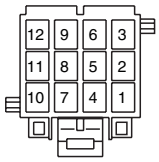

681 GL



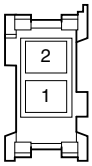

928 GS



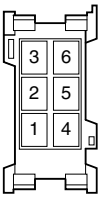

634 ZT



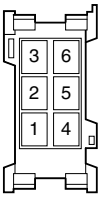

667 ZT



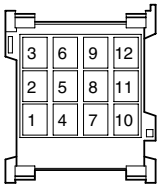

931 BW



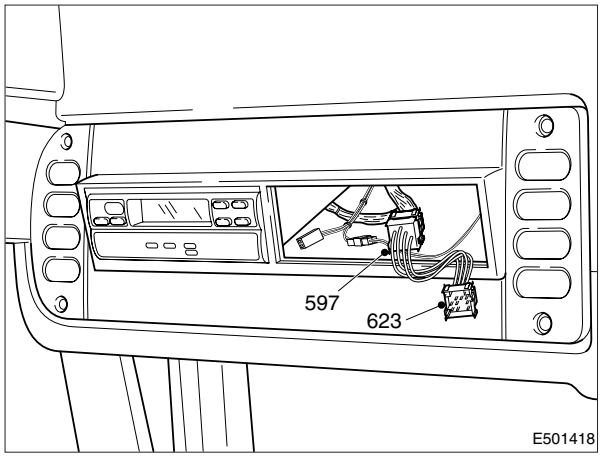

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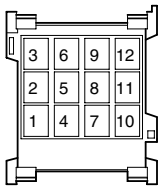

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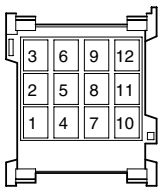

**E501993**




597 ZT

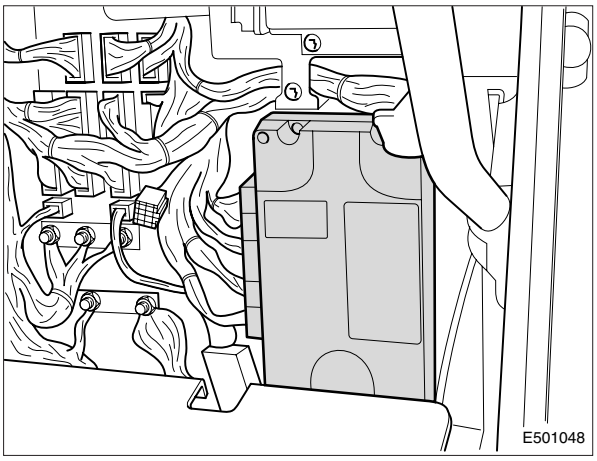


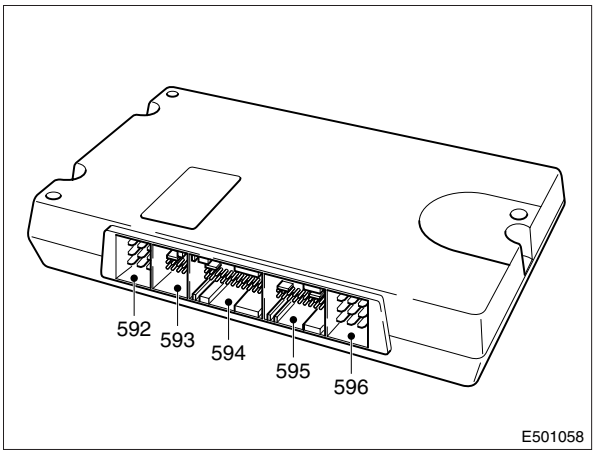

623 ZT

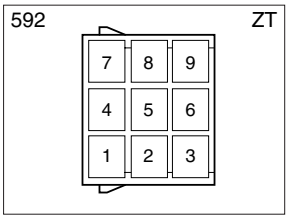


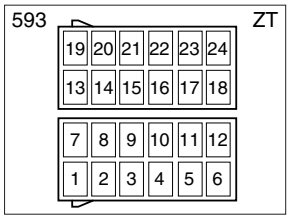

**E501419**

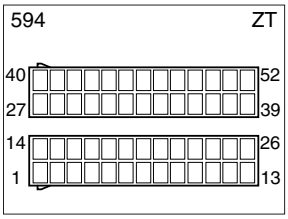
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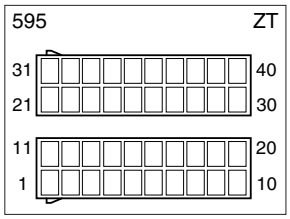


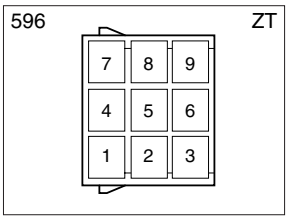



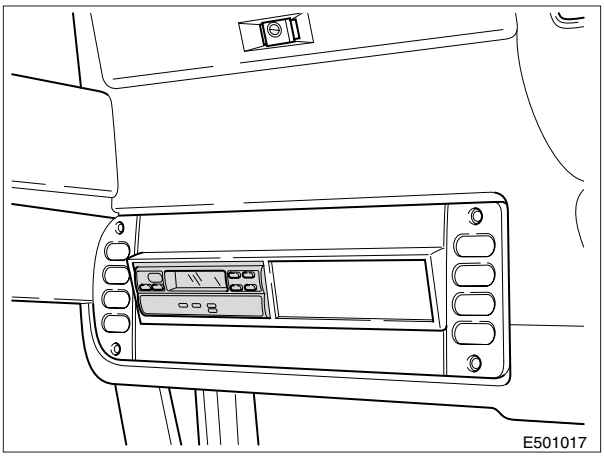



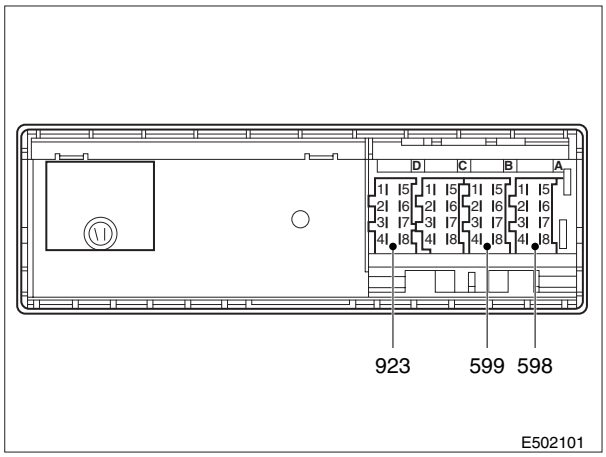



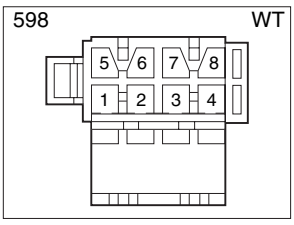



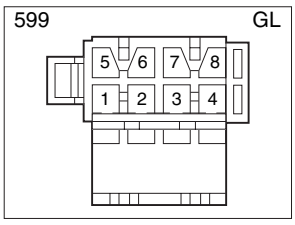



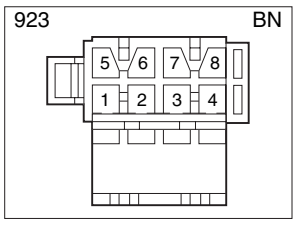

**E501187**



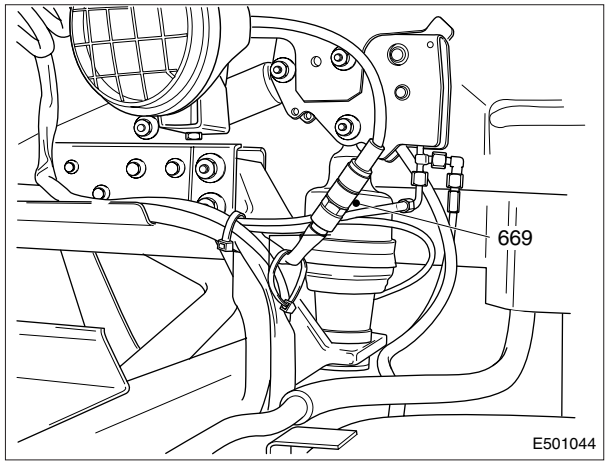



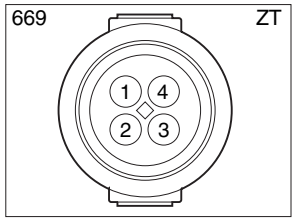



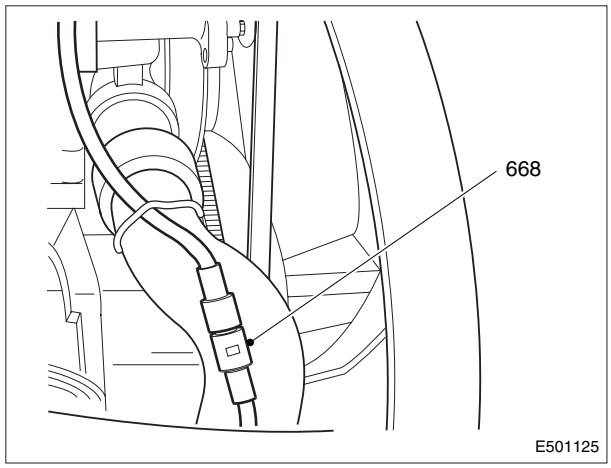



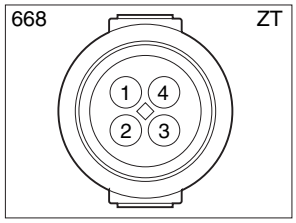

**E502102**



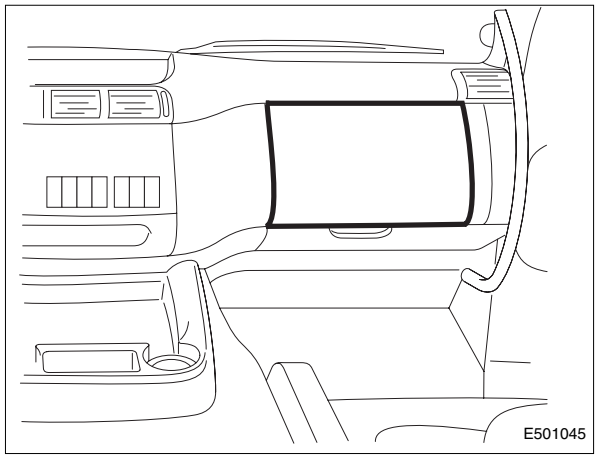

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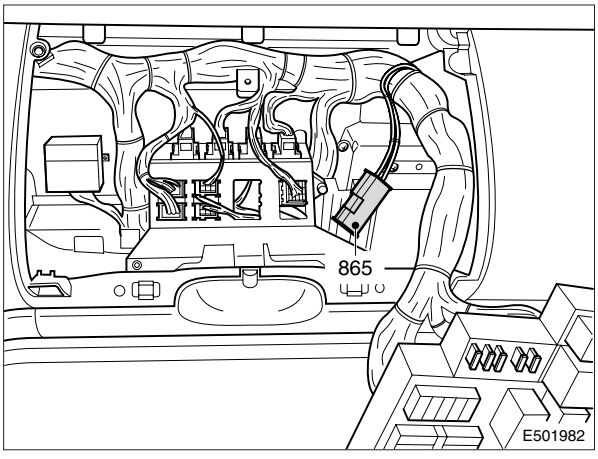


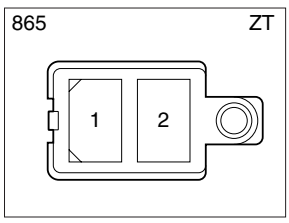




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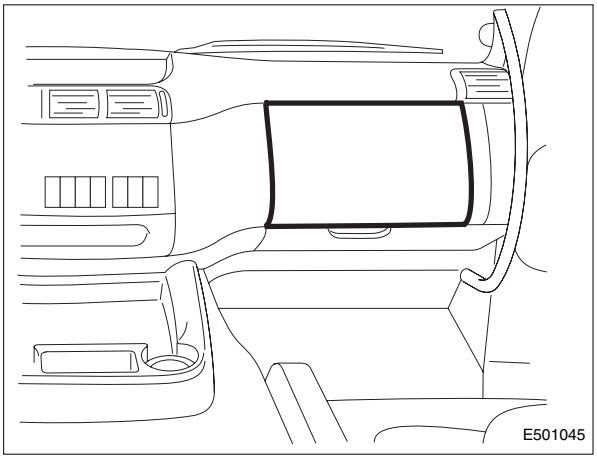
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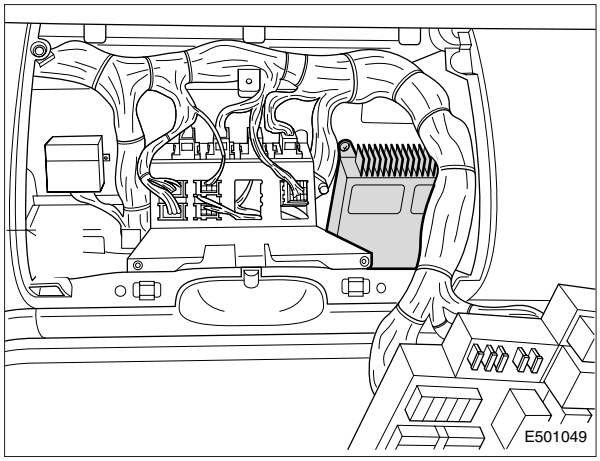


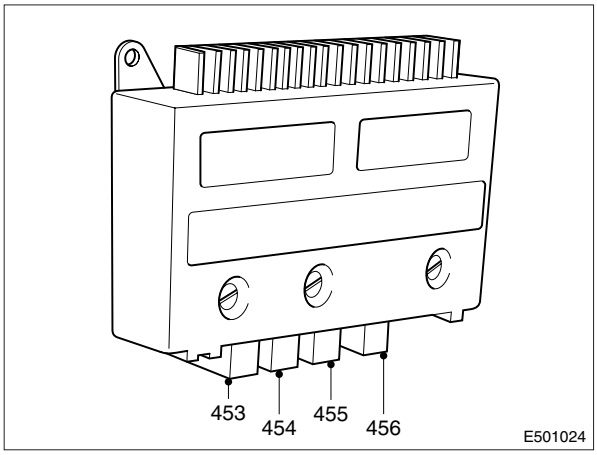



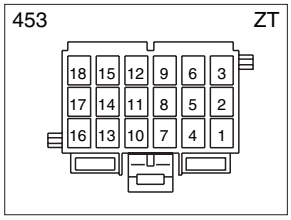



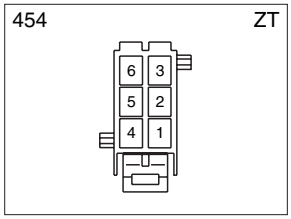

**E501983**

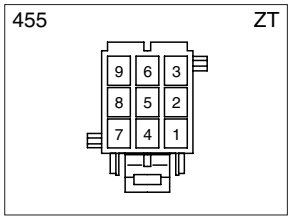


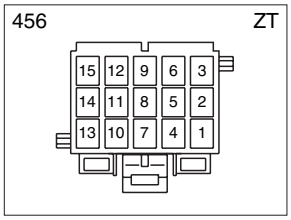



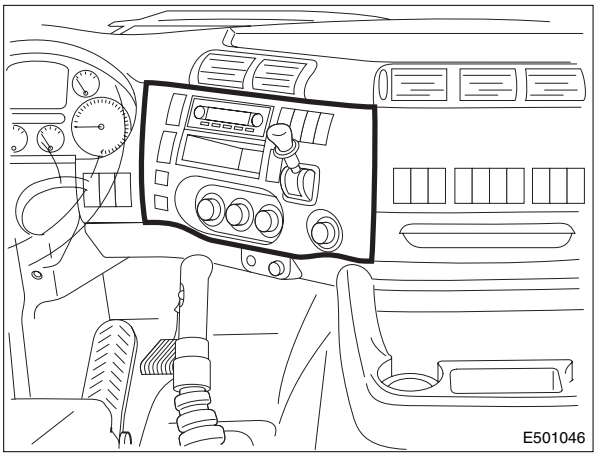



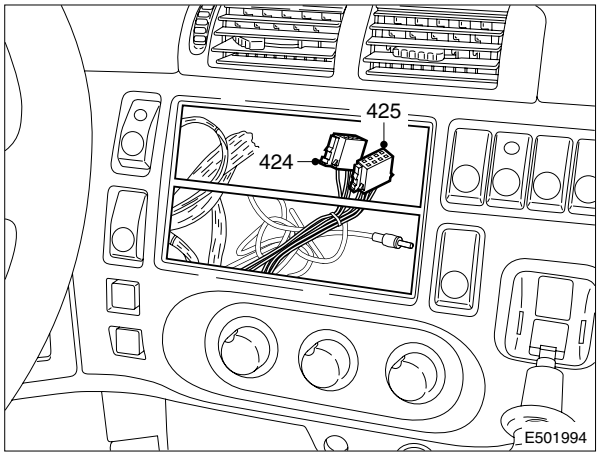



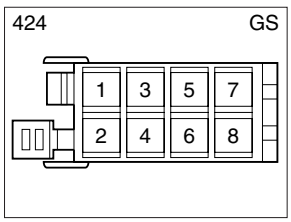



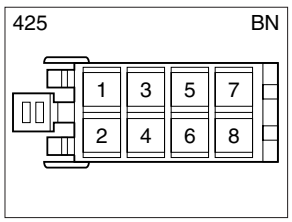




**E501190**



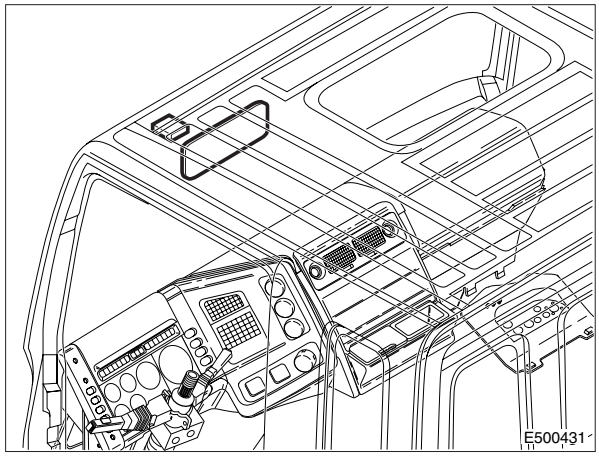



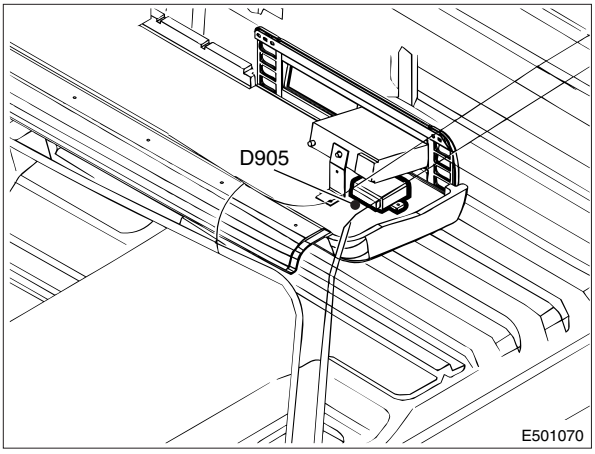



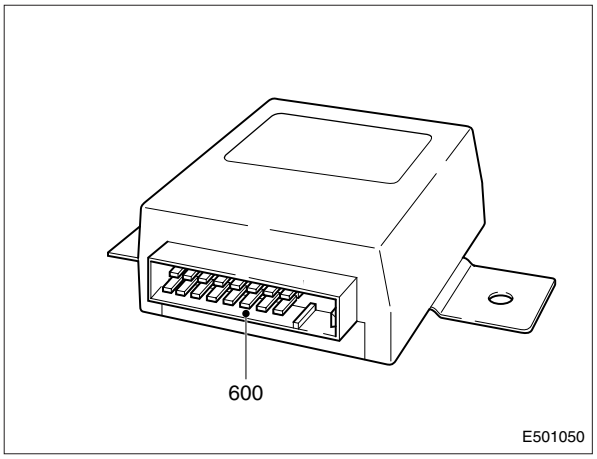



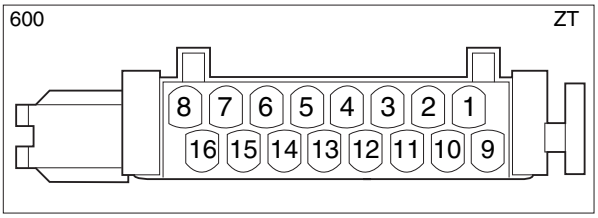

**E501995**

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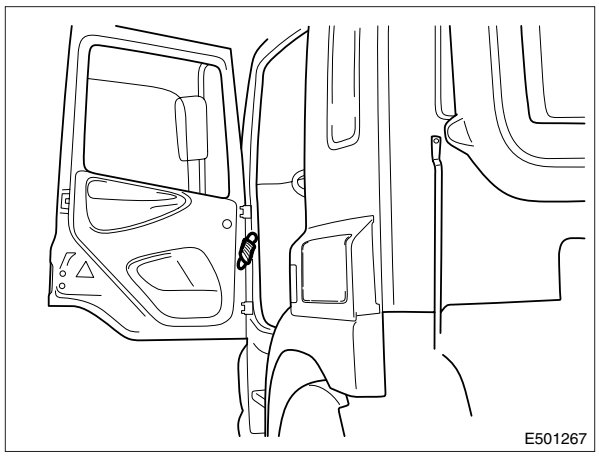


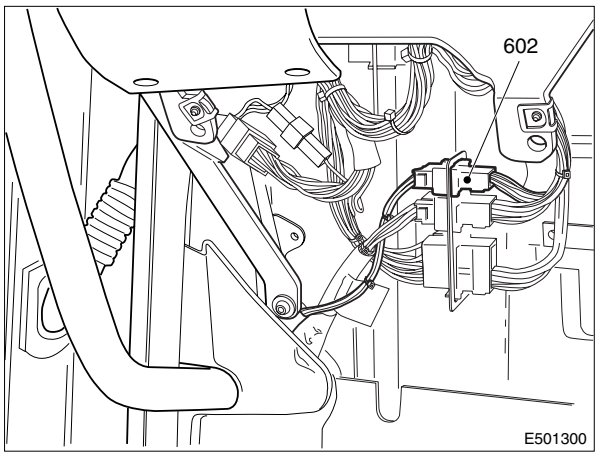



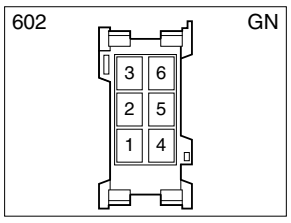



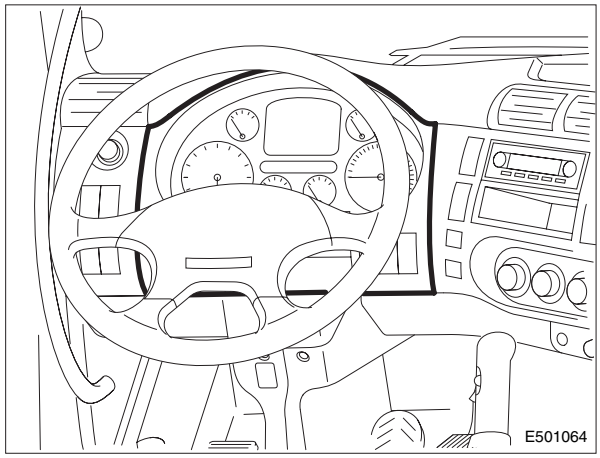

**E501186**

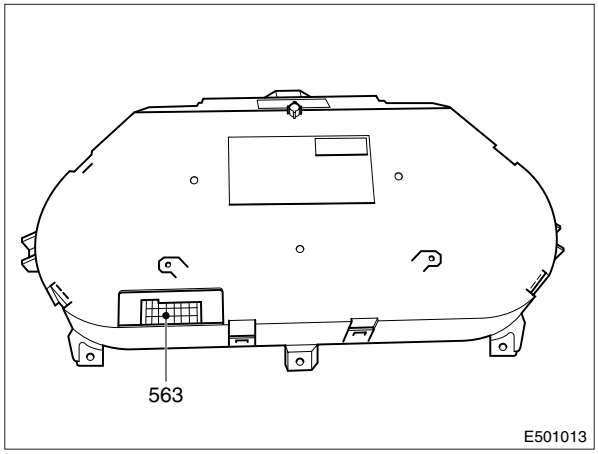


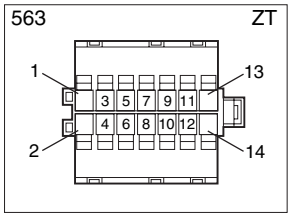



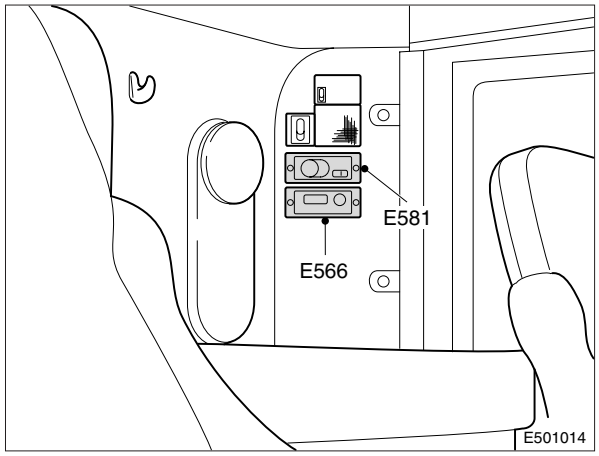

**E501431**

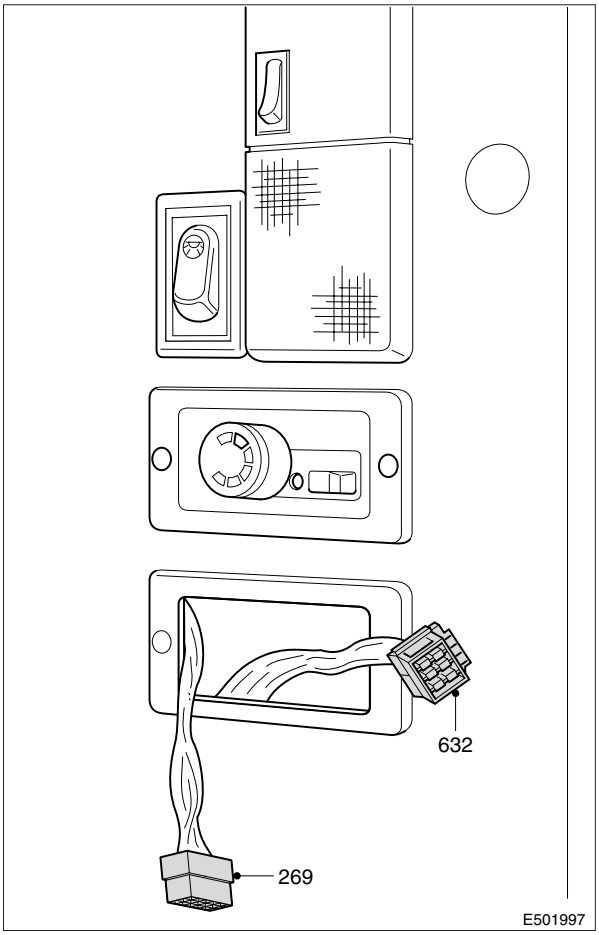


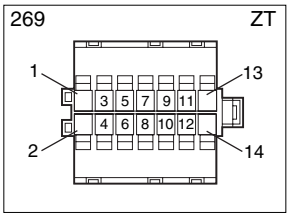



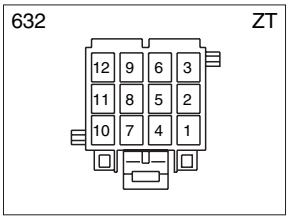




**E501181**



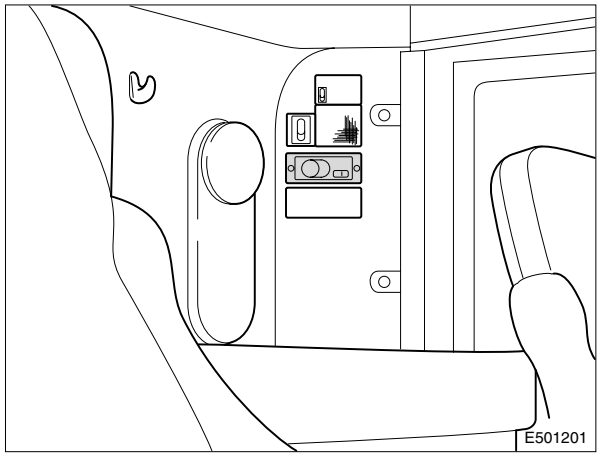



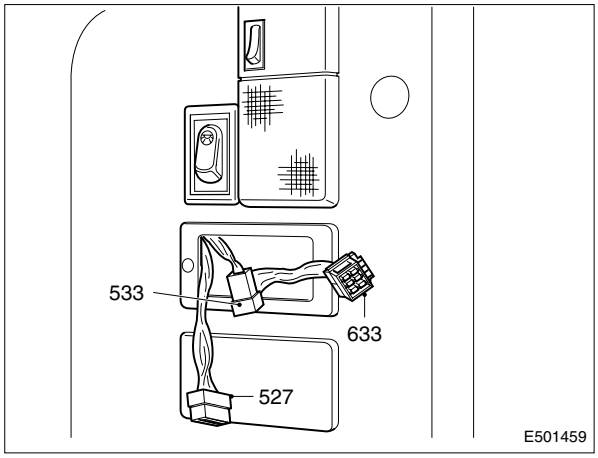



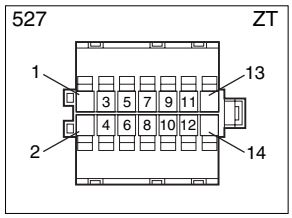



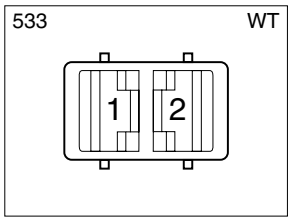

**E501996**

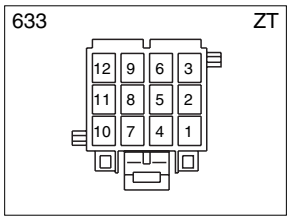
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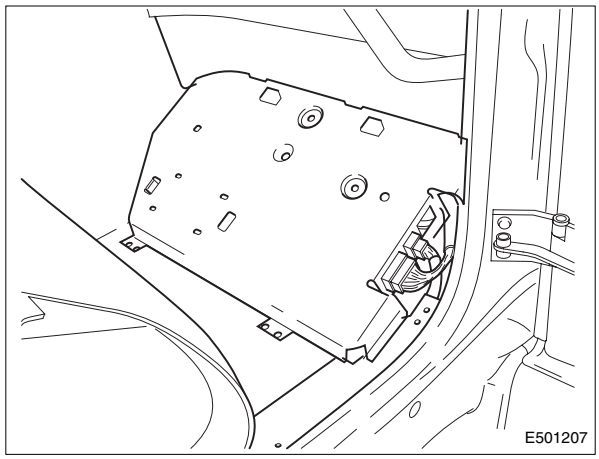



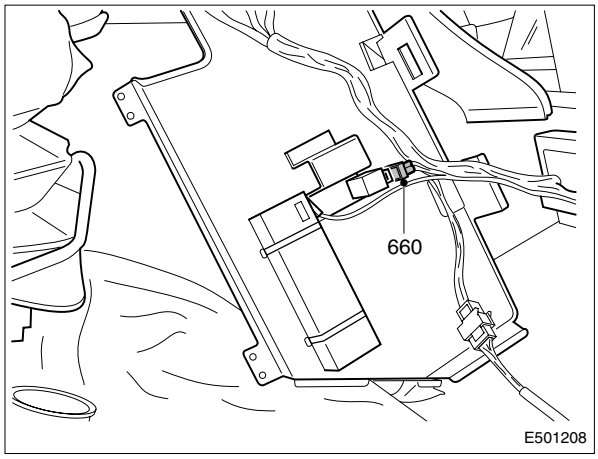



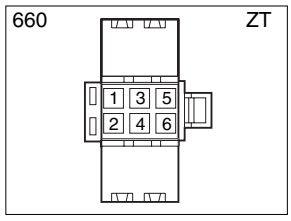




**E501460**

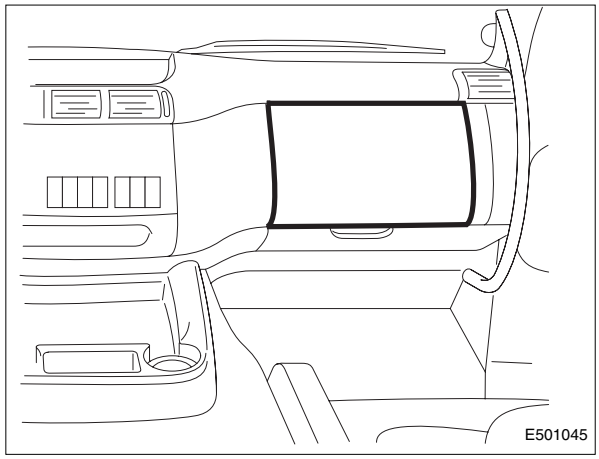


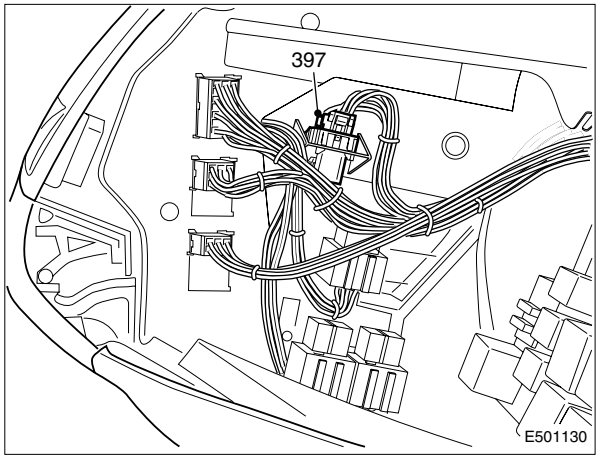



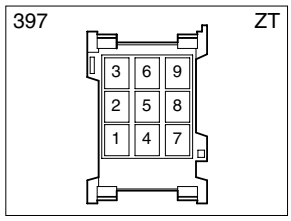




**E501209**

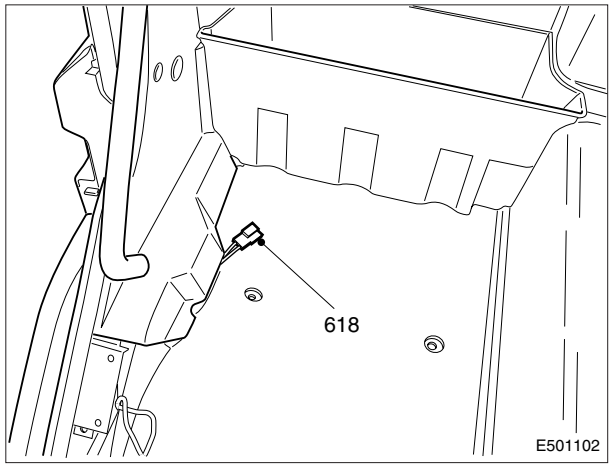
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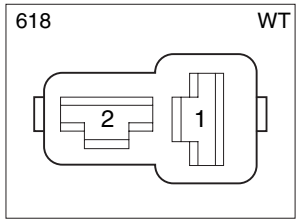


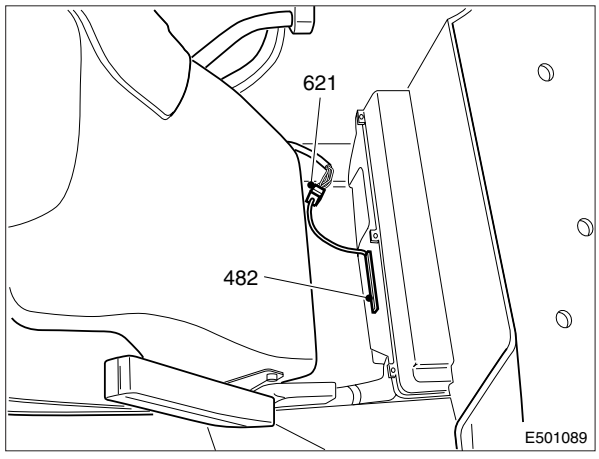



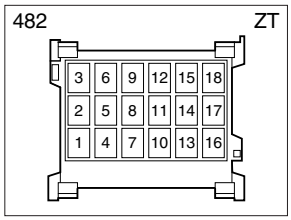

**E501205**

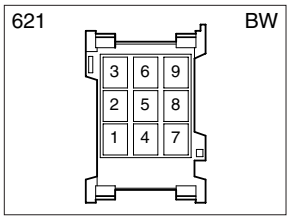



**E501203**

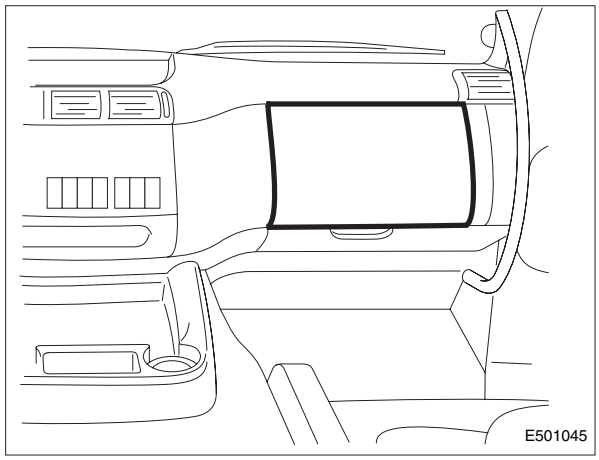


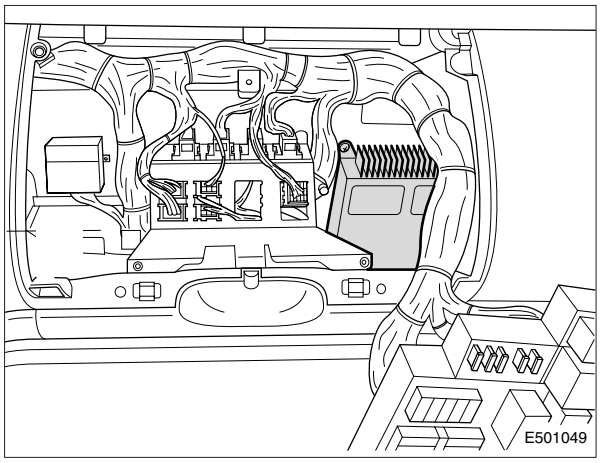



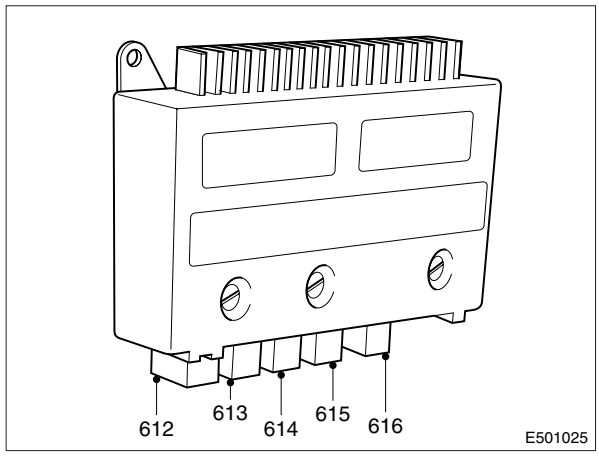



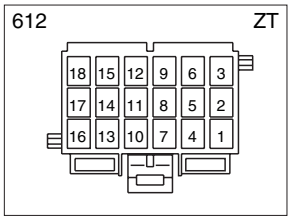

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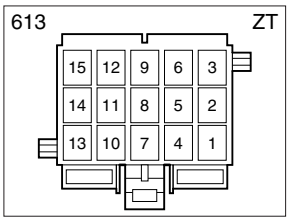
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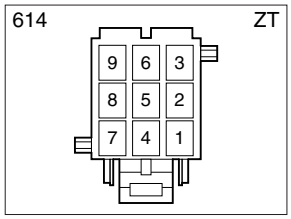


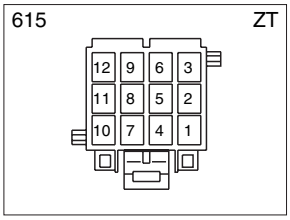



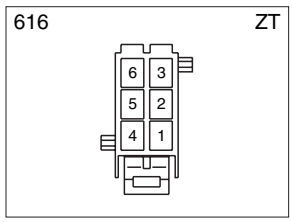



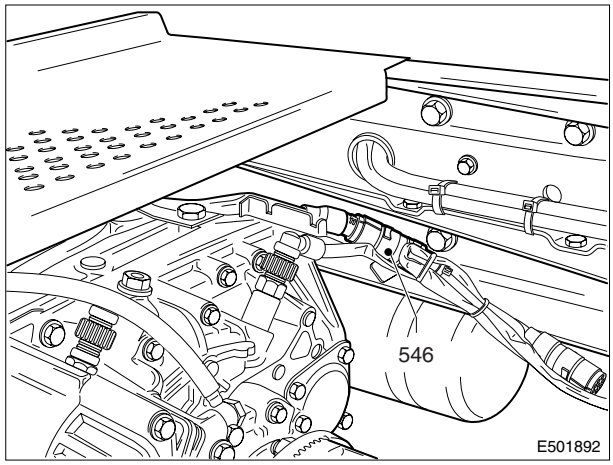



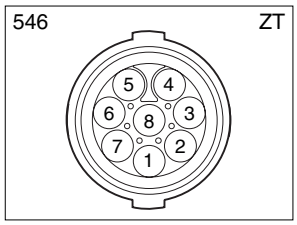



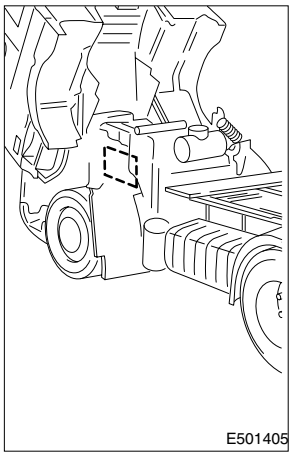



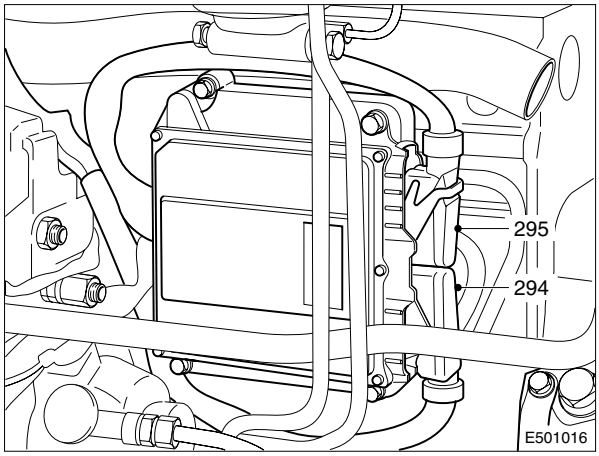

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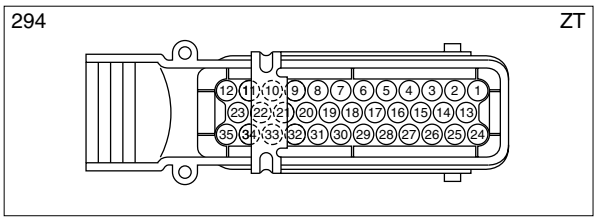


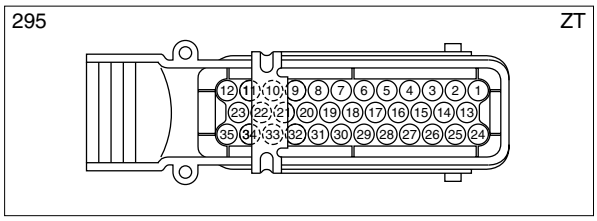

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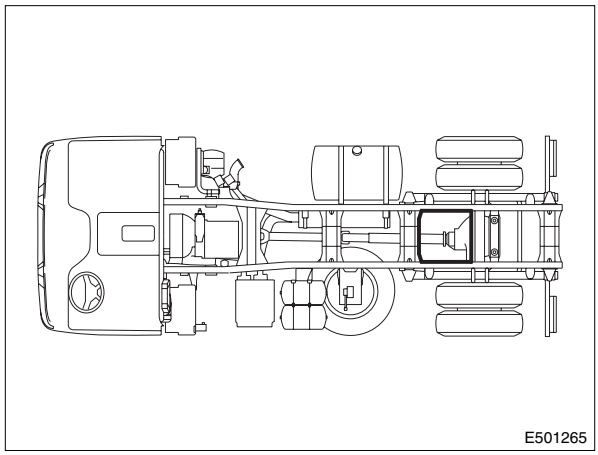


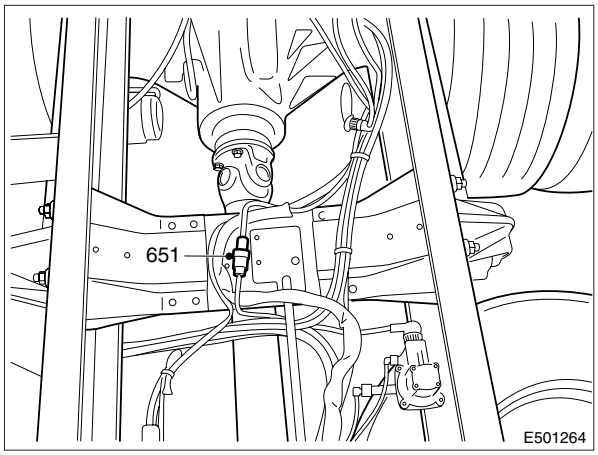



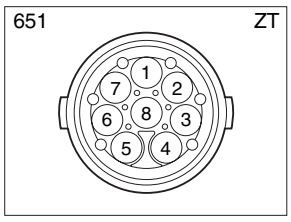




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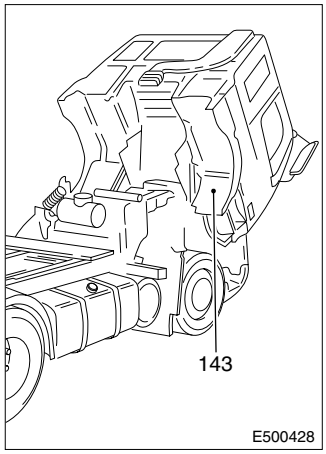


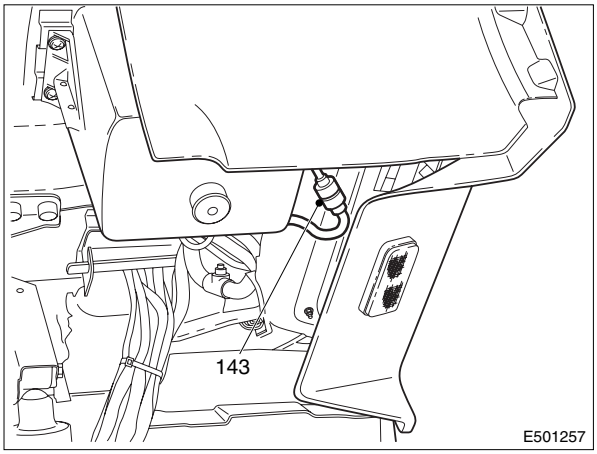



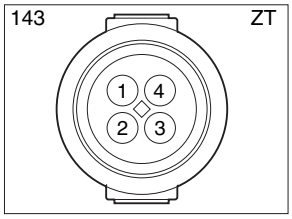




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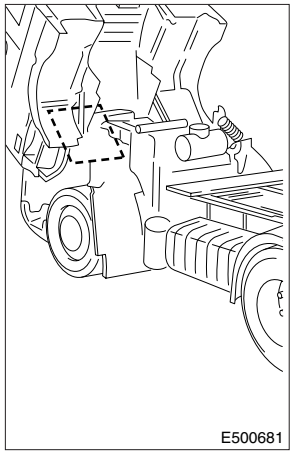
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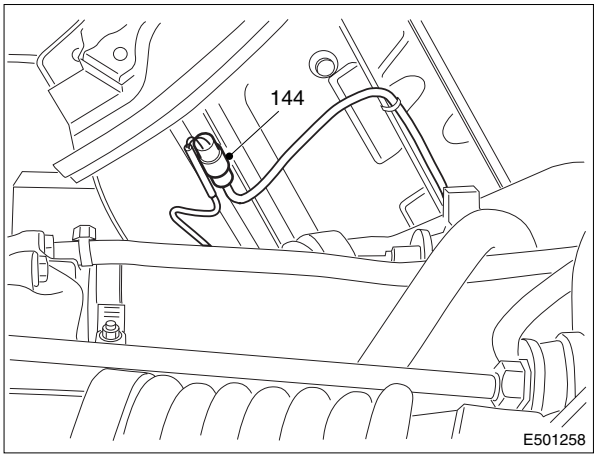


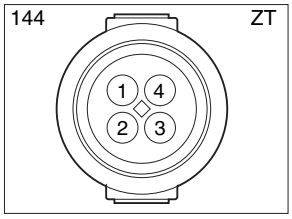




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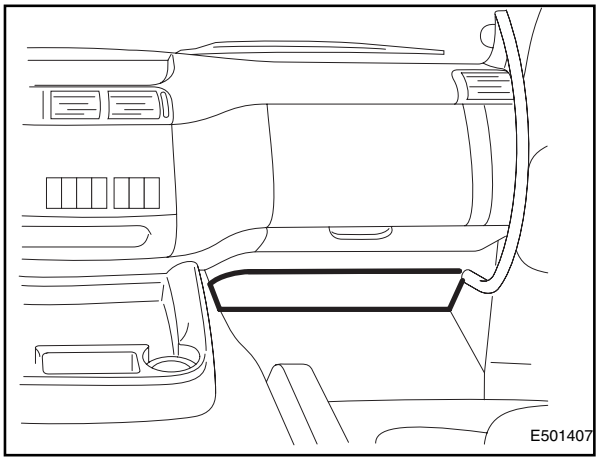


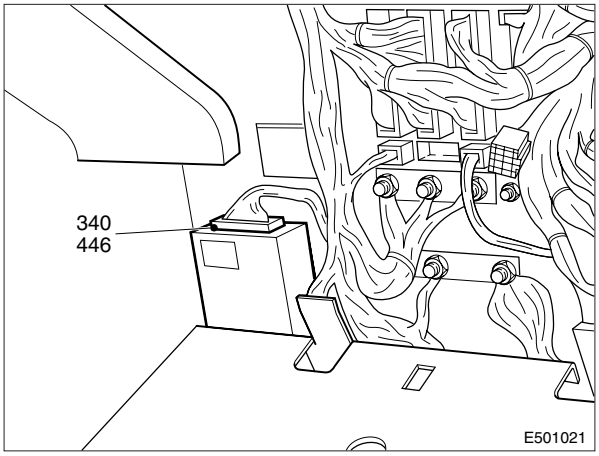



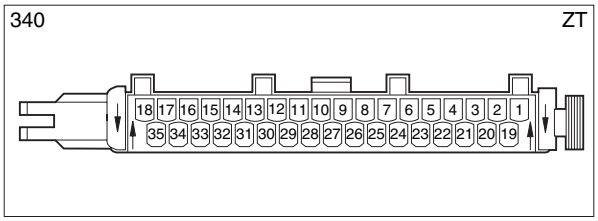



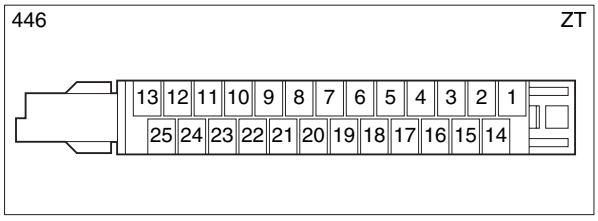

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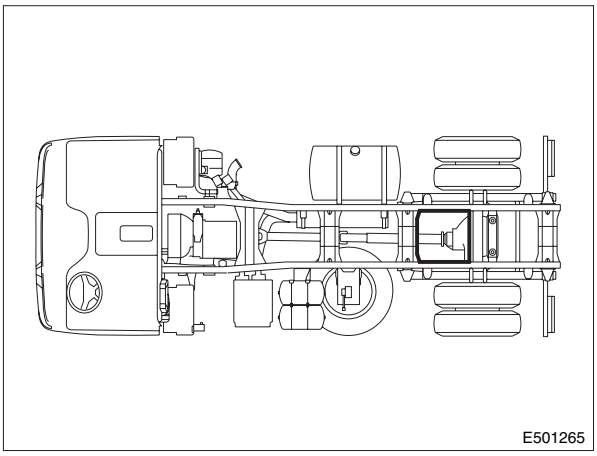


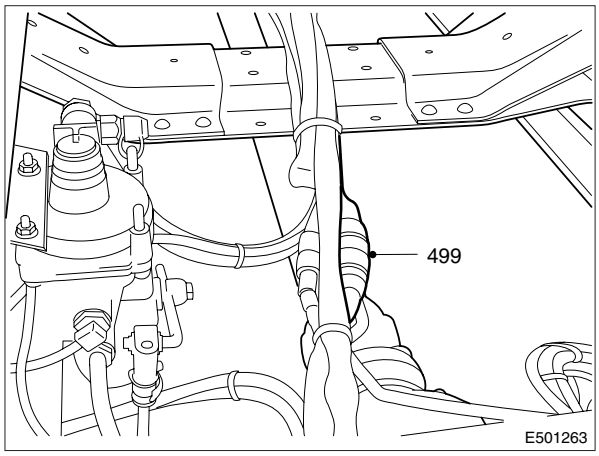



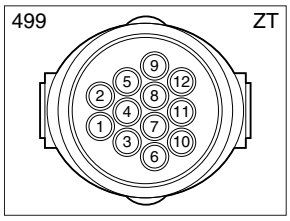




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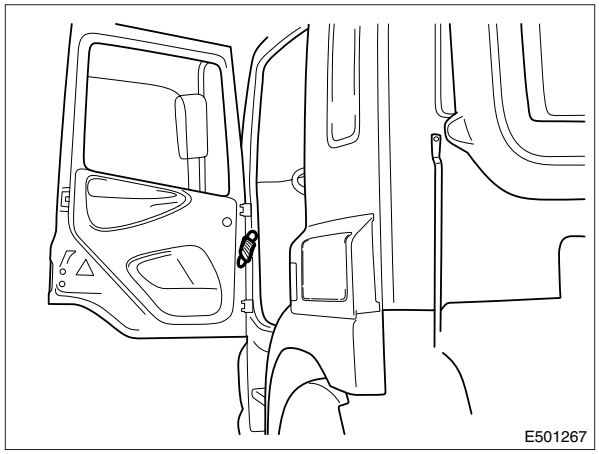


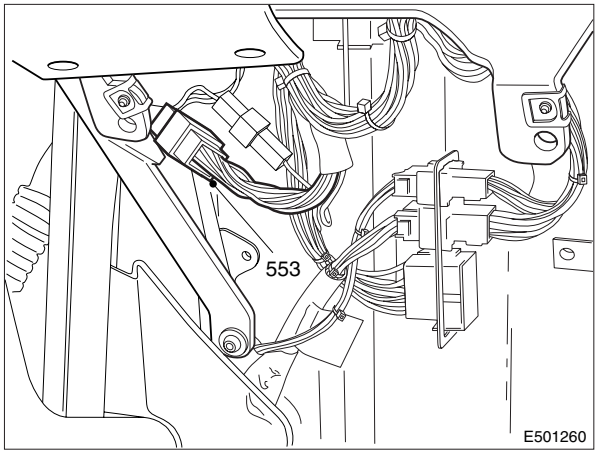



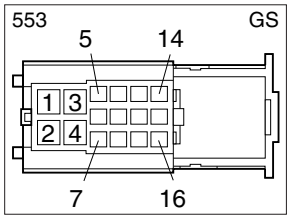




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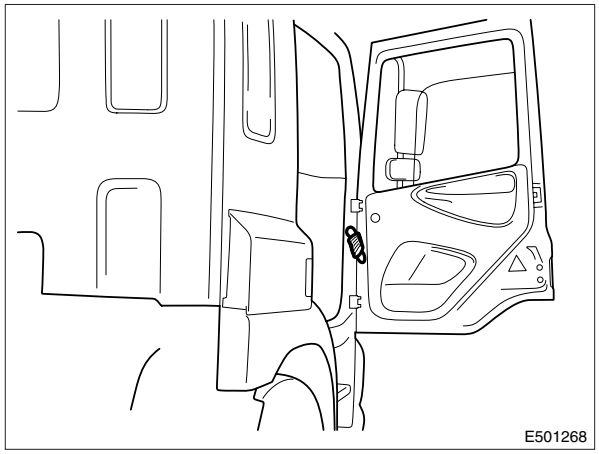
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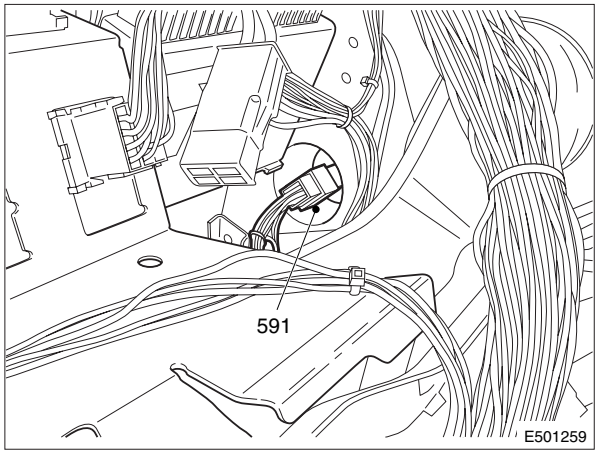


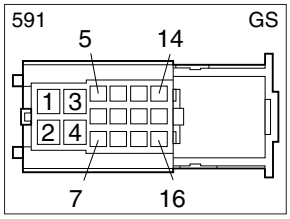




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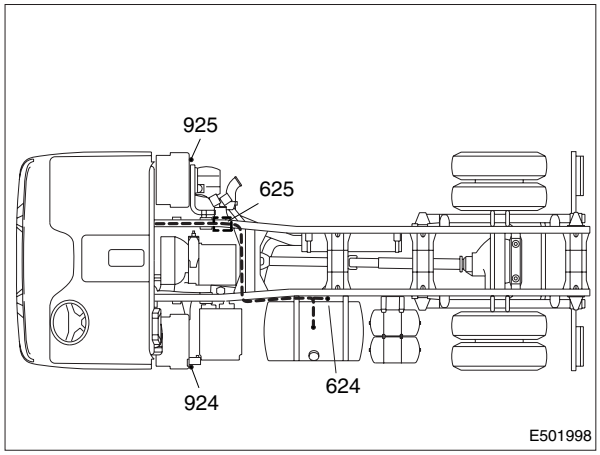


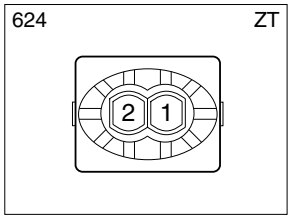



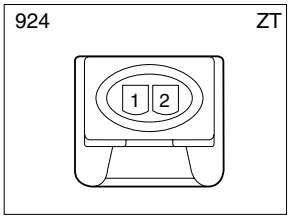



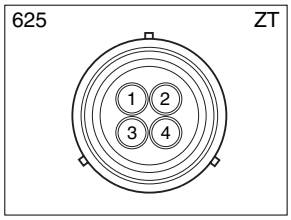

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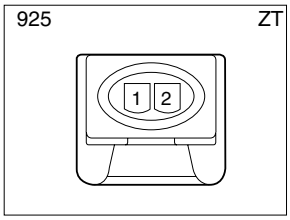
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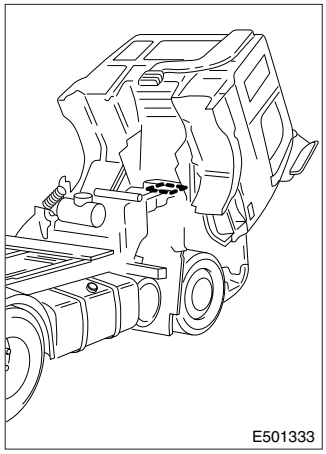



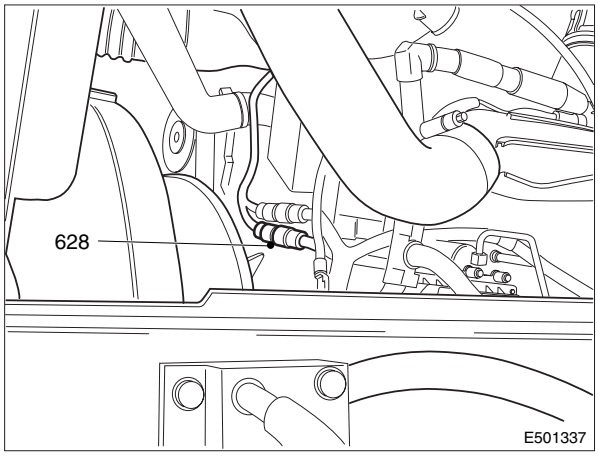



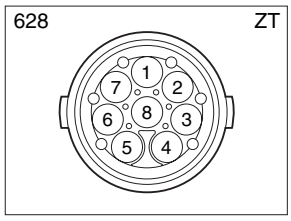




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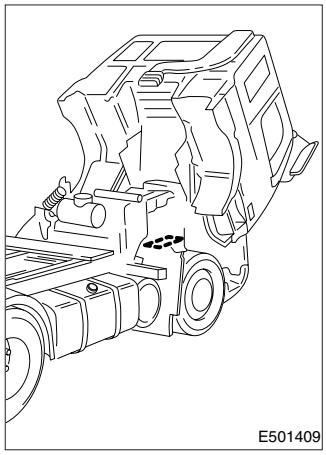


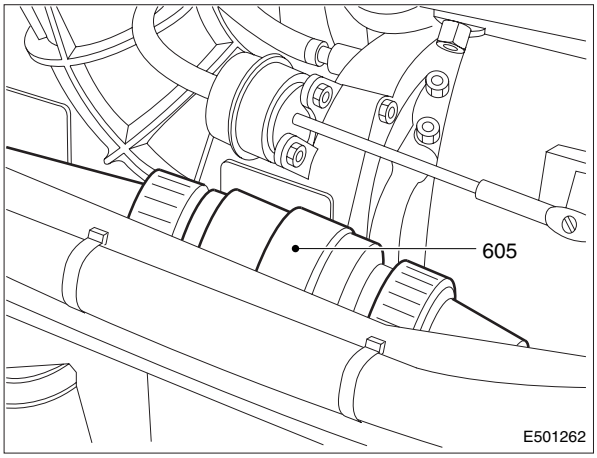



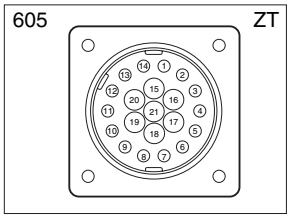




**E501338**

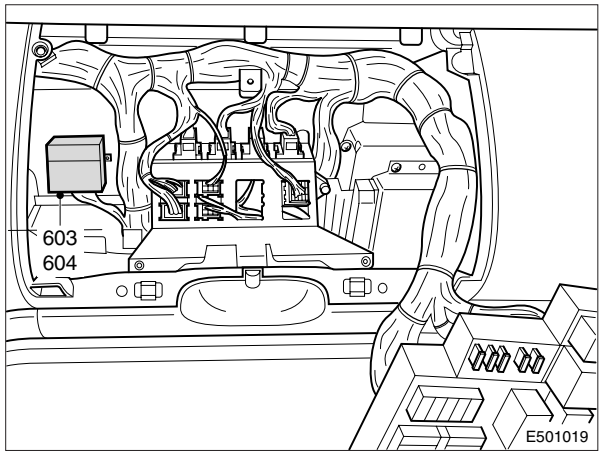
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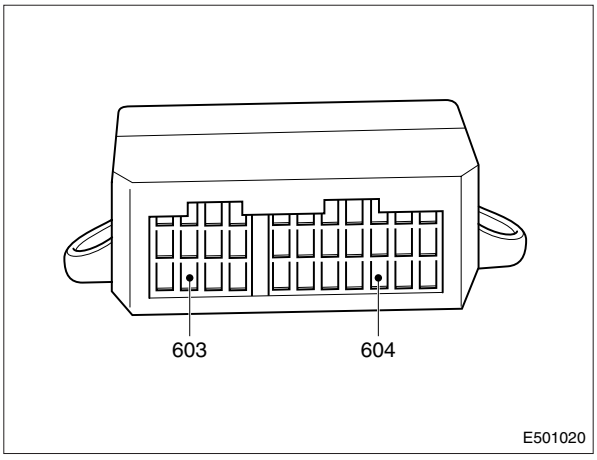


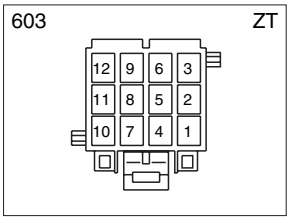



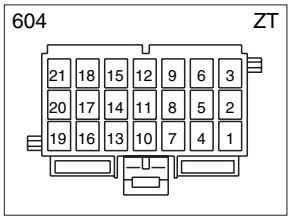




**E501430**



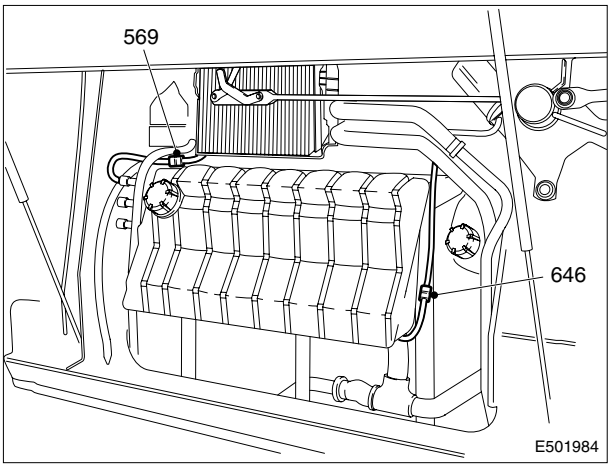



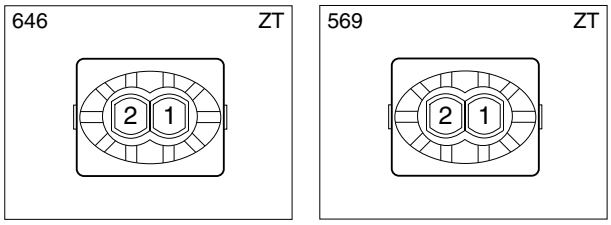



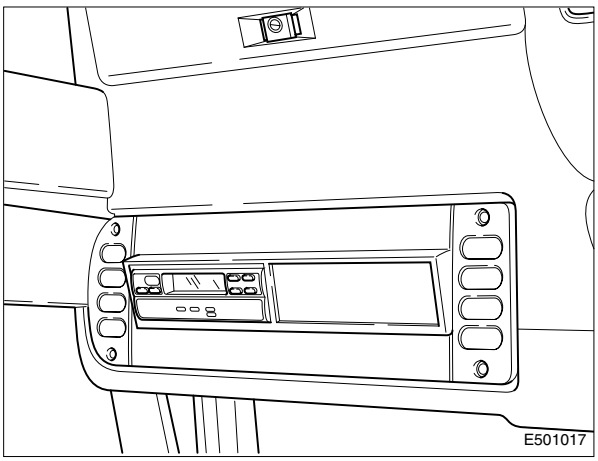

**E501192**

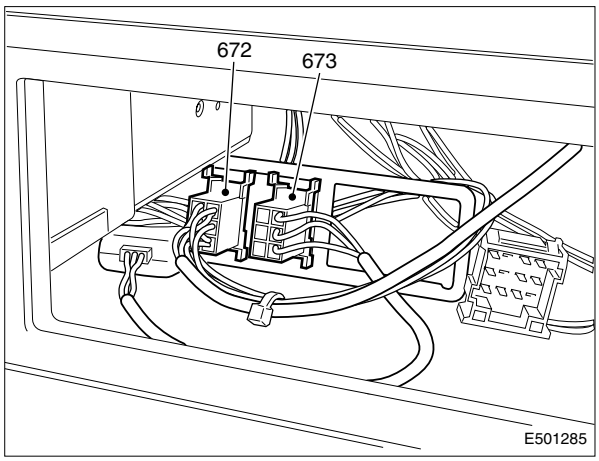
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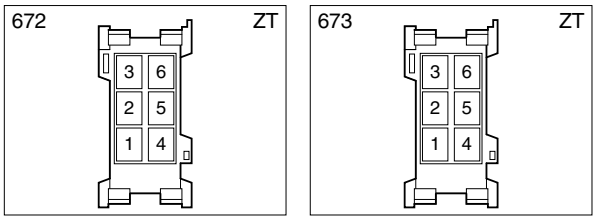



**E501985**

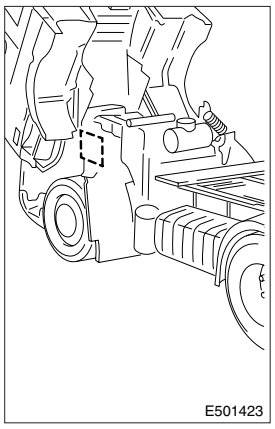


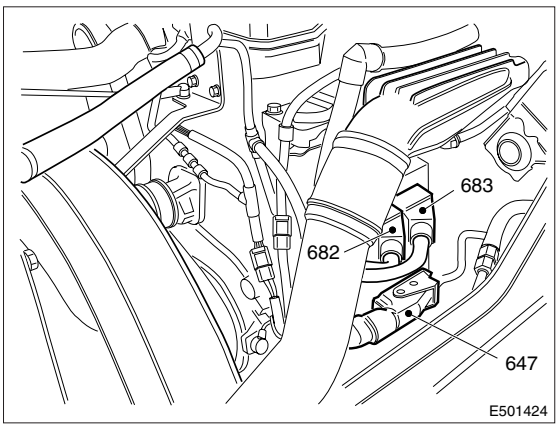



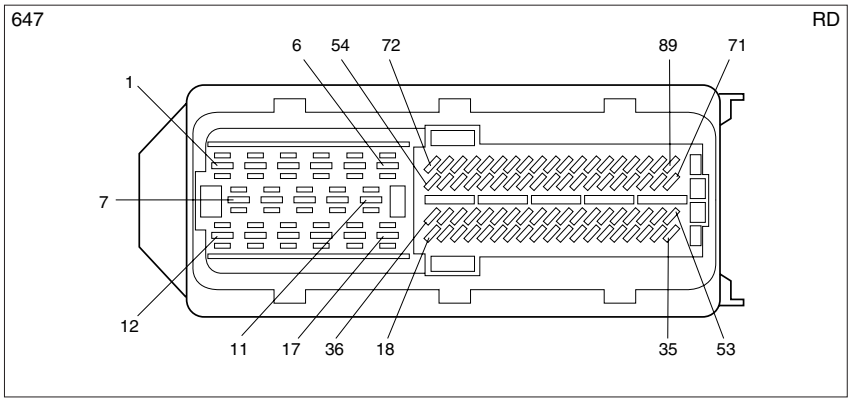



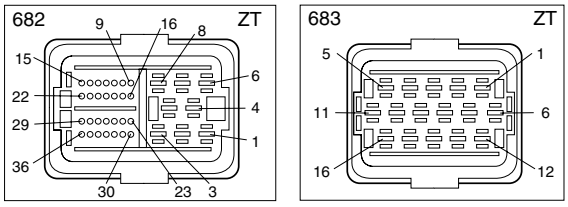

**E501184**

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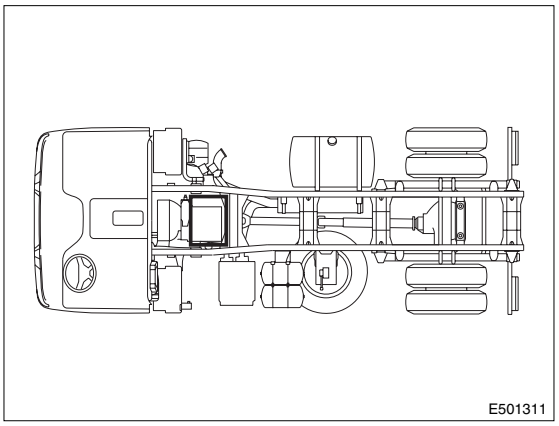


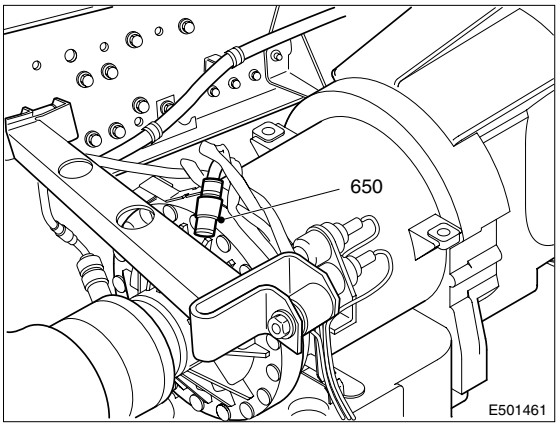



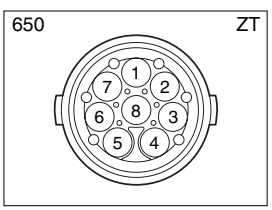



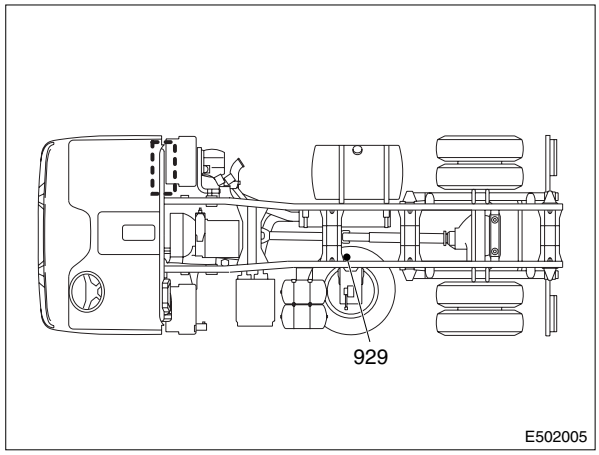

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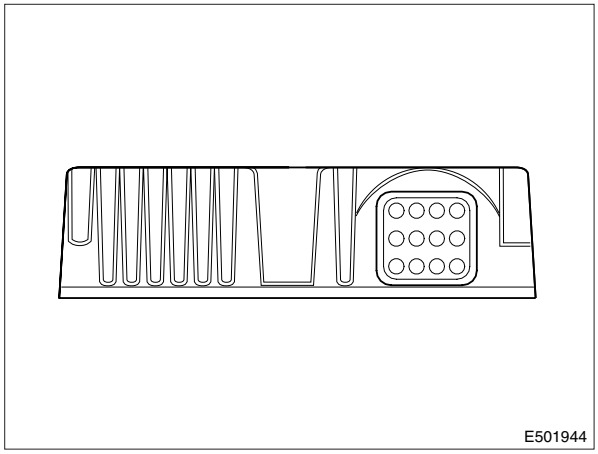


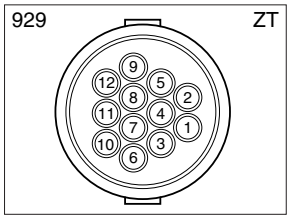



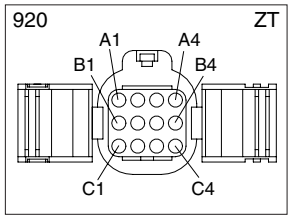




**E501462**

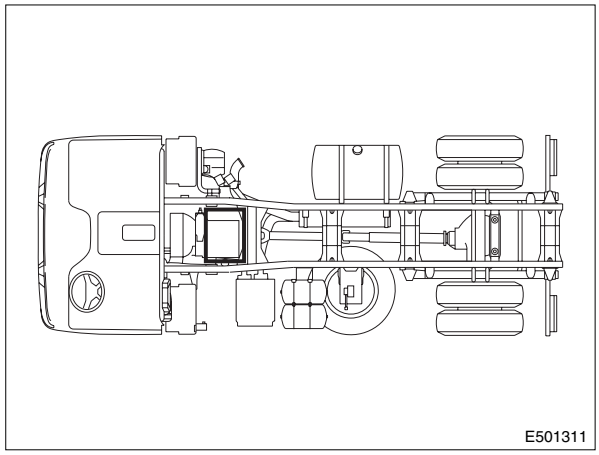


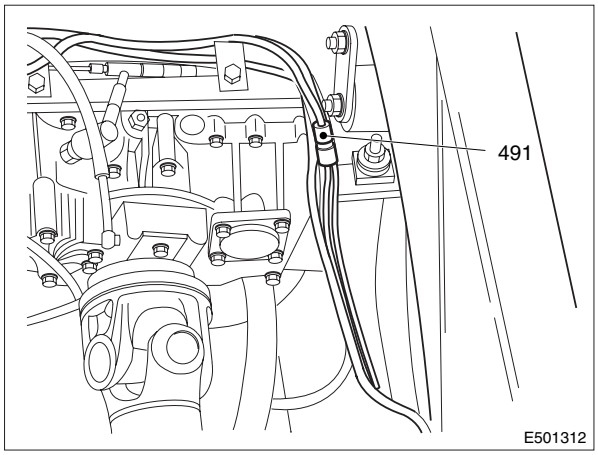



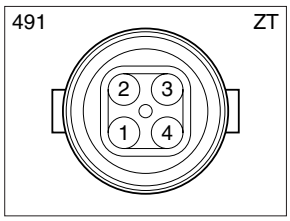




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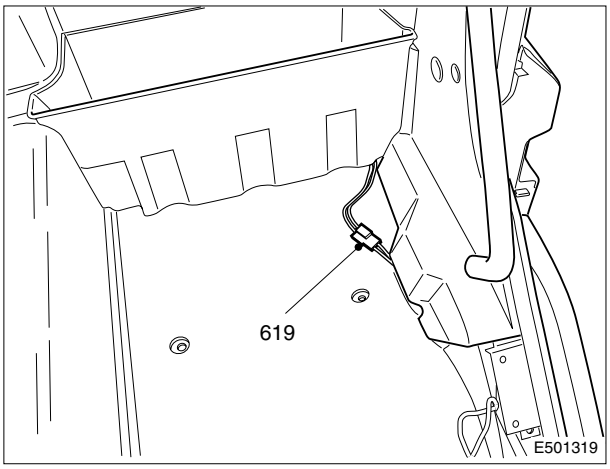


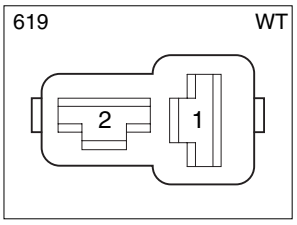



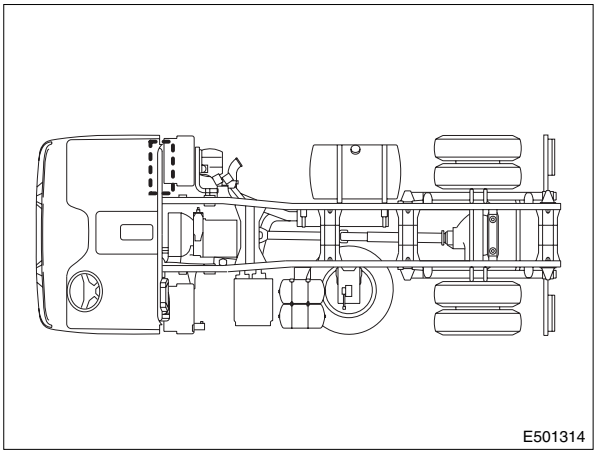

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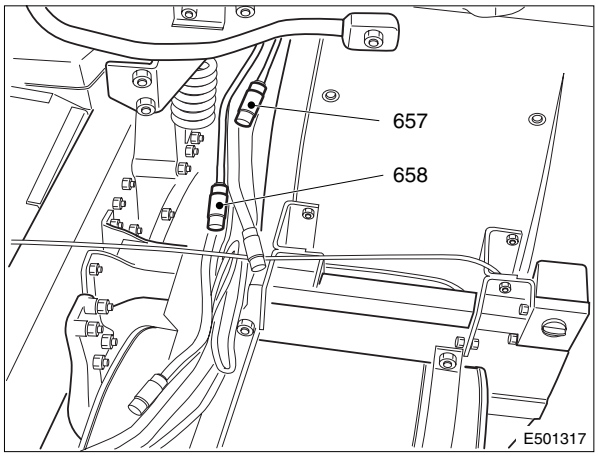
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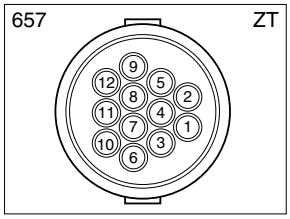


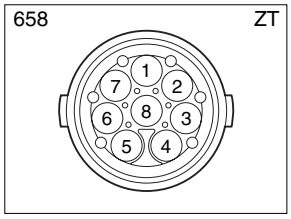




**E501320**



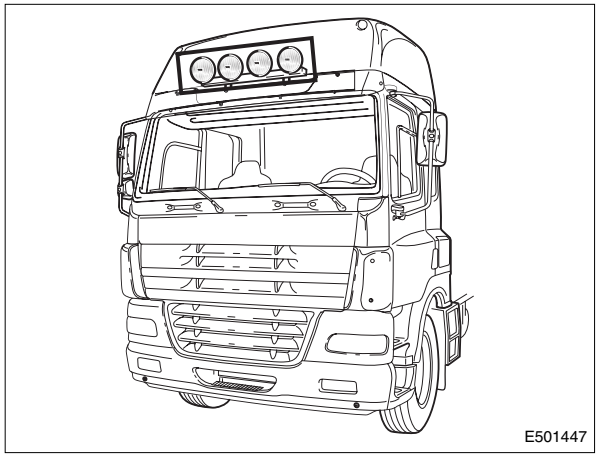



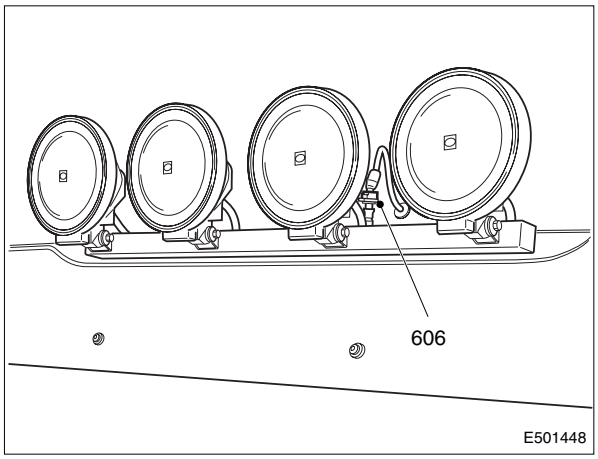



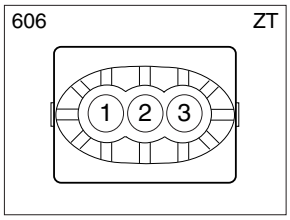




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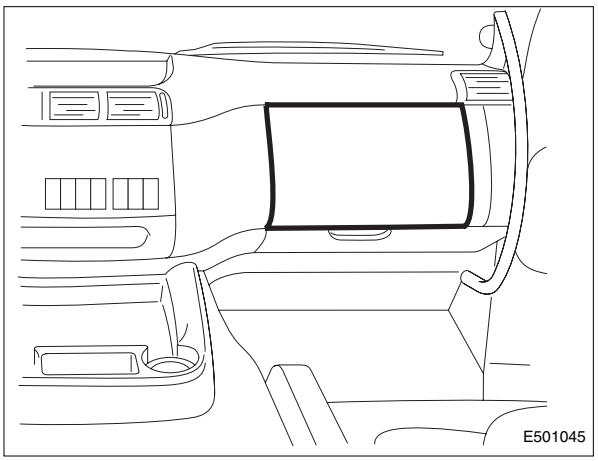
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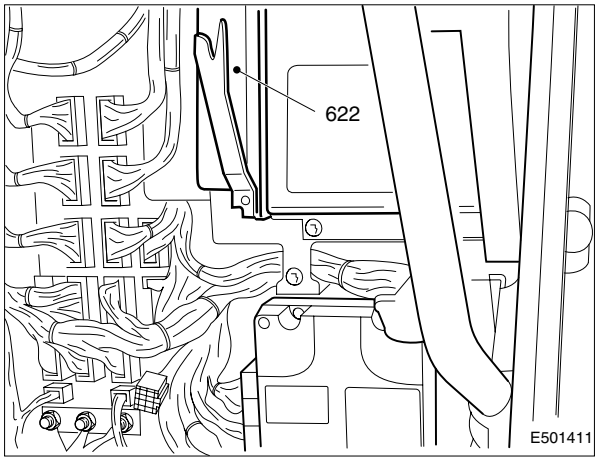


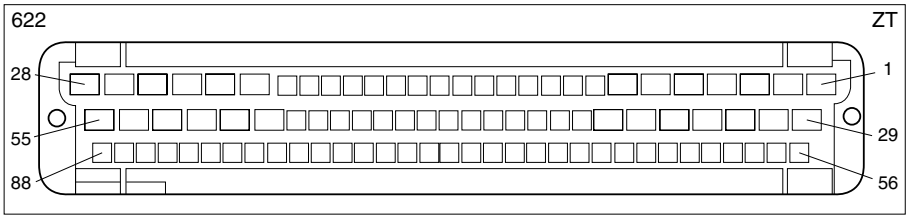



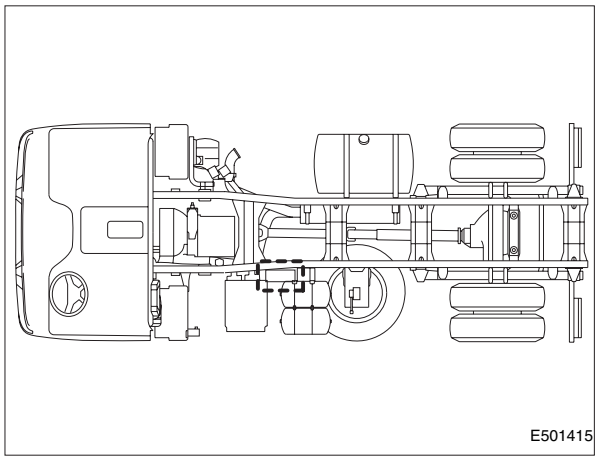

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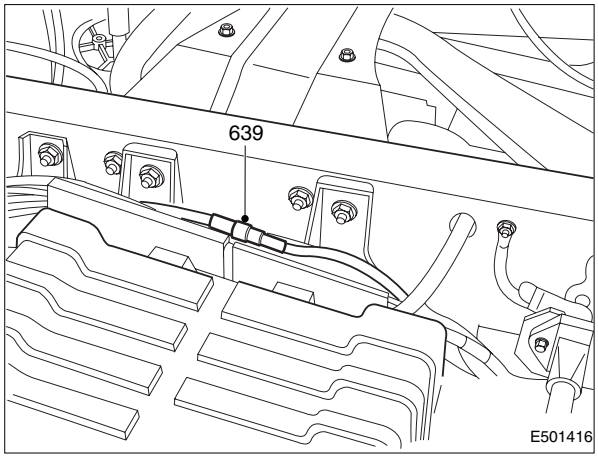


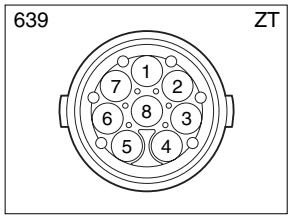



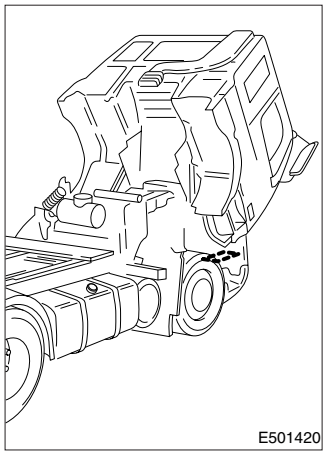

**E501412**

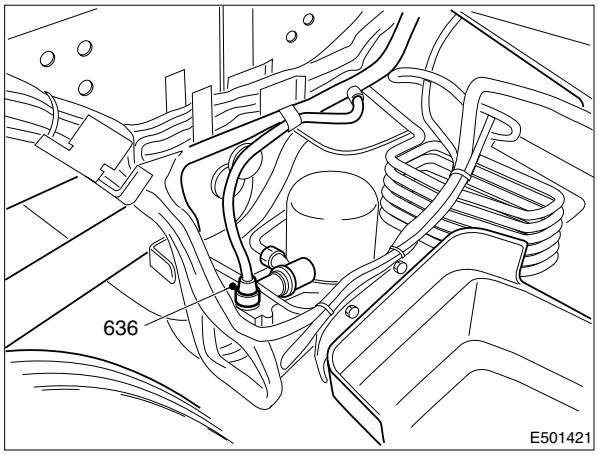


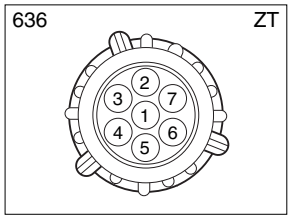




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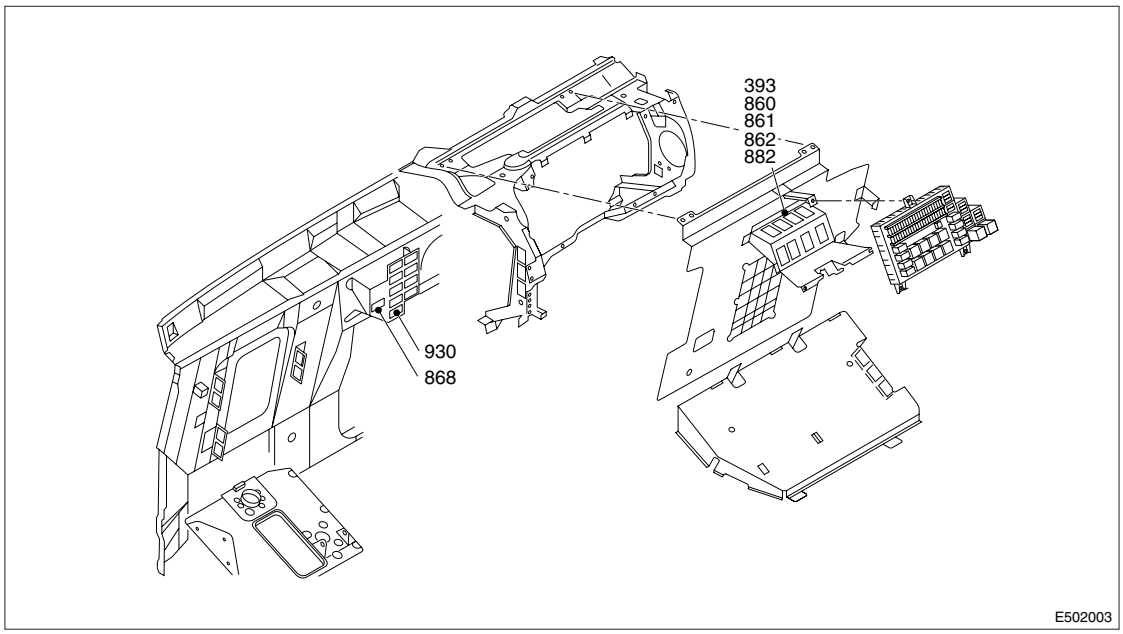


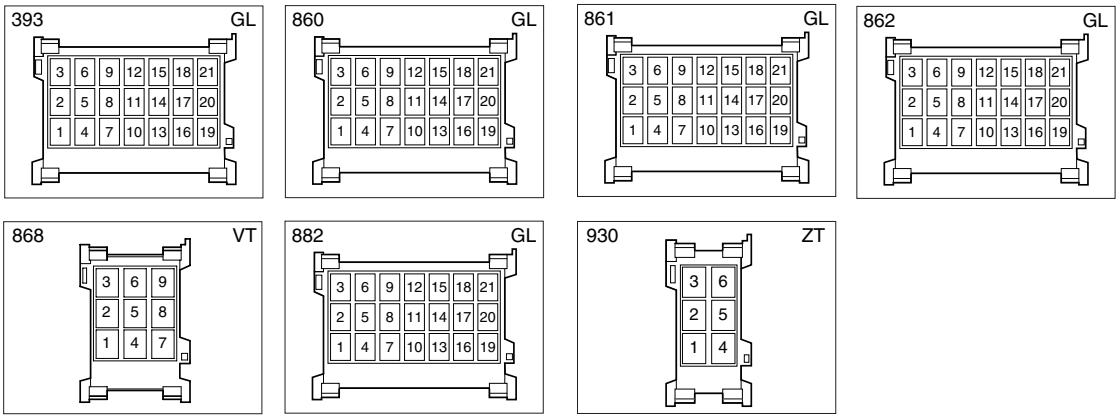



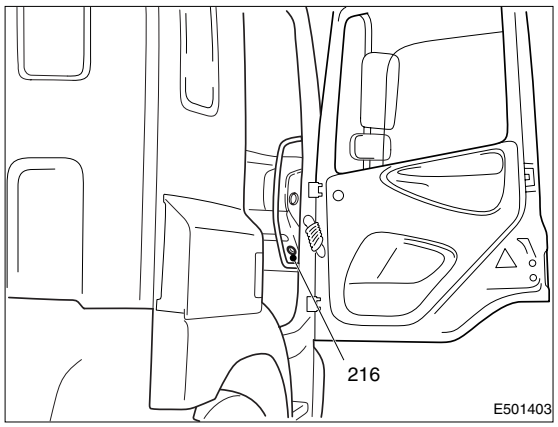

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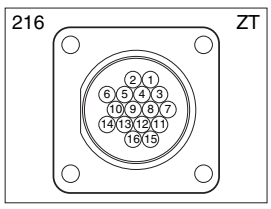
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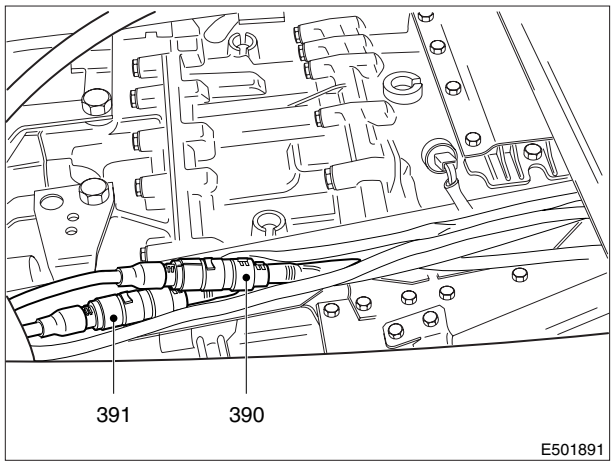

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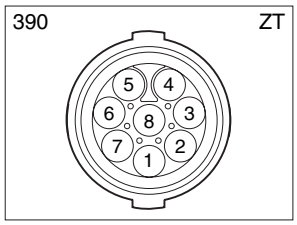


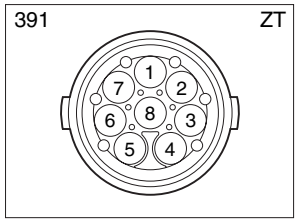




**E501404**

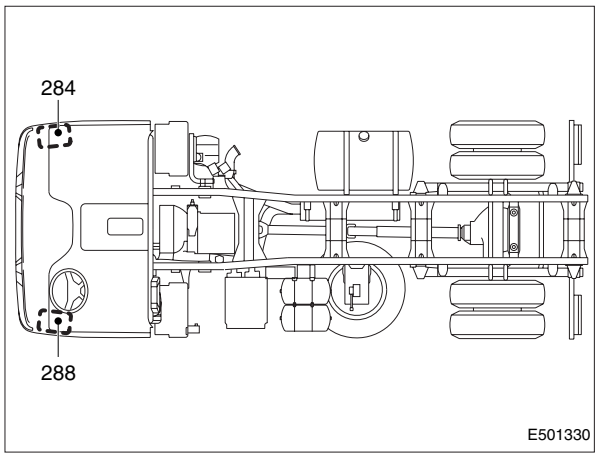
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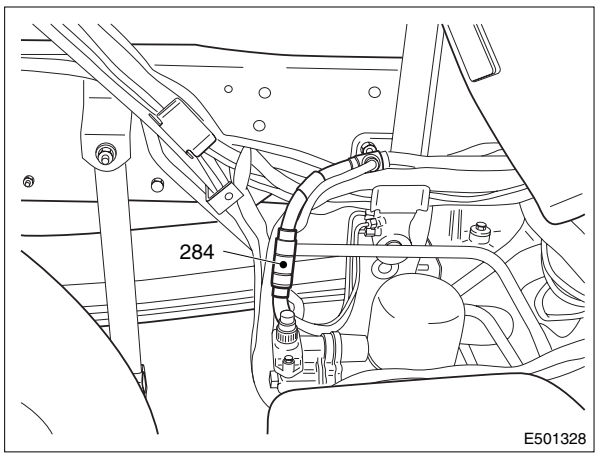


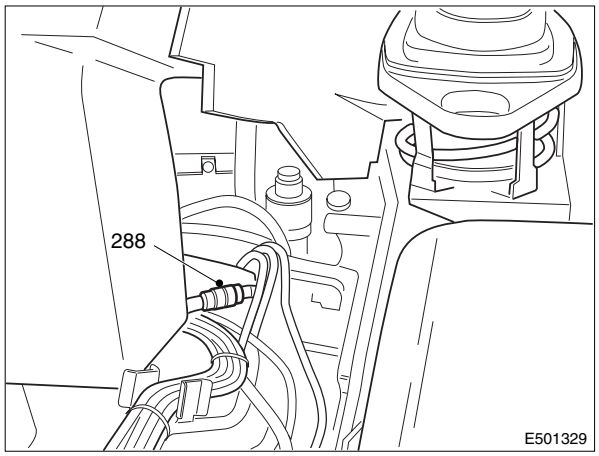



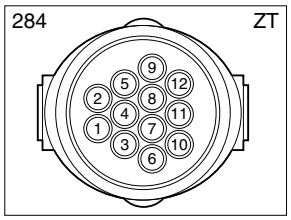



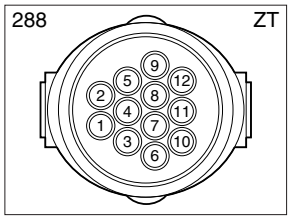

**E501901**



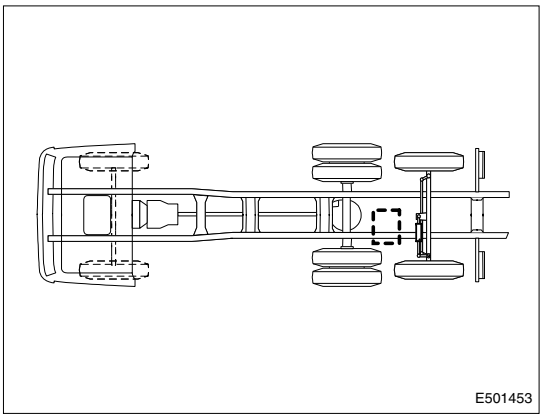



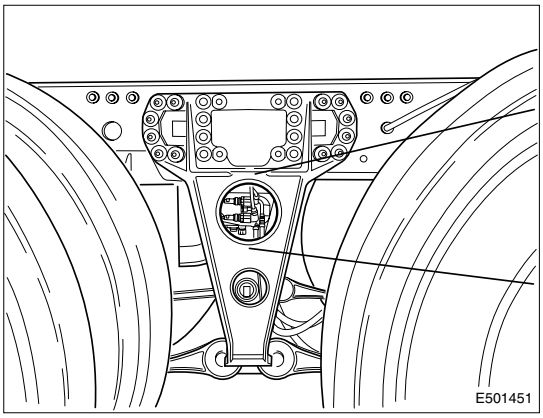



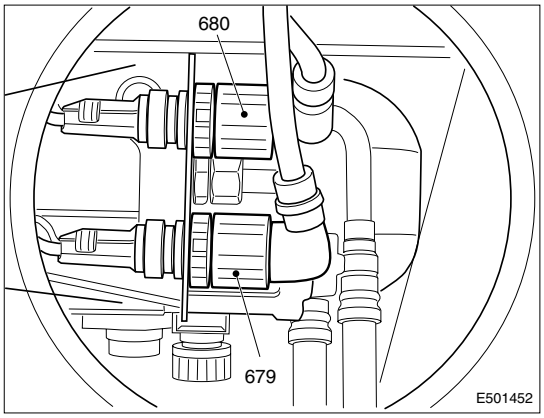



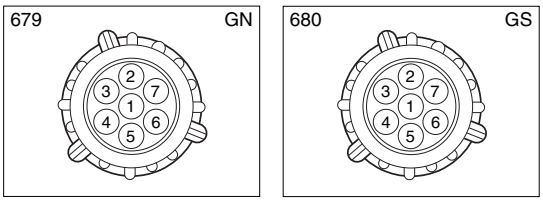

**E501331**

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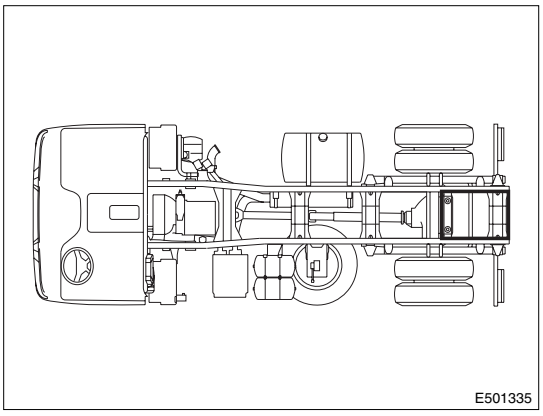


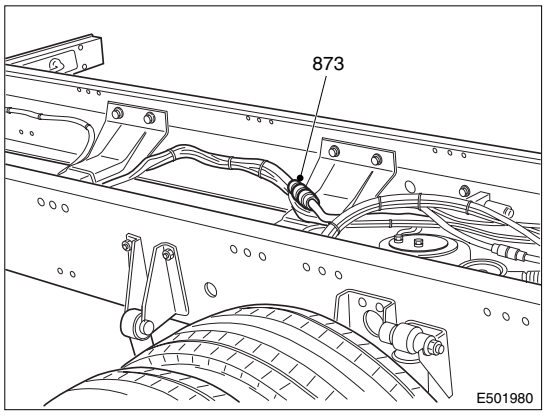



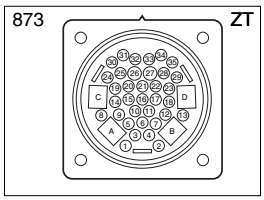




**E501454**

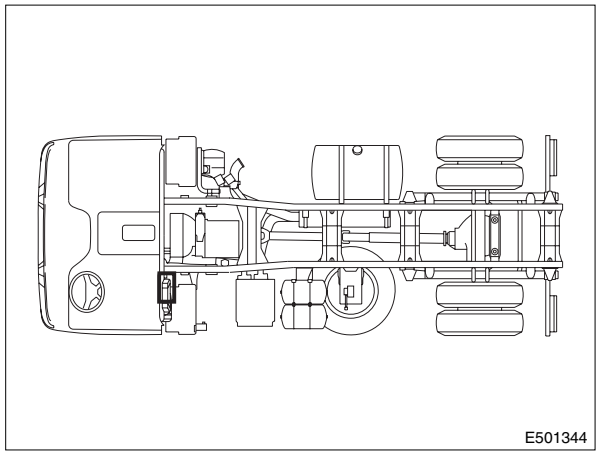


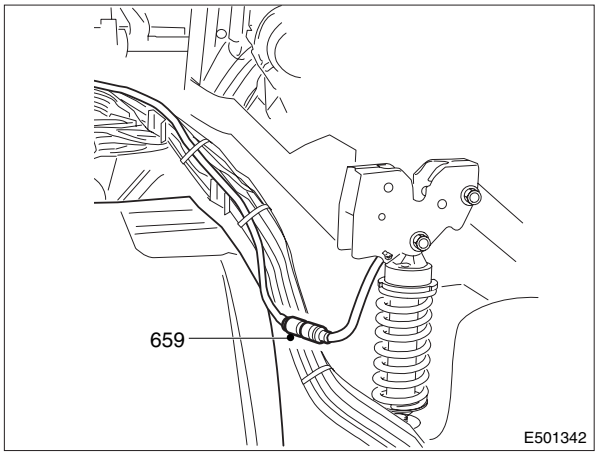



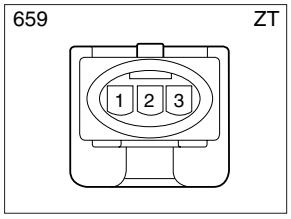




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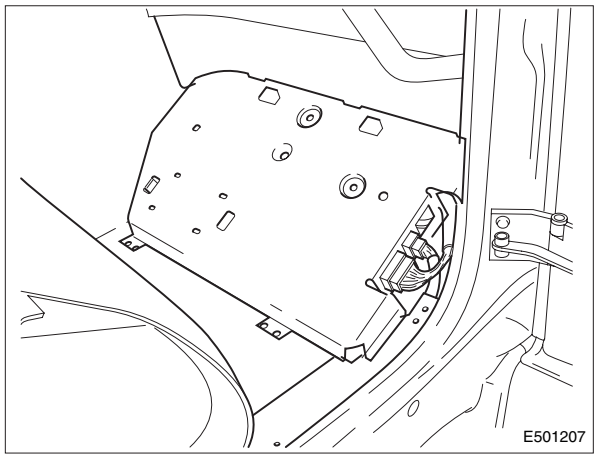
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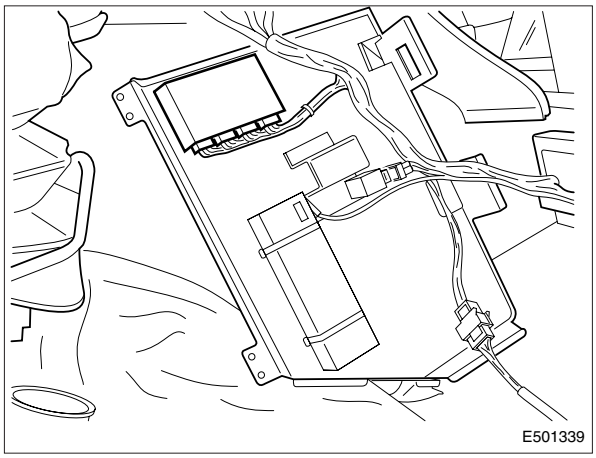


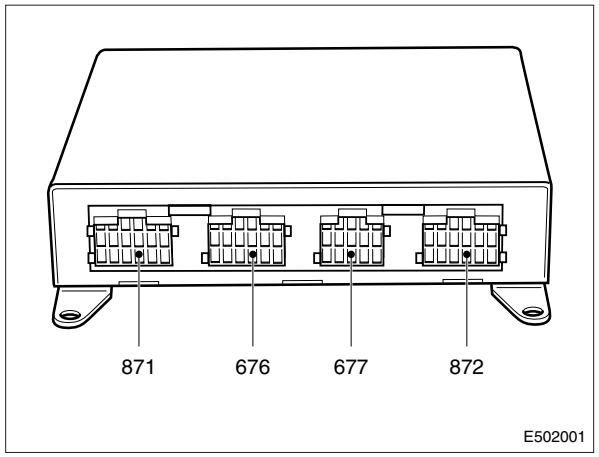



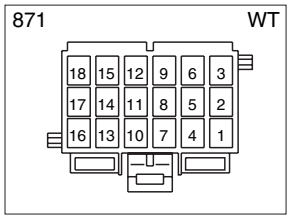



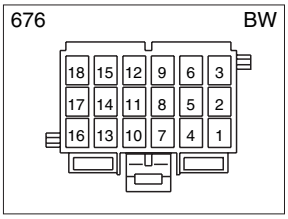

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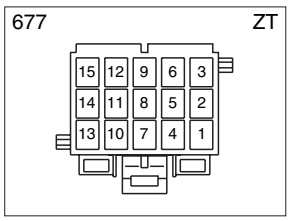


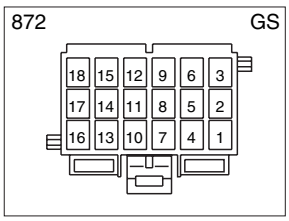



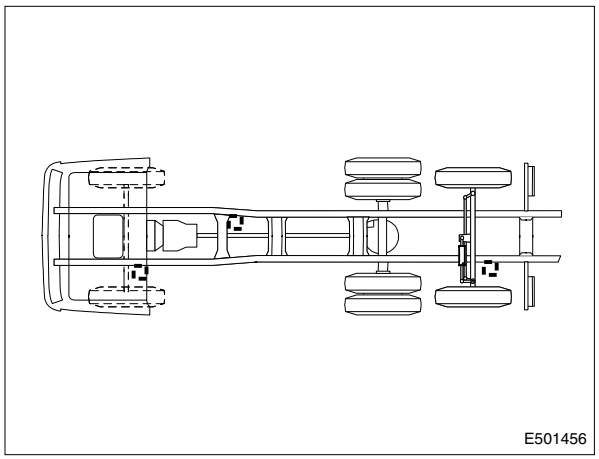



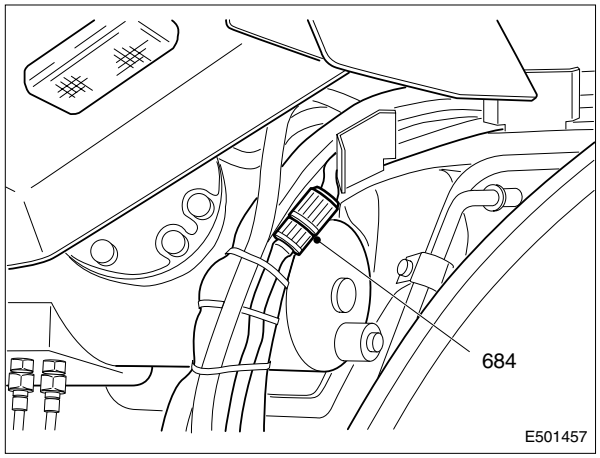



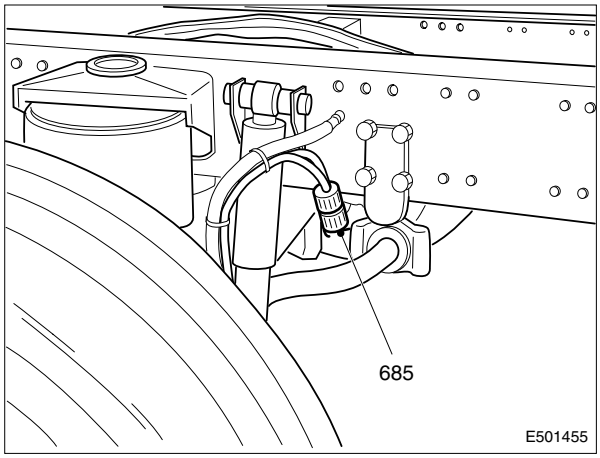



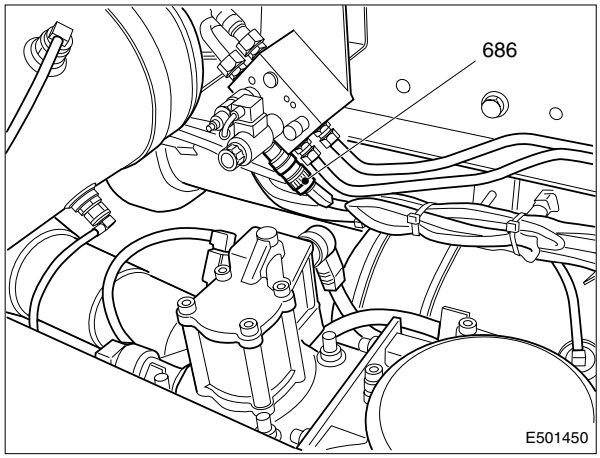



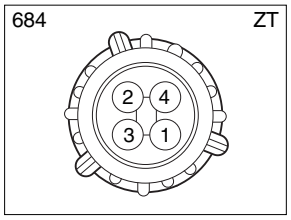

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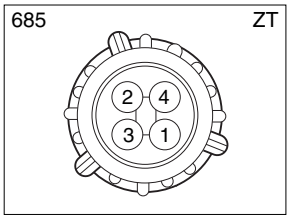

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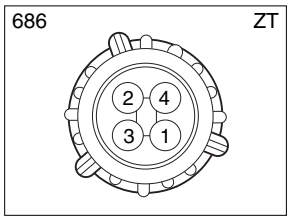

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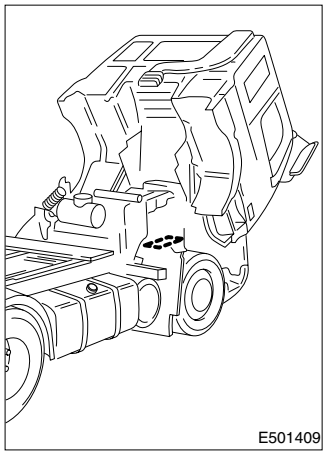

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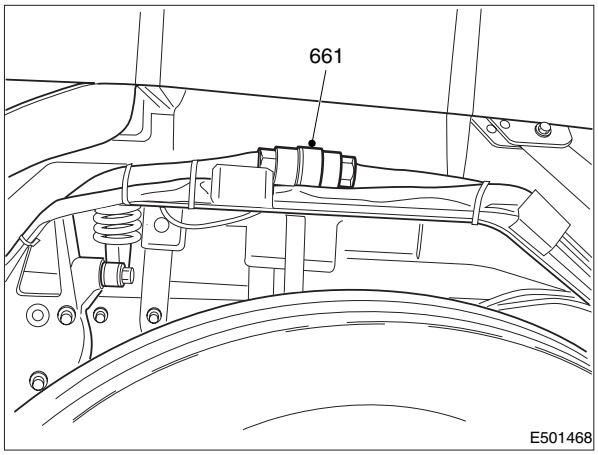

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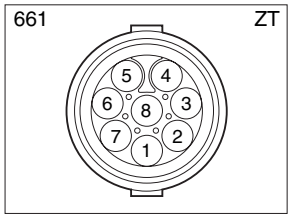

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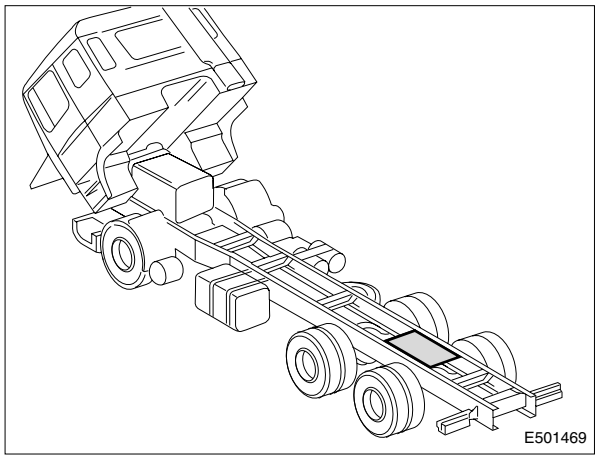
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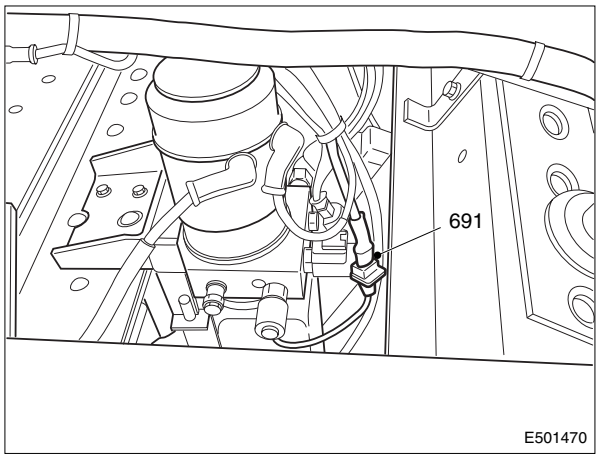


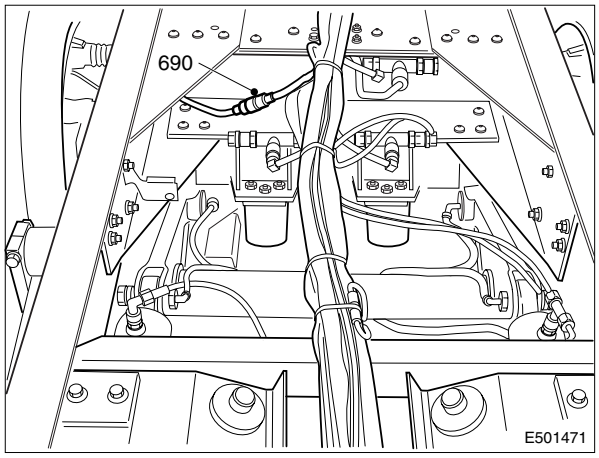



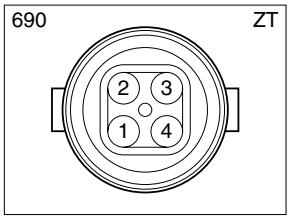



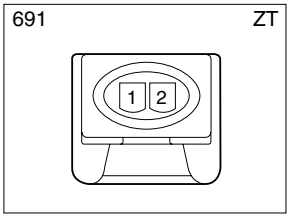

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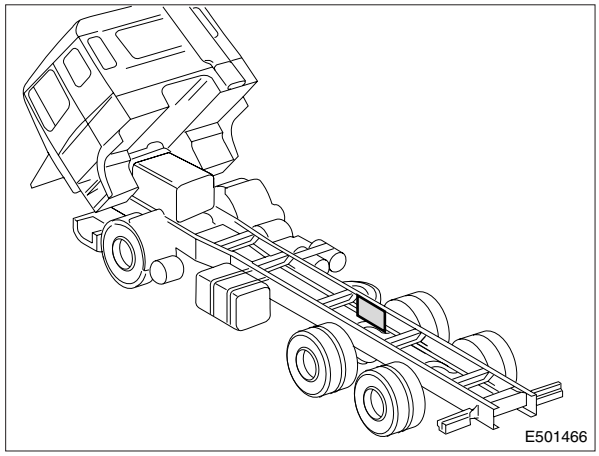



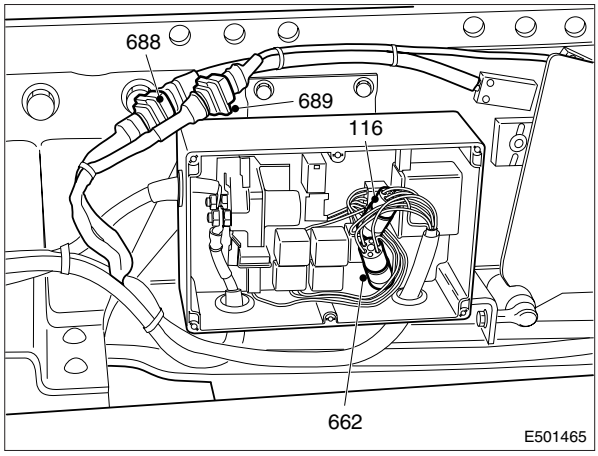



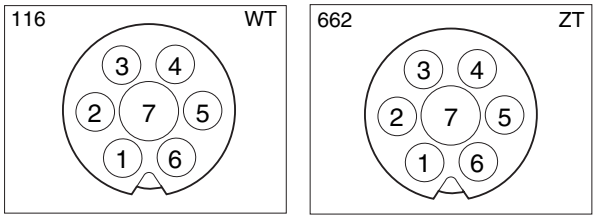




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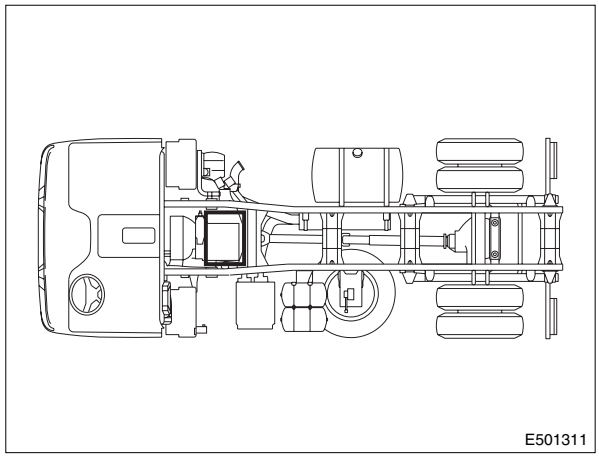
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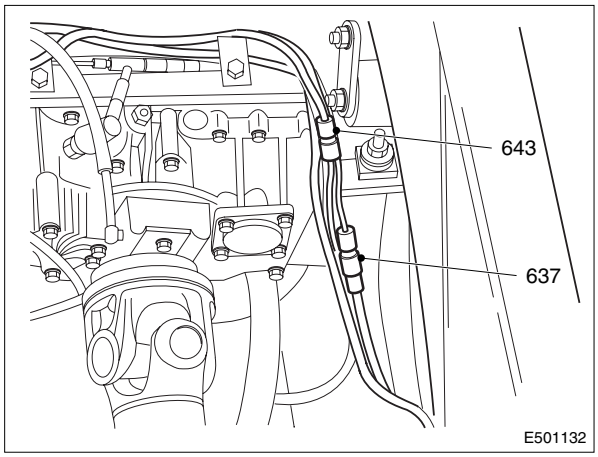


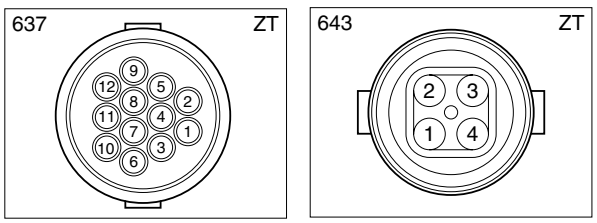




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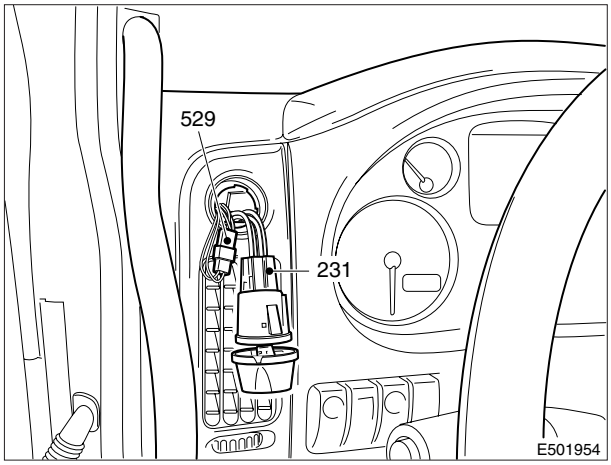


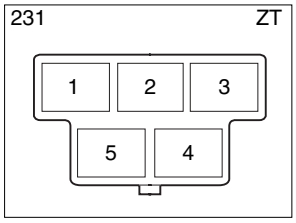



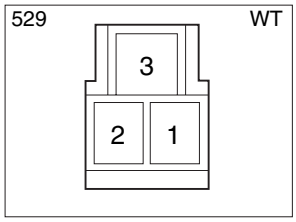




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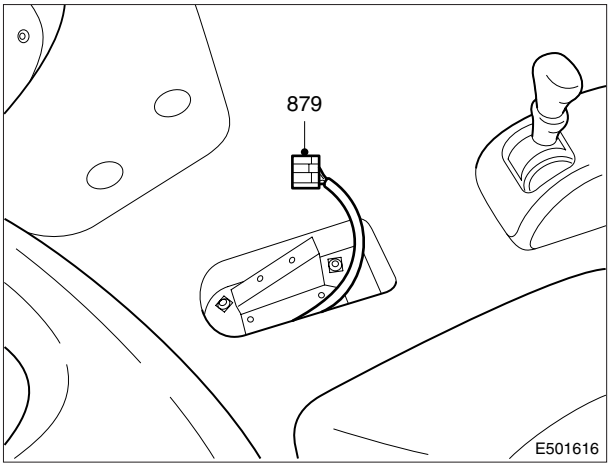
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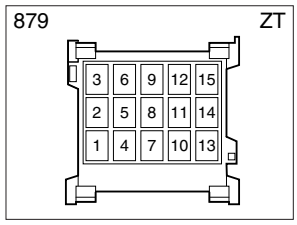


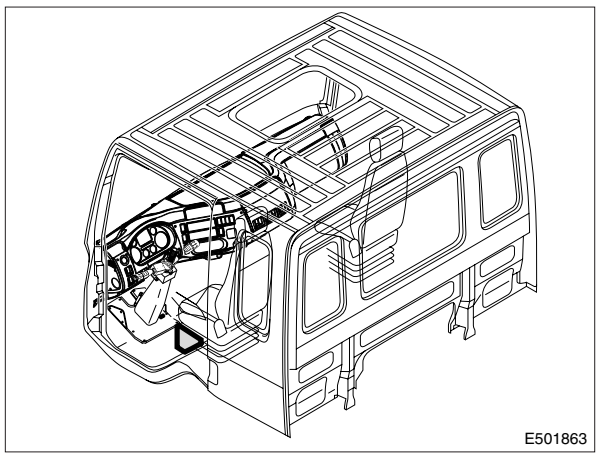



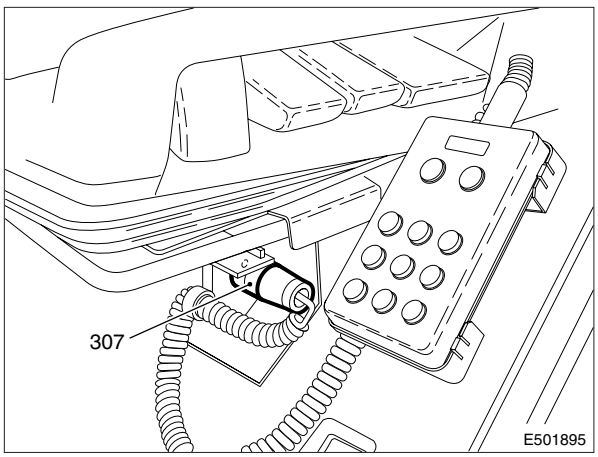

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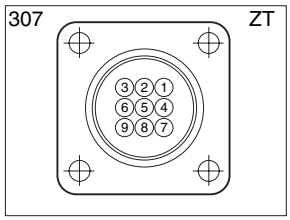



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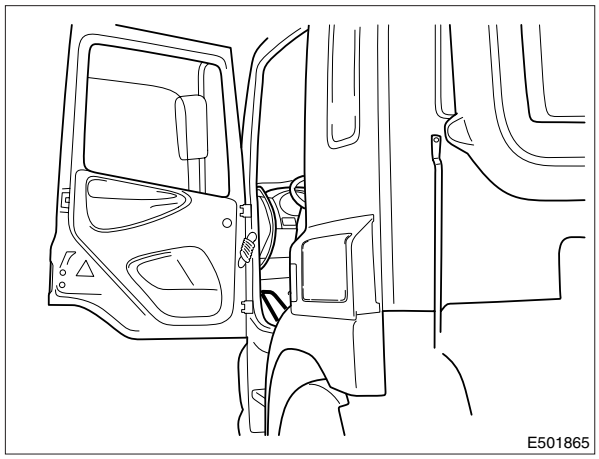


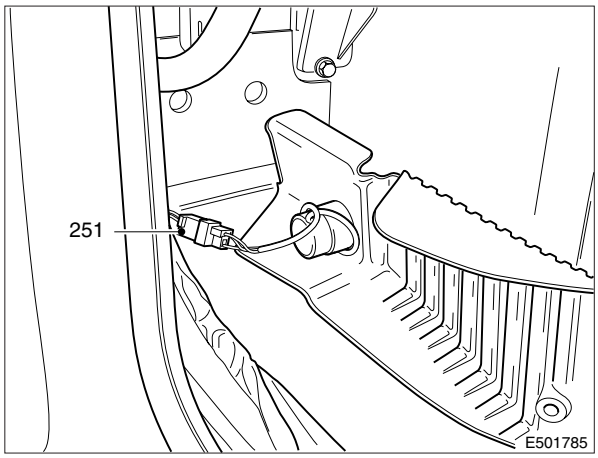



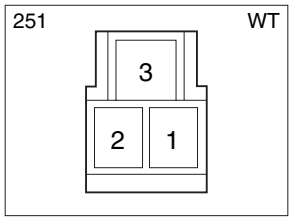




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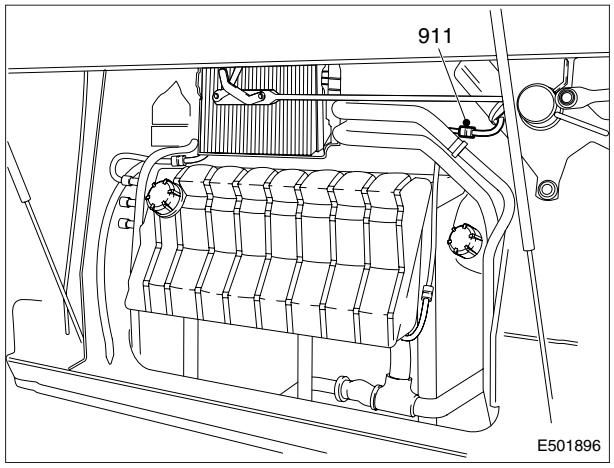
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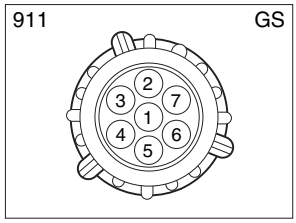


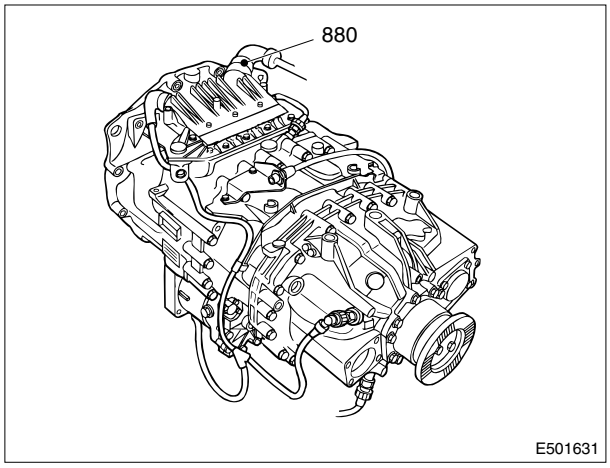



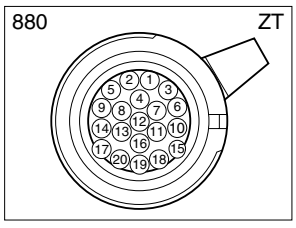

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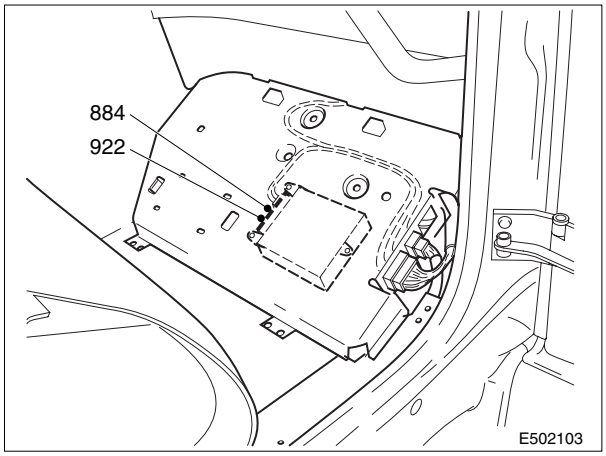

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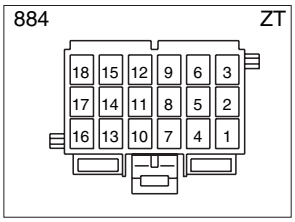


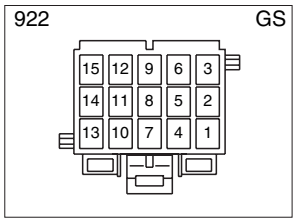




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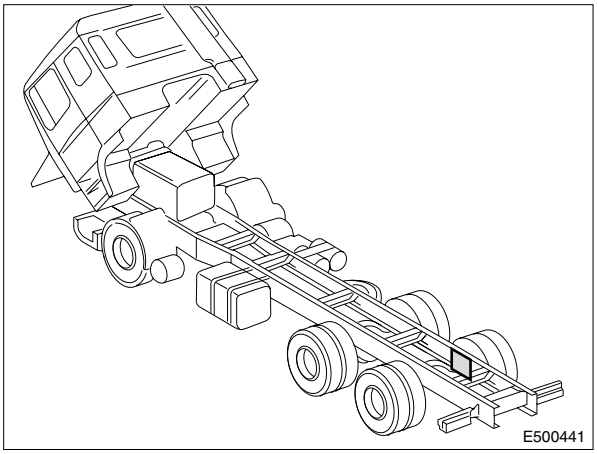
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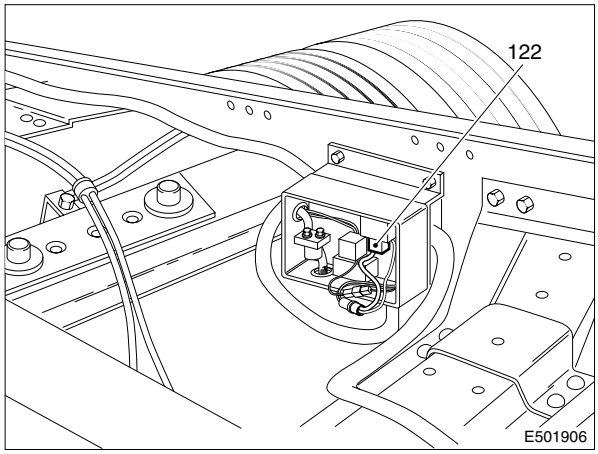


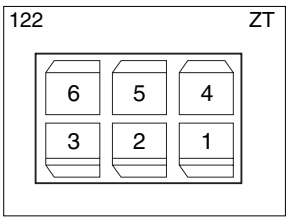




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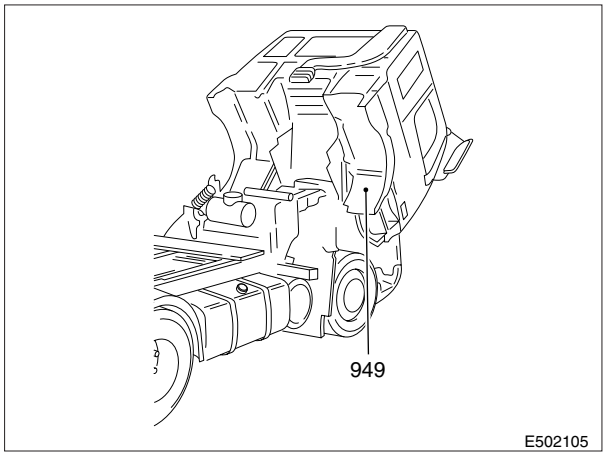


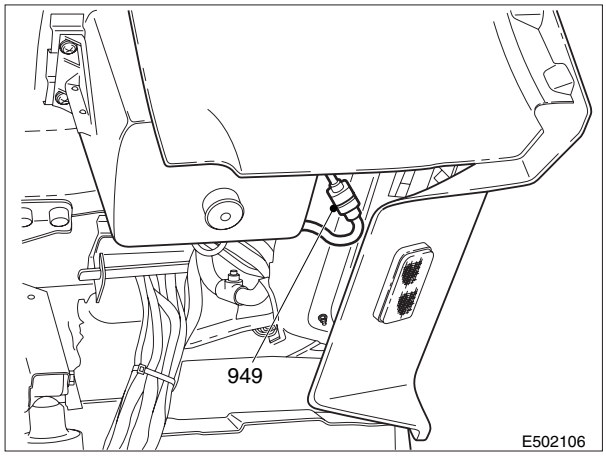



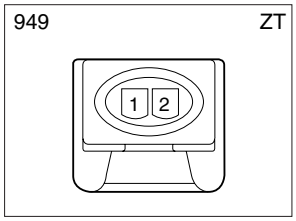




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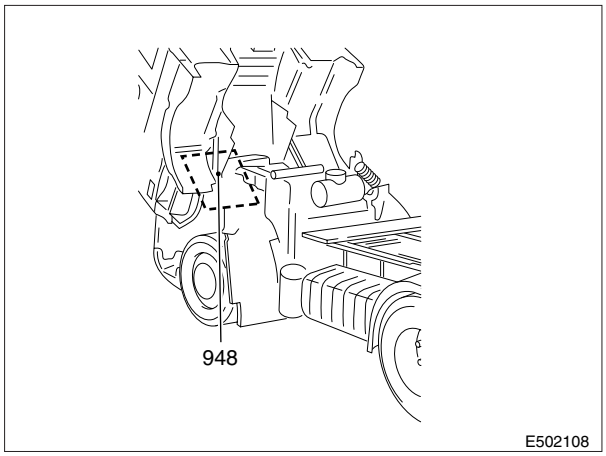
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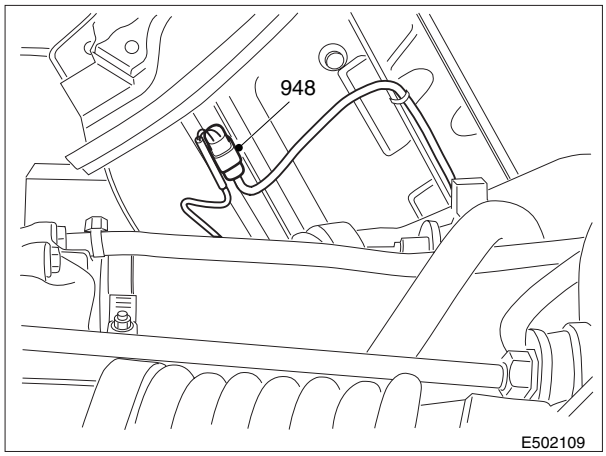


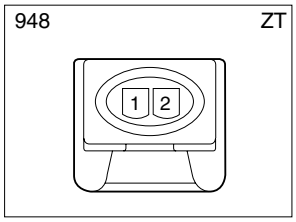




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# 1. INTRODUCTION

This main group includes the entire electrical system shown in the form of **circuit diagrams** and an **overview of connectors/pin allocations** .

**Circuit diagrams**
All information that relates to the complete electrical system of the vehicle is found in the circuit diagrams with the exception of the connectors.

**Note:**
For the location of the connectors in the vehicle, see main group “Location of connectors”.

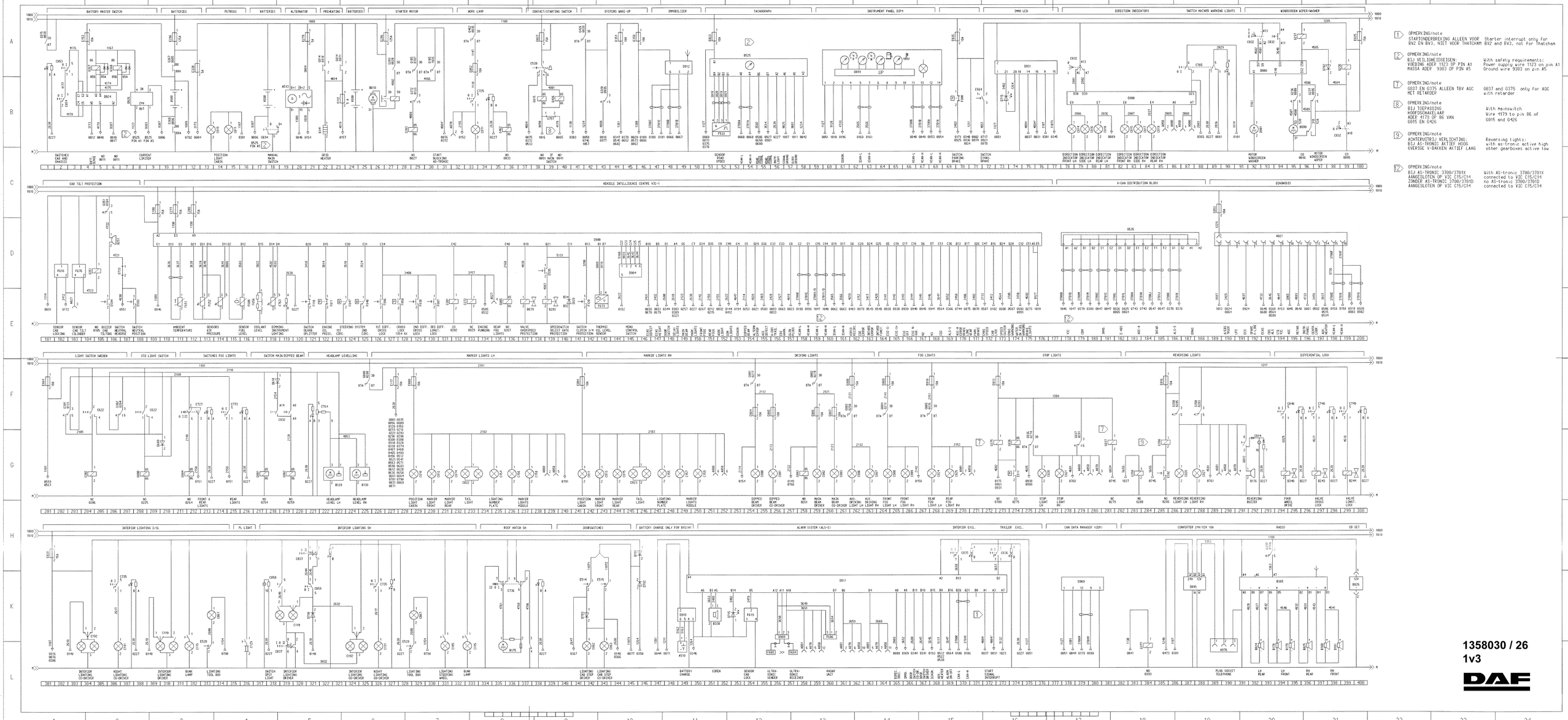
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# 2. ELECTRICAL SYSTEM

## 2.1 CIRCUIT DIAGRAM 1358030/26

This page can be used to make your own notes on the circuit diagram.




