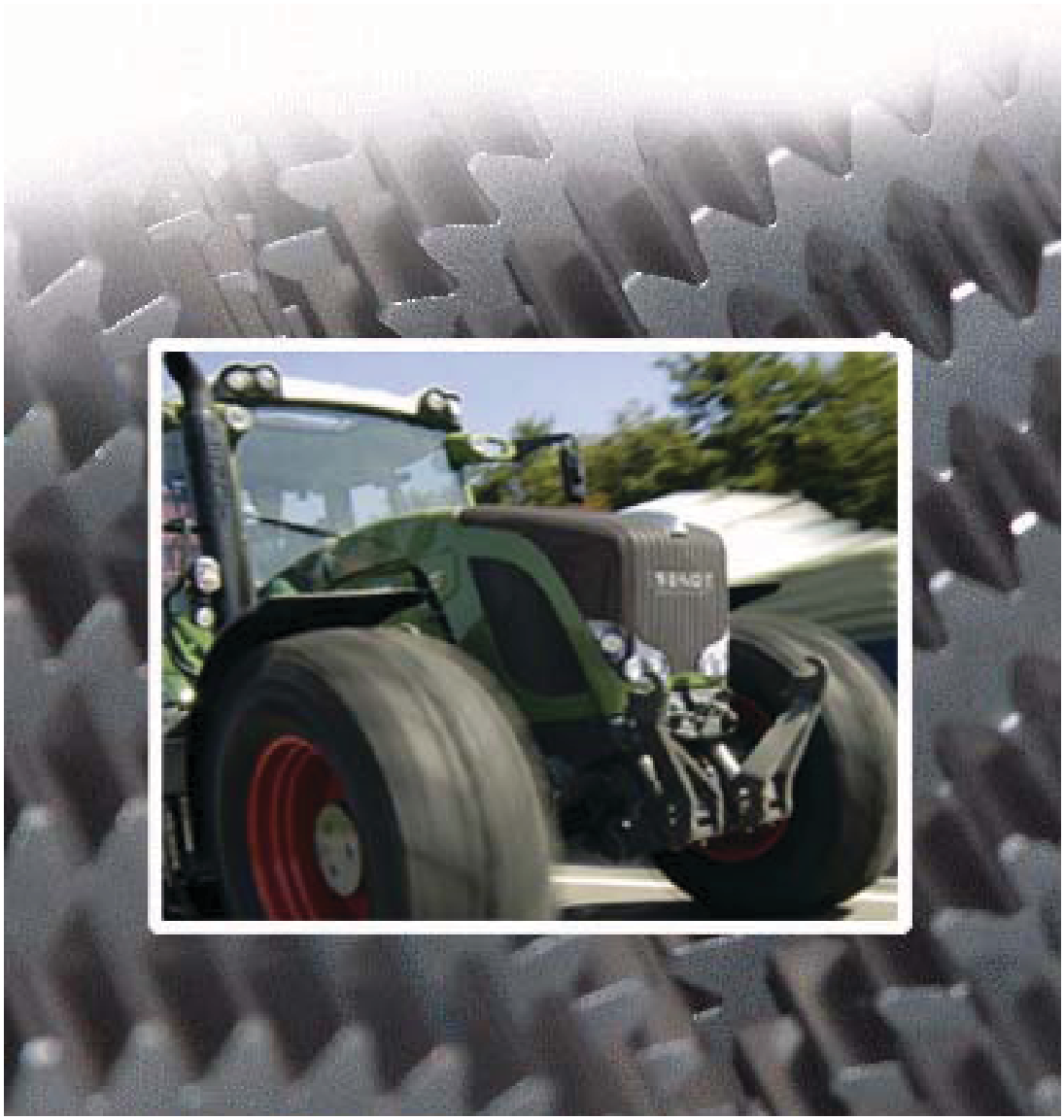
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# Workshop Service Manual

# FENDT 900 Vario - COM III

*919 .. 0101-1000*
*919 .. 1001-*
*922 .. 0101-1000*
*922 .. 1001-*
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*934 .. 1001-*



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English

FENDT

## Volume 4

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All relevant accident prevention regulations and all generally accepted safety, health and road traffic regulations must be strictly observed. The manufacturer does not accept liability for damage resulting from unauthorised modifications.

Changes and additions reserved**!**

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# FENDT 900 Vario - COM III


## Unkt l d 0

0000 Overall system/tractor
1005 Overall system/transmission
1010 Transmission/differential
1015 Transmission/axle drive
1050 Transmission/housing
1070 Transmission / Brake system
1080 Transmission/drive train
1200 Transmission/front PTO
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1320 Transmission/front wheel drive
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5030 Vehicle layout/operator's seat
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8800 Overall system/compressed air system

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9000 Overall system/electrical system
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## Unkt l d 3

**9410 Hydraulic pump installation/LS pump**
**9430 Hydraulic pump installation/steering pump**
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# 9410

Hydraulic pump installation/LS pump

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# 9410 Hydraulic pump installation/LS pump

G Repair . . . . . .5

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# G Repair

1 Removing the LS pump . . . . . 7
2 Installing the LS pump . . . . . 13

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# 1 Removing the LS pump

**Preliminary work:**

- Drain fuel
- Remove battery
- Remove fuel tank, right
- Remove fuel hand pump and hydraulic hand pump

Drain hydraulic oil.



*Fig. 1.* I001690

Loosen tank plate bolts and remove right tank plate.



*Fig. 2.* I001707

Remove cable clip.



*Fig. 3.* I001688

https://truckmanualshub.com/

Loosen earth cable on engine.



*Fig. 4.* I001692

Pull earth cable through to bracket.



*Fig. 5.* I001724

Remove screws of bracket.

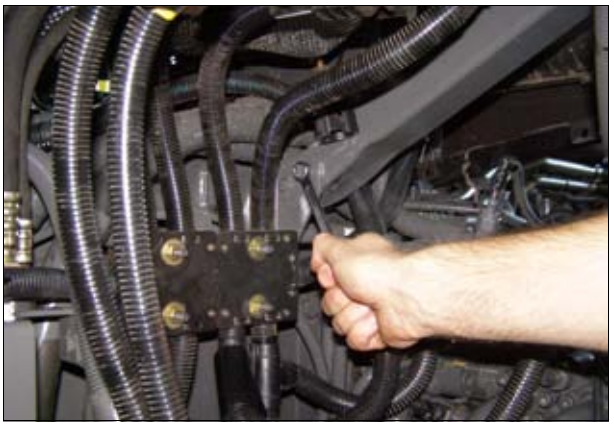


*Fig. 6.* I001691

Fix cable bracket and cable in place so that cover is easily accessible.

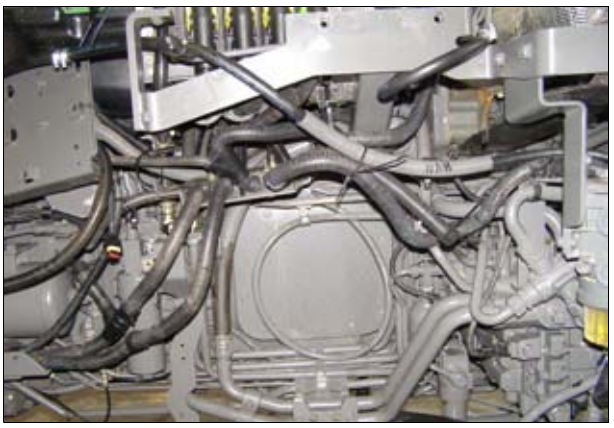


*Fig. 7.* I001693

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Separate LS line from housing and close lines, preventing dirt from entering.



*Fig. 8.* I001689

Loosen bolts of cover.



*Fig. 9.* I001694

Remove cover of hydraulic oil tank.



*Fig. 10.* I001695

Remove silencer from line flange.



*Fig. 11.* I001696

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Loosen hexagon socket head screws from flange.

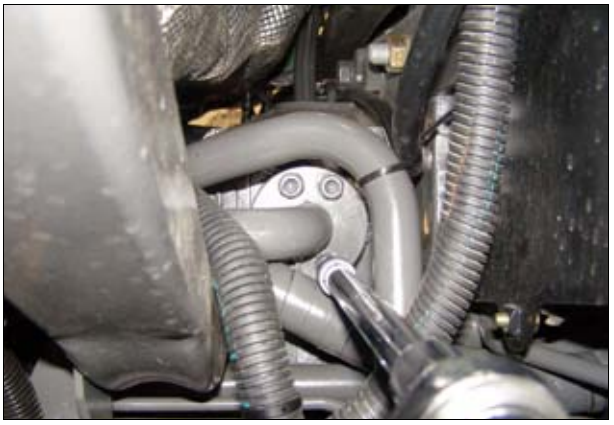


*Fig. 12.* I001697

Hold on to crescent-shaped hardware when loosening flange screws.



*Fig. 13.* I001698

Fix pump hose in place on side.

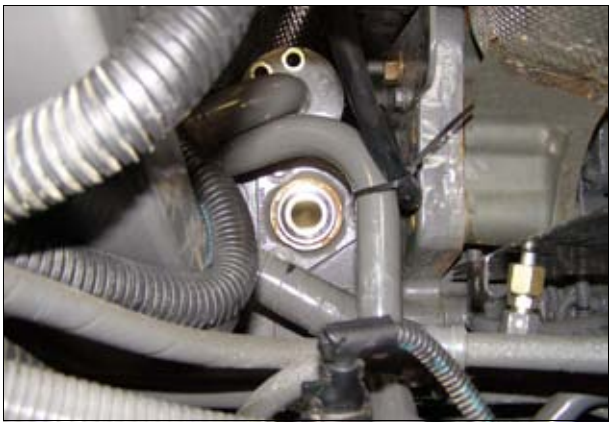


*Fig. 14.* I001699

Remove flange of pump line.



*Fig. 15.* I001700

Loosen screws of line flange.



*Fig. 16.* I001701

Remove pump pressure line.



*Fig. 17.* I001702

Remove pump intake line.

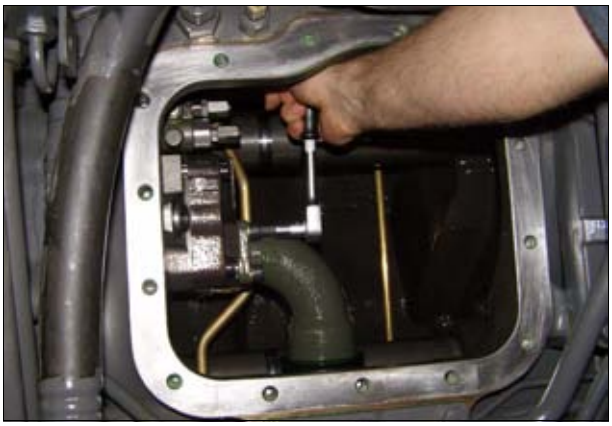


*Fig. 18.* I001703

Remove hydraulic lines that are in the way when the pump is removed.



*Fig. 19.* I001704

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Remove bolts from LS pump.



*Fig. 20.* I001705

Remove pump through opening.

**NOTE:** *The pump is relatively heavy, so be careful when you lift it out. Risk of injury!*



*Fig. 21.* I001706

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## 2 Installing the LS pump

**Preliminary work:**

– Clean sealing surfaces of hydraulic oil tank and hydraulic oil tank cover

Mount oil drain plug with new seal ring.



*Fig. 22.* I001690

Mount new pump flange seal.



*Fig. 23.* I001708

Mount pump through opening.



*Fig. 24.* I001706

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Tighten bolts of pump with a tightening torque of 85 Nm.



*Fig. 25.* I001705

Mount removed hydraulic lines.

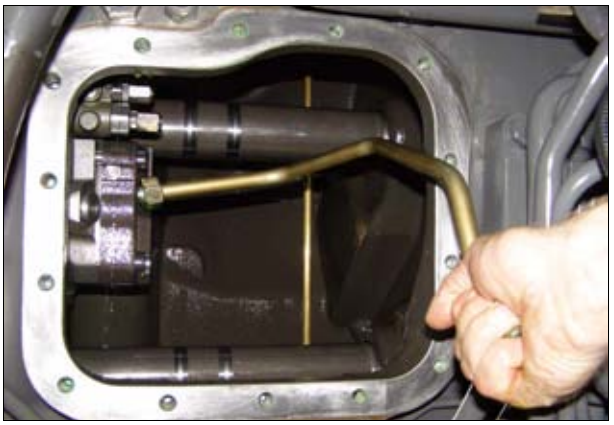


*Fig. 26.* I001704

Insert new O-rings in the suction flange applying a little grease.



*Fig. 27.* I001710

Mount intake line with suction filter on pump.

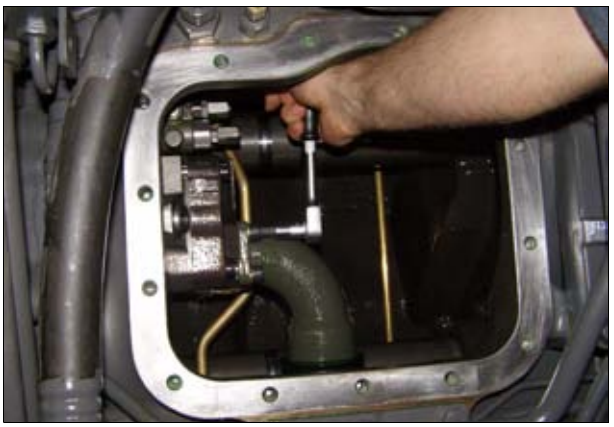


*Fig. 28.* I001703

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Insert new O-rings (arrowed) in pump line applying a little grease.

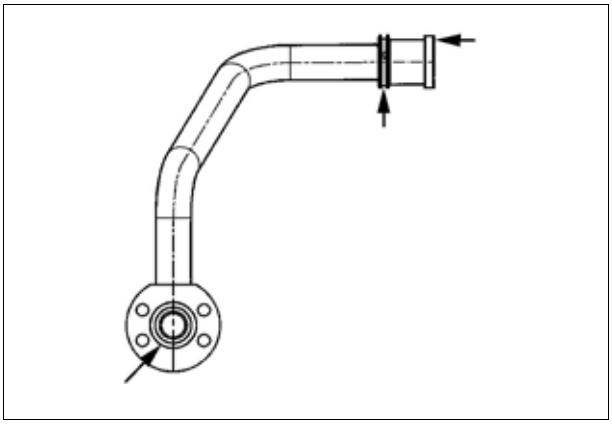


Fig. 29. I001709

Thread pump pressure line through opening.



Fig. 30. I001702

Tighten screws of line flange by hand.



Fig. 31. I001701

Centre flange on pump line to prevent causing strain and tighten screws by hand.



Fig. 32. I001700

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Slightly loosen screws of line flange to align it and then tighten with the prescribed tightening torque.



*Fig. 33.* I001701

Slightly loosen screws of flange to align it and then tighten the screws.



*Fig. 34.* I001700

Flange pump hose to pump line and fasten through crescent-shaped hardware.



*Fig. 35.* I001698

Tighten hexagon socket head screws.



*Fig. 36.* I001697

Mount silencer.



Fig. 37. I001696

Apply X903.050.074 sealant on sealing surfaces and mount cover.



Fig. 38. I001695

Tighten screws of tank cover with a tightening torque of 120 Nm



Fig. 39. I001694

Mount LS line.



Fig. 40. I001689

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Mount cable bracket.

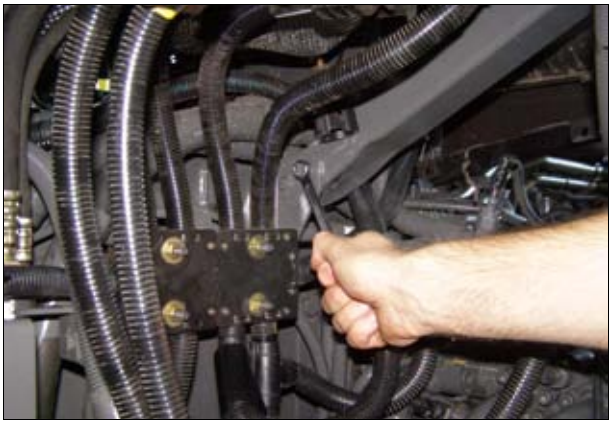


*Fig. 41.* I001691

Attach earth cable to engine earth pin.



*Fig. 42.* I001692

Mount cable clip.



*Fig. 43.* I001688

Mount tank plate with bolts.



*Fig. 44.* I001707

**Final procedures:**

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– Mount fuel hand pump and hydraulic oil hand pump
– Fill up hydraulic oil (change hydraulic oil filter and hydraulic oil depending on hours and contamination)
– Mount fuel tank on right
– Mount battery
– Fill up fuel

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# 9430

Hydraulic pump installation/steering pump

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# 9430 Hydraulic pump installation/steering pump

G Repair . . . . . 5

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# G Repair

1 Removing the wheel-driven emergency steering pump . . . . . 7
2 Installing the wheel-driven emergency steering pump . . . . . 11

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# 1 Removing the wheel-driven emergency steering pump

**Preliminary work:**

- Drain fuel
- Remove fuel tank, right
- Remove battery
- Remove fuel hand pump and hydraulic hand pump

Drain hydraulic oil.



*Fig. 1.* I001690

Drain transmission oil.

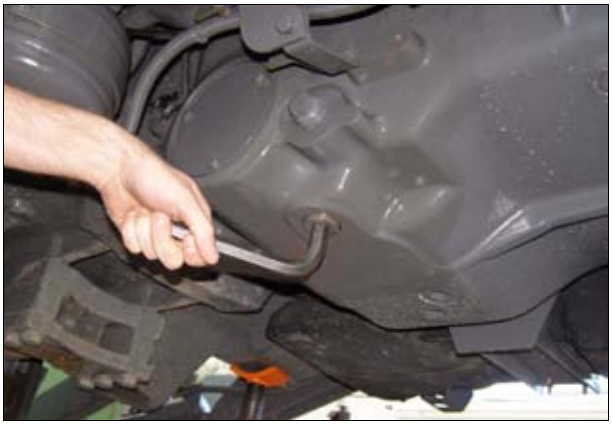


*Fig. 2.* I001718

Loosen tank plate bolts and remove right tank plate.



*Fig. 3.* I001707

Remove cable clip.



*Fig. 4.* I001688

Loosen earth cable on engine.



*Fig. 5.* I001692

Pull earth cable through to bracket.



*Fig. 6.* I001724

Remove cable bracket bolts.

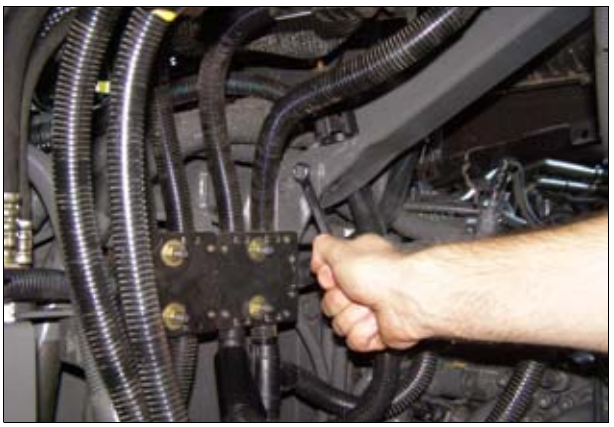


*Fig. 7.* I001691

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Fix cable bracket and cable in place so that cover is easily accessible.

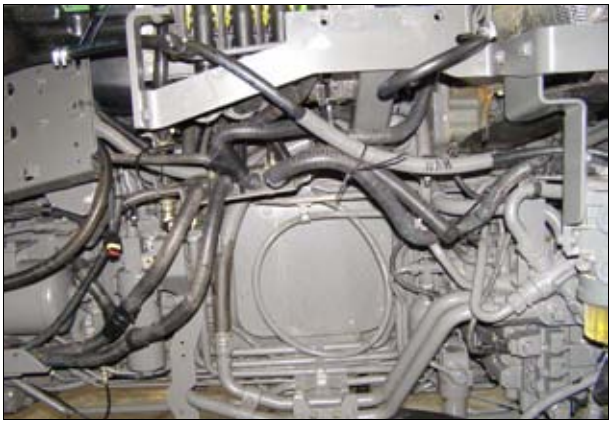


*Fig. 8.* I001693

Separate LS line from housing and close lines, preventing dirt from entering.



*Fig. 9.* I001689

Loosen bolts of cover.



*Fig. 10.* I001694

Remove cover.



*Fig. 11.* I001695

https://truckmanualshub.com/

Remove intake line with suction filter of LS pump.



*Fig. 12.* I001703

Remove pressure line from emergency steering pump.

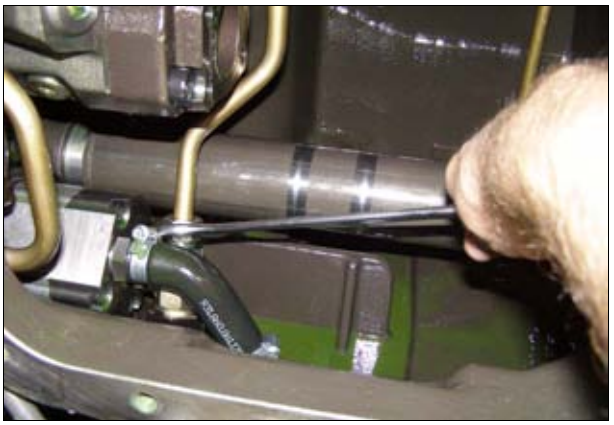


*Fig. 13.* I001719

Loosen emergency steering pump bolts.



*Fig. 14.* I001720

Remove emergency steering pump through opening.



*Fig. 15.* I001721

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## 2 Installing the wheel-driven emergency steering pump

**Preliminary work:**

– Clean sealing surfaces of housing and cover.

Insert new O-ring on emergency steering pump applying a little grease.



*Fig. 16.* I001722

Mount emergency steering pump.



*Fig. 17.* I001721

Tighten bolt with a tightening torque of 70 Nm.



*Fig. 18.* I001720

Mount pressure line of emergency steering pump.

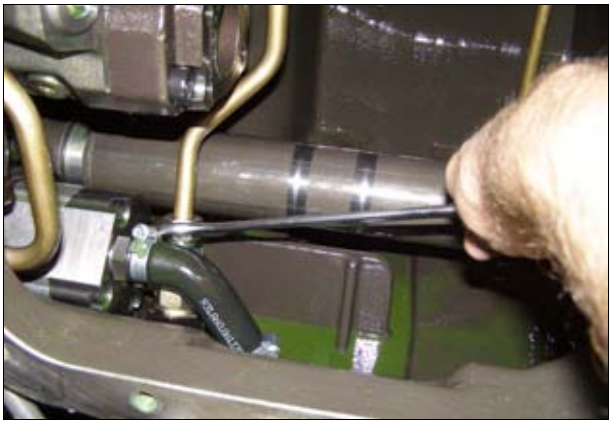


*Fig. 19.* I001719

Mount intake line with suction filter of LS pump.

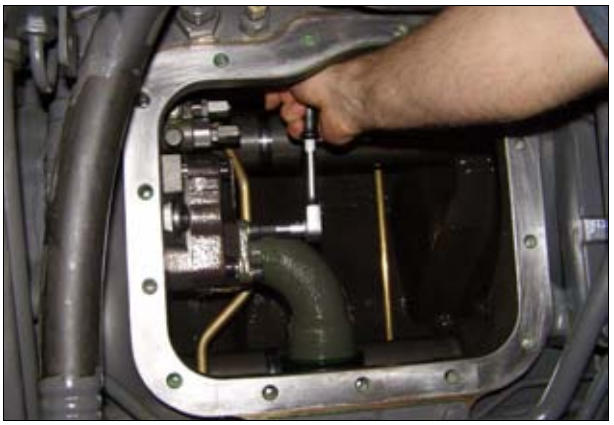


*Fig. 20.* I001703

Apply X903.050.074 sealant on sealing surfaces and mount cover.



*Fig. 21.* I001695

Tighten screws of tank cover with a tightening torque of 120 Nm



*Fig. 22.* I001694

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Mount LS line.



*Fig. 23.* I001689

Mount cable bracket.

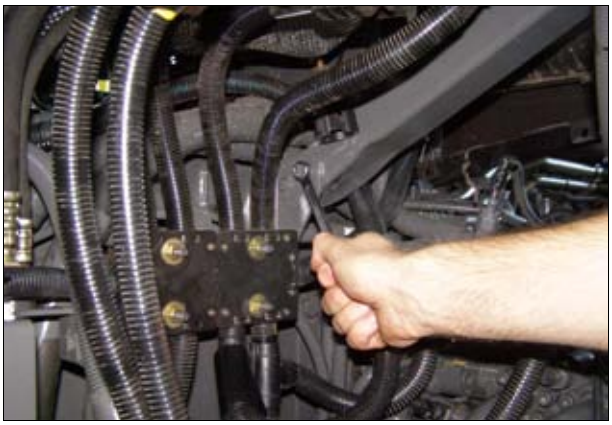


*Fig. 24.* I001691

Attach earth cable to engine earth pin.



*Fig. 25.* I001692

Mount cable clip.



*Fig. 26.* I001688

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Mount tank plate with bolts.



*Fig. 27.* I001707

Mount hydraulic oil drain plug with new seal ring.



*Fig. 28.* I001690

Tighten transmission oil drain plug.

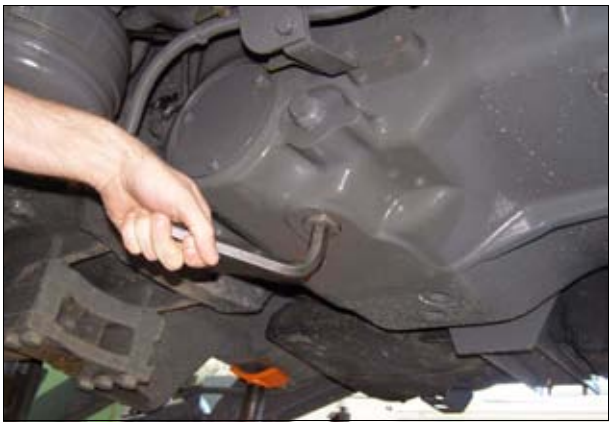


*Fig. 29.* I001718

**Final procedures:**

- Mount fuel hand pump and hydraulic oil hand pump
- Fill up hydraulic oil (change hydraulic oil filter and hydraulic oil depending on hours and contamination)
- Fill up transmission oil (change transmission oil filter and transmission oil depending on hours and contamination)
- Mount fuel tank on right
- Reconnect battery
- Fill up fuel

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# 9534

Hydraulic piping/"Rüfa"reverse operation

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# 9534 Hydraulic piping/"Rüfa"reverse operation

C Documents and diagrams . . . . . .5

G Repair. . . . . .13

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# C Documents and diagrams

1 Technical drawing of rotary feedthrough (Rüfa) . . . . . 7

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# 1 Technical drawing of rotary feedthrough (Rüfa)

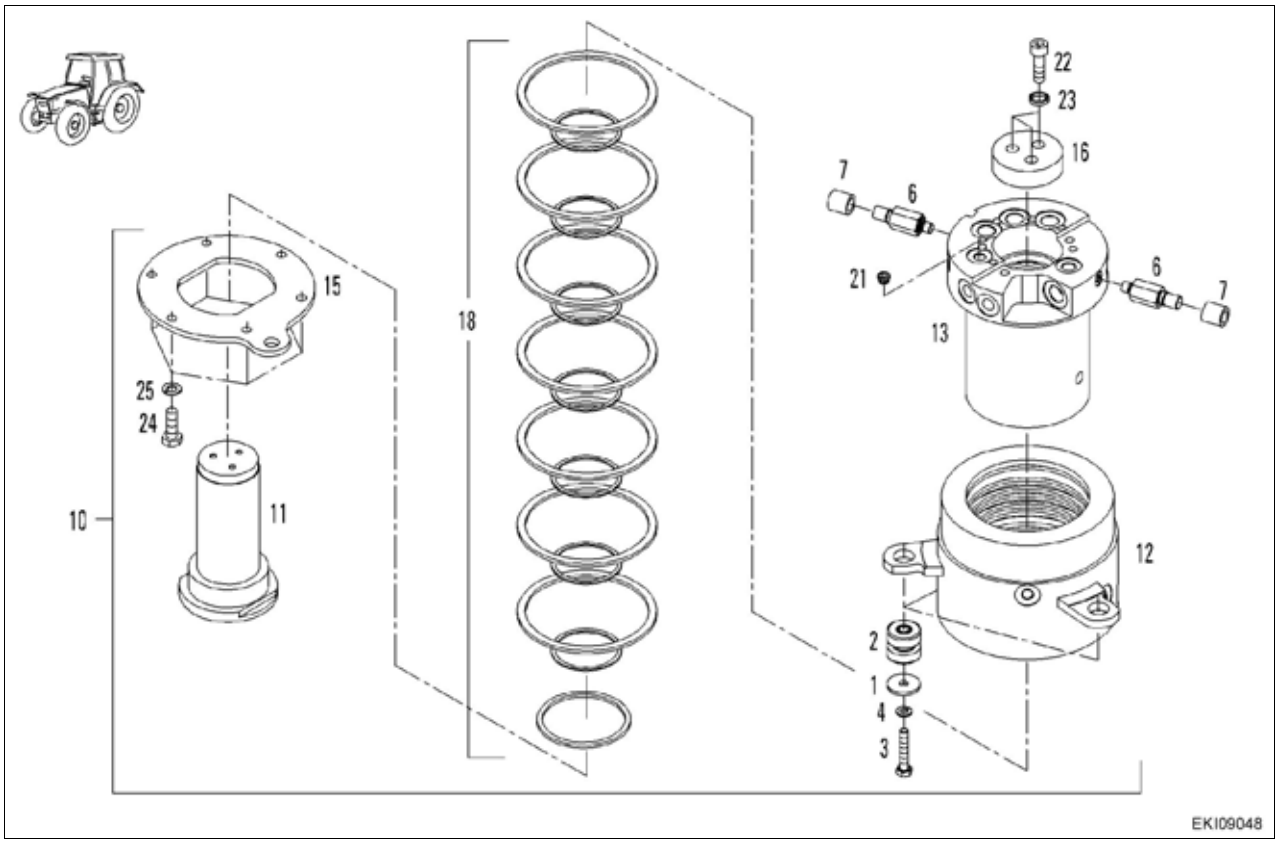



*Fig. 1.* I003770

| Item | Designation | Item | Designation |
|---|---|---|---|
| 1 | Washer | 13 | Rotor (not available individually) |
| 2 | Bearing | 15 | Ring (not available individually) |
| 3 | Hex screw | 16 | Shim (not available individually) |
| 4 | Spring washer | 18 | Seal set |
| 6 | Carrier | 21 | Thread insert (not available individually) |
| 7 | Pressure hose | 22 | Socket head cap screw |
| 10 | Rotary feedthrough (complete) | 23 | Seal ring |
| 11 | Stator (not available individually) | 24 | Hex screw |
| 12 | Stator (not available individually) | 25 | Spring washer |

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Cross-section of rotary feedthrough

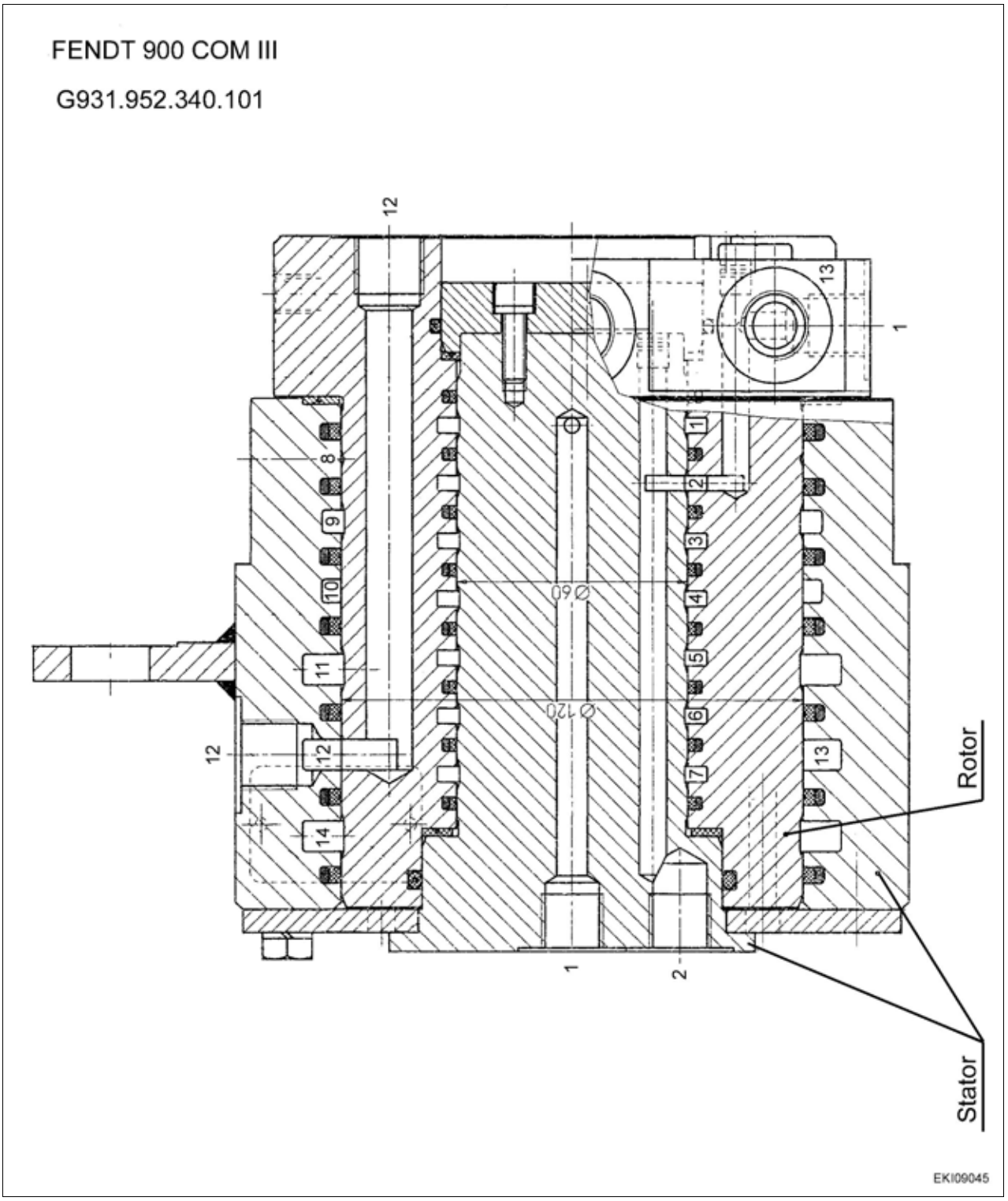



*Fig. 2.* I003767

Underside view

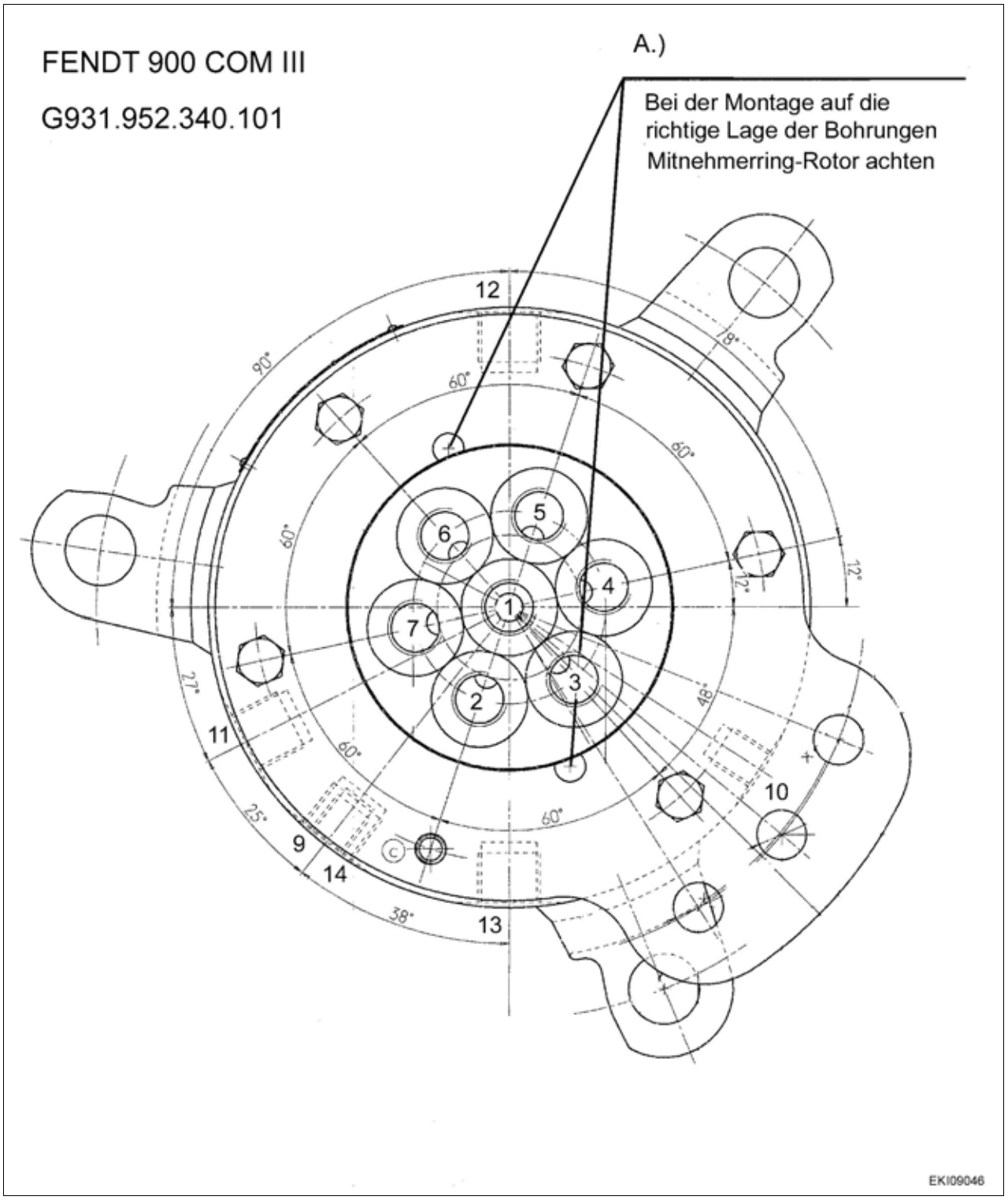



*Fig. 3.* I003768

**A.)** Ensure the correct positioning of the bores on the carrier ring rotor during installation.

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Top view

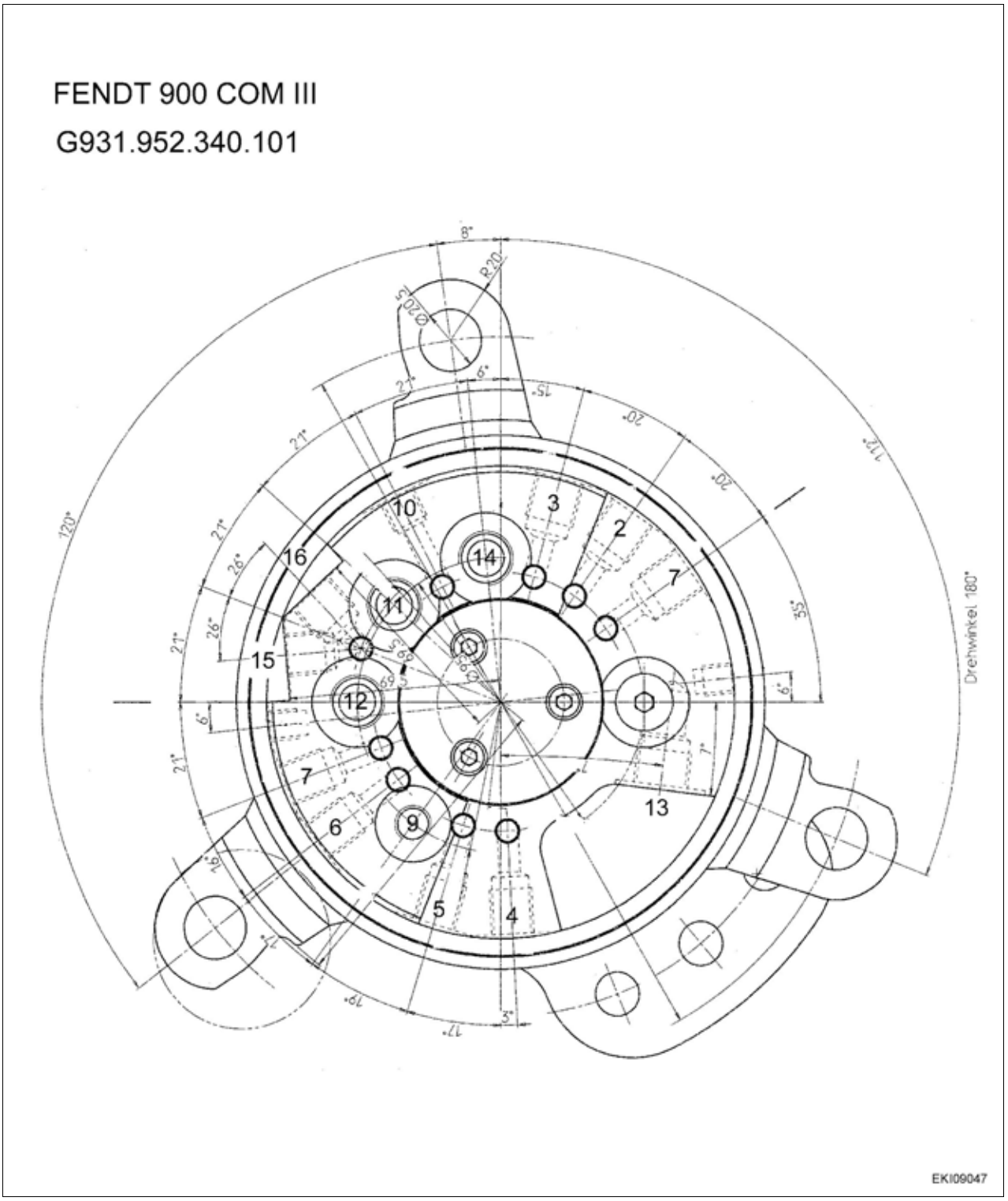



*Fig. 4.* I003769

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Ports on the rotary feedthrough

| Serial No. | NW | Ports | | Max. pressure | Max. flow rate | Medium | Function |
|---|---|---|---|---|---|---|---|
| | | Rotor | Stator | (bar) | (l/min) | | |
| **1** | 6 | M16 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Hand brake |
| **2** | 6 | M16 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Hand brake |
| **3** | 6 | M16 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Hand brake |
| **4** | 8 | M14 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Tank, right |
| **5** | 8 | M14 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Brake, front axle |
| **6** | 8 | M14 x 1.5 | M16 x 1.5 | 8.5 | | Compressed air | Brake, rear axle |
| **7** | 8 | M14 x 1.5 | M16 x 1.5 | 8.5 | - | Compressed air | Tank, left |
| **8** | Internal connection channel with 14 | | | | - | - | - |
| **9** | 6 | M12 x 1.5 | M12 x 1.5 | 210 | 1 | Hydraulic oil | Load sensing (LS) |
| **10** | 6 | M12 x 1.5 | M12 x 1.5 | 30 | 3 | Pentosin (X902.011.622) | Clutch |
| **11** | 12 | M18 x 1.5 | M18 x 1.5 | 210 | 50 | Hydraulic oil | Pump pressure (p) |
| **12** | 12 | M18 x 1.5 | M18 x 1.5 | 210 | 50 | Hydraulic oil | Steering, right |
| **13** | 12 | M18 x 1.5 | M18 x 1.5 | 210 | 50 | Hydraulic oil | Steering, left |
| **14** | 12 | M18 x 1.5 | M18 x 1.5 | 3 | 5 | Hydraulic oil | Return (R) |
| **15** | 8 | M14 x 1.5 | - | - | - | Air | Outlet air, hand-brake |
| **16** | 8 | M16 x 1.5 | - | - | - | Air | Outlet air, hand-brake |

Piping for the rotary feedthrough (rotor)