1 OPMERKING/note
STARTONDERBREKING ALLEEN VOOR BV2 EN BV3, NIET VOOR THATCHAM BV2 and BV3, not for Thatcham

2 OPMERKING/note
BIJ VERLIOMEIDSEIGEN: VIDEDING ADER 1123 OP PIN A1 MASSA ADER 9303 OP PIN A5
With safety requirements: Power supply wire 1123 on pin A1 Ground wire 9303 on pin A5

7 OPMERKING/note
G037 EN G375 ALLEEN TBV AGC MET RETARDER
G037 and G375 only for AGC with retarder

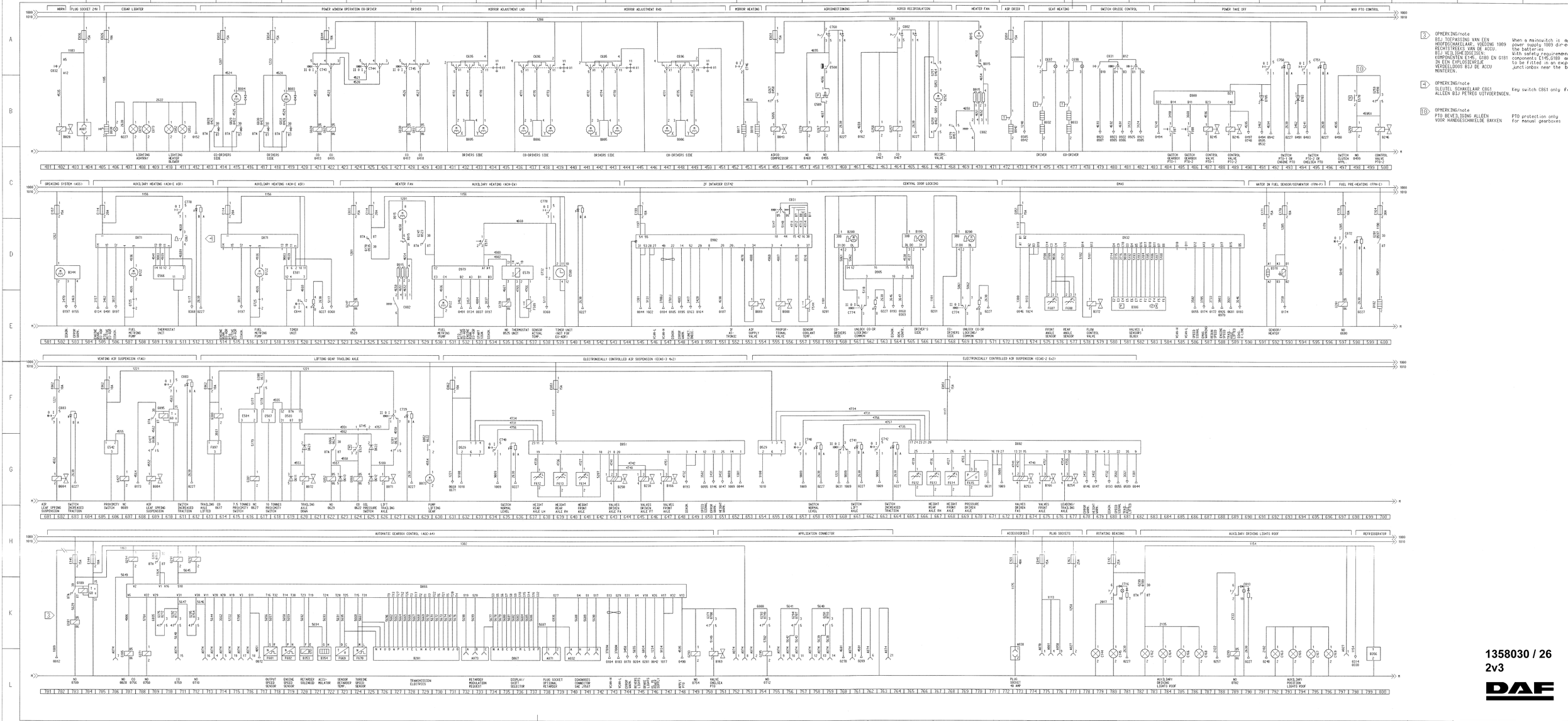
8 OPMERKING/note
BIJ TOEPASSING: HOOFDSCHAKELAAR ADER 4179 OP 86 VAN G015 EN G426
With mainswitch Wire 4179 to pin 86 of G015 and G426

9 OPMERKING/note
ACHTERUITRIJ VERLICHTING: BIJ AS-TRONIC ACTIEF HOOG OVERIGE V-BAKKEN AKTIEF LAAG
Reversing lights: with as-tronic active high other gearboxes active low

12 OPMERKING/note
BIJ AS-TRONIC 3700/3701X AANSLUITEN OP VIC C15/C14
ZONDER AS-TRONIC 3700/3701D AANSLUITEN OP VIC C15/C14
With AS-tronic 3700/3701X connected to VIC C15/C14
no AS-tronic 3700/3701D connected to VIC C15/C14

1358030 / 26
1v3

DAF




3 OPMERKING/note
BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1009 RECHTSTREEKS VAN DE ACCU.
BIJ VEILIGHEIDSISIEN: KOMPONENTEN E145, G180 EN G181 IN EEN EXPLOSIEVRIJE VERPEELDOOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1009 directly from the batteries
With safety requirements: components E145, G180 and G181 to be fitted in an explosionfree junctionbox near the batteries

4 OPMERKING/note
SLEUTEL SCHAKELAAR C861 ALLEEN BIJ PETREO UITVOERINGEN.

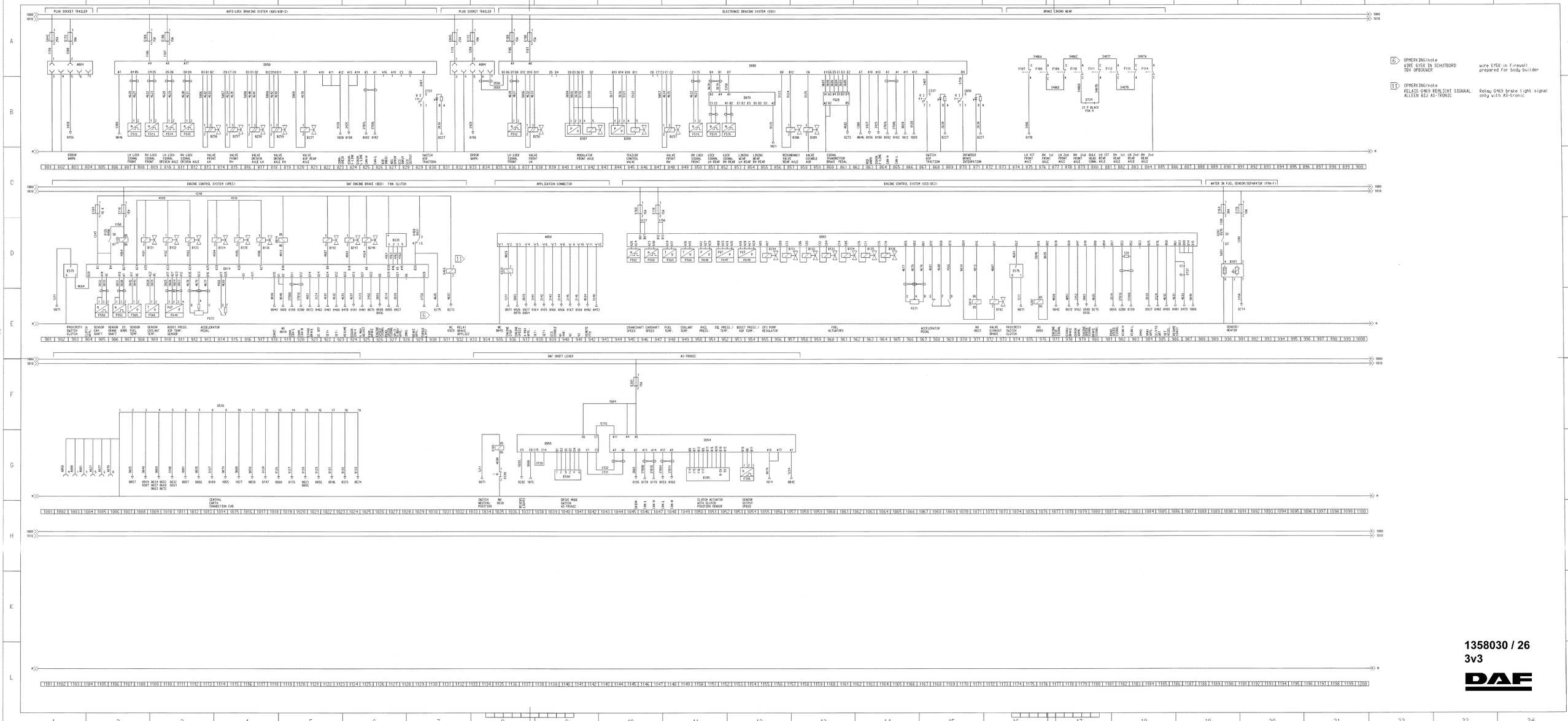
Key switch C861 only for petreg

10 OPMERKING/note
PTO BEVEILIGING ALLEEN VOOR HANDBESCHAKELDE BAKKEN

PTO protection only for manual gearboxes

**1358030 / 26**
**2v3**

DAF


PLUG SOCKET TRAILER
ANTI-LOCK BRAKING SYSTEM (ABS/ASR-D)
PLUG SOCKET TRAILER
ELECTRONIC BRAKING SYSTEM (EBS)
BRAKE LINING WEAR
ERROR WARN
LH LOCK FRONT
RH LOCK FRONT
LH LOCK DRIVEN AXLE
RH LOCK DRIVEN AXLE
VALVE FRONT LH
VALVE FRONT RH
VALVE DRIVEN AXLE LH
VALVE DRIVEN AXLE RH
VALVE TRAILER AXLE REAR
SIGNAL TRAILER AXLE REAR
SIGNAL TRAILER AXLE FRONT
SIGNAL TRAILER AXLE DRIVEN
SIGNAL TRAILER AXLE TRACTION
SWITCH TRAILER TRACTION
ERROR WARN
LH LOCK FRONT
RH LOCK FRONT
VALVE FRONT LH
VALVE FRONT RH
MODULATOR FRONT AXLE
TRAILER CONTROL VALVE
VALVE FRONT EN
RH LOCK FRONT
LH LOCK SIGNAL LH REAR
LH LOCK SIGNAL RH REAR
LINING WEAR LH REAR
LINING WEAR RH REAR
REDUNDANCY VALVE REAR AXLE
VALVE AIR SUSPENSION
SIGNAL TRANSMITTER BRAKE PEDAL
SWITCH TRAILER TRACTION
INTARDER INTERFACE INTEGRATION
LH 1ST FRONT AXLE
RH 1st FRONT AXLE
LH 2nd FRONT AXLE
RH 2nd FRONT AXLE
BOLT CONN. CABLE
LH 1ST REAR AXLE
RH 1st REAR AXLE
LH 2nd REAR AXLE
RH 2nd REAR AXLE
ENGINE CONTROL SYSTEM (UPEC)
DAF ENGINE BRAKE (DEB) FAN CLUTCH
APPLICATION CONNECTOR
ENGINE CONTROL SYSTEM (ECS-DC3)
WATER IN FUEL SENSOR/SEPARATOR (FPM-F1)
PROXIMITY SWITCH CLUTCH
SENSOR INPUT SHAFT
SENSOR OUTPUT SHAFT
SENSOR CO TEMP.
SENSOR AMBIENT TEMP.
SENSOR AIR TEMP.
BOOST PRESS. / TEMP. SENSOR
ACCELERATOR PEDAL
NC RELAY STARTER APPL.(02)
NC RELAY STARTER APPL.(03)
CRANKSHAFT CAMSHAFT SPEED
FUEL TEMP.
COOLANT TEMP.
AXIL PRESS.
OIL PRESS / TEMP.
BOOST PRESS / AIR TEMP.
CP3 PUMP REGULATOR
FUEL ACTUATORS
ACCELERATOR PEDAL
NO 0923
VALVE CLUTCH BRAKE
PROXIMITH SWITCH CLUTCH
NO 0989
SENSOR/ HEATER
DAF SHIFT LEVER
AS-TRONIC
CENTRAL LOCKING CONNECTION CAB
SWITCH NEUTRAL CONNECTION
NO 0030
VALVES CLUTCH
DRIVE MODE SWITCH AS-TRONIC
CLUTCH ACTUATOR WITH CLUTCH POSITION SENSOR
SENSOR OUTPUT SHAFT
6 OPMERKING/note
WIRE 6158 IN SCHUTBORD TBV OPBOUWER
wire 6158 in Firewall prepared for body builder
11 OPMERKING/note
RELAIS G469 REMLICHT SIGNAAL ALLEEN BIJ AS-TRONIC
Relay G469 brake light signal only with AS-tronic
1358030 / 26
3v3
DAF

## 2.2 OVERVIEW OF BASIC CODES FOR CIRCUIT DIAGRAM 1358030/26

| Basic code number | Description | Number on search bar |
|---|---|---|
| A000 | Drawn vehicle socket (7-pin) | 86, 87, 238, 251, 279, 1003 |
| A001 | Rear fog lamp/reversing lamp socket (7-pin) | 270, 289, 358, 361, 363, 775, 1004 |
| A004 | Plug socket, ABS/EBS, drawn vehicle (7-pin) | 803, 834 |
| A007 | 24V socket (2-pin) | 403 |
| A021 | Diagnostics socket (16-pin) | 194, 103 |
| A027 | Socket, 24V accessories (6-pin) | 103, 135, 777, 797, 1004, 1005 |
| A032 | AGC diagnostics socket | 740 |
| A038 | Socket, 40A accessories (2-pin) | 773 |
| A058 | Drawn vehicle socket (15-pin) | 85, 87, 239, 252, 271, 280, 290, 359, 362, 364, 776, 1002 |
| A068 | Application connector, engine speed control | 939 |
| A070 | Application connector, superstructure (8-pin) | 32, 280, 291, 359, 362, 364, 775, 1006 |
| A071 | Automatic gearbox socket, intarder functions | 738 |
| A073 | Automatic gearbox socket, operation | 732 |
| A074 | Automatic gearbox socket, superstructure | 706, 711, 713, 714, 715, 716, 752, 753, 755, 756, 757, 758, 759, 761, 762, 763 |
| A076 | Telephone socket | 389 |
| A500 | Batteries (2x) | 10, 17, 24 |
| A510 | Alarm system battery | 349 |
| A513 | Alternator | 19 |
| B000 | Windscreen wiper motor | 96 |
| B001 | Windscreen wiper pump | 93 |
| B003 | Electric drop glass operation motor, driver's side | 419 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B004 | Electric drop glass operation motor, co-driver's side | 415 |
| B005 | Mirror adjustment motor, left | 432, 442 |
| B006 | Mirror adjustment motor, right | 437, 448 |
| B010 | Starter motor | 25 |
| B015 | 4-speed heater fan | 470, 471, 527, 528 |
| B017 | Mirror heating, driver's side | 452 |
| B018 | Mirror heating, co-driver's side | 453 |
| B024 | Loudspeaker, left | 392 |
| B025 | Loudspeaker, right | 396 |
| B026 | CB set | 399 |
| B028 | Horn | 402 |
| B030 | Cigar lighter, driver's side | 406 |
| B032 | Seat heating, driver's side | 475 |
| B033 | Seat heating, co-driver's side | 477 |
| B042 | Air dryer heating element | 473 |
| B043 | Air conditioning compressor | 455 |
| B071 | Mechanical lifting-gear lifting valve | 626 |
| B072 | Mechanical lifting-gear lowering valve | 620 |
| B073 | Pump, mechanical lifting gear | 629 |
| B079 | Low-range downshift protection valve | 137 |
| B084 | Air suspension valve, bleeding | 602, 609 |
| B088 | Proportional valve, intarder | 556 |
| B089 | Air supply valve, intarder | 554 |
| B122 | Fuel metering pump, cab heater | 508, 517, 531 |
| B129 | Left-hand headlight height adjuster motor | 223 |
| B130 | Right-hand headlight height adjuster motor | 225 |
| B131 | Solenoid valve, pump unit/injector, cylinder 1 | 909 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B132 | Solenoid valve, pump unit/injector, cylinder 2 | 910 |
| B133 | Solenoid valve, pump unit/injector, cylinder 3 | 912 |
| B134 | Solenoid valve, pump unit/injector, cylinder 4 | 914 |
| B135 | Solenoid valve, pump unit/injector, cylinder 5 | 916 |
| B136 | Solenoid valve, pump unit/injector, cylinder 6 | 917 |
| B166 | ECAS valve , front axle | 647, 675 |
| B169 | PTO control valve, Chelsea | 751 |
| B175 | Roof hatch motor | 336 |
| B176 | Reversing buzzer | 292 |
| B178 | Loudspeaker, left | 394 |
| B179 | Loudspeaker, left | 395 |
| B180 | Loudspeaker, right | 397 |
| B181 | Loudspeaker, right | 398 |
| B182 | Water separator fuel heating element | 599 |
| B192 | Exhaust brake valve | 922, 973 |
| B199 | Central door locking motor, driver's side | 565 |
| B200 | Central door locking motor, co-driver's side | 560, 569 |
| B201 | Internal electrical components for automatic gearbox | 728 |
| B237 | ASR selector valve | 821 |
| B238 | ECAS-2 (6x2) valve, driven axle left/right, air supply (FT) | 645 |
| B243 | Cross-axle differential lock control valve | 297 |
| B244 | Longitudinal controlled slip differential control valve | 299 |
| B245 | PTO control valve | 487 |
| B246 | PTO control valve | 489, 500 |
| B247 | Engine brake valve | 924 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B248 | Engine brake valve | 925 |
| B250 | ECAS valve, driven axle left/right, air supply (FA) | 643 |
| B251 | Neutral position buzzer, tilting cab | 106 |
| B252 | Recirculation valve | 468 |
| B253 | ECAS valve, driven axle left/right, air supply | 673 |
| B254 | ECAS valve, second steered axle/trailing axle left/right, lifting bellows | 677 |
| B256 | ABS valve | 813, 838 |
| B257 | ABS valve | |
| B258 | ABS valve | 817 |
| B259 | ABS valve | 818 |
| B293 | Gearbox gate protection valve | 139 |
| B306 | Redundancy valve | 857 |
| B307 | Front axle modulator | 841 |
| B308 | Trailer vehicle control valve | 845 |
| B309 | ASR cut-off valve | 859 |
| B335 | Electronically controlled fan clutch | 927 |
| B338 | Alarm system horn | 351 |
| B340 | Four-wheel drive valve | 295 |
| B341 | Glow element | 22 |
| B344 | Automatic lubrication pump with integrated electronic unit | 503 |
| B353 | Automatic gearbox control solenoid, retarder | 720 |
| B354 | Automatic gearbox accumulator | 721 |
| B356 | Cooler box | 799 |
| B365 | Radio | 394 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B372 | Valve block fluid flow | 579 |
| B378 | Heating element for fuel filter/water separator | 592 |
| B385 | AS Tronic clutch unit | 1051 |
| B386 | Valve block steering cylinder | 581 |
| B387 | Electronic unit, fuel heater/water separator (Fleetguard) | 990 |
| B525 | Modular tachograph (MTCO/DTCO) | 54 |
| C000 | Dipped beam, left | 255 |
| C001 | Dipped beam, right | 256 |
| C002 | Main beam, left | 260 |
| C003 | Main beam, right | 261 |
| C006 | Left spotlight | 262 |
| C007 | Right spotlight | 264 |
| C008 | Fog lamp, front left | 265 |
| C009 | Fog lamp, front right | 266 |
| C010 | Width marker light (headlight), left | 14, 229 |
| C011 | Width marker light (headlight), right | 15, 242 |
| C012 | Width marker light, front left | 231 |
| C013 | Width marker light, front right | 243 |
| C014 | Direction indicator lamp, front left | 79 |
| C015 | Direction indicator lamp, front right | 83 |
| C016 | Direction indicator lamp, side left | 80 |
| C017 | Direction indicator lamp, side right | 84 |
| C018 | Direction indicator lamp, rear left | 81 |
| C019 | Direction indicator lamp, rear right | 85 |
| C020 | Stop light, left | 277 |
| C021 | Stop light, right | 278 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C022 | Tail light, left | 232 |
| C023 | Tail light, right | 245 |
| C024 | Fog lamp, rear left | 268 |
| C025 | Fog lamp, rear right | 270 |
| C026 | Reversing light, left | 287 |
| C027 | Reversing light, right | 288 |
| C052 | Heater fan lighting, left | 411 |
| C053 | Heater fan lighting, right | 412 |
| C062 | Stepwell lighting, driver's side | 342 |
| C063 | Stepwell lighting, co-driver's side | 344 |
| C067 | Tool compartment lighting, left | 314, 329 |
| C071 | Work lamp | 34 |
| C072 | Ashtray lighting, left | 408 |
| C073 | Ashtray lighting, right | 409 |
| C074 | Width marker light, rear left | 232 |
| C075 | Width marker light, rear right | 245 |
| C115 | Bunk light with switch | 312, 333 |
| C119 | Interior lighting with switch, driver's side | 310, 320 |
| C129 | Interior lighting with switch | 316 |
| C144 | Rotating beam, left | 779 |
| C145 | Rotating beam, right | 781 |
| C154 | Rear number plate light, left (FT) | 235 |
| C155 | Rear number plate light, right (FT) | 248 |
| C156 | Width marker light, left, 1st (FT) | 237 |
| C157 | Width marker light, right, 1st (FT) | 249 |
| C158 | Width marker light, left, 2nd (FT) | 238 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C159 | Width marker light, right, 2nd (FT) | 251 |
| C162 | Roof spotlight | 783 |
| C163 | Width marker light in spotlight, roof | 793 |
| C164 | Roof spotlight | 784 |
| C165 | Width marker light in spotlight, roof | 794 |
| C166 | Roof spotlight | 786 |
| C167 | Width marker light in spotlight, roof | 795 |
| C168 | Roof spotlight | 787 |
| C169 | Width marker light in spotlight, roof | 797 |
| C185 | Light with switch | 332 |
| C191 | Nightlight, centre | 307, 327 |
| C192 | Interior lighting with switch, co-driver's side | 304, 324 |
| C539 | Accessories/ignition/starter switch | 38 |
| C622 | Lighting switch | 205, 209 |
| C694 | Mechanical main switch | 17 |
| C695 | Mirror adjustment switch, driver's side | 433, 443 |
| C696 | Mirror adjustment switch, co-driver's side | 438, 448 |
| C697 | Seat heating switch, driver's side | 475 |
| C698 | Seat heating switch, co-driver's side | 477 |
| C716 | Rotating beam switch | 781 |
| C725 | Work lamp switch | 34 |
| C727 | Fog lamp switch, front/rear | 212 |
| C735 | Nightlight switch, interior | 307, 326 |
| C736 | Roof hatch switch | 336 |
| C737 | ASR switch | 830, 868 |
| C739 | Mechanical lifting-gear switch | 627 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C740 | ECAS switch, normal level | 635, 657 |
| C741 | ECAS switch, axle lifting | 661 |
| C742 | Traction assistance switch | 663 |
| C743 | Drop glass switch, co-driver's side (driver's side door) | 422 |
| C744 | Drop glass switch, co-driver's side (driver's side door) | 425 |
| C745 | Drop glass switch, driver's side (driver's side door) | 428 |
| C746 | Mirror heating switch | 453 |
| C748 | Operating switch, cross-axle differential lock | 297 |
| C749 | Operating switch, longitudinal controlled slip differential | 299 |
| C750 | PTO operating switch | 492 |
| C751 | PTO operating switch | 495 |
| C760 | Air conditioning switch | 459 |
| C763 | Instrument lighting dimming potentiometer | 119 |
| C764 | Headlight height adjustment potentiometer | 222 |
| C765 | Switch for warning lamps | 88 |
| C773 | Fog lamp switch, rear | 215 |
| C774 | Central door locking switch | 561, 569 |
| C778 | Switch for Eberspächer cab heater | 511, 538 |
| C802 | Recirculation valve switch | 464 |
| C813 | Spotlight switch, roof | 790 |
| C814 | Reversing buzzer switch | 292 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 480, 556 |
| C832 | Direction indicator/windscreen wiper stalk switch | 79, 92, 93, 98, 219, 402 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C835 | Switch to turn off interior detection | 370 |
| C836 | Switch to turn off superstructure/drawn vehicle loadspace detection | 373 |
| C837 | Interior lighting switch | 318, 320 |
| C840 | Four-wheel drive switch | 295 |
| C844 | Eberspächer cab heater switch with timer unit | 519 |
| C853 | Cab main switch | 2 |
| C854 | Chassis main switch | 3 |
| C858 | Interior spot lighting switch | 318 |
| C859 | Interior lighting switch, driver's side roof console | 321 |
| C861 | PETREG key switch | 511 |
| C872 | Switch, fuel heating relay (Fleetguard) | 597 |
| C882 | Heater fan switch | 470, 527 |
| C883 | FAG traction assistance switch | 602, 611 |
| C890 | Third brake integration switch | 870 |
| D503 | Electronic unit, mechanical lifting gear | 619 |
| D529 | Remote control system, ECAS | 632, 654 |
| D609 | Light switch diode | 209 |
| D610 | Diode, main beam/dipped beam | 218 |
| D611 | Diode, damping valve for lowering mechanical lifting gear | 619 |
| D612 | Diode, damping valve for lifting mechanical lifting gear | 625 |
| D613 | Diode for pump damping relay, mechanical lifting gear | 623 |
| D622 | Diode for mechanical lifting gear, lifting lock | 625 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D623 | Diode for mechanical lifting gear, lowering lock | 620 |
| D703 | Diode for switching off cab heater/door, contact on driver's side | 494 |
| D705 | Diode for switching off the cab heater with running engine | 491 |
| D710 | Interior lighting diode to prevent feedback to driver's side switch | 321 |
| D715 | Alarm system LED | 73, 352 |
| D782 | Diode to prevent door locking feedback, driver's side | 97 |
| D783 | Interior lighting diode, driver's side | 341 |
| D791 | Door switch diode | 345 |
| D792 | Door switch diode | 346 |
| D802 | ECAS-2 (6x2) electronic unit | 673 |
| D814 | UPEC electronic unit | 914 |
| D826 | Electronic unit for VLG current limiter | 7 |
| D850 | ABS/ASR, D version, electronic unit | 817 |
| D851 | ECAS-3 (4x2) electronic unit | 644 |
| D866 | Electronic unit, AGC-A4 automatic gearbox control | 729 |
| D867 | Automatic gearbox selector | 735 |
| D871 | Electronic unit, cab heater | 508, 517 |
| D879 | Rear axle modulator | 854 |
| D880 | EBS electronic unit | 854 |
| D895 | Electronic unit for (10A) converter with power supply for radio memory | 387 |
| D899 | DIP-4 instrument panel | 62 |
| D900 | VIC electronic unit | 83, 93, 143, 486 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D902 | Electronic unit for ZF intarder EST42 | 550 |
| D903 | ECS-DC3 electronic unit | 959 |
| D904 | Menu control switch, MCS | 145 |
| D905 | Electronic unit, central door locking | 562 |
| D909 | Electronic unit, alarm system, ultrasonic | 356 |
| D910 | Electronic unit, battery charger | 349 |
| D911 | Electronic unit, ALS-S alarm system | 361 |
| D912 | Electronic unit, immobiliser | 49 |
| D924 | Electronic unit, main switch | 5 |
| D931 | LED unit, immobiliser | 75 |
| D932 | EMAS electronic unit | 581 |
| D954 | AS Tronic gearbox modulator | 1050 |
| D955 | AS Tronic gear lever unit | 1038 |
| D969 | CAN-data manager, CDM | 379 |
| D979 | Electronic unit, Hydronic 10 cab heater | 532 |
| E000 | Fuse, rear left width marker light | 228 |
| E001 | Fuse, rear right width marker light | 241 |
| E004 | Fuse, dipped beam, driver's side | 254 |
| E005 | Fuse, dipped beam, co-driver's side | 255 |
| E006 | Fuse, main beam, driver's side | 259 |
| E007 | Fuse, main beam/warning lamp, co-driver's side | 260 |
| E008 | Fuse, spotlights | 261 |
| E009 | Fuse, front fog lamps | 264 |
| E010 | Fuse, rear fog lamps | 267 |
| E013 | Fuse, stop lights | 272 |



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| Basic code number | Description | Number on search bar |
|---|---|---|
| E016 | Fuse, reversing lights/gearbox neutral position/windscreen wiper motor/cross-axle differential lock | 285 |
| E023 | Fuse, cold start switch/tachograph clock/cab heater program clock/alarm system | 51 |
| E025 | Fuse, windscreen wiper motor/headlamp washer/windscreen washer motor | 100 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12V converter with power supply for radio memory | 405 |
| E028 | Fuse, interior lighting/bunk lamps/central door lock | 301 |
| E031 | Fuse, heater fan | 455, 523 |
| E033 | Fuse, electric drop glass motor, co-driver's side | 414 |
| E034 | Fuse, electric drop glass motor, driver's side | 417 |
| E035 | Fuse, instruments and warning lamps/parking brake switch/power supply after contact | 69 |
| E036 | Fuse, 24V socket | 403 |
| E037 | Fuse, ignition switch | 38 |
| E043 | Fuse, drawn vehicle ABS/EBS | 801, 831 |
| E044 | Fuse, mirror heating/electric mirror adjustment/electric drop glass operation | 421 |
| E048 | Fuse, drawn vehicle power supply | 774 |
| E051 | Fuse, ECAS/EMAS | 573, 638, 667 |
| E052 | Fuse, ECAS remote control/work lamp | 33 |
| E053 | Fuse, diagnosis connector (16-pin)/LED unit/alarm system | 189 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E062 | Fuse, mechanical lifting gear/ECAS/EMAS | 601, 605, 613, 631 |
| E084 | Fuse, lighting | 201 |
| E091 | Fuse, air dryer heating element/stalk switch/PTO/clutch switch/engine speed control application connector | 472 |
| E108 | Fuse, VIC | 109 |
| E112 | Fuse, glow warning lamp | 23 |
| E114 | Fuse, cab heater/warning lamps | 505, 514, 525 |
| E117 | Fuse, search light | 227 |
| E118 | Fuse, UPEC/ECS-DC3 supply voltage | 906, 947 |
| E142 | Fuse, accessories before contact | 780 |
| E144 | Fuse, AGC-A4 automatic gearbox | 704 |
| E145 | Fuse, AGC-A4 automatic gearbox | 703 |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply | 4 |
| E157 | Fuse, automatic lubrication | 501 |
| E160 | ECS-DC3 fuse | 945 |
| E163 | Fuse, accessories after contact (connector A027)/rotating beams/roof hatch | 777 |
| E164 | Fuse, FPH-E fuel heater before contact | 599, 989 |
| E168 | Fuse, accessories/microwave | 772 |
| E170 | Fuse, electronic unit for fuel filter/water separator, Racor | 592, 597, 991 |
| E171 | Fuse, fuel filter/water separator heating element, Racor | 591 |
| E172 | Fuse, drawn vehicle ABS/EBS | 802, 833 |
| E184 | Fuse, extra functions | 904 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E189 | Fuse, rear axle ABS | 808, 836 |
| E190 | Fuse, front axle ABS | 810, 837 |
| E199 | Fuse, ZF intarder | 545 |
| E277 | Fuse, VIC | 110 |
| E279 | Fuse, airbag and seat belt tensioner/voltage regulation generator | 20 |
| E280 | Fuse, VIC | 112 |
| E286 | Main fuse | 10, 26 |
| E301 | Fuse, AS Tronic | 1045 |
| E330 | Fuse, 'sens' wire main switches | 12 |
| E350 | Fuse, various electrical systems | 45 |
| E351 | Fuse, various electrical systems | 44 |
| E507 | Proximity switch for axle-load protection lifting gear (10 tons) | 617 |
| E508 | Temperature switch for air conditioning compressor | 459 |
| E509 | Air conditioning operating switch, high/low pressure | 458 |
| E511 | Stop light operating switch | 274 |
| E514 | Operating switch for stepwell/interior lighting, driver's side door switch | 341 |
| E515 | Operating switch for stepwell/interior lighting, co-driver's side door switch | 343 |
| E524 | Mechanical lifting-gear operating switch, oil pressure limit switch | 624 |
| E528 | Operating switch for left-hand tool compartment lighting | 313, 328 |
| E542 | Proximity switch for axle load protection (13 tons) | 605 |
| E564 | Engine brake operating switch | 72 |
| E566 | Operating switch, cab heater thermostat | 509 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E570 | Proximity switch, clutch PTO N10 | 498 |
| E571 | Thermo 90/Hydronic 10 cab heater operating switch | 534 |
| E575 | Clutch pedal proximity switch | 902, 974 |
| E579 | Operating switch for thermostat/cab heater, fan, Eberspächer (water) | 536 |
| E580 | Operating switch for thermostat/cab heater, fan, Eberspächer (timer) | 540 |
| E581 | Cab heater timer unit | 519 |
| E584 | Proximity switch for axle-load protection lifting gear (7.5 tons) | 615 |
| E590 | AS Tronic selector switch | 1040 |
| E592 | Reversing light operating switch | 286 |
| E593 | Neutral position switch | 108 |
| E594 | Operating switch for neutral position/reverse gear | 106 |
| E595 | Low-range switch | 139 |
| E599 | Neutral position switch | 1036 |
| F000 | Parking brake switch | 70 |
| F006 | Control switch for differential lock, 1st differential | 127 |
| F007 | Control switch for differential lock, 3rd differential | 131 |
| F011 | Control switch for engine oil pressure | 123 |
| F038 | Control switch for differential lock, 2nd differential | 129 |
| F047 | Control switch for steering system (1st circuit) | 124 |
| F048 | Control switch for steering system (2nd circuit) | 125 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| F050 | Control switch for differential lock pressure, 1st and 2nd differential | 128 |
| F087 | Control switch, gearbox PTO | 485 |
| F088 | Control switch, gearbox PTO | 486 |
| F097 | Proximity switch for trailing axle mechanical lifting gear | 613 |
| F107 | Control switch for brake lining wear, front left | 874 |
| F108 | Control switch for brake lining wear, front right | 876 |
| F109 | Control switch for brake lining wear, front left, 2nd front axle | 877 |
| F110 | Control switch for brake lining wear, front right, 2nd front axle | 879 |
| F111 | Control switch for brake lining wear, rear left | 880 |
| F112 | Control switch for brake lining wear, rear right | 881 |
| F113 | Control switch for brake lining wear, rear left, 2nd rear axle (6x2) | 882 |
| F114 | Control switch for brake lining wear, rear right, 2nd rear axle (6x2) | 884 |
| F118 | Control switch for splitter signalling | 121 |
| F120 | Gearbox switch for gate 3-4 | 142 |
| F509 | Cab temperature sensor, cab heater | 537 |
| F512 | Wheel speed sensor, front axle, left | 807, 836 |
| F513 | Wheel speed sensor, front axle, right | 809, 850 |
| F514 | Wheel speed sensor, driven axle, left | 810 |
| F515 | Wheel speed sensor, driven axle, right | 811 |
| F533 | Speed sensor | 52 |
| F544 | Coolant temperature sensor, intarder | 558 |
| F552 | Crankshaft sensor | 906 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| F558 | Camshaft sensor | 905 |
| F565 | Fuel temperature sensor | 907 |
| F566 | Engine coolant temperature sensor | 909 |
| F601 | Output shaft speed sensor, automatic gearbox | 717 |
| F602 | Input shaft speed sensor, automatic gearbox | 719 |
| F608 | Fuel level sensor | 116 |
| F612 | Height sensor, ECAS, rear axle, left | 637, 665 |
| F613 | Height sensor, ECAS, rear axle, right | 639, 666 |
| F614 | Height sensor, ECAS, front axle | 640, 668 |
| F615 | ECAS pressure sensor, driven axle, left/right | 669 |
| F616 | Cab locking sensor | 102 |
| F619 | Cab locking sensor, alarm system | 354 |
| F628 | Foot brake valve | 860 |
| F649 | Inlet air boost pressure sensor/temperature sensor | 910 |
| F651 | Ambient temperature sensor | 112 |
| F652 | Air pressure sensor | 113 |
| F656 | Coolant level sensor | 117 |
| F669 | Retarder temperature sensor, automatic gearbox | 723 |
| F670 | Automatic gearbox turbine speed sensor | 724 |
| F671 | ECS-DC3 accelerator pedal sensor | 966 |
| F672 | Accelerator pedal sensor | 913 |
| F673 | Engine oil level and temperature sensor | 143 |
| F676 | Lifting cylinder sensor, cab | 103, 360 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| F686 | Alarm system radar sensor | 575 |
| F687 | EMAS angle sensor, front axle | 576 |
| F688 | EMAS angle sensor, trailing axle | 1053 |
| F705 | Speed sensor | 208 |
| G000 | Tail light/width marker light/search light relay | 225 |
| G001 | Dipped beam relay | 217, 254 |
| G002 | Main beam relay | 219, 259 |
| G003 | Spotlight relay | 258.261 |
| G004 | Fog lamp relay, front | 211, 264 |
| G005 | Fog lamp relay, rear | 135, 267 |
| G014 | Glow plug relay | 22, 23, 918, 971 |
| G015 | Contact relay | 1, 38 |
| G028 | Electric drop glass operation relay, co-driver's side | 413, 421 |
| G029 | Electric drop glass operation relay, co-driver's side | 415, 422 |
| G030 | Electric drop glass operation relay, driver's side | 417, 427 |
| G031 | Electric drop glass operation relay, driver's side | 418, 428 |
| G036 | Stop light relay | 274, 275 |
| G037 | Stop light relay for automatic gearbox | 279, 281 |
| G052 | Motor relay, mechanical lifting gear | 622, 629 |
| G066 | Takeover relay, mechanical lifting gear | 622, 624 |
| G095 | Traction assistance relay, 60 sec. bleeding | 609 |
| G126 | UPEC/ECS-DC3 supply relay | 905, 906 |
| G170 | Heater fan relay, cab heater | 525, 535 |
| G180 | Time relay, automatic gearbox | 703 |
| G181 | Takeover relay, automatic gearbox | 703, 709 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G185 | Starting circuit interrupter relay | 29, 30, 707, 1035 |
| G201 | Fuel heating relay, FPH-E | 597, 599, 975, 989 |
| G203 | Starter motor takeover relay | 27, 28 |
| G236 | Windscreen wiper relay (speed 1 or 2) | 95, 99 |
| G237 | Windscreen wiper relay (automatic zero position) | 95, 96 |
| G247 | Heater fan relay, Eberspächer Hydronic cab heater | 523, 529 |
| G257 | Recirculation valve relay | 464, 467 |
| G258 | Recirculation valve relay | 462, 467 |
| G259 | PTO operation takeover relay | 498, 499 |
| G267 | Air conditioning relay | 455, 458 |
| G279 | Air conditioning relay | 457, 468 |
| G291 | Relay, automatic gearbox | 710, 759 |
| G292 | Relay, automatic gearbox | 710, 712 |
| G293 | Relay, automatic gearbox | 749, 754 |
| G294 | Relay, automatic gearbox | 707, 759 |
| G295 | Relay, automatic gearbox | 712, 754 |
| G299 | Relay, roof spotlights | 782, 789 |
| G301 | Lighting relay D+ | 131, 202 |
| G302 | Swedish lighting relay | 204, 206 |
| G328 | Engine stop relay | 43, 935 |
| G350 | Reversing light relay, automatic gearbox | 283, 285, 286, 288 |
| G351 | Cab tilt protection relay | 104, 105 |
| G367 | Main switch relay, power supply | 4, 10 |
| G368 | Main switch relay, earth | 6, 10 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G371 | PTO relay, automatic gearbox | 708, 750 |
| G372 | Starting circuit interrupter relay | 29, 133 |
| G375 | Stop light relay for automatic gearbox with retarder | 272, 709 |
| G377 | Relay, accessories power supply for radio | 384, 393 |
| G380 | Relay, mechanical lifting axle upwards | 613, 617 |
| G381 | Relay, mechanical lifting axle (7.5 tons) | 616, 627 |
| G426 | Contact relay | 39, 41 |
| G427 | Traction assistance relay, FAG | 606, 609 |
| G462 | Work lamp relay | 33, 35 |
| G469 | Braking signal relay | 929, 931 |
| G516 | Central cab earth, co-driver's side | 1014 |
| G535 | CAN distribution block | 183 |
| G725 | Through-connection, cab heater (Eberspächer) | 507, 516 |
| G732 | Through-connection, cab heater (Eberspächer) | 538 |
| G733 | Through connection for intarder neutral position | 107 |
| G734 | Through-connection for brake lining wear | 880 |
| G736 | V-CAN connection | 198 |
| G737 | Through-connection, ECS-DC3 speed control | 987 |
| G745 | Through-connection, mechanical lifting gear | 625 |
| G757 | Through-connection for main switch | 39 |
| I020 | Diode, gearbox gate protection | 141 |

## 2.3 SECTION DIAGRAMS FROM CIRCUIT DIAGRAM 1358030/26

| | |
|---|---|
| A | Voltage before and after contact |
| B | Overview of earthing points |
| C | CAN overview |
| 1 | Main switch |
| 2 | Alternator/ignition/starter switch/charging circuit |
| 3 | Tachograph |
| 4 | Immobiliser |
| 5 | Pre-glowing |
| 6 | DIP-4 |
| 7 | Direction indicators and warning lamps |
| 8 | VIC |
| 9 | FA marker and parking lights |
| 10 | FT marker and parking lights |
| 11 | UPEC |
| 12 | Reversing lights |
| 13 | Light switch/fog lamps/dipped beam and main beam switch, FA/FT |
| 14 | Swedish lighting |
| 15 | Stop lights/cab tilting gear |
| 16 | Differential lock |
| 17 | Interior lighting, D/SL cab |
| 18 | Interior lighting, SH cab |
| 19 | Mirror heating/mirror adjustment |
| 20 | Search lighting |
| 21 | Air conditioning/recirculation valve/heater fan |
| 22 | Seat heating/accessories |
| 23 | Horn/cigar lighter/work lamp/air dryer |
| 24 | ABS-ASR-D |
| 25 | DEB |




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| | |
|---|---|
| 26 | Intarder EST42 |
| 27 | ECS-DC3 |
| 28 | AGS |
| 29 | EMAS |
| 30 | AGC |
| 31 | FAG |
| 32 | PTO |
| 33 | Roof spotlights/cooler box/rotating beams |
| 34A | ECAS-3 (4x2) |
| 34B | ECAS-2 (6x2) |
| 35 | Headlight-height adjustment |
| 36 | 24V/12V converter/radio/CB set |
| 37 | Electric drop glass/central door locking/roof hatch, SH cab |
| 38 | Mechanical lifting gear |
| 39 | Fuel pre-heating |
| 40 | Windscreen wipe/wash system |
| 41 | Airtronic cab heater (ACH-EA) with/without timer |
| 42 | Hydronic 10 (ACH-EW) cab heater with timer |
| 43 | UPEC/CUMMINS/AGC application connector |
| 44 | EBS |
| 45 | Brake lining wear switch |
| 46 | Alarm system/battery charger for BV3 alarm |
| 47 | Sockets, FA |
| 48 | Sockets, FT |
| 49 | Water separator (Fleetguard) |
| 50 | Water separator |
| 51 | AS Tronic |
| 52 | CDM |

## A VOLTAGE BEFORE AND AFTER CONTACT

### VOLTAGE BEFORE CONTACT

A constant voltage is supplied to pin 1 of connector 416 through wire 1008, point 30 on the starter motor, fuse E286, the + bolt in the dashboard connector lead-through and the voltage distribution block.
Power is also supplied (via wire 1008) from point 30 of the starter motor to the B+ connection of the alternator and to relay G014 (glow-plug relay).

Power is supplied to the “S” (sens) connection of the alternator from point 30 of the starter motor via fuse E279 and wire 3084.

Only wire 1008 to the + bolt in the dashboard connector lead-through is fuse-protected by fuse E286 (125A).
The other wires are NOT fuse-protected and they can only be made dead by disconnecting the battery leads..

### VOLTAGE AFTER CONTACT

A voltage is supplied to contact relay G015 (connection point 30) via the starter motor (connection point 30). This connection point may be connected to wire 1010 over contact relay G015.
This wire is only fuse-protected with fuse E286 (125A).

### OPERATION

When the accessories/ignition/starter switch (C539) is set to the “accessories” position (connection between points 1 and 6), a voltage is supplied to connection point 1 of relay G377 via wire 1000, fuse E037, accessories/ignition/starter switch (C539) (contact points 1 - 6) and wire 1130.

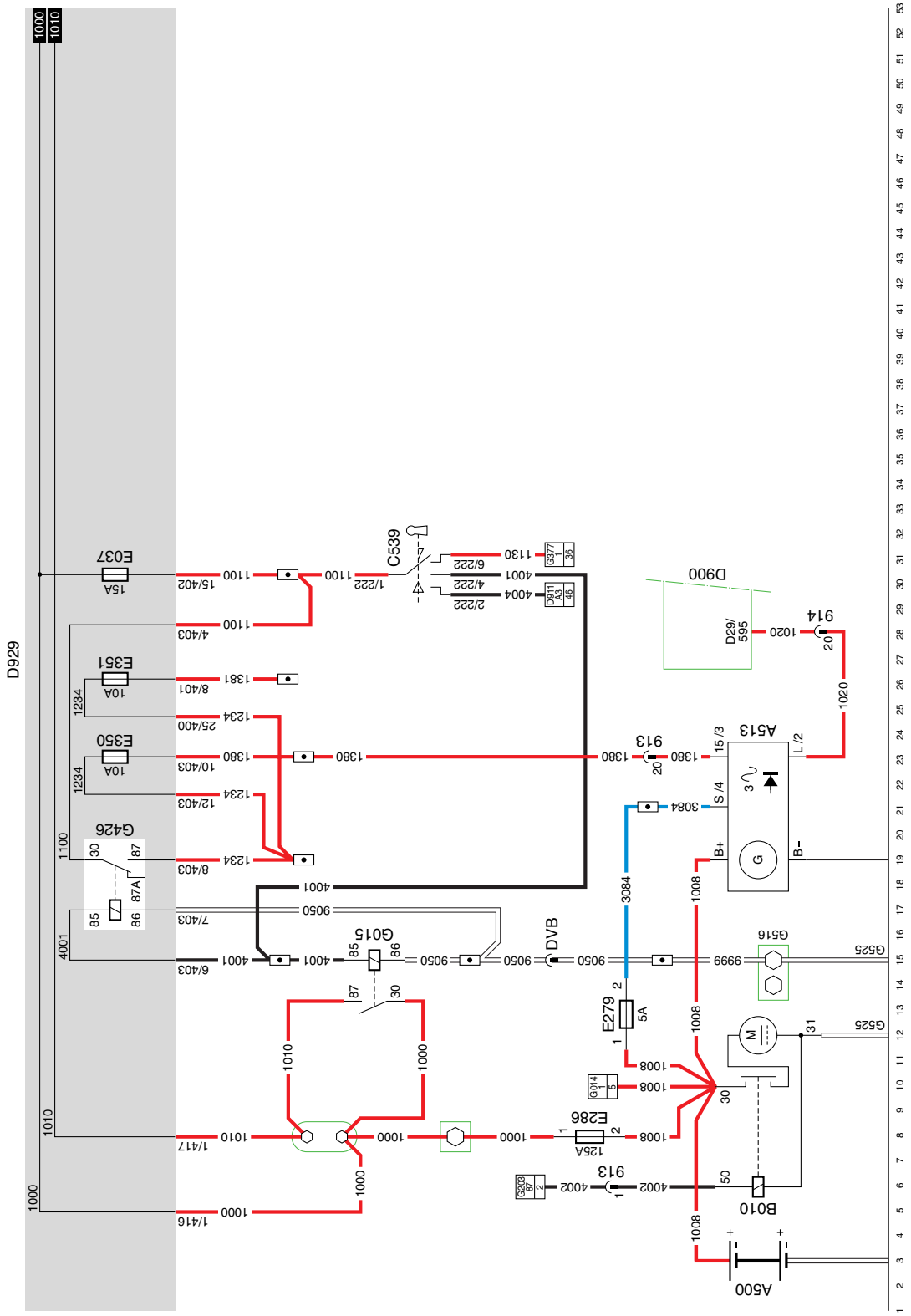
When the accessories/ignition/starter switch (C539) is set to the “contact” position (connection between points 1 and 4), relay G015 is energised via wire 1000, fuse E037, accessories/ignition/starter switch (C539) (contact points 1 - 4) and wire 4001, relay G015.
This then connects wire 1000 (voltage before contact) to wire 1010 (voltage after contact).

At the same moment this voltage is also applied to connection point 85 of relay G426. This relay is also activated and connects contacts 30 and 87. A voltage is now applied both to fuse E350 and to fuse E351 via fuse E037, contacts 30 - 87 and wire 1234. The voltage goes to connection point 15 of the alternator via fuse E350.

When the accessories/ignition/starter switch (C539) is turned against the pressure of the spring (connection between points 1 and 2), relay G015 and relay G426 remain energised and a voltage is supplied to the alarm system (D911) (if present) or directly to connector 403, connection point 2, via wire 1000, fuse E037, accessories/ignition/starter switch (C539), contacts 1 - 2 and wire 4004. When the ignition/starter key is released, the ignition/starter switch automatically springs back and remains in the “contact” position.



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**A** **1358030/26** EL001292

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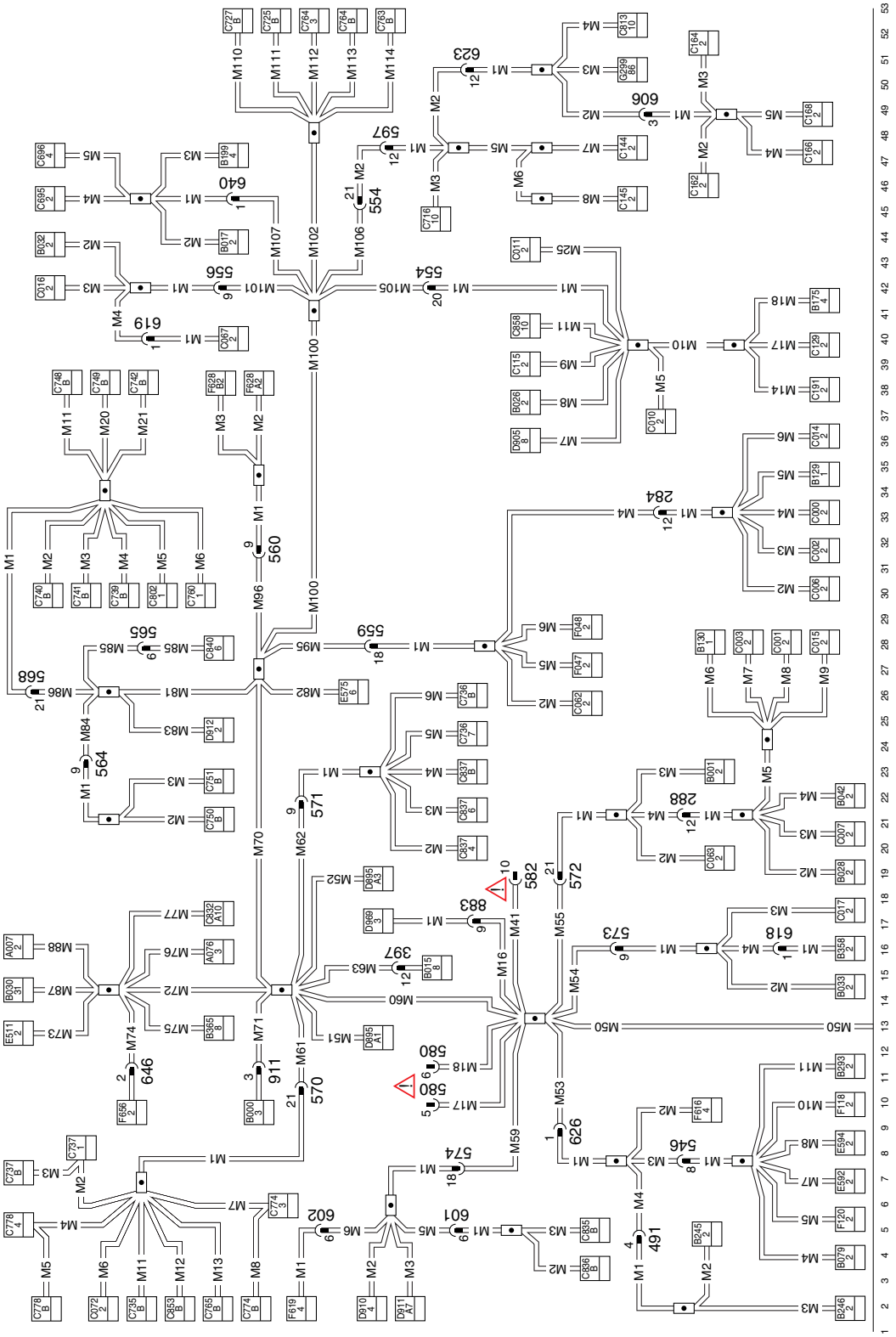
## B OVERVIEW OF EARTHING POINTS

This section diagram gives an overview of all the earth connections, with wire markings and connector points.

**VARIANTS**

**Location**

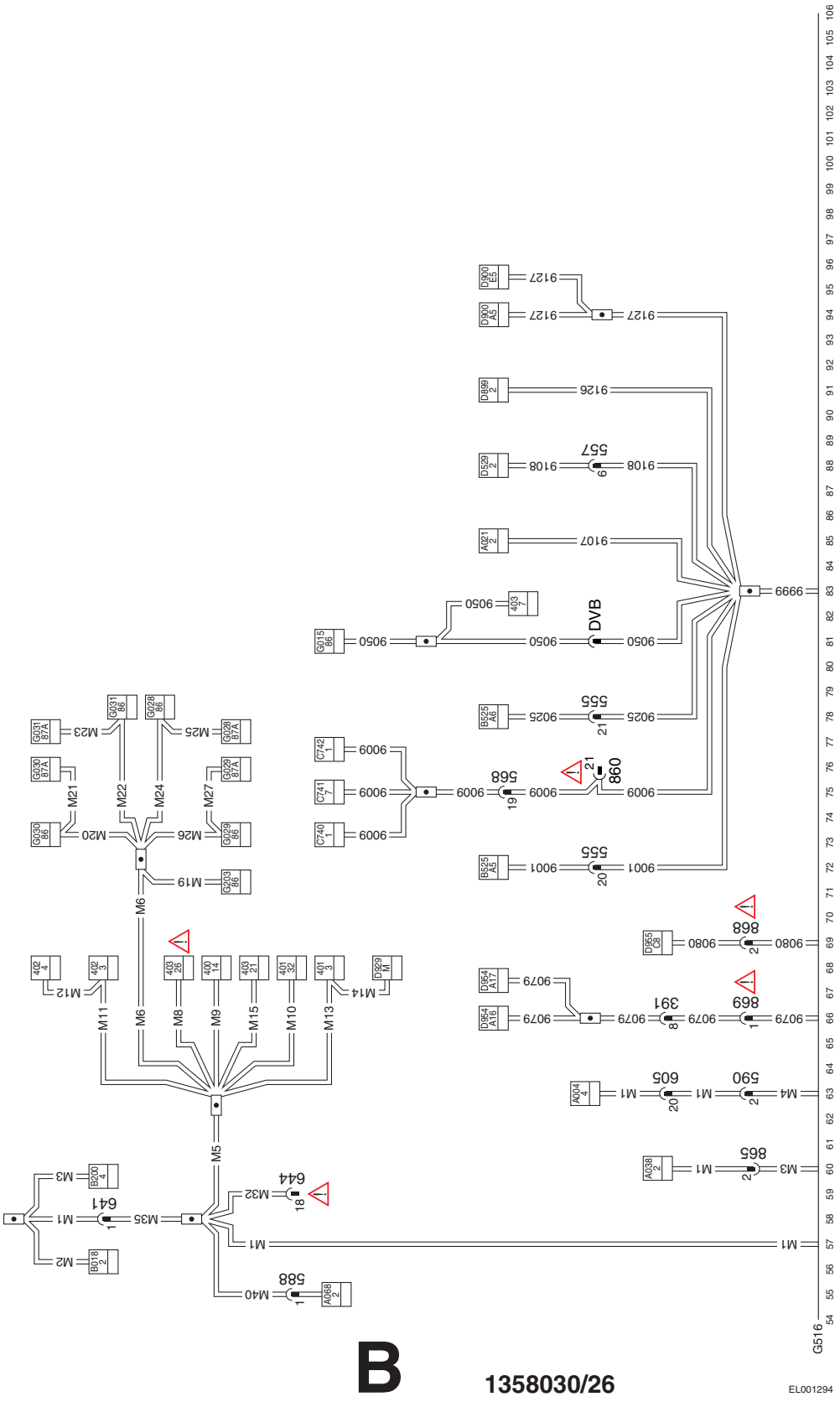
10 connector 580: superstructure connection, accessories
18 connector 482: cab heater ACH-H
connector 582: cab heater ACH-E
59 connector 644: only for AGC
67 connector 869: only for AS Tronic
69 connector 403: only for AS Tronic
71 connector 868: only for AS Tronic
76 connector 860: loop-through to ECAS



B

1358030/26

EL001293


B
1358030/26
EL001294
G516
6999
DVB
M1
M2
M3
M4
M5
M6
M8
M9
M10
M11
M12
M13
M14
M15
M19
M20
M21
M22
M23
M24
M25
M26
M27
M32
M35
M40
9127
9126
9108
9107
9050
9025
9001
9080
9079
6009
557
555
555
568
860
868
869
391
590
605
865
644
641
588

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## C CAN OVERVIEW

This section diagram gives an overview of all the CAN connections, with wire markings and connector points.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

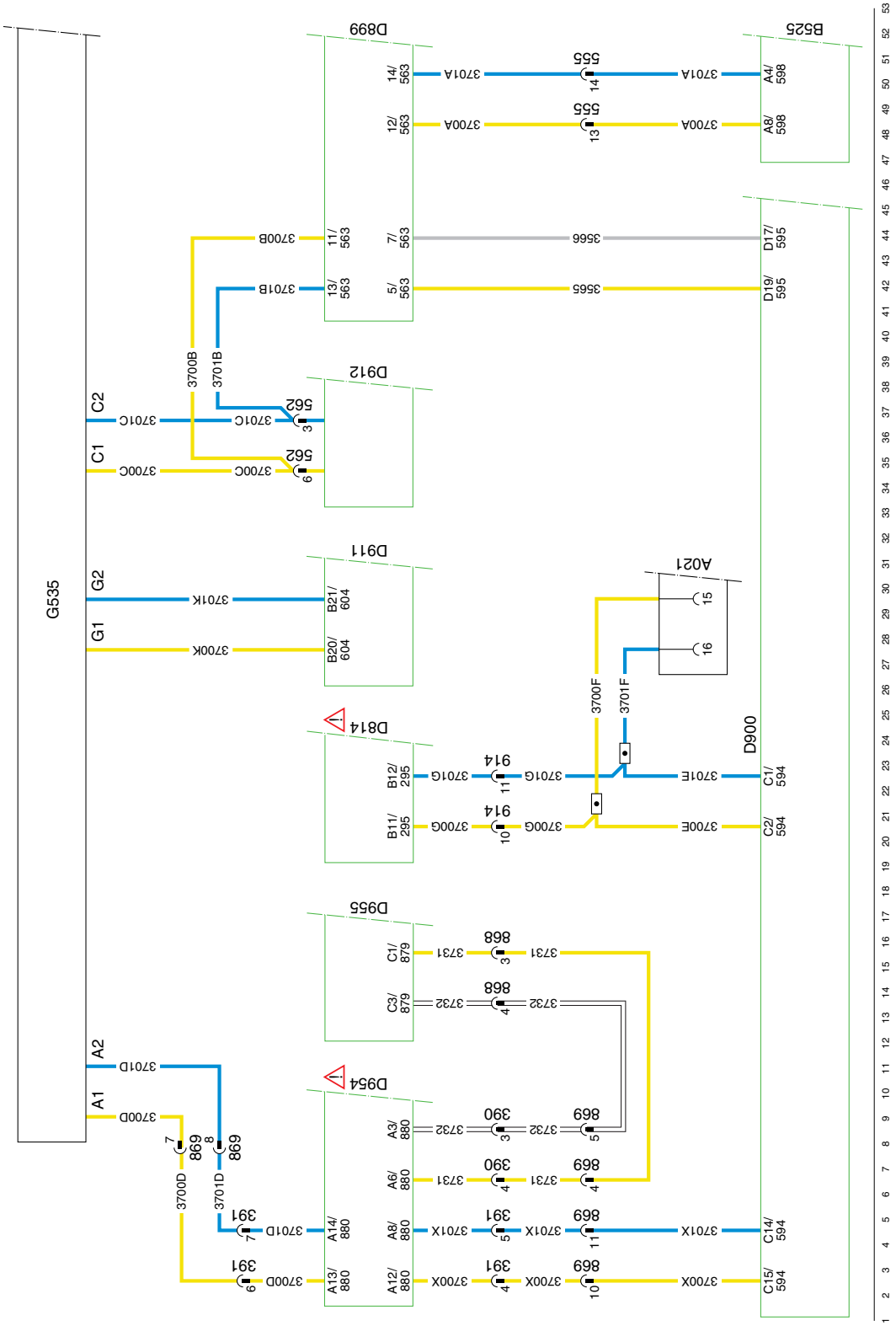
**VARIANTS**

**Location**

11 Only for AS Tronic If AS Tronic is **NOT** fitted, wire 3701 direct from A8 to C14 without in-line connectors.

25 D814: UPEC electronic unit or
D903: electronic unit, ECS-DC3

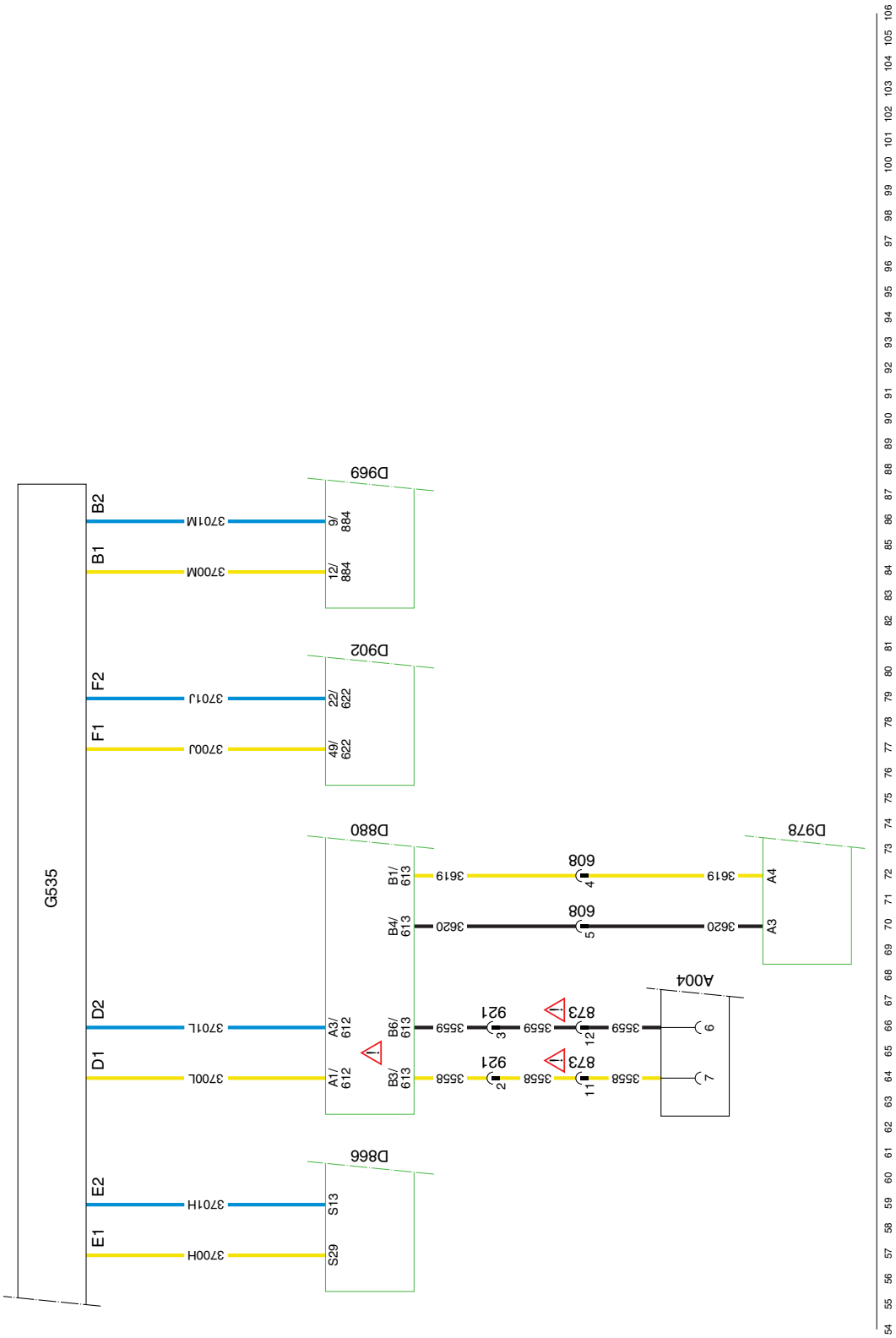
64 Connector 873 only on vehicle type FA
D880 for EBS or
D941 for ABS/ASR-D




**C** **1358030/26** EL001295



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**C** **1358030/26** EL001296

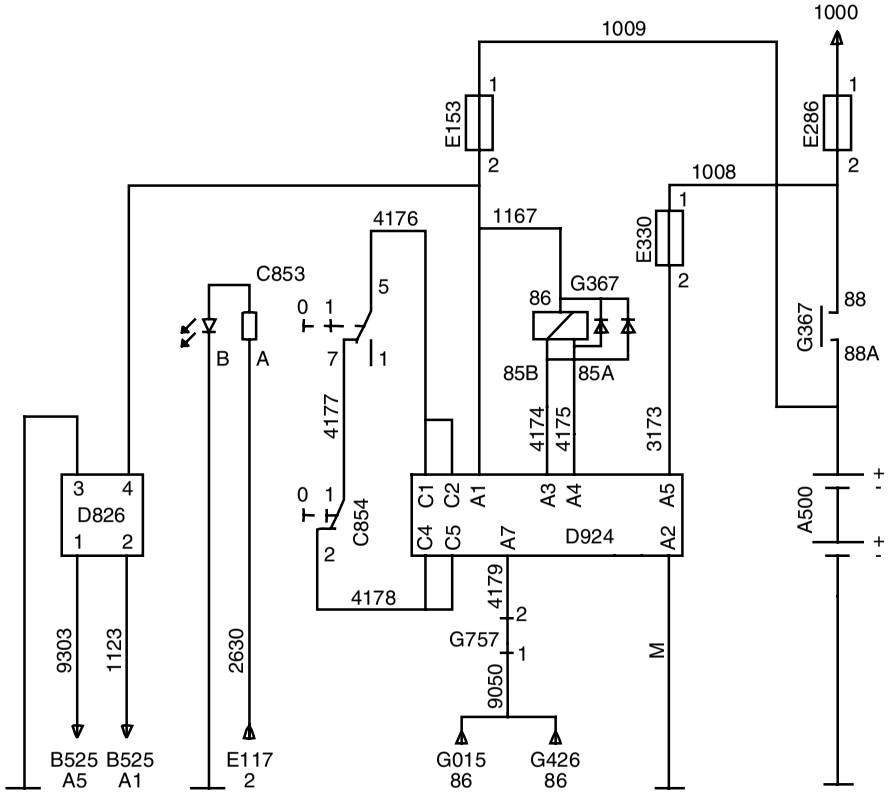
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# 1 MAIN SWITCH

## MAIN SWITCH FOR VLG/ADR

* If the vehicle has an Allison gearbox and the system must meet specific safety requirements, wire no. 1009 (Allison power supply) should be connected to connection 88a of relay G367.

| Basic code number | Description |
|---|---|
| A500 | Batteries |
| A513 | Integrated voltage regulator generator |
| B525 | Modular tachograph, MTCO |
| C853 | Cab main switch |
| C854 | Chassis main switch |
| D826 | Electronic unit for VLG current limiter |
| D900 | CF 65/75/85 VIC electronic unit |
| D924 | Electronic unit for main switch |
| E117 | Fuse, search light |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply |
| E286 | Main fuse |
| E330 | Fuse, 'sens' wire main switch |
| G367 | Main switch relay, power supply |
| G425 | Main switch relay |





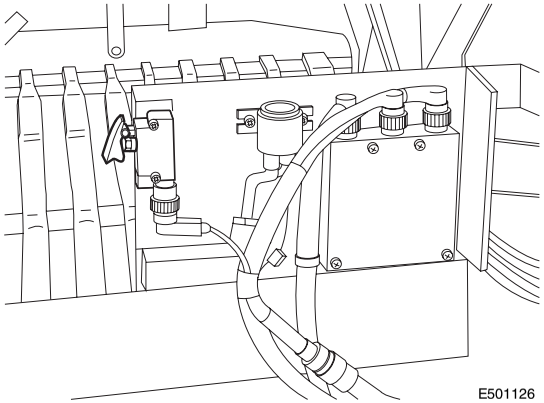



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**Relay, main switch power supply**
Relay G367 is a bi-stable relay. If one of the two coils is briefly energised, the relay will remain in this position. If the other coil is energised, the relay will switch over and then remain in the new position.

## Electrically closing the main switch

The main switch (D924) can be closed:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854




**ATTENTION: Switches C853 and C854 are connected in series. When C853 or C854 is switched on, the other switch must be in the “main switch on” position.**
Switch C853 (main switch in cab) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive pole of the batteries is now connected to the vehicle’s power supply.
Immediately after switch C853 closes, connection point A2 is internally connected to point A7.

Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

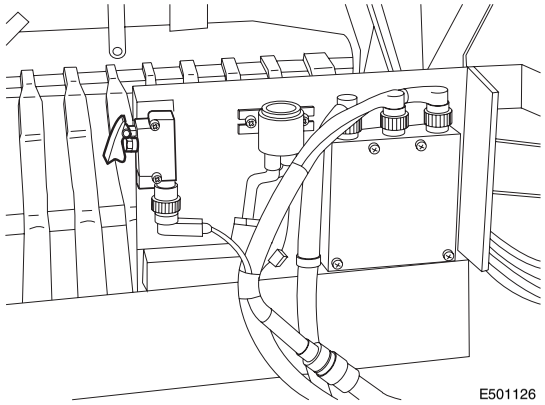
### Closing the main switch electrically on the chassis

**NOTE: Switch C853 must be in the “main switch on” position (connection between contacts 5 and 7).**
Switch C854 (switch for main switch on the chassis) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive pole of the batteries is now connected to the vehicle’s power supply.
Immediately after switch C854 closes, connection point A2 is internally connected to point A7.

Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

The main switch (D924) can be opened:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854

### Opening the main switch electrically in the cab




**NOTE: Switch C854 must be in the “main switch on” position (connection between contacts 1 and 2).**



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Switch C853 (switch for main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178. Two actions are carried out immediately after switch C853 is opened:

1. Connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. After a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive pole via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Opening the main switch electrically on the chassis**

**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**

Switch C854 (main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178.

Two actions are carried out immediately after switch C854 is opened:

1. Connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. After a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive pole via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Note:**
When one of the switches (C853 or C854) that activate the electronic unit (close main switch) is operated, relay G367 is activated after approximately 3 seconds. If one of the switches is operated again within the 3 seconds, the electronic unit (D924) will select the priority 'main switch ON'.

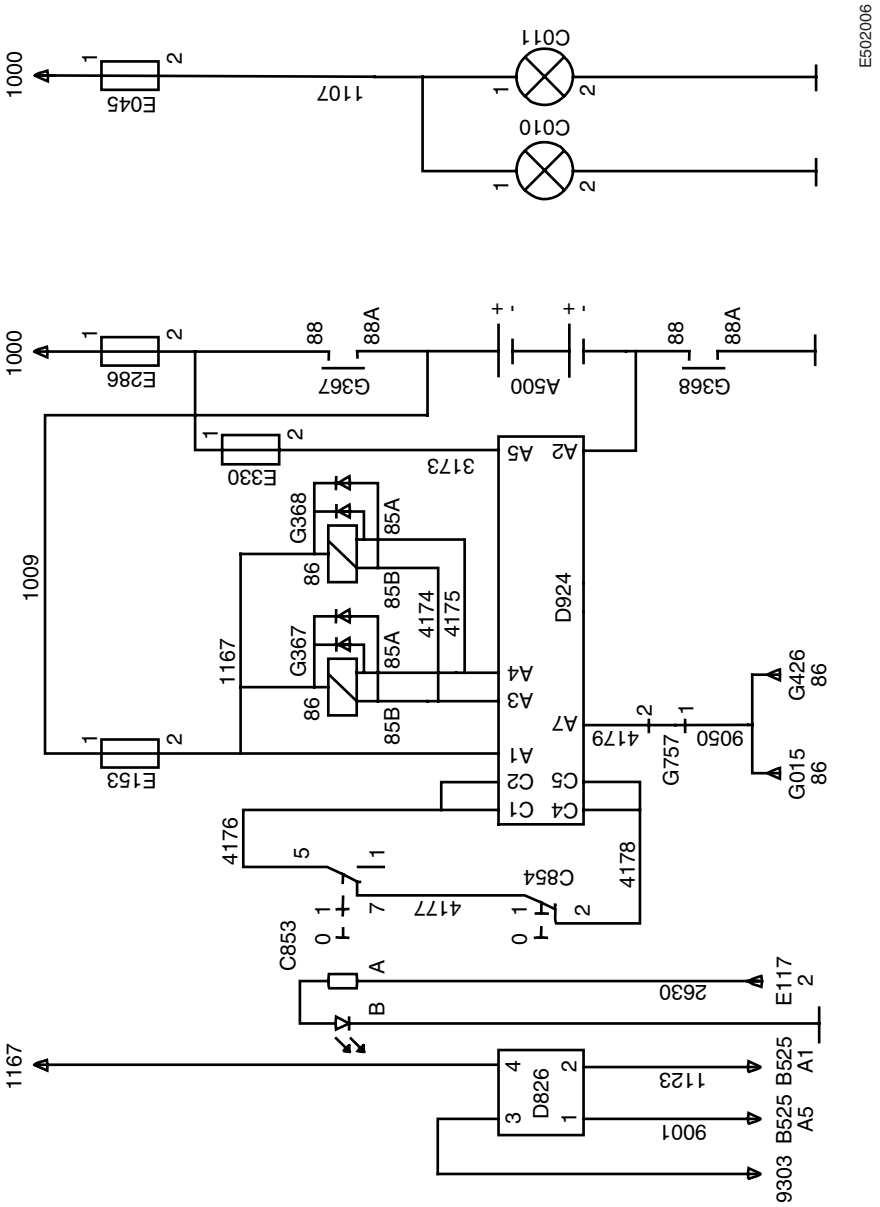
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| Basic code number | Description |
|---|---|
| A500 | Batteries |
| A513 | Integrated voltage regulator generator |
| B525 | Tachograph |
| C010 | Position of cab lamp on driver's side |
| C011 | Position of co-driver's side cab lamp |
| C853 | Switch for main switch in cab |
| C854 | Switch for main switch on chassis |
| D826 | Electronic unit for VLG current limiter |
| D900 | LF65/75/85 VIC electronic unit |
| D924 | Electronic unit for main switch |
| E045 | Fuse, interior lighting |
| E117 | Fuse, search light |
| E153 | Engine stop main switch fuse for main switch |
| E286 | High output fuse |
| E330 | Fuse, 'sens' wire main switch |
| G367 | Relay, power supply main switch |
| G368 | Relay, main switch earth |
| G425 | Relay, main switch |

**MAIN SWITCH FOR PETREG**

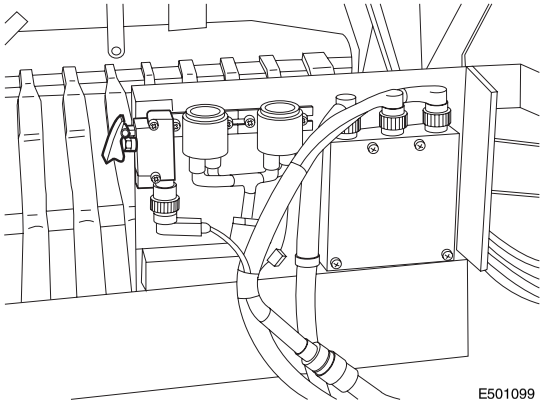
If the vehicle has an Allison gearbox and the system must meet specific safety requirements, wire no. 1009 (Allison power supply) should be connected to connection 88a of relay G367.
The earth connection of D866 must be connected to connector 88 of relay G368.

10


E502006
1000
E045
1107
C011
C010
E286
G367
A500
G368
E330
3173
1009
1167
G368
G367
85A
85B
86
4174
4175
D924
A2
A5
A4
A3
A7
A1
C5
C2
C1
C4
E153
4179
G757
9050
G426
G015
4176
4178
4177
C854
C853
E117
2630
D826
1123
9001
B525 A1
B525 A5
9303

The main switch (D924) can be closed:
- electrically in the cab
- electrically on the chassis

**Closing the main switch electrically in the cab**




**NOTE: Switch C854 must be in the “main switch on” position (connection between contacts 1 and 2).**

Switch C853 (switch for main switch in cab) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178. Relays G367 and G368 are immediately energised through wire 4174 and connection point A3 (A3 is connected to earth for 0.5 seconds). This closes the connection between points 88a and 88 of both relay G367 and relay G368. The positive and the negative poles of the batteries are now connected to the vehicle’s power supply.

Immediately after switch C853 closes, connection point A2 is internally connected to point A7.

Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367.
This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Closing the main switch electrically on the chassis**

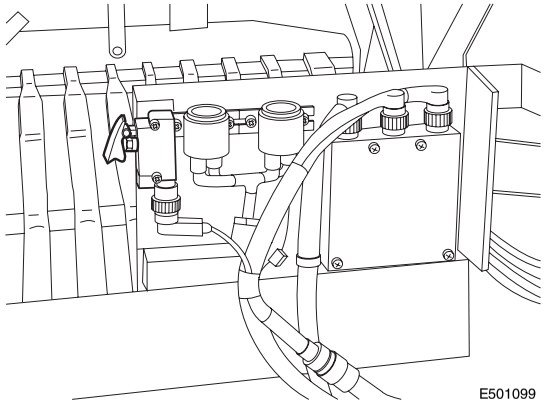
**NOTE: Switch C853 must be in the “main switch on” position (connection between contacts 5 and 7).**

Switch C854 (switch for main switch on the chassis) connects the C1 connection to the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178. Relays G367 and G368 are immediately energised through wire 4174 and connection point A3 (A3 is connected to earth for 0.5 seconds). This closes the connection between points 88a and 88 of both relay G367 and relay G368. The positive and the negative poles of the batteries are now connected to the vehicle’s power supply.

Immediately after switch C854 closes, connection point A2 is internally connected to point A7.
Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

The main switch (D924) can be opened:
- electrically in the cab
- electrically on the chassis

**Opening the main switch electrically in the cab**




**NOTE: Switch C854 must be in the “main switch on” position (connection between contacts 1 and 2).**

Switch C853 (switch for main switch in cab) disconnects wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and the C1 and C2 connections from the C4 and C5 connections via wire 4178.



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Two actions are carried out immediately after switch C853 is opened:
1. Connection point A7 is connected to earth (A2).
2. After a delay of approx. 6 seconds, relays G367 and G368 are connected to earth for approx. 0.5 sec. via wire4175 and connection point A4. This breaks the connection between points 88a and 88 of relays G367 and G368. The positive and the negative poles of the batteries are now disconnected from the vehicle's power supply.

If the engine is running, it is switched off.

Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Opening the main switch electrically on the chassis**

**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**

Switch C854 (switch for main switch in cab) breaks the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5 - 7 of switch C853, wire 4177, contacts 1 - 2 of switch C854 and wire 4178.

Two actions are carried out immediately after switch C854 is opened:
1. Connection point A7 is connected to earth (A2) in the unit.
2. After a delay of approx. 6 seconds, relays G367 and G368 are connected to earth for approx. 0.5 sec. via wire4175 and connection point A4. This breaks the connection between points 88a and 88 of relays G367 and G368. The positive and the negative poles of the batteries are now disconnected from the vehicle's power supply.

If the engine is running, it is switched off.

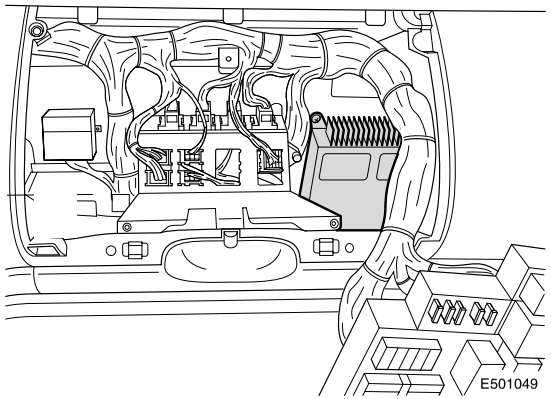
Connection point A5 is connected to the positive pole via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Note:**
When one of the switches (C853 or C854) that activate the electronic unit (close main switch) is operated, relays G367 and G368 are activated after approximately 3 seconds. If one of the switches is operated again within the 3 seconds, the electronic unit (D924) will select the priority 'main switch ON'.

**VARIANTS**

**Location**

| | |
|---|---|
| 24 | Only if the vehicle is equipped to PETREG requirements. |
| 36 | Connect wire 4179 to dashboard-wiring harness in central box (see drawing). |
| 39 | Attach wire 4176 to pin 11 of connector 570.<br>Attach wire 4177 to pin 12 of connector 570. |
| 43, 46 | Attach wire 1123 to pin 2 instead of wire 1127. Insulate wire 1127.<br>Attach wire 9303 to pin 20 of connector 555 instead of wire 9001. Insulate wire 9001. |
| 50 | Only if vehicle is equipped to PETREG requirements. |




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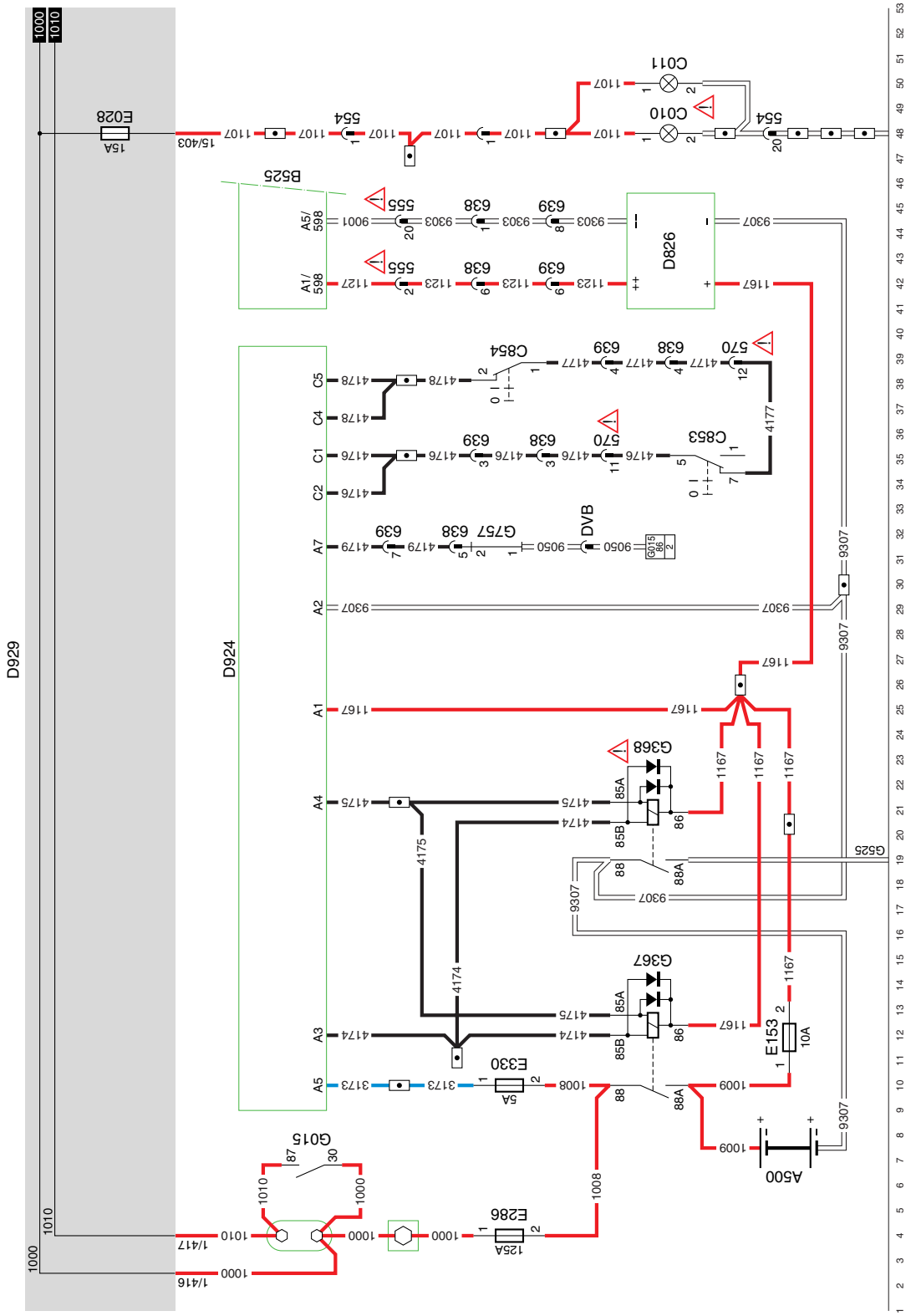
10

**MECHANICAL MAIN SWITCH**

When C694 (mechanical main switch) is operated, connections B and G are connected. The earth of the batteries is now connected to the chassis. The earth connection of B525 (MTCO) is independent of the position of the main switch.

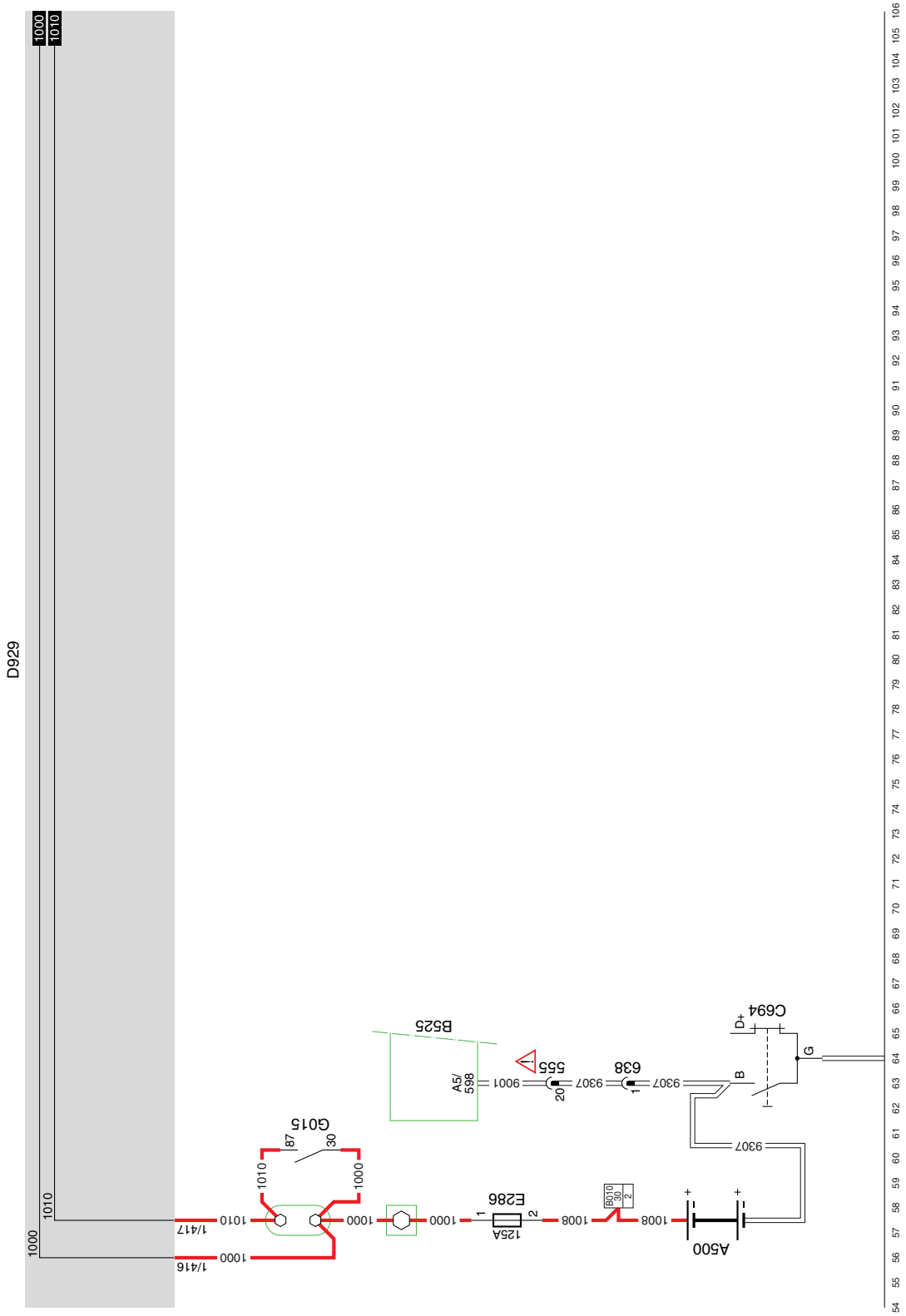
**VARIANTS**

| Location | |
|---|---|
| 64 | Attach wire 9307 to pin 20 of connector 555 instead of wire 9001. Insulate wire 9001. |




1 1358030/26 EL001297

10


D929
1000
1010
1/417
1/416
G015
87
30
E286
125A
A500
B525
A5/
598
555
638
C694
D+
G
B
9307
9001
1008
1358030/26
EL001298

## 2 ALTERNATOR/IGNITION/STARTER SWITCH/CHARGING CIRCUIT

### CONTACT CIRCUIT

If accessories/ignition/starter switch C539 is turned (contact 1 is connected to pin 6), the “radio accessories power supply” relay (G377) will be energised.
Voltage is now applied to contact 1 of relay G377 through fuse E037, wire 1100, contacts 1 - 6 of switch C539, wire 1130. When G377 is energised, a connection is made between contacts 3 and 5 of G377 and a voltage is switched from the converter to the radio.

### STARTING CIRCUIT

If the ignition switch C539 is turned (contact 1 is connected to 4), both contact relay G015 and G426 will be activated via wire 4001.
If the ignition switch is turned to the “start” position, a contact is made in this switch between contacts 1 and 2. The power is now supplied from the batteries through fuse E037, the connection 1 - 2 from the accessories/ignition/starter switch and wire 4004 on connection point A3 of the alarm system.
When the alarm system has been switched off using the remote control, or by activating the contact (the immobiliser switches the alarm off via CAN), wire 4004, connection point A3, is connected to wire 4004, connection point A1.
The coil of relay G203 will be activated. This closes connection 30 - 87. A voltage is now applied to connection point 50 of the starter motor, through fuse E037, wire 1100, relay contacts 30 - 87, wire 4002, causing the starter motor to turn.

When the alarm has been switched off and the door has opened, the start interrupter will be deactivated for 60 seconds. If the engine is not started within this time, the start interrupter is reactivated. If the alarm is switched off and the doors are not opened, the start interrupter remains deactivated for 9 minutes.

**If the vehicle has an AS Tronic gearbox**
If the vehicle has an AS Tronic gearbox, relay G185 is also fitted. When the contact is switched on and the gearbox is in neutral, relay G185 will be energised.
The voltage is now applied to the coil of relay G203 through wire 4004, contacts 30 - 87 of relay G185, wire 4186, contacts 3 - 4, wire 4009. This relay is energised. A voltage is now applied to connection point 50 of the starter motor, through E037, wire 1100, contacts 30 - 87 and wire 4002, causing the starter motor to turn.

As soon as the motor turns, the VIC applies a voltage to connection point C42. The voltage is then applied to connection point 1 of relay G372 via wire 3157. This relay is energised, breaking the starting circuit.

**Note:**
When the immobiliser applies a voltage to wire 4009, the cab heater is also switched off if the vehicle must meet requirements for the transportation of hazardous substances.

### CHARGING CIRCUIT

If the contact is activated, there is voltage on connection point 85 of relay G426. This relay is activated. Voltage is now applied to connection point 15 of the alternator through fuse E037, contacts 30 - 87 of relay G426, fuse E350 and wire 1380.
An internal resistor in the alternator is energised by an IC in the carbon brush holder. This resistor ensures that a low level of current passes through the energising resistor. This excites a magnetic field in the alternator.

After starting, the voltage on terminals B+ and 15 will rise to about 28.5 V. Once this voltage is reached, the IC in the regulator interrupts the pre-exciter coil to enable the voltage to be regulated. The magnetic field will now disappear, so that the generator will not be energised for a short period of time. As a result, the voltage on outputs B+ and 15 will drop.



© 200404

The regulator reactivates when the voltage drops below 27.6V. This means that the voltage supplied by the generator remains relatively constant. The batteries are supplied through the B+ generator output.

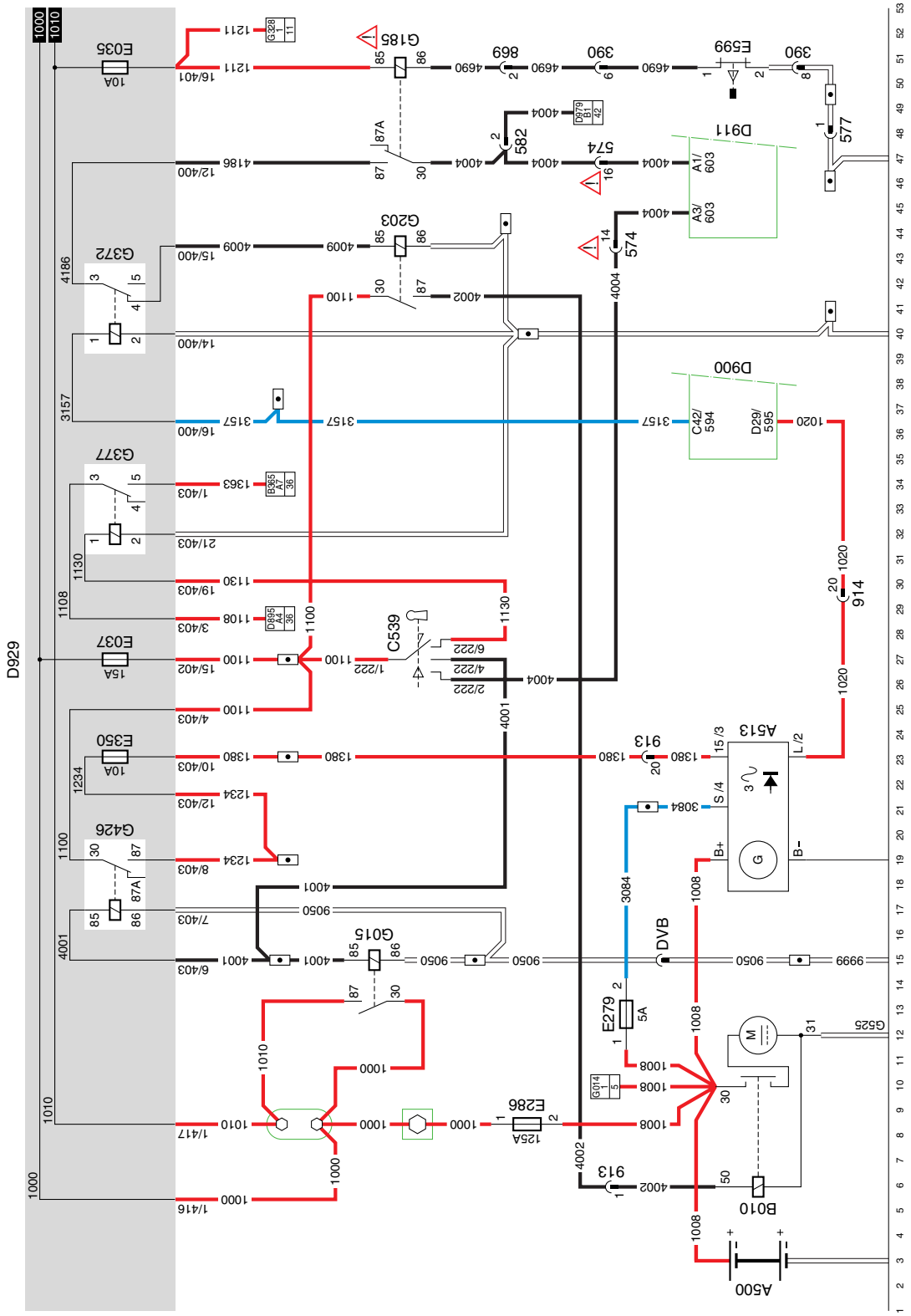
The alternator charging current warning lamp is activated via wire 1020, which is connected to the VIC (D900). The VIC controls the DIP via the CAN network. The voltage on wire 1020 is switched by the control IC.

The alternator is also equipped with a 'sens' line. This connection continuously measures the voltage on connection point 30 of the starter motor. If the voltage on connection point 30 drops, the voltage is immediately corrected by the control IC. The alternator will increase the voltage until a value of 28.5V is reached again.

**VARIANTS**

| Location | |
|---|---|
| 44/46 | If **NO** alarm system is fitted, wires 4004 and 4004A are connected through in connector 574. |
| 51 | Only for AS Tronic. |

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**2** **1358030/26** EL001299

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**3 MTCO-TACHOGRAPH**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

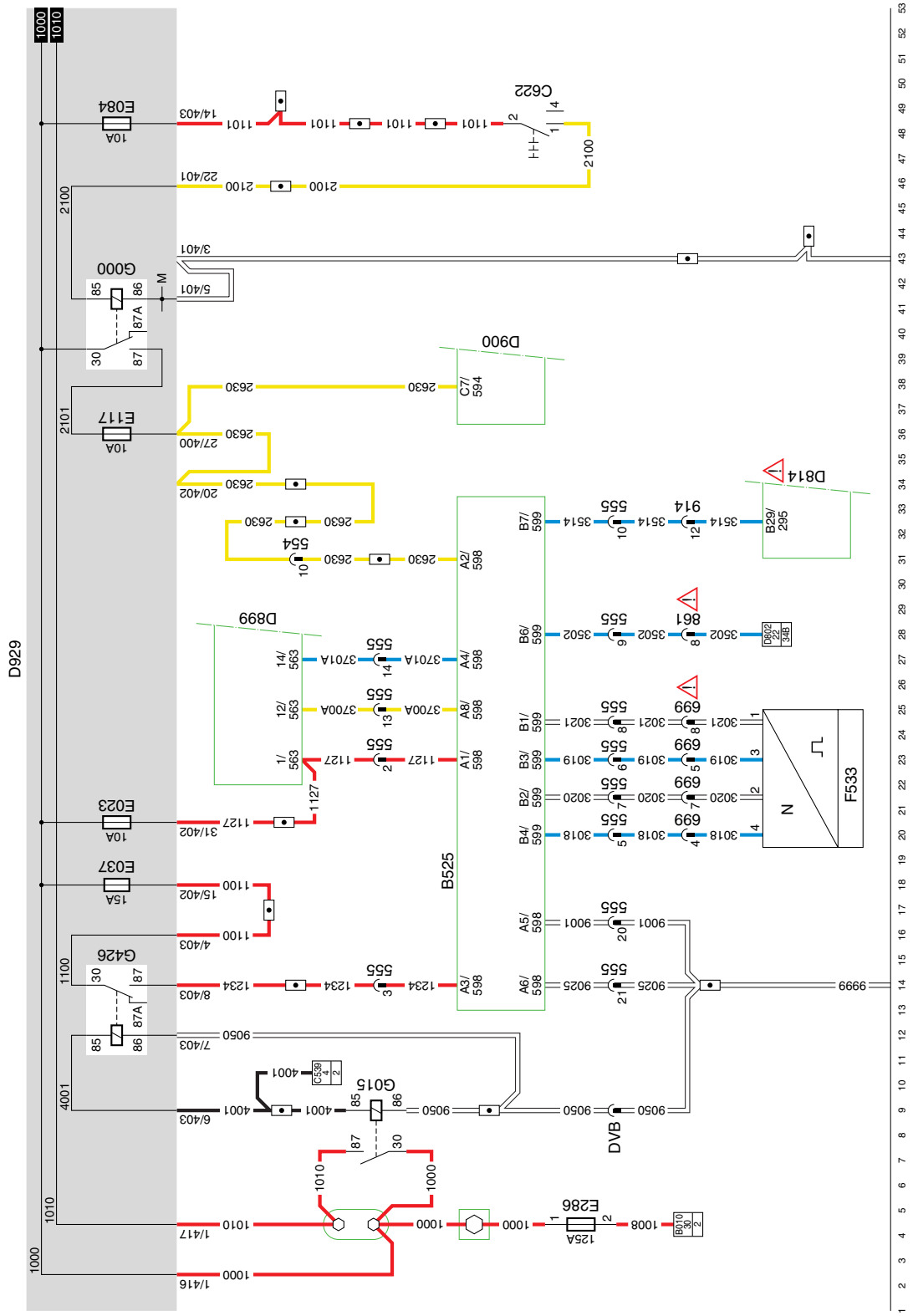
**VARIANTS**

**Location**

26 Connector 626 for manual gearbox.
Connector 699 for AS Tronic.

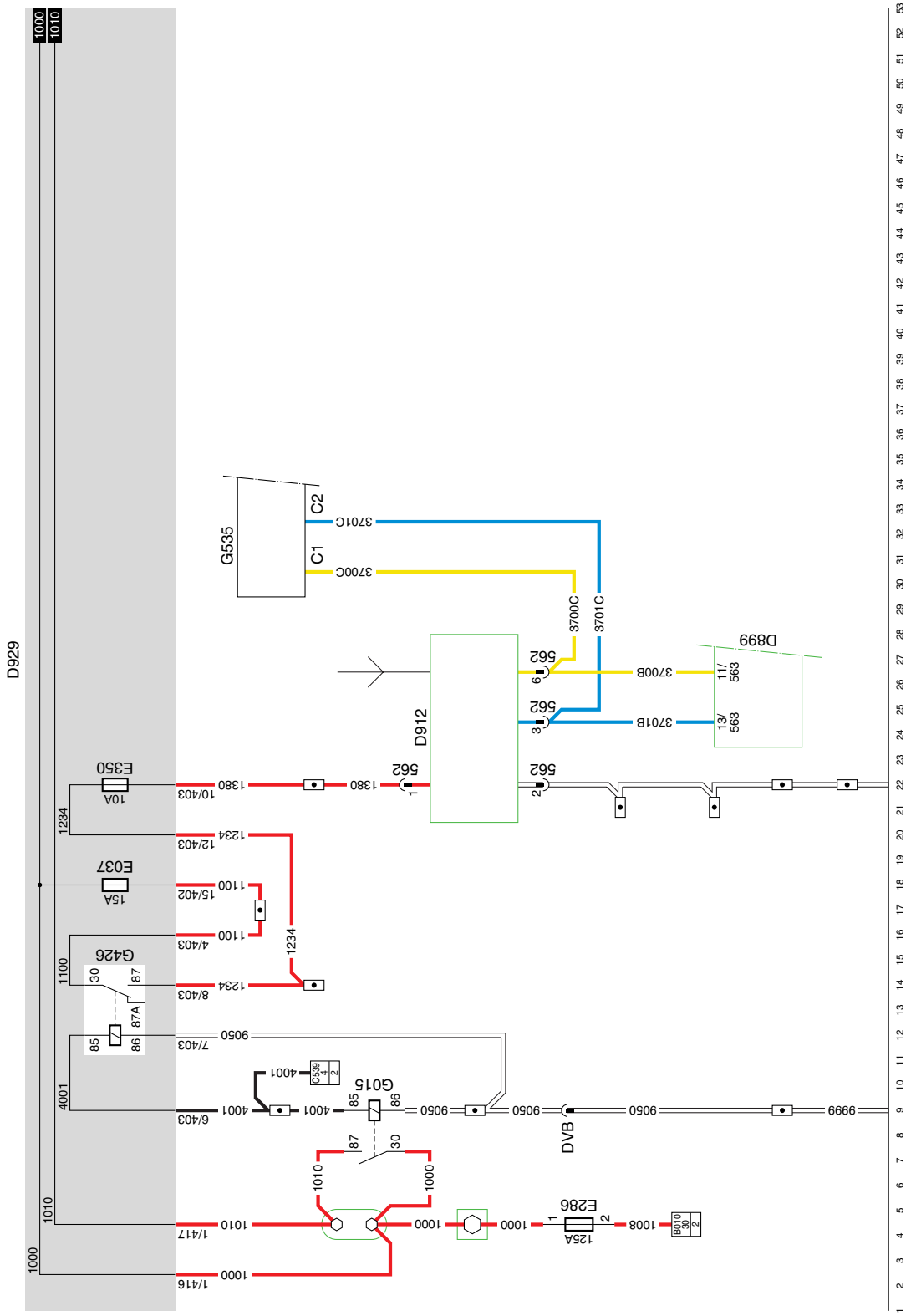
29 Connector 861: connection to ECAS system

35 D814 for vehicles with UPEC.
D903 for vehicles with ECS-DC3.


D929
1000
1010
E084
10A
14/403
1101
C622
2100
22/401
G000
3/401
5/401
87A
30
87
85
86
D900
C7/
594
E117
2101
27/400
20/402
554
B814
B29/
295
914
861
D899
B525
A2/
598
A4/
598
A8/
598
A1/
598
B7/
599
B6/
599
B1/
599
B3/
599
B2/
599
B4/
599
A5/
598
A6/
598
A3/
598
F533
N
E023
31/402
E037
15A
15/402
4/403
G426
8/403
7/403
4001
6/403
G015
DVB
E286
125A
B010
1/417
1/416
1358030/26
EL001300

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4 IMMOBILISER
SEE THE SYSTEM MANUAL FOR MORE INFORMATION




**4** **1358030/26** EL001301

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## 5 PRE-GLOWING

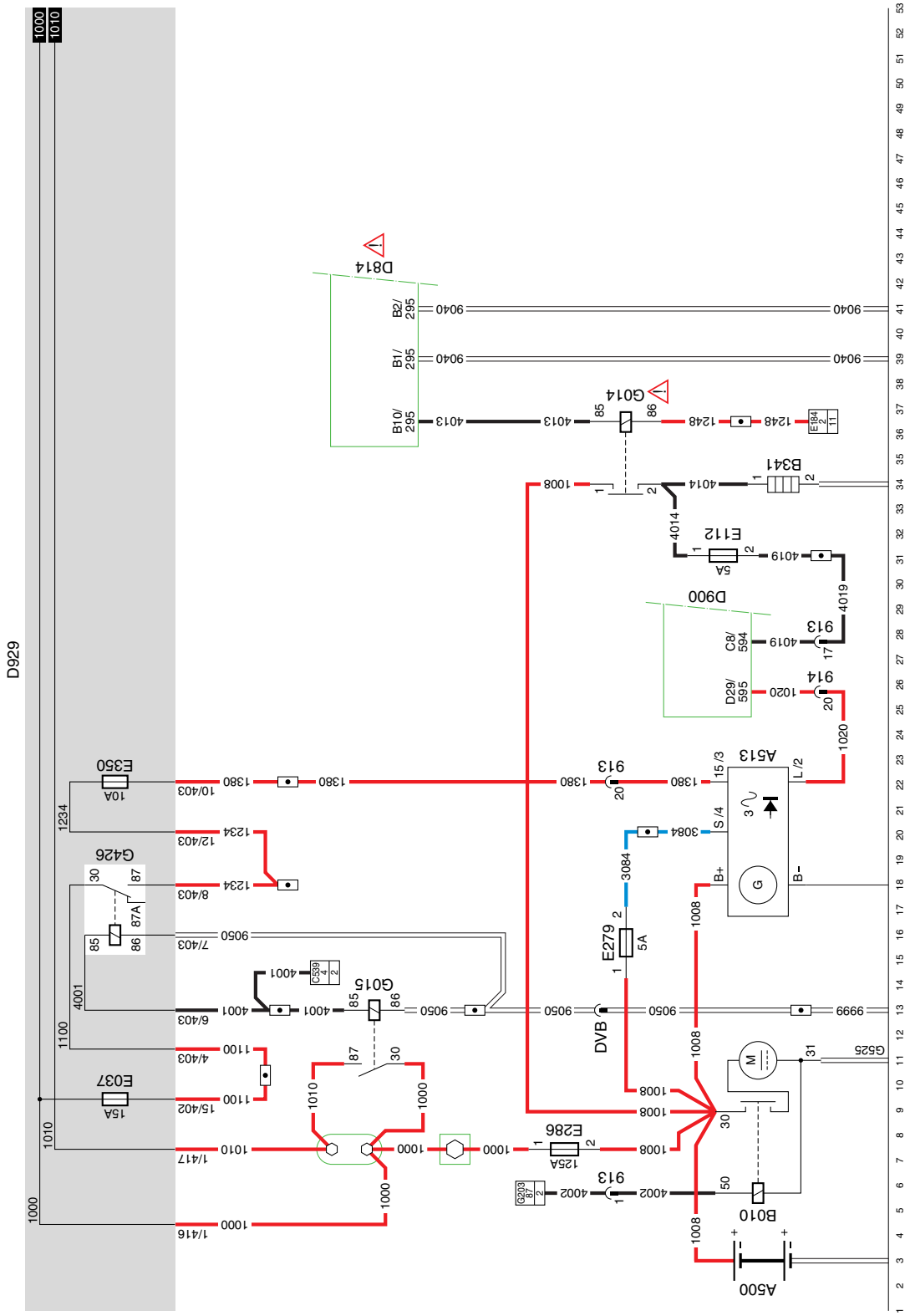
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

37 If no pre-glowing system has been fitted, the wires are attached to a 'dummy' relay.

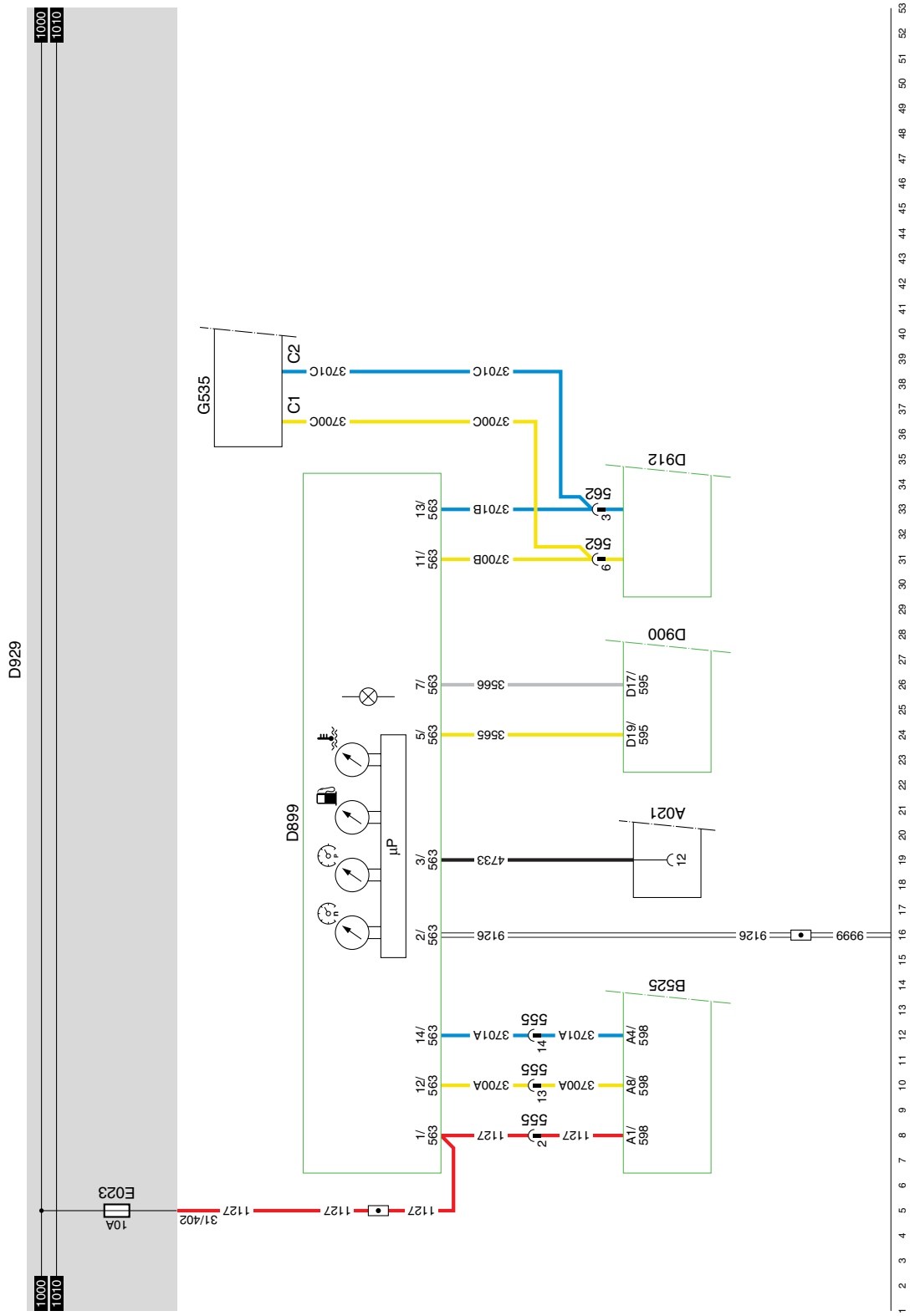
41 D814 for vehicles with UPEC
D903 for vehicles with ECS-DC3


D929
1000
1010
D814
B2/ 295
B1/ 295
B10/ 295
9040
G014
4013
1248
E184
B341
1008
4014
E112
5A
4019
D900
C8/ 594
D29/ 595
913
914
1020
A513
15 /3
L /2
S /4
3
G
B+
B-
3084
E279
5A
DVB
9050
6999
G625
M
31
E350
10A
10/403
1380
1234
12/403
G426
30
87
87A
85
86
8/403
7/403
4001
6/403
G015
C539
4
2
1100
4/403
E037
15A
15/402
1/417
1010
1000
1/416
E286
125A
G203
4002
B010
50
A500
EL001302

**5** **1358030/26**

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6 DIP-4
SEE THE SYSTEM MANUAL FOR MORE INFORMATION




**6** **1358030/26** EL001303

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7 DIRECTION INDICATORS AND WARNING LIGHTS

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

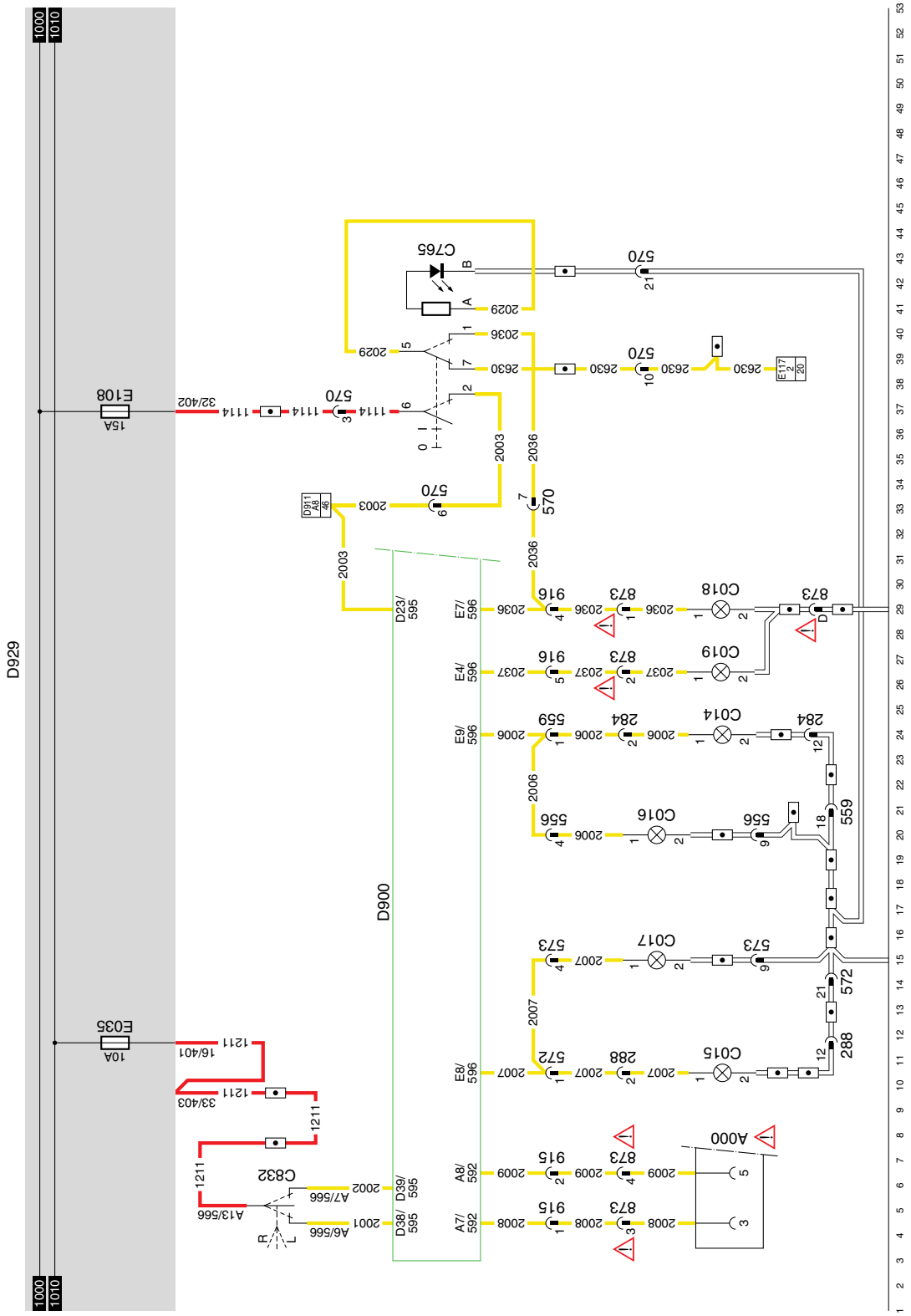
VARIANTS

**Location**

3, 8, 26 Connector 873 only for vehicle type FA.

8 Depending on whether the vehicle is fitted with a 7-pin or 15-pin plug. See also section diagram 47.

10




7

1358030/26

EL001304

**8 VIC**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

145 Connector 580: optional.

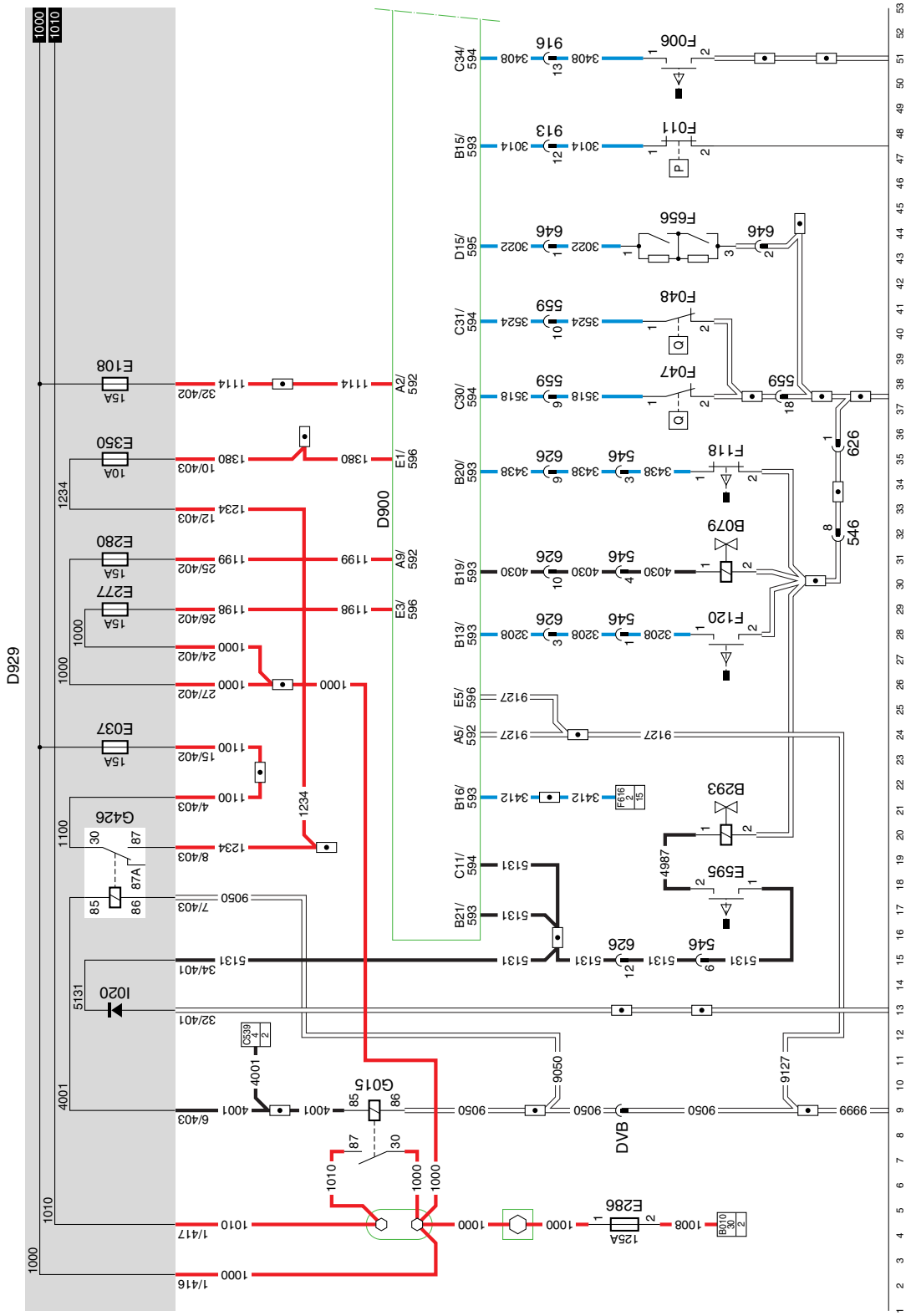
146 D871: Airtronic cab heater.
D979: Hydronic 10 cab heater.

147 G301: if vehicle is fitted with Swedish lighting.

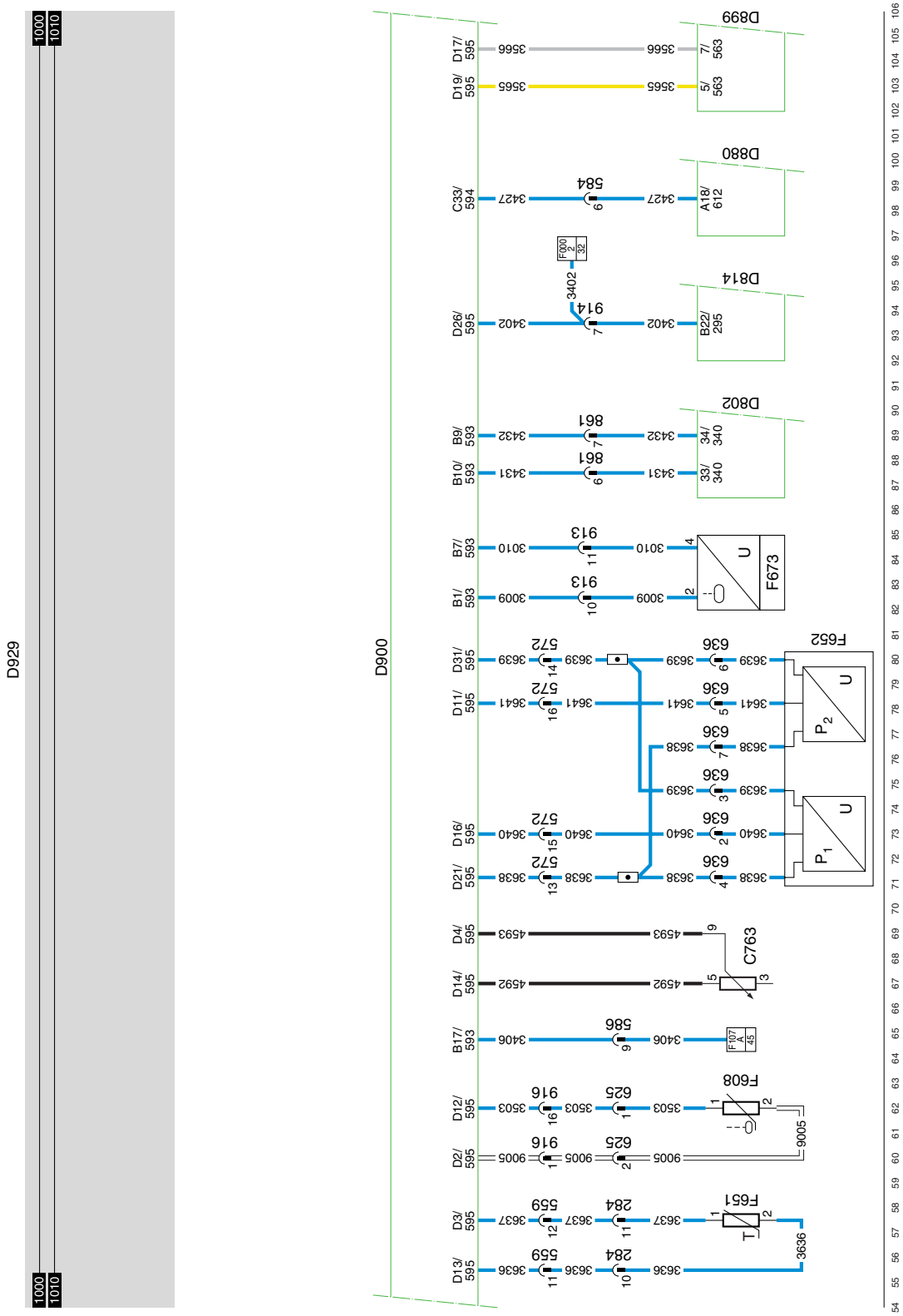
203 For vehicles with ABS/ASR-D, connector 584.
For vehicles with EBS, connector 585.

220 Only if the vehicle is fitted with AS Tronic. If AS Tronic is **NOT** fitted, wire 3701 is connected directly from C14 to A8 without 'in-line' connectors.

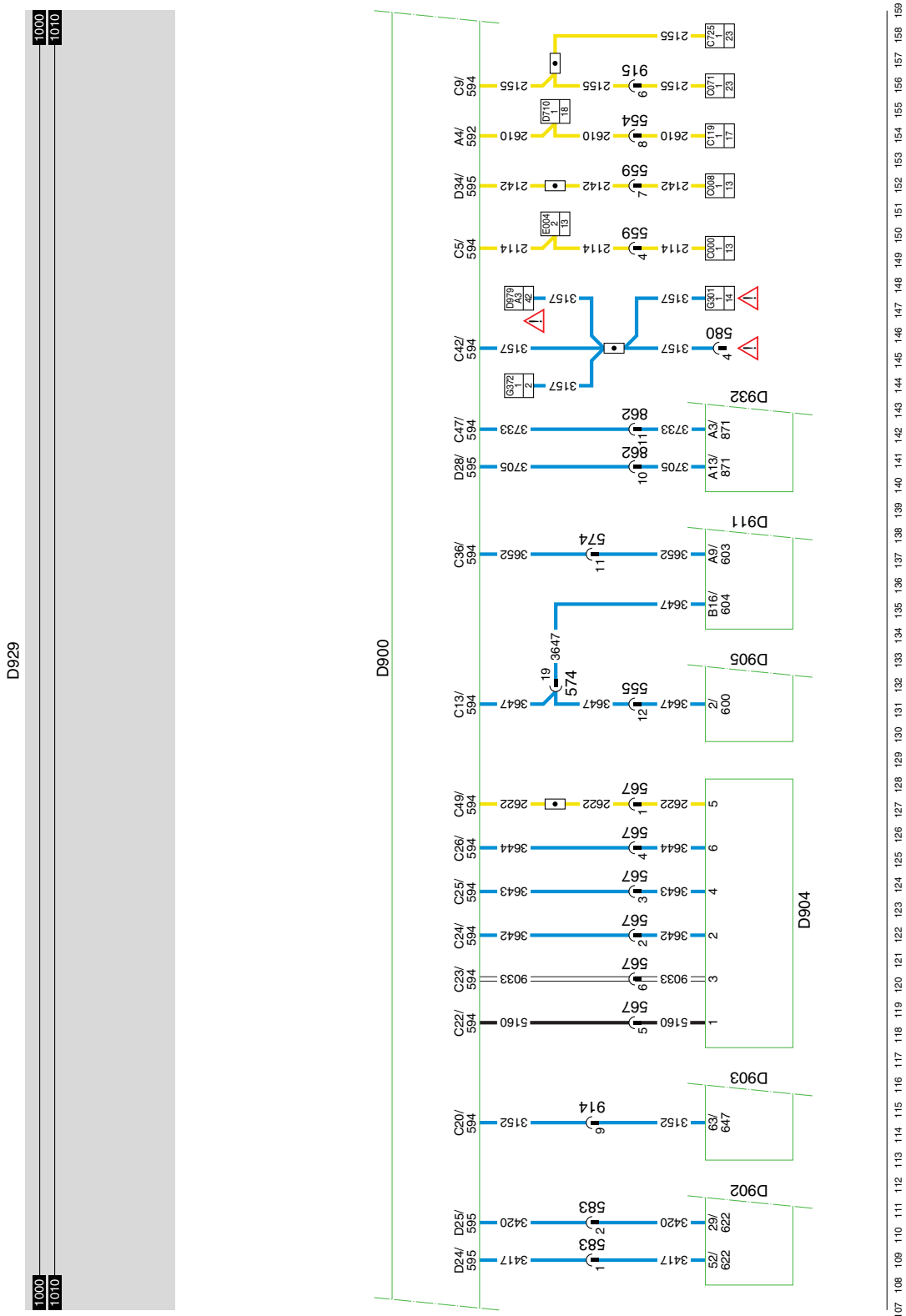
10




**8** **1358030/26** EL001305

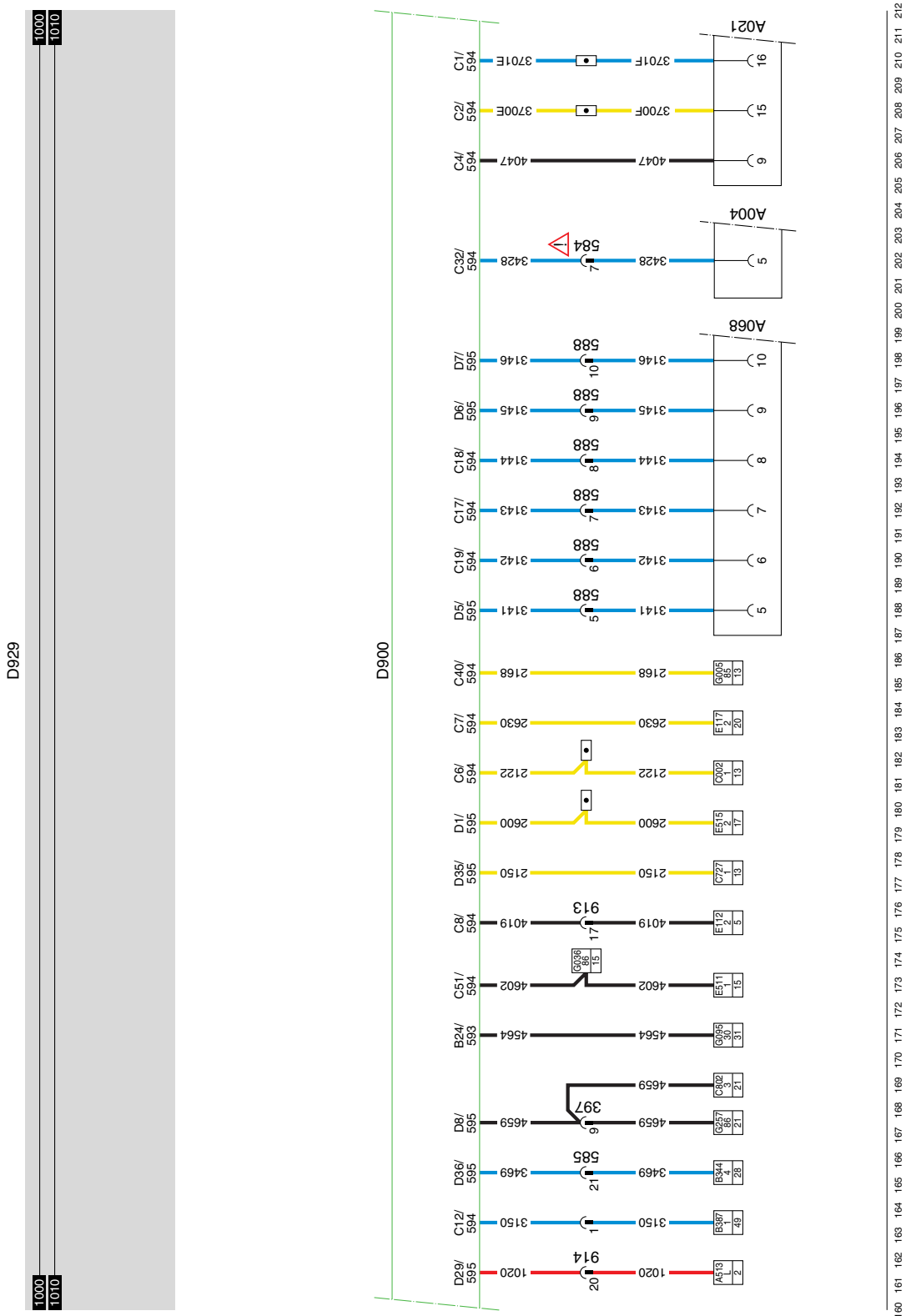



**8** **1358030/26** EL001306

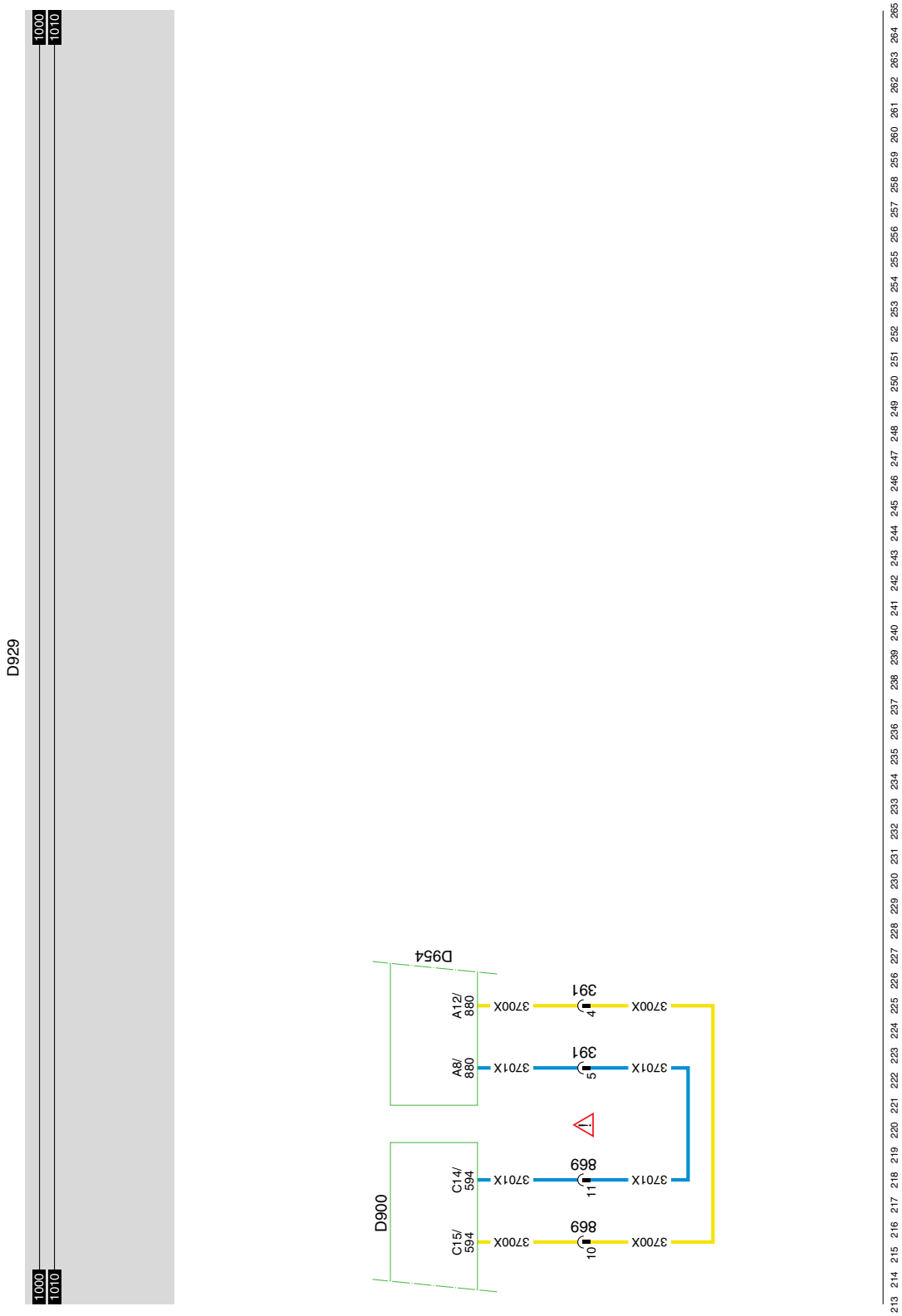



**8** **1358030/26** EL001307

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**8** **1358030/26** EL001308




**8** **1358030/26** EL001309

10

## 9 FA MARKER AND PARKING LIGHTS

Switching the lighting switch (C622) to the 1st position (connection between contacts 2 and 1) energises the rear light/width marker light relay (G000) through fuse E084, wire 1101, contacts 2 - 1 of switch C622 and wire 2100. A voltage is applied to the left and right lights through the G000 relay contacts (30 - 87 respectively) and fuses E000 and E001.

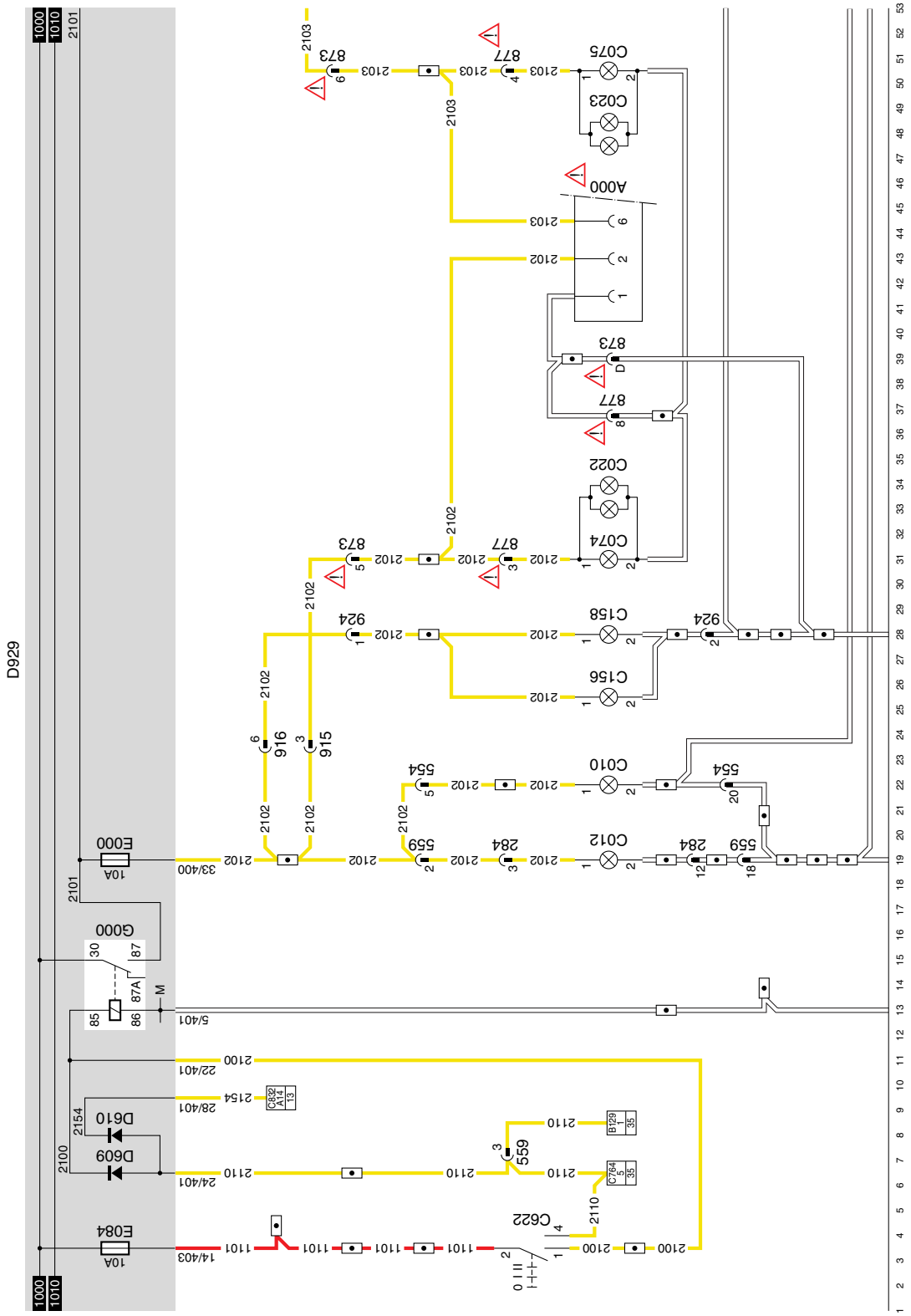
Linked to fuse E000 are: C010, C012, C156, C158, C074 and C022. There is also a connection in connector A000 (pin 2) and connector A070 (pin 2).

Linked to fuse E001 are: C011, C013, C157, C159, C075 and C023. There is also a connection in connector A000 (pin 6) and connector A070 (pin 3).

**VARIANTS**

| Location | |
|---|---|
| 31, 51, 37: | Connector 877: only if the vehicle has a buffer beam as standard. |
| 31, 39, 50: | Connector 873: only on vehicle type FA. **Not** if AE = > 902 mm. |
| 46 | This may be either a 7-pin or a 15-pin connector. For more information: see section diagram 47. |

10

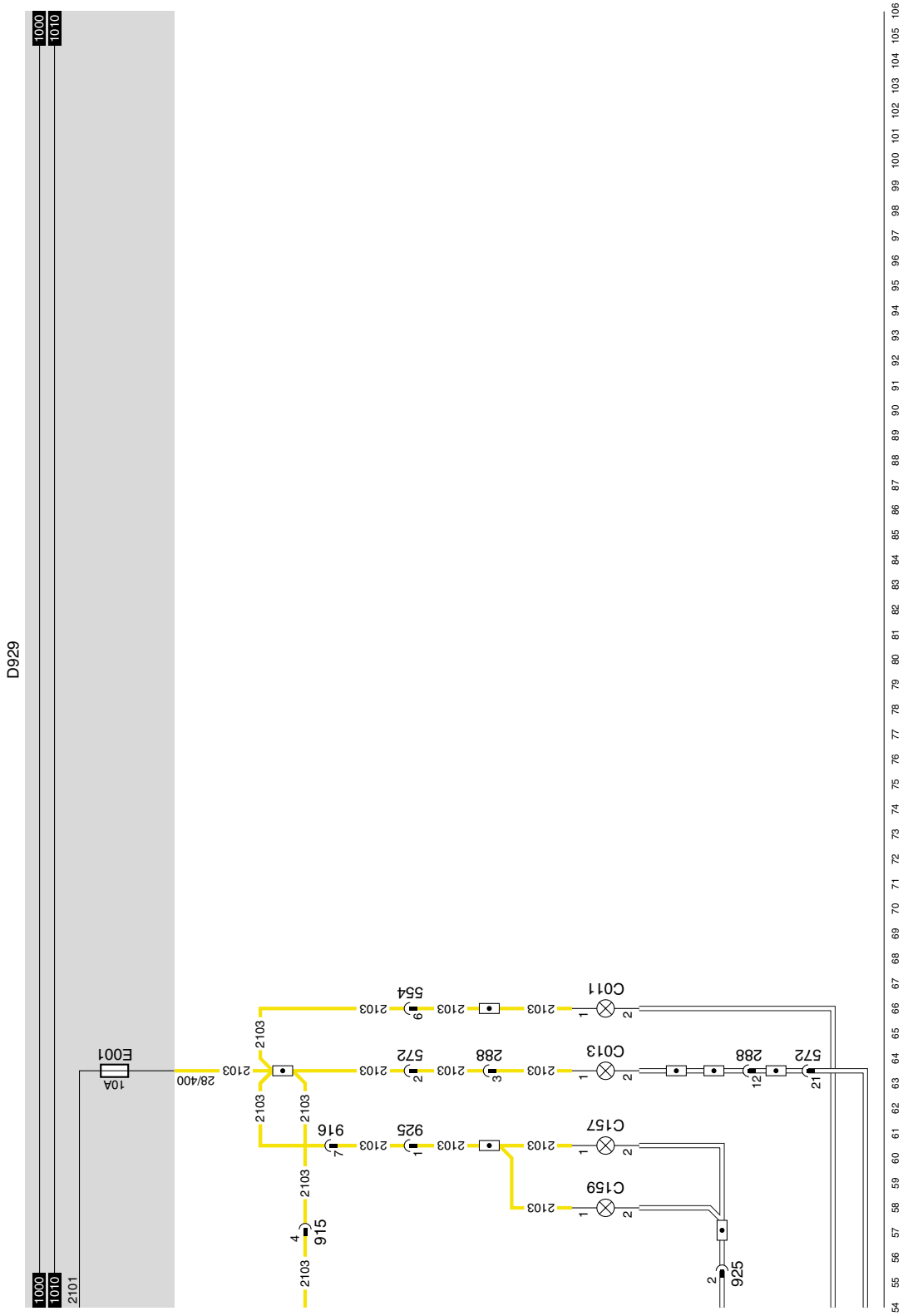



9

1358030/26

EL001310

10


D929
1000
1010
2101
E001
10A
28/400
2103
554
572
288
916
925
915
C011
C013
C157
C159
EL001311

**9** **1358030/26**

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## 10 FT MARKER AND PARKING LIGHTS

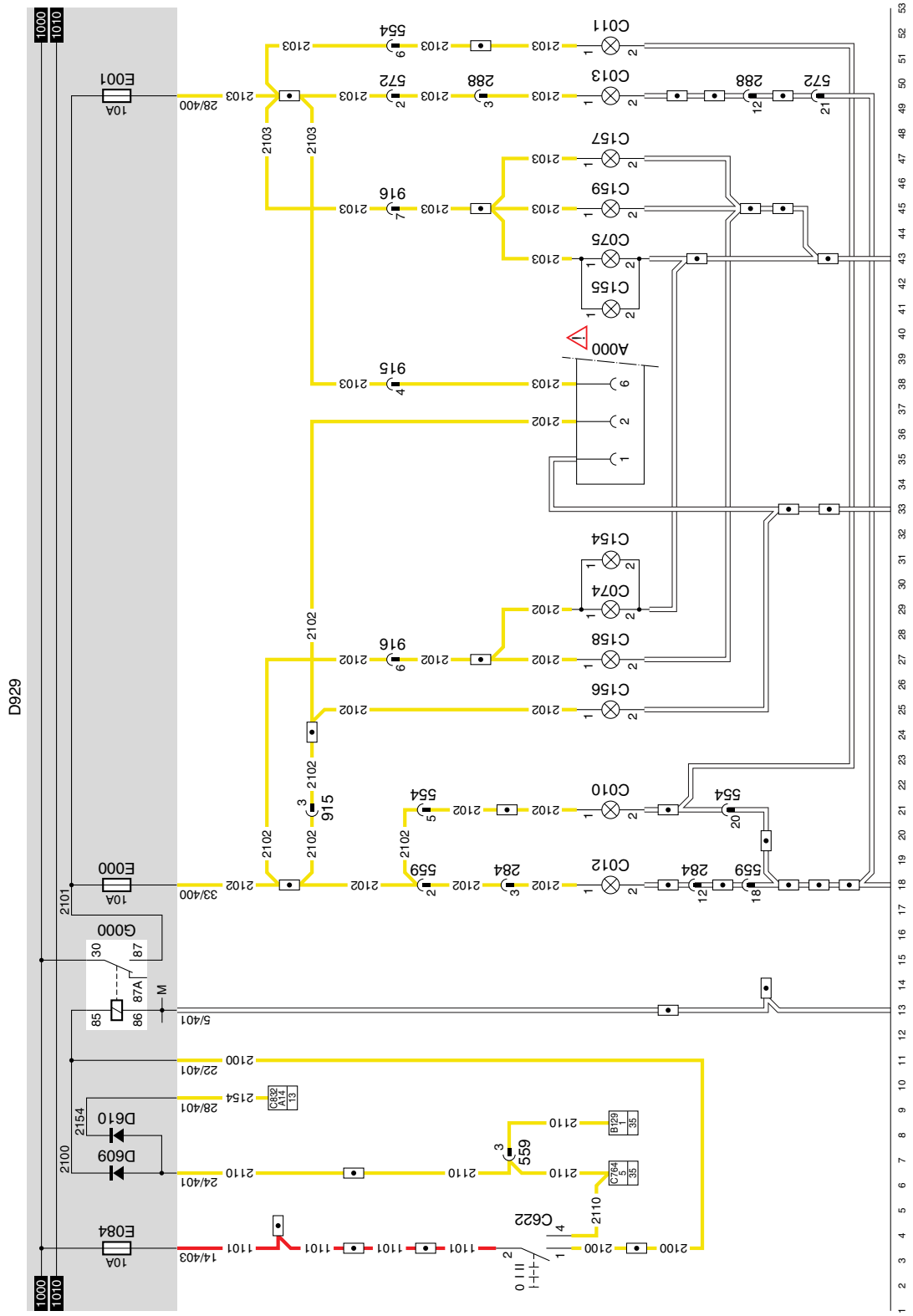
Switching the lighting switch (C622) to the 1st position (connection between contacts 2 and 1) energises the rear light/width marker light relay (G000) through fuse E084, wire 1101, contacts 2 - 1 of switch C622 and wire 2100. A voltage is applied to the left and right lights through the G000 relay contacts (30 - 87 respectively) and fuses E000 and E001.

Linked to fuse E000 are: C010, C012, C156, C158, C074 and C154. There is also a connection in connector A000 (pin 2).

Linked to fuse E001 are: C011, C013, C157, C159, C075 and C155. There is also a connection in connector A000 (pin 6).

**VARIANTS**

| Location | |
|---|---|
| 39 | This may be either a 7-pin or a 15-pin connector. For more information: see section diagram 48. |




**10** **1358030/26** EL001312

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10

11 UPEC

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

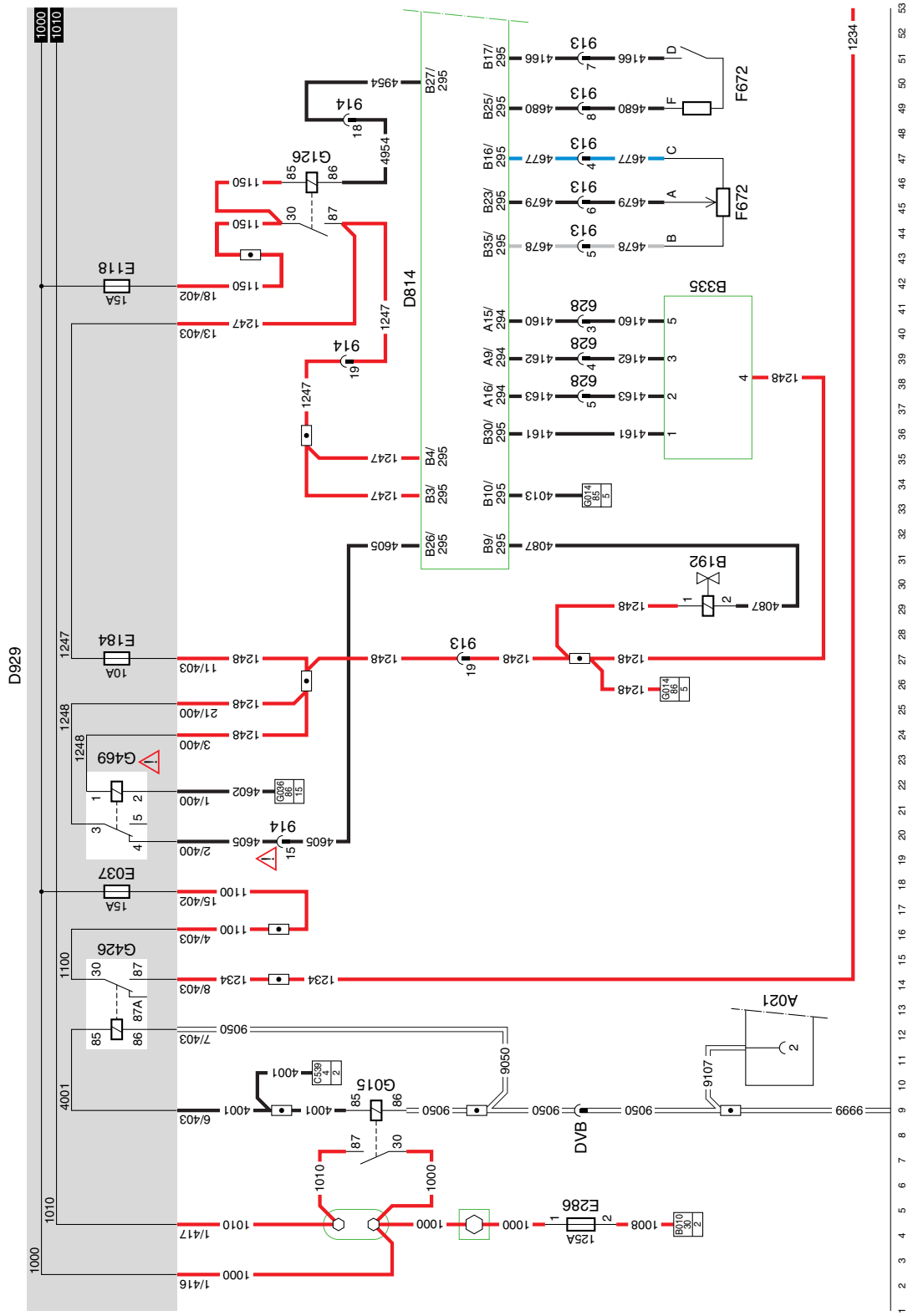
VARIANTS

**Location**

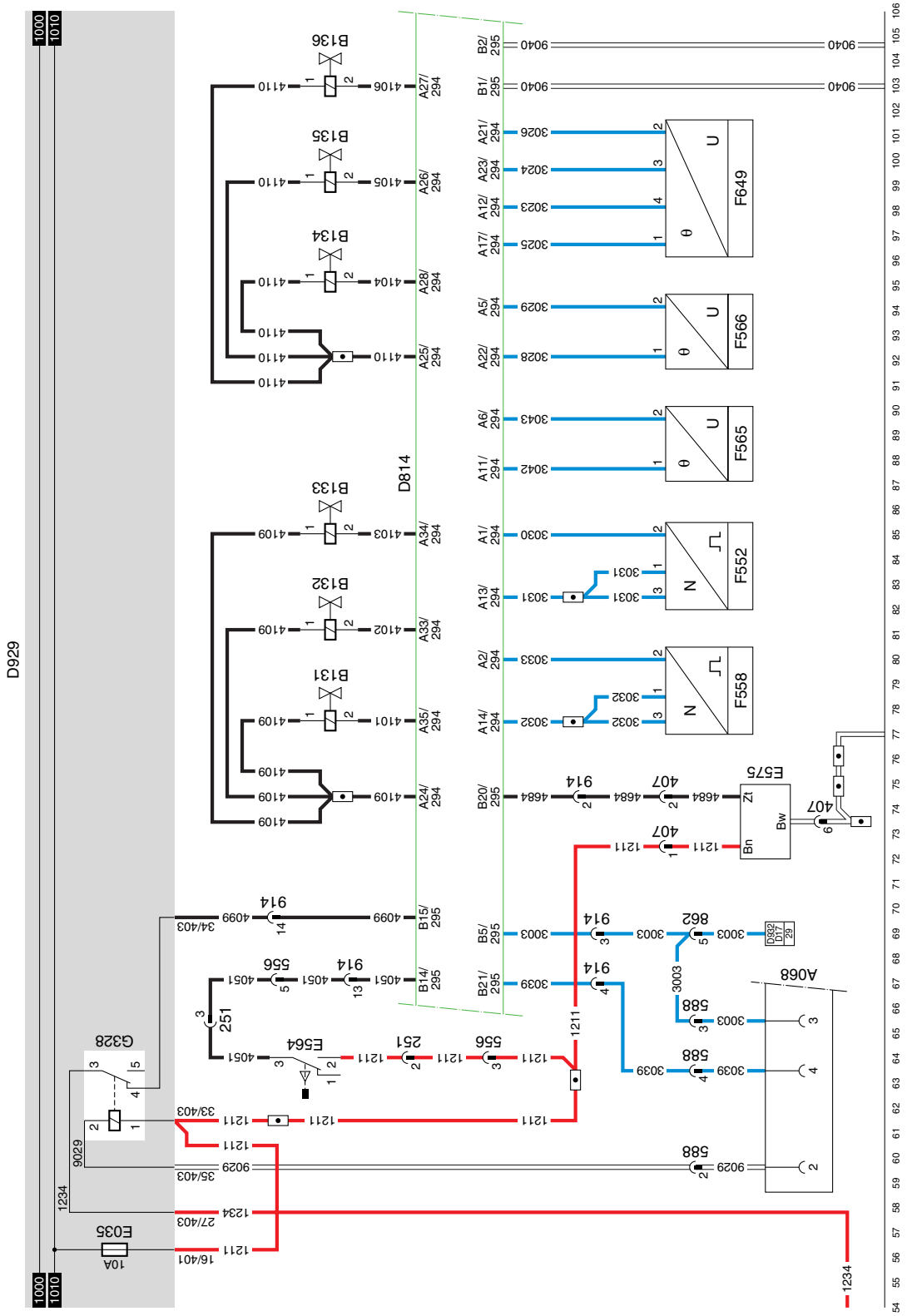
19 Connector 914: the illustration shows the AS Tronic version. For information regarding vehicle without AS Tronic: see section diagram 15.

23 G469: only if the vehicle is fitted with AS Tronic.

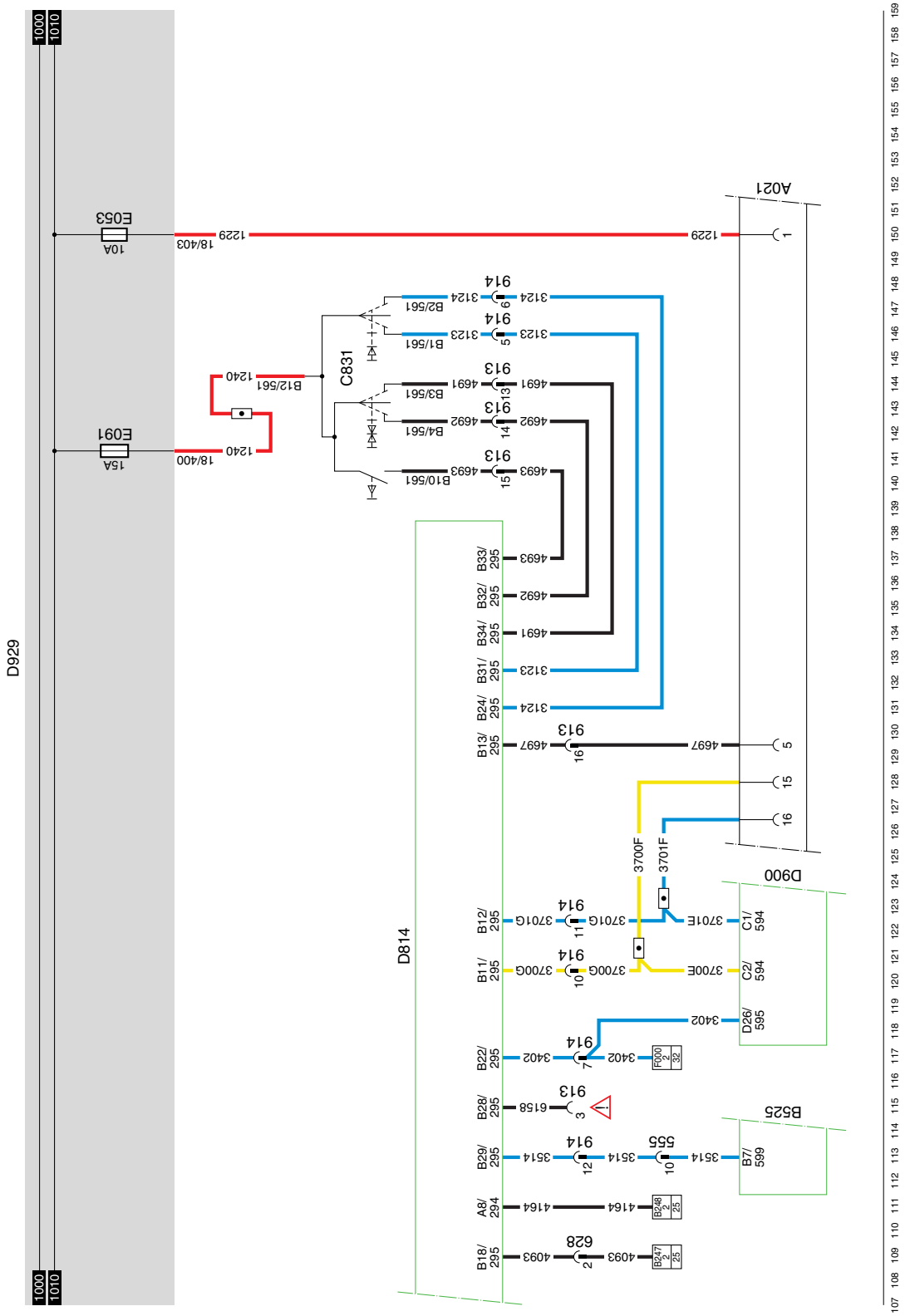
115 Wire 6158 ends in lead-through connector 913, pin 3. This wire is for the bodybuilder.




**11** **1358030/26** EL001313




**11** **1358030/26** EL001314




**11** **1358030/26**

10

## 12 REVERSING LIGHTS

When contact has been made, power is supplied to the operating switch of the reversing lights (E592) via E016 and wire 1217.

This switch is mounted in the gearbox. The contacts are closed when the gearbox is set to the “reverse” position.

The voltage is then applied to earth through fuse E016, wire 1217, connection point 1 of G350 (reversing light relay), wire 5655, contacts 1 and 2 of switch E592.

If relay G350 is activated, a voltage is applied to the reversing lights (C026 and C027) via wire 4591. At the same time the reversing buzzer (B176) is activated and the voltage is also applied to the drawn vehicle connector A000 (pin 3) or to A070 (pin 4).

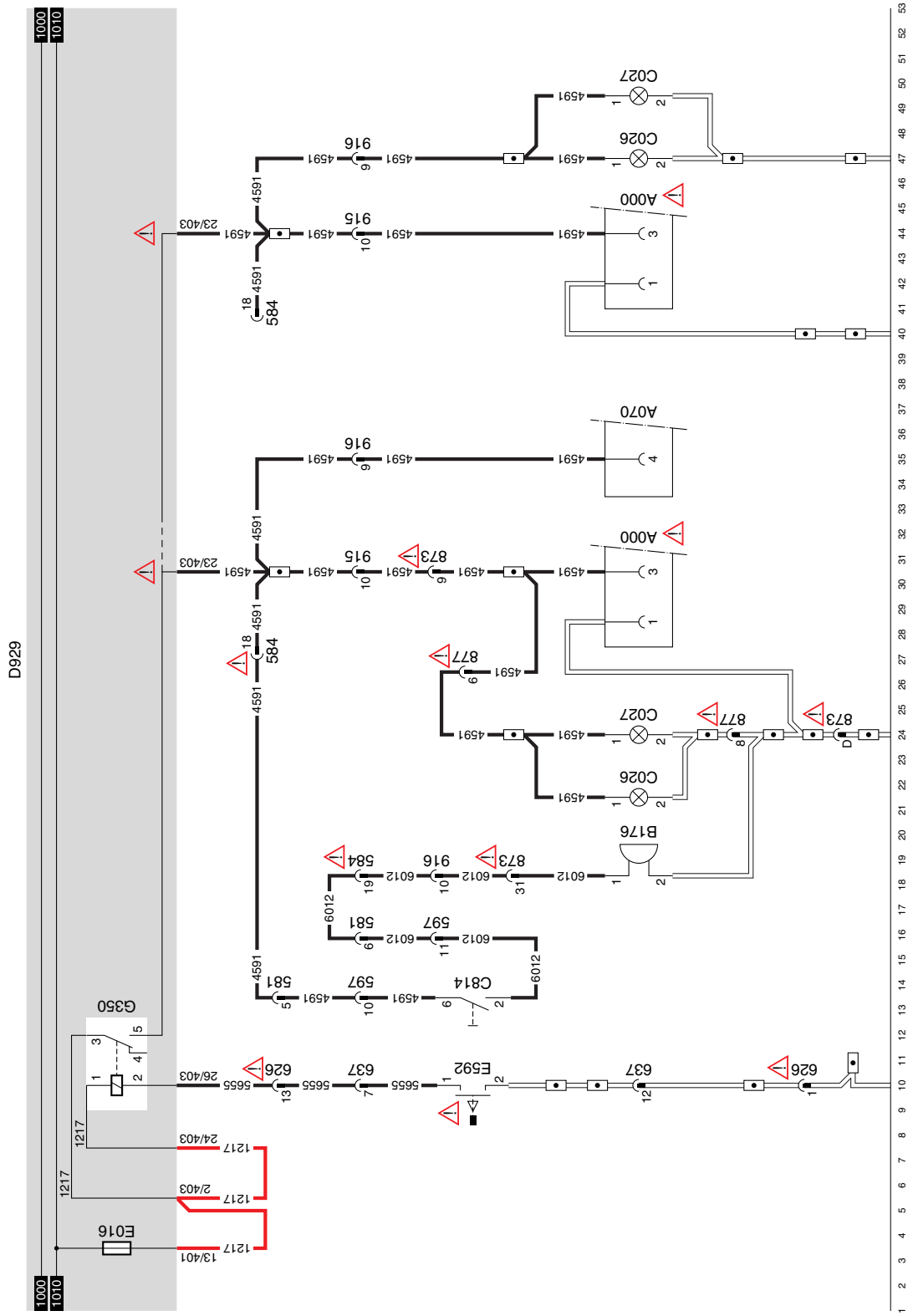
The above description applies to vehicle type FA.

**VARIANTS**

| **Location** | |
|---|---|
| 9, 10 | Connector 626 for a manual gearbox.<br>Connector 868 for an AS Tronic gearbox.<br>Connector 644 for an Allison gearbox. |
| 12 -> 38 | Only for vehicle type FA. |
| 39 -> 51 | Only for vehicle type FT. |
| 18, 24, 31 | Connector 873: only for vehicle type FA. |
| 19, 27 | Fit wires 4591 and 6012 in connector 584. |
| 24, 27 | Connector 877**:** only if the vehicle has a buffer beam as standard. |
| 32, 45 | Depending on whether the vehicle is fitted with a 7-pin or 15-pin plug. See also section diagram 47or 48. |



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**12** **1358030/26** EL001316



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## 13 LIGHT SWITCH / FOG LAMPS / FA/FT DIMMED BEAM AND MAIN BEAM SWITCH

**MARKER AND PARKING LIGHTS**
FOR SECTION DIAGRAM AND EXPLANATION: SEE SECTION DIAGRAMS 9 AND 10

**LIGHTING SWITCH (C622)**

**position 1 (“marker lights”)**
A voltage is applied to connection point 2 of lighting switch C622 through fuse E084, wire 1101. If this switch is in the “town lights” position (connection between contacts 2 and 1), the voltage is transmitted to connection point 85 of relay G000 (rear light/width marker light relay) through wire 2100. This relay is energised and contacts 30 - 87 will close. Through contacts 30 - 87 of relay G000, wire 2101, a voltage is now applied to corner marker lights, marker lights and rear lights through fuses E000 and E001 and wires 2102 and 2103 respectively.

**position 2 (“dipped beam”)**
If switch C622 is put in the 2nd position (connection between contacts 2 and 4), the following takes place:
A voltage is applied to connection point 2 of lighting switch C622 through fuse E084, wire 1101. Through contacts 2 - 4 of C622 the voltage is applied to connection point 85 of G000 through wire 2110, diode D609. The voltage is also applied to connection point 5 of C773 through wire 2100.
The voltage is also applied to connection point 85 of G001 through wire 2110. This relay is activated. Through contacts 30 - 87 of relay G001, wire 2112 and through fuses E004 and E005 and wires 2114 and 2113 respectively, a voltage is now applied to the left and right dipped beams. They will now switch on.

**Signalling light**
The voltage on connection point 85 of relay G001 is also on connection point 14 of stalk switch C832 through diode D610, via wire 2154. If this (spring-loaded) part of the switch is operated (connection between points 14 and 9), relay G002 is energised through wire 2120. A connection is now made between contacts 30 and 87 and this applies a voltage to lights C002 and C003 through contacts 30 - 87, wire 2121, and fuses E006 and E007 and wires 2122 and 2123 respectively. These lights remain on as long as there is a connection between contacts 14 and 9 of stalk switch C832.

**Main beam**
A voltage is applied to connection point 8 of stalk switch C832 through fuse E084 and wire 1101. If this part of the switch is operated (’fixed’ connection between points 8 and 9), relay G002 is energised through wire 2120.
A connection is now made between contacts 30 and 87 and this applies a voltage to lights C002 and C003 through contacts 30 - 87, wire 2121, and fuses E006 and E007 and wires 2122 and 2123 respectively. These lights remain on as long as there is a ‘fixed’ connection between contacts 8 and 9.
The dipped beam does **NOT** go out while the signalling light or main beam is in use.

**REAR FOG LAMPS**
**(standard version)**
To activate the rear fog lamps, lighting switch C622 must be in the “dipped beam” position (connection between contacts 2 and 4). The voltage is then applied to D609 through fuse E084, wire 1101, contacts 2 - 4 of switch C622 and wire 2110. The voltage is split after this diode. The voltage is applied to connection point 85 of G000 through a PCB track. This switches on the corner marker lights, marker lights and rear lights. The same voltage is also applied to connection point 5 of C773 through wire 2100. The VIC also receives a voltage on pin C5 of relay G001 (dipped beam relay). The VIC receives a voltage signal at pin D35 when the fog lamp switch (C773) is operated (connection between 5 and 1).
The VIC then activates the rear fog lamp relay (G005) via pin C40 of the VIC, so that the rear fog lamps come on. The VIC then switches on the “rear fog lamps” indicator on the instrument panel via the I-CAN.

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**FRONT FOG LAMPS (optional)**

To activate the front fog lamps, lighting switch C622 must be in the "town lights" position (connection between contacts 2 and 1). There is now a voltage on connection point 85 of relay G000 (rear light/ width marker light relay). Turning the fog lamp switch (C727) to position I (connection between contacts 2 and 6) (front fog lamps) activates relay G004. A voltage is now applied through fuse E009, wire 2141, contacts 30 - 87 of relay G004 and wire 2142. The left and right front fog lamps (C008 and C009 respectively) will now come on.

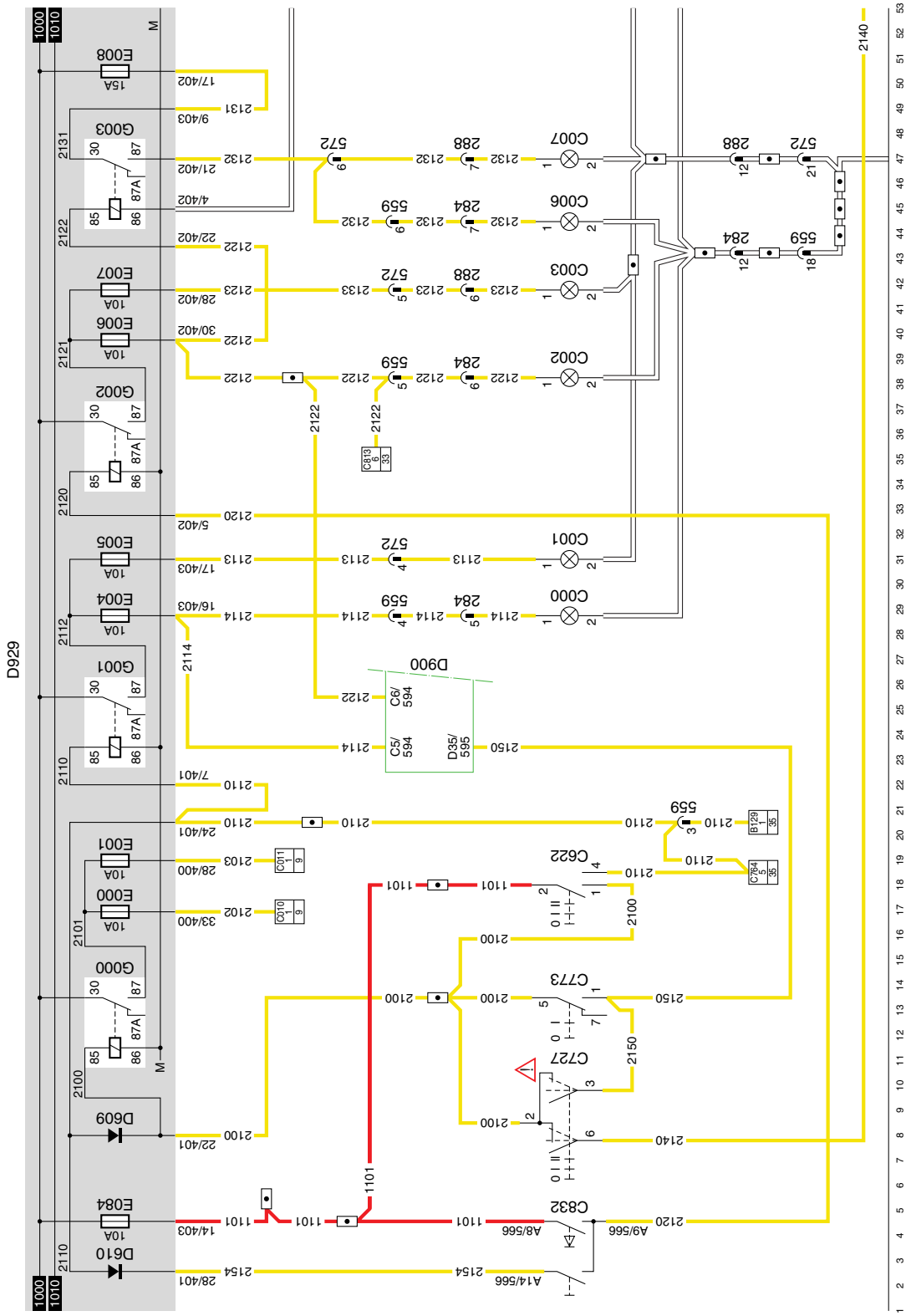
A voltage is also sent to the VIC via wire 2142, pin C34. The VIC controls the DIP, which ensures that the "front fog lamps" warning indicator illuminates on the instrument panel. The VIC receives a voltage signal at pin D35 through wire 2150 when the fog lamp switch (C727) is turned to position 2 (connection between contacts 2 and 3).

The VIC then activates the rear fog lamp relay (G005) via pin C40 of the VIC, so that the rear fog lamps come on. The VIC then switches on the "rear fog lamps" warning indicator on the instrument panel via the I-CAN.

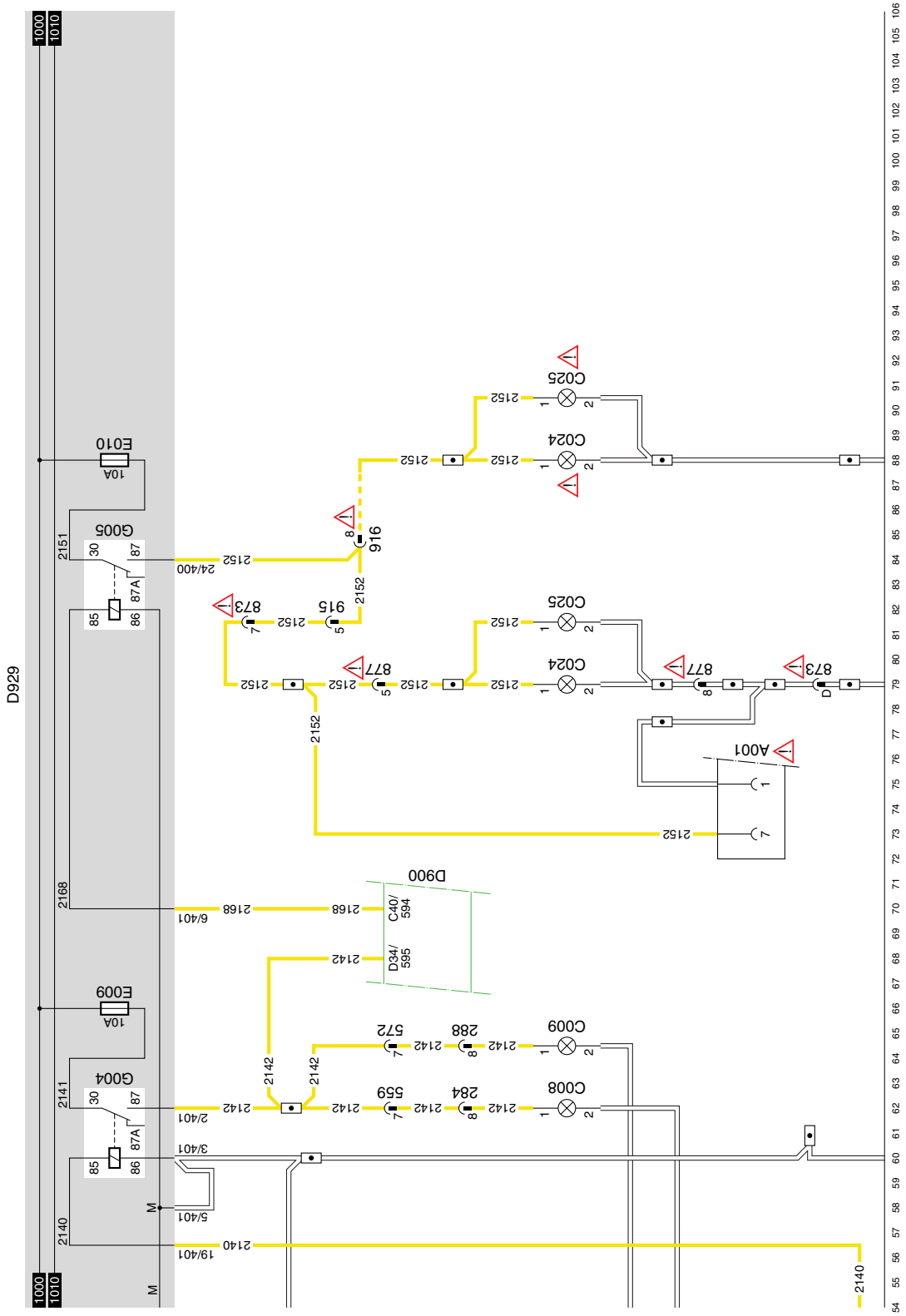
**VARIANTS**

| Location | | |
|---|---|---|
| 15 | | C773 is fitted as standard . If the front fog lamps option is selected, switches C773 and C727 should be swapped over. Connector 877 only if the vehicle has a buffer beam as standard. |
| 79 | | |
| | 79 -> 82 | Situation for vehicle type FA. |
| | 87 -> 91 | Situation for vehicle type FT. |
| 87 | | This may be either a 7-pin or a 15-pin connector. For more information: see section diagram 47. |

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**13** **1358030/26** EL001317




**13** **1358030/26** EL001318

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## 14 SWEDISH LIGHTING

**Conditions: Engine running, switch C622 has NOT been operated.**

If the engine is running and switch C622 has **NOT** been operated, relay G301 is activated by a voltage from connection point C42 of D900 (VIC). A voltage is then applied to connection point 85 of relay G001 (dipped beam relay) through fuse E084, wire 1101, contacts 5 - 3 of relay G301, wire 2100, contacts 3 - 4 of relay G302 and wire 2110. The same voltage is also applied to connection point 85 of relay G000 (rear light/width marker light relay) through diode D609. Both relays are energised.
When relay G000 is energised (connection between contacts 30 and 87), a voltage is applied to the left and right width marker lights in the headlights through contacts 30 - 87 of relay G000, PCB track 2101, fuses E000 and E001 and wire 2102.
When relay G001 is energised (connection between contacts 30 and 87), a voltage is applied through contacts 30 - 87 of relay G001, PCB track 2112, fuse E004 and fuse E005. The voltage through wire 2114 is applied to connection point 1 of C000 (left dipped beam) through fuse E004. The voltage through wire 2113 is applied to connection point 1 of C001 (right dipped beam) through fuse E005.

A voltage is also applied to the VIC via wire 2114, pin C5. The VIC controls the DIP, which ensures that the “dipped beam” warning indicator illuminates on the instrument panel.