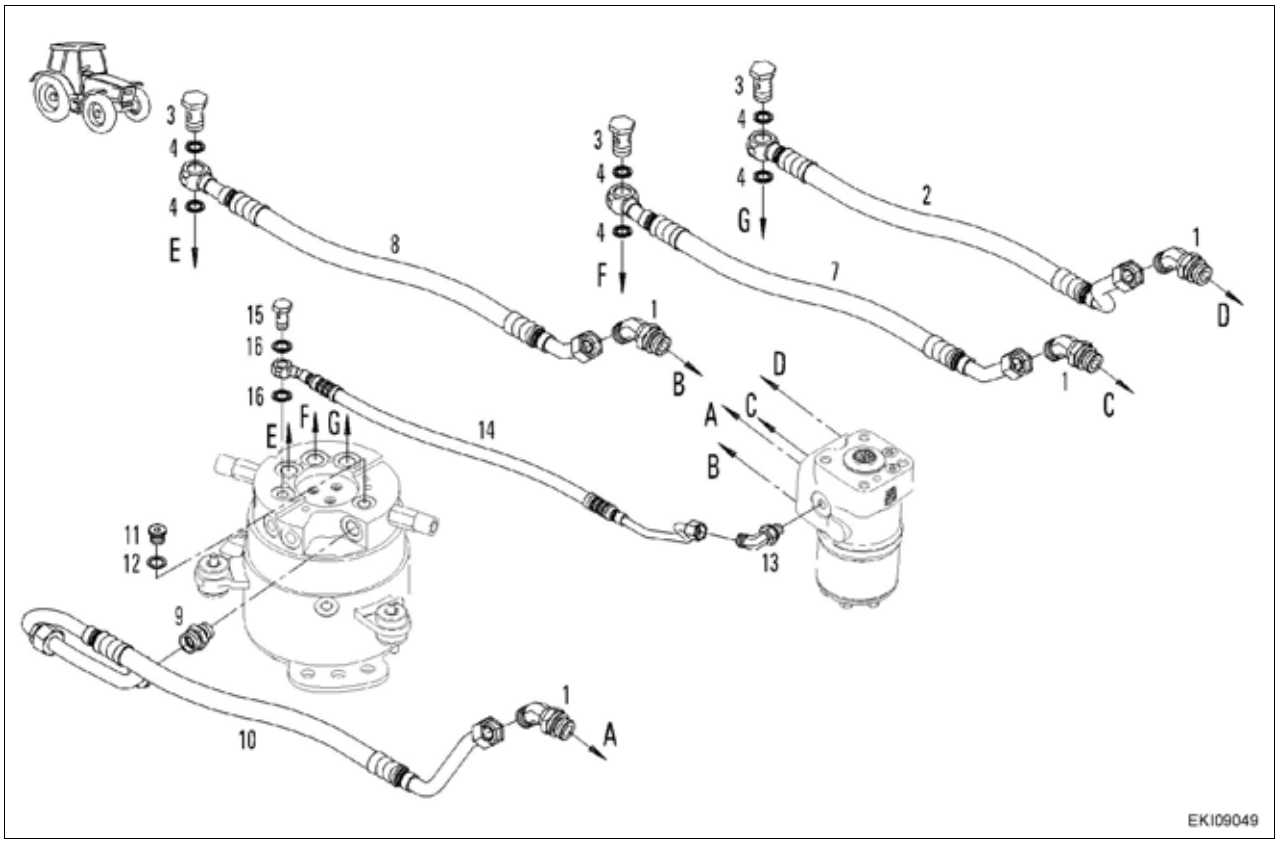



*Fig. 5.*

I003771

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Piping for the rotary feedthrough (stator)

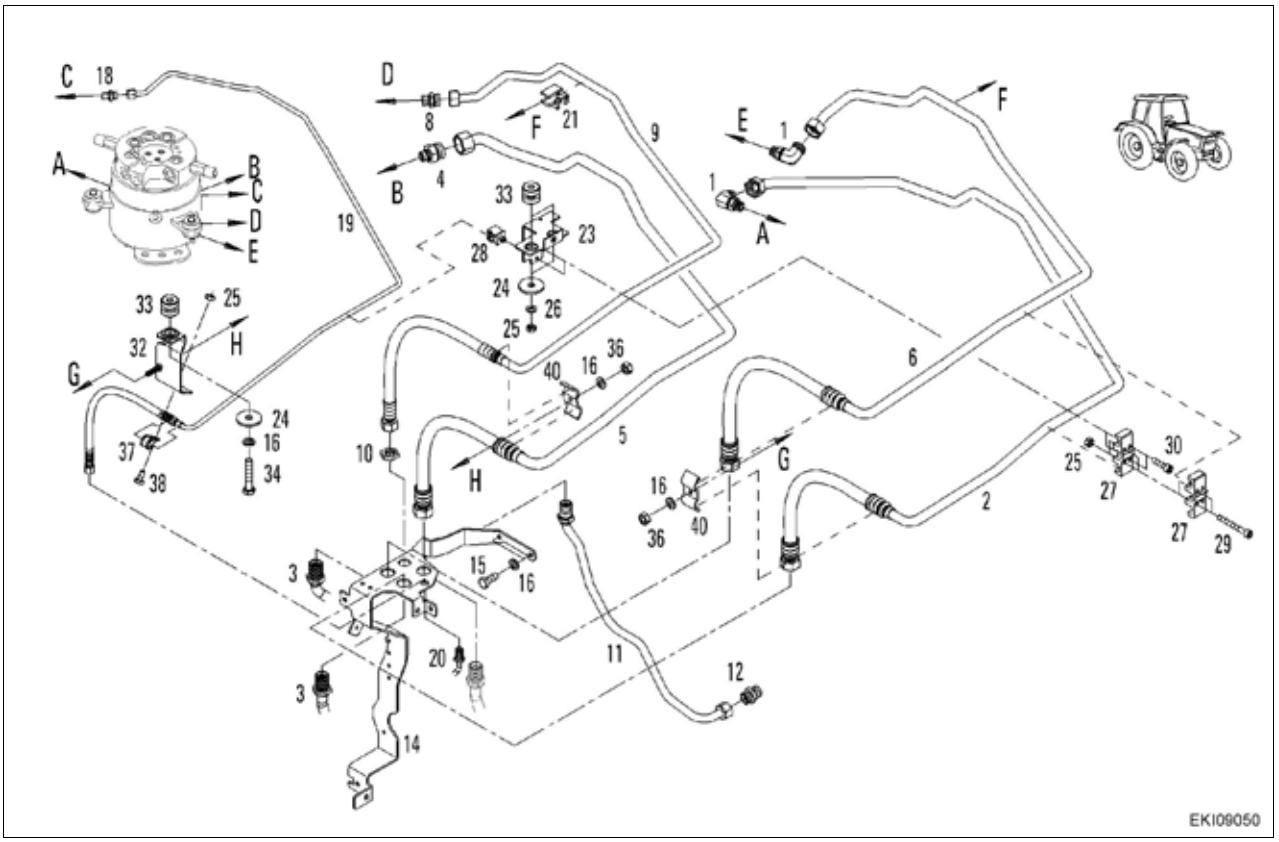



*Fig. 6.* I003772



| | | |
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# G Repair

1 Sealing the rotary feedthrough . . . . . 15

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# 1 Sealing the rotary feedthrough

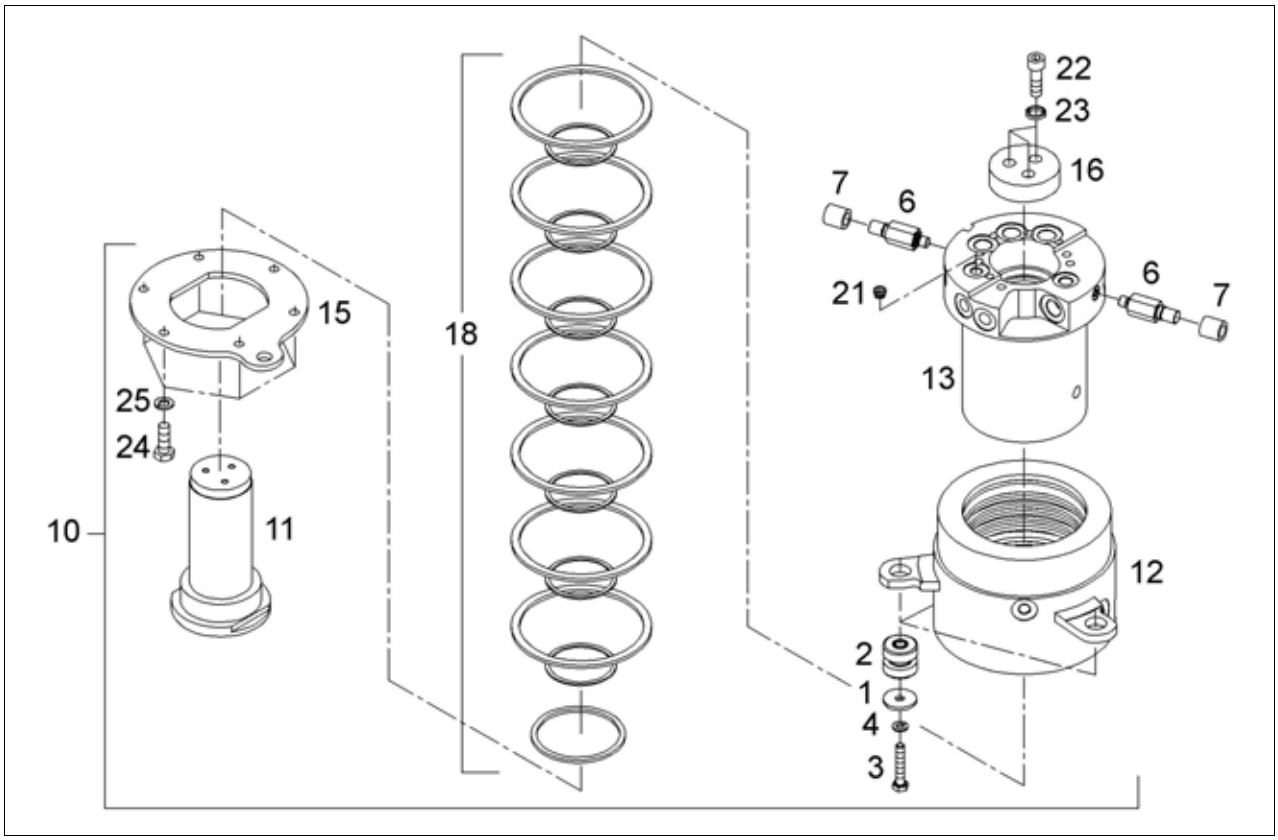



*Fig. 1.* I007993

| Item | Designation | Item | Designation |
|---|---|---|---|
| 1 | Washer | 13 | Rotor (not available individually) |
| 2 | Bearing | 15 | Ring (not available individually) |
| 3 | Hex screw | 16 | Shim (not available individually) |
| 4 | Spring washer | 18 | Seal set |
| 6 | Carrier | 21 | Thread insert (not available individually) |
| 7 | Pressure hose | 22 | Socket head cap screw |
| 10 | Rotary feedthrough (complete) | 23 | Seal ring |
| 11 | Stator (not available individually) | 24 | Hex screw |
| 12 | Stator (not available individually) | 25 | Spring washer |

Loosen cap screws (22) by about three turns



*Fig. 2.* I007965

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Place wood underneath the three lugs, so that there is a gap between the working surface and the front end of the rotary feedthrough; using a rubber mallet, tap the screw head thus moving stator (11) downwards and then remove cap screws (22)



*Fig. 3.* I007966

Turn rotary feedthrough and remove hex bolts (24)



*Fig. 4.* I007968

Disassemble stator (11) and ring (15) using a mounting lever



*Fig. 5.* I007967

Remove stator (11) and ring (15)



*Fig. 6.* I007969

Disassemble ring (16)



*Fig. 7.* I007970

Push rotor (13) out of stator (12), use the 3 lugs on stator (12) as a supporting surface

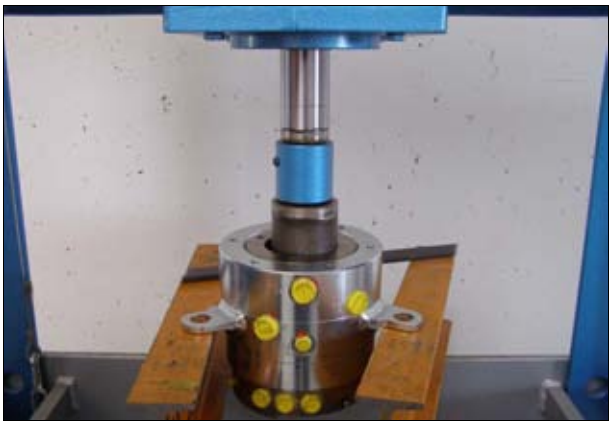


*Fig. 8.* I007971

Hold rotor (13) while pushing it out



*Fig. 9.* I007972

Take the seal ring and O-ring out of rotor (13)

**NOTE:** *A bent welding wire can be used as an aid here*



*Fig. 10.* I007973

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Take the seal ring and O-ring out of stator (12)

**NOTE:** *A bent welding wire can be used as an aid here*

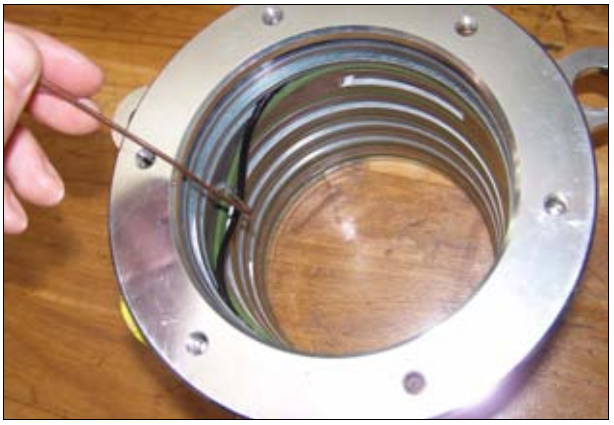


*Fig. 11.* I007974

**NOTE:** *Check all surfaces and grooves for damage and wear*

Lightly spray all seals with oil



*Fig. 12.* I007977

Fit O-rings in stator (12)

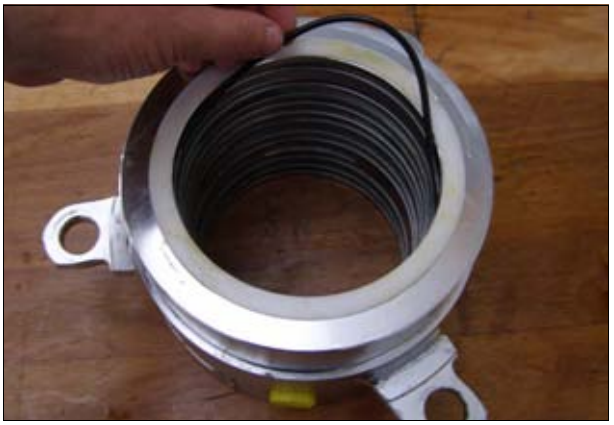


*Fig. 13.* I007976

Fit seal rings in stator (12), while pressing the seal ring in a crescent shape

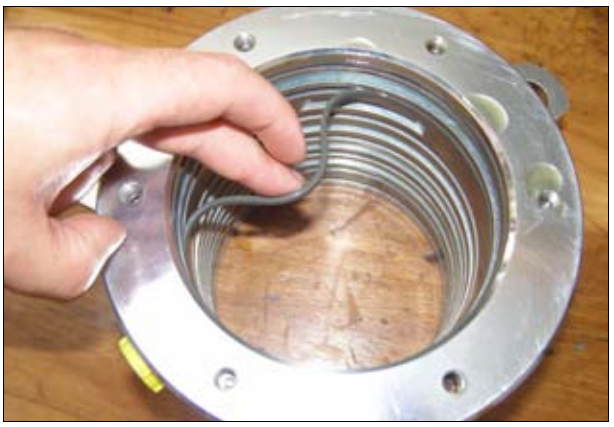


*Fig. 14.* I007980

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Fit O-rings in rotor (13)

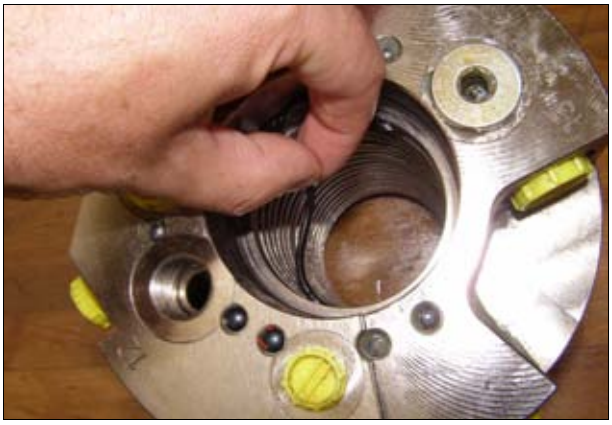


*Fig. 15.* I007981

Fit seal rings in rotor (13), while pressing the seal ring in a crescent shape



*Fig. 16.* I007982

Lubricate the sealing washer and place on stator (12)



*Fig. 17.* I007975

Insert rotor (13) in stator (12)



*Fig. 18.* I007983

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Push rotor (13) into stator (12)

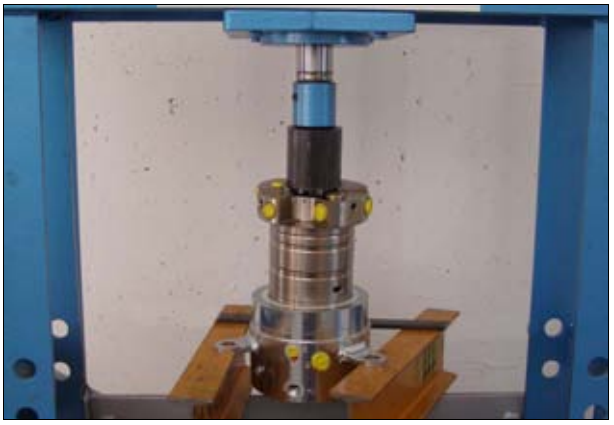


*Fig. 19.* I007989

Mount ring (15) using hex bolts (24), turn rotor (13) such that the bore (arrow) of the rotor and of the ring are directly above one another



*Fig. 20.* I007984

Lubricate the sealing washer and fit to stator (11)



*Fig. 21.* I007985

Press in stator (11)



*Fig. 22.* I007990

Lubricate the sealing washer and place on washer (16)



*Fig. 23.* I007986

Fit washer (16)



*Fig. 24.* I007988

Fit cap screws with seal ring (22, 23)
Tightening torque: 9 Nm



*Fig. 25.* I007965

Check for leaks: Charge every port on the rotary feedthrough in succession with compressed air (own provision), close each outlet and then listen and feel whether air is escaping from a different outlet

**NOTE:** *see §1*



*Fig. 26.* I007987

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| **A** | General |
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# 9600

Overall system/hydraulic equipment

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# 9600 Overall system/hydraulic equipment

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# A General

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2 Hydraulic comparison: FENDT 900 COM III to FENDT 900 COM II . . . . . 10
3 Technical specification: working and steering hydraulics . . . . . 11
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# 1 Pressure regulation – PR (LS pump)

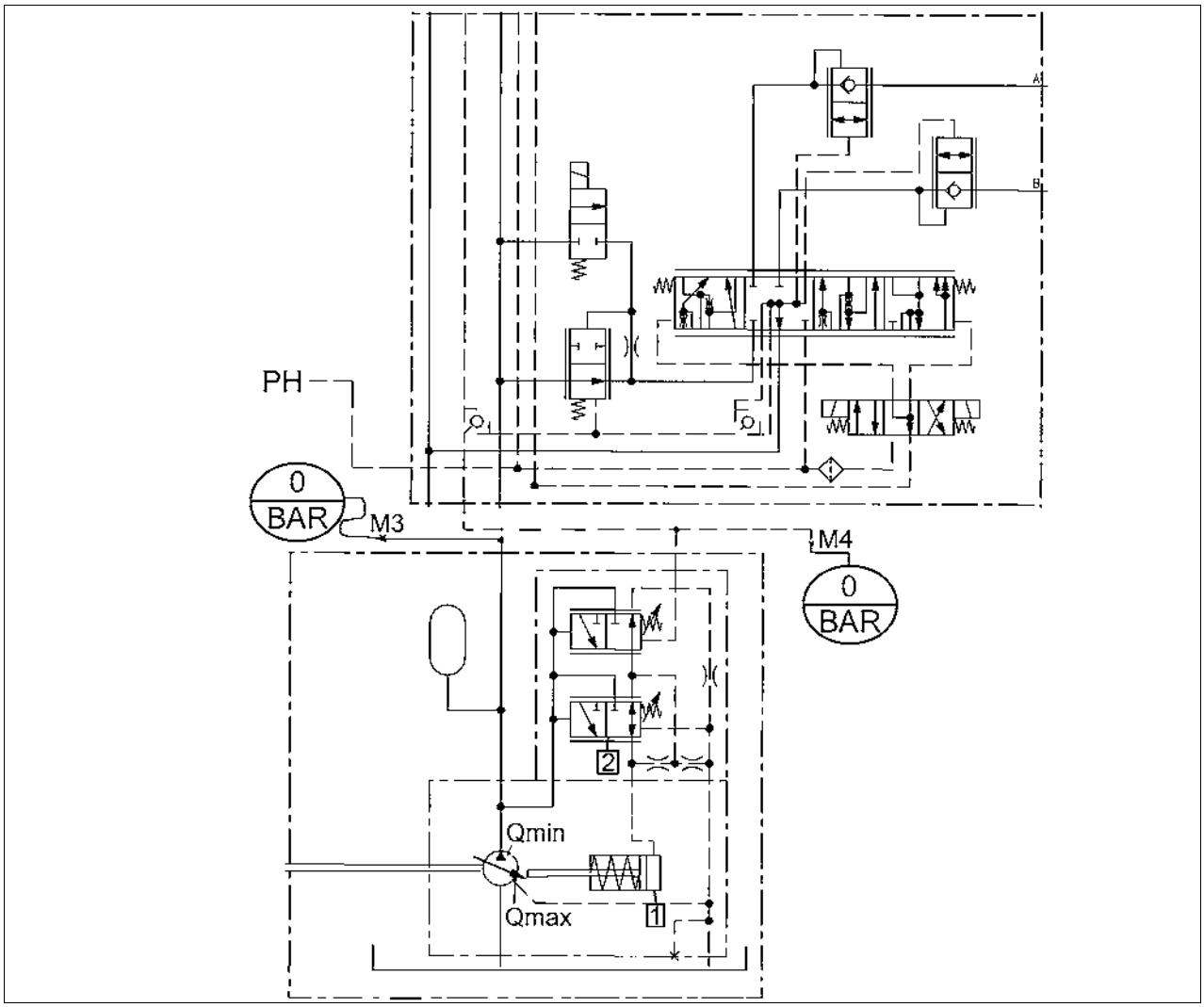



*Fig. 1.* I001331

**The LS pump is not driven**

The variable displacement piston (1) is brought into contact with the "Q max. stop" by spring force and the pump is stationary in maximum swivel angle position (max. volume flow 163 l/min or 215 l/min).
At the same time, the spring pushes the pressure cut-off valve (2) into the position shown.
The large variable displacement piston chamber is connected to the tank connection via the control line.
The stationary pump is not supplying any oil, so no pressure builds up.

**The pump is driven at a constant speed.**

The pump generates a volume flow from the suction point to the consumer.
Pressure rises in the high-pressure pipe according to the load resistance of the consumer.
At the same time, this working pressure acts on the measuring surface of the control valve (2).
As long as the working pressure does not reach the set value (Pmax), the force of the spring prevails over the control piston of the control valve (2).
The control piston remains in its position, and the pump remains in maximum swivel angle position accordingly (Q max).
The consumer is moved at maximum speed.

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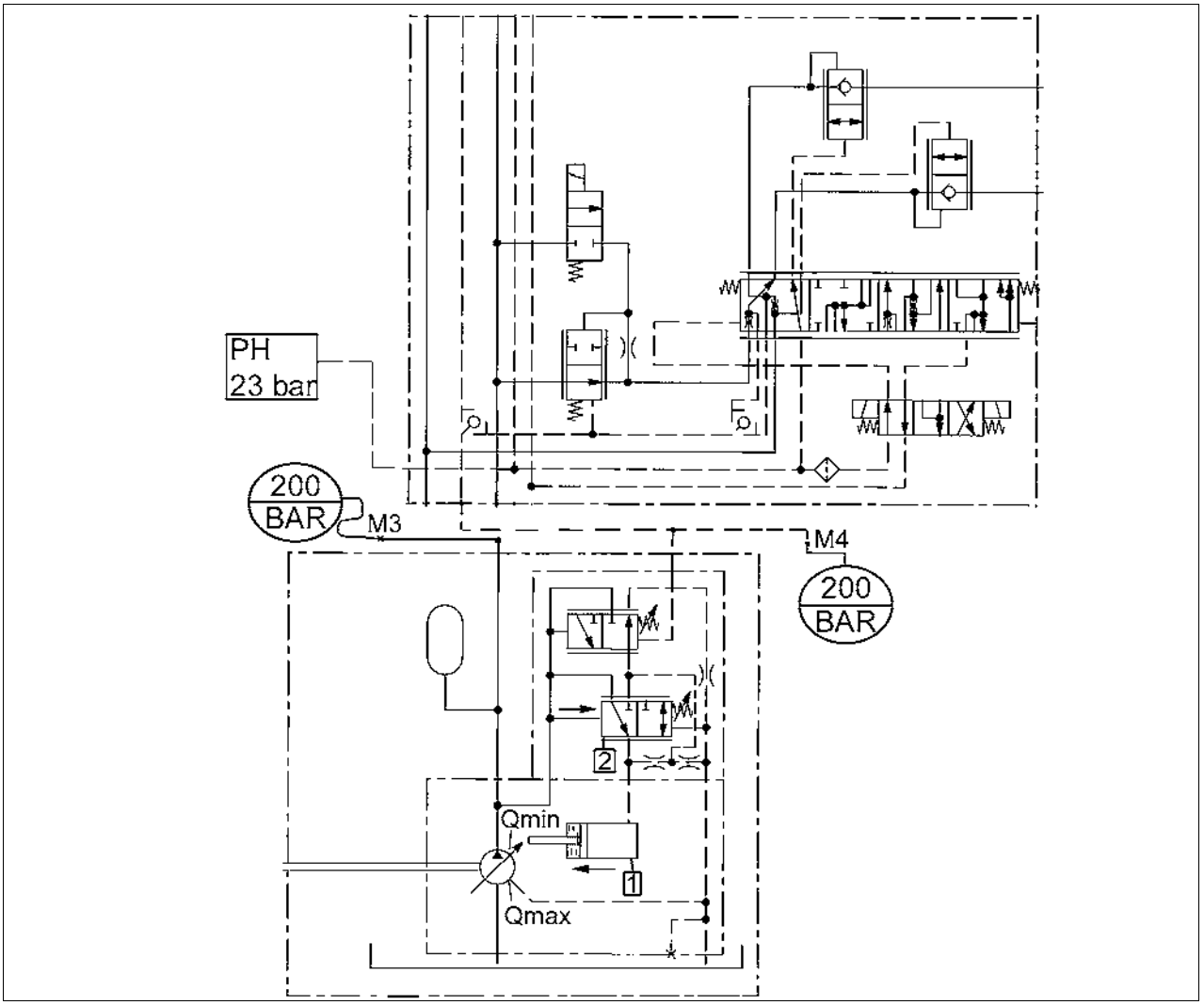



*Fig. 2.* I001332

As the working pressure increases, the pressure on the measuring surface of the control valve (2) increases accordingly.
The hydraulic force prevails over the set spring force, and the control valve (2) moves to the right and opens the valve.
The pressure in the large variable displacement chamber of the variable displacement piston (1) increases.
If this pressure increases to exceed the counter pressure built up by the spring force and the pressure in the small chamber, the variable displacement piston moves to the left.

**This process denotes the start of control.**

A further increase in working pressure creates a larger opening of the control valve (2) and increased pressure in the large variable displacement chamber (1).
The pump swivels towards zero (Q min) and keeps the working pressure at a constant.
Absolute zero is not reached by this swivel process; "zero" position means that no axial piston movement takes place and therefore oil is no longer supplied.
However, there may be internal leaking, at the pump itself and at the stationary consumer and the valves.
The pump needs to compensate for this to maintain the pressure.
The pump provides a permanent supply of oil to do this.
The pump remains in a "quasi-zero position".

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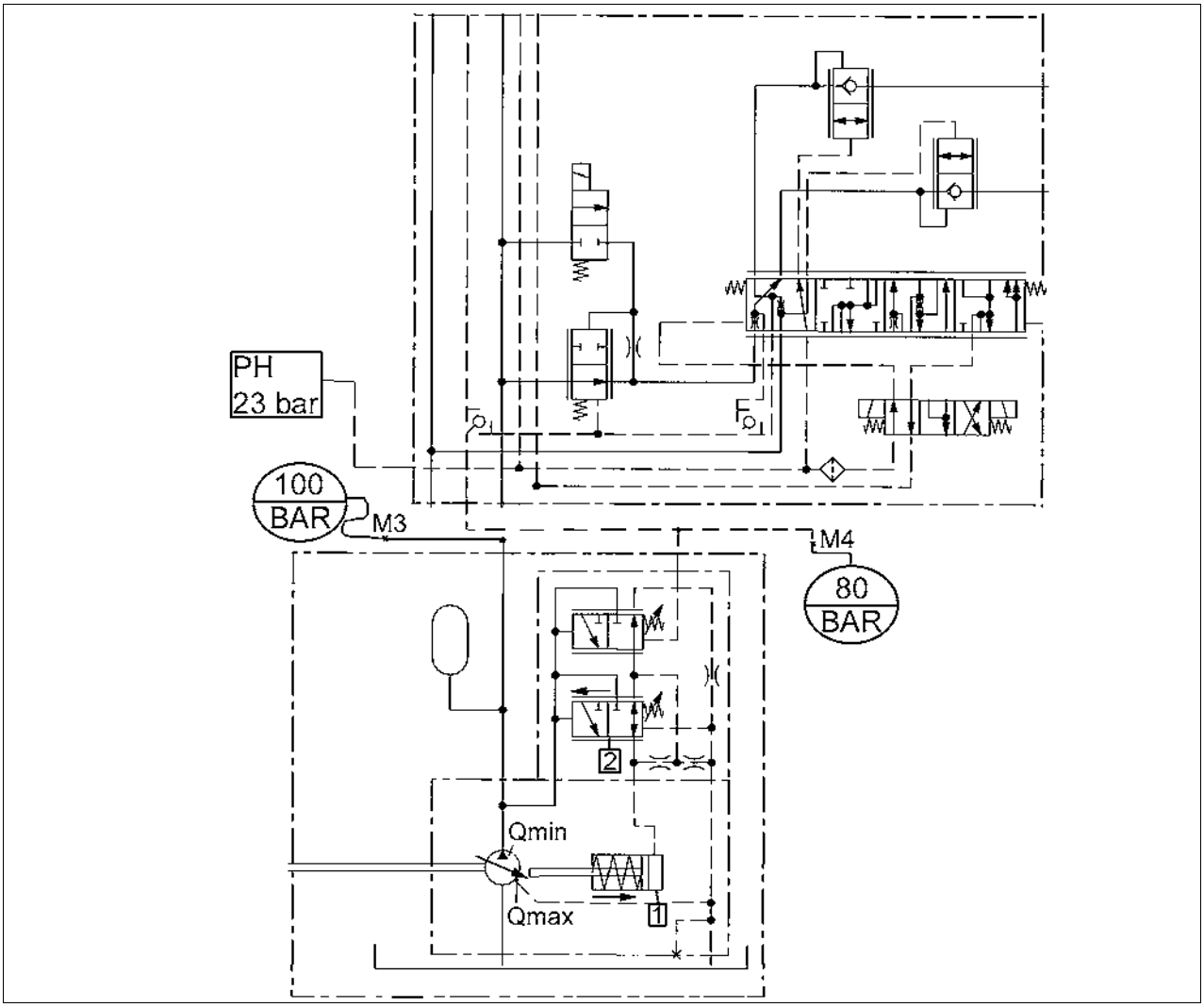



*Fig. 3.* I001333

The working pressure at the pressure connection falls (e.g. by actuating a directional control valve).
The pressure on the measuring surface of the control valve (2) falls under the spring pressure and the control piston is moved to the left by the spring force.
The large variable displacement chamber (1) is relieved by the control line to the tank.
The spring force causes the variable displacement piston to swivel out, thus reaching the axial piston pump.
The maximum volume flow (Q max) of the pump is available for the directional control valve.

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# 2 Hydraulic comparison: FENDT 900 COM III to FENDT 900 COM II

**Summary and comparison of hydraulic systems**

| Component | FENDT 900 COM III | FENDT 900 COM II |
|---|---|---|
| | | |
| **LS pump** | Inclined disc axial-flow piston pump with pressure and flow rate control | Inclined disc axial-flow piston pump with pressure and flow rate control |
| Minimum standby pressure (valves locked) | 22 bar | 22 bar |
| Minimum standby pressure (valves unlocked) | 22 bar | 42 to 45 bar |
| Flow rate | 163 l/min (optional 215 l/min) | 110 l/min (163 l/min, optional from 10/2004) |
| Pump drive | 1¼ inch | 1 inch from 10/2004 (previously 7/8 inch) |
| Control pressure differential | 20 bar | 20 bar |
| Max. working pressure | 200 bar | 200 bar |
| **Control pressure** | 23 bar from the **auxiliary pump** | 23 bar from the **LS pump** |
| **Auxiliary pump** | Gear pump | Gear pump |
| Flow rate | 22.5 cc/r - 55l/min ---><br>1-circuit brake system without front PTO | 11 cc/r - 34 l/min |
| | 22.5 cc/r + 8 cc/r ---><br>1-circuit brake system with front PTO | |
| | 22.5 cc/r + 16 cc/r ---><br>2-circuit brake system | |
| Connection condition | When the pilot pressure is released or the LS pump is exhausted | LS pump exhausted or steering sluggish |
| Max. pressure | 200 bar | 190 bar |
| **Wheel-driven emergency steering pump** | Wheel-driven gear pump | ---------- |
| Flow rate | 8 cc/r | ---------- |
| **Control valves** | SB 23 LS-EHS 2 | SB 23 LS-EHS |
| Max. flow rate | 100 l/min (optional 140 l/min - only Pos. 4 possible) | 80 l/min |
| **Measuring and testing - pressure measuring points** | | |
| M1 | Emergency steering pump pressure (wheel-driven) | Not present |
| M2 | Auxiliary pump pressure | Auxiliary pump pressure |
| M3 | LS pump pressure | LS pump pressure |
| M4 | LS pressure | LS pressure |
| M5 | Control pressure | Control pressure |
| | | |

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# 3 Technical specification: working and steering hydraulics

| Component | Specifications |
|---|---|
| Working and steering hydraulics | Load sensing hydraulics |
| LS pump PR | Inclined disc axial flow piston pump<br>with pressure and flow rate regulation |
| Pump (series): flow rate at<br>rated engine speed = 2200 rpm | 163 l/min |
| Pump (optional): flow rate at<br>rated engine speed = 2200 rpm | 215 l/min |
| Max. working pressure | 200 bar |
| Control pressure differential | 20 bar |
| Transmission ratio (diesel engine: pump) | 0.869 |
| | |
| Auxiliary pump PH | Gear pump |
| Flow rate/revolution for<br>1-circuit braking system without front PTO | 22.5 cc/rev. – single pump |
| Flow rate/revolution for<br>1-circuit braking system with front PTO | 22.5 cc/rev + 8 cc/rev tandem pump<br>at 25 bar DBV |
| Flow rate/revolution for<br>2-circuit braking system with/without front PTO | 22.5 cc/rev + 16 cc/rev tandem pump<br>at 25 bar DBV |
| Transmission ratio (diesel engine: pump) | 0.896 |
| Flow rate at<br>rated engine speed = 2200 rpm | 55 l/min |
| Max. pressure | 190 bar |
| Drive | Flange-mounted to air compressor |
| | |
| Emergency steering pump PNL | 8 cc wheel-driven gear pump |
| Flow rate at 60 km/h | 36 l/min |
| Flow rate at 10 km/h | 6 l/min |
| Drive | via 4WD |
| | |
| Auxiliary control valves | SB 23 LS-EHS 2 |
| Max. flow rate | 100 l/min (optional 140 l/min - only Pos. 4 possible) |
| Auxiliary control valves (standard) | 4 valves, rear:<br>1.1 "yellow", 1.2 "blue", 1.3 "red", 1.4 "green" |
| Auxiliary control valves (optional) | Max. 6 valves, **rear**: 1.5 "brown", 1.6 "purple"<br>+ 2 valves, **front**: 2.1 "olive", 2.2 "grey" |
| Actuation system | Electro-hydraulic via CAN bus (daisy chain) |
| | |
| Rear power lift (Power) | EPC 23 C - SA |
| Rear power lift (Professional) | EPC 23 C - SA/DA |
| | |
| Front power lift (Standard) | Hydac valve SA |
| Front power lift (Enhanced control) | EPC 23 C - SA/DA |
| | |
| Hydraulic trailer brake valve | Optional |
| | |
| | |

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| | |
|---|---|
| 1.1 | Yellow valve (standard) |
| 1.2 | Blue valve (standard) |
| 1.3 | Red valve (standard) |
| 1.4 | Green valve (standard) |
| 1.5 | Brown valve |
| 1.6 | Violet valve |
| CD | Overflow oil line (Case Drain) |
| Hy. ABV | Hydraulic trailer brake valve |
| LS | LS control line (load sensing) |
| P | Pump pressure line |
| RH | Return line, rear |

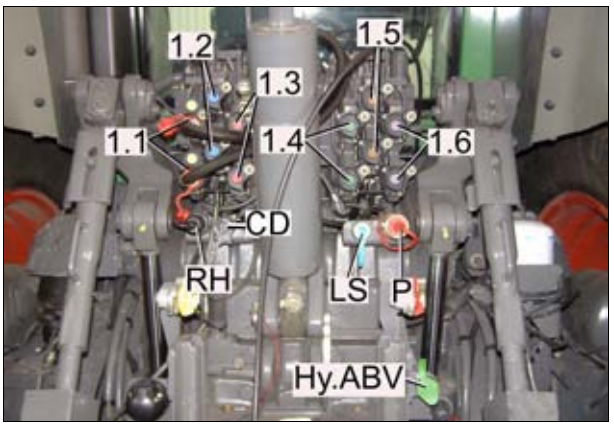



*Fig. 4.* I004435

| | |
|---|---|
| 2.1 | Olive valve |
| 2.2 | Grey valve |
| RF | Return line, front |

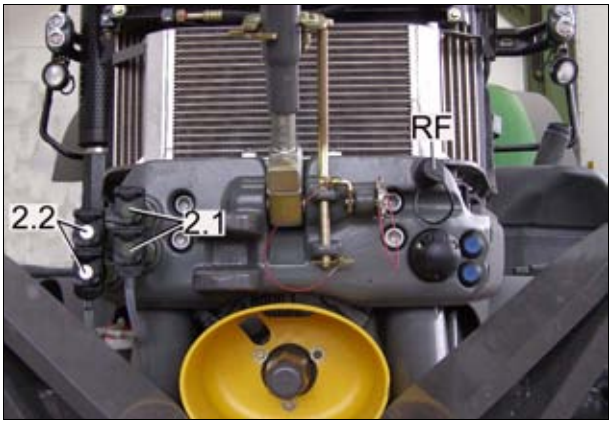



*Fig. 5.* I000956

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## 4 Overview of pressure measuring points

M1 Measuring point, emergency steering pump
M2 Measuring point, auxiliary pump
M3 Measuring point, LS pump
M4 Measuring point, LS pressure
M5 Measuring point, control pressure

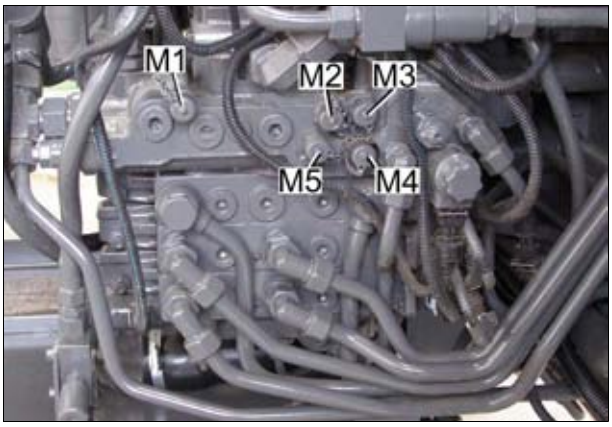



*Fig. 6.* I001210

| | | |
|---|---|---|
| M1 | pPNL | Emergency steering pump pressure<br>- Since it is flange-mounted to the 4WD, the pump operates only during travel |
| M2 | pPH | - Auxiliary pump pressure<br>- Standby pressure for control pressure<br>- As needed and at a steering lock of 190 bar<br>(Need scenario exists only if the LS pump is fully "occupied" with current oil demand, can no longer meet demand, and pressure requirement from steering system is higher than current working pressure) |
| M3 | pPR | All LS pump pressures<br>- Min. standby pressure<br>- Current working pressure<br>- Max. standby pressure<br>Other functions (engine speed/cold-start/warm-start) are also active when engine is started. |
| M4 | pLS | Control pressure (=command/signal) to the LS pump |
| M5 | pSt | Control pressure is required to activate control valves 1…8 and also for the EPC valves |

M6 Rear return flow reference pressure measuring point

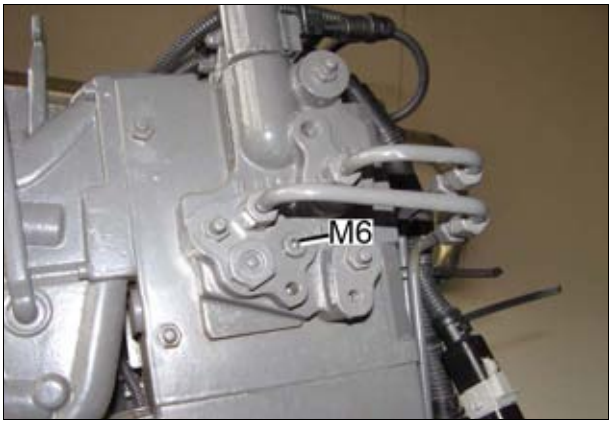



*Fig. 7.* I005866

| | | |
|---|---|---|
| M6 | RREF rear | Pressure in the rear return flow<br>- is measured in the rear end plate |

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M7 Front return flow reference pressure measuring point



*Fig. 8.* I005867

| | | |
|---|---|---|
| M7 | RREF front | Pressure in the front return flow<br>- is measured in the middle end plate |

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## 5 External pressure rise (Power Beyond)

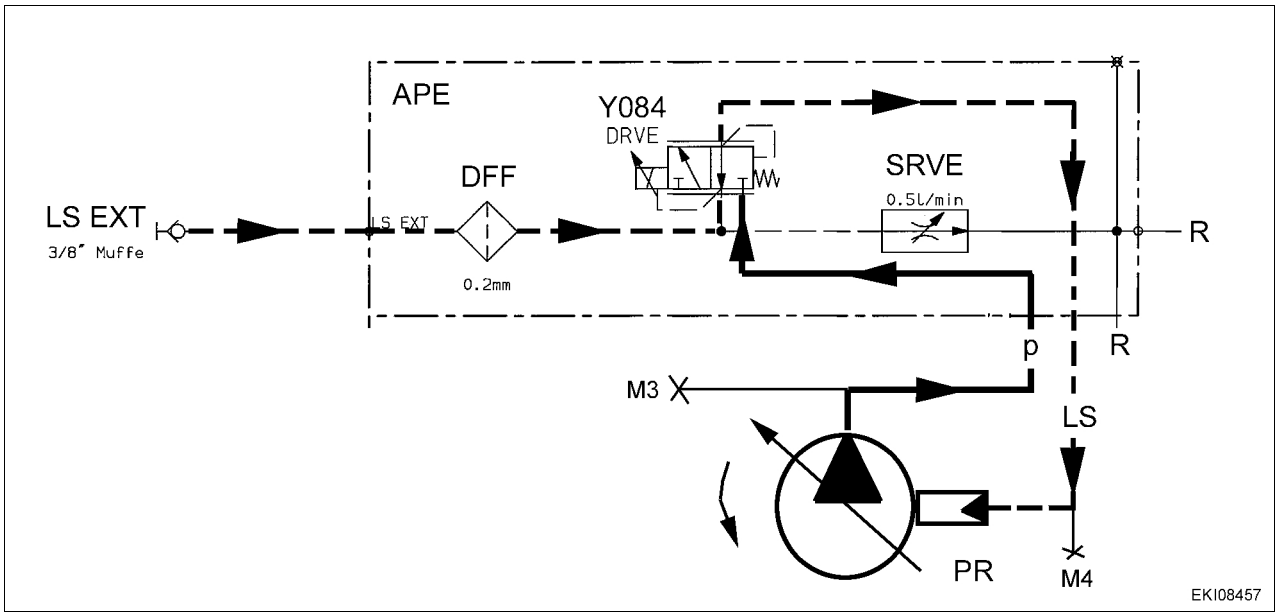



*Fig. 9.* I002113

| Item | Designation | Item | Designation |
|---|---|---|---|
| PR | LS pump | p | Pump pressure |
| Y084 | Control pressure increase solenoid valve (DRVE) | R | Return flow |
| DFF | Pressure filter | LS | Load sensing pressure |
| LS ext | External load sensing connection | M3 | Measuring point: pump pressure p |
| SRVE | Flow cut-off valve, external load sensing relief | M4 | Measuring point: load sensing pressure LS |

Implements with hydraulic consumers that are operated on the tractor often have very long supply lines, which pose the risk of pressure loss. Hence, the 22 bar of control pressure is not always reached.
The control pressure increase is set and activated via the terminal. This in turn energises the pressure cut-off valve, external LS, reinforcement (DRVE), in dependence of the set value. The wider the pressure cut-off valve opens, the higher the volume of oil fed by the pressure line (P) to the LS line, which raises the LS pressure.
If additional pressure is present in the external LS line, the control line pressure pushes the pressure cut-off valve further to the right and the LS pressure is raised.
The flow cut-off valve, external LS relief (SRVE) is required to allow a small volume of oil to flow to the tank (T), thus relieving the LS line.
The pressure filter, external LS (DFE) protects the system from impurities that penetrate the system via the external LS line.

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# C Documents and diagrams

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922 .. 0101-1000
922 .. 1001-
925 .. 0101-1000
925 .. 1001-
928 .. 0101-1000
928 .. 1001-
931 .. 0101-1000
931 .. 1001-
934 .. 0101-1000
934 .. 1001-

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# 1 Hydraulic circuit diagram with legend

| Item | Designation | DIN | Item | Designation | DIN |
|---|---|---|---|---|---|
| **APE** - Entry plate for external pressure supply | | | **MVKFS [Y022]** - Lowering solenoid valve (standard front power lift) | | Y022 |
| **ASP1** - Accumulator, suspension 1 | | | **MVKH [Y055]** - Rear pressure compensator lock valve (SA/DA) | | |
| **ASP2** - Accumulator, suspension 2 | | | **MVL [Y012]** - Solenoid valve, charge function (suspension, oil pre-heater) | | Y012 |
| **AVF1** - Lock valve, suspension 1 | | | **MVP [Y032]** - Solenoid valve, pilot pressure | | Y032 |
| **AVF2** - Lock valve, suspension 2 | | | **MVUL [Y082]** - Solenoid valve, lower link stabiliser lock | | Y082 |
| **BF** - Ventilation filter | | | **MVVH [Y060]** - Solenoid valve, rear pre-heater | | Y060 |
| **DBV1** - Main pressure-limiting valve | | | **MVVM [Y061]** - Solenoid valve, central pre-heater | | Y061 |
| **DBVF1** - Pressure-limiting valve, suspension 1 | | | **OETR** - Oil temperature regulator | | |
| **DBVF2** - Pressure-limiting valve, suspension 2 | | | **PH** - Auxiliary pump | | |
| **DBVKF [Y022]** - Field pressure valve, DA front power lift enhanced control | | | **PNL** - Emergency steering pump | | |
| **DBVKH [Y062]** - Field pressure valve, DA rear power lift | | | **PR** - LS pump | | |
| **DBV-L** - Pressure-limiting valve, 175 bar steering | | | **PVL** - Priority valve, steering | | |
| **DFE** - Pressure filter, external LS | | | **RLF** - Return line filter | | |
| **DFP** - Pressure filter, pilot pressure | | | **RVF1** - Non-return valve, suspension 1 | | |
| **DFWH** - Flow monitor, auxiliary pump | | | **RVFH** - Non-return valve, raise suspension | | |
| **DRVE [Y084]** - Pressure cut-off valve, Power Beyond | | | **RVFS** - Non-return valve, lower suspension | | |
| **DRVF [Y013]** - Suspension load pressure/lower | | | **RVL1-3** - Non-return valve, steering 1-3 | | |
| **DRVP** - Pressure cut-off valve, pilot pressure | | | **RVN** - Non-return valve, emergency steering pump | | |
| **DS1** - Pressure switch, LS pump monitor | | | **SFH** - Auxiliary pump suction filter | | |
| **DSF [B063]** - Pressure switch, filter monitor | | B063 | **SFN1+2** - Suction filter, emergency steering pump 1+2 | | |
| **DWKF** - Pressure compensator, front power lift, SA | | | **SFR** - Suction filter, LS pump | | |
| **DWL** - Pressure compensator, steering | | | **SRVE** - Flow cut-off valve, external LS relief | | |
| **DWP** - Pressure compensator, pilot pressure | | | **SVUL [Y083]** - Solenoid valve, lower link stabiliser release | | Y083 |
| **EPH** - End plate, rear valve block | | | **TG [B013]** - Temperature sensor | | B013 |
| **EPM** - End plate, centre | | | **VBF** - Valve block, suspension | | |
| **FKH** - Front power lift | | | **VBL** - Valve block, steering | | |
| **FSP** - Front power lift accumulator | | | **VBP** - Valve block, pilot pressure supply | | |
| **FSS [B084]** - Level switch | | B084 | **WV1** - LS shuttle valve 1 | | |
| **GDR** - Silencer, LS pump | | | **WVP** - Shuttle valve, pilot pressure | | |
| **HKH** - Rear power lift | | | **ZF1** - Federungszylinder 1 | | |
| **HP** - Hand pump, pilot pressure – emergency supply | | | **ZL** - Steering cylinder | | |
| **Hy.ABV** - Hydraulic trailer brake | | | **ZSB** - Central control block | | |

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| Item | Designation | DIN | Item | Designation | DIN |
|---|---|---|---|---|---|
| **K** - Hydraulic oil cooler | | | **ZSP** - Auxiliary accumulator, suspension | | |
| **LE** - Steering unit | | | **Autoguide** | | |
| **M1** - Measuring point, emergency pumps | | | **APLE** - Connection plate for el.-hyd. steering system | | |
| **M2** - Measuring point, auxiliary pumps | | | **DRVLE** - Pilot pressure cut-off valve, el.-hyd. steering system | | |
| **M3** - Measuring point, LS pump | | | **MVLE1 [Y085]** - Solenoid valve, pilot pressure/switch-off (Auto-Guide) | | |
| **M4** - Measuring point, LS pressure | | | **MVLE2 [Y086]** - Solenoid valve, steering disconnect (Auto-Guide) | | |
| **M5** - Measuring point, control pressure | | | **PVLE** - Proportional valve, el.-hyd. steering system | | |
| **MVFF [Y067]** - Solenoid valve, lock suspension | | Y067 | **VBLE1** - Valve block, el.-hyd. steering system 1 | | |
| **MVFH [Y065]** - Solenoid valve, raise suspension | | Y065 | **VBLE2** - Valve block, el.-hyd. steering system 2 | | |
| **MVFW [Y063]** - Solenoid valve, wobble stabiliser | | Y063 | **VLE1** - LE priority valve (oversteering valve) | | |
| **MVKF [Y021]** - Front pressure compensator lock valve (SA/DA) | | Y021 | **VLE2+3** - LE switch off 1 + 2 valves | | |
| **MVKFH [Y021]** - Lifting solenoid valve (standard front power lift) | | Y021 | **WVLE** - LS shuttle valve, el.-hyd. steering system | | |
| | | | | | |

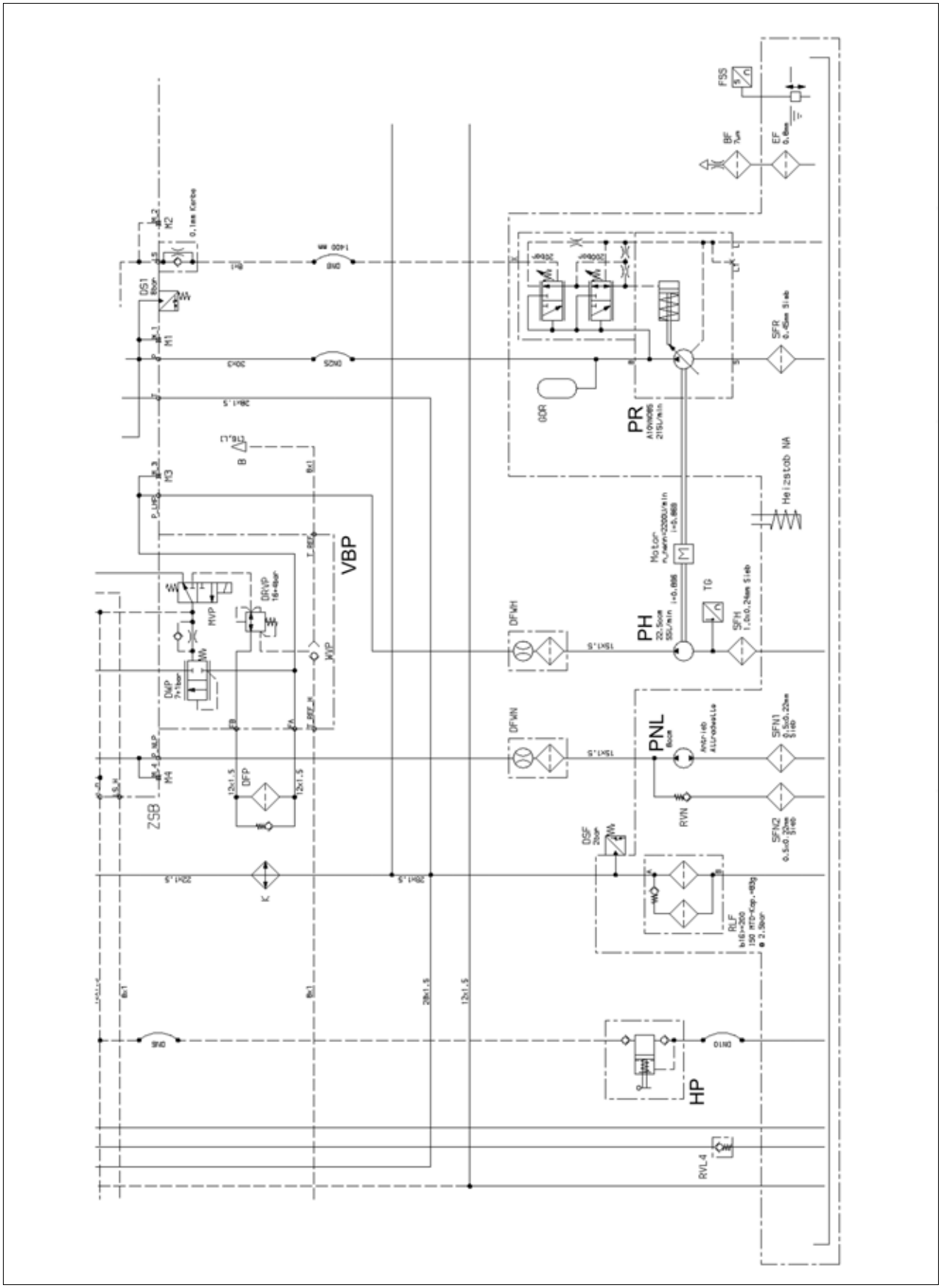



*Fig. 1. Pumps*

I000962

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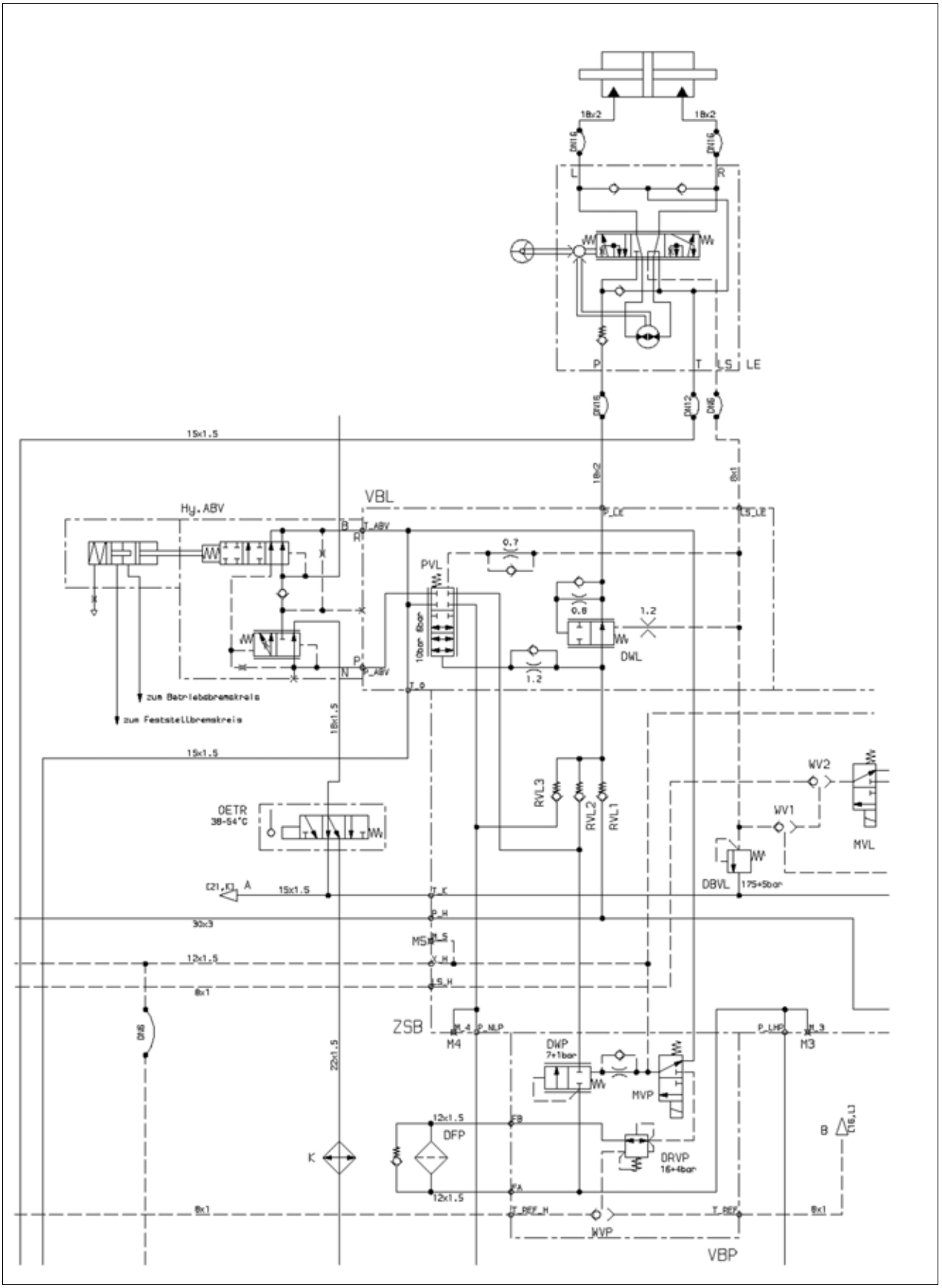



*Fig. 2. Central control block and steering*

I000937

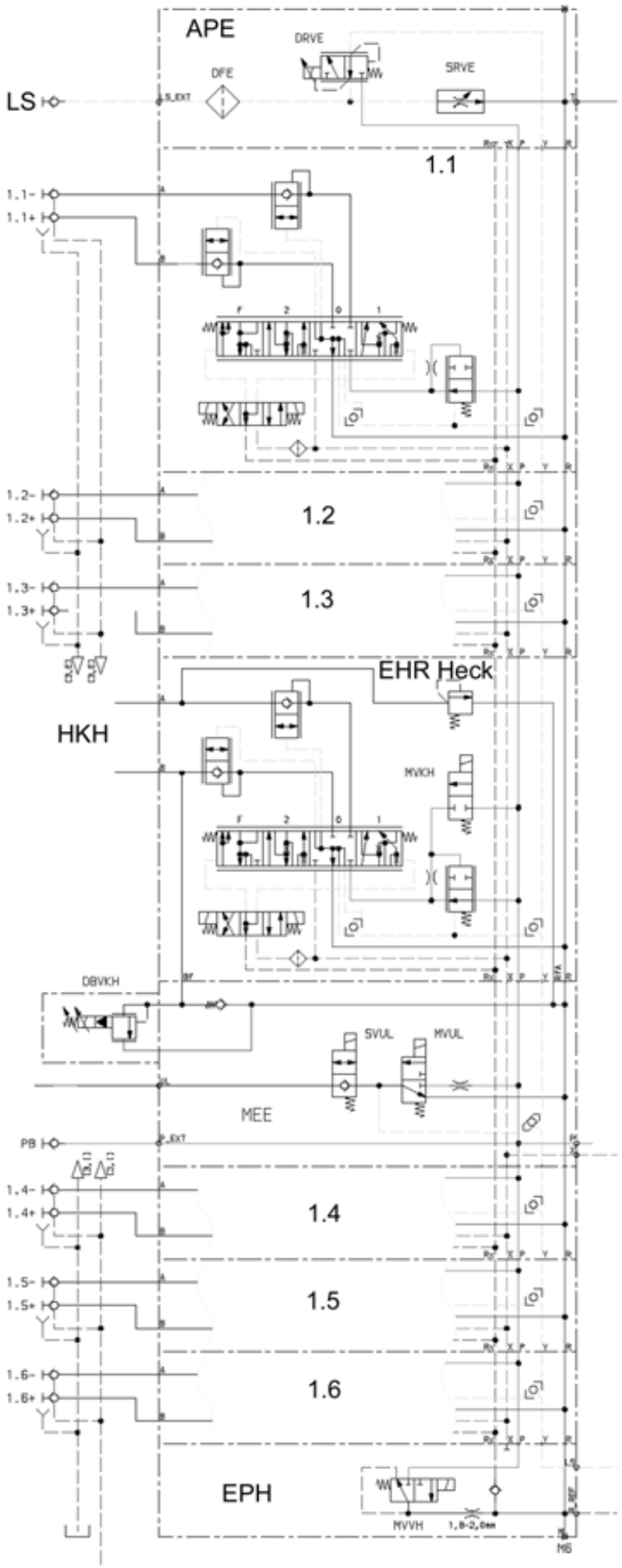



*Fig. 3. Rear valve block*

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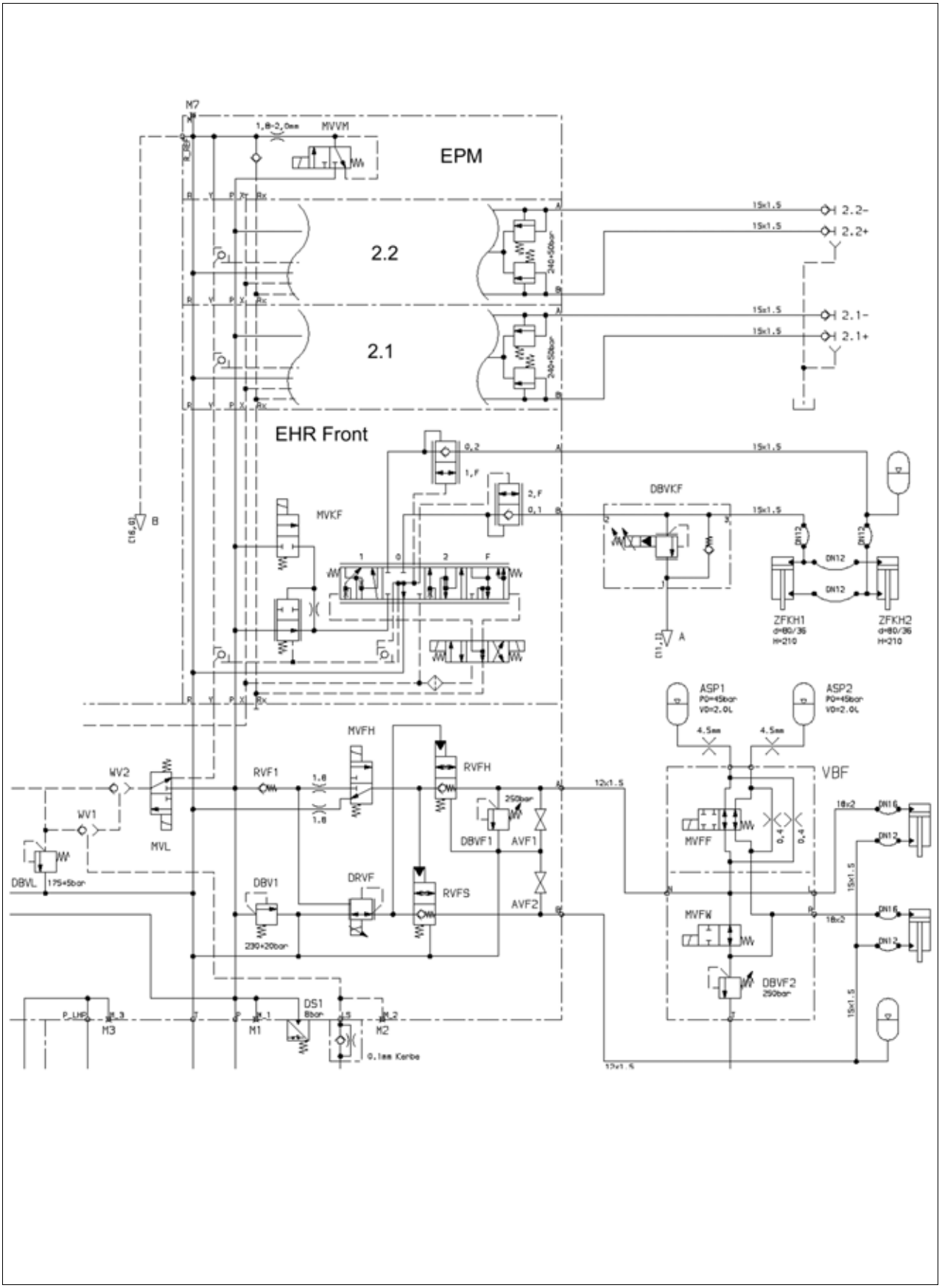



*Fig. 4. Central valve block*

I000969

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# E Measuring and testing

1 Test report, fax template . . . . . 27

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# 1 Test report, fax template

Pressure testing

| | | | | |
|---|---|---|---|---|
| FENDT | | | | Measurement no. |
| Chassis no.: | Op. hrs. reading: | Keyword: | Name: | Date: |

**NOTE:** *Initial condition of tractor for all measurements:*

- *Engine in idle (800 rpm)*
- *Valves and EPC are locked*
- *No steering*
- *In tractors with hydraulic trailer brakes, release the pressure with the trailer brake button while the handbrake is applied*
- *Oil temperature 40-50°C*

| | LS pump test [PR] | M2 (bar) | M3 (bar) | M4 (bar) | M5 (bar) | Oil temperature |
|---|---|---|---|---|---|---|
| A | | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | |
| A1 | Minimum standby pressure (Valves locked) | 12-18 | 20-24 | 0 | 0 | |
| A2 | Minimum standby pressure (Valves unlocked) | 34-40 | 20-24 | 0 | 22-25 | |
| A3 | Free steering when stationary To left/right (Valves unlocked) | 34-40 / | Depending on resistance / | Depending on resistance / | 22-25 | |
| A4 | Turn steering to stop To left/right (Valves unlocked) | 34-40 / | 195-200 / | 170-180 / | 22-25 | |
| A5 | Yellow control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A6 | Blue control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A7 | Red control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A8 | Green control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A9 | Brown control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A10 | Violet control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A11 | Olive control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A12 | Grey control valve Raise/lower | 34-40 / | 198-210 / | 198-210 / | 22-25 | |
| A13 | Rear EPC with external pushbutton to stop | 34-40 | 198-210 | 198-210 | 22-25 | |
| A14 | Front power lift with external pushbutton to stop | 34-40 | 198-210 | 198-210 | 22-25 | |
| A15 | Suspension ON or during raising (Valves unlocked) | 34-40 | 198-210 | 198-210 | 22-25 | |

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| | Auxiliary pump test [PH] | M2 (bar) | M3 (bar) | M4 (bar) | M5 (bar) | Oil temperature |
|---|---|---|---|---|---|---|
| B | Connect the short circuit hose to a control valve and use the terminal to set the valve to max. flow rate and deflect or – Short circuit hose from pressure connection, external to return line, rear | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | |
| B1 | Free steering when stationary (Valves unlocked) | Depending on resistance | Depending on resistance | Depending on resistance | 22-25 | |
| B2 | Steering at stop to left/right (Valves unlocked) | 190 - 200 | Depending on resistance | 175 - 185 | 22-25 | |
| B3 | | | | | | |

| | Wheel-driven steering pump test | M1 (bar) | M1 (bar) | Oil temperature |
|---|---|---|---|---|
| C | **[PNL] - only when driving forwards** | SETPOINT | ACTUAL | |
| C1 | 10 km/h | 0.4 | | |
| C2 | 40 km/h | 1.5 | | |
| C3 | | | | |

| | Further measurements | M1 (bar) | M2 (bar) | M3 (bar) | M4 (bar) | M5 (bar) | Oil temperature |
|---|---|---|---|---|---|---|---|
| D | special conditions/combinations/sequences/settings/implements | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | SETPOINT ACTUAL | |
| D1 | | | | | | | |
| D2 | | | | | | | |
| D3 | | | | | | | |
| D4 | | | | | | | |

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Measuring leak oil volume at LS pump

**NOTE:** *Do not perform measurement, unless:*

– *There are genuine doubts about the pump volume*

– *The overall hydraulic function has already been checked*

**Preparation:**

Direct the leak oil line of the LS pump into a receptacle with a litre scale.

**Starting condition of tractor**

– Oil temperature 50°C

– With a maximum standby pressure of 200 bar and zero delivery

– Engine speed 1500 rpm

| Pump status | Leak oil |
|---|---|
| New | Approx. 5 l/min |
| Permissible, normal state | Up to 12 l/min |
| Worn | From 12 l/min |

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| | |
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# 9605

Hydraulic equipment/hydraulic connections

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# 9605 Hydraulic equipment/hydraulic connections

G Repair . . . . . .5

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# G Repair

1 Removing rear hydraulic quick-release coupler . . . . . 7
2 Installing rear hydraulic quick-release coupler . . . . . 10

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# 1 Removing rear hydraulic quick-release coupler

**NOTE:** *The coupler housing does not have to be removed if only the quick-release coupling inserts are removed.*

For greater clarity, the work was performed with the control valve removed.

Loosen coupler housing bolts and remove housing (when the control valve is installed, a long Allen key is required).



*Fig. 1.* I001740

Remove protective cap of coupler.



*Fig. 2.* I001741

Remove circlip from coupler insert.



*Fig. 3.* I001742

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Operate release lever to push out and remove coupler.



*Fig. 4.* I001743

Remove pressure sleeve with circlip pliers.



*Fig. 5.* I001744

Remove circlip from release lever.



*Fig. 6.* I001745

Remove release lever.



*Fig. 7.* I001746

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Remove plastic cover and pressure lever.



*Fig. 8.* I001747

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## 2 Installing rear hydraulic quick-release coupler

Prepare cleaned parts of hydraulic coupler for assembly.



*Fig. 9.* I001748

Insert new support rings and O-rings.

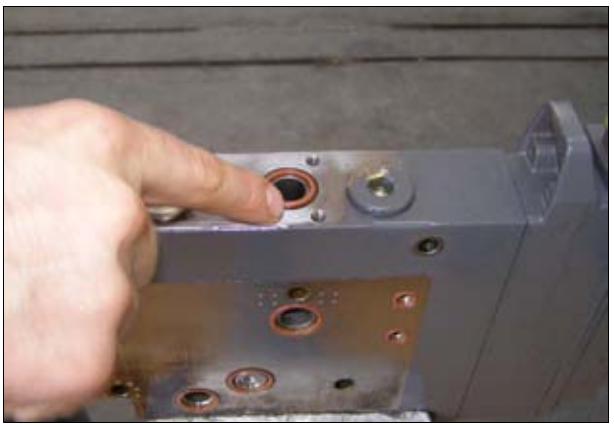


*Fig. 10.* I001749

Insert release rocker in coupler housing, ensure that the marking points to the release lever.



*Fig. 11.* I001747

Insert release lever in bore.



*Fig. 12.* I001746

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Mount release lever circlip.



*Fig. 13.* I001745

Insert pressure sleeve using circlip pliers.



*Fig. 14.* I001744

Press coupler insert into housing bore.



*Fig. 15.* I001743

Mount coupler insert circlip.



*Fig. 16.* I001742

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Mount protective caps.



*Fig. 17.* I001741

Mount coupler housing on control valve and tighten bolts.

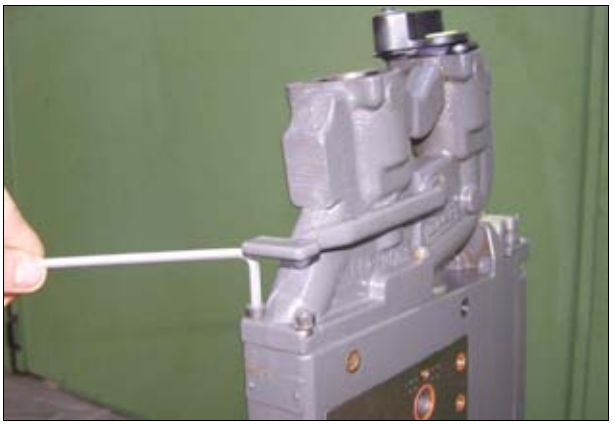


*Fig. 18.* I001740

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| | |
|---|---|
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| D | Component location |
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| F | Setting and Calibration |
| G | Repair |
| H | Service – Info |


# 9610

Hydraulic equipment/central control block (ZSB)

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# 9610 Hydraulic equipment/central control block (ZSB)

A General. . . . . .5

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# A General

1 Central control block. . . . . 7

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# 1 Central control block

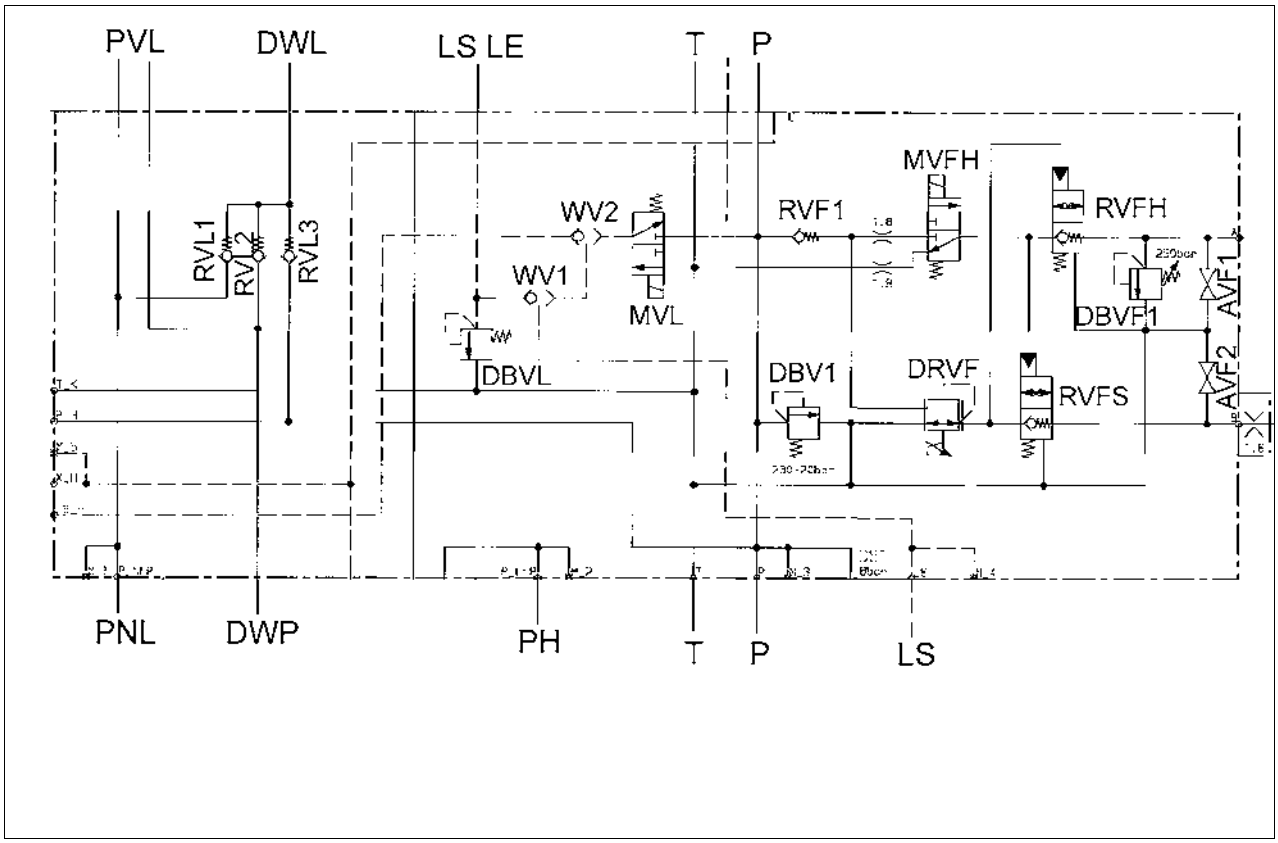



*Fig. 1.* I001343

Vital hydraulic functions are integrated into the central control block. This keeps the number of hydraulic line connections to a minimum.
The central control block accommodates the following components:

- Non-return valves 1-3, steering (RVL1-3)
- Pressure-limiting valve, steering (DBVL)
- Shuttle valves 1+2 (WV1+2)
- Solenoid valve, charge function (MVL)
- Main pressure-limiting valve (DBV1)
- Non-return valve, suspension 1 (RVF1)
- Solenoid valve, raise suspension (MVFH)
- Pressure cut-off valve, suspension (DRVF)
- Non-return valves, raise/lower suspension (RVFH, RVFS)
- Pressure-limiting valve, suspension 1 (DBVF1)
- Stop valves, suspension 1+2 (AVF1 + AVF2)

The following components are flange-mounted to the central control block:

- Measuring connections 1-5 (M1-M5)
- Valve block, pilot pressure supply (VBP)
- Valve block, steering (VBL)
- EPC cut-off valve, front
- Control units SB 23 LS-EHS 2 for front connections
- End plate, centre (EPM)

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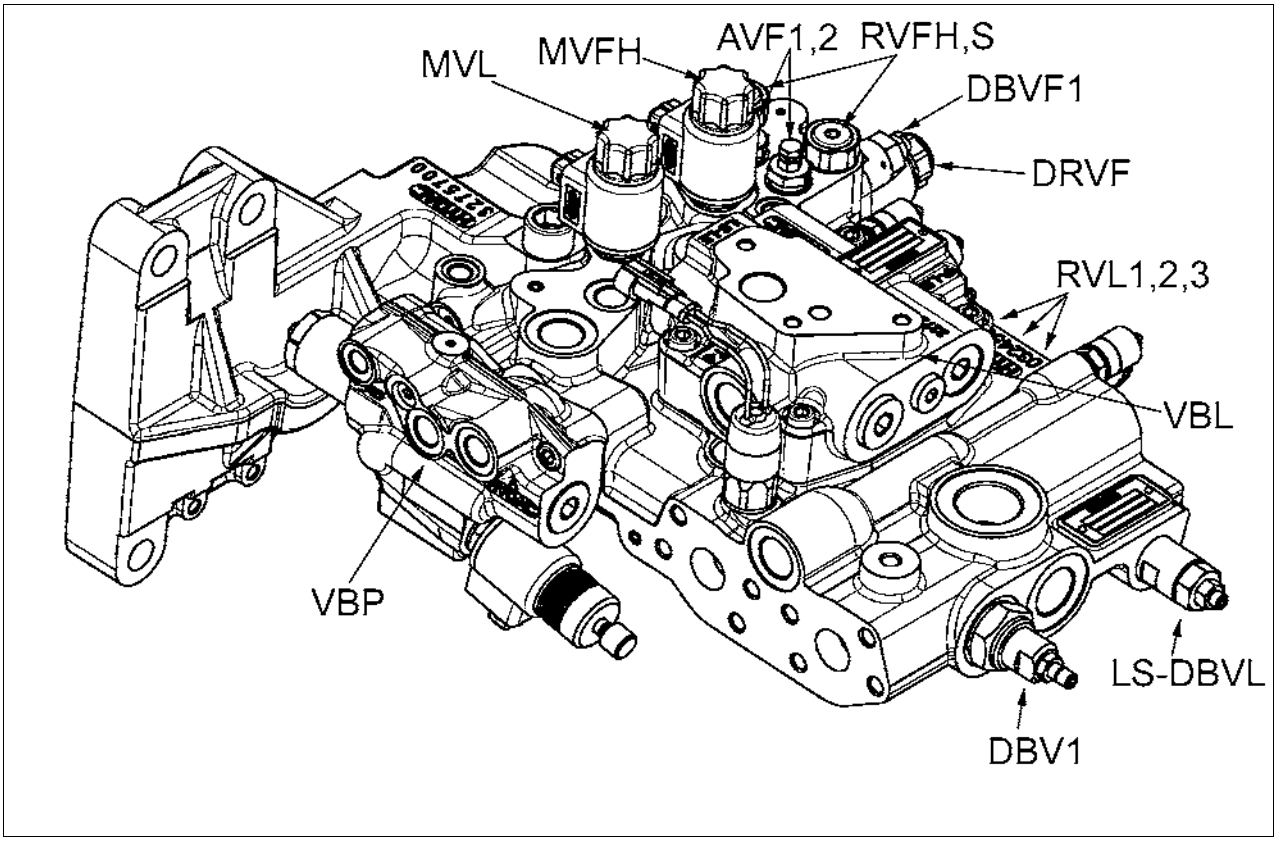



*Fig. 2.* I001344

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| | |
|---|---|
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# 9620

Hydraulic equipment/valve fitting

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# 9620 Hydraulic equipment/valve fitting

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C Documents and diagrams . . . . . .13

F Setting and calibrating . . . . . .17

G Repair. . . . . .25

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# A General

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2 Control pressure . . . . . 10
3 Oil pre-heater . . . . . 11

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# 1 Control valves SB 23 LS-EHS 2/Emergency mode

**Manual mode:**

In the event of electronic failure, the individual valves can also be operated manually.

– Detach the cover plate (A) from the rear control valves or

– detach the panel from the central control valve

– Actuate the valve with a spanner (size 13)

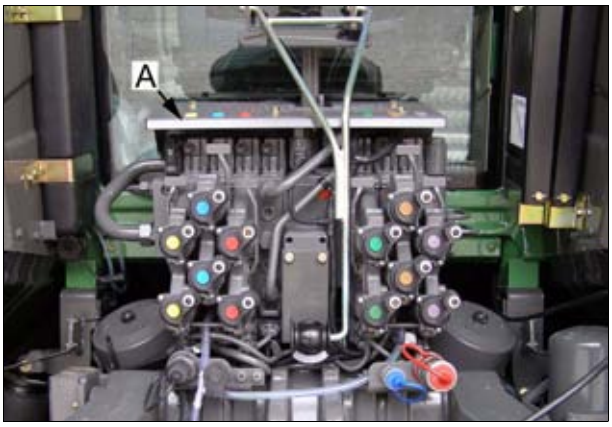



*Fig. 1.* I001312

**Actuation directions:**

| | |
|---|---|
| A | Raise |
| B | Lower |
| C | Floating position |

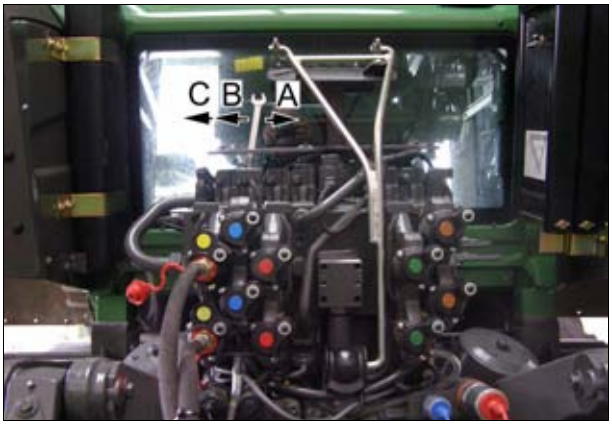



*Fig. 2.* I001313

**NOTE:** *Always actuate valves on side "A" with the spanner. If the valves are actuated on the opposite side, the valve setting may be altered.*

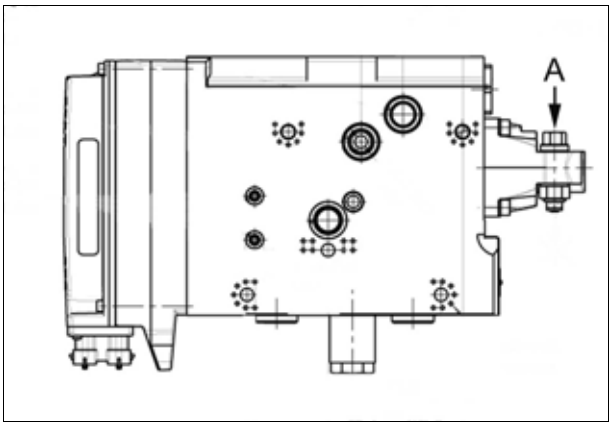



*Fig. 3.* I001314

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**Manual operation in the event of hydraulic failure**

In the event of hydraulics failure (e.g. engine damage), pilot pressure can be generated using the hand pump, which in turn enables the valves to be deflected.

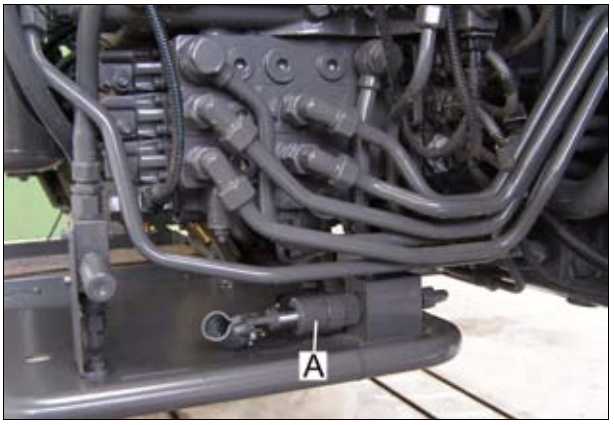



*Fig. 4.* I001316

**Procedure:**

– Screw in screw "A" on the pilot valve to manually set it to flow

– Actuate hand pump whilst manually deflecting the valve (two-person operation)

**NOTE:** *The hand pump generates pilot pressure that is needed to deflect the valves. This enables mounted implements to lower under their own weight. Lifting in this way is not possible.*

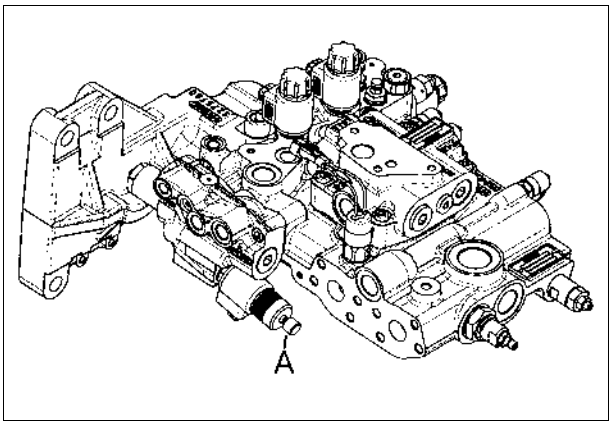



*Fig. 5.* I001317

**Shut down control valve**

Electronic problems or a mechanical defect in a control valve causes **all** control valves to lock.

**Work through the following steps in the event of control valve failure:**

| | |
|---|---|
| Establish which valve has failed | Read-off and clear error code |
| Lower implement | Manual mode (see above) |
| Hydraulically flush control valve | Manual mode (see above) |
| If the fault recurs and the control valves lock | Shut down control valve |

**Shutting down control valve:**

These control valves are connected like a daisy chain. This means that the valves are connected in series, i.e. one is connected to the other.
If one control valve has to be shut down, a valve is "skipped"

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**Diagram for valve shut down**

If a valve has to be shut down, it is removed from the chain. If, for example, valve 2 has a problem and has to be shut down, valve 1 is connected to valve 3.

**IMPORTANT:** *Control valves that have been shut down must remain in neutral when the engine is started.*

*If not:*

– *The hydraulic circuit may heat up*

– *Pump noise*

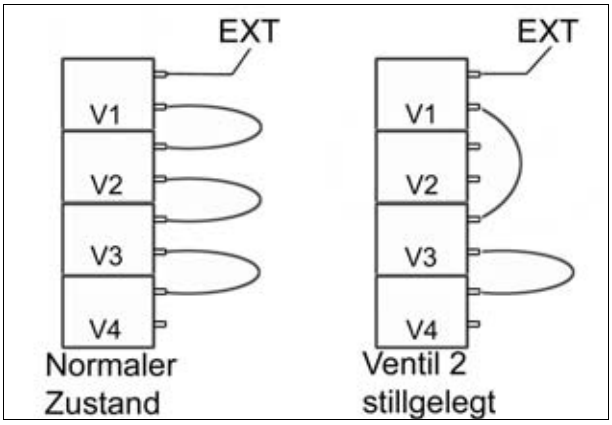
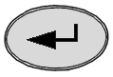



*Fig. 6.* I001318



Press enter to clear the error message.
Each stored fault message must be cleared individually. Cancelling a fault message does not remove the fault; it is simply no longer displayed.
The message will be displayed again the next time the tractor is started up.

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## 2 Control pressure

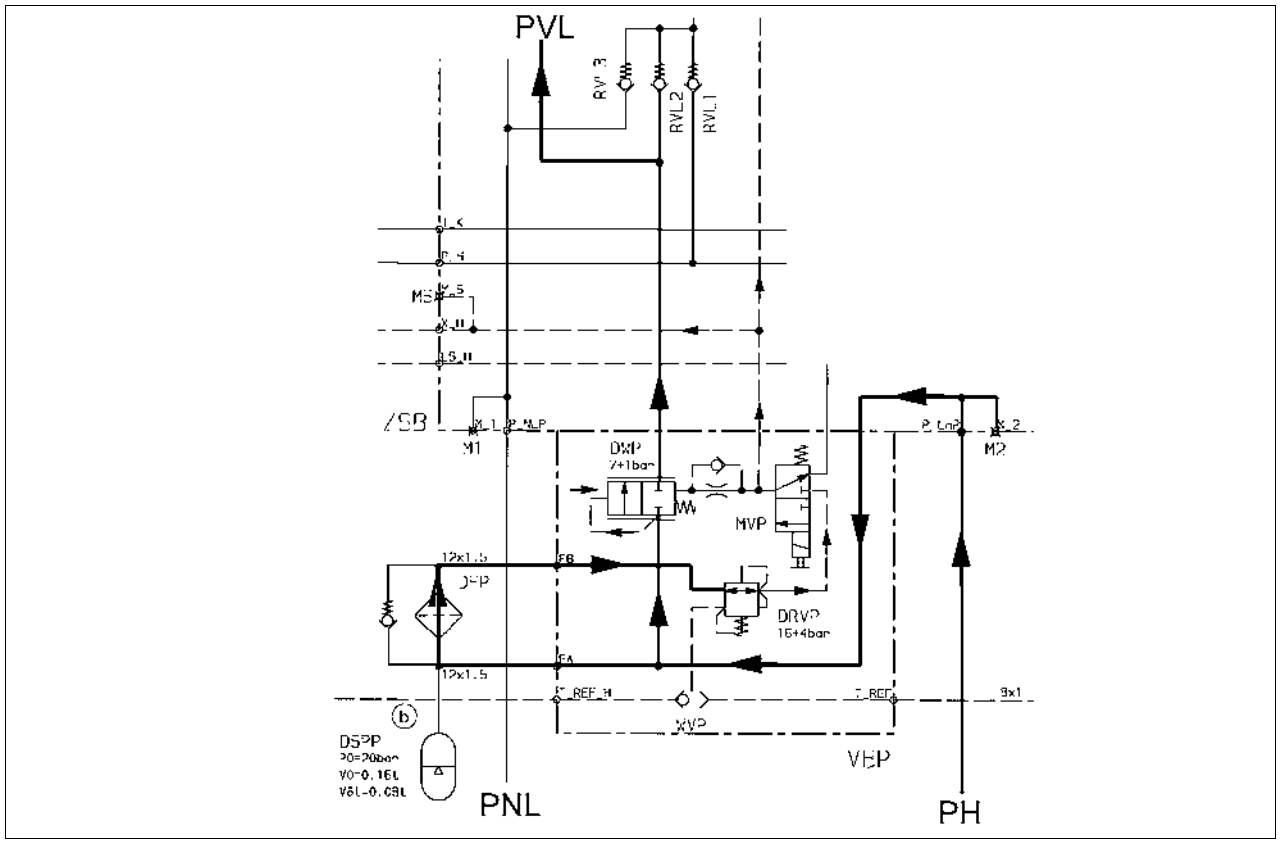



*Fig. 7.* I001339

Once the diesel engine has started, oil flows from the auxiliary pump to the pilot control pressure compensator (DWP) and via the pilot control pressure filter (DFP) to the pilot pressure cut-off valve (DRVP).