**Conditions: Engine running, switch C622 in position: marker lights (position 1).**

When the engine is running and switch C622 is in the ‘marker lights’ position (connection between 2 and 1), the following occurs:
Relay G301 is energised, making a connection between contacts 5 and 3. The voltage is now applied to wire 2100 and to connection point 85 of relay G000 through fuse E084, wire 1101, contacts 5-3 of relay G301 . When relay G000 is energised a voltage is applied through relay contacts 30 - 87 of relay G000, wire 2101, fuses E000 and E001 and wire 2102 and wire 2103 respectively. The corner marker lights, marker lights and rear lights (on both the driver’s and co-driver’s side) now come on.
There is also a voltage on connection point 1 of relay G302 through fuse E084, wire 1101, contacts 2 - 1 of switch C622, wire 2105.
Relay G302 is energised, breaking contacts 3 - 4.
There is no longer a voltage on wire 2110 and, as a result, relay G001 is no longer energised. Contacts 30 - 87 are now broken and, as a result, the driver’s and co-driver’s side headlights go out.

**Conditions: Engine not running, switch C622 in position: dipped beam (position 2).**

When the engine is not running and switch C622 is in the ‘dipped beam’ position (position 2) (connection between 2 and 4), the following takes place:
Relay G301 is energised, making a connection between contacts 5 and 3. The voltage is now applied to wire 2100 and to connection point 85 of relay G000 through fuse E084, wire 1101, contacts 5 - 3 of relay G301 . When relay G000 is energised a voltage is applied through relay contacts 30 - 87 of relay G000, wire 2101, fuses E000 and E001 and wire 2102 and wire 2103 respectively. The corner marker lights, marker lights and rear lights (on both the driver’s and co-driver’s side) now come on. Because there is a voltage on connection point 85 of relay G001 through contacts 2 - 4 of switch C622, wire 2110, this relay is energised. When relay G001 is energised, a voltage is applied to both the left and right dipped beam through contacts 30 - 87, wire 2112, fuses E004 and E005 and wires 2113 and 2114 respectively. A voltage is also sent to the VIC via wire 2114, pin C5. The VIC controls the DIP, which ensures that the “dipped beam” warning indicator illuminates on the instrument panel.

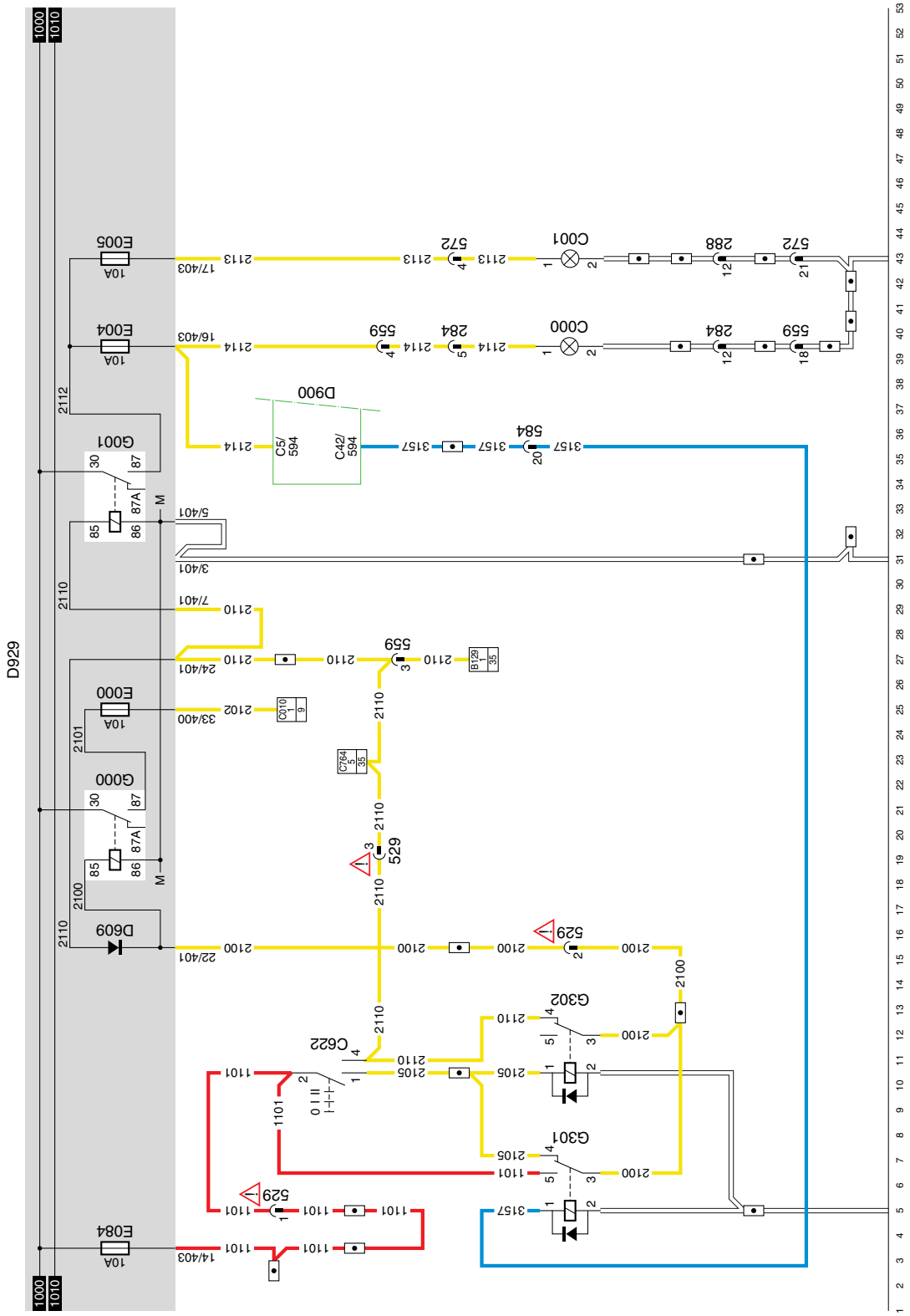


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**VARIANTS**

**Location**
5, 16, 19

Connector 529 fitted on Swedish lighting version.




**14** **1358030/26** EL001319

## 15 STOP LIGHTS/CAB TILTING GEAR

### STOP LIGHTS

When the brake pedal is pressed, stop light operating switch E511 is activated (connection between contacts 2 and 1) and relay G036 will be energised. Through fuse E013, wire 1209, contacts 30 and 87 of relay G036 and wire 4601 a voltage is now applied to the right stop light (C021) and the left stop light (C020), so that they go on. There is also a voltage on connection point 4 of drawn vehicle socket A000 and on connection point 3 of the superstructure application connector (A070). When relay G036 is energised, the connection 30 - 78a is broken. The voltage on D814 (UPEC electronic unit) or D903 (ECS-DC3 electronic unit) is lost.

### CAB TILTING GEAR

A voltage is applied to connection point 1 of the cab locking sensor F676 (sensor) and to sensor F616 (cab tilting cylinder sensor) through fuse E018 and wire 1114. There is also a voltage on connection point 2 of sensor F676 through connection points 1 - 2 of relay G351 (cab tilt protection micro-relay) and wire 4723. When this sensor is activated, the voltage is transmitted to connection point D16 of D900 (VIC) and to connection point 2 of sensor F616. The VIC now sends a message to the DIP, which then activates the “cab tilted” warning lamp. When sensor F616 is activated, relay G351 is energised and, as a result, a voltage is applied to B251 through contacts 3 and 5 and wire 4722 (buzzer neutral position, cab tilting). If the contacts in switch E594 (neutral position switch) are closed (connection between pins 1 and 2), the horn will go off.

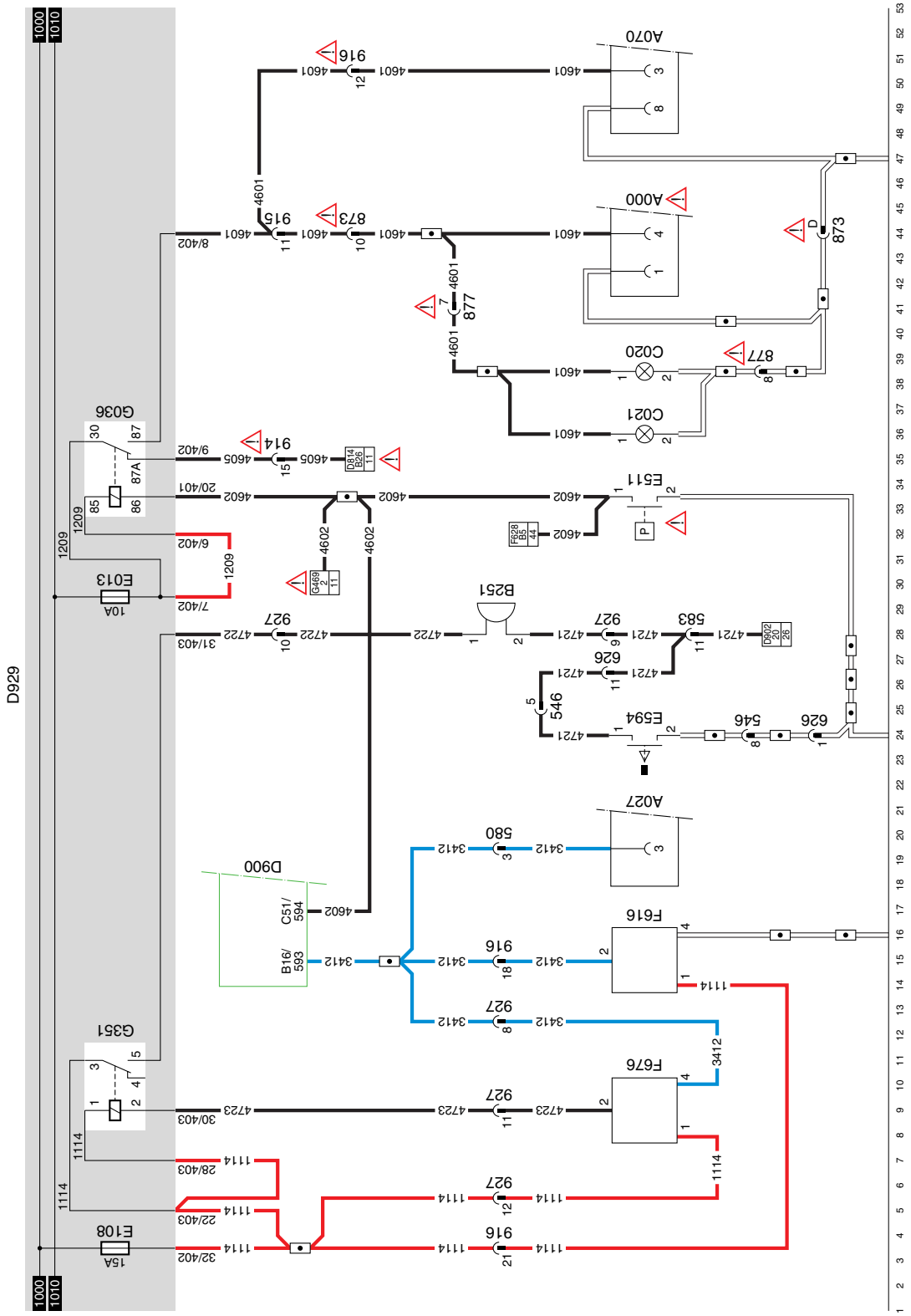
### VARIANTS

**Location**

| | |
|---|---|
| 30 | Only if the vehicle is fitted with AS Tronic gearbox. |
| 33 | If the vehicle is fitted with a conventional braking system, there is **NO** connection to F628.<br>If the vehicle is fitted with the EBS braking system, there is **NO** stop light switch (E511) or earth connection. |
| 35 | Depending on whether the vehicle is fitted with a UPEC or ECS-DC3 engine. |
| 36 | Connector 914 if **NO** AS Tronic fitted.<br>If AS Tronic fitted: see section diagram 11. |
| 39, 41 | Connector 877 only if the vehicle has a buffer beam as standard. |
| 44, 45 | Connector 873: only for vehicle type FA. |
| 48 | Depending on whether the vehicle is fitted with a 7-pin or 15-pin plug. See also section diagram 47or 48. |
| 52 | Connector 916: only for vehicle type FA. |



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**15** **1358030/26**

EL001320

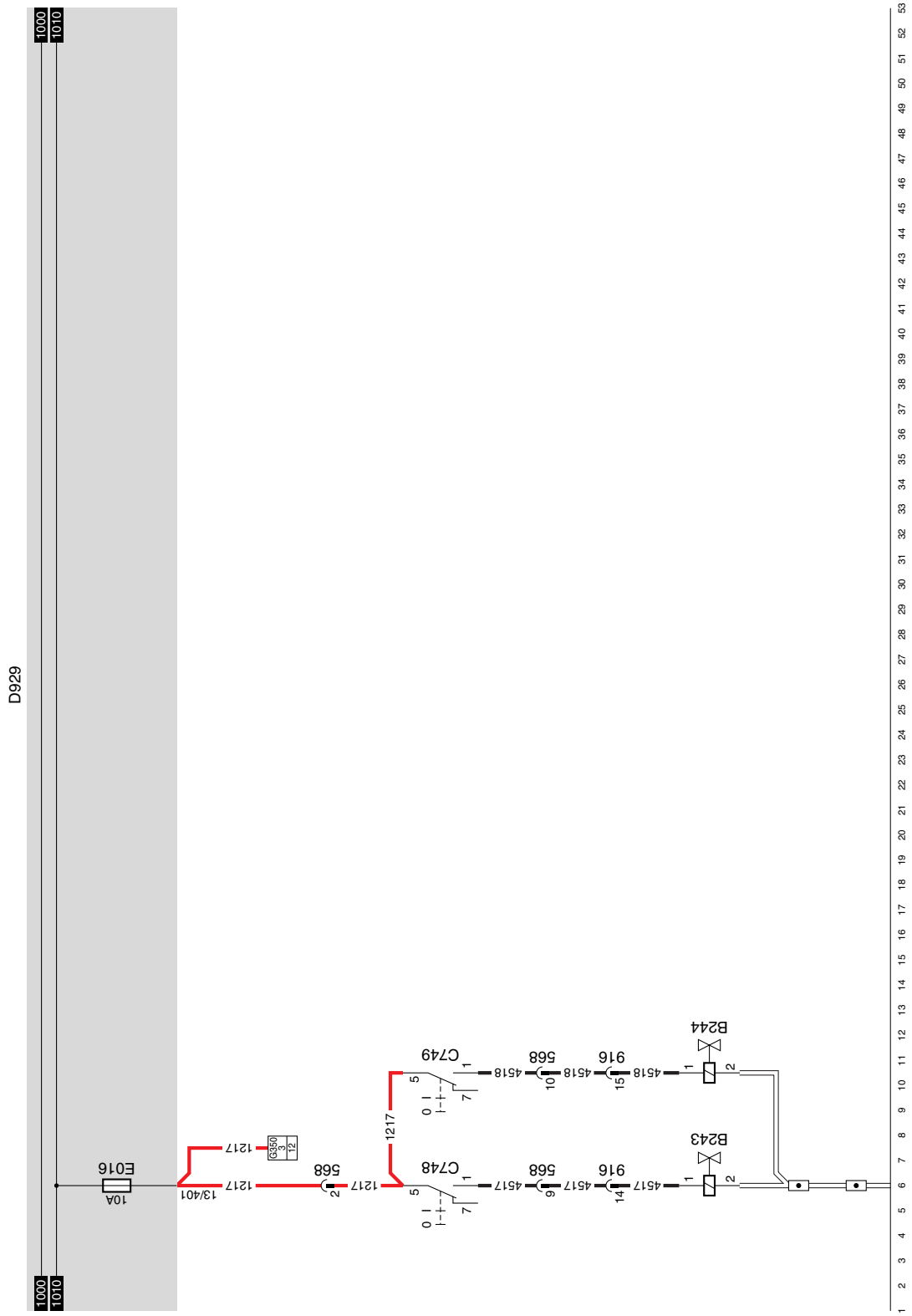
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## 16 DIFFERENTIAL LOCK

When the ignition switch (G015) is activated, a voltage is applied through fuse E016 and wire 1217 to the cross-axle lock differential control switch (C748) and the longitudinal controlled slip differential control switch (C749).

When the cross-axle differential lock (C748) is activated, a voltage is applied through wire 4517 to the cross-axle differential lock control valve (B243). As a result, the valve is activated.

When the longitudinal controlled slip differential (C749) is activated, a voltage is applied through wire 4518 to the longitudinal controlled slip differential control valve (B244). As a result, the valve is activated.




**16** **1358030/26** EL001321

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## 17 INTERIOR LIGHTING, DAY/SLEEPER CAB

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, DRIVER'S SIDE

If the door on the driver's side is opened, door switch E514 is activated (connection between 1 and 2). A a result, there is a voltage on C062, C063 and D911 through fuse E028 (interior lighting fuse), wire 1107, contacts 1 - 2 of door switch E514, wire 2647, diode D783 (driver's side interior lighting diode), wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063). The VIC (D900) also receives a voltage on connection point 1, connector 595. The VIC then turns on the cab lighting (C119/C192), provided the switch is in the correct position, activating it via connection point 4, connector 492.

When the door on the driver's side is closed (contacts 1 - 2 interrupted), the voltage to connection point 1, connector 595 of the VIC is lost. Connection point 4, connector 592 will then continue to be supplied with power for another 9 seconds approximately. After approximately 9 seconds, the supply voltage is switched off and the lights go out.

If the vehicle ignition is switched on (contact made) within 9 seconds, the power supply to connection point 4, connector 592 of the VIC will be switched off immediately. The lighting will be switched off immediately. If the alarm system (D911) sends a voltage to connection point 13, connector 594 of the VIC to indicate that the doors have locked correctly, the lighting will also go off immediately.

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, CO-DRIVER'S SIDE

If the door on the co-driver's side is opened, door switch E515 is activated (connection between 1 and 2).
As a result, there is a voltage on both C062 and C063 through fuse E028 (interior lighting fuse), wire 1107, contacts 1 - 2 of door switch E515, wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063).

### INTERIOR LIGHT WITH MAP-READING LIGHT (DRIVER'S SIDE AND CO-DRIVER'S SIDE)

There is a combined interior light and map-reading light on both sides of the cab against the roof. The lamps operate in the same way on the driver's side and co-driver's side.

A voltage is applied to connection point 2 of C119 and C192 through fuse E028, wire 1107. Depending on the position of the built-in switches, the interior light or the map-reading light is now switched on individually or together.

### TOOL COMPARTMENT LIGHTING

When the tool compartment door is opened, tool compartment light switch E528 is activated (connection between 1 and 2). As a result, there is a voltage on C067 through fuse E142 (accessories before contact fuse), wire 1154, contacts 1 - 2 of tool compartment light switch E528, wire 2608. This switches on the tool compartment light. The tool compartment light works independently of the contact.

### BUNK LAMP

The bunk lamp C115 is switched on by a switch in the light fitting. The bunk lamp works independently of the contact. Voltage is applied to connection point 1 of C115 through fuse E028, wire 1107. When the switch is operated (connection between contacts 1 and 2), connection point 2 is connected to earth. The lamp will now come on.

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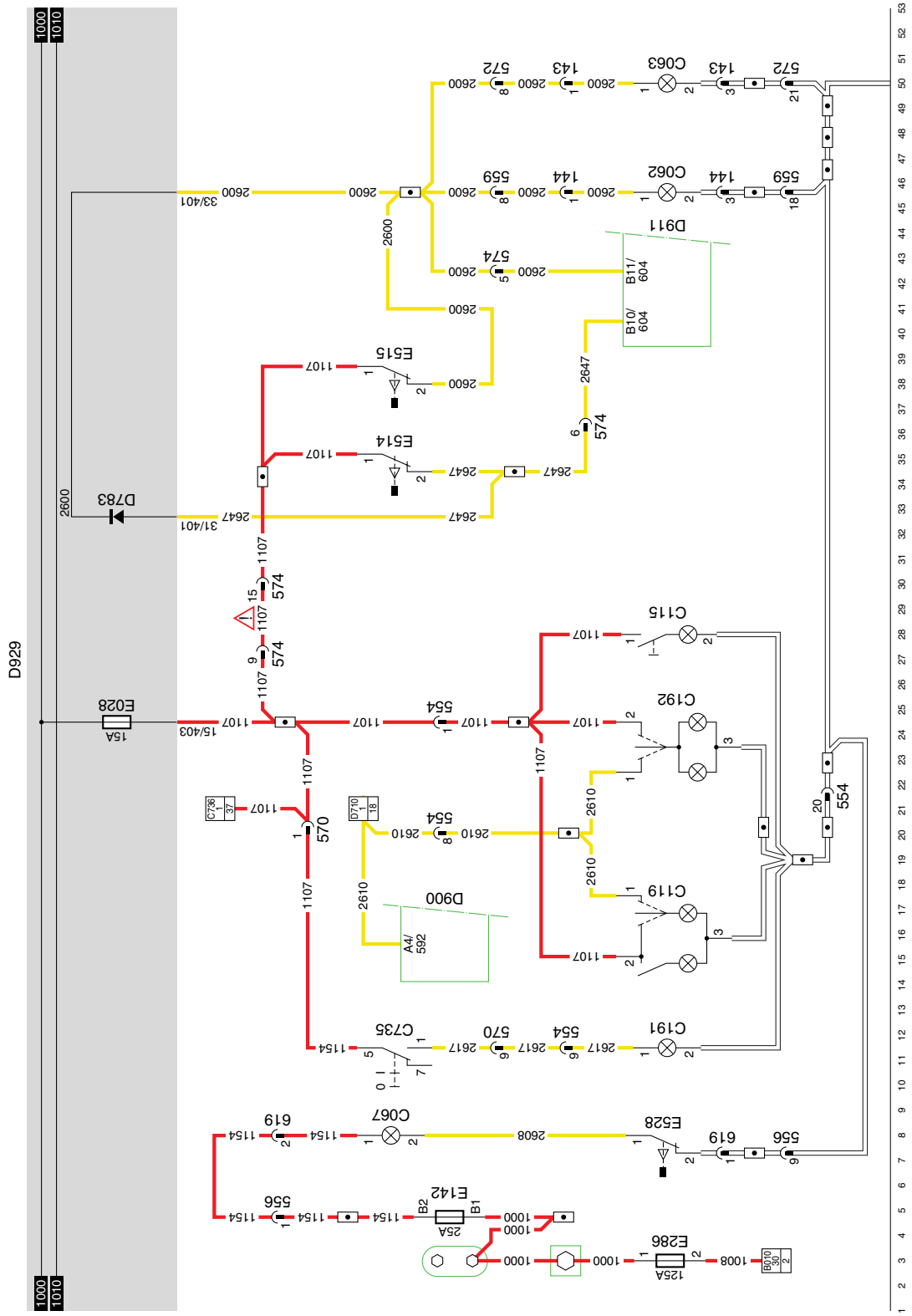
**INTERIOR NIGHTLIGHT**

When switch C735 (interior nightlight switch) is operated (connection between 5 and 1), a voltage is applied to C191 through fuse E028 (interior lighting fuse), wire 1107, contacts 5 - 1 of nightlight switch C735, wire 2617. This switches the nightlight on. The nightlight works independently of the contact.

**VARIANTS**

**Location**

29 Wire 1107 only fitted if there is **NO** alarm system.




**17** **1358030/26** EL001322

## 18 SH CAB INTERIOR LIGHTING

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, DRIVER'S SIDE

If the door on the driver's side is opened, door switch E514 is activated (connection between 1 and 2). A a result, there is a voltage on the driver's side cab stepwell lighting (C062), co-driver's side cab stepwell lighting (C063) and D911 (alarm system) through fuse E028 (interior lighting fuse), wire 1107, contacts 1 - 2 of door switch E514, wire 2647, diode D783 (driver's side interior lighting diode), wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063). The VIC (D900) also receives a voltage on connection point 1, connector 595. The VIC then turns on the cab lighting (C119/C192), provided the switches (C119, C192, C859 and C837) are in the correct position, activating it through wire 2610 (connection point 4, connector 592 of the VIC unit).

When the door on the driver's side is closed (contacts 1 - 2 of door switch E514 interrupted), the voltage to connection point 1, connector 595 of the VIC is lost. Connection point 4, connector 592 will then continue to be supplied with power for another 9 seconds approximately. After approximately 9 seconds, the supply voltage is switched off and the interior lighting goes out.

If the vehicle ignition is switched on (contact made) within 9 seconds, the power supply to connection point 4, connector 592 of the VIC will be switched off immediately. The interior lighting will be switched off immediately. If the alarm system (D911, pin 16 of connector 604, wire 3647) sends a voltage to connection point 13, connector 594 of the VIC to indicate that the doors have locked correctly, the interior lighting will also go off immediately.

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, CO-DRIVER'S SIDE

If the door on the co-driver's side is opened, door switch E515 is activated (connection between 1 and 2).
As a result, there is a voltage on both driver's side cab stepwell lighting (C062) and co-driver's side cab stepwell lighting (C063) through fuse E028 (interior lighting fuse), wire 1107, contacts 1 - 2 of door switch E515, wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063).

**Interior lighting with map-reading light (driver's and co-driver's side)**
There is a combined interior light and map-reading light on both sides of the cab against the roof. The lamps operate in the same way on the driver's side and co-driver's side.

A voltage is applied to connection point 2 of C119 and C192 through fuse E028, wire 1107. Depending on the position of the built-in switches, the interior light or the map-reading light is now switched on individually or together.

### INTERIOR LIGHTING TWO-WAY SWITCHING

The condition to turn on both interior lights is that C119 (interior light with switch, driver's side) and C192 (interior light with switch, co-driver's side) must be switched together. In other words: the switch is connected to contact 1.

**Situation 1: Switch C837 in '0' position.**
Switch C837 in middle position (contacts 5 - 1 and 8 - 4 connected).
The supply voltage and the earth are now interrupted and the light does not work.

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**Situation 2:**
Switch C837 set to position 'I' (contacts 5 - 7 and 8 - 6 connected). A voltage is now applied to connection point 1 of C119 and to connection point 1 of C192 through fuse E028, wire 1107, contacts 5 - 7 of C837, wire 2644, contacts 7 - 5 of C859 (driver's side roof console interior light switch), wire 2632. The earth is formed because connection point 3 of C119 and connection point 3 of C192 are connected to the vehicle earth through wire 9032, contacts 8 - 6 of C837.
The lighting can now be switched on or off using switch C859.

**Situation 3:**
Switch C837 set to position 'II' (contacts 3 - 1 and 2 - 4 connected). A voltage is now applied to connection point 1 of C119 and to connection point 1 of C192 through fuse E028, wire 1107, contacts 3 - 1 of C837, wire 2645, contacts 1 - 5 of C859 (driver's side roof console interior light switch), wire 2632. The earth is formed because connection point 3 of C119 and connection point 3 of C192 are connected to the vehicle earth through wire 9032, contacts 2 - 4 of C837.
The lighting can now be switched on or off using switch C859.
Explanation of two-way switching in vehicle

**Tool compartment lighting**
When the tool compartment door is opened, the driver's side tool compartment light switch (E528) is activated (connection between 1 and 2). As a result, there is a voltage through fuse E142, wire 1154 on C067, wire 2608 on E528 (tool compartment light switch). This is connected to earth. This switches on the tool compartment light. The tool compartment light works independently of the contact.

**Bunk lamp**
The bunk lamp C115 is switched on by a switch in the light fitting. The bunk lamp works independently of the contact. Voltage is applied to connection point 1 of C115 through fuse E028, wire 1107. Connection point 2 of C115 is connected to earth. When the switch is operated (connection between contacts 1 and 2), the lamp goes on.

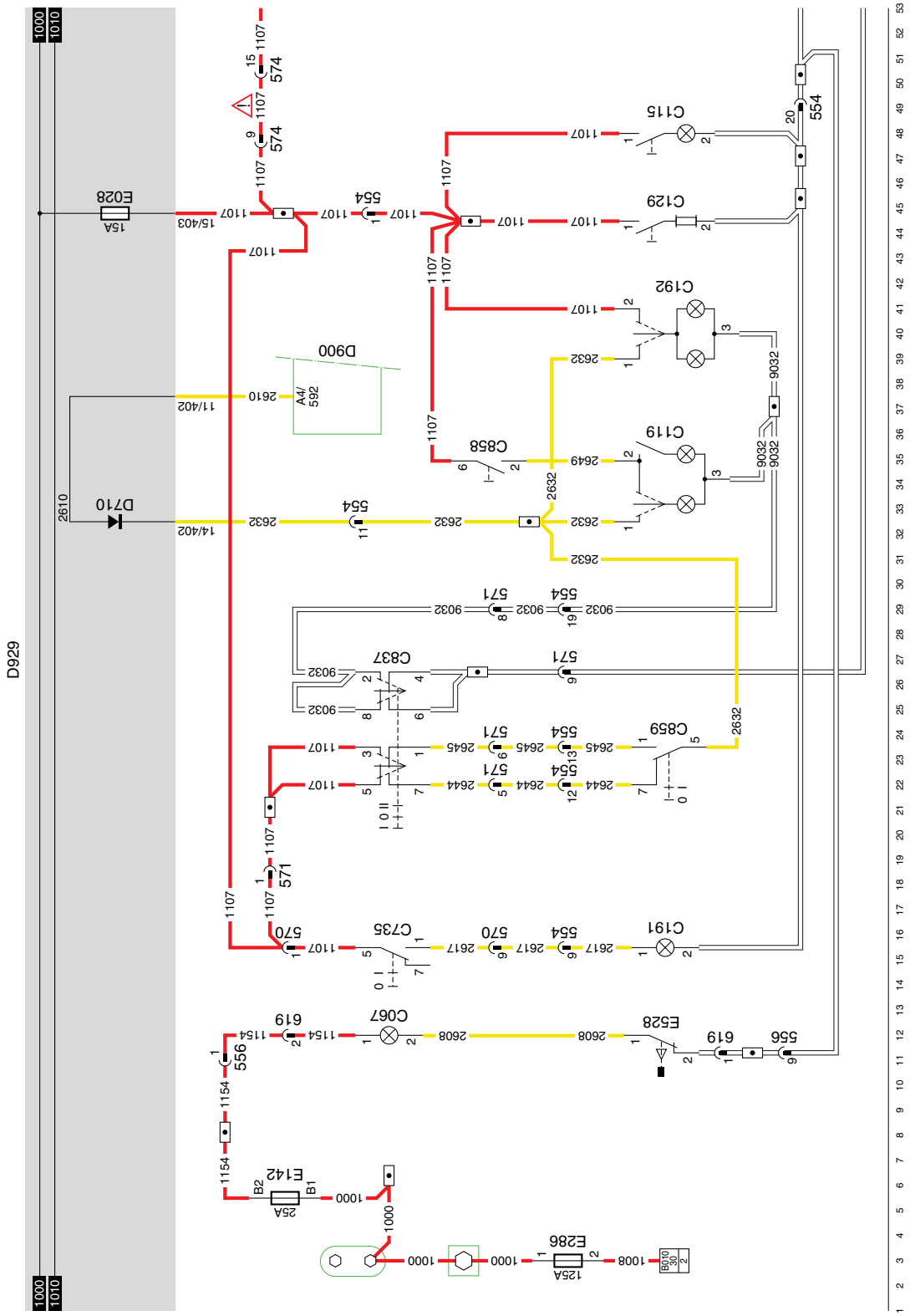
**Nightlight**
When switch C735 (interior nightlight switch) is operated (connection between 5 and 1), a voltage is applied to connection point 1 of C191 (middle nightlight) through fuse E028 (interior lighting fuse), wire 1107, contacts 5 -1 of nightlight switch C735, wire 2617. This switches the nightlight on. The nightlight works independently of the contact.

**VARIANTS**

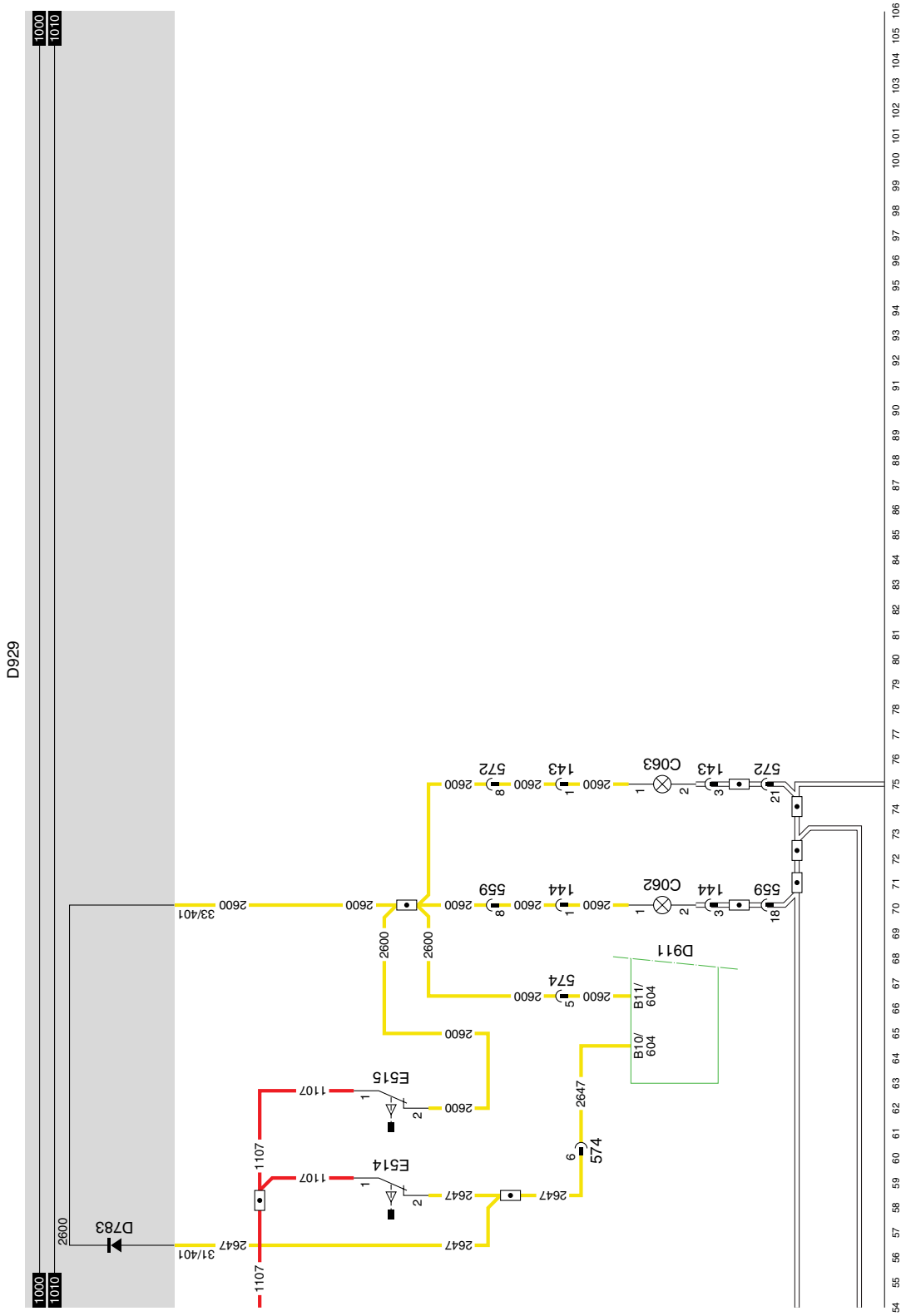
**Location**

| | |
|---|---|
| 49 | Wire 1107 only fitted if there is **NO** alarm system. |

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**18** **1358030/26** EL001323




**18** **1358030/26** EL001324

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## 19 MIRROR HEATING/MIRROR ADJUSTMENT

### MIRROR HEATING

When the mirror heating switch (C746) is operated, a voltage is applied to mirror heater B017 (driver's side) and B018 (co-driver's side) through fuse E044, wire 1208, switch C746 (contacts 1 - 2) and wire 4532.

The mirror heating can only be switched on when the contact relay has been energised (contact 'on').

### MIRROR ADJUSTMENT

The outside mirrors are adjusted using two so-called "joystick" switches C695 (driver's side) and C696 (co-driver's side). If the handle of the switch is moved from the rest position (centre) in a particular direction, power will be supplied to mirror adjustment motor B005 (driver's side) or B006 (co-driver's side) and the mirror in question will follow the movement of the handle.
For this, wires 4770 and 4774 (driver's side) or 4771 and 4775 (co-driver's side) supply power to the motor for the left/right movement.
Wires 4772 and 4774 (driver's side) or 4773 and 4775 (co-driver's side) supply power to the adjusting motor for the up and down movement.

The mirror adjustment system can only be used if the contact relay is energised.

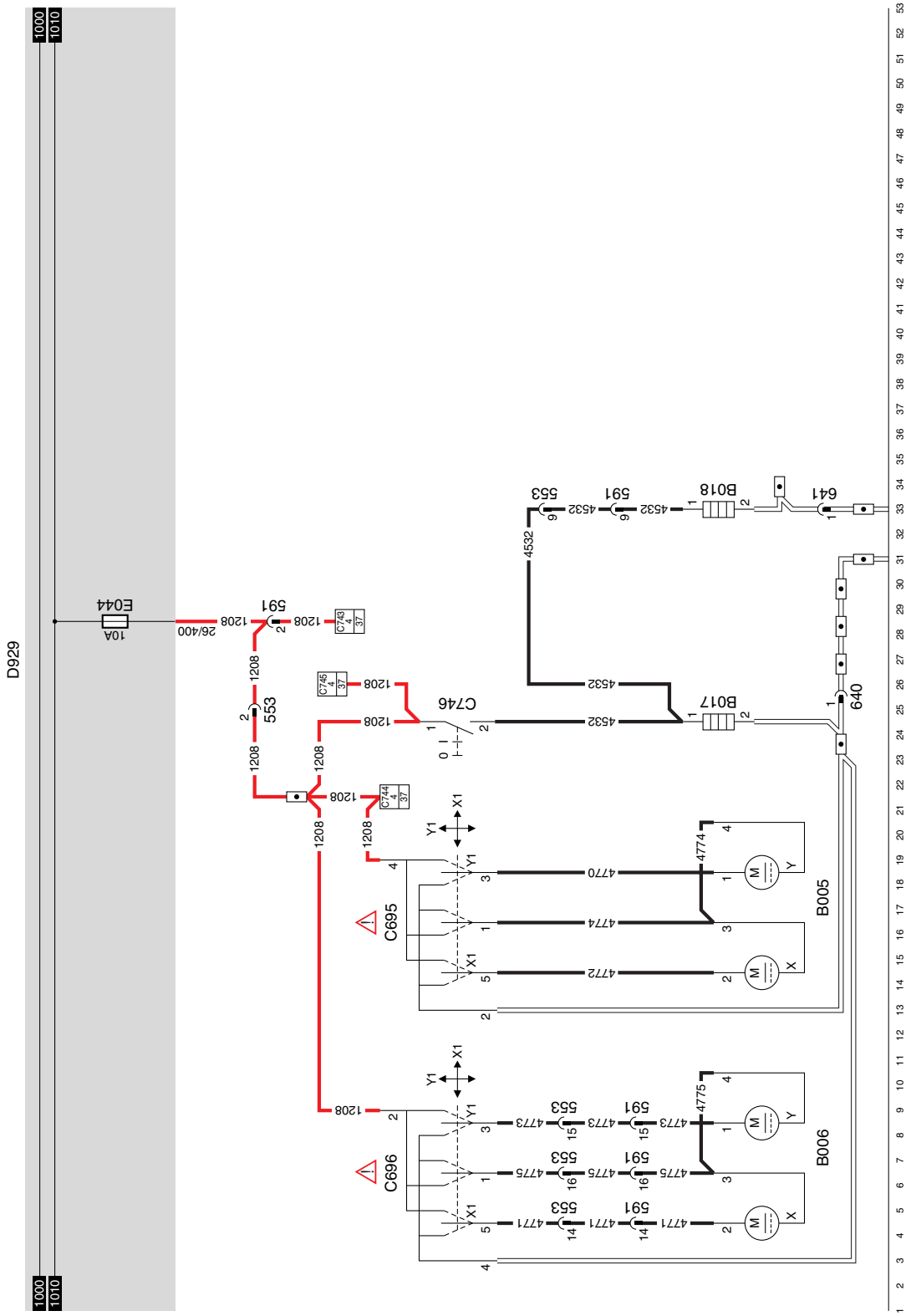
### VARIANTS

**Location**

| | |
|---|---|
| 7 | If RHD, pin 4 is connected to wire 1208 and pin 2 is connected to earth. |
| 17 | If RHD, pin 4 is connected to wire 1208 and pin 2 is connected to earth. |



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**19** **1358030/26** EL001325

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## 20 SEARCH LIGHTING

### SEARCH LIGHTING

Search lighting refers to lights or LEDs in the various function switches.

When the light switch (C622) is operated, a supply voltage is present on relay G000 (connection point 85) through fuse E084 and the light switch (C622), contacts 2 - 1, wire 2100.

Relay G000 is energised (connection between connection points 30 and 87), PCB track 2101, fuse (E117) when there is a voltage on the search lighting (through wire 2630). All search lighting connected to this will come on.

The following switches are illuminated by a light: B030, C052, C053, C072, C073, C716, C813, C814 and C858.

The following switches are illuminated by an LED:
C725, C727, C735, C736, C737, C739, C740, C741, C742, C748, C749, C750, C751, C760, C763, C764, C765, C774, C778, C802, C835, C836, C837 and C853.

### LIGHT BUZZER

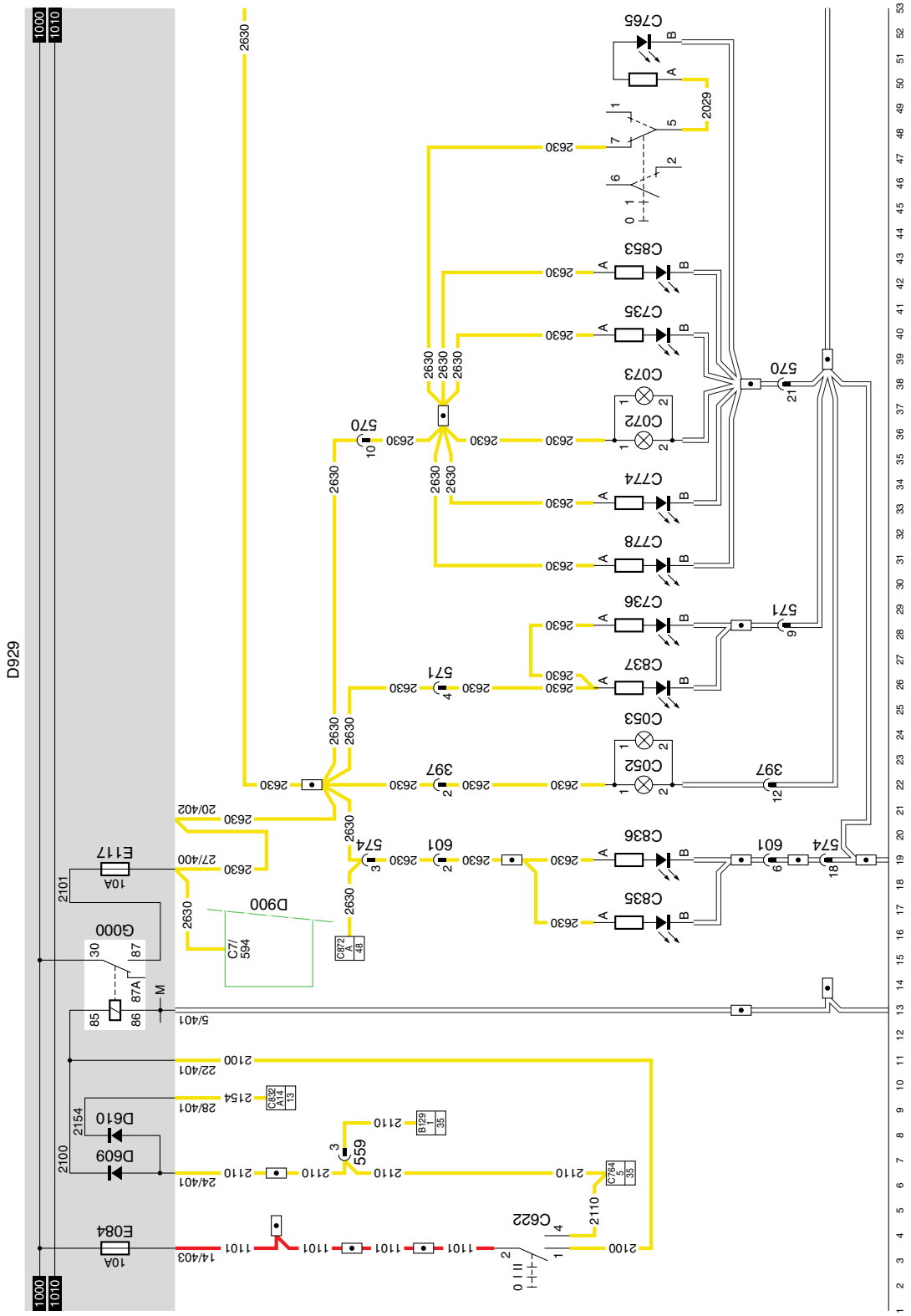
When the lighting switch (C622) is operated, supply voltage will be applied to connection point 85 of relay G000 through fuse E084, lighting switch (C622) and wire 2100.

Relay G000 is energised so that a voltage is applied to the search lighting (wire 2630) through fuse E117. This wire is also connected to the VIC (D900), pin C7, connector 594.

If the pre-programmed condition in the VIC is met, the VIC sends a message to the DIP, which in turn activates the buzzer (fitted in the DIP).

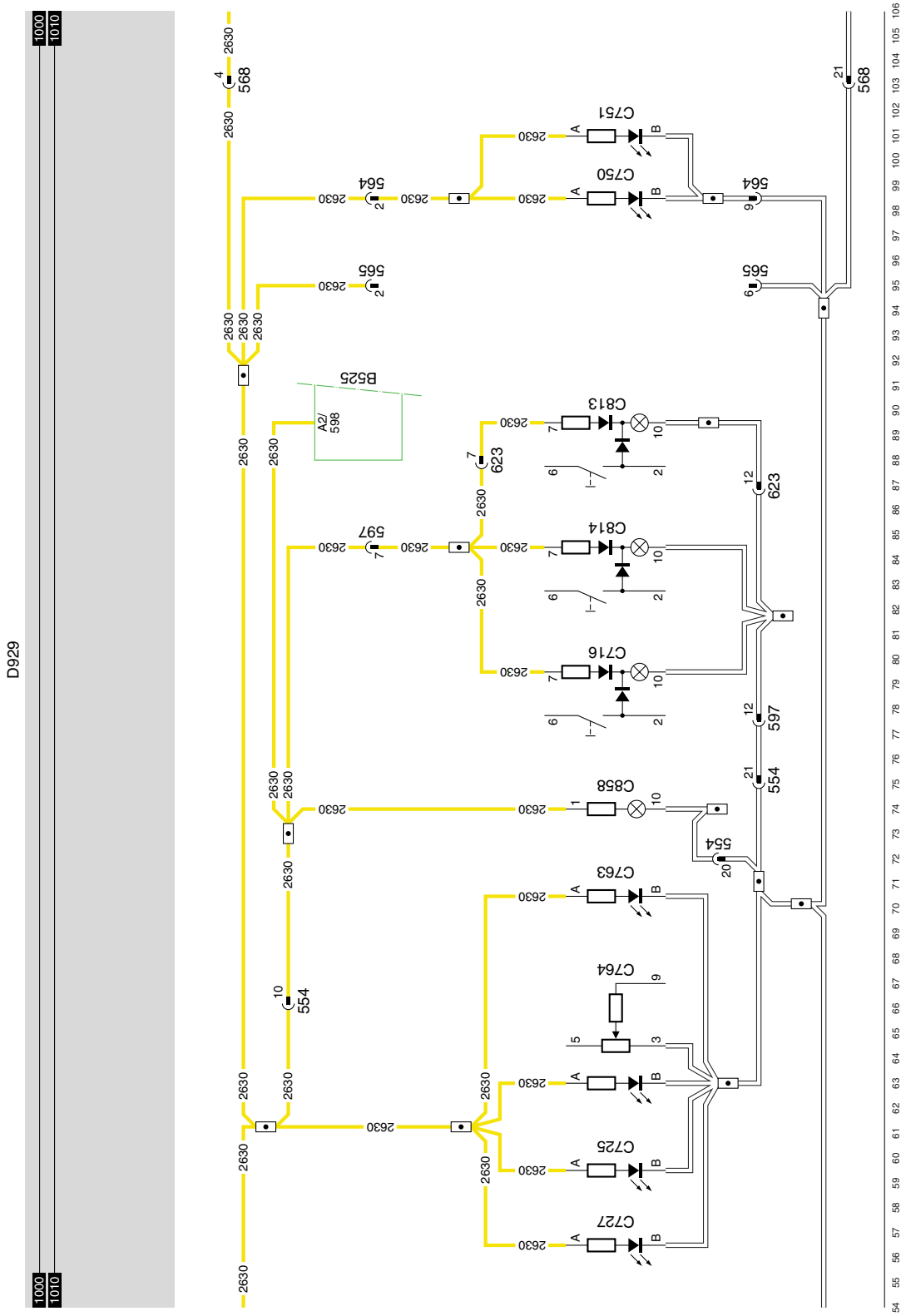


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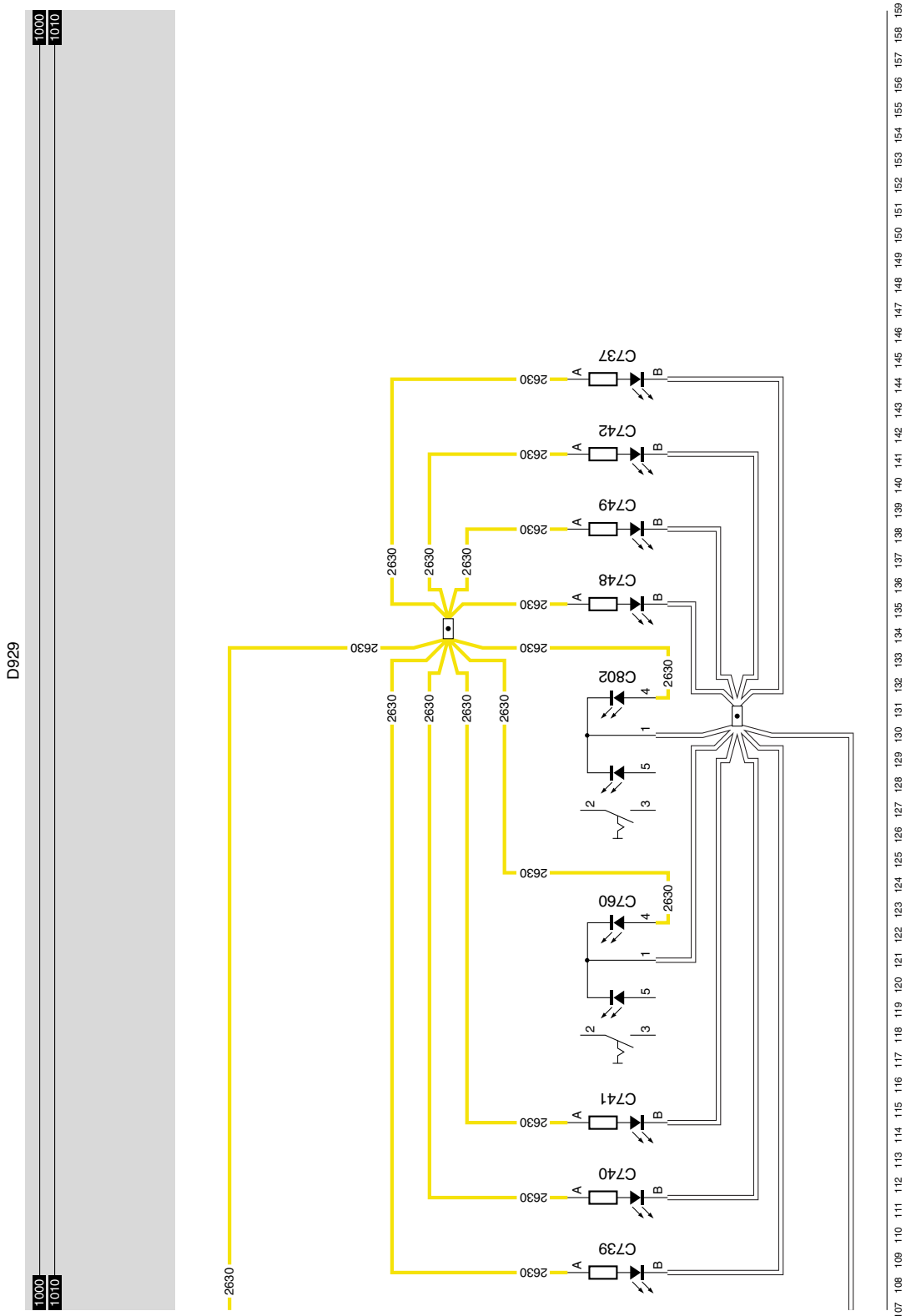



**20** **1358030/26** EL001326

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**20** **1358030/26** EL001327




20 1358030/26 EL001328

## 21 AIR CONDITIONING/RECIRCULATION VALVE/HEATER FAN

### AIR CONDITIONING

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

### RECIRCULATION VALVE

When C802 is operated (connection between contacts 2 and 3), a voltage is applied to connection points 1 of G257 and G258 through fuse E031, wire 1201, contacts 2 - 3 of C802, wire 4659. This relay is energised and, as a result, a connection is made between contacts 3 and 5. This causes a voltage to be applied to connection point 1 of B252 through fuse E031, wire 1201, contacts 5 - 3 of relay G257 and wire 5053. The other connection point 2 is connected to earth through wire 5054, contacts 3 - 5 of relay G258. The recirculation valve, driven by B252, will now close.
The VIC (D900) also receives a voltage signal on connection point 8. The VIC activates the “recirculation” warning indicator on the instrument panel via the I-CAN.

### HEATER FAN

A voltage is applied to connection point 8 of B015 (4-speed heater fan) through fuse E031 (heater fan) and wire 1201.
Depending on the position of C882 (heater fan switch), the fan will start operating.

The knob has five positions:

**Off: (position 0):** Heater fan (B015) off.

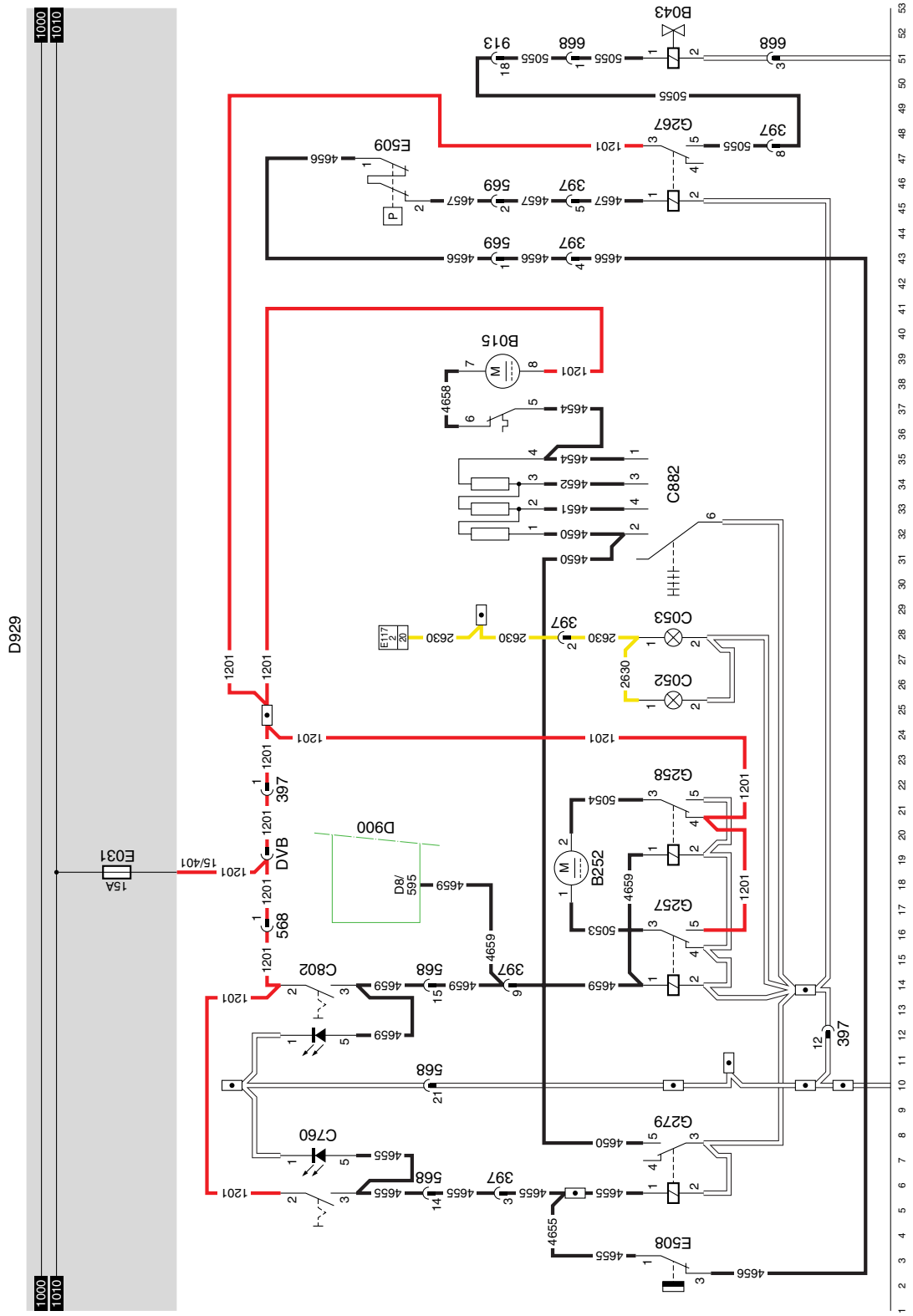
**Position 1:** (Connection between contacts 2 and 6) The fan runs at the lowest speed. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6 - 5 of thermal switch B015, wire 4654, through three resistors (B015), wire 4650 and contacts 2 - 6 of C882.

**Position 2:** (Connection between contacts 2 and 6) The fan runs slightly faster.
Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6 - 5 of thermal switch B015, wire 4654, through two resistors (B015), wire 4651 and contacts 4 - 6 of C882.

**Position 3:** (Connection between contacts 3 and 6) The fan runs at the highest speed but one.
Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6 - 5 of thermal switch B015, wire 4654, through one resistor (B015), wire 4652 and contacts 3 - 6 of C882.

**Position 4:** (Connection between contacts 1 and 6) The fan runs at the highest speed. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6 - 5 of the thermal switch (B015).

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**21** **1358030/26** EL001329

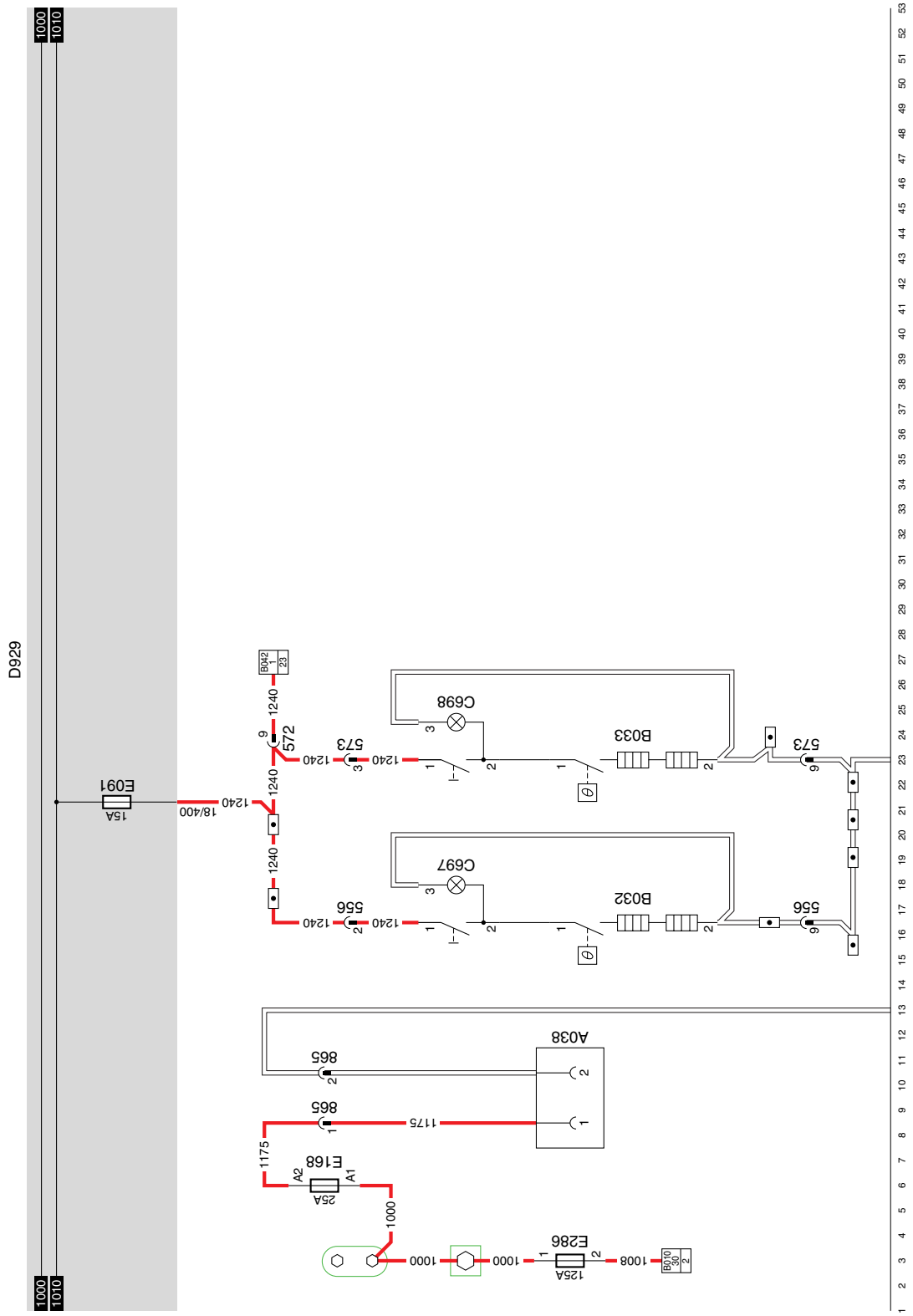
10

## 22 CONNECTION FOR SEAT HEATING/ACCESSORIES

**SEAT HEATING**
When the contact is activated, a voltage is applied to switch C697 (driver's side seat heating switch) and switch C698 (co-driver's side seat heating switch) through fuse E091 and wire 1240.
When one of the switches (C697 or C698) is operated, heating element B032 or B033 is switched on. When the maximum temperature is reached, a thermal switch in the seat switches off the heating element.

**ACCESSORIES CONNECTION**
There is a 2-pin connector A038 (connector number: 180) in the central box, under the PCB.
This is connected before contact (wire 1175) and is protected by a 25A fuse.

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**22** **1358030/26** EL001330

## 23 HORN/CIGAR LIGHTER/WORK LAMP/AIR DRYER

### HORN

A voltage is applied to connection point 5 of C832 (direction indicator/windscreen wiper stalk switch) via fuse E036 and wire 1103. When this switch is operated (connection between contacts 5 and 12), voltage is applied to connection point 1 of valve B028 (horn) via wire 4535. This valve is activated. The air duct in the pneumatic horn is now released.

### CIGAR LIGHTER

A voltage is applied to connection point 1 of B030 (driver's side cigar lighter) through fuse E026 (power supply before contact) and wire 1105. When the cigar lighter is pressed in (connection between contacts 1 and 3), a current flows through an internal resistor. When the temperature exceeds a specific value, the heating element springs back and the electric circuit is broken.

### WORK LAMP

When the vehicle lighting is on (relay G000 activated), a voltage is applied to connection point 85 of relay G462 (work lamp relay) through contacts 30 - 87 of relay G000, PCB track 2101, fuse E117, wire 2630. This relay is activated. A voltage is now applied through fuse E037, wire 1100, contacts 30 and 87 of relay G462 through fuse E052 to connection point 5 of C725 (work lamp switch). When the work lamp switch is operated (connection between connection points 5 and 1), the work lamp (C071) is supplied with voltage. The VIC (D900) also receives a voltage signal on connection point C9. The VIC switches on the "work lamp" warning indicator on the instrument panel via the I-CAN.

### AIR DRYER

A voltage is applied to connection point 1 of B042 (air dryer heating element) through fuse E091 (power supply after contact) and wire 1240. If the built-in temperature switch is closed (connection between contacts 1 and 2), a current flows through an internal resistor. If the temperature exceeds a specific value, the temperature switch turns the heating element back off.

### VARIANTS

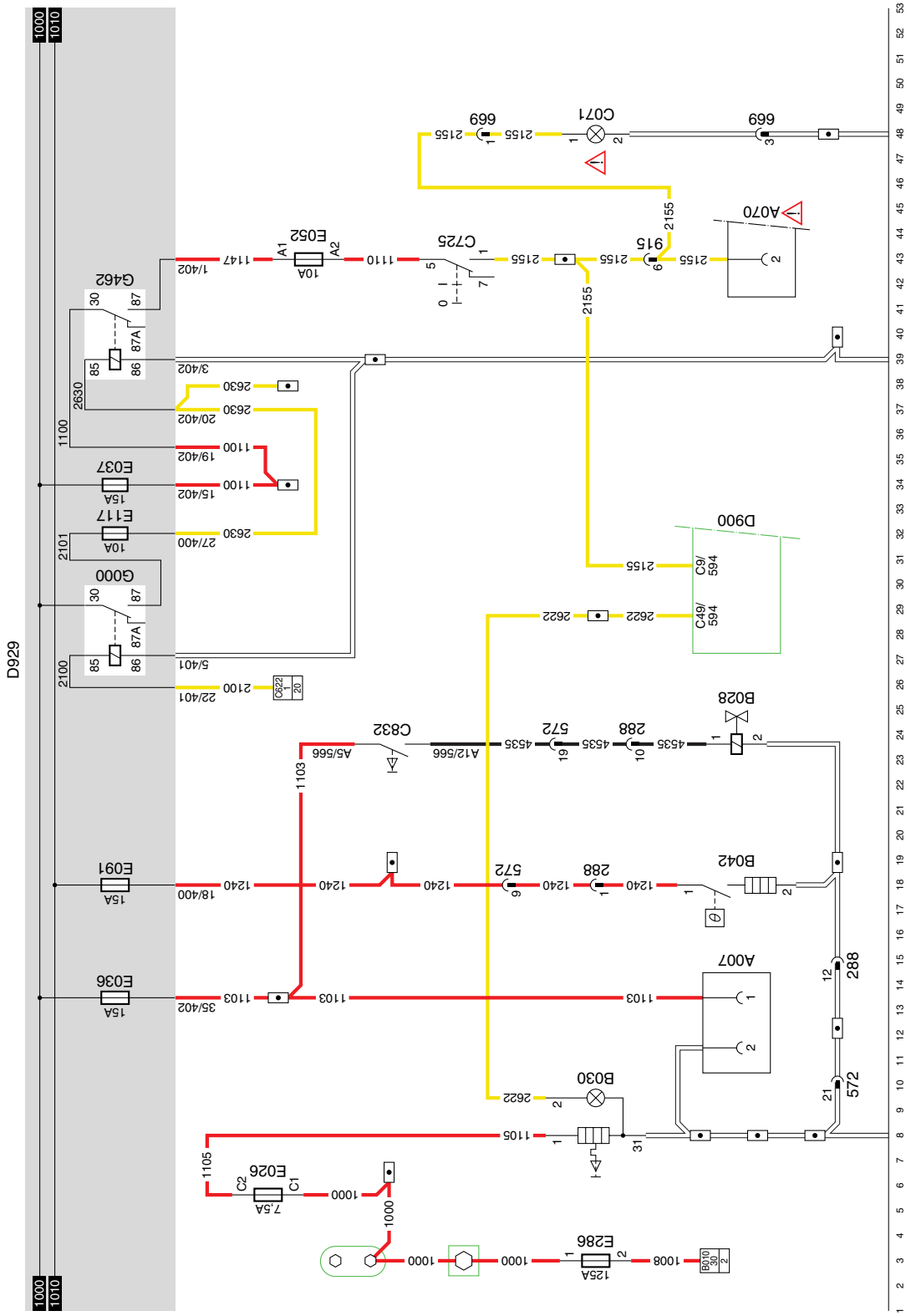
**Location**

| | |
|---|---|
| 45 | Connector A070: optional. Only for vehicle type FA. |
| 47 | only on vehicle type FA. |





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**23** **1358030/26** EL001331

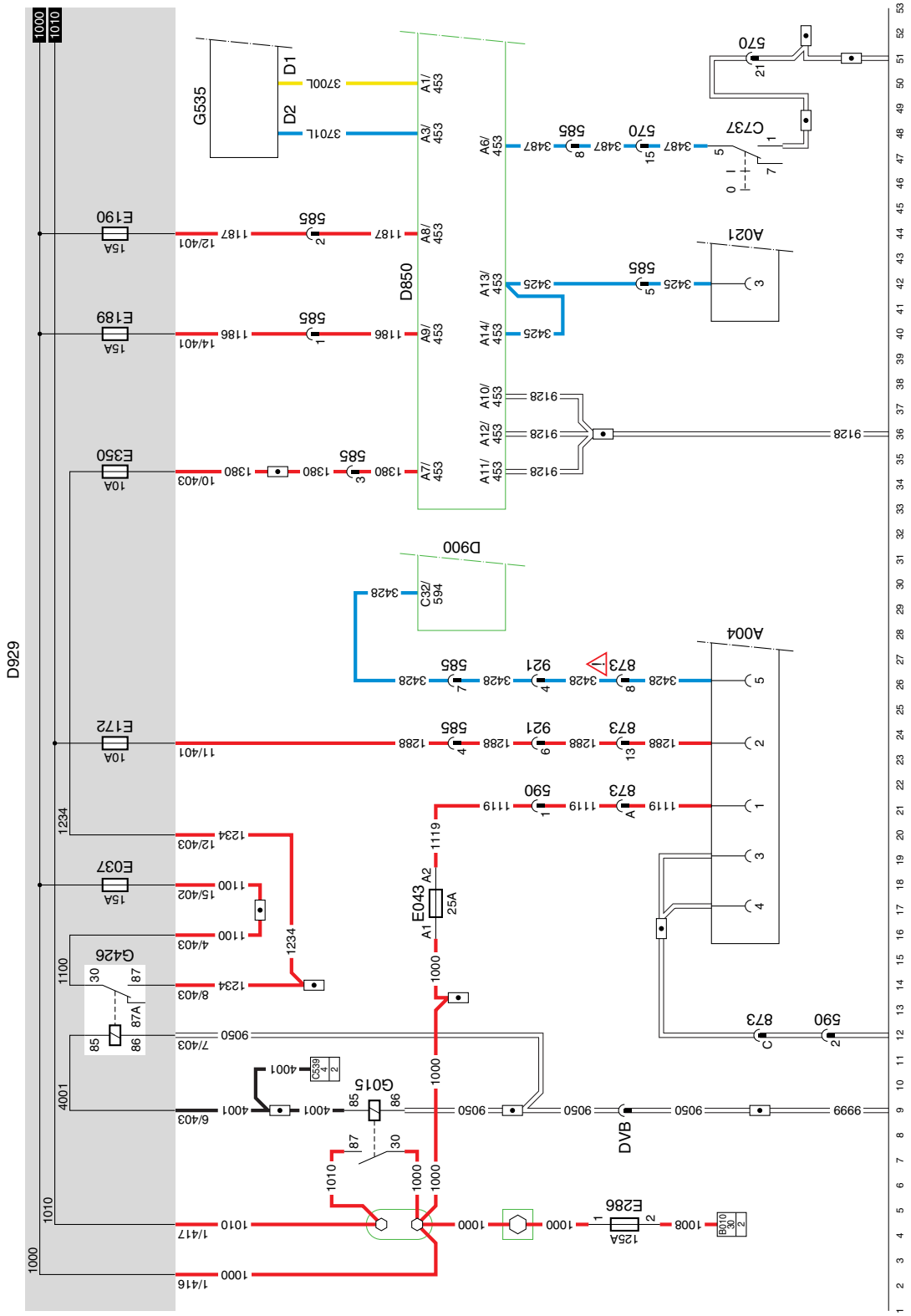
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24 ABS - ASR-D

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

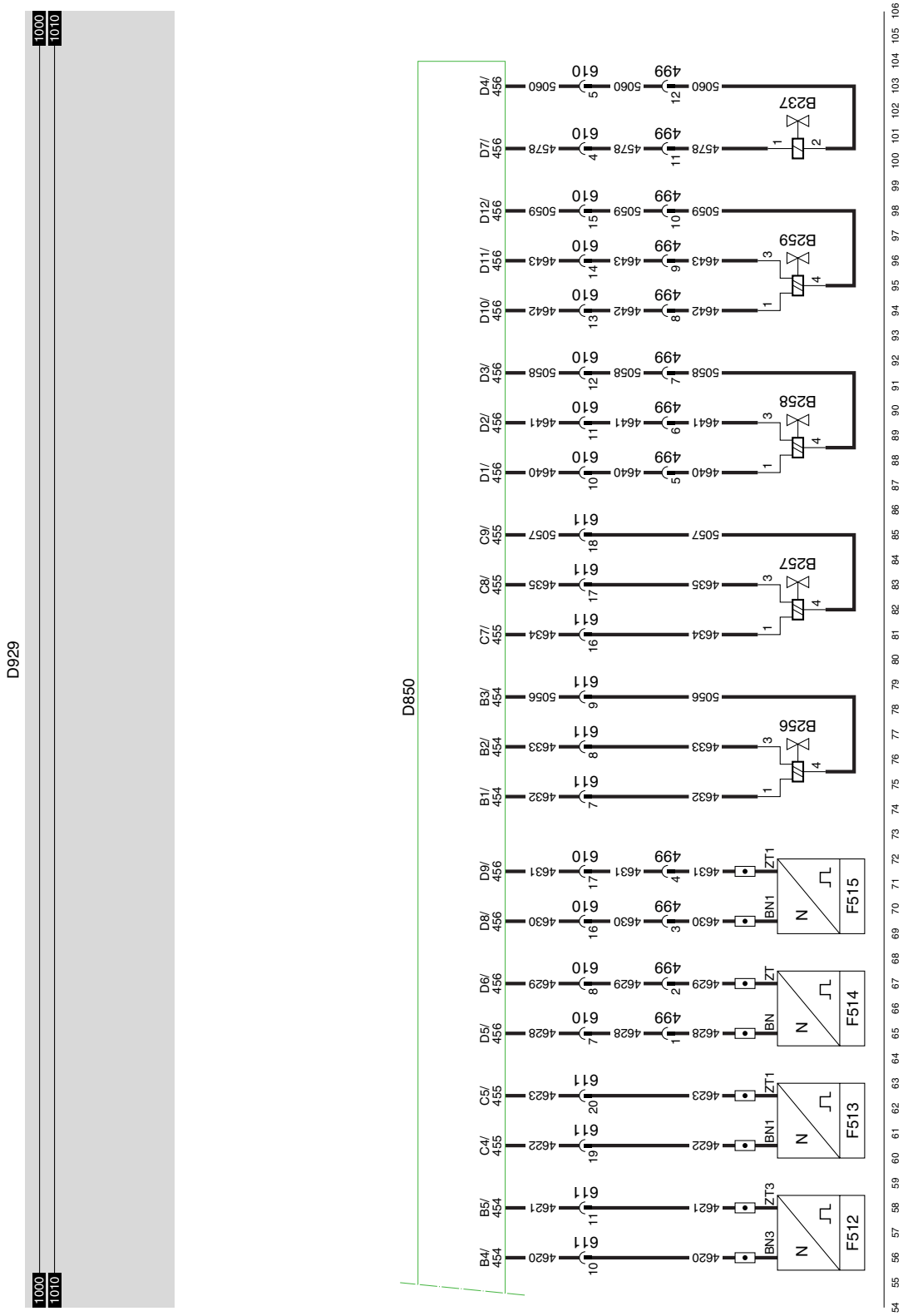
VARIANTS

**Location**
21 -> 26 Connector 873: only on vehicle type FA.




**24** **1358030/26** EL001332

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**24** **1358030/26** EL001333

**25 DEB**

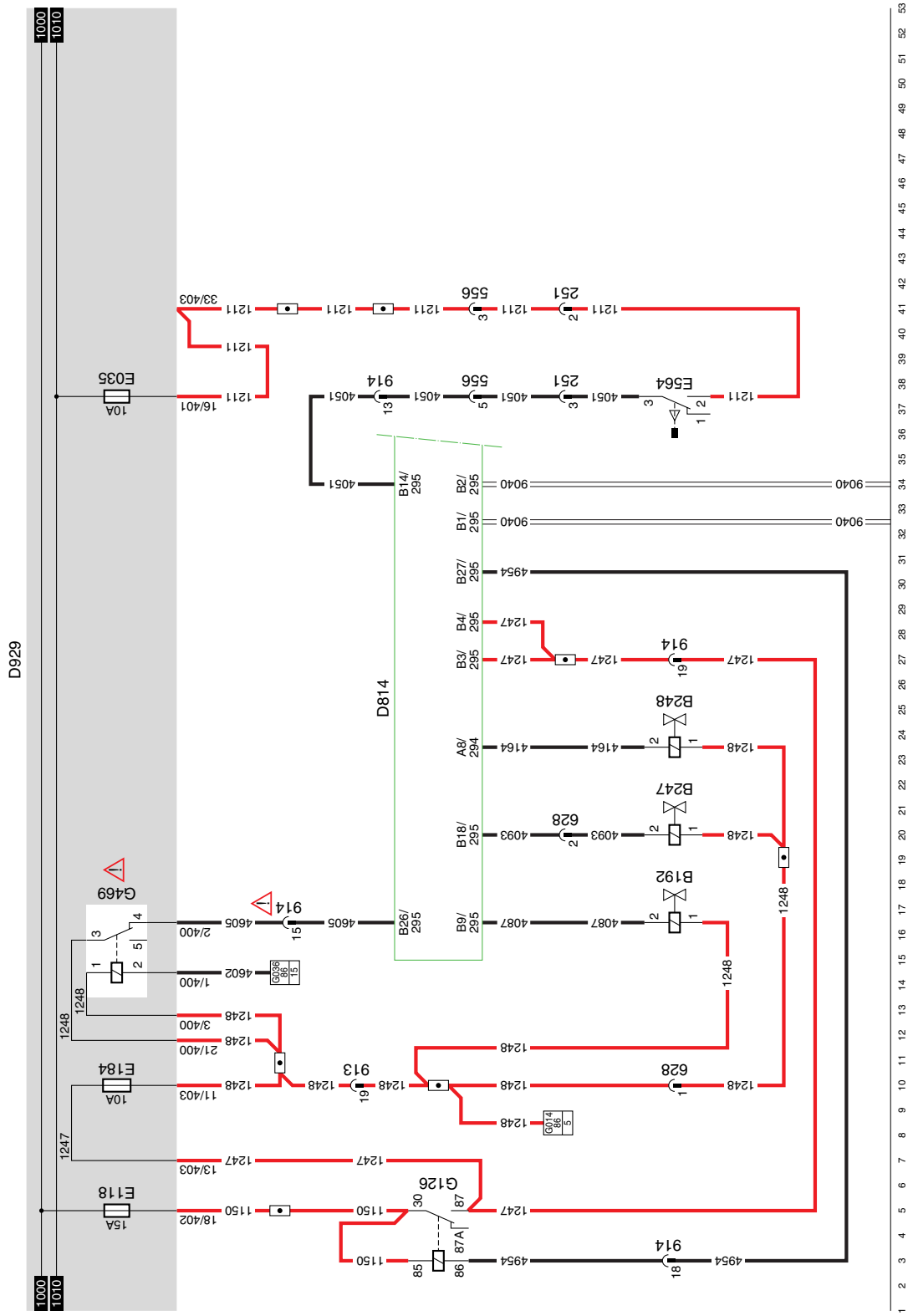
Voltage is applied through fuse E118 and relay G126 to D814 (UPEC electronic unit) and through fuse E184 to valves B192, B247 and B248.
Depending on unit D814, relay G126 is activated, after which voltage is applied to exhaust brake valve B192 and engine brake (DEB) valves B247 and B248.
Depending on unit D814 these valves are connected to earth or are not connected to earth.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 17 | Connector 914: only for AS Tronic. |
| 17 | Relay G469: only for AS Tronic. |

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**25** **1358030/26** EL001334

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**26 INTARDER EST42**

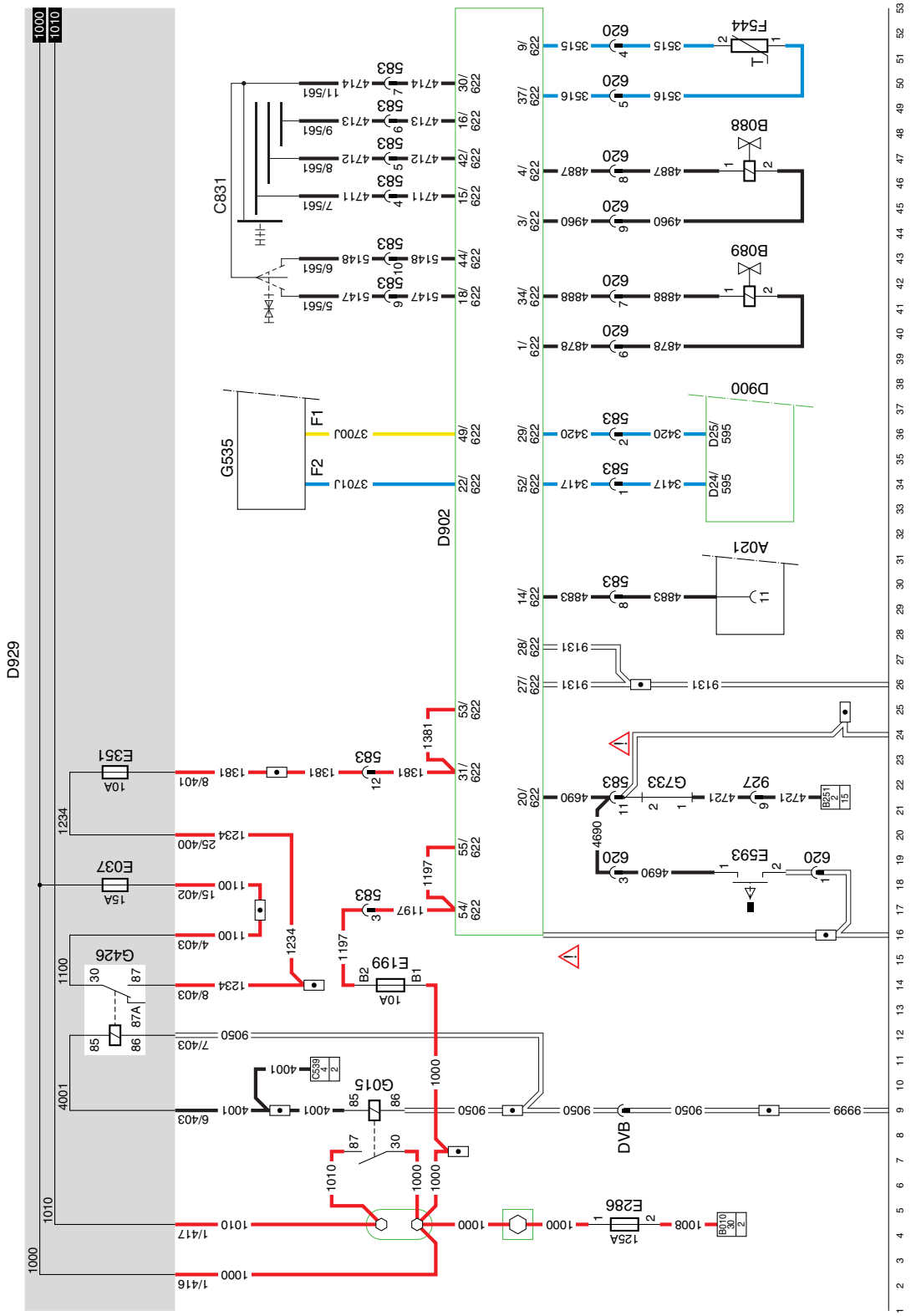
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

15 The housing is connected to earth by a separate wire.

23 Connector 583: on AS Tronic: wire 4690 connected directly to earth.




**26** **1358030/26** EL001335

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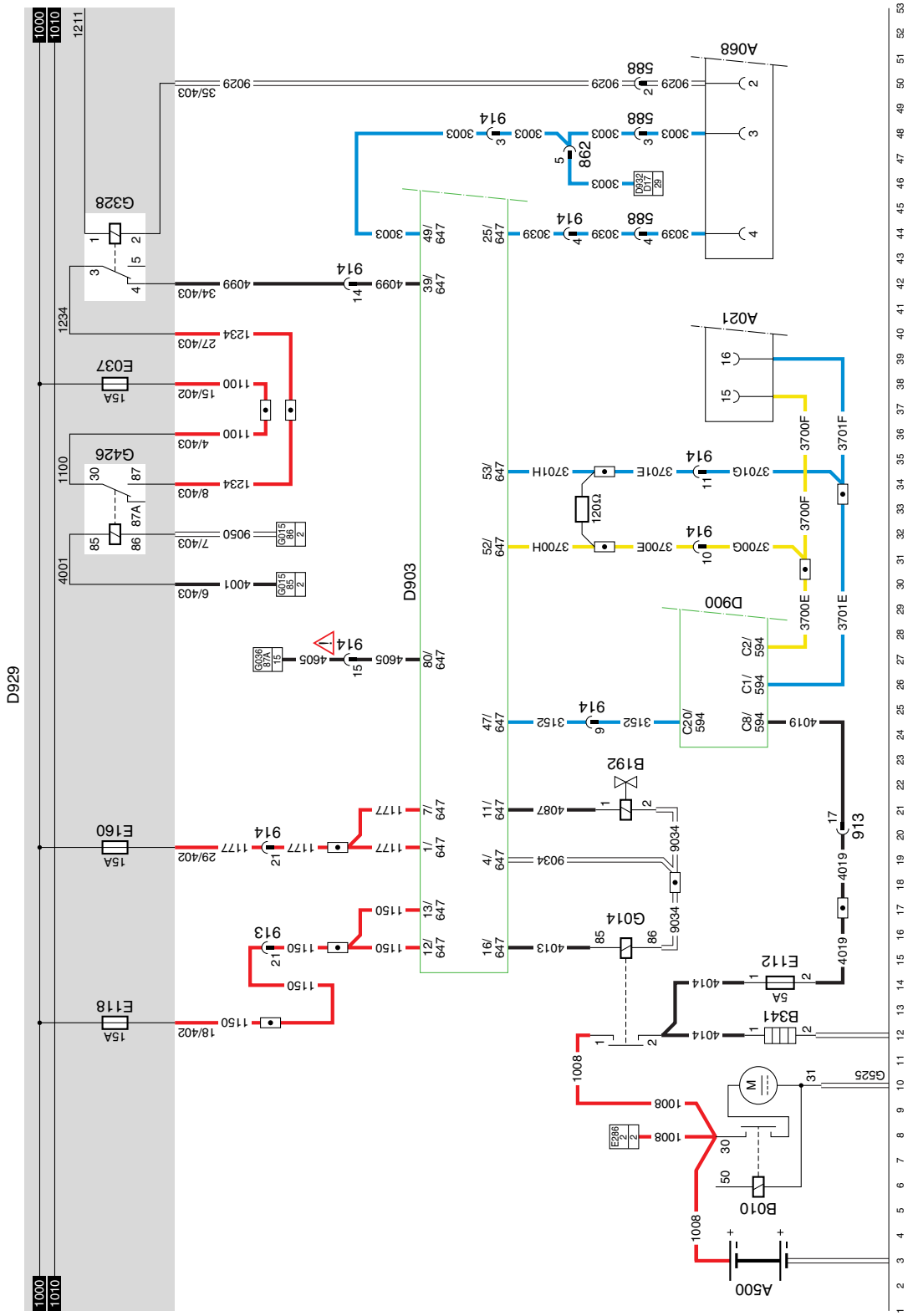
27 ECS-DC3

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

VARIANTS

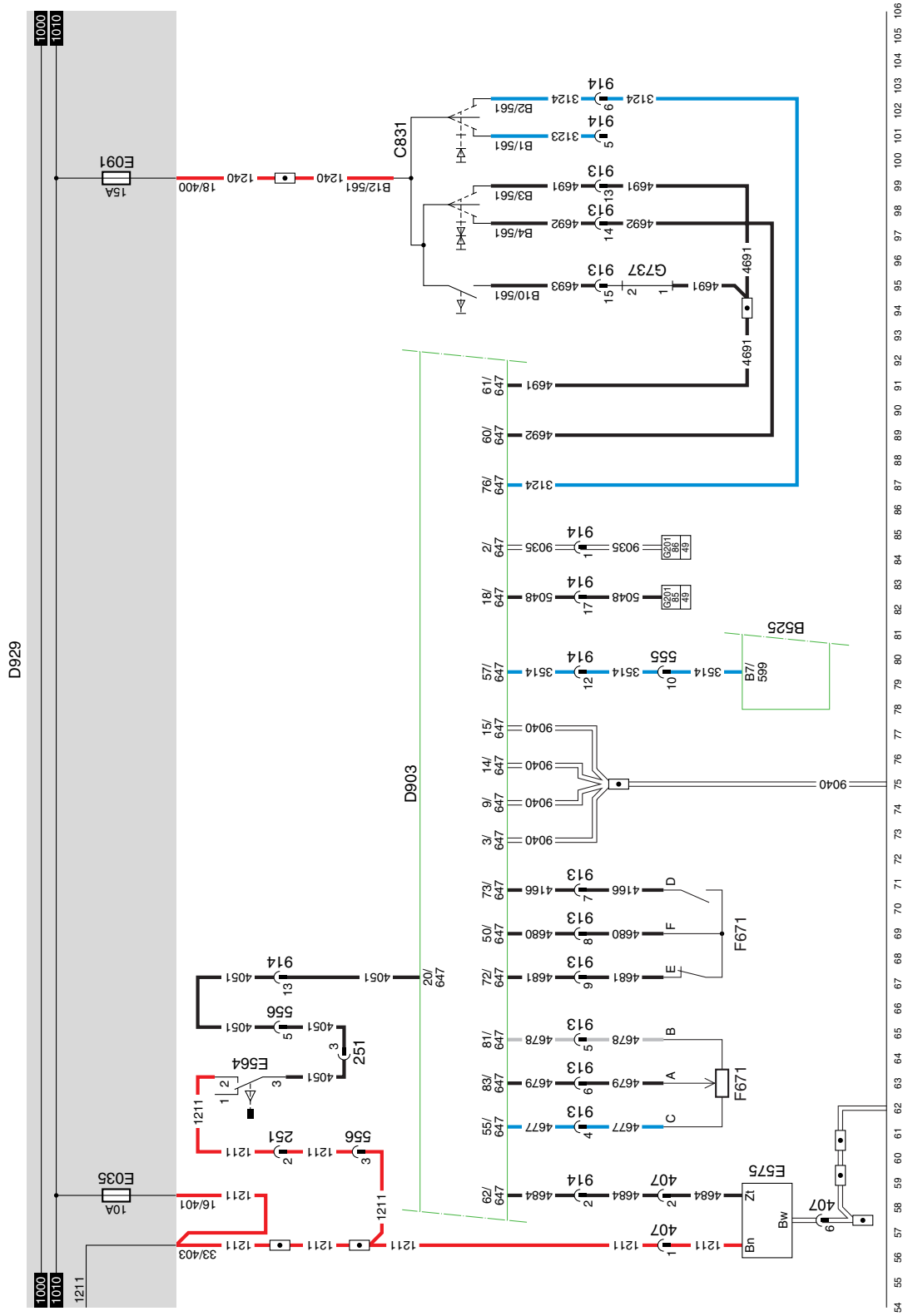
Location

28 Connector 914: the illustration shows the situation without AS Tronic. See section diagram 11 for situation with AS Tronic.



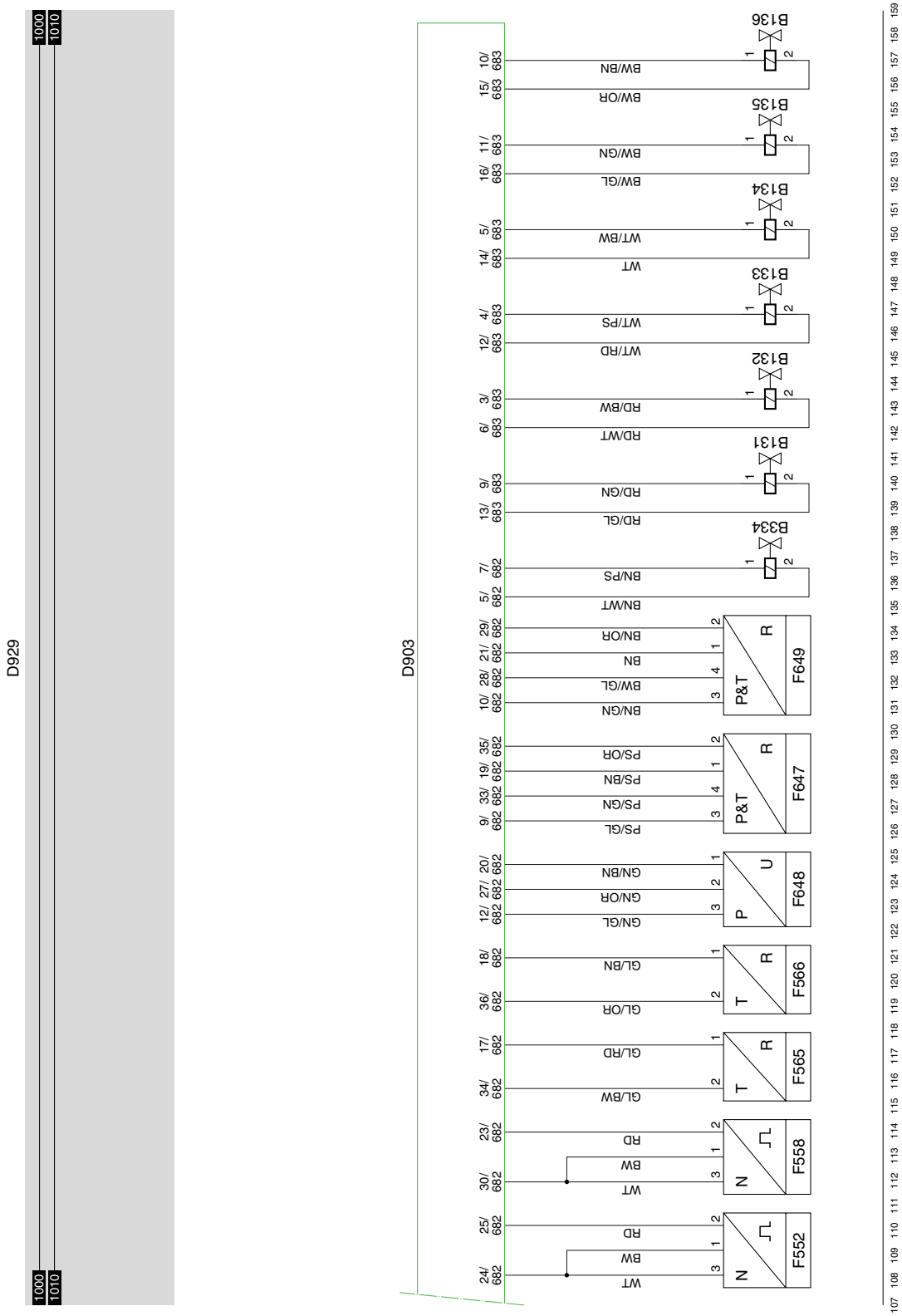

27 1358030/26 EL001336

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**27** **1358030/26** EL001337

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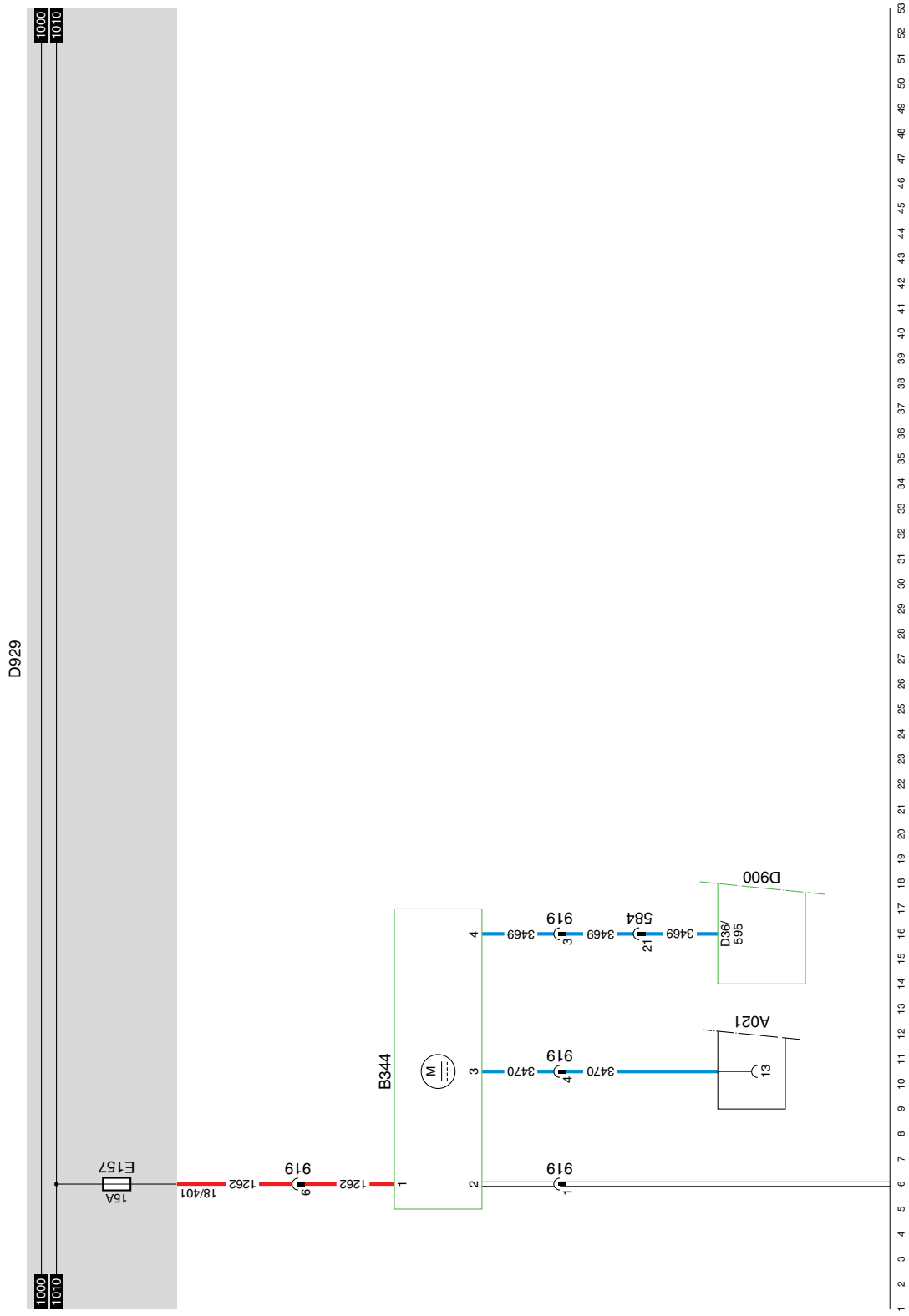



**27** **1358030/26** EL001338

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28 AGS
SEE THE SYSTEM MANUAL FOR MORE INFORMATION




**28** **1358030/26** EL001339

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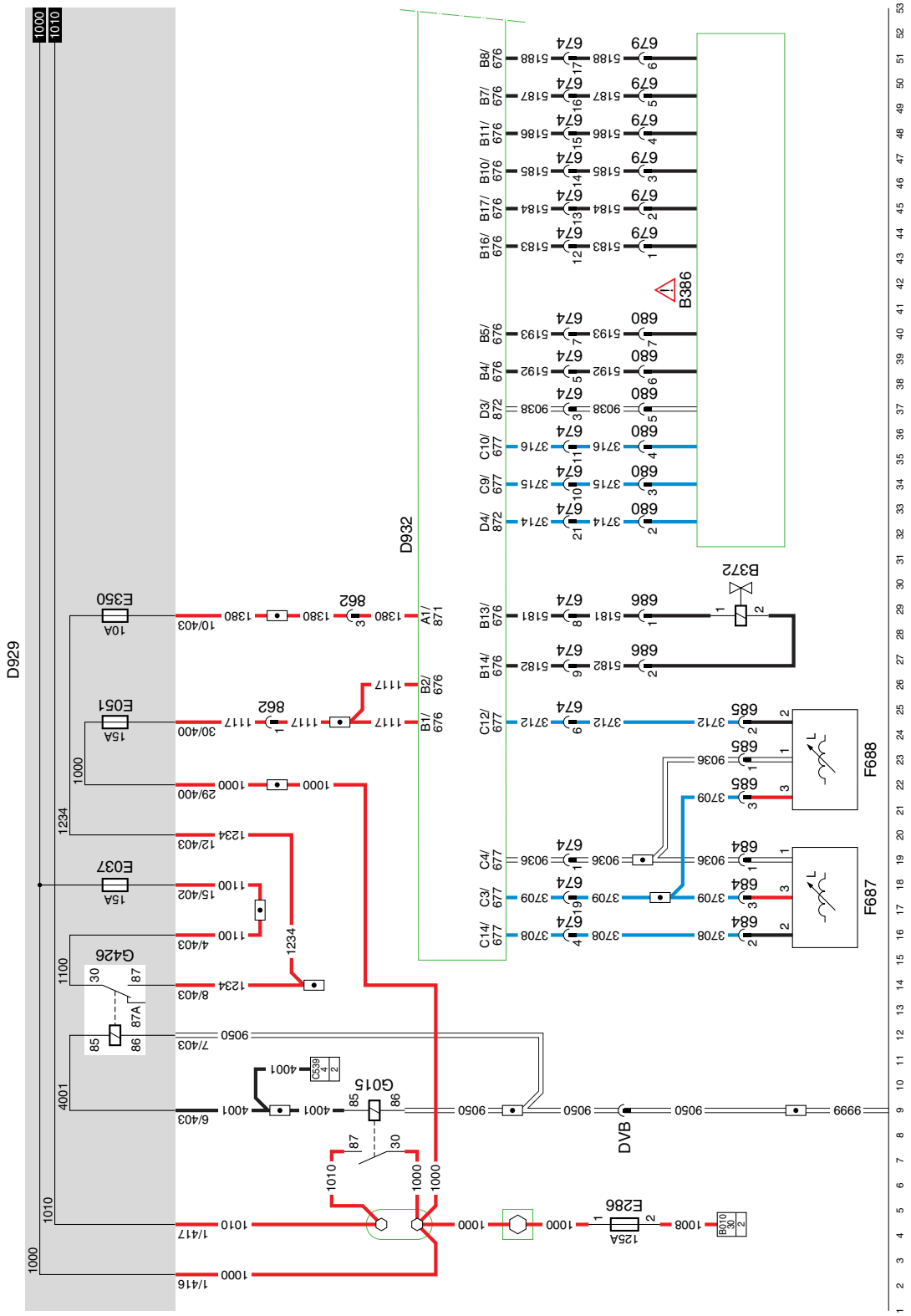
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29 EMAS

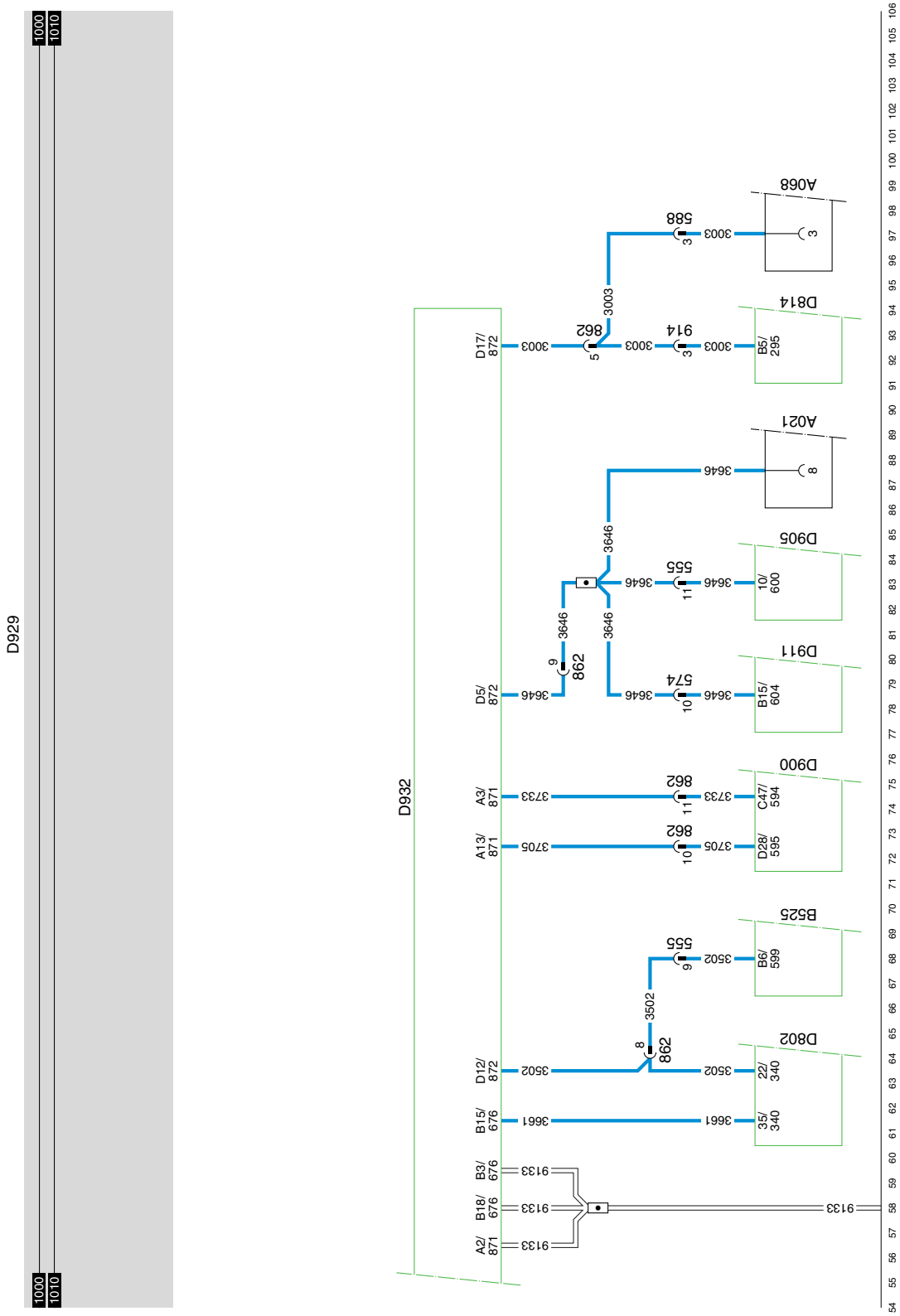
SEE THE SYSTEM MANUAL FOR MORE INFORMATION

VARIANTS

Location
42 Wires coming out of connectors 679 and 680 are **NOT** provided with DAF markings.


D929
D932
E350
10A
E051
15A
E037
15A
G426
G015
B372
B386
F688
F687
DVB
E286
125A
1000
1010
1234
1100
4001
9050
1117
1380
1000
1234
1100
4001
9050
1010
1000
1000
1000
1000
1008
9999
1/416
1/417
4/403
6/403
7/403
8/403
10/403
12/403
15/402
29/400
30/400
1358030/26
EL001340

**29**




**29** **1358030/26** EL001341

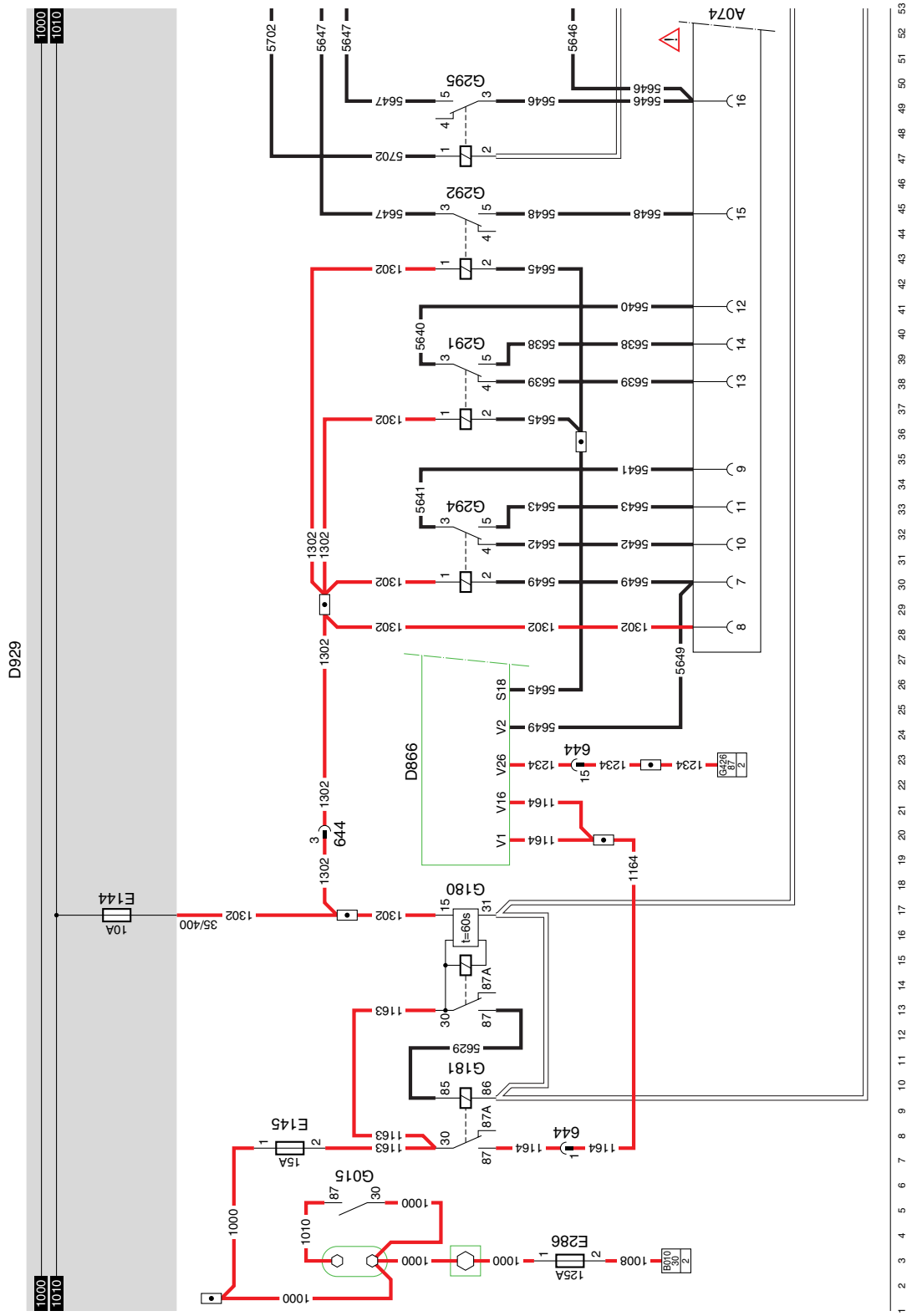
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30 AGC

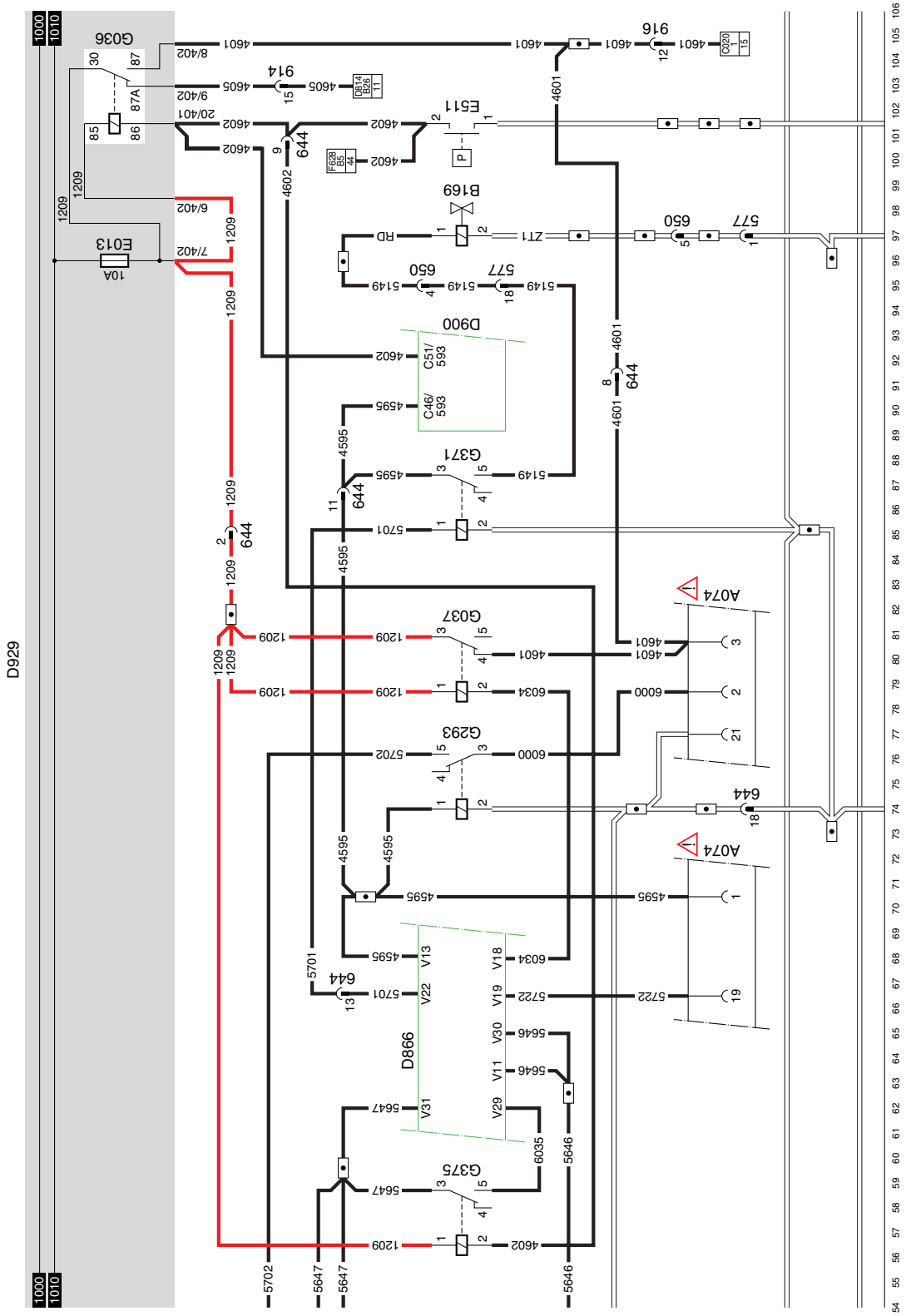
SEE THE SYSTEM MANUAL FOR MORE INFORMATION

VARIANTS

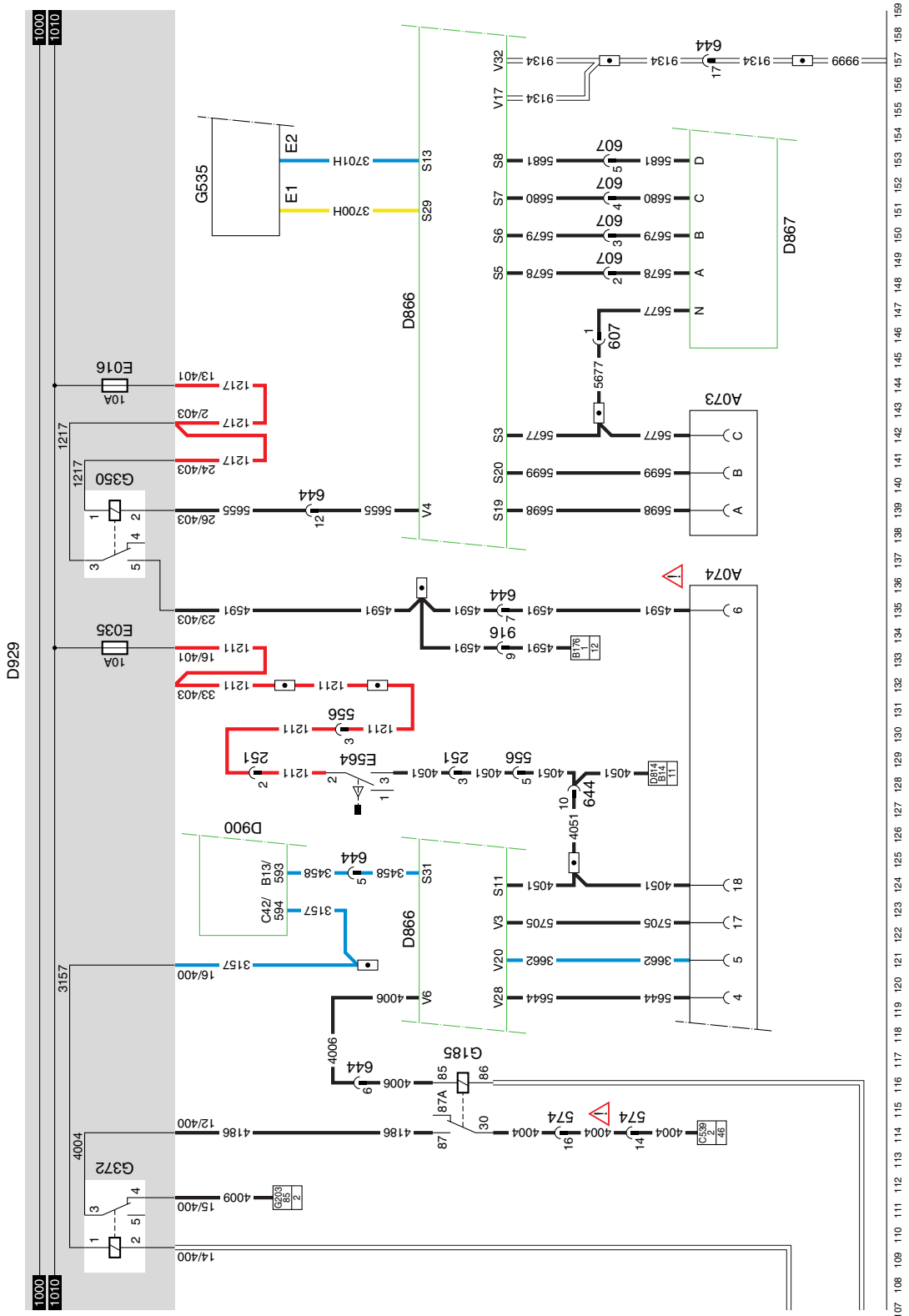
Location
52, 72, 82, 136: Connector A074: this is a connector for bodybuilder.
115 Depending on whether alarm system is fitted.




**30** **1358030/26** EL001342



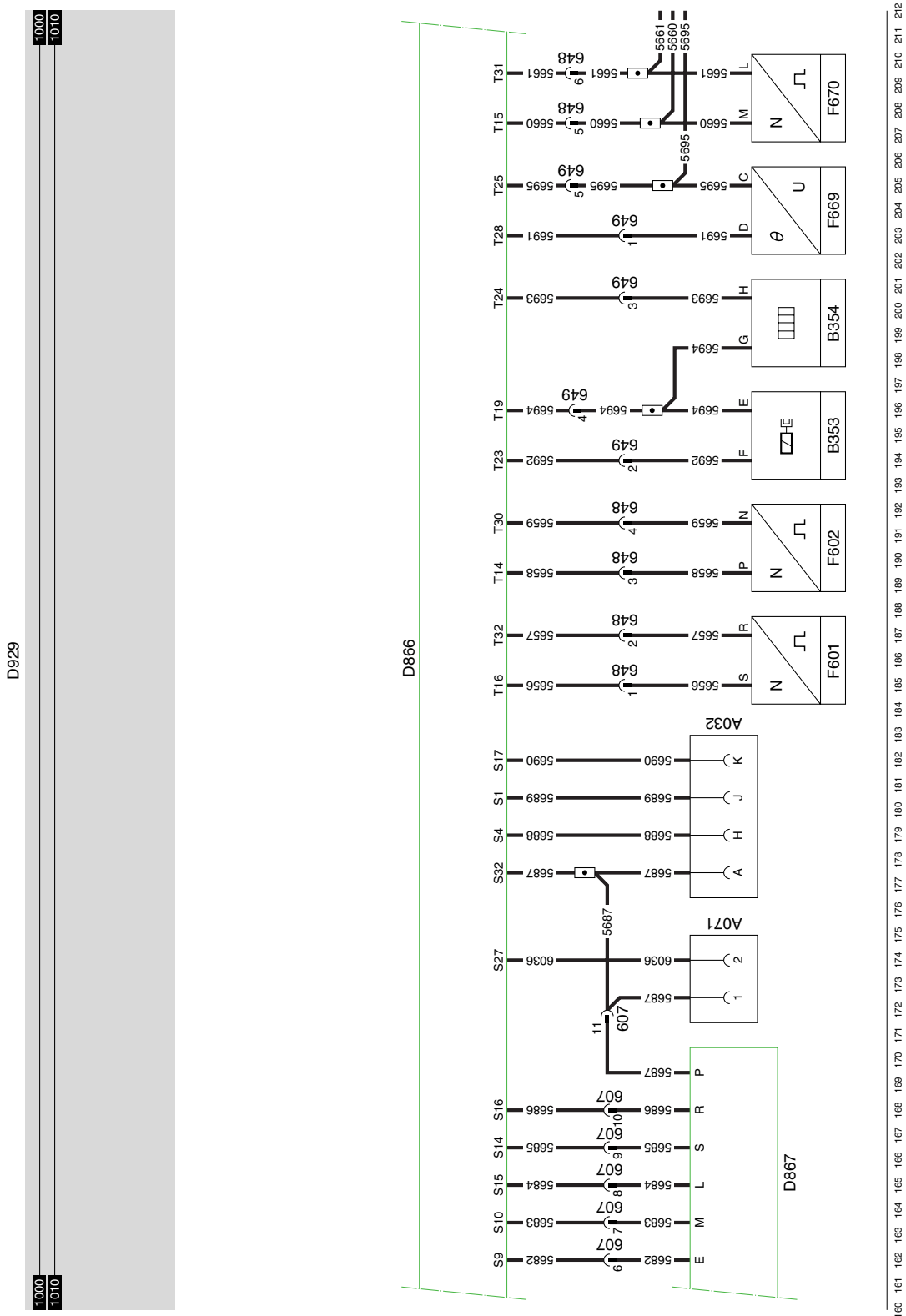

**30** **1358030/26** EL001343



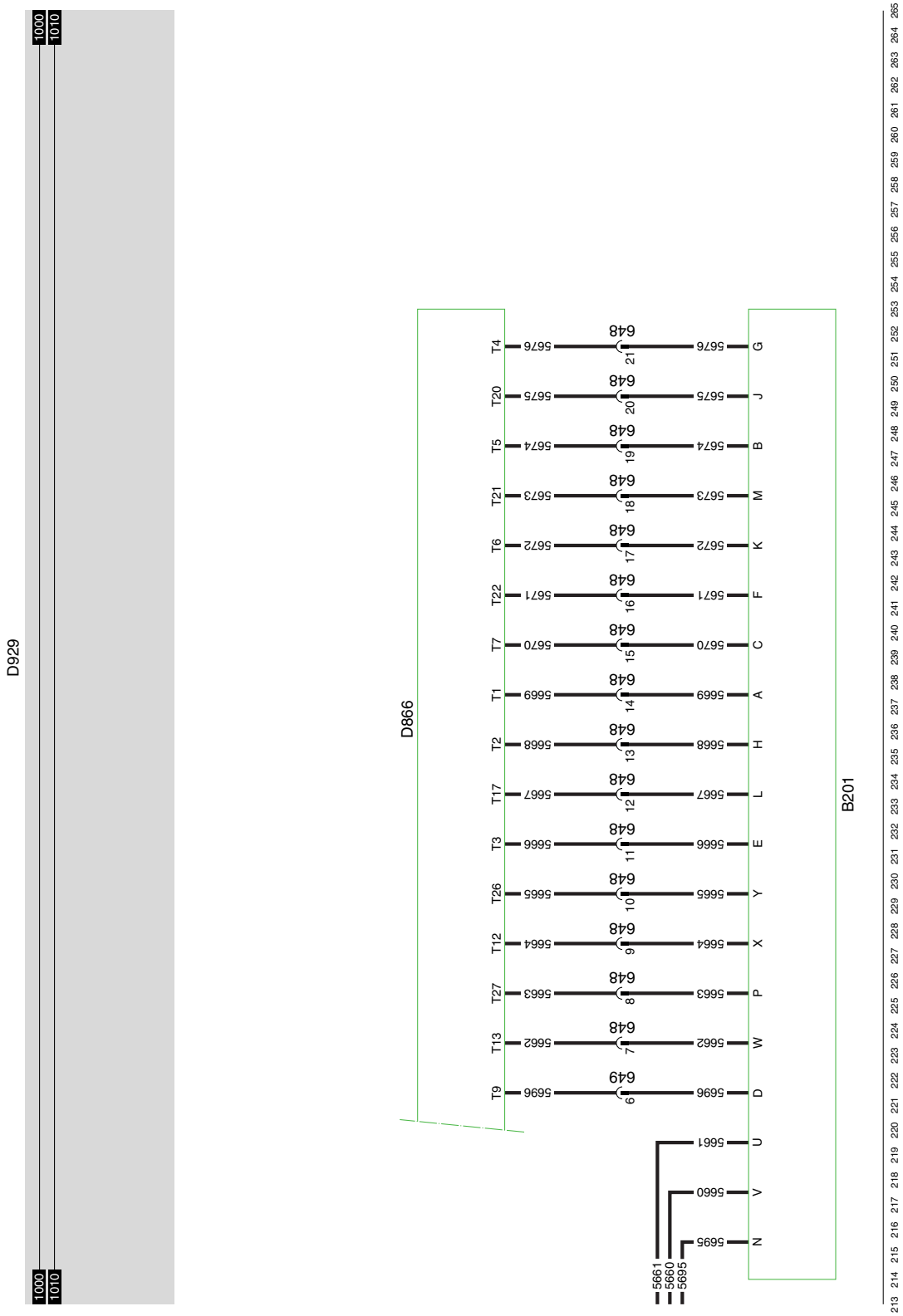

**30** **1358030/26**



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**30** **1358030/26** EL001345




**30** **1358030/26** EL001346

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## 31 FAG

A distinction can be made between three different situations:
- rest position (normal position during driving).
- bleeding leading rear axle (increased pressure on driving axle).
- ventilating leading rear axle (returned to rest).

Operation of traction control mode is limited to a maximum time: 90 seconds.
A further operation of traction assistance may only be started after a pause of 50 seconds after the end of the previous operation.
By now adjusting a time relay (G095) to a delay time of 60 ± 8 seconds, the pause period is fulfilled.

**REST POSITION**
When traction assistance switch C883 is operated (connection between contacts 5 and 1), a voltage is applied to connection point 15 of time relay G095 through fuse E062, wire 1221, contacts 5 - 1 of C883, wire 4563.
During normal driving, the traction assistance switch contact (C883) is open. The switch is self-returning.

**BLEEDING LEADING REAR AXLE**
Pressing and then releasing the traction assistance switch activates traction assistance (bleeding leading rear axle).

The time relay (G095) is now switched on for a period of 60 seconds. Contacts 30 - 87 are closed.
The voltage is now applied from the VIC to connection point 1 of B084 through wire 4564, contacts 30 - 87 of relay G095, wire 4562, contacts 3 - 4 and wire 4552. The VIC will only supply a voltage below the programmed speed. This activates the solenoid valve (B084), thus bleeding the bellows of the leading rear axle. As a result, a greater load is placed on the driving axle (more traction).
When the 60 ± 8 seconds have elapsed, the connection 30 - 87 of time relay G095 is broken. As a result, the voltage on valve B084 is also lost.

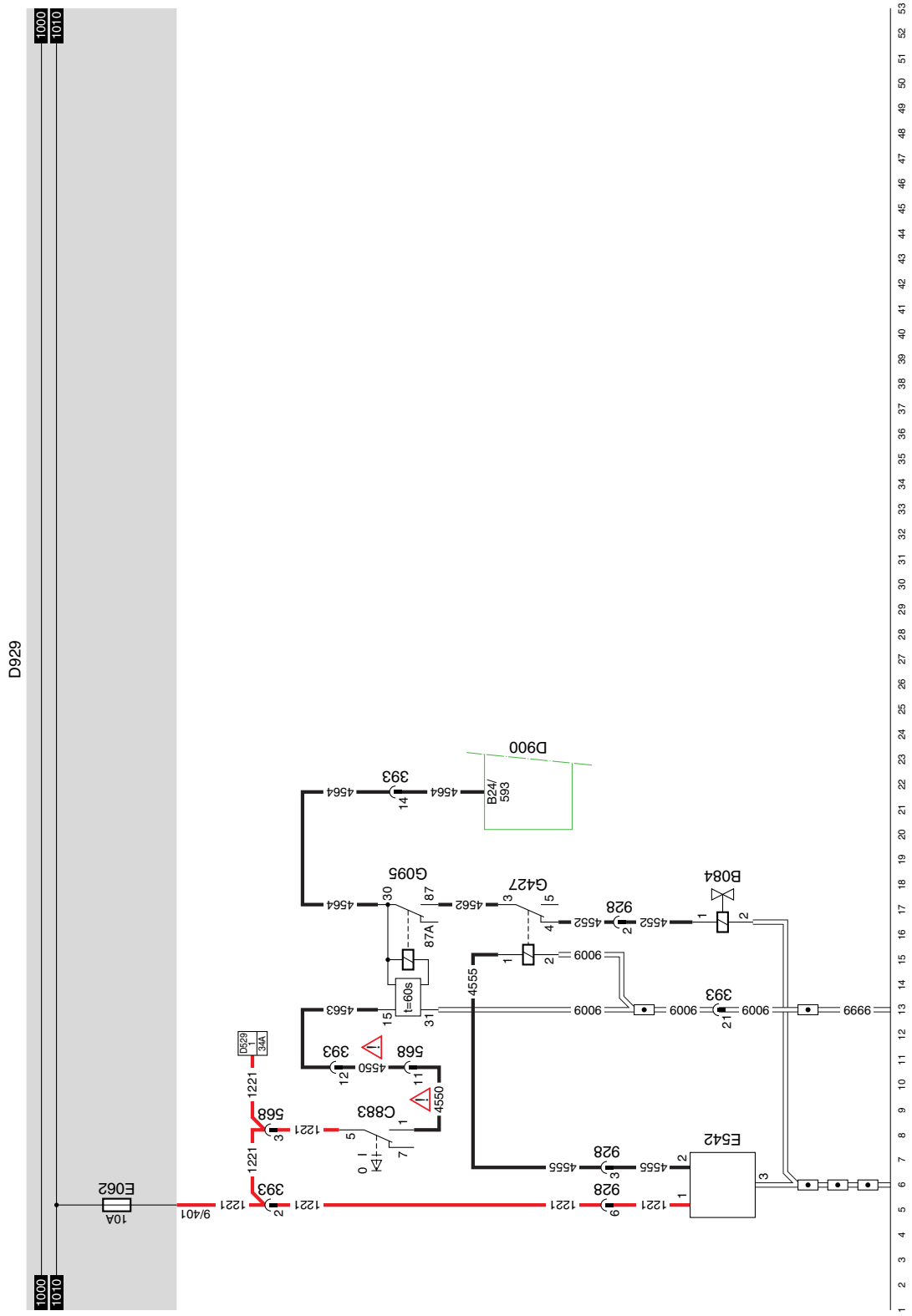
There is a safety mechanism to prevent overload of the axle. The proximity switch (E542) monitors the axle load.
When the maximum value is reached, the proximity switch (E542) is activated and this applies a supply voltage to connection point 1 of relay G427 through wire 4555.
Relay G427 is now energised, thereby breaking contacts 3 - 4. The bleed valve (B084) is no longer activated, so that bleeding is no longer performed and ventilation starts again immediately.

**VARIANTS**

**Location**
9, 12 Wire 4550: only on vehicle type FAG.



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**31** **1358030/26** EL001347

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## 32 PTO

**'REQUEST' PTO 1 (= SWITCH ON)**
When the PTO operation switch (C750) is operated, a voltage is applied to connection point D27 of D900 (VIC) through fuse E091, wire 1240, contacts 5 - 1 of switch C750 and wire 4594. The PTO can also be switched on through connection point 11 of A068 (engine speed control application connector). This means that a 'request' to use the PTO has been made.
This 'request' is implemented depending on the conditions programmed in the VIC. A condition might be that the parking brake must be engaged. In this case, a voltage is applied to connection point 1 of parking brake switch F000 through fuse E035, wire 1211. If parking brake switch F000 is closed (connection between contacts 1 and 2), this voltage is also on connection point B22 of D814 (UPEC electronic unit) through wire 3402 and on connection point D26 of D900 (VIC).

**OPERATION**
When the 'PTO request' is implemented, the following takes place:
A voltage is applied from connection point B23 of D900 through wire 4596 to connection point 1 of B245, thereby switching on the PTO.

The VIC checks whether the PTO is actually switched on. This takes place as follows:
When the PTO has been switched on, F087 is operated mechanically. Contacts 1 - 2 of F087 close. Connection point B14 of the VIC is now connected to earth. The VIC then sends a message to the DIP and the "PTO active" warning is activated. If the PTO does **NOT** switch on, F087 is **NOT** operated and connection point B14 of the VIC is **NOT** connected to earth. After a period of time programmed in the VIC, a 'message' is sent to the DIP and the "PTO fault" warning symbol is activated.

**'CANCEL' PTO 1 (= SWITCH OFF)**
Breaking contacts 5 - 1 of C750 switches the PTO off. This interrupts the voltage from connection point D27 to D900 (VIC). One of the switch-on conditions for operation of the PTO is now absent. The VIC responds to this by also removing the voltage from connection point B23, causing the voltage at connection point 1 of B245 to be lost. The valve is no longer energised and the PTO is switched off.

**'REQUEST' PTO 2 (= SWITCH ON)**
When the PTO operation switch (C751) is operated, a voltage is applied to connection point D22 of D900 (VIC) through fuse E091, wire 1240, contacts 5 - 1 of switch C750 and wire 5241. This means that a 'request' to use the PTO has been made.
This 'request' is implemented depending on the conditions programmed in the VIC. A condition might be that the parking brake must be engaged. In this case, a voltage is applied to connection point 1 of parking brake switch F000 through fuse E035, wire 1211. If parking brake switch F000 is closed (connection between contacts 1 and 2), this voltage is also on connection point B22 of D814 (UPEC electronic unit) through wire 3402 and on connection point D26 of D900 (VIC).



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**OPERATION**
When the 'PTO request' is implemented, the following takes place:
A voltage is applied from connection point C46 of D900 to connection point 1 of E570 (clutch - PTO N10 proximity switch) (if present) and to connection point 3 of relay G259 (PTO operation takeover relay) (if present) through wire 4595. When switch E570 is operated by depressing the clutch pedal (connection between contacts 1 and 2), a voltage is applied to connection point 1 of relay G259 through wire 4595 and to connection point 1 of B245 (PTO control valve). Relay G259 is energised and, as a result, a connection is made between contacts 3 and 5 of relay G259. Relay G259 now remains energised irrespective of E570 (this is a 'memory' function). B246 is also activated and this switches the PTO on.

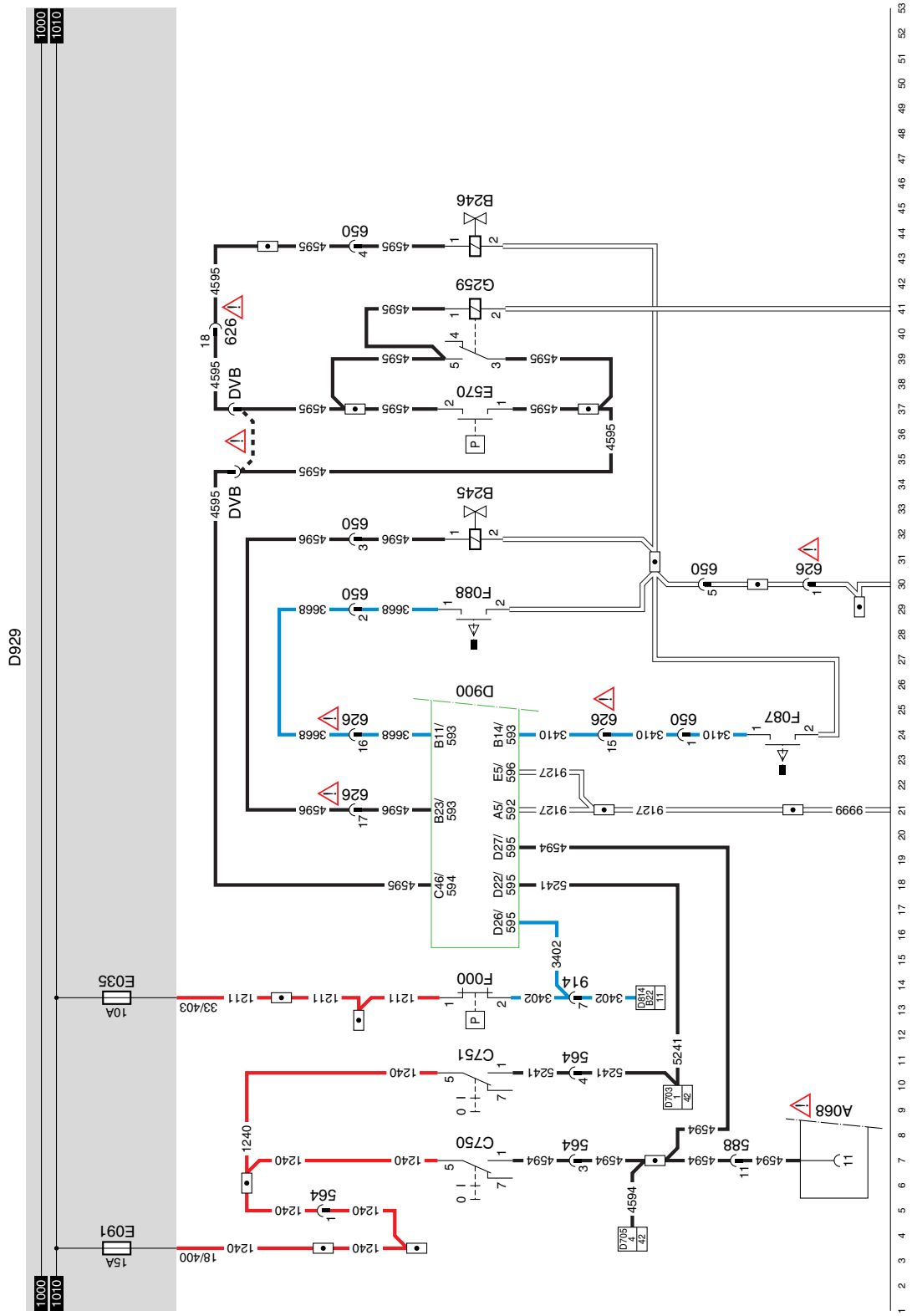
The VIC checks whether the PTO is actually switched on. This takes place as follows:
When the PTO has been switched on, F088 is operated mechanically. Contacts 1 - 2 of F088 close. Connection point B11 of the VIC is now connected to earth. The VIC then sends a message to the DIP and the "PTO active" warning is activated. If the PTO does **NOT** switch on, F088 is **NOT** operated and connection point B11 of the VIC is **NOT** connected to earth. After a period of time programmed in the VIC, a 'message' is sent to the DIP and the "PTO fault" warning symbol is activated.

**'CANCEL' PTO 2 (= SWITCH OFF)**
Breaking contacts 5 - 1 of C751 switches the PTO off. This interrupts the voltage from connection point D22 to D900 (VIC). One of the switch-on conditions for operation of the PTO is now absent. The VIC responds to this by removing the voltage on connection point C46 as well. The voltage on relay G259 is interrupted and, as a result, the coil is no longer energised. Contacts 5 - 3 open and, as a result, the voltage on connection point 1 of B246 is lost. The valve is no longer energised and the PTO is switched off.

**VARIANTS**

**Location**
9 Connector A068: optional.
35 DVB: in wiring harness above PCB if there is **NO** clutch PTO N10 proximity switch.
21, 24, 25, 31, 41:
Connector 626: for manual gearbox.
Connector 699: for AS Tronic.
Connector 577 for AGC.

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**32** **1358030/26** EL001348

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# 33 ROOF SPOTLIGHTS/COOLER BOX/ROTATING BEAMS

## ROOF SPOTLIGHTS

**Marker/parking lights in roof spotlights**
A voltage is applied to connection point 2 of C622 (lighting switch) via fuse E084 and wire 1101. When this switch is operated (connection between contacts 2 and 1), voltage is applied to connection point 85 of relay G000 (tail light/width marker light relay) via wire 2100. This relay is activated. A voltage is now applied through contacts 30 - 87 of relay G000, fuse E000 and wire 2102 to C163, C165, C167 and C169 (width marker light in roof spotlights). The marker and parking lights in the spotlights now come on.

**Roof spotlights**
A voltage is applied to connection point A8 of C832 (direction indicator/windscreen wiper stalk switch) via fuse E084 and wire 1101. When this switch is operated (connection between contacts A8 and A9), voltage is applied to connection point 85 of relay G002 (main beam relay) via wire 2120. This relay is activated. A voltage is now applied through contacts 30 - 87 of relay G002, fuse E006 and wire 2122 to C002 (left main beam) and connection point 6 of C813 (roof spotlights switch). When this switch is closed (connection between contacts 6 and 2), voltage is also applied to connection point 85 of G299 (roof spotlights relay). This relay is activated. A voltage is now applied through fuse E142, wire 1154, contacts 30 - 87 of G299 and wire 2135 to connection point 1 of C162, C164, C166 and C168 (roof spotlights). The spotlights will now light up.

## COOLER BOX

The cooler box is connected to voltage BEFORE contact. Voltage is applied to connection point 1 of B356 (cooler box) from fuse E142 via wire 1154.

## ROTATING BEAMS

The rotating beams are connected to voltage BEFORE contact. Voltage is applied to connection point 6 of C716 (rotating beams switch) from fuse E142 via wire 1154. When the switch is closed (connection between contacts 6 and 2), voltage is applied to C144 (left rotating beam) and C145 (right rotating beam) via wire 2017. These rotating beams will now light up. Switch C716 may be replaced by C715.

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## 33 ROOF SPOTLIGHTS/COOLER BOX/ROTATING BEAMS

### ROOF SPOTLIGHTS

**Marker/parking lights in roof spotlights**
A voltage is applied to connection point 2 of C622 (lighting switch) via fuse E084 and wire 1101. When this switch is operated (connection between contacts 2 and 1), voltage is applied to connection point 85 of relay G000 (tail light/width marker light relay) via wire 2100. This relay is activated. A voltage is now applied through contacts 30 - 87 of relay G000, fuse E000 and wire 2102 to C163, C165, C167 and C169 (width marker light in roof spotlights). The marker and parking lights in the spotlights now come on.

**Roof spotlights**
A voltage is applied to connection point A8 of C832 (direction indicator/windscreen wiper stalk switch) via fuse E084 and wire 1101. When this switch is operated (connection between contacts A8 and A9), voltage is applied to connection point 85 of relay G002 (main beam relay) via wire 2120. This relay is activated. A voltage is now applied through contacts 30 - 87 of relay G002, fuse E006 and wire 2122 to C002 (left main beam) and connection point 6 of C813 (roof spotlights switch).

When this switch is closed (connection between contacts 6 and 2), voltage is also applied to connection point 85 of G299 (roof spotlights relay). This relay is activated. A voltage is now applied through fuse E142, wire 1154, contacts 30 - 87 of G299 and wire 2135 to connection point 1 of C162, C164, C166 and C168 (roof spotlights). The spotlights will now light up.

### COOLER BOX

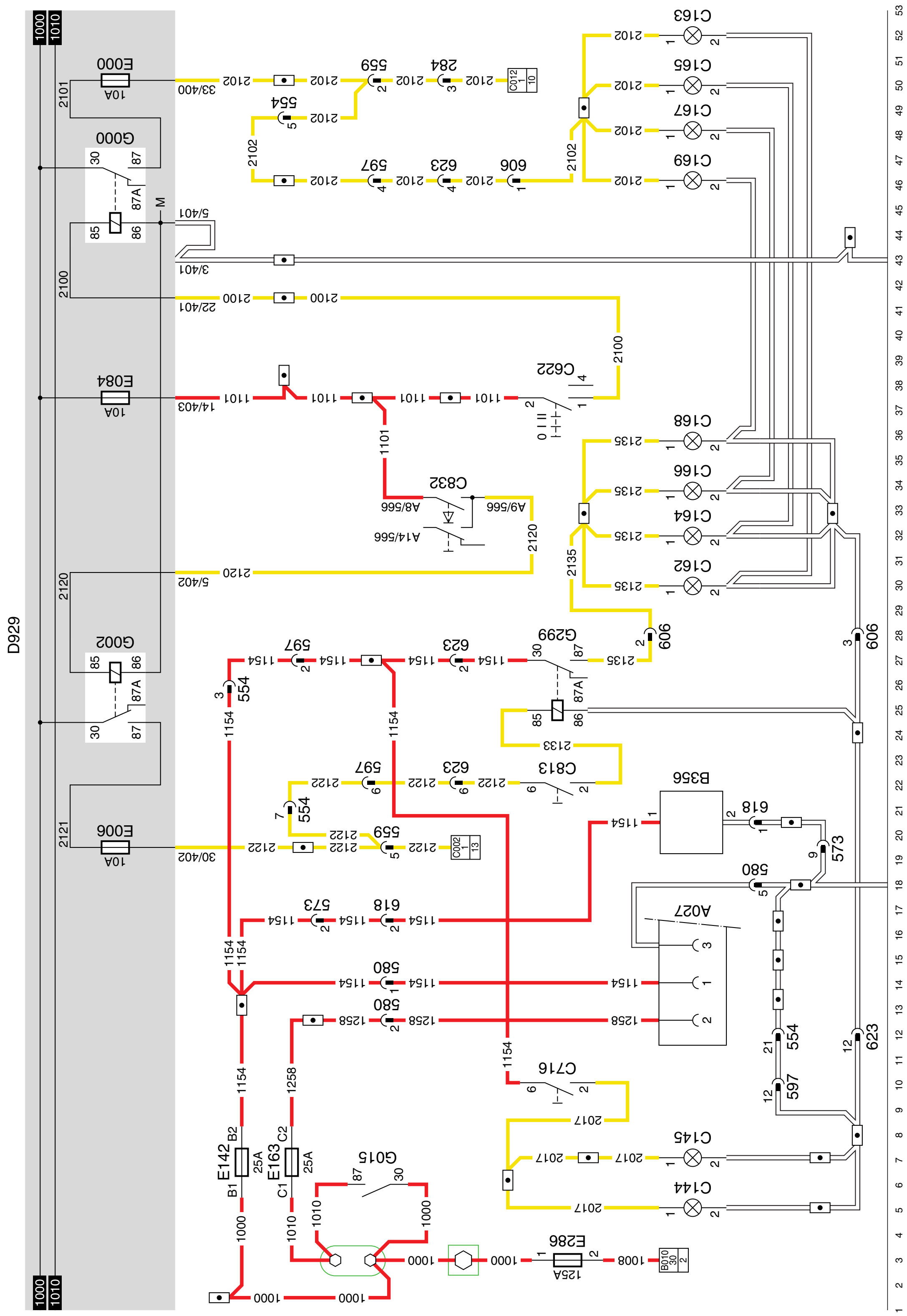
The cooler box is connected to voltage BEFORE contact. Voltage is applied to connection point 1 of B356 (cooler box) from fuse E142 via wire 1154.

### ROTATING BEAMS

The rotating beams are connected to voltage BEFORE contact. Voltage is applied to connection point 6 of C716 (rotating beams switch) from fuse E142 via wire 1154. When the switch is closed (connection between contacts 6 and 2), voltage is applied to C144 (left rotating beam) and C145 (right rotating beam) via wire 2017. These rotating beams will now light up. Switch C716 may be replaced by C715.



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**33** **1358030/26** EL001349

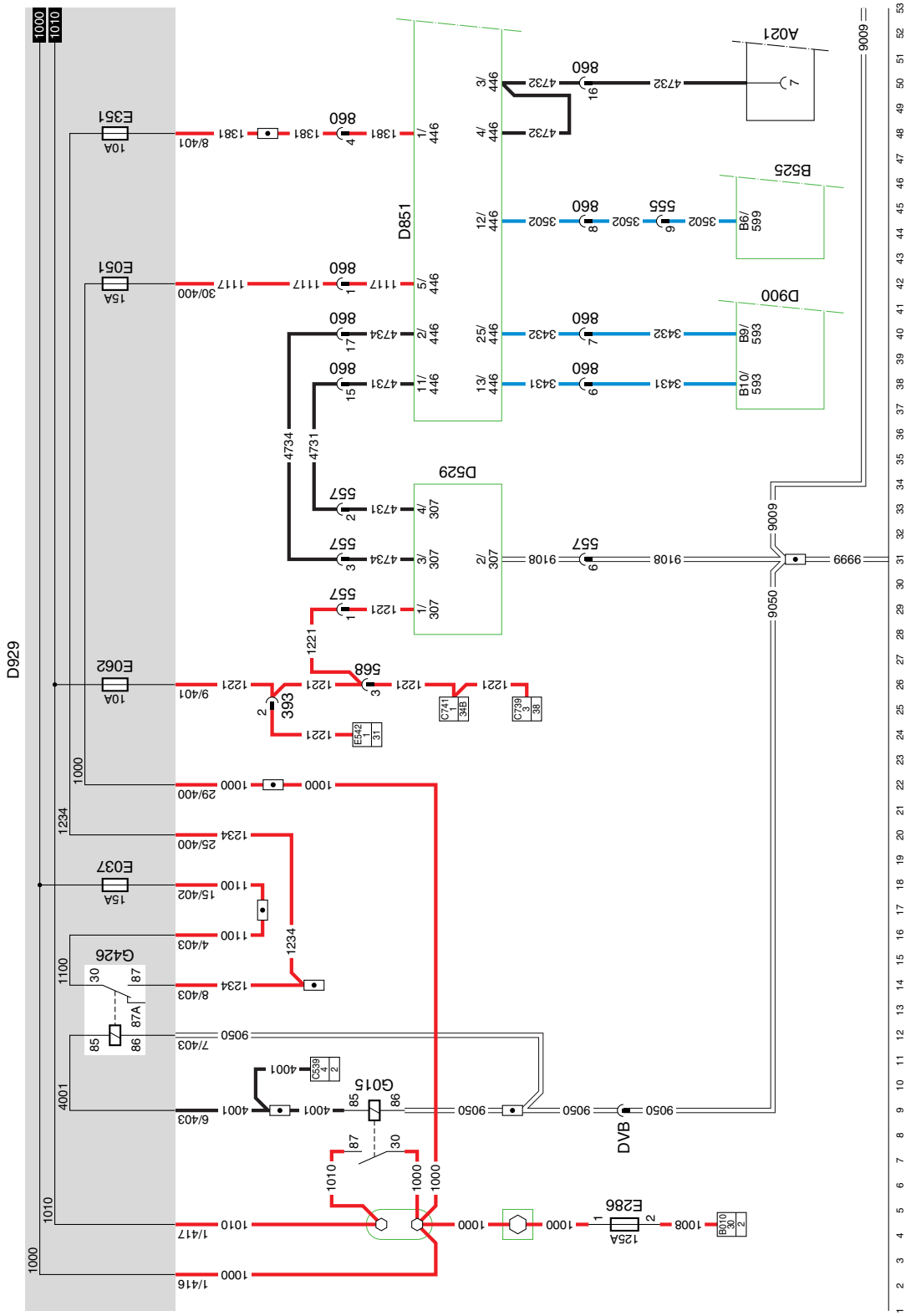
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34A ECAS-3 (4X2)

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

VARIANTS

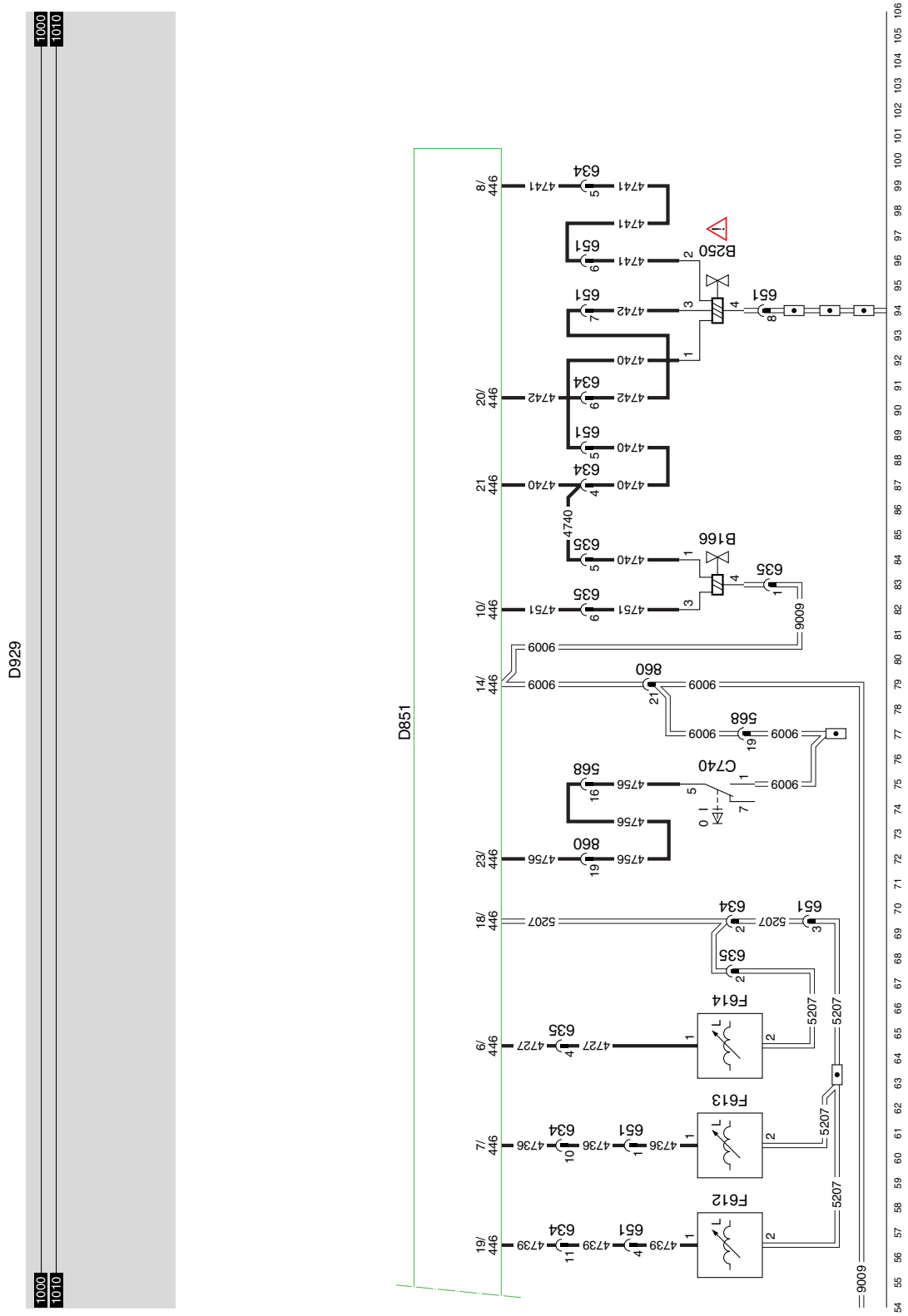
Location
98 Valve B250:
for vehicle type FA: B250.
for vehicle type FA: B238.




**34A** **1358030/26**

EL001350

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**34A** **1358030/26**

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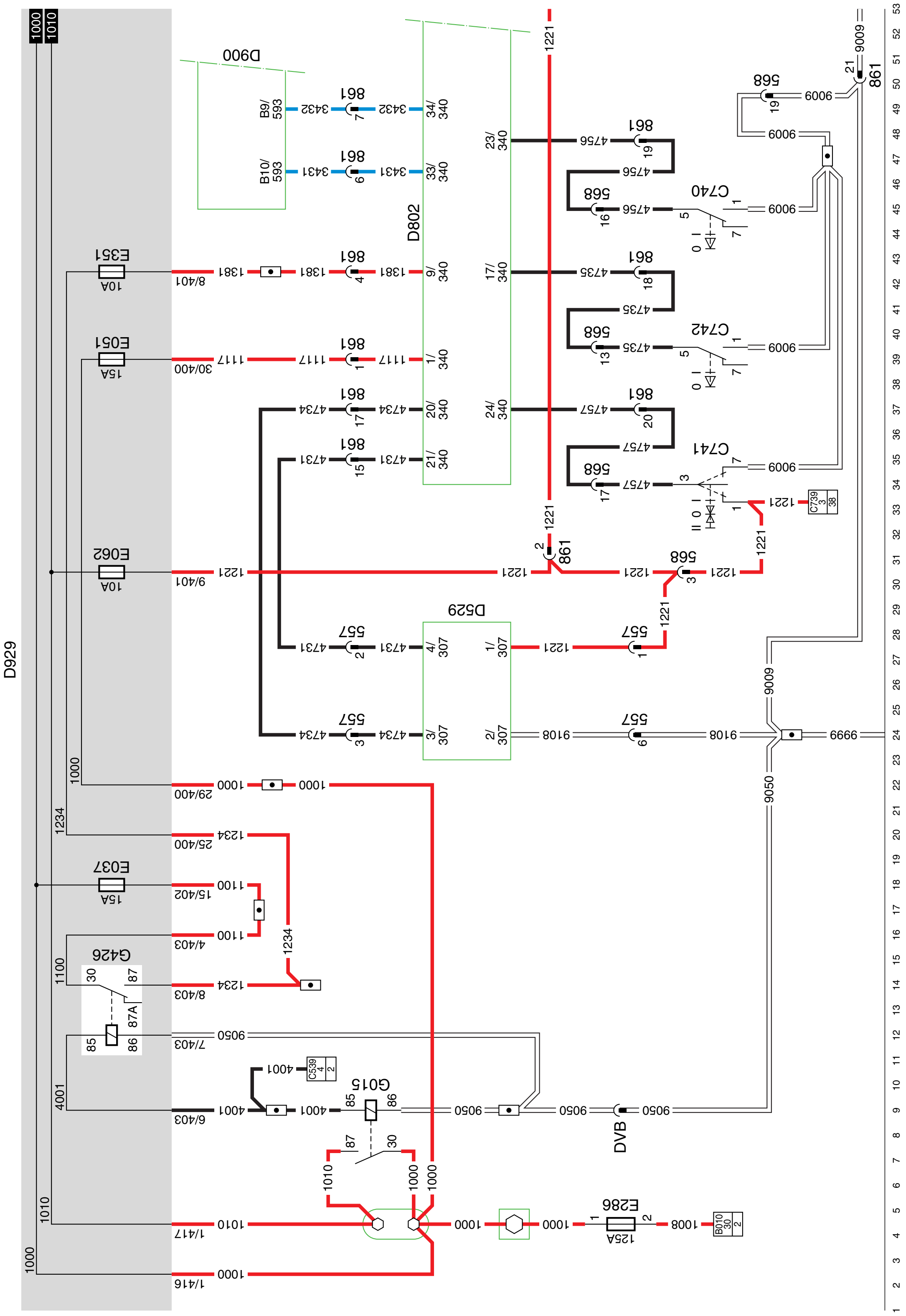
**34B ECAS-2 (6X2)**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

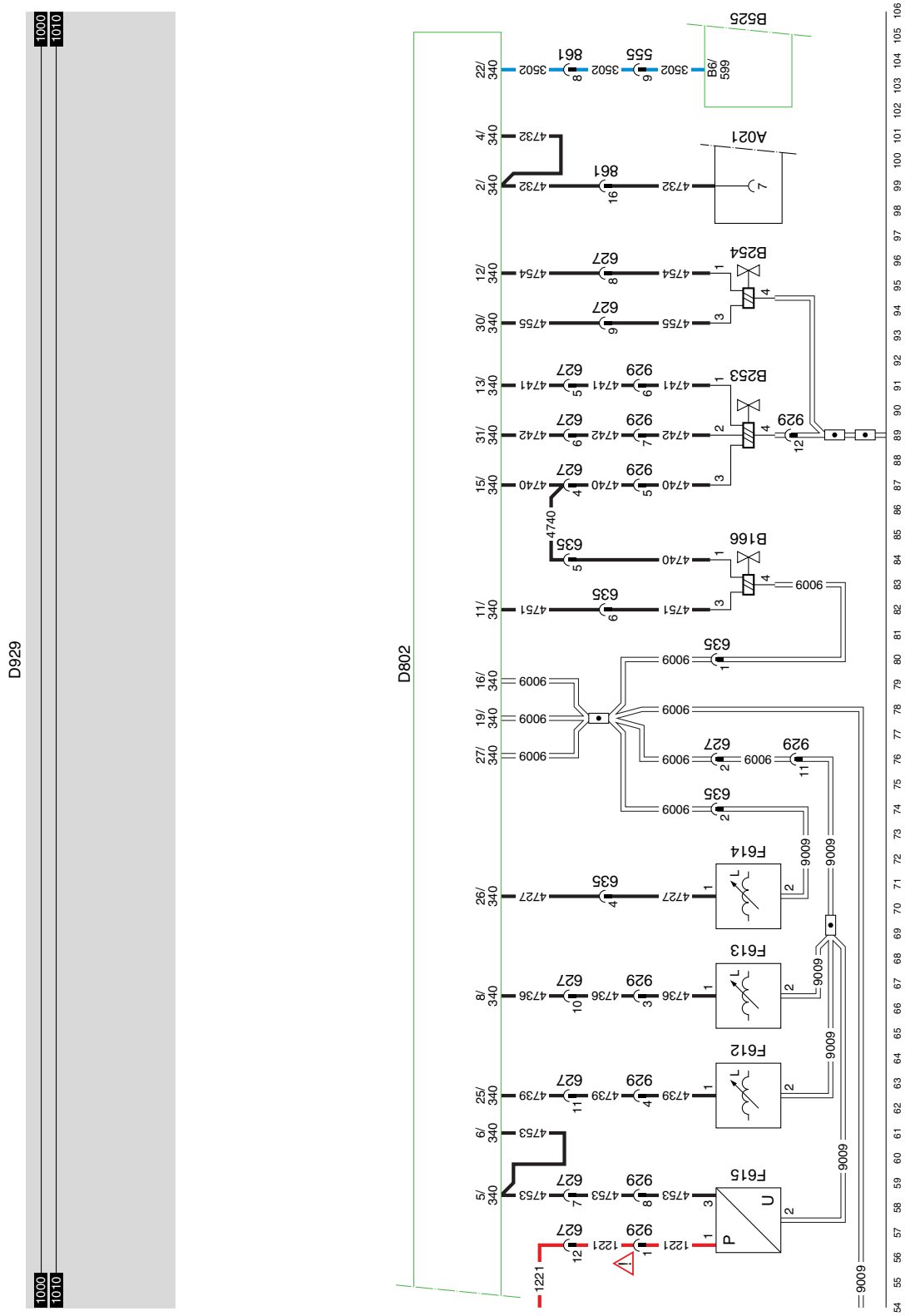
**Location**

56 Connector 929:
only if the vehicle has been equipped to transport hazardous substances.




**34B** **1358030/26**

EL001352

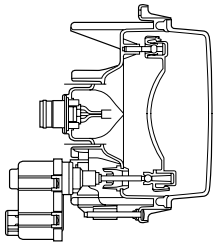


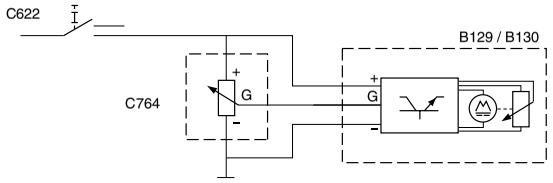

**34B** **1358030/26** EL001353

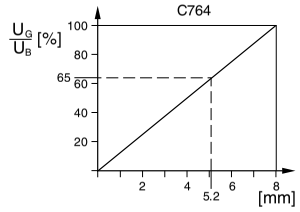
## 35 HEADLAMP HEIGHT ADJUSTMENT

**Parking/marker lights position**
A voltage is applied to connection 2 of switch C622 (light switch) through fuse E084, wire 1101.