The pilot control pressure compensator (DWP) is closed by the spring force. If a pressure of 7 +1 bar is applied to the pressure compensator, this hydraulic force acts on the control line and pushes the pressure compensator against the spring force to the right. The pressure compensator opens and oil is allowed to flow to the non-return valve, steering 2 (RVL2) and to the steering priority valve (PVL).

The pressure is regulated at 16 + 4 bar at the pilot pressure cut-off valve (DRVP) and applied to the pilot control solenoid valve (MVP).

The pilot control solenoid valve opens on actuation and the pilot pressure is applied to the pilot control valves. The pilot pressure is also applied to the right side of the pressure compensator and, together with the spring force, pushes it to the left.

This increases the pressure before the pressure compensator (control line) until it exceeds the sum of the spring force and pilot pressure together and pushes the pressure compensator further to the right until it opens.

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## 3 Oil pre-heater

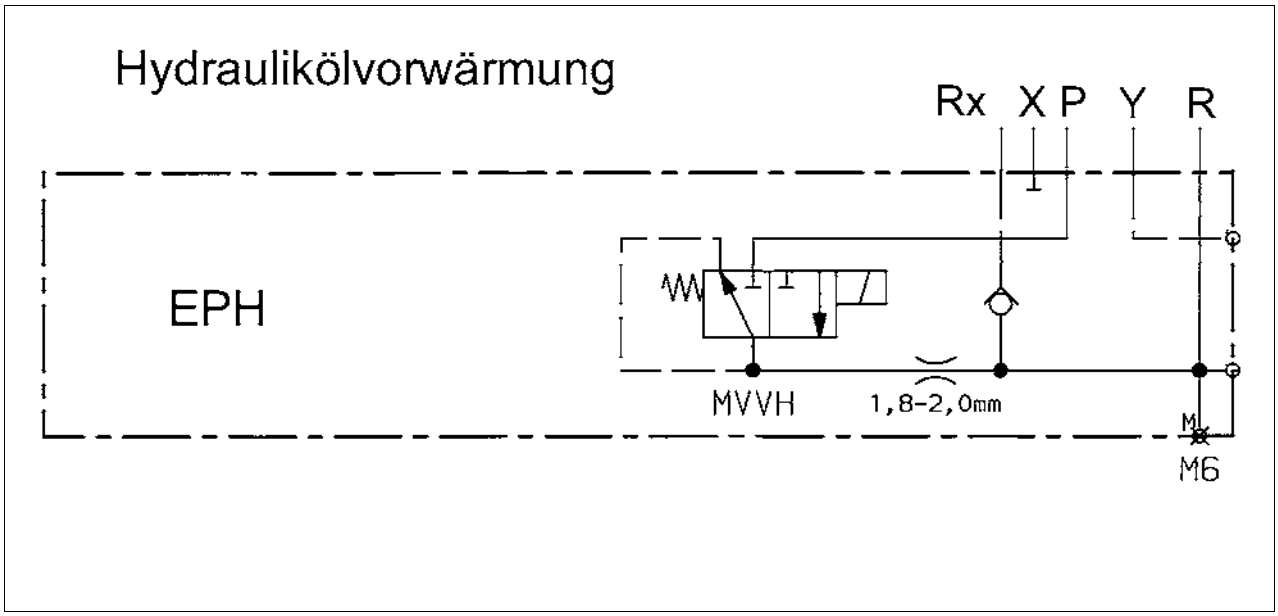



*Fig. 8.* I001354

To heat up the hydraulic oil more quickly at cold temperatures and hence minimise frictional loss, solenoid valves for oil pre-heating are installed in the end plates.
As standard, the rear end plate (EPH) accommodates the solenoid valve, rear pre-heater (MVVH).
The solenoid valve, central pre-heater (MVVM) is fitted into the end plate, centre (EPM) only if a valve (control valve or EPC valve) is also fitted.
At oil temperatures below 0°C, the solenoid valves, pre-heater (MVVH & MVVM) are energised and the oil flows from the pressure side (P) via the aperture to the return line (R). The aperture's narrow diameter (1.8-2.0 mm) causes the oil to heat up more quickly and therefore become thinner.
At temperatures above 30°C, the solenoid valves are de-energised and the pre-heater operation switched off.
The oil temperature is measured by the sensor, hydraulic oil temperature (B013, TG).

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# C Documents and diagrams

1 Control valves SB 23 LS-EHS 2 . . . . . 15

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# 1 Control valves SB 23 LS-EHS 2

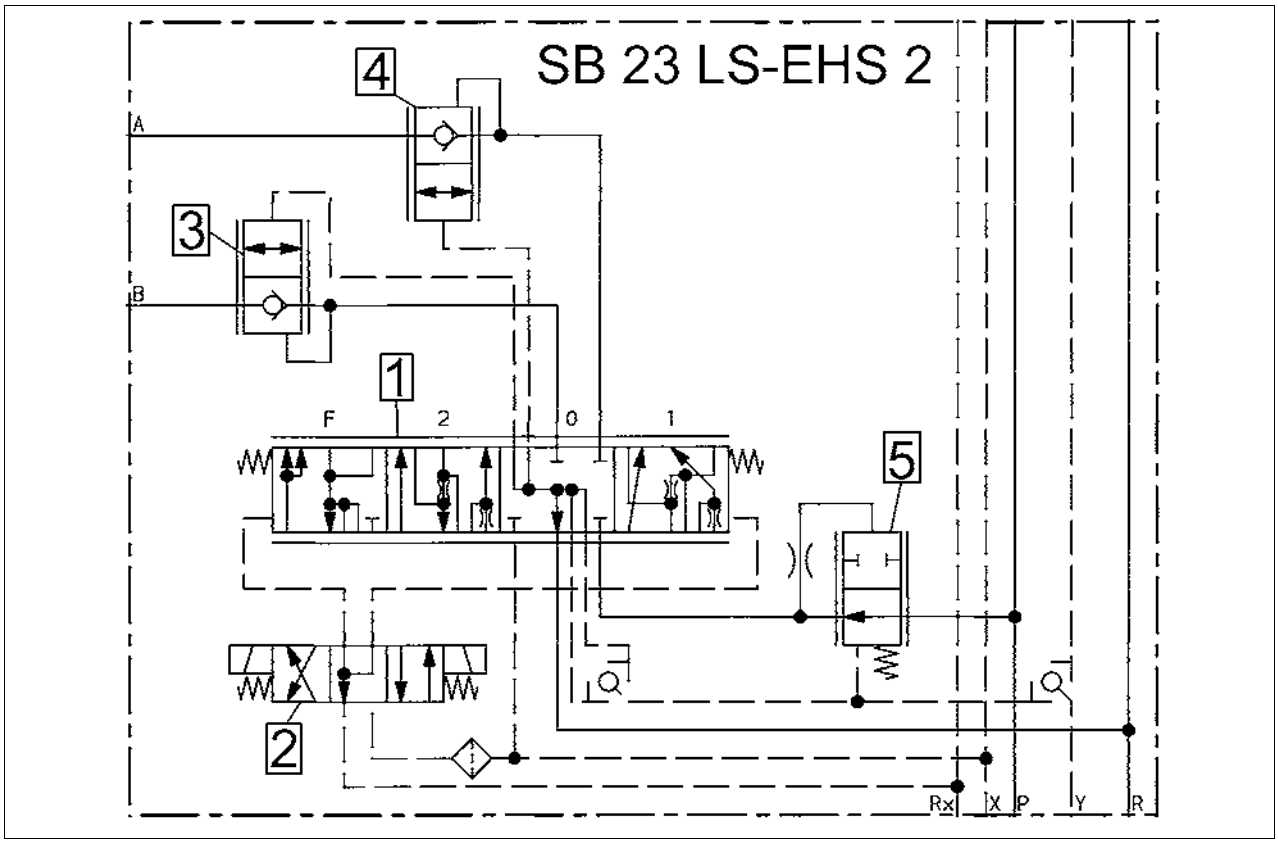



*Fig. 1.* I001348

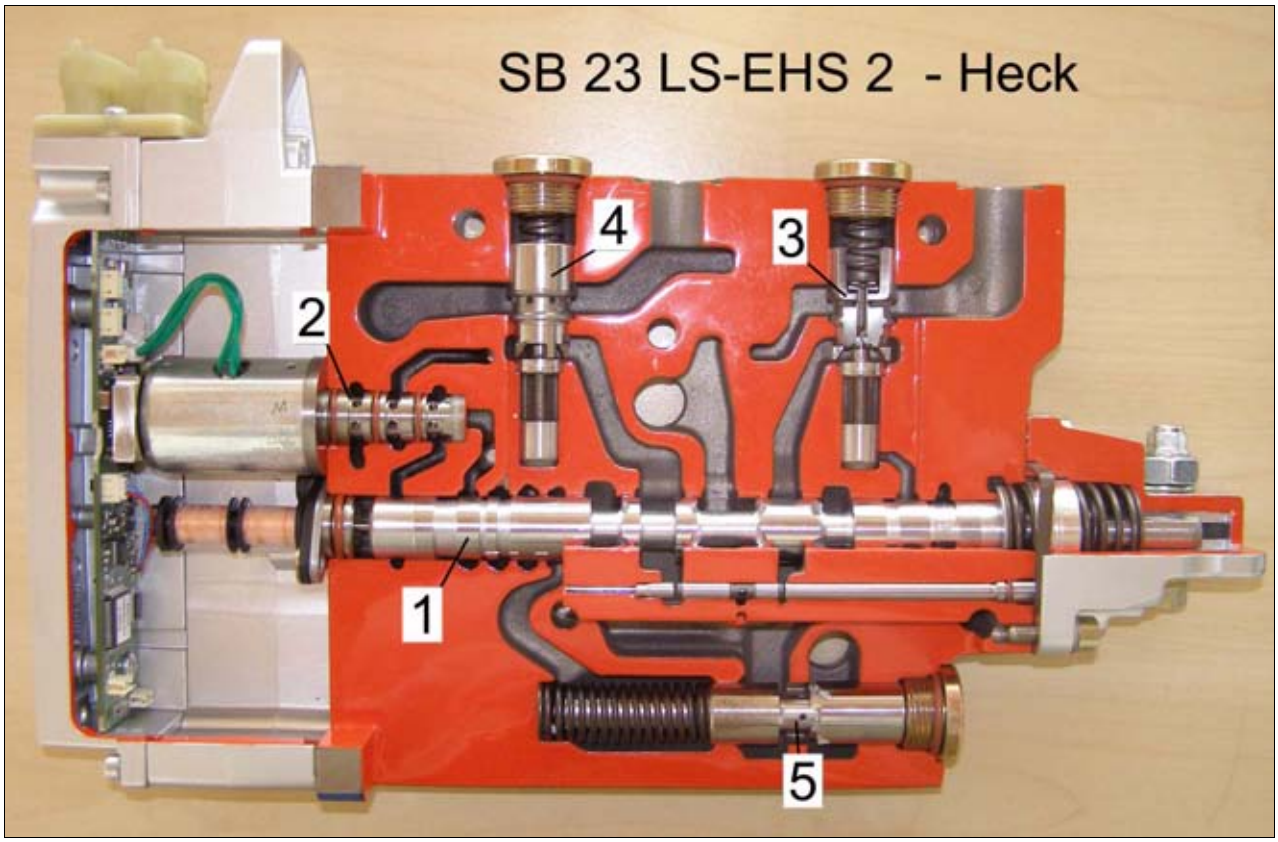



*Fig. 2.* I001346

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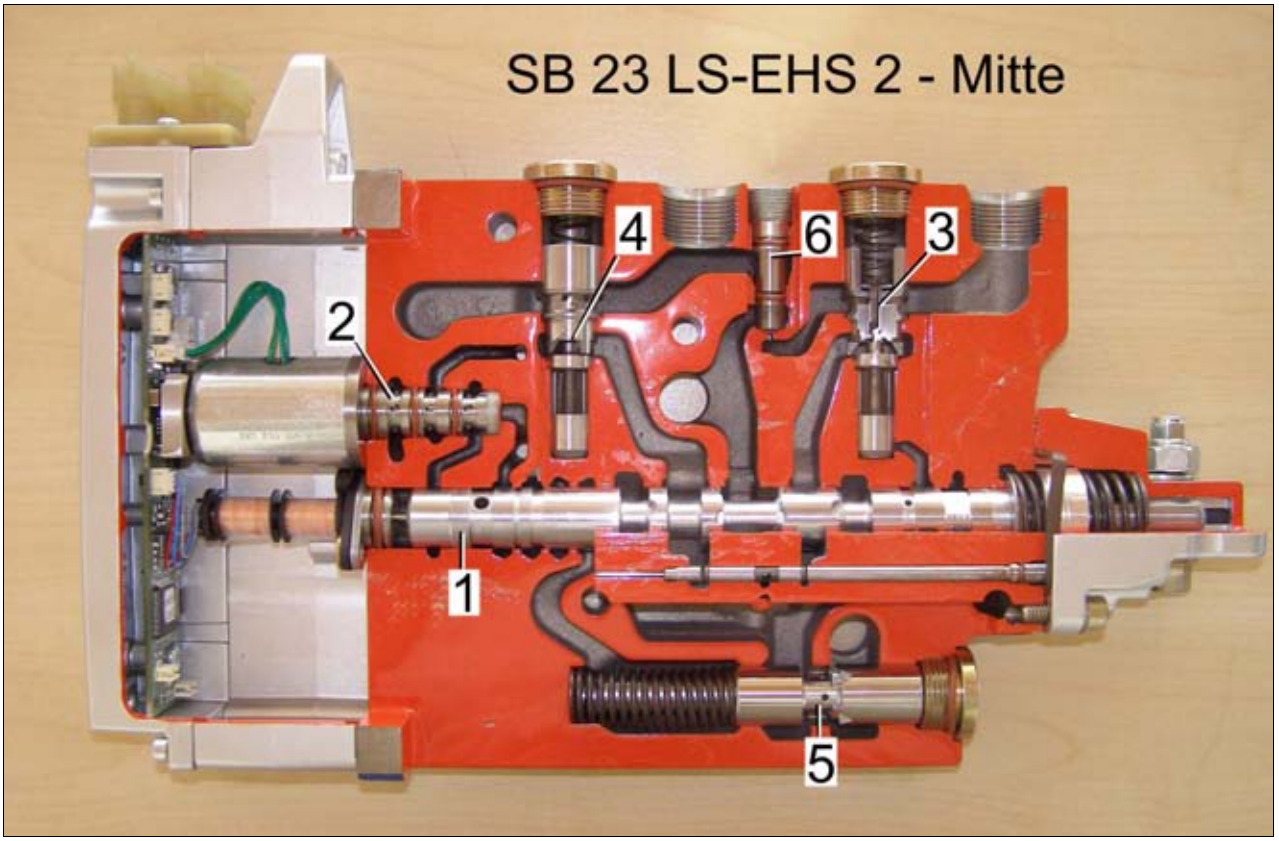



*Fig. 3.* I001347

| Item | Designation |
|---|---|
| 1 | Valve slide |
| 2 | Pilot valve |
| 3 | Non-return valve, output B |
| 4 | Non-return valve, output A |
| 5 | Pressure compensator |
| 6 | Thermal pressure-limiting valve |

**NOTE:** *Rear and central control valves SB 23 LS-EHS 2 cannot be interchanged.*
*The central control valves have an internal thread at output A and B for inserting the hydraulic screw connections. In the rear control valves, the coupler housing is flange-mounted to the face end of outputs A and B and therefore has no internal thread.*
*The central valves also have a thermal pressure-limiting valve, which is not fitted into the rear valves.*

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# F Setting and calibrating

1 Setting valves . . . . . 19

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# 1 Setting valves

Start Fendias via link
Can AS card or USB adapter has been connected to the laptop

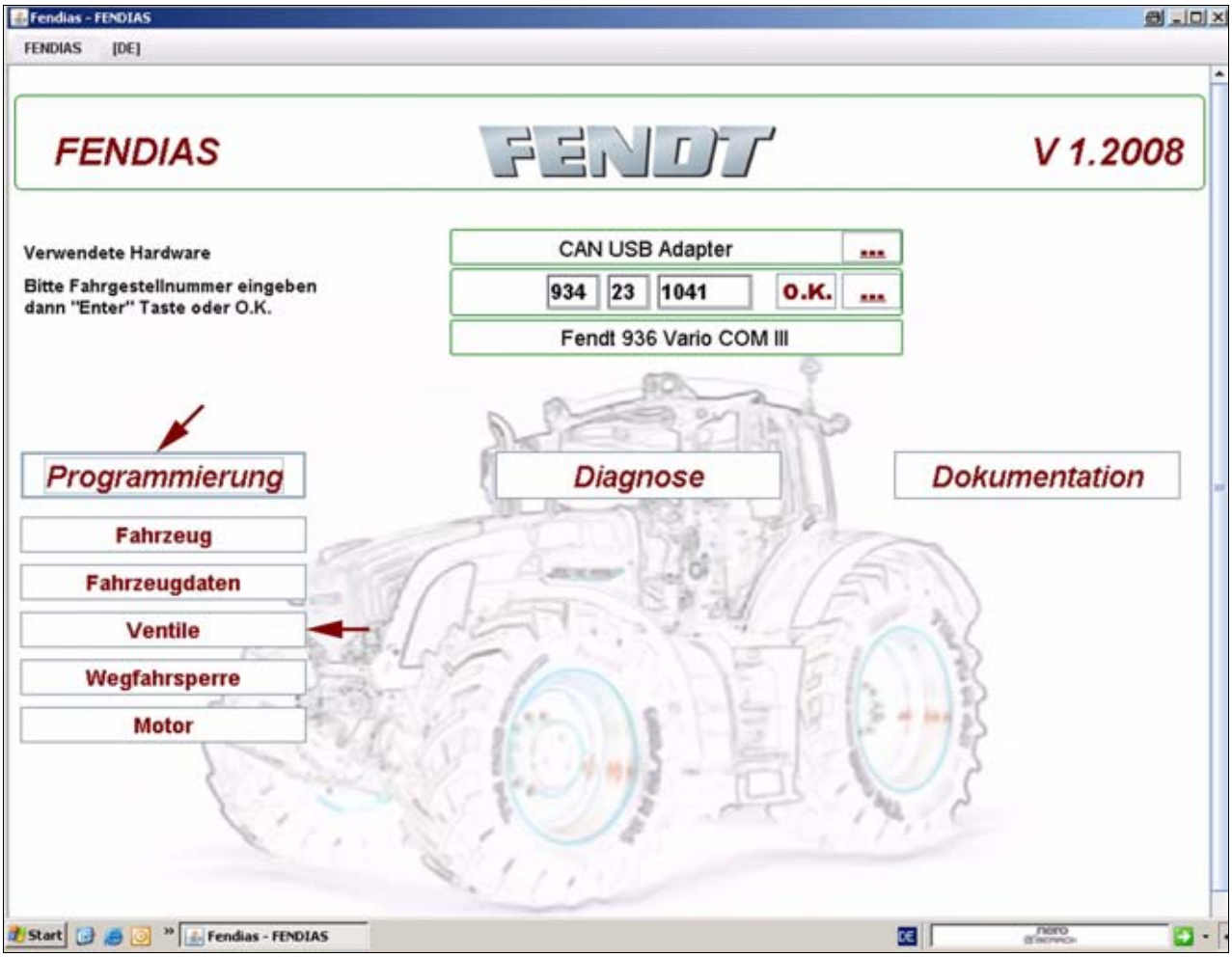



*Fig. 1.* I007149

Enter full chassis number and click on OK.
The tractor type will be recognised. The various program points will be displayed.
Open **Programming** and then select **Valves**.

Check Chassis Range!

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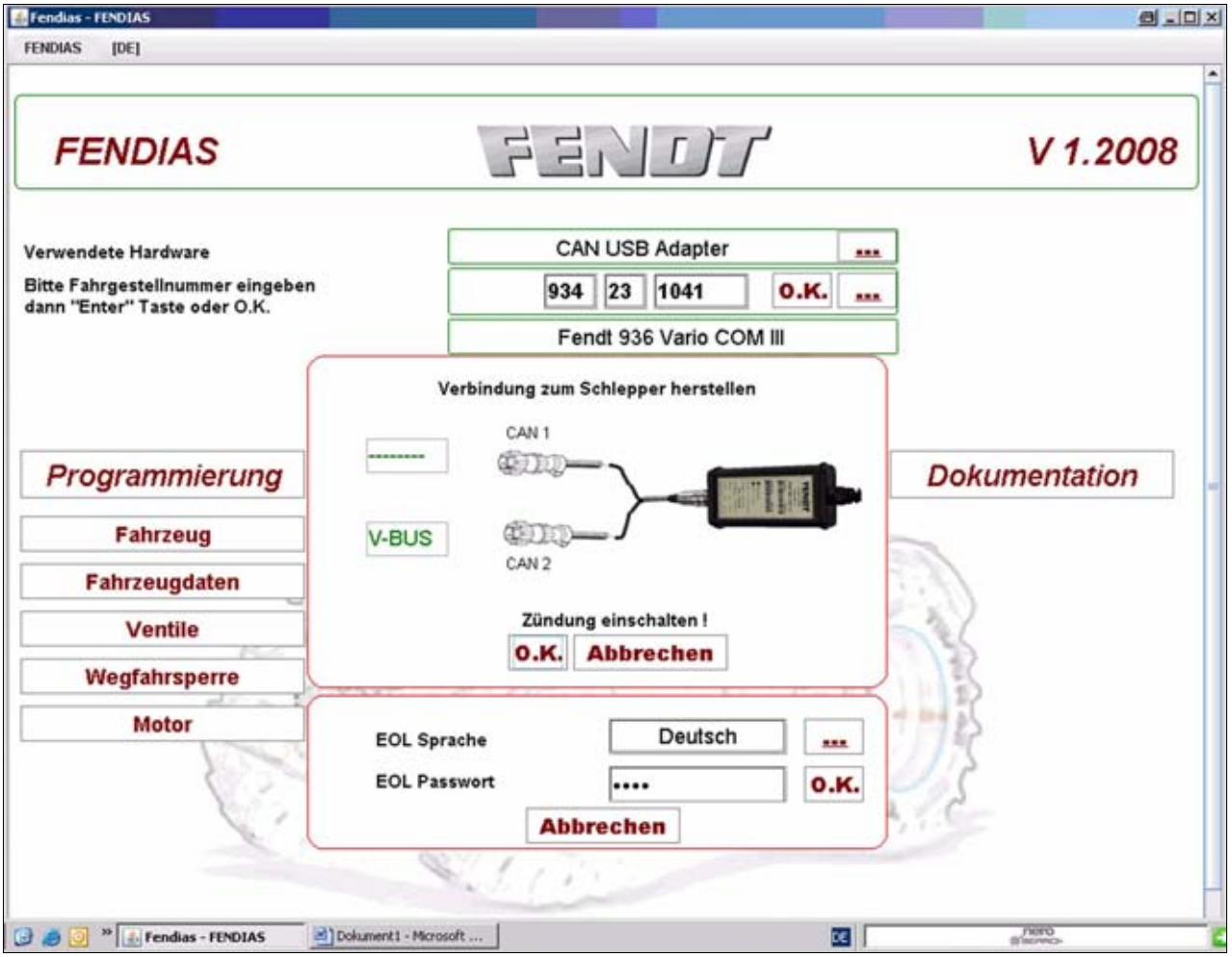



*Fig. 2.* I007097

This will show which CAN bus the CAN cable needs to be connected to.
Switch ignition ON.
Enter password and click on OK.
The following screen appears.

Check Chassis Range!

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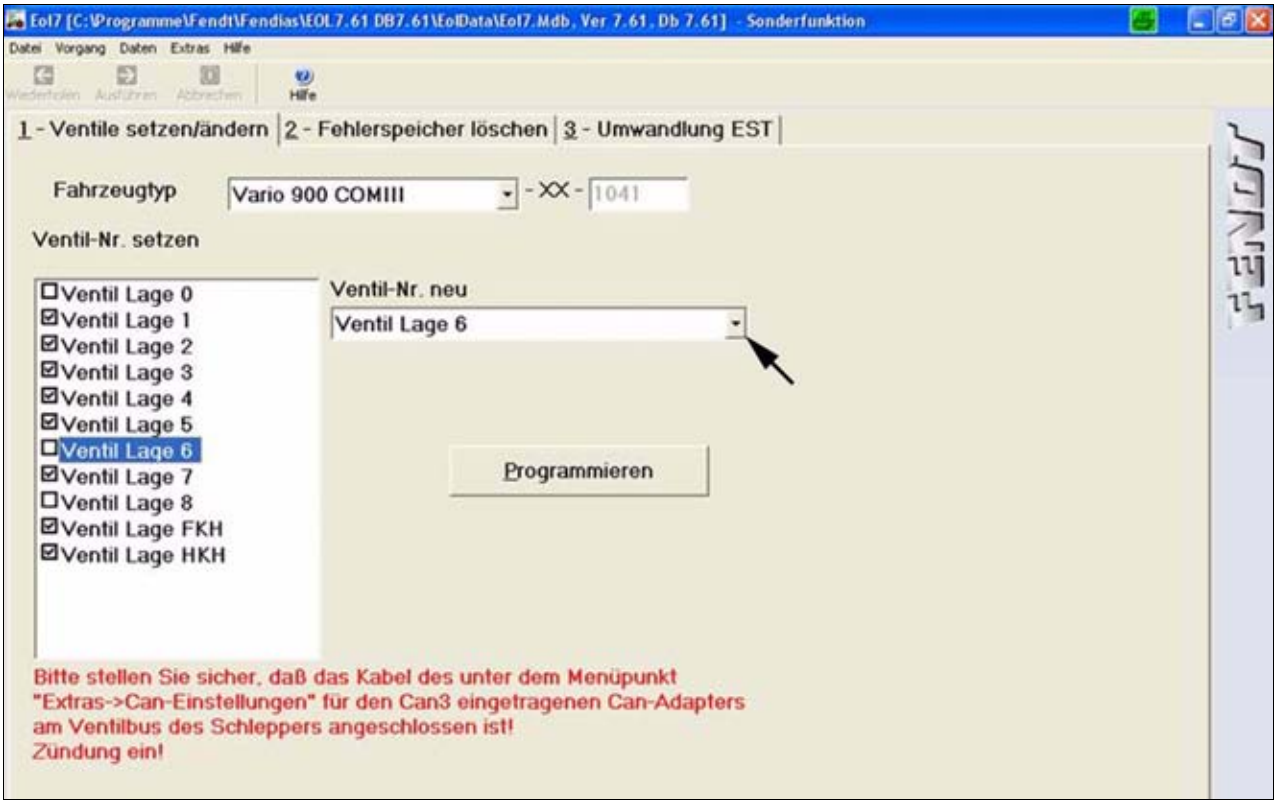



*Fig. 3.* I007098

The check marks indicate which valves have already been set and are recognised by the valve bus.
The desired valve position can be selected by clicking on the arrow under **Program valve**, e.g. **valve position 6**.
Confirm your selection with the **"Program"** button. The following screen appears:




*Fig. 4.* I007105

The valve that is to be set must be now be deflected by hand within 60 seconds (see display).

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Deflect valve on emergency actuation in one direction.

**Actuation directions:**

| | |
|---|---|
| A | Raise |
| B | Lower |
| C | Floating position |

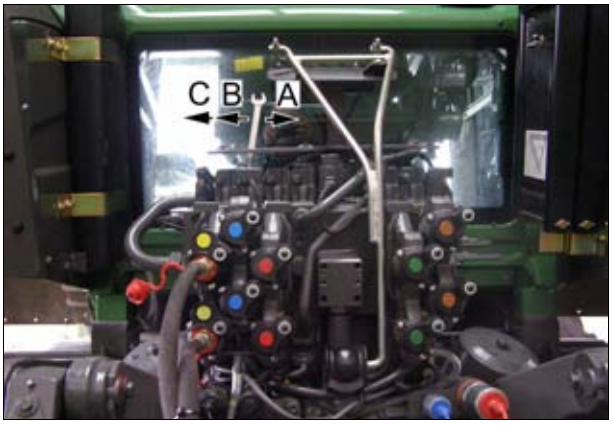



*Fig. 5.* I001313

**IMPORTANT:** *Always actuate valves on side "A" with the spanner. If the valves are actuated on the opposite side, the valve setting may be altered.*

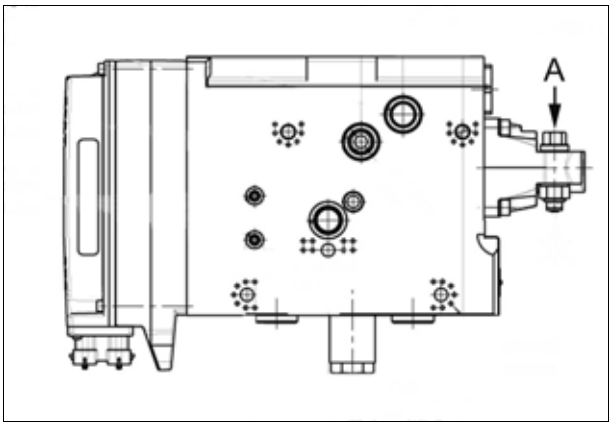



*Fig. 6.* I001314

If a movement is detected via the position sensor, this valve is set with the selected address.
If programming has been successful, the following screen appears.

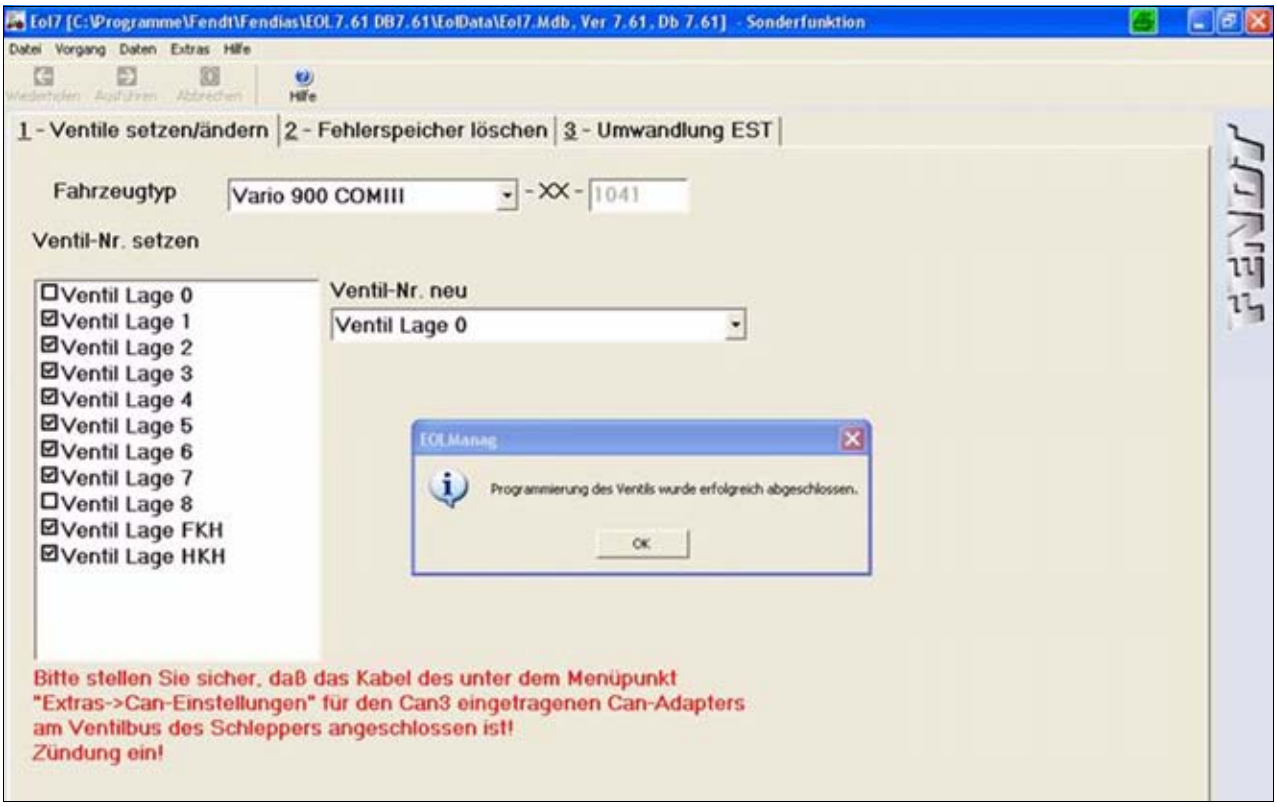



*Fig. 7.* I007106

Confirm the message.

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**Sequence of valve positions.**

**Rear of tractor, valve pillar**
The valve position must be set as shown in the picture.

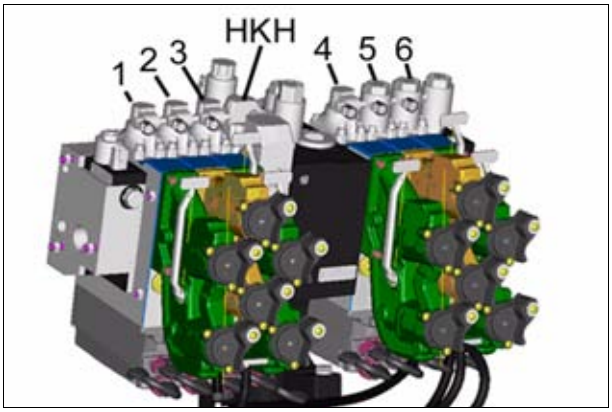



*Fig. 8.* I007099

**Centre of tractor, valve pillar**
The valve position must be set as shown in the picture.

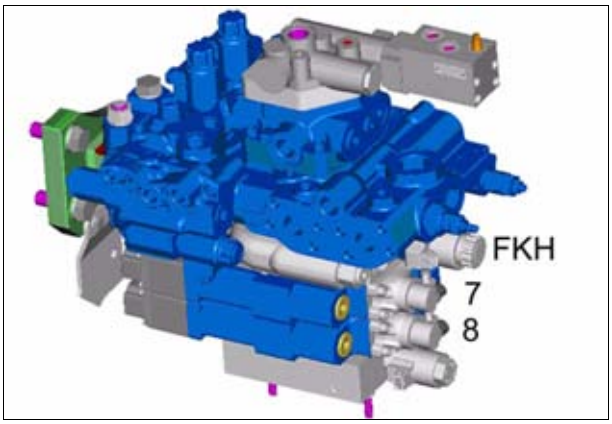



*Fig. 9.* I007100

| Valve position | Colour | Hydr. designation | Elect. Designation |
|---|---|---|---|
| Valve position 1 | yellow | 1.1 | Y074 |
| Valve position 2 | blue | 1.2 | Y075 |
| Valve position 3 | red | 1.3 | Y076 |
| Valve position 4 | green | 1.4 | Y078 |
| Valve position 5 | brown | 1.5 | Y079 |
| Valve position 6 | violet | 1.6 | Y080 |
| Valve position 7 | olive | 2.1 | Y071 |
| Valve position 8 | grey | 2.2 | Y072 |
| Valve position front power lift | Enhanced control front power lift | Front EPC | Y070 |
| Valve position rear power lift | Rear power lift | Rear EPC | Y077 |

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# G Repair

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# 1 Removing rear control valve

**Preliminary work:**

– Remove cover plate
– If necessary, remove retainers
– Place an oil pad or drip tray underneath the valve block

Valves on the left side = 1.1 yellow, 1.2 blue, 1.3 red

Unplug the control valve "daisy chain" connection.



*Fig. 1.* I001571

Remove the hydraulic lines from the entry plate.



*Fig. 2.* I001572

Remove the LS lines from the entry plate, close them off in a clean condition and affix them to the cab.



*Fig. 3.* I001573

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Unplug the Power Beyond connector from the entry plate.



*Fig. 4.* I001575

Loosen the tie bolt nuts in accordance with the numbered sequence in the diagram.

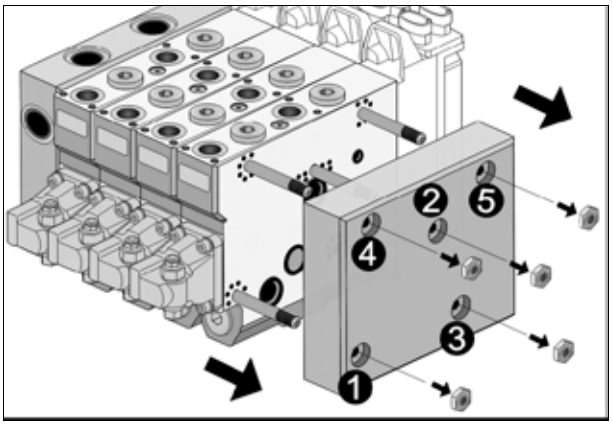



*Fig. 5.* I001675

Remove nuts on the three long tie bolts from the entry plate.

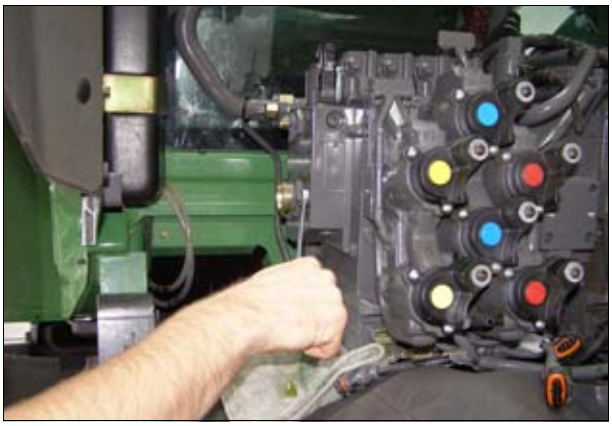


*Fig. 6.* I002128

Remove the entry plate sideways.



*Fig. 7.* I001577

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Remove the three long tie bolts.



*Fig. 8.* I001579

Remove the nuts from the two short tie bolts.



*Fig. 9.* I001578

Remove control valves to the side up to the corresponding valve.

**IMPORTANT:** *When dismantling the valve, ensure that the shuttle valve does not fall out.*

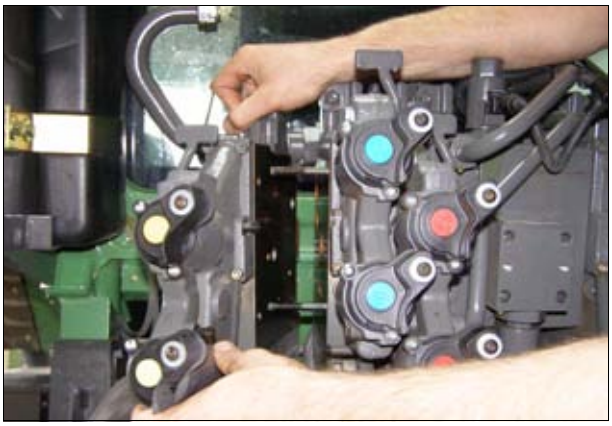


*Fig. 10.* I001580

Valves on the right side = 1.4 green, 1.5 brown, 1.6 purple

Unplug the control valve "daisy chain" connector.

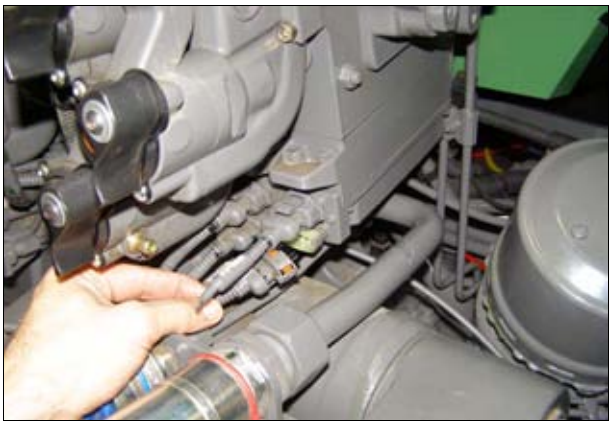


*Fig. 11.* I001589

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If maximum equipment is not available, remove the oil leak hoses.



*Fig. 12.* I001596

Remove hydraulic lines from the end plate.



*Fig. 13.* I001587

Swing hydraulic lines towards the cab and seal to prevent dirt from entering.



*Fig. 14.* I001588

Remove the rear hydraulic oil pre-heater connector.



*Fig. 15.* I001590

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Loosen the tie bolt nuts in accordance with the numbered sequence in the diagram.

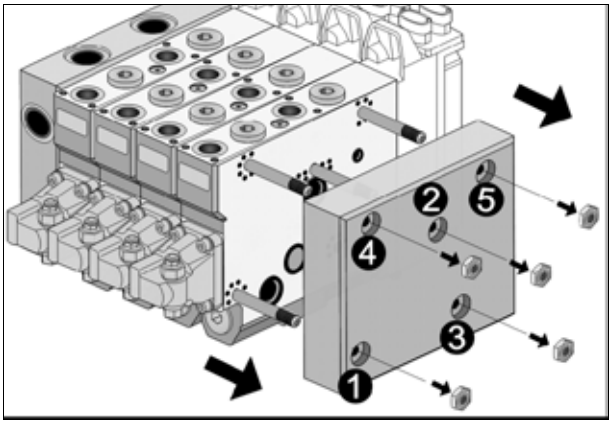



*Fig. 16.* I001675

Remove nuts on the three long tie bolts from the end plate.



*Fig. 17.* I001591

Take end plate out to the side.

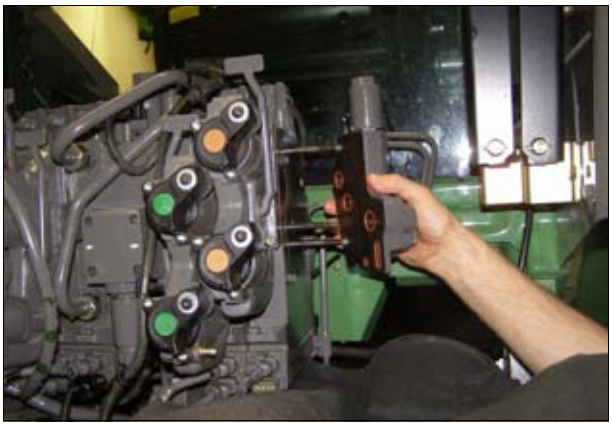


*Fig. 18.* I001592

If six rear control valves are fitted: remove the three long tie bolts.

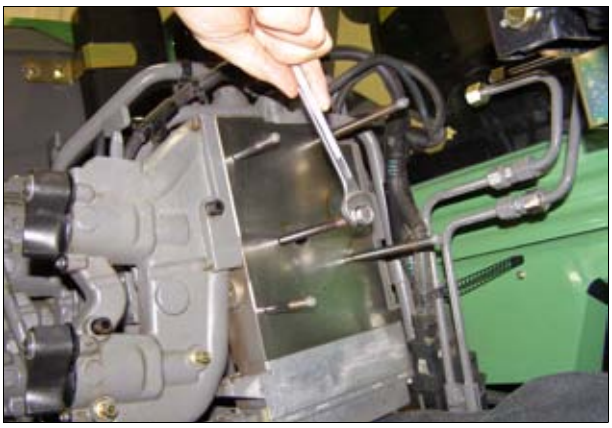
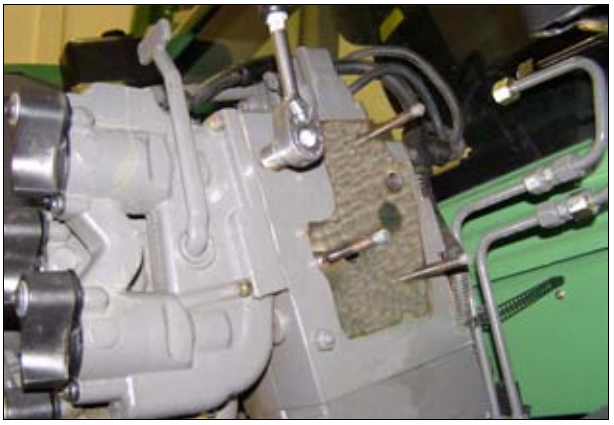


*Fig. 19.* I001594

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Remove the nuts from the two short tie bolts.


*Fig. 20.* I001593

Remove control valves to the side up to the corresponding valve.

**IMPORTANT:** *When dismantling the valve, ensure that the shuttle valve does not fall out.*


*Fig. 21.* I001595

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## 2 Installing rear control valve

**NOTE:** *In order to prevent leaks, the O-rings on all valves should be replaced.*

**NOTE:** *When working on hydraulic systems, cleanliness is of paramount importance. Even the slightest amount of dirt can lead to control valves seizing.*

**Preliminary work:**

– The flange surfaces of the valves should be polished with a carborundum rubbing stone

– The polished flange surfaces should be wiped clean with an oil-soaked cloth

Insert the shuttle valve into the control valve, applying a little grease.

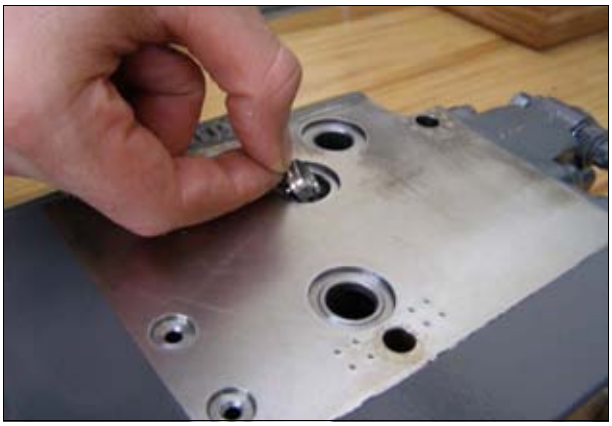


*Fig. 22.* I001684

Check the dimension of 0.5 mm.

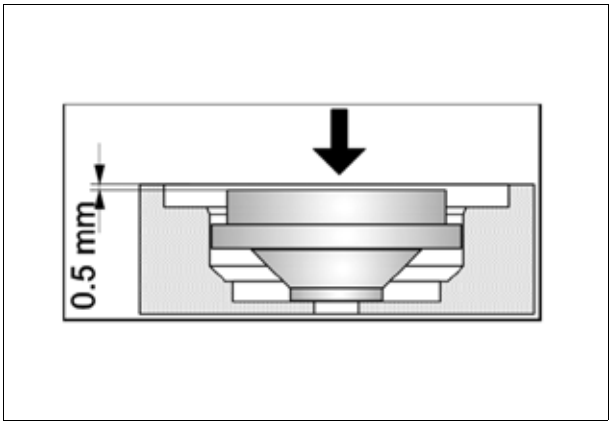



*Fig. 23.* I001671

Fit the new support rings in accordance with the diagram.

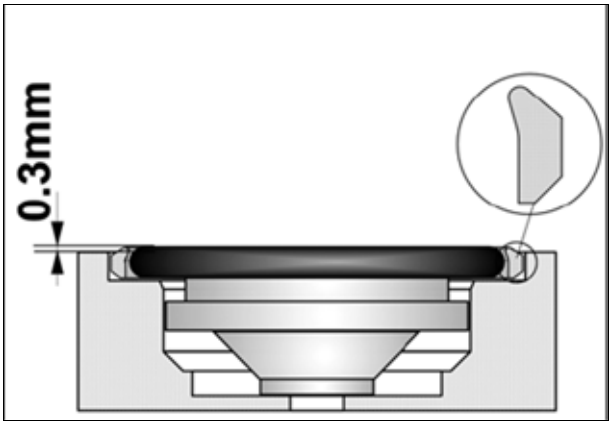



*Fig. 24.* I001672

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Use a small amount of grease to seat the O-rings.

For each valve there are:

– 2 x item 1 + 2: support ring and O-ring
– 1 x item 3: large O-ring
– 2 x item 5: small O-ring

Ensure that the O-rings protrude 0.3 mm beyond the flange surface.

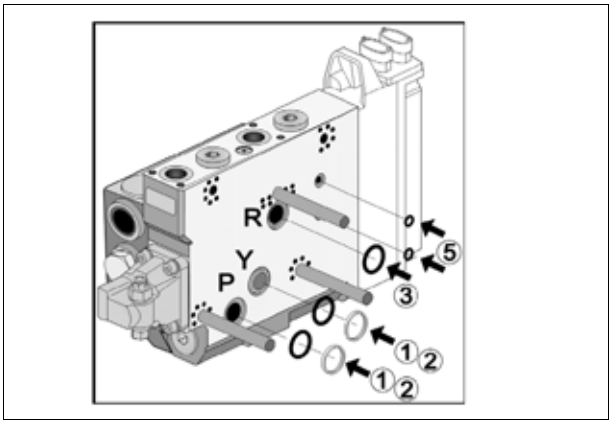
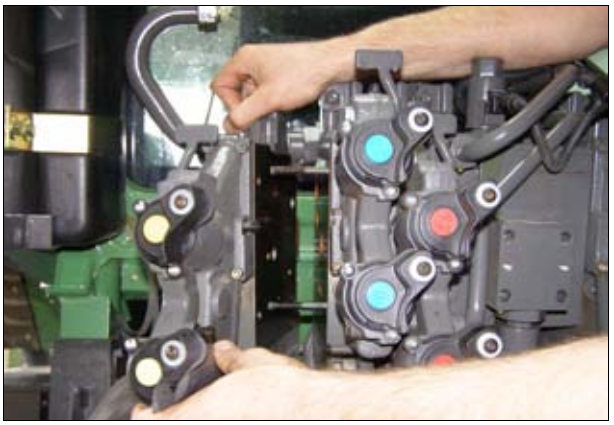


*Fig. 25.* I001686

Place the control valve onto the two short tie bolts and hand-tighten the nuts so that the shuttle valves do not fall out.


*Fig. 26.* I001580

Screw in the three long tie bolts.


*Fig. 27.* I001579

Fit the entry plate onto the tie bolts and hand-tighten the nuts.


*Fig. 28.* I001577

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Align the valve plates with each other and tighten to a torque of 25.5 + 2.5 Nm, following the numbered sequence in the diagram.

**NOTE:** *The quoted tightening torque of 25.5 + 2.5 Nm applies to oiled tie bolts and nuts.*

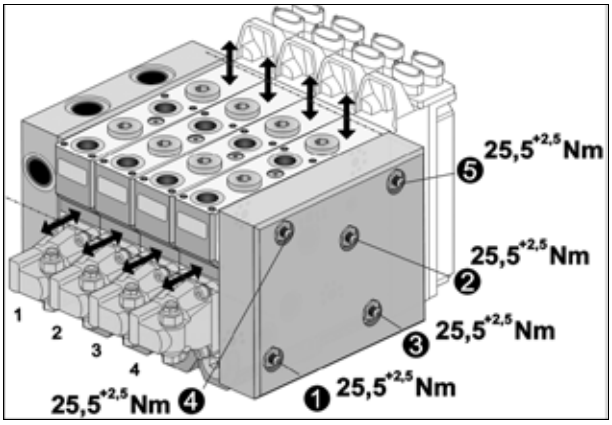



*Fig. 29.* I001674

Plug in the external pressure rise connector.



*Fig. 30.* I001575

Connect the LS line to the entry plate and tighten.



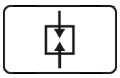
*Fig. 31.* I001573

Connect the hydraulic line to the entry plate and tighten.



*Fig. 32.* I001572

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Plug in the "daisy chain" connector (note the coding).

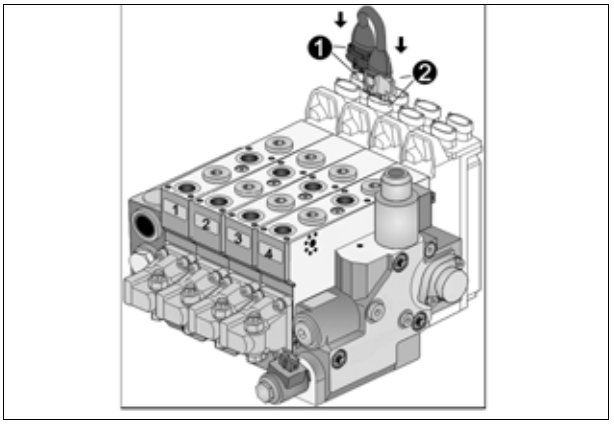
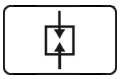



*Fig. 33.* I001680



Grey connector top, black connector bottom.



*Fig. 34.* I001571

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## 3 Removing central control valve

**NOTE:** *To provide a better view, the work was carried out with the right-hand fuel tank removed.*

**Essential preliminary work:**

– Place an oil pad or oil sump under the valve block

Remove the hydraulic hand-pump bolts and secure the hand pump to the side.



*Fig. 35.* I001652

Remove the fuel hand-pump bolts and secure the hand pump to the side.



*Fig. 36.* I001653

Unplug the connector of the central pre-heater solenoid valve.



*Fig. 37.* I001660

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Unplug the daisy chain connector as far as the required valve.



*Fig. 38.* I001661

Loosen the pilot pressure hydraulic lines on the end plate.



*Fig. 39.* I001654

Loosen and remove the pilot pressure line on the pilot pressure valve block.



*Fig. 40.* I001658

Loosen but do not remove the hydraulic lines for the control valves as far as the faulty valve.



*Fig. 41.* I001657

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Secure the control valves to the ZBS above (e.g. with cable ties).

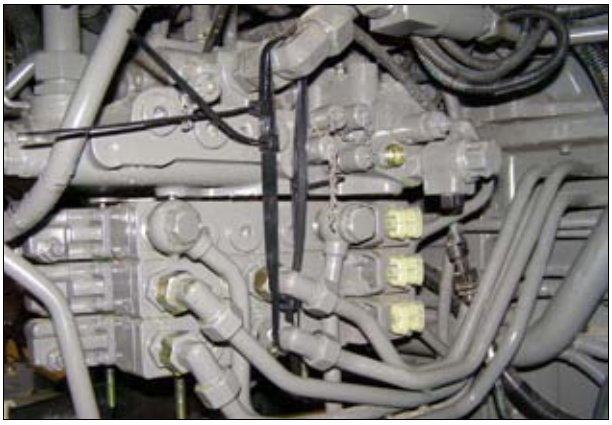


*Fig. 42.* I001666

Loosen nuts on the studs following the numbering in the diagram

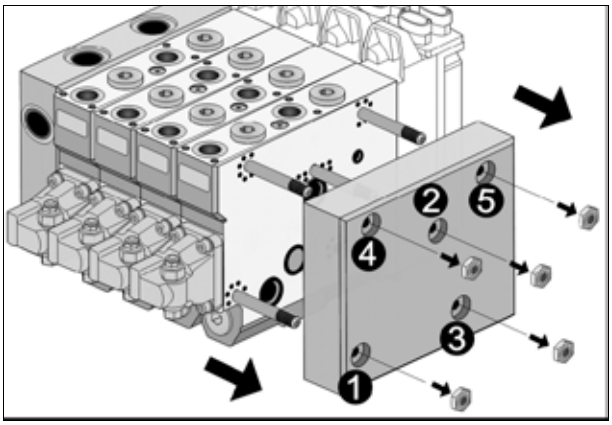



*Fig. 43.* I001675

Remove the nuts from the stud bolts, whilst keeping the end plate raised.



*Fig. 44.* I001659

Remove the end plate.



*Fig. 45.* I001662

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Remove the control valve fixings and the hydraulic lines, and remove the valve downwards.

**IMPORTANT:** *When detaching the valves, take care that the shuttle valve does not fall out*



*Fig. 46.* I001664

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## 4 Installing the central control valve

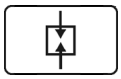
**NOTE:** *In order to prevent leaks, the O-rings on all valves should be replaced.*

**NOTE:** *When working on hydraulic systems, cleanliness is of paramount importance. Even the slightest amount of dirt may lead to control valves seizing.*

**Preliminary work:**

– The flange surfaces of the valves should be polished with a carborundum rubbing stone

– The polished flange surfaces should be wiped clean with an oil-soaked cloth



Insert the shuttle valve into the control valve, applying a little grease.

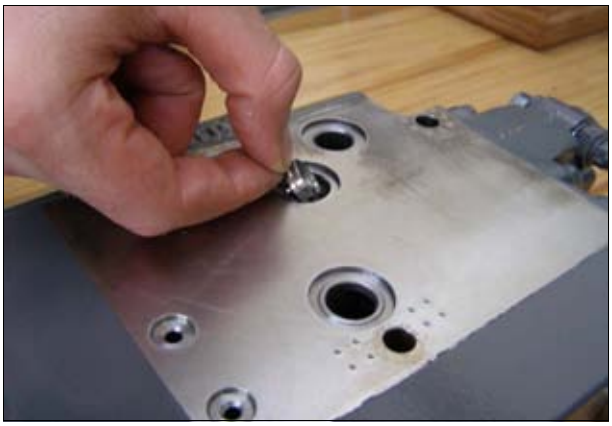
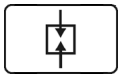


*Fig. 47.* I001684



Check the stand-off distance of 0.5 mm.

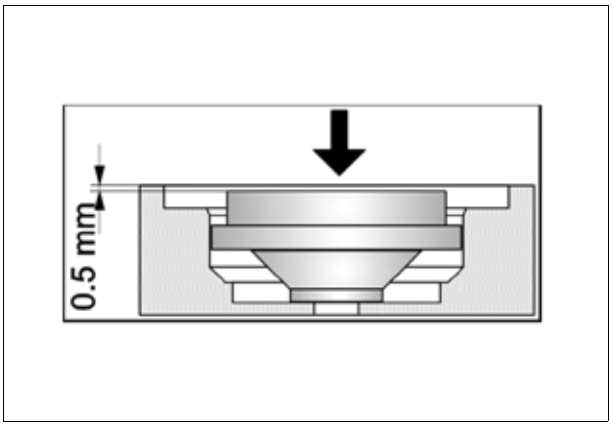
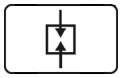



*Fig. 48.* I001671



Mount the support rings in accordance with the diagram.

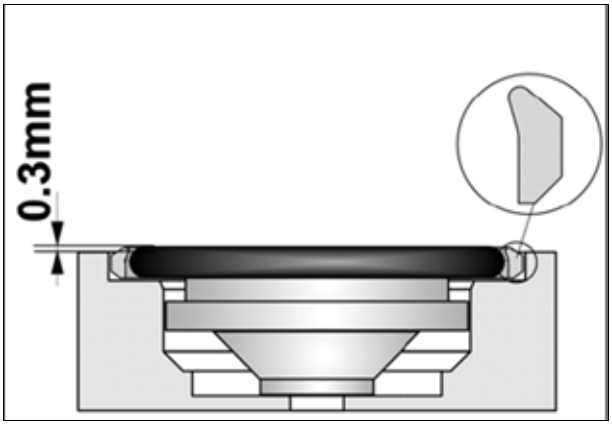



*Fig. 49.* I001672

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Use a small amount of grease to seat the O-rings.

For each valve there are:

– 2 x item 1 + 2: support ring and O-ring
– 1 x item 3: large O-ring
– 2 x item 5: small O-ring

Ensure that the O-rings protrude 0.3 mm beyond the flange surface.

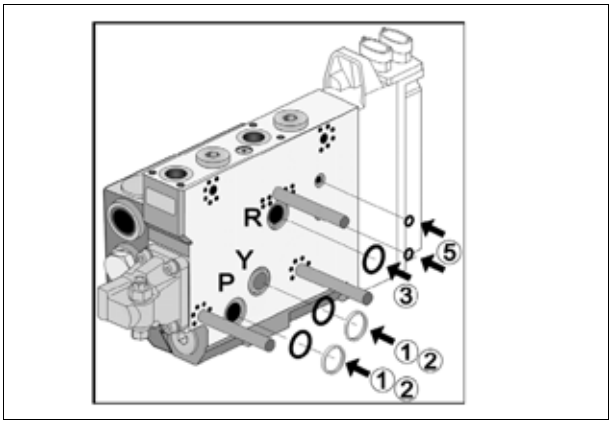



*Fig. 50.* I001686

Mount the control valve upwards onto the tie bolts, ensuring that the shuttle valve does not fall out.

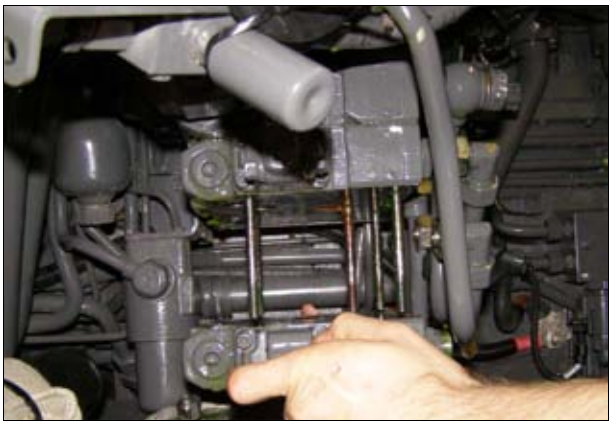


*Fig. 51.* I001664

Hand-tighten the hydraulic lines and secure the control valves to the ZBS above (e.g. with cable ties).

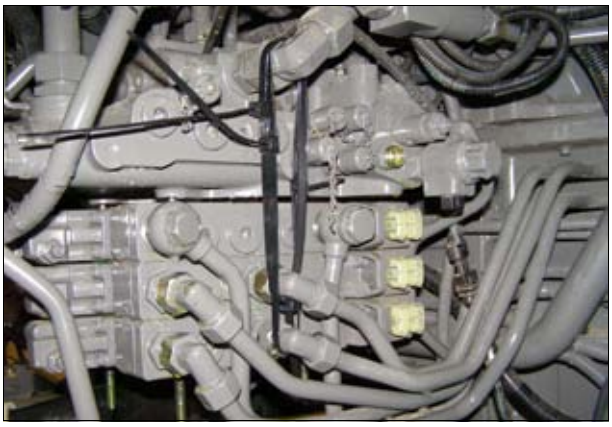


*Fig. 52.* I001666

Mount the end plate onto the tie bolts and hand-tighten the nuts.



*Fig. 53.* I001662

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Align the valve plates with each other and tighten to a torque of 25.5 + 2.5 Nm, following the numbered sequence in the diagram.

**NOTE:** *The quoted tightening torque of 25.5 + 2.5 Nm applies to oiled tie bolts and nuts.*

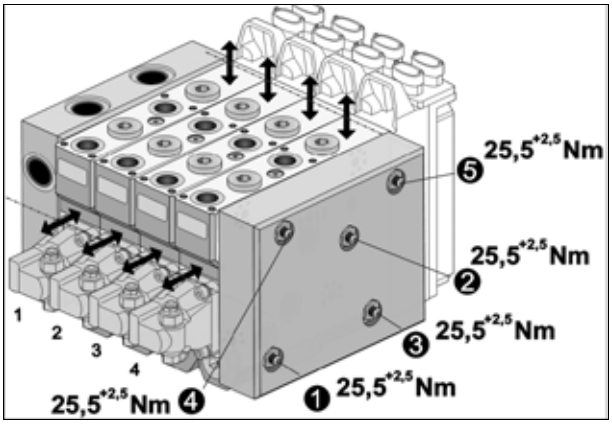



*Fig. 54.* I001674

Tighten the control valve hydraulic lines.



*Fig. 55.* I001657

Mount the pilot pressure line from the pilot pressure valve block to the end plate.



*Fig. 56.* I001658

Tighten the pilot pressure line onto the end plate.

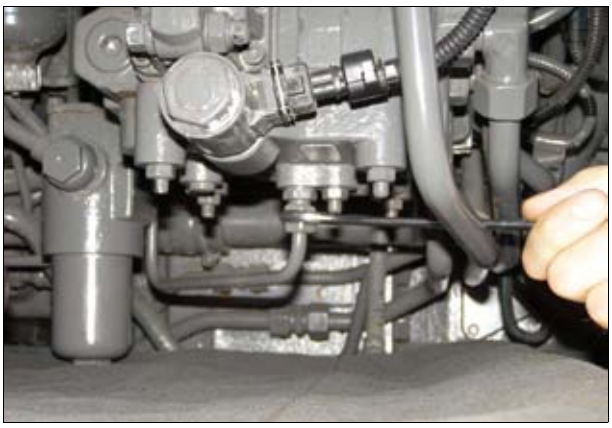


*Fig. 57.* I001654

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Plug in the connector of the central hydraulic oil pre-heater solenoid valve.



*Fig. 58.* I001660

Plug in the "daisy chain" connector (note the coding).

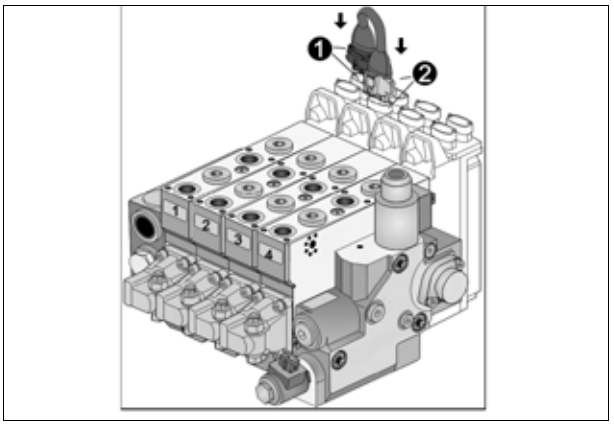



*Fig. 59.* I001680

1 Grey connector
2 Black connector




*Fig. 60.* I001752

Mount the fuel hand-pump.



*Fig. 61.* I001653



919 .. 0101-1000
919 .. 1001-
922 .. 0101-1000
922 .. 1001-
925 .. 0101-1000
925 .. 1001-
928 .. 0101-1000
928 .. 1001-
931 .. 0101-1000
931 .. 1001-
934 .. 0101-1000
934 .. 1001-

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Mount the hydraulic hand-pump.



*Fig. 62.* I001652

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## 5 Dismantling rear entry plate

Remove the nut on the coil and remove the, remove the pressure cut-off valve.



*Fig. 63.* I001753

Remove the flow cut-off valve.



*Fig. 64.* I001754

Remove the LS line screw coupling.



*Fig. 65.* I001755

Loosen the LS line filter.



*Fig. 66.* I001756

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Remove the LS line filter.



*Fig. 67.* I001757

If necessary, remove the plug and screw couplings.



*Fig. 68.* I001759

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## 6 Reassembling rear entry plate

Mount the plug and screw couplings.



*Fig. 69.* I001759

Insert the LS line filter into the screw coupling.



*Fig. 70.* I001757

Tighten LS line filter to a torque of 10 Nm.



*Fig. 71.* I001756

Mount the LS line screw coupling and tighten to a torque of 50 Nm.



*Fig. 72.* I001755

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Install the entry plate flow cut-off valve and tighten to a torque of 20 -25 Nm

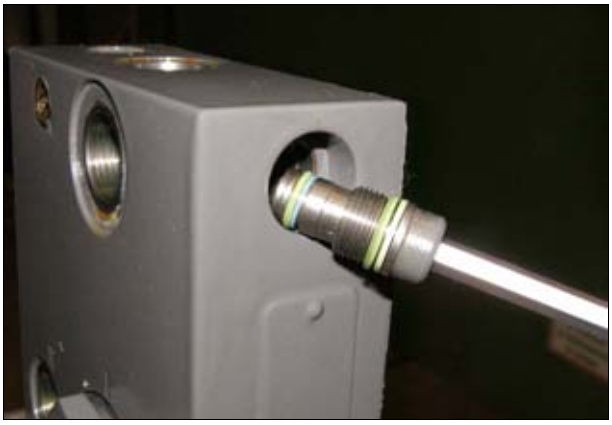


*Fig. 73.* I001754

Screw in pressure cut-off valve and tighten to a torque of 27 Nm, mount coil and nut.



*Fig. 74.* I001753

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## 7 Dismantling rear end plate

Dismount the nut on the solenoid coil and remove the coil, remove the rear pre-heater solenoid valve.



*Fig. 75.* I001761

Remove the end plate non-return valve.



*Fig. 76.* I001762

If necessary, remove the plug and screw couplings.



*Fig. 77.* I001763

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## 8 Reassembling rear end plate

Mount the plug and screw couplings.



*Fig. 78.* I001763

Mount the end-plate non-return valve and tighten to a torque of 30 Nm.



*Fig. 79.* I001762

Screw in the rear pre-heater solenoid valve and tighten to a torque of30 Nm Mount the solenoid coil and tighten the clamp nut to a torque of 8 Nm



*Fig. 80.* I001761

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|---|---|
| **A** | General |
| **B** | Faults |
| **C** | Documents and Diagrams |
| **D** | Component location |
| **E** | Testing |
| **F** | Setting and Calibration |
| **G** | Repair |
| **H** | Service – Info |

# 9700

Overall system/electronics

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# 9700 Overall system/electronics

A General. . . . . .5

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# A General

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# 1 Electronics concept for FENDT 900 Vario COM III

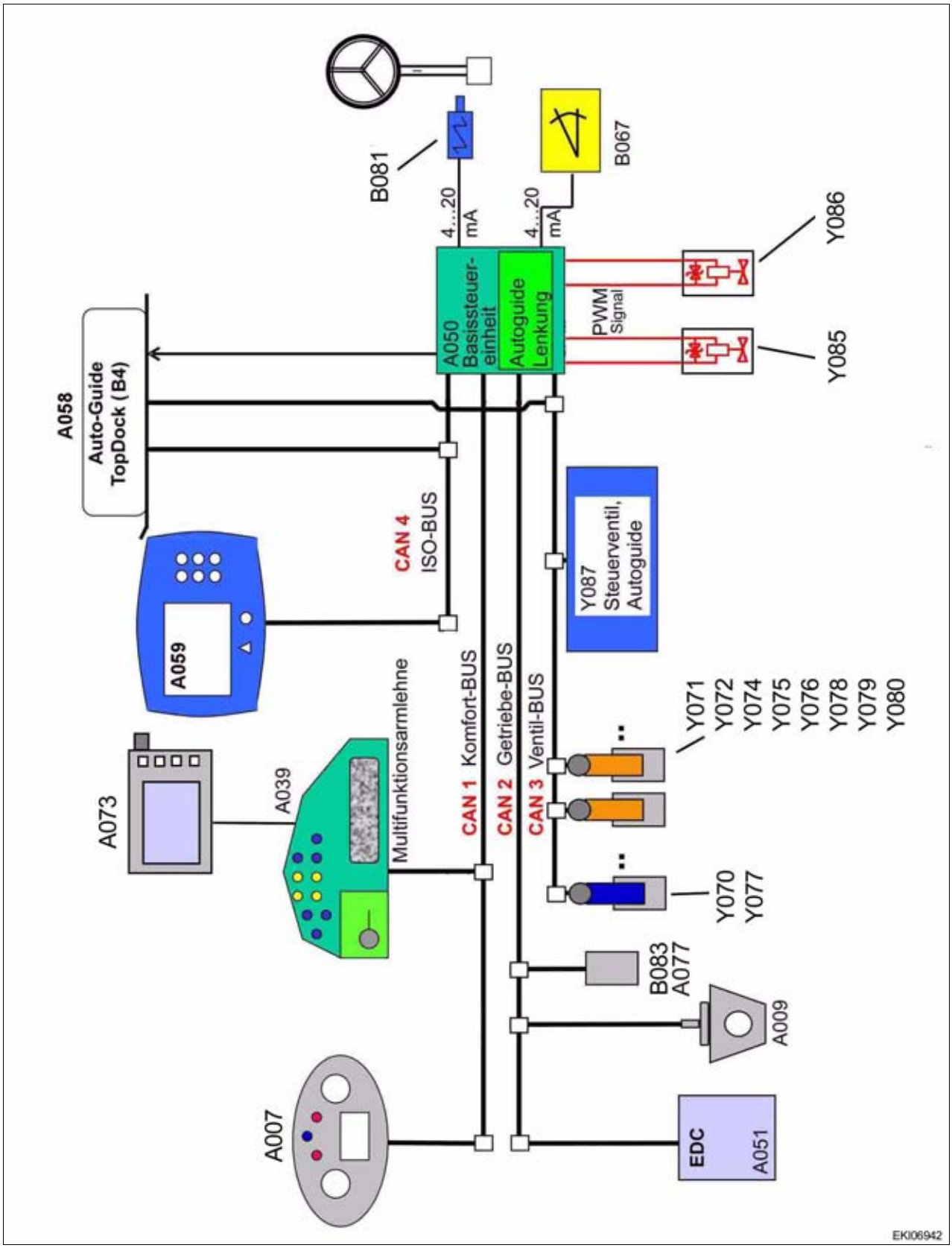



*Fig. 1. For a description of individual CAN buses, see detailed drawings*

I013635

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Check Chassis Range!

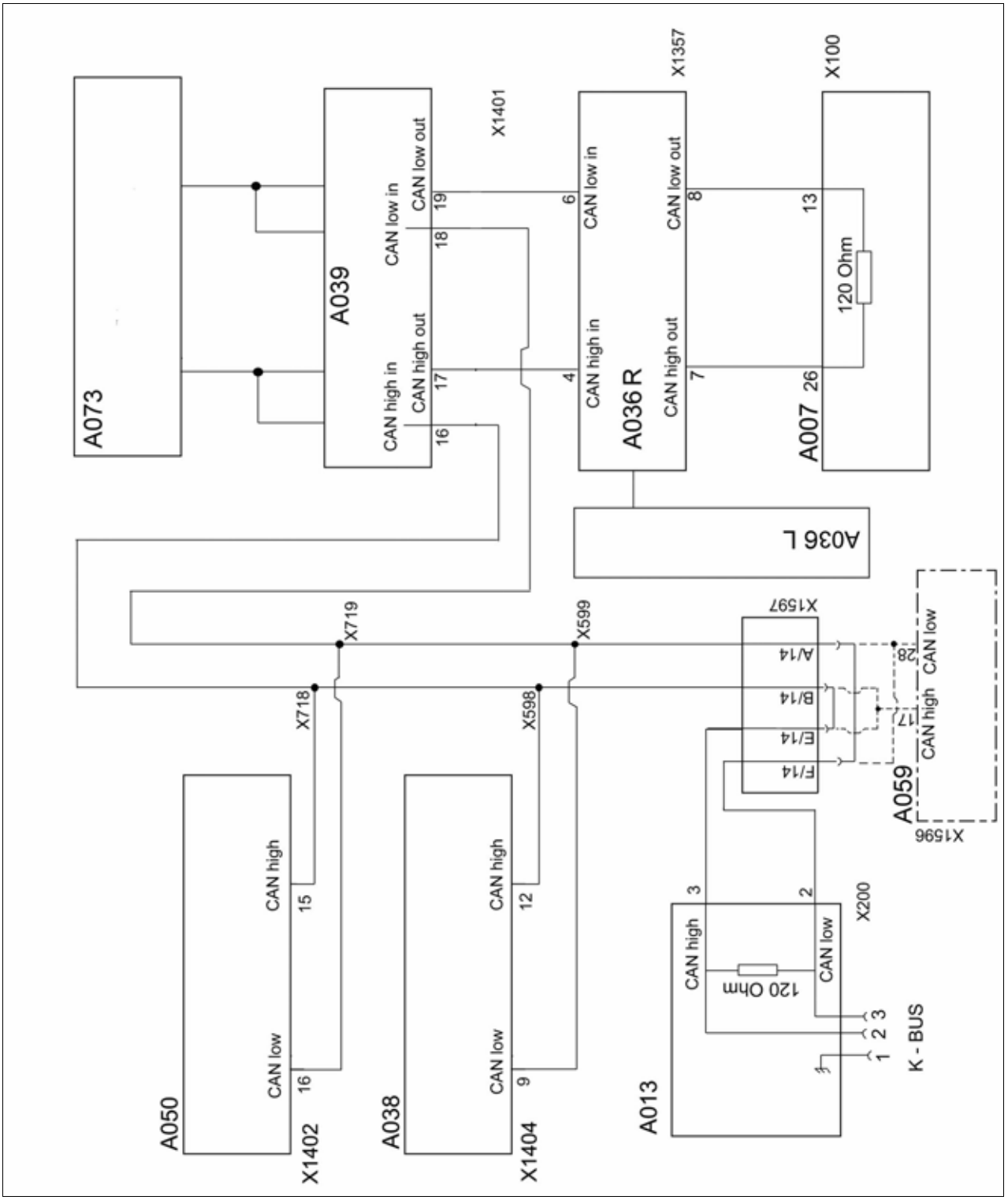



*Fig. 2.* I007393

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**K bus** (control bus)
**A007** - Instrument panel
**A013** - PCB, microfuses
**A036** - Control panel, dashboard left
**A038** - ECU, central electrical system
**A039** - MFA, multifunction armrest
**A050** - ECU, basic control unit
**A059** - Terminal (Auto-Guide)
**A073** - Terminal (A4)
**X1597** - Cable coupling A059 (not present with additional terminal, e.g. Auto-Guide)

**NOTE:** ***Procedure for checking the bus system (passive bus)***

Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)

– Test total resistance **60 Ohm.**
(total resistance 120 Ohm = wiring break, defective terminating resistor)

– Check the voltage level of CAN High/CAN Low.
0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

**NOTE:** *In tractors up to chassis number 9XX/2X/1701, an additional terminating resistor of 120 ohms was installed in the* ***A038*** *- ECU, central electrical system.*

On these tractors, the **total resistance is 40 Ohm**

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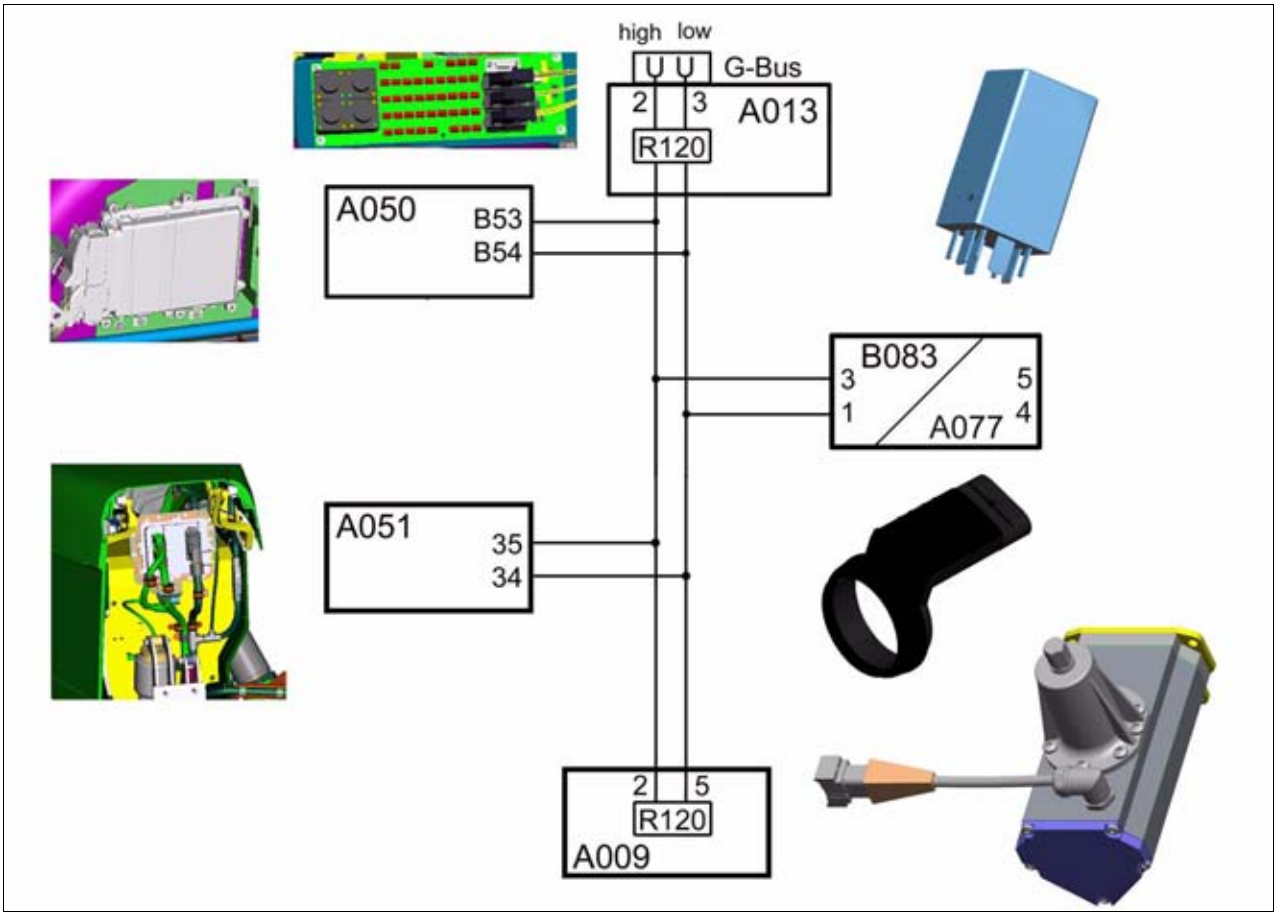



*Fig. 3.* I013633

**G bus** (transmission bus)
**A009** - Actuator unit
**A013** - PCB, microfuses
**A050** - ECU, basic control unit
**A051** - ECU, engine control unit (EDC 7).
**A077** - Immobiliser ECU
**B083** - Immobiliser control

**NOTE:** ***A077*** *- Immobiliser ECU is installed from the following chassis number: 919/../1847; 922/../2004; 925/../2054; 928/../2291; 931/../1908; 934/../2790. The only replacement is the new version U931.970.110.000*

**NOTE:** ***Procedure for checking the bus system (passive bus)***

Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)
– Test total resistance **60 Ohm.**
(total resistance 120 Ohm = wiring break, defective terminating resistor)
– Check the voltage level of CAN High/CAN Low.
0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

Check Chassis Range!

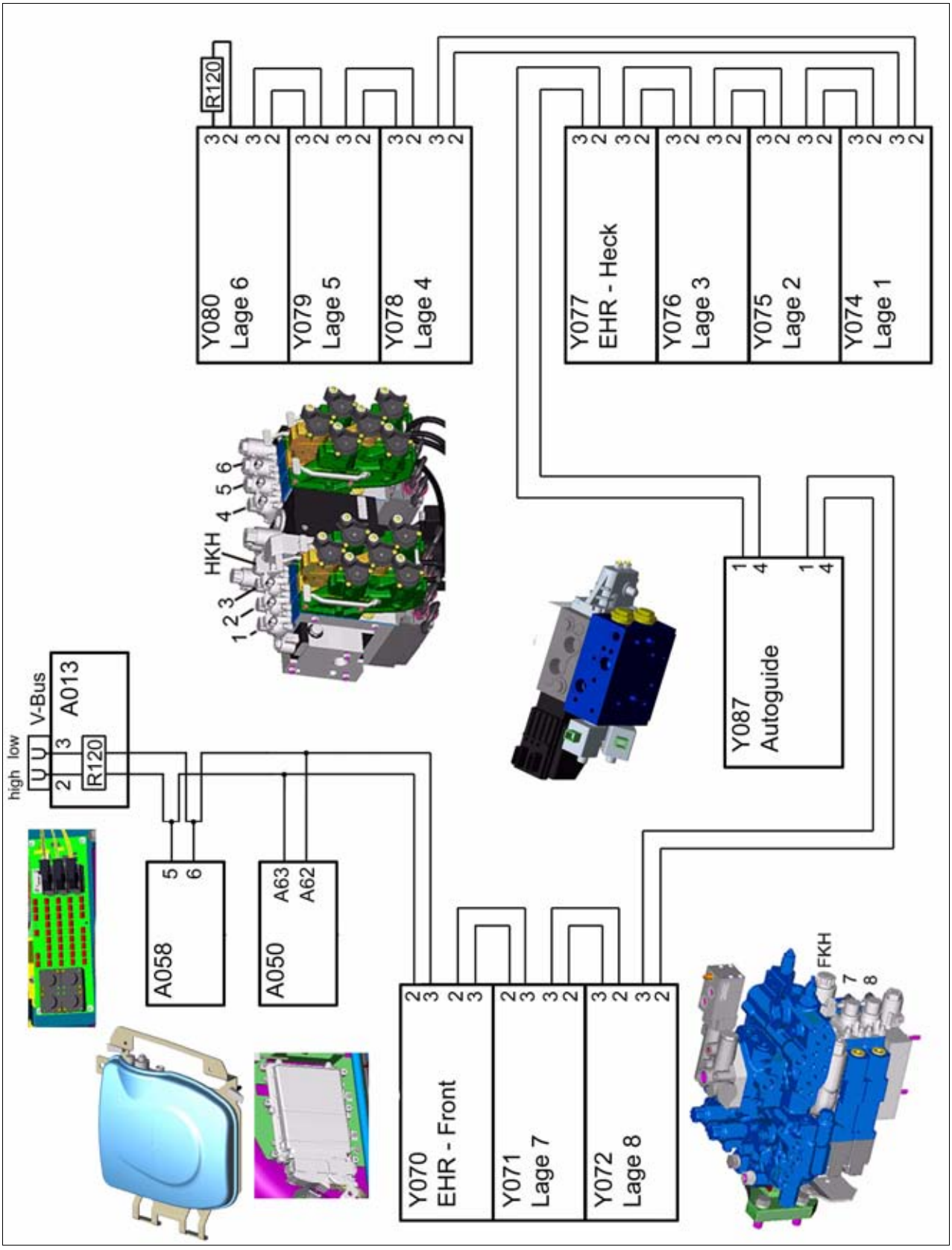



*Fig. 4.*

I007096

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Check Chassis Range!

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**V bus** (valve bus)
**A013** - PCB, microfuses
**A050** - ECU, basic control unit
**A058** - TopDock (Auto-Guide)
**Y070 [FKH]** - Cut-off valve, front power lift enhanced control Valve position **FKH**
**Y071 [2.1]** - Auxiliary control valve (olive) Valve position **7**
**Y072 [2.2]** - Auxiliary control valve (grey) Valve position **8**
**Y074 [1.1]** - Auxiliary control valve (yellow) Valve position **1**
**Y075 [1.2]** - Auxiliary control valve (blue) Valve position **2**
**Y076 [1.3]** - Auxiliary control valve (red) Valve position **3**
**Y077 [HKH]** - Cut-off valve, rear EPC Valve position **HKH**
**Y078 [1.4]** - Auxiliary control valve (green) Valve position **4**
**Y079 [1.5]** - Auxiliary control valve (brown) Valve position **5**
**Y080 [1.6]** - Auxiliary control valve (violet) Valve position **6**
**Y087** - Steering valve block, Auto-Guide

**NOTE:** ***Procedure for checking the bus system (passive bus)***

Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)
– Test total resistance **60 Ohm.**
(total resistance 120 Ohm = wiring break, defective terminating resistor)
– Check the voltage level of CAN High/CAN Low.
0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

Check Chassis Range!

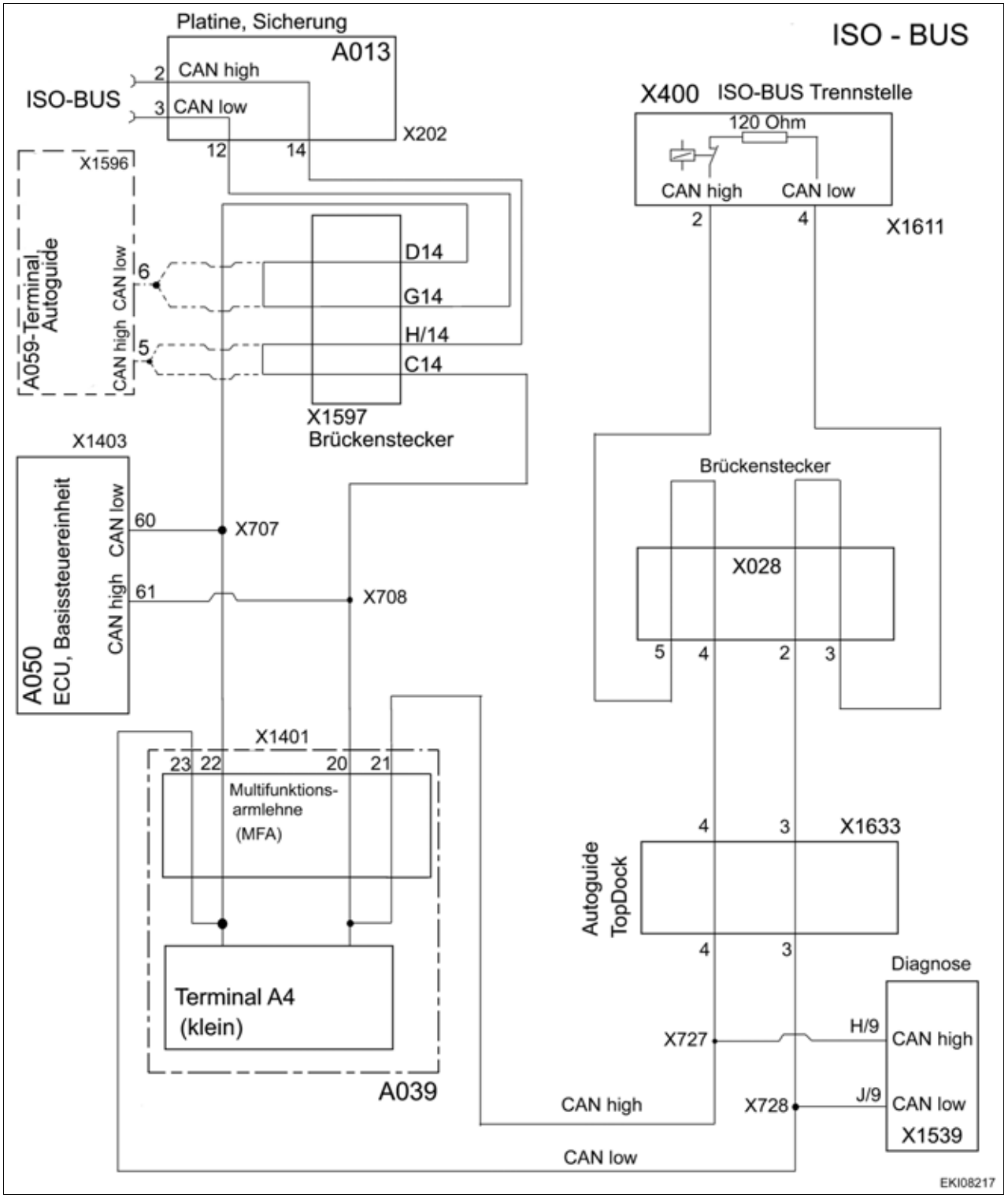



*Fig. 5.* I001189

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**ISO bus**
**A013** - PCB, microfuses
**A039** - MFA, multifunction armrest
**A050** - ECU, basic control unit
**A058** - TopDock (Auto-Guide)
**A059** - Terminal (Auto-Guide)
**A073** - Terminal (A4)
**X028** - ISO socket (cab)
**X400** - Rear ISO implement socket
**X1539** - ISO bus diagnostics socket
**X1597** - Cable coupling A059 (not present with additional terminal, e.g. Auto-Guide)
**X1633** - Separation point, Auto-Guide TopDock

**NOTE:** ***Procedure for checking the bus system (active bus)***

Active bus means that the bus ends are pre-tensioned via networks.