**Dipped beam position**
When a connection is made between contacts 2 and 4 through switch C622, a voltage is applied to connection point 85 of relay G000 through fuse E084, wire 1101, switch C622, wire 2110, via D609 (light switch diode). There is also a voltage on both B129 (left headlamp height adjustment motor), connection point 1, and on B130 (right headlamp height adjustment motor), connection point 1 and connection point 5 of C764 (headlamp height adjustment potentiometer). Depending upon the position of C764 (headlamp height adjustment potentiometer), the motor in the headlamp will be activated. The headlamp height adjustment motor remains activated until there is an electrical equilibrium. This equilibrium refers to the voltage difference that exists between wires 2110 and 4953 of C764, B129 and B130. This voltage difference should be the same for all three components.



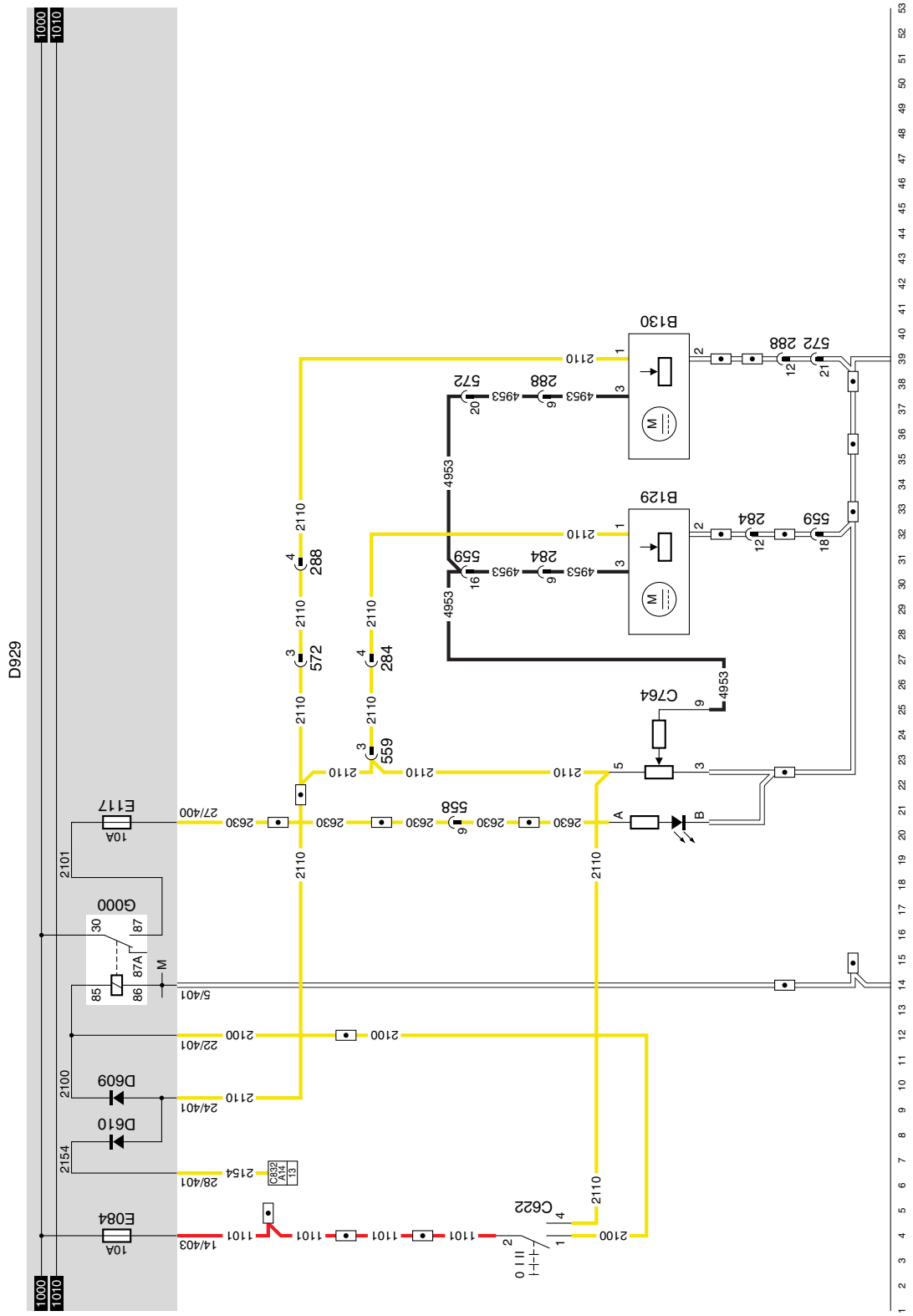



K100380



© 200404




**35** **1358030/26** EL001354

## 36 24 V/12 V CONVERTER FOR RADIO/CB SET

**The following description of the operation and connection is intended as a general guideline only.**

**Also refer to the manufacturer's installation instructions supplied with the radio.**

If the accessories/ignition/starter switch (C539) is switched to accessories position, pin 1 is connected to pin 6 (wire 1100 is connected to wire 1130). As a result, a voltage is applied to connection point 1 of relay G377. This relay is activated. There is now a power supply of 12 volts to connection point A7 of the 'ISO' connector through wire 1108 and contacts 3 - 5 of relay G377 and wire 1363.

The radio has an aerial connection and 2 loudspeaker outputs which can be used to connect loudspeakers B024 and B025. Two high-tone and two low-tone speakers (B178, B179, B180 and B181) can also be connected to the radio.

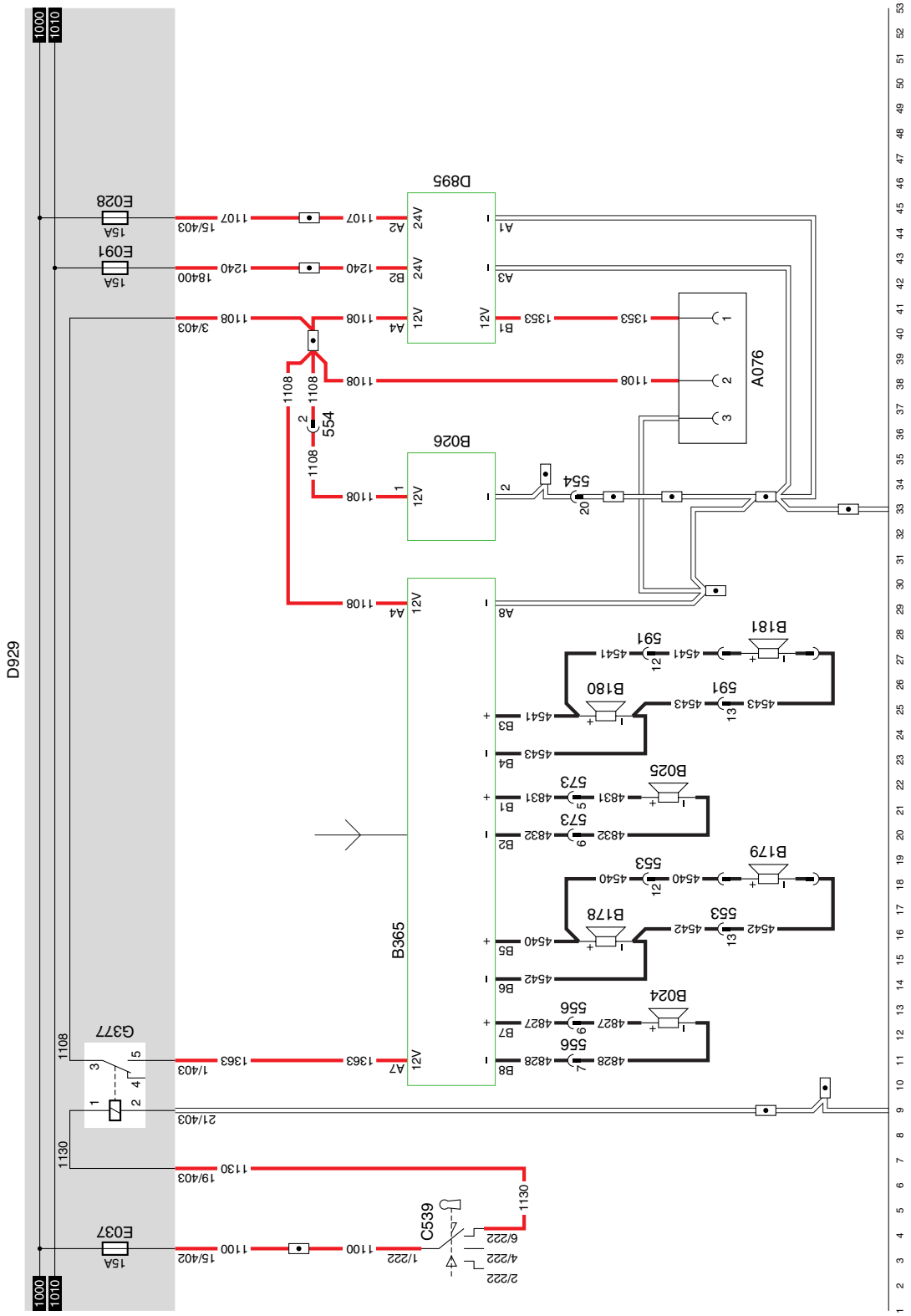
### CB SET

Wire 1108 is also available in a white connector for a CB set (B026). This connector is in the roof console on the driver's side.

**For more information, see also block 6: Connection of accessories.**



© 200404




**36** **1358030/26** EL001355

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## 37 DROP GLASS OPERATION / CENTRAL DOOR LOCKING / SH CAB ROOF HATCH

**ELECTRIC DROP GLASS OPERATION, DRIVER'S SIDE (OPENING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 2 and 4) by means of the driver's side drop glass operation switch (C745), relay G030 will be energised through fuse E044, switch C745 (wire 4526). As a result of this, there is a supply voltage on connection point 2 of the motor (B003) through fuse E034. The other connection point (2) is connected to earth via relay G031. The motor starts running anti-clockwise and the driver's side window opens.

**ELECTRIC DROP GLASS OPERATION, DRIVER'S SIDE (CLOSING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 4 and 1) by means of the driver's side drop glass operation switch (C745), relay G031 will be energised through fuse E044, switch C745 (wire 4527). As a result of this, there is a supply voltage on connection point 2 of the motor (B003) through fuse E034. The other connection point (1) is connected to earth via relay G030. The motor starts running clockwise and the driver's side window will close.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE (OPENING)**
**(Switch in door panel, driver's side)**
When the co-driver's side drop glass operation switch (C743) is operated and a connection is made (contacts 2 and 4), relay G028 will be energised through fuse E044, switch C743 (wire 4522). As a result of this, there is a supply voltage on connection point 1 of the motor (B004) through fuse E033. The other connection point (2) is connected to earth via relay G029.
The motor starts running anti-clockwise and the co-driver's side window will open.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE (CLOSING)**
**(Switch in door panel, driver's side)**
When the co-driver's side drop glass operation switch (C743) is operated and a connection is made (contacts 4 and 1), relay G029 will be energised through fuse E044, switch C743 (wire 4523). As a result of this, there is a supply voltage on connection point 2 of the motor (B004) through fuse E033. The other connection point (1) is connected to earth via relay G028.
The motor starts running clockwise and the co-driver's side window will close.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE**
**(Switch in door panel, co-driver's side)**
Operation of the drop glass on the co-driver's side through switch C744 works in exactly the same way as on the driver's side. When switch C744 is operated (connection between contacts 4 and 2), relay G028 is switched via switch C743 (contacts 5 and 2) and the motor (B004) will open the window. When switch C744 (connection between contacts 4 and 1) is operated, relay G029 is activated through switch C743 (contacts 3 and 1), the motor runs clockwise and the window closes as a result.

The electric drop glass will only operate if the contact is activated.





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**DOOR LOCKING, CO-DRIVER'S SIDE (STANDARD)**

**Purpose:**
To lock the co-driver's side door using button/key or switch C744.

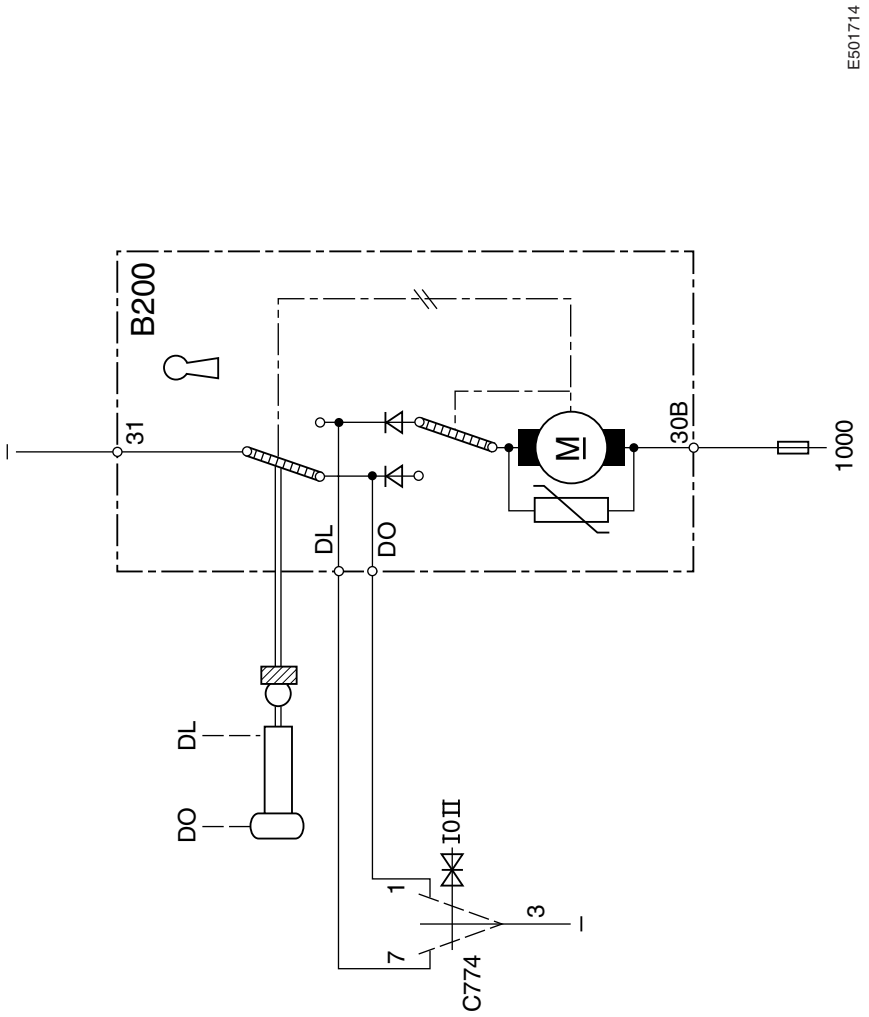
The driver can lock/unlock the co-driver's door from the driving position using the switch.

Central door locking motor, co-driver's side (B200):

The motor has two (internal) switches:
- an 'end stroke' switch (switches over at the end of each stroke) (the bottom switch in the diagram).
- a switch that is mechanically connected to the locking button (switches over at the beginning of each upward or downward movement of the locking button) (the top switch in the diagram).

**Note:**
A mechanical connection (rod linkage) between the cylinder lock and the locking button is maintained.

10




**Initial position: door unlocked**

- **The door is locked using the button/key.** The top switch is directly switched over via the rod linkage. As a result, a current will flow through the fuse, connection 30B, the motor, the bottom switch and the top switch through connection 31 to earth. Because of the mechanical connection between the motor and the locking button, the button moves downwards. When the lower position is reached, the 'end stroke' switch (the lower switch in the diagram) switches over. The forces are transmitted from the motor to the locking button via a crank/connecting rod linkage.

- **The door is locked using switch C774.** When spring-loaded switch C774 makes a connection between connections 3 and 7, connection point DL of B200 is connected to earth. As a result, a current will flow through the fuse, connection 30B, the motor and the bottom switch to earth. A brief moment is sufficient to start the motor. Since there is a mechanical connection between the motor and the locking button, the top switch will switch over immediately. A current will pass until the 'end stroke' switch interrupts the circuit.

10

**Initial position: door locked**

- **The door is unlocked using the button/key.**

The top switch is directly switched over via the rod linkage. As a result, a current will flow through the fuse, connection 30B, the motor, the bottom switch and the top switch through connection 31 to earth. Because of the mechanical connection between the motor and the locking button, the button moves upwards. When the lower position is reached, the 'end stroke' switch (the lower switch in the diagram) switches over. The forces are transmitted from the motor to the locking button via a crank/connecting rod linkage.

- **The door is unlocked using switch C774.**

When spring-loaded switch C774 makes a connection between connections 3 and 1, connection point DO of B200 is connected to earth. As a result, a current will flow through the fuse, connection 30B, the motor and the bottom switch to earth. A brief moment is sufficient to start the motor. Since there is a mechanical connection between the motor and the locking button, the top switch will switch over immediately. A current will pass until the 'end stroke' switch interrupts the circuit.

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**CENTRAL DOOR LOCKING (CDS-3)**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**SH CAB ROOF HATCH**

**OPENING ROOF HATCH**
When the roof hatch switch (C736) is operated and a connection is made between contacts 2 and 6 and therefore between contacts 1 and 3, a voltage is applied to pin 1 of the roof hatch motor (B175) through fuse E028, switch C736 and wire 4761. The roof hatch will open.

**CLOSING ROOF HATCH**
When the roof hatch switch (C736) is operated and a connection is made between contacts 8 and 6 and therefore between contacts 7 and 3, a voltage is applied to pin 2 of the roof hatch motor (B175) through fuse E028, switch C736 and wire 4760. The roof hatch will now close.

**VARIANTS**

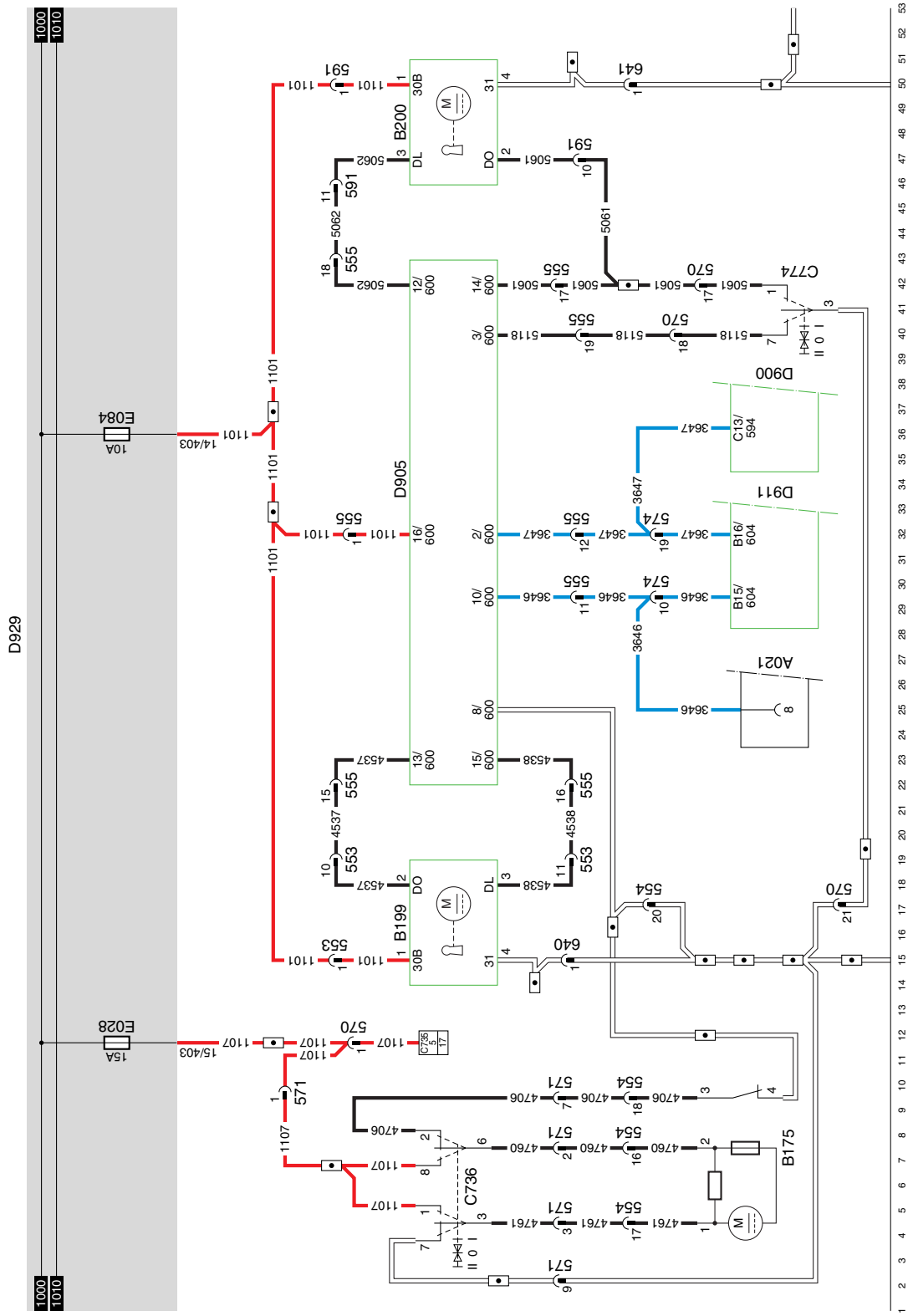
**Location**
36 If the standard version is installed, the motor for door locking on the driver's side (B199) and the electronic unit for central door locking (D905) are not fitted.

The connections on B200 are as follows:

| Connection point | Wire number: | Description |
|---|---|---|
| 1 | 1105 | Power supply |
| 2 | 5061 | Open door |
| 3 | 5062 | Close door |
| 4 | M | Earth |

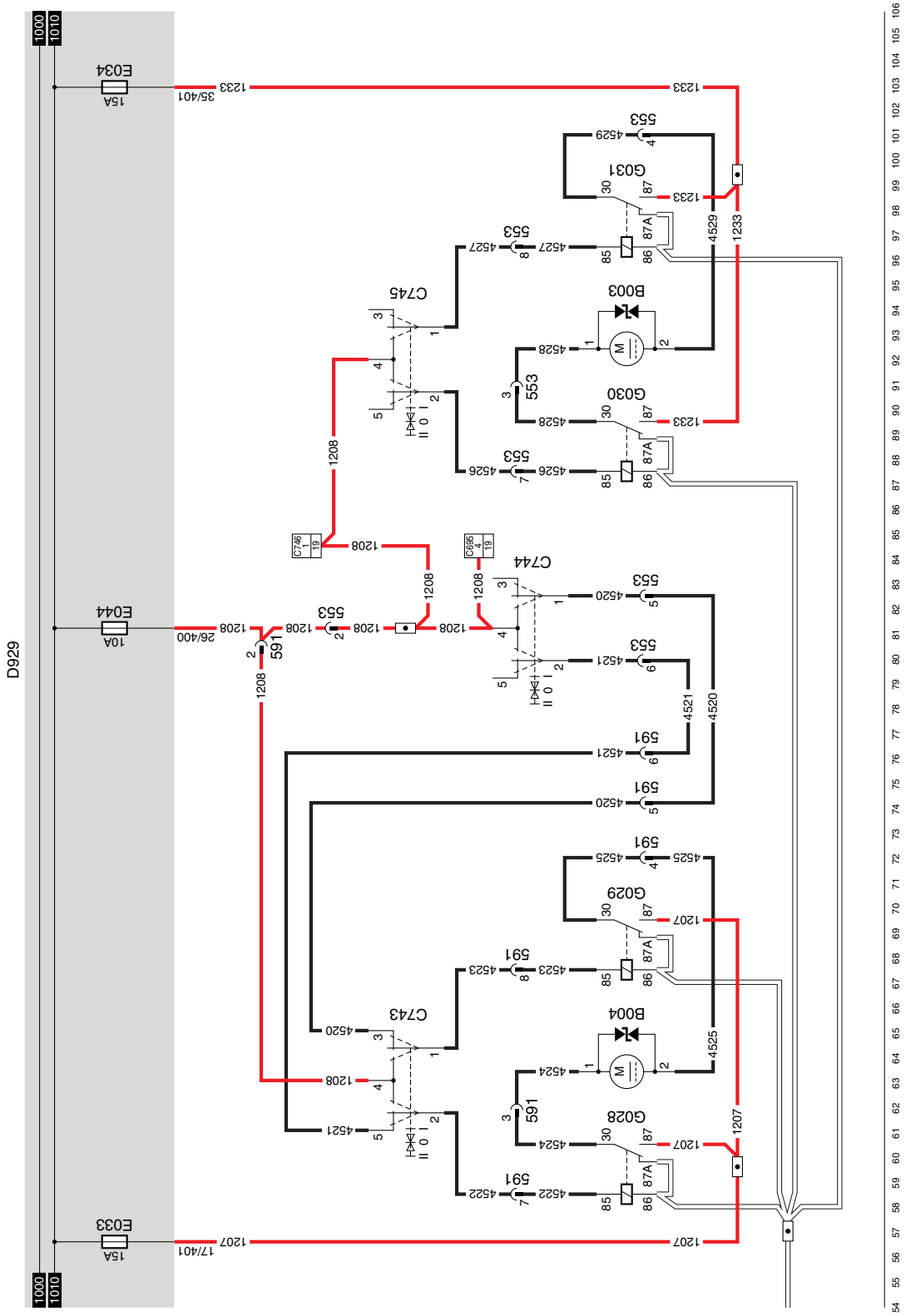
Wire 5062 is directly connected to connection point 7 of switch C774.

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**37** **1358030/26** EL001356

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**37** **1358030/26** EL001357

## 38 MECHANICAL LIFTING GEAR

**Manual lifting**
When switch C739 (mechanical lifting gear switch) is operated (connection between contacts 3 and 7), a voltage is applied to connection point 1 of B071 through fuse E062, wire 1221, contacts 3 - 7 of switch C739, wire 4550, contacts 3 - 4 of relay G381 and wire 5180. This valve is energised. At the same time the voltage is applied to connection point 85 of relay G052 through D622, wire 4552, contacts 30 - 87a of relay G066, wire 4557. This relay is activated and closes contacts 1 - 2. A voltage is now applied to connection point 1 of B073 through contacts 1 - 2 of relay G052, wire 4554. The oil pump motor starts to run.
If the oil pressure becomes too high (>160 bar), E524 will close. Voltage is now applied to connection point 85 of relay G066 through contacts 1 - 2 of E524. This relay is energised and breaks the connection 30 - 87a. Voltage is now applied to connection point 85 of relay G066 from wire 4552 through contacts 30 - 87 of relay G066 and wire 4558. This relay continues to be activated. At the same time the voltage through relay G052 is lost. Contacts 1 - 2 open and the voltage on connection point 1 of B073 is lost. The pump motor is no longer driven and the oil pressure drops.

**Manual lowering**
When switch C739 (mechanical lifting gear switch) is operated (connection between contacts 3 and 1), a voltage is applied to connection point S1 of D503 through fuse E062, wire 1221, contacts 3 - 1 of switch C739, wire 4757, through-connection G745 and wire 4551. A voltage is applied to connection point 1 of B072 through connection point 87 of D503, wire 4553. This valve is energised. At the same time the voltage is applied to connection point 85 of relay G052 through D623, wire 4552, contacts 30 - 87a of relay G066, wire 4557. This relay is activated and closes contacts 1 - 2. A voltage is now applied to connection point 1 of B073 through contacts 1 - 2 of relay G052, wire 4554. The oil pump motor starts to run.
If the oil pressure becomes too high (>160 bar), E524 will close. Voltage is now applied to connection point 85 of relay G066 through contacts 1 - 2 of E524. This relay is energised and breaks the connection 30 - 87a. Voltage is now applied to connection point 85 of relay G066 from wire 4552 through contacts 30 - 87 of relay G066 and wire 4558. This relay continues to be activated. At the same time the voltage through relay G052 is lost. Contacts 1 - 2 open and the voltage on connection point 1 of B073 is lost. The pump motor is no longer driven and the oil pressure drops.

**Automatic axle load protection**
If the pressure on the driven axle is greater than the legal maximum, sensor E584 is activated. This puts sensor E507 in 'stand-by' mode. If the permitted axle load increases further (> 10 tons), sensor E507 automatically lowers the trailing axle.
If the axle has been lifted, F097 (proximity switch for mechanical trailing axle lifting gear) ensures that relay G380 is energised through wire 3661. A voltage is now applied through fuse E062, wire 1221, contacts 3 - 5 of relay G380 to connection point 1 of E507. This relay is activated.
The voltage is immediately transmitted to S2 on D503. The signal sent by the proximity switch for axle load protection (E507) to S2 should last for at least 10 seconds before the electronic unit for lifting gear (D503) will activate the valve (B072) and the lifting gear pump motor (B073), so that the trailing axle is lowered. This is to prevent the legal maximum axle load from being exceeded.
If the dashboard switch is operated within 2.5 minutes, the electronic unit will be reset and another 2.5 minute period will start.



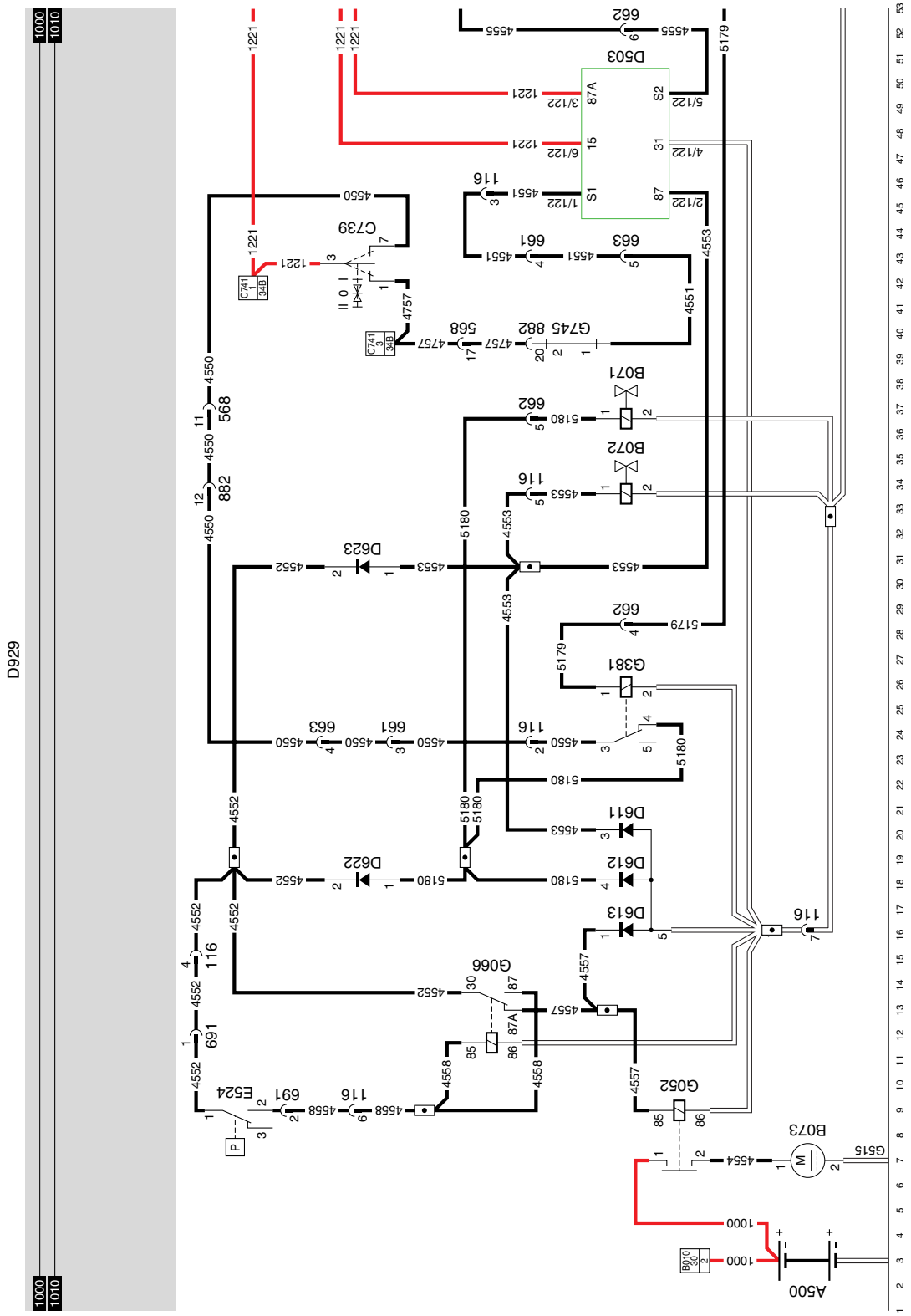
© 200404

**VARIANTS**

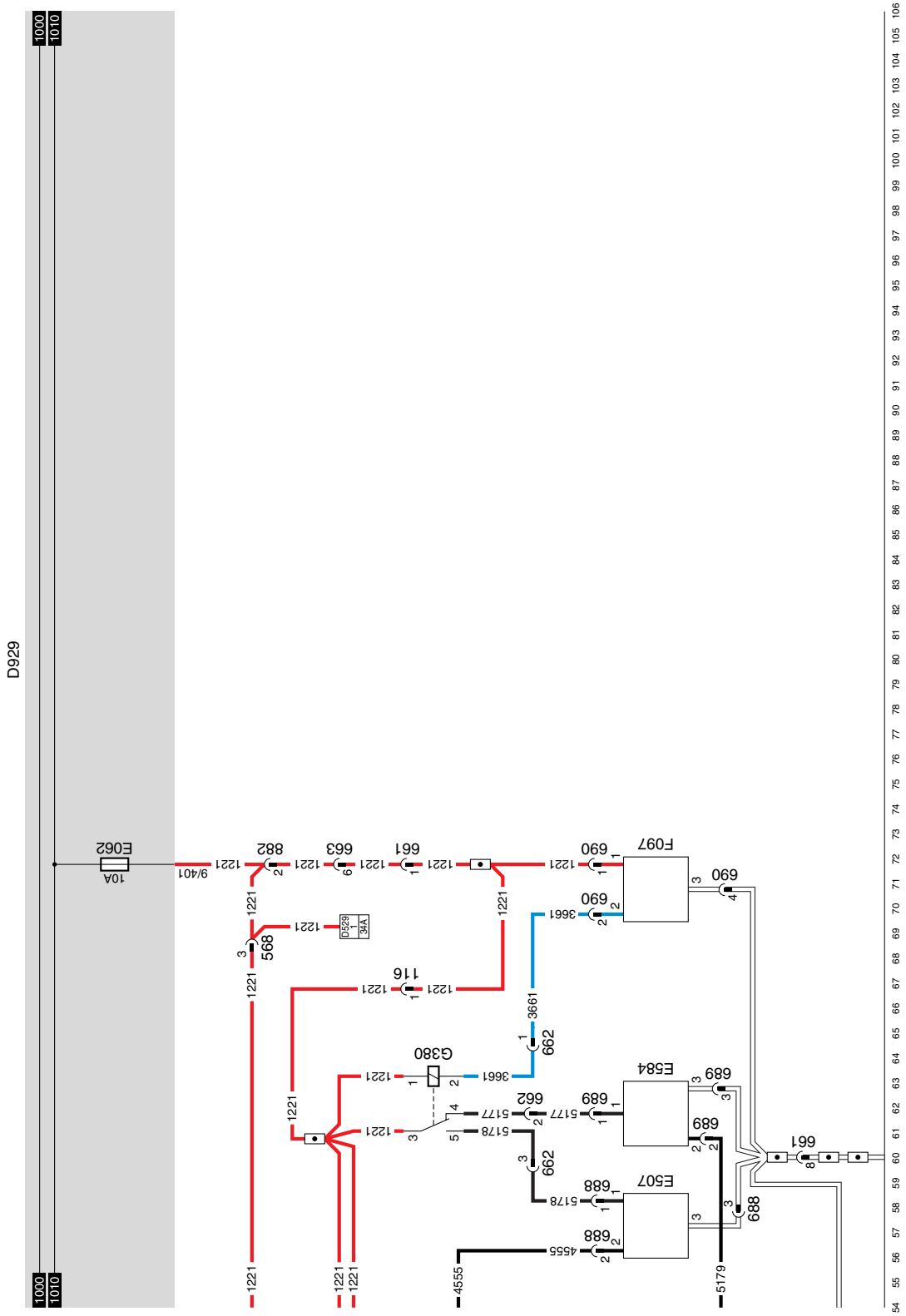
**Location**

40 G745: In connector 882, pin 20 there is a wire, 4757. In the other side there is wire 4551. G745 is formed by the pin connection.

As a result, the mechanical lifting gear motor relay (G052) will also be activated, thus activating the mechanical lifting gear pump (B073). This is done through D623, relay G066 (connection between points 30 and 87a) to connection point 85 of relay G052.
When a pressure of 160 bar is reached, the limit switch (E524) switches the lifting-gear pump motor (B073) off through relay G066 and relay G052.
The trailing axle cannot be lifted for a period of 2.5 minutes as the valve (B072) remains energised. This valve should be in the **non**-activated position for lifting.




**38** **1358030/26** EL001358



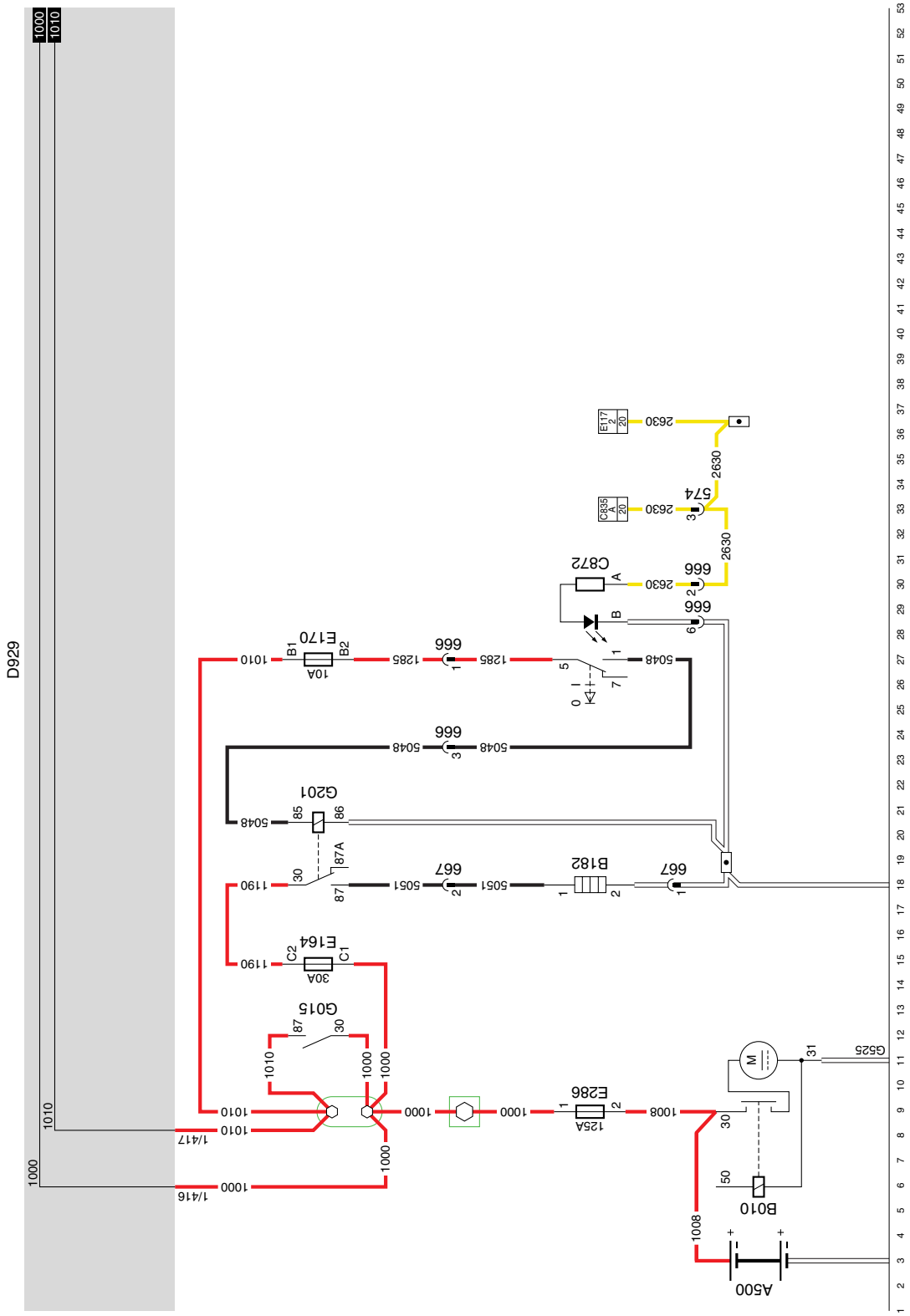

**38** **1358030/26** EL001359

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## 39 FUEL PRE-HEATING

**HEATING ELEMENT**

A voltage is applied to connection point 5 of C872 (FPH-E fuel heating relay switch) through wire 1010, fuse E170, wire 1285. When this switch is switched on (connection between contacts 5 and 1), voltage is applied to connection point 85 of relay G201 (FPH-E fuel heating relay) via wire 5048. This relay is energised and contacts 30 - 87 close. A voltage is now applied to connection point 1 of B182 (water separator fuel heating element) through wire 1000, fuse E164, wire 1190, contacts 30 - 87 of relay G201 and wire 5051. This element now warms up and will keep the fuel fluid.




**39** **1358030/26** EL001360

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## 40 WINDSCREEN WIPE/WASH INSTALLATION

**Speed I (low speed)**
When windscreen wiper switch (C832) is set to position I (connection between contacts A13 and A2), there is a voltage on connection point D9 of D900 (VIC) through fuse E035, wire 1211, contacts A13 - A2 of switch C832 and wire 4501. The VIC switches connection point C50 to earth. Voltage is now applied to connection point 1 of relay G237 through fuse E025, wire 1205. Because the VIC has connected wire 4505 to earth through connection point C50, relay G237 is energised.
A voltage is now applied to connection point 53 of B000 through fuse E025, wire 1205, contacts 5 - 3 of G237, wire 4506, contacts 3 - 4 of relay G236, wire 4507.

**Speed II (high speed)**
When windscreen wiper switch C832 is set to position II (connection between contacts A3 and A10), relays G236 and G237 are switched to earth through fuse E025, wire 1205, relays G236 and G237, wire 4505, diode D782, wire 4504 and switch C832 (contacts 3 - 10).
Both relays are now energised. A voltage is now applied to connection point 53b of B000 through fuse E025, wire 1205, contacts 5 - 3 of relay G237, wire 4506, contacts 3 - 5 of relay G236 and wire 4508.
The VIC is bypassed at speed II (high speed).

**Intermittent wipe**
When windscreen wiper switch C832 is set to intermittent wipe (connection between contacts A13 and A!), there is a voltage on connection point D37 of the VIC through fuse E035, wire 1211, contacts 13 - 1 of C832 and wire 4502. The VIC switches connection point C50 to earth. Voltage is now applied to connection point 1 of relay G237 through E025, wire 1205. The earth is formed through wire 4505 and connection point C50 of the VIC. As a result, relay G237 is energised. A voltage is now applied to connection point 53 of B000 through fuse E025, wire 1205, contacts 5 - 3 of relay G237, wire 4506, contacts 3 - 4 of relay G236, wire 4507.

A voltage is applied to connection point D32 of the VIC through fuse E025, wire 1205, the cut-off switch in the windscreen wiper motor (B000), wire 4509. The earth with connection point C50 is broken and, as a result, relay G237 is no longer energised.

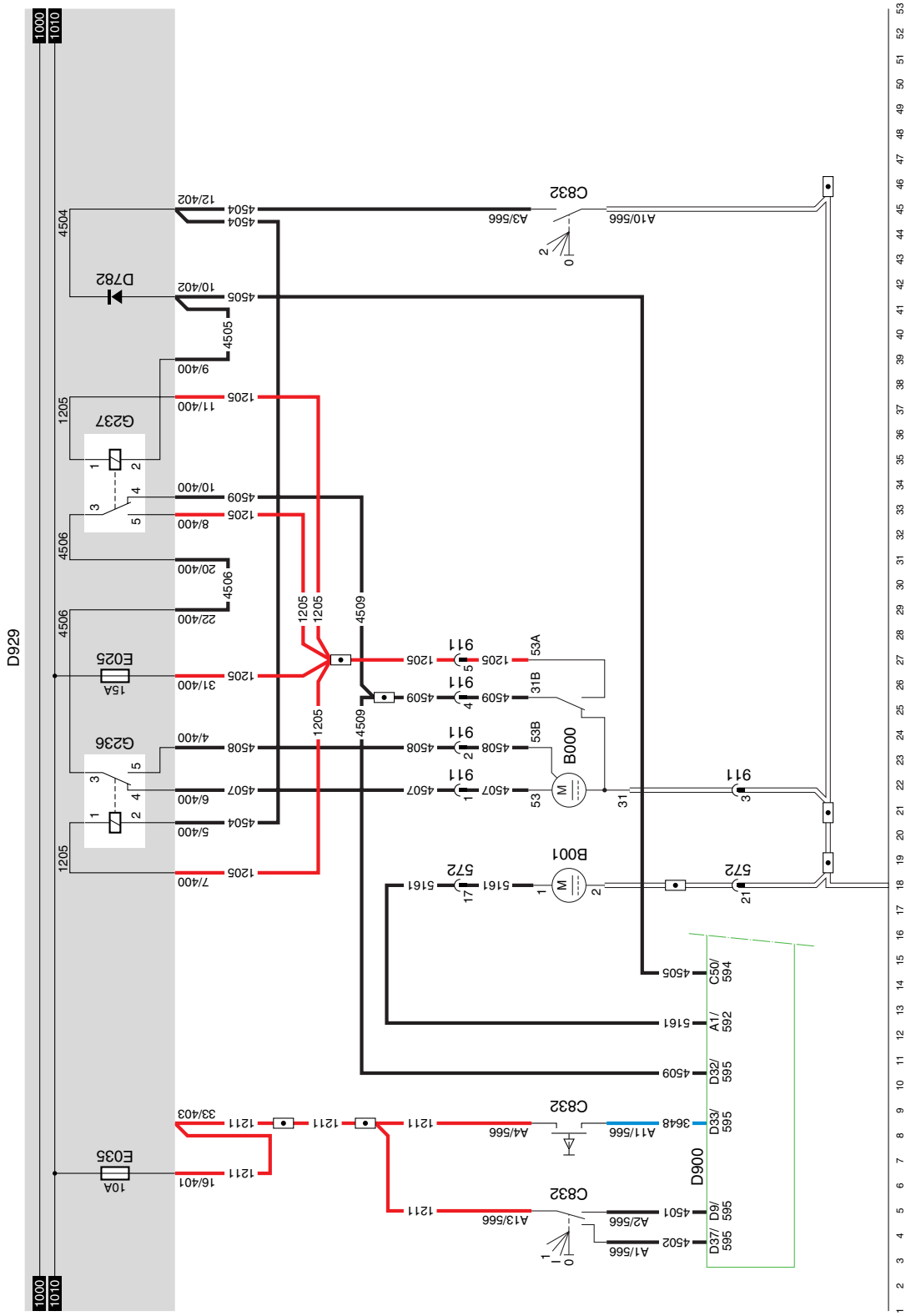
If connection point D32 is earthed again via the cut-off switch, connection point C50 will be switched to earth again after the interval period, so that relay G237 is re-activated. This starts the cycle again.

**Wash/wipe**
When a voltage is applied briefly to connection point D33 of the VIC through fuse E035, wire 1211, contacts A4 - A11 of C832, wire 3648, and then is lost again (windscreen wiper switch C832 no longer operated), connection point 50 of the VIC is switched to earth for a specific period of time. As a result, the relay (G237) is energised and the windscreen wipers perform 1 wiper stroke.

When a voltage is applied to windscreen wiper switch C832 through fuse E035, wire 1211, contacts A4 - A11 of C832 and wire 3648 for approximately 2 seconds, a voltage is applied to connection point A1 of the VIC, as a result of which the windscreen wiper pump (B001) is activated. After approximately 1 second, C50 is connected to earth for a specific period of time. As a result, the relay (G237) is energised and the windscreen wiper motor is operated.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

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**40** **1358030/26** EL001361

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## 41 AIRTRONIC (ACH-EA) CAB HEATER WITH/WITHOUT TIMER

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

7, 9 Only if the vehicle has been equipped to transport hazardous substances in accordance with RTMDR requirements.

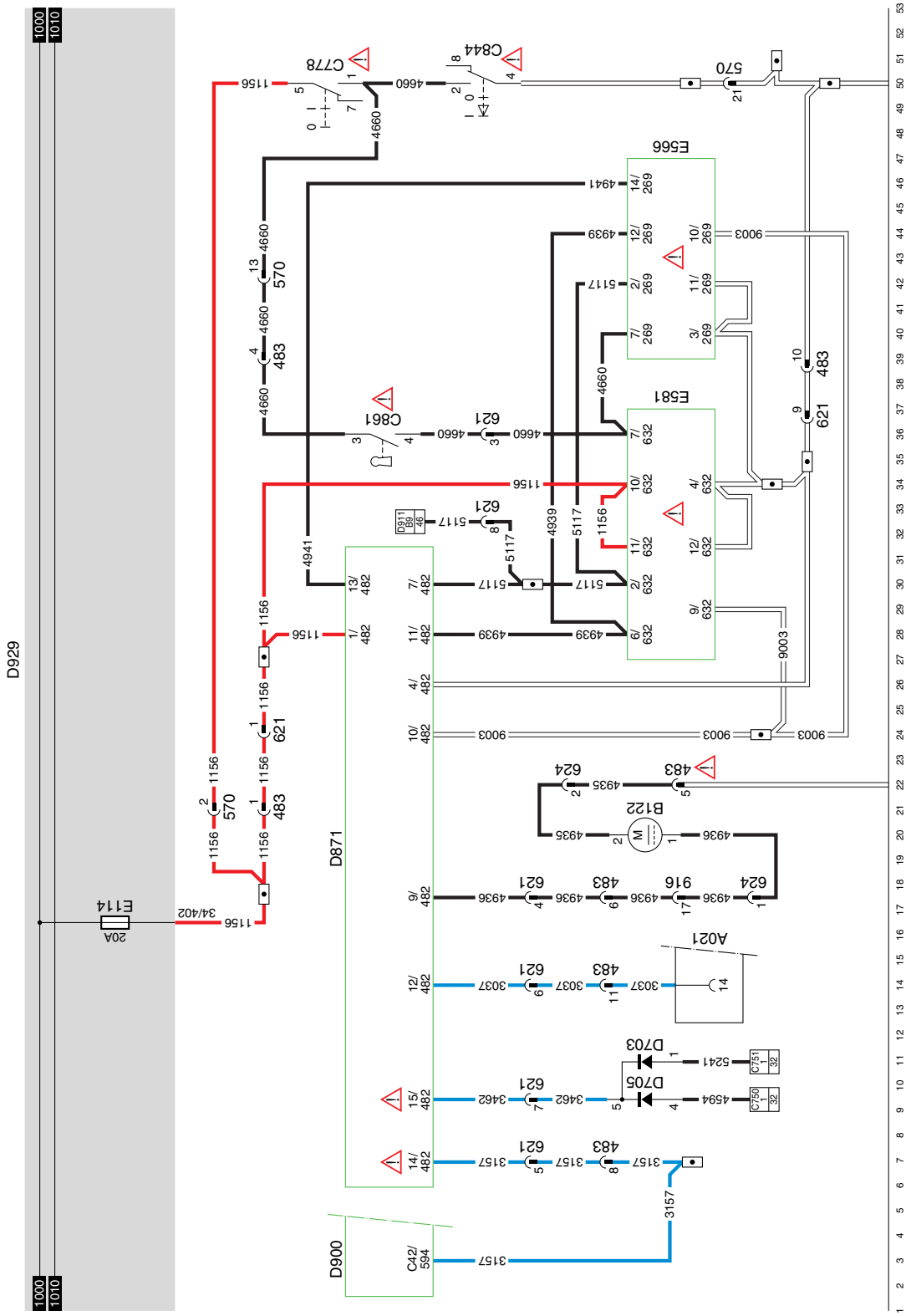
22 Connector 483, pin 5, wire 4935: on the one side there is wire 4935, on the other side an earth connection.

33 Only if the vehicle has a thermostat unit, then also switch C778. Does **not** apply if the vehicle has NOT been equipped to transport hazardous substances.

37 Only if the vehicle has been equipped to transport hazardous substances in accordance with PETREG requirements.

43 Only if the vehicle has a timer.

50 C844: Only if the vehicle has been equipped to transport hazardous substances in accordance with RTMDR requirements.




**41** **1358030/26** EL001362

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**42 HYDRONIC 10 (ACH-EW) CAB HEATER WITH TIMER**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

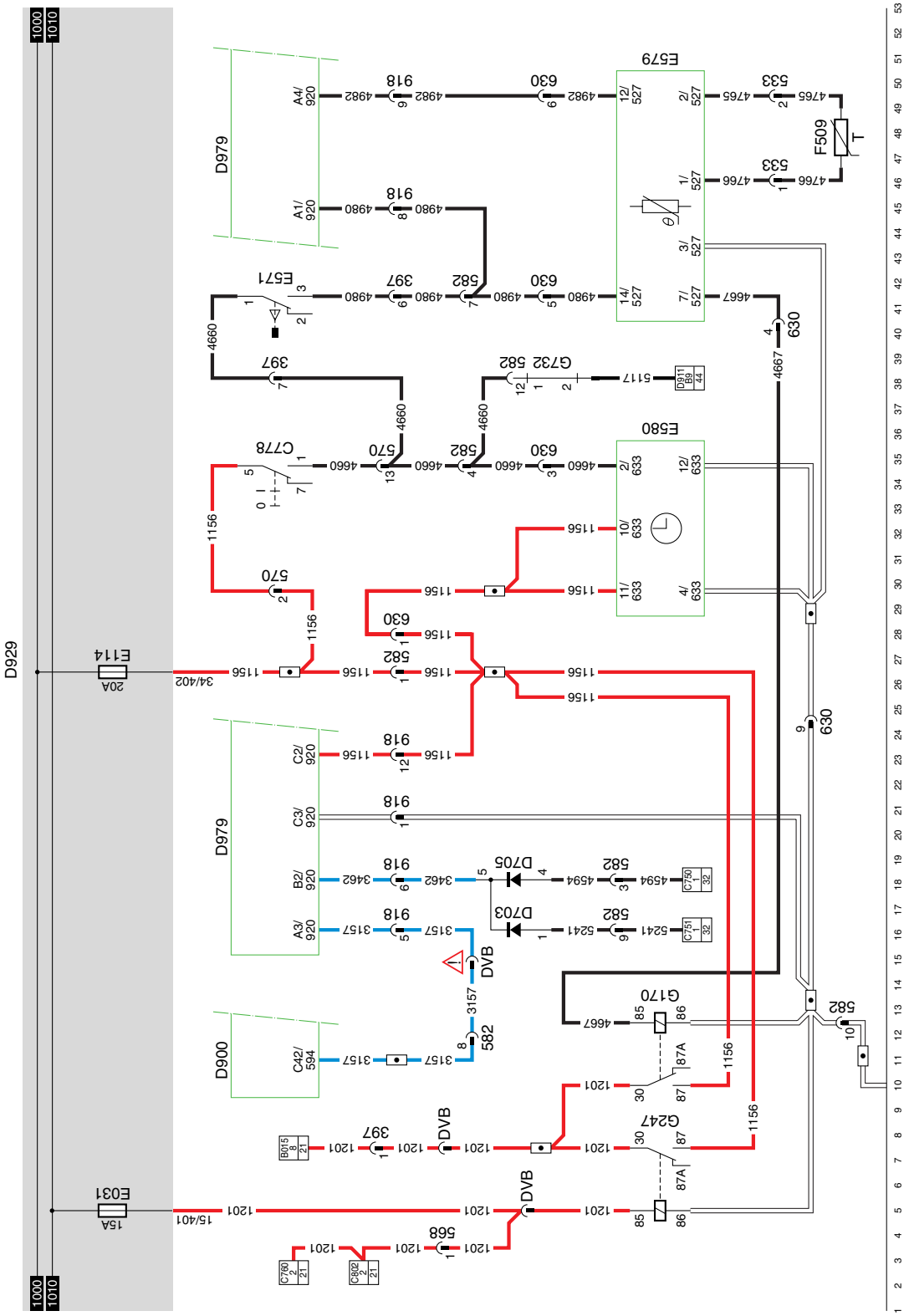
**VARIANTS**

**Location**

15 DVB: in wiring harness next to PCB.

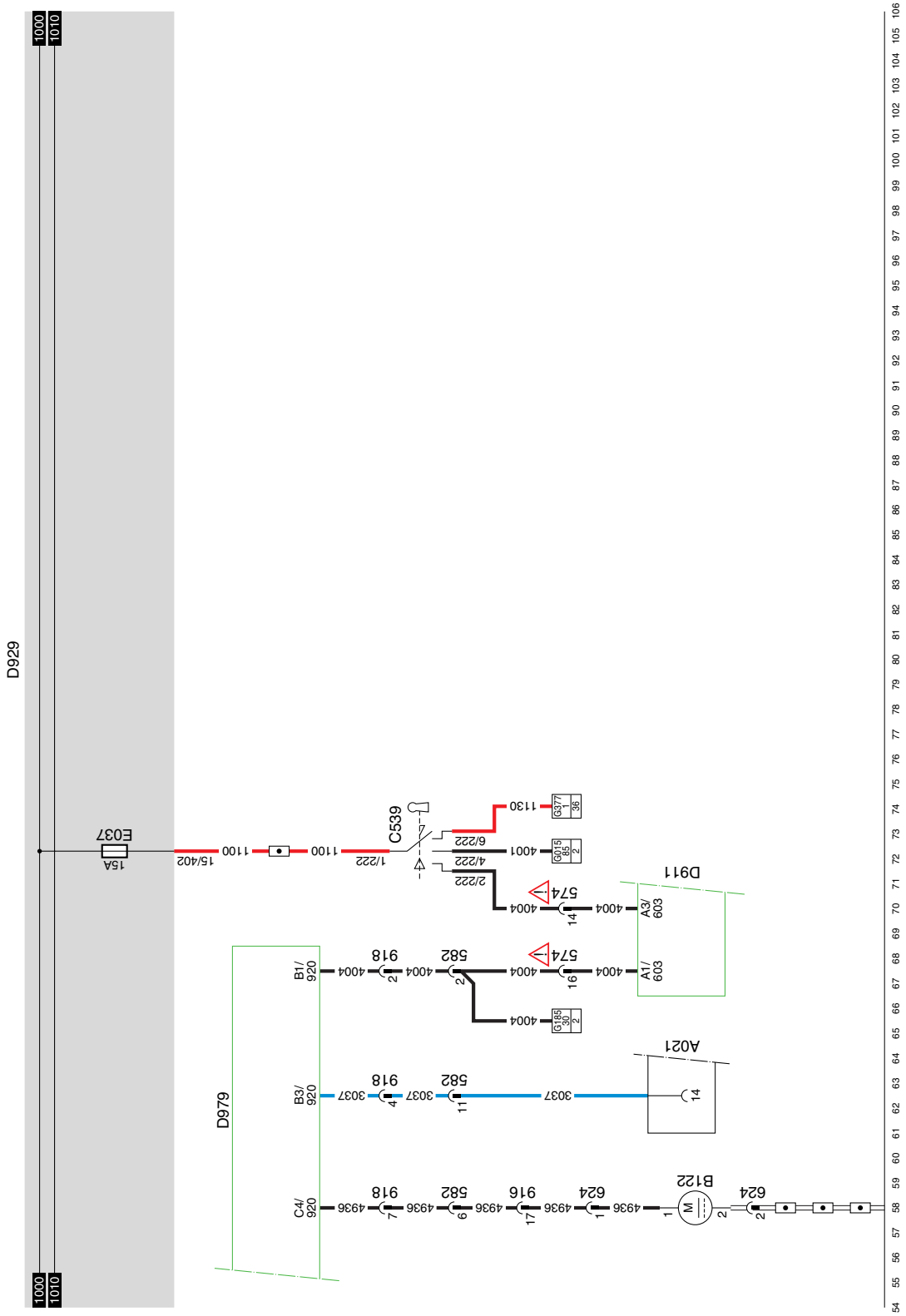
68, 71 Only if the vehicle has an alarm system.

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**42** **1358030/26** EL001363

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D929
1000
1010
E037
15A
15/402
1100
1100
C539
1/222
1130
G377
1
36
6/222
4001
G015
85
2
4/222
2/222
4004
574
14
A3/
603
D911
B1/
920
4004
918
2
4004
582
2
4004
574
16
A1/
603
4004
G185
30
2
A021
B3/
920
3037
4
3037
582
11
3037
14
D979
C4/
920
4936
918
7
4936
582
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4936
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M
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624
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B122
42
1358030/26
EL001364

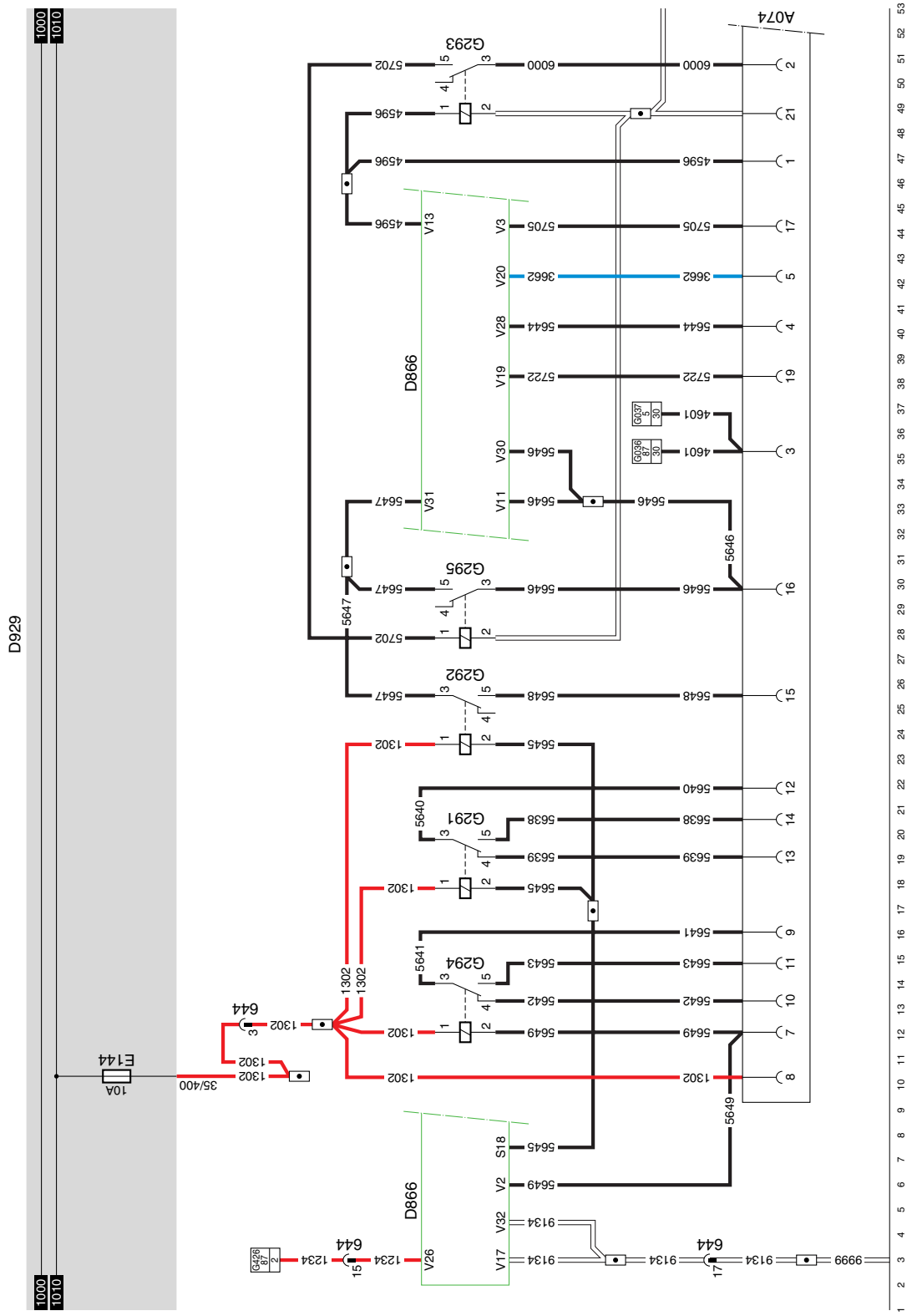
## 43 UPEC/CUMMINS/AGC/SUPERSTRUCTURE FUNCTIONS APPLICATION CONNECTOR

**FOR MORE INFORMATIO, SEE BLOCK 6: CONNECTION OF ACCESSORIES**

**VARIANTS**

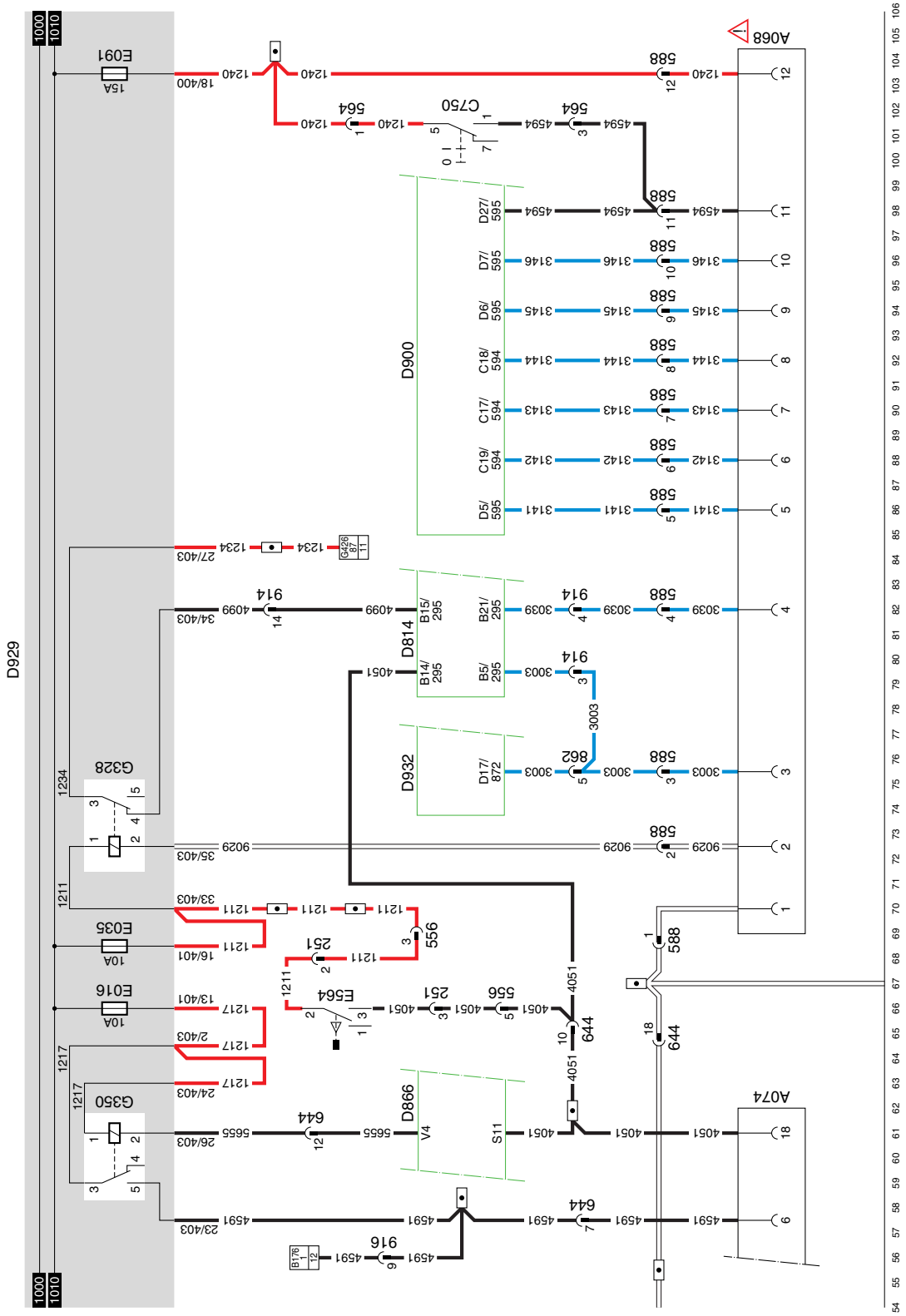
| Location | |
|---|---|
| 69 -> 105 | If the vehicle has UPEC. |
| 105 | Connector A068: optional. |
| 109 -> 142 | If the vehicle has ECS-DC3. |
| 165 -> 183 | All 658 connectors: optional. |
| 165 -> 182 and 185 -> 207 | All 656 connectors: optional. |
| 185 -> 195 | All 654 connectors: optional. |
| 185 -> 207 | All 657 connectors: optional. |
| 197 -> 207 | All 655 connectors: optional. |

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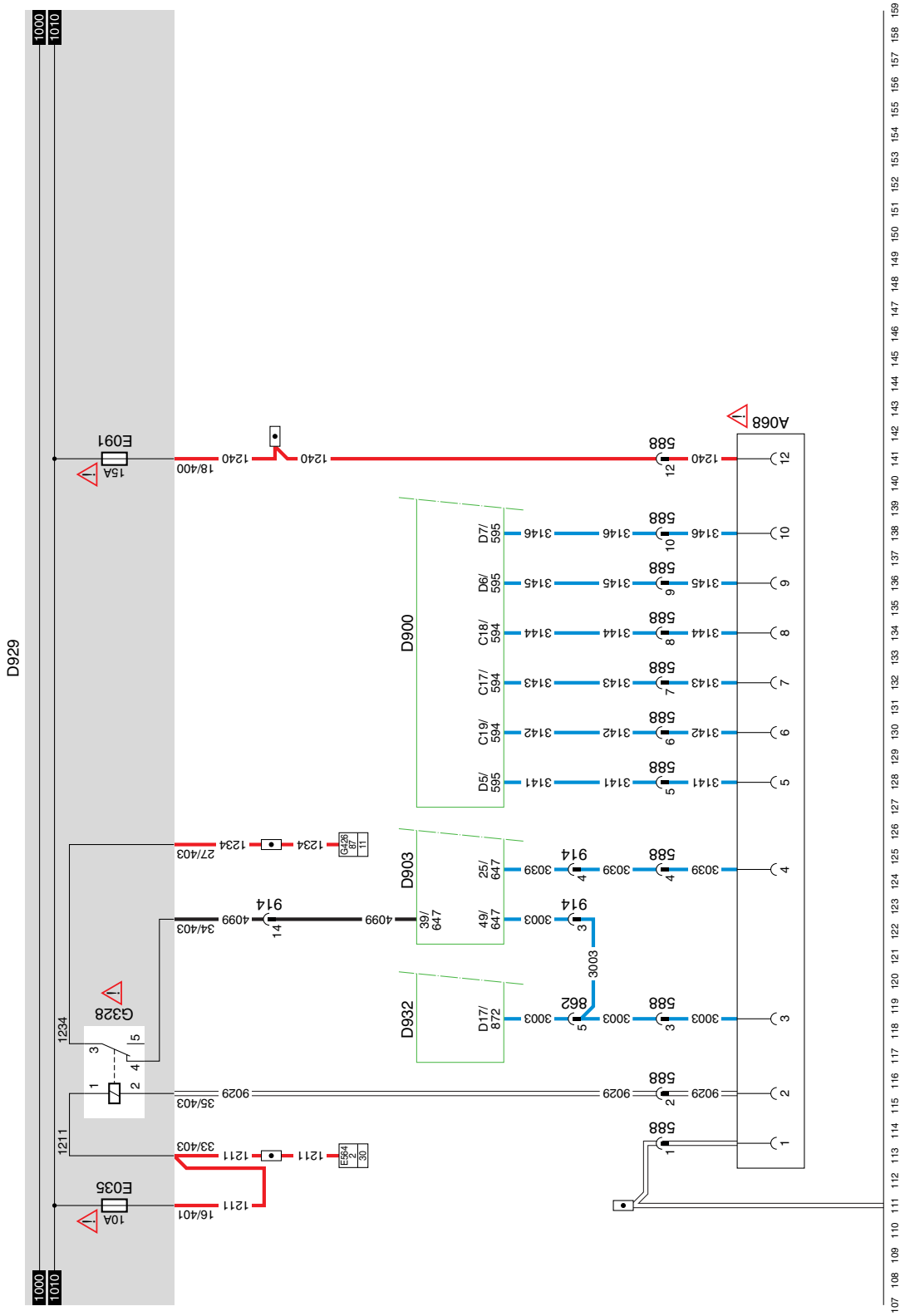



**43** **1358030/26** EL001365

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**43** **1358030/26** EL001366




**43** **1358030/26** EL001367

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**43** **1358030/26** EL001368

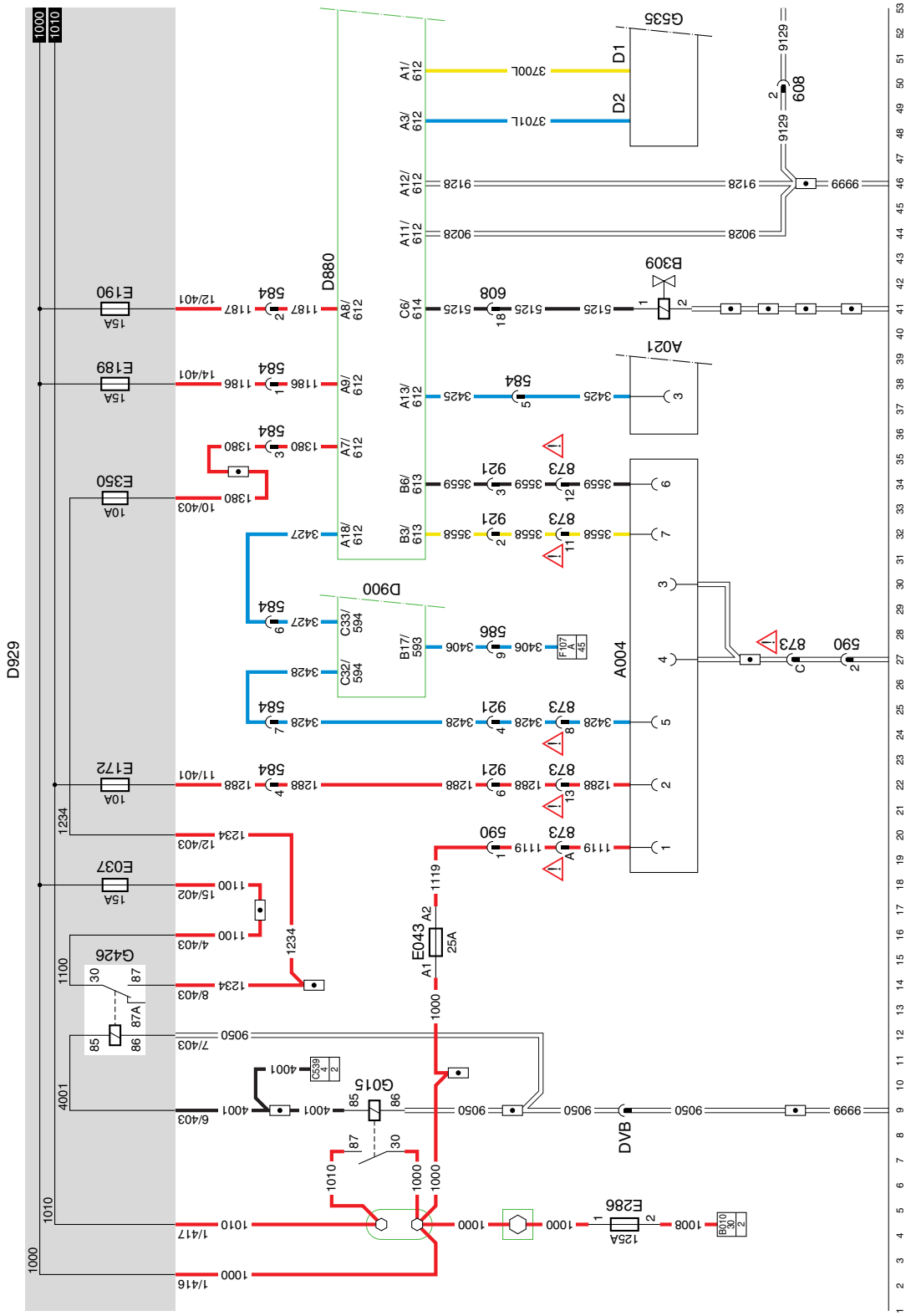
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**44 EBS**

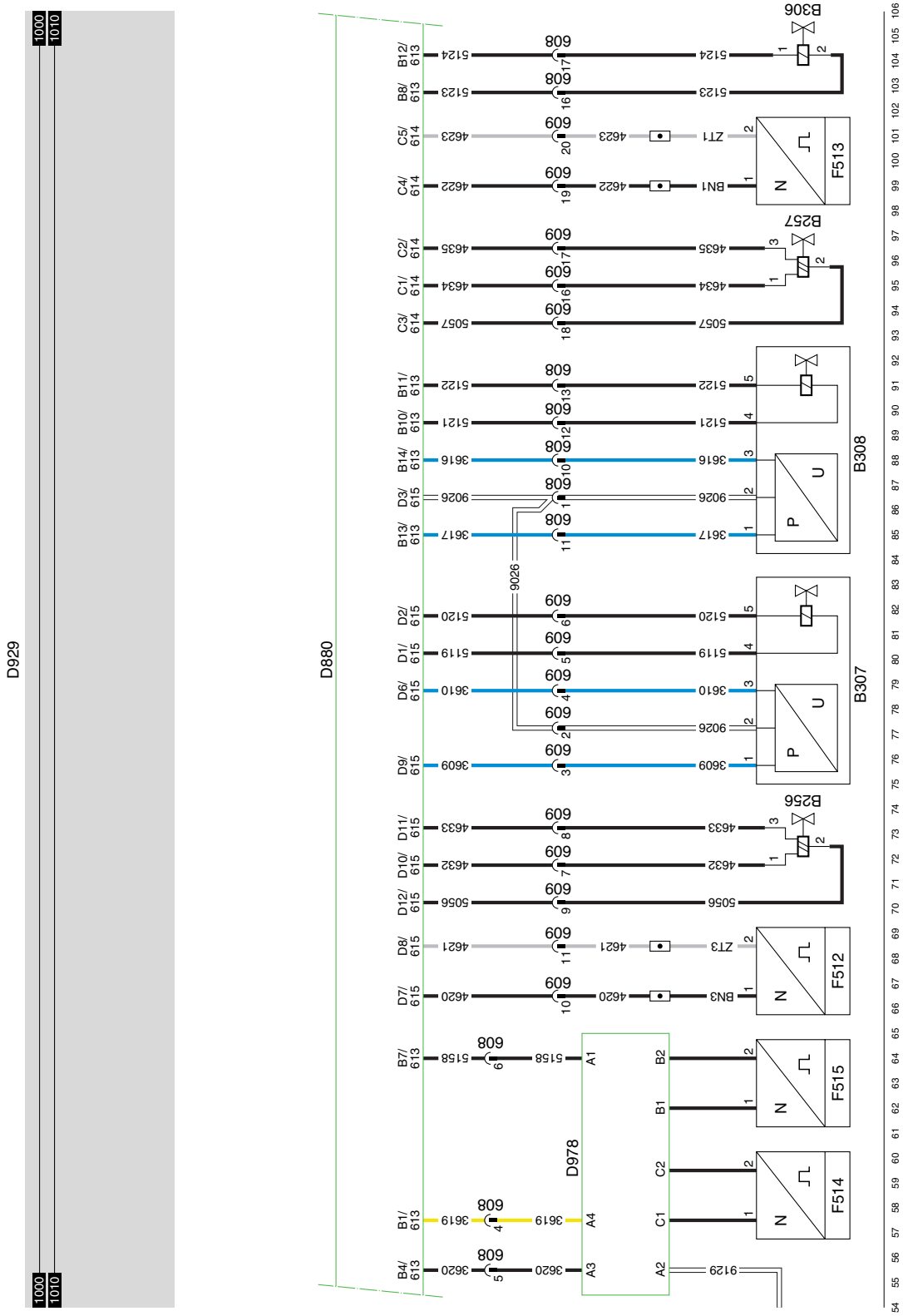
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 18 -> 35 | Connector 873: only on cab type D. |
| 121 | E511 not fitted for EBS. |

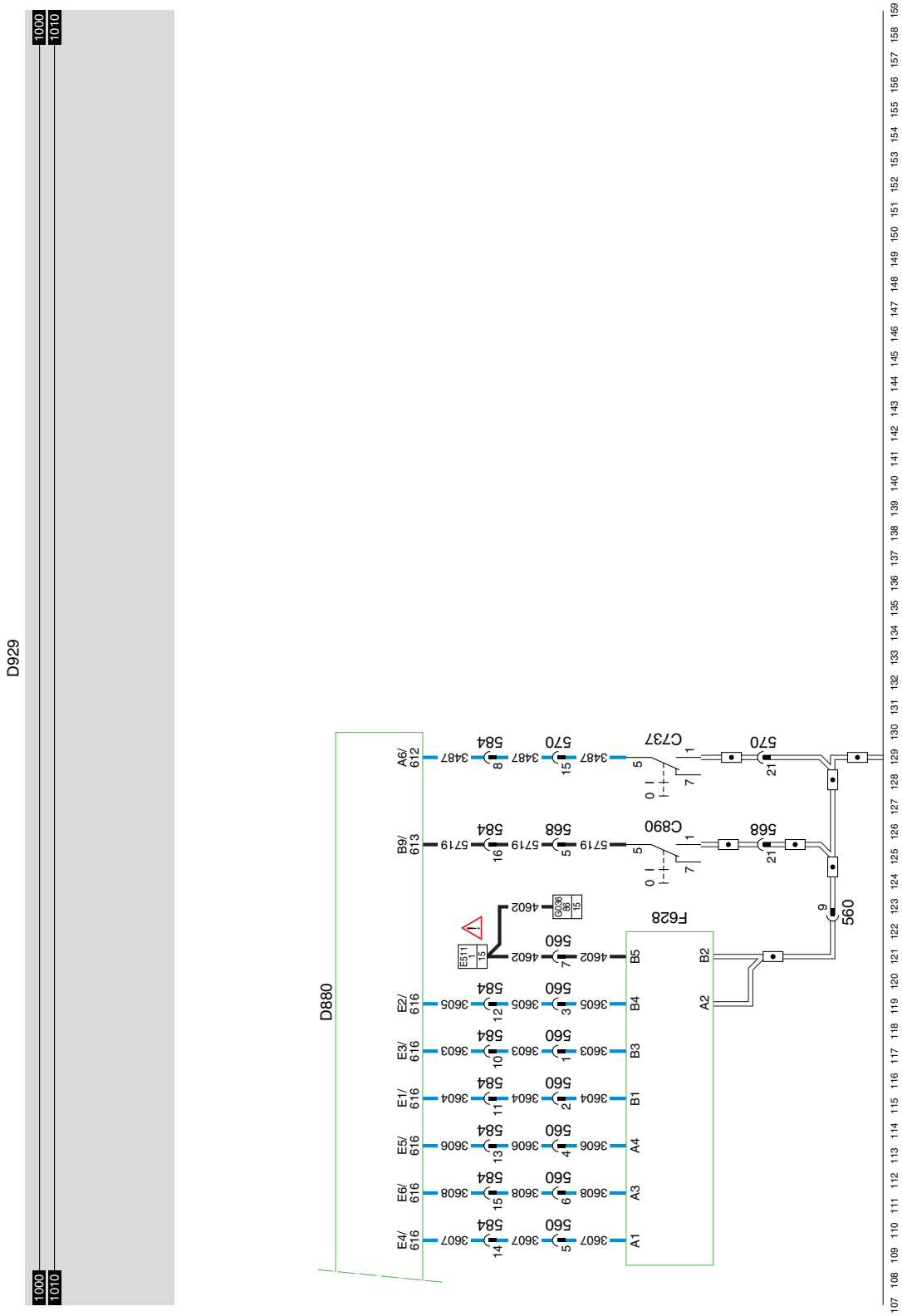



**44** **1358030/26** EL001369




**44** **1358030/26** EL001370

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**44** **1358030/26** EL001371

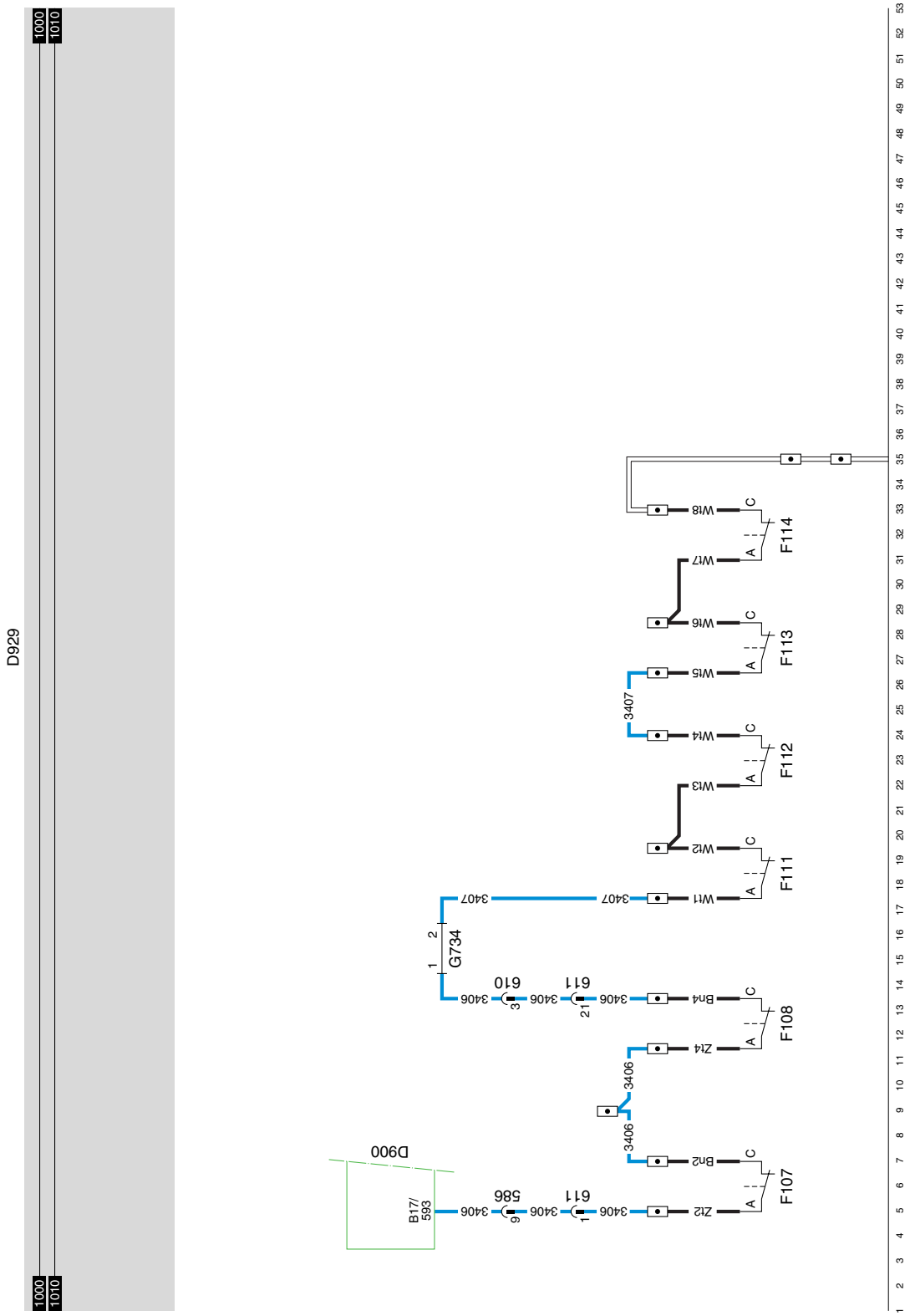


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### 45 BRAKE LINING WEAR SWITCH

If one of the brake linings is too thin, connection point B17 of the VIC (D900) will be interrupted by the corresponding brake lining wear control switch (F107 or F108 or F111 or F112 or F113 or F114) through wire 3406. The VIC will send a message to the instrument panel, which will then activate the "brake lining wear" indicator.




**45** **1358030/26** EL001372

## 46 ALARM SYSTEM/BATTERY CHARGER FOR BV3 ALARM SYSTEM

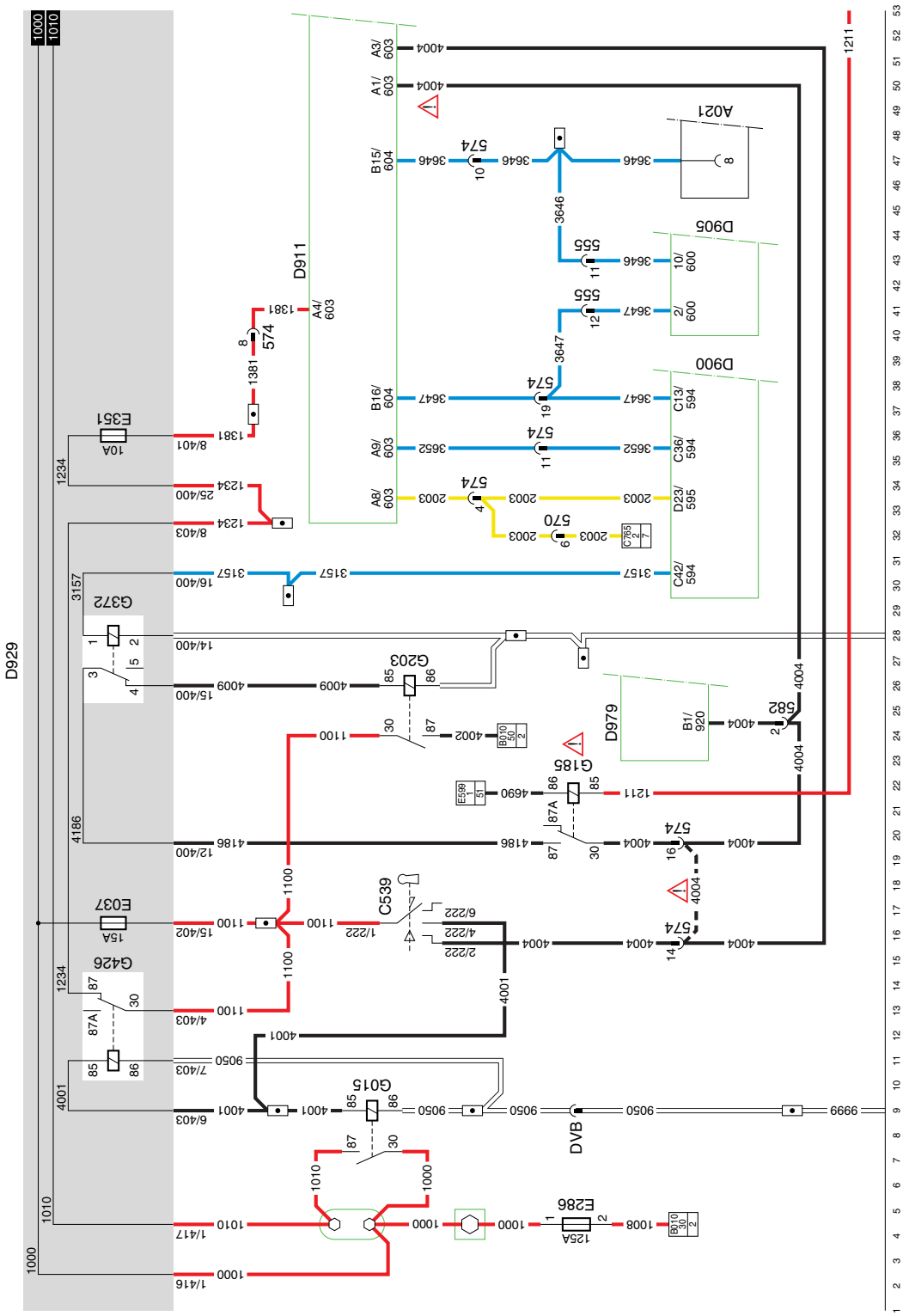
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

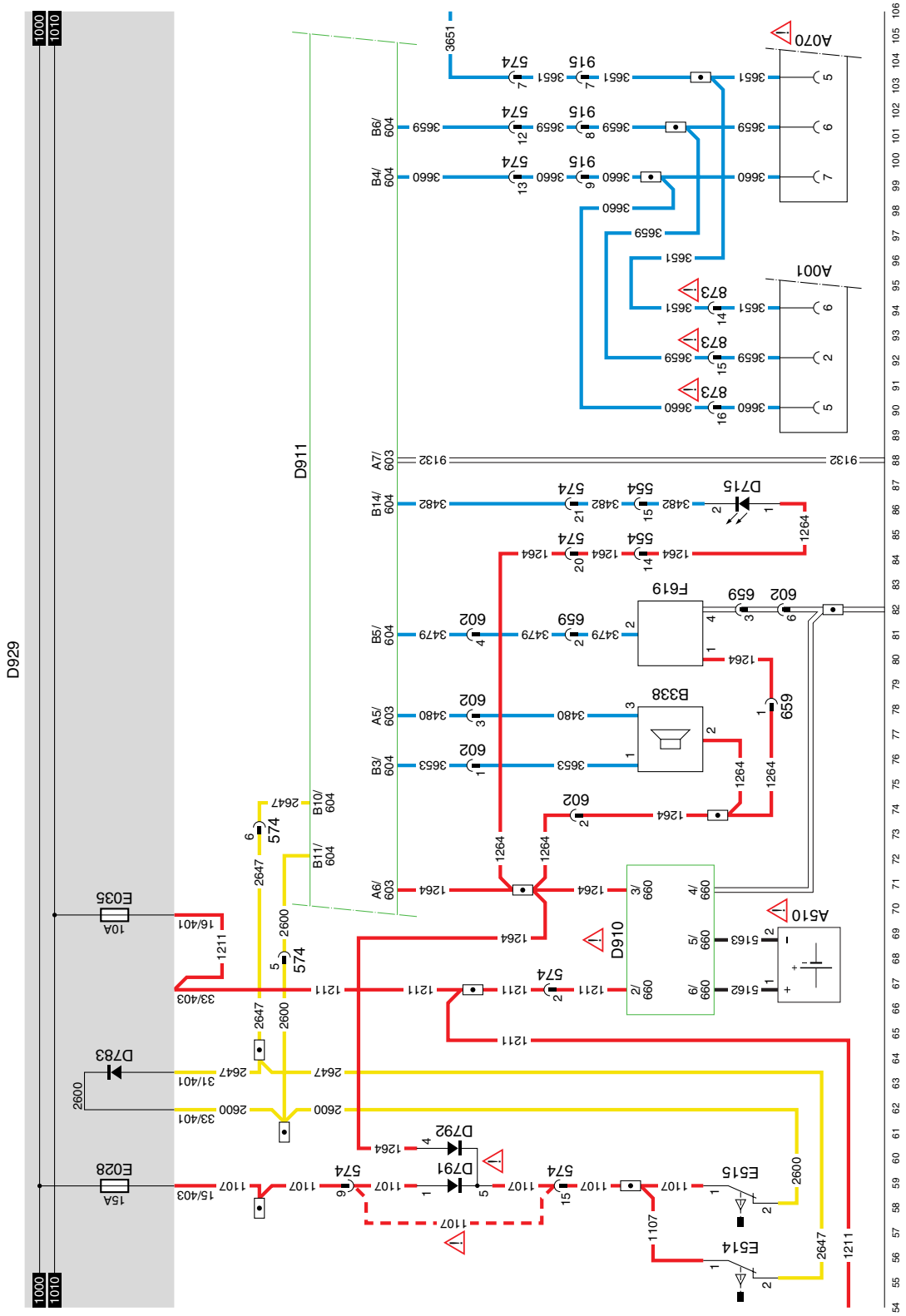
| Location | |
|---|---|
| 18 | Wire 4004: fitted if **NO** alarm system installed. |
| 23 | G185: only for AS Tronic. |
| 49, 57 | **NOT** fitted on H1 version |
| 64 | For more information on D783, see section diagram 17 & 18. |
| 60, 69, 71 | **NOT** fitted on BV02 version. |
| 90 -> 95 | Connector 873 on vehicle type FA.<br>Connector 874 on vehicle type FT. |
| 90 -> 95 | Connector A001: on vehicle type FA.<br>Connector A003 on vehicle type FT. |
| 105 | Only on vehicle type FA. |
| 115 | Connection for F686 (this is optional). Only applies to an SL cab and for versions BV2, BV3 or H1.<br>Only applies to SL cab.<br>**NOT** fitted on H1 version |
| 153 | D931: only if **NO** alarm system fitted. |
| 154 | E035: only if **NO** alarm system fitted. |
| 157 | E023: only if **NO** alarm system fitted. |



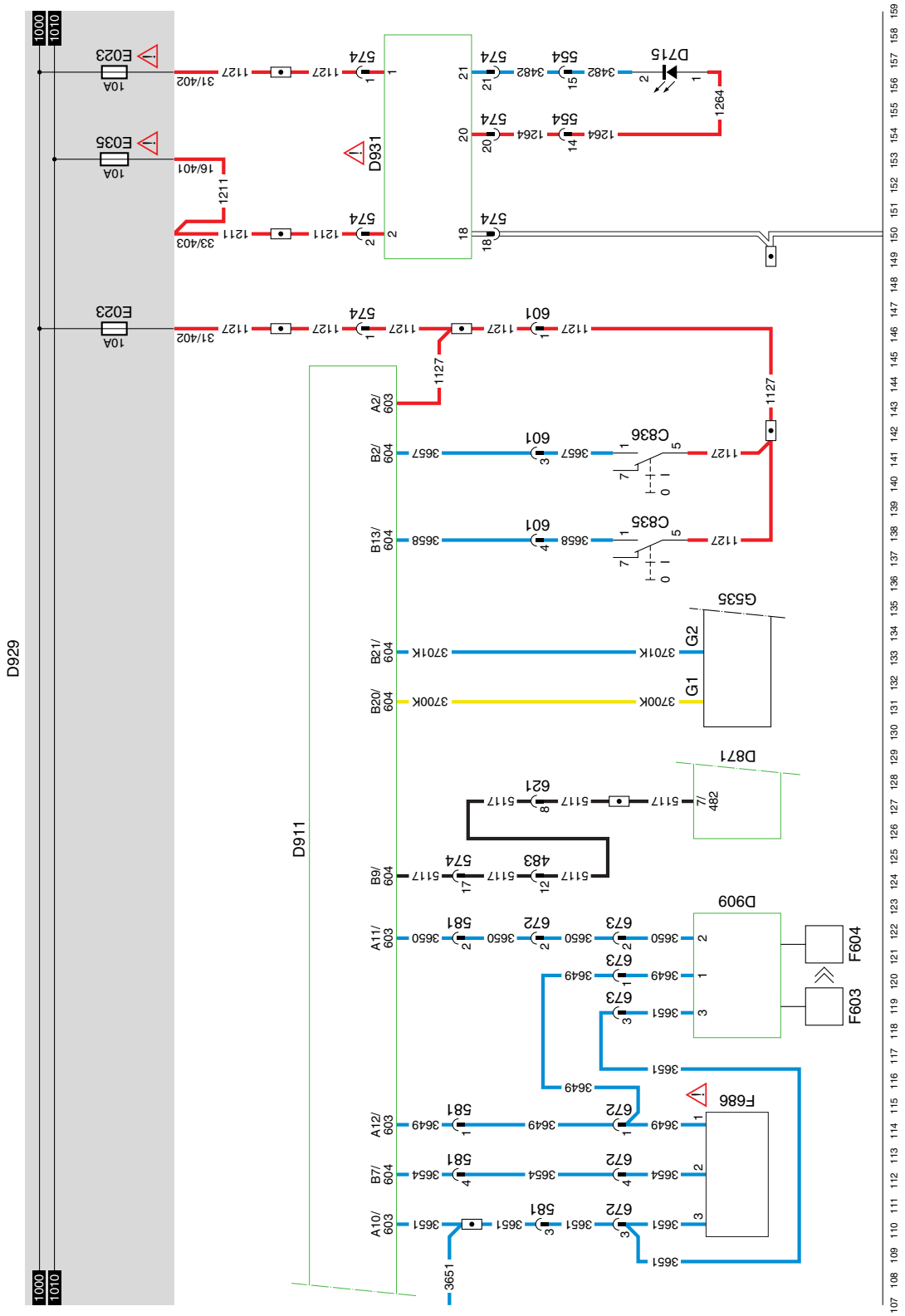
© 200404




**46** **1358030/26** EL001373




**46** **1358030/26**




**46** **1358030/26** EL001375

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## 47 PLUG SOCKETS, FA

### DIAGNOSTICS PLUG (A021)

The diagnostics plug is on the bottom right on the outside of the central box. This is the plug for the DAVIE connection. After the ignition is switched on, power is supplied to pin 1 via fuse E053. Pin 2 is connected to earth. The remaining pins are for communication with the various systems, and are connected to those systems.

| Pin no. | Wire no. | Colour | Description |
|---|---|---|---|
| 1 | 1229 | red | Power supply for DAVIE |
| 2 | 9107 | white | Earth |
| 3 | 3425 | blue | ABS - ASR-D |
| 4 | | | |
| 5 | 4697 | black | UPEC, ECS-DC3 |
| 6 | | | |
| 7 | 4732 | black | ECAS |
| 8 | 3646 | blue | CDS, ALS-S, EMAS |
| 9 | 4047 | black | VIC |
| 10 | 3065 | blue | AS Tronic |
| 11 | 4883 | black | ZF intarder |
| 12 | 4733 | black | DIP-4 |
| 13 | 3470 | blue | AGS |
| 14 | 3037 | blue | Cab heater |
| 15 | 3700 | yellow | V-CAN-L |
| 16 | 3701 | blue | V-CAN-H |

### 24V SOCKET (2-pin) (A007)

Pin 1 is connected directly to the power supply through wire 1103, fuse E036.

Pin 2 is connected to earth.

### ABS/EBS SOCKET (7-pin) (A004)

Pin 1 is connected directly to power before contact through fuse E043 and wire 1119.

Pin 2 is connected directly to power after contact through fuse E172 and wire 1288.

Pins 3 + 4 are both connected to earth.

Pin 5 is connected to pin C32 of the VIC (D900) through wire 3428.

Pin 6 is connected to pin B6 of D880 (EBS) via wire 3559.
Only if the vehicle has EBS.

Pin 7 is connected to pin B3 of D880 (EBS) via wire 3558.
Only if the vehicle has EBS.

### DRAWN VEHICLE PLUG SOCKET (7-pin) (A000)

Pin 1 is connected to earth.

Pin 2 switches the left tail light.

Pin 3 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 4 is connected to relay G036 (stop light relay) through wire 4601.

Pin 5 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 6 switches the right tail light.

### DRAWN VEHICLE PLUG SOCKET (15-pin) (A058)

Pin 1 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 2 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 3 is connected via wire 2152 to connection point 87 of relay G005 (fog lamp relay, rear).

Pin 4 is connected to earth.

Pin 5 switches the left tail light via wire 2102.





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Pin 5 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 6 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 7 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 8 is connected to earth.

**TELEPHONE CONNECTOR (A076)**

Pin 1 is connected via wire 1353 to connection B1 (12V) of D895.

Pin 2 is connected via wire 1108 to connection A4 (12V) of D895.

Pin 3 is connected to earth.

**ACCESSORIES SOCKET (6-pin) (A027)**

Pin 1 is connected to power before contact through wire 1154 and fuse E142.

Pin 2 is connected to power after contact through wire 1258 and fuse E163.

Pin 3 is connected to connection point 2 of F616 (cab locking sensor) through wire 3412.

Pin 5 is connected to C42 of the VIC (D900) through wire 3157.

Pin 5 is connected to earth.

Pin 6 is connected to earth.

Pin 3 is connected to connection point 5 of G350 (reversing lights relay) through wire 4591.

Pin 4 is connected to power before contact through wire 1113 and fuse E048.

Pin 5 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 6 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 7 is connected via wire 2152 to connection point 87 of relay G005 (fog lamp relay, rear).

**APPLICATION CONNECTOR, SUPERSTRUCTURE (8-pin) (A070)**

Pin 1 is connected to power before contact through wire 1113 and fuse E048.

Pin 2 is connected to connection point 1 of C725 (work lamp switch) through wire 2155.

Pin 3 is connected to connection point 87 of G036 (stop light relay) through wire 4601.

Pin 4 is connected to connection point 5 of G350 (reversing lights relay) through wire 4591.

Pin 6 switches the right tail light via wire 2103.

Pin 7 is connected to connection point 87 of relay G036 (stop light relay) through wire 4601.

Pin 8 is connected to connection point 5 of G350 (reversing lights relay) through wire 4591.

Pin 9 is connected to power before contact through wire 1113 and fuse E048.

Pin 10 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 11 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 12 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 13 Not connected.

Pin 14 Not connected.

Pin 15 Not connected.

**SOCKET, REAR FOG LAMP AND REVERSING LIGHT PLUG (A001)**

Pin 1 is connected to earth.

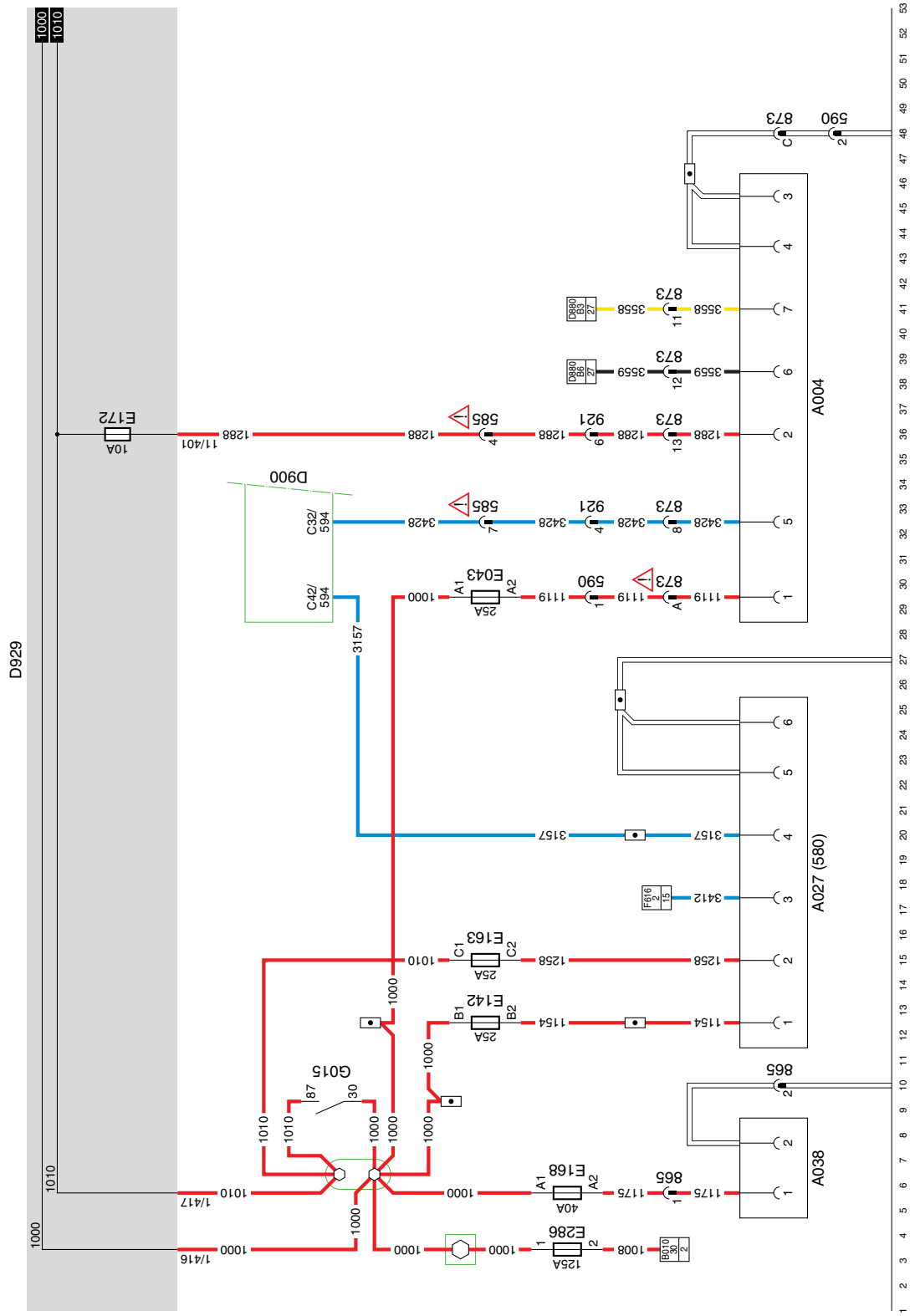
Pin 2 is connected via wire 3659 to connection point B6 of ALS-S (D911).

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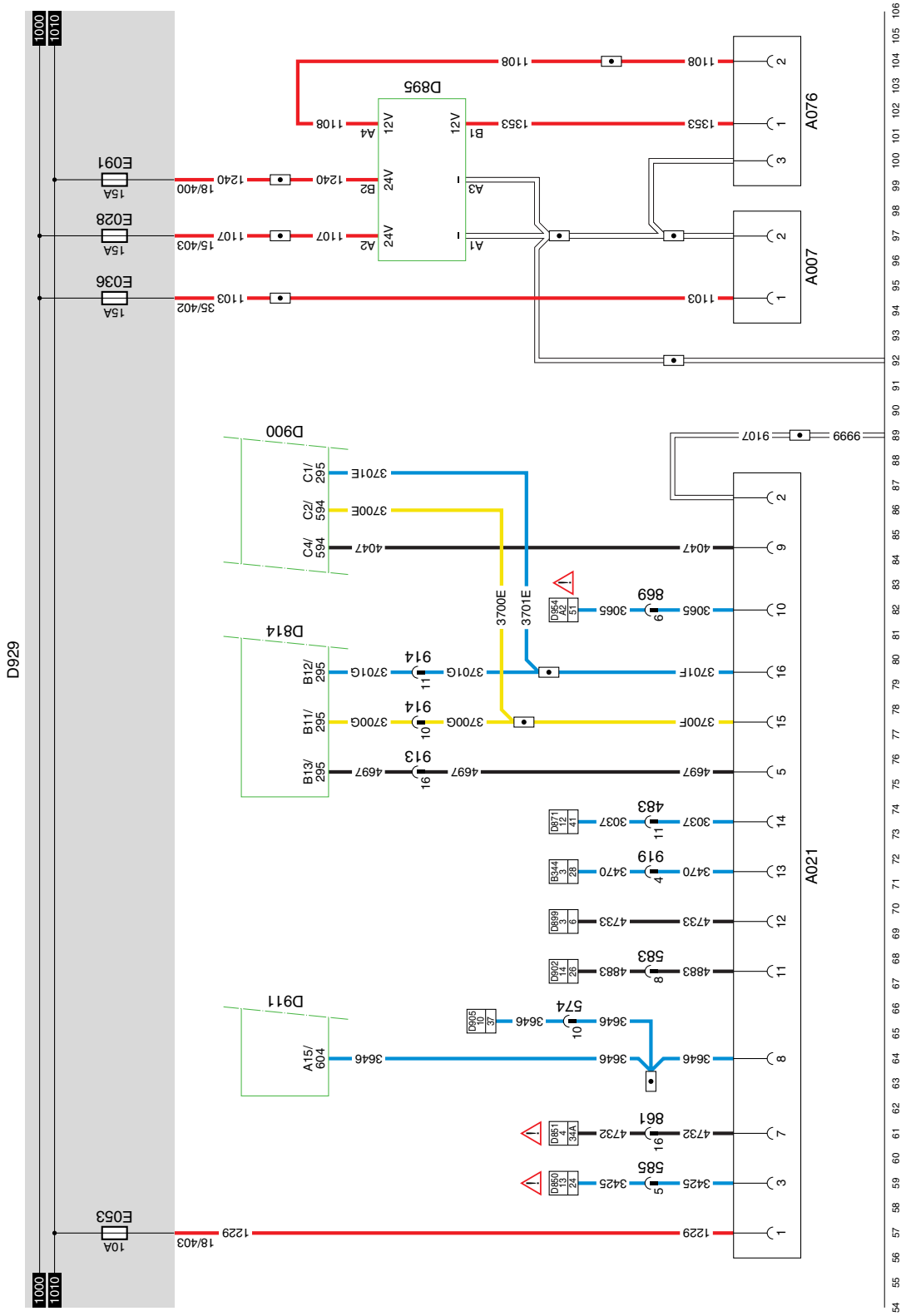
**VARIANTS**

| Location | |
|---|---|
| 32, 36, 59 | Connector 585: for ABS/ASR-D. Connector 584 for EBS. |
| 59 | Connection to D850 or D880. |
| 61 | Connection to D851 or D802. |
| 66 | If the vehicle has EMAS system. |
| 83 | D954: only for AS Tronic. |
| 121, 158 | A000 and A001. For 2x 7-pin connector. |
| 162 -> 209 | For 1x 15-pin connector. |



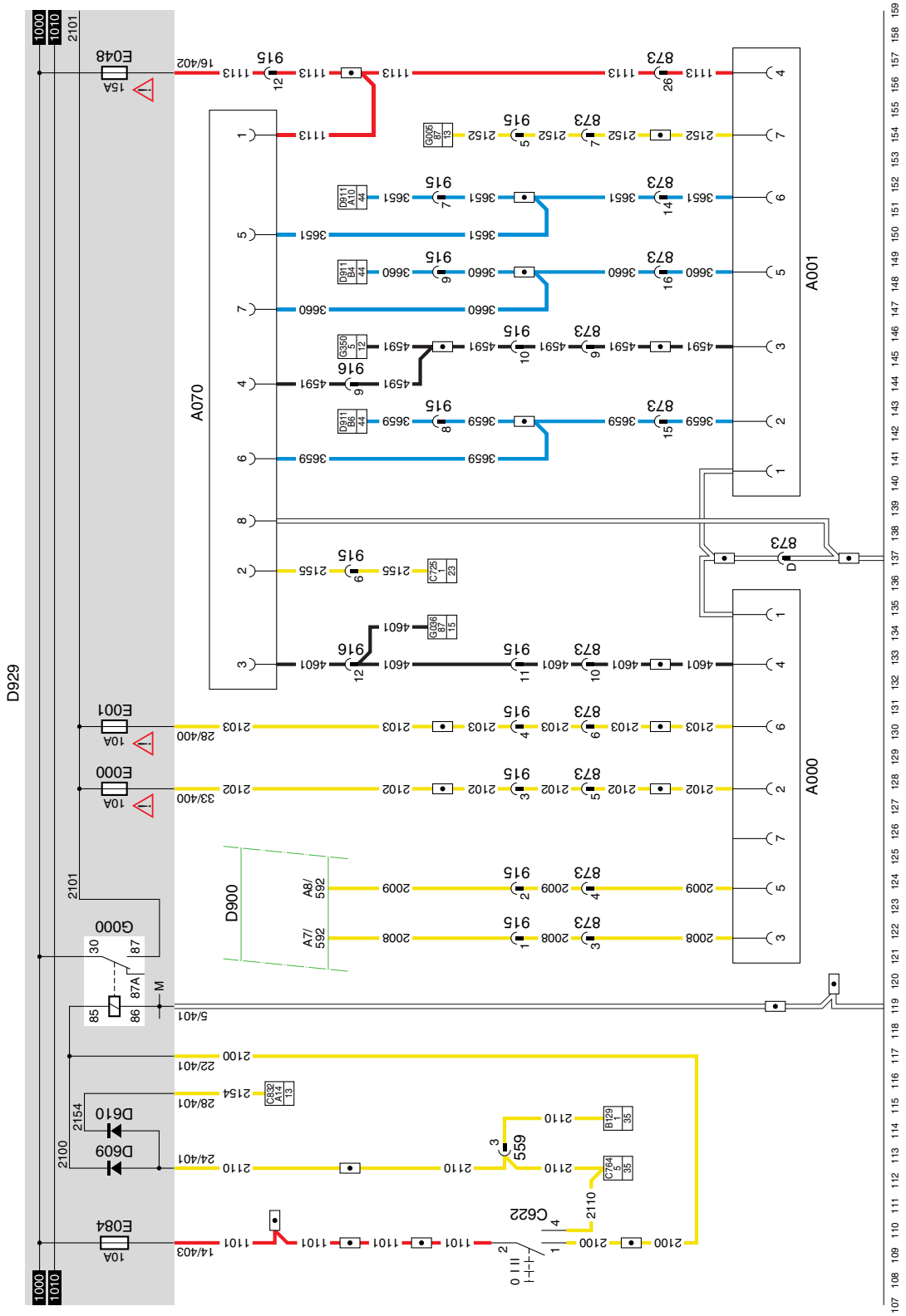

**47** **1358030/26**

EL001376




**47** **1358030/26** EL001377

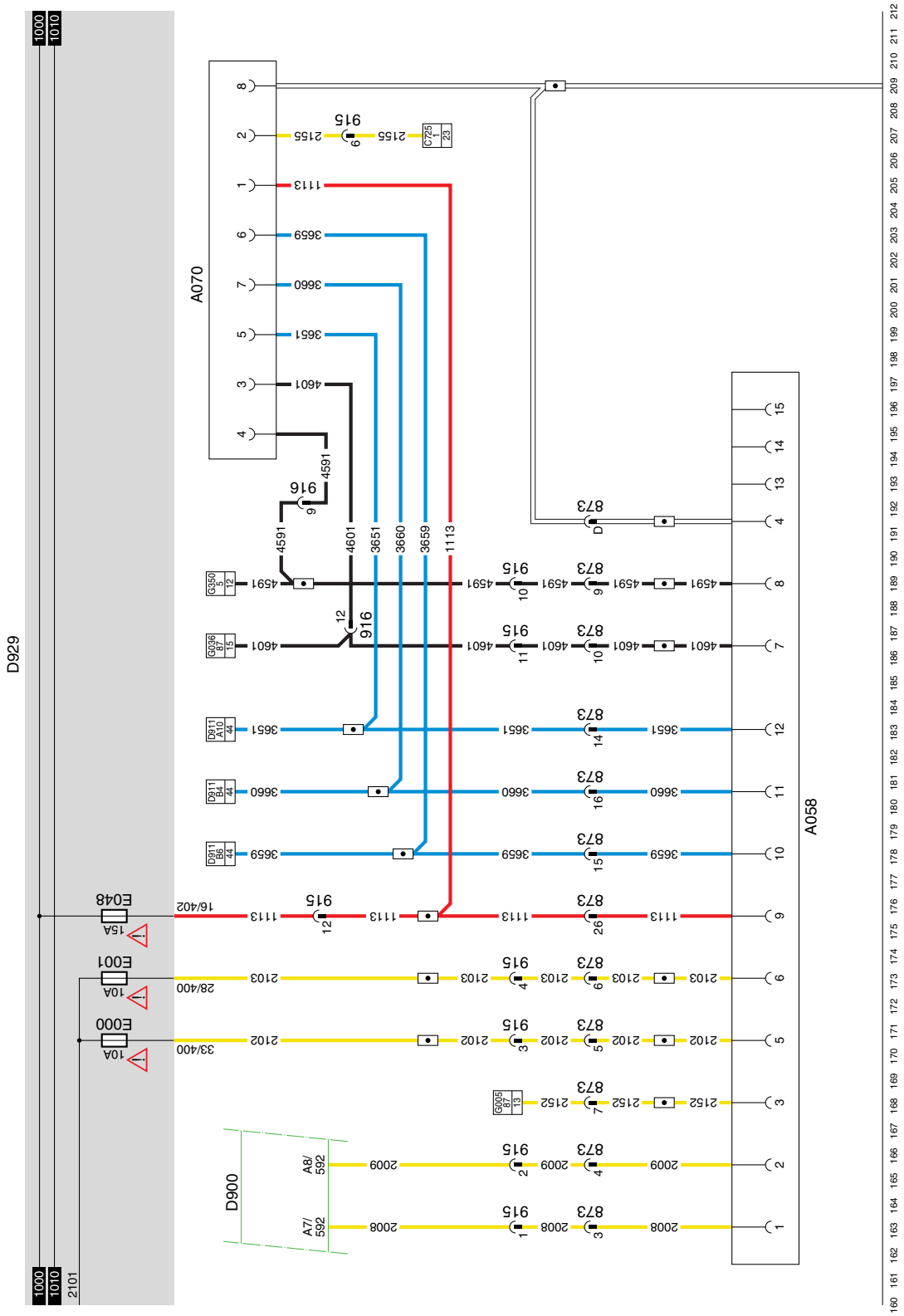

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**47** **1358030/26**



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**47** **1358030/26** EL001379

## 48 PLUG SOCKETS, FT

### DIAGNOSTICS PLUG (A021)

The diagnostics plug is on the bottom right on the outside of the central box. This is the plug for the DAVIE connection. After the ignition is switched on, power is supplied to pin 1 via fuse E053. Pin 2 is connected to earth. The remaining pins are for communication with the various systems, and are connected to those systems.

| Pin no. | Wire no. | Colour | Description |
|---|---|---|---|
| 1 | 1229 | red | Power supply for DAVIE |
| 2 | 9107 | white | Earth |
| 3 | 3425 | blue | ABS - ASR-D |
| 4 | | | |
| 5 | 4697 | black | UPEC, ECS-DC3 |
| 6 | | | |
| 7 | 4732 | black | ECAS |
| 8 | 3646 | blue | CDS, ALS-S, EMAS |
| 9 | 4047 | black | VIC |
| 10 | 3065 | blue | AS Tronic |
| 11 | 4883 | black | ZF intarder |
| 12 | 4733 | black | DIP-4 |
| 13 | 3470 | blue | AGS |
| 14 | 3037 | blue | Cab heater |
| 15 | 3700 | yellow | V-CAN-L |
| 16 | 3701 | blue | V-CAN-H |

**24V SOCKET (2-pin) (A007)**

Pin 1 is connected directly to the power supply through wire 1103, fuse E036.

Pin 2 is connected to earth.

**ABS/EBS SOCKET (7-pin) (A004)**

Pin 1 is connected directly to power before contact through fuse E043 and wire 1119.

Pin 2 is connected directly to power after contact through fuse E172 and wire 1288.

Pins 3 + 4 are both connected to earth.

Pin 5 is connected to pin C32 of the VIC (D900) through wire 3428.

Pin 6 is connected to pin B6 of D880 (EBS) via wire 3559.
Only if the vehicle has EBS.

Pin 7 is connected to pin B3 of D880 (EBS) via wire 3558.
Only if the vehicle has EBS.

**DRAWN VEHICLE PLUG SOCKET (7-pin) (A000)**

Pin 1 is connected to earth.

Pin 2 switches the left tail light.

Pin 3 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 4 is connected to relay G036 (stop light relay) through wire 4601.

Pin 5 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 6 switches the right tail light.

**DRAWN VEHICLE PLUG SOCKET (15-pin) (A058)**

Pin 1 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 2 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 3 is connected via wire 2152 to connection point 87 of relay G005 (fog lamp relay, rear).

Pin 4 is connected to earth.

Pin 5 switches the left tail light via wire 2102.



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Pin 6 switches the right tail light via wire 2103.

Pin 7 is connected to connection point 87 of relay G036 (stop light relay) through wire 4601.

Pin 8 is connected to connection point 5 of G350 (reversing lights relay) through wire 4591.

Pin 9 is connected to power before contact through wire 1113 and fuse E048.

Pin 10 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 11 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 12 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 13 Not connected.

Pin 14 Not connected.

Pin 15 Not connected.

**SOCKET, REAR FOG LAMP AND REVERSING LIGHT PLUG (A001)**

Pin 1 is connected to earth.

Pin 2 is connected via wire 3659 to connection point B6 of ALS-S (D911).

Pin 3 is connected to connection point 5 of G350 (reversing lights relay) through wire 4591.

Pin 4 is connected to power before contact through wire 1113 and fuse E048.

Pin 5 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 6 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 7 is connected via wire 2152 to connection point 87 of relay G005 (fog lamp relay, rear).

**TELEPHONE CONNECTOR (A076)**

Pin 1 is connected via wire 1353 to connection B1 (12V) of D895.

Pin 2 is connected via wire 1108 to connection A4 (12V) of D895.

Pin 3 is connected to earth.

**ACCESSORIES SOCKET (6-pin) (A027)**

Pin 1 is connected to power before contact through wire 1154 and fuse E142.

Pin 2 is connected to power after contact through wire 1258 and fuse E163.

Pin 3 is connected to connection point 2 of F616 (cab locking sensor) through wire 3412.

Pin 5 is connected to C42 of the VIC (D900) through wire 3157.

Pin 5 is connected to earth.

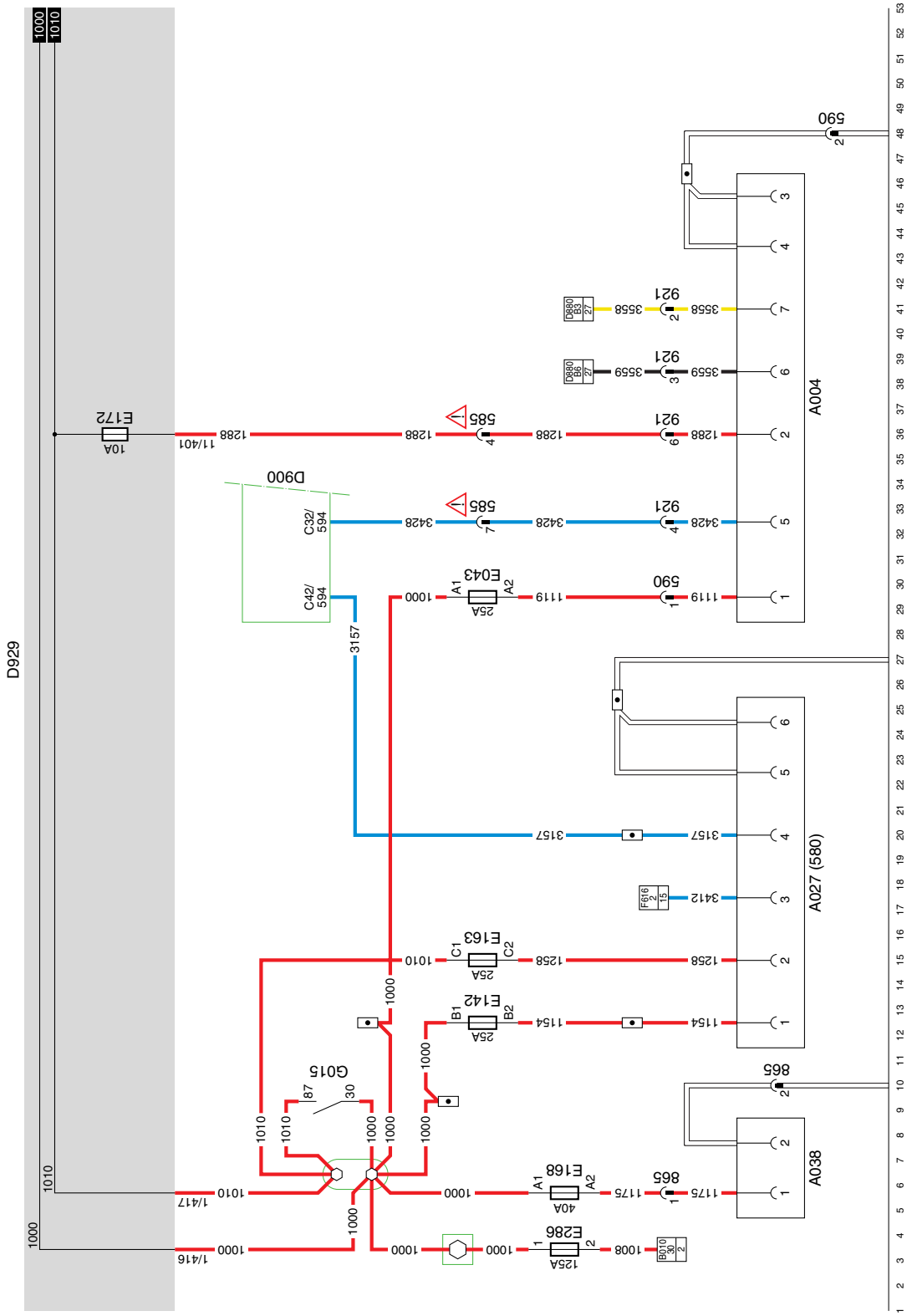
Pin 6 is connected to earth.

**VARIANTS**

**Location**

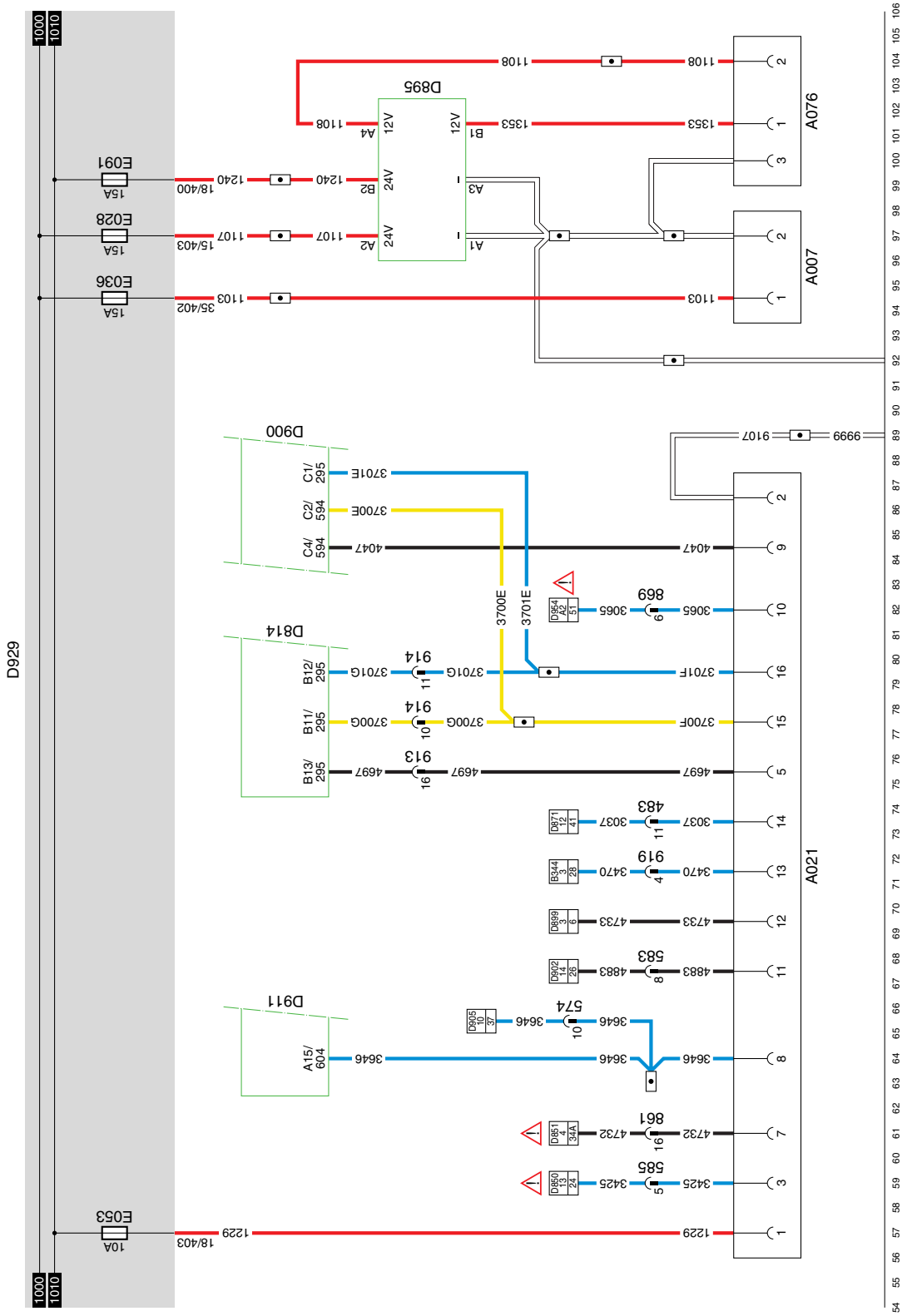
| | |
|---|---|
| 32, 36 | Connector 585 for ABS/ASR-D. Connector 584 for EBS. |
| 59 | Connection to D850 or D880. |
| 61 | Connection to D851 or D802. |
| 82 | D954: only for AS Tronic. |
| 122 -> 156 | A000 and A001. For 2x 7-pin connector. |
| 161 -> 199 | For 1x 15-pin connector. |

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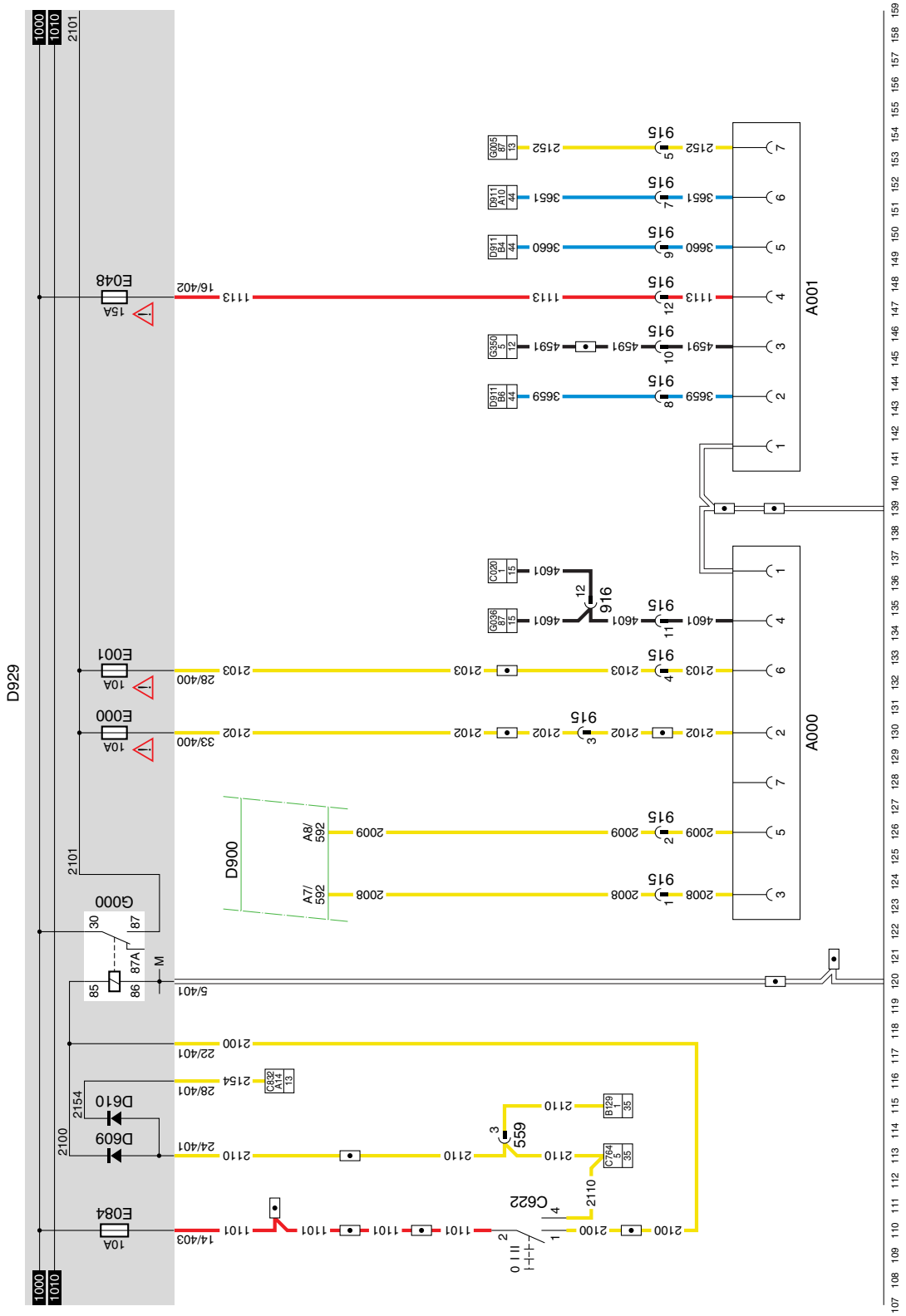



**48** **1358030/26**


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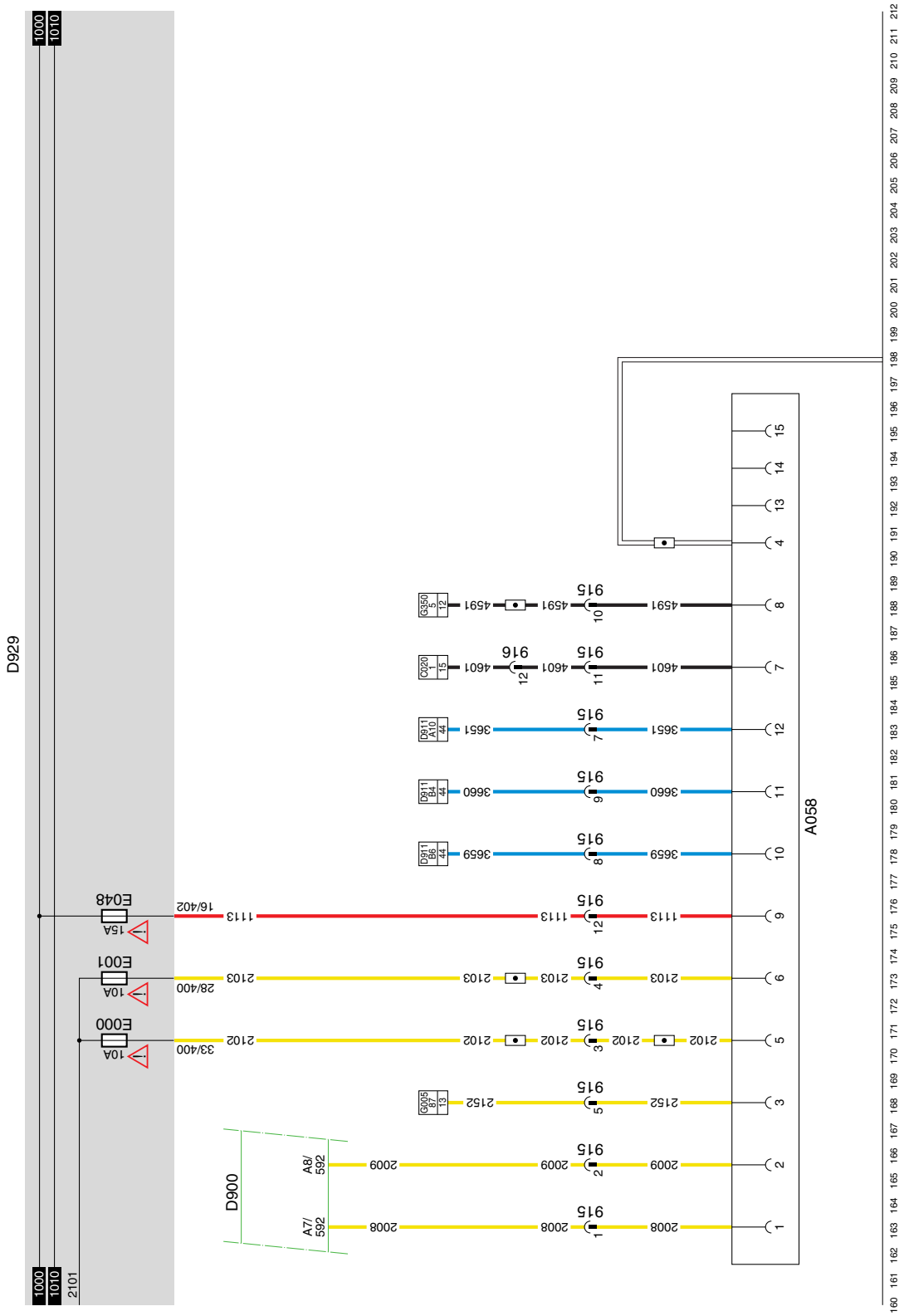



**48** **1358030/26** EL001381




**48** **1358030/26**


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**48** **358030/26** EL001383



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## 49 FUEL FILTER/WATER SEPARATOR (FLEETGUARD)

When the vehicle contact is switched on, there is a voltage on connection point 2 of electronic unit B387 (electronic unit for fuel filter/water separator) through wire 1010 and fuse E170.

If the temperature of the fuel is too low, relay G201 is activated by the ECS-DC3 electronic unit (D903).
A voltage is applied from connection point 18, wire 5048 to connection point 85 of relay G201. Connection point 86 of relay G201 is connected through an earth wire to connection point 2. The VIC now switches the earth on or off, so that relay G201 is switched on or off depending on the fuel temperature.

When relay G201 is energised, contacts 30 - 87 close. A voltage is now applied to connection point A of electronic unit B387 through wire 1000, fuse E164, wire 1190, contacts 30 - 87 of relay G201, wire 5051. The glow element is now activated.

If there is too much water in the fuel prefilter of the water separator, a voltage is applied to connection C12 of the VIC unit through connection 1 of B387, wire 3150. This in turn sends a signal to the DIP via the I-CAN. The DIP will now send a message to indicate that there is too much water in the fuel filter/water separator.

**VARIANTS**

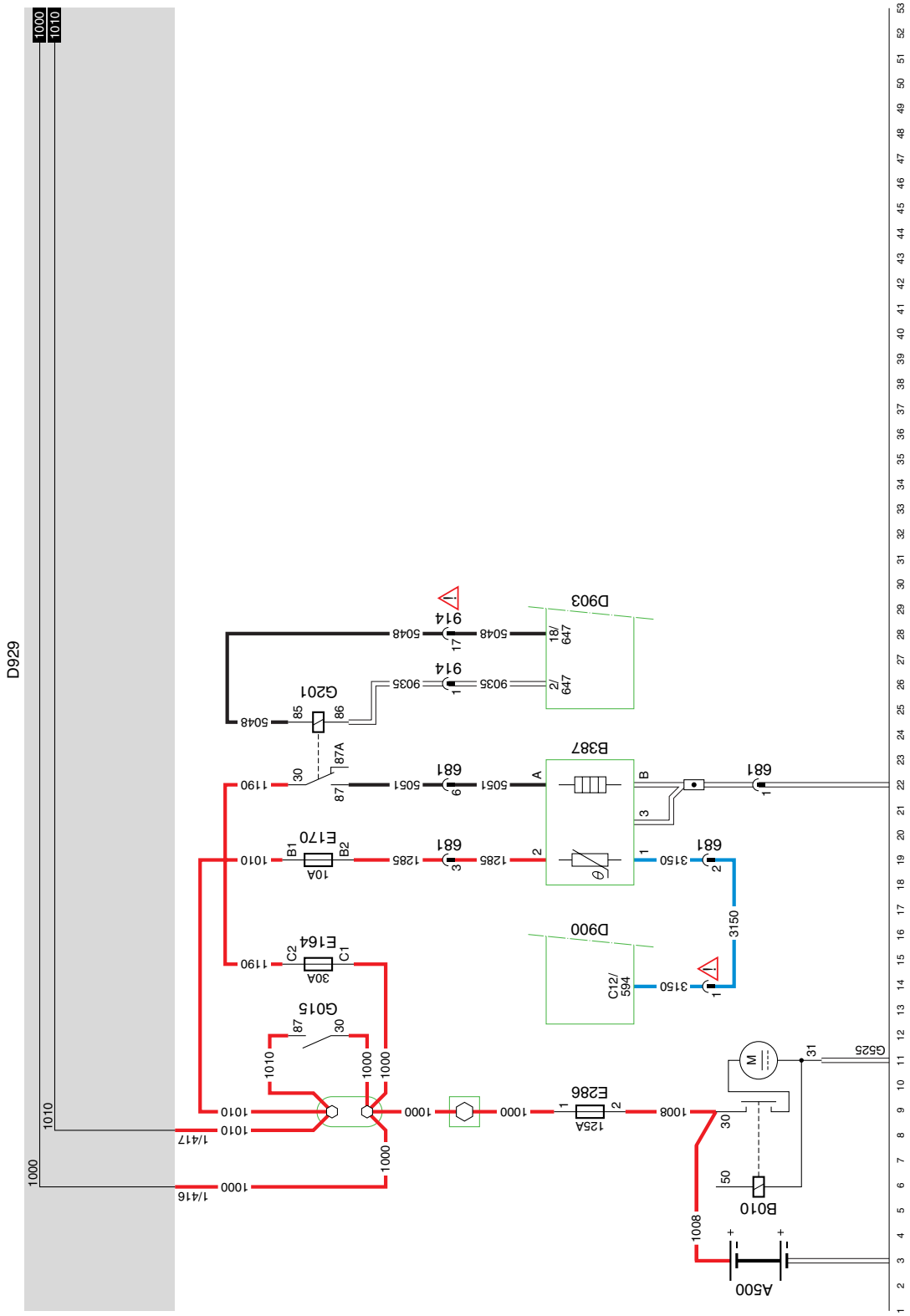
**Location**

15 This is a 1-pin plug. It is located in the wire harness behind the central PCB.

29 Attach wire 5048 in connector 914, pin 17.
Attach wire 9035 in connector 914, pin 1.



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**49** **1358030/26** EL001384

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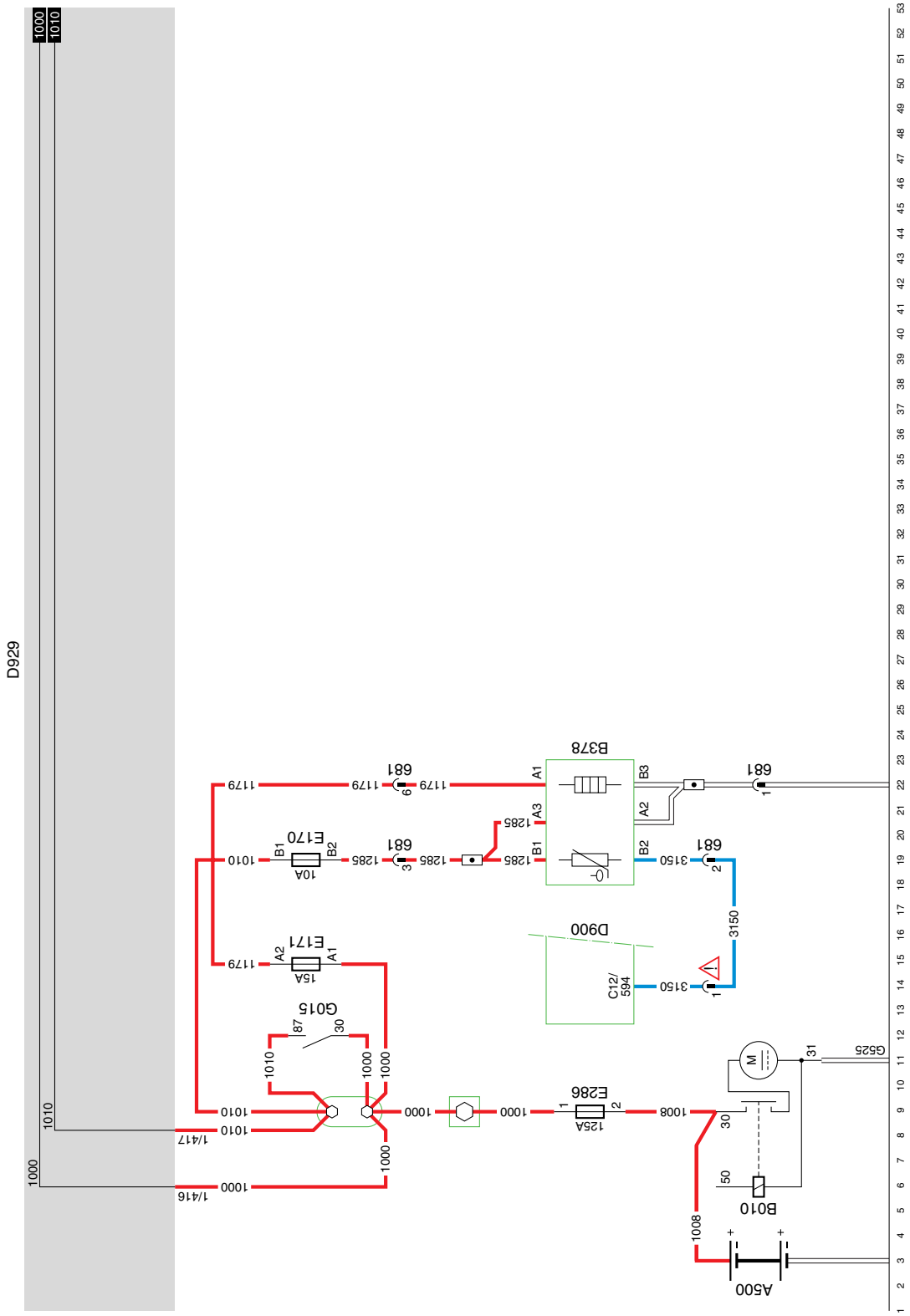
## 50 WATER SEPARATOR

When the vehicle contact is activated, there is a voltage on both connection points B1 and A3 of the electronic unit (B378) (fuel filter/water separator heating element sensor) through wire 1010 and fuse E170. Voltage is also applied to connection point A1 of B378 through wire 1000, fuse E171, wire 1179.

A signal that there is water in the water separator is given via wire 3150. This signal goes to connection point C12 of the VIC (D900). The VIC activates the 'Water separator/fuel filter' symbol on the instrument panel.

**VARIANTS**

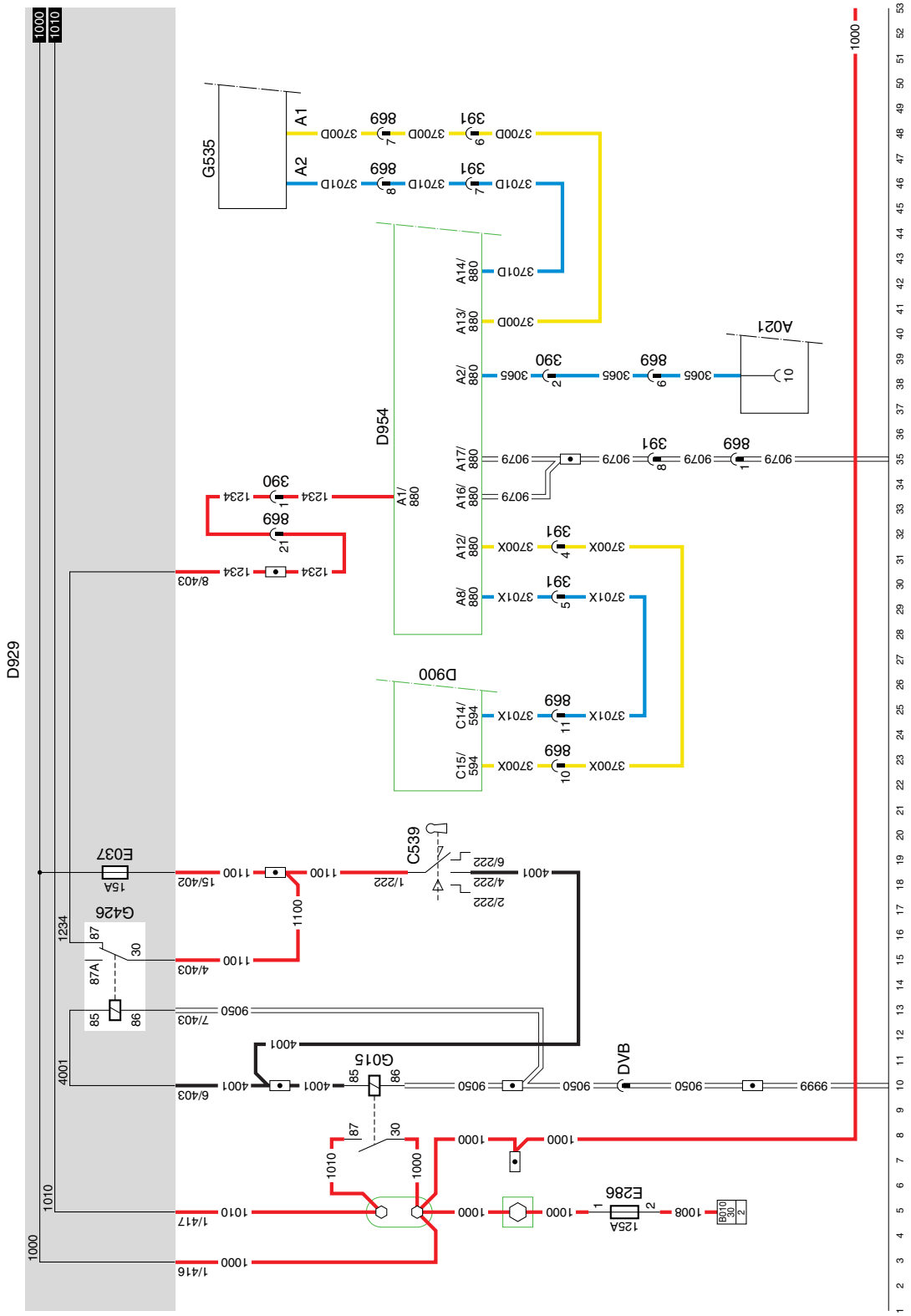
**Location**
15 This is a 1-pin plug. It is located in the wire harness behind the central PCB.




**50** **1358030/26** EL001385

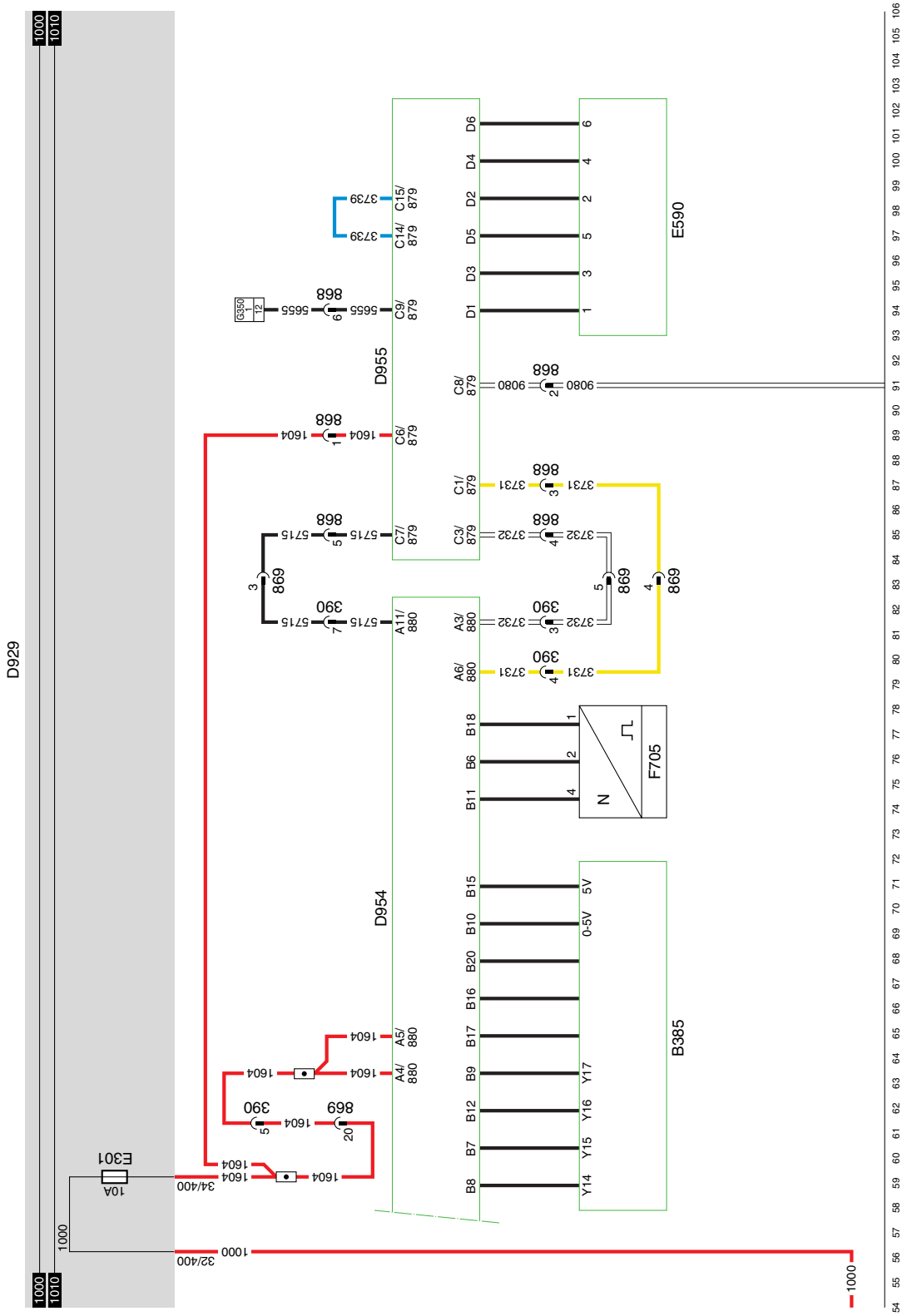
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51 AS TRONIC
SEE THE SYSTEM MANUAL FOR MORE INFORMATION




**51** 1358030/26 EL001386

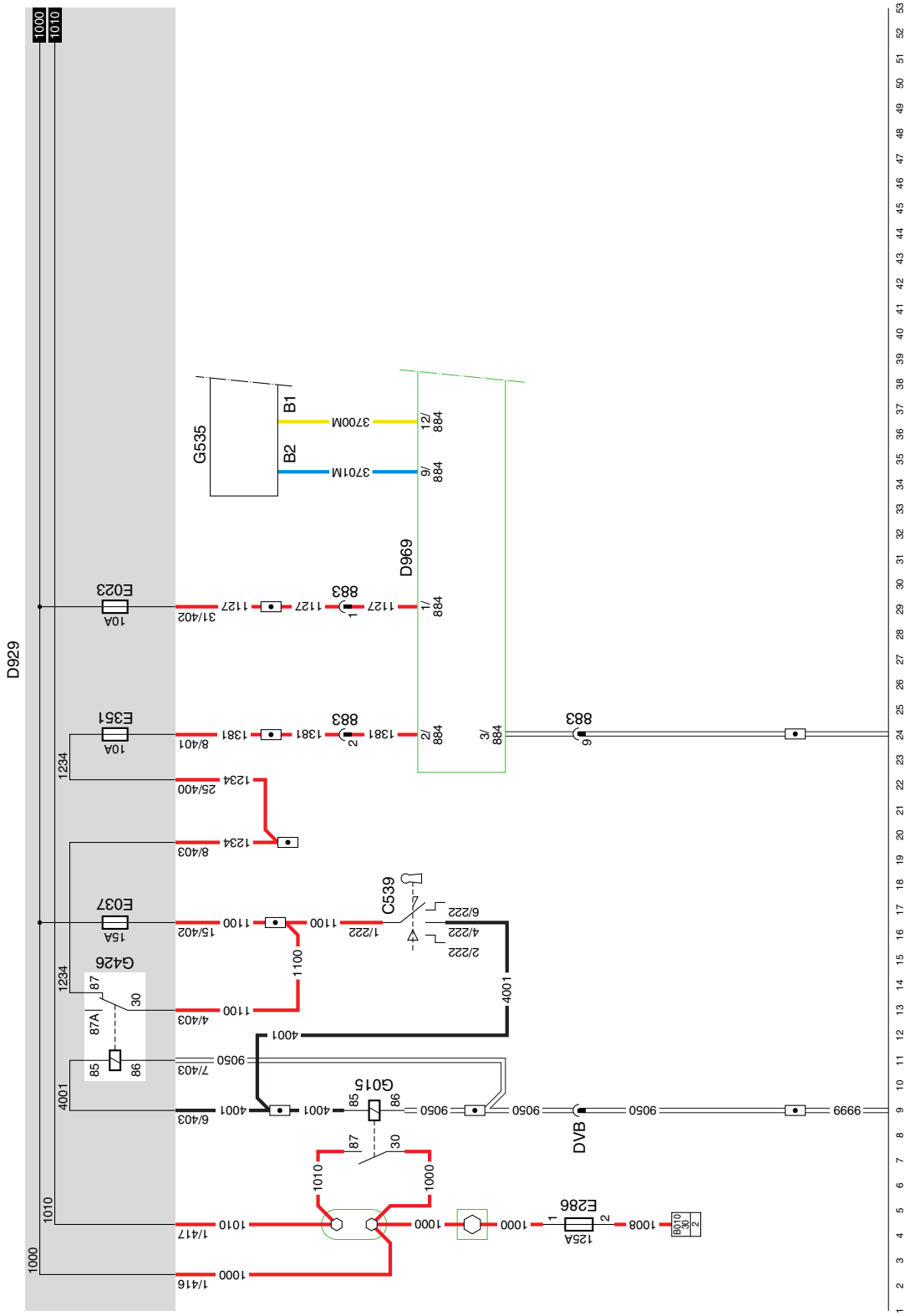
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**51** **1358030/26** EL001387

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52 CDM
SEE THE SYSTEM MANUAL FOR MORE INFORMATION




**52** **1358030/26** EL001388

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# 1. INTRODUCTION

This main group includes the entire electrical system shown in the form of **circuit diagrams and the modified section diagrams.**

**Circuit diagrams**
All information that relates to the complete electrical system of the vehicle is found in the circuit diagrams with the exception of the connectors.