– Check the supply voltage to the bus consumers (positive and earth)

– Check bus voltage **High= 1.5 - 2.5 VDC**.
Check bus voltage **Low= 2.5 - 3.5 VDC**.
Voltage level of CAN High/CAN Low
**0 VDC** = earth connection, **4 VDC and higher** = short circuit to +UB

Check Chassis Range!

## 2 Control bus

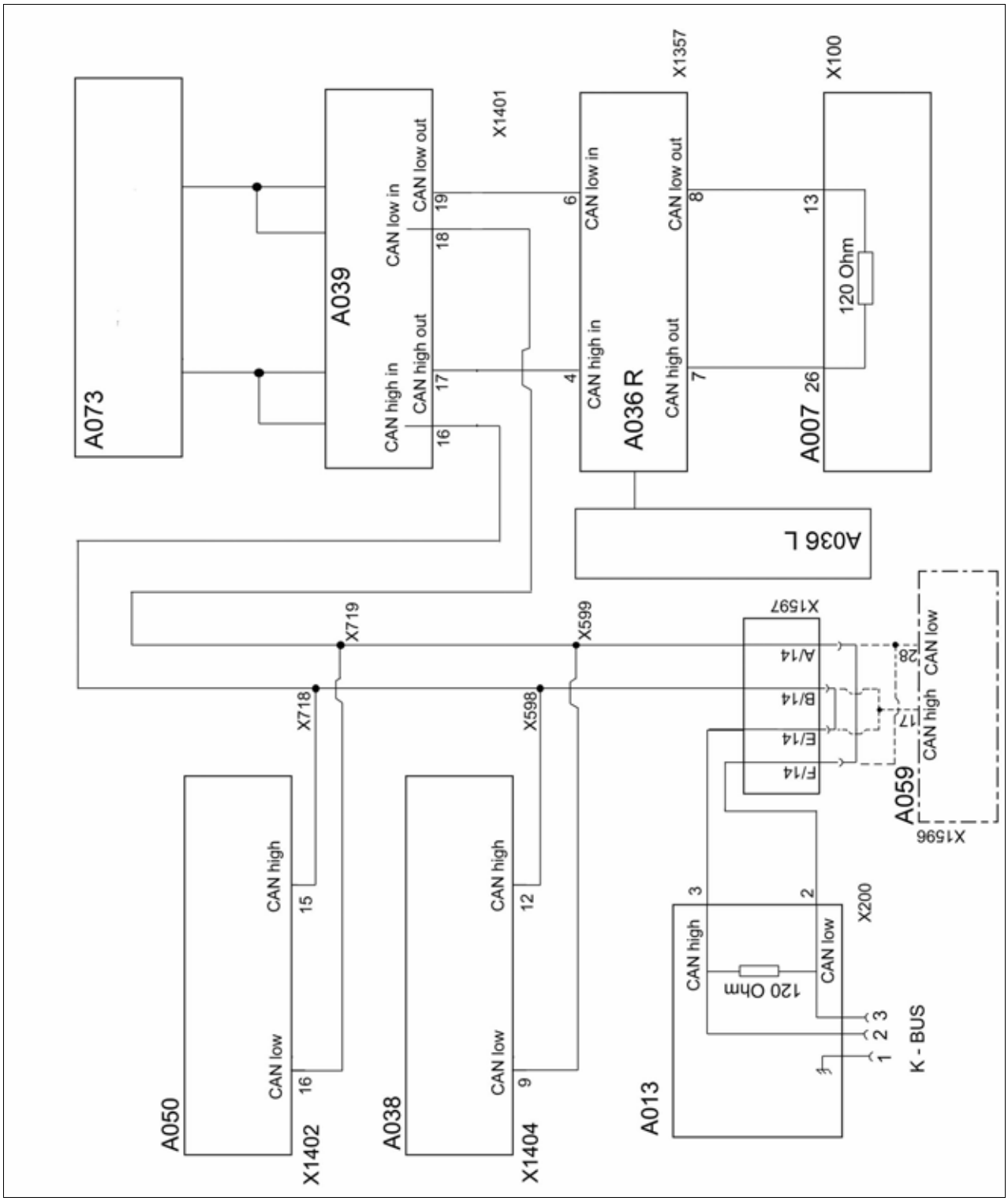



*Fig. 6.* I007393

**NOTE:** *Procedure for checking the bus system (passive bus)*



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Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)
– Test total resistance 60 Ohm.
  (total resistance 120 Ohm = wiring break, defective terminating resistor)
– Check the voltage level of CAN High/CAN Low.
  0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

**NOTE:** *The A038 central electrical system was installed with an additional terminating resistance of 120 ohms in tractors up to chassis number 9XX/2X/1701.*
*The total resistance on these tractors is 40 ohms.*

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# 3 Transmission bus

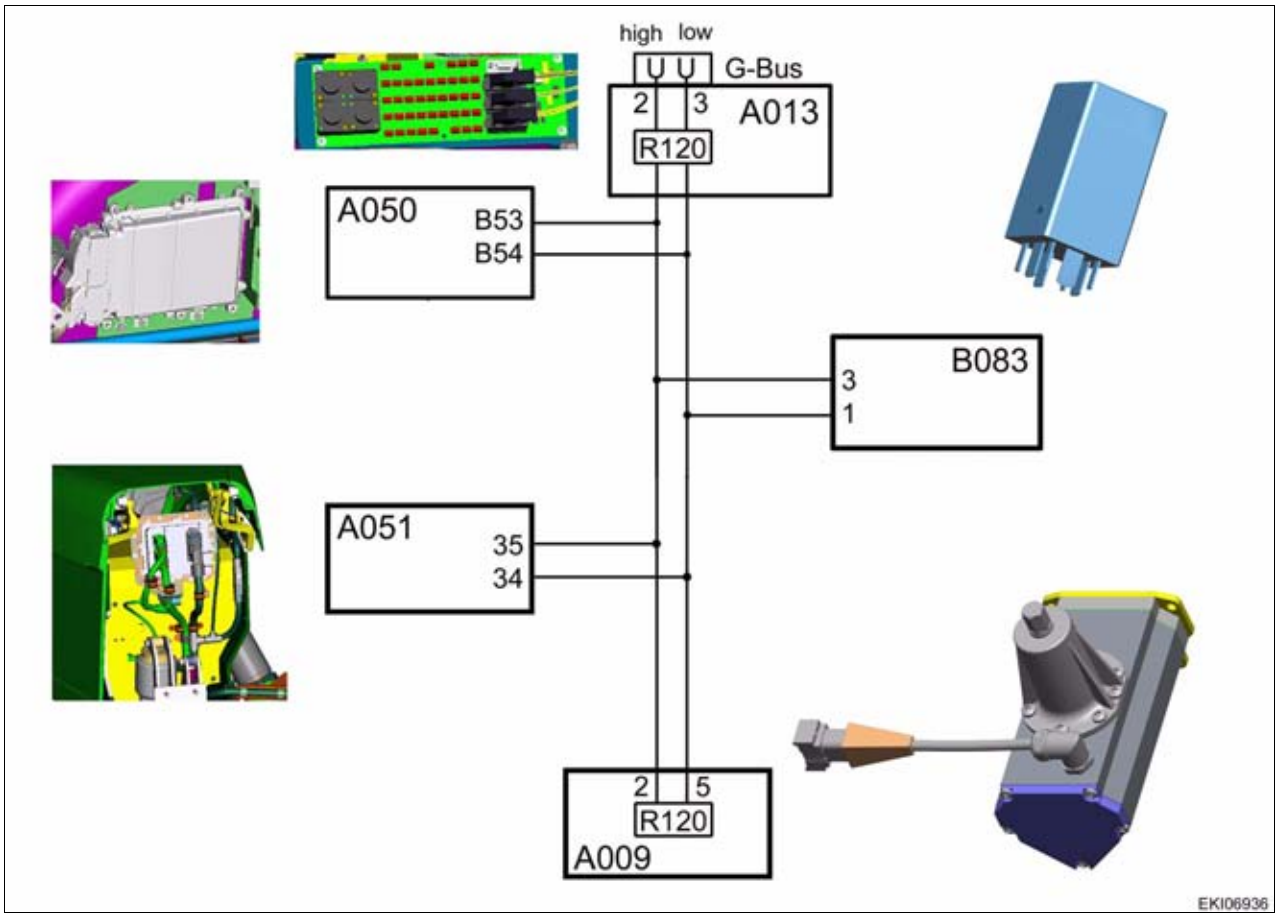



*Fig. 7.* I007787

| DIN | Designation |
|---|---|
| **A009** - Actuator unit | |
| **A013** - PCB, microfuses | |
| **A050** - ECU, basic control unit | |
| **A051** - ECU, engine control unit (EDC 7). | |
| **B083** - Immobiliser control | |

**NOTE:** *Procedure for checking the bus system (passive bus)*

Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)

– Test total resistance 60 Ohm.
(total resistance 120 Ohm = wiring break, defective terminating resistor)

– Check the voltage level of CAN High/CAN Low.
0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

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# 4 ISO bus

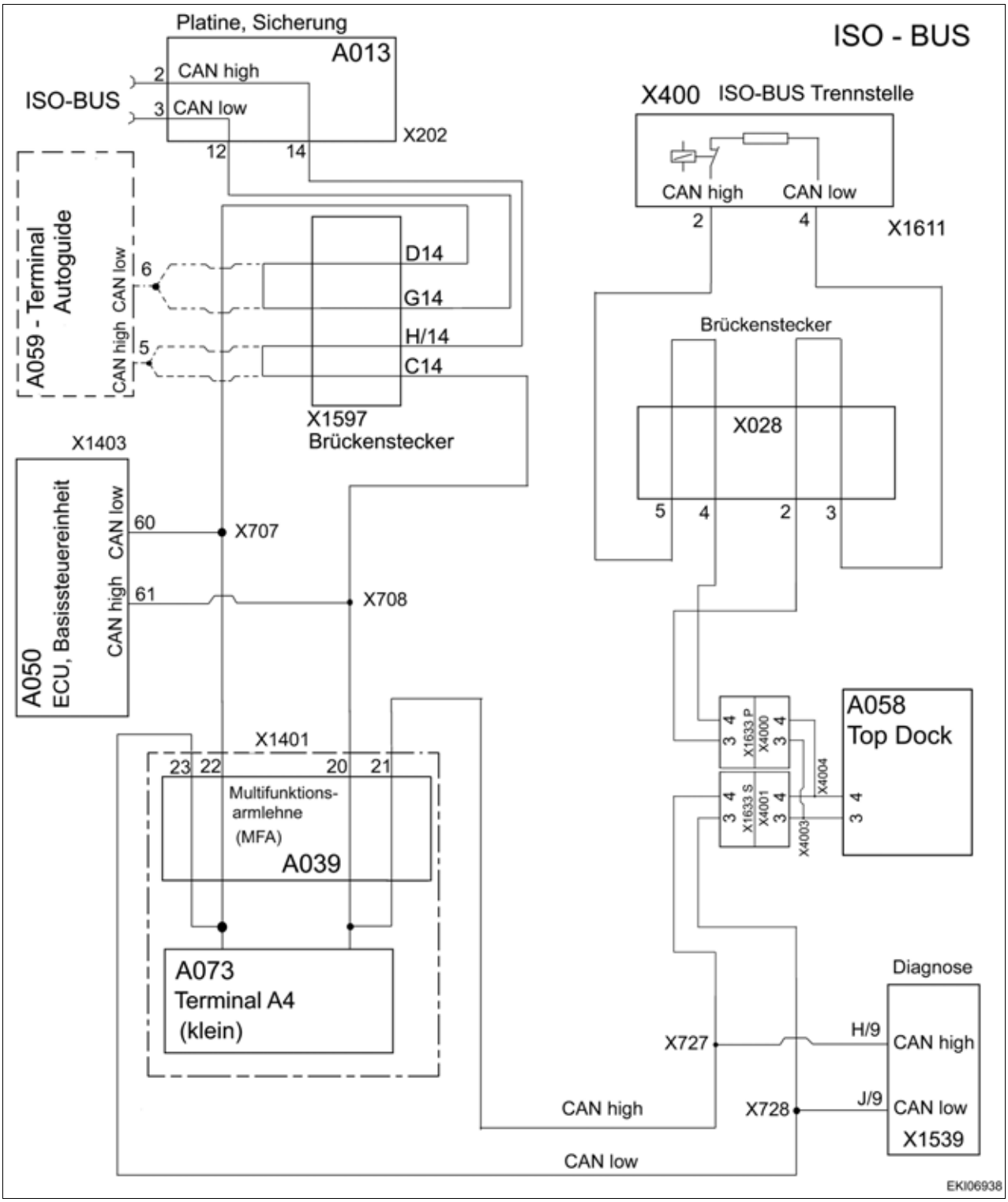



*Fig. 8.* I007788

**NOTE:** ***Procedure for checking the bus system (active bus)***

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Active bus means that the bus ends are pre-tensioned via networks.

– Check the supply voltage to the bus consumers (positive and earth)

– Check bus voltage **High= 1.5 - 2.5 VDC**.
  Check bus voltage **Low= 2.5 - 3.5 VDC**.
  Voltage level of CAN High/CAN Low
  **0 VDC** = earth connection, **4 VDC and higher** = short circuit to +UB

# 5 Valve bus

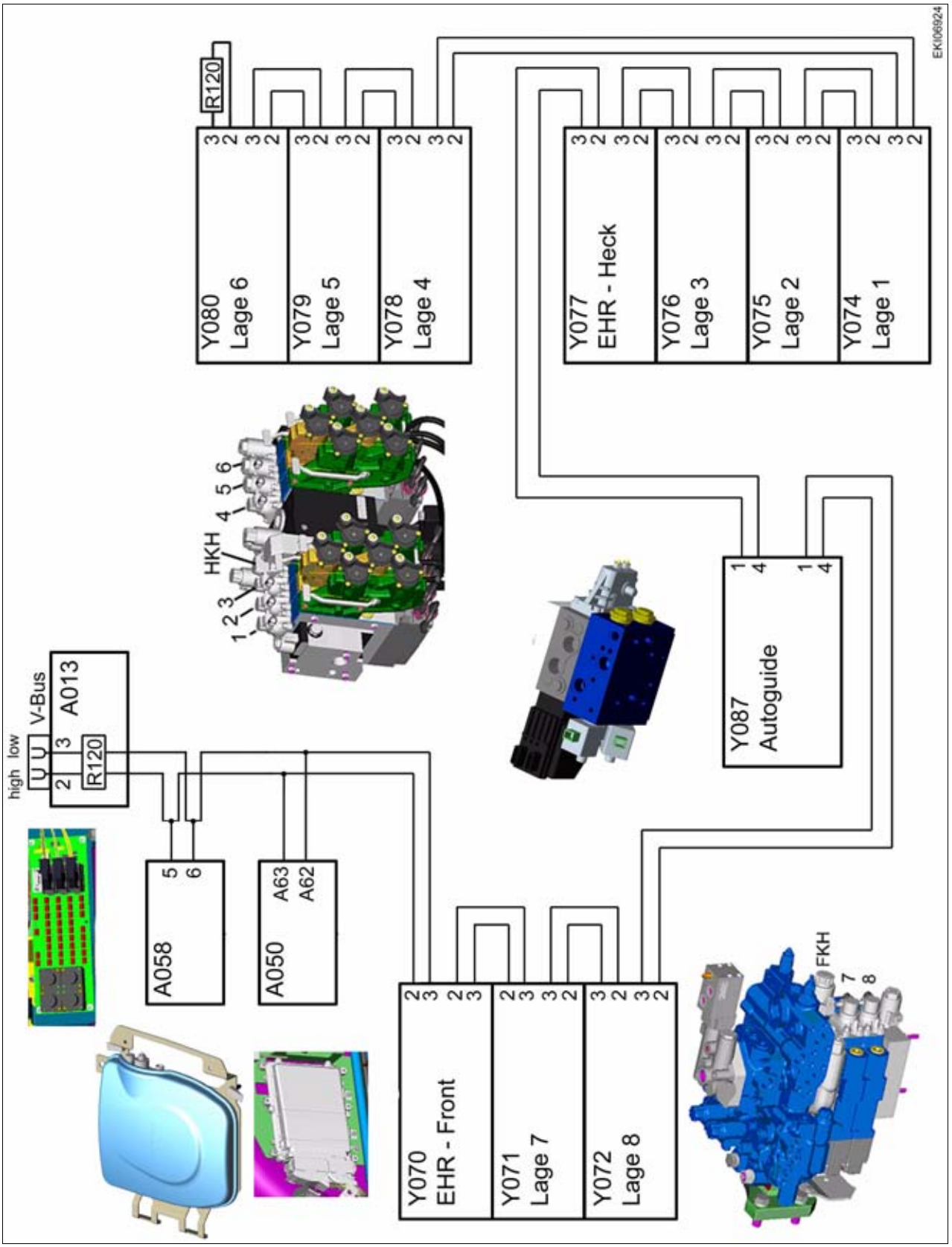



*Fig. 9.* I004837

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| DIN | Designation | Hydr. | Position | Colour |
|---|---|---|---|---|
| **A013** - PCB, microfuses | | | | |
| **A050** - ECU, basic control unit | | | | |
| **A058** - TopDock (Auto-Guide) | | | | |
| **Y070 [FKH]** - Cut-off valve, front power lift enhanced control | | Front EPC | FKH | |
| **Y071 [2.1]** - Auxiliary control valve (olive) | | 2.1 | 7 | olive |
| **Y072 [2.2]** - Auxiliary control valve (grey) | | 2.2 | 8 | grey |
| **Y074 [1.1]** - Auxiliary control valve (yellow) | | 1.1 | 1 | yellow |
| **Y075 [1.2]** - Auxiliary control valve (blue) | | 1.2 | 2 | blue |
| **Y076 [1.3]** - Auxiliary control valve (red) | | 1.3 | 3 | red |
| **Y077 [HKH]** - Cut-off valve, rear EPC | | Rear EPC | HKH | |
| **Y078 [1.4]** - Auxiliary control valve (green) | | 1.4 | 4 | green |
| **Y079 [1.5]** - Auxiliary control valve (brown) | | 1.5 | 5 | brown |
| **Y080 [1.6]** - Auxiliary control valve (violet) | | 1.6 | 6 | violet |

**NOTE:** *Procedure for checking the bus system (passive bus)*

Passive bus means that the bus ends are sealed off with terminating resistors.

– Check the supply voltage to the bus consumers (positive and earth)

– Test total resistance 60 Ohm.
(total resistance 120 Ohm = wiring break, defective terminating resistor)

– Check the voltage level of CAN High/CAN Low.
0 VDC = earth connection, 4 VDC and higher = short circuit to +UB

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# 6 Functional description of the A050 ECU, basic control unit

Functional description of components with current inputs at the **A050** - ECU, basic control unit

*Sensors with current inputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **B008** - Sensor, high-pressure 1 | | A67 |
| **B016** - Sensor, travel range detection | | A69 |
| **B017** - Sensor, clutch pedal | | B29 |
| **B039** - Sensor, high-pressure 2 | | A70 |
| **B040** - Sensor, front power lift position | | A38 |
| **B055** - Sensor, foot throttle | | B18 |
| **B066** - Sensor, wheel position (left) | | A66 |
| **B067** - Sensor, steering angle | | A65 |
| **B068** - Sensor, wheel position (right) | | A64 |
| **B081** - Steering wheel sensor (360°) | | B17 |

The **A050** - ECU, basic control unit receives a signal strength of **4–20 mA** from the sensor depending on the position or pressure of the sensor.
The signal strength of **4 - 20 mA** produces a signal voltage of 0.6 - 4.2 V.
The **A050** - ECU, basic control unit receives signals from these sensors e.g. for the high pressure in the transmission or the current foot throttle position (engine target speed).

Functional description of components with voltage inputs at the **A050** - ECU, basic control unit

*Sensors with voltage inputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **B030** - Sensor, rear power lift position | | A21 |
| **B031** - Sensor, draft sensing pin, right | | A17 |
| **B032** - Sensor, draft sensing pin, left | | B16 |
| - | Sensor, external position (X015) | A18 |

The **A050** - ECU, basic control unit receives a signal voltage of **2.0–7.6 VDC** from the sensor depending on the position or pressure of the sensor.
Through these sensors, e.g. B030 rear power lift position sensor, the **A050** - ECU, basic control unit receives the lifting height of the power lift.

Functional description of components with frequency inputs at the **A050** - ECU, basic control unit

*Sensors with frequency inputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **A011** - Radar sensor | | A12 |
| **B002** - Sensor, front PTO speed | | A08 |
| **B010** - Sensor, engine speed | | A11 |
| **B014** - Sensor, collecting shaft (speed) | | A13 |
| **B015** - Sensor, bevel pinion (speed) | | A09 |
| **B020** - Sensor, rear PTO speed (stub shaft) | | A10 |
| **B021** - Sensor, rear PTO speed (clutch) | | A33 |

The **A050** - ECU, basic control unit supplies a basic signal voltage of **6.3 VDC**
The basic signal voltage **must** come from the **A050** - ECU, basic control unit.
When a Hall sensor is connected, this basic signal voltage is reduced by the resistance circuits inside the Hall sensor:

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from **4.6 VDC to 1.0 VDC** (depending on ratchet wheel position).
The **A050** - ECU, basic control unit calculates the rotational frequency of the shaft (rotational speed) from the number of voltage levels (4.6 VDC and 1.0 VDC).

Functional description of components with digital inputs at the **A050** - ECU, basic control unit

*Switches with digital inputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **A009** - Actuator unit Reference F/R | | A58 |
| **A039** - MFA, multifunction armrestSeat switch | | B14 |
| **B009** - Discharge temperature sensor | | B23 |
| **B014** - Sensor, collecting shaft (rotational direction) | | A59 |
| **B015** - Sensor, bevel pinion (rotational direction) | | A57 |
| **B063** - Pressure switch, filter contamination (hydraulic circuit) | | A42 |
| **S005** - Switch, right brake | | B11 |
| **S006** - Switch, left brake | | B24 |
| **S017** - Filter contamination switch | | A34 |
| **S019** - Button, rear PTO, external left | | B36 |
| **S020** - Button, rear PTO, external right | | B50 |
| **S021** - Button, front power lift, external raise | | A37 |
| **S022** - Button, front power lift, external lower | | A36 |
| **S025** - Switch, LS pump pressure monitor | | A35 |
| **S026** - Switch, steering pump flow controller | | A48 |
| **S027** - Button, rear power lift, right-hand external raise | | B37 |
| **S028** - Button, rear power lift, right-hand external lower | | B12 |
| **S029** - Button, rear power lift, left-hand external raise | | B39 |
| **S030** - Button, rear power lift, left-hand external lower | | B48 |
| **S045** - Switch, reversing driver stand | | B09 |
| **S067** - Button, valve actuation, external raise | | B35 |
| **S068** - Button, valve actuation, external lower | | B47 |
| **S075** - Switch, guard rail pump flow monitor | | A43 |
| **S079** - Switch, steering column | | B10 |
| **S080** - Switch, hand brake | | B34 |
| **S086** - Switch, brake wearing, right | | B51 |
| **S087** - Switch, brake wearing, left | | B25 |

The **A050** - ECU, basic control unit supplies a basic signal voltage of **6.0 VDC**
The basic signal voltage must come from the **A050** - ECU, basic control unit.
Depending on the position of the switch, the basic signal voltage from the ECU is reduced:
**Switch open** to **3.7 VDC** (internal resistance of component 510 Ohm) or
**Switch closed** to **1.7 VDC** (internal resistance of component 121 Ohm).
The desired function is carried out in the ECU based on the voltage level.

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Functional description of components with digital output at the **A050** - ECU, basic control unit

*Switches with digital outputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **A009** - Actuator unit | | A15 |
| **H009** - Blip signal, reversing | | B42 |
| - | ISO bus | B43 |
| **K061** - ISO bus disconnect relay | | A14 |
| **K061** - ISO bus disconnect relay | | B56 |
| **S019** - Button, rear PTO, external left LED | | B41 |
| **S020** - Button, rear PTO, external right LED | | B041 |
| **Y002** - Solenoid valve, travel range I | | A92 |
| **Y003** - Solenoid valve, travel range II | | A91 |
| **Y009** - Solenoid valve, 4WD | | A89 |
| **Y010** - Solenoid valve, differential lock | | A90 |
| **Y012** - Oil pre-heater/load suspension solenoid valve | | A87 |
| **Y060** - Hydraulic oil pre-heater solenoid valve (rear) | | A88 |
| **Y065** - Raise suspension solenoid valve | | A93 |
| **Y067** - Lock suspension solenoid valve | | A95 |
| **Y082** - Solenoid valve, lower link stabiliser, lock | | A96 |
| **Y083** - Solenoid valve, lower link stabiliser, release | | A72 |

The **A050** - ECU, basic control unit supplies a voltage for energising the solenoid valves:
of **0 VDC or 12 VDC** (black - white) switching.
The **A050** - ECU, basic control unit is capable of having diagnostics run at the outputs; this means that if a break in wiring or a short circuit occurs, this output is switched off and an error code is output.

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Functional description of components with pulse width output **A050** - ECU, basic control unit

*Actuators with pulse width outputs*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **Y004** - Solenoid valve, turbo-clutch | | B21 |
| **Y005** - Solenoid valve, speed governor | | A75 |
| **Y008** - Solenoid valve, rear PTO (clutch) | | A77 |
| **Y011** - Front PTO solenoid valve (clutch) | | A86 |
| **Y021** - Lifting solenoid valve (standard front power lift) | | A49 |
| **Y021** - Front pressure compensator lock valve | | |
| **Y022** - Lowering solenoid valve (standard front power lift) | | A73 |
| **Y022** - Field pressure control solenoid valve (front), | | |
| **Y026** - Solenoid valve, rear PTO, stage I | | A54 |
| **Y027** - Solenoid valve, rear PTO, stage II | | A53 |
| **Y032** - Control pressure solenoid valve | | A52 |
| **Y053** - Active hold function solenoid valve (High) | | A04 |
| **Y053** - Active hold function solenoid valve (Low) | | A81 |
| **Y055** - Rear pressure compensator lock valve | | A31 |
| **Y061** - hydraulic oil pre-heater solenoid valve (middle) | | A74 |
| **Y062** - Solenoid valve, field pressure control (rear) | | A56 |
| **Y063** - Wobble stabiliser solenoid valve | | A01 |
| **Y064** - Suspension load pressure/lowering solenoid valve | | A26 |
| **Y084** - Solenoid valve, Power Beyond | | A50 |
| **Y085** - Pilot pressure/switch-off solenoid valve (Auto-Guide) (High) | | A07 |
| **Y085** - Pilot pressure/switch-off solenoid valve (Auto-Guide) (Low) | | A78 |
| **Y086** - Solenoid valve, steering disconnect (Auto-Guide) (High) | | A06 |
| **Y086** - Solenoid valve, steering disconnect (Auto-Guide) (Low) | | A79 |
| **Y088** - Solenoid valve, release trailer brake (High) | | A02 |
| **Y088** - Solenoid valve, release trailer brake (Low) | | A85 |

The **A050** - ECU, basic control unit supplies a voltage of **0 VDC to 12 VDC** for energising the solenoid valves
**The voltage increase to 12 VDC or the voltage shutoff to 0 VDC is proportionally controlled.**
The **A050** - ECU, basic control unit is capable of having diagnostics run at the outputs; this means that if a break in wiring or a short circuit occurs, this output is switched off and an error code is output.

**NOTE:** *A pulse width output can also be programmed to a given current value, e.g. Y005 speed limiter solenoid valve 800 mA.*

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# 7 Hall sensor operation

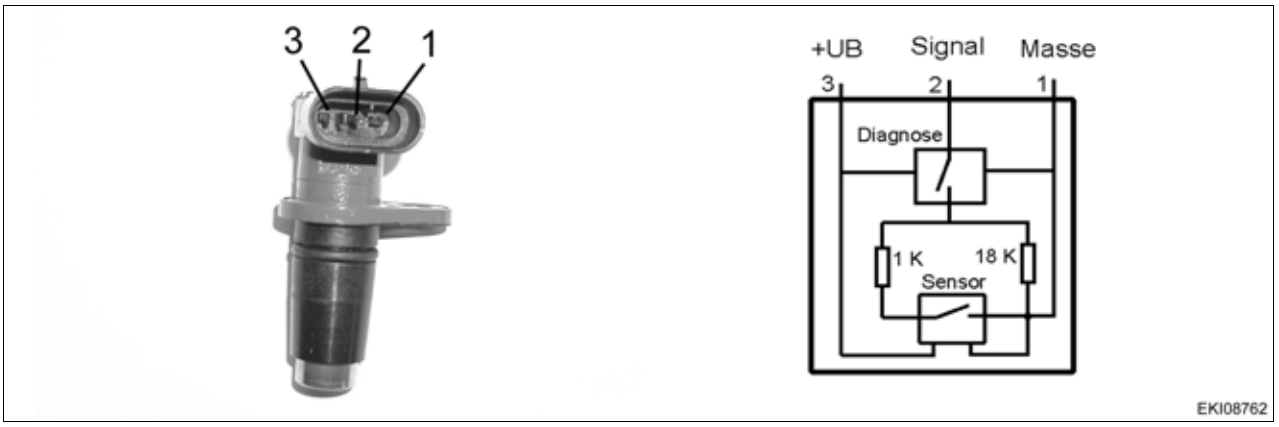



*Fig. 10.* I007041

Hall sensor pin assignment
1 = earth
2 = signal
3 = +supply

Signal voltage, measure at pin 2 and pin 1
The A050 ECU, basic control unit delivers a basic signal voltage of approx. **6.3 VDC** to pin 2, only possible when the Hall sensor is disconnected.
**Ratchet wheel position A**
Sensor switch open signal voltage = approx. **4.6 VDC**, resistance 18 kOhm
**Ratchet wheel position B**
Sensor switch closed signal voltage = approx. **1.0 VDC**, total resistance (parallel circuit) from 18 kOhm and 1 kOhm

+ supply, measure at pin 3 and pin 1
Voltage = **12 to 14 VDC** (depending on on-board voltage)

*Tractor with **A002** - ECU, enhanced control e.g.: FENDT 900 COM II:*

| Supply | Switch I (Diagnostics) | Switch II (Sensor) | Signal voltage | Fault code |
|---|---|---|---|---|
| 0 VDC | | | | |
| 12 VDC | | | | |

*Tractor with **A050** - ECU, basic control unit e.g.: FENDT 900 COM III:*

| Supply | Switch I (Diagnostics) | Switch II (Sensor) | Signal voltage | Fault code |
|---|---|---|---|---|
| 0 VDC | | | | |
| 12 VDC | | | | |

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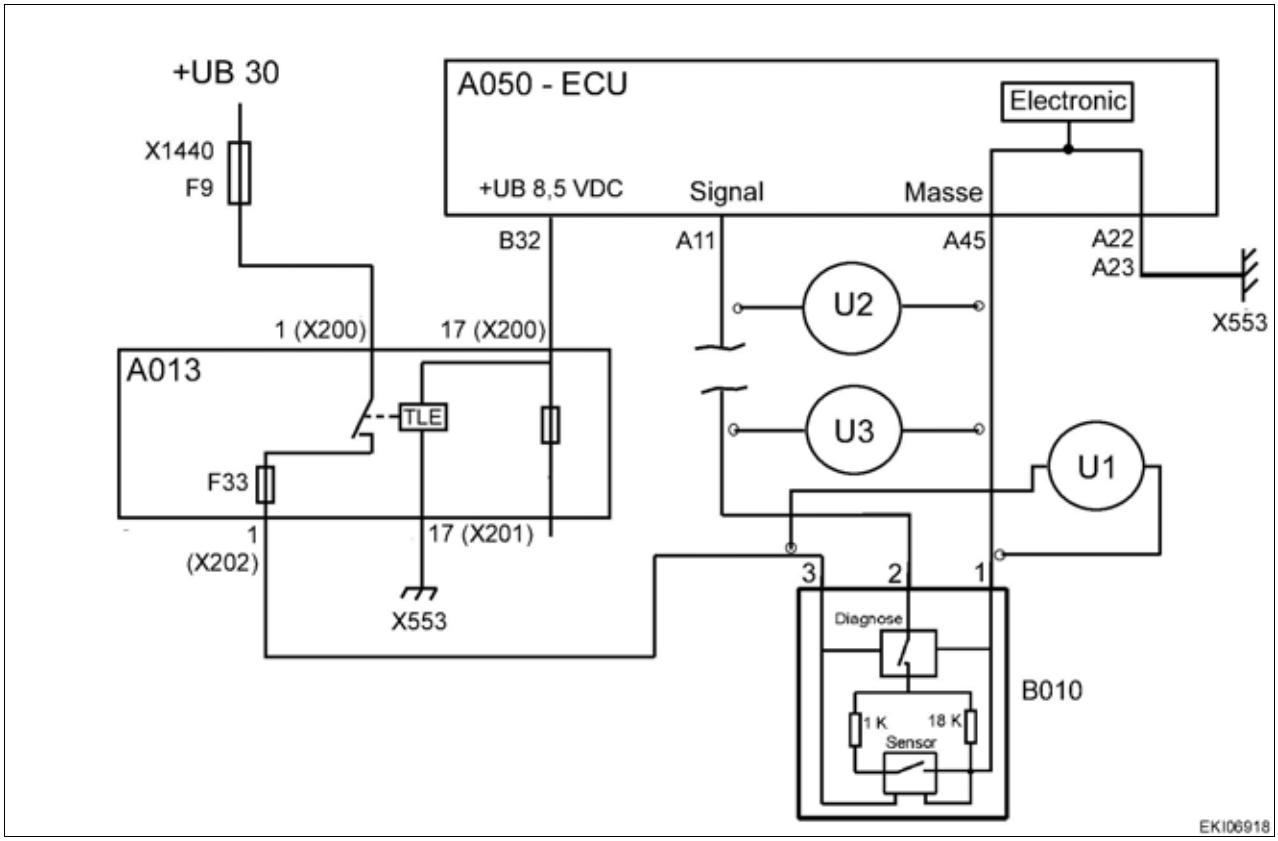



*Fig. 11.* I007790

| Voltage | A002 (COM II) | A050 (COM III) | Note |
|---|---|---|---|
| U1 | | | |
| U2 | | | |
| U3 | | | |
| | | | |

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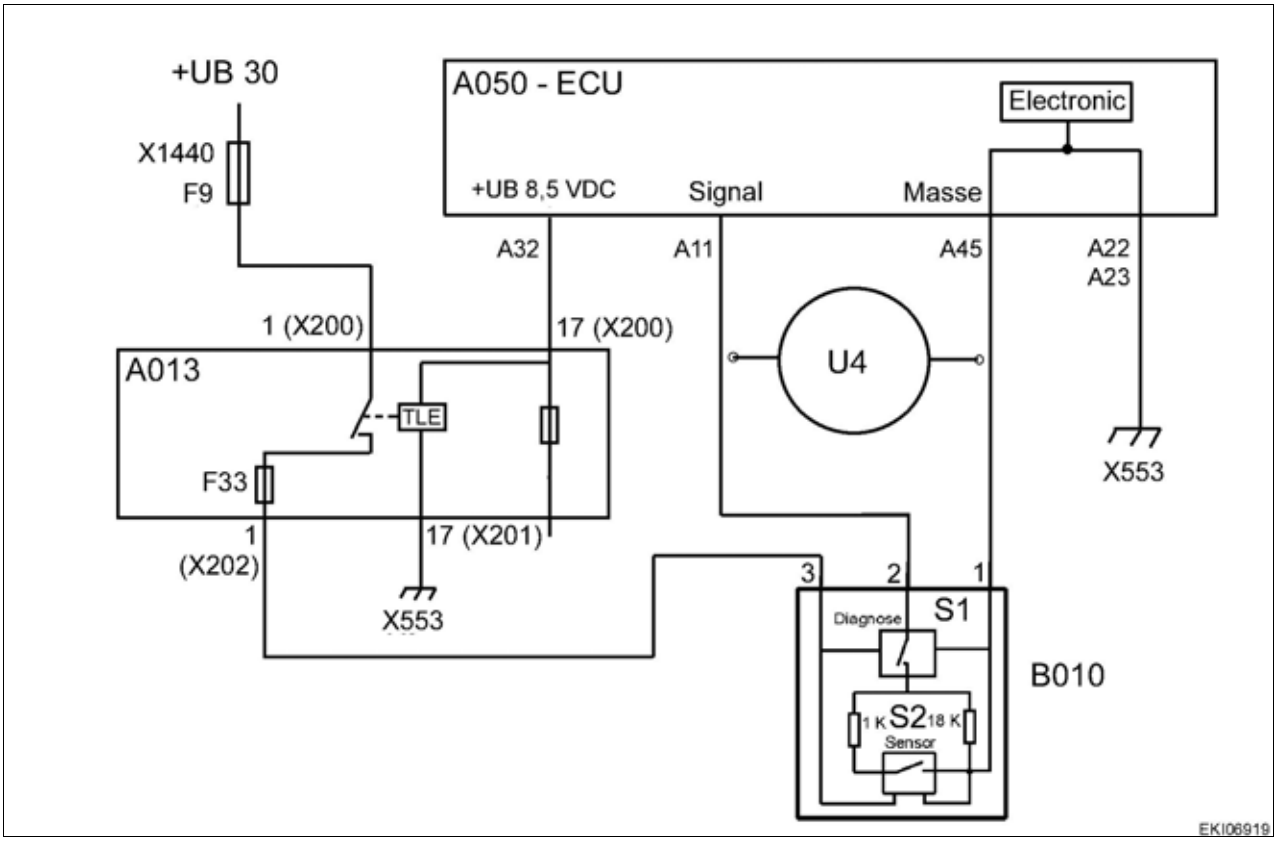



*Fig. 12.* I007791

| Voltage | S1 | S2 | A002 (COM II) | A050 (COM III) |
|---|---|---|---|---|
| U4 | CLOSED | OPEN | | |
| | CLOSED | CLOSED | | |

*Other Hall sensors fitted on the tractor:*

| DIN | Designation | Note |
|---|---|---|
| **A011** - Radar sensor | | |
| **B002** - Sensor, front PTO speed | | |
| **B010** - Sensor, engine speed | | |
| **B014** - Sensor, collecting shaft (speed) | | |
| **B015** - Sensor, bevel pinion (speed) | | |
| **B020** - Sensor, rear PTO speed (stub shaft) | | |
| **B021** - Sensor, rear PTO speed (clutch) | | |

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# 8 Position sensor operation

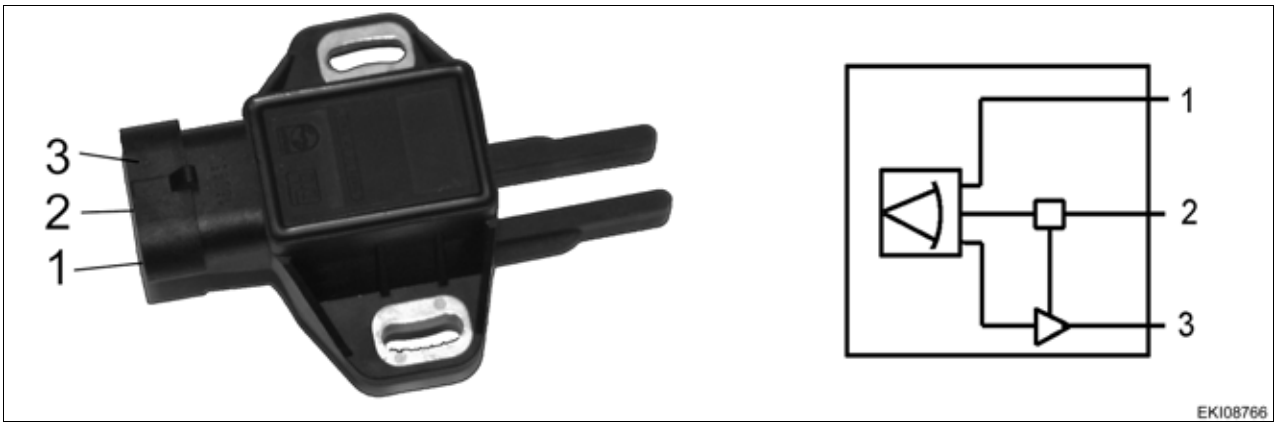



*Fig. 13.* I007046

Position sensor (angle/current) pin assignment
1 = earth
2 = +supply
3 = signal

Functional description of position sensor (angle/current)

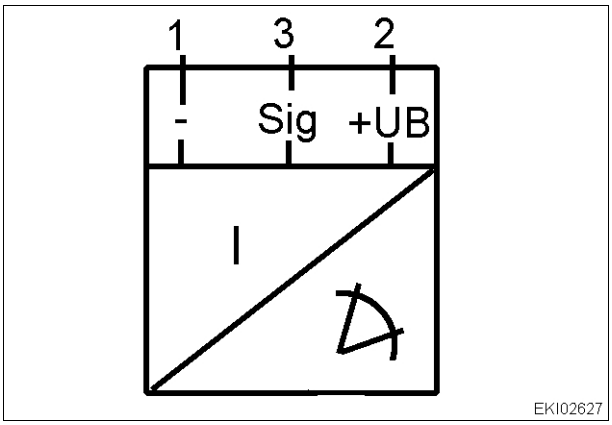



*Fig. 14.* I006985

The position sensor is used to detect angles.
The **earth** of the position sensor goes to ECU pins A45 and A46 (sensor system earth).
It is supplied by the **A013** - PCB, microfuses with **8.5 VDC**.
The position sensor is equipped with an **electronic current divider**, which sends a signal current of **4 - 20 mA** to the ECU depending on the angle position.
Measured with the adapter cable, a signal voltage of **0.6 - 4.2 VDC** is generated.

*Position sensor (angle/current)*

| DIN | Designation | Note |
|---|---|---|
| **B016** - Sensor, travel range detection | | |
| **B017** - Sensor, clutch pedal | | |
| **B040** - Sensor, front power lift position | | |
| **B055** - Sensor, foot throttle | | |
| **B066** - Sensor, wheel position (left) | | |
| **B067** - Sensor, steering angle | | |
| **B068** - Sensor, wheel position (right) | | |

**To compensate for mechanical and electrical tolerances in sensors, the sensor must be calibrated.**

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*High pressure sensor (pressure/current (I))*

| DIN | Designation | Note |
|---|---|---|
| **B008** - Sensor, high-pressure 1 | | |
| **B039** - Sensor, high-pressure 2 | | |

Functional description of position sensor (angle/voltage)

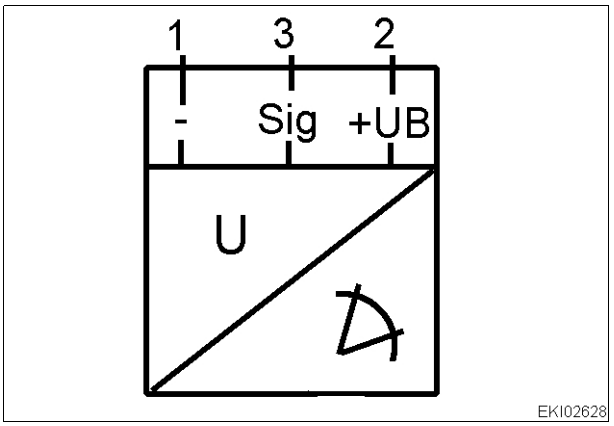



*Fig. 15.* I006986

The position sensor is used to detect angles
The position sensor is supplied from the ECU.
The earth of the position sensor goes to ECU pins A45 and A46 (sensor system earth).
The position sensor is equipped with an **electronic voltage divider**, which reports a signal voltage to the ECU reflecting the angular position.

*Position sensor (angle/voltage)*

| DIN | Designation | Note |
|---|---|---|
| **B030** - Sensor, rear power lift position | | |
| | Sensor, external position (X015) | |
| **B055** - Sensor, foot throttle | | |

**To compensate for mechanical and electrical tolerances in sensors, the sensor must be calibrated.**

**NOTE:** *Chapter 0000 Reg. F - Setting and calibrating*
*Chapter 9000 Reg. E - Measuring and testing electrical components.*

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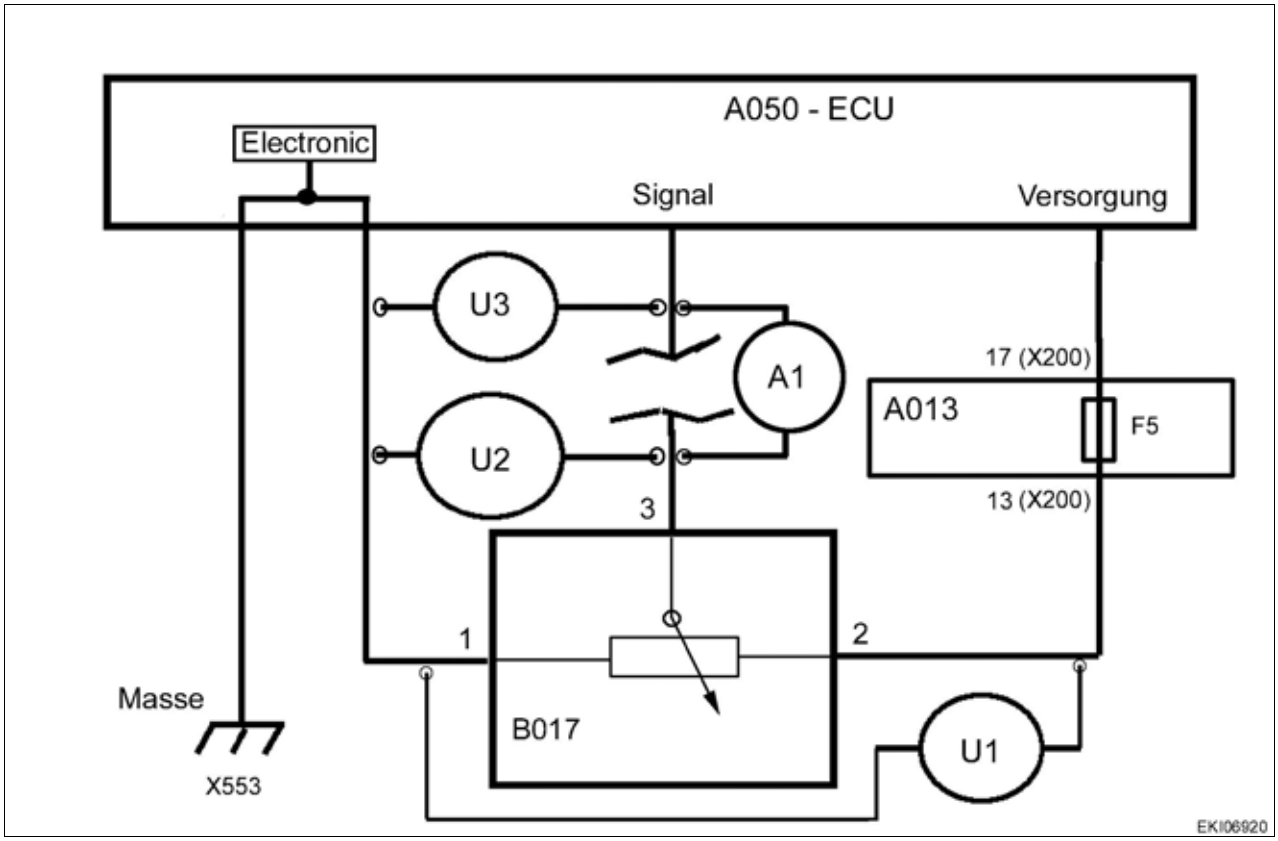



*Fig. 16.* I007792

| | |
|---|---|
| **A013** - PCB, microfuses | **B017** - Sensor, clutch pedal |
| **A050** - ECU, basic control unit | |

| Voltage | Conditions | Reading | Note |
|---|---|---|---|
| U1 | | | |
| U2 | | | |
| U3 | | | |
| U3 | Connected | | |
| A1 | | | |

If the supply voltage at the position sensor is OK, the sensor sends a signal of **4 - 20 mA** to the ECU reflecting the angular position.
If the supply (positive or earth) is not OK, no signal is transmitted; an error code appears. **The signal comes from the position sensor.**

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# 9 Button functionality

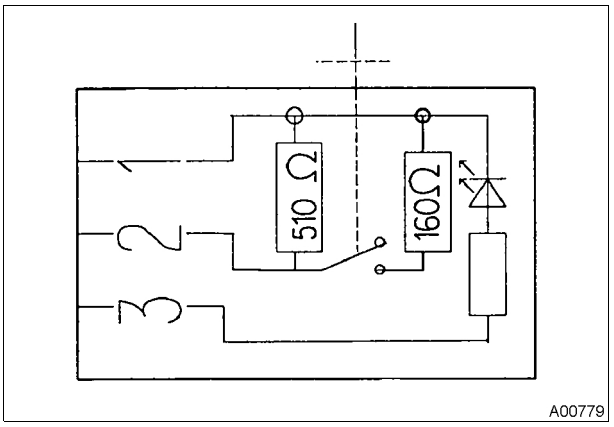



*Fig. 17.* I007044

Pin assignment button
1 = earth
2 = signal (on/off)
3 = lights ON/OFF button

Measure the signal voltage at pin 2 and pin 1
The **A050** - ECU, basic control unit sends a basic signal voltage of **6.0 VDC** to pin 2, not possible unless the button is disconnected.
The basic signal voltage must come from the **A050** - ECU, basic control unit.
**Switch open**
Resistance R = 510 Ohm => signal voltage = **3.7 VDC**
**Switch closed**
Resistance R = 121 Ohm => signal voltage = **1.7 VDC**

Measure the resistance at pin 2 and pin 1
**Switch open**
Resistance R = **510 Ohm**
**Switch closed**
Resistance R = 1 / (1/510 + 1/160) = **121 Ohm**

Measure "lights button" voltage at pin 3 and pin 1
Voltage = 0 VDC or 12 VDC (depending on switch position message from the ECU)

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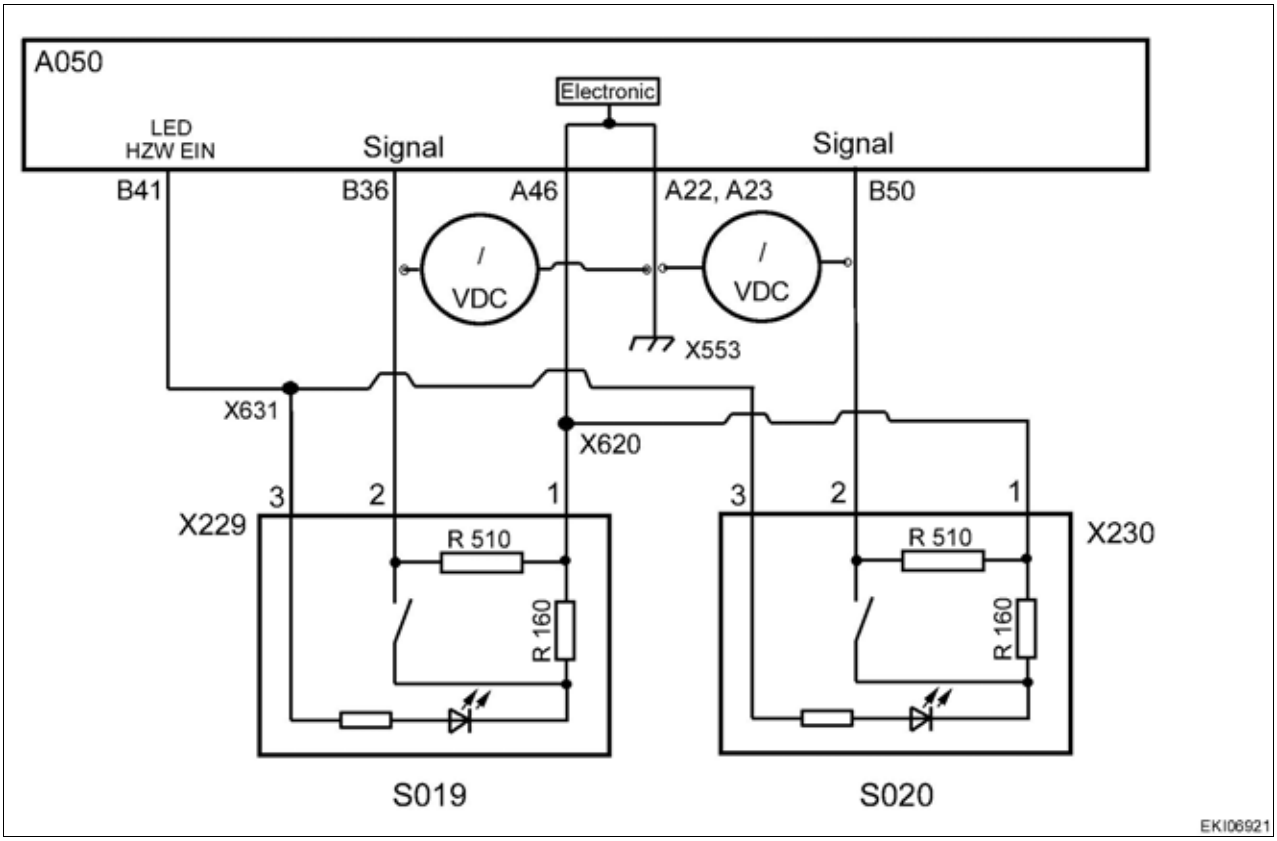



*Fig. 18.* I007793

| | |
|---|---|
| **A013** - PCB, microfuses | **S019** - Button, rear PTO, external left |
| **A050** - ECU, basic control unit | **S020** - Button, rear PTO, external right |

| Switch | A002 (COM II) | A050 (COM III) | Resistance | Note |
|---|---|---|---|---|
| Open | | | | |
| Closed | | | | |

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*Other buttons/switches fitted on the tractor:*

| DIN | Designation | Pin at A050 |
|---|---|---|
| **A009** | - Actuator unit | A58 |
| **A039** | - MFA, multifunction armrest | B14 |
| **B009** | - Discharge temperature sensor | B23 |
| **B014** | - Sensor, collecting shaft | A59 |
| **B015** | - Sensor, bevel pinion | A57 |
| **B063** | - Pressure switch, filter contamination (hydraulic circuit) | A42 |
| **S005** | - Switch, right brake | B11 |
| **S006** | - Switch, left brake | B24 |
| **S017** | - Filter contamination switch | A34 |
| **S019** | - Button, rear PTO, external left | B36 |
| **S020** | - Button, rear PTO, external right | B50 |
| **S021** | - Button, front power lift, external raise | A37 |
| **S022** | - Button, front power lift, external lower | A36 |
| **S025** | - Switch, LS pump pressure monitor | A35 |
| **S027** | - Button, rear power lift, right-hand external raise | B37 |
| **S028** | - Button, rear power lift, right-hand external lower | B12 |
| **S029** | - Button, rear power lift, left-hand external raise | B39 |
| **S030** | - Button, rear power lift, left-hand external lower | B48 |
| **S045** | - Switch, reversing driver stand | B09 |
| **S067** | - Button, valve actuation, external raise | B35 |
| **S068** | - Button, valve actuation, external lower | B47 |
| **S079** | - Switch, steering column | B10 |
| **S080** | - Switch, hand brake | B34 |
| **S086** | - Switch, brake wearing, right | B51 |
| **S087** | - Switch, brake wearing, left | B25 |

Switches for which no diagnostics are available, in the event of cable breaks:
**Measure the signal voltage at pin 2 and pin 1**

**Switch open**
Resistance R = infinite => signal voltage **= 6.0 VDC**
**Switch closed**
Resistance R = approx. 0 ohms => signal voltage **= 0 VDC**

| DIN | Designation | Pin at A050 |
|---|---|---|
| **S026** | - Switch, steering pump flow controller | A48 |
| **S075** | - Switch, guard rail pump flow monitor | A43 |

**NOTE:** *see §6*
*Electrical circuit diagrams - Chapter 9000 Reg. C*
*Electrical/electronic components - Measuring and testing - Chapter 9000 Reg. E*

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| | |
|---|---|
| **A** | General |
| **B** | Faults |
| **C** | Documents and Diagrams |
| **D** | Component location |
| **E** | Testing |
| **F** | Setting and Calibration |
| **G** | Repair |
| **H** | Service – Info |

# 9920

Service/special tools

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# 9920 Service/special tools

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# A General

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2 Special tools for Common Rail . . . . . 10
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4 Special tool for Auto-Guide system F 900 COM III . . . . . 14

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# 1 Special tools

**X899.980.246.208**
**Adapter cable (6-pin)**
for testing B055 foot throttle sensor.

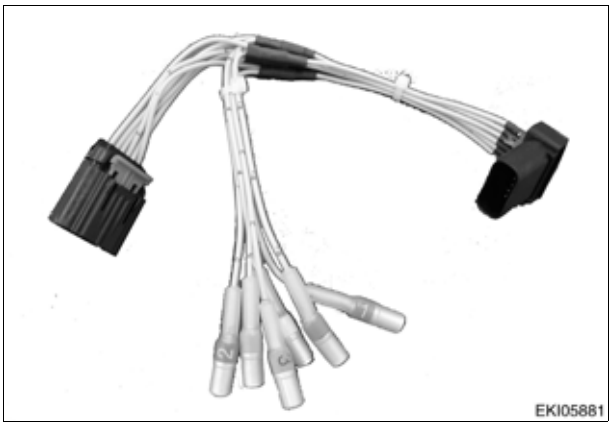



*Fig. 1.* I002527

**X899.980.259.102**
**Adapter cable (4-pin)**

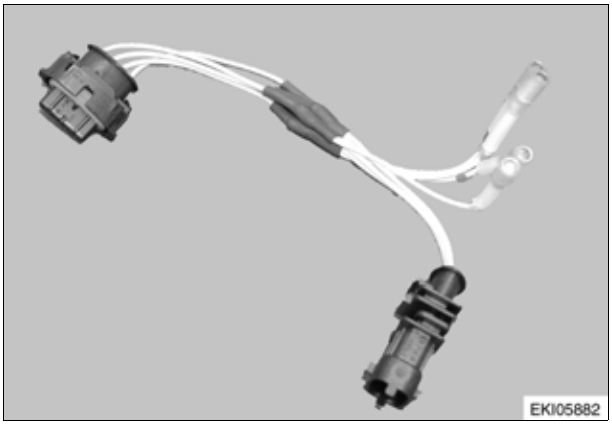



*Fig. 2.* I002529

**X899.980.259.104**
**Adapter cable (2-pin)**

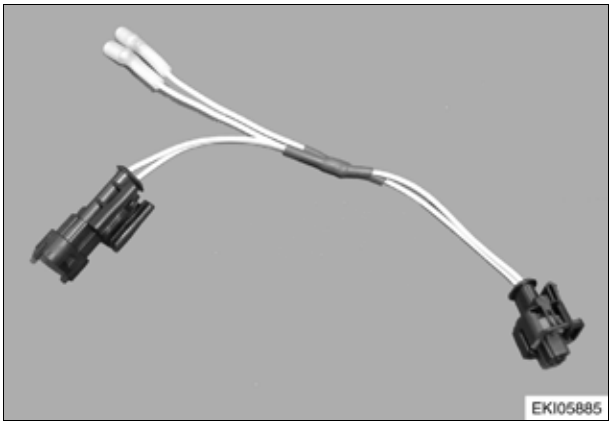



*Fig. 3.* I002528

**X899.980.304.000**
**Adapter box (160-pin)**
for universal testing of electrical and electronic systems.




*Fig. 4.* I002521

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**X899.980.304.201**
**Adapter cable (96/58/4x41-pin)**
for testing the **A050 ECU, basic control unit.**



*Fig. 5.* I002522

**X899.980.304.202**
**Adapter cable (36/16/89/4x41-pin)**
for testing the **A051 ECU, engine control unit.**



*Fig. 6.* I002523

**X899.980.304.203**
**Adapter cable (21/41-pin)**
for testing the **A038 ECU, central electrical system.**



*Fig. 7.* I002524

**X899.980.304.204**
**Adapter cable (68/2x41-pin)**
Adapter for all adapter cables with a 68-pin separation point.



*Fig. 8.* I002525

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**X899.980.304.400**
Support for X899.980.304.000 adapter box.




*Fig. 9.* I002526

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## 2 Special tools for Common Rail

Special spanner (SW 17), assembling and disassembling high pressure lines
X 899.980.238 V

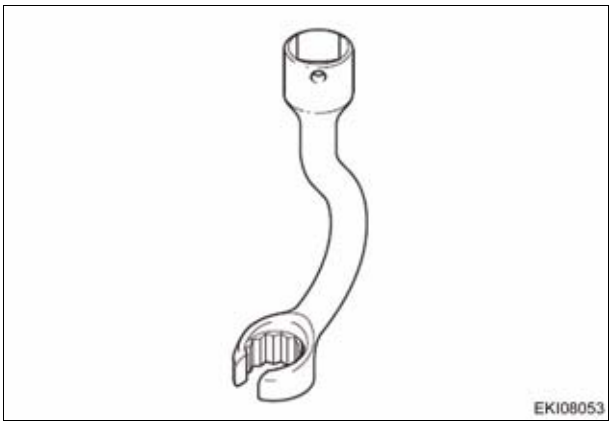



*Fig. 10.* I003737

**Please order the following special tools at the following address:**

Firma Wilbaer
Wilhelm Baecker GmbH & Co.KG
Postbox 14 05 80
42826 Remscheid
Germany
Telephone: +49 (0) 21 91 - 9339 - 200
Fax: +49 (0) 21 91 - 9339 - 0
E-mail: info@wilbaer.de
Internet: http://www.deutz-tools.com

Disassembling device for the removal of the pressure pipe coupling
Order number: 110 630

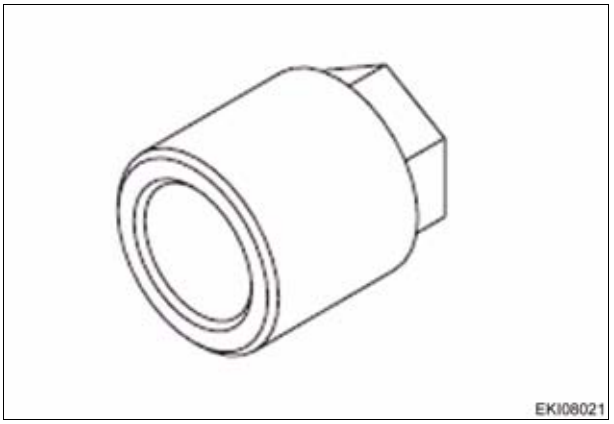



*Fig. 11.* I003738

Lever for removal of injectors
Order number: 110 620

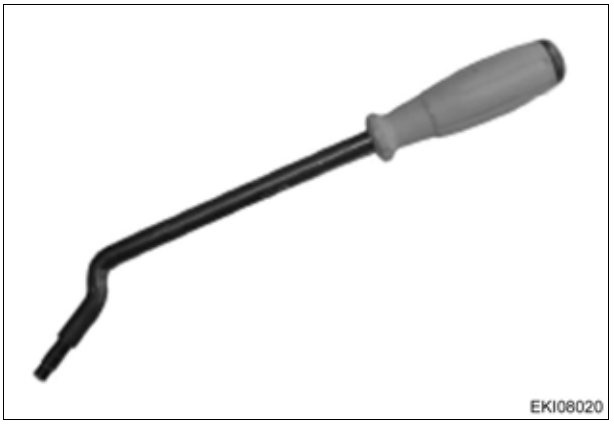



*Fig. 12.* I003736

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Assembly pliers
Order number: 8024

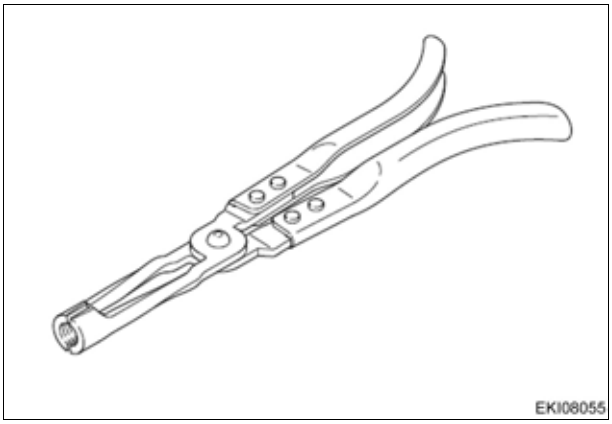



*Fig. 13.* I003739

Removal device for the removal of a tight injector seal ring
Order number: 120 680
In combination with slide hammer 150 800

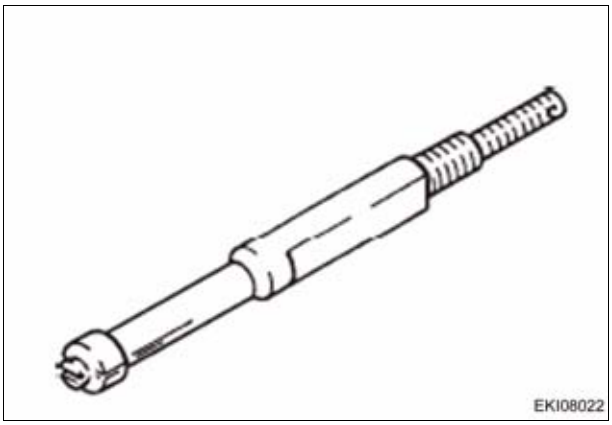



*Fig. 14.* I003740

Slide hammer
Order number: 150 800
In combination with detaching device 120 680

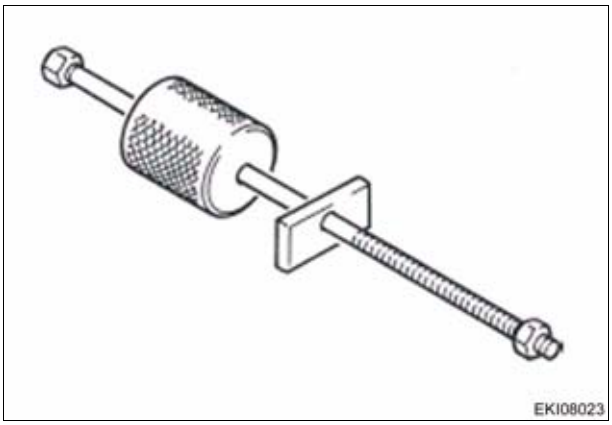



*Fig. 15.* I003741

Assembly case (fitting and removing O-ring seals)
Case complete with:
Disassembling tool 110 901and three assembling sleeves with guide

- High-pressure pump (diameter 36 mm ), 110 902
- Injector 2V engine (diameter 16 mm ), 110903
- Injector 4V engine (diameter 23 mm ), 110904

Order number: 110 900




*Fig. 16.* I003742

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# 3 X899.980.316.000 - "Auto-Guide COM III" tool box

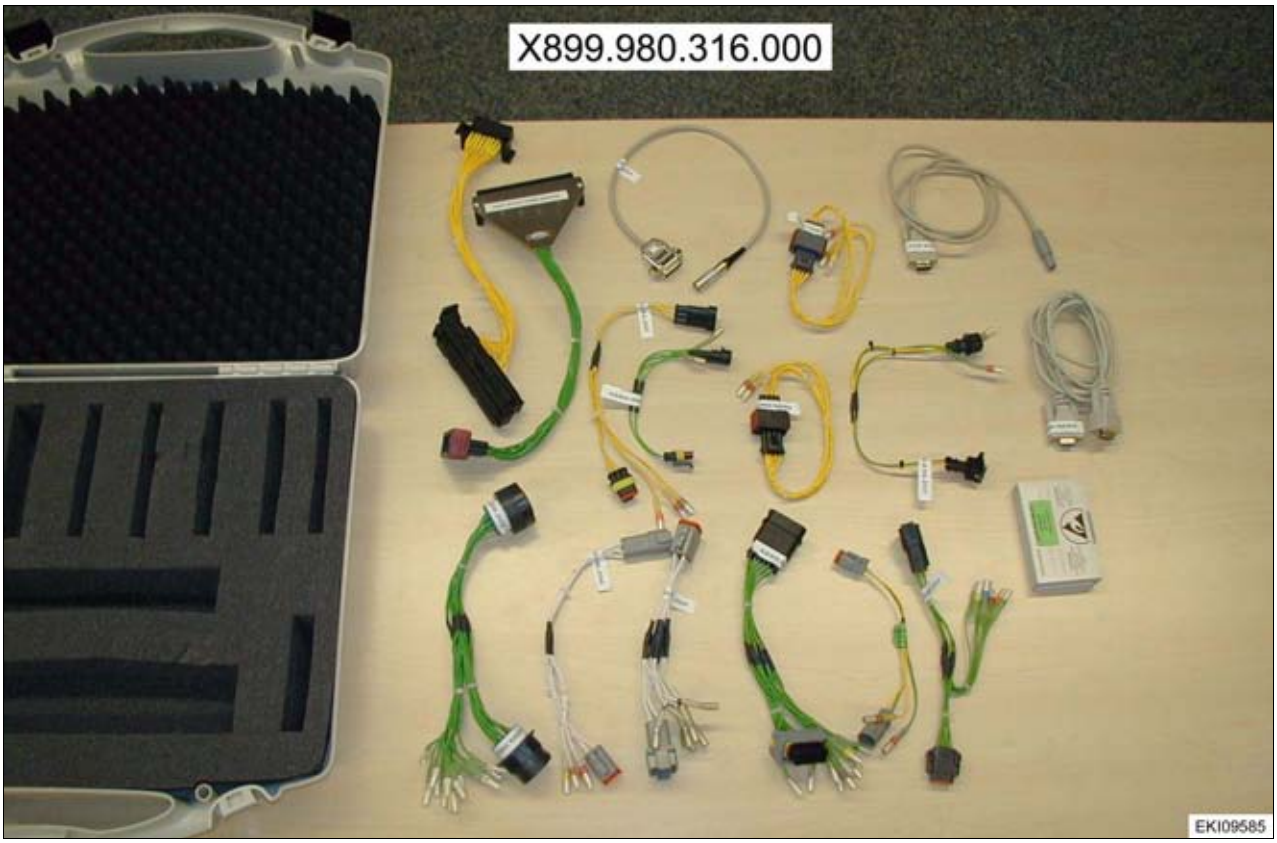



*Fig. 17.* I007492

| **X899.980.316.000 Tool box - Auto-Guide COM III** | | | |
|---|---|---|---|
| **Adapter cable** | **Adapter cable for:** | **FENDT 700/800 COM III** | **FENDT 900 COM III** |
| X899.980.288.200 | Box without tools | - | - |
| | | | |
| X899.980.208.220 | A057 ECU, steering controller | **X** | - |
| X899.980.246.201 | Y099 solenoid valve | **X** | **-** |
| | Y085 solenoid valve | - | **X** |
| X899.980.246.204 | S088 pressure switch | **X** | **-** |
| X899.980.246.205 | B081 steering wheel sensor | - | **X** |
| | B087 steering angle sensor | - | X |
| X899.980.246.207 | A059 Auto-Guide terminal | **X** | - |
| X899.980.288.201 | PCMCIA card (for programming the Auto-Guide system) | **X** | **X** |
| X899.980.288.202 | Programming the Auto-Guide system with the A059 Auto-Guide terminal | **X** | **X** |
| X899.980.288.206 | A058 Auto-Guide TopDock (B3/B4) | **X** | **-** |
| | Y086 solenoid valve | - | **X** |
| X899.980.288.207 | A058 Auto-Guide TopDock (B3/B4) | **X** | **-** |

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| **X899.980.316.000<br>Tool box - Auto-Guide COM III** | | | |
|---|---|---|---|
| **Adapter cable** | **Adapter cable for:** | **FENDT 700/800 COM III** | **FENDT 900 COM III** |
| X899.980.288.208 | A058 Auto-Guide TopDock (B4) Setting the radio frequency of the radio module (base station) | **X** | **X** |
| X899.980.316.201 | Y087 Auto-Guide control valve | **X** | **X** |
| X899.980.316.202 | Y087 Auto-Guide control valve | **X** | **X** |
| X899.980.316.203 | A059 Auto-Guide terminal | - | **X** |
| X899.980.316.204 | A058 Auto-Guide TopDock (B4) | - | **X** |
| X899.980.316.205 | Programming the Auto-Guide system with the Auto-Guide Service Tool (laptop) | **X** | **X** |
| X899.980.316.206 | S089 switch, Auto-Guide activation | **X** | **-** |

**NOTE:** *For Auto-Guide system diagnostics, see also:*
*X990.005.462.000 - FENDT 700/800 Vario COM III (Auto-Guide) training documentation*
*X990.005.459.000 - FENDT 900 Vario COM III (Auto-Guide) training documentation*

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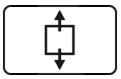
# 4 Special tool for Auto-Guide system F 900 COM III

For checking A050 ECU, basic control unit

**A050 ECU, basic control unit**



On right mudguard.



Remove panel.




*Fig. 18.* I001030

**X899.980.304.201**
**Adapter cable (96/58/4x41-pin)**
for testing the **A050 ECU, basic control unit.**




*Fig. 19.* I002522

**X899.980.304.000**
Adapter box (160-pin) for universal checking of electrics/electronics




*Fig. 20.* I002521

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**X899.980.304.400**
Support for X899.980.304.000 adapter box.

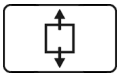


*Fig. 21.* I007229

For checking Y087 Auto-Guide control valve

**Y087 Auto-Guide control valve**


On right side of tractor


Remove right rear wheel and panel.

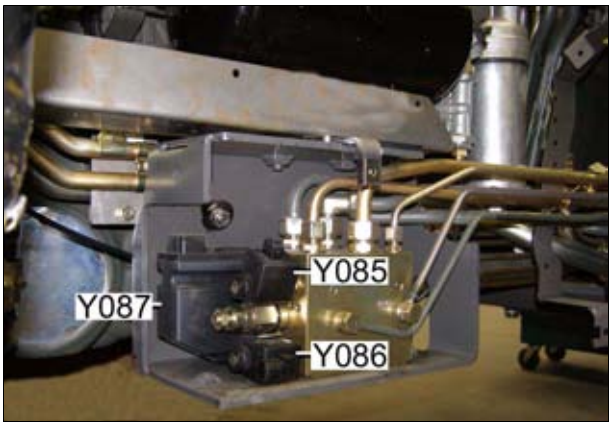


*Fig. 22.* I001987

Separation points on Y087 Auto-Guide control valve

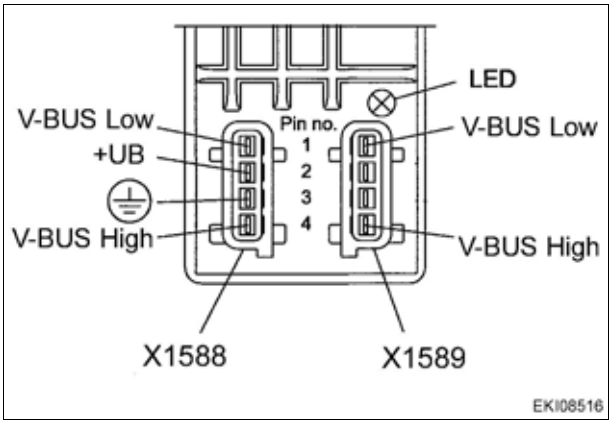


*Fig. 23.* I002198

**X899.980.316.201 adapter cable (grey)**
**X899.980.316.202 adapter cable (black)**



*Fig. 24.* I007227

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For checking A058 Auto-Guide TopDock (B4)

**A058 Auto-Guide TopDock (B4)**



At top in cab

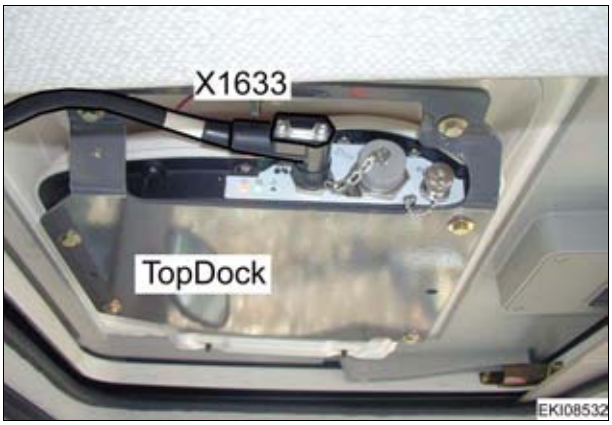
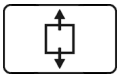



*Fig. 25.* I002345



At front in cab, behind right loudspeaker



Remove right loudspeaker.

X1633 separation point on A058 Auto-Guide TopDock

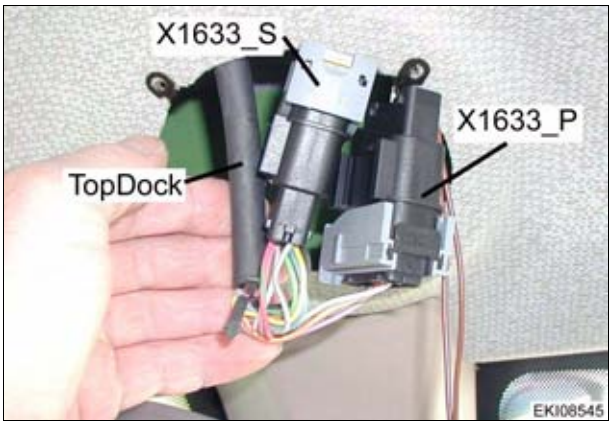



*Fig. 26.* I002351

**X899.980.316.204 adapter cable**




*Fig. 27.* I007237

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For checking A059 Auto-Guide terminal

**A059 Auto-Guide terminal**

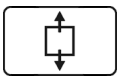



*Fig. 28.* I001366

X1597 separation point for A059 Auto-Guide terminal



On right mudguard.



Remove panel.




*Fig. 29.* I002347

**X899.980.316.203 adapter cable**




*Fig. 30.* I007228

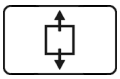
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For checking Y085/Y086 solenoid valve

**Y085/Y086 solenoid valve**



On right side of tractor



Remove right rear wheel and panel.




*Fig. 31.* I001987

For the Y085 solenoid valve:
**X899.980.246.201 adapter cable**

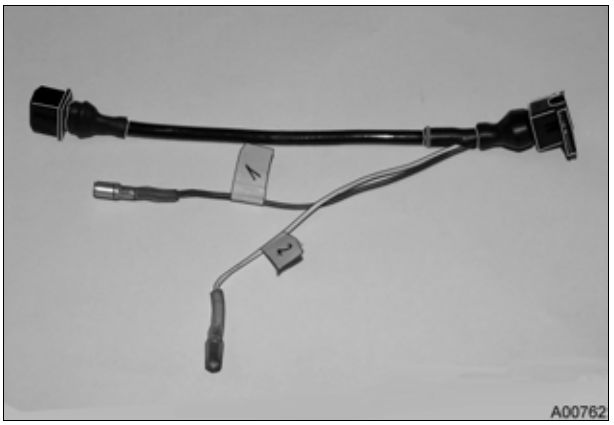



*Fig. 32.* I007147

For the Y086 solenoid valve:
**X899.980.288.206 adapter cable**

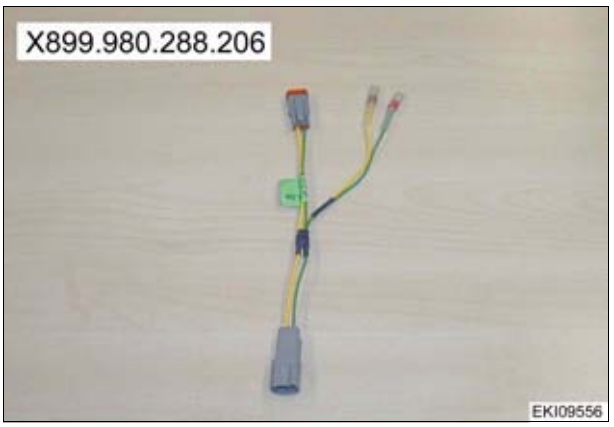



*Fig. 33.* I007238

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For checking B067 / B081 - sensor

**B067 steering angle sensor**



Right-hand side, on front axle

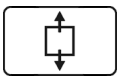



*Fig. 34.* I001081

**B081 steering wheel sensor**



In the cab



Remove panel on steering servo unit




*Fig. 35.* I006663

**X899.980.246.205 adapter cable**

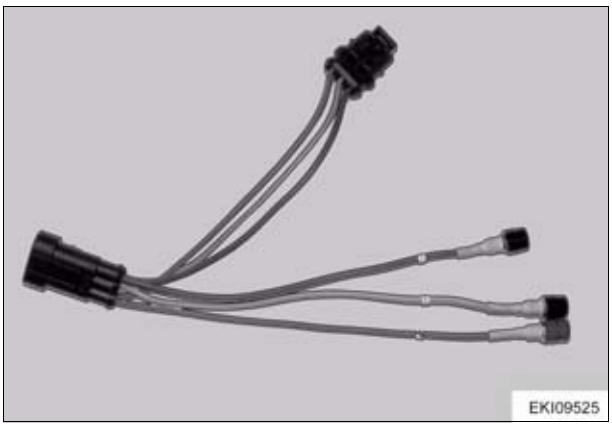



*Fig. 36.* I006875

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Set radio frequency on radio module (transmitter) of base station

**When operating a base station:**
The radio module (transmitter) of the base station must be set to a valid radio frequency.
The radio frequency is set using the A058 Auto-Guide TopDock



*Fig. 37.* I006171

**X899.980.288.208 - adapter cable**



*Fig. 38.* I007490

For programming: A058 Auto-Guide TopDock and A059 Auto-Guide terminal

**X899.980.288.201 - PCMCIA card**

- Download software from AGCO NET
- The A058 Auto-Guide TopDock is programmed via the A059 Auto-Guide terminal.



*Fig. 39.* I003065

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**For programming the A058 Auto-Guide TopDock:**
Programming with the A059 Auto-Guide terminal

**X899.980.288.202 - programming cable**




*Fig. 40.* I003082

**Alternatively, the A058 Auto-Guide TopDock can be programmed using the Auto-Guide Service Tool (laptop).**

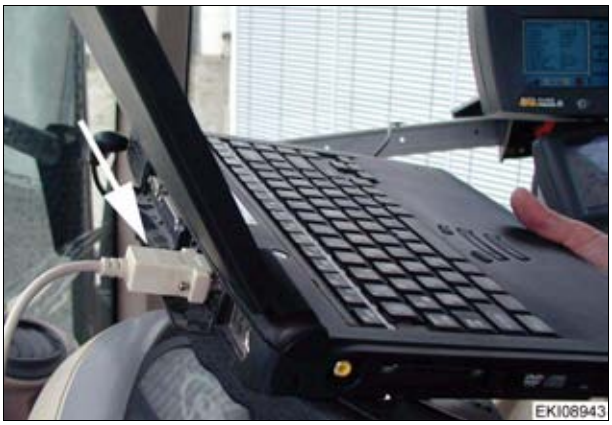



*Fig. 41.* I003345

**For programming the A058 Auto-Guide TopDock:**
Programming with the Auto-Guide Service Tool (laptop)

**X899.980.316.205 - programming cable (serial)**




*Fig. 42.* I007493

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| | |
|---|---|
| **A** | General |
| **B** | Faults |
| **C** | Documents and Diagrams |
| **D** | Component location |
| **E** | Testing |
| **F** | Setting and Calibration |
| **G** | Repair |
| **H** | Service – Info |

# 9975

Service/SERDIA - Deutz engine diagnostics program

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# 9975 Service/SERDIA - Deutz engine diagnostics program

A General. . . . . .5

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# A General

1 Engine diagnostics using the Deutz diagnostics program (SERDIA) . . . . . 7

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# 1 Engine diagnostics using the Deutz diagnostics program (SERDIA)

Principle: Common Rail injection

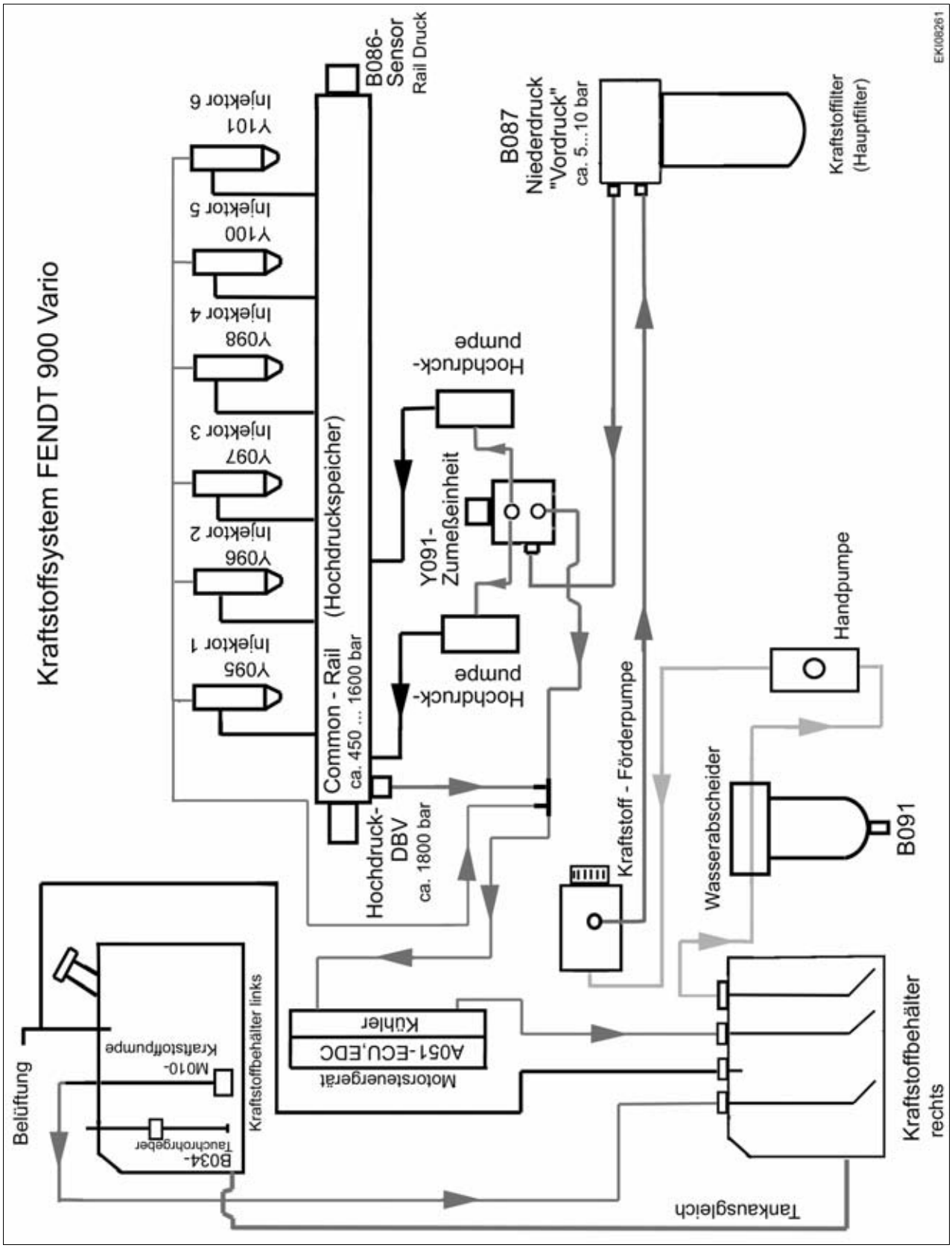



*Fig. 1.*



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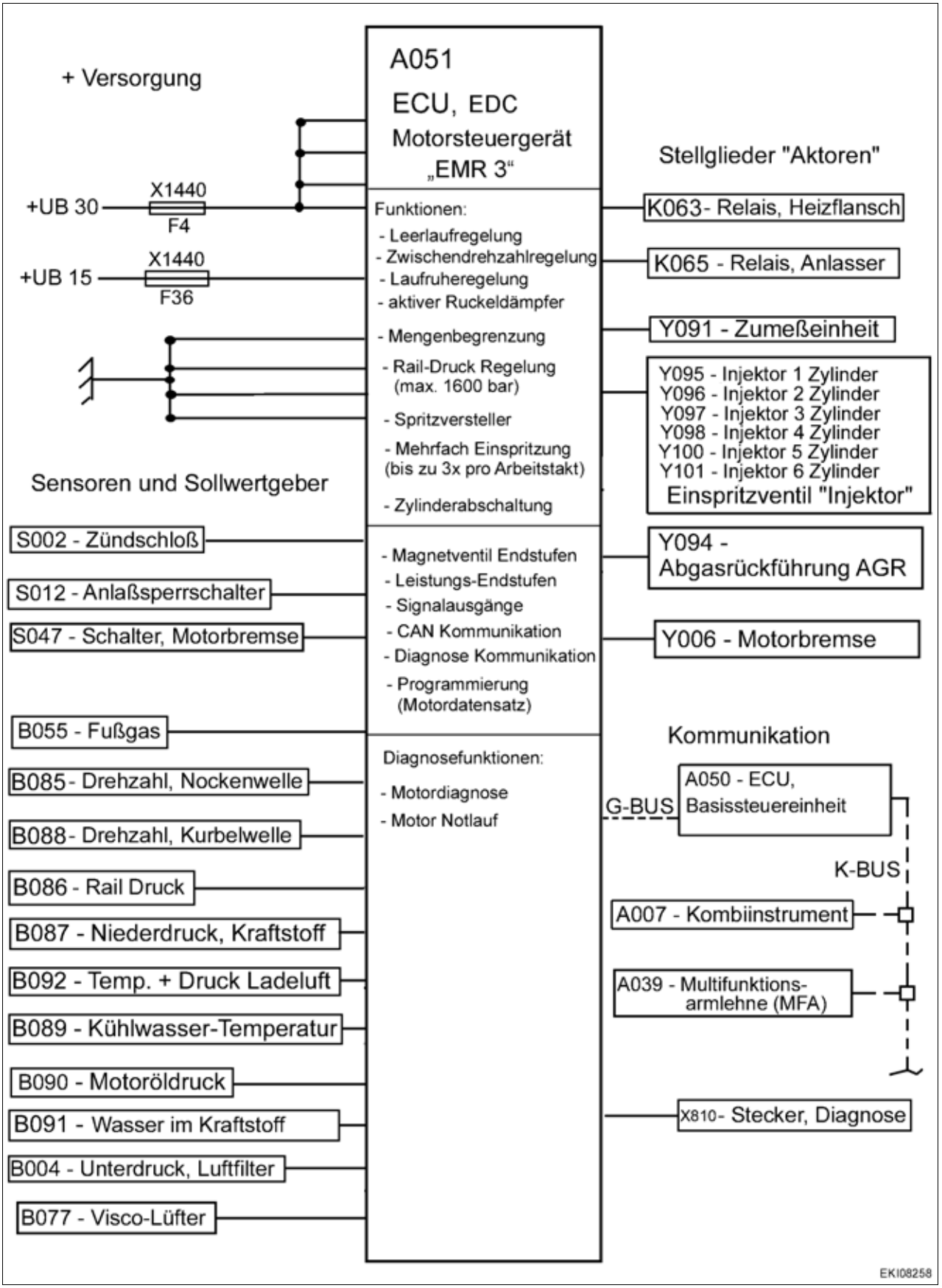


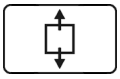

*Fig. 2.* I002007

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**A051** - ECU, engine control unit (EDC 7).



at the bulkhead, between engine and cab



Open bonnet.