**Section diagrams**
Only the modified parts of the electrical system are shown on the section diagrams. These diagrams also contain the connectors.

**Note:**
For the location of the connectors in the vehicle, see “Location of connectors”.

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# 2. CHANGES IN THE ELECTRICAL SYSTEM FROM CHASSIS NUMBER 0E626381

## 2.1 OVERVIEW OF THE CHANGES IN THE ELECTRICAL SYSTEM

| Section diagram | Electrical system | Changes | From chassis number |
|---|---|---|---|
| B | Overview of earthing points | Various earthing points changed | 0E626381 |
| C | CAN overview | Diagram modified | 0E626381 |
| 1 | Main switch | Current limiter and PETREG version based on additional circuit diagram | 0E626381 |
| 20 | Search lighting | C900 added | 0E626381 |
| 41 | Airtronic cab heater (ACH-EA) with/without timer | Various connectors changed | 0E626381 |
| 44 | EBS-2 | New | 0E626381 |
| 51 | AS Tronic | Wire 1380 added<br>Wire 5715 removed | 0E626381 |

The other section diagrams from circuit diagrams 1358030/27-29 contain no functional changes compared with circuit diagram 1358030/26.

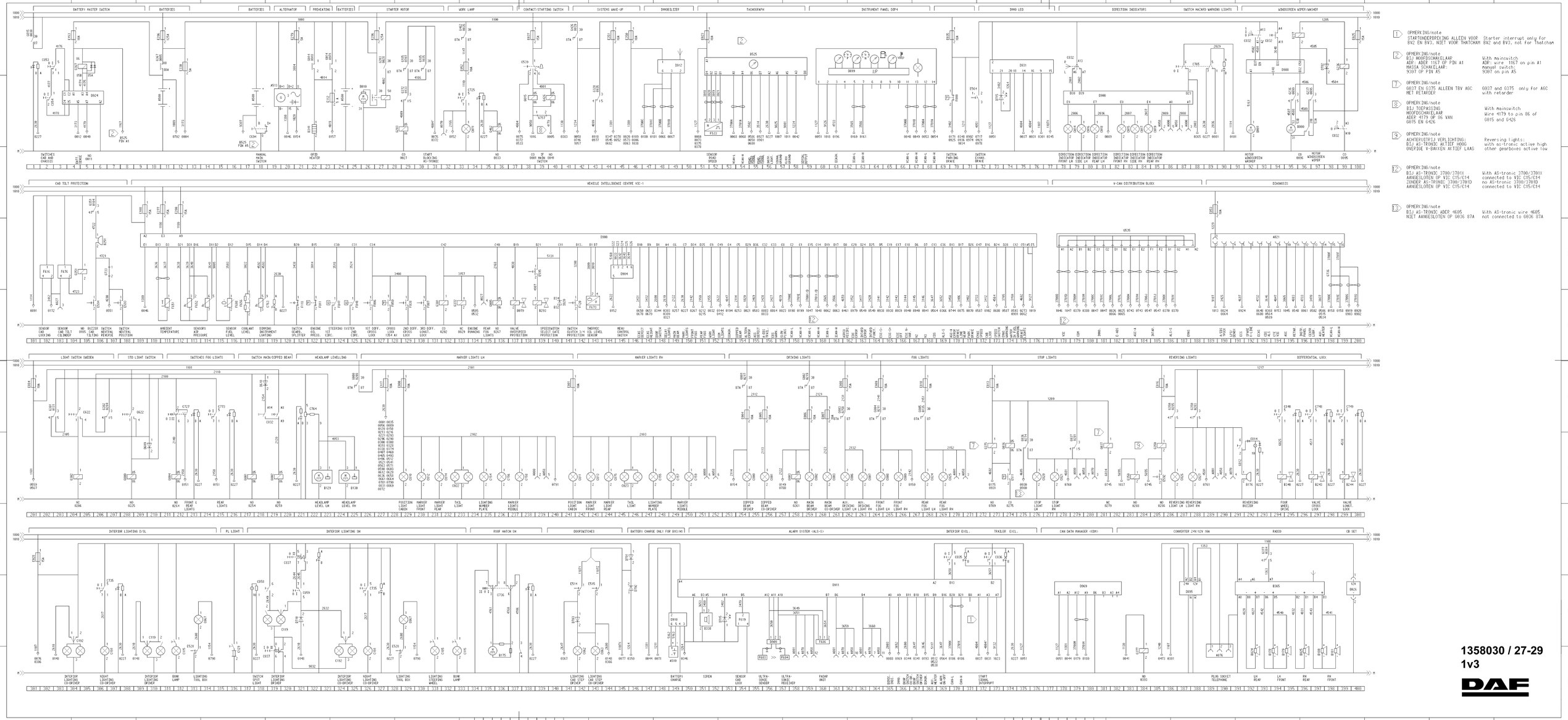
## 2.2 CIRCUIT DIAGRAM 1358030/27-29

This page can be used to make your own notes on the circuit diagram.





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1 OPMERKING/note
STARTONDERBREKING ALLEEN VOOR BV2 EN BV3, NIET VOOR THATCHAM BV2 en BV3, not for Thatcham
Starter interrupt only for

2 OPMERKING/note
BIJ HOOFDSCHAKELAAR
ADER: ADER 1167 OP PIN A1
MASSA SCHAKELAAR: 9307 OP PIN A5
With mainswitch
ADR: wire 1167 on pin A1
Mannual switch: 9307 on pin A5

7 OPMERKING/note
6937 EN 6375 ALLEEN TBV AGC MET RETARDER
6937 and 6375 only for AGC with retarder

8 OPMERKING/note
BIJ TOEPASSING HOOFDSCHAKELAAR
ADER 4179 OP 86 VAN 6815 EN 6426
With mainswitch
Wire 4179 to pin 86 of 6815 and 6426

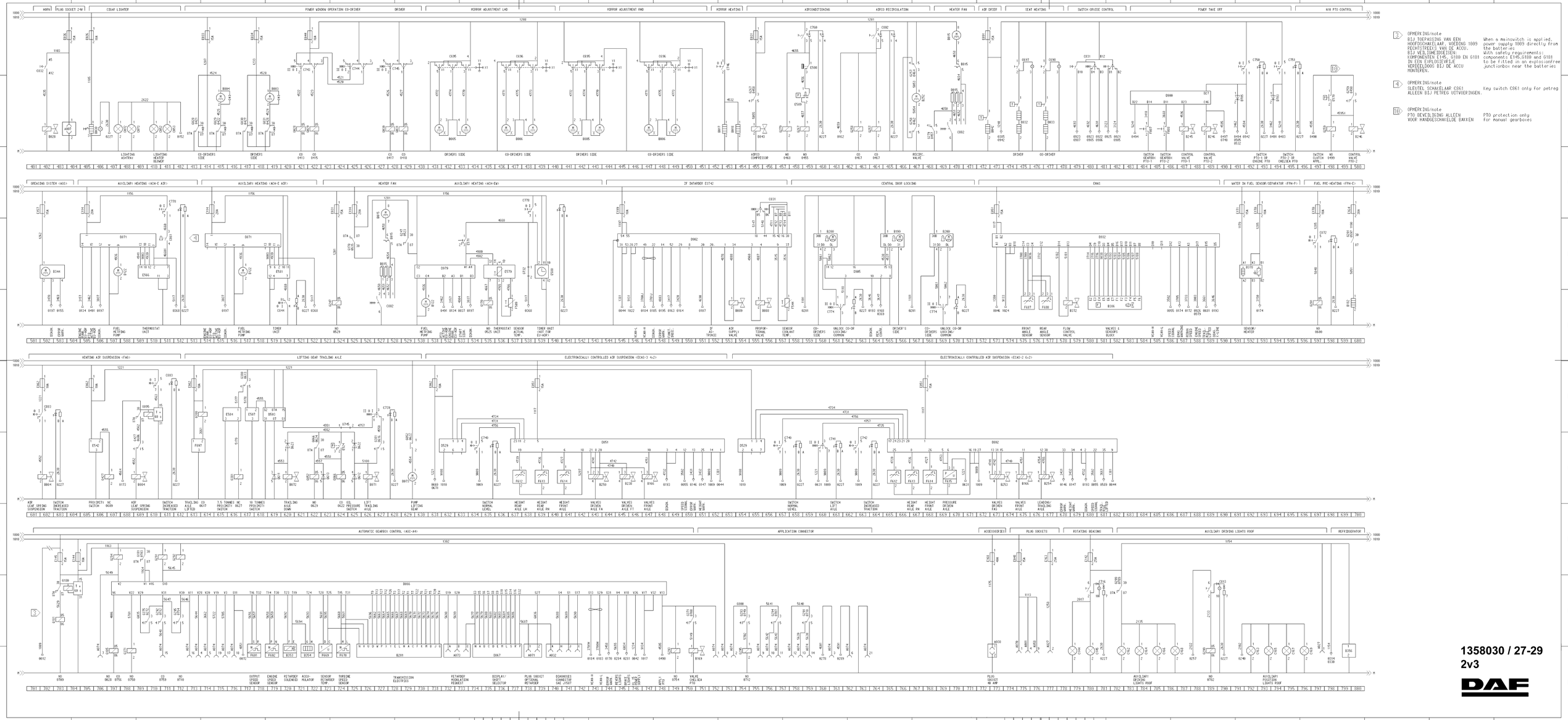
4 OPMERKING/note
ACHTERUITRIJLI VERLICHTING:
BIJ AS-TRONIC ALTIJF HOOG OVERDIVE V-BAKKEN ALTIJF LAAG
Reversing lights:
with as-tronic active high other gearboxes active low

12 OPMERKING/note
BIJ AS-TRONIC 2700/3701X AANGESLOTEN OP VIC C15/C14
ZONDER AS-TRONIC 2700/3701D AANGESLOTEN OP VIC C15/C14
With AS-tronic 2700/3701X connected to VIC C15/C14
no AS-tronic 2700/3701D connected to VIC C15/C14

13 OPMERKING/note
BIJ AS-TRONIC ADER 4605 NIET AANGESLOTEN OP 6836 87A
With AS-tronic wire 4605 not connected to 6836 87A

1358030 / 27-29
1v3

DAF




5 OPMERKING/note
BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1089 RECHTSTREEKS VAN DE ACCU. BIJ VEILIGHEIDSEISEN: KOMPONENTEN E145, G188 EN G181 IN EEN EXPLOSIEVEILIGE VERDEELDOOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1089 directly from the batteries
With safety requirements: components E145,G188 and G181 to be fitted in an explosionfree junctionbox near the batteries

4 OPMERKING/note
SLEUTEL SCHAKELAAR C861 ALLEEN BIJ PETREG UITVOERINGEN.

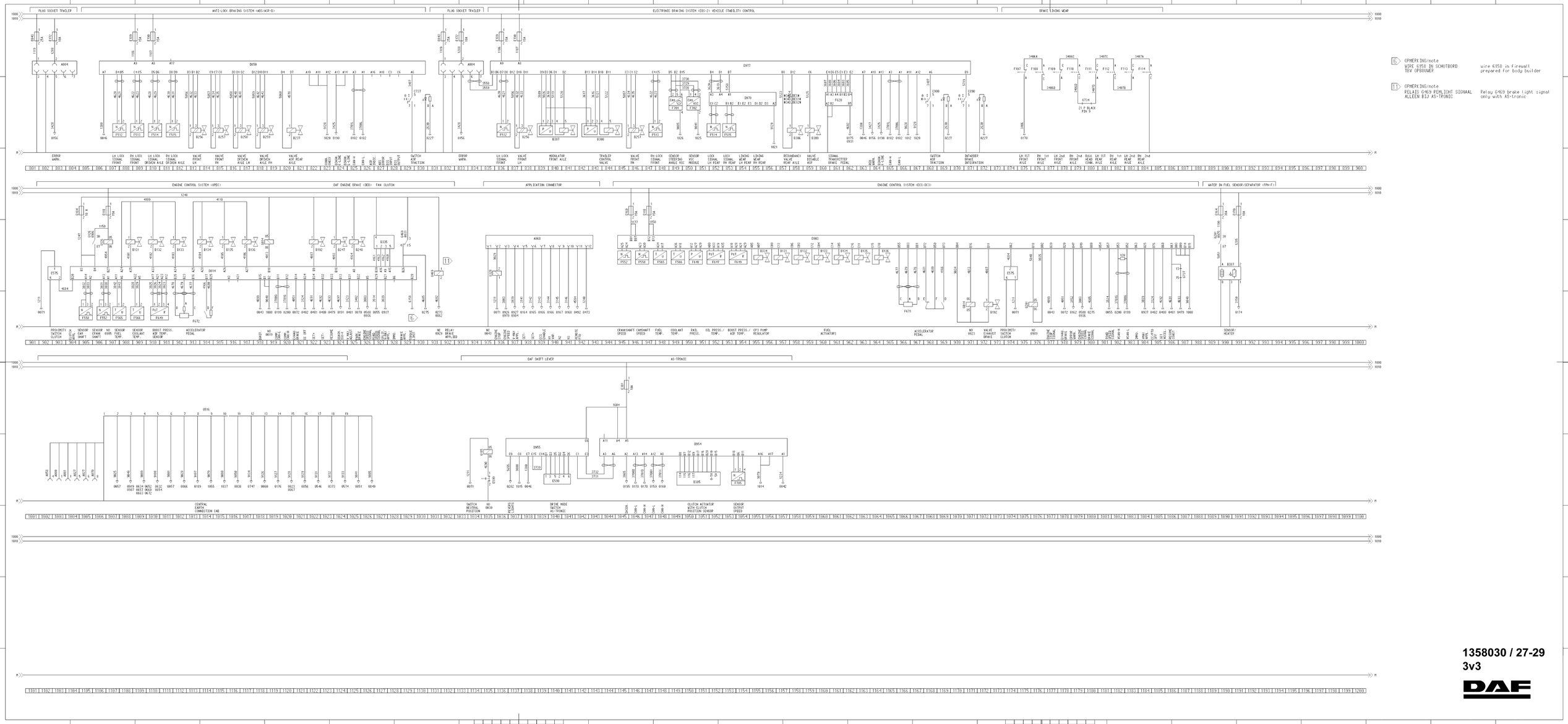
Key switch C861 only for petreg

16 OPMERKING/note
PTO BEVEILIGING ALLEEN VOOR HANDGESCHAKELDE BAKKEN

PTO protection only for manual gearboxes

1358030 / 27-29
2v3

DAF


PLUG SOCKET TRAILER
ANTI-LOCK BRAKING SYSTEM <ABS/ASP-D>
PLUG SOCKET TRAILER
ELECTRONIC BRAKING SYSTEM <EBS-2> VEHICLE STABILITY CONTROL
BRAKE LINING WEAR
E> OPMERKING/note
WIRE 6158 IN SCHUTBORD
TBV OPBOUWER
wire 6158 in firewall
prepared for body builder
[1] OPMERKING/note
RELAIS 6469 REMLICHT SIGNAAL
ALLEEN BIJ AS-TRONIC
Relay 6469 brake light signal
only with AS-tronic
ENGINE CONTROL SYSTEM <UPEC>
DAF ENGINE BRAKE <DEB> FAN CLUTCH
APPLICATION CONNECTOR
ENGINE CONTROL SYSTEM <ECS-DC3>
WATER IN FUEL SENSOR/SEPARATOR <FPH-F>
DAF SHIFT LEVER
AS-TRONIC
1358030 / 27-29
3v3
DAF

## 2.3 OVERVIEW OF BASIC CODE NUMBERS IN CIRCUIT DIAGRAMS 1358030/27-29

| Basic code number | Description | Number on search bar |
|---|---|---|
| A000 | Drawn vehicle socket (7-pin) | 86, 87, 238, 251, 279, 1003 |
| A001 | Rear fog lamp/reversing lamp socket (7-pin) | 270, 289, 358, 361, 363, 775, 1004 |
| A004 | Plug socket, ABS/EBS, drawn vehicle (7-pin) | 803, 834 |
| A007 | 24V socket (2-pin) | 403 |
| A021 | Diagnostics socket (16-pin) | 194 |
| A027 | Socket, 24V accessories (4-pin) | 103, 135, 777, 797, 1004, 1005 |
| A032 | AGC diagnostics socket | 740 |
| A038 | Socket, 40A accessories (2-pin) | 773 |
| A058 | Drawn vehicle socket (15-pin) | 85, 87, 239, 252, 271, 280, 290, 359, 362, 364, 776, 1002 |
| A068 | Application connector, engine speed control | 939 |
| A070 | Application connector, superstructure (8-pin) | 32, 280, 291, 359, 362, 364, 775, 1006 |
| A071 | Automatic gearbox socket, retarder functions | 738 |
| A073 | Automatic gearbox socket, operation | 732 |
| A074 | Automatic gearbox socket, superstructure | 706, 711, 713, 714, 715, 716, 752, 753, 755, 756, 757, 758, 759, 761, 762, 763 |
| A076 | Telephone socket | 389 |
| A500 | Batteries (2x) | 10, 17, 24 |
| A510 | Alarm system battery | 349 |
| A513 | Alternator | 19 |
| B000 | Windscreen wiper motor | 96 |
| B001 | Windscreen wiper pump | 93 |
| B003 | Electric drop glass operation motor, driver's side | 419 |
| B004 | Electric drop glass operation motor, co-driver's side | 415 |
| B005 | Mirror adjustment motor, left | 432, 442 |
| B006 | Mirror adjustment motor, right | 437, 448 |
| B010 | Starter motor | 25 |

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| B015 | 4-speed heater fan | 470, 471, 527, 528 |
| B017 | Mirror heating, driver's side | 452 |
| B018 | Mirror heating, co-driver's side | 453 |
| B024 | Loudspeaker, left | 392 |
| B025 | Loudspeaker, right | 396 |
| B026 | CB set | 399 |
| B028 | Horn | 402 |
| B030 | Cigar lighter, driver's side | 406 |
| B032 | Seat heating, driver's side | 475 |
| B033 | Seat heating, co-driver's side | 477 |
| B042 | Air dryer heating element | 473 |
| B043 | Air conditioning compressor | 455 |
| B071 | Mechanical lifting-gear lifting valve | 626 |
| B072 | Mechanical lifting-gear lowering valve | 620 |
| B073 | Pump, mechanical lifting gear | 629 |
| B079 | Low-range downshift protection valve | 137 |
| B084 | Air suspension valve, bleeding | 602, 609 |
| B088 | Intarder proportional valve | 556 |
| B089 | Air supply valve, intarder | 554 |
| B122 | Fuel metering pump, cab heater | 508, 517, 531 |
| B129 | Left-hand headlamp height adjuster motor | 223 |
| B130 | Right-hand headlamp height adjuster motor | 225 |
| B131 | Solenoid valve, pump unit/injector, cylinder 1 | 909 |
| B132 | Solenoid valve, pump unit/injector, cylinder 2 | 910 |
| B133 | Solenoid valve, pump unit/injector, cylinder 3 | 912 |
| B134 | Solenoid valve, pump unit/injector, cylinder 4 | 914 |
| B135 | Solenoid valve, pump unit/injector, cylinder 5 | 916 |
| B136 | Solenoid valve, pump unit/injector, cylinder 6 | 917 |
| B166 | ECAS valve , front axle | 647, 675 |
| B169 | PTO control valve, Chelsea | 751 |
| B175 | Roof hatch motor | 336 |
| B176 | Reversing buzzer | 292 |





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| Basic code number | Description | Number on search bar |
|---|---|---|
| B178 | Loudspeaker, left | 394 |
| B179 | Loudspeaker, left | 395 |
| B180 | Loudspeaker, right | 397 |
| B181 | Loudspeaker, right | 398 |
| B182 | Water separator fuel heating element | 599 |
| B192 | Exhaust brake valve | 922, 973 |
| B199 | Central door locking motor, driver's side | 565 |
| B200 | Central door locking motor, co-driver's side | 560, 569 |
| B201 | Internal electrical components for automatic gearbox | 728 |
| B237 | ASR selector valve | 821 |
| B238 | ECAS-2 (6x2) valve, driven axle left/right, air supply (FT) | 645 |
| B243 | Cross-axle differential lock control valve | 297 |
| B244 | Longitudinal controlled slip differential control valve | 299 |
| B245 | PTO control valve | 487 |
| B246 | PTO control valve | 489, 500 |
| B247 | Engine brake valve | 924 |
| B248 | Engine brake valve | 925 |
| B250 | ECAS valve, driven axle left/right, air supply (FA) | 643 |
| B251 | Neutral position buzzer, tilting cab | 106 |
| B252 | Recirculation valve | 468 |
| B253 | ECAS valve, driven axle left/right, air supply | 673 |
| B254 | ECAS valve, steered leading rear axle/trailing axle left/right, lifting bellows | 677 |
| B256 | ABS valve | 813, 838 |
| B257 | ABS valve | 815, 846 |
| B258 | ABS valve | 817 |
| B259 | ABS valve | 818 |
| B293 | Gearbox gate protection valve | 139 |
| B306 | Redundancy valve | 858 |
| B307 | Front axle modulator | 840 |
| B308 | Drawn vehicle control valve | 843 |
| B309 | ASR cut-off valve | 859 |

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| B335 | Electronically controlled fan clutch | 927 |
| B338 | Alarm system horn | 351 |
| B340 | Four-wheel drive valve | 295 |
| B341 | Glow element | 22 |
| B344 | Automatic lubrication pump with integrated electronic unit | 503 |
| B353 | Automatic gearbox control solenoid, retarder | 720 |
| B354 | Automatic gearbox accumulator | 721 |
| B356 | Cooler box | 799 |
| B365 | Radio | 394 |
| B372 | Valve block fluid flow | 579 |
| B378 | Heating element for fuel filter/water separator | 592 |
| B385 | AS Tronic clutch unit | 1051 |
| B386 | Valve block steering cylinder | 581 |
| B387 | Electronic unit, fuel heater/water separator (Fleetguard) | 990 |
| B525 | Modular tachograph (MTCO/DTCO) | 55 |
| C000 | Dipped beam, left | 255 |
| C001 | Dipped beam, right | 256 |
| C002 | Main beam, left | 260 |
| C003 | Main beam, right | 261 |
| C006 | Left spotlight | 262 |
| C007 | Right spotlight | 264 |
| C008 | Fog lamp, front left | 265 |
| C009 | Fog lamp, front right | 266 |
| C010 | Width marker light (headlight), left | 229 |
| C011 | Width marker light (headlight), right | 242 |
| C012 | Width marker light, front left | 231 |
| C013 | Width marker light, front right | 243 |
| C014 | Direction indicator lamp, front left | 79 |
| C015 | Direction indicator lamp, front right | 83 |
| C016 | Direction indicator lamp, side left | 80 |
| C017 | Direction indicator lamp, side right | 84 |
| C018 | Direction indicator lamp, rear left | 81 |
| C019 | Direction indicator lamp, rear right | 85 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C020 | Stop light, left | 277 |
| C021 | Stop light, right | 278 |
| C022 | Tail light, left | 232 |
| C023 | Tail light, right | 245 |
| C024 | Fog lamp, rear left | 268 |
| C025 | Fog lamp, rear right | 270 |
| C026 | Reversing light, left | 287 |
| C027 | Reversing light, right | 288 |
| C052 | Heater fan light, left | 411 |
| C053 | Heater fan light, right | 412 |
| C062 | Cab stepwell lighting, driver's side | 342 |
| C063 | Cab stepwell lighting, co-driver's side | 344 |
| C067 | Left-hand tool compartment lighting | 314, 329 |
| C071 | Work lamp | 34 |
| C072 | Ashtray light, left | 408 |
| C073 | Ashtray light, right | 409 |
| C074 | Width marker light, rear left | 232 |
| C075 | Width marker light, rear right | 245 |
| C115 | Bunk light with switch | 312, 333 |
| C119 | Interior lighting with switch, driver's side | 310, 320 |
| C129 | Interior lighting with switch | 316 |
| C144 | Rotating beam, left | 779 |
| C145 | Rotating beam, right | 781 |
| C154 | Rear number plate light, left (tractors) | 235 |
| C155 | Rear number plate light, left (tractors) | 248 |
| C156 | Width marker light, left, 1st (tractors) | 237 |
| C157 | Width marker light, right, 1st (tractors) | 249 |
| C158 | Width marker light, left, 2nd (tractors) | 238 |
| C159 | Width marker light, right, 2nd (tractors) | 251 |
| C162 | Roof spotlight | 783 |
| C163 | Width marker light in roof spotlight | 793 |
| C164 | Roof spotlight | 784 |
| C165 | Width marker light in roof spotlight | 794 |

Changes in the electrical system from chassis number 0E626381 ***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| C166 | Roof spotlight | 786 |
| C167 | Width marker light in roof spotlight | 795 |
| C168 | Roof spotlight | 787 |
| C169 | Width marker light in roof spotlight | 797 |
| C185 | Light with switch | 332 |
| C191 | Nightlight, centre | 307, 327 |
| C192 | Interior lighting with switch, co-driver's side | 304, 324 |
| C539 | Accessories/ignition/starter switch | 38 |
| C622 | Switch, lighting | 205, 209 |
| C694 | Main switch, mechanical | 17 |
| C695 | Mirror adjustment switch, driver's side | 433, 443 |
| C696 | Mirror adjustment switch, co-driver's side | 438, 448 |
| C697 | Seat heating switch, driver's side | 475 |
| C698 | Seat heating switch, co-driver's side | 477 |
| C716 | Switch, rotating beams | 781 |
| C725 | Work lamp switch | 34 |
| C727 | Front/rear fog lamp switch | 212 |
| C735 | Interior nightlight switch | 307, 326 |
| C736 | Roof hatch switch | 336 |
| C737 | ABS/ASR-D traction switch | 830 |
| C739 | Mechanical lifting-gear switch | 627 |
| C740 | ECAS switch, normal level | 635, 657 |
| C741 | ECAS switch, axle lifting | 661 |
| C742 | Traction assistance switch | 663 |
| C743 | Electric drop glass switch, co-driver's side (driver's side door) | 422 |
| C744 | Electric drop glass switch, co-driver's side (co-driver's side door) | 425 |
| C745 | Electric drop glass switch, driver's side (driver's side door) | 428 |
| C746 | Mirror heating switch | 453 |
| C748 | Cross-axle differential lock operating switch | 297 |
| C749 | Longitudinal controlled slip differential operating switch | 299 |
| C750 | PTO operation switch | 492 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C751 | PTO operation switch | 495 |
| C760 | Air conditioning switch | 459 |
| C763 | Instrument lighting dimming potentiometer | 119 |
| C764 | Potentiometer for headlamp height adjustment | 222 |
| C765 | Switch, warning lamps (with LED search lighting) | 88 |
| C773 | Rear fog lamp switch | 215 |
| C774 | Central door locking switch | 561, 569 |
| C778 | Cab heater switch | 511, 538 |
| C802 | Switch, recirculation valve | 464 |
| C813 | Spotlight switch, roof | 790 |
| C814 | Reversing buzzer switch | 292 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 480, 556 |
| C832 | Direction indicator/windscreen wiper stalk switch | 79, 92, 93, 98, 219, 402 |
| C835 | Switch to turn off interior detection | 370 |
| C836 | Switch to turn off superstructure/drawn vehicle loadspace detection | 373 |
| C837 | Interior lighting switch | 318,320 |
| C840 | Four-wheel drive switch | 295 |
| C844 | Cab heater main switch | 519 |
| C853 | Cab main switch | 2 |
| C854 | Chassis main switch | 3 |
| C858 | Interior spot lighting switch | 318 |
| C859 | Interior lighting switch, roof console, driver's side | 321 |
| C861 | PETREG key switch | 511 |
| C872 | Fuel filter/water separator operating switch | 597 |
| C882 | Heater fan switch | 470, 527 |
| C883 | FAG traction assistance switch | 602, 611 |
| C890 | Switch to switch off integration of third brake | 871 |
| D503 | Electronic unit, mechanical lifting gear | 619 |
| D529 | Electronic unit, ECAS remote control | 632, 654 |

Changes in the electrical system from chassis number 0E626381 ***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| D609 | Light switch diode | 209 |
| D610 | Diode, main beam/dipped beam | 218 |
| D611 | Diode for valve damping, lowering mechanical lifting gear | 619 |
| D612 | Diode for valve damping, lifting mechanical lifting gear | 625 |
| D613 | Diode for pump relay damping, mechanical lifting gear | 623 |
| D622 | Diode for mechanical lifting gear, lifting lock | 625 |
| D623 | Diode for mechanical lifting gear, lowering lock | 620 |
| D703 | Diode for switching off cab heater/door, contact on driver's side | 494 |
| D705 | Diode for switching off cab heater with running engine | 491 |
| D710 | Interior lighting diode to prevent feedback to driver's side switch | 321 |
| D715 | Alarm system LED | 73, 352 |
| D782 | Diode to prevent door locking feedback, driver's side | 97 |
| D783 | Diode, cab stepwell lighting, driver's side | 341 |
| D791 | Door switch diode | 345 |
| D792 | Door switch diode | 346 |
| D802 | ECAS-2 (6x2) electronic unit | 673 |
| D814 | UPEC electronic unit | 914 |
| D850 | Electronic unit, ABS/ASR, D model | 817 |
| D851 | Electronic unit, ECAS-3 (4x2) | 644 |
| D866 | Electronic unit, AGC-A automatic gearbox control | 729 |
| D867 | Automatic gearbox gear selection display | 735 |
| D871 | Electronic unit for Airtronic D2 cab heater | 508 517 |
| D895 | Electronic unit for (10 A) converter with power supply for radio memory | 387 |
| D899 | DIP-4 instrument panel | 62 |
| D900 | VIC electronic unit | 81, 94, 143, 486 |
| D902 | Electronic unit, ZF intarder with CAN | 550 |
| D903 | ECS-DC3 electronic unit | 959 |
| D904 | Menu Control Switch, MCS | 145 |
| D905 | Electronic unit for central door locking | 562 |
| D909 | Electronic unit, alarm system, ultrasonic | 356 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D910 | Electronic unit, battery charger | 349 |
| D911 | Electronic unit, ALS-S alarm system | 361 |
| D912 | Electronic unit, immobiliser | 49 |
| D924 | Electronic unit for main switch | 5 |
| D931 | LED unit, immobiliser | 75 |
| D932 | EMAS electronic unit | 581 |
| D954 | AS Tronic gearbox modulator | 1050 |
| D955 | AS Tronic gear lever unit | 1038 |
| D969 | CAN Data Manager, CDM | 379 |
| D977 | Electronic unit, EBS-2 | 854 |
| D978 | Rear axle modulator | 854 |
| D979 | Electronic unit for Hydronic 10 cab heater | 532 |
| E000 | Fuse, rear left width marker light | 228 |
| E001 | Fuse, rear right width marker light | 241 |
| E004 | Fuse, dipped beam, driver's side | 254 |
| E005 | Fuse, dipped beam/warning lamp, co-driver's side | 255 |
| E006 | Fuse, main beam, driver's side | 259 |
| E007 | Fuse, main beam/warning lamp, co-driver's side | 260 |
| E008 | Fuse, spotlights | 261 |
| E009 | Fuse, front fog lamps | 264 |
| E010 | Fuse, rear fog lamps | 267 |
| E013 | Fuse, stop lights | 272 |
| E016 | Fuse, reversing lights/gearbox neutral position/windscreen wiper motor/cross-axle differential lock | 285 |
| E023 | Fuse, switch for cold start/tachograph clock/cab heater program clock/alarm system | 51 |
| E025 | Fuse, windscreen wiper motor/headlamp washer/windscreen washer motor | 100 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12 V converter with power supply for radio memory | 405 |
| E028 | Fuse, interior lighting/bunk lamps/central door lock | 301 |
| E031 | Fuse, heater fan | 455, 523 |
| E033 | Fuse, electric drop glass motor, co-driver's side | 414 |

Changes in the electrical system from chassis number 0E626381 ***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| E034 | Fuse, electric drop glass motor, driver's side | 417 |
| E035 | Fuse, instruments and warning lamps/parking brake switch | 69 |
| E036 | Fuse, 24V socket | 403 |
| E037 | Fuse, ignition switch | 38 |
| E043 | Fuse, drawn vehicle ABS/EBS | 801, 831 |
| E044 | Fuse, mirror heating/electric mirror adjustment/electric drop glass operation | 421 |
| E048 | Fuse, drawn vehicle power supply | 774 |
| E051 | Fuse, ECAS/EMAS | 573, 638, 667 |
| E052 | Fuse, ECAS remote control/work lamp | 33 |
| E053 | Fuse, diagnosis connector (16-pin)/LED unit/alarm system | 189 |
| E062 | Fuse, ECAS/EMAS mechanical lifting gear | 601, 605, 613, 631 |
| E084 | Fuse, lighting | 201 |
| E091 | Fuse, air dryer heating element/stalk switch/PTO/clutch switch/engine speed control application connector | 472 |
| E108 | Fuse, VIC | 109 |
| E112 | Fuse, glow warning lamp | 23 |
| E114 | Fuse, cab heater (Eberspächer)/warning lamps | 505, 514, 525 |
| E117 | Fuse, search lighting | 227 |
| E118 | Fuse, UPEC/ECS-DC3 supply voltage | 906, 947 |
| E142 | Fuse, accessories before contact | 780 |
| E144 | Fuse, AGC-A4 automatic gearbox | 704 |
| E145 | Fuse, AGC-A4 automatic gearbox | 703 |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply | 4 |
| E157 | Fuse, automatic lubrication | 501 |
| E160 | ECS-DC3 fuse | 945 |
| E163 | Fuse, accessories after contact (connector A027)/rotating beams/roof hatch | 777 |
| E164 | Fuse for fuel heater before contact | 599, 989 |
| E168 | Fuse, accessories/microwave | 772 |



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| Basic code number | Description | Number on search bar |
|---|---|---|
| E170 | Fuse, fuel heater after contact | 592, 597, 991 |
| E171 | Fuse, electronic unit for fuel filter/water separator, Racor | 591 |
| E172 | Fuse, drawn vehicle ABS/EBS | 802, 833 |
| E184 | Fuse, UPEC | 904 |
| E189 | Fuse, rear axle EBS | 808, 836 |
| E190 | Fuse, front axle EBS | 810, 837 |
| E199 | Fuse, ZF intarder | 545 |
| E277 | Fuse, VIC | 110 |
| E279 | Fuse, generator voltage control | 20 |
| E280 | Fuse, VIC | 112 |
| E286 | Main fuse | 10, 26 |
| E301 | Fuse, AS Tronic | 1045 |
| E330 | Fuse, main switch, “sens” wire | 12 |
| E350 | Fuse, various electrical systems | 45 |
| E351 | Fuse, various electrical systems | 44 |
| E507 | Proximity switch for axle-load protection lifting gear (10 tons) | 617 |
| E508 | Temperature switch for air conditioning compressor | 459 |
| E509 | Air conditioning operating switch, high/low pressure | 458 |
| E511 | Stop light operating switch | 274 |
| E514 | Operating switch for stepwell/interior lighting, driver’s side door switch | 341 |
| E515 | Operating switch for stepwell/interior lighting, co-driver’s side | 343 |
| E524 | Mechanical lifting-gear operating switch, oil pressure limit switch | 624 |
| E528 | Operating switch for left-hand tool compartment lighting | 313, 328 |
| E542 | Proximity switch for axle load protection (13 tons) | 605 |
| E564 | Operating switch, engine brake | 72 |
| E566 | Operating switch for Eberspächer cab heater thermostat (DILC) | 509 |
| E570 | Pneumatic switch, clutch PTO N10 | 498 |
| E571 | Thermo 90/Hydronic 10 cab heater operating switch | 534 |

Changes in the electrical system from chassis number 0E626381 ***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| E575 | Proximity switch, clutch | 902, 974 |
| E579 | Operating switch for thermostat/cab heater, fan, Eberspächer (water) | 536 |
| E580 | Operating switch for thermostat/cab heater, fan, Eberspächer (timer) | 540 |
| E581 | Operating switch/combination clock, Eberspächer Airtronic cab heater | 519 |
| E584 | Proximity switch for axle-load protection lifting gear (7.5 tons) | 615 |
| E590 | AS Tronic selector switch | 1040 |
| E592 | Reversing light operating switch | 286 |
| E593 | Neutral position switch | 108 |
| E594 | Operating switch for neutral position/reverse gear | 106 |
| E595 | Gearbox gate protection operating switch | 139 |
| E599 | Neutral position switch | 1036 |
| F000 | Control switch for parking brake | 70 |
| F006 | Control switch for differential lock, 1st differential | 127 |
| F007 | Control switch for differential lock, 3rd differential | 131 |
| F011 | Control switch for engine oil pressure | 123 |
| F038 | Control switch for differential lock, 2nd differential | 129 |
| F047 | Control switch for steering system (1st circuit) | 124 |
| F048 | Control switch for steering system (2nd circuit) | 125 |
| F050 | Control switch for differential lock pressure, 1st and 2nd differentials | 128 |
| F087 | Control switch, gearbox PTO | 485 |
| F088 | Control switch, gearbox PTO | 486 |
| F097 | Proximity switch for trailing axle mechanical lifting gear | 613 |
| F107 | Brake pad wear switch, front left | 874 |
| F108 | Brake pad wear switch, front right | 876 |
| F109 | Brake pad wear switch, front left, 2nd front axle | 877 |
| F110 | Brake pad wear switch, front right, 2nd front axle | 879 |
| F111 | Brake pad wear switch, rear left | 880 |
| F112 | Brake pad wear switch, rear right | 881 |
| F113 | Brake pad wear switch, rear left, 2nd rear axle | 882 |
| F114 | Brake pad wear switch, rear right, 2nd rear axle | 884 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| F118 | Control switch for splitter signalling | 121 |
| F120 | Clutch protection switch | 142 |
| F509 | Cab temperature sensor of cab heater | 537 |
| F512 | Wheel speed sensor, front axle, left | 807, 836 |
| F513 | Wheel speed sensor, front axle, right | 809, 847 |
| F514 | Wheel speed sensor, driven axle, left | 810 |
| F515 | Wheel speed sensor, driven axle, right | 811 |
| F533 | Speed sensor (4-pin, 1st) | 52 |
| F544 | Coolant temperature sensor for secondary retarder | 558 |
| F552 | Crankshaft sensor | 906 |
| F558 | Camshaft sensor | 905 |
| F565 | Sensor, fuel temperature | 907 |
| F566 | Sensor, engine coolant temperature | 909 |
| F601 | Sensor, AGS | 717 |
| F602 | Sensor, AGS | 719 |
| F608 | Sensor, fuel level | 116 |
| F612 | Height sensor, ECAS, rear axle, left | 637, 665 |
| F613 | Height sensor, ECAS, rear axle, right | 639, 666 |
| F614 | Height sensor, ECAS, front axle | 640, 668 |
| F615 | ECAS pressure sensor, driven axle, left/right | 669 |
| F616 | Cab locking sensor | 102 |
| F619 | Cab locking sensor, alarm system | 354 |
| F628 | EBS foot brake valve | 861 |
| F649 | Boost pressure and air inlet temperature sensor | 910 |
| F651 | Ambient temperature sensor | 112 |
| F652 | Air pressure sensor | 113 |
| F656 | Coolant level sensor | 117 |
| F669 | Retarder temperature sensor, automatic gearbox | 723 |
| F670 | Automatic gearbox turbine speed sensor | 724 |
| F671 | Sensor, accelerator pedal, ECS-DC3 | 966 |
| F672 | UPEC accelerator pedal sensor | 913 |
| F673 | Sensor, engine oil level and temperature | 143 |

Changes in the electrical system from chassis number 0E626381 ***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| F676 | Cab locking sensor | 103 |
| F686 | Alarm system sensor, radar | 360 |
| F687 | Angle sensor, front axle, EMAS | 575 |
| F688 | Angle sensor, rear axle, EMAS | 576 |
| F701 | Steering angle sensor | 849 |
| F702 | VSC module | 850 |
| F705 | Speed sensor | 1053 |
| G000 | Relay, tail light/width marker light/search lighting | 208, 225 |
| G001 | Relay, dipped beam | 217, 254 |
| G002 | Relay, main beam | 219, 259 |
| G003 | Relay, spotlights | 258, 261 |
| G004 | Relay, front fog lamp | 211, 264 |
| G005 | Relay, rear fog lamp | 135, 267 |
| G014 | Relay, glowing | 22, 23, 918, 971 |
| G015 | Relay, contact | 1, 38 |
| G028 | Electric drop glass operation relay, co-driver's side | 413, 421 |
| G029 | Electric drop glass operation relay, co-driver's side | 415, 422 |
| G030 | Relay, electric drop glass operation, driver's side | 417, 427 |
| G031 | Relay, electric drop glass operation, driver's side | 418, 428 |
| G036 | Relay, stop light | 274, 275 |
| G037 | Stop light micro relay for AGC with retarder | 279, 281 |
| G052 | Relay, mechanical lifting-gear motor | 622, 629 |
| G066 | Relay, mechanical lifting-gear takeover | 622, 624 |
| G095 | Traction assistance relay, 60 sec. bleeding | 609 |
| G126 | UPEC/ECS-DC3 supply relay | 905, 906 |
| G170 | Relay, cab heater fan | 525, 535 |
| G180 | Time relay power supply, Allison, 12V | 703 |
| G181 | Takeover relay power supply, Allison, 12V | 703, 709 |
| G185 | Starting circuit interrupter relay | 29, 30, 707, 1035 |
| G201 | Fuel heating relay, EFPH | 597, 599, 975, 989 |
| G203 | Starter motor takeover relay | 27, 28 |
| G236 | Relay, windscreen wiper (speed 1 or 2) | 95, 99 |
| G237 | Relay, windscreen wiper (automatic zero position) | 95, 96 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G247 | Relay, heater fan, Eberspächer Hydronic cab heater | 523, 529 |
| G257 | Recirculation valve relay | 464, 467 |
| G258 | Recirculation valve relay | 462, 467 |
| G259 | PTO operation takeover relay | 498, 499 |
| G267 | Air conditioning relay | 455, 458 |
| G279 | Air conditioning relay | 457, 468 |
| G291 | Relay, automatic gearbox | 710, 759 |
| G292 | Relay, automatic gearbox | 710, 712 |
| G293 | Relay, automatic gearbox | 749, 754 |
| G294 | Relay, automatic gearbox | 707, 756 |
| G295 | Relay, automatic gearbox | 712, 754 |
| G299 | Relay, roof spotlights | 782, 789 |
| G301 | Relay, light D+ | 131, 202 |
| G302 | Relay for Swedish lighting | 204, 206 |
| G328 | Relay, engine stop | 43, 935 |
| G350 | Reversing light relay, automatic gearbox | 283, 285, 286, 288 |
| G351 | Cab tilt protection relay | 104, 105 |
| G367 | Relay, main switch power supply | 4, 10 |
| G368 | Relay, main switch earth | 6, 10 |
| G371 | Automatic gearbox relay, superstructure | 708, 750 |
| G372 | Starting circuit interrupter relay | 29, 133 |
| G375 | Stop light relay for AGC with retarder | 272, 709 |
| G377 | Relay, accessories power supply for radio | 384, 393 |
| G380 | Relay, mechanical lifting axle | 613, 617 |
| G381 | Relay, mechanical lifting axle | 616, 627 |
| G426 | Relay, contact | 39, 41 |
| G427 | FAG traction assistance relay | 606, 609 |
| G462 | Relay for work lamp | 33, 35 |
| G469 | Relay, braking signal | 929, 931 |
| G516 | Central cab earth, co-driver's side | 1014 |
| G535 | CAN distribution block | 183 |
| G732 | Through-connection for cab heater | 538 |

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| G733 | Through connection for intarder neutral position | 107 |
| G734 | Through-connection for brake lining wear | 880 |
| G736 | V-CAN connection | 198 |
| G737 | Through-connection, ECS-DC3 speed control | 987 |
| G745 | Through-connection, mechanical lifting gear | 625 |
| G757 | Through-connection for main switch | 39 |
| I020 | Diode, gearbox gate protection | 141 |





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## 2.4 SECTION DIAGRAMS FROM CIRCUIT DIAGRAMS 1358030/27-29

B Overview of earthing points
C CAN overview
1 Main switch
20 Search lighting
41 Airtronic cab heater (ACH-EA) with/without timer
44 EBS-2
51 AS Tronic

## B OVERVIEW OF EARTHING POINTS

This section diagram gives an overview of all the earth connections, with wire markings and connector points.

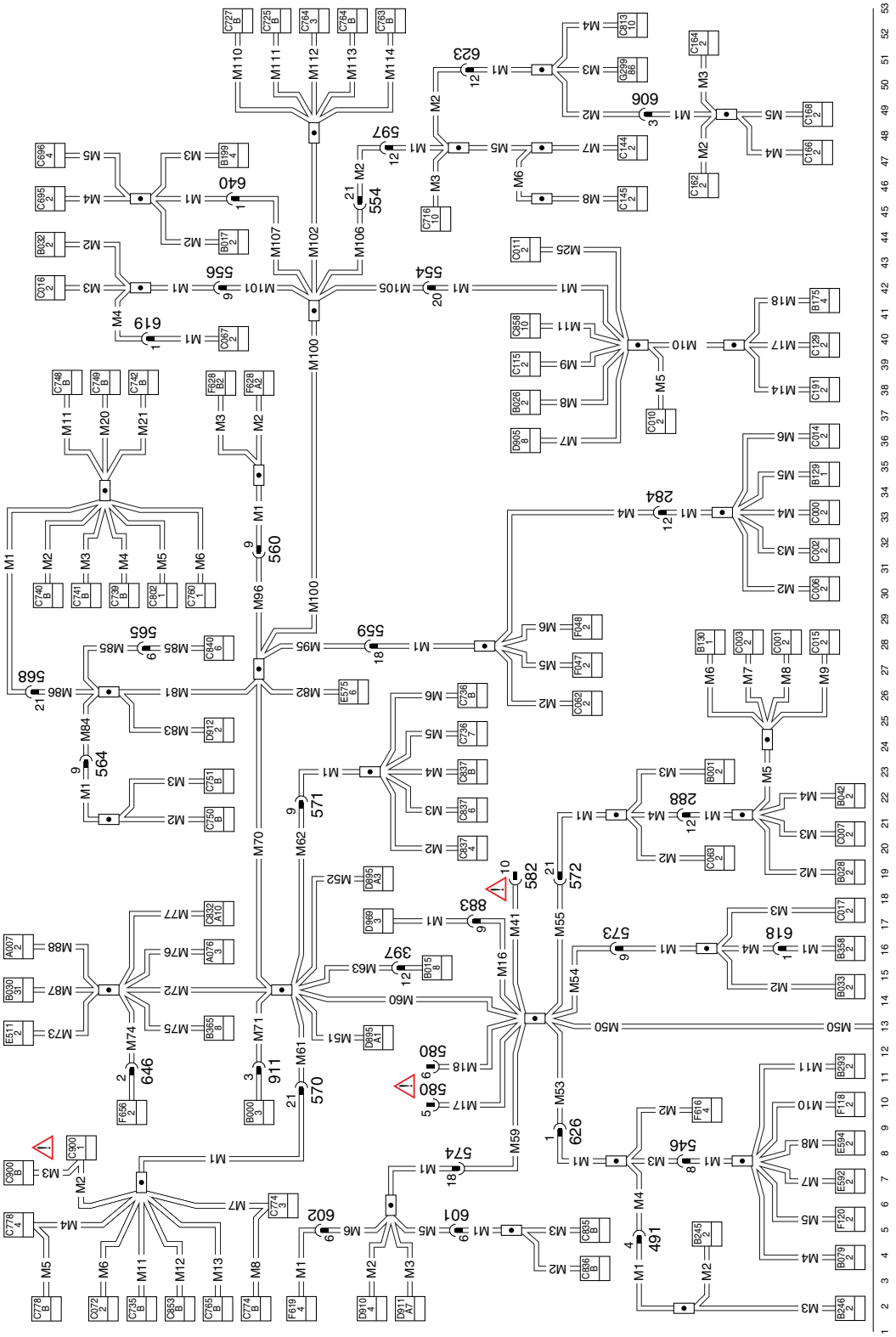
**VARIANTS**

| Location | |
|---|---|
| 11 | Connector 580: superstructure connection, accessories |
| 18 | Connector 482: cab heater ACH-H<br>Connector 582: cab heater ACH-E |
| 59 | Connector 644: only for AGC |
| 67 | Connector 869: only for AS Tronic |
| 69 | Connector 403: only for AS Tronic |
| 71 | Connector 868: only for AS Tronic |
| 76 | Connector 860: loop-through to ECAS |





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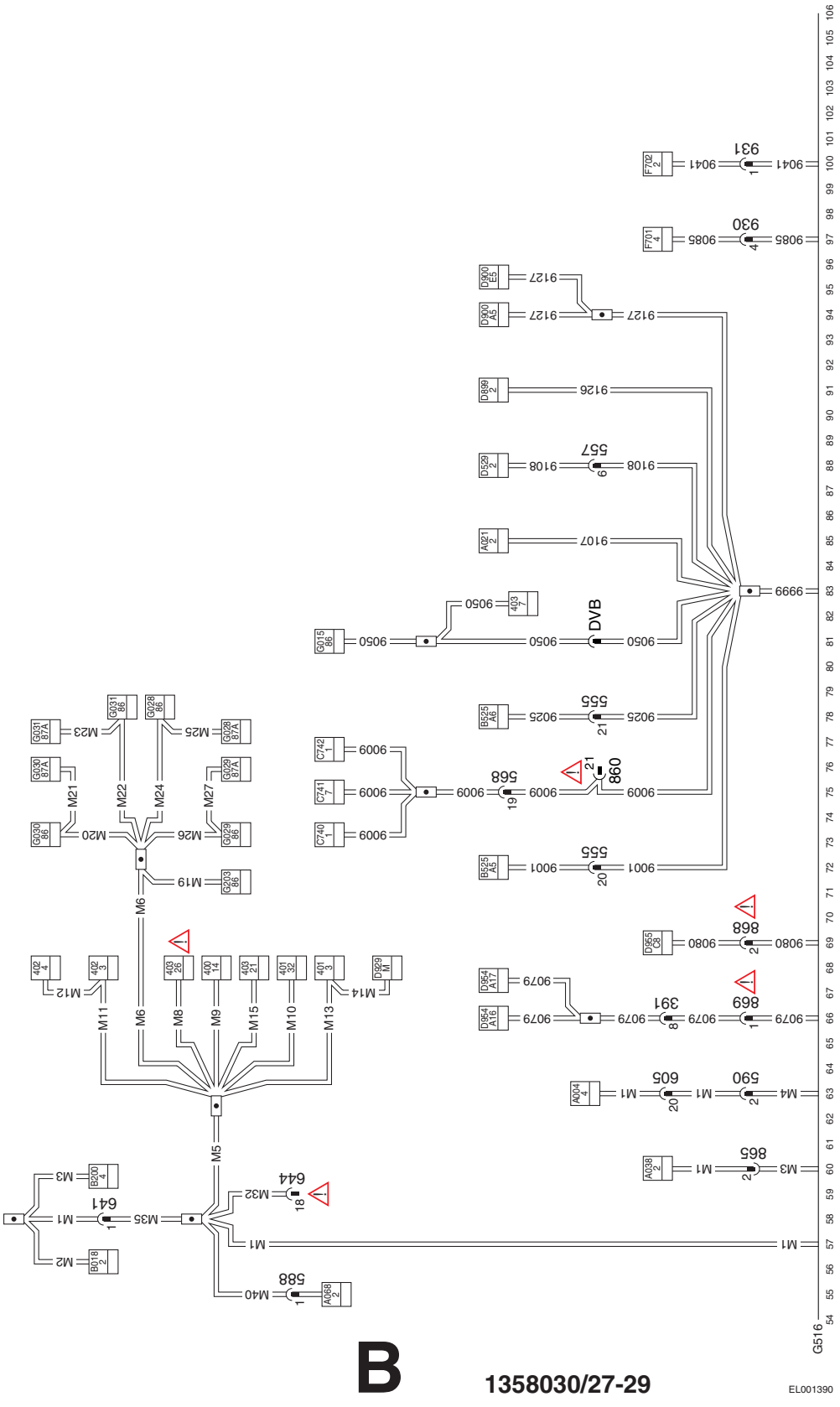
**B**

**1358030/27-29**

EL001389

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥0E621376



## C CAN OVERVIEW

This section diagram gives an overview of all the CAN connections, with wire markings and connector points.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

11 only for AS Tronic. If AS Tronic is **NOT** fitted, wire 3701 direct from A8 to C14 without in-line connectors.

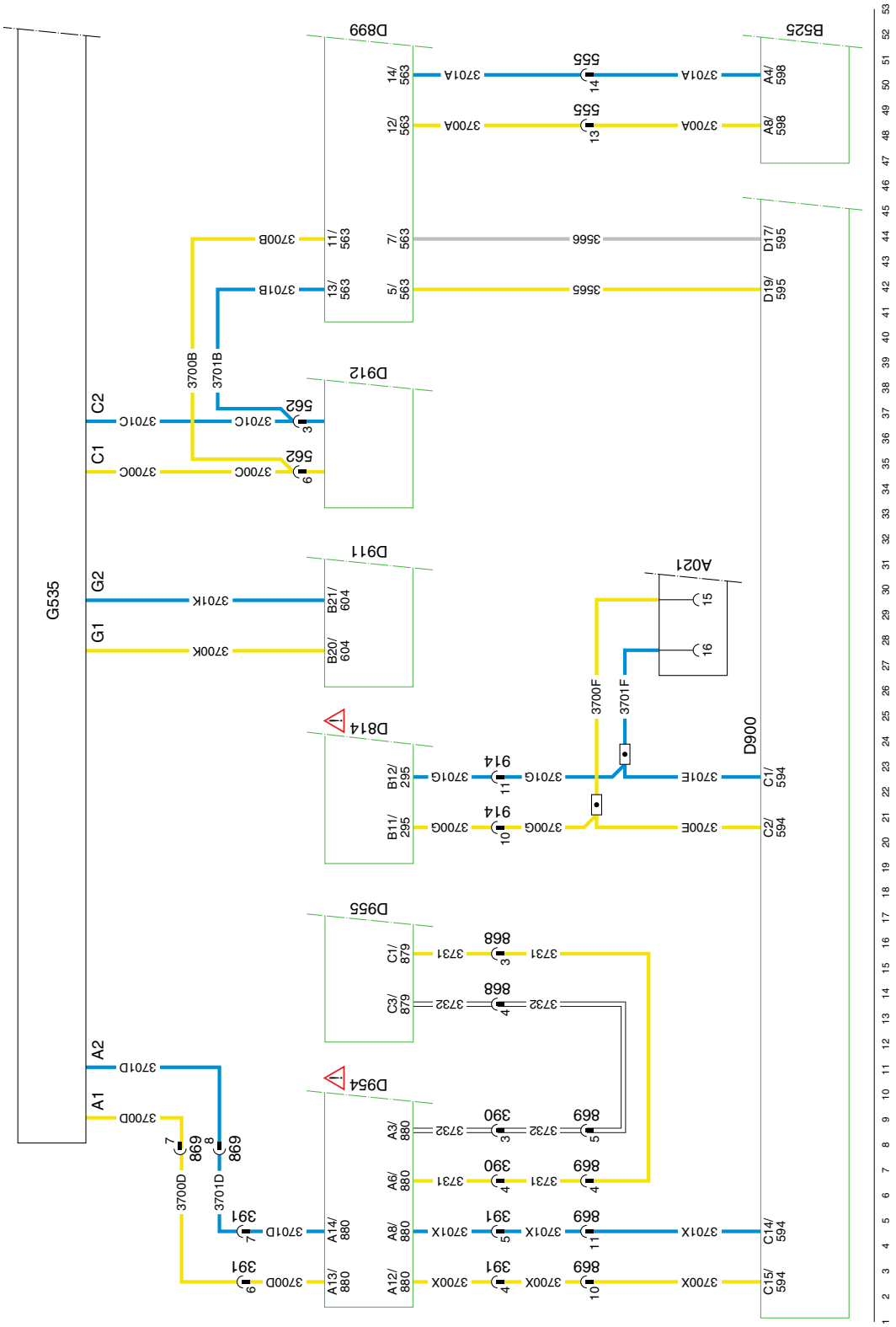
25 D814: UPEC electronic unit or D903: electronic unit, ECS-DC3

64 Connector 873 only on vehicle type FA
D880 for EBS or
D941 for ABS/ASR-D

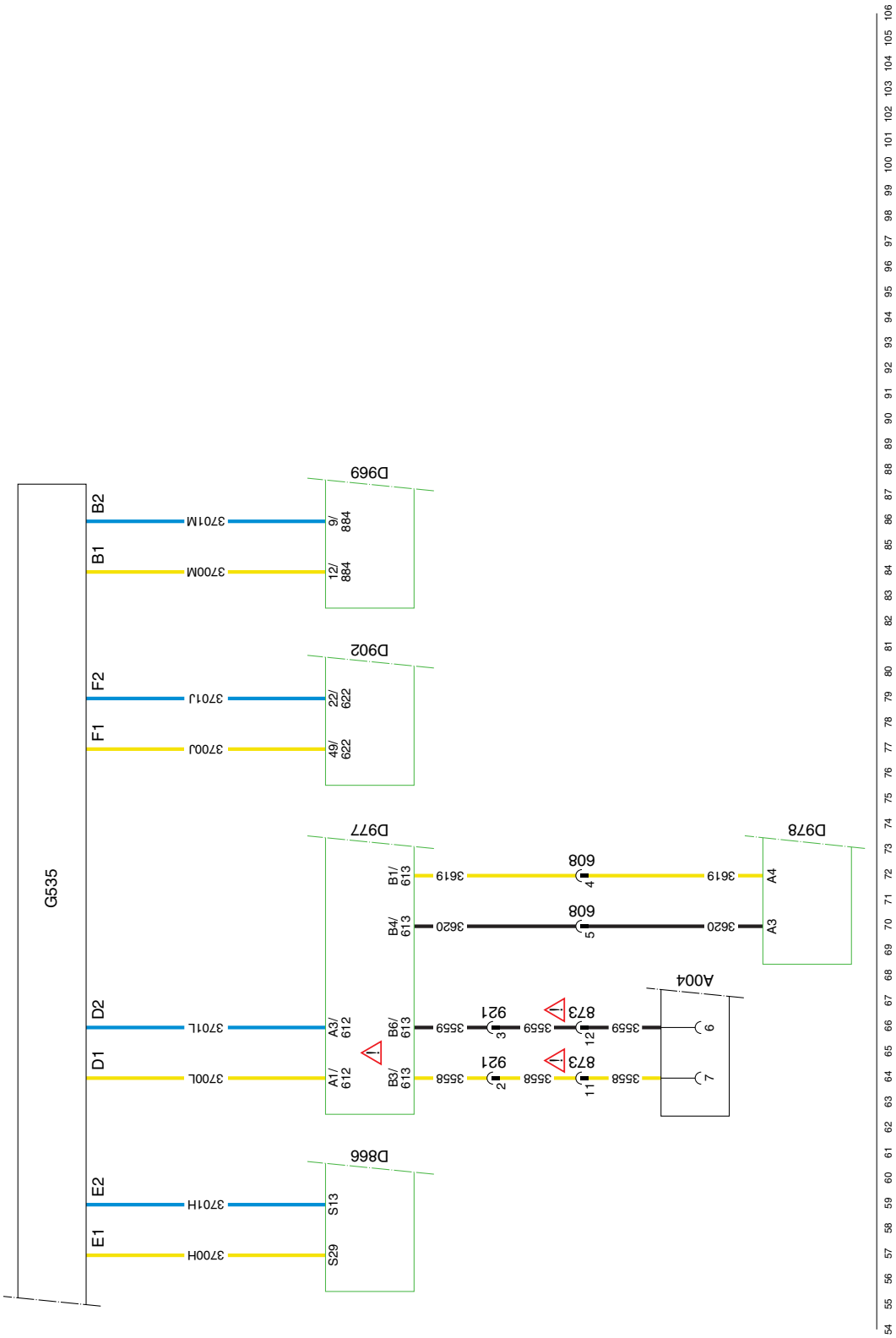




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D899
B525
555
14/ 563
3701A
A4/ 598
12/ 563
3700A
A8/ 598
11/ 563
3700B
7/ 563
3566
D17/ 595
13/ 563
3701B
5/ 563
3565
D19/ 595
D912
C2
3701C
562
3
C1
3700C
6
D911
G2
3701K
B21/ 604
G1
3700K
B20/ 604
G535
A021
15
16
3700F
3701F
D814
B12/ 295
914
11
3701G
3701E
C1/ 594
B11/ 295
10
3700G
3700E
C2/ 594
D900
D955
C1/ 879
868
3731
3
C3/ 879
3732
4
A2
3701D
A1
3700D
7
869
8
3700D
3701D
D954
A3/ 880
390
5
A6/ 880
391
A14/ 880
A8/ 880
3701X
C14/ 594
A13/ 880
A12/ 880
3700X
C15/ 594
C
1358030/27-29
EL001399

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**C** **1358030/27-29** EL001400



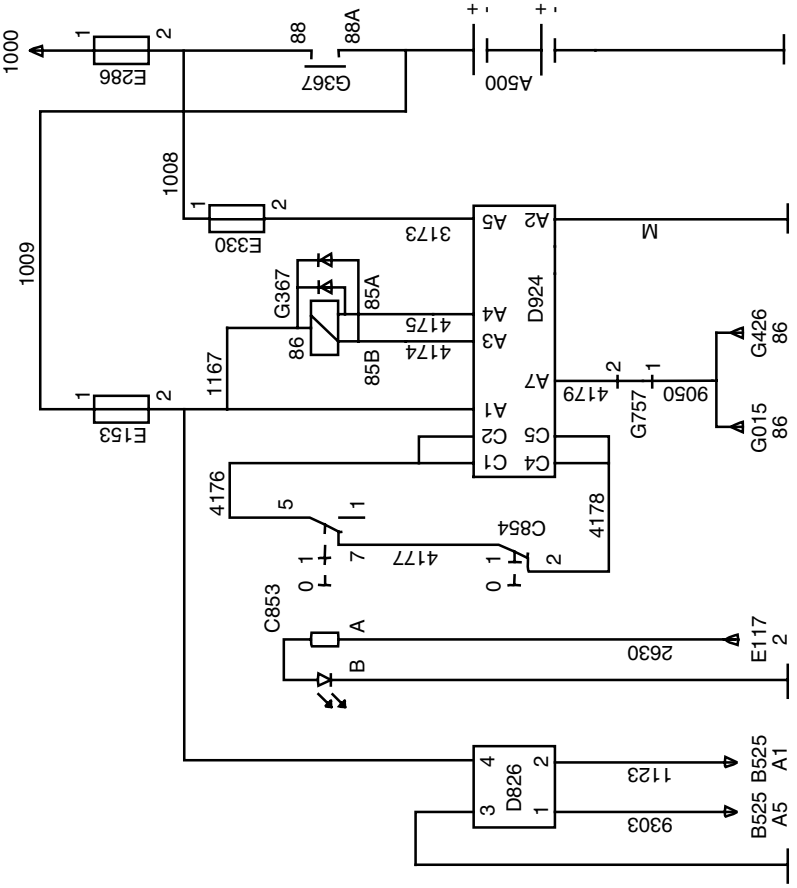
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Changes in the electrical system from chassis number 0E626381

*CF*65/75/85 Serie ≥ 0E621376

**MAIN SWITCH FOR VLG/ADR**
If the vehicle has an Allison gearbox and the system must meet specific safety requirements, wire no. 1009 (Allison power supply) should be connected to connection 88a of relay G367.

| Basic code number | Description |
|---|---|
| A500 | Batteries |
| A513 | Integrated voltage regulator generator |
| B525 | Modular tachograph, MTCO |
| C853 | Cab main switch |
| C854 | Chassis main switch |
| D826 | Electronic unit for VLG current limiter |
| D900 | CF 65/75/85 VIC electronic unit |
| D924 | Electronic unit for main switch |
| E117 | Fuse, search lighting |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply |
| E286 | Main fuse |
| E330 | Fuse, main switch, "sens" wire |
| G367 | Main switch relay, power supply |
| G425 | Main switch relay |

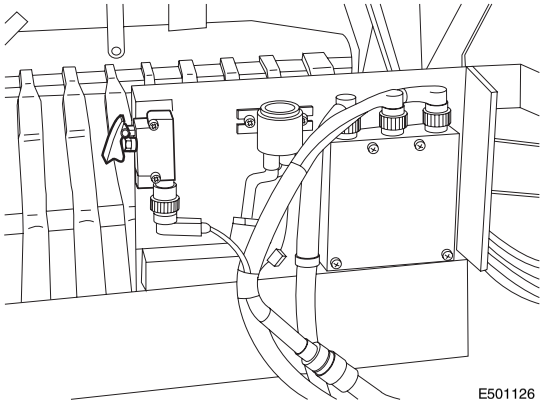



1 MAIN SWITCH

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**Relay, main switch power supply**
Relay G367 is a bi-stable relay. If one of the two coils is briefly energised, the relay will remain in this position. If the other coil is energised, the relay will switch over and then remain in the new position.

**Electrically closing the main switch**
The main switch (D924) can be closed:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854




**ATTENTION: Switches C853 and C854 are connected in series. When C853 or C854 is switched on, the other switch must be in the "main switch on" position.**
Switch C853 (main switch in cab) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive terminal of the batteries is now connected to the vehicle's power supply.
Immediately after switch C853 closes, connection point C2 is internally connected to point A7.

Connection point A5 is connected to the positive terminal via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Closing the main switch electrically on the chassis**

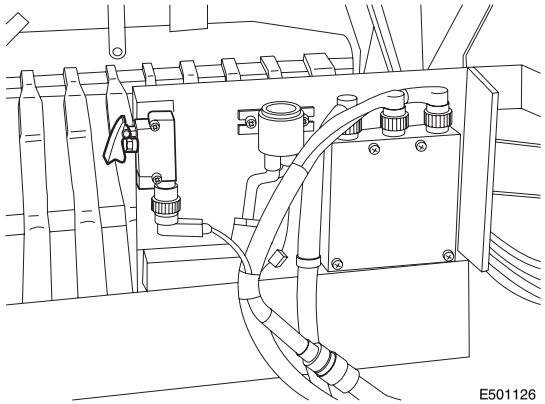
**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**

Switch C854 (switch for main switch on the chassis) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive terminal of the batteries is now connected to the vehicle's power supply.
Immediately after switch C854 closes, connection point C2 is internally connected to point A7.

Connection point A5 is connected to the positive terminal via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

The main switch (D924) can be opened:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854

**Opening the main switch electrically in the cab**




**NOTE: Switch C854 must be in the "main switch on" position (connection between contacts 1 and 2).**

Switch C853 (switch for main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.

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Two actions are carried out immediately after switch C853 is opened:

1. connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. after a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive terminal via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Opening the main switch electrically on the chassis**

**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**

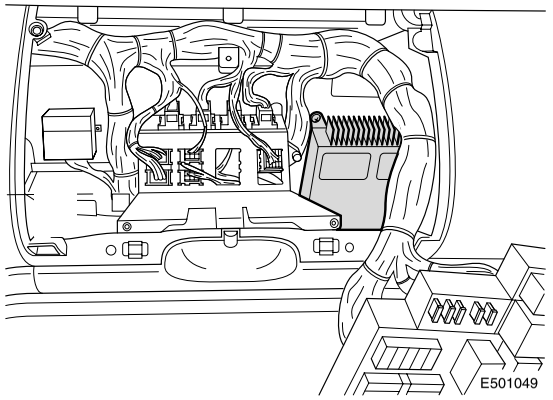
Switch C854 (main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.

Two actions are carried out immediately after switch C854 is opened:

1. connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. after a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive terminal via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Note:**
When one of the switches (C853 or C854) that activate the electronic unit (close main switch) is operated, relay G367 is activated after approximately 3 seconds. If one of the switches is operated again within the 3 seconds, the electronic unit (D924) will select the priority "main switch ON".




**VARIANTS**

**Location**

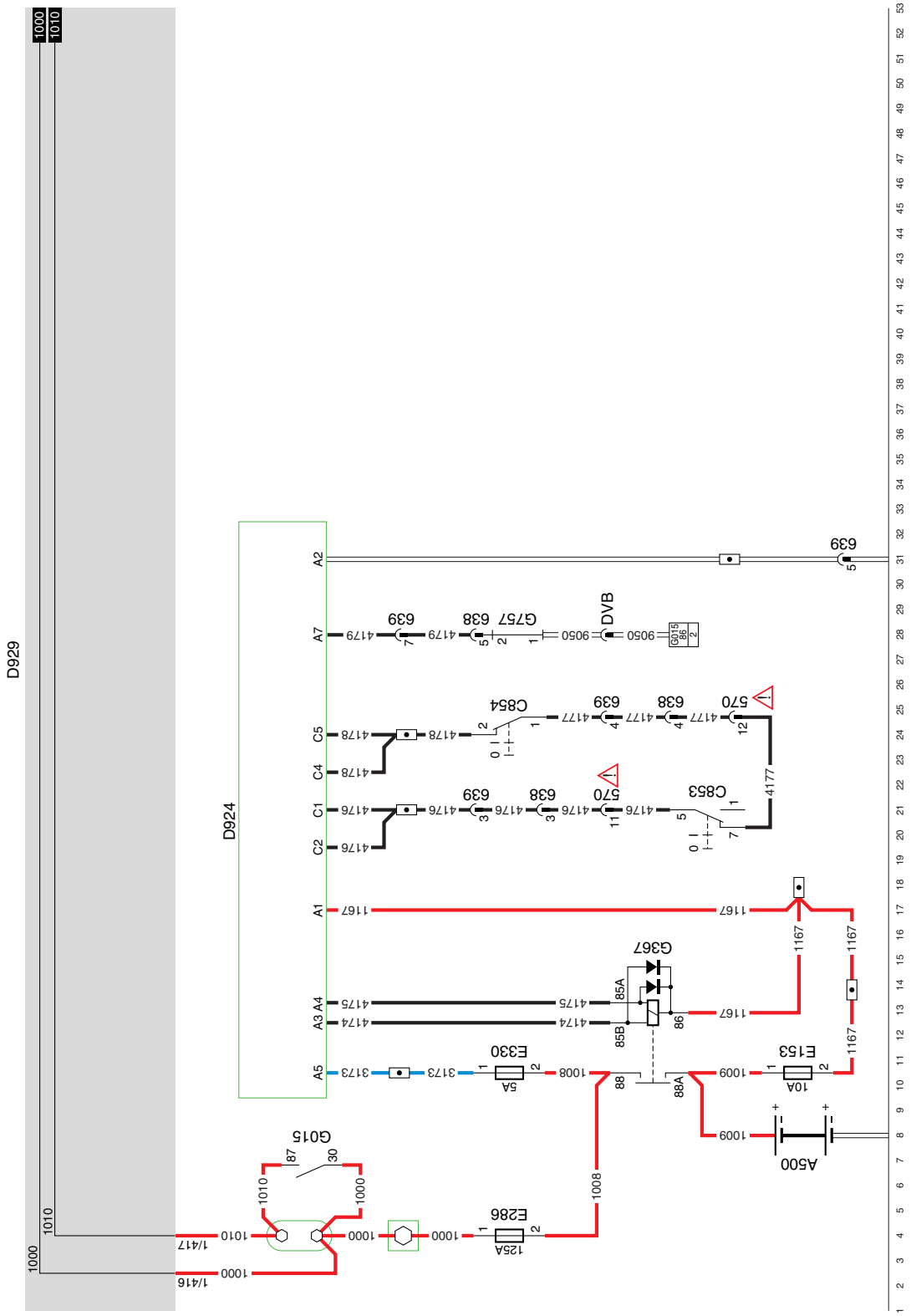
| | |
|---|---|
| 22 | Attach wire 4176 to pin 11 of connector 570. |
| 25 | Attach wire 4177 to pin 12 of connector 570. |

**MECHANICAL MAIN SWITCH**
When C694 (mechanical main switch) is operated, connections B and G are connected. The earth of the batteries is now connected to the chassis. The earth connection of B525 (MTCO) is independent of the position of the main switch.



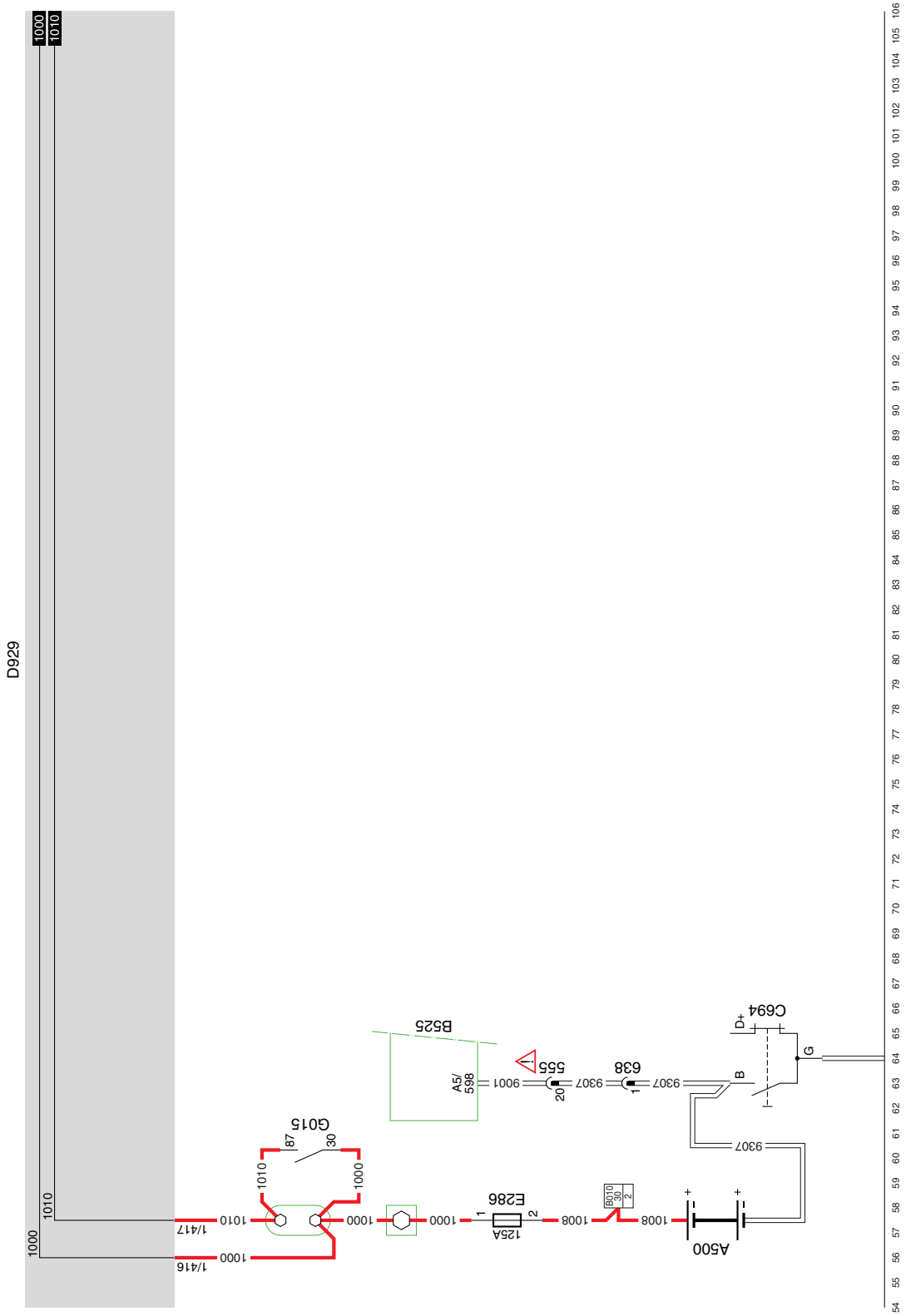


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**1** 1358030/27-29 EL001391

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**1** **1358030/27-29** EL001392

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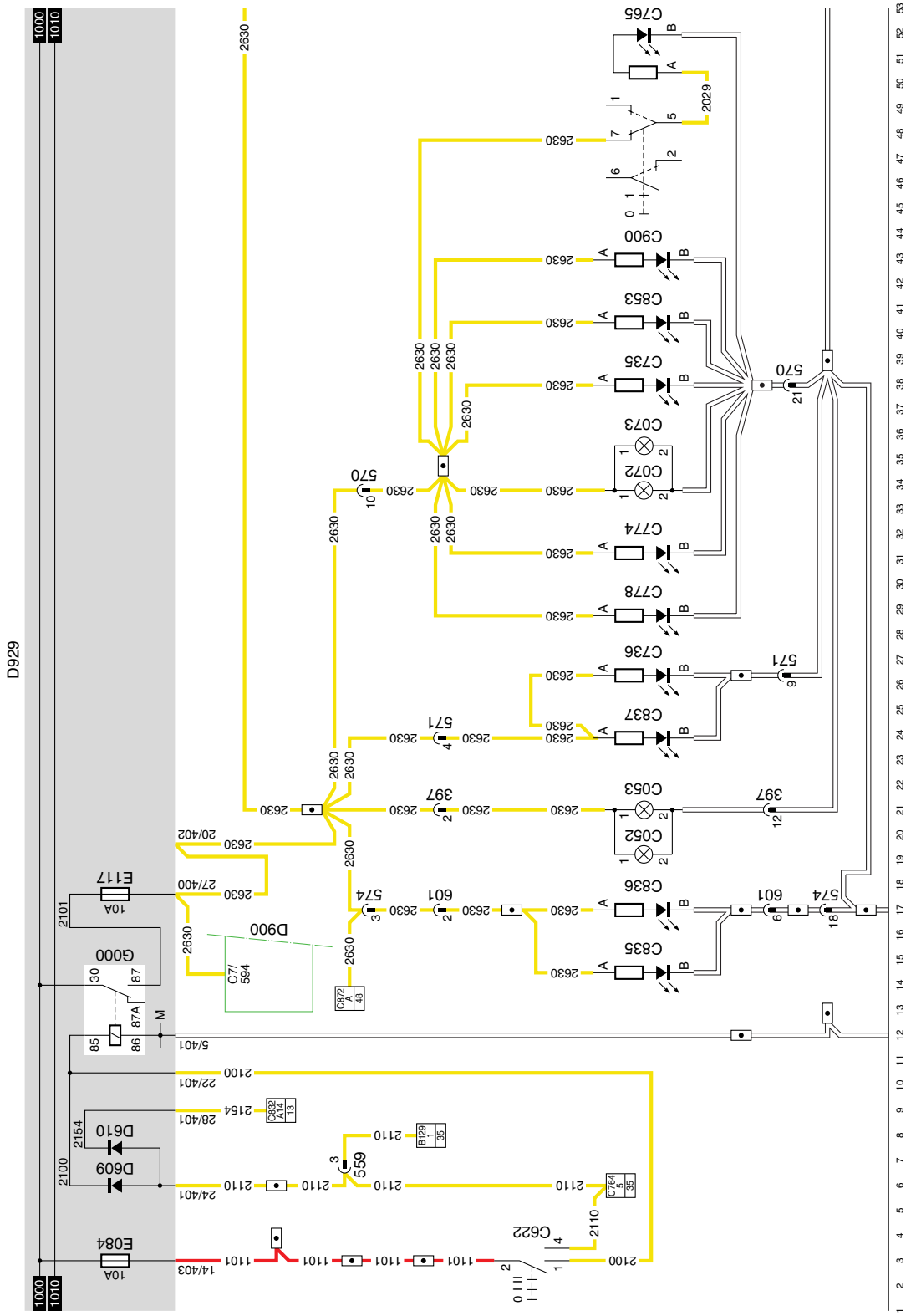
## 20 SEARCH LIGHTING

**SEARCH LIGHTING**
Search lighting refers to lights or LEDs in the various function switches.
When the light switch (C622) is operated, a supply voltage is present on relay G000 (connection point 85) through fuse E084 and the light switch (C622), contacts 2-1, wire 2100.
Relay G000 is energised (connection between connection points 30 and 87, PCB track 2101, fuse (E117)) when there is a voltage on the search lighting (through wire 2630). All search lighting connected to this will come on.

The following switches are illuminated by a light: B030, C052, C053, C072, C073, C716, C813, C814 and C858.

The following switches are illuminated by an LED:
C725, C727, C735, C736, C737, C739, C740, C741, C742, C748, C749, C750, C751, C760, C763, C764, C765, C774, C778, C802, C835, C836, C837, C853 and C900.

**LIGHT BUZZER**
When the light switch (C622) is operated, supply voltage will be applied to connection point 85 of relay G000 through fuse E084, light switch (C622) and wire 2100.
Relay G000 is energised so that a voltage is applied to the search lighting (wire 2630) through fuse E117. This wire is also connected to the VIC (D900), pin C7, connector 594.
If the pre-programmed condition in the VIC is met, the VIC sends a message to the DIP, which in turn activates the buzzer (fitted in the DIP).

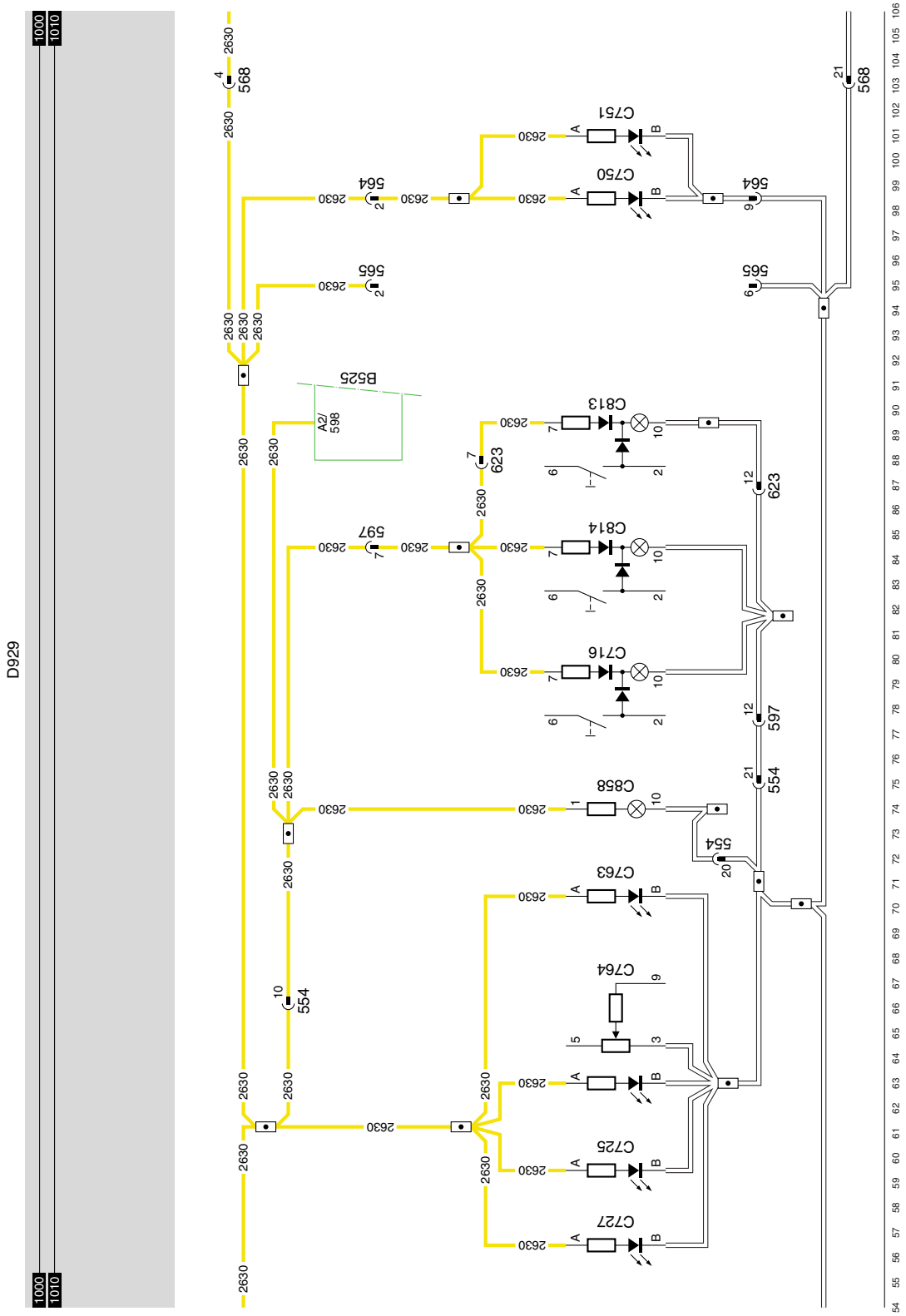



**20** **1358030/27-29** EL001401

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Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥0E621376

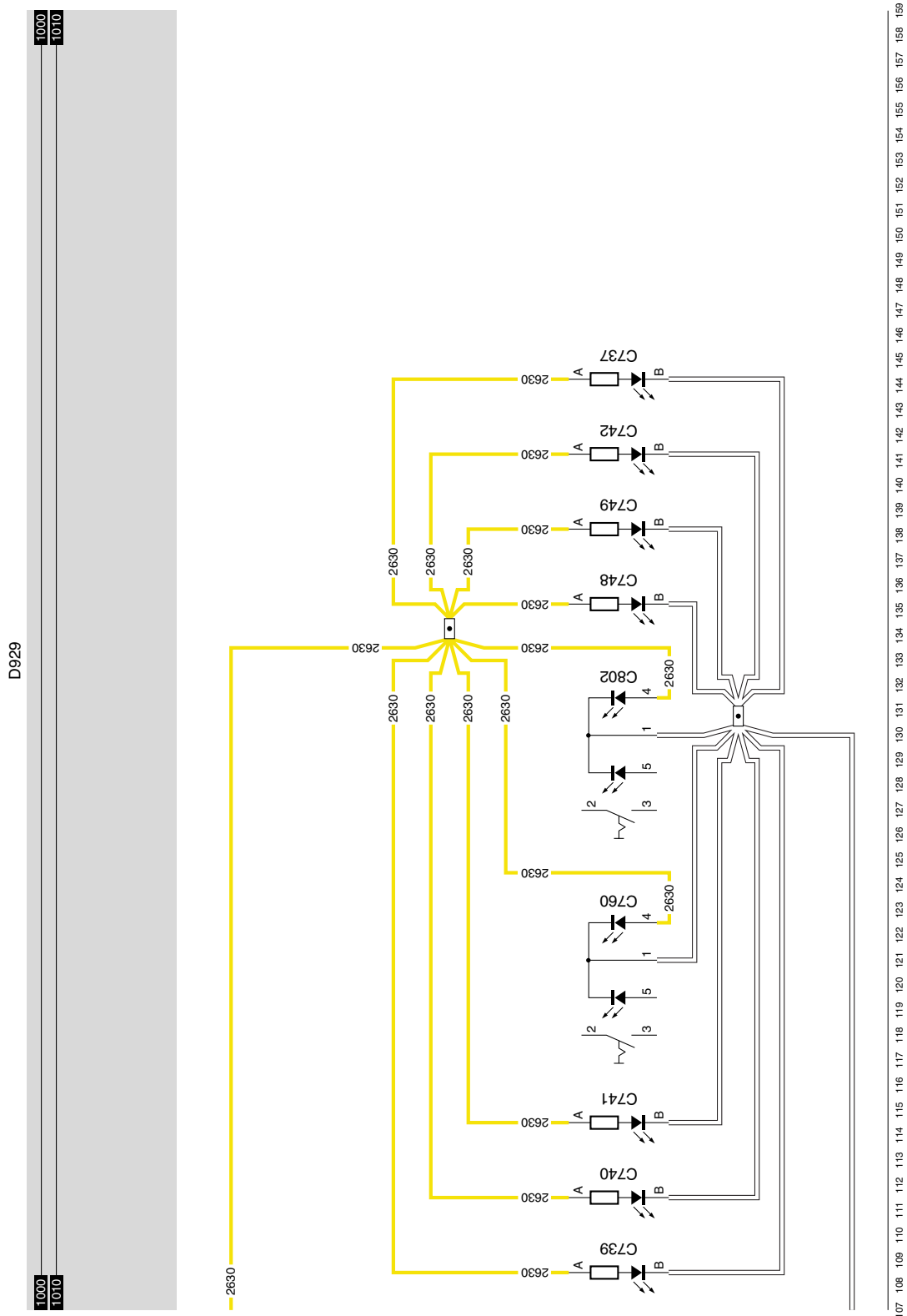



**20** 1358030/27-29 EL001402

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**20** **1358030/27-29** EL001403

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**41 AIRTRONIC (ACH-EA) CAB HEATER WITH/WITHOUT TIMER**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

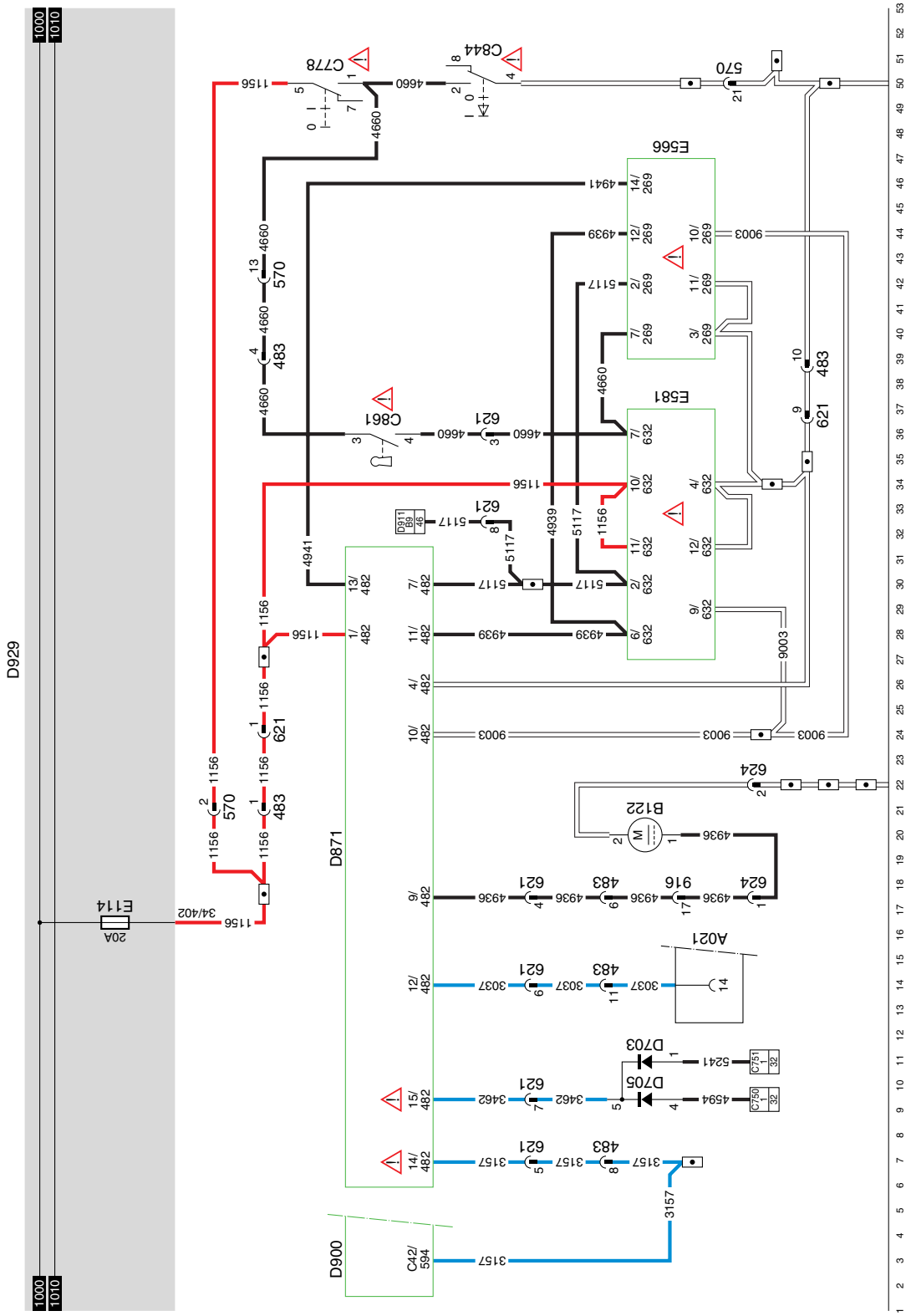
**VARIANTS**

| Location | |
|---|---|
| 7, 9 | Only if the vehicle has been equipped to transport hazardous substances in accordance with RTMDR requirements. |
| 33 | Only if the vehicle has a thermostat unit, then also switch C778. Does **not** apply if the vehicle has NOT been equipped to transport hazardous substances. |
| 37 | Only if the vehicle has been equipped to transport hazardous substances in accordance with PETREG requirements. |
| 43 | Only if the vehicle has a timer. |
| 50 | C844: only if the vehicle has been equipped to transport hazardous substances in accordance with RTMDR requirements. |





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**41** 1358030/27-29 EL001393

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥ 0E621376

**44 EBS-2**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

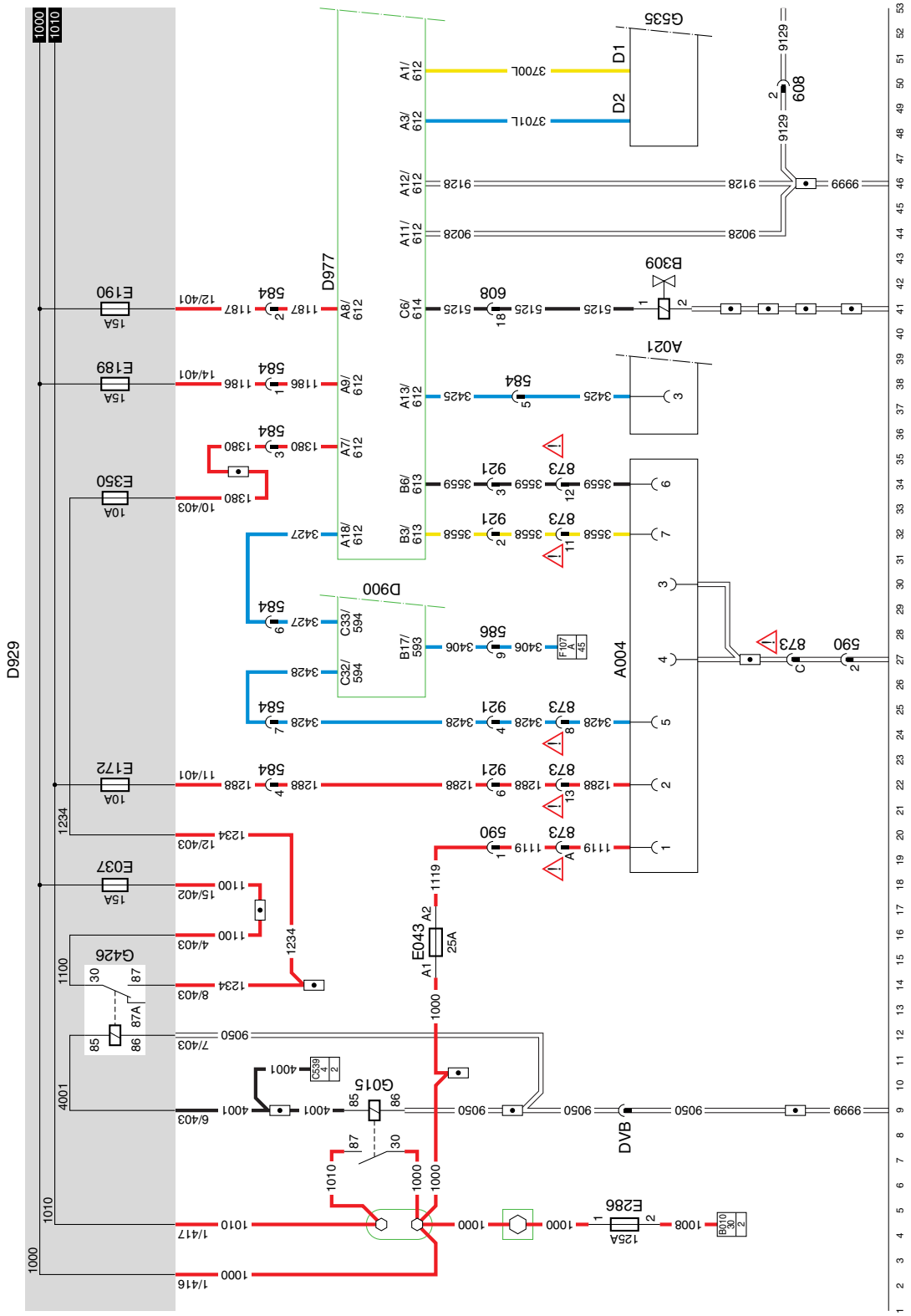
**VARIANTS**

**Location**
18 -> 35: Connector 873: only on cab type D

11



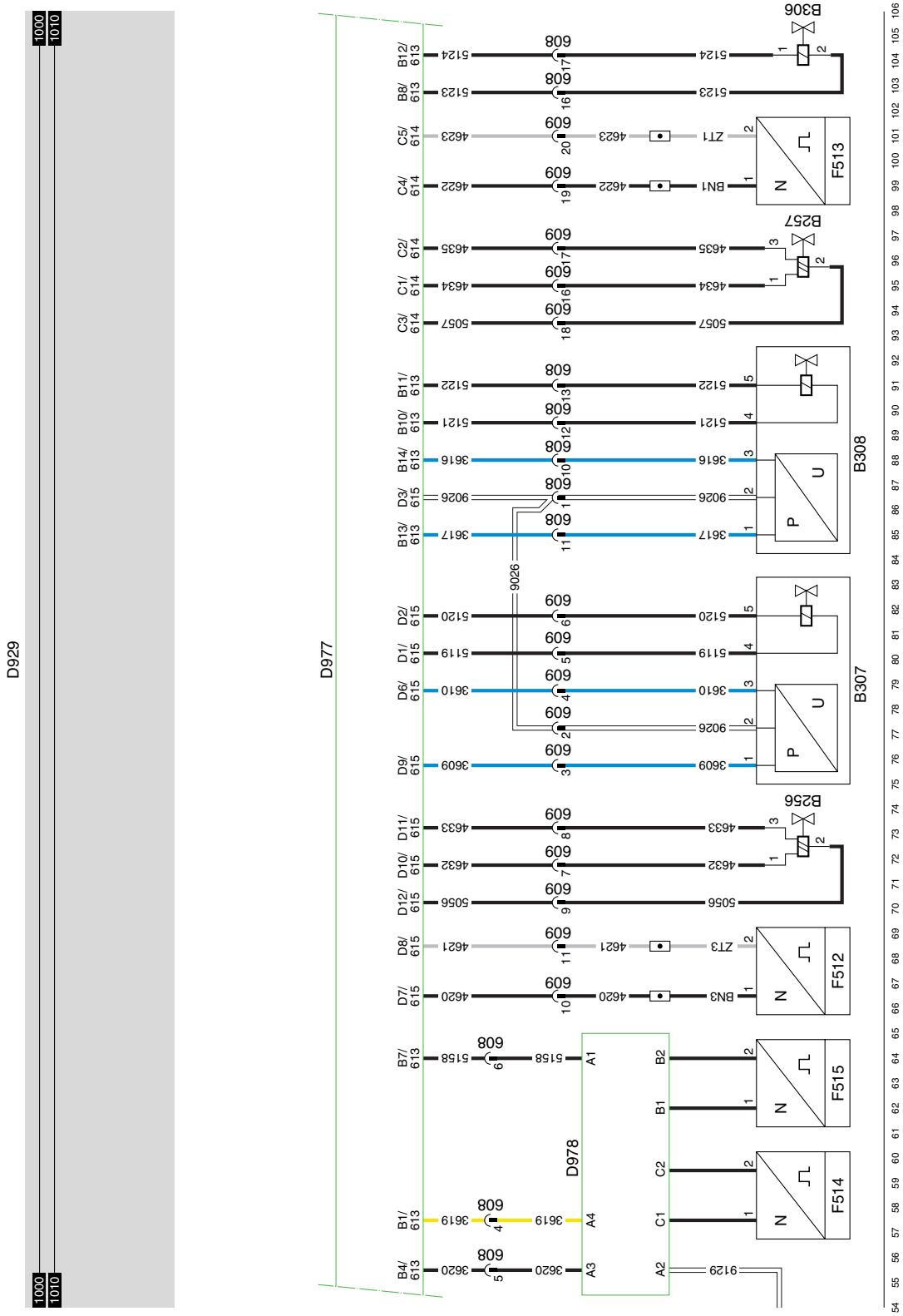
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**44** **1358030/27-29**

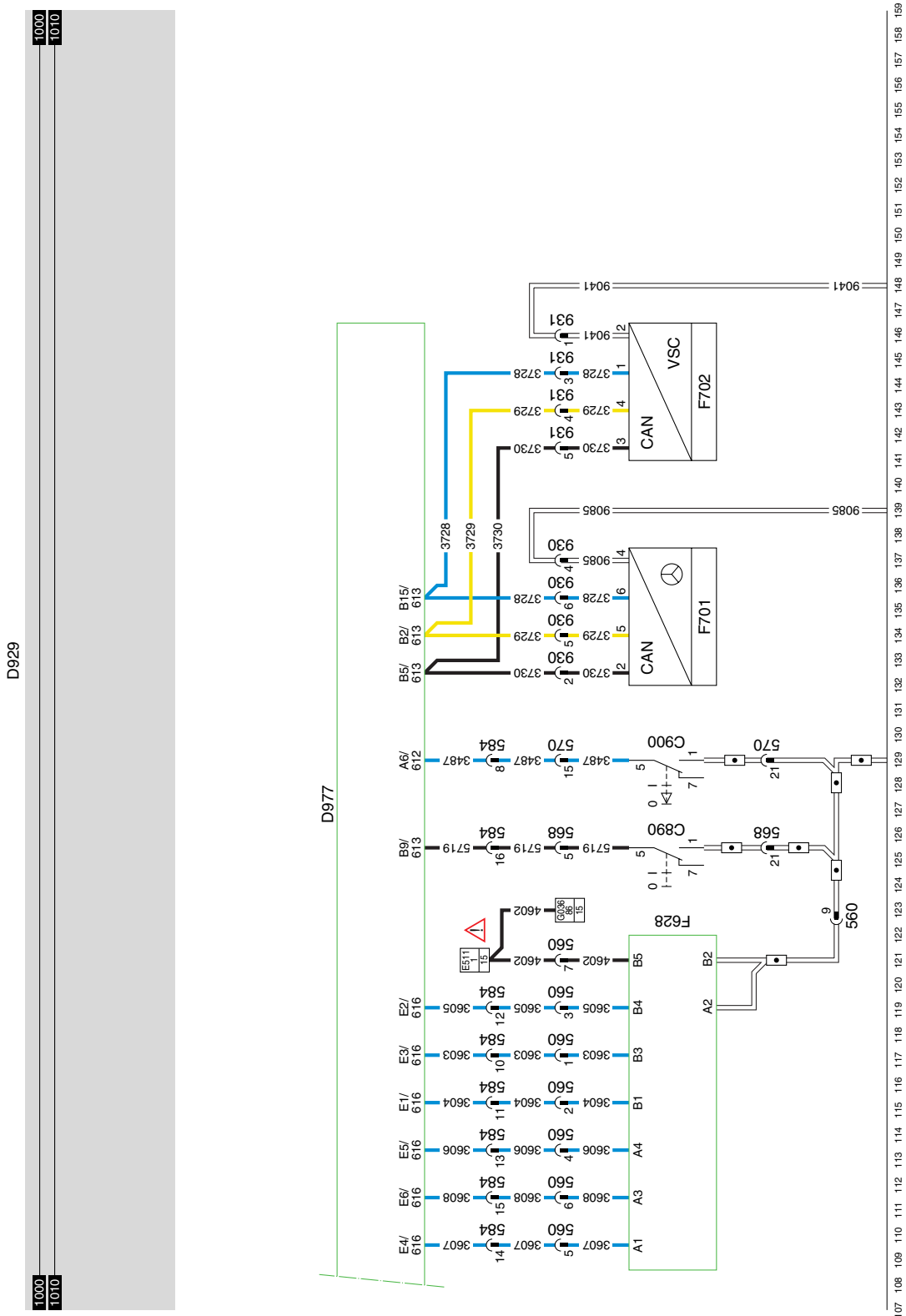
Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥0E621376




**44** **1358030/27-29** EL001395

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**44** **1358030/27-29** EL001396

11

Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥ 0E621376

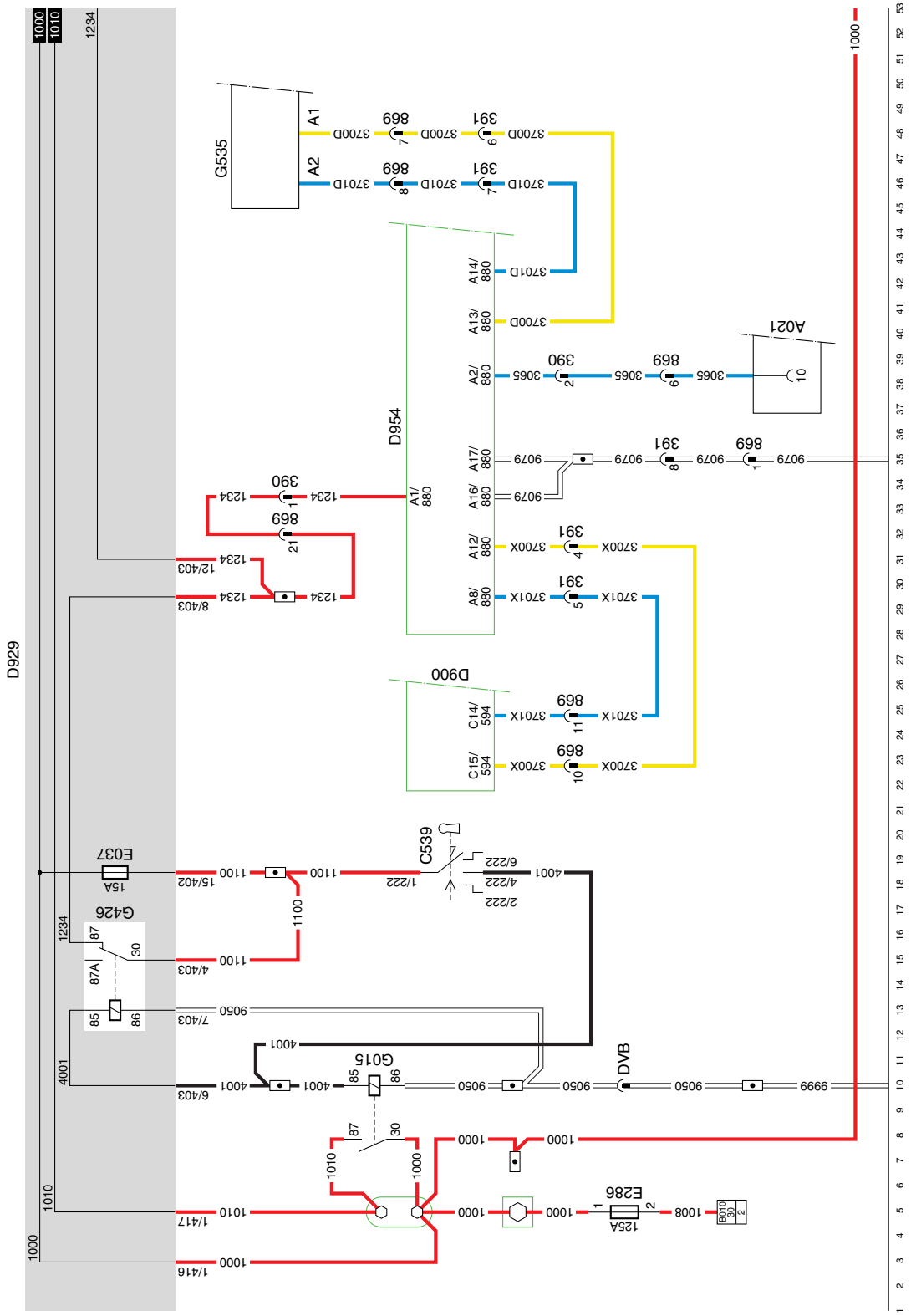
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51 AS TRONIC

SEE THE SYSTEM MANUAL FOR MORE INFORMATION



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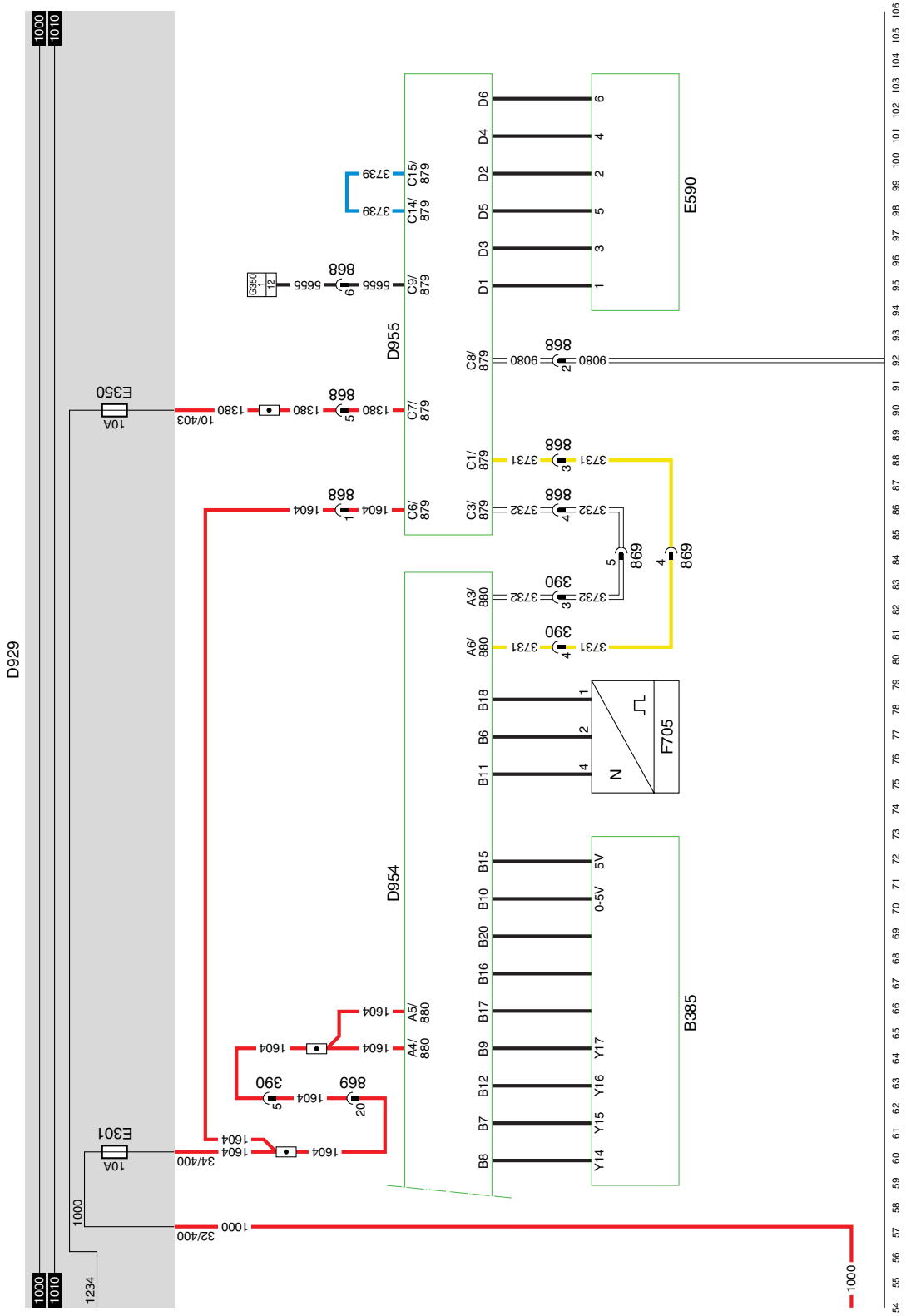



**51** 1358030/27-29 EL001397

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Changes in the electrical system from chassis number 0E626381

***CF*65/75/85** Serie ≥0E621376




**51** 1358030/27-29 EL001398

11



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# 3. CHANGES IN THE ELECTRICAL SYSTEM FROM CHASSIS NUMBER 0E646818

## 3.1 OVERVIEW OF THE CHANGES IN THE ELECTRICAL SYSTEM

| Section diagram | Electrical system | Changes | From chassis number |
|---|---|---|---|
| A | Voltage before and after contact | Connection to D911 removed, connection to G372 added | 0E646818 |
| B | Overview of earthing points | Various earthing points changed | 0E646818 |
| C | CAN overview | Diagram modified with connectors A097 and A098 | 0E646818 |
| 1 | Main switch | Unit D826 removed. Unit B525 added | 0E646818 |
| 2 | Alternator/ignition/starter switch/charging circuit | Connection of wires 4004, 3157 and 4202 modified | 0E646818 |
| 3 | MTCO tachograph | Connections of wires 3225 and 3502 modified | 0E646818 |
| 8 | VIC | Start interruptor function switched via VIC. Connection from relay G372 (relay, starter motor lock) to wire 3457 removed and added to wire 3157 at connector point C42.<br>Wire 4690 with connection to B251 and D902 added to connector point B5/593. Wire 4202 at connection point C44 of D900 added | 0E646818 |
| 9 | FA marker/parking lights | Connection to A098 added | 0E646818 |
| 10 | FT marker/parking lights | Connection to A098 added, C155 removed | 0E646818 |
| 11 | UPEC | Stop light circuit modified | 0E646818 |
| 15 A | Stop lights in combination with manual gearbox/cab tilting gear | Stop light circuit modified | 0E646818 |
| 15B | Stop lights in combination with AS Tronic gearbox/cab tilting gear | Stop light circuit modified | 0E646818 |

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Series ≥ 0E621376

| Section diagram | Electrical system | Changes | From chassis number |
|---|---|---|---|
| 17 | D/SL interior lighting | Connectors modified | 0E646818 |
| 18 | SH interior lighting | Connectors modified | 0E646818 |
| 25 | DEB | Stop light circuit modified | 0E646818 |
| 26 | Intarder EST 42 | Wire 4690 at VIC added | 0E646818 |
| 27 | ECS-DC3 | Connections of wire 3003 modified.<br>A098 added.<br>F565 and F647 removed | 0E646818 |
| 29 | EMAS | Branch to A098 added | 0E646818 |
| 30 | AGC | Stop light circuit modified | 0E646818 |
| 32 | PTO | Wire 4596 to A098 added | 0E646818 |
| 34A | ECAS-3 | Wire 3502 added | 0E646818 |
| 34B | ECAS-2 | Wire 3502 added | 0E646818 |
| 42 | Hydronic 10 | Wire 3157 added, wire 4980 removed | 0E646818 |
| 43 | UPEC/CUMMINS/AGC application connector | Wire 3003 with branch to A098 added | 0E646818 |
| 46 | Alarm system | Wire 3003 added, connectors modified | 0E646818 |
| 52 | CDM + FMS | New | 0E646818 |

The other section diagrams from circuit diagrams 1358030/30-34 contain no functional changes compared with circuit diagrams 1358030/27-29.

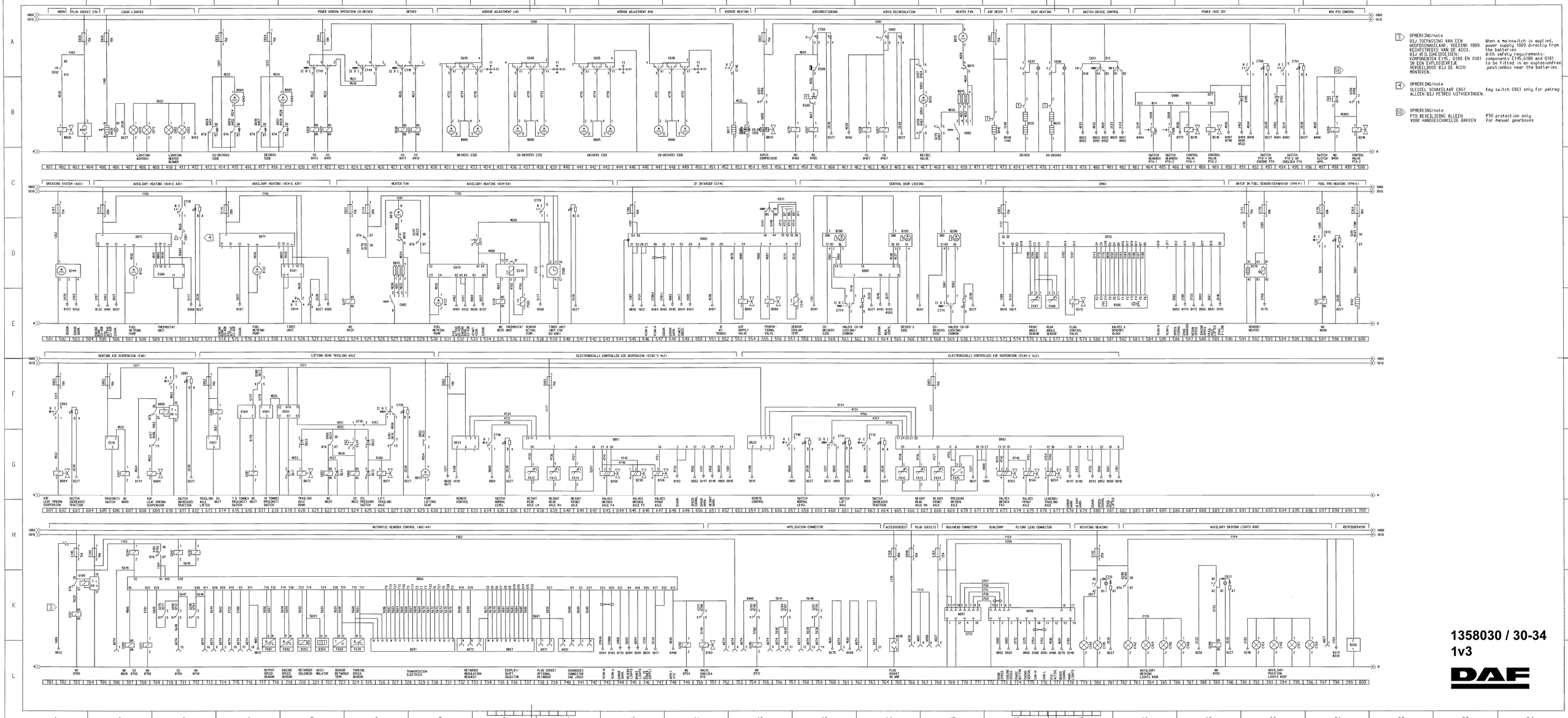




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## 3.2 CIRCUIT DIAGRAMS 1358030/30-34

This page can be used to make your own notes on the circuit diagram.




3 OPMERKING/note
BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1069 RECHTSTREEKS VAN DE ACCU.
BIJ VEILIGHEIDSEISEN: KOMPONENTEN E145, G180 EN G181 IN EEN EXPLOSIEVEILIGE VERDEELDOOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1069 directly from the batteries
With safety requirements: components E145,G180 and G181 to be fitted in an explosionfree junctionbox near the batteries

4 OPMERKING/note
SLEUTEL SCHAKELAAR C861 ALLEEN BIJ PETREO UITVOERINGEN.

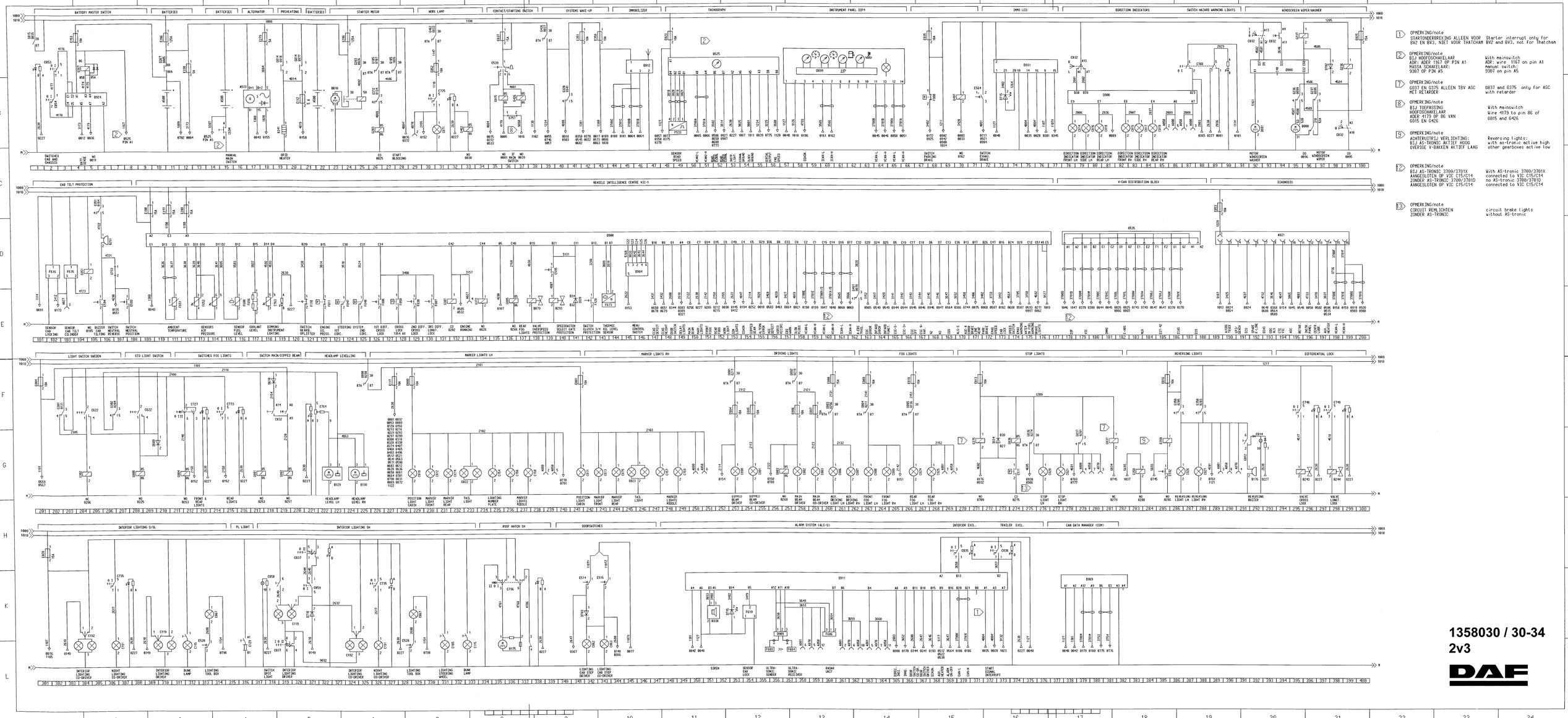
Key switch C861 only for petreo

10 OPMERKING/note
PTO BEVEILIGING ALLEEN VOOR HANDBEDIENKABELTJE BAKKEN

PTO protection only
For manual gearboxes

**1358030 / 30-34**
**1v3**

DAF




1 OPMERKING/note
STARTONDERBREKING ALLEEN VOOR BV2 EN BV2, NIET VOOR THATCHAM
Starter interrupt only for BV2 EN BV2, NIET VOOR THATCHAM BV2 and BV3, not for Thatcham

2 OPMERKING/note
BIJ HOOFDSCHAKELAAR
ADR: ADER 1167 OP PIN A1
MASSA SCHAKELAAR:
5307 OP PIN A5
With mainswitch
ADR: wire 1167 on pin A1
manual switch:
5307 on pin A5

7 OPMERKING/note
6837 EN 6375 ALLEEN TBV AGC MET RETARDER
6837 and 6375 only for AGC with retarder

8 OPMERKING/note
BIJ TOEPASSING HOOFDSCHAKELAAR
ADER 4179 OP B6 VAN 6015 EN 6426
With mainswitch
Wire 4179 to pin B6 of 6015 EN 6426


9 OPMERKING/note
ACHTERUITRIJ VERLICHTING:
BIJ AS-TRONIC AKTIEF HOOG OVERSIZE V-BAKKEN AKTIEF LAAG
Reversing lights:
with as-tronic active high other gearboxes active low

12 OPMERKING/note
BIJ AS-TRONIC 3700/3701X AANGESLOTEN OP VIC C15/C14
ZONDER AS-TRONIC 3700/3701D AANGESLOTEN OP VIC C15/C14
With AS-tronic 3700/3701X connected to VIC C15/C14
no AS-tronic 3700/3701D connected to VIC C15/C14

13 OPMERKING/note
CIRCUIT REMLICHTEN ZONDER AS-TRONIC
circuit brake lights without AS-tronic

1358030 / 30-34
2v3

DAF




6 OPMERKING/note
WIRE 6158 IN SCHUTBORD TBV OPBOUWER
wire 6158 in firewall prepared for body builder

11 OPMERKING/note
CIRCUIT REMLICHTEN MET AS-TRONIC
circuit brake lights with AS-tronic

**1358030 / 30-34**
**3v3**

DAF

### 3.3 OVERVIEW OF BASIC CODE NUMBERS IN CIRCUIT DIAGRAMS 1358030/30-34

| Basic code number | Description | Number on search bar |
|---|---|---|
| A000 | Drawn vehicle socket (7-pin) | 86, 87, 238, 250, 279, 937, 1003 |
| A001 | Rear fog lamp/reversing lamp socket (7-pin) | 269, 289, 358, 361, 363, 767, 1004 |
| A004 | Plug socket, ABS/EBS, drawn vehicle (7-pin) | 803, 834 |
| A007 | 24V socket (2-pin) | 403 |
| A021 | Diagnostics socket (16-pin) | 194 |
| A027 | Socket, 24V accessories (4-pin) | 103, 133, 768, 797, 1004, 1005 |
| A032 | AGC diagnostics socket | 740 |
| A038 | Socket, 40A accessories (2-pin) | 765 |
| A058 | Drawn vehicle socket (15-pin) | 85, 87, 239, 251, 269, 280, 290, 359, 362, 364, 767, 938, 1002 |
| A068 | Application connector, engine speed control | 945 |
| A070 | Application connector, superstructure (8-pin) | 32, 280, 291, 359, 362, 364, 776, 939, 1006 |
| A071 | Automatic gearbox socket, retarder functions | 738 |
| A073 | Automatic gearbox socket, operation | 732 |
| A074 | Automatic gearbox socket, superstructure | 706, 711, 713, 714, 715, 716, 752, 753, 755, 756, 757, 758, 759, 761, 762, 763 |
| A076 | Telephone socket | 1109 |
| A097 | FMS connector (21-pin) | 770 |
| A098 | FMS connector (18-pin) | 775 |
| A500 | Batteries (2x) | 10, 17, 24 |
| A510 | Alarm system battery | 349 |
| A513 | Alternator | 19 |
| B000 | Windscreen wiper motor | 96 |
| B001 | Windscreen wiper pump | 93 |
| B003 | Electric drop glass operation motor, driver's side | 419 |
| B004 | Electric drop glass operation motor, co-driver's side | 415 |
| B005 | Mirror adjustment motor, left | 432, 442 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B006 | Mirror adjustment motor, right | 437, 448 |
| B010 | Starter motor | 25 |
| B015 | 4-speed heater fan | 470, 471, 527, 528 |
| B017 | Mirror heating, driver's side | 452 |
| B018 | Mirror heating, co-driver's side | 453 |
| B024 | Loudspeaker, left | 1112, 1128 |
| B025 | Loudspeaker, right | 1115, 1124 |
| B026 | CB set | 1131 |
| B028 | Horn | 402 |
| B030 | Cigar lighter, driver's side | 406 |
| B032 | Seat heating, driver's side | 475 |
| B033 | Seat heating, co-driver's side | 477 |
| B042 | Air dryer heating element | 473 |
| B043 | Air conditioning compressor | 455 |
| B071 | Mechanical lifting-gear lifting valve | 626 |
| B072 | Mechanical lifting-gear lowering valve | 620 |
| B073 | Pump, mechanical lifting gear | 629 |
| B079 | Low-range downshift protection valve | 138 |
| B084 | Air suspension valve, bleeding | 602, 609 |
| B088 | Intarder proportional valve | 556 |
| B089 | Air supply valve, intarder | 554 |
| B122 | Fuel metering pump, cab heater | 508, 517, 531 |
| B129 | Left-hand headlamp height adjuster motor | 223 |
| B130 | Right-hand headlamp height adjuster motor | 225 |
| B131 | Solenoid valve, pump unit/injector, cylinder 1 | 909 |
| B132 | Solenoid valve, pump unit/injector, cylinder 2 | 910 |
| B133 | Solenoid valve, pump unit/injector, cylinder 3 | 912 |
| B134 | Solenoid valve, pump unit/injector, cylinder 4 | 914 |
| B135 | Solenoid valve, pump unit/injector, cylinder 5 | 916 |
| B136 | Solenoid valve, pump unit/injector, cylinder 6 | 917 |
| B166 | ECAS valve , front axle | 647, 675 |
| B169 | PTO control valve, Chelsea | 751 |
| B175 | Roof hatch motor | 336 |

Changes in the electrical system from chassis number 0E646818 ***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| B176 | Reversing buzzer | 292 |
| B178 | Loudspeaker, left | 1113, 1126 |
| B179 | Loudspeaker, left | 1114 |
| B180 | Loudspeaker, right | 1117, 1125 |
| B181 | Loudspeaker, right | 1118 |
| B182 | Water separator fuel heating element | 599 |
| B192 | Exhaust brake valve | 922, 979 |
| B199 | Central door locking motor, driver's side | 565 |
| B200 | Central door locking motor, co-driver's side | 560, 569 |
| B201 | Internal electrical components for automatic gearbox | 728 |
| B237 | ASR selector valve | 821 |
| B238 | ECAS-2 (6x2) valve, driven axle left/right, air supply (FT) | 645 |
| B243 | Cross-axle differential lock control valve | 297 |
| B244 | Longitudinal controlled slip differential control valve | 299 |
| B245 | PTO control valve | 487 |
| B246 | PTO control valve | 489, 500 |
| B247 | Engine brake valve | 924 |
| B248 | Engine brake valve | 925 |
| B250 | ECAS valve, driven axle left/right, air supply (FA) | 643 |
| B251 | Neutral position buzzer, tilting cab | 106 |
| B252 | Recirculation valve | 468 |
| B253 | ECAS valve, driven axle left/right, air supply | 673 |
| B254 | ECAS valve, steered leading rear axle/trailing axle left/right, lifting bellows | 677 |
| B256 | ABS valve | 813, 838 |
| B257 | ABS valve | 815, 846 |
| B258 | ABS valve | 817 |
| B259 | ABS valve | 818 |
| B293 | Gearbox gate protection valve | 140 |
| B306 | Redundancy valve | 858 |
| B307 | Front axle modulator | 840 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B308 | Drawn vehicle control valve | 843 |
| B309 | ASR cut-off valve | 859 |
| B335 | Electronically controlled fan clutch | 927 |
| B338 | Alarm system horn | 351 |
| B340 | Four-wheel drive valve | 295 |
| B341 | Glow element | 22 |
| B344 | Automatic lubrication pump with integrated electronic unit | 503 |
| B353 | Automatic gearbox control solenoid, retarder | 720 |
| B354 | Automatic gearbox accumulator | 721 |
| B356 | Cooler box | 799 |
| B365 | Radio | 1113 |
| B372 | Valve block fluid flow | 579 |
| B378 | Heating element for fuel filter/water separator | 592 |
| B385 | AS Tronic clutch unit | 1051 |
| B386 | Valve block steering cylinder | 581 |
| B387 | Electronic unit, fuel heater/water separator (Fleetguard) | 996 |
| B467 | Radio | 1128 |
| B525 | Modular tachograph (MTCO) | 54 |
| C000 | Dipped beam, left | 254 |
| C001 | Dipped beam, right | 255 |
| C002 | Main beam, left | 258 |
| C003 | Main beam, right | 260 |
| C006 | Left spotlight | 261 |
| C007 | Right spotlight | 262 |
| C008 | Fog lamp, front left | 264 |
| C009 | Fog lamp, front right | 265 |
| C010 | Width marker light (headlight), left | 229 |
| C011 | Width marker light (headlight), right | 242 |
| C012 | Width marker light, front left | 231 |
| C013 | Width marker light, front right | 243 |
| C014 | Direction indicator lamp, front left | 79 |
| C015 | Direction indicator lamp, front right | 83 |

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| C016 | Direction indicator lamp, side left | 80 |
| C017 | Direction indicator lamp, side right | 84 |
| C018 | Direction indicator lamp, rear left | 81 |
| C019 | Direction indicator lamp, rear right | 85 |
| C020 | Stop light, left | 277, 935 |
| C021 | Stop light, right | 278, 937 |
| C022 | Tail light, left | 232 |
| C023 | Tail light, right | 245 |
| C024 | Fog lamp, rear left | 267 |
| C025 | Fog lamp, rear right | 268 |
| C026 | Reversing light, left | 287 |
| C027 | Reversing light, right | 288 |
| C052 | Heater fan light, left | 411 |
| C053 | Heater fan light, right | 412 |
| C062 | Cab stepwell lighting, driver's side | 342 |
| C063 | Cab stepwell lighting, co-driver's side | 344 |
| C067 | Left-hand tool compartment lighting | 314, 329 |
| C071 | Work lamp | 34 |
| C072 | Ashtray light, left | 408 |
| C073 | Ashtray light, right | 409 |
| C074 | Width marker light, rear left | 232 |
| C075 | Width marker light, rear right | 245 |
| C115 | Bunk light with switch | 312, 333 |
| C119 | Interior lighting with switch, driver's side | 310, 320 |
| C129 | Interior lighting with switch | 316 |
| C144 | Rotating beam, left | 780 |
| C145 | Rotating beam, right | 781 |
| C154 | Rear number plate light, left (tractors) | 235 |
| C156 | Width marker light, left, 1st (tractors) | 237 |
| C157 | Width marker light, right, 1st (tractors) | 248 |
| C158 | Width marker light, left, 2nd (tractors) | 238 |
| C159 | Width marker light, right, 2nd (tractors) | 249 |
| C162 | Roof spotlight | 783 |
| C163 | Width marker light in roof spotlight | 793 |





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| Basic code number | Description | Number on search bar |
|---|---|---|
| C164 | Roof spotlight | 784 |
| C165 | Width marker light in roof spotlight | 794 |
| C166 | Roof spotlight | 786 |
| C167 | Width marker light in roof spotlight | 795 |
| C168 | Roof spotlight | 787 |
| C169 | Width marker light in roof spotlight | 797 |
| C185 | Light with switch | 332 |
| C191 | Nightlight, centre | 307, 327 |
| C192 | Interior lighting with switch, co-driver's side | 304, 324 |
| C539 | Accessories/ignition/starter switch | 38 |
| C622 | Switch, light | 205, 209 |
| C694 | Main switch, mechanical | 17 |
| C695 | Mirror adjustment switch, driver's side | 433, 443 |
| C696 | Mirror adjustment switch, co-driver's side | 438, 448 |
| C697 | Seat heating switch, driver's side | 475 |
| C698 | Seat heating switch, co-driver's side | 477 |
| C716 | Switch, rotating beams | 781 |
| C725 | Work lamp switch | 34 |
| C727 | Front/rear fog lamp switch | 212 |
| C735 | Interior nightlight switch | 307, 326 |
| C736 | Roof hatch switch | 336 |
| C737 | ABS/ASR-D traction switch | 830 |
| C739 | Mechanical lifting-gear switch | 627 |
| C740 | ECAS switch, normal level | 635, 657 |
| C741 | ECAS switch, axle lifting | 661 |
| C742 | Traction assistance switch | 663 |
| C743 | Electric drop glass switch, co-driver's side (driver's side door) | 422 |
| C744 | Electric drop glass switch, co-driver's side (co-driver's side door) | 425 |
| C745 | Electric drop glass switch, driver's side (driver's side door) | 428 |
| C746 | Mirror heating switch | 453 |
| C748 | Cross-axle differential lock operating switch | 297 |

Changes in the electrical system from chassis number 0E646818 ***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| C749 | Longitudinal controlled slip differential operating switch | 299 |
| C750 | PTO operation switch | 492 |
| C751 | PTO operation switch | 495 |
| C760 | Air conditioning switch | 459 |
| C763 | Instrument lighting dimming potentiometer | 119 |
| C764 | Potentiometer for headlamp height adjustment | 222 |
| C765 | Switch, warning lamps (with LED search lighting) | 88 |
| C773 | Rear fog lamp switch | 215 |
| C774 | Central door locking switch | 561, 569 |
| C778 | Cab heater switch | 511, 538 |
| C802 | Switch, recirculation valve | 464 |
| C813 | Switch for roof spotlights | 790 |
| C814 | Reversing buzzer switch | 292 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 480, 556 |
| C832 | Direction indicator/windscreen wiper stalk switch | 79, 92, 93, 98, 219, 402 |
| C835 | Switch to turn off interior detection | 370 |
| C836 | Switch to turn off superstructure/drawn vehicle loadspace detection | 373 |
| C837 | Interior lighting switch | 318,320 |
| C840 | Four-wheel drive switch | 295 |
| C844 | Cab heater main switch | 519 |
| C853 | Cab main switch | 2 |
| C854 | Chassis main switch | 3 |
| C858 | Interior spot lighting switch | 318 |
| C859 | Interior lighting switch, roof console, driver's side | 321 |
| C861 | PETREG key switch | 511 |
| C872 | Fuel filter/water separator operating switch | 597 |
| C882 | Heater fan switch | 470, 527 |
| C883 | FAG traction assistance switch | 602, 611 |
| C890 | Switch to turn off integration of third brake | 871 |
| C900 | ASR switch | 868 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D503 | Electronic unit, mechanical lifting gear | 619 |
| D529 | Electronic unit, ECAS remote control | 632, 654 |
| D609 | Light switch diode | 209 |
| D610 | Diode, main beam/dipped beam | 218 |
| D611 | Diode for valve damping, lowering mechanical lifting gear | 619 |
| D612 | Diode for valve damping, lifting mechanical lifting gear | 625 |
| D613 | Diode for pump relay damping, mechanical lifting gear | 623 |
| D622 | Diode for mechanical lifting gear, lifting lock | 625 |
| D623 | Diode for mechanical lifting gear, lowering lock | 620 |
| D703 | Diode for switching off cab heater/door, contact on driver's side | 494 |
| D705 | Diode for switching off cab heater with running engine | 491 |
| D710 | Interior lighting diode to prevent feedback to driver's side switch | 321 |
| D715 | Alarm system LED | 73, 352 |
| D782 | Diode to prevent door locking feedback, driver's side | 97 |
| D783 | Diode, cab stepwell lighting, driver's side | 341 |
| D791 | Door switch diode | 345 |
| D792 | Door switch diode | 346 |
| D802 | Electronic unit, ECAS-2 (6x2) | 673 |
| D814 | UPEC electronic unit | 914 |
| D850 | Electronic unit, ABS/ASR, D model | 817 |
| D851 | Electronic unit, ECAS-3 (4x2) | 644 |
| D866 | Electronic unit, AGC-A automatic gearbox control | 729 |
| D867 | Automatic gearbox gear selection display | 735 |
| D871 | Electronic unit, Airtronic D2 cab heater | 508 517 |
| D879 | Rear axle modulator | 854 |
| D895 | Electronic unit, converter (10 A) with power supply for radio memory | 1107 |
| D899 | DIP-4 instrument panel | 62 |
| D900 | VIC electronic unit | 81, 94, 143, 486 |

Changes in the electrical system from chassis number 0E646818 ***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| D902 | Electronic unit, ZF intarder with CAN | 550 |
| D903 | Electronic unit, ECS-DC3 | 965 |
| D904 | Menu Control Switch, MCS | 146 |
| D905 | Electronic unit, central door locking | 562 |
| D909 | Electronic unit, alarm system, ultrasonic | 356 |
| D910 | Electronic unit, battery charger | 349 |
| D911 | Electronic unit, ALS-S alarm system | 361 |
| D912 | Electronic unit, immobiliser | 49 |
| D924 | Electronic unit, main switch | 5 |
| D931 | LED unit, immobiliser | 75 |
| D932 | EMAS electronic unit | 581 |
| D954 | AS Tronic gearbox modulator | 1050 |
| D955 | AS Tronic gear lever unit | 1038 |
| D969 | CAN Data Manager, CDM | 379 |
| D977 | Electronic unit, EBS-2 | 854 |
| D979 | Electronic unit, Hydronic 10 cab heater | 532 |
| E000 | Fuse, rear left width marker light | 228 |
| E001 | Fuse, rear right width marker light | 241 |
| E004 | Fuse, dipped beam, driver's side | 253 |
| E005 | Fuse, dipped beam/warning lamp, co-driver's side | 254 |
| E006 | Fuse, main beam, driver's side | 257 |
| E007 | Fuse, main beam/warning lamp, co-driver's side | 259 |
| E008 | Fuse, spotlights | 260 |
| E009 | Fuse, front fog lamps | 263 |
| E010 | Fuse, rear fog lamps | 266 |
| E013 | Fuse, stop lights | 271, 934 |
| E016 | Fuse, reversing lights/gearbox neutral position/windscreen wiper motor/cross-axle differential lock | 285 |
| E023 | Fuse, switch for cold start/tachograph/cab heater program clock/alarm system | 51 |
| E025 | Fuse, windscreen wiper motor/headlamp washer/windscreen washer motor | 100 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12 V converter with power supply for radio memory | 405 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E028 | Fuse, interior lighting/bunk lamps/central door lock | 301 |
| E031 | Fuse, heater fan | 455, 523 |
| E033 | Fuse, electric drop glass motor, co-driver's side | 414 |
| E034 | Fuse, electric drop glass motor, driver's side | 417 |
| E035 | Fuse, instruments and warning lamps/parking brake switch | 69 |
| E036 | Fuse, 24V socket | 403 |
| E037 | Fuse, ignition switch | 38 |
| E043 | Fuse, drawn vehicle ABS/EBS | 801, 831 |
| E044 | Fuse, mirror heating/electric mirror adjustment/electric drop glass operation | 421 |
| E048 | Fuse, drawn vehicle power supply | 766 |
| E051 | Fuse, ECAS/EMAS | 573, 638, 667 |
| E052 | Fuse, ECAS remote control/work lamp | 33 |
| E053 | Fuse, diagnostic connector (16-pin)/LED unit/alarm system | 189 |
| E062 | Fuse, ECAS/EMAS mechanical lifting gear | 601, 605, 613, 631 |
| E084 | Fuse, lighting | 201 |
| E091 | Fuse, air dryer heating element/stalk switch/PTO/clutch switch/engine speed control application connector | 472 |
| E108 | Fuse, VIC | 109 |
| E112 | Fuse, glow warning lamp | 23 |
| E114 | Fuse, cab heater (Eberspächer)/warning lamps | 505, 514, 525 |
| E117 | Fuse, search lighting | 227 |
| E118 | Fuse, UPEC/ECS-DC3 supply voltage | 906, 953 |
| E142 | Fuse, accessories before contact | 780 |
| E144 | Fuse, AGC-A4 automatic gearbox | 704 |
| E145 | Fuse, AGC-A4 automatic gearbox | 703 |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply | 4 |
| E157 | Fuse, automatic lubrication | 501 |
| E160 | Fuse, ECS-DC3 | 951 |

Changes in the electrical system from chassis number 0E646818 ***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| E163 | Fuse, accessories after contact (connector A027)/rotating beams/roof hatch | 768 |
| E164 | Fuse, fuel heater before contact | 599, 995 |
| E168 | Fuse, accessories/microwave | 764 |
| E170 | Fuse, fuel heater after contact | 592, 597, 997 |
| E171 | Fuse, electronic unit for fuel filter/water separator, Racor | 591 |
| E172 | Fuse, drawn vehicle ABS/EBS | 802, 833 |
| E184 | Fuse, UPEC | 904 |
| E189 | Fuse, rear axle EBS | 808, 836 |
| E190 | Fuse, front axle EBS | 810, 837 |
| E199 | Fuse, ZF intarder | 545 |
| E277 | Fuse, VIC | 110 |
| E279 | Fuse, generator voltage control | 20 |
| E280 | Fuse, VIC | 112 |
| E286 | Main fuse | 10, 26 |
| E301 | Fuse, AS Tronic | 1045 |
| E330 | Fuse, main switch, “sens” wire | 12 |
| E350 | Fuse, various electrical systems | 45 |
| E351 | Fuse, various electrical systems | 44 |
| E507 | Proximity switch for axle-load protection lifting gear (10 tons) | 617 |
| E508 | Temperature switch for air conditioning compressor | 459 |
| E509 | Air conditioning operating switch, high/low pressure | 458 |
| E511 | Stop light operating switch | 274 |
| E514 | Operating switch for stepwell/interior lighting, driver’s side door switch | 341 |
| E515 | Operating switch for stepwell/interior lighting, co-driver’s side | 343 |
| E524 | Mechanical lifting-gear operating switch, oil pressure limit switch | 624 |
| E528 | Operating switch for left-hand tool compartment lighting | 313, 328 |
| E542 | Proximity switch for axle load protection (13 tons) | 605 |
| E564 | Operating switch, engine brake | 72 |
| E566 | Operating switch for Eberspächer cab heater thermostat (DILC) | 509 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E570 | Pneumatic switch, clutch PTO N10 | 498 |
| E571 | Thermo 90/Hydronic 10 cab heater operating switch | 534 |
| E575 | Proximity switch, clutch | 902, 980 |
| E579 | Operating switch for thermostat/cab heater, fan, Eberspächer (water) | 536 |
| E580 | Operating switch for thermostat/cab heater, fan, Eberspächer (timer) | 540 |
| E581 | Operating switch/combination clock, Eberspächer Airtronic cab heater | 519 |
| E584 | Proximity switch for axle-load protection lifting gear (7.5 tons) | 615 |
| E590 | AS Tronic selector switch | 1040 |
| E592 | Reversing light operating switch | 286 |
| E593 | Neutral position switch | 108 |
| E594 | Operating switch for neutral position/reverse gear | 106 |
| E595 | Gearbox gate protection operating switch | 140 |
| E599 | Neutral position switch | 1036 |
| F000 | Control switch for parking brake | 70 |
| F006 | Control switch for differential lock, 1st differential | 127 |
| F007 | Control switch for differential lock, 3rd differential | 131 |
| F011 | Control switch for engine oil pressure | 123 |
| F038 | Control switch for differential lock, 2nd differential | 129 |
| F047 | Control switch for steering system (1st circuit) | 124 |
| F048 | Control switch for steering system (2nd circuit) | 125 |
| F050 | Control switch for differential lock pressure, 1st and 2nd differentials | 128 |
| F087 | Control switch, gearbox PTO | 485 |
| F088 | Control switch, gearbox PTO | 486 |
| F097 | Proximity switch for trailing axle mechanical lifting gear | 613 |
| F107 | Brake pad wear switch, front left | 874 |
| F108 | Brake pad wear switch, front right | 876 |
| F109 | Brake pad wear switch, front left, 2nd front axle | 877 |
| F110 | Brake pad wear switch, front right, 2nd front axle | 879 |

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| F111 | Brake pad wear switch, rear left | 880 |
| F112 | Brake pad wear switch, rear right | 881 |
| F113 | Brake pad wear switch, rear left, 2nd rear axle | 882 |
| F114 | Brake pad wear switch, rear right, 2nd rear axle | 884 |
| F118 | Control switch for splitter signalling | 121 |
| F120 | Clutch protection switch | 143 |
| F509 | Cab temperature sensor of cab heater | 537 |
| F512 | Wheel speed sensor, front axle, left | 807, 836 |
| F513 | Wheel speed sensor, front axle, right | 809, 847 |
| F514 | Wheel speed sensor, driven axle, left | 810 |
| F515 | Wheel speed sensor, driven axle, right | 811 |
| F533 | Speed sensor (4-pin, 1st) | 52 |
| F544 | Coolant temperature sensor for secondary retarder | 558 |
| F552 | Crankshaft sensor | 906 |
| F558 | Camshaft sensor | 905 |
| F565 | Sensor, fuel temperature | 907 |
| F566 | Sensor, engine coolant temperature | 909 |
| F601 | Sensor, AGS | 717 |
| F602 | Sensor, AGS | 719 |
| F608 | Sensor, fuel level | 116 |
| F612 | Height sensor, ECAS, rear axle, left | 637, 665 |
| F613 | Height sensor, ECAS, rear axle, right | 639, 666 |
| F614 | Height sensor, ECAS, front axle | 640, 668 |
| F615 | Pressure sensor, ECAS, driven axle, left/right | 669 |
| F616 | Cab locking sensor | 102 |
| F619 | Cab locking sensor, alarm system | 354 |
| F628 | EBS foot brake valve | 861 |
| F649 | Boost pressure and air inlet temperature sensor | 910 |
| F651 | Ambient temperature sensor | 112 |
| F652 | Air pressure sensor | 113 |
| F656 | Coolant level sensor | 117 |
| F669 | Retarder temperature sensor, automatic gearbox | 723 |
| F670 | Automatic gearbox turbine speed sensor | 724 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| F671 | Sensor, accelerator pedal, ECS-DC3 | 972 |
| F672 | UPEC accelerator pedal sensor | 913 |
| F673 | Sensor, engine oil level and temperature | 143 |
| F676 | Cab locking sensor | 103 |
| F686 | Alarm system sensor, radar | 360 |
| F687 | Angle sensor, front axle, EMAS | 575 |
| F688 | Angle sensor, rear axle, EMAS | 576 |
| F701 | Steering angle sensor | 849 |
| F702 | VSC module | 850 |
| F705 | Speed sensor | 1053 |
| G000 | Relay, tail light/width marker light/search lighting | 208, 225 |
| G001 | Relay, dipped beam | 217, 253 |
| G002 | Relay, main beam | 219, 257 |
| G003 | Relay, spotlights | 256, 260 |
| G004 | Relay, front fog lamp | 211, 263 |
| G005 | Relay, rear fog lamp | 136, 266 |
| G014 | Relay, glowing | 22, 23, 918, 977 |
| G015 | Relay, contact | 1, 38 |
| G028 | Electric drop glass operation relay, co-driver's side | 413, 421 |
| G029 | Electric drop glass operation relay, co-driver's side | 415, 422 |
| G030 | Relay, electric drop glass operation, driver's side | 417, 427 |
| G031 | Relay, electric drop glass operation, driver's side | 418, 428 |
| G036 | Relay, stop light | 274, 275, 931, 934 |
| G037 | Stop light micro relay for AGC with retarder | 279, 281 |
| G052 | Relay, mechanical lifting-gear motor | 622, 629 |
| G066 | Relay, mechanical lifting-gear takeover | 622, 624 |
| G095 | Traction assistance relay, 60 sec. bleeding | 609 |
| G126 | Supply relay, UPEC/ECS-DC3 | 905, 906 |
| G170 | Relay, cab heater fan | 525, 535 |
| G180 | Time relay power supply, Allison, 12V | 703 |
| G181 | Takeover relay power supply, Allison, 12V | 703, 709 |
| G185 | Starting circuit interrupter relay | 29, 30, 707, 1035 |
| G201 | Fuel heating relay, EFPH | 597, 599, 981, 995 |

Changes in the electrical system from chassis number 0E646818 ***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| G203 | Starter motor takeover relay | 27, 29 |
| G236 | Relay, windscreen wiper (speed 1 or 2) | 95, 99 |
| G237 | Relay, windscreen wiper (automatic zero position) | 95, 96 |
| G247 | Relay, heater fan, Eberspächer Hydronic cab heater | 523, 529 |
| G257 | Recirculation valve relay | 464, 467 |
| G258 | Recirculation valve relay | 462, 467 |
| G259 | PTO operation takeover relay | 498, 499 |
| G267 | Air conditioning relay | 455, 458 |
| G279 | Air conditioning relay | 457, 468 |
| G291 | Relay, automatic gearbox | 710, 759 |
| G292 | Relay, automatic gearbox | 710, 712 |
| G293 | Relay, automatic gearbox | 749, 754 |
| G294 | Relay, automatic gearbox | 707, 756 |
| G295 | Relay, automatic gearbox | 712, 754 |
| G299 | Relay, roof spotlights | 782, 789 |
| G301 | Relay, light D+ | 131, 202 |
| G302 | Relay for Swedish lighting | 204, 206 |
| G328 | Relay, engine stop | 43, 941 |
| G350 | Relay, reversing lights, automatic gearbox | 283, 285, 286, 288 |
| G351 | Relay, cab tilt protection | 104, 105 |
| G367 | Relay, main switch power supply | 4, 10 |
| G371 | Relay, automatic gearbox, superstructure | 708, 750 |
| G372 | Starting circuit interrupter relay | 29, 134 |
| G375 | Stop light relay for AGC with retarder | 271, 709 |
| G377 | Relay, accessories power supply for radio | 1103, 1112 |
| G380 | Relay, mechanical lifting axle | 613, 617 |
| G381 | Relay, mechanical lifting axle | 616, 627 |
| G426 | Relay, contact | 39, 41 |
| G427 | FAG traction assistance relay | 606, 609 |
| G462 | Relay, work lamp | 33, 35 |
| G469 | Relay, braking signal | 931, 932 |
| G516 | Central cab earth, co-driver's side | 1014 |
| G535 | CAN distribution block | 183 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G732 | Through-connection for cab heater | 538 |
| G733 | Through connection for intarder neutral position | 107 |
| G734 | Through-connection for brake lining wear | 880 |
| G736 | V-CAN connection | 198 |
| G737 | Through-connection, ECS-DC3 speed control | 993 |
| G745 | Through-connection, mechanical lifting gear | 625 |
| G757 | Through-connection for main switch | 39 |
| I020 | Diode, gearbox gate protection | 141 |
| I034 | Diode, stop light relay | 272, 933 |

## 3.4 SECTION DIAGRAMS FROM CIRCUIT DIAGRAMS 1358030/30-34

| | |
|---|---|
| A | Voltage before and after contact |
| B | Overview of earthing points |
| C | CAN overview |
| 1 | Main switch |
| 2 | Alternator/starter motor/ignition/starter switch |
| 3 | Modular tachograph (MTCO) |
| 8 | VIC |
| 9 | FA marker/parking lights |
| 10 | FT marker/parking lights |
| 11 | UPEC |
| 15A | Stop lights in combination with manual gearbox/cab tilting gear |
| 15B | Stop lights in combination with manual gearbox/cab tilting gear |
| 17 | D/SL interior lighting |
| 18 | SH interior lighting |
| 20 | Search lighting |
| 25 | DEB |
| 26 | Intarder EST 42 |
| 27 | Engine Control System (ECS-DC3) |
| 29 | EMAS |
| 30 | AGC |
| 32 | PTO |
| 34A | ECAS-3 |
| 34B | ECAS-2 |
| 41 | Airtronic cab heater (ACH-EA) with/without timer |
| 42 | Hydronic 10 (ACH-EW) cab heater with timer |
| 43 | UPEC/CUMMINS/AGC application connector |
| 46 | Alarm system/battery charger for BV3 alarm |
| 52 | CDM + FMS |

## A VOLTAGE BEFORE AND AFTER CONTACT

### VOLTAGE BEFORE CONTACT

A constant voltage is supplied to pin 1 of connector 416 through wire 1008, point 30 on the starter motor, fuse E286, the + bolt in the bulkhead connector lead-through and the voltage distribution block.
Power is also supplied (via wire 1008) from point 30 of the starter motor to the B+ connection of the alternator and to relay G014 (glow-plug relay).

Power is supplied to the “S” (sens) connection of the alternator from point 30 of the starter motor via fuse E279 and wire 3084.

Only wire 1008 to the + bolt in the bulkhead connector lead-through is fuse-protected by fuse E286 (125A).
The other wires are NOT fuse-protected and they can only be made dead by disconnecting the battery leads.

### VOLTAGE AFTER CONTACT

A voltage is supplied to contact relay G015 (connection point 30) via the starter motor (connection point 30). This connection point may be connected to wire 1010 over contact relay G015.
This wire is only fuse-protected with fuse E286 (125 A).

### OPERATION

When the accessories/ignition/starter switch (C539) is set to the “accessories” position (connection between points 1 and 6), a voltage is supplied to connection point 1 of relay G377 via wire 1000, fuse E037, accessories/ignition/starter switch (C539) (contact points 1-6) and wire 1130.

When the accessories/ignition/starter switch (C539) is set to the “contact” position (connection between points 1 and 4), relay G015 is energised via wire 1000, fuse E037, accessories/ignition/starter switch (C539) (contact points 1 - 4) and wire 4001.
This then connects wire 1000 (voltage before contact) to wire 1010 (voltage after contact).

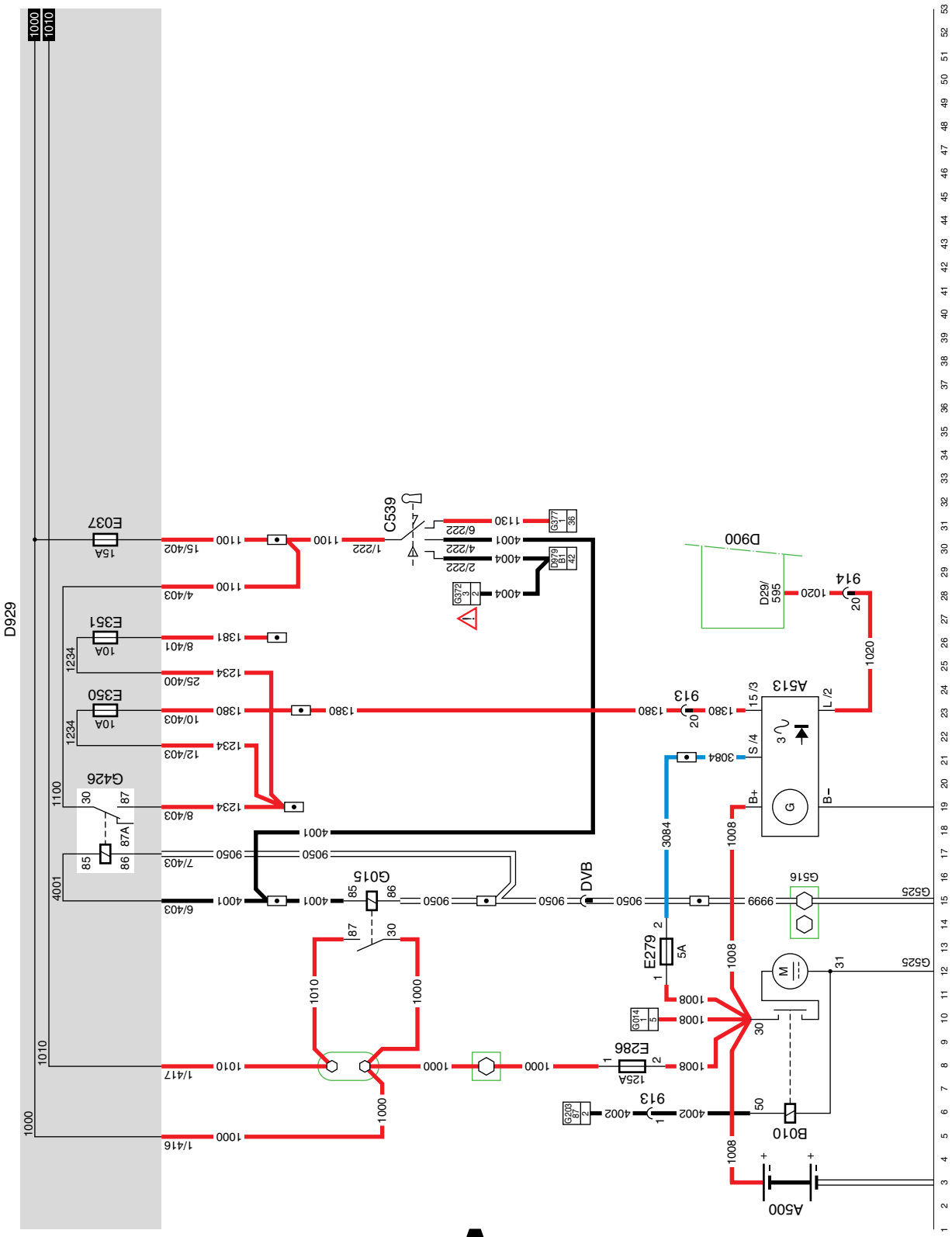
When the accessories/ignition/starter switch (C539) is turned against the pressure of the spring (connection between points 1 and 2), relay G015 remains energised and a voltage is supplied to starting circuit interrupter relay G372 or to D979 (Hydronic 10 cab heater electronic unit) (if fitted) via wire 1000, fuse E037, accessories/ignition/starter switch (C539) (contacts 1-2) and wire 4004. The engine will start, depending on the activation of relay G372 by VIC. When the key is released, the accessories/ignition/starter switch automatically springs back and remains in the “contact” position.

### VARIANTS

| Location | |
|---|---|
| 27: | Relay G372 for manual gearbox.<br>Relay G185 for AS Tronic or Allison. |



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D929
1000
1010
E037
15A
E351
10A
E350
10A
G426
C539
G377
D679
G372
D900
D29/595
914
A513
913
G015
DVB
E279
5A
E286
125A
G614
G209
B010
A500
G516
G525
1358030/30-34
EL001495

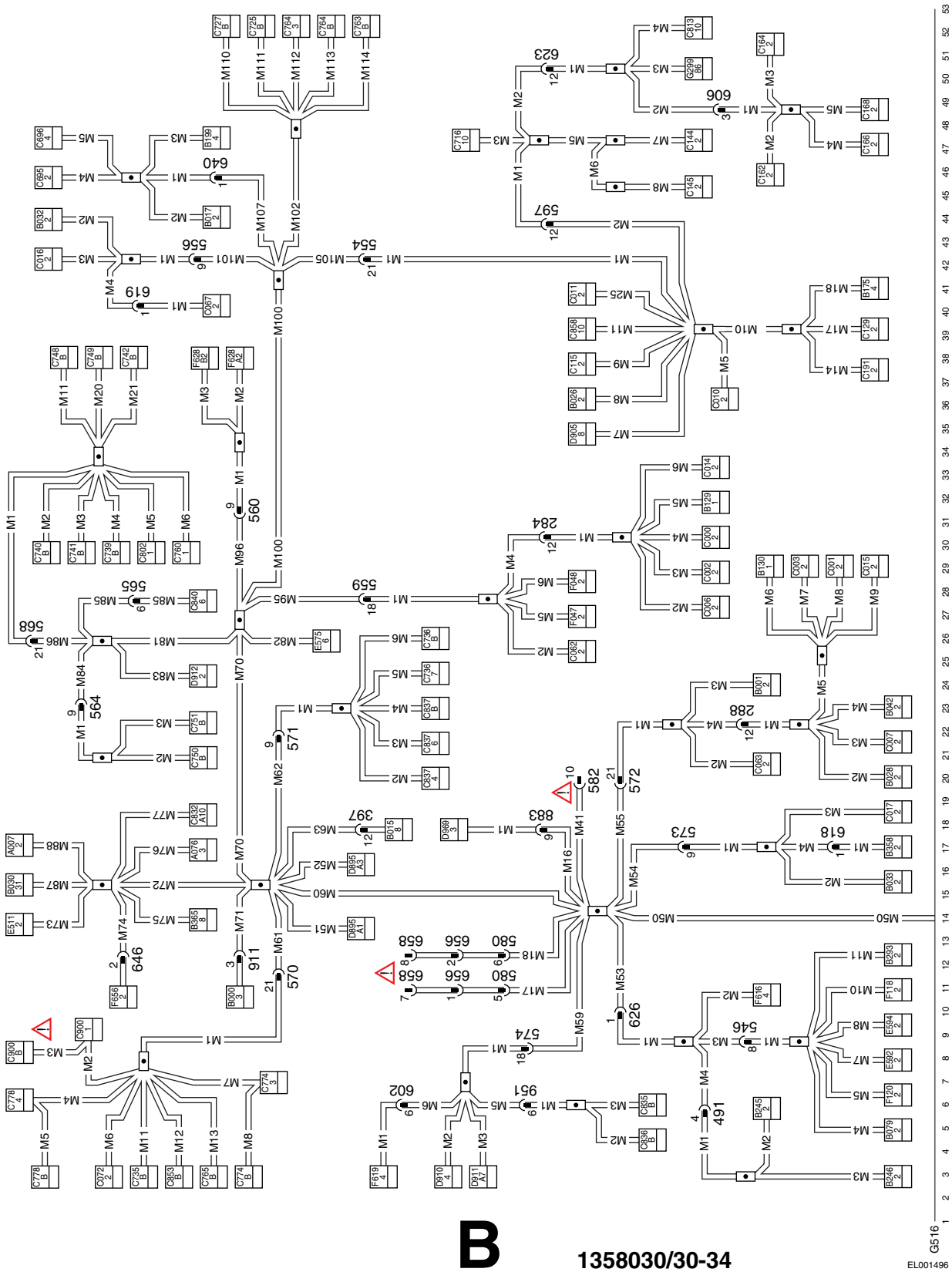
## B OVERVIEW OF EARTHING POINTS

This section diagram gives an overview of all the earth connections, with wire markings and connector points.

**VARIANTS**

| Location | |
|---|---|
| 10 | C900 for EBS system<br>C737 for ABS/ASR-D |
| 12 | Connector 658: superstructure connector (optional) |
| 19 | Connector 582 for cab heater ACH-EA.<br>Connector 482 for cab heater ACH-EW |
| 59 | Connector 644: only for AGC |
| 63 | Only for AS Tronic |
| 71 | Connector 869: only for AS Tronic |
| 72 | Connector 403 only for AS Tronic |
| 74 | Connector 868 only for AS Tronic |
| 75 | Earth connection to relay G036 only for AS Tronic |
| 80 | Connector 860: loop-through to ECAS |

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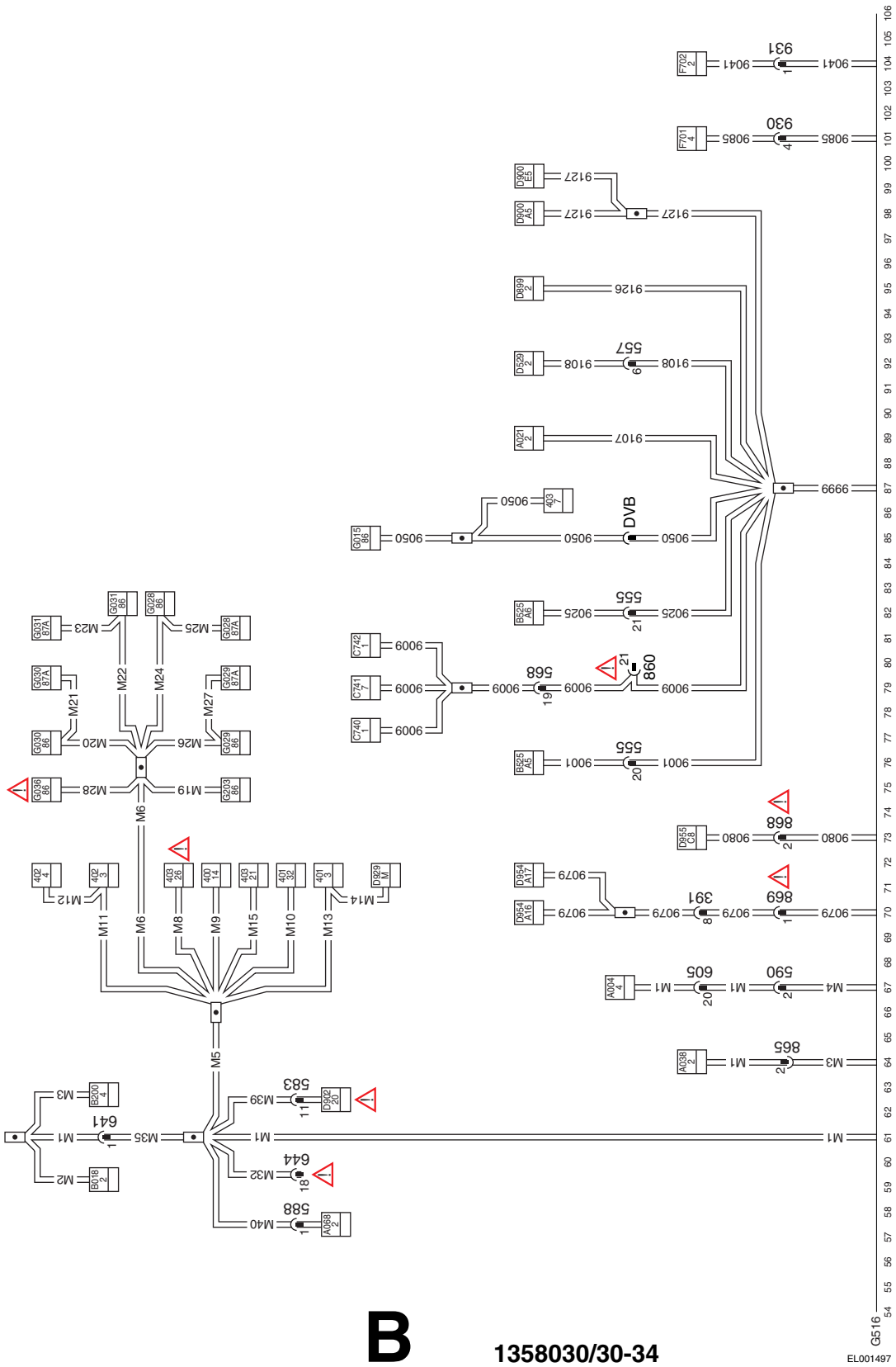
B

1358030/30-34

EL001496

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**B** **1358030/30-34**

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## C CAN OVERVIEW

This section diagram gives an overview of all the CAN connections, with wire markings and connector points.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

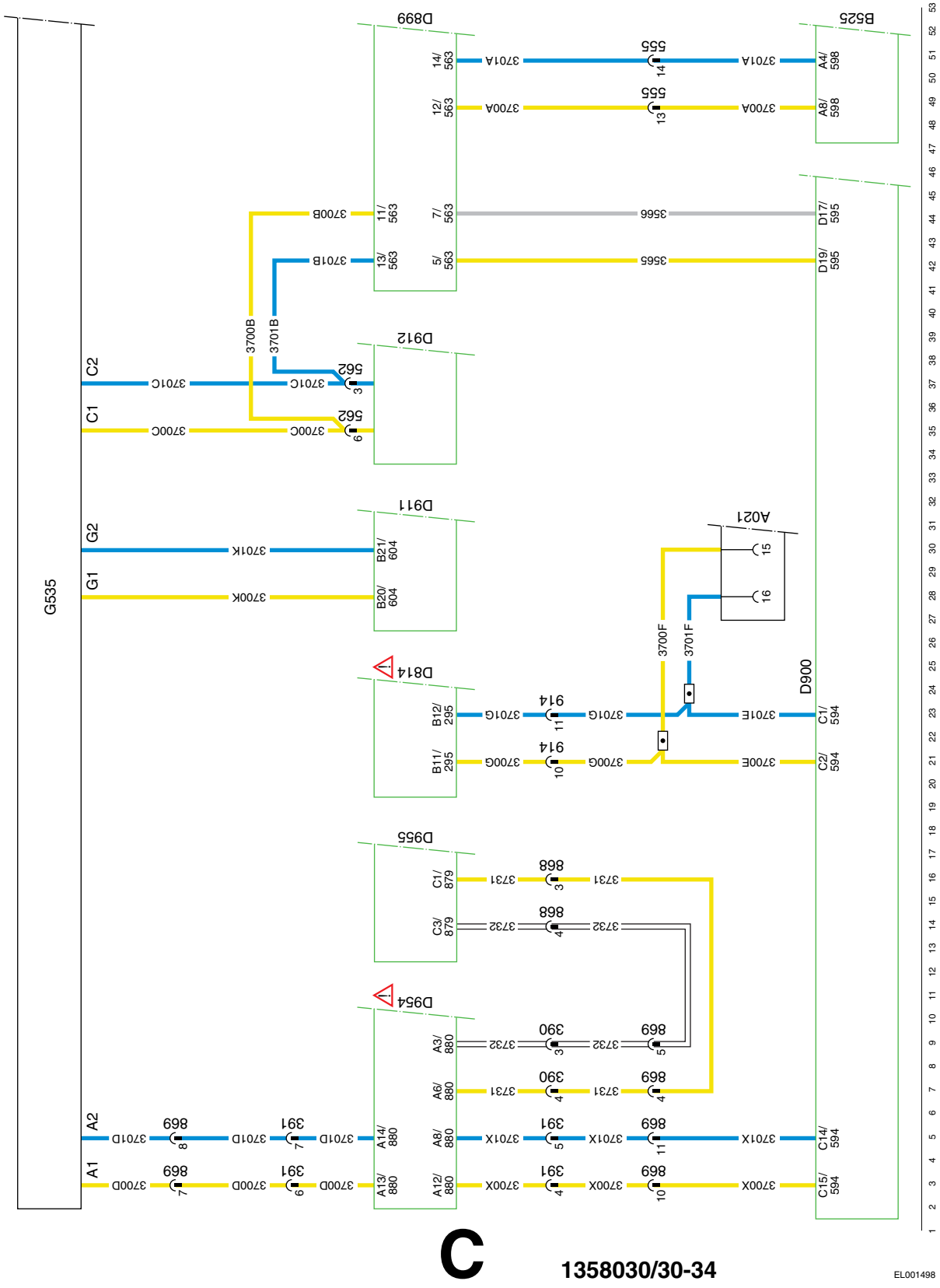
**VARIANTS**

| Location | |
|---|---|
| 11 | D954: only for AS Tronic. If AS Tronic is **NOT** fitted, wire 3700D and wire 3701D direct from C14 and C15 without in-line connectors from D900 to G535, connection points A1 and A2. |
| 25 | D814: UPEC electronic unit or D903: Electronic unit, ECS-DC3 |
| 64, 67 | Connector 873 only on vehicle type FA |



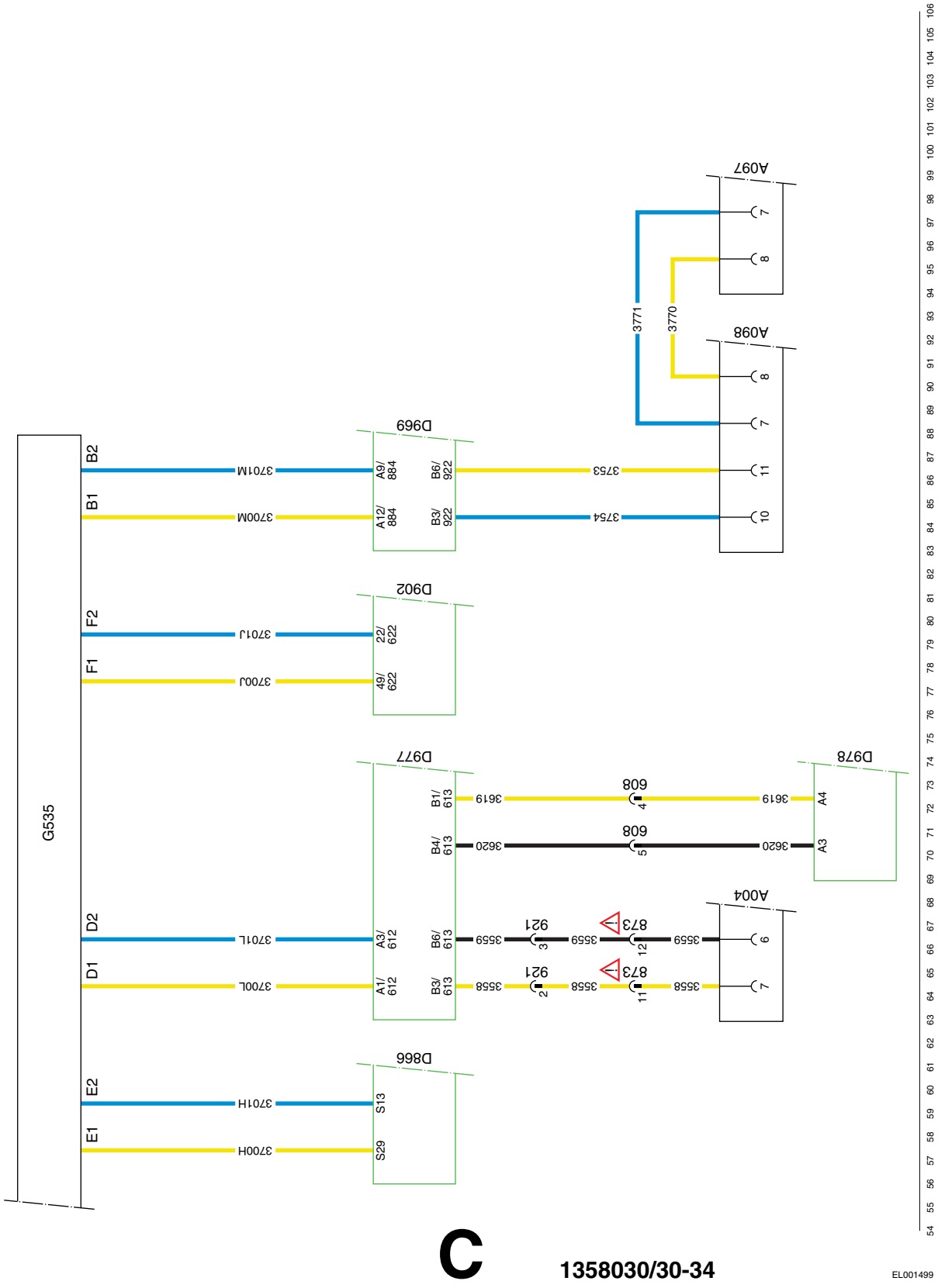


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**C** **1358030/30-34**

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**C** **1358030/30-34** EL001499

Changes in the electrical system from chassis number 0E646818

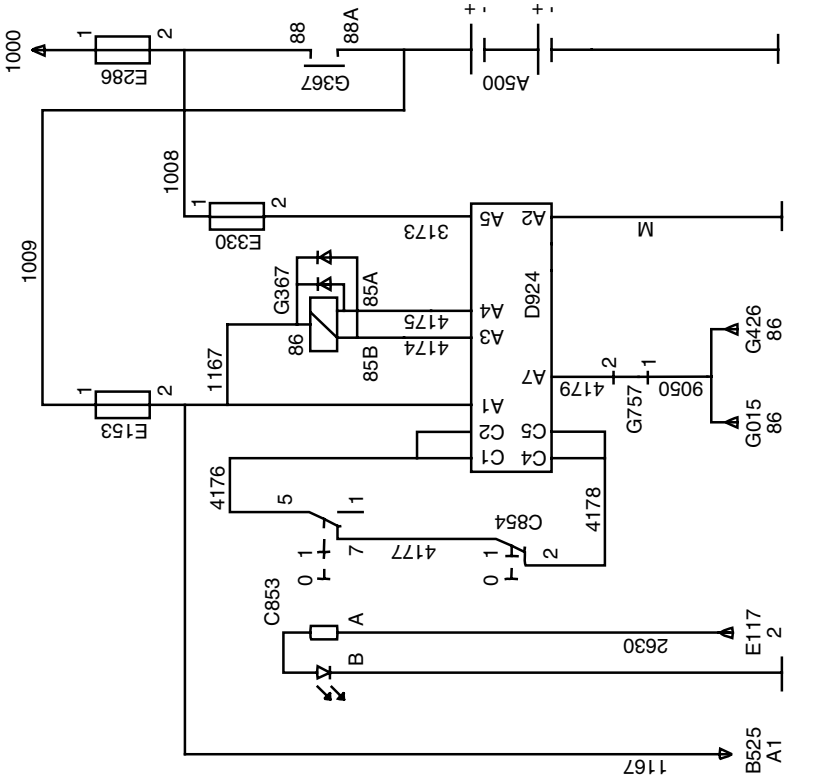
***CF*65/75/85** Serie ≥ 0E621376

## 1 MAIN SWITCH

### MAIN SWITCH FOR VLG/ADR

If the vehicle has an Allison gearbox and the system must meet specific safety requirements, wire no. 1009 (Allison power supply) should be connected to connection 88a of relay G367.

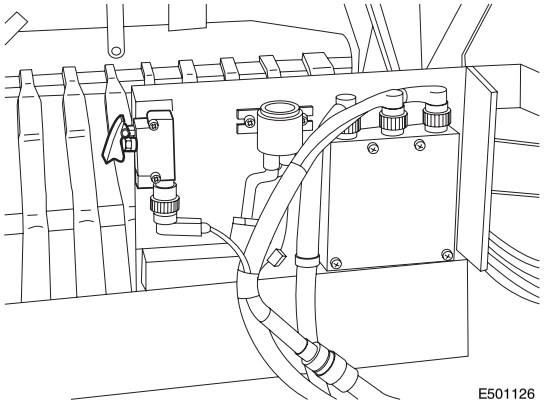
| Basic code number | Description |
|---|---|
| A500 | Batteries |
| B525 | Modular tachograph, MTCO |
| C853 | Cab main switch |
| C854 | Chassis main switch |
| D924 | Electronic unit, main switch |
| E117 | Fuse, search lighting |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply |
| E286 | Main fuse |
| E330 | Fuse, main switch, “sens” wire |
| G015 | Contact relay |
| G367 | Relay, main switch power supply |
| G426 | Contact relay |
| G757 | Through-connection between output A7 (wire 4179), G015 and G426 via wire 9050. |



**Relay, main switch power supply**
Relay G367 is a bi-stable relay. If one of the two coils is briefly energised, the relay will remain in this position. If the other coil is energised, the relay will switch over and then remain in the new position.

## Electrically closing the main switch

The main switch (D924) can be closed:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854




**ATTENTION: Switches C853 and C854 are connected in series. When C853 or C854 is switched on, the other switch must be in the "main switch on" position.**
Switch C853 (main switch in cab) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive terminal of the batteries is now connected to the vehicle's power supply.
Immediately after switch C853 closes, connection point C2 is internally connected to point A7.

Connection point A5 is connected to the positive terminal via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

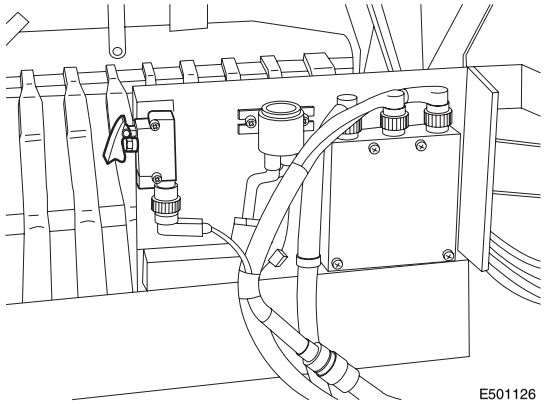
**Closing the main switch electrically on the chassis**

**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**
Switch C854 (switch for main switch on the chassis) connects the C1 and C2 connections to the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.
Relay G367 is immediately energised through wire 4174 and connection point A3 (A3 is connected to earth in the unit for 0.5 seconds). This connects point 88a to 88 of relay G367. The positive terminal of the batteries is now connected to the vehicle's power supply.
Immediately after switch C854 closes, connection point C2 is internally connected to point A7.

Connection point A5 is connected to the positive terminal via wire 3173 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

The main switch (D924) can be opened:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854

**Opening the main switch electrically in the cab**




**NOTE: Switch C854 must be in the "main switch on" position (connection between contacts 1 and 2).**
Switch C853 (switch for main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.

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Two actions are carried out immediately after switch C853 is opened:

1. connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. after a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive terminal via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Opening the main switch electrically on the chassis**

**NOTE: Switch C853 must be in the "main switch on" position (connection between contacts 5 and 7).**
Switch C854 (main switch in cab) disconnects the C1 and C2 connections from the C4 and C5 connections via wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.

Two actions are carried out immediately after switch C854 is opened:

1. connection point A7 is disconnected from earth (A2) in the unit. If the engine is running, it is switched off.
2. After a delay of approx. 6 seconds, relay G367 is connected to earth in the unit for approx. 0.5 seconds via wire 4175 and connection point A4. This breaks the connection between points 88a and 88 of relay G367. The batteries are now disconnected from the vehicle's power supply.

Connection point A5 is connected to the positive terminal via wire 3173 and fuse E330 after connection point 88 of relay G367. This connection transmits a signal to the ECU to indicate that relay G367 has switched.

**Note:**
When one of the switches (C853 or C854) that activate the electronic unit (close main switch) is operated, relay G367 is activated after approximately 3 seconds. If one of the switches is operated again within the 3 seconds, the electronic unit (D924) will select the priority "main switch ON".

**MECHANICAL MAIN SWITCH**
When C694 (mechanical main switch) is operated, connections B and A are connected. The earth of the batteries is now connected to the chassis. The earth connection of B525 (MTCO) is independent of the position of the main switch.

**VARIANTS**

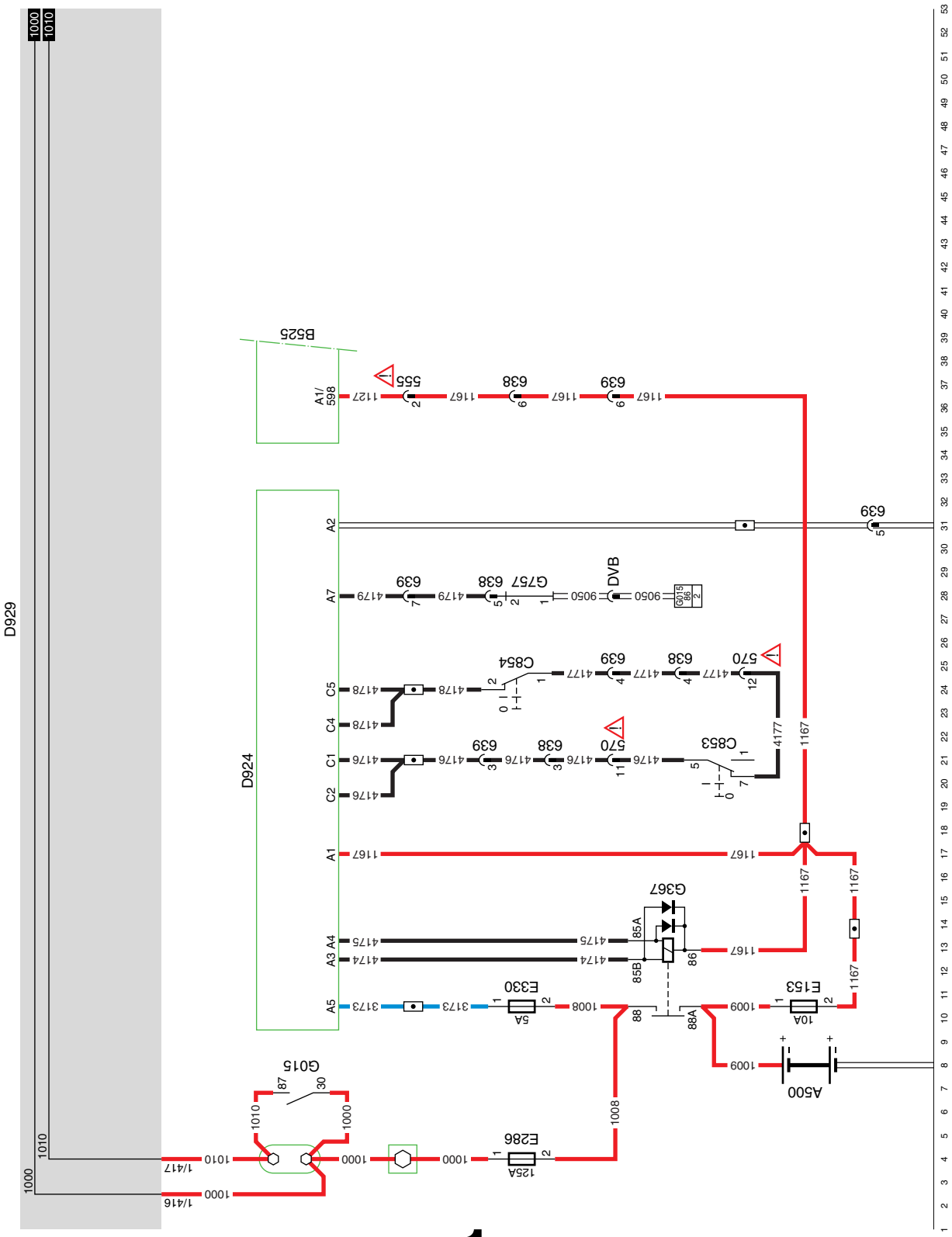
| Location | |
|---|---|
| 22 | Attach wire 4176 to pin 11 of connector 570. |
| 25 | Attach wire 4177 to pin 12 of connector 570. |
| 37 | Attach wire 1167 to pin 2 of connector 555. |
| 64 | Attach wire 9307 to pin 20 of connector 555. |







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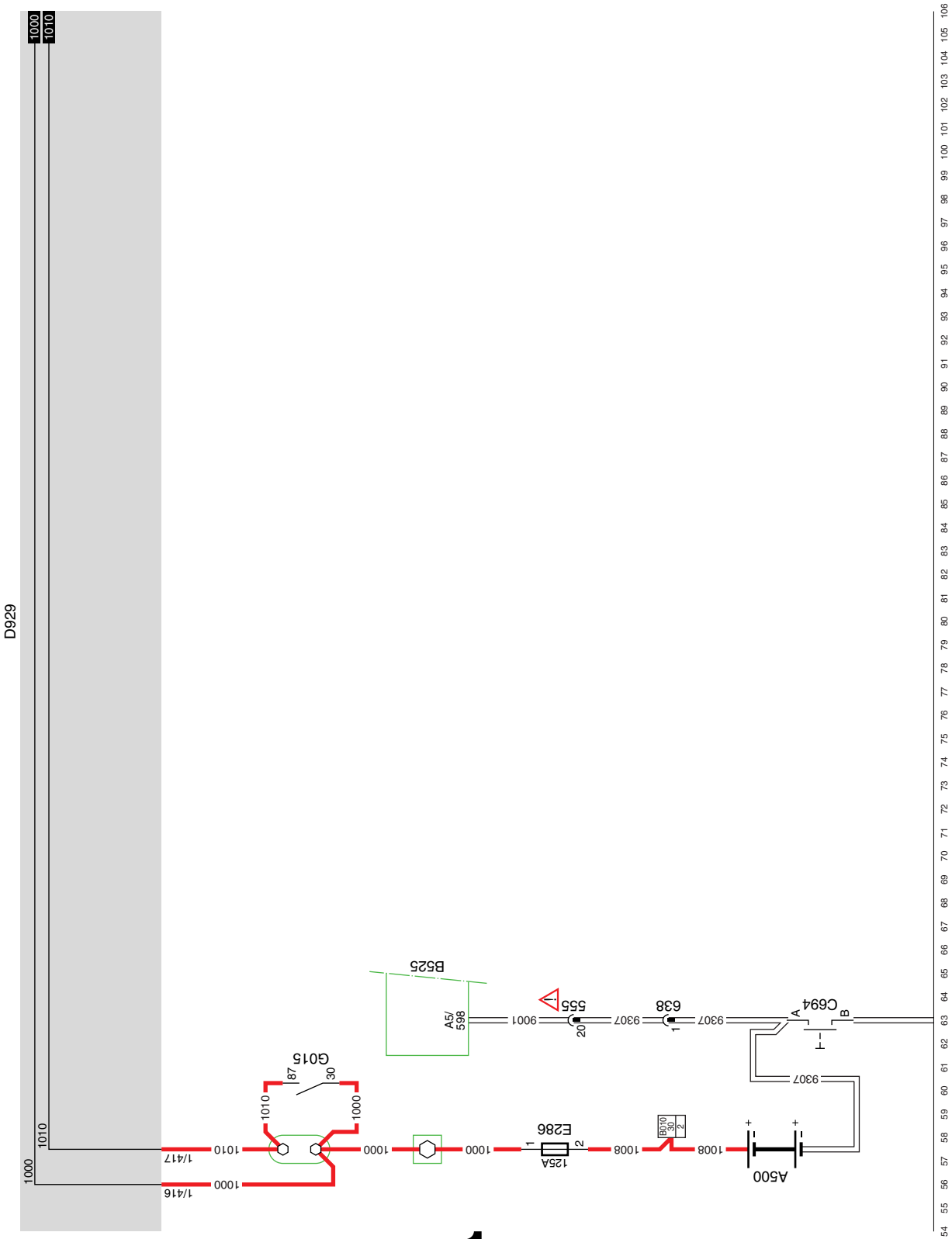

**1** **1358030/30-34**

EL001500

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Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**1** **1358030/30-34**

EL001501

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## 2 ALTERNATOR/IGNITION/STARTER SWITCH/CHARGING CIRCUIT

**CONTACT CIRCUIT**
If accessories/ignition/starter switch C539 is turned (contact 1 is connected to pin 6), the “radio accessories power supply” relay (G377) will be energised.
Voltage is now applied to contact 1 of relay G377 through fuse E037, wire 1100, contacts 1-6 of switch C539, wire 1130. When G377 is energised, a connection is made between contacts 3 and 5 of G377 and a voltage is switched from the converter to the radio.

**STARTING CIRCUIT**
If the ignition switch C539 is turned (contact 1 is connected to 4), contact relay G015 will be activated via wire 4001.
If the ignition switch is turned to the “start” position, a contact is made in this switch between contacts 1 and 2. The power is now supplied from the batteries through fuse E037, the connection 1-2 from the ignition/starter switch and wire 4004 on connection point B1 of D979.
A voltage is also applied to connection point 30 of relay G185 through wire 4004.
Relay G185 is only fitted if the vehicle is equipped with AS Tronic. When the contact is switched on and the gearbox is in neutral, relay G185 will be energised.
The voltage is now applied to connection point 85 of relay G203 through wire 4004, contacts 30-87 of relay G185, contacts 3-5 of relay G372. This relay is energised, thereby connecting connection point 30 to connection point 87.
A voltage is now applied to connection point 50 of the starter motor, through fuse E037, wire 1100, relay contacts 30-87, wire 4002, causing the starter motor to turn.

As soon as the motor turns, the VIC applies a voltage to connection point C44. The voltage is then applied to connection point 1 of relay G372 via wire 4202. This relay is energised, breaking the starting circuit.

If the vehicle has a manual gearbox, wire 4004 is directly connected to point 3 of relay G372.

**CHARGING CIRCUIT**
If the contact is activated, there is voltage on connection 15 of the alternator.
An internal resistor in the alternator is energised by an IC in the carbon brush holder. This resistor ensures that a low level of current passes through the energised resistor. This excites a magnetic field in the alternator.

After starting, the voltage on terminals B+ and 15 will rise to about 28.5V. Once this voltage is reached, the IC in the regulator interrupts the pre-exciter coil to enable the voltage to be controlled. The magnetic field will now disappear, so that the generator will not be energised for a short period of time. As a result, the voltage on outputs B+ and 15 will drop.
The regulator reactivates when the voltage drops below 27.6V. This means that the voltage supplied by the generator remains relatively constant. The batteries are supplied through the B+ generator output.

The alternator charging current warning in the DIP is activated through wire 1020, which is connected to connection point D29 of the VIC (D900). The VIC controls the DIP via the CAN network. The voltage on wire 1020 is switched by the control IC.

The alternator is also equipped with a “sens” line. This connection continuously measures the voltage on connection point 30 of the starter motor. If the voltage on connection point 30 drops, it is immediately corrected by the control IC. The alternator will increase the voltage until a value of 28.5V is reached again.

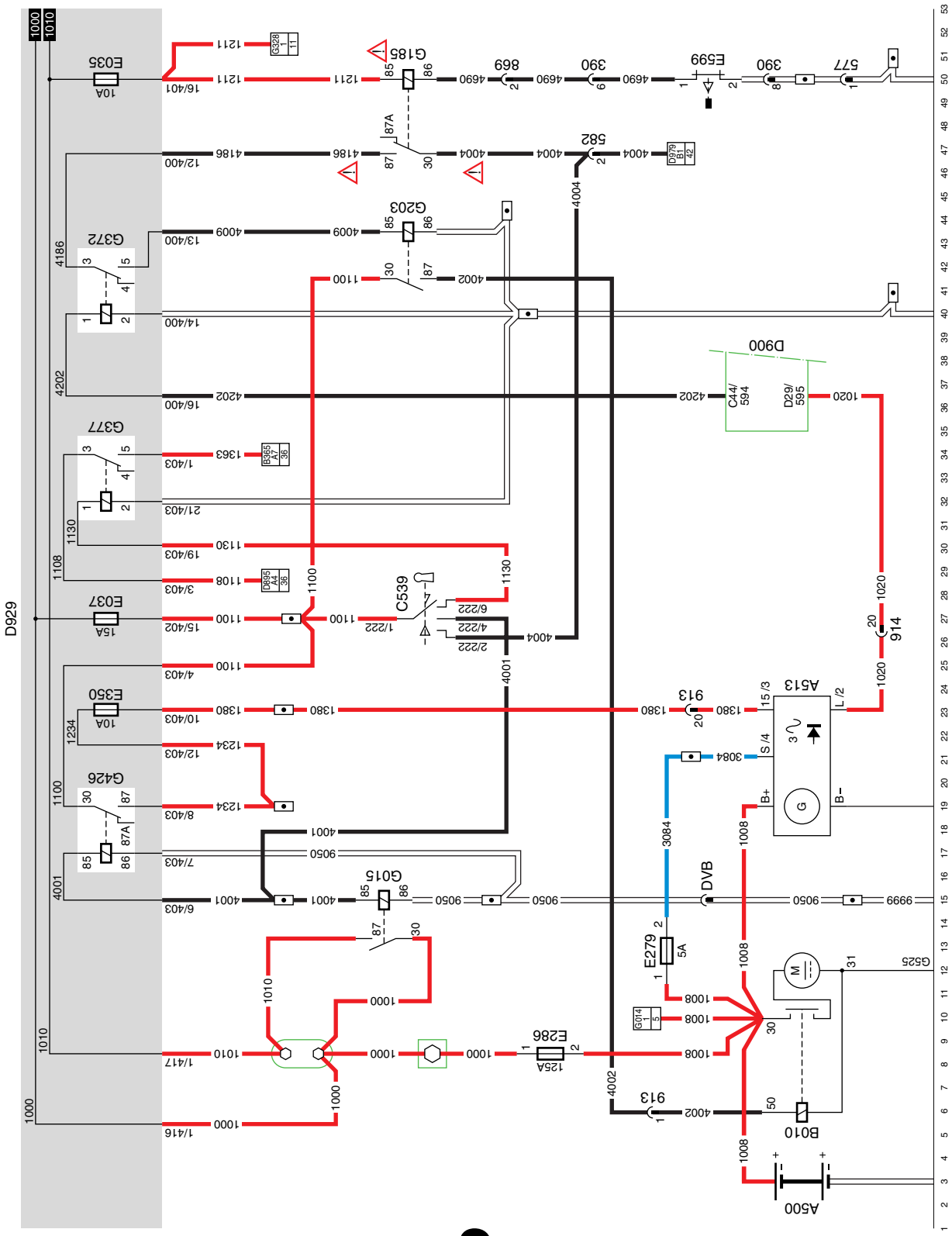
**VARIANTS**

| Location | |
|---|---|
| 15 | DVB in wiring harness next to PCB |
| 46 | If AS Tronic not fitted: wire 4004 direct from connector 582, connection point 2 to connector 400, connection point 12. |
| 52 | Relay G185 fitted only on AS Tronic gearbox. |





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D929
E035
10A
G185
E599
390
869
577
582
G203
G372
G377
E037
15A
C539
E350
10A
G426
G015
DVB
E279
5A
E286
125A
D900
C44/
594
D29/
595
914
A513
913
B010
A500
G625
1358030/30-34
EL001502

2



11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

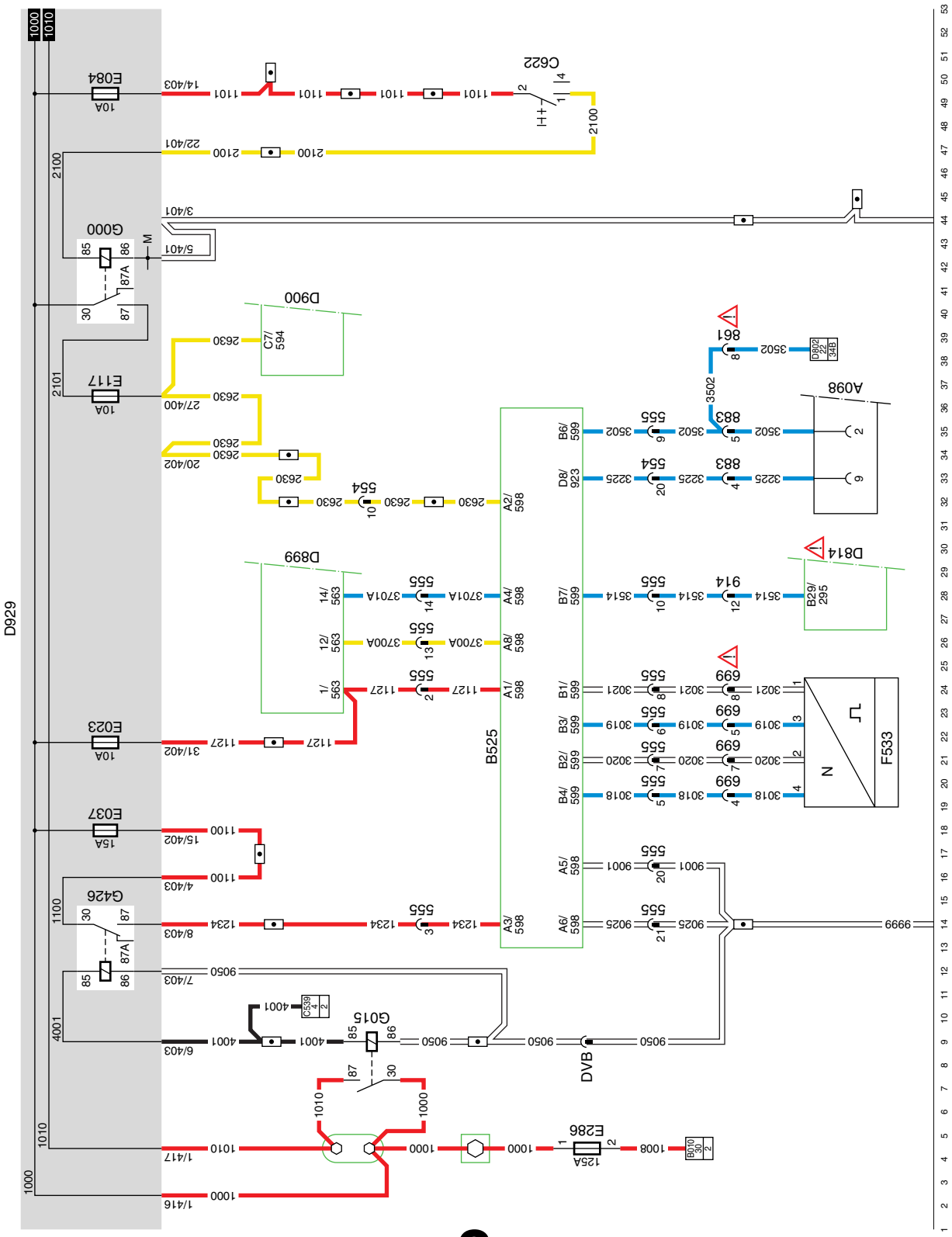
**3 MODULAR TACHOGRAPH (MTCO)**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 26 | Connector 699 for AS Tronic. Connector 626 for manual gearbox. |
| 29 | D814 for vehicles with UPEC. D903 for vehicles with ECS-DC3. |
| 39 | Connector 861: connection to ECAS system |

11


D929
B525
DVB
F533
A098
D814
D899
D900
E084
E117
E023
E037
G426
G015
G000
E286
C622
B61
B883
B554
B555
B669
B914
B1/599
B2/599
B3/599
B4/599
B6/599
B7/599
D8/923
A1/598
A2/598
A3/598
A4/598
A5/598
A6/598
A8/598
1/563
12/563
14/563
C7/594
B29/295
D802 22 34B
B570 30 2
C539 4 2
3
1358030/30-34
EL001503

**8 VIC**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

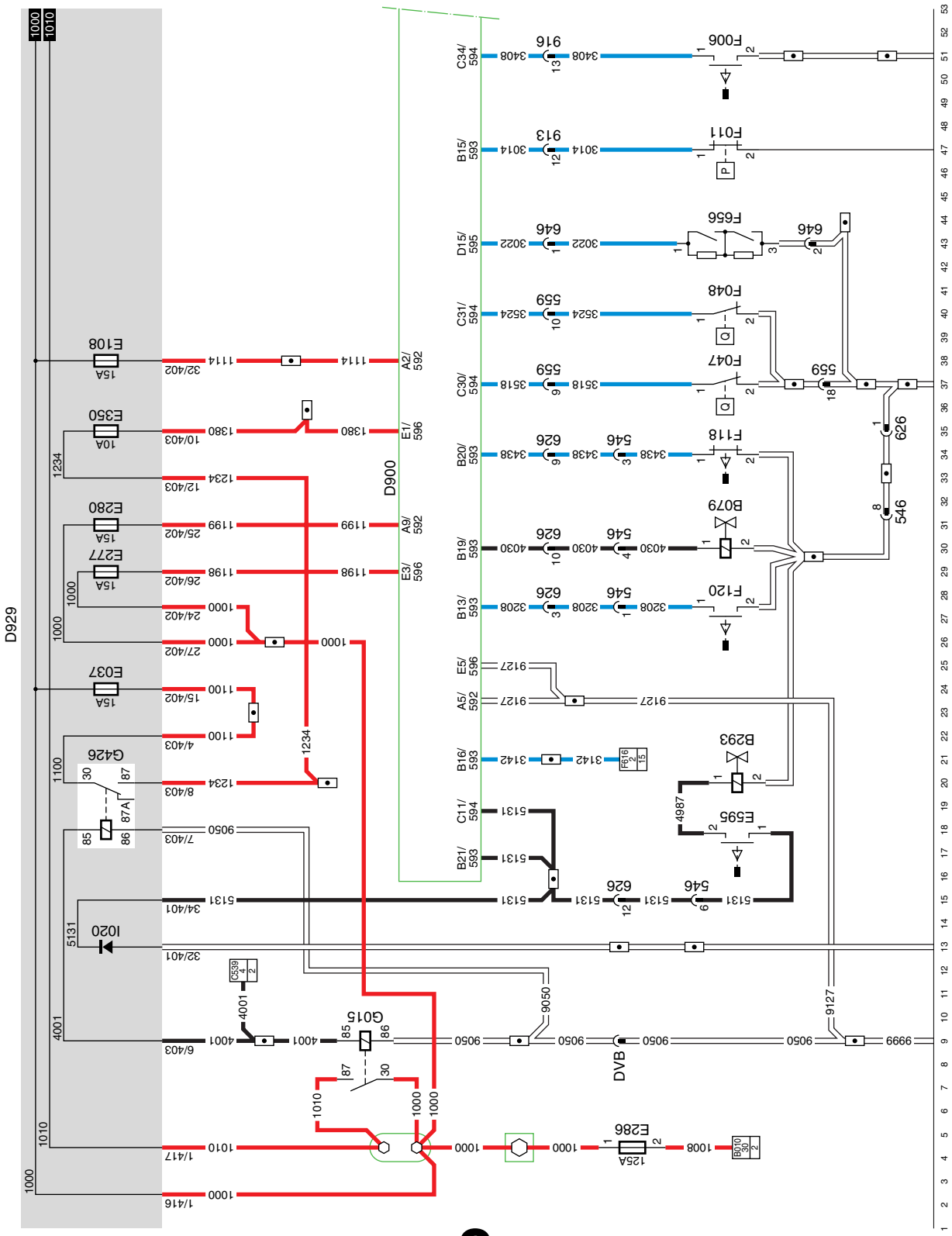
**VARIANTS**

| **Location** | |
|---|---|
| 146 | Connector 580: is an option for bodybuilder |
| 148 | D871: cab heater ACH-EA.<br>D979: cab heater ACH-EW |
| 148 | Relay G301: if vehicle is fitted with Swedish lighting. |
| 203 | Connector 584: for vehicles with ABS/ASR-D.<br>Connector 585: for vehicles with EBS. |
| 223, 227 | D954: only for AS Tronic. If AS Tronic is **NOT** fitted, wire 3700D and wire 3701D direct from C14 and C15 without in-line connectors from D900 to G535, connection points A1 and A2. |

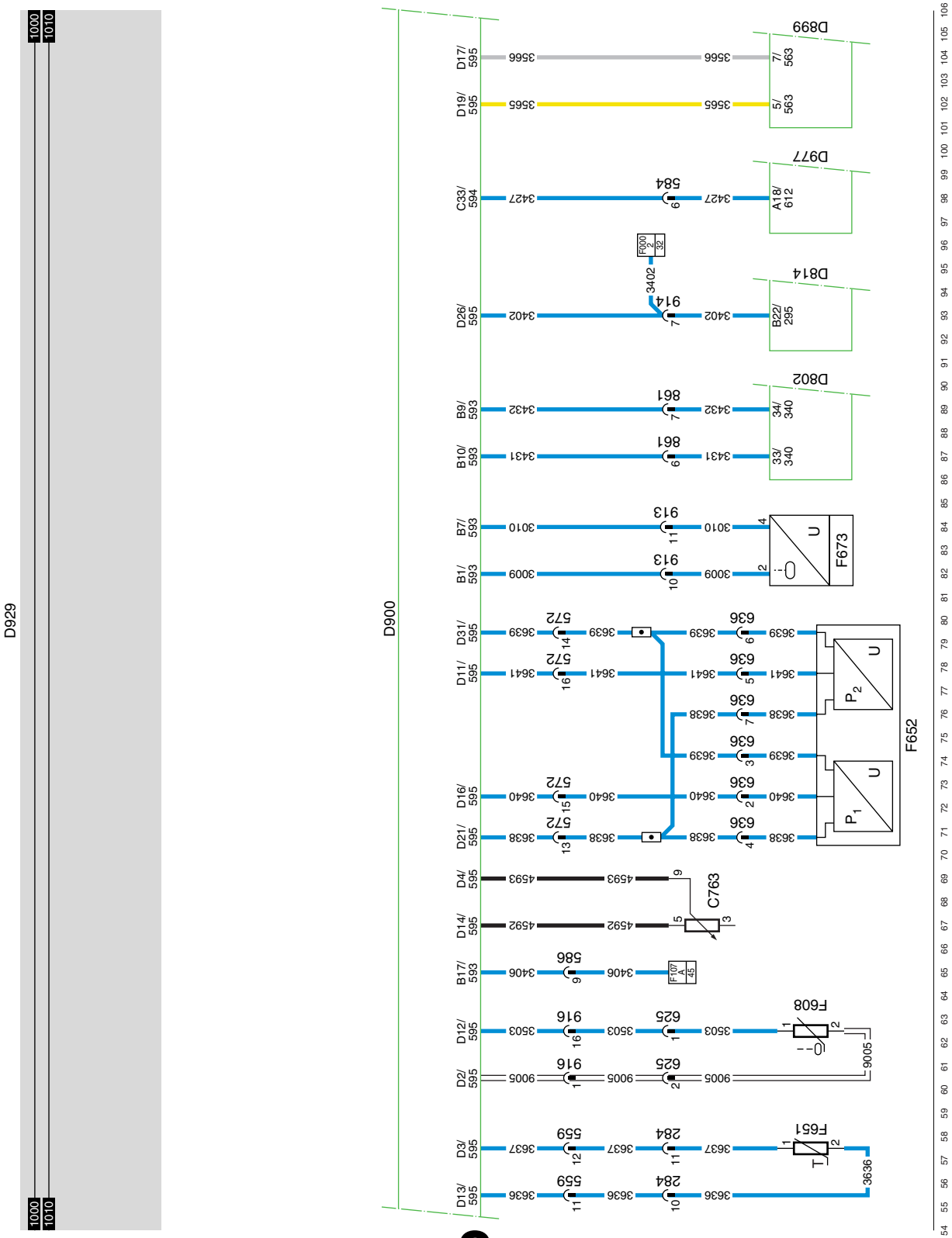
11



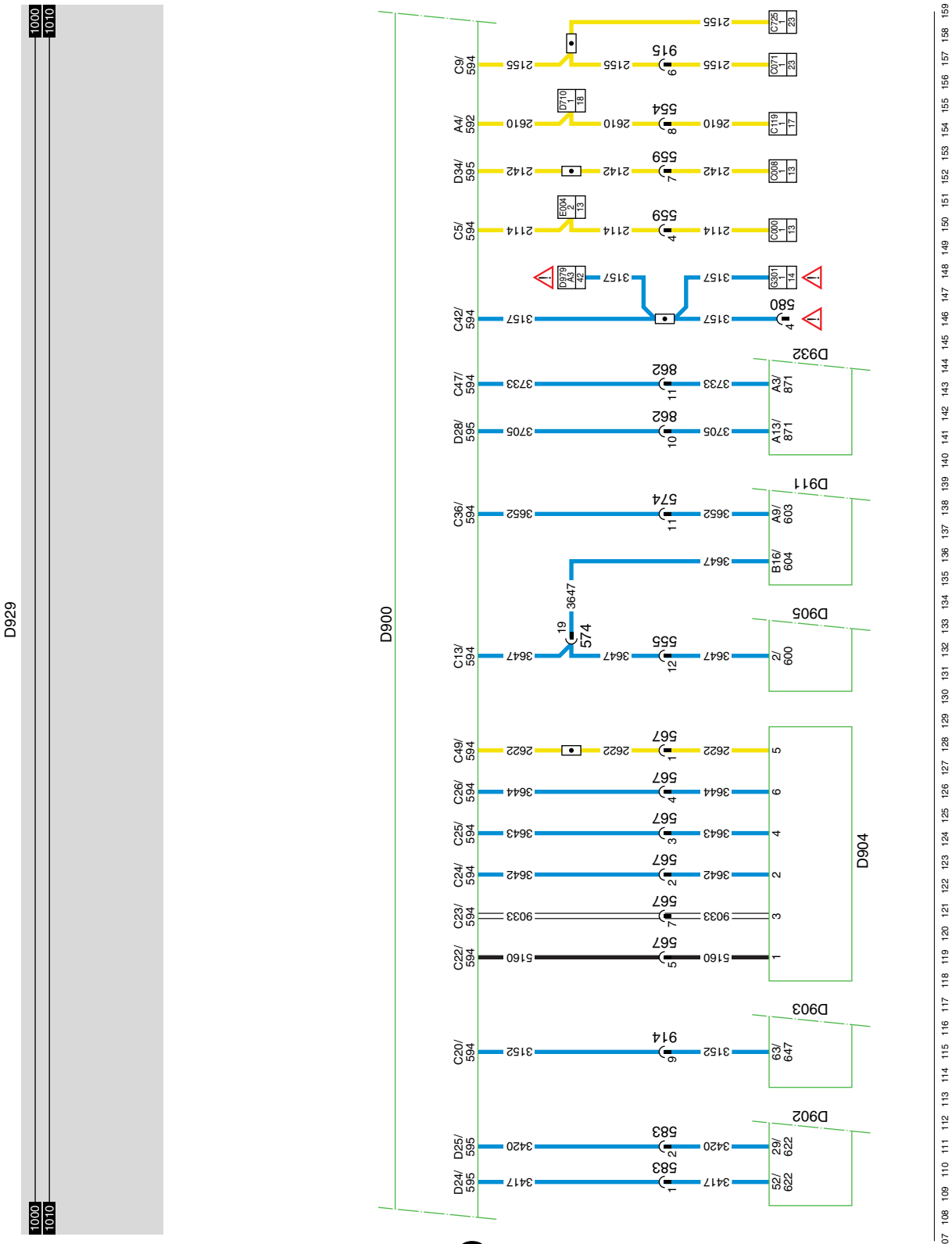
© 200520




**8** **1358030/30-34**




**8** **1358030/30-34**



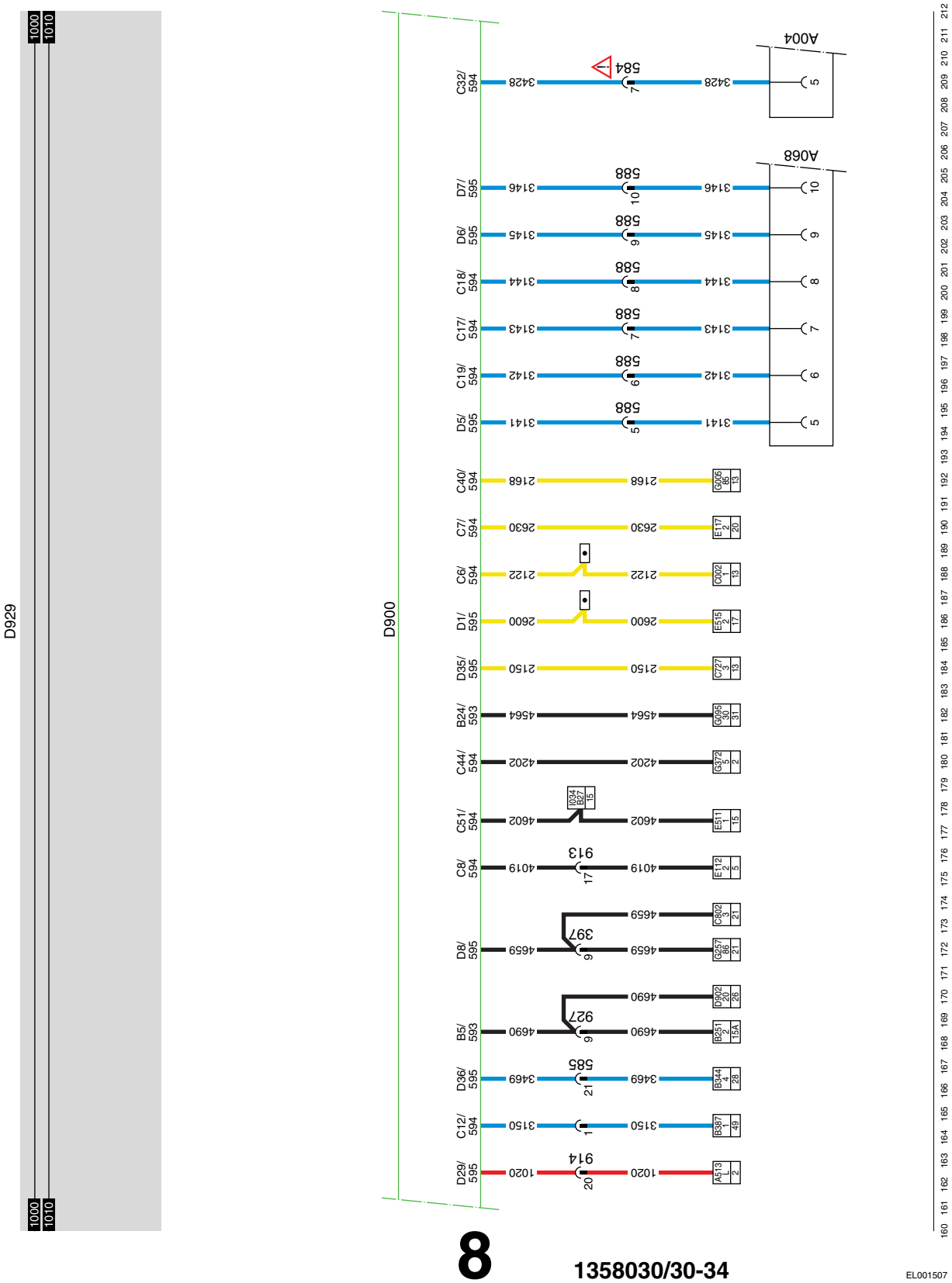

**8** **1358030/30-34**

EL001506

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376

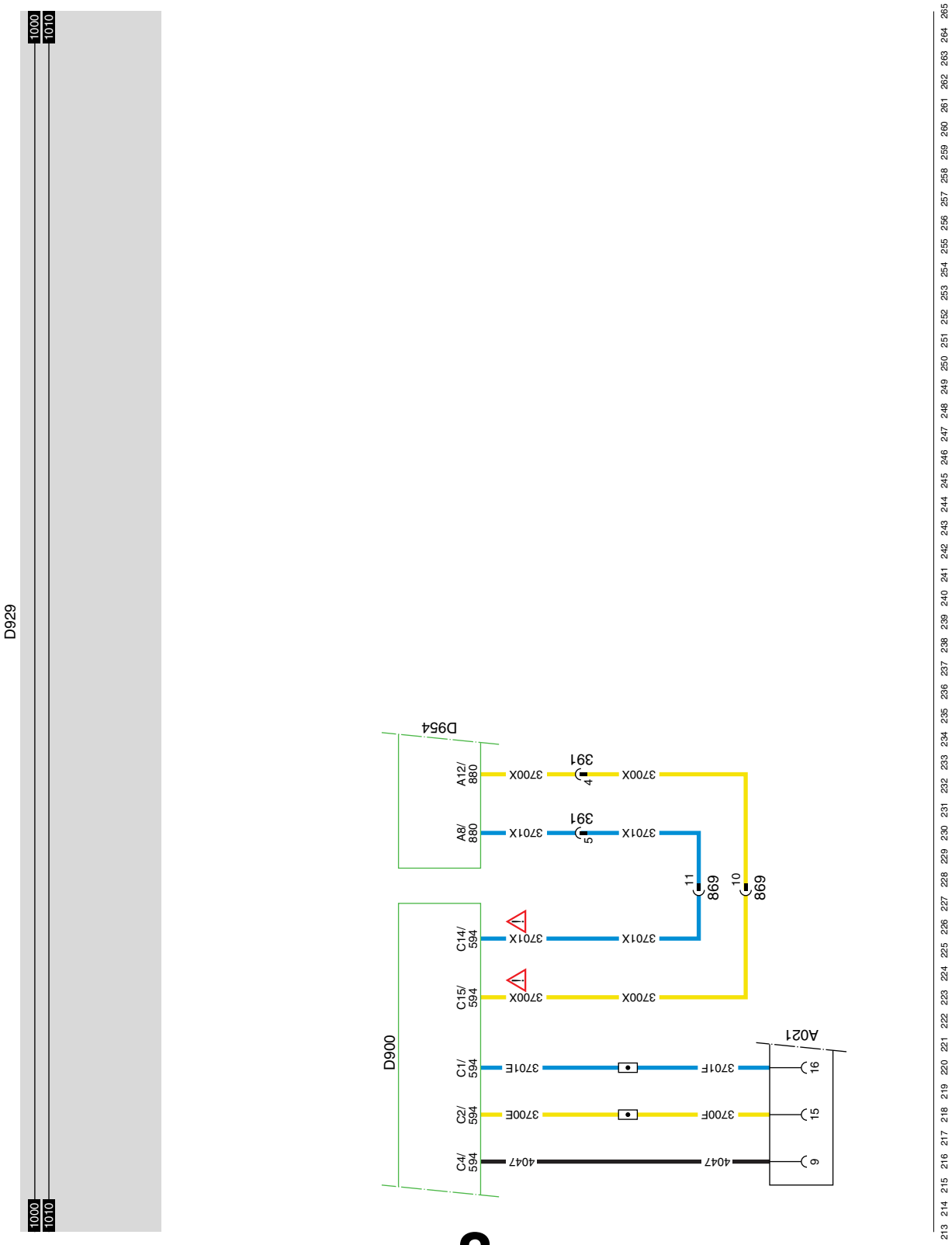



**8** **1358030/30-34**

EL001507



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**8** **1358030/30-34**

11

**9 FA MARKER AND PARKING LIGHTS**

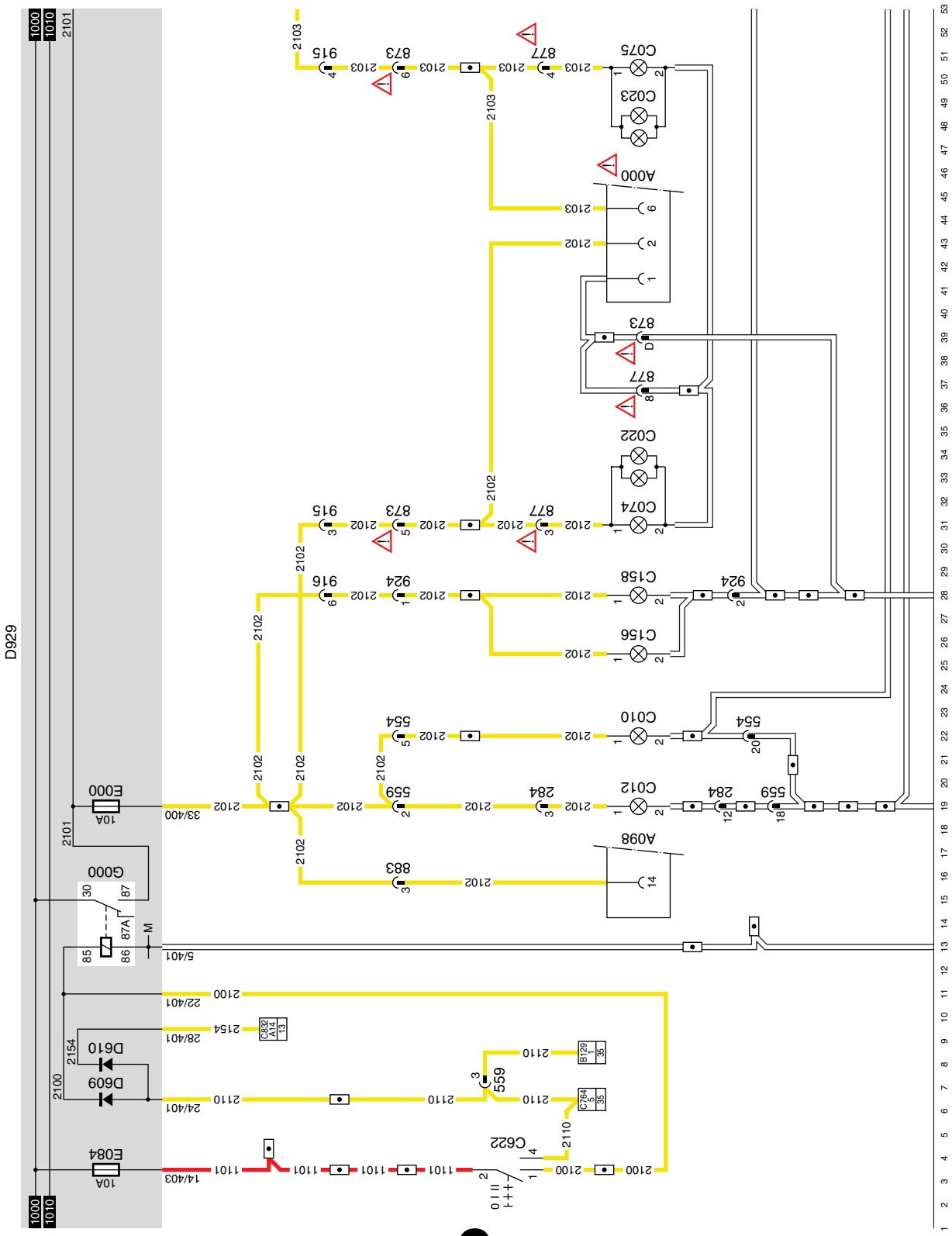
Switching the light switch (C622) to the 1st position (connection between contacts 2 and 1) energises the tail light/width marker light relay (G000) through fuse E084, wire 1101, contacts 2-1 of switch C622 and wire 2100. A voltage is applied to the left and right lights through the G000 relay contacts (30-87) and fuses E000 and E001 respectively.

Linked to fuse E000 are: C010, C012, C156, C158, C074 and C022. There is also a connection in connector A000 (pin 2) and connector A098 (pin 14) (option).

Linked to fuse E001 are: C011, C013, C157, C159, C075 and C023. There is also a connection in connector A000 (pin 6).

**VARIANTS**

| **Location** | |
|---|---|
| 31, 36, 51: | Connector 877: only if the vehicle has a buffer beam as standard. |
| 31, 39, 50: | Connector 873: only on vehicle type FA. **Not** if AE = > 902 mm. |
| 46 | This may be either a 7-pin or a 15-pin connector. For more information: see section diagram 47. |



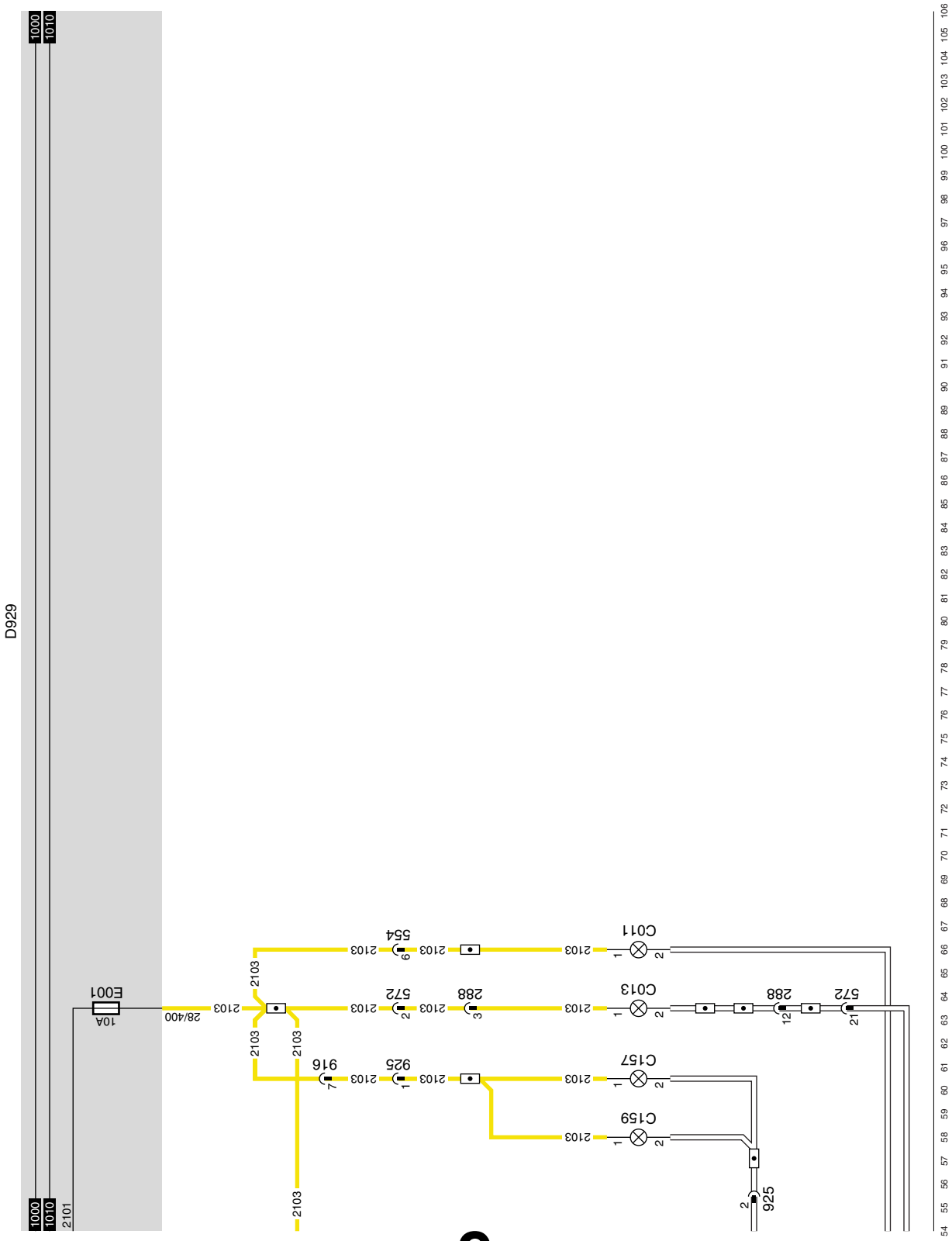

**9** **1358030/30-34**

EL001509

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**9** **1358030/30-34** EL001510

11

## 10 FT MARKER AND PARKING LIGHTS

Switching the light switch (C622) to the 1st position (connection between contacts 2 and 1) energises the tail light/width marker light relay (G000) through fuse E084, wire 1101, contacts 2-1 of switch C622 and wire 2100. A voltage is applied to the left and right lights through the G000 relay contacts (30-87) and fuses E000 and E001 respectively.

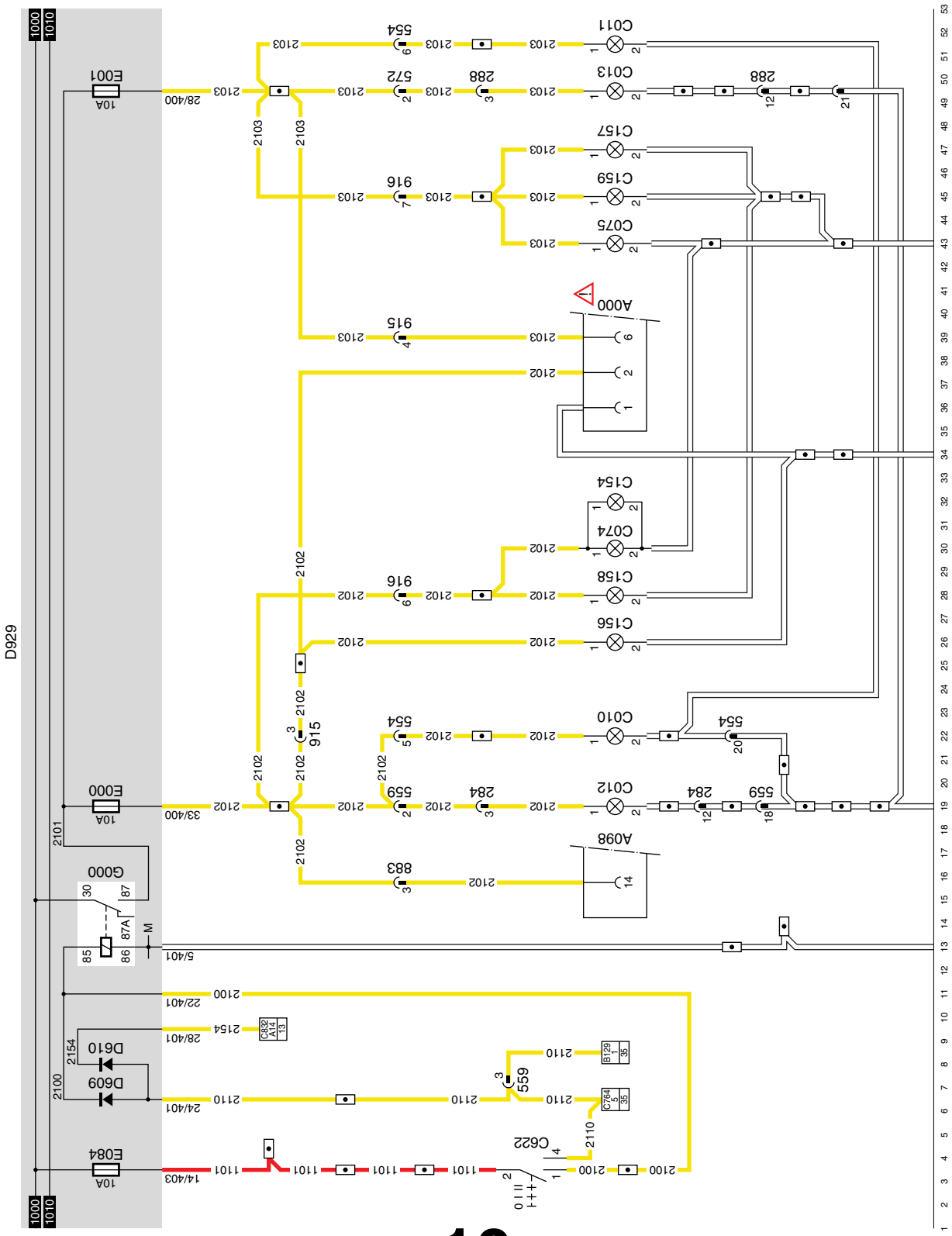
Linked to fuse E000 are: C010, C012, C156, C158, C074 and C154. There is also a connection in connector A000 (pin 2).

Linked to fuse E001 are: C011, C013, C157, C159 and C075. There is also a connection in connector A000 (pin 6) and connector A098 (pin 14) (option).

**VARIANTS**

**Location**
39 This may be either a 7-pin or a 15-pin connector. For more information: see section diagram 48.

11




**10** **1358030/30-34**

EL001511

11

Changes in the electrical system from chassis number 0E646818

*CF*65/75/85 Serie ≥ 0E621376

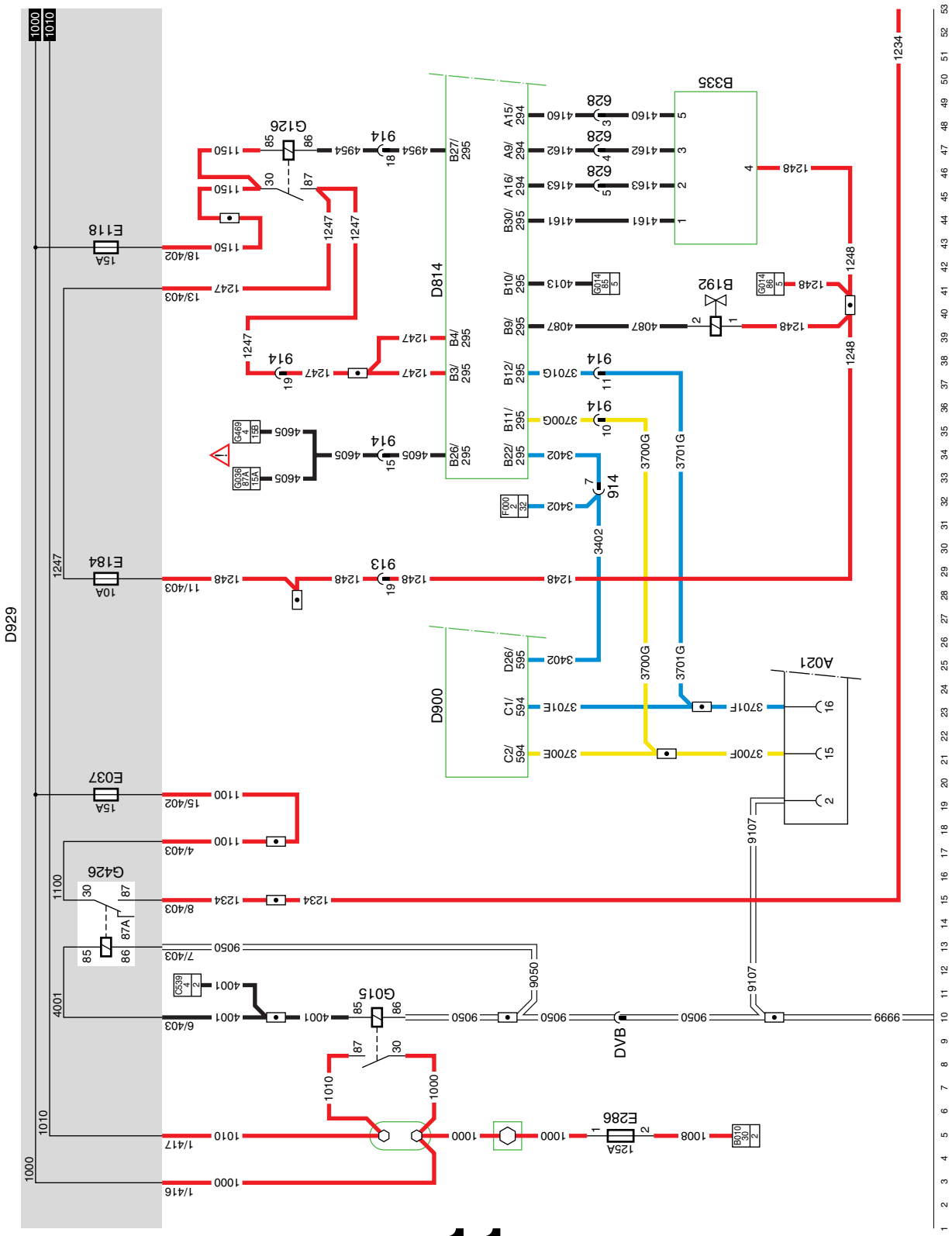
11 UPEC

SEE THE SYSTEM MANUAL FOR MORE INFORMATION

VARIANTS

| Location | |
|---|---|
| 34 | Section diagram 15A if the vehicle is fitted with a manual gearbox or an Allison gearbox. Section diagram 15B if the vehicle is fitted with AS Tronic gearbox. |
| 91 | Wire 6158 ends in lead-through connector 913, pin 3. This wire is for the bodybuilder. |

11

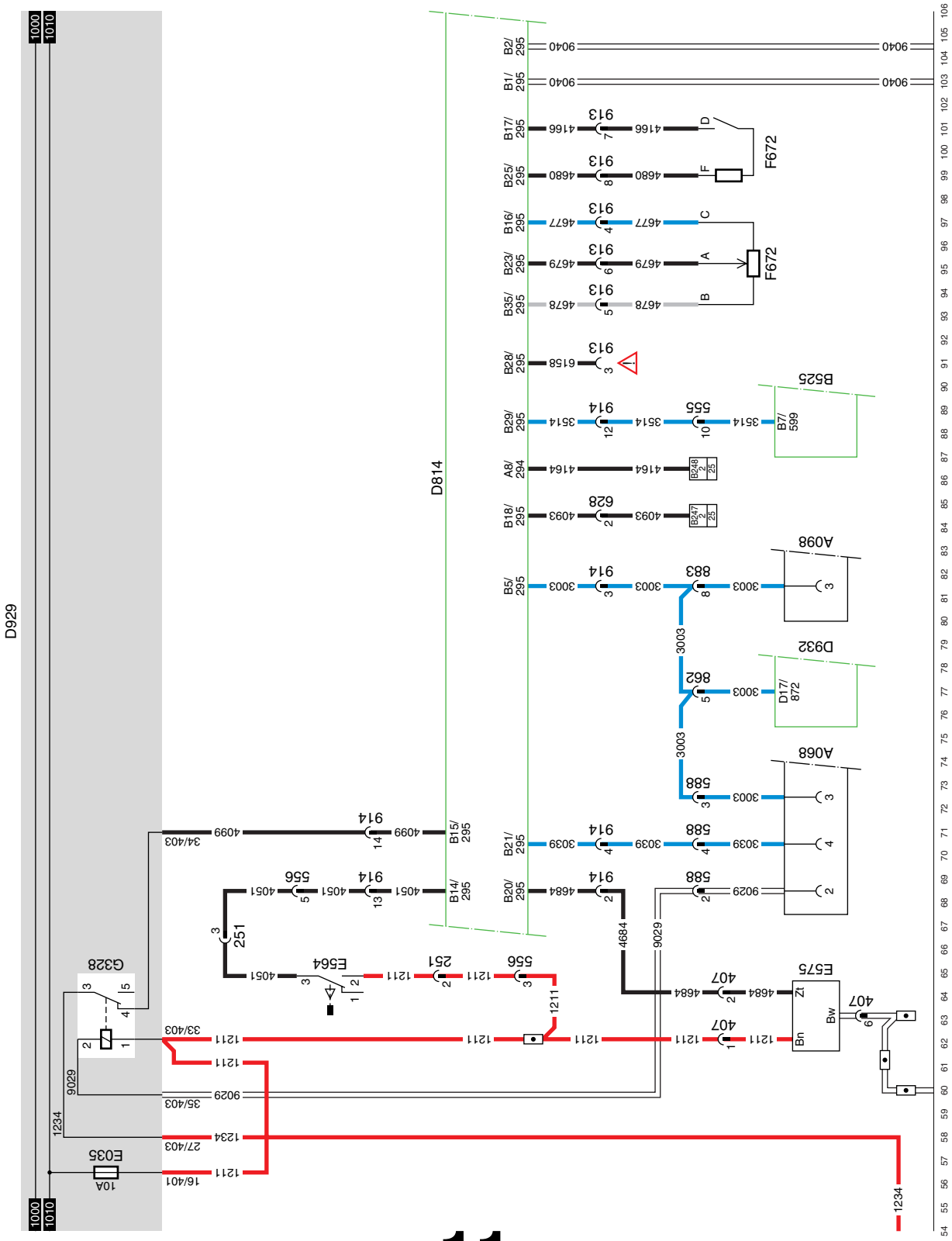



**11** 1358030/30-34

EL001512

Changes in the electrical system from chassis number 0E646818

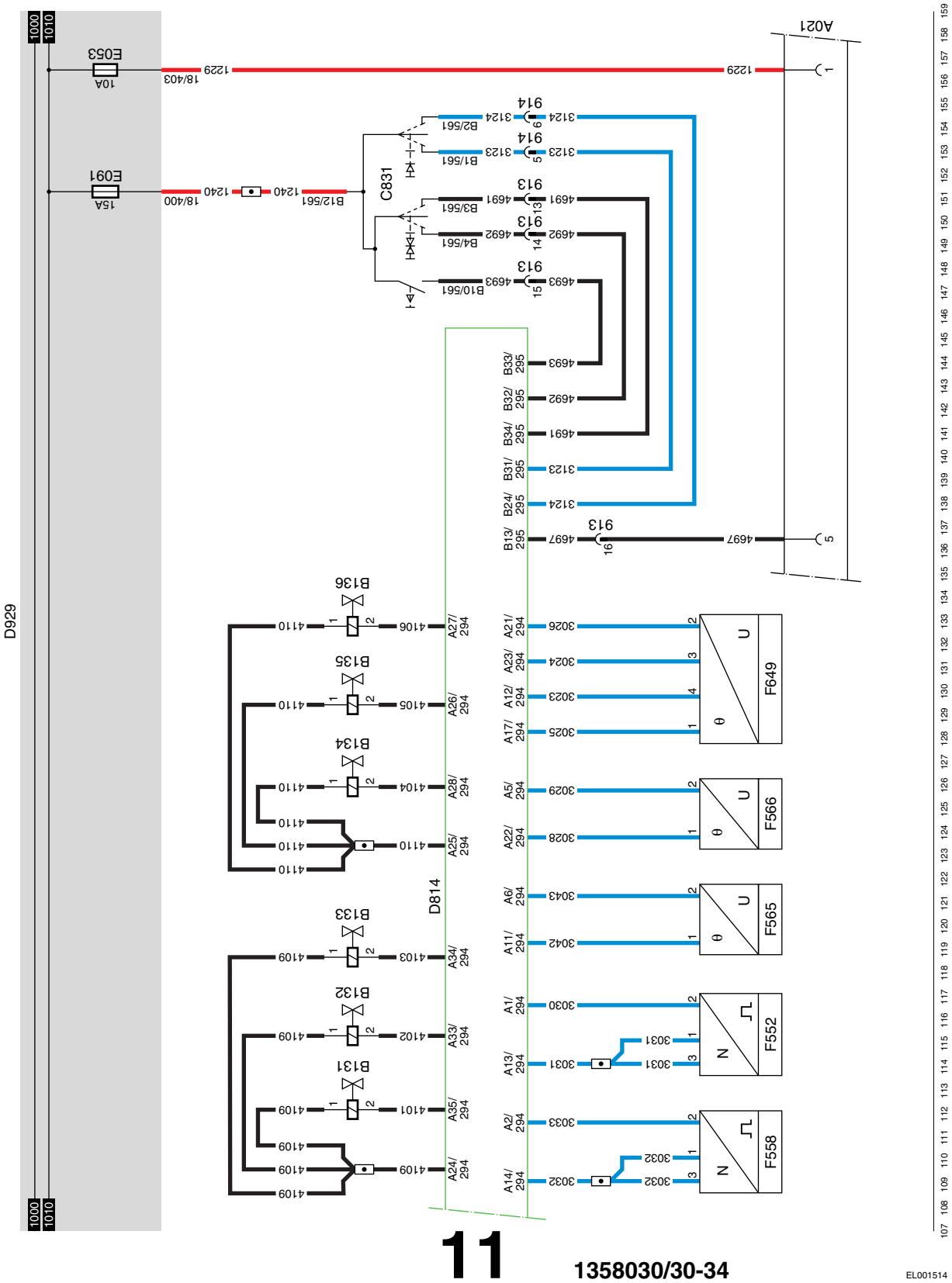
***CF*65/75/85** Serie ≥0E621376




11 1358030/30-34



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**11**

**1358030/30-34**

EL001514

11

## 15A STOP LIGHTS IN COMBINATION WITH MANUAL GEARBOX/CAB TILTING GEAR

### STOP LIGHTS

When the brake pedal is depressed or following activation via VIC (D900), relay G036 is energised. Voltage is now applied to connection point 85 of relay G036 through fuse E013, wire and PCB track 1209. The earth is formed through wire 4602 and contacts 1-2 of switch E511. The relay is activated. A voltage is now applied to the left stop light (C020) and the right stop light (C021) through fuse E013, wire and PCB track 1209, contacts 30-87 of relay G036 and wire 4605. A voltage is also applied to connection point 4 of the drawn vehicle socket (A000), connection point C51 of the VIC (D900), connection point 13 of the FMS connector (A098) and connection point 3 of the superstructure application connector (A070). The stop lights will now light up.
When relay G036 is energised, the connection 30-87a is broken. The voltage on D814 (UPEC electronic unit) is lost.

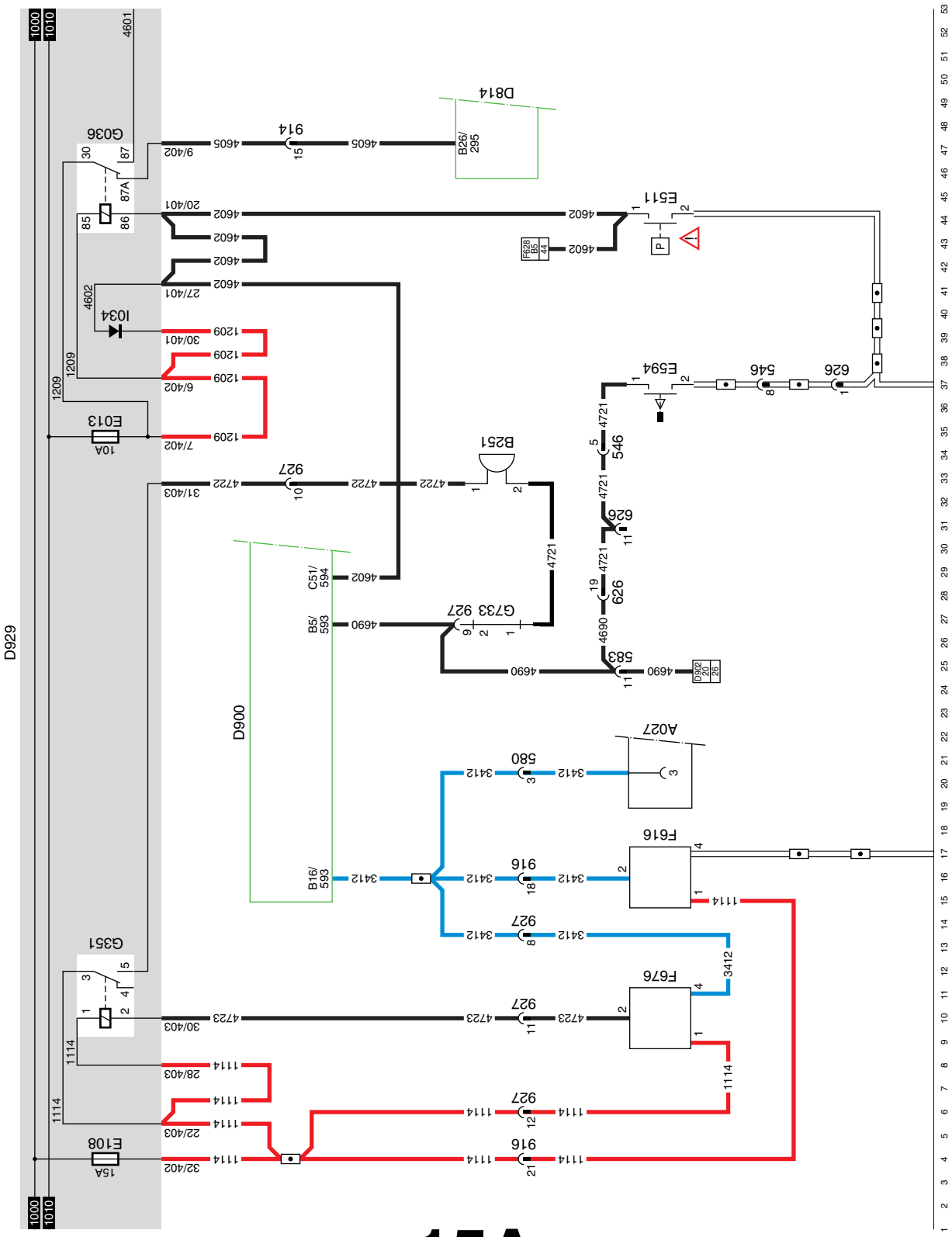
### CAB TILTING GEAR

A voltage is applied to connection point 1 of the cab locking sensor (F616) through fuse E018 and wire 1114. A voltage is also applied to connection point 1 of F676 and connections 1 and 3 of relay G351 (cab tilt protection relay).
When sensor F676 is activated, wire 4723 in sensor F616 is connected to earth. Relay G351 will be energised, causing voltage to be applied to connection point 1 of B251 (buzzer neutral position) through contacts 3-5 of relay G351, wire 4722.
B251 will now be activated via the VIC. A message is also sent to the DIP, which then activates the “cab tilted” warning lamp.

### VARIANTS

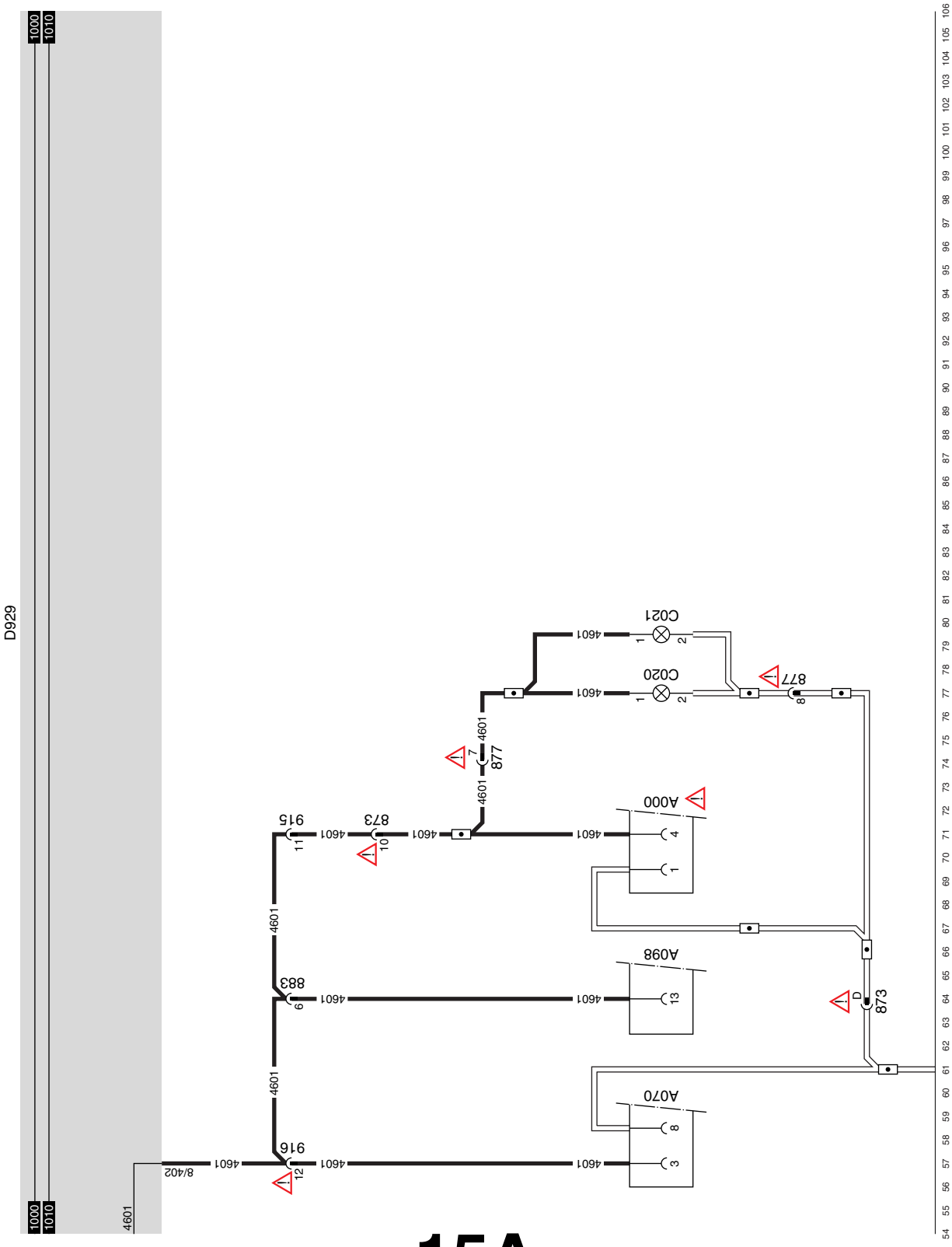
| Location | |
|---|---|
| 43 | E511 not fitted for EBS. |
| 56 | On an FT model, C020 and C021 are connected here. |
| 64, 70 | Connector 873: on vehicle type FA |
| 73 | A000: 7-pin model<br>A058: 15-pin model |
| 74, 77 | Only for vehicle fitted with buffer beam. |


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15A
1358030/30-34
EL001515
D929
D900
D814
G036
E511
E594
B251
G733 927
A027
F616
F676
G351
E108
E013
1034
626
546
927
916
1114
1209
4602
4601
4721
4722
4723
4690
3412
1000
1010

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**15A** **1358030/30-34**

11



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## 15B STOP LIGHTS IN COMBINATION WITH AS TRONIC GEARBOX/CAB TILTING GEAR

### STOP LIGHTS

When the brake pedal is depressed or following activation via VIC (D900), relay G469 is energised. This also energises relay G036. Voltage is now applied to connection point 1 of relay G469 through fuse E184, wire and PCB track 1248. Contacts 3-5 are closed, causing a voltage to be applied to the coil of relay G036 via wire 1248 and PCB track 5292. The relay is activated. A voltage is now applied to the left stop light (C020) and the right stop light (C021) through fuse E013, PCB track 1209, contacts 30-87 of relay G036 and wire 4601. A voltage is also applied to connection point 4 of the drawn vehicle socket (A000), to connection point 13 of the FMS connector (A098) and connection point 3 of the superstructure application connector (A070). The stop lights will now light up.

### CAB TILTING GEAR

A voltage is applied to connection point 1 of the cab locking sensor (F616) through fuse E018 and wire 1114. A voltage is also applied to connection point 1 of F676 and connections 1 and 3 of relay G351 (cab tilt protection relay).
When sensor F676 is activated, wire 4723 in sensor F616 is connected to earth. Relay G351 will be energised, causing voltage to be applied to connection point 1 of B251 (buzzer neutral position) through contacts 3 - 5 of relay G351, wire 4722.
B251 will now be activated via the VIC. A message is also sent to the DIP, which then activates the “cab tilted” warning lamp.

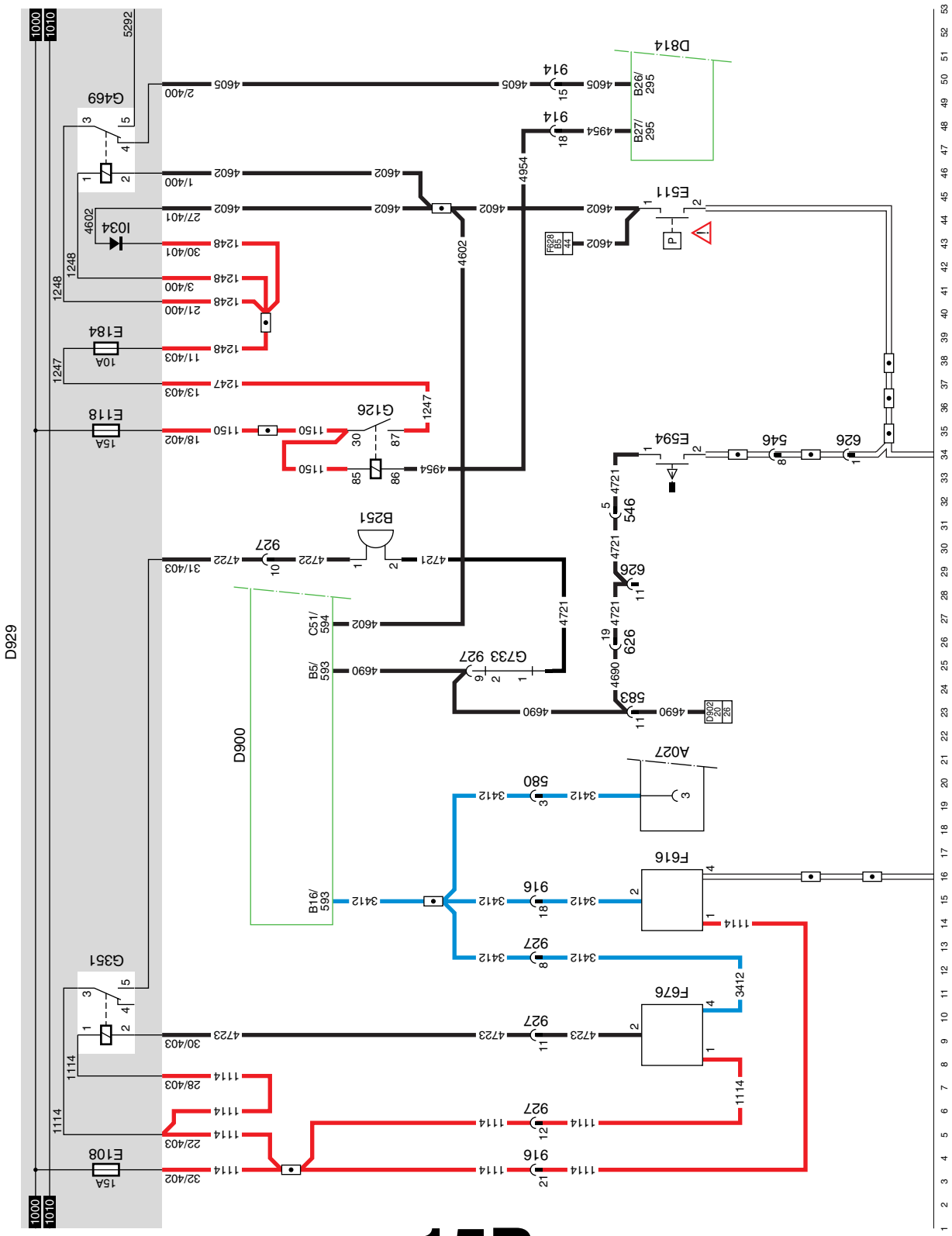
### VARIANTS

| Location | |
|---|---|
| 69, 76 | Connector 873: on vehicle type FA |
| 77 | A000: 7-pin model<br>A058: 15-pin model |
| 44 | E511 not fitted for EBS. |
| 79, 82 | Only for vehicle fitted with buffer beam. |
| 61 | On an FT model, C020 and C021 are connected here. |





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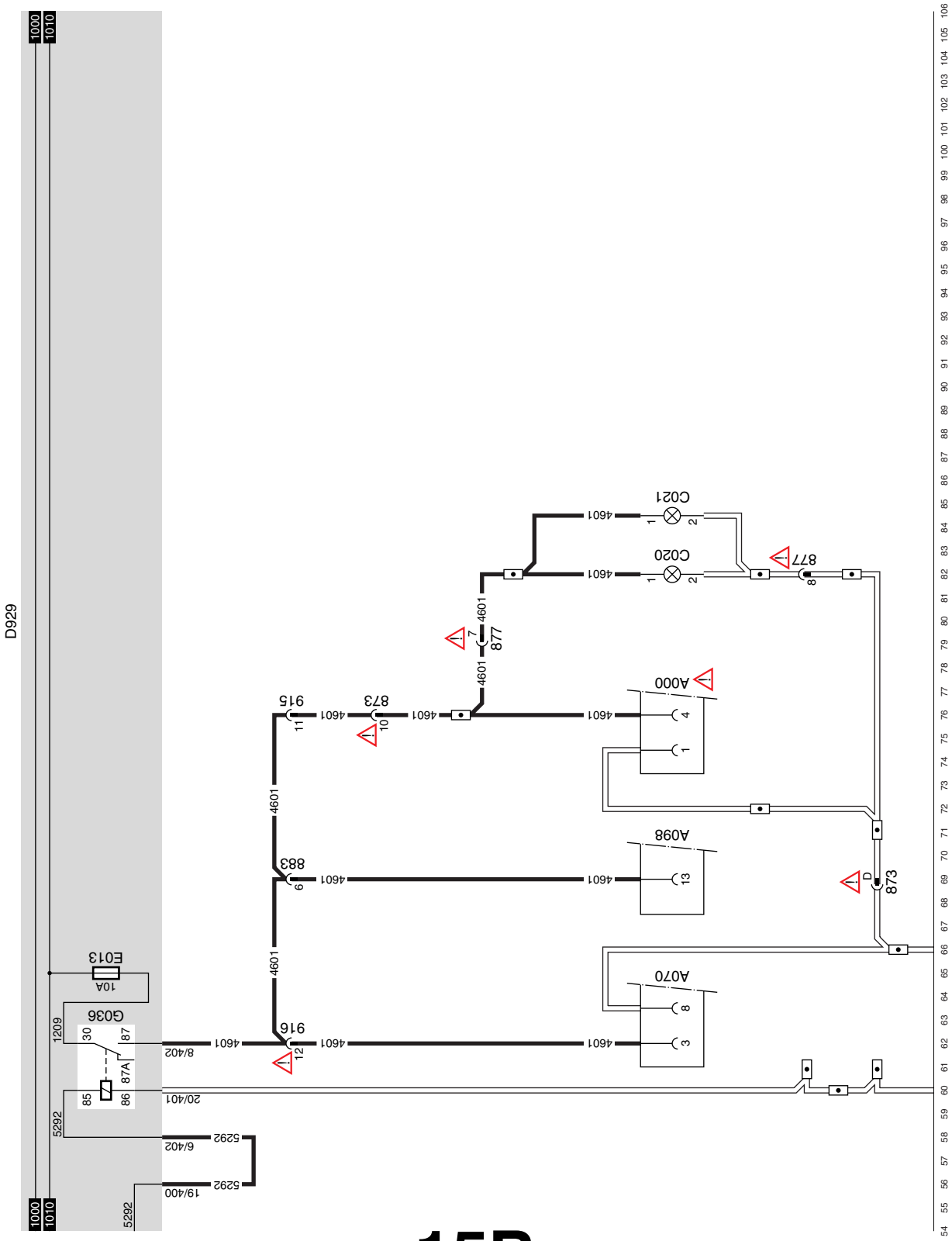

**15B** 1358030/30-34

EL001517

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Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**15B** **1358030/30-34**

EL001518

11



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## 17 INTERIOR LIGHTING, DAY/SLEEPER CAB

**CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, DRIVER'S SIDE**
If the door on the driver's side is opened, door switch E514 is activated (connection between 1 and 2). A a result, there is a voltage on C062, C063 and D911 through fuse E028 (interior lighting fuse), wire 1107, contacts 1-2 of door switch E514, wire 2647, diode D783 (driver's side interior lighting diode), wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063). The VIC (D900) also receives a voltage on connection point 1, connector 595. The VIC then turns on the cab lighting (C119/C192), provided the switch is in the correct position

When the door on the driver's side is closed (contacts 1-2 interrupted), connection point 4, connector 592 will be connected to the supply voltage for approx. another 9 seconds. After approximately 9 seconds, the supply voltage is switched off and the lights go out.

If the vehicle ignition is switched on (contact made) within 9 seconds, the power supply to connection point 4, connector 592 of the VIC will be switched off immediately. The lighting will be switched off immediately. If the alarm system (D911) sends a voltage to connection point 13, connector 594 of the VIC to indicate that the doors have locked correctly, the lighting will also go off immediately.

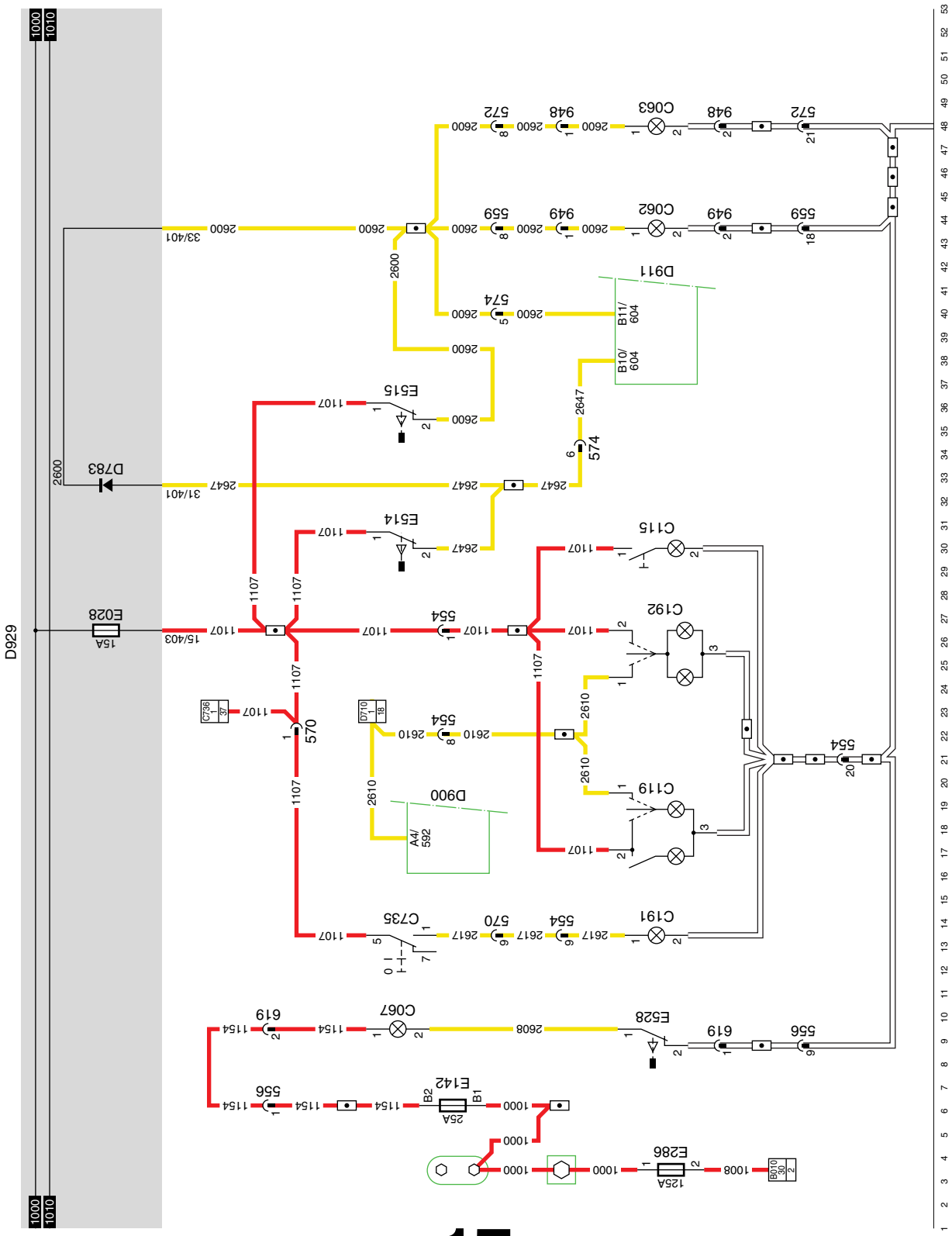
**CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, CO-DRIVER'S SIDE**
If the door on the co-driver's side is opened, door switch E515 is activated (connection between 1 and 2).
As a result, there is a voltage on both C062 and C063 through fuse E028 (interior lighting fuse), wire 1107, contacts 1-2 of door switch E515, wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063).

**INTERIOR LIGHT WITH MAP-READING LIGHT (DRIVER'S SIDE AND CO-DRIVER'S SIDE)**
There is a combined interior light and map-reading light on both sides of the cab against the roof. The lamps operate in the same way on the driver's side and co-driver's side.
A voltage is applied to connection point 2 of C119 and to connection point 2 of C192 through fuse E028, wire 1107. Depending on the position of the built-in switches, the interior light and the map-reading light can now be switched on individually or together.

**TOOL COMPARTMENT LIGHTING**
When the tool compartment door is opened, tool compartment light switch E528 is activated (connection between 1 and 2). As a result, there is a voltage on C067 through fuse E142 (accessories before contact fuse), wire 1154, contacts 1-2 of tool compartment light switch E528, wire 2608. This switches on the tool compartment light. The tool compartment light works independently of the contact.

**BUNK LAMP**
The bunk lamp C115 is switched on by a switch in the light fitting. The bunk lamp works independently of the contact. Voltage is applied to connection point 1 of C115 through fuse E028, wire 1107. When the switch is operated (connection between contacts 1 and 2), connection point 2 is connected to earth. The lamp will now come on.

**INTERIOR NIGHTLIGHT**
When switch C735 (interior nightlight switch) is operated (connection between 5 and 1), a voltage is applied to C191 through fuse E028 (interior lighting fuse), wire 1107, contacts 5-1 of nightlight switch C735, wire 2617. This switches the nightlight on. The nightlight works independently of the contact.




17 1358030/30-34

EL001519

11

## 18 SH CAB INTERIOR LIGHTING

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, DRIVER'S SIDE

If the door on the driver's side is opened, door switch E514 is activated (connection between 1 and 2). A a result, there is a voltage on the driver's side cab stepwell lighting (C062), co-driver's side cab stepwell lighting (C063) and D911 (alarm system) through fuse E028 (interior lighting fuse), wire 1107, contacts 1-2 of door switch E514, wire 2647, diode D783 (driver's side interior lighting diode), wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063). The VIC (D900) also receives a voltage on connection point 1, connector 595. The VIC then turns on the cab lighting (C119/C192), provided the switches (C119, C192, C859 and C837) are in the correct position, activating it through wire 2610 (connection point 4, connector 592 of the VIC unit).

When the door on the driver's side is closed (contacts 1-2 of door switch E514 interrupted), the voltage to connection point 1, connector 595 of the VIC is lost. Connection point 4, connector 592 will then continue to be supplied with power for another 9 seconds approximately. After approximately 9 seconds, the supply voltage is switched off and the interior lighting goes out.

If the vehicle ignition is switched on (contact made) within 9 seconds, the power supply to connection point 4, connector 592 of the VIC will be switched off immediately. The interior lighting will be switched off immediately. If the alarm system (D911, pin 16 of connector 604, wire 3647) sends a voltage to connection point 13, connector 594 of the VIC to indicate that the doors have locked correctly, the interior lighting will also go off immediately.

### CAB STEPWELL LIGHTING/INTERIOR LIGHTING DOOR SWITCH, CO-DRIVER'S SIDE

If the door on the co-driver's side is opened, door switch E515 is activated (connection between 1 and 2).
As a result, there is a voltage on both driver's side cab stepwell lighting (C062) and co-driver's side cab stepwell lighting (C063) through fuse E028 (interior lighting fuse), wire 1107, contacts 1-2 of door switch E515, wire 2600. This activates the cab stepwell lighting on both the driver's side (C062) and the co-driver's side (C063).

### Interior lighting with map-reading light (driver's and co-driver's side)

There is a combined interior light and map-reading light on both sides of the cab against the roof. The lamps operate in the same way on the driver's side and co-driver's side.
A voltage is applied to connection point 2 of C119 and to connection point 2 of C192 through fuse E028, wire 1107. Depending on the position of the built-in switches, the interior light and the map-reading light can now be switched on individually or together.



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**Bunk lamp**
The bunk lamp C115 is switched on by a switch in the light fitting. The bunk lamp works independently of the contact. Voltage is applied to connection point 1 of C115 through fuse E028, wire 1107. Connection point 2 of C115 is connected to earth. When the switch is operated (connection between contacts 1 and 2), the lamp goes on.

**Nightlight**
When switch C735 (interior nightlight switch) is operated (connection between 5 and 1), a voltage is applied to connection point 1 of C191 (middle nightlight) through fuse E028 (interior lighting fuse), wire 1107, contacts 5-1 of nightlight switch C735, wire 2617. This switches the nightlight on. The nightlight works independently of the contact.

**Situation 3:**
Switch C837 set to position “II” (contacts 3-1 and 2-4 connected). A voltage is now applied to connection point 1 of C119 and to connection point 1 of C192 through fuse E028, wire 1107, contacts 3-1 of C837, wire 2645, contacts 1-5 of C859 (driver’s side roof console interior light switch), wire 2632. The earth is formed because connection point 3 of C119 and connection point 3 of C192 are connected to the vehicle earth through wire 9032, contacts 2-4 of C837.
The lighting can now be switched on or off using switch C859.

**Tool compartment lighting**
When the tool compartment door is opened, the left-hand tool compartment light switch (E528) is activated (connection between 1 and 2). As a result, there is a voltage through fuse E142, wire 1154 on C067, wire 2608 on E528 (tool compartment light switch). This is connected to earth. This switches on the tool compartment light. The tool compartment light works independently of the contact.

**INTERIOR LIGHTING TWO-WAY SWITCHING**
The condition for turning on both interior lights is that C119 (interior light with switch, driver’s side) and C192 (interior light with switch, co-driver’s side) must be switched together. In other words: the switch is connected to contact 1.

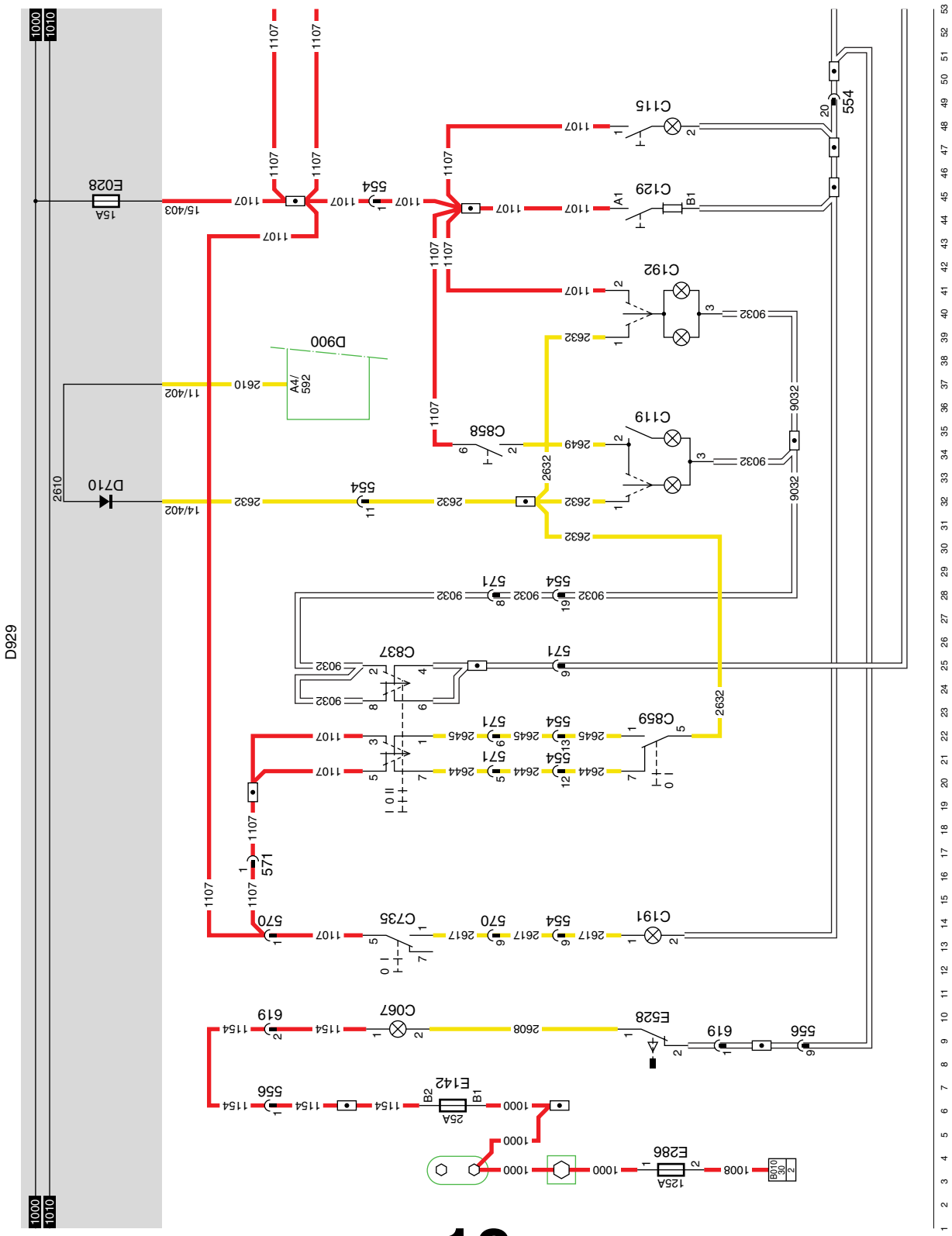
**Situation 1: Switch C837 in “0” position.**
Switch C837 in middle position (contacts 5-1 and 8-4 connected).
The supply voltage and the earth are now interrupted and the light does not work.

**Situation 2:**
Switch C837 set to position “I” (contacts 5-7 and 8-6 connected). A voltage is now applied to connection point 1 of C119 and to connection point 1 of C192 through fuse E028, wire 1107, contacts 5-7 of C837, wire 2644, contacts 7-5 of C859 (driver’s side roof console interior light switch), wire 2632. The earth is formed because connection point 3 of C119 and connection point 3 of C192 are connected to the vehicle earth through wire 9032, contacts 8-6 of C837.
The lighting can now be switched on or off using switch C859.

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Changes in the electrical system from chassis number 0E646818

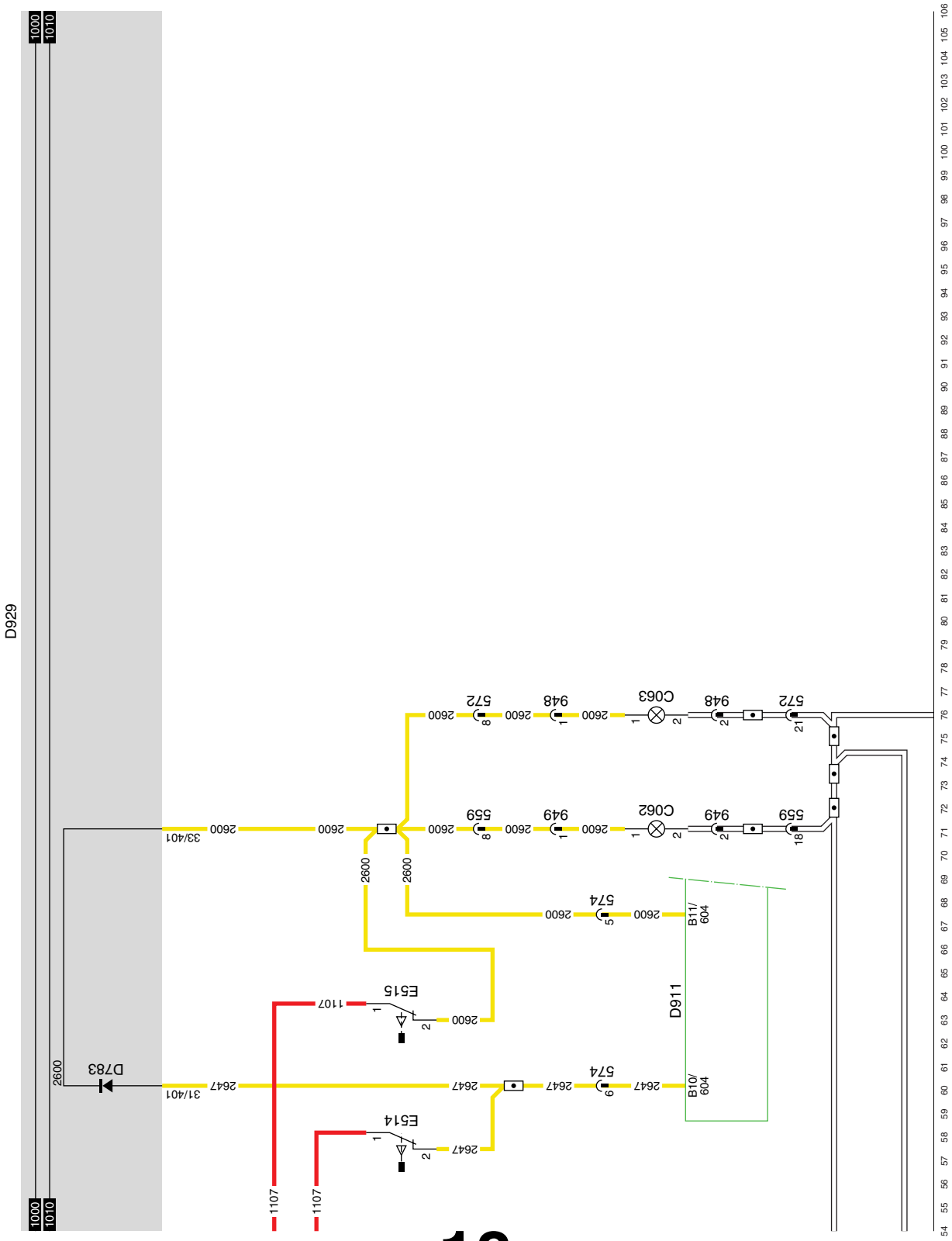
*CF*65/75/85 Serie ≥0E621376




**18** 1358030/30-34

EL001520

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**18** 1358030/30-34

EL001521

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## 20 SEARCH LIGHTING

### SEARCH LIGHTING

Search lighting refers to lights or LEDs in the various function switches.

When the light switch (C622) is operated, a supply voltage is present on relay G000 (connection point 85) through fuse E084 and the light switch (C622), contacts 2-1, wire 2100.

Relay G000 is energised (connection between connection points 30 and 87, PCB track 2101, fuse (E117)) when there is a voltage on the search lighting (through wire 2630). All search lighting connected to this will come on.

The following switches are illuminated by a light: C052, C053, C072, C073, C716, C813, C814 and C858.

The following switches are illuminated by an LED: C725, C727, C735, C736, C737, C739, C740, C741, C742, C748, C749, C750, C751, C760, C763, C764, C765, C774, C778, C802, C835, C836, C837, C853 and C900.

### LIGHT BUZZER

When the light switch (C622) is operated, supply voltage will be applied to connection point 85 of relay G000 through fuse E084, light switch (C622) and wire 2100.

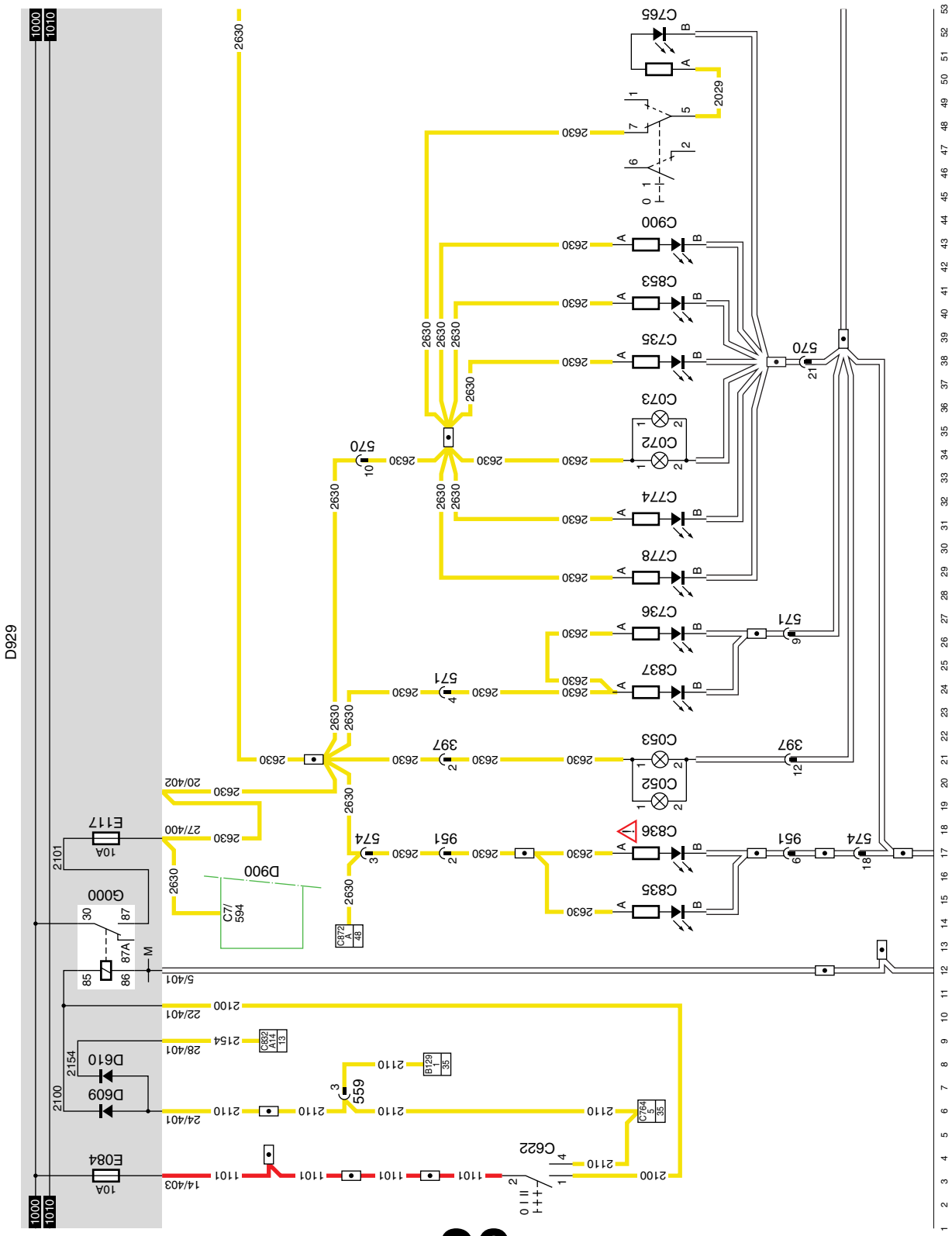
Relay G000 is energised so that a voltage is applied to the search lighting (wire 2630) through fuse E117. This wire is also connected to the VIC (D900), pin C7, connector 594.

If the pre-programmed condition in the VIC is met, the VIC sends a message to the DIP, which in turn activates the buzzer (fitted in the DIP).

### VARIANTS

| Location | |
|---|---|
| 18 | C836: switch for turning off cargo body space detection is an option. |

11



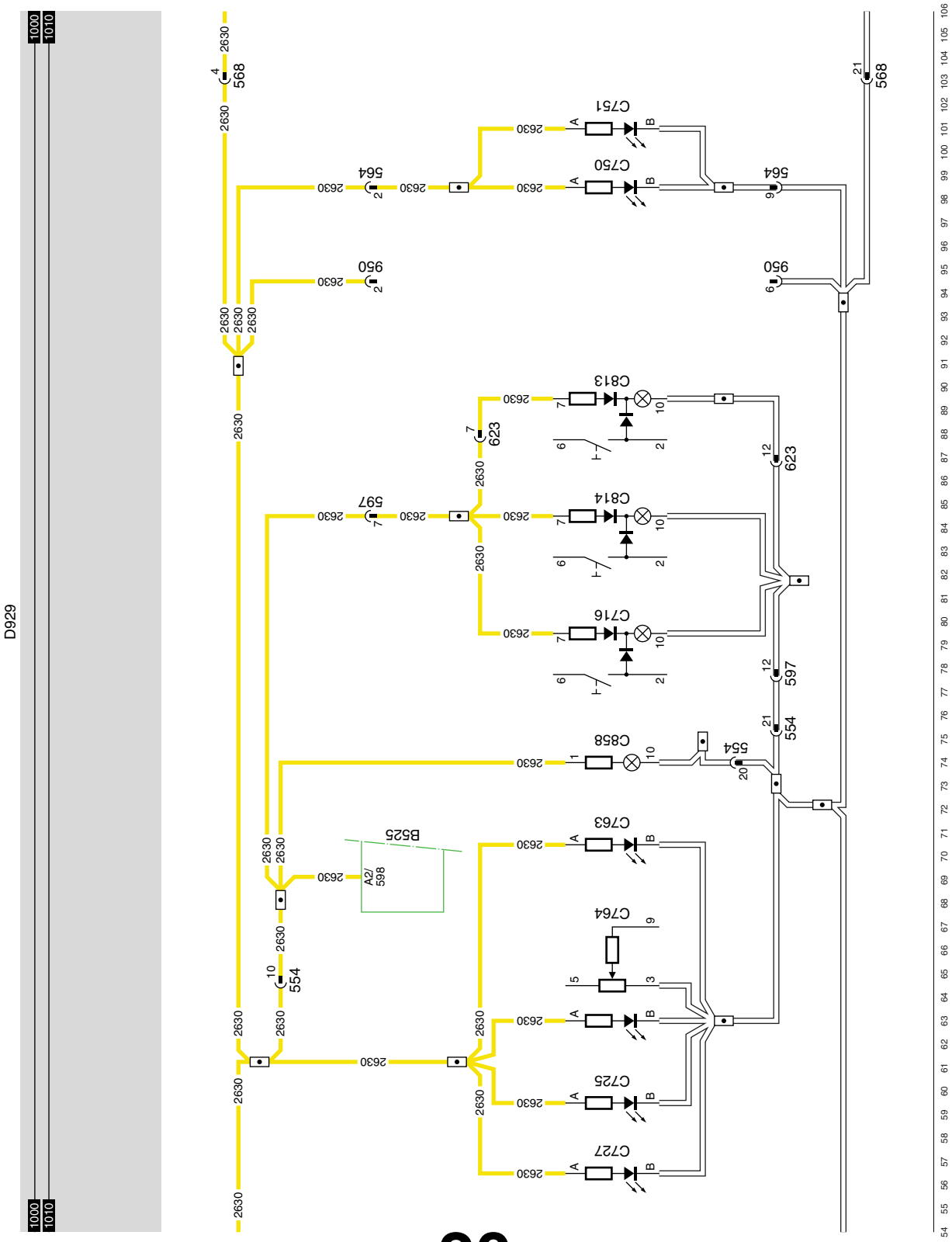

**20** 1358030/30-34

EL001522

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376



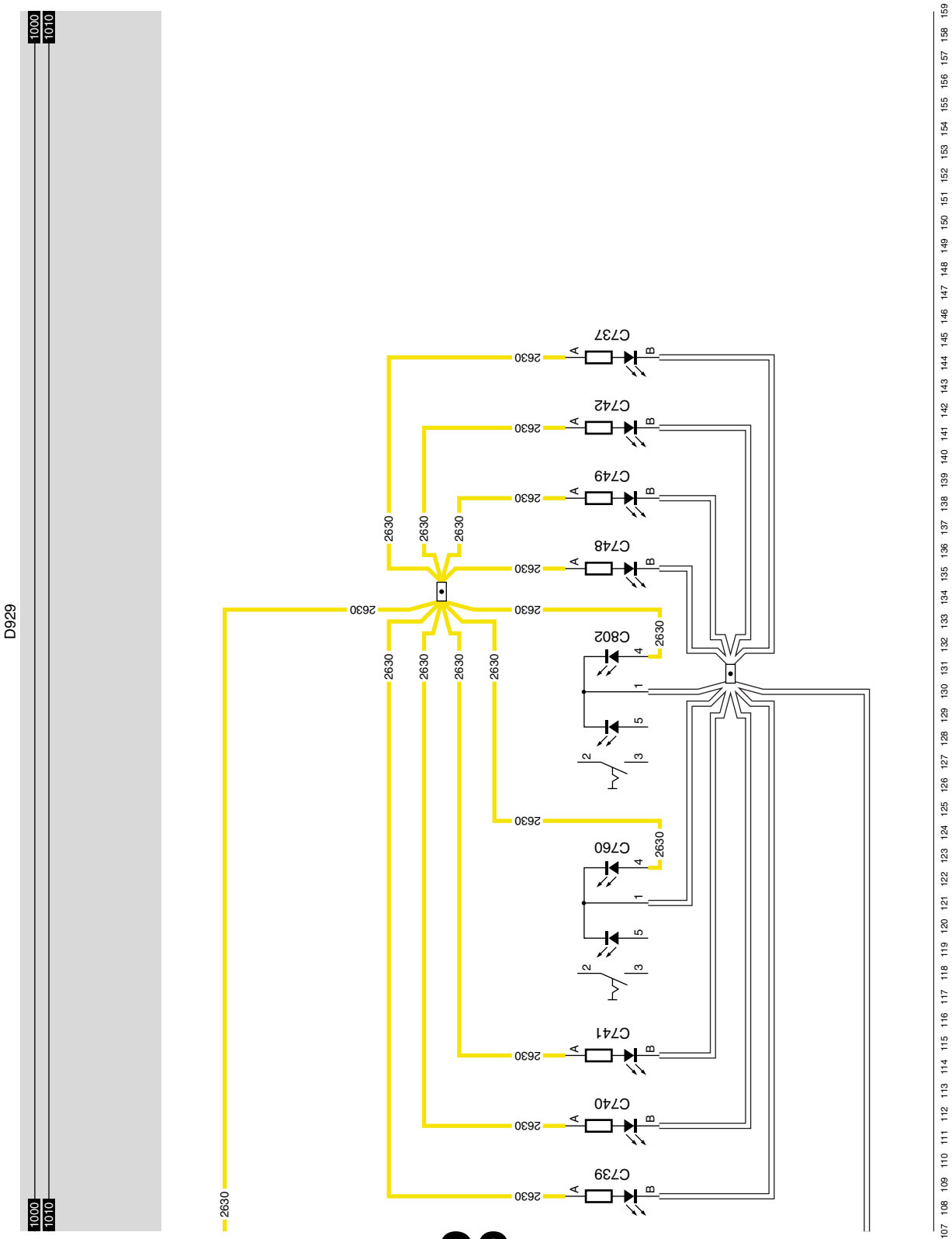

**20** 1358030/30-34

EL001523

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1000
1010
D929
C737
C742
C749
C748
C802
C760
C741
C740
C739
2630
A
B
1
2
3
4
5
20
1358030/30-34
EL001524

11

Changes in the electrical system from chassis number 0E646818

*CF***65**/**75**/**85** Serie ≥ 0E621376

**25 DEB**

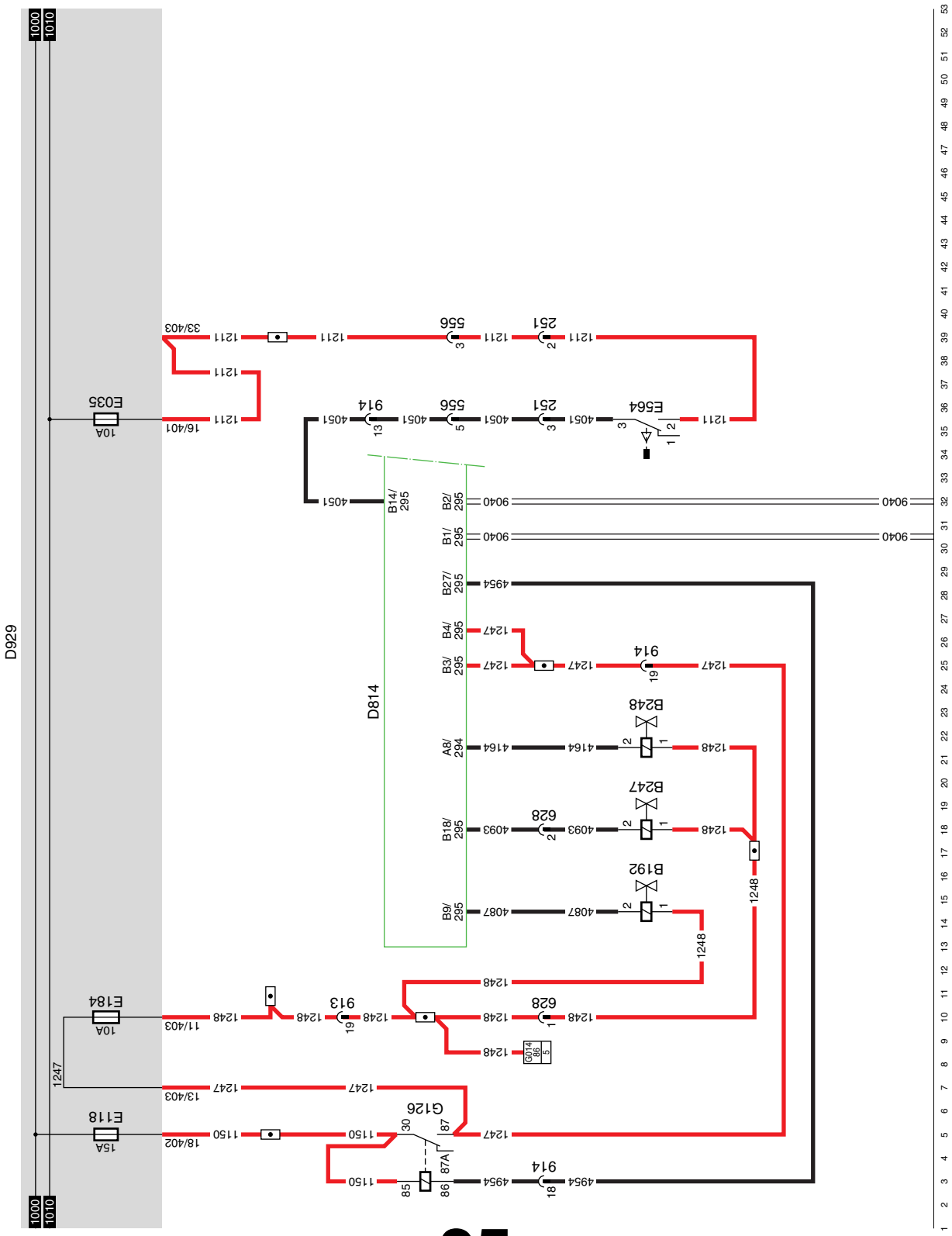
Voltage is applied through fuse E118 and relay G126 to D814 (UPEC electronic unit) and through fuse E184 to valves B192, B247 and B248.
Depending on unit D814, relay G126 is activated, after which voltage is applied to exhaust brake valve B192 and engine brake (DEB) valves B247 and B248.
Depending on unit D814 these valves are connected to earth or are not connected to earth.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**





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25
1358030/30-34
EL001525
D929
D814
E035
E184
E118
G126
B248
B247
B192
914
913
628
556
251
564
1000
1010

11

Changes in the electrical system from chassis number 0E646818



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**26 INTARDER EST 42**

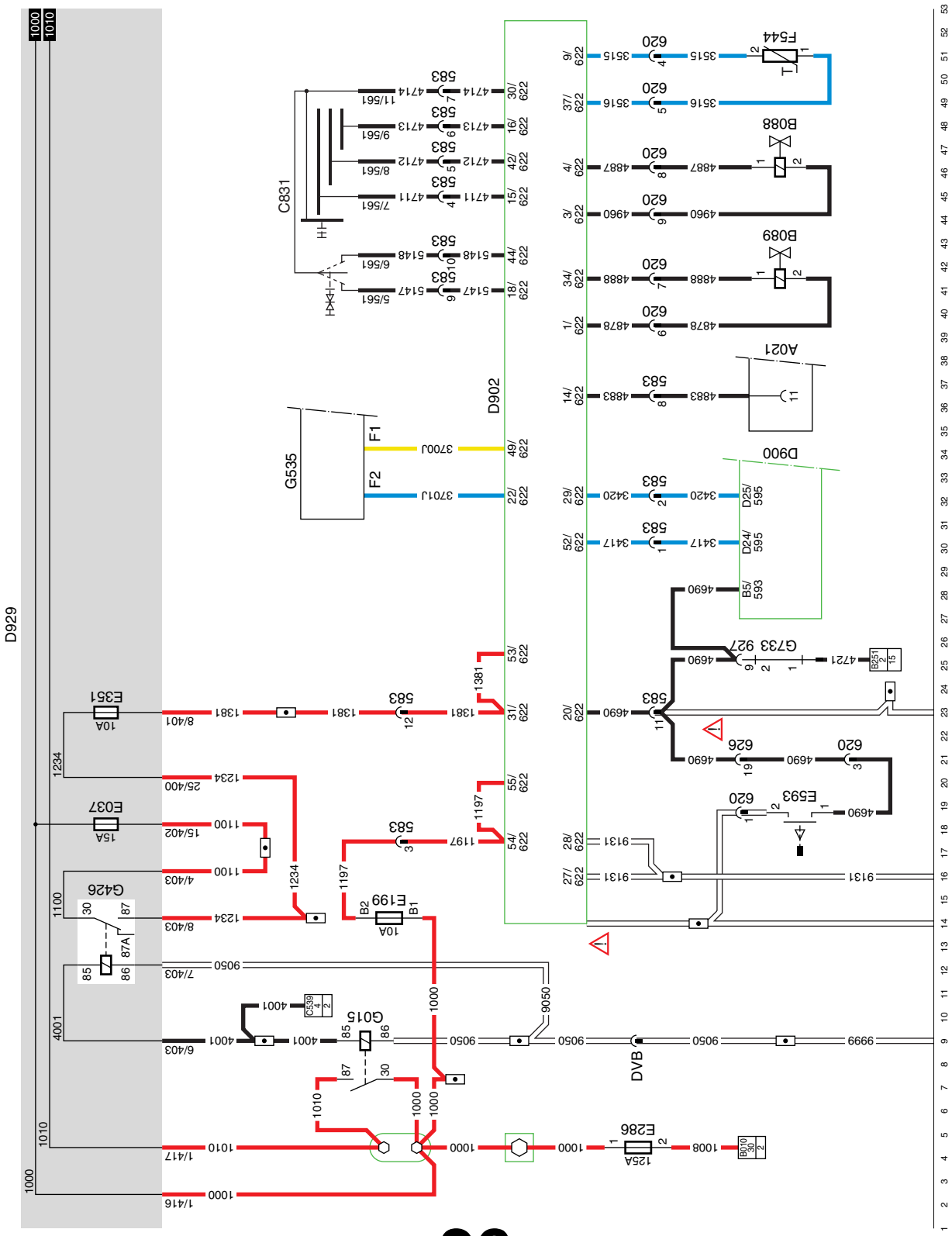
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 13 | The housing is connected to earth by a separate wire. |
| 22 | Connector 583: if AS Tronic fitted: wire 4690 direct to earth. |



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D929
1000
1010
F544
B088
B089
A021
D900
D902
G535
C831
F1
F2
G733 927
E351
E037
G426
E199
G015
E593
E286
DVB
D25/595
D24/595
B5/593
B251
B370
C539
26
1358030/30-34
EL001526

Changes in the electrical system from chassis number 0E646818

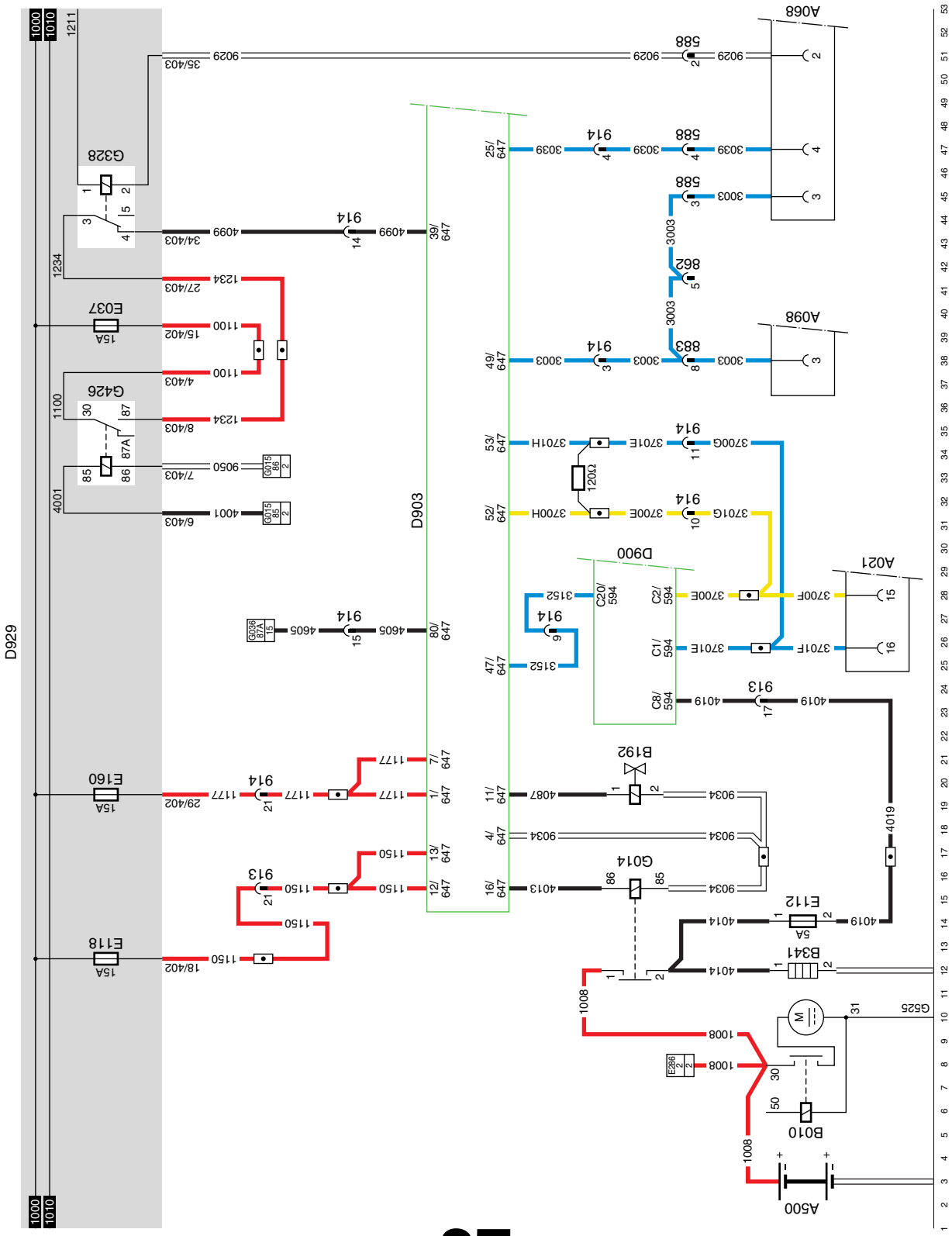
***CF*65/75/85** Serie ≥ 0E621376

11

27 ECS-DC3
SEE THE SYSTEM MANUAL FOR MORE INFORMATION



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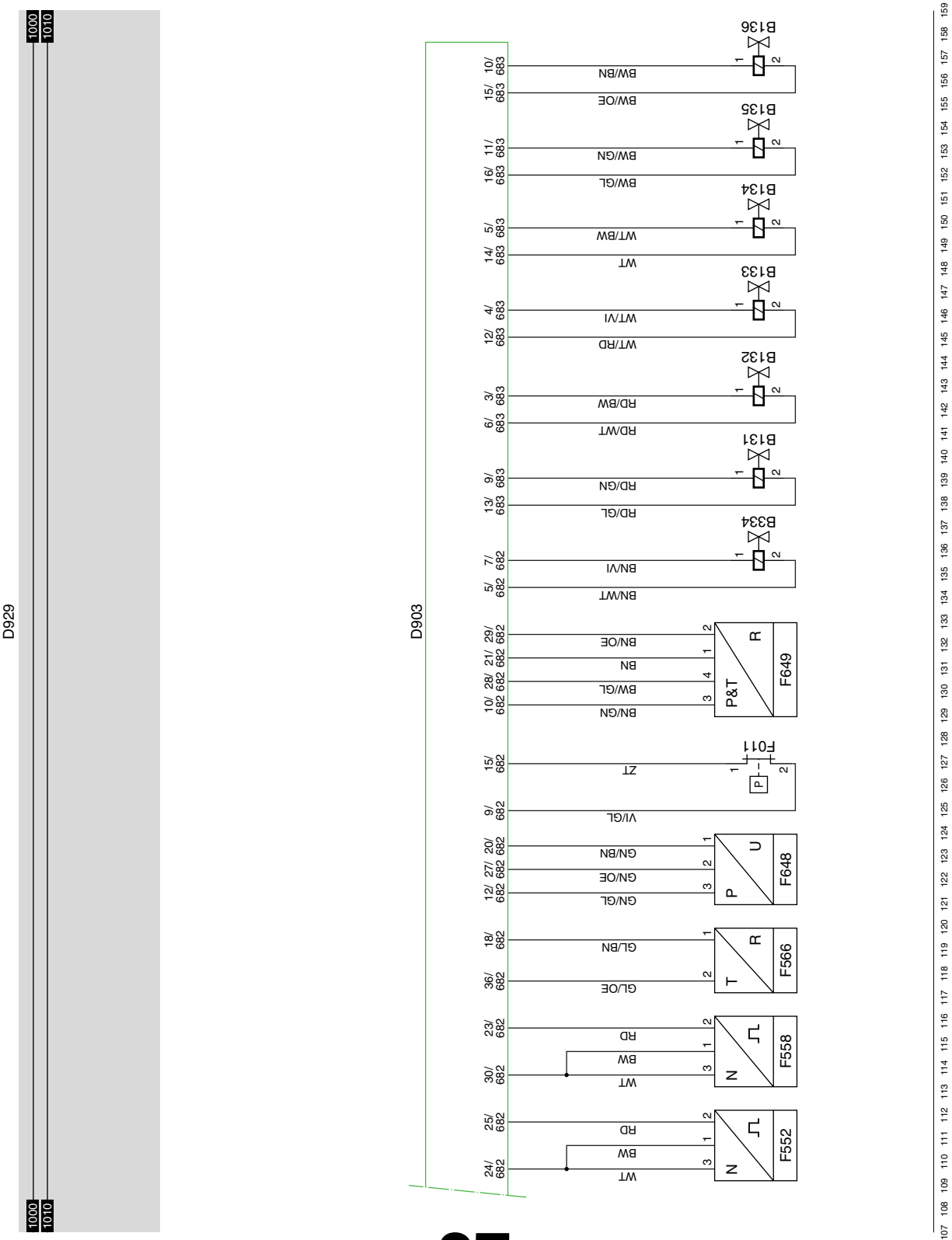

27

1358030/30-34

EL001527

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376



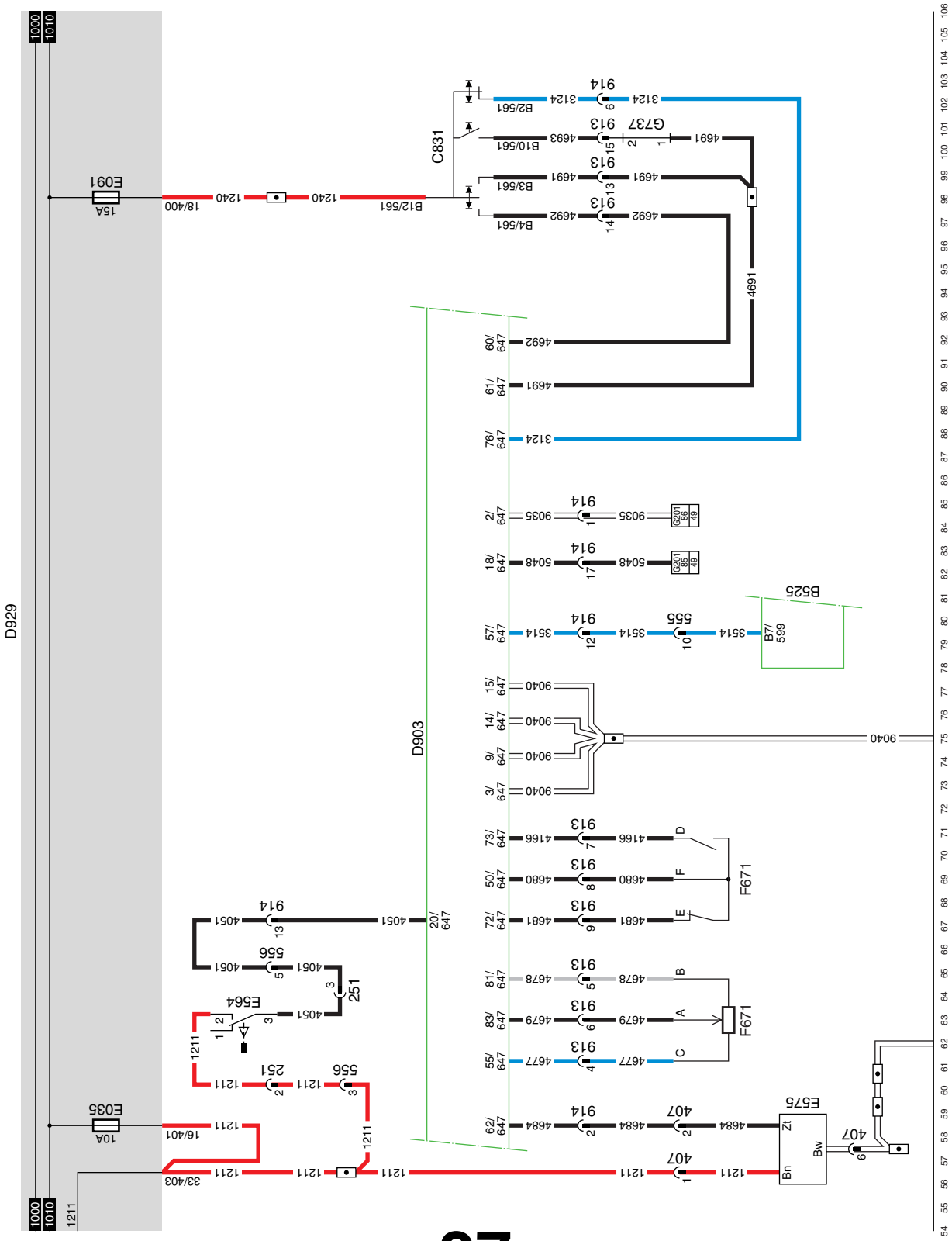

**27** **1358030/30-34**

EL001529

11



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**27** **1358030/30-34**

EL001528

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

**29 EMAS**

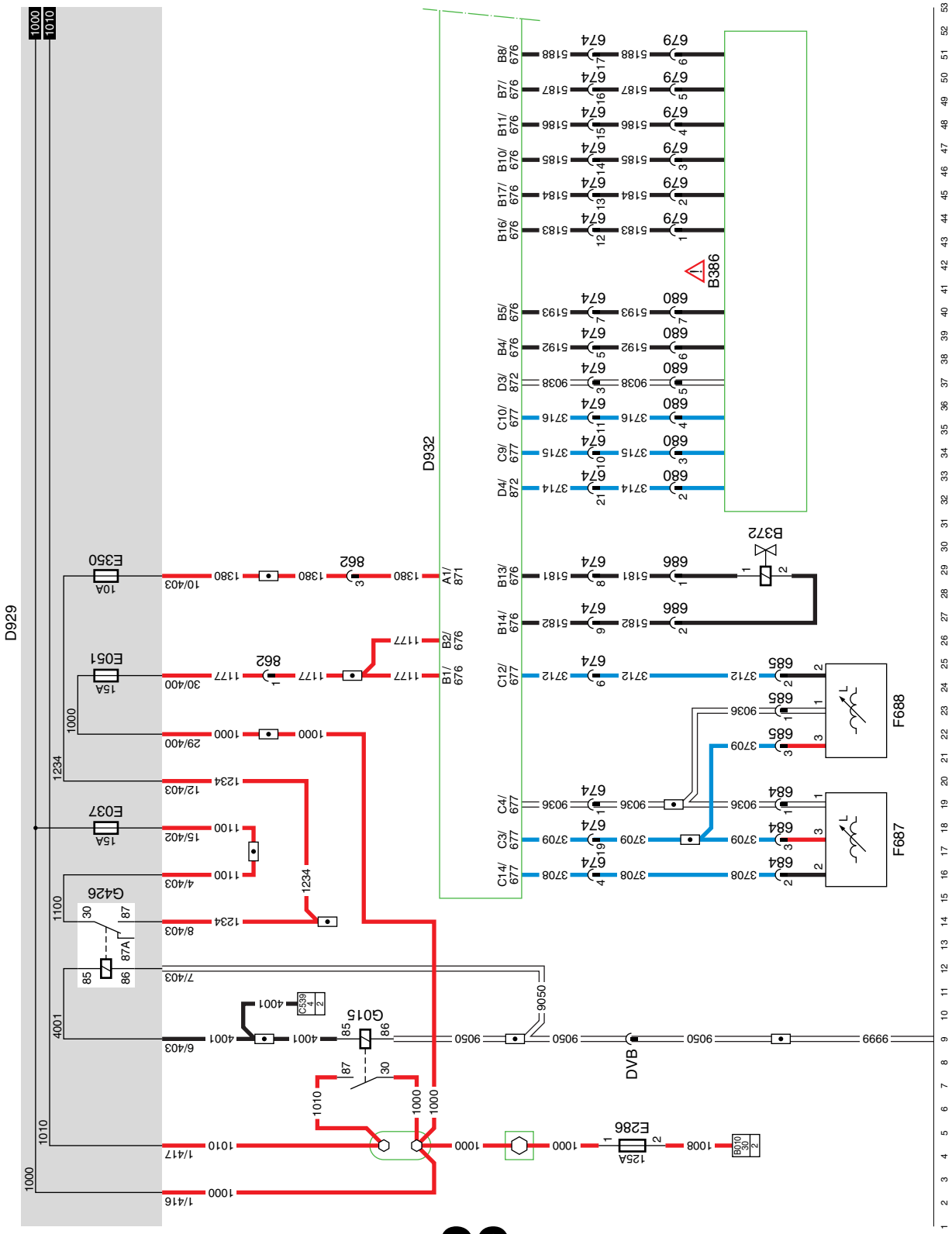
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**
42

Wires coming out of connectors: 679 and 680 are **NOT** provided with DAF markings.

11




29

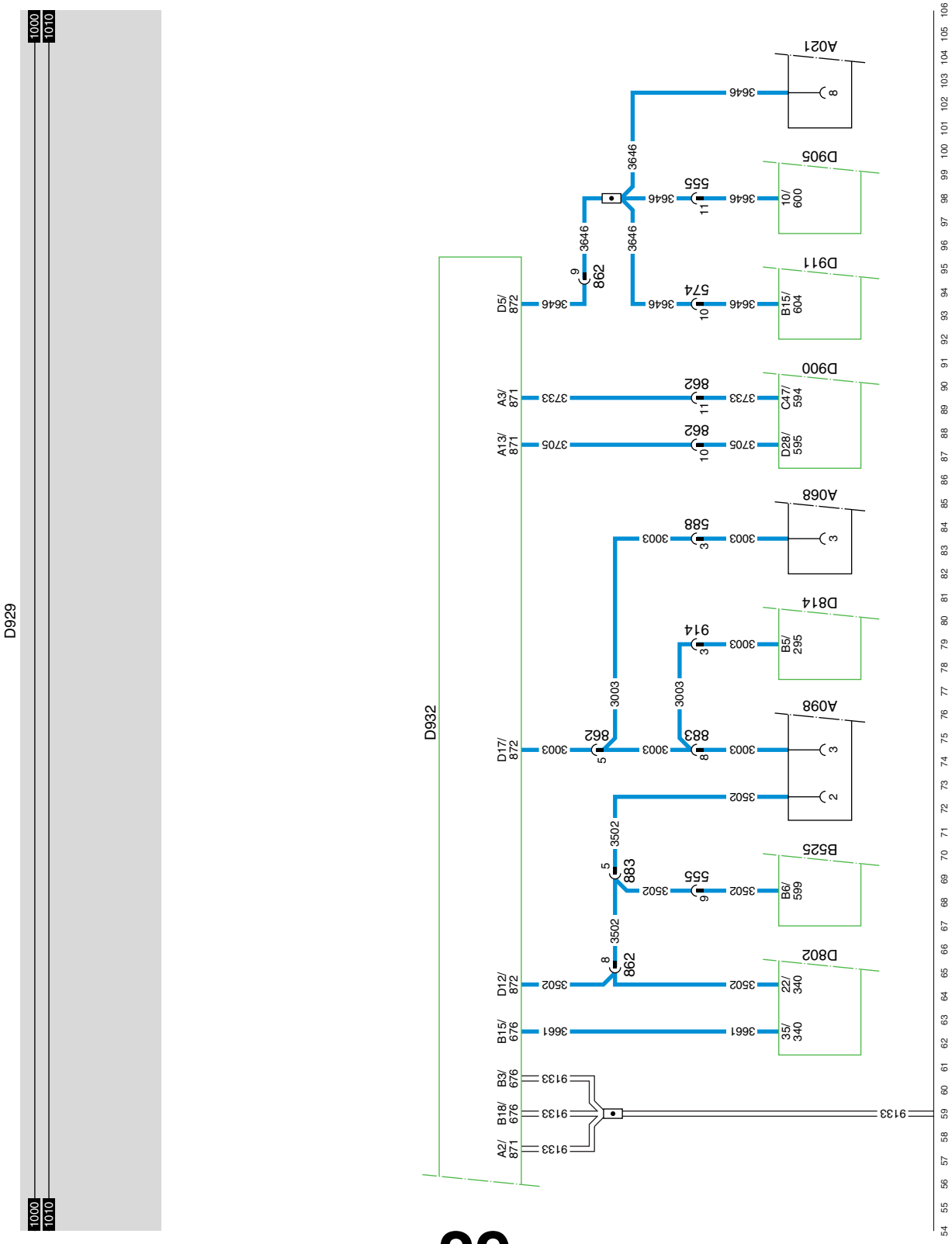
1358030/30-34

EL001530

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Changes in the electrical system from chassis number 0E646818

*CF*65/75/85 Serie ≥0E621376




**29** **1358030/30-34**

EL001531

11



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Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

**30 AGC**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**

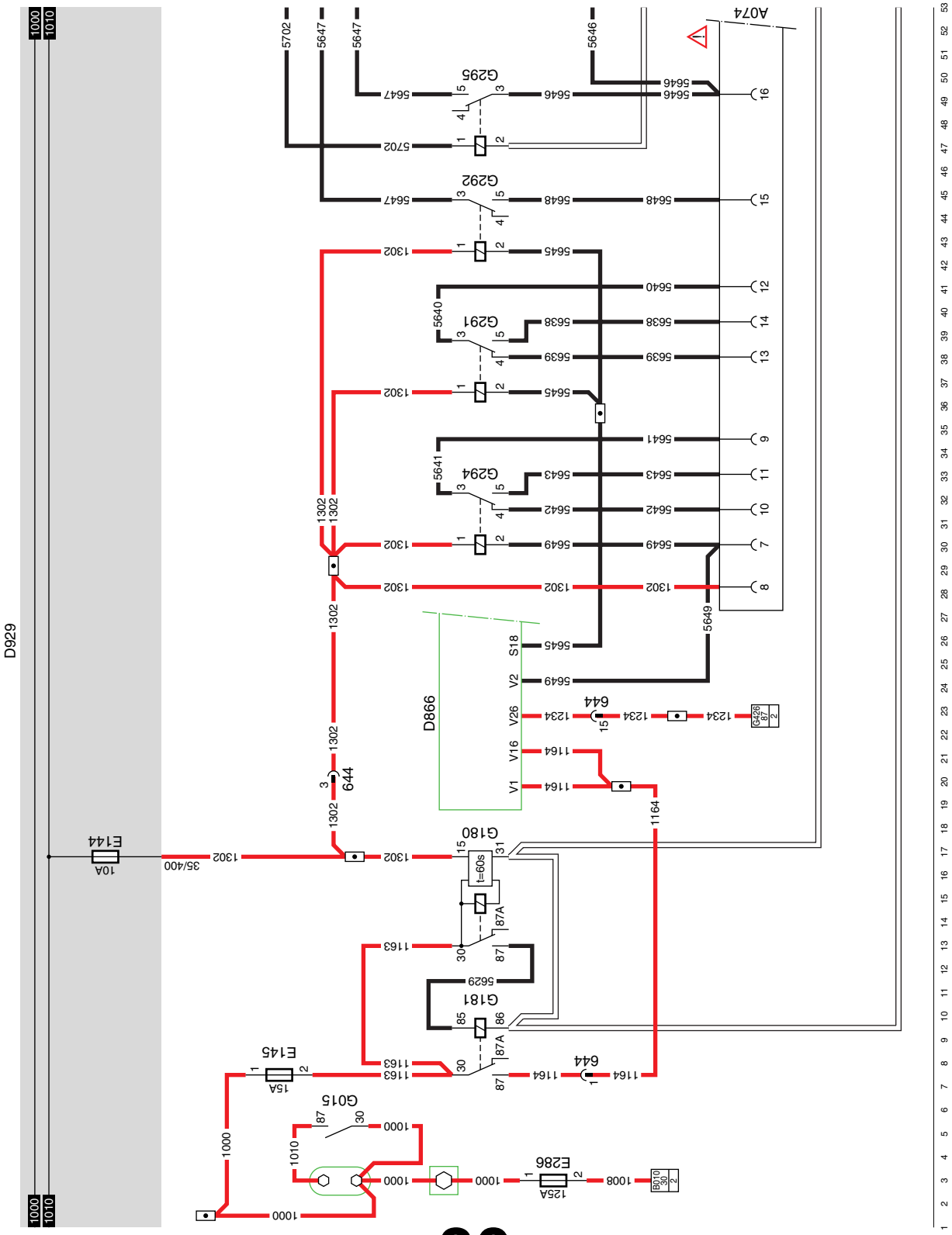
52, 72, 83, 136: Connector A074: this is a connector for bodybuilder.

115 Depending on whether alarm system is fitted.

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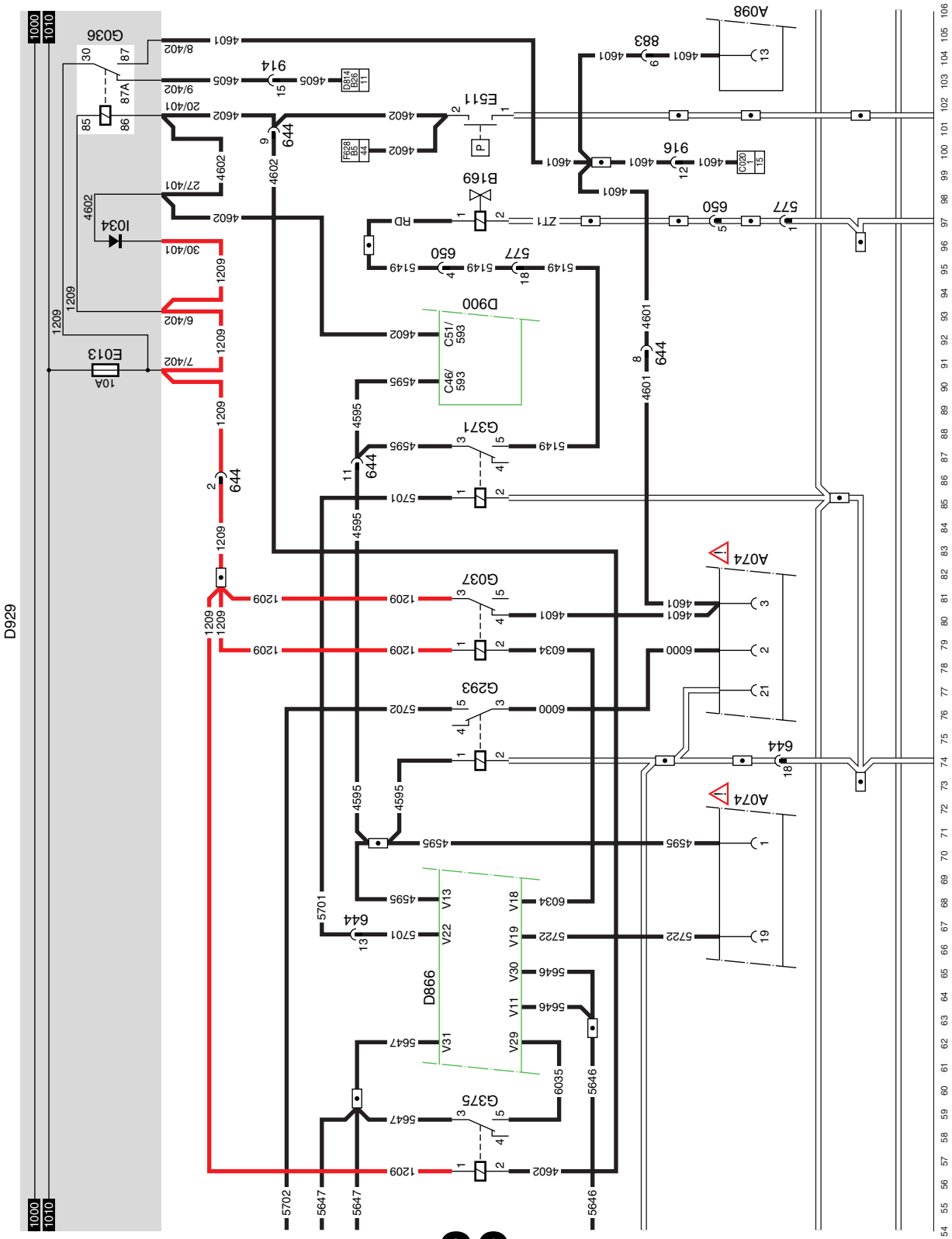


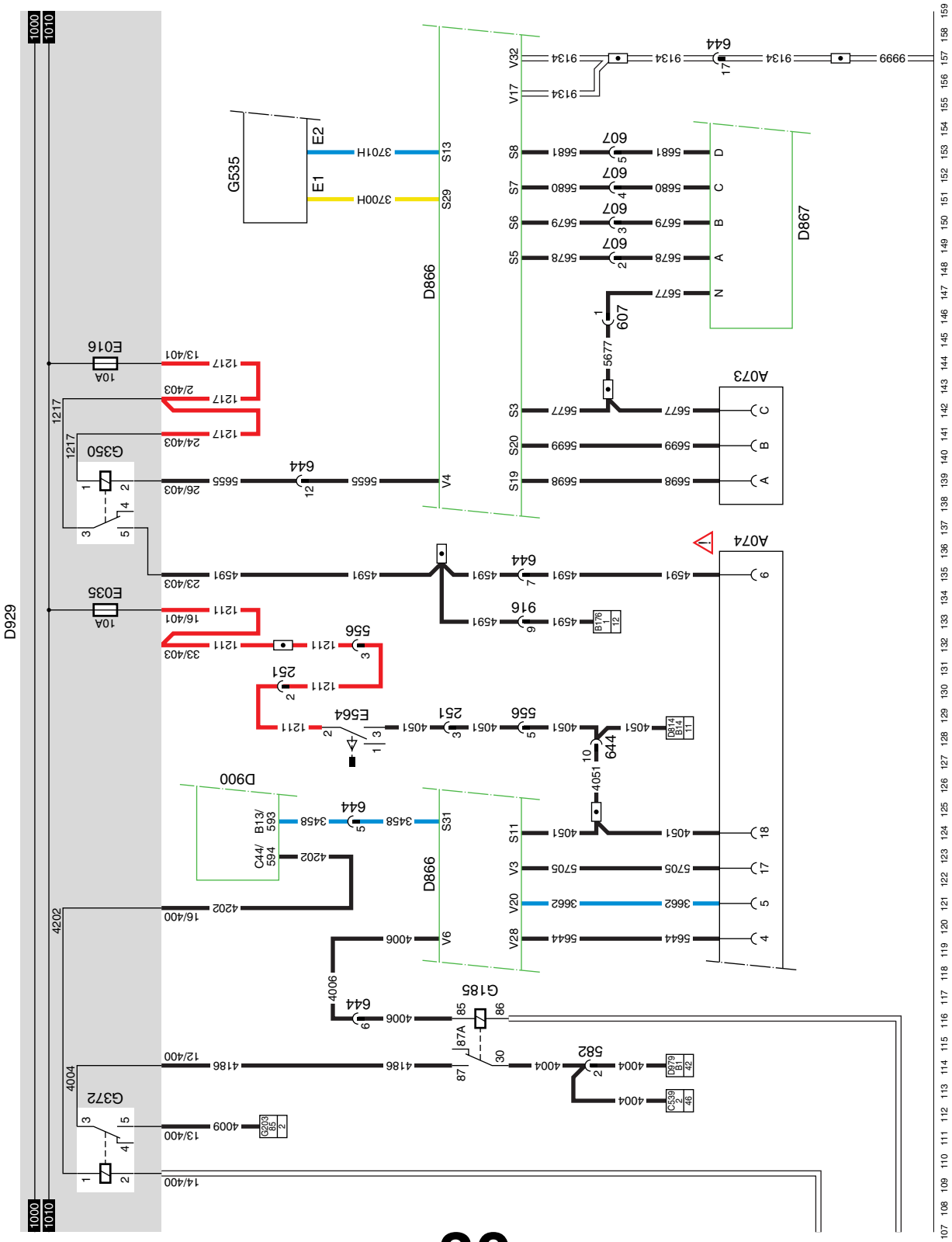

**30** 1358030/30-34

EL001532

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376





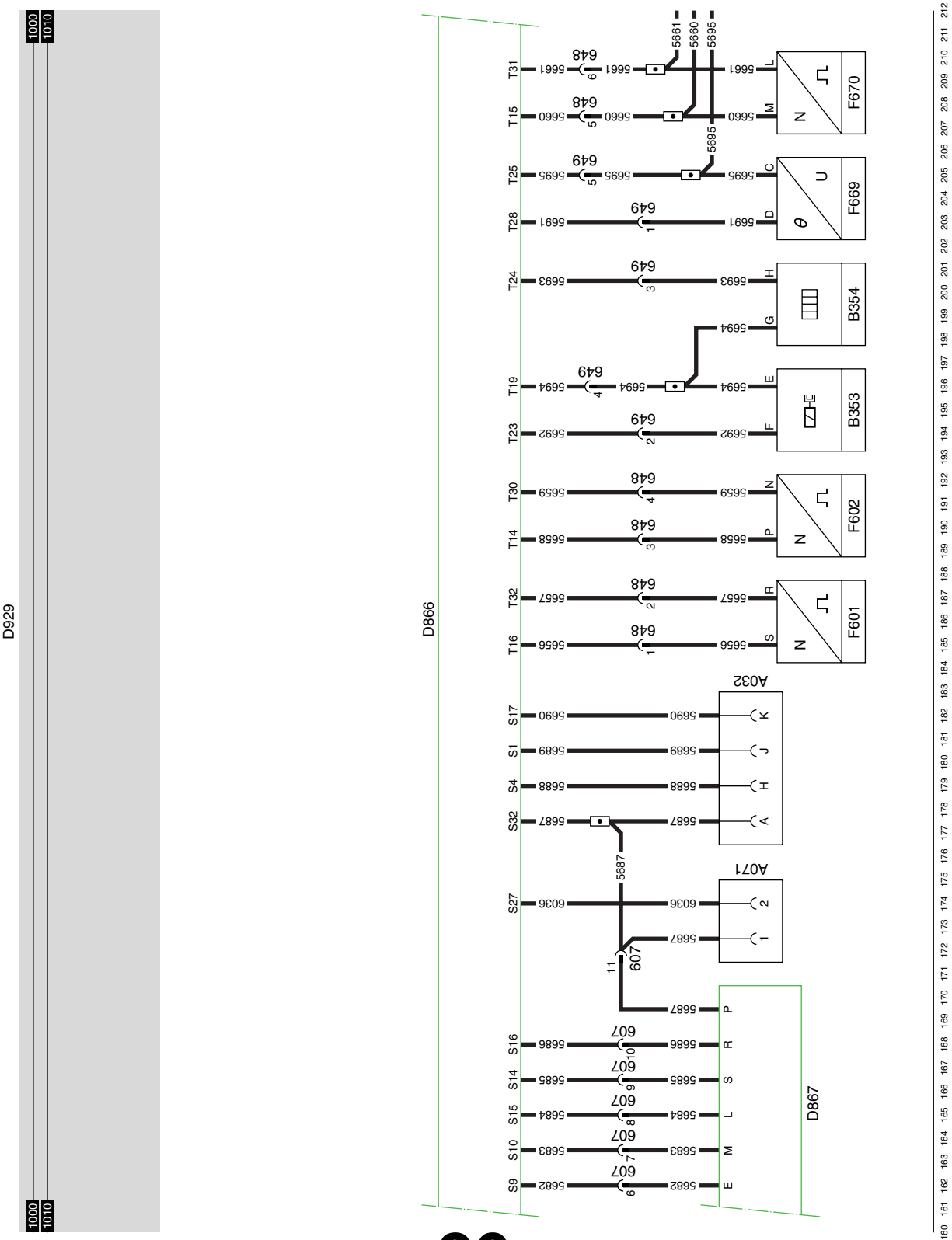

**30** 1358030/30-34

EL001534

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376

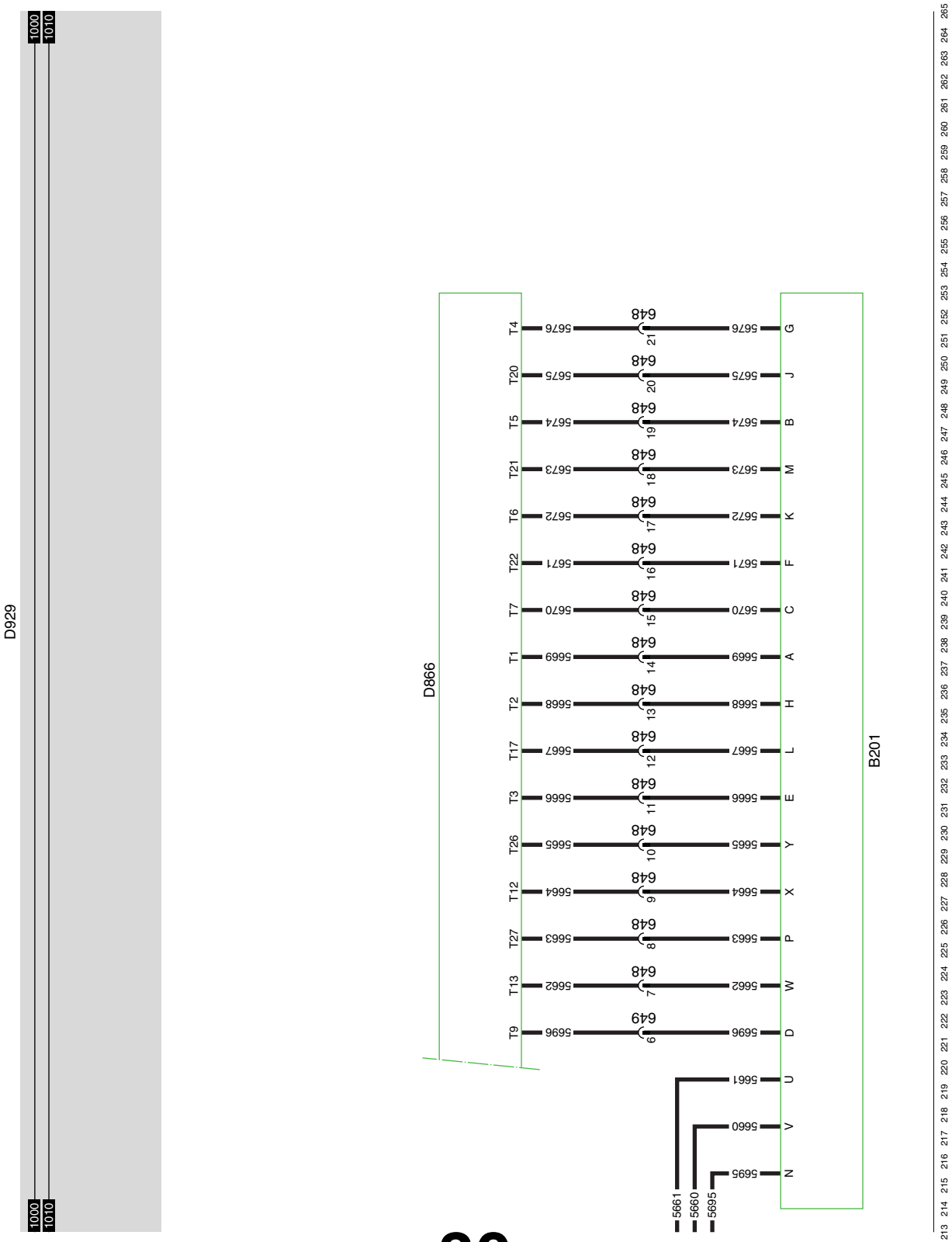



**30** **1358030/30-34**

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**30** **1358030/30-34**

EL001536

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## 32 PTO

**”“REQUEST” PTO 1 (= SWITCH ON)**
When the PTO 1 switch (C750) is operated, a voltage is applied to connection point D27 of D900 (VIC) through fuse E091, wire 1240, contacts 5-1 of switch C750 and wire 4594. The PTO can also be switched on through connection point 11 of A068 (engine speed control application connector). This means that a “request” to use the PTO has been made.
This “request” is implemented depending on the conditions programmed in the VIC. A condition might be that the parking brake must be engaged. In this case, a voltage is applied to connection point 1 of parking brake switch F000 through fuse E035, wire 1211. If parking brake switch F000 is closed (connection between contacts 1 and 2), this voltage is also on connection point B22 of D814 (UPEC electronic unit) through wire 3402 and on connection point D26 of D900 (VIC).

**OPERATION**
If the “PTO request” is implemented, the following takes place:
A voltage is applied from connection point B23 of D900 through wire 4596 to connection point 1 of B245, thereby switching on the PTO.

The VIC checks whether the PTO is actually switched on. This takes place as follows:
When the PTO has been switched on, F087 is operated mechanically. Contacts 1-2 of F087 close. Connection point B14 of the VIC is now connected to earth. The VIC then sends a message to the DIP and the “PTO active” warning is activated. If the PTO does **NOT** switch on, F087 is **NOT** operated and connection point B14 of the VIC is **NOT** connected to earth. After a period of time programmed in the VIC, a “message” is sent to the DIP and the “PTO fault” warning symbol is activated.

**“CANCEL” PTO 1 (= SWITCH OFF)**
Breaking contacts 5-1 of C750 switches the PTO off. This interrupts the voltage from connection point D27 to D900 (VIC). One of the switch-on conditions for operation of the PTO is now absent. The VIC responds to this by also removing the voltage from connection point B23, causing the voltage at connection point 1 of B245 to be lost. The valve is no longer energised and the PTO is switched off.

**“REQUEST” PTO 2 (= SWITCH ON)**
When the PTO operation switch (C751) is operated, a voltage is applied to connection point D22 of D900 (VIC) through fuse E091, wire 1240, contacts 5-1 of switch C750 and wire 5241. This means that a “request” to use the PTO has been made.
This “request” is implemented depending on the conditions programmed in the VIC. A condition might be that the parking brake must be engaged. In this case, a voltage is applied to connection point 1 of parking brake switch F000 through fuse E035, wire 1211. If parking brake switch F000 is closed (connection between contacts 1 and 2), this voltage is also on connection point B22 of D814 (UPEC electronic unit) through wire 3402 and on connection point D26 of D900 (VIC).

**OPERATION**
If the “PTO request” is implemented, the following takes place:
A voltage is applied from connection point C46 of D900 to connection point 1 of E570 (clutch PTO N10 proximity switch) (if present) and to connection point 3 of relay G259 (PTO operation takeover relay) (if present) through wire 4595. When switch E570 is operated by depressing the clutch pedal (connection between contacts 1 and 2), a voltage is applied to connection point 1 of relay G259 through wire 4595 and to connection point 1 of B245 (PTO control valve). Relay G259 is energised and, as a result, a connection is made between contacts 3 and 5 of relay G259. Relay G259 now remains energised irrespective of E570 (this is a “memory” function). B246 is also activated and this switches the PTO on.





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The VIC checks whether the PTO is actually switched on. This takes place as follows: When the PTO has been switched on, F088 is operated mechanically. Contacts 1-2 of F088 close. Connection point B11 of the VIC is now connected to earth. The VIC then sends a message to the DIP and the "PTO active" warning is activated. If the PTO does **NOT** switch on, F088 is **NOT** operated and connection point B11 of the VIC is **NOT** connected to earth. After a period of time programmed in the VIC, a "message" is sent to the DIP and the "PTO fault" warning symbol is activated.

**"CANCEL" PTO 2 (= SWITCH OFF)**

Breaking contacts 5-1 of C751 switches the PTO off. This interrupts the voltage from connection point D22 to D900 (VIC). One of the switch-on conditions for operation of the PTO is now absent. The VIC responds to this by removing the voltage on connection point C46 as well. The voltage on relay G259 is interrupted and, as a result, the coil is no longer energised. Contacts 5-3 open and, as a result, the voltage on connection point 1 of B246 is lost. The valve is no longer energised and the PTO is switched off.

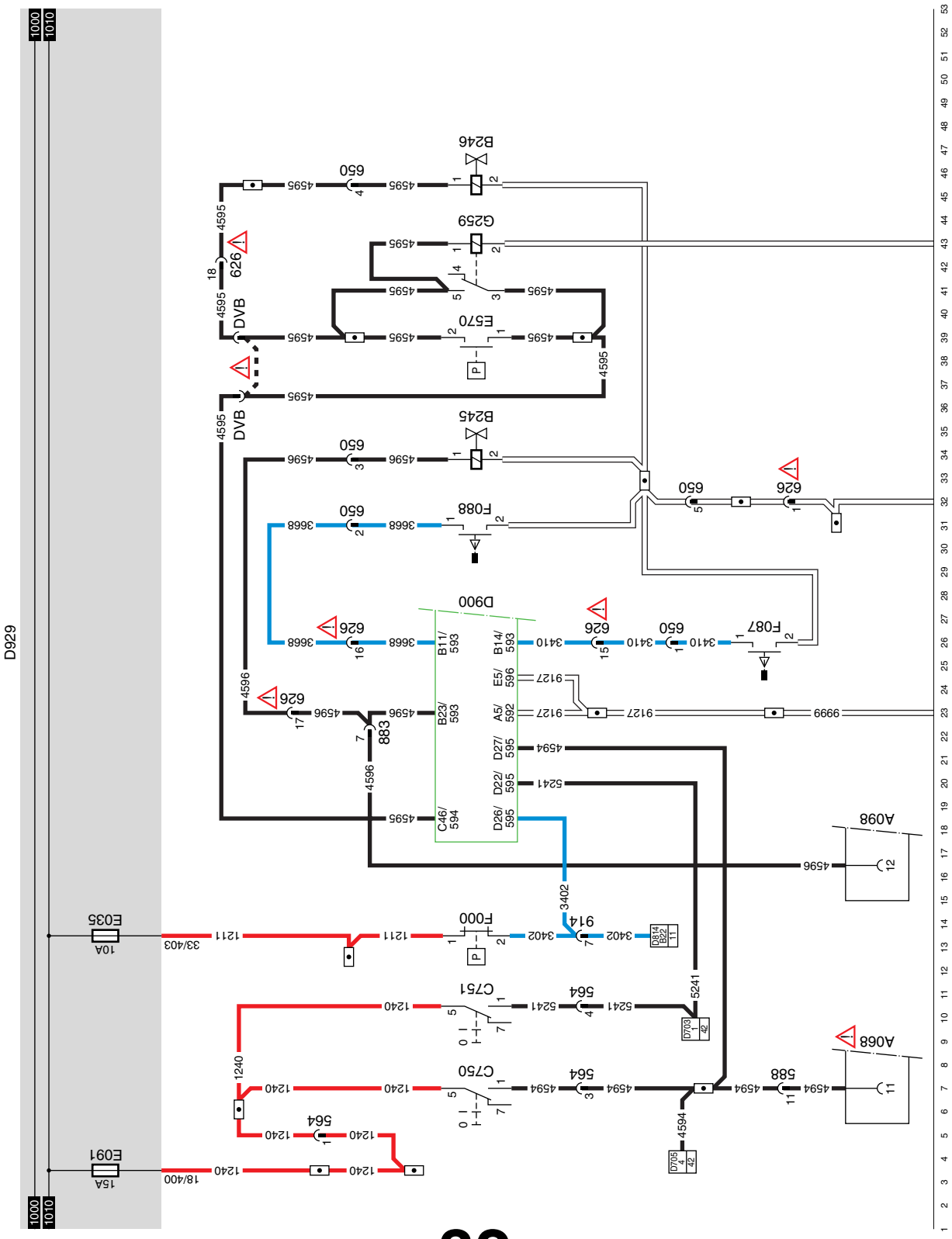
**VARIANTS**

| Location | |
|---|---|
| 9 | Connector A068: optional |
| 39 | DVB: in wiring harness above PCB if there is **NO** clutch PTO N10 proximity switch. |
| 24, 27, 33, 44: | Connector 626: for manual gearbox.<br>Connector 699: for AS Tronic.<br>Connector 577 for AGC. |

11

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**32** **1358030/30-34**

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

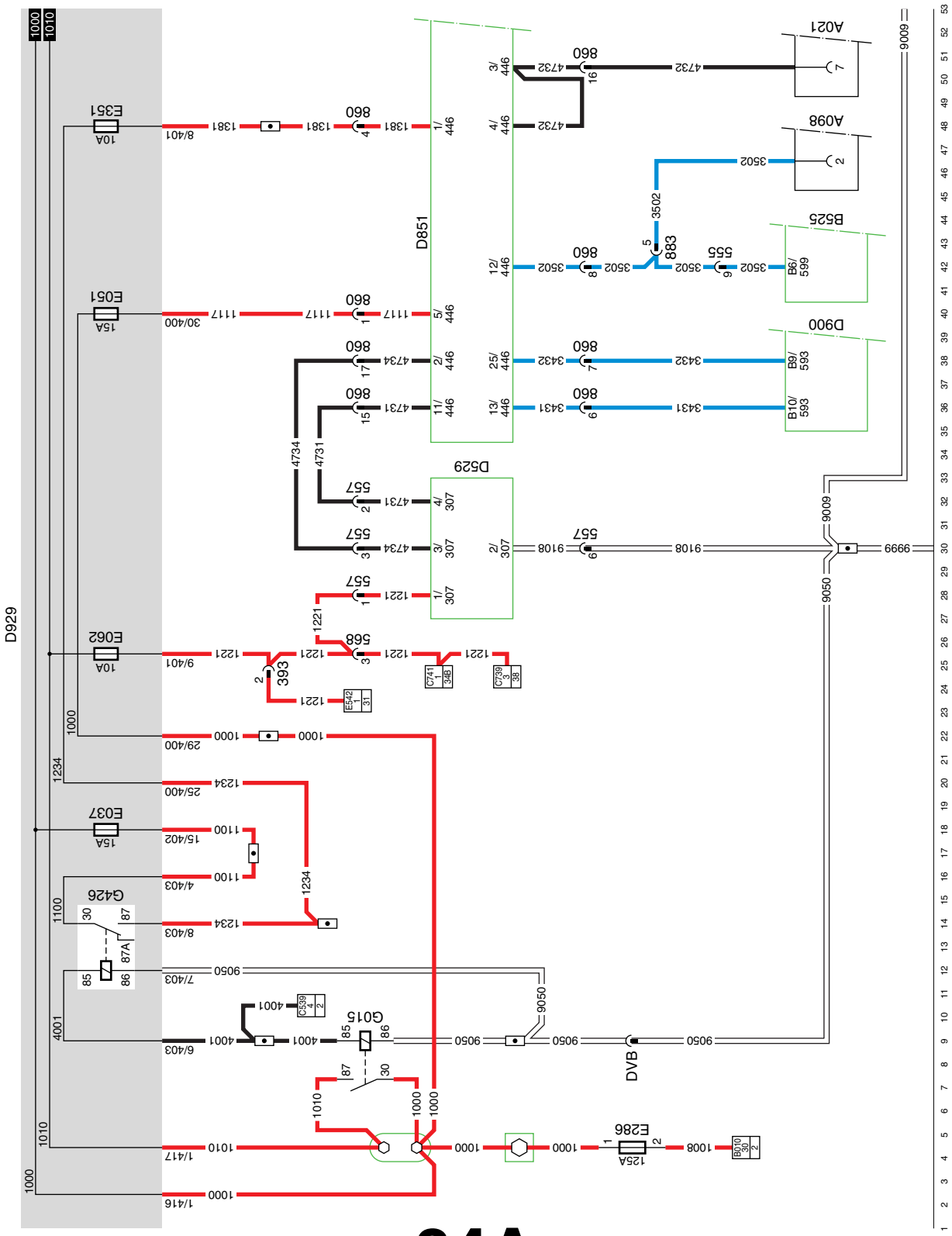
**34A ECAS-3**

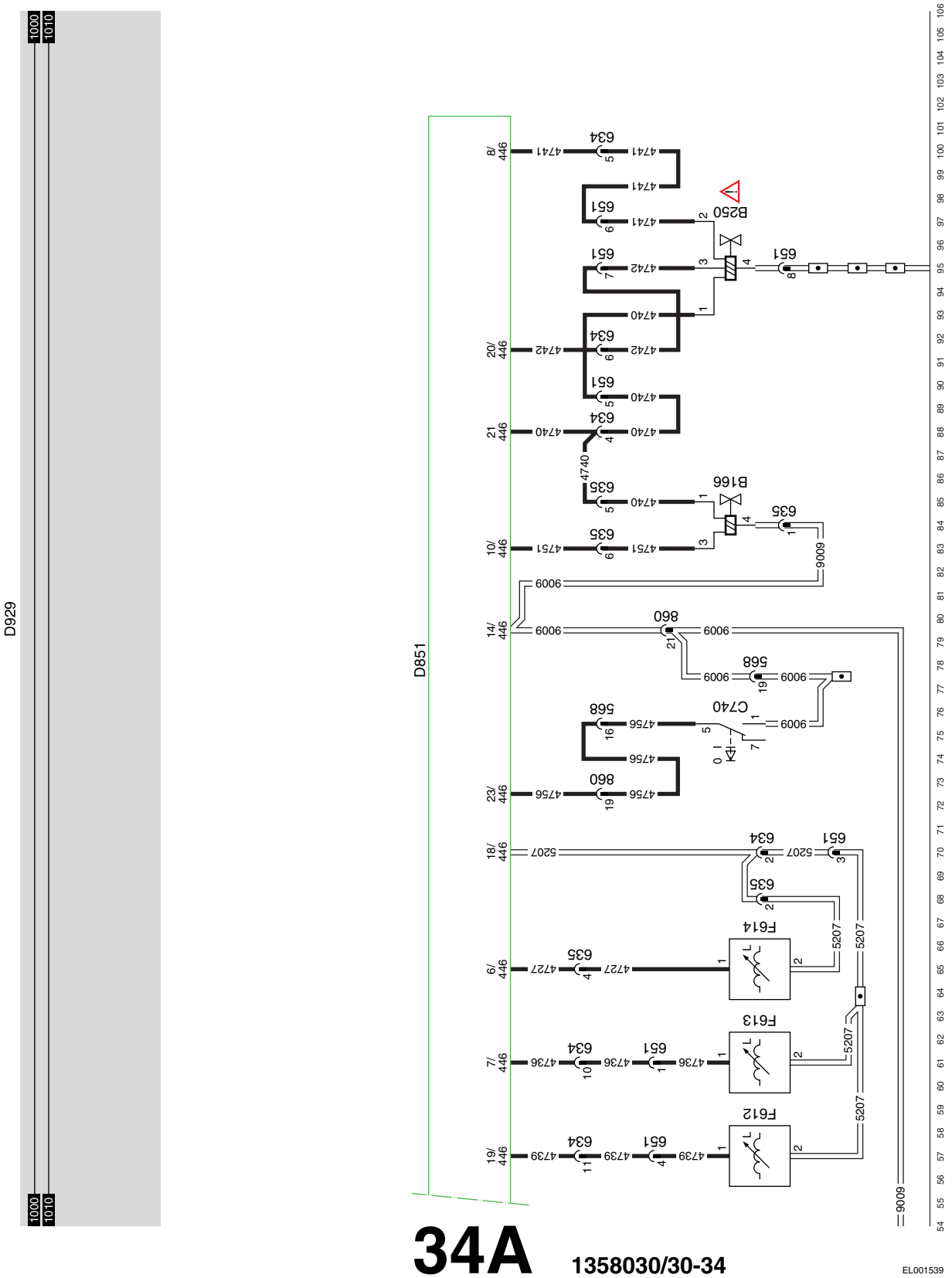
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**
98 Valve B250:
for vehicle type FA: B250
for vehicle type FT: B238

11


D929
D851
D529
D900
A021
A098
B525
E351
E051
E062
E037
G426
G015
DVB
E286
1000
1010
1234
1100
4001
9050
6666
9006
9009
9108
1358030/30-34
EL001538


D929
D851
1000
1010
B250
B166
C740
F614
F613
F612
634
651
635
860
568
6006
9009
5207
4741
4742
4740
4751
4727
4736
4739
4756
34A
1358030/30-34
EL001539

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

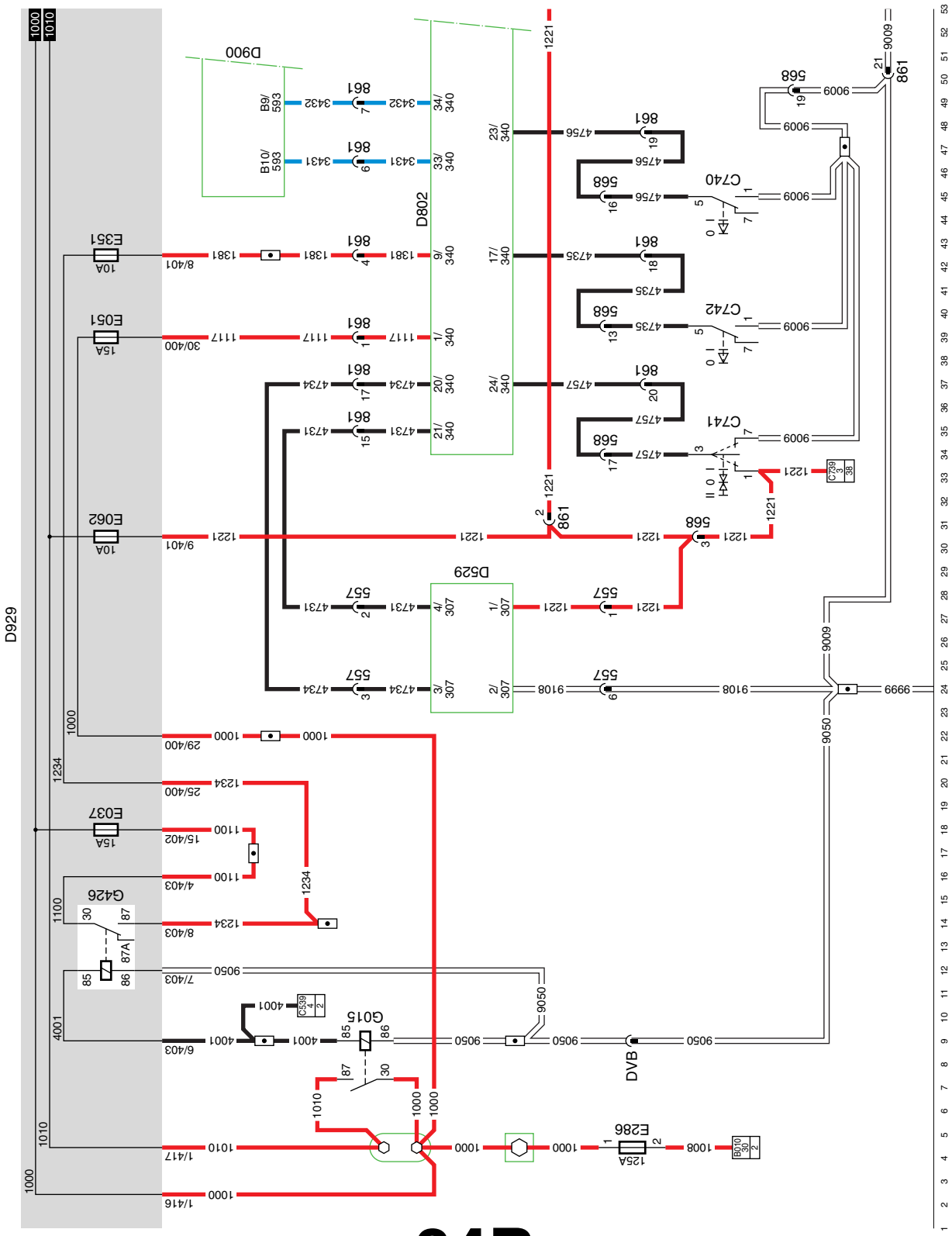
**34B ECAS-2**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

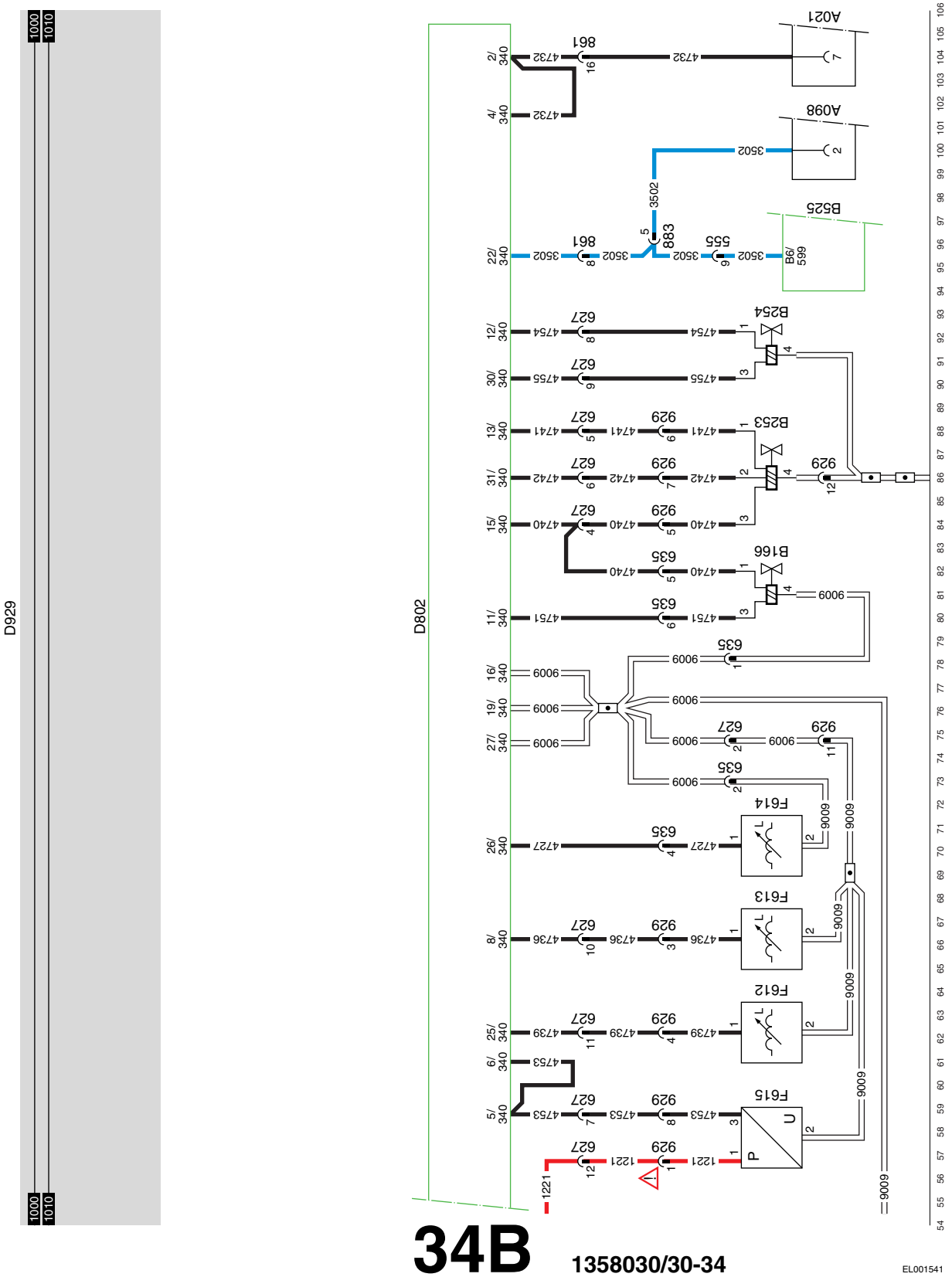
**Location**
56 Connector 929: only if the vehicle has been equipped to transport hazardous substances.

11


D929
D900
D802
D529
DVB
E351
E051
E062
E037
G426
G015
E286
C740
C742
C741
C739
B010
1000
1010
1234
1100
4001
1221
9050
9009
6666
6006
9108
861
568
557
547
1358030/30-34
EL001540

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376






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## 42 HYDRONIC 10 (ACH-EW) CAB HEATER WITH TIMER

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

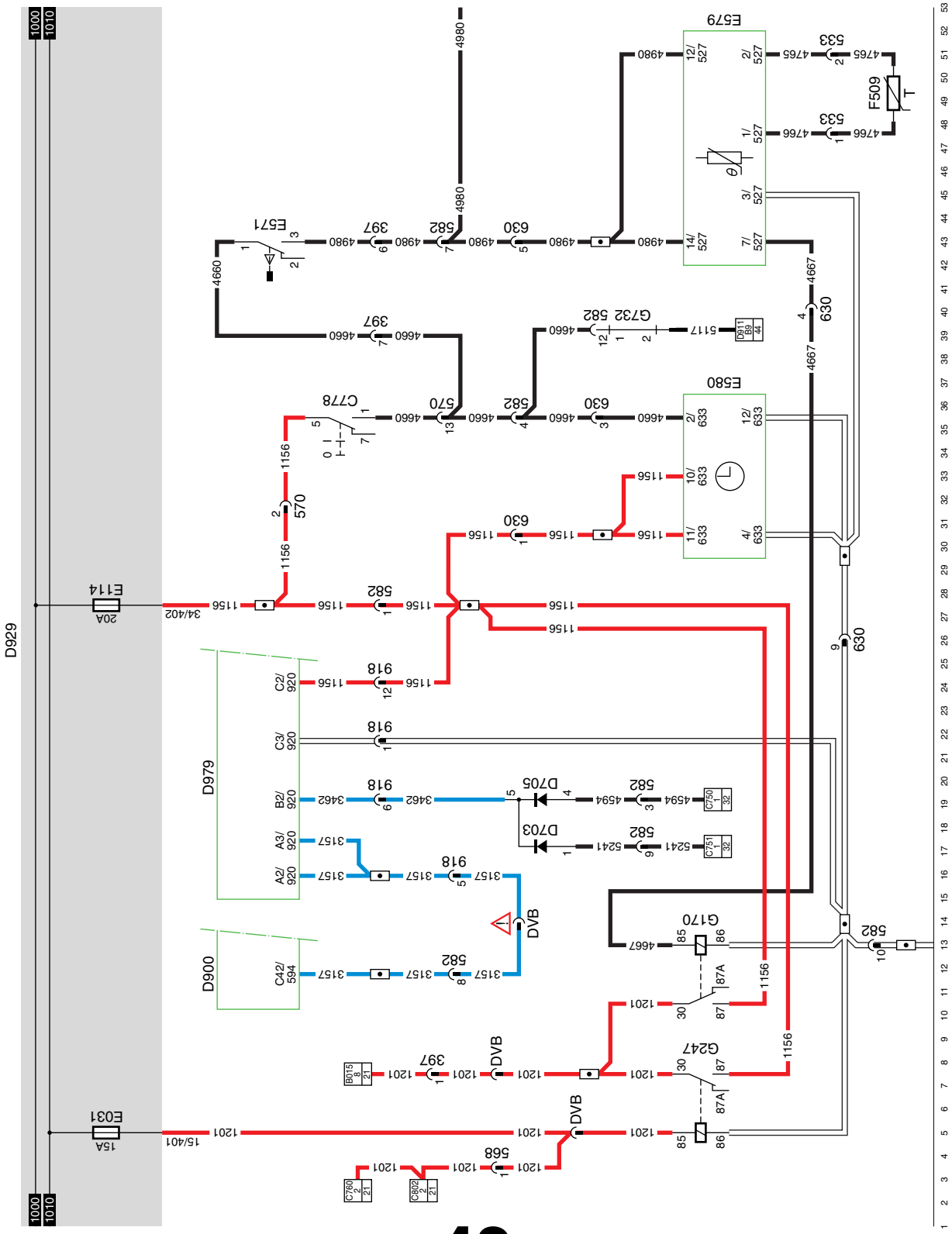
**VARIANTS**

| Location | |
|---|---|
| 15 | DVB: in wiring harness next to PCB |
| 68 | Relay G372 for a manual gearbox.<br>Relay G185 for an AS Tronic gearbox and for an Allison gearbox. |

11

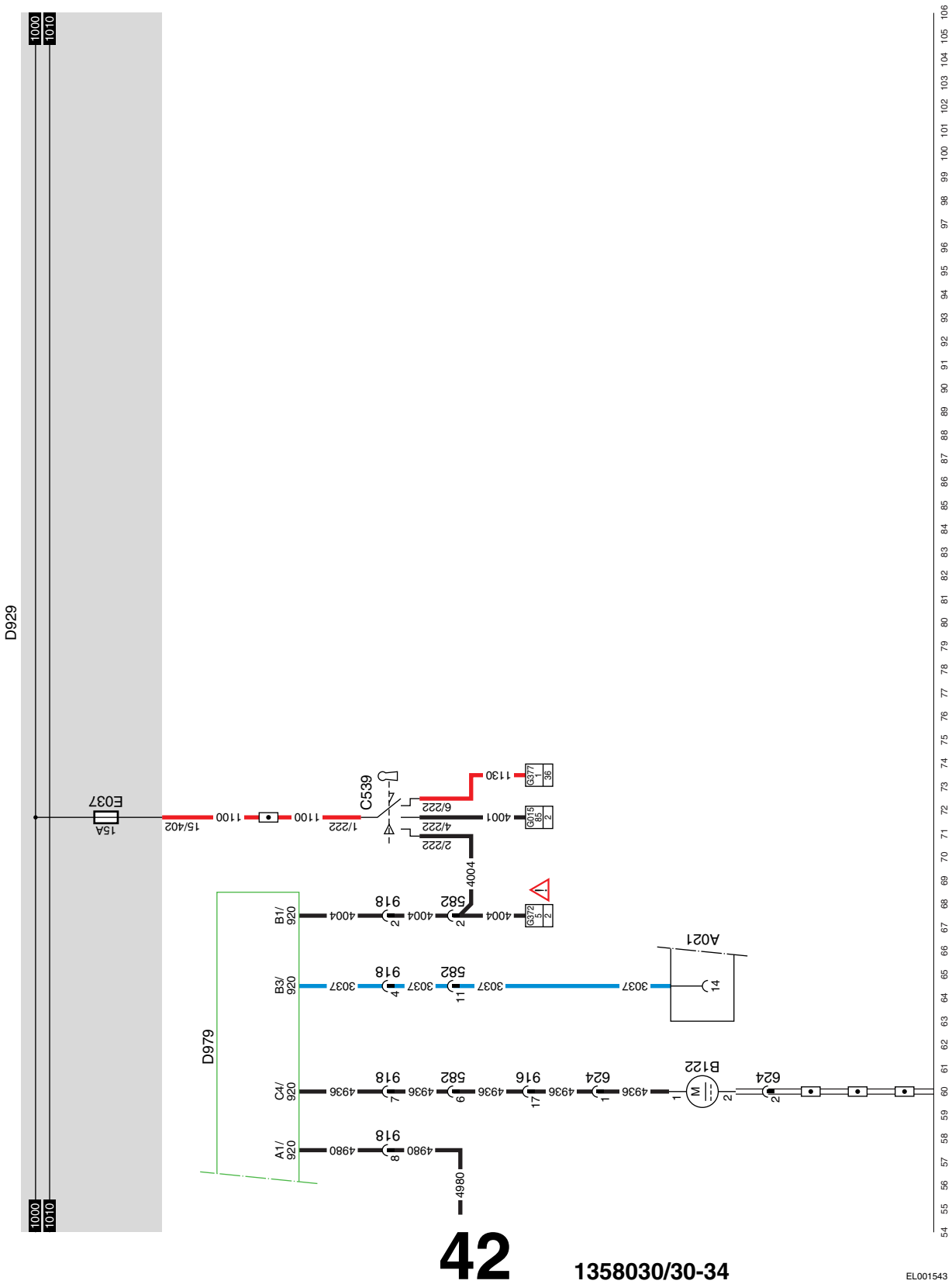


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E579
E580
E571
E114
E031
F509
G732 582
G170
G247
D979
D900
D703
D705
DVB
D929
11358030/30-34
EL001542

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




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## 43 UPEC/CUMMINS/AGC/SUPERSTRUCTURE FUNCTIONS APPLICATION CONNECTOR

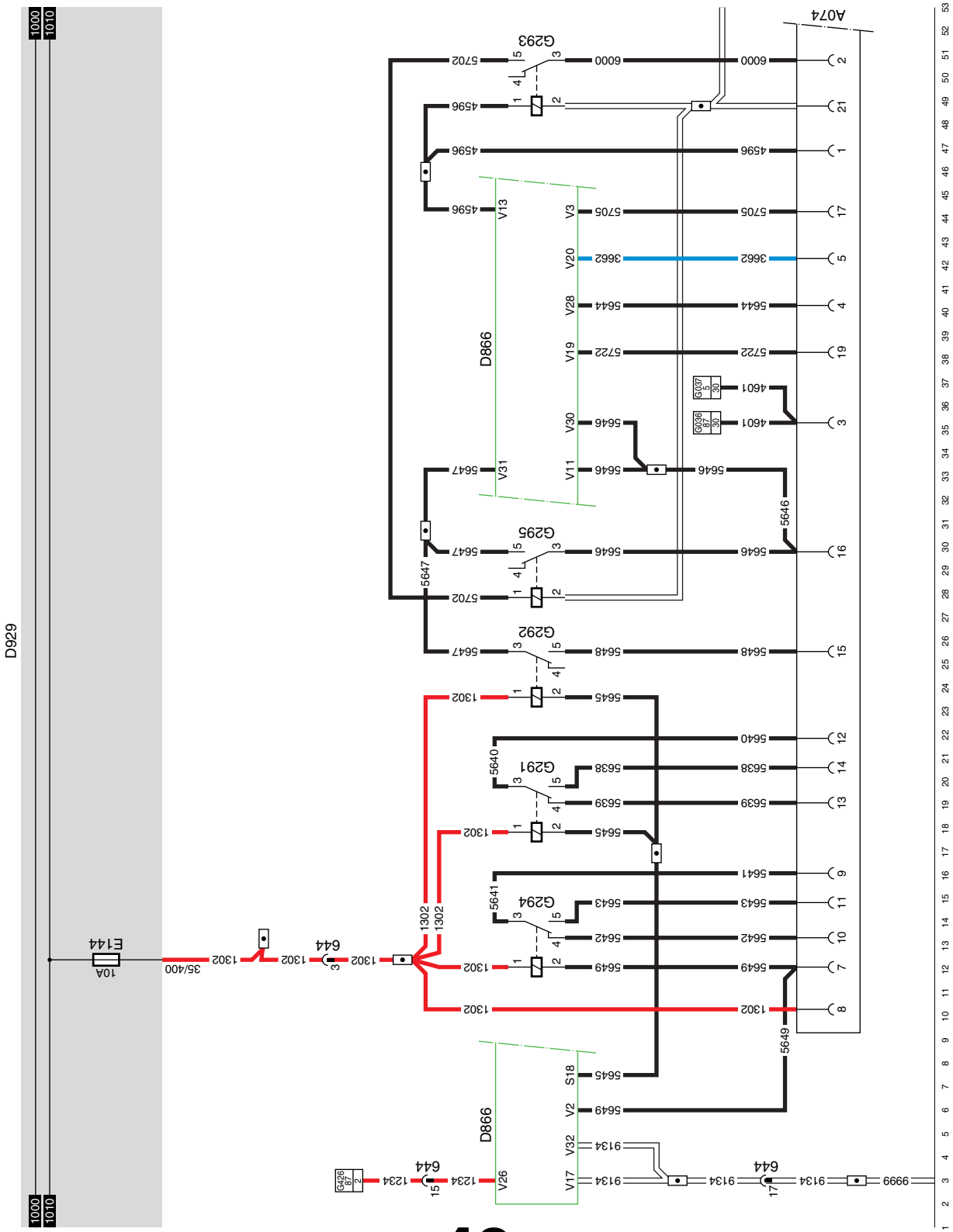
**FOR MORE INFORMATION: SEE BLOCK 6: CONNECTION OF ACCESSORIES**

**VARIANTS**

**Location**

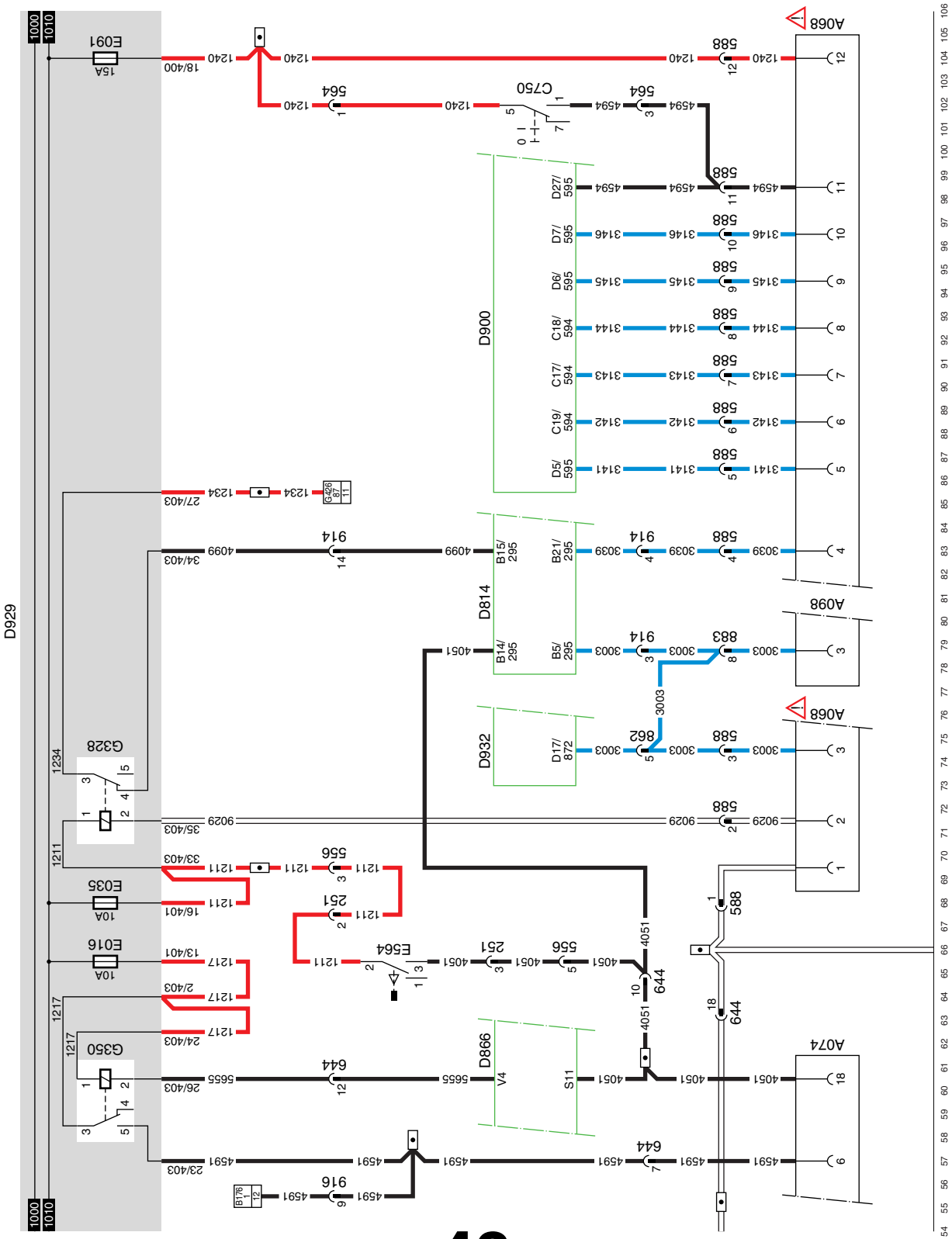
69 -> 105: If the vehicle has UPEC.
76, 105, 120, 147
Connector A068: optional
109 -> 147: If the vehicle has ECS-DC3.
165 -> 182: All 658 connectors: optional
165 -> 182 and 185 -> 209:
All 656 connectors: optional
185 -> 197: All 654 connectors: optional
185 -> 209: All 657 connectors: optional
199 -> 209: All 655 connectors: optional

11


A074
G293
G295
G292
G291
G294
D866
D929
E144
10A
644
1358030/30-34
EL001544

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376

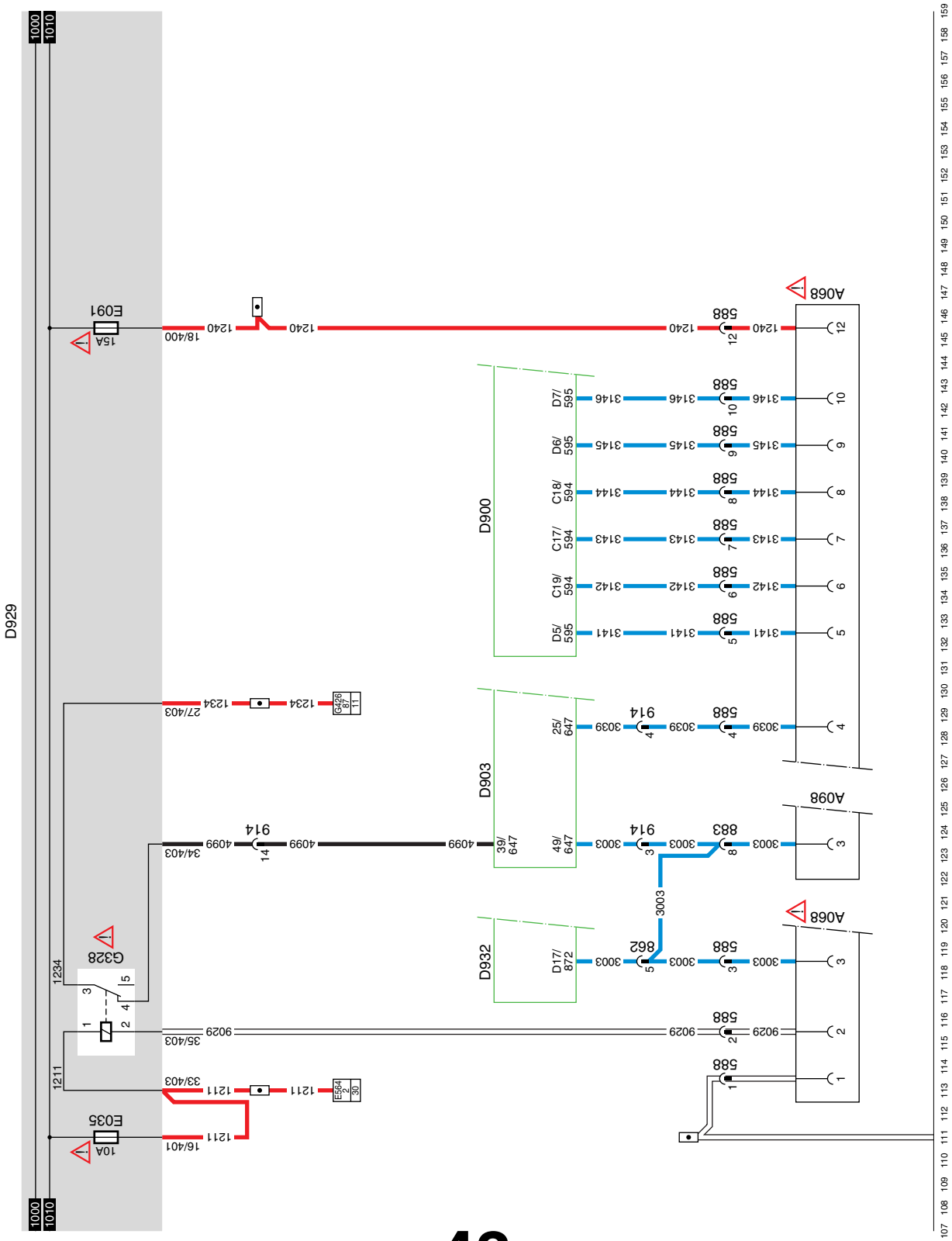



**43** **1358030/30-34** EL001545

11



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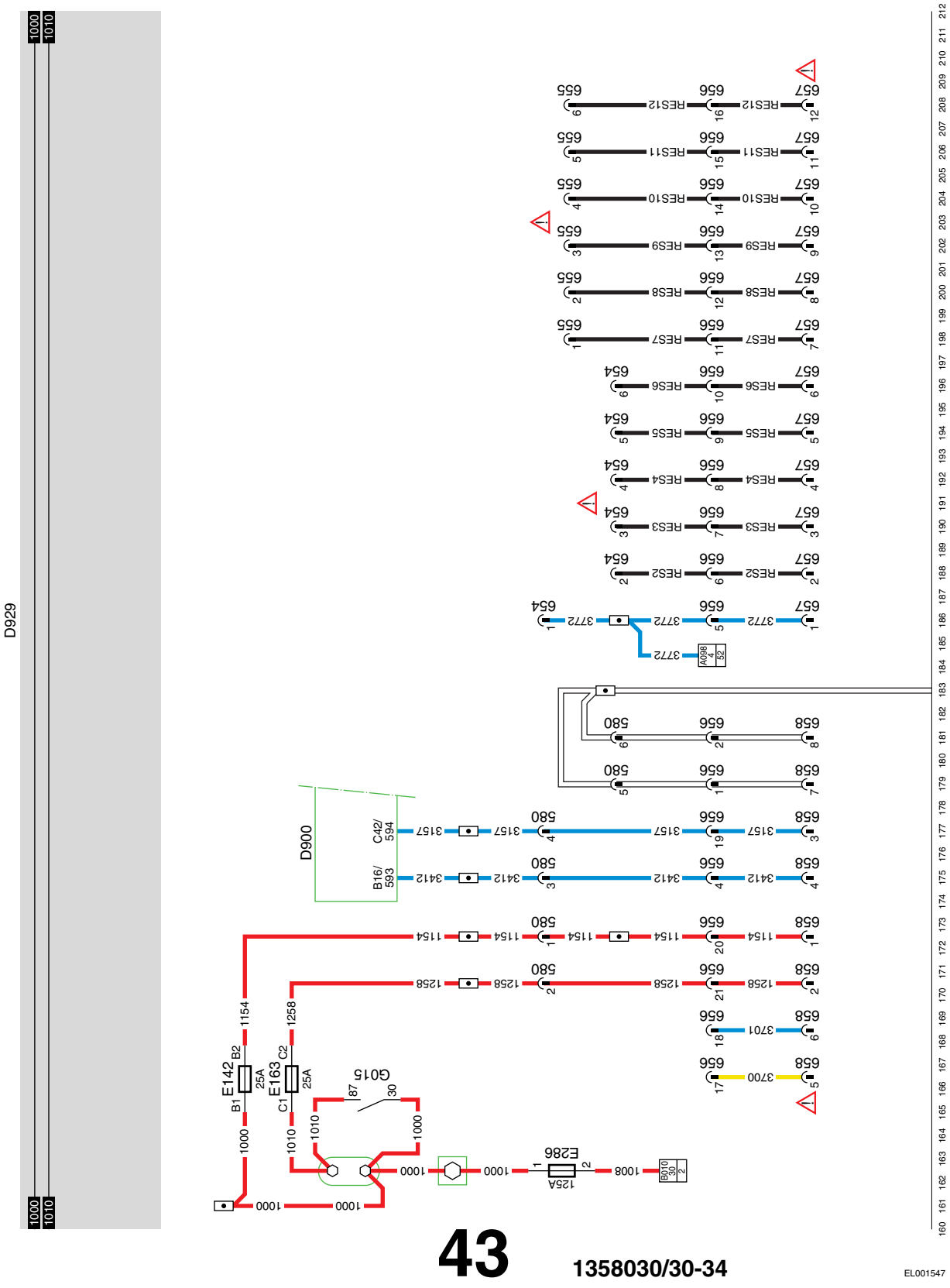

**43** 1358030/30-34

EL001546

11

Changes in the electrical system from chassis number 0E646818

*CF*65/75/85 Serie ≥0E621376




43

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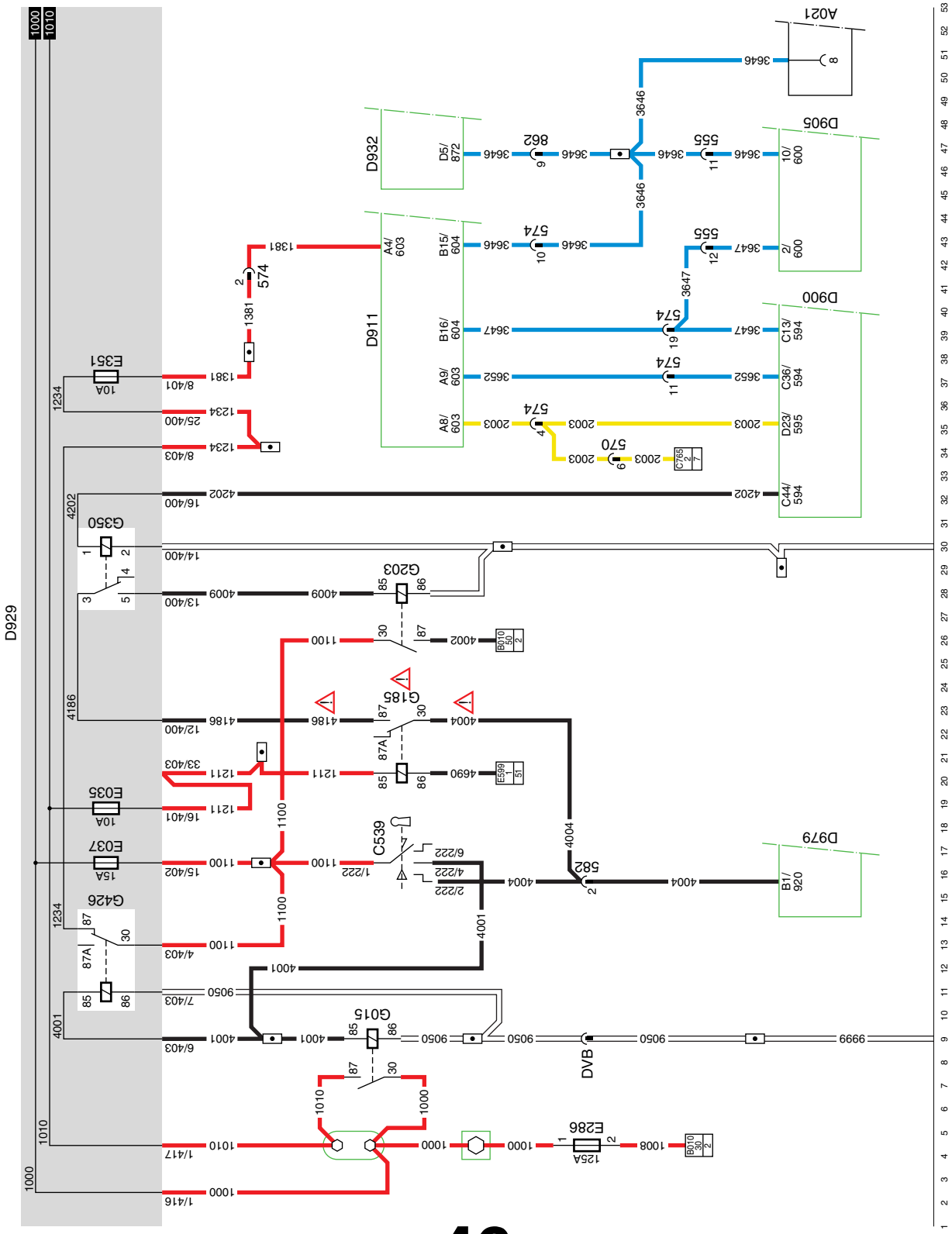
11

## 46 ALARM SYSTEM

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 23, 24 | Relay G185: only for AS Tronic or Allison gearbox. Only relay G350 is fitted if gearbox is manual. Connection point 30 (with wire 4004) is then rigidly connected to wire 4186. |
| 59 -> 65 | Connector 873 on vehicle type FA. Connector 874 on vehicle type FT. |
| 59 -> 65 | Connector A001: on vehicle type FA. Connector A003: on vehicle type FT. |
| 73 | Connector A073: only on vehicle type FA |
| 81 | Connection for F686 (this is optional). Only applies to SL cab. |
| 128 | C836: optional |
| 144 | D931: fitted if **NO** alarm system installed. |
| 142 | E351: fitted if **NO** alarm system installed. |
| 147 | E023: fitted if **NO** alarm system installed. |

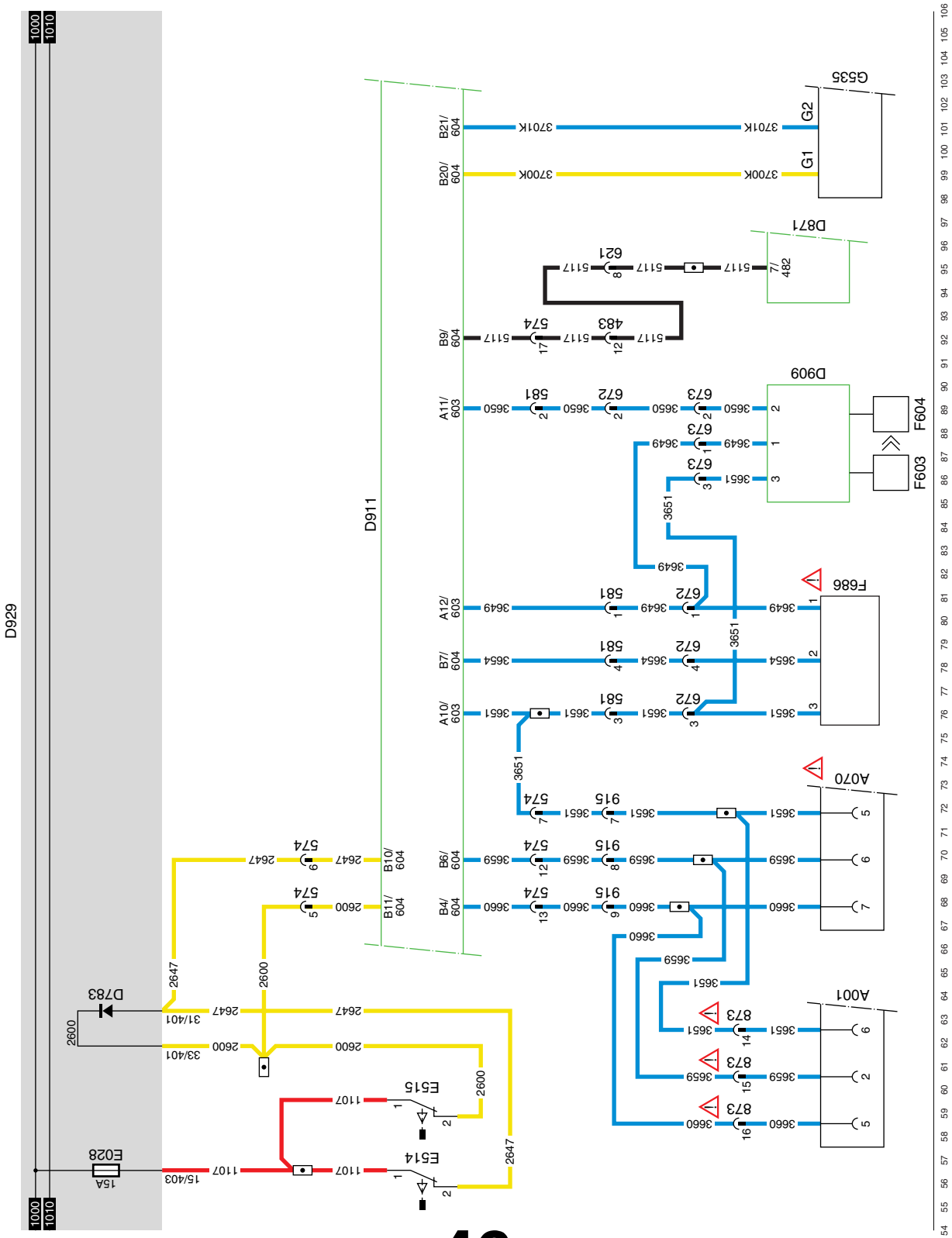



**46** **1358030/30-34**

EL001548

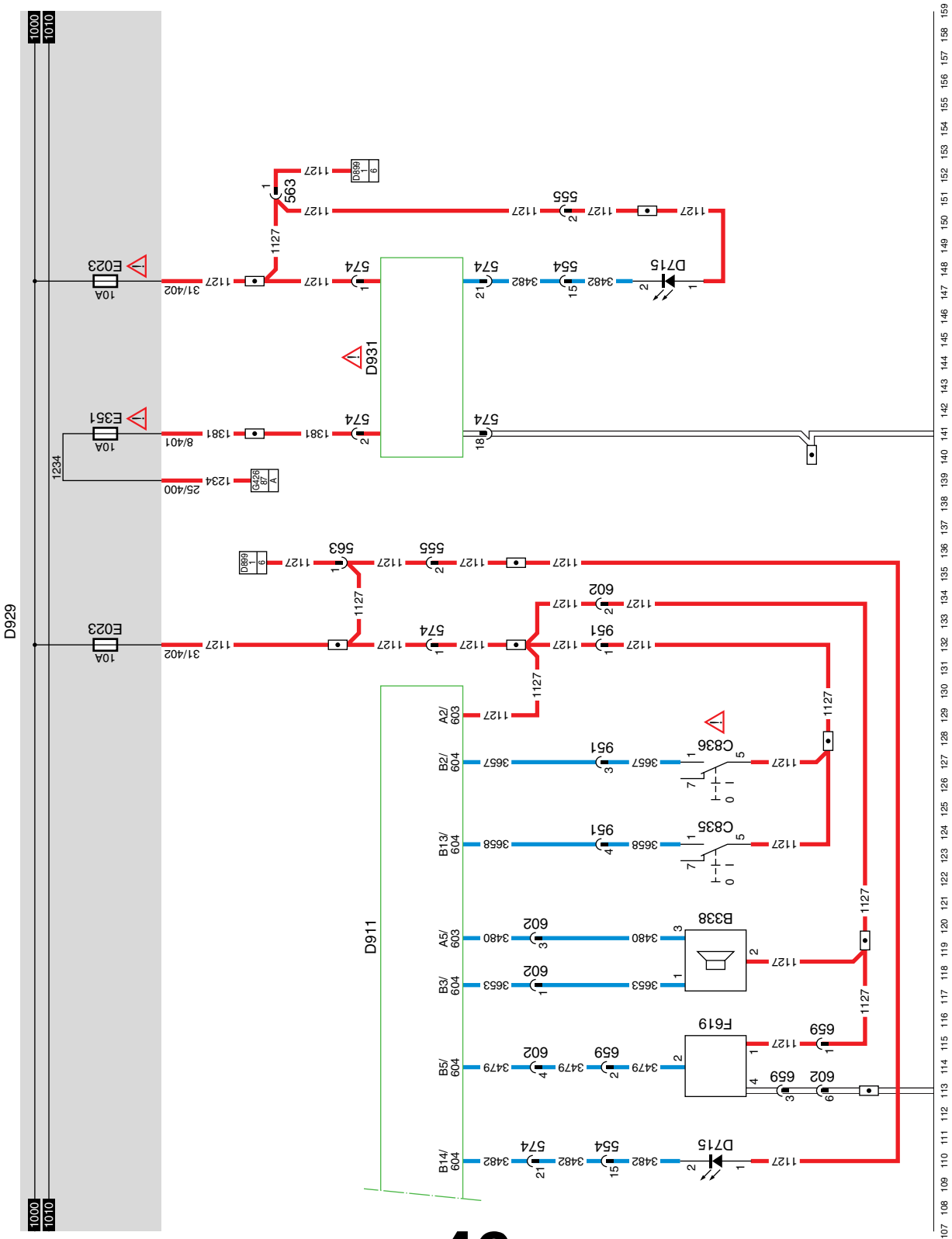
Changes in the electrical system from chassis number 0E646818

*CF*65/75/85 Serie ≥0E621376






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46 1358030/30-34

EL001550

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Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥ 0E621376

**52 CDM + FMS**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

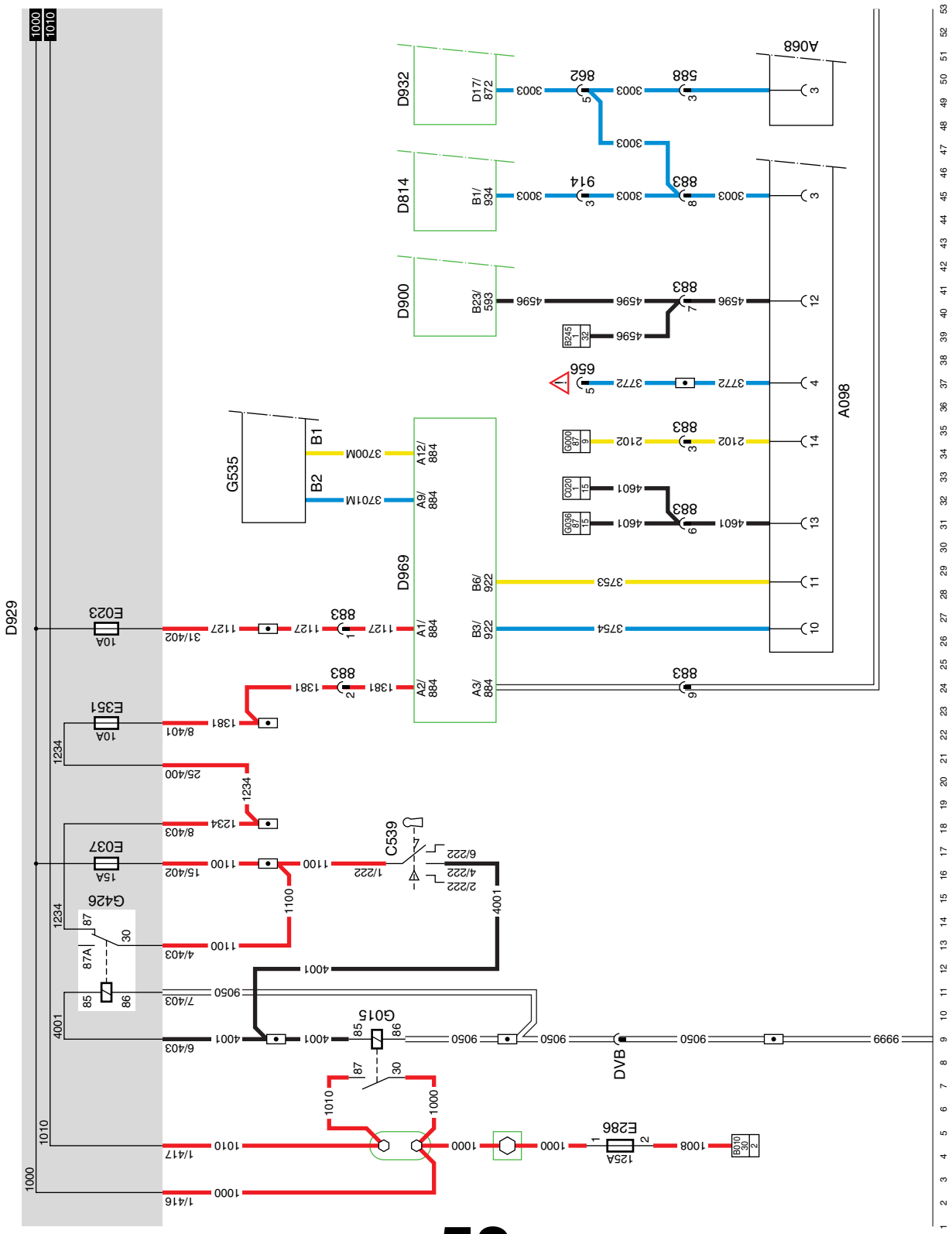
**VARIANTS**

**Location**
37 Connector 656: connector for bodybuilder

11

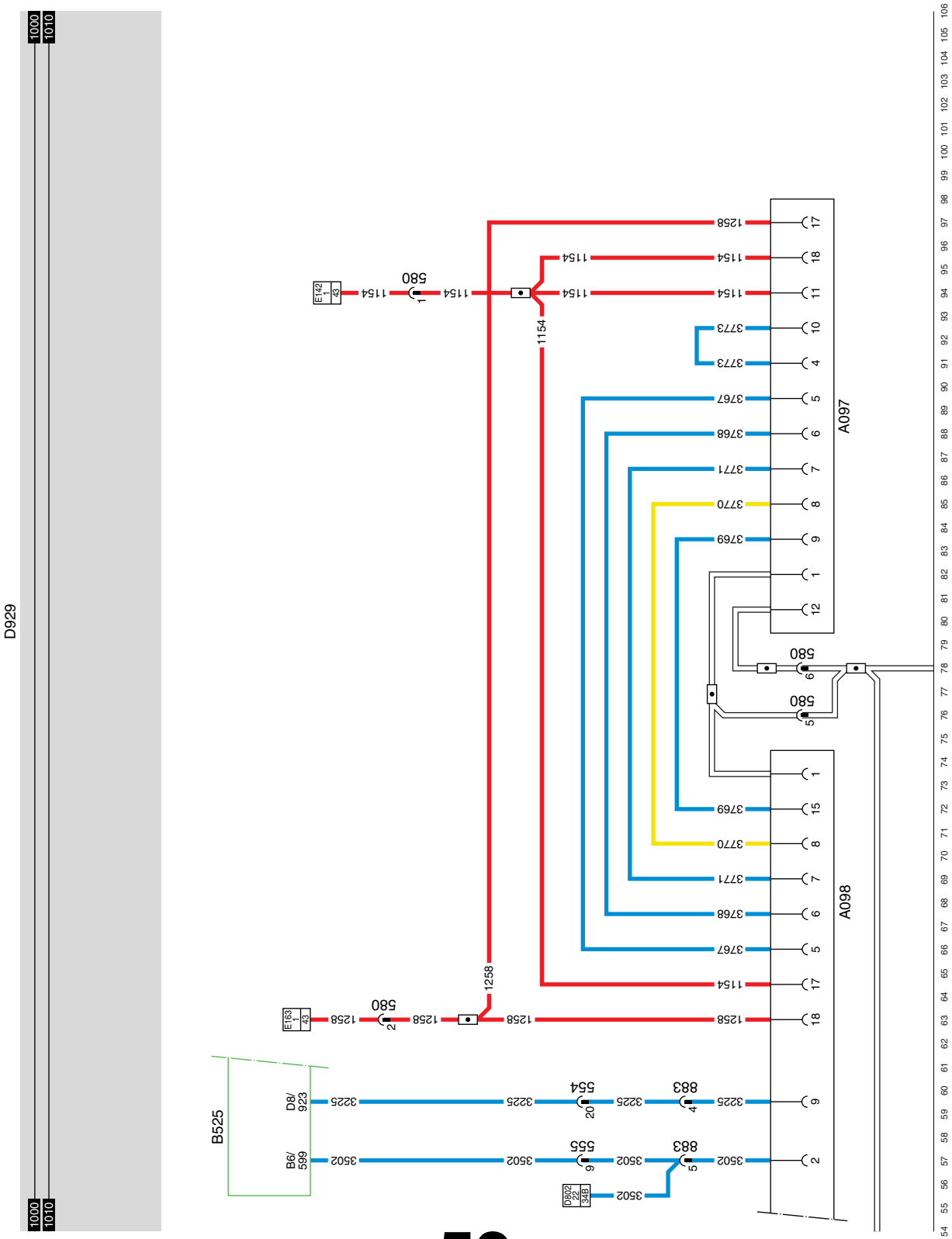


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D929
D932
D814
D900
D969
G535
A068
A098
DVB
E023
E351
E037
G426
G015
C539
E286
1000
1010
1358030/30-34
EL001551

Changes in the electrical system from chassis number 0E646818

***CF*65/75/85** Serie ≥0E621376




**52** **1358030/30-34**

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# 4. CHANGES IN THE ELECTRICAL SYSTEM FROM CHASSIS NUMBER 0E659894

## 4.1 OVERVIEW OF THE CHANGES IN THE ELECTRICAL SYSTEM

| Section diagram | Electrical system | Changes | From chassis number |
|---|---|---|---|
| B | Overview of earthing points | Various earthing points changed | 0E663173 |
| 1 | Main switch | New main switch | 0E682847 |
| 5 | Tachograph | ECN name changed | 0E682847 |
| 8 | VIC | Relay, EBS warning, semi-trailer (G497) added | 0E659894 |
| 11 | UPEC | Relay, EBS warning, semi-trailer (G497) added to fuse E035 | 0E659894 |
| 15B | Stop lights/cab tilting gear | Power supply to wire 1248 changed to wire 1217 | 0E659894 |
| 21 | Air conditioning/air-conditioning reci rculation/heater fan | Temperature switch E508 replaced by temperature sensor F754 | 0E659894 |
| 24 | ABS - ASR-D | Relay, EBS warning, semi-trailer (G497) added | 0E659894 |
| 25 | DEB | Relay, EBS warning, semi-trailer (G497) added to fuse E035 | 0E659894 |
| 34C | ECAS-2 FT low deck + FA large volume | New | 0E673432 |
| 36 | 24 V/12 V 10/20 A converter/radio/CB set | Supplemented by connection for combi-aerial | 0E659894 |
| 37 | Electric drop glass/central door locking/roof hatch, XC | Connection to fuses E033 and E034 changed to wire 1000 | 0E682847 |
| 44 | EBS-2 | Relay, EBS warning, semi-trailer (G497) added | 0E659894 |
| 47 | FA connectors | Relay, EBS warning, semi-trailer (G497) added | 0E659894 |
| 48 | FT connectors | Relay, EBS warning, semi-trailer (G497) added | 0E659894 |
| 53 | Car kit telephone | New | 0E663173 |

The other section diagrams from circuit diagrams 1358030/35-37 contain no functional changes compared with circuit diagram 1358030/30-34.

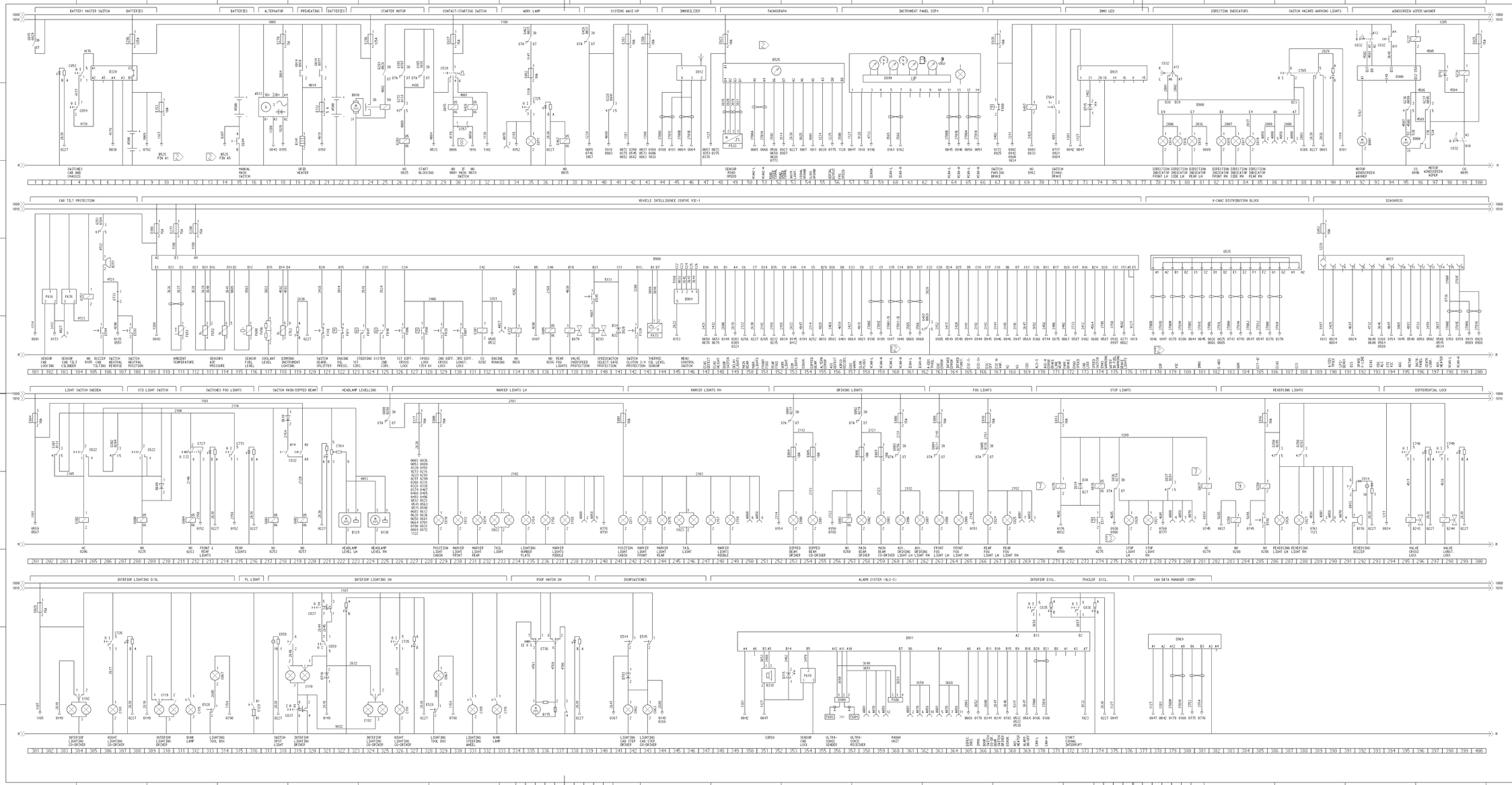
## 4.2 CIRCUIT DIAGRAMS 1358030/35-37

This page can be used to make your own notes on the circuit diagram.





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1 OPMERKING/note
STARTONDERBREKING ALLEEN VOOR BV6 EN BV3, NIET VOOR THATCHAM BX2 en BV3, not for Thatcham

F OPMERKING/note
BIJ HOOFDSCHAKELAAR
ADER: ADER 1167 OP PIN A1
MASSA SCHAKELAAR:
9307 OP PIN A5
With mainswitch
ADR: wire 1167 on pin A1
Mannual switch:
9307 on pin A5

7 OPMERKING/note
G037 EN G375 ALLEEN TBV AGC MET RETARDER
G037 and G375 only for AGC with retarder

8 OPMERKING/note
BIJ TOEPASSING HOOFDSCHAKELAAR
ADER 4179 OP 86 VAN 0915 EN 0426
With mainswitch
Wire 4179 to pin 86 of 0915 and 0426

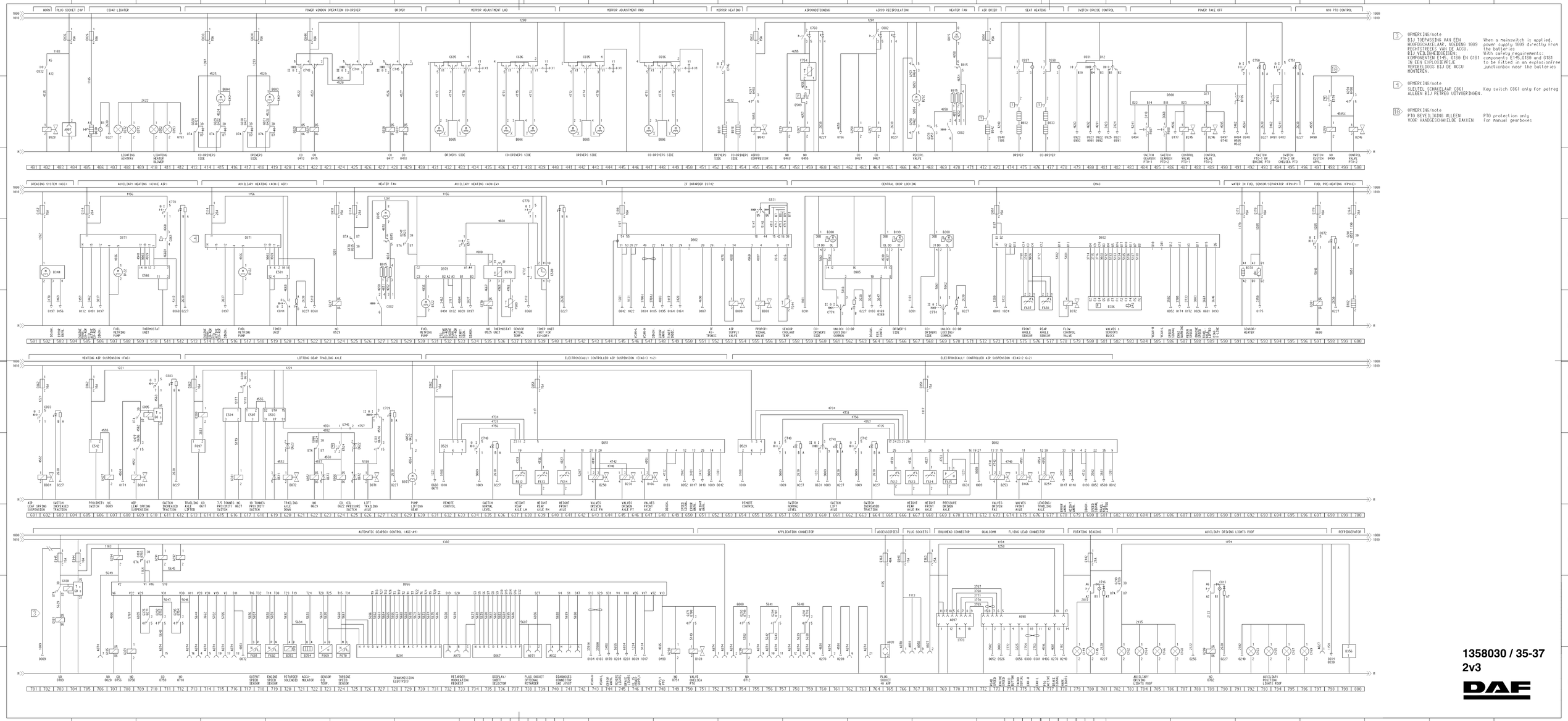
9 OPMERKING/note
ACHTERUITRIJ VERPLICHTING:
BIJ AS-TRONIC AKTIEF MOOG OVERIGE V-BAKKEN AKTIEF LAAG
Reversing lights:
with as-tronic active high other gearboxes active low

F OPMERKING/note
BIJ AS-TRONIC 2700/3701X AANGESLOTEN OP VIC C15/C14
ZONDER AS-TRONIC 2700/3701D AANGESLOTEN OP VIC C15/C14
With AS-tronic 2700/3701X connected to VIC C15/C14
no AS-tronic 2700/3701D connected to VIC C15/C14

F OPMERKING/note
CIRCUIT REMLICHTEN ZONDER AS-TRONIC
circuit brake lights without AS-tronic

**1358030 / 35-37**
**1v3**

DAF




5 OPMERKING/note
BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1089 RECHTSTREEKS VAN DE ACCU.
BIJ VEILIGHEIDSEISEN: KOMPONENTEN E1495, G180 EN G181 IN EEN EXPLOSIEVEILIE VERDEELDOOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1089 directly from the batteries
With safety requirements: components E1495,G180 and G181 to be fitted in an explosionfree junctionbox near the batteries

4 OPMERKING/note
SLEUTEL SCHAKELAAR CB61 ALLEEN BIJ PETREO UITVOERINGEN.

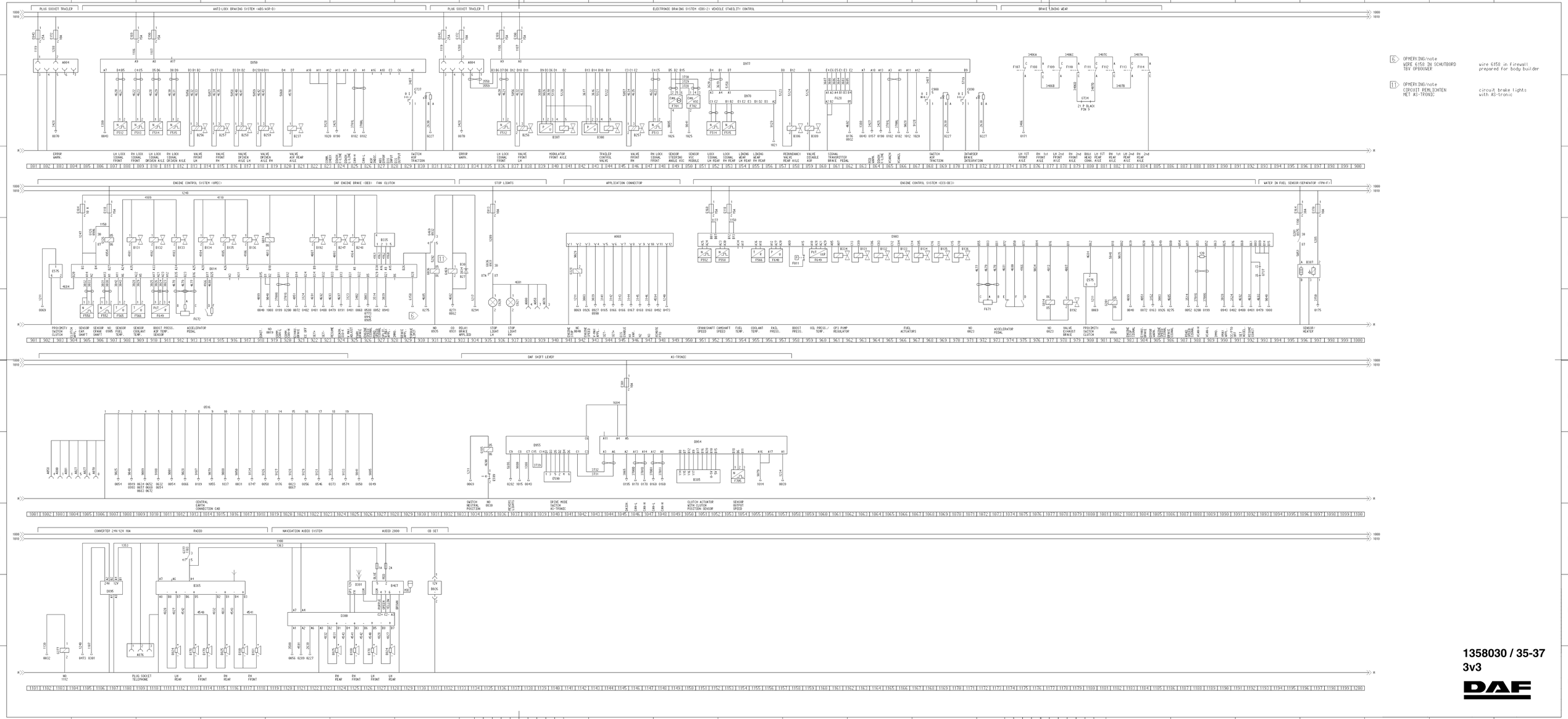
Key switch CB61 only for petreo

16 OPMERKING/note
PTO BEVEILIGING ALLEEN VOOR HANDGESCHAKELDE BAKKEN

PTO protection only
For manual gearboxes

**1358030 / 35-37**
**2v3**

DAF


PLUG SOCKET TRAILER
ANTI-LOCK BRAKING SYSTEM (ABS/ASR-D)
PLUG SOCKET TRAILER
ELECTRONIC BRAKING SYSTEM (EBS-2) VEHICLE STABILITY CONTROL
BRAKE LINING WEAR
E> OPMERKING/note WIRE 6158 IN SCHUTBORD TBV OPBOUWER
wire 6158 in firewall prepared for body builder
[1] OPMERKING/note CIRCUIT REMLICHTEN MET AS-TRONIC
circuit brake lights with AS-tronic
ENGINE CONTROL SYSTEM (UPEC)
DAF ENGINE BRAKE (DEB) FAN CLUTCH
STOP LIGHTS
APPLICATION CONNECTOR
ENGINE CONTROL SYSTEM (ECS-DC)
WATER IN FUEL SENSOR/SEPARATOR (FPW-F)
DAF SHIFT LEVER
AS-TRONIC
CENTRAL EARTH CONNECTION CAB
CONVERTER 24V/12V 10A
RADIO
NAVIGATION AUDIO SYSTEM
AUDIO 2000
CB SET
PLUG SOCKET TELEPHONE
1358030 / 35-37
3v3
DAF

## 4.3 OVERVIEW OF BASIC CODE NUMBERS IN CIRCUIT DIAGRAMS 1358030/35-37

| Basic code number | Description | Number on search bar |
|---|---|---|
| A000 | Drawn vehicle connector (7-pin) | 86, 87, 238, 250, 279, 938, 1003 |
| A001 | Rear fog lamp/reversing lamp connector (7-pin) | 269, 289, 358, 361, 363, 767, 1004 |
| A004 | ABS/EBS drawn vehicle connector (7-pin) | 803, 834 |
| A007 | Connector, 24 V (2-pin) | 403 |
| A021 | Diagnostic connector (16-pin) | 194 |
| A027 | Accessories connector, 24 V (6-pin) | 103, 133, 768, 797, 1004, 1005 |
| A032 | AGC diagnostic connector | 740 |
| A038 | Accessories connector, 40 A (2-pin) | 765 |
| A058 | Drawn vehicle connector (15-pin) | 85, 87, 239, 251, 269, 280, 290, 359, 362, 364, 767, 939, 1002 |
| A068 | Application connector, engine speed control | 945 |
| A070 | Application connector, superstructure (8-pin) | 33, 280, 291, 359, 362, 364, 766, 939, 1006 |
| A071 | Automatic gearbox connector, intarder functions | 738 |
| A073 | Automatic gearbox connector, operation | 732 |
| A074 | Automatic gearbox connector, superstructure | 706, 711, 713, 714, 715, 716, 752, 753, 755, 756, 757, 758, 759, 761, 762, 763 |
| A076 | Phone connector | 1109 |
| A097 | FMS connector (21-pin) | 770 |
| A098 | FMS connector (18-pin) | 775 |
| A500 | Batteries (2x) | 7, 15, 21 |
| A513 | Alternator | 16 |
| B000 | Windscreen wiper motor | 96 |
| B001 | Windscreen wiper pump | 93 |
| B003 | Electric drop glass operation motor, driver's side | 419 |
| B004 | Electric drop glass operation motor, co-driver's side | 415 |
| B005 | Mirror adjustment motor, left | 432, 442 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| B006 | Mirror adjustment motor, right | 437, 448 |
| B010 | Starter motor | 23 |
| B015 | 4-speed heater fan | 470, 471, 527, 528 |
| B017 | Mirror heating, driver's side | 452 |
| B018 | Mirror heating, co-driver's side | 453 |
| B024 | Loudspeaker, left | 1112, 1128 |
| B025 | Loudspeaker, right | 1115, 1124 |
| B026 | CB set | 1131 |
| B028 | Horn | 402 |
| B030 | Cigar lighter, driver's side | 406 |
| B032 | Seat heating, driver's side | 475 |
| B033 | Seat heating, co-driver's side | 477 |
| B042 | Air dryer heating element | 473 |
| B043 | Air conditioning compressor | 455 |
| B071 | Mechanical lifting-gear lifting valve | 626 |
| B072 | Mechanical lifting-gear lowering valve | 620 |
| B073 | Pump, mechanical lifting gear | 629 |
| B079 | Low-range downshift protection valve | 138 |
| B084 | Air suspension valve, bleeding | 602, 609 |
| B088 | Intarder proportional valve | 556 |
| B089 | Air supply valve, intarder | 554 |
| B122 | Fuel metering pump, cab heater | 508, 517, 531 |
| B129 | Left-hand headlamp height adjuster motor | 223 |
| B130 | Right-hand headlamp height adjuster motor | 225 |
| B131 | Solenoid valve, pump unit/injector, cylinder 1 | 909 |
| B132 | Solenoid valve, pump unit/injector, cylinder 2 | 910 |
| B133 | Solenoid valve, pump unit/injector, cylinder 3 | 912 |
| B134 | Solenoid valve, pump unit/injector, cylinder 4 | 914 |
| B135 | Solenoid valve, pump unit/injector, cylinder 5 | 916 |
| B136 | Solenoid valve, pump unit/injector, cylinder 6 | 917 |
| B166 | ECAS valve , front axle | 647, 675 |
| B169 | PTO control valve, Chelsea | 751 |
| B175 | Roof hatch motor | 336 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B176 | Reversing buzzer | 292 |
| B178 | Loudspeaker, left | 1113, 1126 |
| B179 | Loudspeaker, left | 1114, 1117 |
| B180 | Loudspeaker, right | 1125 |
| B181 | Loudspeaker, right | 1118 |
| B182 | Water separator fuel heating element | 599 |
| B192 | Exhaust brake valve | 922, 979 |
| B199 | Central door locking motor | 565 |
| B200 | Central door locking motor, co-driver's side | 560, 569 |
| B201 | Internal electrical components for automatic gearbox | 728 |
| B237 | ASR valve | 821 |
| B238 | ECAS valve, driven axle, air supply | 645 |
| B243 | Cross-axle differential lock control valve | 296 |
| B244 | Longitudinal controlled slip differential control valve | 298 |
| B245 | PTO 1 control valve | 487 |
| B246 | PTO 2 control valve | 489, 500 |
| B247 | DEB solenoid valve, cyl. 1-3 | 924 |
| B248 | DEB solenoid valve, cyl. 4-6 | 925 |
| B250 | ECAS valve, driven axle, air supply | 643 |
| B251 | Neutral position buzzer, tilting cab | 106 |
| B252 | Recirculation valve | 468 |
| B253 | ECAS valve, driven axle, air supply | 673 |
| B254 | ECAS valve, steered leading rear axle/trailing axle, lifting bellows | 677 |
| B256 | ABS valve, front axle, left | 813, 838 |
| B257 | ABS valve, front axle, right | 815, 846 |
| B258 | ABS valve, driven axle, left | 817 |
| B259 | ABS valve, driven axle, right | 818 |
| B293 | Gearbox gate protection valve | 140 |
| B306 | Redundancy valve | 858 |
| B307 | Front axle modulator | 840 |
| B308 | Drawn vehicle control valve | 843 |
| B309 | ASR cut-off valve | 859 |
| B335 | Electronically controlled fan clutch | 927 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| B338 | Alarm system horn | 351 |
| B341 | Glow element | 19 |
| B344 | Automatic lubrication pump with integrated electronic unit | 503 |
| B353 | Automatic gearbox control solenoid valve, retarder | 720 |
| B354 | Automatic gearbox accumulator | 721 |
| B356 | Cooler box | 799 |
| B365 | Radio | 1113 |
| B372 | Fluid flow valve block | 579 |
| B378 | Heating element for fuel filter/water separator | 592 |
| B385 | AS Tronic clutch unit | 1051 |
| B386 | Steering cylinder valve block | 581 |
| B387 | Electronic unit, fuel heater/water separator (Fleetguard) | 996 |
| B467 | Radio | 1128 |
| B525 | Tachograph | 52 |
| C000 | Dipped beam, left | 254 |
| C001 | Dipped beam, right | 255 |
| C002 | Main beam, left | 258 |
| C003 | Main beam, right | 260 |
| C006 | Left spotlight | 261 |
| C007 | Right spotlight | 262 |
| C008 | Fog lamp, front left | 264 |
| C009 | Fog lamp, front right | 265 |
| C010 | Marker lights, left | 229 |
| C011 | Marker lights, right | 242 |
| C012 | Parking light, front left | 231 |
| C013 | Parking light, front right | 243 |
| C014 | Direction indicator lamp, front left | 79 |
| C015 | Direction indicator lamp, front right | 83 |
| C016 | Direction indicator lamp, side left | 80 |
| C017 | Direction indicator lamp, side right | 84 |
| C018 | Direction indicator lamp, rear left | 81 |
| C019 | Direction indicator lamp, rear right | 85 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C020 | Stop light, left | 277, 936 |
| C021 | Stop light, right | 278, 937 |
| C022 | Tail light, left | 232 |
| C023 | Tail light, right | 245 |
| C024 | Fog lamp, rear left | 267 |
| C025 | Fog lamp, rear right | 268 |
| C026 | Reversing light, left | 287 |
| C027 | Reversing light, right | 288 |
| C052 | Heater fan lighting, left | 411 |
| C053 | Heater fan lighting, right | 412 |
| C062 | Stepwell lighting, left | 342 |
| C063 | Stepwell lighting, right | 344 |
| C067 | Tool compartment lighting, left | 314, 329 |
| C071 | Work lamp | 36 |
| C072 | Ashtray lighting, left | 408 |
| C073 | Ashtray lighting, right | 409 |
| C074 | Marker lights, rear left | 232 |
| C075 | Marker lights, rear right | 245 |
| C115 | Bunk light with switch | 312, 333 |
| C119 | Interior lighting with switch, driver's side | 310, 320 |
| C129 | Interior lighting with switch | 316 |
| C144 | Rotating beam, left | 780 |
| C145 | Rotating beam, right | 781 |
| C154 | Rear number plate light, left | 235 |
| C156 | Marker lights, left, 1st | 237 |
| C157 | Marker lights, right, 1st | 248 |
| C158 | Marker lights, left, 2nd | 238 |
| C159 | Marker lights, right, 2nd | 249 |
| C162 | Roof spotlight | 783 |
| C163 | Marker lights in spotlight, roof | 793 |
| C164 | Roof spotlight | 784 |
| C165 | Marker lights in spotlight, roof | 794 |
| C166 | Roof spotlight | 786 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| C167 | Marker lights in spotlight, roof | 795 |
| C168 | Roof spotlight | 787 |
| C169 | Marker lights in spotlight, roof | 797 |
| C185 | Light with switch | 332 |
| C191 | Nightlight, centre | 307, 327 |
| C192 | Interior lighting with switch, co-driver's side | 304, 324 |
| C539 | Accessories / ignition / starter switch | 29 |
| C622 | Light switch | 205, 209 |
| C694 | Mechanical main switch | 15 |
| C695 | Mirror adjustment switch, driver's side | 433, 443 |
| C696 | Mirror adjustment switch, co-driver's side | 438, 448 |
| C697 | Seat heating switch, driver's side | 475 |
| C698 | Seat heating switch, co-driver's side | 477 |
| C716 | Rotating beam switch | 781 |
| C725 | Work lamp switch | 35 |
| C727 | Fog lamp switch, front/rear | 212 |
| C735 | Nightlight switch, interior | 307, 326 |
| C736 | Roof hatch switch | 336 |
| C737 | ASR switch | 830 |
| C739 | Mechanical lifting-gear switch | 627 |
| C740 | ECAS switch, normal level | 635, 657 |
| C741 | ECAS switch, axle lifting | 661 |
| C742 | Traction assistance switch | 663 |
| C743 | Drop glass switch, co-driver's side (driver's side door) | 422 |
| C744 | Drop glass switch, co-driver's side (co-driver's side door) | 425 |
| C745 | Drop glass switch, driver's side (driver's side door) | 428 |
| C746 | Mirror heating switch | 453 |
| C748 | Cross-axle differential lock switch | 296 |
| C749 | Longitudinal controlled slip differential switch | 298 |
| C750 | PTO 1 switch | 492 |
| C751 | PTO 2 switch | 495 |
| C760 | Air conditioning switch | 459 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| C763 | Instrument lighting dimming potentiometer | 119 |
| C764 | Potentiometer for headlamp height adjustment | 222 |
| C765 | Switch for warning lamps | 88 |
| C773 | Fog lamp switch, rear | 215 |
| C774 | Central door locking switch | 561, 569 |
| C778 | Switch for Eberspächer cab heater | 511, 538 |
| C802 | Recirculation valve switch | 464 |
| C813 | Switch for roof spotlights | 790 |
| C814 | Reversing buzzer switch | 292 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 480, 556 |
| C832 | Direction indicator/windscreen wiper stalk switch | 79, 92, 93, 98, 219, 402 |
| C835 | Switch to turn off interior detection | 370 |
| C836 | Switch to turn off superstructure/drawn vehicle loadspace detection | 373 |
| C837 | Interior lighting switch | 318,320 |
| C844 | Eberspächer cab heater switch with timer unit | 519 |
| C853 | Cab main switch | 3 |
| C854 | Chassis main switch | 4 |
| C858 | Interior spot lighting switch | 318 |
| C859 | Interior lighting switch, driver's side roof console | 321 |
| C861 | PETREG key switch | 511 |
| C872 | Switch, fuel heating relay (Fleetguard) | 597 |
| C882 | Heater fan switch | 470, 527 |
| C883 | FAG traction assistance switch | 602, 611 |
| C890 | Third brake integration switch | 871 |
| C900 | ASR switch | 868 |
| D300 | Electronic unit, audio navigation system | 1124 |
| D301 | GPS antenna | 1125 |
| D320 | Electronic unit, integrated main switch | 7 |
| D503 | Electronic unit, mechanical lifting gear | 619 |
| D529 | Remote control system, ECAS | 632, 654 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| D609 | Light switch diode | 209 |
| D610 | Diode, main beam/dipped beam | 218 |
| D611 | Diode for valve damping, lowering mechanical lifting gear | 619 |
| D612 | Diode for valve damping, lifting mechanical lifting gear | 625 |
| D613 | Diode for pump relay damping, mechanical lifting gear | 623 |
| D622 | Diode for mechanical lifting gear, lifting lock | 625 |
| D623 | Diode for mechanical lifting gear, lowering lock | 620 |
| D703 | Diode for switching off cab heater/door switch on the driver's side | 494 |
| D705 | Diode for switching off cab heater with running engine | 491 |
| D710 | Interior lighting diode to prevent feedback to driver's side switch | 321 |
| D715 | Alarm system LED | 73, 352 |
| D782 | Diode, windscreen wipers | 97 |
| D783 | Diode, cab stepwell lighting, driver's side | 341 |
| D802 | Electronic unit, ECAS-2 | 673 |
| D814 | UPEC electronic unit | 914 |
| D850 | Electronic unit, ABS/ASR, D model | 817 |
| D851 | Electronic unit, ECAS-3 | 644 |
| D866 | Electronic unit, AGC-A4 automatic gearbox control | 729 |
| D867 | Automatic gearbox selector | 735 |
| D871 | Electronic unit, Airtronic cab heater | 508, 517 |
| D895 | Electronic unit, converter (10 A) with power supply for radio memory | 1107 |
| D899 | DIP-4 instrument panel | 59 |
| D900 | VIC electronic unit | 81, 94, 143, 486 |
| D902 | Electronic unit for EST 42 ZF intarder | 550 |
| D903 | Electronic unit, ECS-DC3 | 965 |
| D904 | Menu Control Switch, MCS | 146 |
| D905 | Electronic unit, CDS | 562 |
| D909 | Electronic unit, alarm system, ultrasonic | 356 |
| D911 | Electronic unit, ALS-S alarm system | 361 |
| D912 | Electronic unit, immobiliser | 46 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D931 | LED unit, immobiliser | 75 |
| D932 | EMAS electronic unit | 581 |
| D954 | AS Tronic gearbox modulator | 1050 |
| D955 | AS Tronic gear lever unit | 1038 |
| D969 | CDM electronic unit | 379 |
| D977 | Electronic unit, EBS-2 | 854 |
| D978 | Rear axle modulator | 854 |
| D979 | Electronic unit, Hydronic 10 cab heater | 532 |
| E000 | Fuse, tail light/parking light/marker light and search lighting, left | 228 |
| E001 | Fuse, tail light/parking light/marker light and search lighting, right | 241 |
| E004 | Fuse, dipped beam, driver's side | 253 |
| E005 | Fuse, dipped beam, co-driver's side | 254 |
| E006 | Fuse, main beam, driver's side | 257 |
| E007 | Fuse, main beam/warning lamp, co-driver's side | 259 |
| E008 | Fuse, spotlights | 260 |
| E009 | Fuse, front fog lamps | 263 |
| E010 | Fuse, rear fog lamps | 266 |
| E013 | Fuse, stop lights | 271, 935 |
| E016 | Fuse, reversing lights/gearbox neutral position/windscreen wiper motor/cross-axle differential lock/hydraulic fan drive | 285 |
| E023 | Fuse, switch for cold start/tachograph/cab heater program clock/alarm system/diagnostic connector (16-pin) | 48 |
| E025 | Fuse, windscreen wiper motor/headlamp washer/windscreen washer motor | 100 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12 V converter with power supply for radio memory | 405 |
| E028 | Fuse, interior lighting/bunk lamps/central door lock | 301 |
| E031 | Fuse, heater fan | 455, 523 |
| E033 | Fuse, electric drop glass motor, co-driver's side | 414 |
| E034 | Fuse, electric drop glass motor, driver's side | 417 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| E035 | Fuse, instruments and warning lamps/parking brake switch/power supply after contact | 67 |
| E036 | Fuse, 24 V connector | 403 |
| E037 | Fuse, ignition switch | 29 |
| E043 | Fuse, drawn vehicle ABS/EBS | 801, 831 |
| E044 | Fuse, mirror heating/electric mirror adjustment/electric drop glass operation | 421 |
| E048 | Fuse, drawn vehicle power supply | 766 |
| E051 | Fuse, ECAS/EMAS | 573, 638, 667 |
| E052 | Fuse for work lamp | 35 |
| E053 | Fuse, diagnostic connector (16-pin)/LED unit/alarm system | 189 |
| E062 | Fuse, ECAS/EMAS mechanical lifting gear | 601, 605, 613, 631 |
| E084 | Fuse, lighting/CDS3 | 201 |
| E091 | Fuse, air dryer heating element/water separator/stalk switch/PTO/clutch switch/RAS-EC/engine speed control application connector | 472 |
| E108 | Fuse, VIC | 109 |
| E112 | Fuse, glow warning lamp | 20 |
| E114 | Fuse, cab heater/warning lamps | 505, 514, 525 |
| E117 | Fuse, search lighting | 227 |
| E118 | Fuse, engine management power supply | 906, 953 |
| E142 | Fuse, accessories before contact | 780 |
| E144 | Fuse, AGC-A automatic gearbox | 704 |
| E145 | Fuse, AGC-A automatic gearbox | 703 |
| E153 | Fuse, main switch for timer/engine stop/main switch power supply | 9 |
| E157 | Fuse, automatic lubrication | 501 |
| E160 | Fuse, ECS-DC3 | 951 |
| E163 | Fuse, accessories after contact (connector A027)/rotating beams/roof hatch | 768 |
| E164 | Fuse, FPH-E fuel heater before contact | 599, 995 |
| E168 | Fuse, accessories/microwave | 764 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| E170 | Fuse, electronic unit for fuel filter/water separator, Racor | 592, 597, 997 |
| E171 | Fuse, fuel filter/water separator heating element, Racor | 591 |
| E172 | Fuse, drawn vehicle ABS/EBS | 802, 833 |
| E184 | Fuse, extra functions | 904 |
| E189 | Fuse, rear axle EBS | 808, 836 |
| E190 | Fuse, ABS-D / ABS / ASR-E / EBS, front axle | 810, 837 |
| E199 | Fuse, ZF intarder | 545 |
| E277 | Fuse, VIC | 110 |
| E279 | Fuse, generator voltage control | 18 |
| E280 | Fuse, VIC | 112 |
| E286 | Main fuse | 7, 24 |
| E301 | Fuse, AS Tronic | 1045 |
| E350 | Fuse, various electrical systems | 43 |
| E351 | Fuse, various electrical systems | 41 |
| E507 | Proximity switch for axle-load protection lifting gear (10 tons) | 617 |
| E509 | Air conditioning switch, high/low pressure | 458 |
| E511 | Stop light switch | 274 |
| E514 | Cab stepwell lighting/interior lighting door switch, driver's side | 341 |
| E515 | Cab stepwell lighting/interior lighting door switch, co-driver's side | 343 |
| E524 | Oil pressure limit switch for mechanical lifting gear | 624 |
| E528 | Switch, tool compartment lighting, right | 313, 328 |
| E542 | Proximity switch for axle load protection (13 tons) | 605 |
| E564 | Engine brake switch | 72 |
| E566 | Switch for cab heater thermostat | 509 |
| E570 | Pneumatic switch, clutch PTO N10 | 498 |
| E571 | Operating switch, cab heater | 534 |
| E575 | Proximity switch, clutch | 902, 980 |
| E579 | Thermostat / cab heater, Eberspächer (water) | 536 |
| E580 | Thermostat / cab heater, Eberspächer | 540 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| E581 | Cab heater timer unit | 519 |
| E584 | Proximity switch for axle-load protection lifting gear (7.5 tons) | 615 |
| E590 | AS Tronic selector switch | 1040 |
| E592 | Reverse gear switch | 286 |
| E593 | Neutral position switch | 108 |
| E594 | Neutral position/reverse gear switch | 106 |
| E595 | Low-range switch | 140 |
| E599 | Neutral position switch | 1036 |
| F000 | Parking brake switch | 68 |
| F006 | Control switch for differential lock, 1st differential | 127 |
| F007 | Control switch for differential lock, 3rd differential | 131 |
| F011 | Control switch for engine oil pressure | 123 |
| F038 | Control switch for differential lock, 2nd differential | 129 |
| F047 | Control switch for steering system (1st circuit) | 124 |
| F048 | Control switch for steering system (2nd circuit) | 125 |
| F050 | Control switch for differential lock pressure, 1st and 2nd differentials | 128 |
| F087 | Control switch, gearbox PTO | 485 |
| F088 | Control switch, gearbox PTO | 486 |
| F097 | Proximity switch for trailing axle mechanical lifting gear | 613 |
| F107 | Brake pad wear switch, front left | 874 |
| F108 | Brake pad wear switch, front right | 876 |
| F109 | Brake pad wear switch, front left, 2nd front axle | 877 |
| F110 | Brake pad wear switch, front right, 2nd front axle | 879 |
| F111 | Control switch for brake lining wear, rear left | 880 |
| F112 | Control switch for brake lining wear, rear right | 881 |
| F113 | Control switch for brake lining wear, rear left, 2nd rear axle (6x2) | 882 |
| F114 | Control switch for brake lining wear, rear right, 2nd rear axle (6x2) | 884 |
| F118 | Splitter control switch | 121 |





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| Basic code number | Description | Number on search bar |
|---|---|---|
| F120 | Gearbox switch for gate 3-4 | 143 |
| F509 | Cab temperature sensor, cab heater | 537 |
| F512 | Wheel speed sensor, front axle, left | 807, 836 |
| F513 | Wheel speed sensor, front axle, right | 809, 847 |
| F514 | Wheel speed sensor, driven axle, left | 810 |
| F515 | Wheel speed sensor, driven axle, right | 811 |
| F533 | Vehicle speed sensor | 49 |
| F544 | Coolant temperature sensor, intarder | 558 |
| F552 | Crankshaft sensor | 906 |
| F558 | Camshaft sensor | 905 |
| F565 | Fuel temperature sensor | 907 |
| F566 | Coolant temperature sensor | 909 |
| F601 | Output shaft speed sensor, automatic gearbox | 717 |
| F602 | Input shaft speed sensor, automatic gearbox | 719 |
| F608 | Fuel level sensor | 116 |
| F612 | Height sensor, ECAS, rear axle, left | 637, 665 |
| F613 | Height sensor, ECAS, rear axle, right | 639, 666 |
| F614 | Height sensor, ECAS, front axle | 640, 668 |
| F615 | ECAS pressure sensor, driven axle, right | 669 |
| F616 | Cab locking sensor | 102 |
| F619 | Cab locking sensor, alarm system | 354 |
| F628 | Sensor/switches, foot-brake valve | 861 |
| F649 | Charge boost pressure sensor and temperature sensor | 910 |
| F651 | Ambient temperature sensor | 112 |
| F652 | Air pressure sensor | 113 |
| F656 | Coolant level sensor | 117 |
| F669 | Retarder oil temperature sensor, automatic gearbox | 723 |
| F670 | Automatic gearbox turbine speed sensor | 724 |
| F671 | ECS-DC3 accelerator pedal sensor | 972 |
| F672 | Accelerator pedal sensor | 913 |
| F673 | Engine oil level sensor | 143 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| F676 | Lifting cylinder sensor, cab | 103 |
| F686 | Alarm system radar sensor | 360 |
| F687 | EMAS angle sensor, front axle | 575 |
| F688 | EMAS angle sensor, trailing axle | 576 |
| F701 | Steering angle sensor | 849 |
| F702 | VSC module | 850 |
| F705 | AS Tronic speed sensor | 1053 |
| F754 | Air conditioning temperature sensor | 458 |
| G000 | Rear light/parking light/marker light and search lighting relay | 208, 225 |
| G001 | Dipped beam relay | 217, 253 |
| G002 | Main beam relay | 219, 257 |
| G003 | Spotlight relay | 256, 260 |
| G004 | Relay, front fog lamp | 211, 263 |
| G005 | Relay, rear fog lamp | 136, 266 |
| G014 | Glow plug relay | 19, 20, 918, 977 |
| G015 | Contact relay | 1, 29 |
| G028 | Electric drop glass operation relay, co-driver's side | 413, 421 |
| G029 | Electric drop glass operation relay, co-driver's side | 415, 422 |
| G030 | Electric drop glass operation relay, driver's side | 417, 427 |
| G031 | Electric drop glass operation relay, driver's side | 418, 428 |
| G036 | Stop light relay | 274, 275, 931, 935 |
| G037 | Stop light relay for automatic gearbox | 279, 281 |
| G052 | Pump relay, mechanical lifting gear | 622, 629 |
| G066 | Takeover relay, mechanical lifting gear | 622, 624 |
| G095 | Traction assistance relay, 60 sec. bleeding | 609 |
| G126 | Engine management supply relay | 905, 906 |
| G170 | Heater fan relay, cab heater | 525, 535 |
| G180 | Time relay, automatic gearbox | 703 |
| G181 | Takeover relay, automatic gearbox | 703, 709 |
| G185 | Starting circuit interrupter relay | 26, 27, 707, 1035 |
| G201 | Fuel heating relay, FPH-E | 597, 599, 981, 995 |
| G203 | Starter motor takeover relay | 25, 26 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G236 | Windscreen wiper relay (speed 1 or 2) | 95, 99 |
| G237 | Windscreen wiper relay (zero position) | 95, 96 |
| G247 | Heater fan relay, cab heater | 523, 529 |
| G257 | Recirculation valve relay | 464, 467 |
| G258 | Recirculation valve relay | 462, 467 |
| G259 | PTO operation takeover relay | 498, 499 |
| G267 | Air conditioning relay | 455, 458 |
| G279 | Air conditioning relay | 457, 468 |
| G291 | Relay, automatic gearbox | 710, 759 |
| G292 | Relay, automatic gearbox | 710, 712 |
| G293 | Relay, automatic gearbox | 749, 754 |
| G294 | Relay, automatic gearbox | 707, 756 |
| G295 | Relay, automatic gearbox | 712, 754 |
| G299 | Relay, roof spotlights | 782, 789 |
| G301 | “Engine running” lighting relay | 131, 202 |
| G302 | Swedish lighting relay | 204, 206 |
| G328 | Engine stop relay | 40, 941 |
| G350 | Reversing light relay, automatic gearbox | 283, 285, 286, 288 |
| G351 | Relay, cab tilt protection | 104, 105 |
| G371 | PTO relay, automatic gearbox | 708, 750 |
| G372 | Starting circuit interrupter relay | 26, 134 |
| G375 | Stop light relay for automatic gearbox with retarder | 271, 709 |
| G377 | Relay, accessories power supply for radio | 1103, 1112 |
| G380 | Relay, mechanical lifting axle upwards | 613, 617 |
| G381 | Relay, mechanical lifting axle (7.5 tons) | 616, 627 |
| G426 | Contact relay | 31, 39 |
| G427 | Traction assistance relay, FAG | 606, 609 |
| G462 | Work lamp relay | 35, 37 |
| G469 | Braking signal relay | 931, 932 |
| G497 | Relay, EBS warning, semi-trailer | 70, 162 |
| G516 | Central cab earth, co-driver’s side | 1014 |
| G535 | CAN distribution block | 183 |

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Series ≥ 0E621376

| Basic code number | Description | Number on search bar |
|---|---|---|
| G732 | Through-connection for cab heater | 538 |
| G733 | Through connection for intarder neutral position | 107 |
| G734 | Through-connection for brake lining wear | 880 |
| G736 | V-CAN connection | 198 |
| G737 | Through-connection, ECS-DC3 speed control | 993 |
| G745 | Through-connection, mechanical lifting gear | 625 |
| G757 | Through-connection for main switch | 30 |
| I020 | Diode, gearbox gate protection | 141 |
| I034 | Damping diode for relay | 272, 933 |





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## 4.4 SECTION DIAGRAMS FROM CIRCUIT DIAGRAMS 1358030/35-37

| | |
|---|---|
| B | Overview of earthing points |
| 1 | Main switch |
| 3 | Tachograph |
| 8 | VIC |
| 11 | UPEC |
| 15B | Stop lights/cab tilting gear |
| 21 | Air conditioning/air–conditioning recirculation/heater fan |
| 24 | ABS - ASR-D |
| 25 | DEB |
| 34C | ECAS-2 FT low deck + FA large volume |
| 36 | 24 V/12 V 10/20 A converter/radio/CB set |
| 37 | Electric drop glass/central door locking/roof hatch, XC |
| 44 | EBS-2 |
| 47 | FA connectors |
| 48 | FT connectors |
| 53 | Car kit telephone |

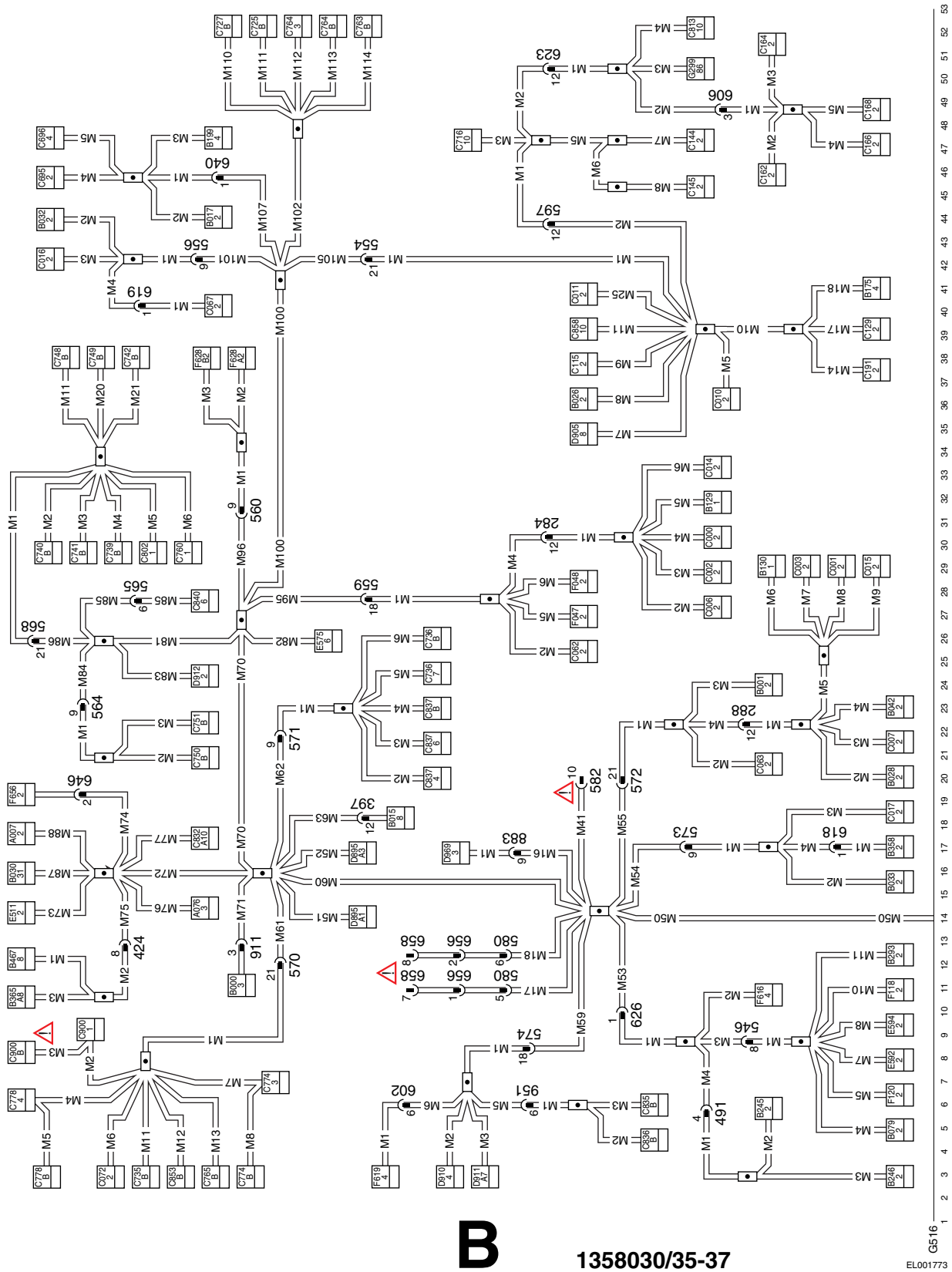
## B OVERVIEW OF EARTHING POINTS

This section diagram gives an overview of all the earth connections, with wire markings and connector points.

**VARIANTS**

| Location | |
|---|---|
| 9 | C900 for EBS system<br>C737 for ABS/ASR-D |
| 11 | Connector 658: superstructure connector (optional) |
| 18 | Connector 482:<br>cab heater ACH-H<br>Connector 582:<br>cab heater ACH-E |
| 59 | Connector 644: only for AGC |
| 63 | Only for AS Tronic |
| 67 | Connector 869:<br>only for AS Tronic |
| 69 | Connector 403:<br>only for AS Tronic |
| 71 | Connector 868:<br>only for AS Tronic |
| 75 | Earth connection to relay G036<br>only for AS Tronic |
| 76 | Connector 860: loop-through to ECAS |

11



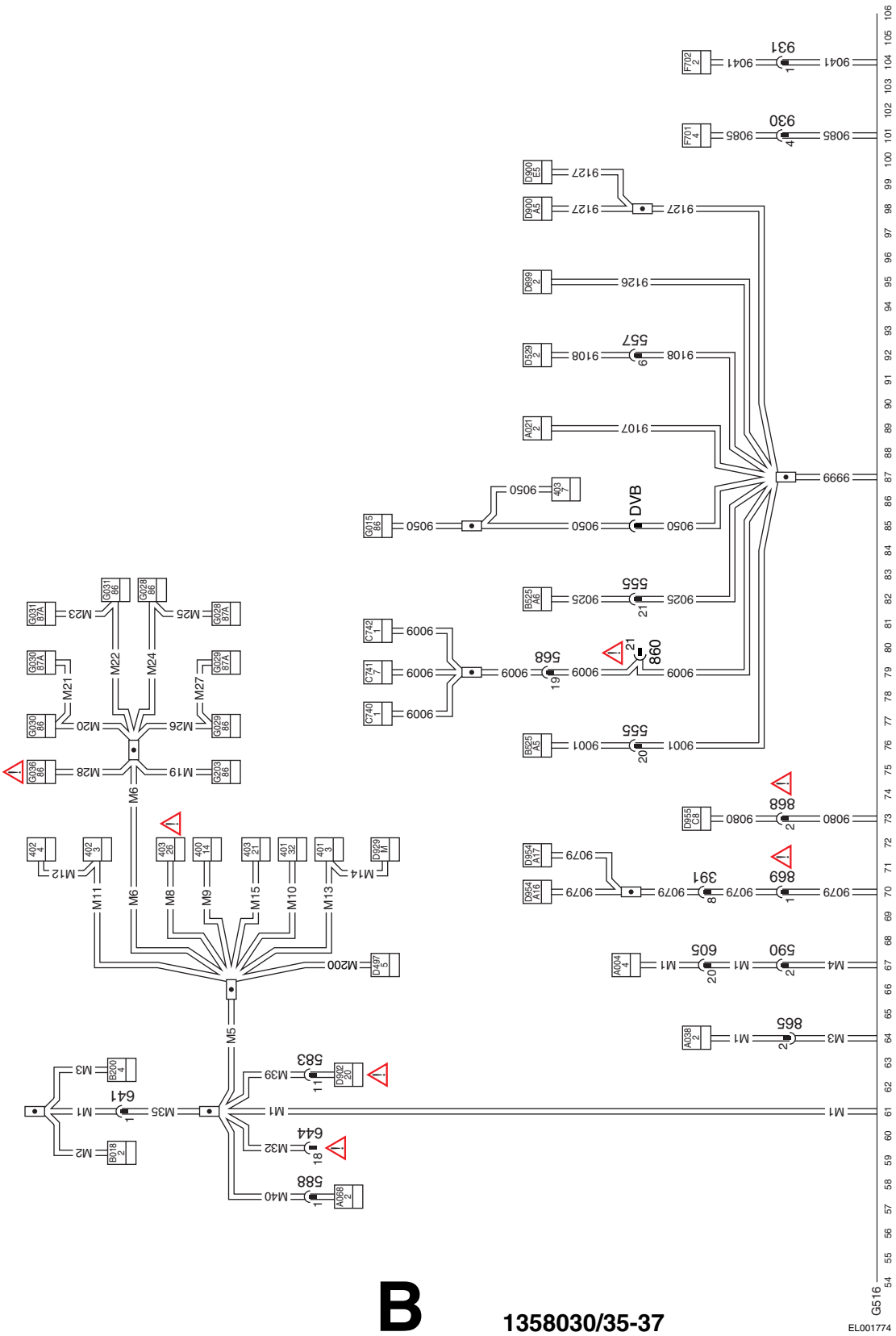
B

1358030/35-37

EL001773

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




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## 1 MAIN SWITCH

**Operation of main switch**
The electronic unit of the integrated main switch (D320) contains one mechanical bi-stable relay. The operation of this relay is comparable to the mechanics also used in a ball-pen.
When the coil is briefly energised, the relay will switch off and stay off until the coil is briefly energised again. The relay will then switch on and stay on.

**Electrically closing the main switch**
The main switch (D320) can be closed:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854

**ATTENTION: Switches C853 and C854 are connected in series. This means that both switches must be in the "on" position before the main switch is "closed" (battery connected to vehicle's power supply).**

When C853 or C854 is operated, the A1 and A2 connections are connected through wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178. The internal relay will immediately be briefly energised. The positive terminal of the batteries is now connected to the vehicle's power supply.

**Note:**
When one of the switches (C853 or C854) that activate the electronic unit (close main switch) is operated, the mechanical bi-stable relay (G367) will immediately close the contacts.

**Electrically opening the main switch**
The main switch (D320) can be opened:
- electrically in the cab using switch C853
- electrically on the chassis using switch C854

When C853 or C854 is operated, the A1 and A2 connections are disconnected through wire 4176, contacts 5-7 of switch C853, wire 4177, contacts 1-2 of switch C854 and wire 4178.

**Note:**
When one of the switches (C853 or C854) is operated while the ignition is "on", the mechanical bi-stable relay (G367) will be activated after approximately 3 seconds.

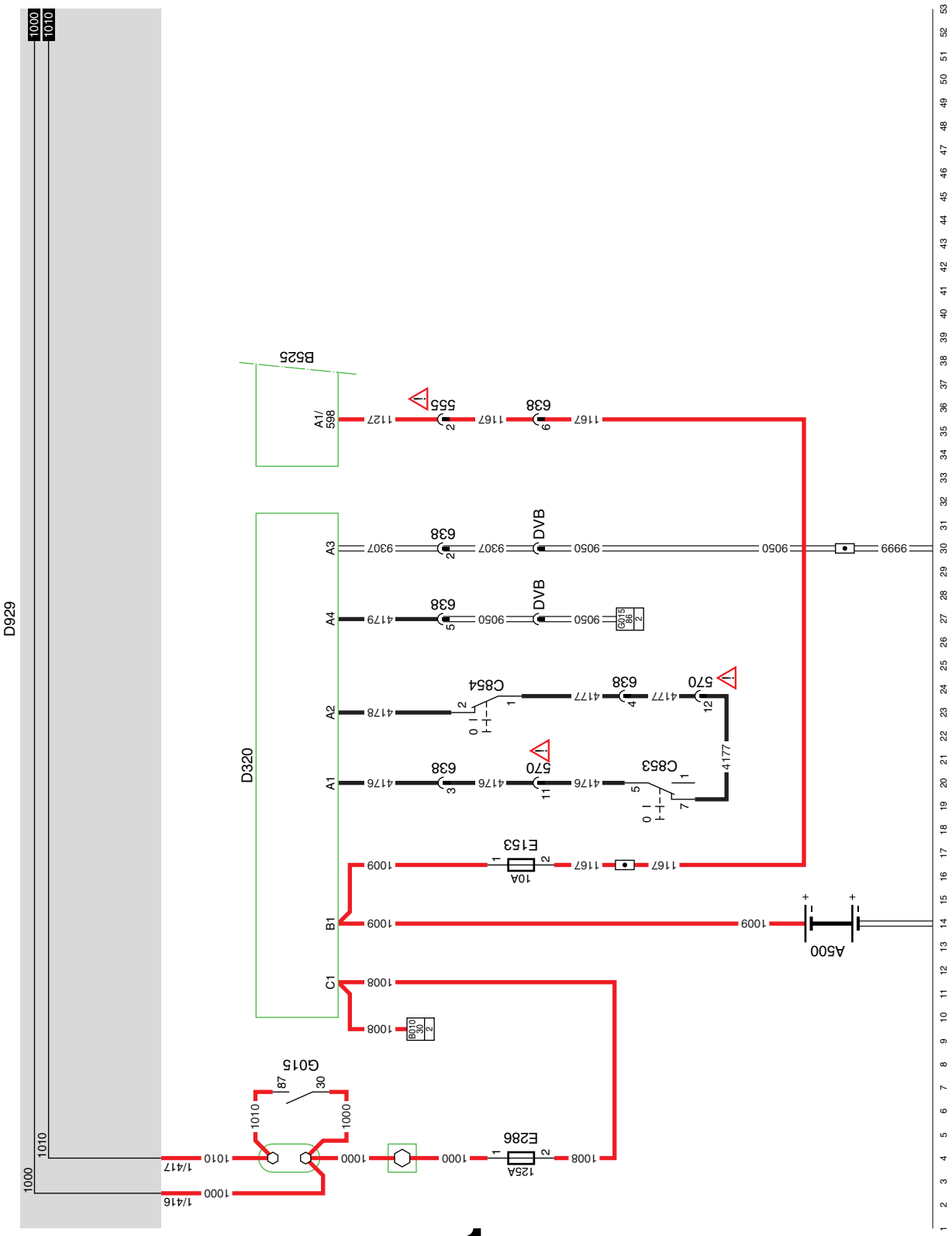
**VARIANTS**

**Location**

| | |
|---|---|
| 22 | Attach wire 4176 to pin 11 of connector 570. |
| 25 | Attach wire 4177 to pin 12 of connector 570. |
| 63 | Attach wire 1127 to pin 2 of connector 555. |

**MECHANICAL MAIN SWITCH**
When C694 (mechanical main switch) is operated, connections B and A are connected. The earth of the batteries is now connected to the chassis. The earth connection of B525 (MTCO) is independent of the position of the main switch.


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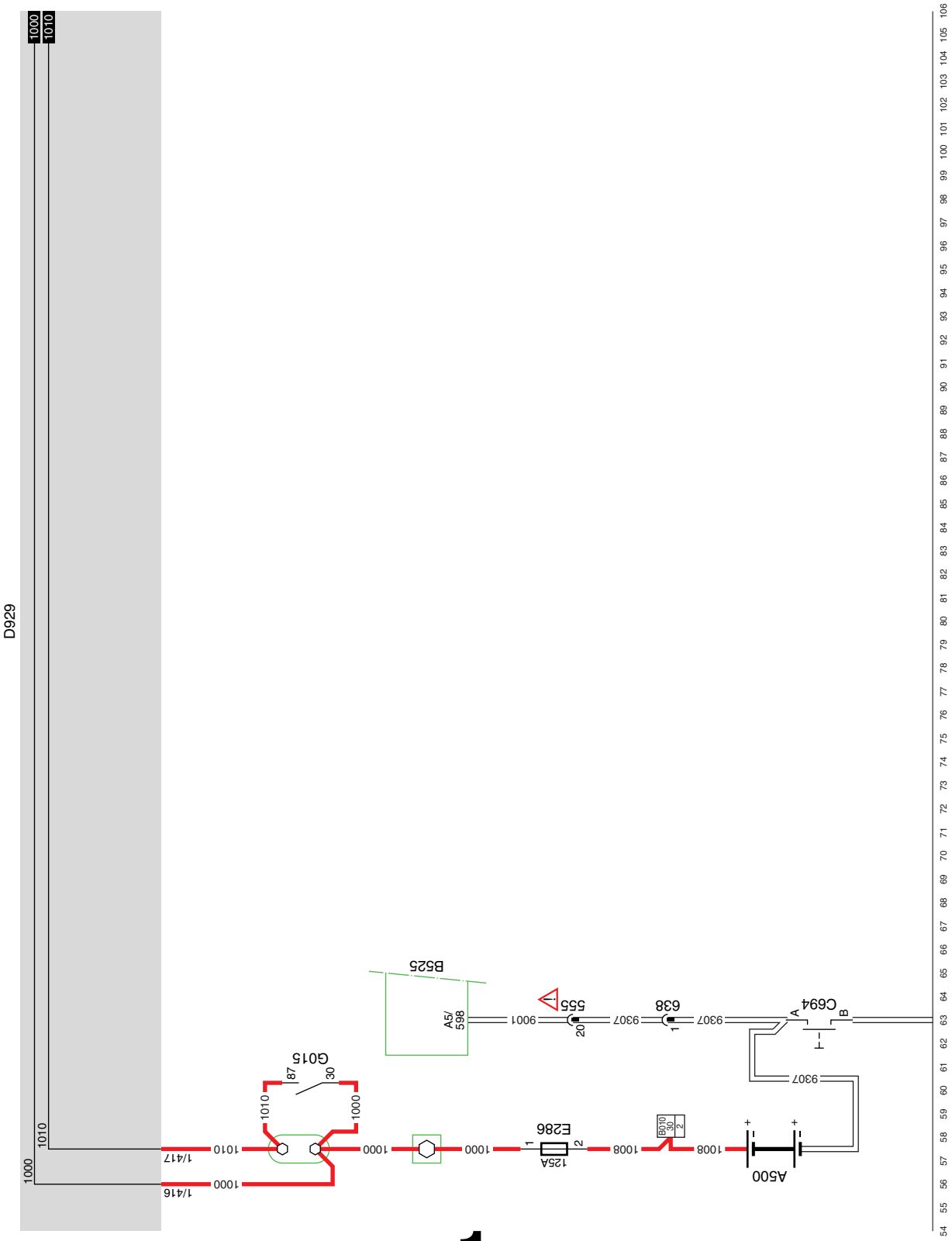

1 1358030/35-37

EL001775

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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




**1** **1358030/35-37**

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥ 0E621376

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**3 TACHOGRAPH**

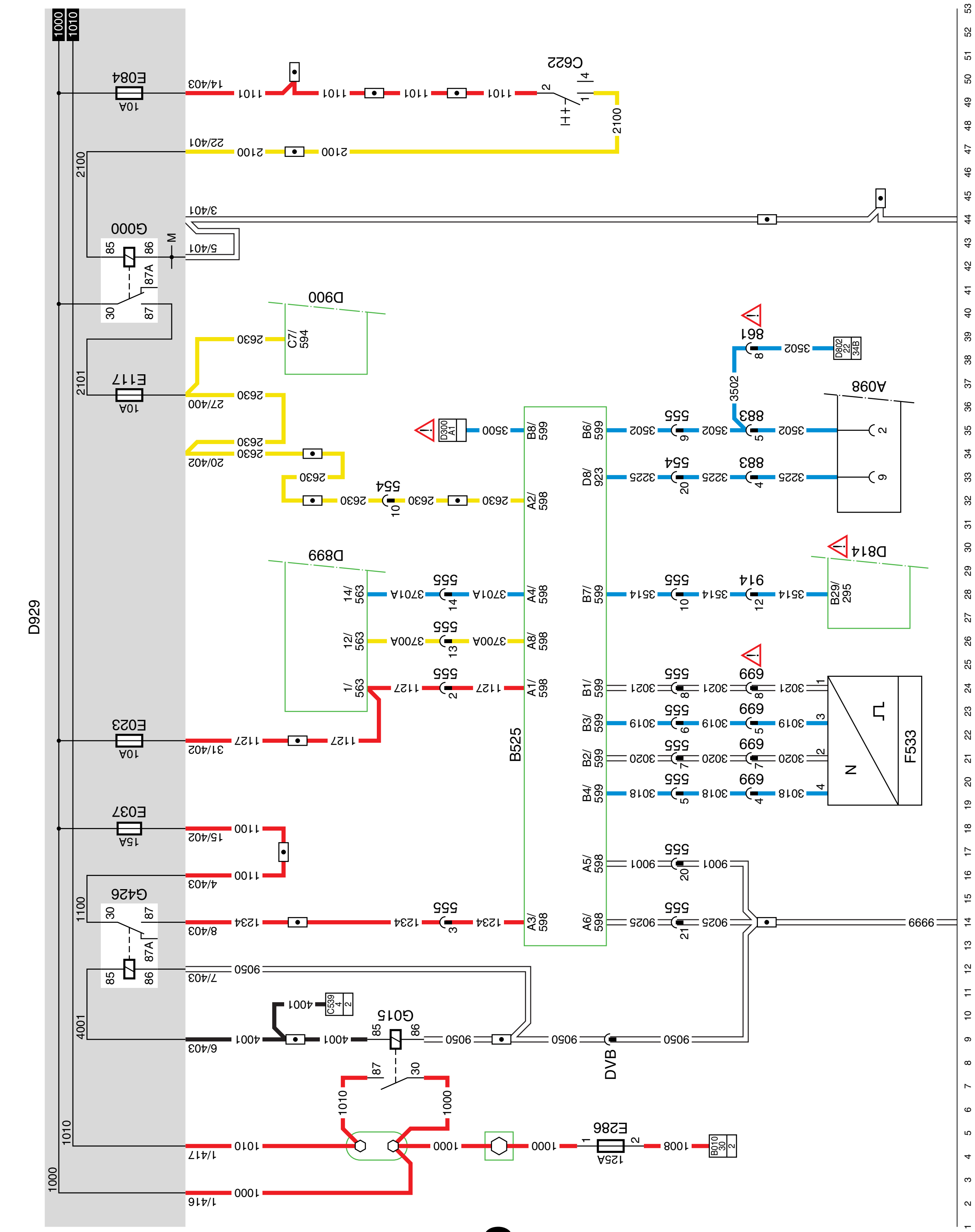
**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

| Location | |
|---|---|
| 26 | Connector 699 for AS Tronic. Connector 626 for manual gearbox. |
| 29 | D814 for vehicles with UPEC. D903 for vehicles with ECS-DC3. |
| 35 | Wire 3500: for connection to D300 (= option) |
| 39 | Connector 861: connection to ECAS system |



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3 **1358030/35-37**

EL001808

Changes in the electrical system from chassis number 0E659894

*CF***65**/**75**/**85** Serie ≥ 0E621376

**8 VIC**

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**VARIANTS**

**Location**

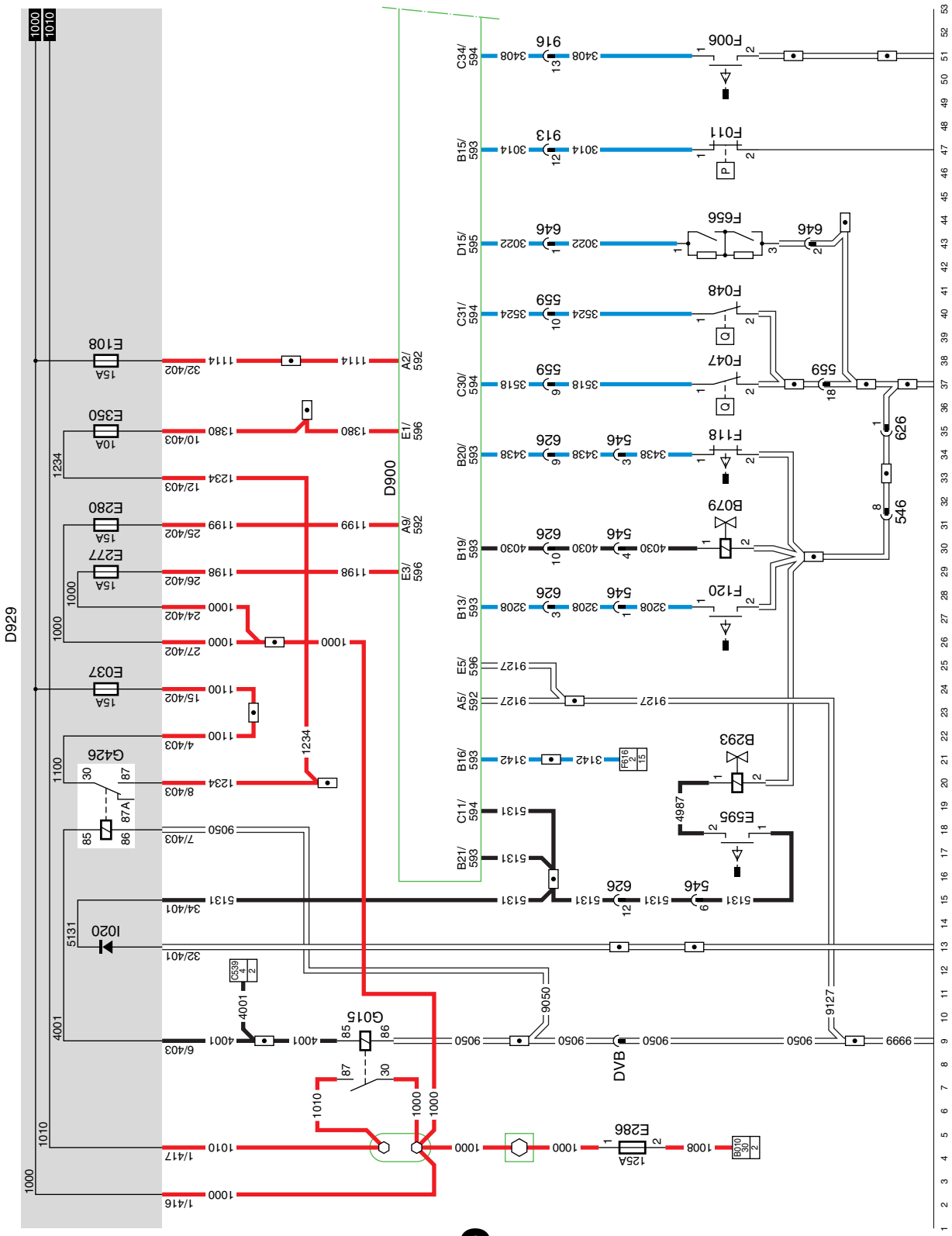
146 Connector 580: is an option for bodybuilder

148 D979: cab heater ACH-EW

148 Relay G301: if vehicle is fitted with Swedish lighting.

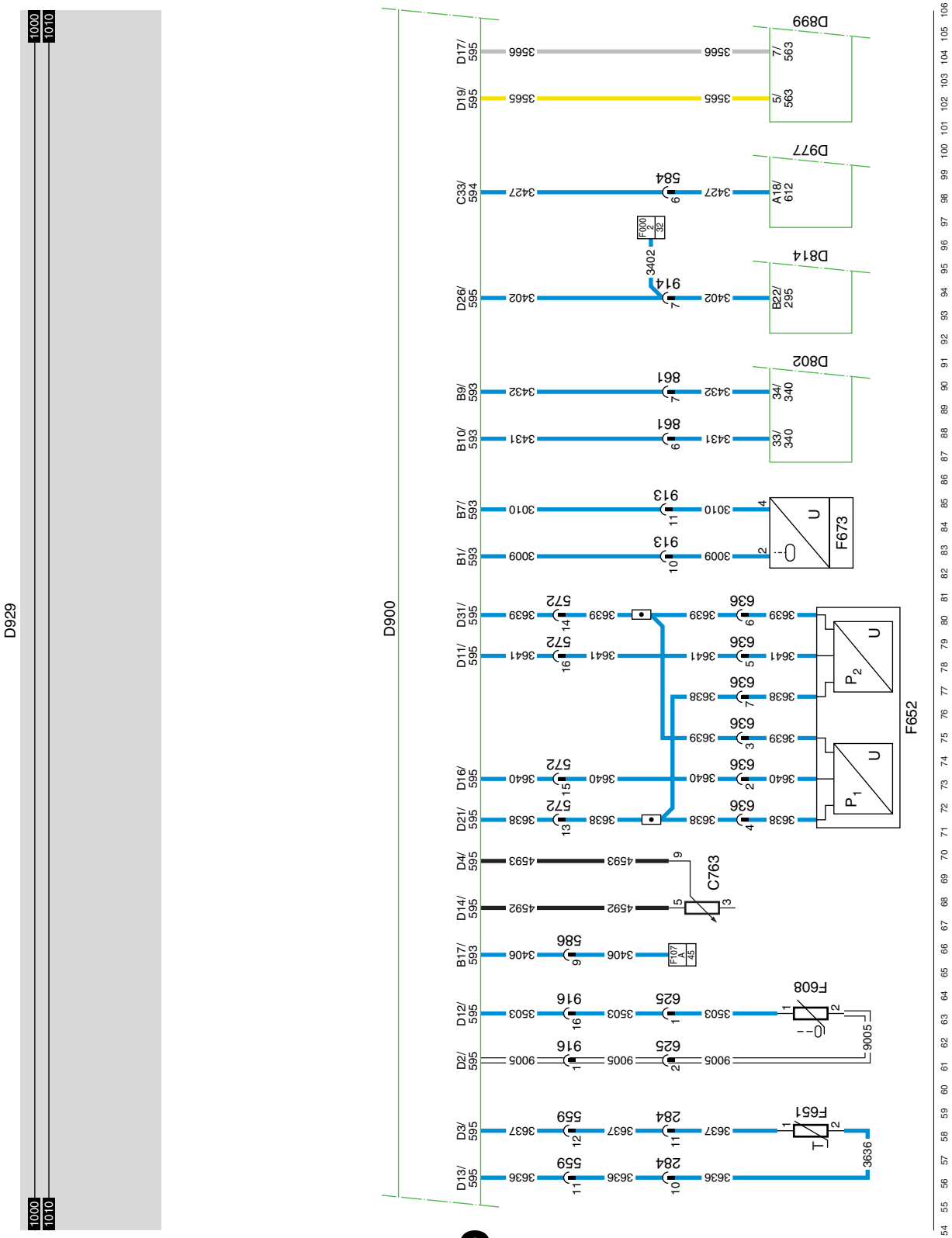
223, 227 D954:
only for AS Tronic. If AS Tronic is **NOT** fitted, wire 3700D and wire 3701D direct from C14 and C15 without in-line connectors from D900 to G535, connection points A1 and A2.

11


D929
D900
DVB
E108
E350
E280
E227
E037
G426
I020
G015
E286
F006
F011
F656
F048
F047
F118
B079
F120
B293
E595
1358030/35-37
EL001777

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376

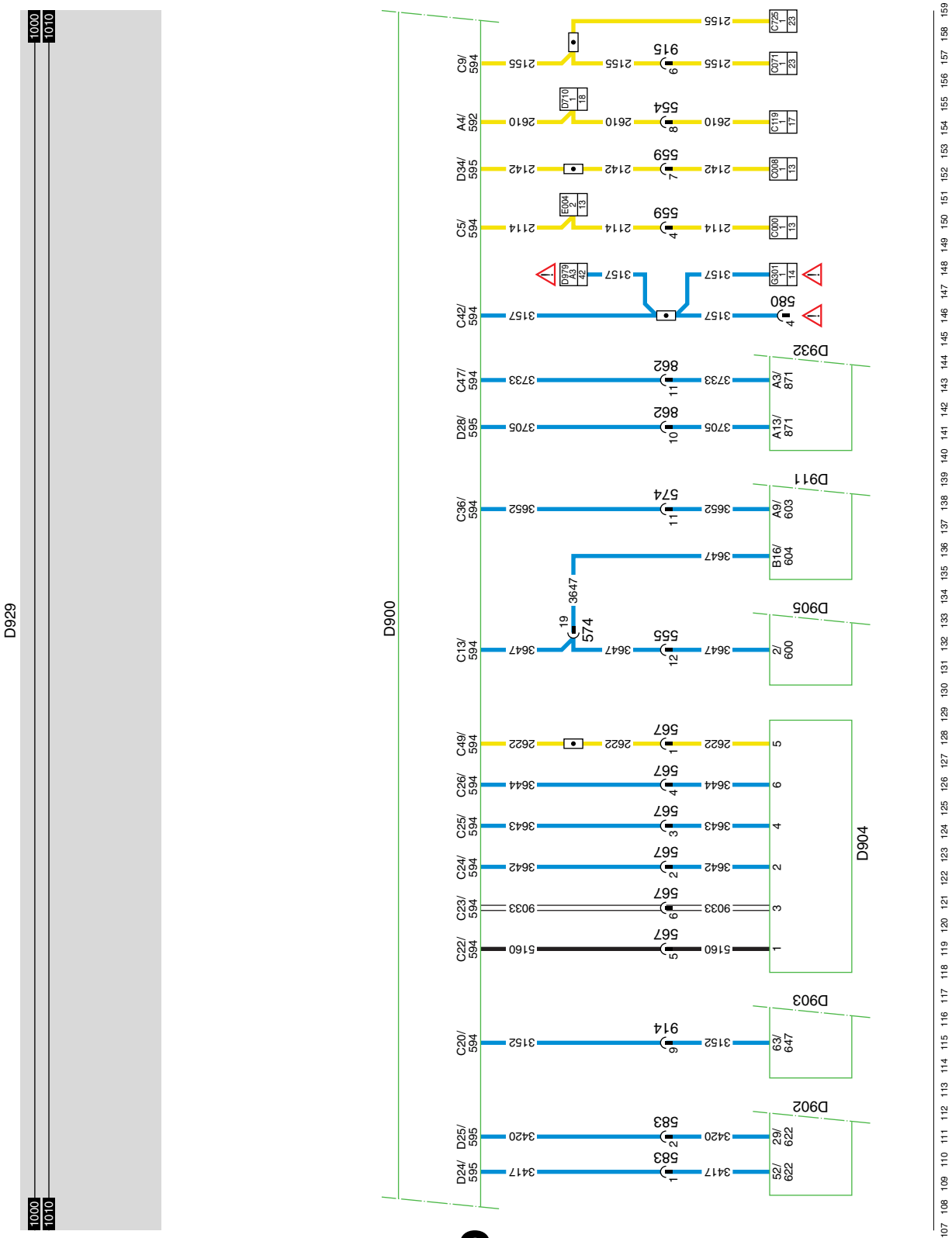



**8** **1358030/35-37**

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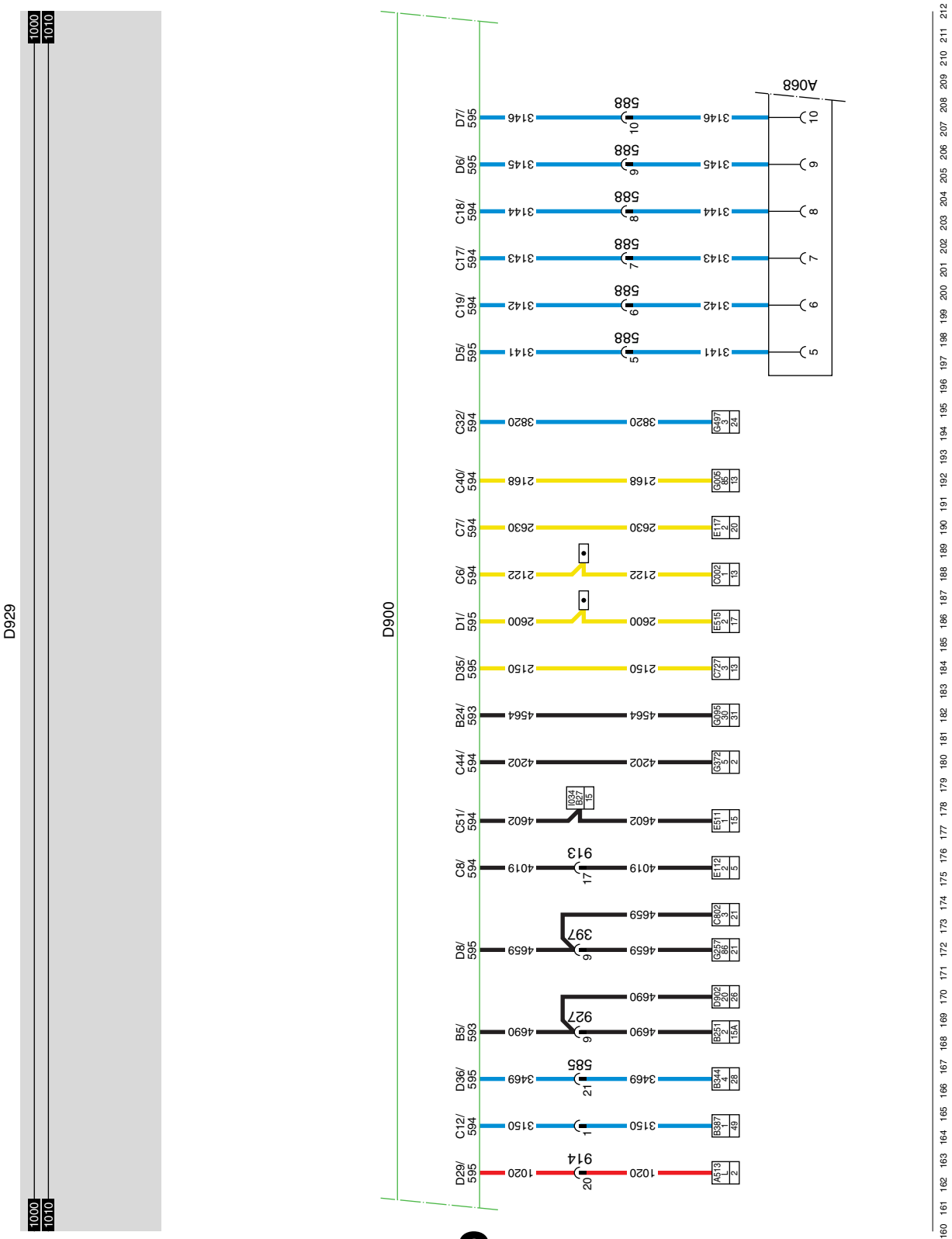
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D929
1000
1010
D900
C9/ 594
A4/ 592
D34/ 595
C5/ 594
C42/ 594
C47/ 594
D28/ 595
C36/ 594
C13/ 594
C49/ 594
C26/ 594
C25/ 594
C24/ 594
C23/ 594
C22/ 594
C20/ 594
D25/ 595
D24/ 595
D932
A3/ 871
A13/ 871
D911
A9/ 603
B16/ 604
D905
2/ 600
D904
D903
63/ 647
D902
29/ 622
52/ 622
915
554
559
559
580
862
862
574
3647
19
914
583
583
C725 1 23
C071 1 23
C119 1 17
C008 1 13
C000 1 13
G301 1 14
D710 1 18
E004 2 13
D979 A3 42
2155
2610
2142
2114
3157
3733
3705
3652
3647
2622
3644
3643
3642
9033
5160
3152
3420
3417
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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376

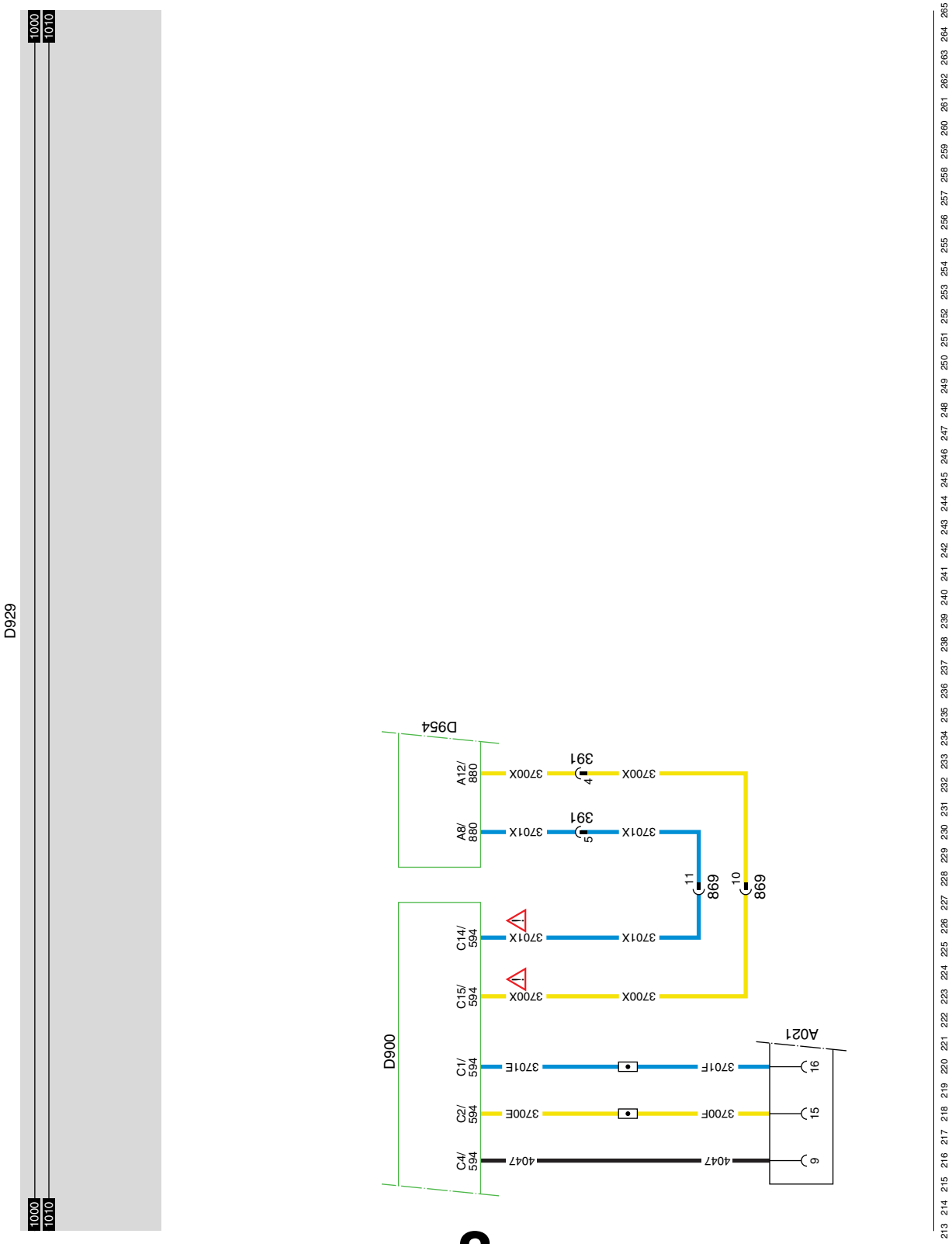



**8** **1358030/35-37**

EL001780



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**8** **1358030/35-37**

EL001781

Changes in the electrical system from chassis number 0E659894

*CF*65/75/85 Serie ≥ 0E621376

11 UPEC

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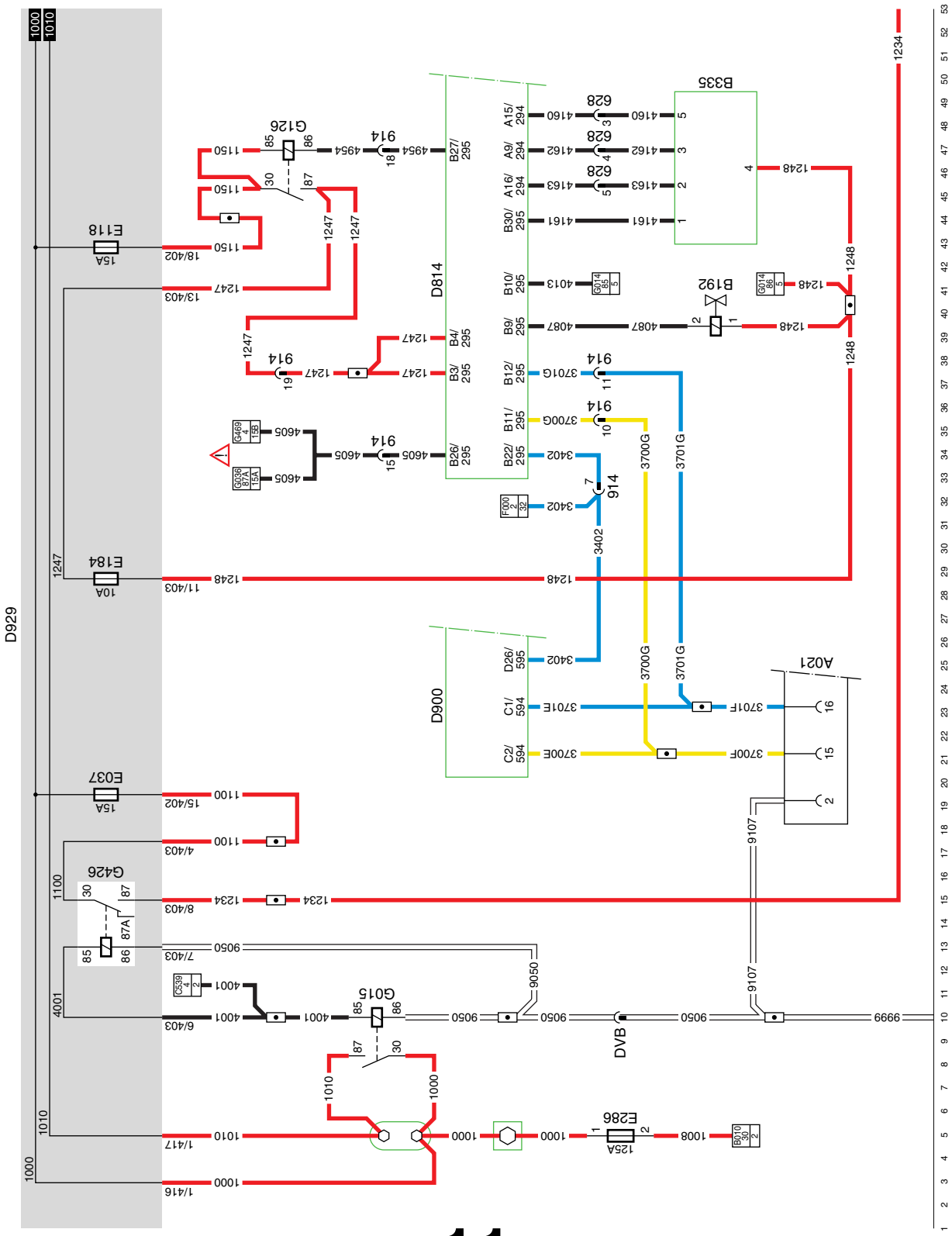
VARIANTS

| Location | |
|---|---|
| 34 | Section diagram 15A if the vehicle is fitted with a manual gearbox or an Allison gearbox.<br>Section diagram 15B if the vehicle is fitted with AS Tronic gearbox. |
| 91 | Wire 6158 ends in lead-through connector 913, pin 3.<br>This wire is for the bodybuilder. |

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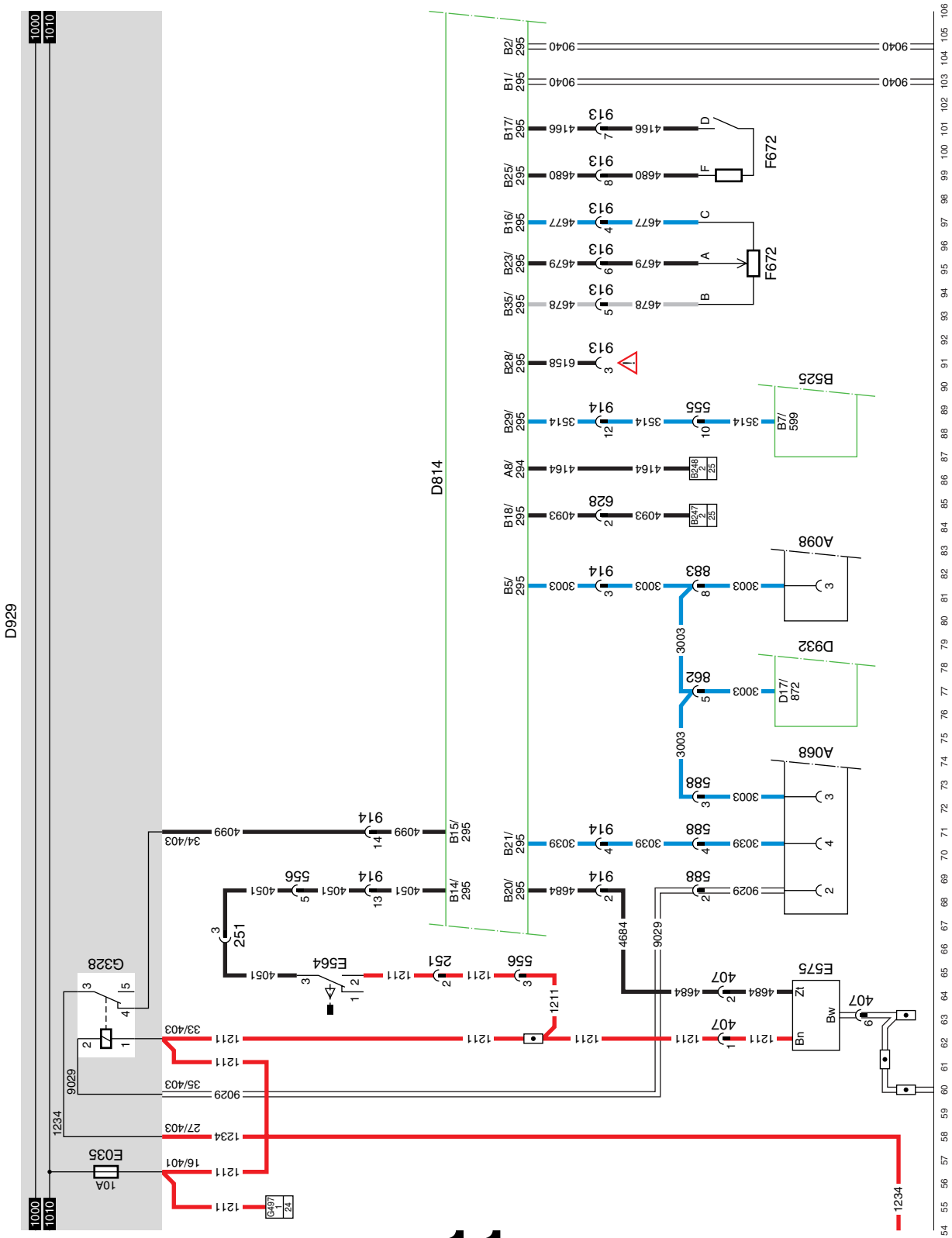



11 1358030/35-37

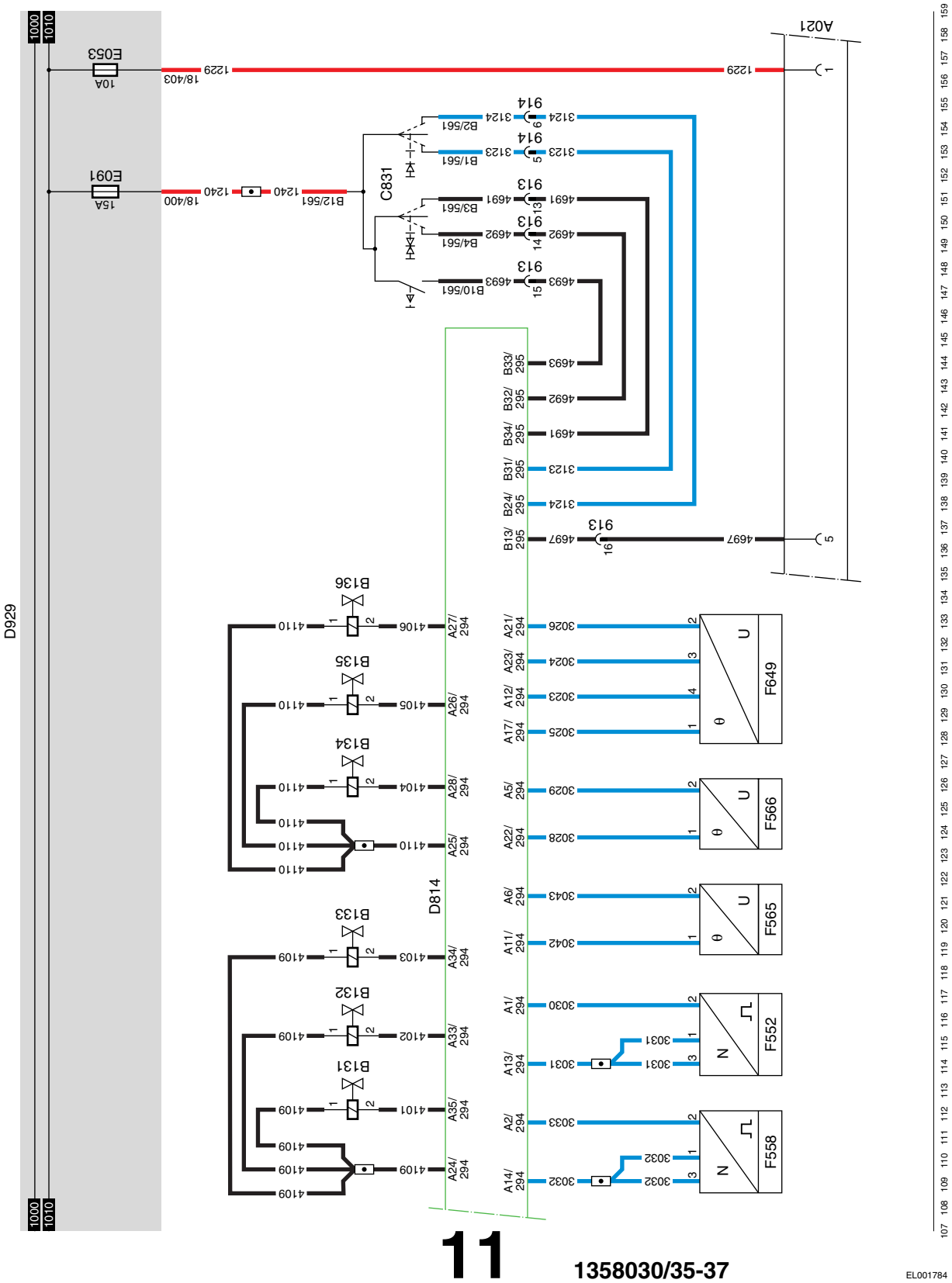
EL001782

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




**11** **1358030/35-37**


A021
E053
10A
E091
15A
1229
1240
18/403
18/400
B12/561
C831
914
913
B2/561
B1/561
B3/561
B4/561
B10/561
B33/295
B32/295
B34/295
B31/295
B24/295
B13/295
D929
D814
B136
B135
B134
B133
B132
B131
A27/294
A26/294
A28/294
A25/294
A34/294
A33/294
A35/294
A24/294
A21/294
A23/294
A12/294
A17/294
A5/294
A22/294
A6/294
A11/294
A1/294
A13/294
A2/294
A14/294
F649
F566
F565
F552
F558
11
1358030/35-37
EL001784

## 15B STOP LIGHTS IN COMBINATION WITH AS TRONIC GEARBOX/CAB TILTING GEAR

### STOP LIGHTS

When the brake pedal is depressed or following activation via VIC (D900), relay G469 is energised. This also energises relay G036. Voltage is now applied to connection point 1 of relay G469 through fuse E016, wire and PCB track 1217. Contacts 3-5 are closed, causing a voltage to be applied to the coil of relay G036 via wire 1217 and PCB track 5292. The relay is activated. A voltage is now applied to the left stop light (C020) and the right stop light (C021) through fuse E013, PCB track 1209, contacts 30-87 of relay G036 and wire 4601. A voltage is also applied to connection point 4 of the drawn vehicle socket (A000), to connection point 13 of the FMS connector (A098) and connection point 3 of the superstructure application connector (A070). The stop lights will now light up.

### CAB TILTING GEAR

A voltage is applied to connection point 1 of the cab locking sensor (F616) through fuse E018 and wire 1114. A voltage is also applied to connection point 1 of F676 and connections 1 and 3 of relay G351 (cab tilt protection relay).
When sensor F676 is activated, wire 4723 in sensor F616 is connected to earth. Relay G351 will be energised, causing voltage to be applied to connection point 1 of B251 (buzzer neutral position) through contacts 3 - 5 of relay G351, wire 4722.
B251 will now be activated via the VIC. A message is also sent to the DIP, which then activates the “cab tilted” warning lamp.

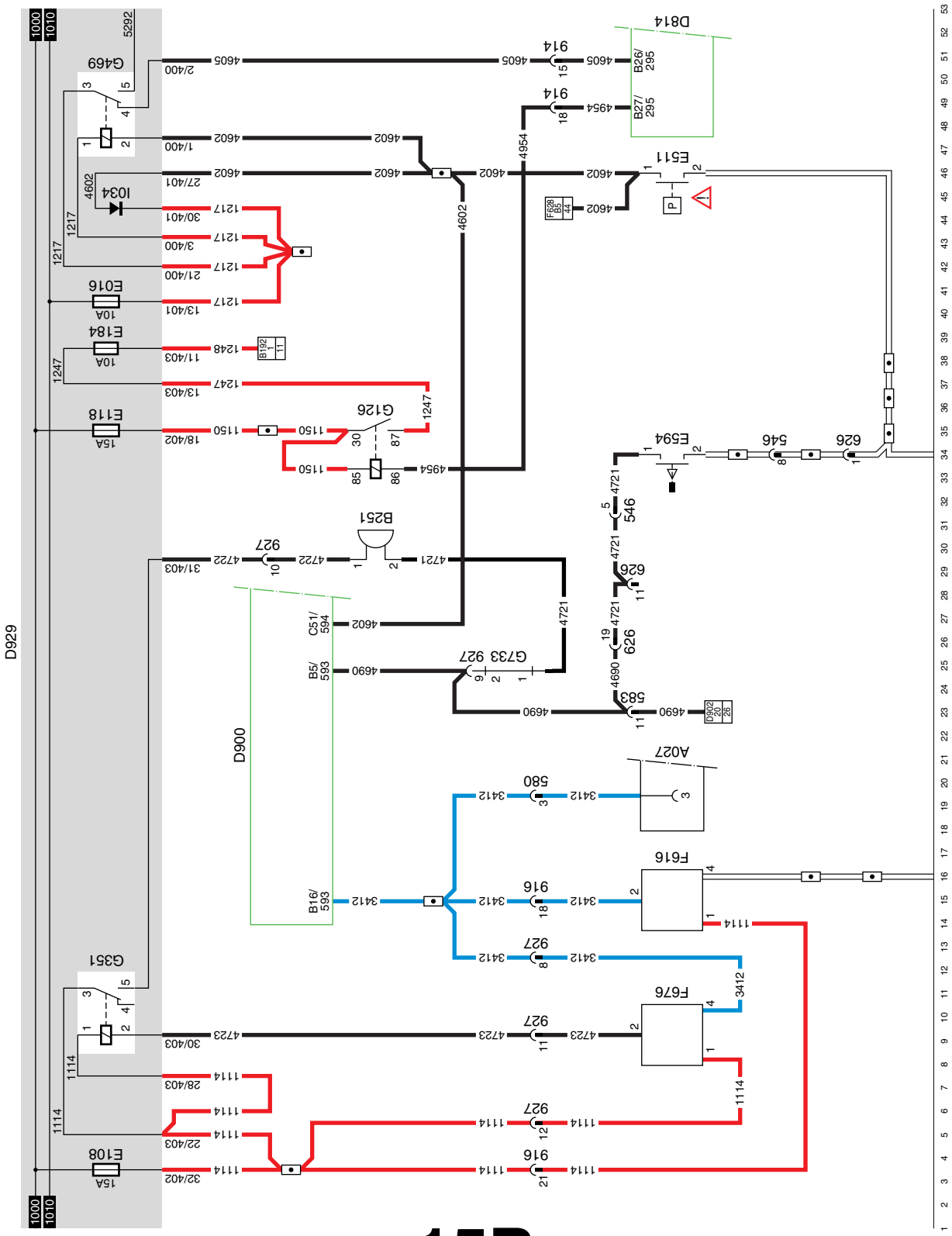
### VARIANTS

**Location**

| | |
|---|---|
| 45 | E511 not fitted for EBS. |
| 69, 75 | Connector 873: on vehicle type FA |
| 77 | A000: 7-pin model<br>A058: 15-pin model |
| 79, 82 | Only for vehicle fitted with buffer beam. |
| 61 | On an FT model, C020 and C021 are connected here. |



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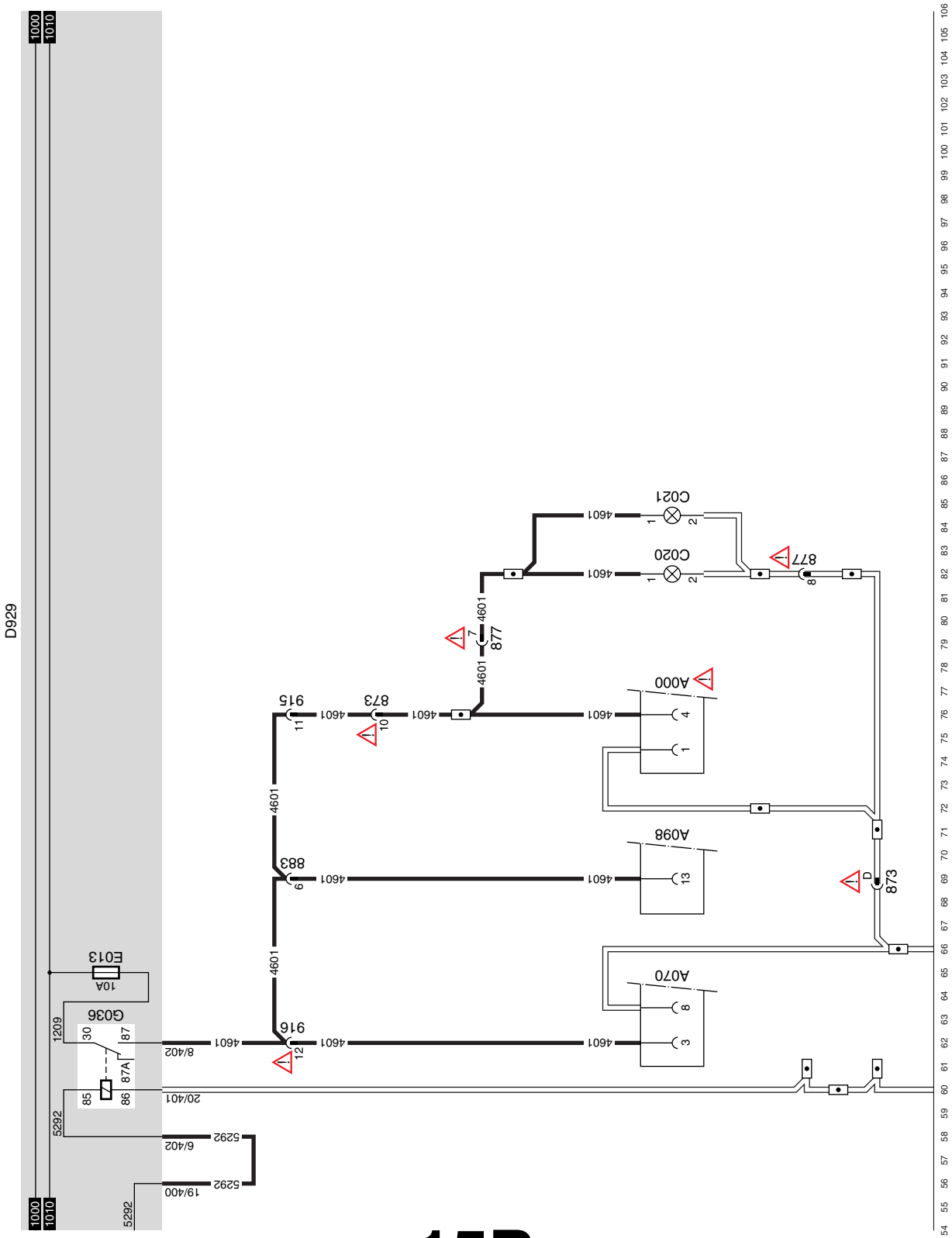



**15B** 1358030/35-37

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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




**15B** **1358030/35-37**

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## 21 AIR CONDITIONING/RECIRCULATION VALVE/HEATER FAN

### AIR CONDITIONING

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

### RECIRCULATION VALVE

When C802 is operated (connection between contacts 2 and 3), a voltage is applied to connection points 1 of G257 and G258 through fuse E031, wire 1201, contacts 2-3 of C802, wire 4659. These relays are energised and, as a result, a connection is made between contacts 3 and 5. This causes a voltage to be applied to connection point 1 of B252 through E031, wire 1201, contacts 5-3 of relay G257 and wire 5053. The other connection point 2 is connected to earth through wire 5054, contacts 3-5 of relay G258. The recirculation valve, driven by B252, will now close.
The VIC (D900) also receives a voltage signal on connection point 8. The VIC activates the “recirculation” warning indicator on the instrument panel via the I-CAN.

### HEATER FAN

A voltage is applied to connection point 8 of B015 (4-speed heater fan) through fuse E031 (heater fan) and wire 1201.
Depending on the position of C882 (heater fan switch), the fan will start operating.

The knob has five positions:

**Off: (position 0):** Heater fan (B015) off.

**Position 1:** (Connection between contacts 2 and 6.) The fan runs at the lowest speed. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6-5 of thermal switch B015, wire 4654, through three resistors (B015), wire 4650 and contacts 2-6 of C882.

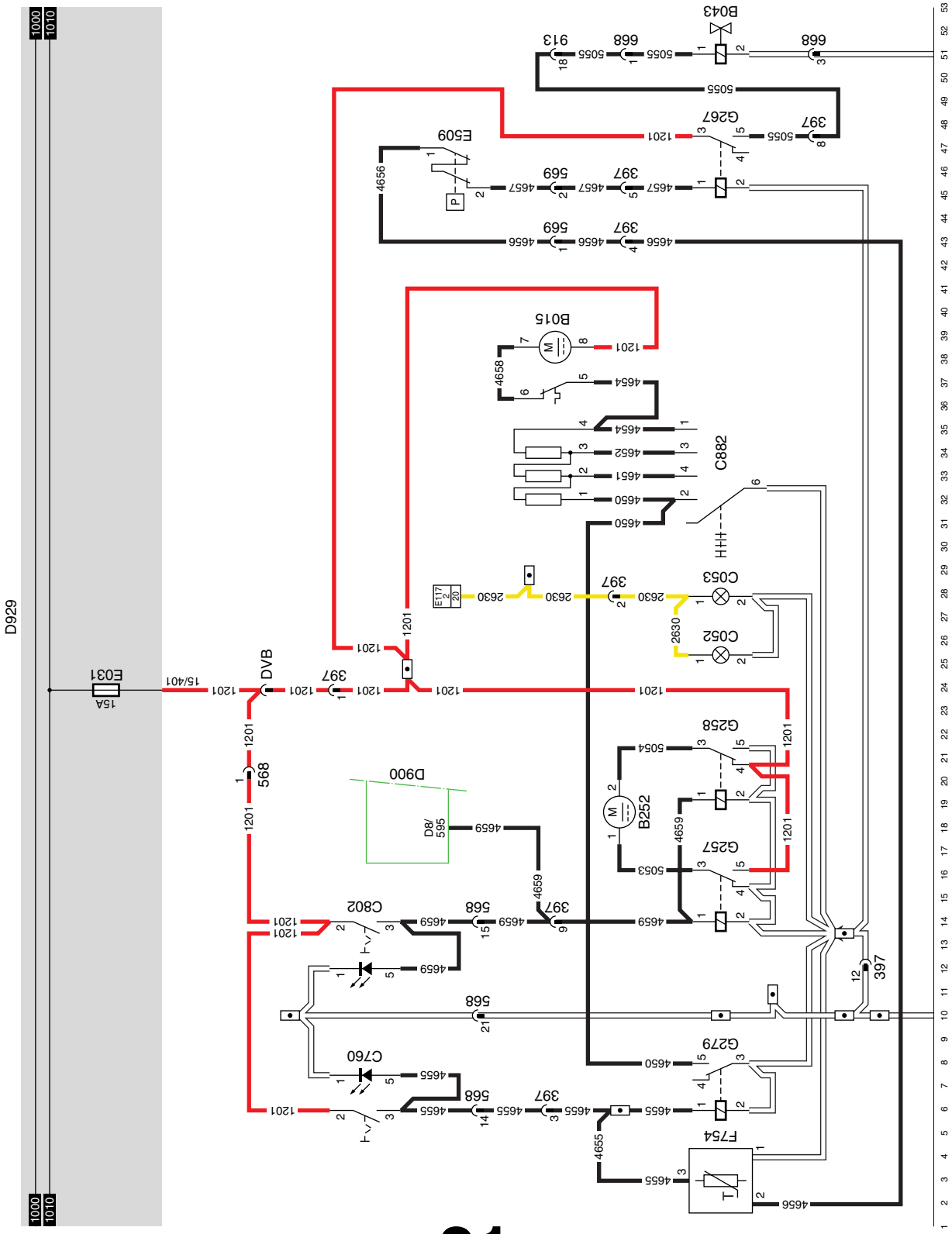
**Position 2:** (Connection between contacts 4 and 6). The fan runs slightly faster. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6-5 of thermal switch B015, wire 4654, through two resistors (B015), wire 4651 and contacts 4-6 of C882.

**Position 3:** (Connection between contacts 3 and 6.) The fan runs at the highest speed but one. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6-5 of thermal switch B015, wire 4654, through one resistor (B015), wire 4652 and contacts 3-6 of C882.

**Position 4:** (Connection between contacts 1 and 6.) The fan runs at the highest speed. Voltage is applied to connection point 8 of B015 through fuse E031 and wire 1201. The earth is formed through connection point 7 of B015, wire 4658, contacts 6-5 of the thermal switch (B015).



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B043
913
668
5055
668
G267
397
E509
4656
4657
569
397
4656
B015
1201
4658
4654
C882
4652
4651
4650
E117
2630
C053
C052
D929
E031
15A
15/401
DVB
1201
568
D900
D8/595
4659
G258
5054
B252
G257
5053
C802
C760
4655
G279
F754
21
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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥ 0E621376

**24 ABS - ASR-D**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

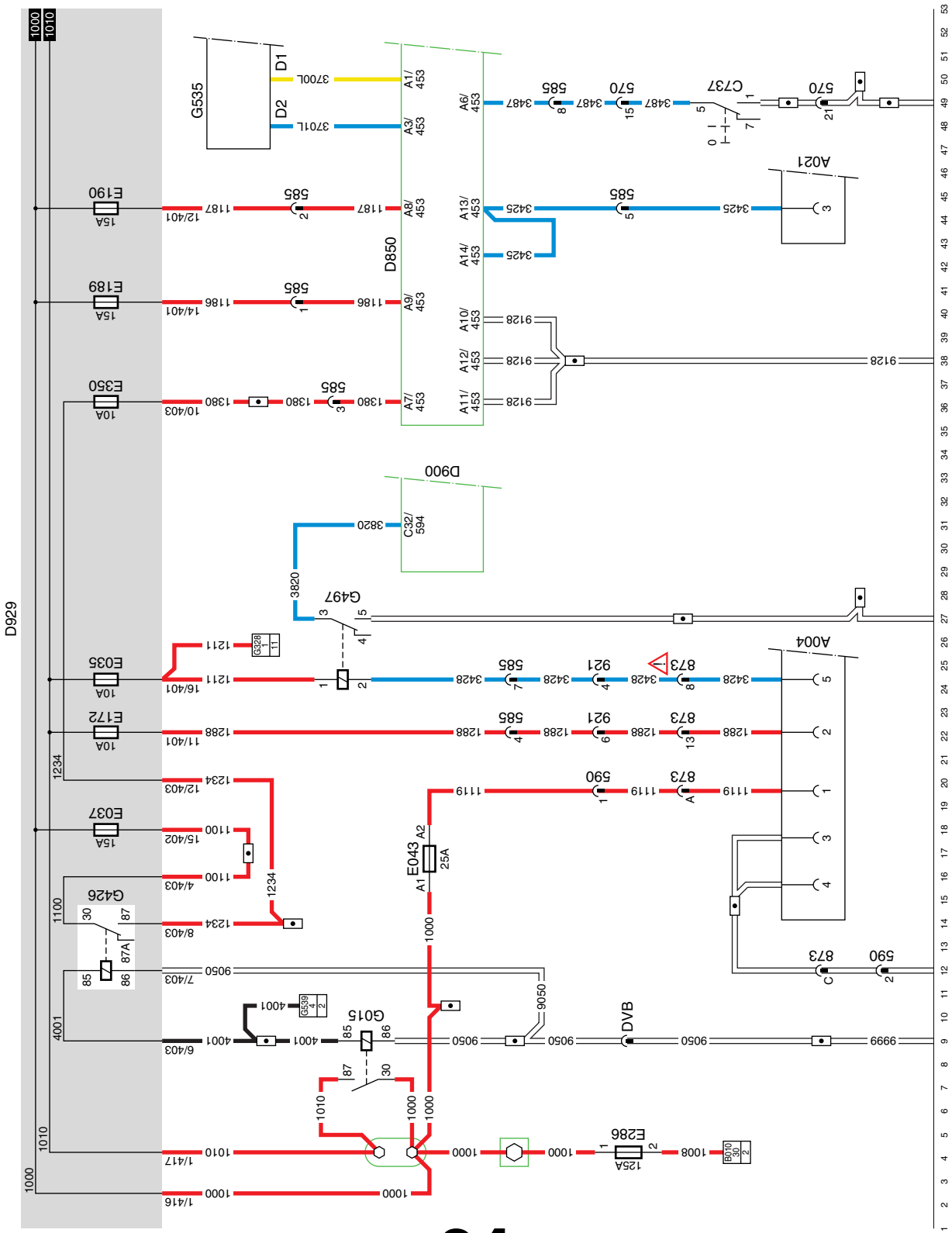
**VARIANTS**

**Location**
21 -> 26 Connector 873: only on vehicle type FA

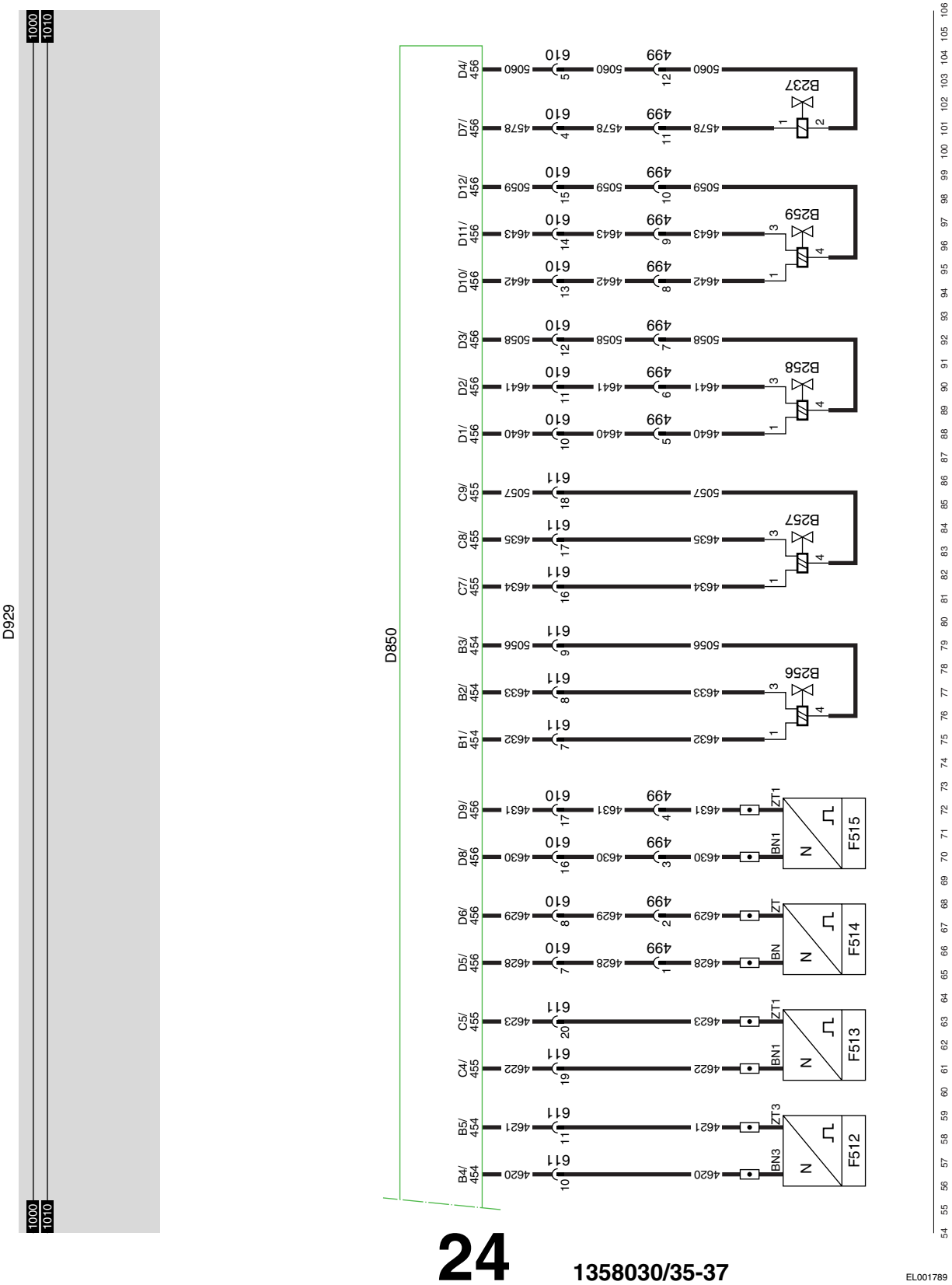
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**24** 1358030/35-37




**24** **1358030/35-37**

Changes in the electrical system from chassis number 0E659894

*CF***65**/**75**/**85** Serie ≥ 0E621376

**25 DEB**

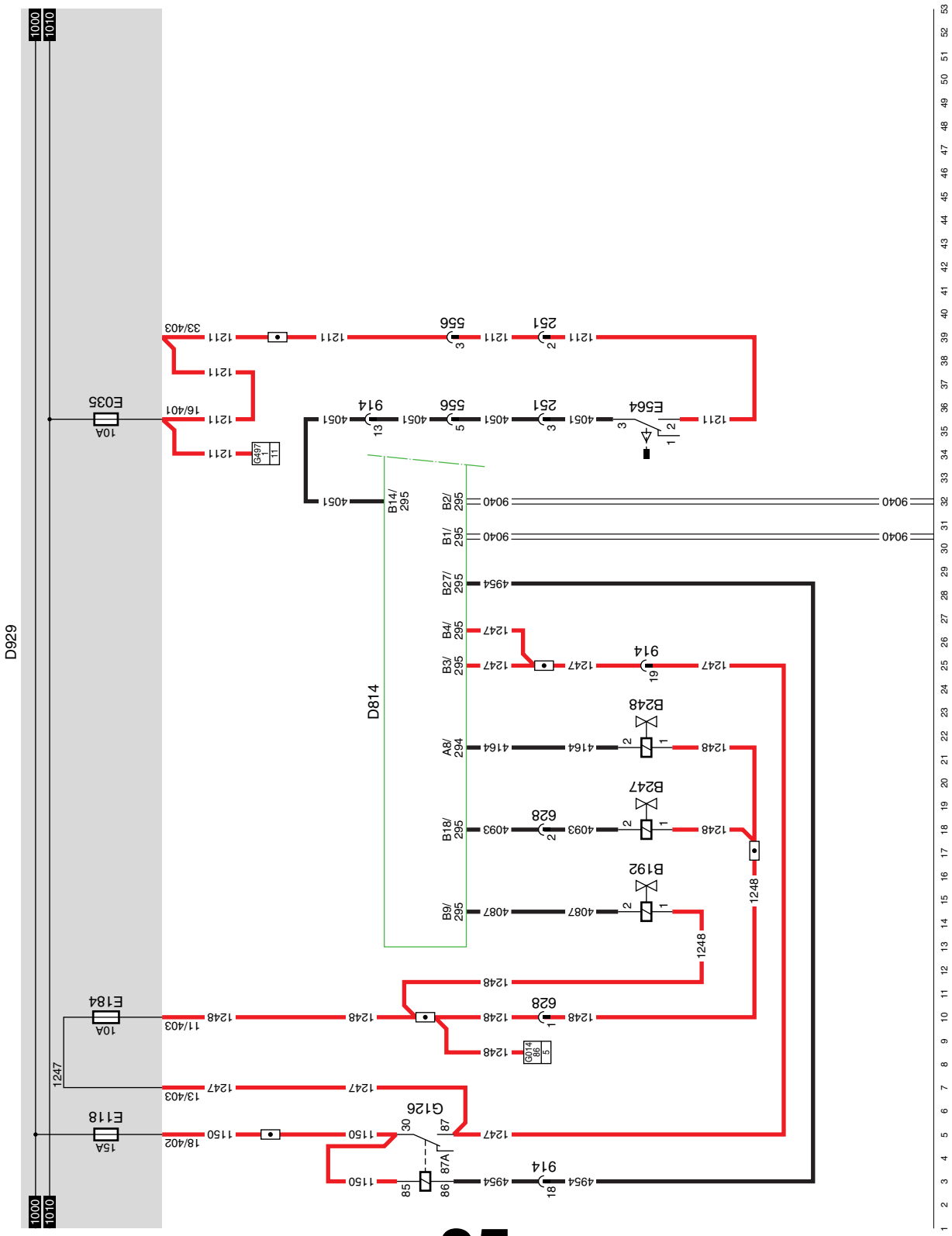
Voltage is applied through fuse E118 and relay G126 to D814 (UPEC electronic unit) and through fuse E184 to valves B192, B247 and B248.
Depending on unit D814, relay G126 is activated, after which voltage is applied to exhaust brake valve B192 and engine brake (DEB) valves B247 and B248.
Depending on unit D814 these valves are connected to earth or are not connected to earth.

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**





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D929
D814
E035
10A
E184
10A
E118
15A
G126
556
251
914
E564
628
B248
B247
B192
1248
1247
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Changes in the electrical system from chassis number 0E659894

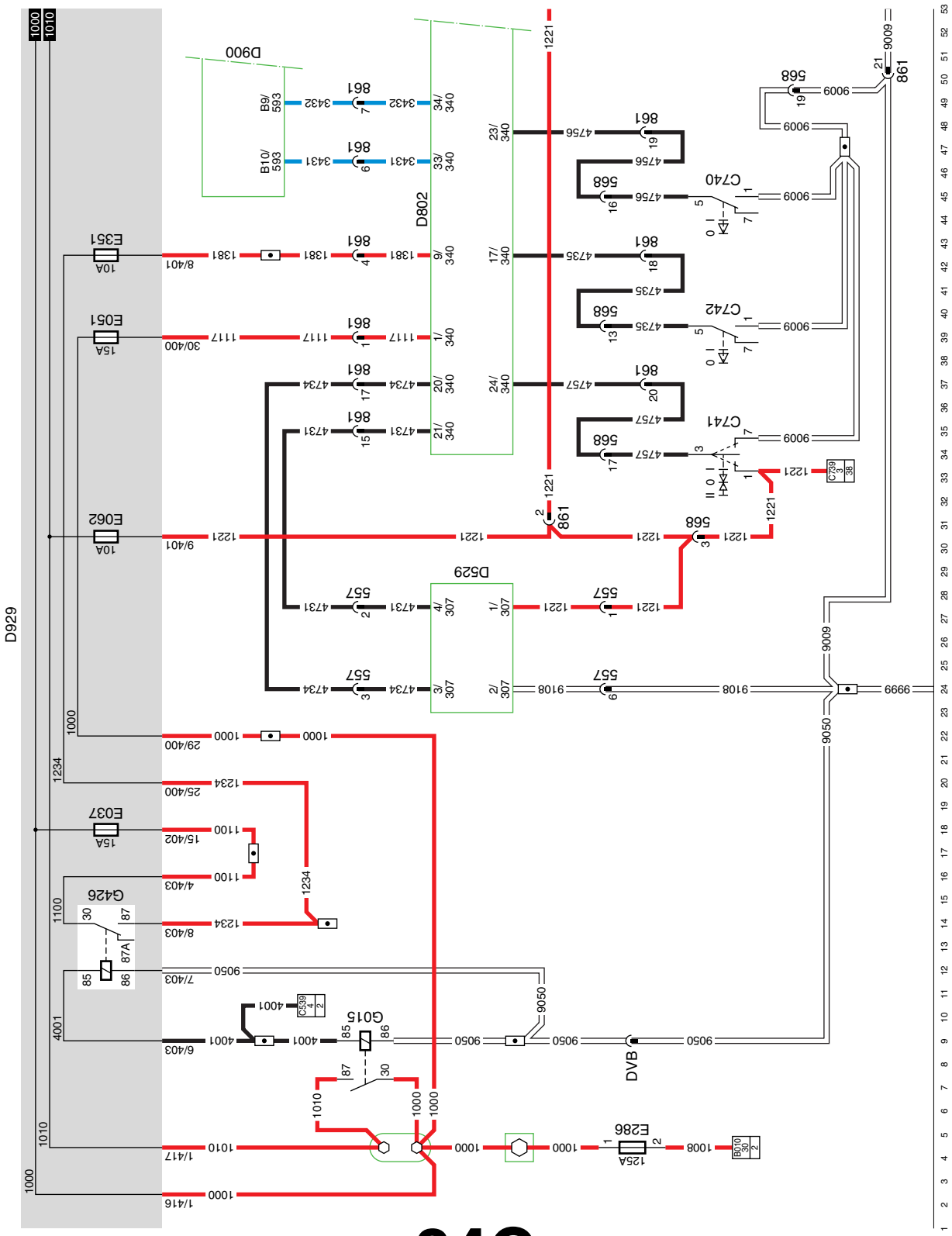
***CF*65/75/85** Serie ≥ 0E621376

34C ECAS-2 FT LOW DECK + FA LARGE VOLUME
SEE THE SYSTEM MANUAL FOR MORE INFORMATION

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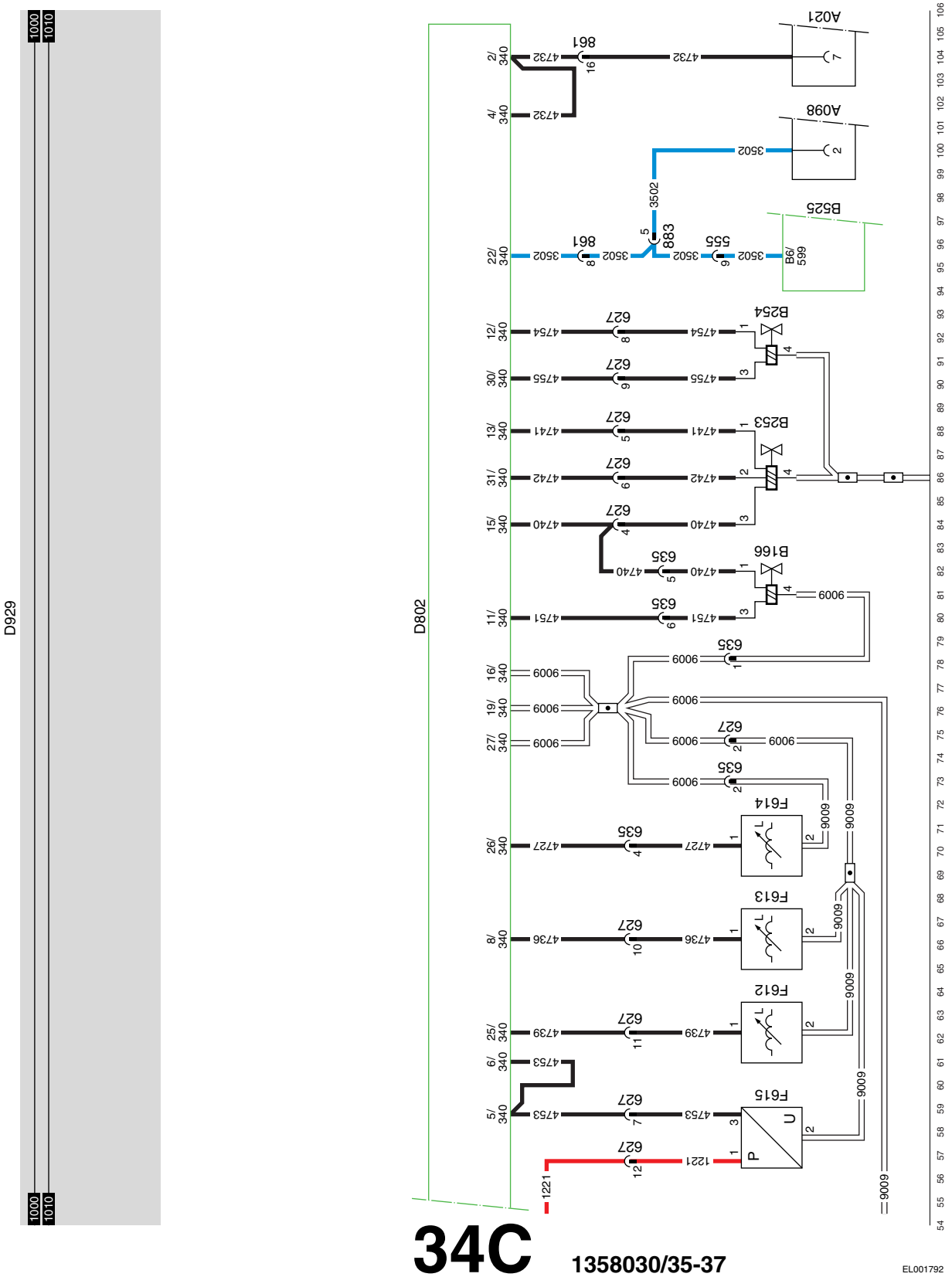
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**34C** **1358030/35-37**

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




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## 36 24 V/12 V CONVERTER/RADIO/CB SET

**The following description of the operation and connection is intended as a general guideline only.**

**Also refer to the manufacturer's installation instructions supplied with the radio.**

If the accessories/ignition/starter switch (C539) is switched to accessories position, pin 1 is connected to pin 6 (wire 1100 is connected to wire 1130). As a result, a voltage is applied to connection point 1 of relay G377. This relay is activated. There is now a power supply of 12 volts to connection point A7 of the "ISO" connector through wire 1108 and contacts 3-5 of relay G377 and wire 1363.

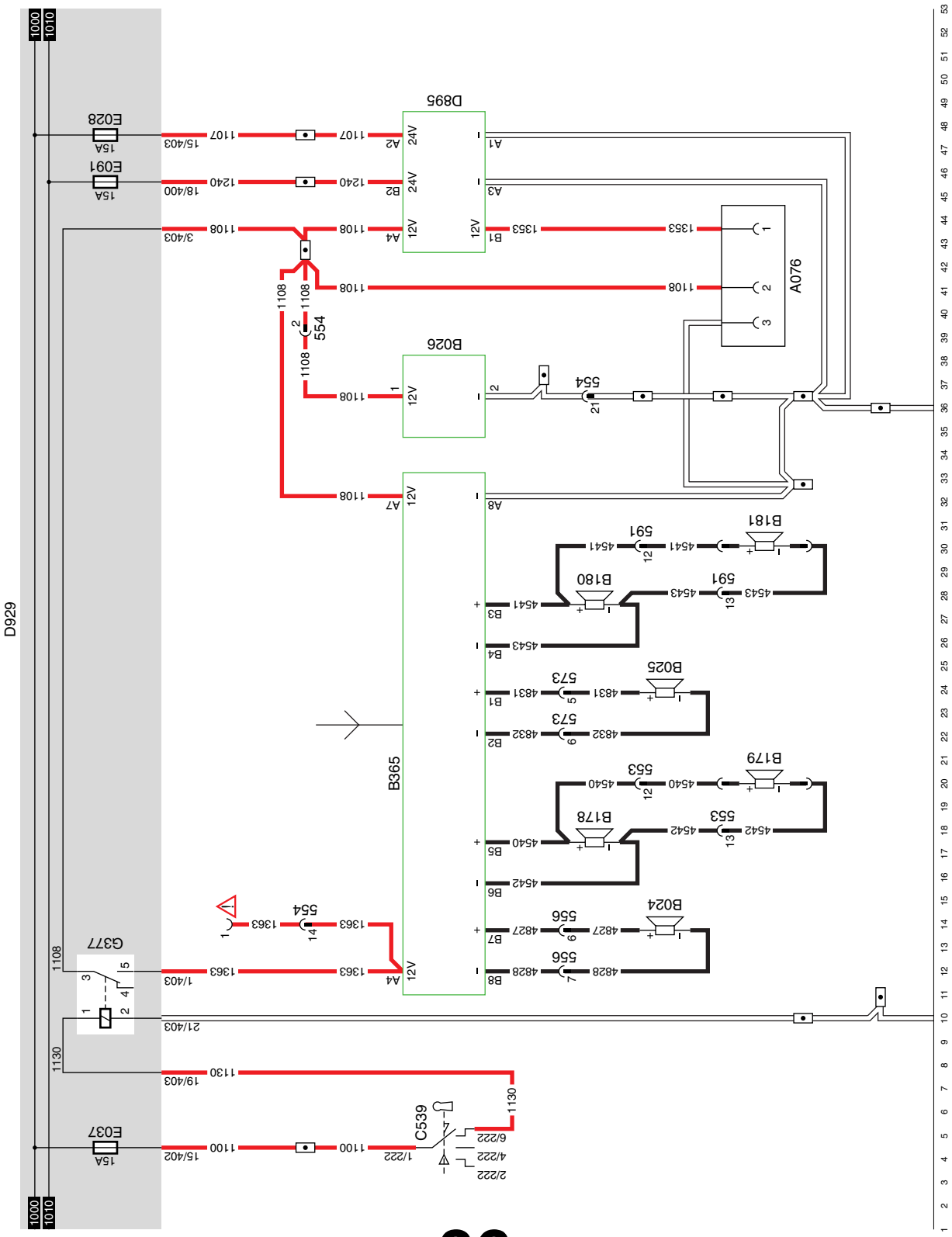
The radio has an aerial connection and 2 loudspeaker outputs which can be used to connect loudspeakers B024 and B025. Two high-tone and two low-tone speakers (B178, B179 and B180, B181) can also be connected to the radio.

**CB SET**
Wire 1108 is also available in a white connector for a CB set (B026). This connector is in the roof console on the driver's side.

**For more information: see also block 6: Connection of accessories.**

**VARIANTS**

| Location | |
|---|---|
| 15 | Connector 554 contains wire 1363. This wire should be connected to the combi-aerial. |




**36** **1358030/35-37**

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## 37 ELECTRIC DROP GLASS/CENTRAL DOOR LOCKING/ROOF HATCH, SH CAB

**ELECTRIC DROP GLASS OPERATION, DRIVER'S SIDE (OPENING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 2 and 4) by means of the driver's side drop glass operation switch (C745), relay G030 will be energised through fuse E044, switch C745 (wire 4526). As a result of this, there is a supply voltage on connection point 1 of the motor (B003) through fuse E034. The other connection point (2) is connected to earth via relay G031. The motor starts running anti-clockwise and the driver's side window opens.

**ELECTRIC DROP GLASS OPERATION, DRIVER'S SIDE (CLOSING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 4 and 1) by means of the driver's side drop glass operation switch (C745), relay G031 will be energised through fuse E044, switch C745 (wire 4527). As a result of this, there is a supply voltage on connection point 2 of the motor (B003) through fuse E034. The other connection point (1) is connected to earth via relay G030. The motor starts running clockwise and the driver's side window will close.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE (OPENING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 2 and 4) by means of the co-driver's side drop glass operation switch (C743), relay G028 will be energised through fuse E044, switch C743 (wire 4522). As a result of this, there is a supply voltage on connection point 1 of the motor (B004) through fuse E033. The other connection point (2) is connected to earth via relay G029.
The motor starts running anti-clockwise and the co-driver's side window will open.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE (CLOSING)**
**(Switch in door panel, driver's side)**
When a connection is made (contacts 4 and 1) by means of the co-driver's side drop glass operation switch (C743), relay G029 will be energised through fuse E044, switch C743 (wire 4523). As a result of this, there is a supply voltage on connection point 2 of the motor (B004) through fuse E033. The other connection point (1) is connected to earth via relay G028.
The motor starts running clockwise and the co-driver's side window will close.

**ELECTRIC DROP GLASS OPERATION, CO-DRIVER'S SIDE**
**(Switch in door panel, co-driver's side)**
Operation of the drop glass on the co-driver's side through switch C744 works in exactly the same way as on the driver's side. When switch C744 is operated (connection between contacts 4 and 2), relay G028 is switched via switch C743 (contacts 5 and 2) and the motor (B004) will open the window. When switch C744 (connection between contacts 4 and 1) is operated, relay G029 is activated through switch C743 (contacts 3 and 1), the motor runs clockwise and the window closes as a result.

The electric drop glass will only operate if the contact is activated.

### DOOR LOCKING, CO-DRIVER'S SIDE (STANDARD)

**Purpose:**
To lock the co-driver's side door using button/key or switch C744.

The driver can lock/unlock the co-driver's door from the driving position using the switch.

Central door locking motor, co-driver's side (B200)



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The motor has two (internal) switches:
- an "end stroke" switch (switches over at the end of each stroke) (the bottom switch in the diagram).
- a switch that is mechanically connected to the locking button (switches over at the beginning of each upward or downward movement of the locking button) (the top switch in the diagram).

**Note:**
A mechanical connection (rod linkage) between the cylinder lock and the locking button is maintained.

**Conditions: door unlocked.**

- **The door is locked using the button/key.**
  The top switch is directly switched over via the rod linkage. As a result, a current will flow through the fuse, connection 30B, the motor, the bottom switch and the top switch through connection 31 to earth. Because of the mechanical connection between the motor and the locking button, the button moves downwards. When the lower position is reached, the "end stroke" switch (the lower switch in the diagram) switches over. The forces are transmitted from the motor to the locking button via a crank/connecting rod linkage.

- **The door is locked using switch C774.**
  When spring-loaded switch C774 makes a connection between connections 3 and 7, connection point DL of B200 is connected to earth. As a result, a current will flow through the fuse, connection 30B, the motor and the bottom switch to earth. A brief moment is sufficient to start the motor. Since there is a mechanical connection between the motor and the locking button, the top switch will switch over immediately. A current will pass until the "end stroke" switch interrupts the circuit.

**Conditions: door locked.**

- **The door is unlocked using the button/key.**
  The top switch is directly switched over via the rod linkage. As a result, a current will flow through the fuse, connection 30B, the motor, the bottom switch and the top switch through connection 31 to earth. Because of the mechanical connection between the motor and the locking button, the button moves upwards. When the lower position is reached, the "end stroke" switch (the lower switch in the diagram) switches over. The forces are transmitted from the motor to the locking button via a crank/connecting rod linkage.

- **The door is unlocked using switch C774.**
  When spring-loaded switch C774 makes a connection between connections 3 and 1, connection point DO of B200 is connected to earth. As a result, a current will flow through the fuse, connection 30B, the motor and the bottom switch to earth. A brief moment is sufficient to start the motor. Since there is a mechanical connection between the motor and the locking button, the top switch will switch over immediately. A current will pass until the "end stroke" switch interrupts the circuit.

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**CENTRAL DOOR LOCKING (CDS-3)**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**SH CAB ROOF HATCH**

**OPENING ROOF HATCH**
When the roof hatch switch (C736) is operated and a connection is made between contacts 2 and 6 and therefore between contacts 1 and 3 as well, a voltage is applied to pin 1 of the roof hatch motor (B175) through fuse E028, switch C736 and wire 4761. The roof hatch will open.

**CLOSING ROOF HATCH**
When the roof hatch switch (C736) is operated and a connection is made between contacts 8 and 6 and therefore between contacts 7 and 3 as well, a voltage is applied to pin 2 of the roof hatch motor (B175) through fuse E028, switch C736 and wire 4760. The roof hatch will now close.

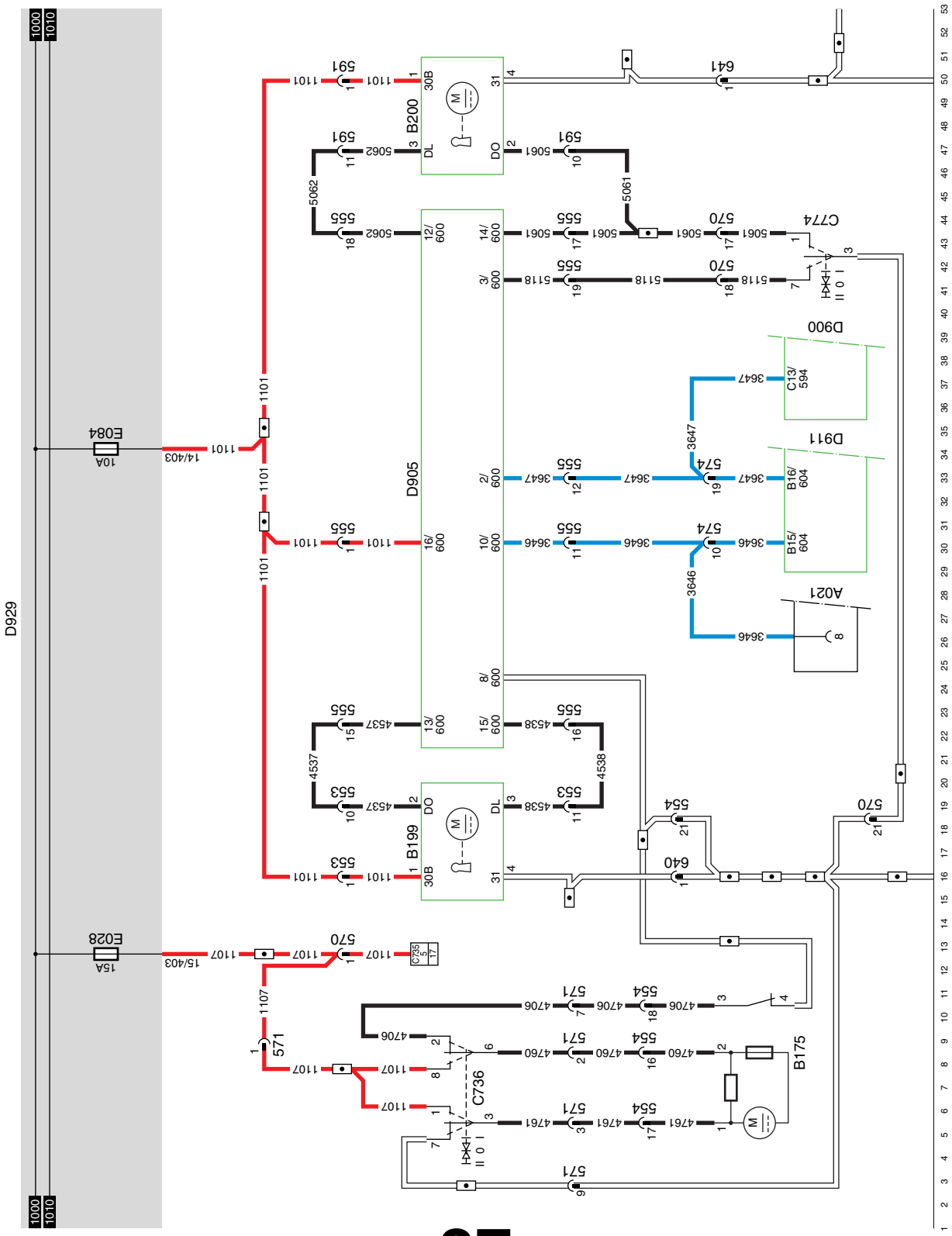
**VARIANTS**

**Location**
37 If the standard version is installed, the motor for door locking on the driver's side (B199) and the CDS electronic unit (D905) are not fitted.

**The connections on B200 are then as follows:**

| Connection point | Wire number: | Description |
|---|---|---|
| 1 | 1105 | Power supply |
| 2 | 5061 | Open door |
| 3 | 5062 | Close door |
| 4 | M | Earth |

Wire 5062 is directly connected to connection point 7 of switch C774.

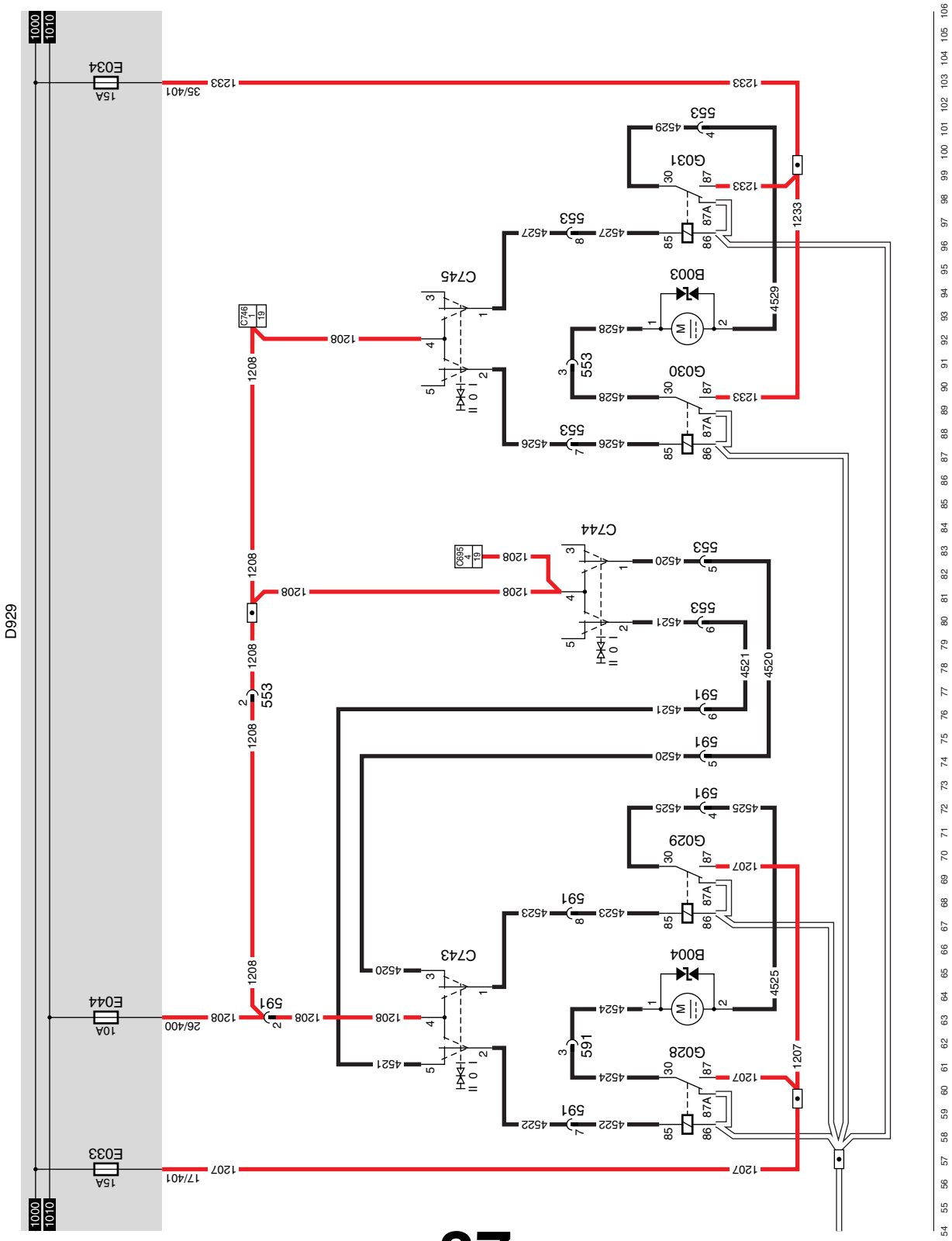



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**37** **1358030/35-37**

EL001795

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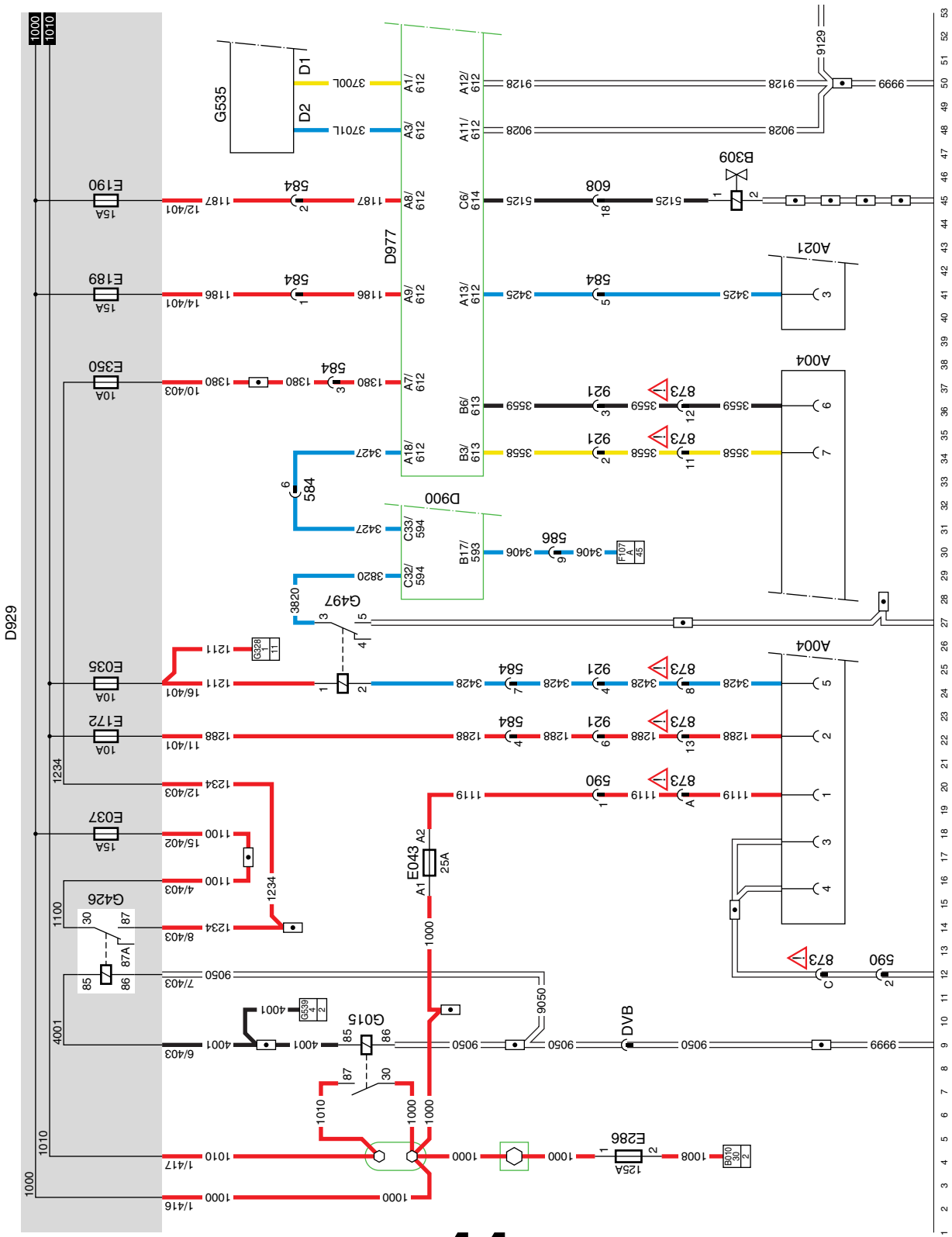
**44 EBS-2**

**SEE THE SYSTEM MANUAL FOR MORE INFORMATION**

**VARIANTS**

**Location**
18 -> 37: Connector 873: only on cab type D
126: E511 NOT fitted with EBS.

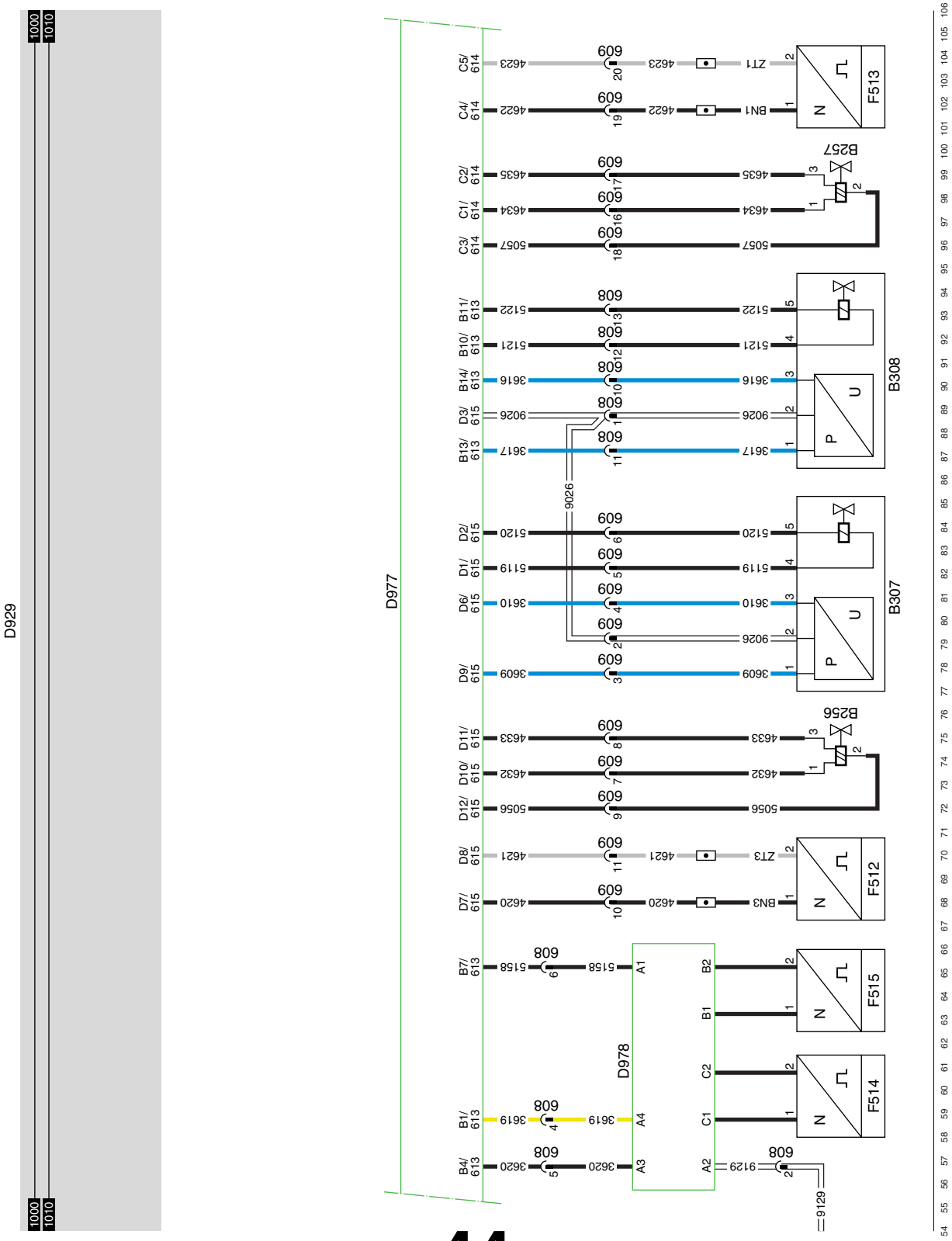
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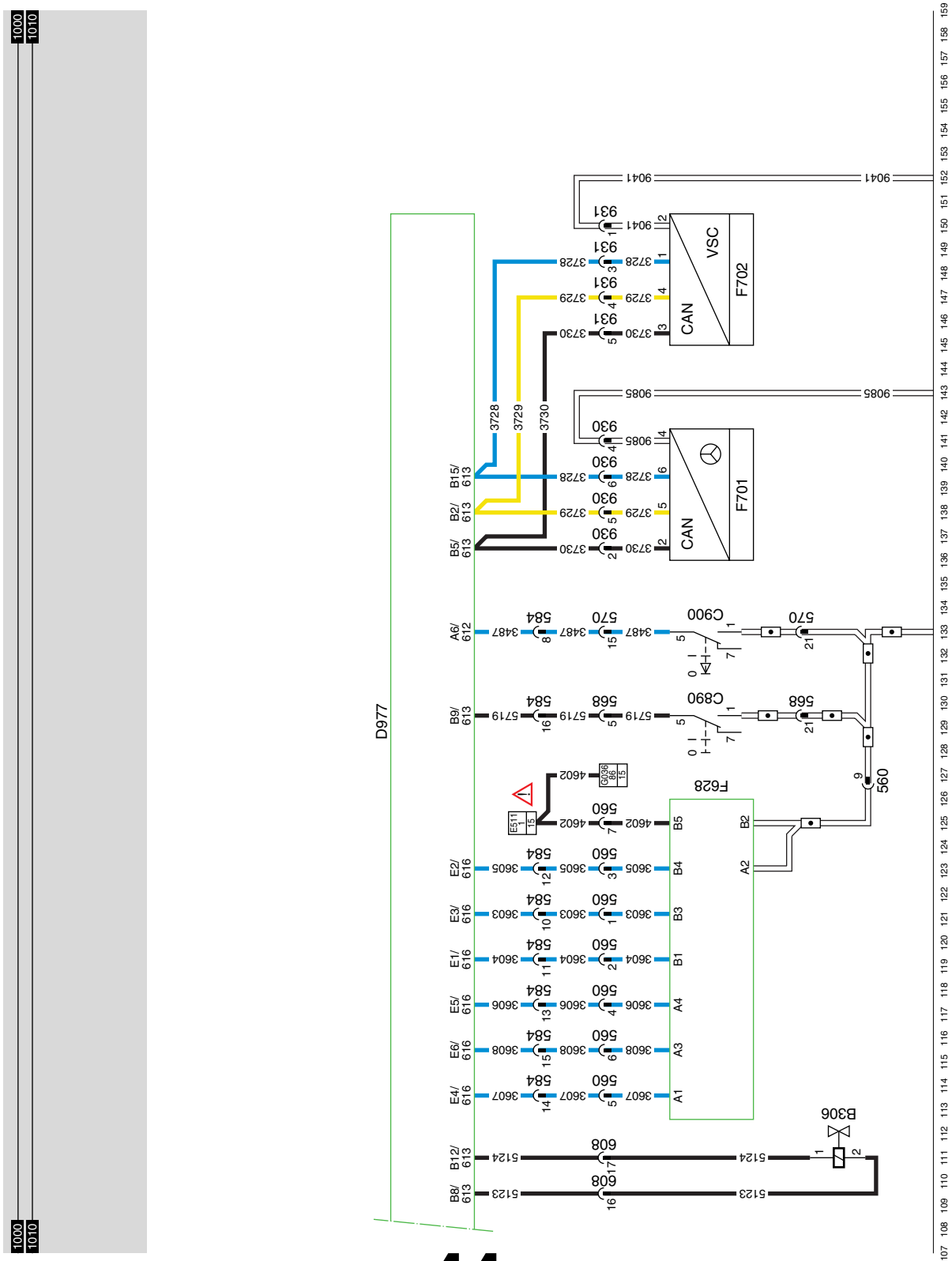

**44** 1358030/35-37

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**44** 1358030/35-37 EL0011797




**44** **1358030/35-37**

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## 47 PLUG SOCKETS, FA

### DIAGNOSTIC CONNECTOR (A021)

The diagnostic connector is at bottom right on the outside of the central box. This is the connector for the DAVIE connection. After the ignition is switched on, power is supplied to pin 1 via fuse E053. Pin 2 is connected to earth. The remaining pins are for communication with the various systems, and are connected to those systems.

| Pin no. | Wire no. | Colour | Description |
|---|---|---|---|
| 1 | 1229 | red | Power supply for DAVIE |
| 2 | 9107 | white | Earth |
| 3 | 3425 | blue | ABS - ASR-D |
| 4 | | | |
| 5 | 4697 | black | UPEC, ECS-DC3 |
| 6 | | | |
| 7 | 4732 | black | ECAS |
| 8 | 3646 | blue | CDS, ALS-S, EMAS |
| 9 | 4047 | black | VIC |
| 10 | 3065 | blue | AS Tronic |
| 11 | 4883 | black | ZF intarder |
| 12 | 4733 | black | DIP-4 |
| 13 | 3470 | blue | AGS |
| 14 | 3037 | blue | Cab heater |
| 15 | 3700 | yellow | V-CAN-L |
| 16 | 3701 | blue | V-CAN-H |

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**24 V CONNECTOR (2-pin) (A007)**

Pin 1 is connected directly to the power supply through wire 1103, fuse E036.

Pin 2 is connected to earth.

**ABS/EBS DRAWN VEHICLE CONNECTOR (7-pin) (A004)**

Pin 1 is connected directly to power before contact through fuse E043 and wire 1119.

Pin 2 is connected directly to power after contact through fuse E172 and wire 1288.

Pins 3 + 4 are both connected to earth.

Pin 5 is connected to power supply through wire 3428 and the coil of relay G497. It is activated when a semi-trailer fitted with EBS is hitched.

Pin 6 is connected to pin B6 of D880 (EBS) via wire 3559.
Only if the vehicle has EBS.

Pin 7 is connected to pin B3 of D880 (EBS) via wire 3558.
Only if the vehicle has EBS.

**DRAWN VEHICLE CONNECTOR (7-pin) (A000)**

Pin 1 is connected to earth.

Pin 2 switches the left tail light.

Pin 3 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 4 is connected to relay G036 (stop light relay) through wire 4601.

Pin 5 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 6 switches the right tail light.

**DRAWN VEHICLE CONNECTOR (15-pin) (A058)**

Pin 1 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 2 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 3 is connected via wire 2152 to connection point 87 of relay G005 (relay, rear fog lamp).

Pin 4 is connected to earth.

Pin 5 switches the left tail light via wire 2102.

Pin 6 switches the right tail light via wire 2103.

Pin 7 is connected to connection point 87 of relay G036 (stop light relay) through wire 4601.

Pin 8 is connected to connection point 5 of G350 (reversing light relay) through wire 4591.

Pin 9 is connected to power before contact through wire 1113 and fuse E048.

Pin 10 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 11 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 12 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 13 is not connected.

Pin 14 is not connected.

Pin 15 is not connected.

**REAR FOG LAMP/REVERSING LAMP CONNECTOR (A001)**

Pin 1 is connected to earth.

Pin 2 is connected via wire 3659 to connection point B6 of ALS-S (D911).

Pin 3 is connected to connection point 5 of G350 (reversing light relay) through wire 4591.

Pin 4 is connected to power before contact through wire 1113 and fuse E048.

Pin 5 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 6 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 7 is connected via wire 2152 to connection point 87 of relay G005 (relay, rear fog lamp).

**APPLICATION CONNECTOR, SUPERSTRUCTURE (8-pin) (A070)**

Pin 1 is connected to power before contact through wire 1113 and fuse E048.

Pin 2 is connected to connection point 1 of C725 (work lamp switch) through wire 2155.

Pin 3 is connected to connection point 87 of G036 (stop light relay) through wire 4601.

Pin 4 is connected to connection point 5 of G350 (reversing light relay) through wire 4591.

Pin 5 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 6 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 7 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 8 is connected to earth.

**PHONE CONNECTOR (A076)**

Pin 1 is connected via wire 1353 to connection B1 (12V) of D895.

Pin 2 is connected via wire 1108 to connection A4 (12V) of D895.

Pin 3 is connected to earth.

**ACCESSORIES CONNECTOR (6-pin) (A027)**

Pin 1 is connected to power before contact through wire 1154 and fuse E142.

Pin 2 is connected to power after contact through wire 1258 and fuse E163.

Pin 3 is connected to connection point 2 of F616 (cab locking sensor) through wire 3412.

Pin 5 is connected to C42 of the VIC (D900) through wire 3157.

Pin 5 is connected to earth.

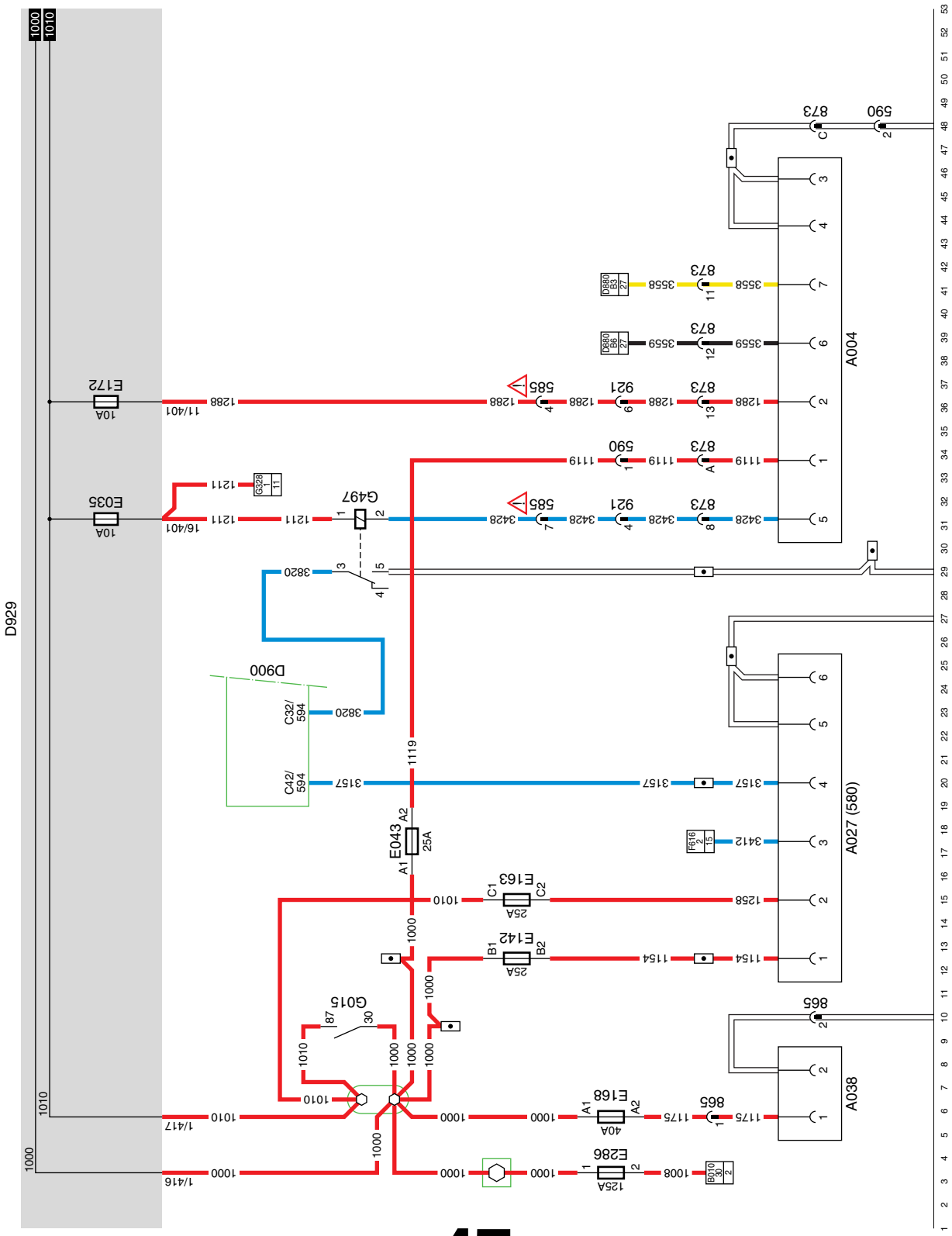
Pin 6 is connected to earth.

**VARIANTS**

| Location | |
|---|---|
| 32, 36, 59 | Connector 585: for ABS/ASR-D. Connector 584 for EBS. |
| 59 | Connection to D850 or D880. |
| 61 | Connection to D851 or D802. |
| 82 | D954: Only for AS Tronic |
| 121, 158 | A000 and A001. For 2x 7-pin connector. |

162 -> 209:For 1x 15-pin connector.

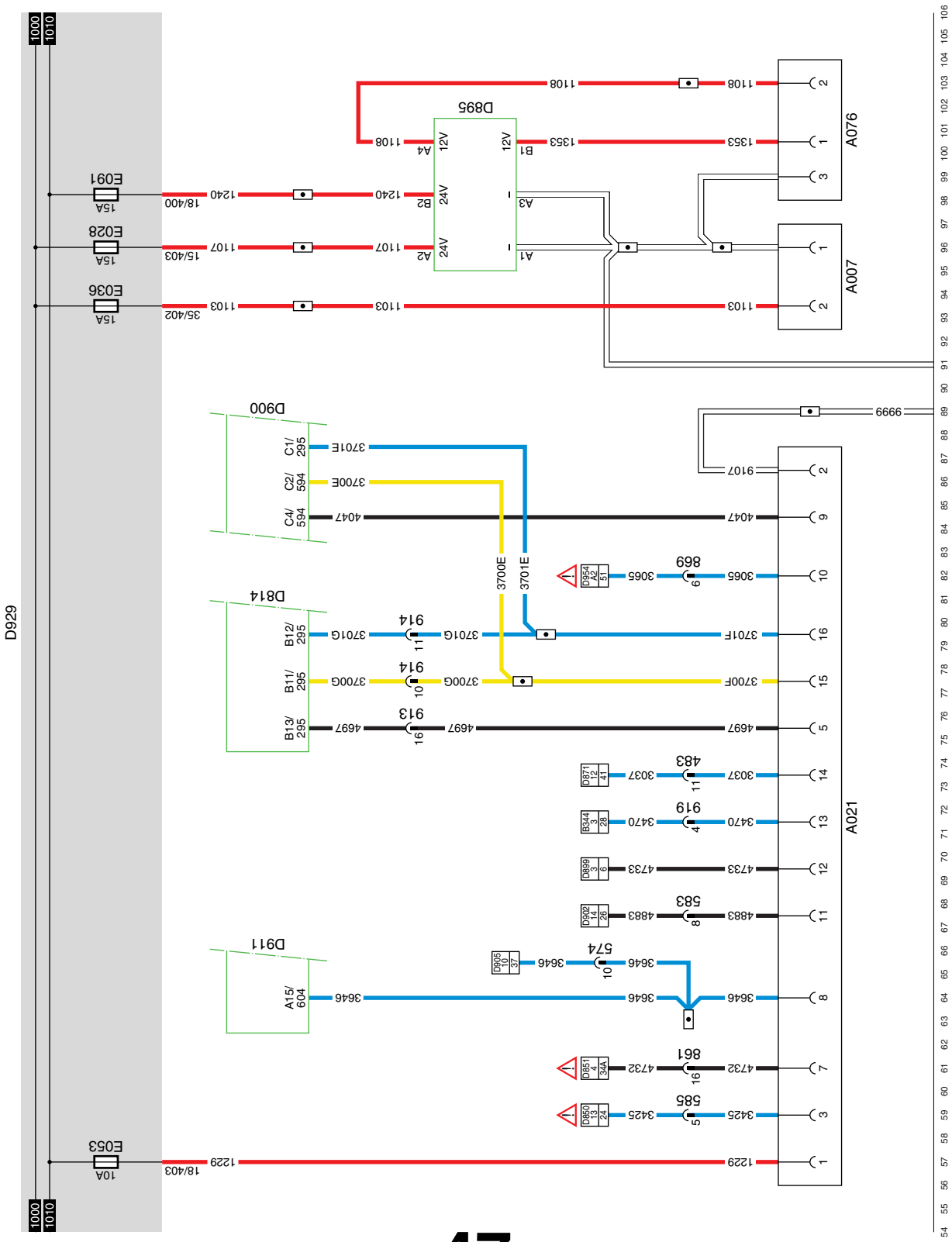
11


D929
A004
A027 (580)
A038
E172
E035
E043
E163
E142
E168
E286
G497
G015
D900
1358030/35-37
EL001799

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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376

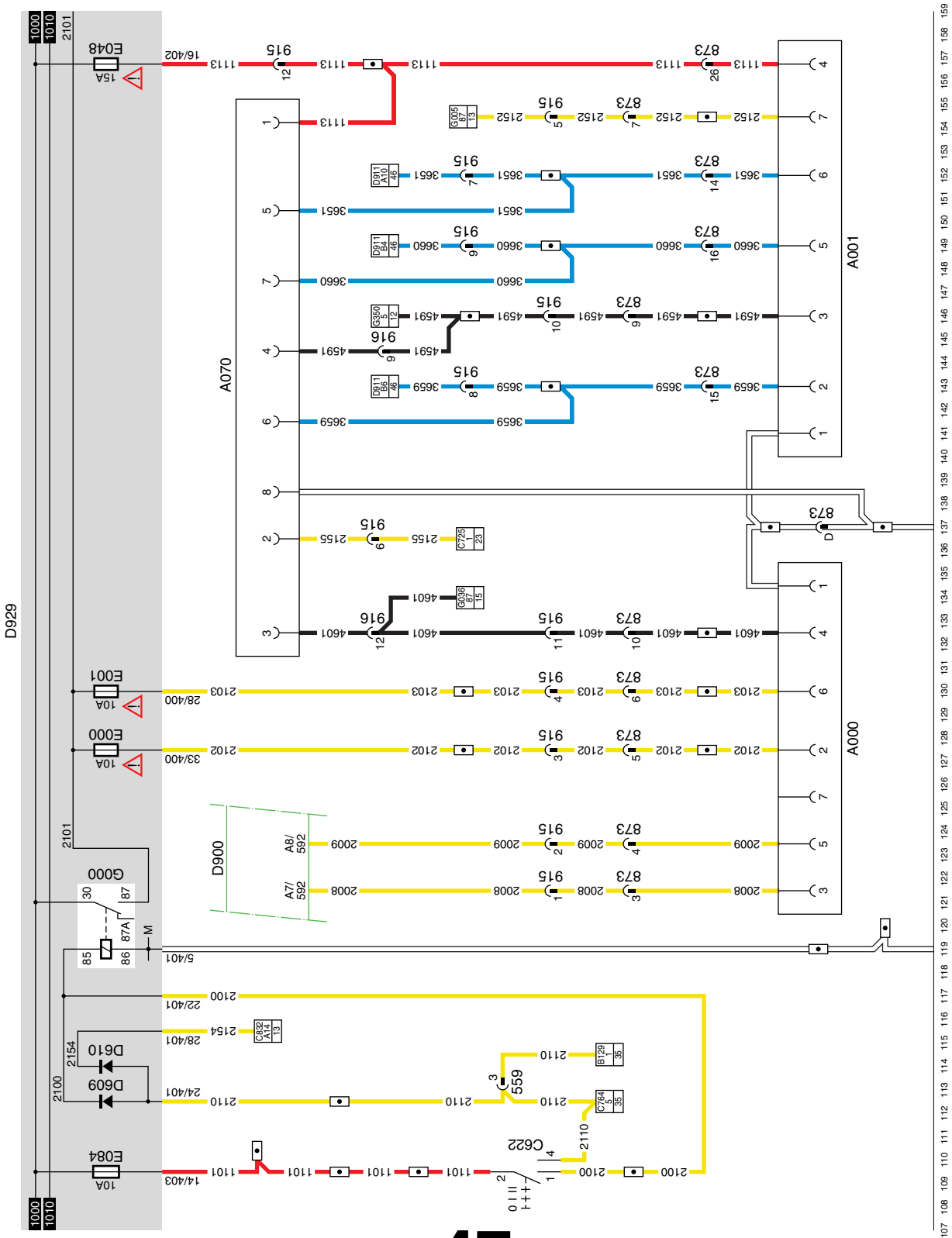



**47** **1358030/35-37**

11

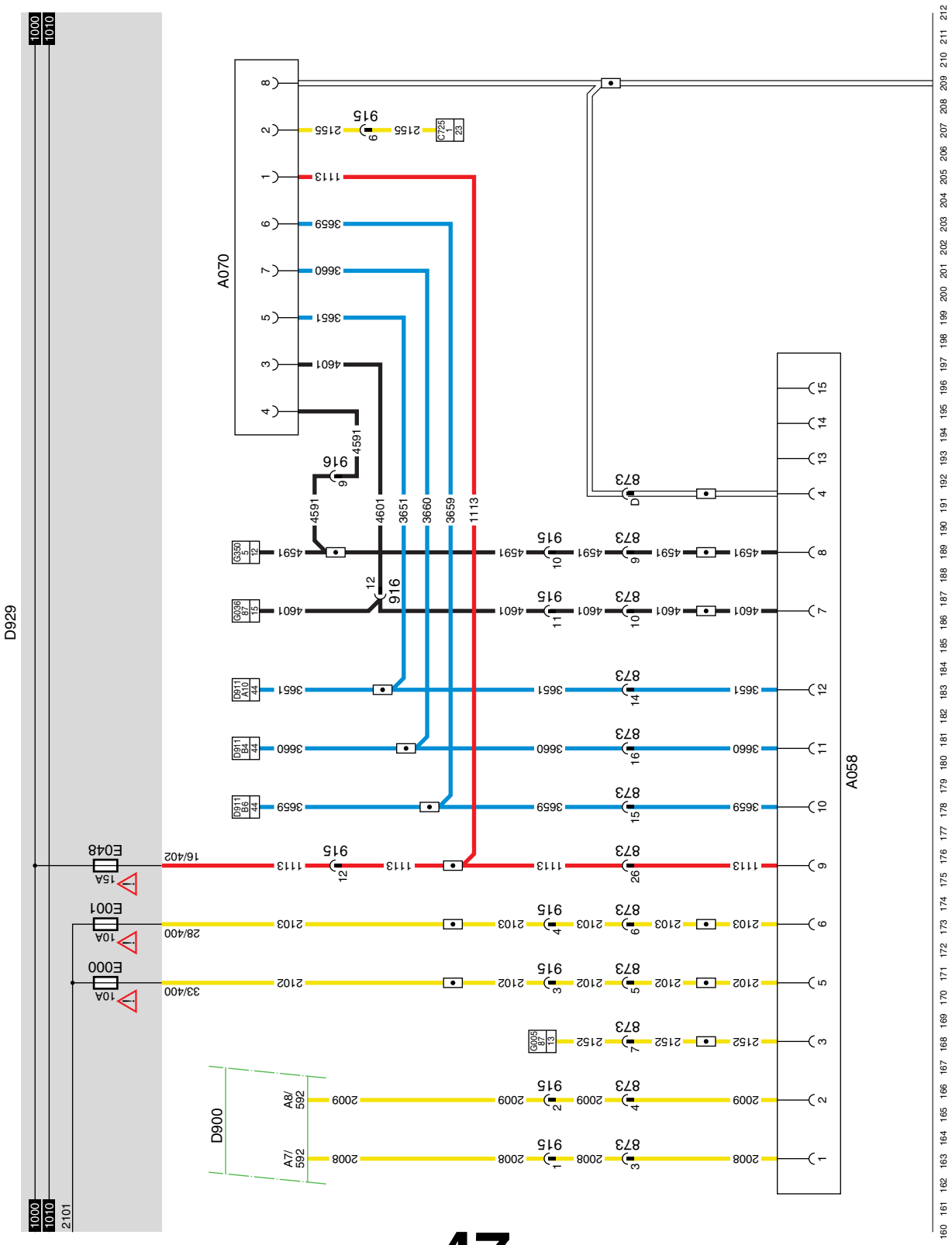


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D929
A070
A001
A000
D900
E048
E001
E000
E084
G000
D610
D609
1358030/35-37
EL001801

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




**47** **1358030/35-37**

EL001802

11



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## 48 PLUG SOCKETS, FT

### DIAGNOSTIC CONNECTOR (A021)

The diagnostic connector is at bottom right on the outside of the central box. This is the connector for the DAVIE connection. After the ignition is switched on, power is supplied to pin 1 via fuse E053. Pin 2 is connected to earth. The remaining pins are for communication with the various systems, and are connected to those systems.

| Pin no. | Wire no. | Colour | Description |
|---|---|---|---|
| 1 | 1229 | red | Power supply for DAVIE |
| 2 | 9107 | white | Earth |
| 3 | 3425 | blue | ABS - ASR-D |
| 4 | | | |
| 5 | 4697 | black | UPEC, ECS-DC3 |
| 6 | | | |
| 7 | 4732 | black | ECAS |
| 8 | 3646 | blue | CDS, ALS-S, EMAS |
| 9 | 4047 | black | VIC |
| 10 | 3065 | blue | AS Tronic |
| 11 | 4883 | black | ZF intarder |
| 12 | 4733 | black | DIP-4 |
| 13 | 3470 | blue | AGS |
| 14 | 3037 | blue | Cab heater |
| 15 | 3700 | yellow | V-CAN-L |
| 16 | 3701 | blue | V-CAN-H |

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**24 V CONNECTOR (2-pin) (A007)**

Pin 1 is connected directly to the power supply through wire 1103, fuse E036.

Pin 2 is connected to earth.

**ABS/EBS DRAWN VEHICLE CONNECTOR (7-pin) (A004)**

Pin 1 is connected directly to power before contact through fuse E043 and wire 1119.

Pin 2 is connected directly to power after contact through fuse E172 and wire 1288.

Pins 3 + 4 are both connected to earth.

Pin 5 is connected to power supply through wire 3428 and the coil of relay G497. It is activated when a semi-trailer fitted with EBS is hitched.

Pin 6 is connected to pin B6 of D880 (EBS) via wire 3559.

Only if the vehicle has EBS.

Pin 7 is connected to pin B3 of D880 (EBS) via wire 3558.

Only if the vehicle has EBS.

**DRAWN VEHICLE CONNECTOR (7-pin) (A000)**

Pin 1 is connected to earth.

Pin 2 switches the left tail light.

Pin 3 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 4 is connected to relay G036 (stop light relay) through wire 4601.

Pin 5 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 6 switches the right tail light.

**DRAWN VEHICLE CONNECTOR (15-pin) (A058)**

Pin 1 is connected through wire 2008 to connection point A7 of the VIC (D900) (direction, left).

Pin 2 is connected through wire 2009 to connection point A8 of the VIC (D900) (direction, right).

Pin 3 is connected via wire 2152 to connection point 87 of relay G005 (relay, rear fog lamp).

Pin 4 is connected to earth.

Pin 5 switches the left tail light via wire 2102.

Pin 6 switches the right tail light via wire 2103.

Pin 7 is connected to connection point 87 of relay G036 (stop light relay) through wire 4601.

Pin 8 is connected to connection point 5 of G350 (reversing light relay) through wire 4591.

Pin 9 is connected to power before contact through wire 1113 and fuse E048.

Pin 10 is connected via wire 3659 to connection point B6 of D911 (ALS-S).

Pin 11 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 12 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 13 is not connected.

Pin 14 is not connected.

Pin 15 is not connected.

**REAR FOG LAMP/REVERSING LAMP CONNECTOR (A001)**

Pin 1 is connected to earth.

Pin 2 is connected via wire 3659 to connection point B6 of ALS-S (D911).

Pin 3 is connected to connection point 5 of G350 (reversing light relay) through wire 4591.

Pin 4 is connected to power before contact through wire 1113 and fuse E048.

Pin 5 is connected via wire 3660 to connection point B4 of D911 (ALS-S).

Pin 6 is connected to connection point A10 of D911 (ALS-S) through wire 3651.

Pin 7 is connected via wire 2152 to connection point 87 of relay G005 (relay, rear fog lamp).

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**PHONE CONNECTOR (A076)**

Pin 1 is connected via wire 1353 to connection B1 (12V) of D895.

Pin 2 is connected via wire 1108 to connection A4 (12V) of D895.

Pin 3 is connected to earth.

**ACCESSORIES CONNECTOR (6-pin) (A027)**

Pin 1 is connected to power before contact through wire 1154 and fuse E142.

Pin 2 is connected to power after contact through wire 1258 and fuse E163.

Pin 3 is connected to connection point 2 of F616 (cab locking sensor) through wire 3412.

Pin 5 is connected to C42 of the VIC (D900) through wire 3157.

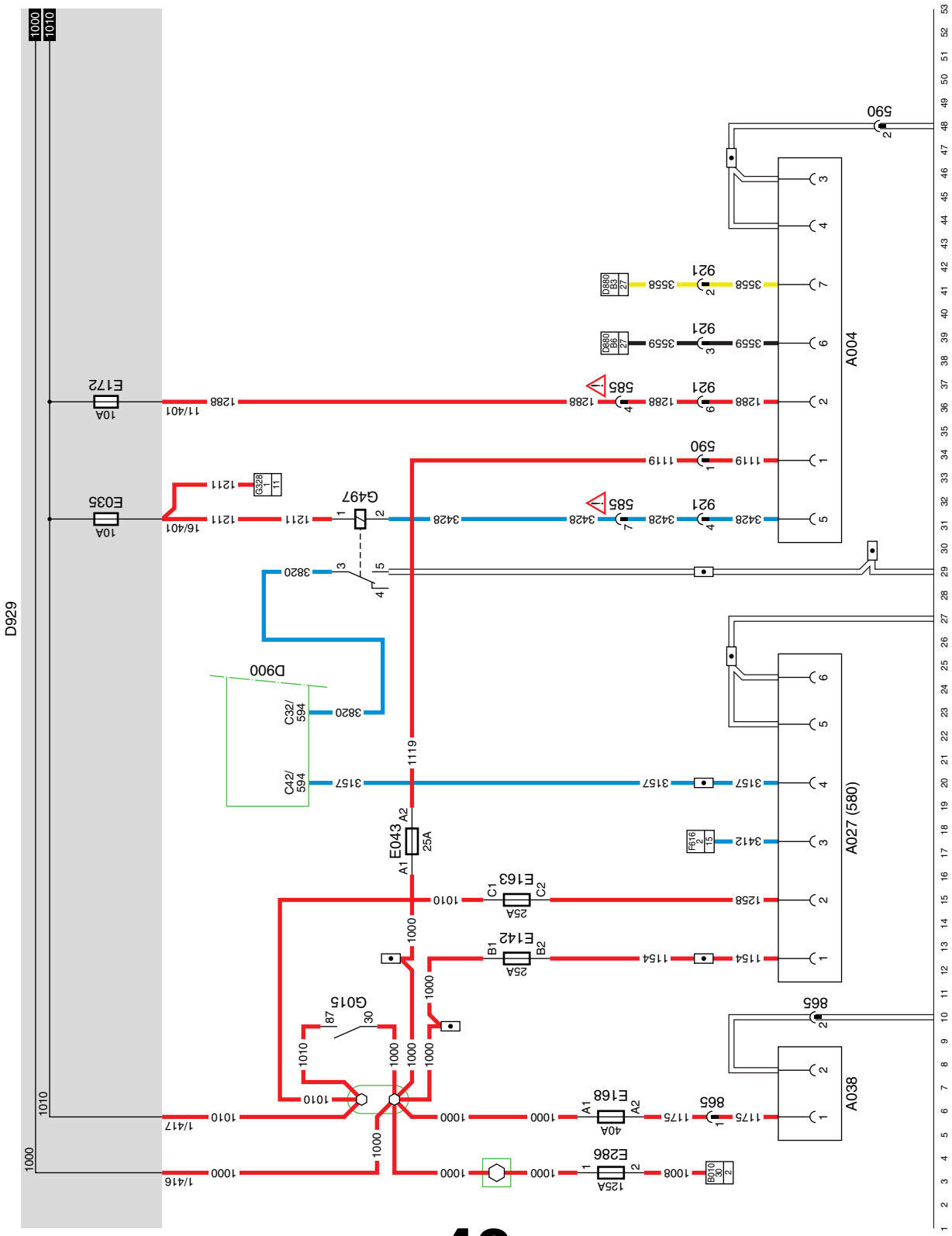
Pin 5 is connected to earth.

Pin 6 is connected to earth.

**VARIANTS**

| Location | |
|---|---|
| 32, 36 | Connector 585 for ABS/ASR-D. Connector 584 for EBS. |
| 59 | Connection to D850 or D880. |
| 61 | Connection to D851 or D802. |
| 82 | D954: only for AS Tronic. |
| 122 -> 156 | A000 and A001. For 2x 7-pin connector. |
| 161 -> 199 | For 1x 15-pin connector. |

11

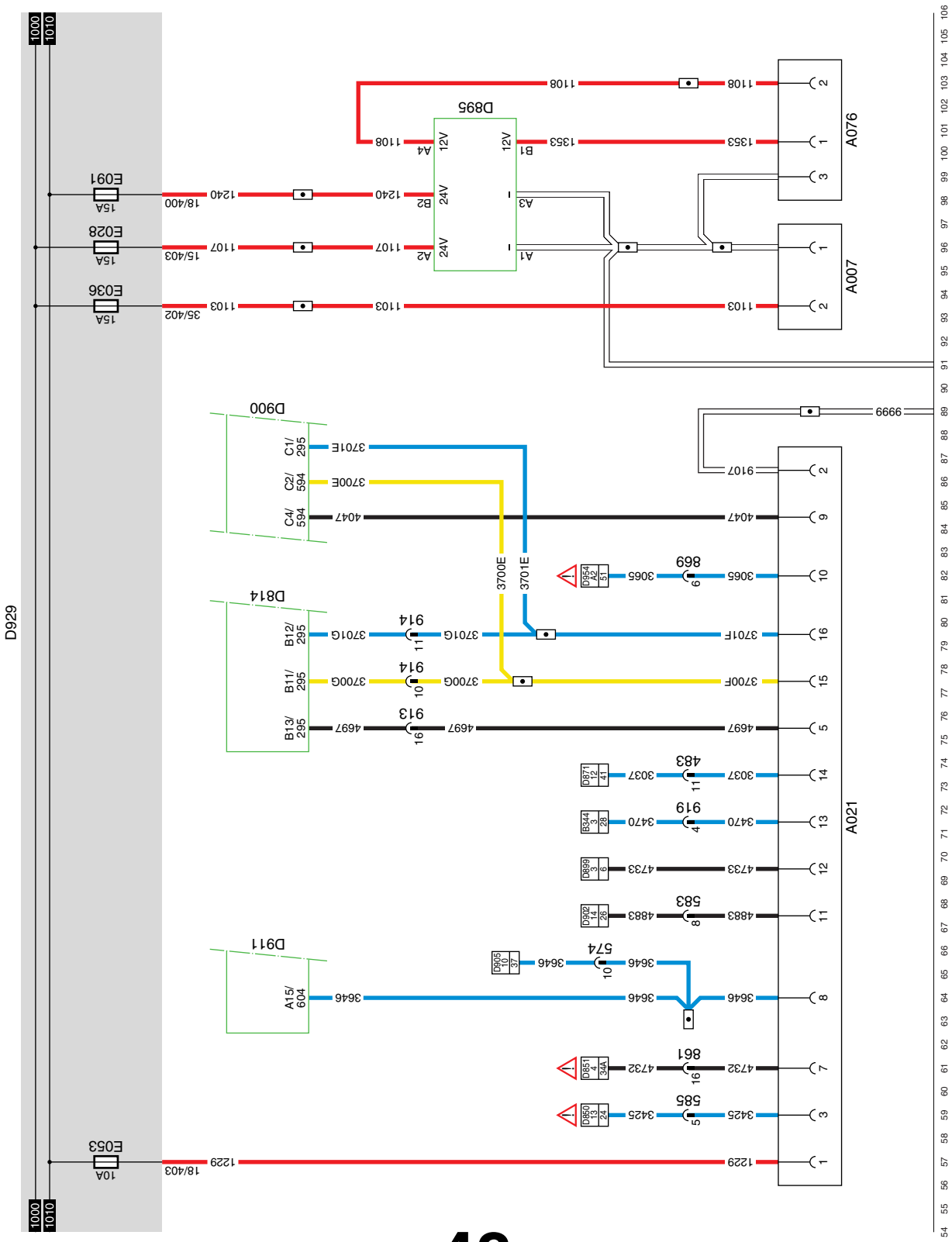



**48** **1358030/35-37**

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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376



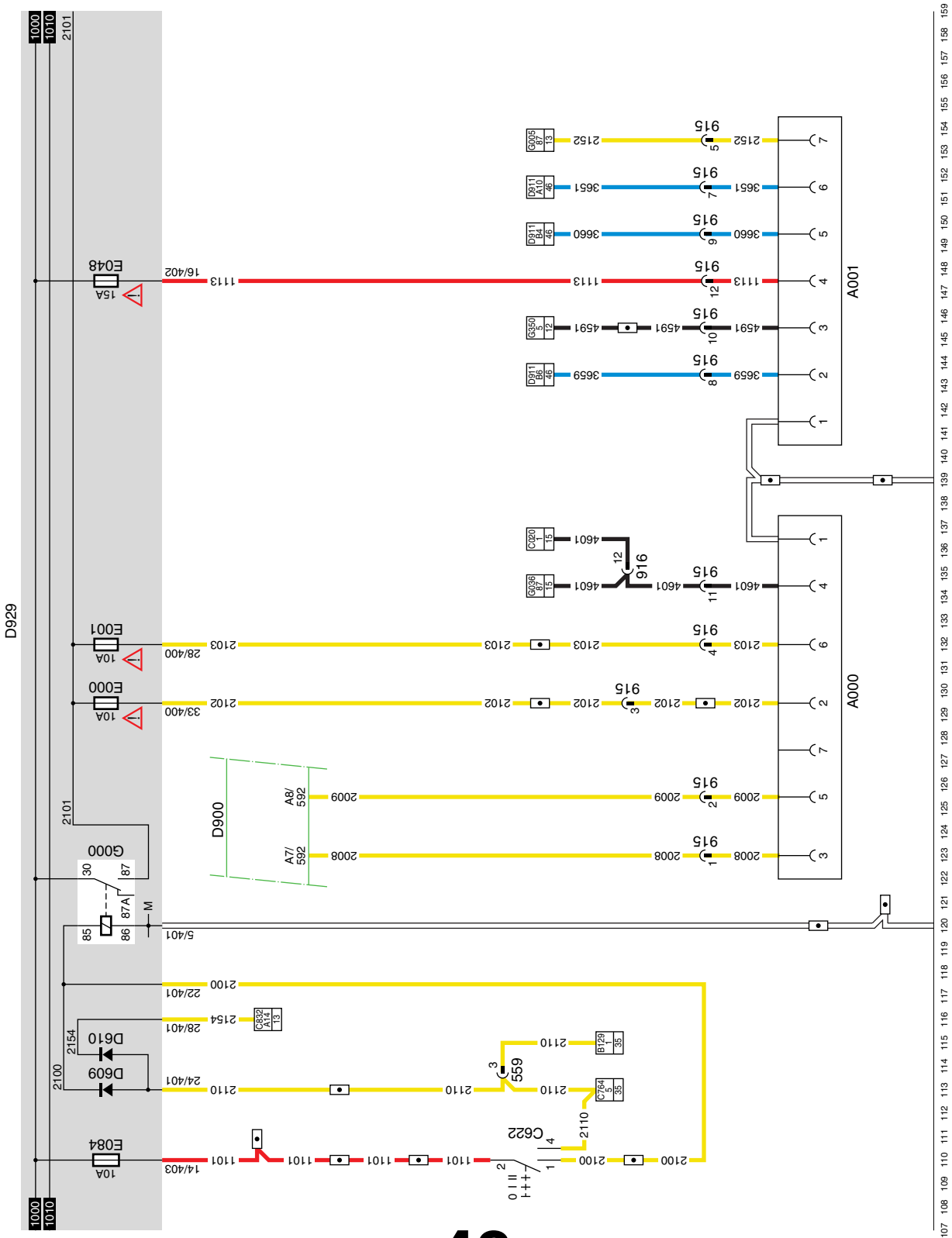

**48** **1358030/35-37**

EL001804

11



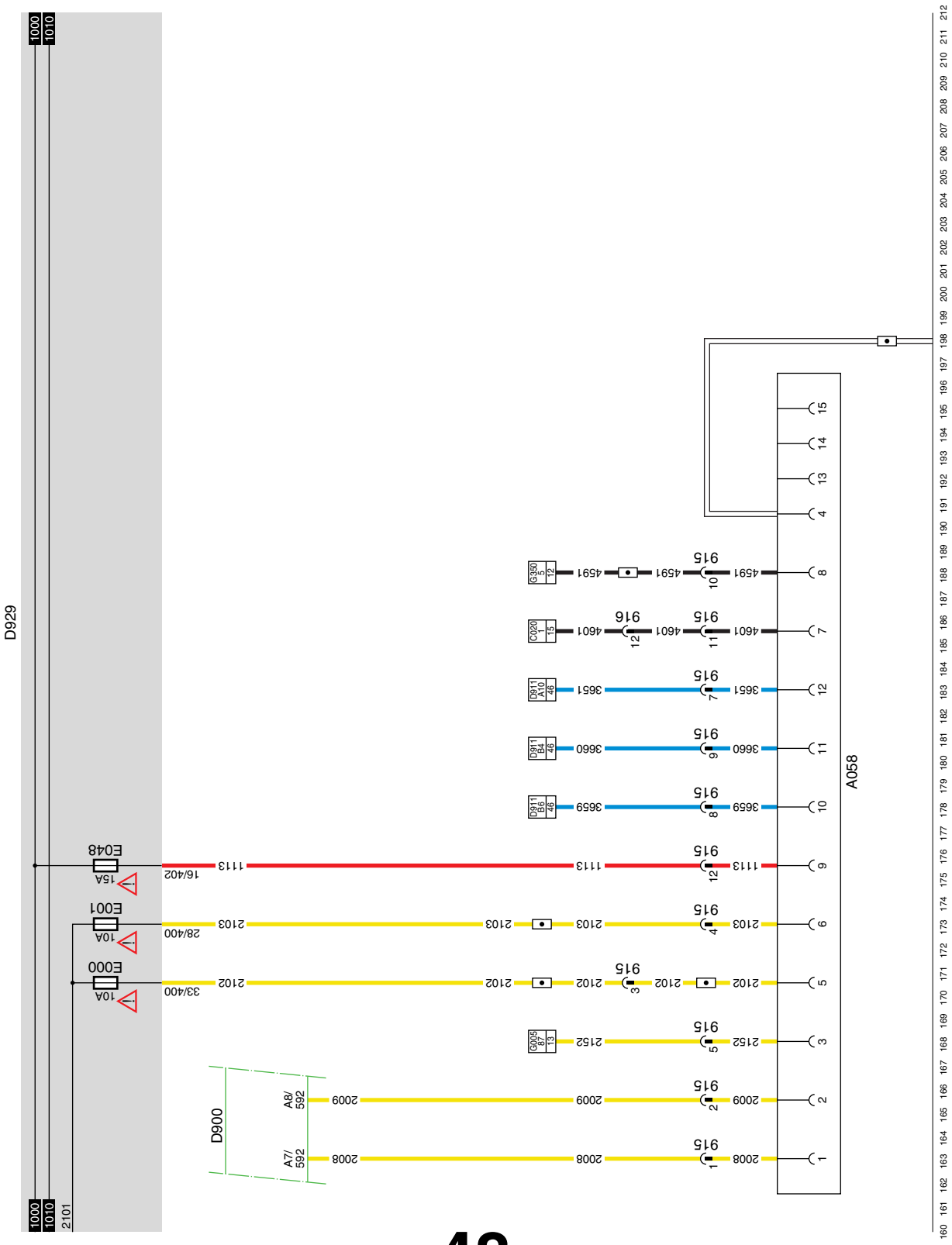
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**48** **1358030/35-37**

Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥0E621376




**48** **1358030/35-37**

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## 53 CAR KIT TELEPHONE

**The following description of the operation and connection is intended as a general guideline only.**

**Also refer to the manufacturer's installation instructions supplied with the radio.**

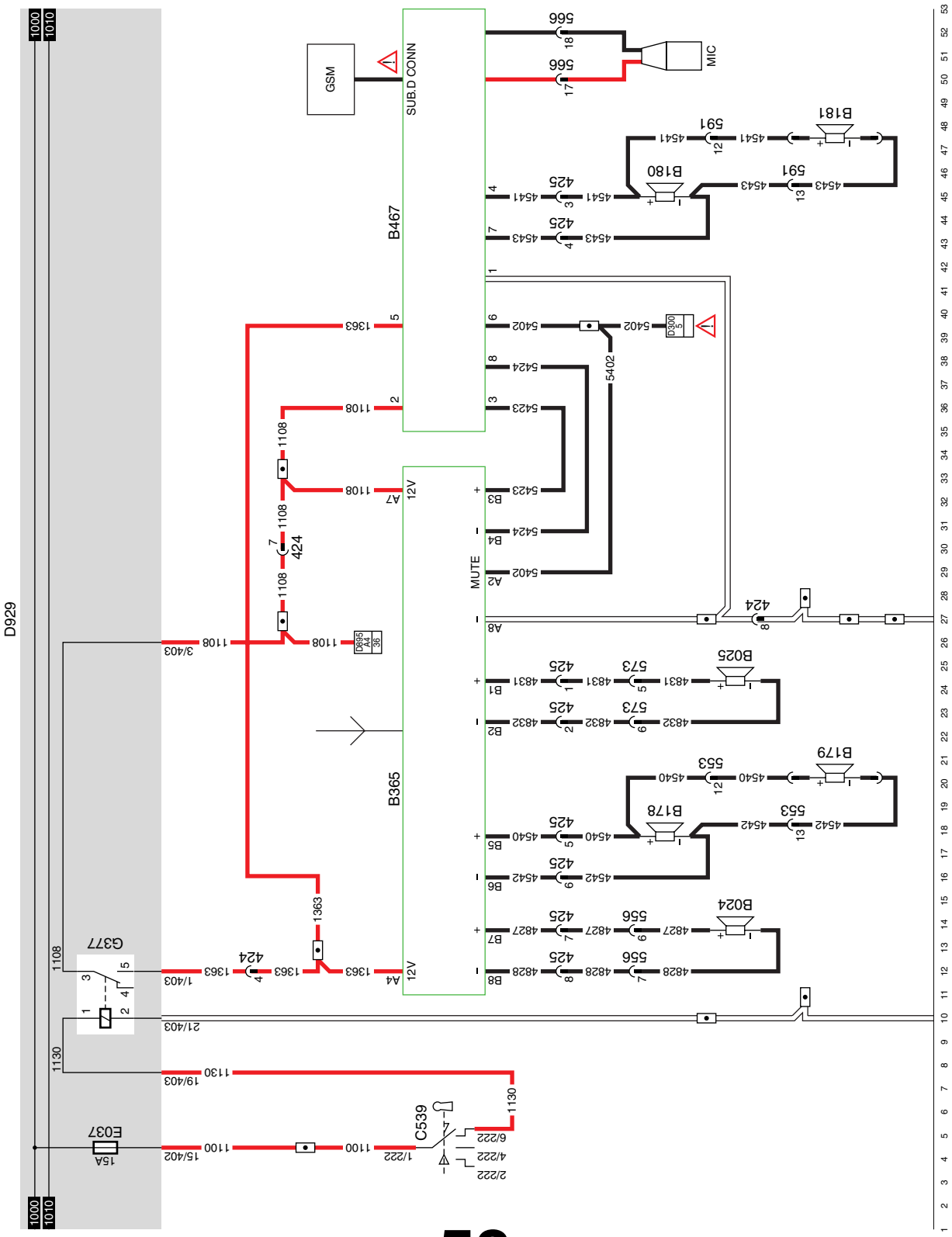
If the accessories/ignition/starter switch (C539) is switched to accessories position, pin 1 is connected to pin 6 (wire 1100 is connected to wire 1130). As a result, a voltage is applied to connection point 1 of relay G377. This relay is activated. There is now a power supply of 12 volts to connection point A7 of the "ISO" connector through wire 1108 and contacts 3-5 of relay G377 and wire 1363.

The radio has an aerial connection and 2 loudspeaker outputs which can be used to connect loudspeakers B024 and B025. Two high-tone and two low-tone speakers (B178, B179 and B180, B181) can also be connected to the radio.

**For more information: see also block 6: Connection of accessories.**

**VARIANTS**

| Location | |
|---|---|
| 20 | Connector 554 contains wire 1363. This wire should be connected to the combi-aerial. |
| 40 | Wire 5402 is a "mute" connection. It should be connected to the "mute" input of the radio. |
| 51 | This wiring harness contains a "sub.D-connector" and therefore has no connector number. |




**53** 1358030/35-37

EL001807

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Changes in the electrical system from chassis number 0E659894

***CF*65/75/85** Serie ≥ 0E621376





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| 2.1 | Circuit diagram 1454219/03 | 2-1 | 200520 |
| 2.2 | Overview of basic codes for circuit diagram 1454219/03 | 2-2 | 200520 |
| **3.** | **ELECTRICAL SYSTEM: OPTIONS AND SPECIAL APPLICATIONS FROM CHASSIS NUMBER 0E678692** | 3-1 | 200520 |
| 3.1 | Circuit diagram 1454219/09 | 3-1 | 200520 |
| 3.2 | Overview of basic codes for circuit diagram 1454219/09 | 3-2 | 200520 |


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# 1. INTRODUCTION

This main group includes the entire electrical system for options and special applications shown in the form of **circuit diagrams**.

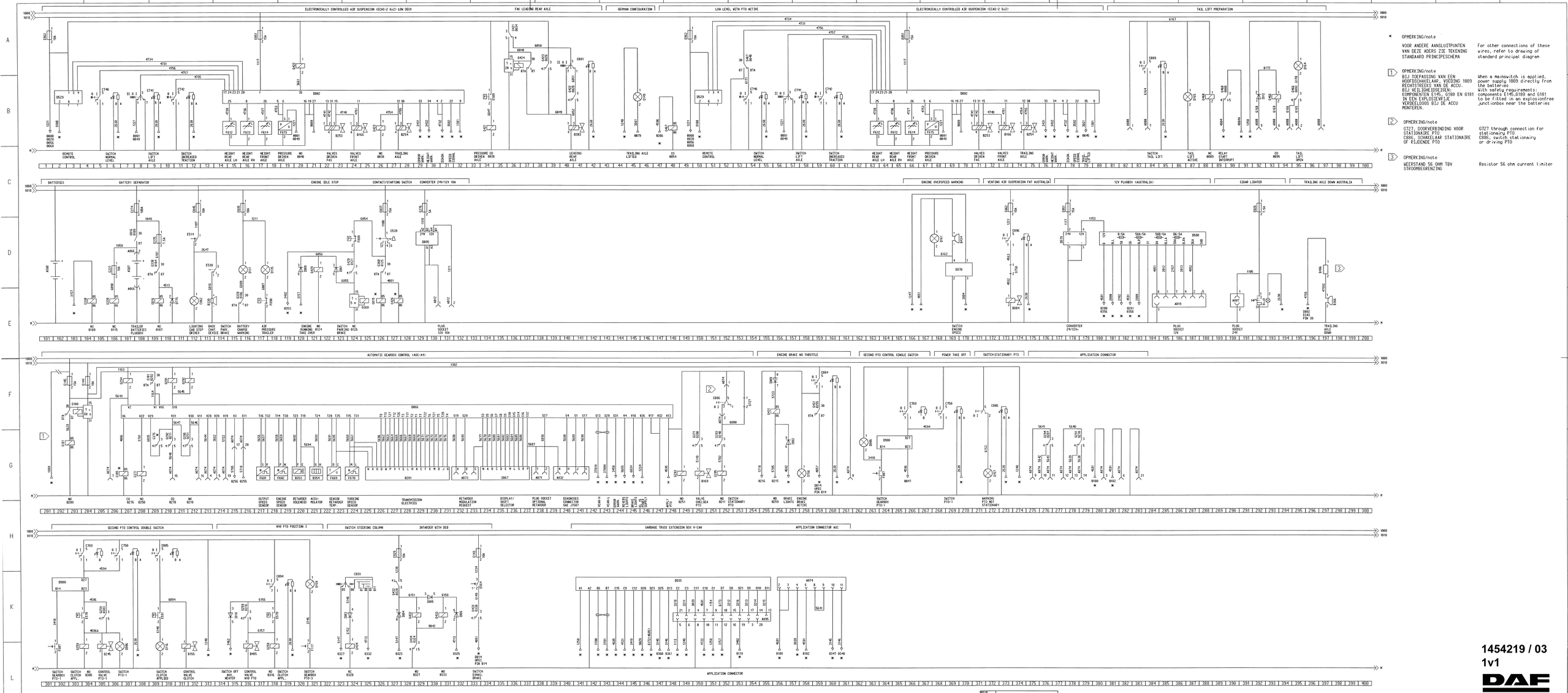
**Circuit diagram**
The circuit diagram contains all information relating to the entire electrical system: options and special applications which can be used in the vehicle, with the exception of the connectors.

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# 2. ELECTRICAL SYSTEM: OPTIONS AND SPECIAL APPLICATIONS FROM CHASSIS NUMBER 0E615715

## 2.1 CIRCUIT DIAGRAM 1454219/03

This page can be used to make your own notes on the circuit diagram.




OPMERKING/note

VOOR ANDERE AANSLUITPUNTEN VAN DEZE ADERS ZIE TEKENING STANDAARD PRINCIPESCHEMA

For other connections of these wires, refer to drawing of standard principal diagram

1 OPMERKING/note

BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1809 RECHTSTREEKS VAN DE ACCU. BIJ VEILIGHEIDSEISEN: KOMPONENTEN E145, G180 EN G181 IN EEN EXPLOSIEVRIJE VERBEELDDOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1809 directly from the batteries
With safety requirements: components E145,G180 and G181 to be fitted in an explosionfree junctionbox near the batteries

2 OPMERKING/note

G727, DOORVERBINDING VOOR STATIONAIRE PTO
C886, SCHAKELAAR STATIONAIRE OF RIJDENDE PTO

G727 through connection for stationairy PTO
C886, switch stationairy or driving PTO

3 OPMERKING/note

WEERSTAND 56 OHM TBV STROOMBEGRENZING

Resistor 56 ohm current liniter

**1454219 / 03**
**1v1**

DAF

## 2.2 OVERVIEW OF BASIC CODES FOR CIRCUIT DIAGRAM 1454219/03

| Basic code number | Description | Number on search bar |
|---|---|---|
| A007 | 24V socket (2-pin) | 190 |
| A012 | 12V socket, 2-pin | 130, 131 |
| A019 | 12V socket (7-pin) | 186 |
| A032 | AGC automatic gearbox diagnostics socket | 239 |
| A066 | Semi-trailer socket (2-pin) | 107, 108 |
| A071 | Automatic gearbox socket, intarder functions | 238 |
| A073 | Automatic gearbox socket, operation | 232 |
| A074 | Automatic gearbox socket, superstructure | 206, 210, 212, 213, 214, 215, 216, 252, 261, 275, 276, 277, 278, 279, 280, 282, 283, 359 |
| A088 | Superstructure socket, tail lift (21-pin) | 82, 84, 92, 93, 94, 95, 97 |
| A095 | Application connector | 355 |
| A500 | Batteries (2x) | 101 |
| A507 | Batteries for superstructure/radio/tail lift (2x) | 107 |
| B030 | Cigar lighter, driver's side | 192 |
| B084 | Air suspension bleed valve | 174 |
| B155 | Operation valve, PTO, 2nd | 312 |
| B166 | ECAS valve, front axle | 24, 73 |
| B169 | PTO operation valve, Chelsea | 250 |
| B201 | Internal electrical components for AGC automatic gearbox | 228 |
| B245 | PTO operation valve | 305 |
| B253 | ECAS valve, driven axle left/right, air supply | 23, 71 |
| B254 | ECAS valve, steered leading rear axle/trailing axle left/right, lifting bellows | 28, 75 |
| B330 | Buzzer indicating door open, handbrake not in use | 114 |
| B353 | Automatic gearbox control solenoid, retarder | 220 |
| B354 | Accumulator, AGC-A4 automatic gearbox | 221 |



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| Basic code number | Description | Number on search bar |
|---|---|---|
| B366 | Buzzer indicating trailing axle lowering | 198 |
| B383 | ECAS valve, FAK/FTM leading rear axle | 41 |
| B405 | Operation valve, PTO, 3rd | 316 |
| B406 | Resistor, trailing axle lowering | 197 |
| B434 | Buzzer indicating engine speed too high | 170 |
| C062 | Cab stepwell lighting, driver's side | 113 |
| C539 | Accessories/ignition/starter switch | 127 |
| C740 | ECAS switch, normal level | 5, 54 |
| C741 | ECAS switch, axle lifting | 9, 57 |
| C742 | Traction assistance switch | 11, 60 |
| C750 | PTO operation switch | 269, 307 |
| C769 | PTO operation switch | 266, 304 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 324 |
| C881 | ECAS switch, lifting | 41 |
| C884 | Engine brake switch, retarder function | 259 |
| C885 | Clutch operation switch | 310 |
| C886 | PTO switch, idling | 251, 272 |
| C889 | Tail lift switch | 84 |
| C894 | Operation switch, PTO, 3rd | 318 |
| C896 | Air suspension bleed switch | 174 |
| D086 | PTO warning light (orange) | 263, 307 |
| D116 | Warning lamp (red) for second operation, PTO on | 310 |
| D131 | Warning lamp (red), semi-trailer connection | 116 |
| D135 | Warning lamp, semi-trailer air pressure | 118 |
| D149 | Warning lamp, lifting axle lifted | 46 |
| D156 | Engine brake warning lamp, retarder function | 258 |
| D157 | Warning lamp, idling PTO | 272 |
| D159 | Warning lamp, PTO, 3rd | 321 |
| D161 | Warning lamp indicating engine speed too high | 168 |
| D164 | Warning lamp, tail lift open | 96 |
| D165 | Warning lamp, tail lift operated | 87 |
| D529 | Electronic unit, ECAS remote control | 2, 50 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| D579 | Electronic unit for converter, 24/12 V (15 A) | 177 |
| D580 | Electronic unit for voltage reduction, 24/12V | 187 |
| D775 | Diode, battery partition, semi-trailer | 111 |
| D802 | Electronic unit, ECAS-2 (6x2) | 21, 70 |
| D866 | Electronic unit, AGC-A4 automatic gearbox control | 228 |
| D867 | Selector for AGC automatic gearbox | 235 |
| D895 | Electronic unit, converter (10 A) with power supply for radio memory | 129 |
| D900 | VIC electronic unit | 264, 302 |
| D935 | CAN extension box CXB | 348 |
| D970 | Electronic unit for engine speed switch | 169 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12 V converter with power supply for radio memory | 192 |
| E029 | Fuse, intarders/engine brake | 327 |
| E035 | Fuse, instruments and warning lamps/parking brake switch/power supply after contact | 115 |
| E037 | Fuse, ignition switch | 126 |
| E045 | Fuse, interior lighting | 112 |
| E051 | Fuse, ECAS/EMAS | 17, 65, 177 |
| E062 | Fuse, ECAS/EMAS mechanical lifting gear | 1, 49, 173 |
| E143 | Fuse, UPEC/tachograph/alarm system/immobiliser/ABS-D/ABS/ASR-E | 333 |
| E144 | Fuse, AGC-A4 automatic gearbox | 204 |
| E145 | Fuse, AGC-A4 automatic gearbox | 202 |
| E221 | Fuse for superstructure | 106 |
| E274 | Main fuse, battery partition | 107 |
| E275 | Fuse, battery partition | 109 |
| E276 | Fuse, converter | 129 |
| E514 | Operating switch for stepwell/interior lighting, driver's side door switch | 112 |
| E564 | Operating switch, engine brake | 334 |
| E570 | Proximity switch, clutch-PTO N10 | 304, 318 |

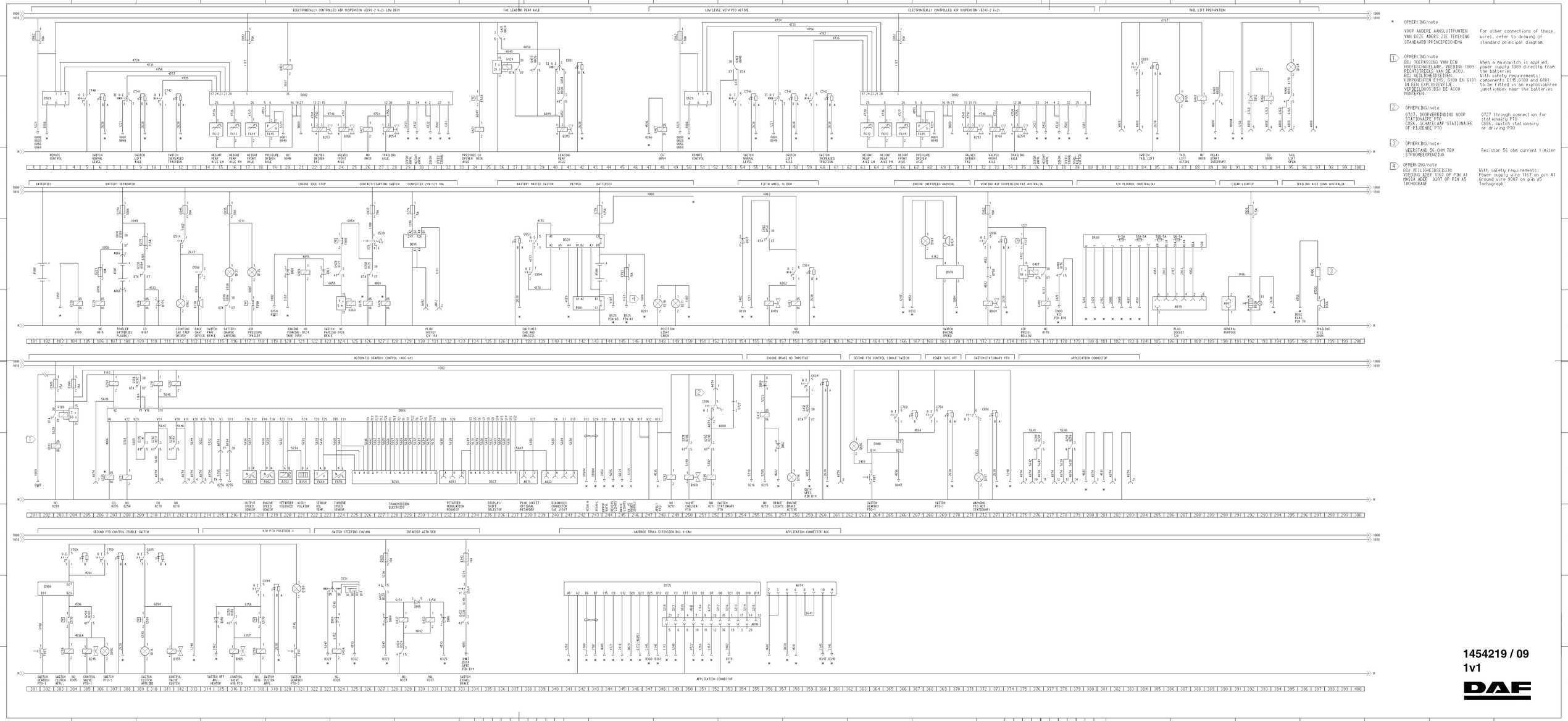
| Basic code number | Description | Number on search bar |
|---|---|---|
| E589 | ECAS operating switch, driven axle | 35 |
| E591 | Operating switch, clutch | 310 |
| E598 | Operating switch, buzzer | 113 |
| F000 | Control switch for parking brake | 124 |
| F087 | Control switch, gearbox PTO | 264, 302 |
| F090 | Control switch for ABS/parking brake/drawn vehicle | 118 |
| F117 | Control switch, PTO, 3rd | 321 |
| F601 | Sensor, output shaft speed, AGC automatic gearbox | 217 |
| F602 | Sensor, input shaft speed, AGC automatic gearbox | 218 |
| F612 | Height sensor, ECAS, rear axle, left | 14, 63 |
| F613 | Height sensor, ECAS, rear axle, right | 16, 64 |
| F614 | Height sensor, ECAS, front axle | 17, 66 |
| F615 | Pressure sensor, ECAS, driven axle, left/right | 19, 67 |
| F669 | Retarder temperature sensor - AGC-A4 automatic gearbox | 222 |
| F670 | Sensor, turbine speed, AGC automatic gearbox AT1000/2000 | 224 |
| G015 | Relay, contact | 126 |
| G016 | Partition relay | 107, 109 |
| G180 | Time relay power supply, Allison, 12V | 203 |
| G181 | Takeover relay power supply, Allison, 12V | 202, 209 |
| G185 | Starting circuit interrupter relay | 206 |
| G259 | PTO operation takeover relay | 303, 305, 316, 318 |
| G291 | Relay, AGC-A4 automatic gearbox | 210, 278 |
| G292 | Relay, AGC-A4 automatic gearbox | 210, 211 |
| G293 | Relay, AGC-A4 automatic gearbox | 248, 251 |
| G294 | Relay, AGC-A4 automatic gearbox | 207, 276 |
| G295 | Relay, AGC-A4 automatic gearbox | 211, 251 |
| G338 | Relay, battery partition | 104, 109 |
| G339 | Relay, battery partition warning lamp | 106, 115 |
| G360 | Relay, engine stop | 125, 126 |
| G371 | Relay, automatic gearbox, superstructure | 208, 250 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| G375 | Relay, stop light for AGC-A4 automatic gearbox with retarder | 209 |
| G421 | Relay, ECAS, leading rear axle, lowering | 34, 35 |
| G422 | Relay, ECAS, leading rear axle, lifting | 20, 40 |
| G423 | Relay, ECAS, leading rear axle lowering before trailing axle is lowered | 26, 38 |
| G424 | Time relay, ECAS, leading rear axle, lowering | 37 |
| G426 | Relay, contact | 127 |
| G429 | Relay, parking brake | 121, 124 |
| G431 | Engine brake relay, retarder function | 255, 259 |
| G432 | Intarder + DEB relay | 327, 328 |
| G433 | DEB relay disengaged | 330, 333 |
| G434 | Intarder + DEB relay | 324, 328 |
| G466 | Relay, tail lift open | 93, 95 |
| G467 | Relay, ECAS, lowering if PTO active | 48, 54 |
| G468 | Relay for interrupting starting circuit during use of tail lift | 88, 89 |
| G727 | Connection for PTO | 254 |
| G758 | Air suspension bleed through-connection | 174 |
| I000 | Diode to prevent “engine running” takeover relay feedback | 120 |
| I001 | Diode to prevent “engine stop” takeover relay feedback | 123 |
| I002 | Diode to prevent stop-lights feedback | 257 |
| I003 | Diode to prevent cruise control/engine speed control/retarder stalk switch feedback | 323 |
| I004 | Diode to prevent cruise control/engine speed control/retarder stalk switch feedback | 328 |
| I005 | Diode to prevent intarder/DEB relay feedback | 330 |
| I006 | Diode to prevent cruise control/engine speed control/retarder stalk switch feedback | 332 |
| I009 | Diode to prevent stop-lights feedback | 255 |
| I010 | Diode to prevent feedback, PTO, 3rd | 315 |
| I012 | Polarity diode, tail lift open indication | 92 |

# 3. ELECTRICAL SYSTEM: OPTIONS AND SPECIAL APPLICATIONS FROM CHASSIS NUMBER 0E678692

## 3.1 CIRCUIT DIAGRAM 1454219/09

This page can be used to make your own notes on the circuit diagram.




* OPMERKING/note

VOOR ANDERE AANSLUITPUNTEN VAN DEZE ADERS ZIE TEKENING STANDAARD PRINCIPESCHEMA

For other connections of these wires, refer to drawing of standard principal diagram

1 OPMERKING/note

BIJ TOEPASSING VAN EEN HOOFDSCHAKELAAR, VOEDING 1069 RECHTSTREEKS VAN DE ACCU.
BIJ VEILIGHEIDSEISEN: KOMPONENTEN E145, G180 EN G181 IN EEN EXPLOSIEVRIJE VERKEERSDOOS BIJ DE ACCU MONTEREN.

When a mainswitch is applied, power supply 1069 directly from the batteries.
With safety requirements: components E145, G180 and G181 to be fitted in an explosionfree junctionbox near the batteries

2 OPMERKING/note

C727 DOORVERBINDING VOOR STATIONAIRE PTO
C896 SCHAKELAAR STATIONAIRE OF RIJDENDE PTO

G727 through connection for stationairy PTO
C896 switch stationairy or driving PTO

3 OPMERKING/note

WEERSTAND 56 OHM TBV STROOMBEGRENZING

Resistor 56 ohm current limiter

4 OPMERKING/note

BIJ VEILIGHEIDSEISEN: VOEDING ADER 1167 OP PIN A1
MASSA ADER 9307 OP PIN A5 TACHOGRAAF

With safety requirements: Power supply wire 1167 on pin A1
Ground wire 9307 on pin A5 Tachograph

1454219 / 09
1v1

DAF

## 3.2 OVERVIEW OF BASIC CODES FOR CIRCUIT DIAGRAM 1454219/09

| Basic code number | Description | Number on search bar |
|---|---|---|
| A007 | Connector, 24 V (2-pin) | 190 |
| A012 | Connector, 24 V (2-pin) | 130, 131 |
| A019 | Connector, 12 V (7-pin) | 186 |
| A032 | AGC diagnostic connector | 239 |
| A066 | Application connector, engine speed control | 107, 108 |
| A071 | Automatic gearbox connector, intarder functions | 238 |
| A073 | Automatic gearbox connector, operation | 232 |
| A074 | Automatic gearbox connector, superstructure | 206, 212, 213, 214, 215, 216, 252, 261, 275, 276, 277, 278, 279, 280, 282, 283, 358 |
| A088 | Superstructure connector, tail lift (7-pin) | 82, 84, 92, 93, 94, 95, 97 |
| A095 | Refuse collection vehicle superstructure application connector | 355 |
| A500 | Batteries (2x) | 101, 143 |
| A507 | Batteries for superstructure/radio/tail lift (2x) | 107 |
| B030 | Cigar lighter, driver's side | 192 |
| B084 | Air suspension valve, bleeding | 173 |
| B155 | 2nd PTO control valve | 312 |
| B166 | ECAS valve , front axle | 24, 73 |
| B169 | PTO control valve, Chelsea | 250 |
| B201 | Internal electrical components for automatic gearbox | 228 |
| B245 | PTO 1 control valve | 305 |
| B253 | ECAS valve, driven axle, air supply | 23, 71 |
| B254 | ECAS valve, steered leading rear axle/trailing axle, lifting bellows | 28, 75 |
| B330 | Buzzer indicating door open, handbrake not in use | 113 |
| B353 | Automatic gearbox control solenoid, retarder | 220 |
| B354 | Automatic gearbox accumulator, retarder | 221 |
| B366 | Buzzer indicating trailing axle lowering | 198 |
| B383 | ECAS valve, FAK/FTM leading rear axle | 41 |

| Basic code number | Description | Number on search bar |
|---|---|---|
| B405 | 3rd PTO control valve | 316 |
| B406 | Resistor, trailing axle lowering | 197 |
| B434 | Buzzer indicating engine speed too high | 170 |
| B478 | Fifth wheel guide valve | 156 |
| C010 | Marker lights, left | 148 |
| C011 | Marker lights, right | 150 |
| C062 | Stepwell lighting, left | 113 |
| C539 | Accessories / ignition / starter switch | 127 |
| C740 | ECAS switch, normal level | 5, 54 |
| C741 | ECAS switch, axle lifting | 9, 57 |
| C742 | Traction assistance switch | 11, 60 |
| C750 | PTO 1 switch | 269, 307 |
| C769 | PTO operation switch | 266, 304 |
| C831 | Cruise control/engine speed control/retarder stalk switch | 324 |
| C853 | Cab main switch | 138 |
| C854 | Chassis main switch | 139 |
| C881 | ECAS switch, lifting axle | 41 |
| C884 | Engine brake switch, retarder function | 259 |
| C885 | Clutch operation switch | 310 |
| C886 | Idling PTO switch | 251, 272 |
| C889 | Tail lift switch | 84 |
| C894 | 3rd PTO switch | 318 |
| C896 | Airglide air suspension bleed switch | 173 |
| C914 | Fifth wheel guide switch | 159 |
| D086 | PTO warning light (orange) | 263, 307 |
| D116 | Warning lamp (red) for second operation, PTO on | 310 |
| D131 | Warning lamp (red), semi-trailer connection | 116 |
| D135 | Warning lamp, semi-trailer air pressure | 118 |
| D156 | Engine brake warning lamp, retarder function | 258 |
| D157 | Idling PTO warning lamp | 272 |
| D159 | 3rd PTO warning lamp | 321 |
| D161 | Warning lamp indicating engine speed too high | 168 |

| Basic code number | Description | Number on search bar |
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| D529 | Remote control system, ECAS | 2, 50 |
| D580 | Electronic unit, 24/12V converter, with power supply for radio memory | 180 |
| D775 | Diode, battery partition, semi-trailer | 111 |
| D802 | Electronic unit, ECAS-2 | 21, 70 |
| D866 | Electronic unit, AGC-A4 automatic gearbox control | 228 |
| D867 | Automatic gearbox selector | 235 |
| D895 | Electronic unit, converter (10 A) with power supply for radio memory | 129 |
| D900 | VIC electronic unit | 264, 302 |
| D935 | CAN extension box CXB | 348 |
| D970 | Electronic unit for engine speed switch | 169 |
| E026 | Fuse, cigar lighter/door switches/electronic unit, 24/12 V converter with power supply for radio memory | 192 |
| E029 | Fuse, intarder/engine brake | 327 |
| E035 | Fuse, instruments and warning lamps/parking brake switch/power supply after contact | 115 |
| E037 | Fuse, ignition switch | 126 |
| E045 | Fuse, interior lighting | 112 |
| E051 | Fuse, ECAS/EMAS | 17, 65 |
| E062 | Fuse, ECAS/EMAS mechanical lifting gear | 1, 49, 172 |
| E143 | Fuse, UPEC/tachograph/alarm system/immobiliser/ABS-D/ABS/ASR-E | 333 |
| E144 | Fuse, AGC-A automatic gearbox | 204 |
| E145 | Fuse, AGC-A automatic gearbox | 202 |
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| E275 | Fuse, battery partition | 109 |
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| Basic code number | Description | Number on search bar |
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| G181 | Takeover relay, automatic gearbox | 202, 209 |
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| G259 | PTO operation takeover relay | 303, 305, 316, 318 |
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| G292 | Relay, automatic gearbox | 210, 211 |
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| Basic code number | Description | Number on search bar |
|---|---|---|
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| I000 | Diode, “engine running” takeover relay | 120 |
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| I003 | Diode, cruise control/engine speed control/retarder stalk switch | 323 |
| I004 | Diode, cruise control/engine speed control/retarder stalk switch | 328 |
| I005 | Diode, intarder/DEB relay | 330 |

| Basic code number | Description | Number on search bar |
|---|---|---|
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| I009 | Diode, stop lights | 255 |
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| I037 | Diode, parking brake | 154 |
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