**NOTE:** *See also:*
*Chapter 9000 Reg. E – Measuring and testing the A051- ECU, EDC engine control unit*




*Fig. 3.* I001150

Engine control

- **Engine horsepower** (speed and injection quantity)
- **All speed control** (the speed set on the foot throttle, hand throttle, memory keys or via TMS is kept constant.
- **Torque restriction** (maximum injection quantity, engine cut-off speed)
- **Boost-pressure-dependent regulator end stop "LDA-Function"** (if the boost pressure falls, the injection quantity is limited, avoiding smoke formation)
- **Altitude correction** (avoidance of smoke plumes at low air density). At high altitudes (e.g. Andes, the Himalayas) the maximum engine horsepower is restricted
- **Engine start** (release of the injection quantity, see also: **B083** - Immobiliser control)
- **Engine stop** (zero delivery, **Y091** - Dispensing unit (fuel) and Y injector "injector valve"
- **Actuation of the starter** (**M001** - starter.)
- **Actuation of the cold-start system** (**R002** - Heater flange)
- **Actuation of the exhaust gas recirculation** (**Y094** - Actuator unit, AGR (exhaust gas recirculation))
- **Actuation of the engine brake** (**Y006** - Solenoid valve, engine brake)
- **Actuation of the tractor cooling** (**B077** - Engine fan (speed sensor/magnetic clutch))

Engine monitoring

The **A051** - ECU, engine control unit (EDC 7). monitors the diesel engine.

- **Fault code output** (see also: Chapter 0000 Reg. B – Confirming, triggering, deleting fault codes)
- **Motor emergency running** (reduced output or stopping of the motor after approx. 4 minutes of emergency running)
- **Motor diagnostics with the Deutz diagnostic program (SERDIA)**

The settings (engine power, engine cut-off speed, governor behaviour, engine configuration etc.) have been saved in the engine software (engine data record and operating software).
The engine software is installed on the **A051** - ECU, engine control unit (EDC 7)..

**NOTE:** *See also:*
*Chapter 2000 Reg. A – A051 ECU, EDC engine control unit (saving engine software, installing engine software)*

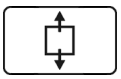
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Motor diagnostics with the Deutz diagnostic program (SERDIA)

Connect the SERDIA adapter (level 3) to the X810 diagnostics socket



Cab, on the right mudguard



Remove cover.




*Fig. 4.* I003168

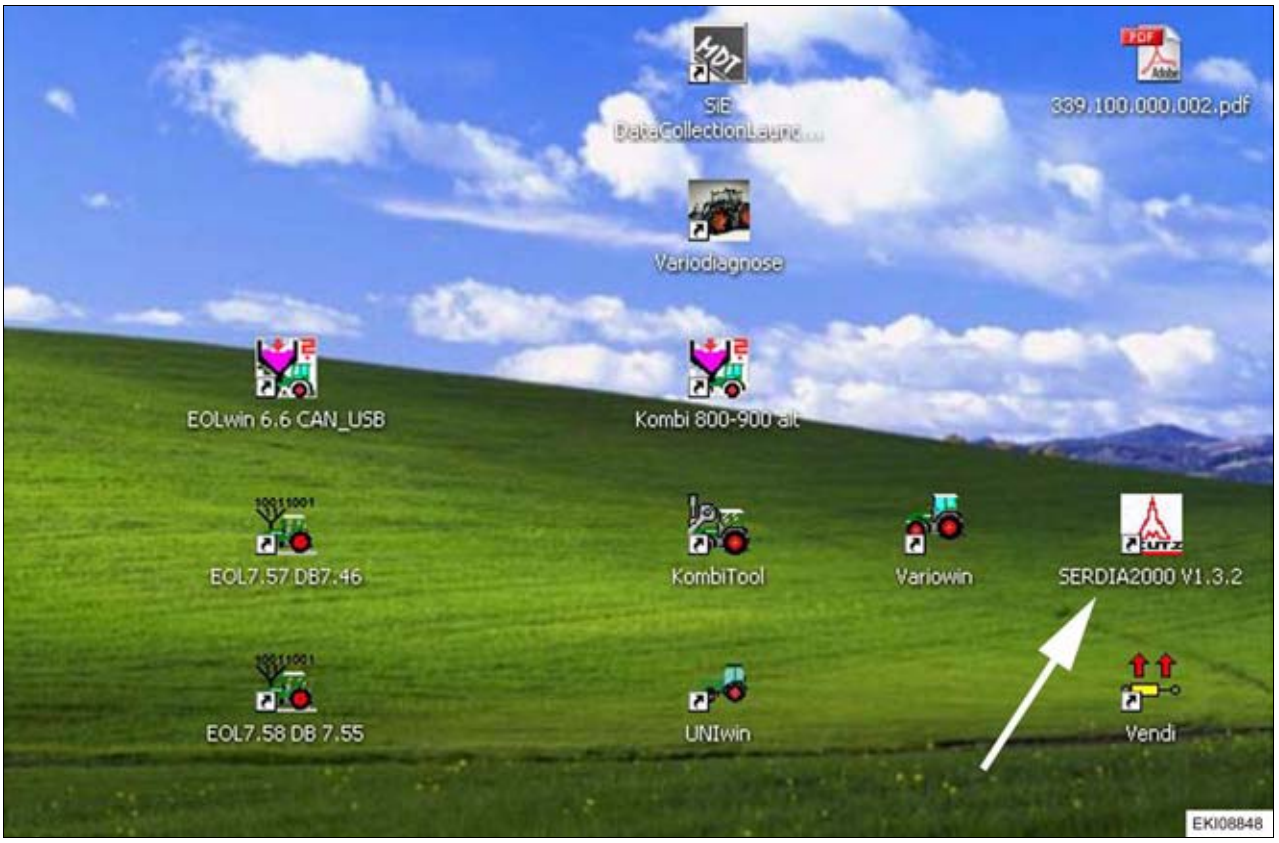



*Fig. 5.* I003156

Open the Serdia diagnostics program

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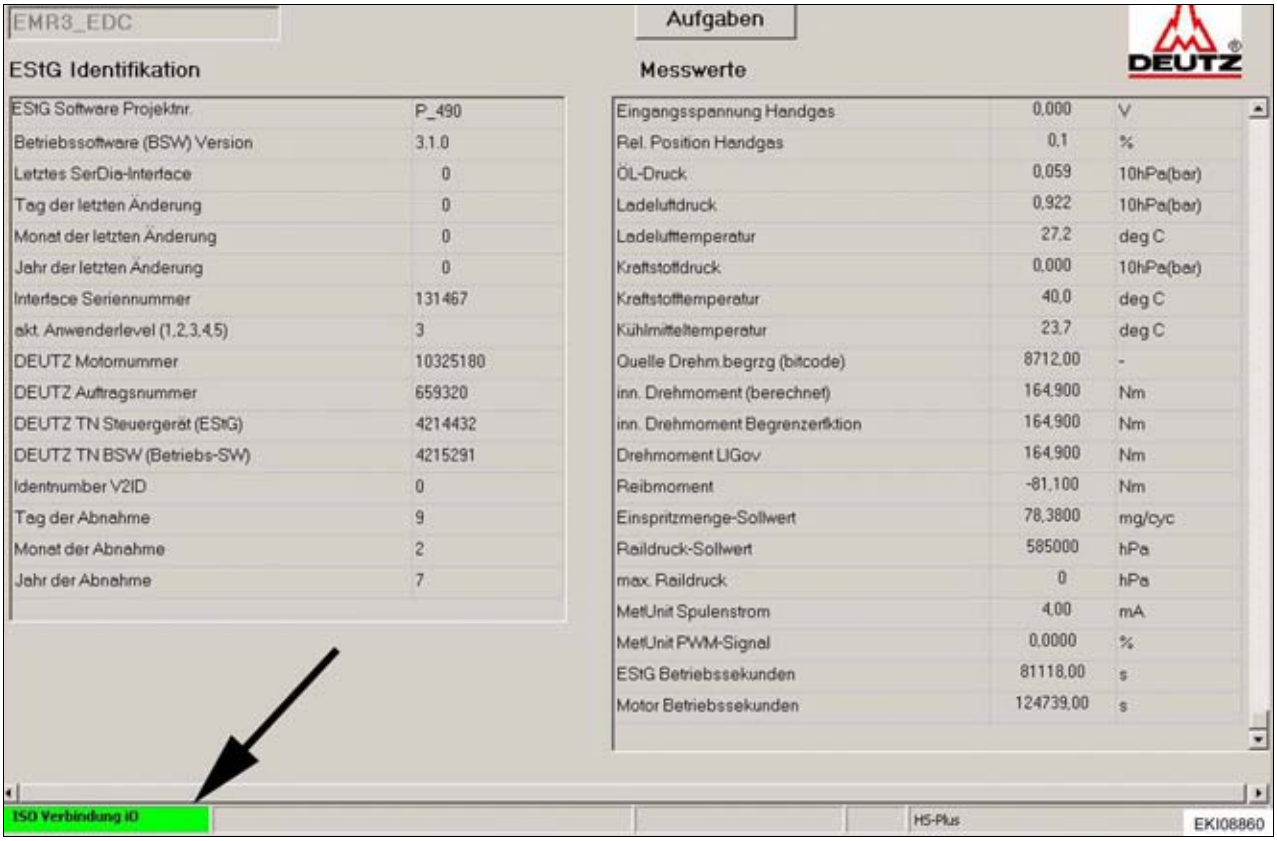




*Fig. 6.* I003157

**Green bar** = a connection has been established between **A051** - ECU, engine control unit (EDC 7). and the laptop
**Red bar** = no connection has been established between the **A051** - ECU, engine control unit (EDC 7)., engine control unit and the laptop

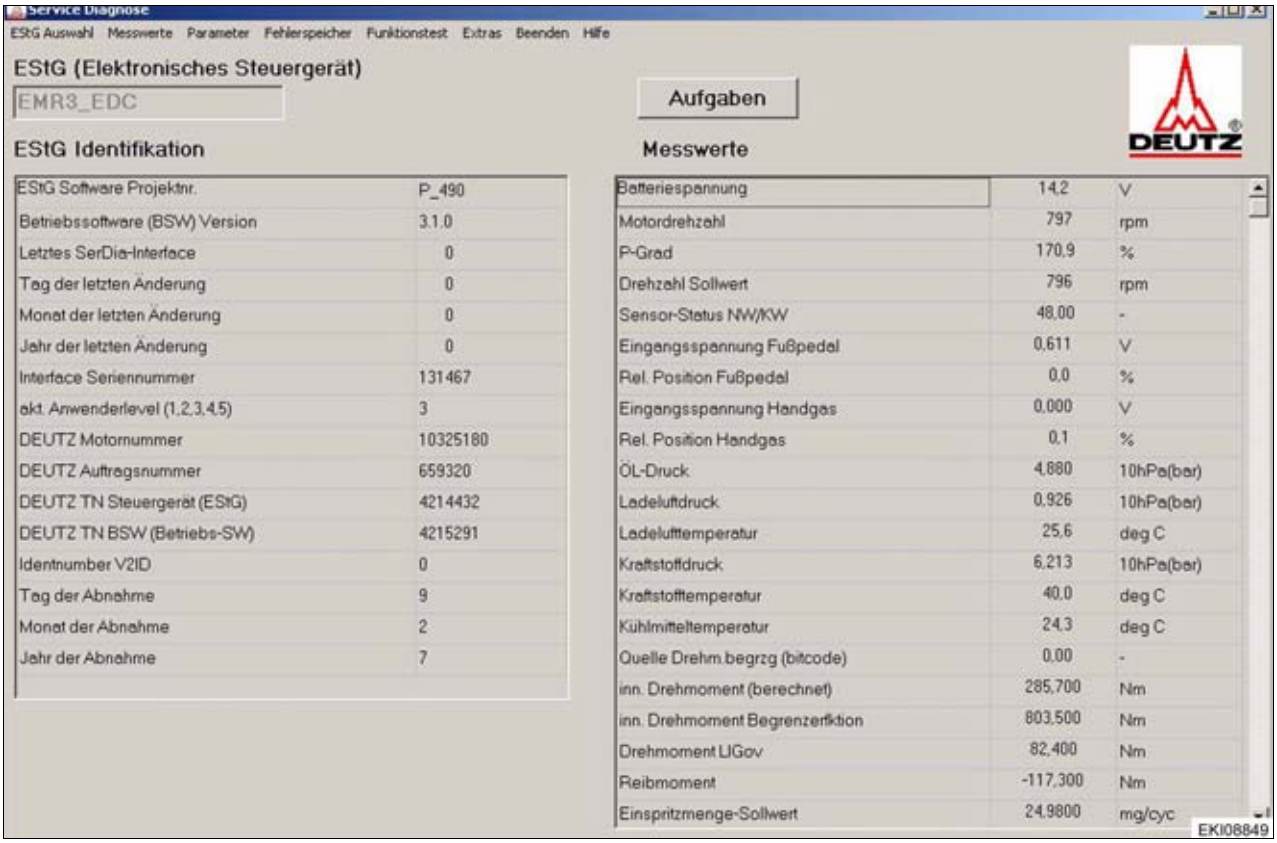



*Fig. 7.* I003158

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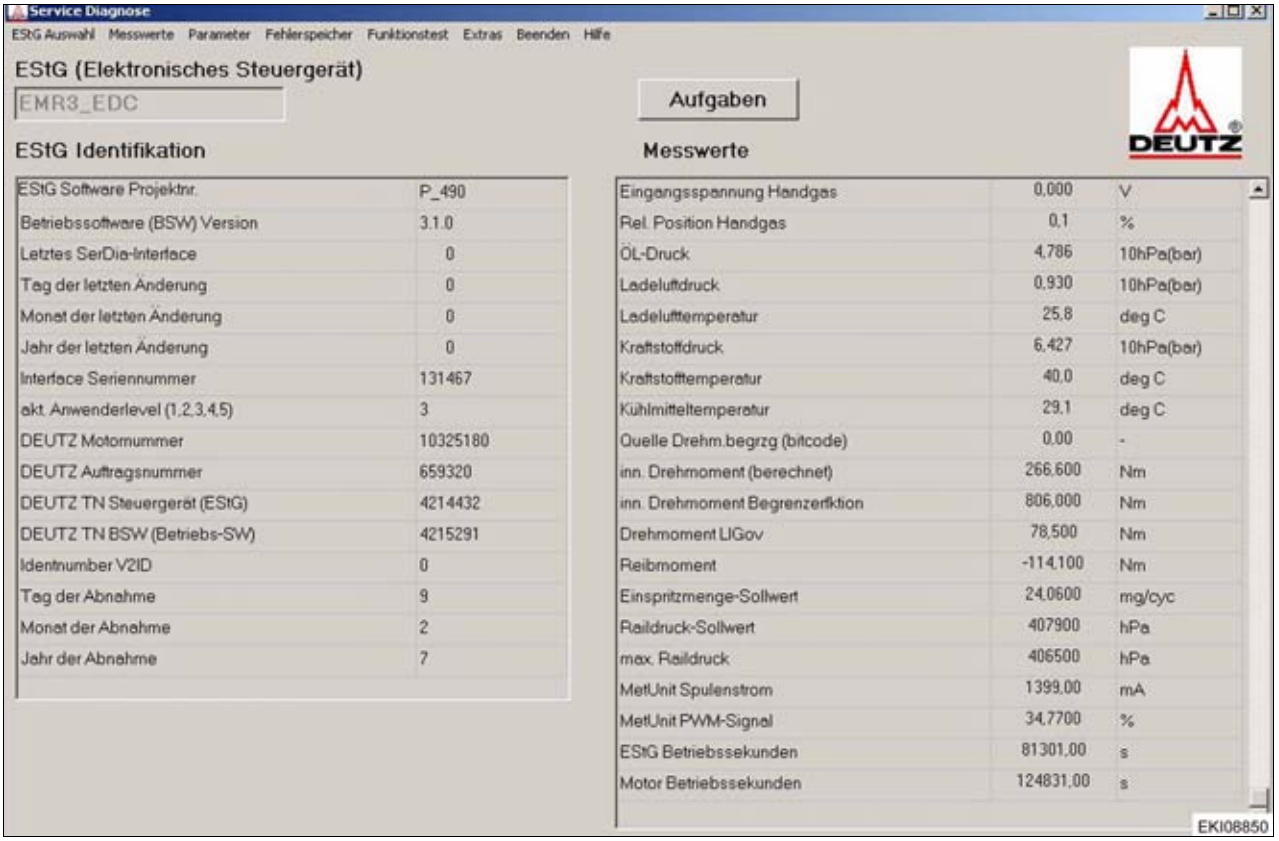




*Fig. 8.* I003159

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| Designation (Deutz - SERDIA) | Sensor (FENDT) | Note |
|---|---|---|
| **See also: Chapter 9000 Reg. E - Measuring and testing electric/electronic components** | | |
| | | |
| **Battery voltage** | **G001** - Battery 1 | Ignition ON, engine OFF<br>approx. 12.8 VDC = battery charged<br>approx. 12.0 VDC = battery 1/2 charged<br>approx. 11.5 VDC = battery flat<br>Ignition ON, engine running<br>Approx. 14 VDC |
| **Motor speed (actual value)** | **B088** - Crankshaft speed sensor | approx. 800 rpm (idle speed)<br>approx. 2200 rpm (rated engine speed)<br>approx. 2350 rpm (rated engine speed) |
| **Speed (target value)** | **A051** - ECU, engine control unit (EDC 7). | **Signal path (hand throttle, speed storage):**<br>Speed setting on A039 multifunction armrest<br>Control bus (K bus)<br>A050 ECU, basic control unit<br>Transmission bus (G bus),<br>A051-ECU, engine control unit,<br>the A051 ECU, engine control unit regulates the injection quantity via the Y injector.<br>**Signal path (foot throttle) "normal operation":**<br>Speed setting on the B055 foot throttle sensor,<br>A050 ECU, basic control unit<br>Transmission bus (G bus),<br>A051-ECU, engine control unit,<br>the A051 ECU, engine control unit regulates the injection quantity via the Y injector.<br>**Signal path (foot throttle) "emergency mode"**<br>**Emergency mode (e.g. interruption of the transmission bus)**<br>B055 foot throttle sensor,<br>A051-ECU, engine control unit,<br>the A051 ECU, engine control unit regulates the injection quantity via the Y injector.<br>**Signal path (TMS "Tractor Management System")**<br>A050 ECU, basic control unit (sets the engine speed and the gear ratio),<br>Transmission bus (G bus),<br>A051-ECU, engine control unit,<br>the A051 ECU, engine control unit regulates the injection quantity via the Y injector. |

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| Designation (Deutz - SERDIA) | Sensor (FENDT) | Note |
|---|---|---|
| **See also: Chapter 9000 Reg. E - Measuring and testing electric/electronic components** | | |
| | | |
| **Foot pedal input voltage**<br>Signal (speed setting) | **B055** - Sensor, foot throttle<br><br>Pin 5 (+supply 5.0 VDC)<br>Pin 6 (signal)<br>Pin 4 (earth) | **Signal path (foot throttle) "emergency mode"**<br>**Emergency mode (e.g. interruption of the transmission bus)**<br>A051-ECU, engine control unit,<br>the A051 ECU, engine control unit regulates the injection quantity via the Y injector. |
| **Foot pedal relay position** | **B055** - Sensor, foot throttle<br>Pin 5 (+supply 5.0 VDC)<br>Pin 6 (signal)<br>Pin 4 (earth)<br>Deflection of the pedal | 0% = pedal not actuated<br>100% = pedal actuated |
| **Oil pressure** | **B090** - Sensor, oil pressure | Minimum engine oil pressure:<br>800 rpm = approx. 0,9 bar<br>1300 rpm = approx. 1,5 bar<br>From 1900 rpm = approx. 2,0 bar<br><br>If the specified pressures are not reached at the respective engine speeds, the A007 instrument panel issues an error message. |
| **Charge air pressure** | **B092** - Sensor, charge air pressure/temperature | Max. boost pressure = approx. 1.6 bar<br>Place engine under maximum load using the dynamometric brake. |
| **Charge air temperature** | **B092** - Sensor, charge air pressure/temperature | Above approx. 110°C a warning message will be issued on the A007 instrument panel. |
| **Fuel pressure** | **B087** - Fuel low pressure sensor<br>(Fuel pressure after the fuel filter) | Fuel low pressure:<br>approx. 6 bar (irrespective of engine speed) |
| **Coolant temperature** | **B089** - Engine temperature sensor<br>(Deutz) | Coolant water temperature<br>Green range up to approx. 110 °C<br>Red range from approx. 110 °C |

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| Designation (Deutz - SERDIA) | Sensor (FENDT) | Note |
|---|---|---|
| **See also: Chapter 9000 Reg. E - Measuring and testing electric/electronic components** | | |
| | | |
| **Rail pressure target value** | **A051** - ECU, engine control unit (EDC 7). | The A051 ECU, engine control unit regulates the rail pressure in dependence on the engine load.<br>**Regulation of the rail pressure (high pressure)**<br>The A051 ECU, engine control unit sets the target value.<br>The A051 ECU, engine control unit regulates the fuel quantity via the Y091 dispensing unit to the high-pressure pumps.<br>The rail pressure (high pressure) builds in the rail.<br>The B086 rail pressure sensor detects the high pressure (actual value) and sends the pressure to the A051 ECU, engine control unit. |
| **Max. rail pressure (actual value)** | **B086** - Rail pressure sensor | Rail pressure (high pressure):<br>The rail pressure is set in dependence on the engine load<br>approx. 400 bar (engine in idle; not loaded)<br>approx. 1600 bar (engine under full load)<br>approx. 1800 bar (DBV opens)<br>approx. 700 bar (DBV has opened) "holding pressure in the rail" |
| **Met unit coil current** | **Y091** - Dispensing unit (fuel) | Coil resistance approx. 3.6 ohms<br>Voltage level (engine not under load) approx. 4.3 VDC<br>Power consumption (engine not under load) approx. 1.2 ADC +/- 15% |

Check **Y094** - Actuator unit, AGR (exhaust gas recirculation) using the Deutz diagnostics program (SERDIA)

**WARNING: Motor stationary!**

Y094 Exhaust gas recirculation actuator motor
X1674 Separation point on Y094
A Exhaust flap open
Z Exhaust flap closed



On left side of engine.

After ignition ON, the **Y094** - Actuator unit, AGR (exhaust gas recirculation) moves to the exhaust flap stops. Within the stops, the **A051** - ECU, engine control unit (EDC 7). controls the position of the exhaust flap depending on the engine load.

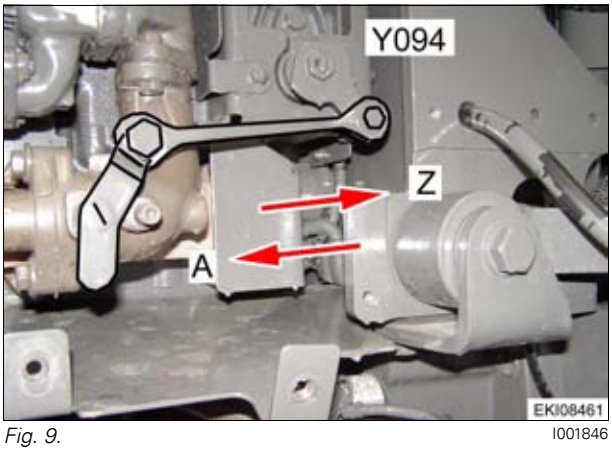



*Fig. 9.* I001846

**NOTE:** *If the **Y094** - Actuator unit, AGR (exhaust gas recirculation) is replaced:*
*First hook the mechanical linkage onto the **Y094** - Actuator unit, AGR (exhaust gas recirculation),*
*then switch the ignition ON so that **Y094** - Actuator unit, AGR (exhaust gas recirculation) calibrates the exhaust flap stops.*
*(*

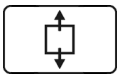
**WARNING: If the ignition is turned on when the linkage is not attached, the calibration will be carried out incorrectly. The incorrect calibration can not be reset!**

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Connect the SERDIA adapter (level 3) to the X810 diagnostics socket



Cab, on the right mudguard



Remove cover.




*Fig. 10.* I003168

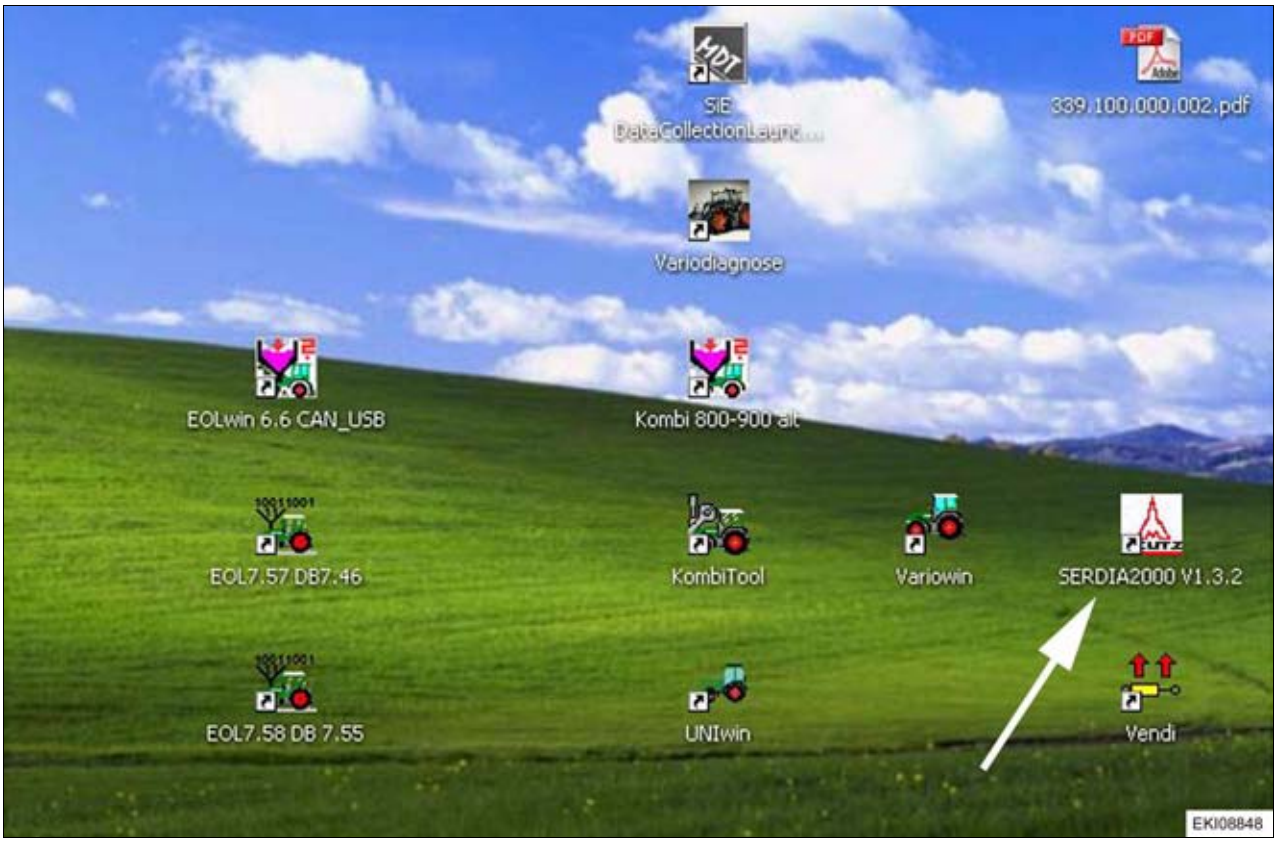



*Fig. 11.* I003156

Open the Serdia diagnostics program

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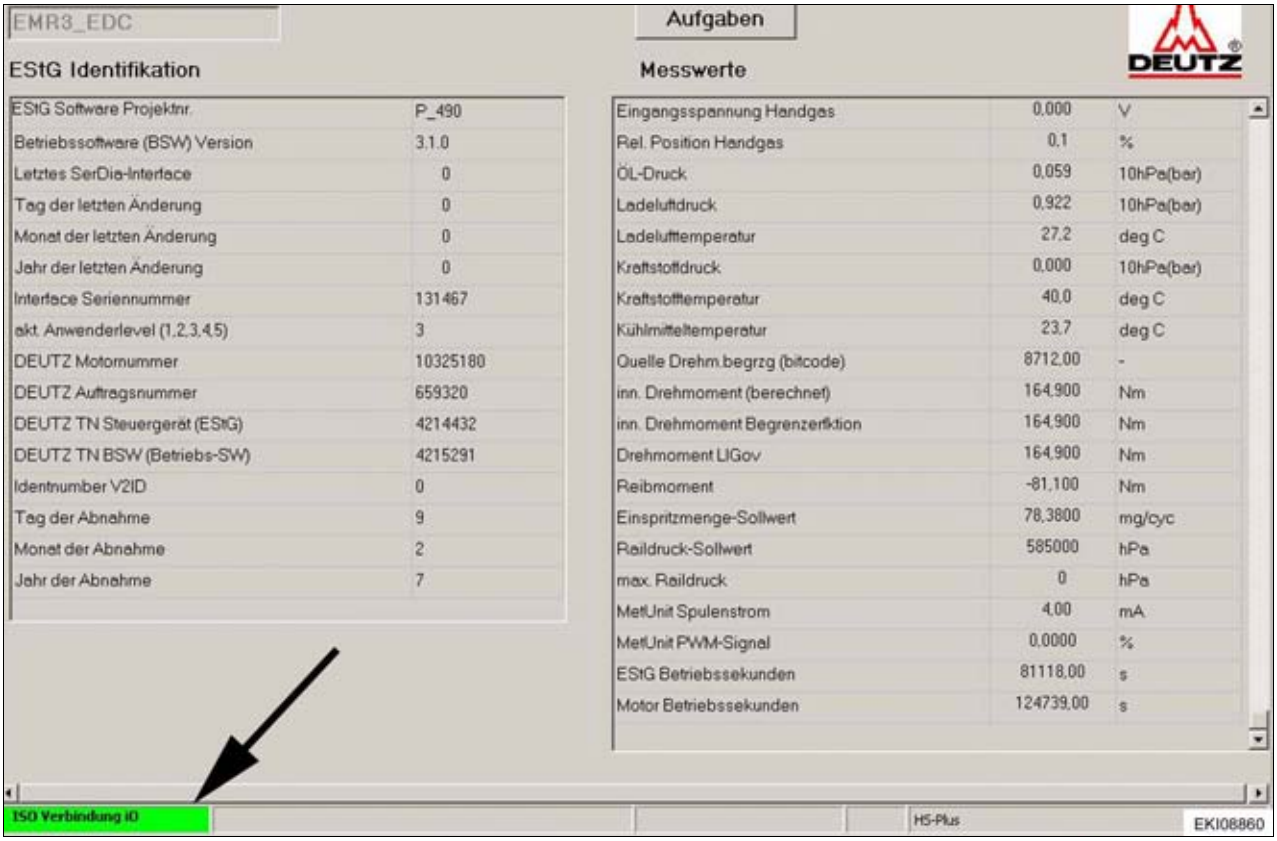



*Fig. 12.* I003157

**Green bar** = connection established between A051 ECU, engine control unit and laptop
**Red bar** = a connection has not been established between the A051 ECU, engine control unit and the laptop

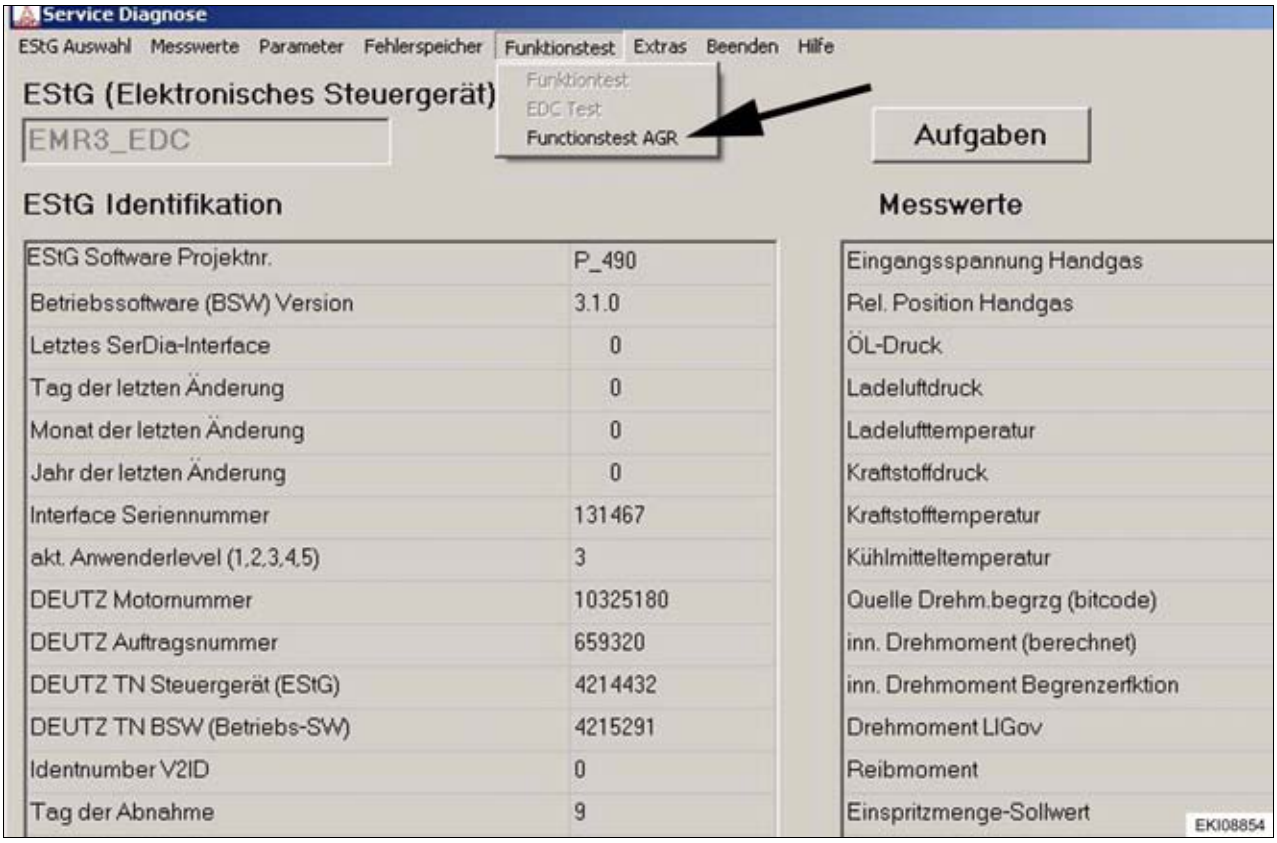


*Fig. 13.* I003171

Select the function test AGR (exhaust gas recirculation) in the sub-menu function test.

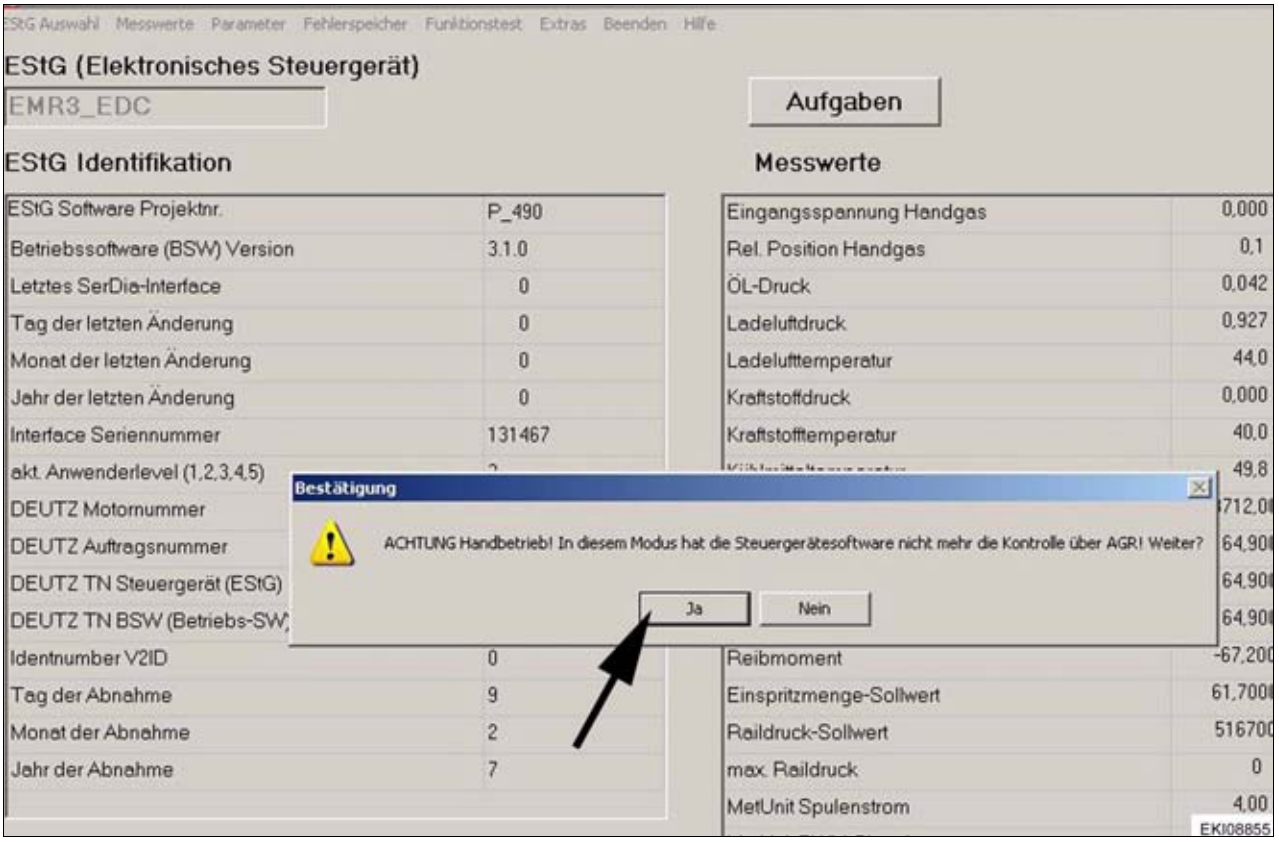



*Fig. 14.* I003172

**Note: In this mode, the control unit software no longer has control over the AGR! Further ?**
Confirm with **Yes**

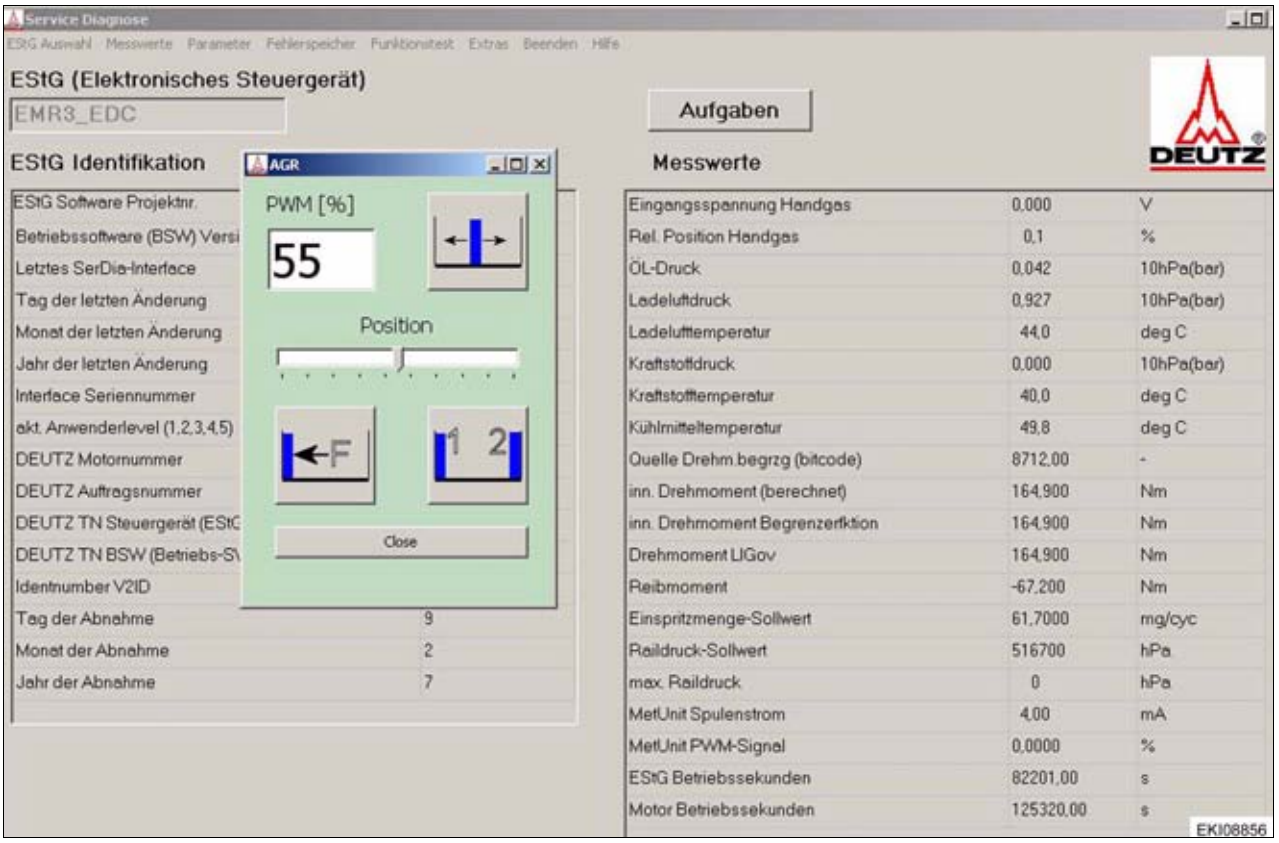



*Fig. 15.* I003173

The test for the
**Y094** - Actuator unit, AGR (exhaust gas recirculation) is displayed.

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Set the power consumption percentage (PWM signal) in the Deutz diagnostic program (Serdia).
Observe the opening angle on **Y094** - Actuator unit, AGR (exhaust gas recirculation).

**Z = closed**
**A = open**

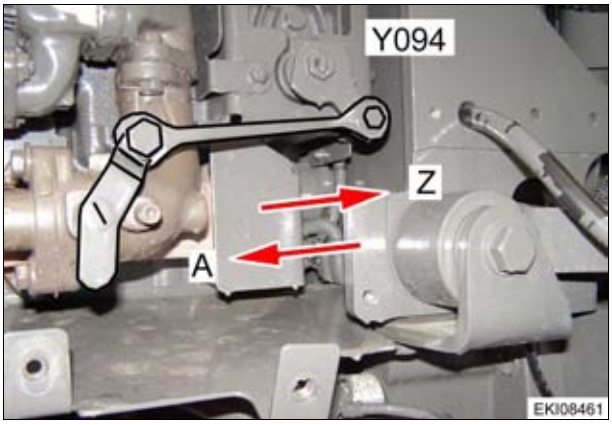



*Fig. 16.* I001846

| Key (Deutz diagnostic program "Serdia") | Power consumption (target value) of the Y094 actuator motor | Position of the Y094 actuator motor |
|---|---|---|
| F | 2.5 % | completely closed (Z) |
| 1_2 | 97.5% | completely opened (A) |
| slowly adjust the position regulator | 97.5% ... 5% | open ... closed |

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# 3 Checking the A038 ECU, central electrical system




*Fig. 7.* I007509

Adapter cable X899.980.304.203 for connection to **A038** - ECU, central electrical system

**Left front end**, at connector (S1)
**YELLOW** adapter cable connection
(Measurement: cabling to component)

**Right front end**, at connector (S2)
**GREEN** adapter cable connection
(Measurement: to electronics box)

**NOTE:** *Check the connector coding when connecting the adapter cable.*

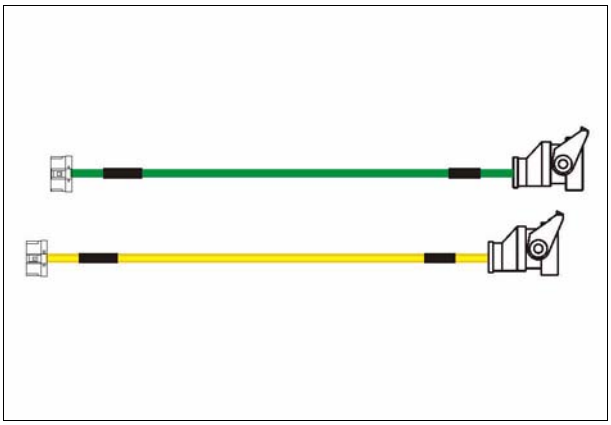


*Fig. 8.* I007521

**IMPORTANT:** *Check the adapter box pin range*

**X1404** = pins 1 - 21 - connector designation **A**
**X1405** = pins 1 - 21 connector designation **B**
**X1406** = pins 1 - 21 - connector designation **C**
**X1407** = pins 1 - 21 - connector designation **D**
**X1408** = pins 1 - 21 - connector designation **E**
**X1409** = pins 1 - 21 - connector designation **F** on wiring diagram
See the adapter box measuring range area outlined in **RED**.

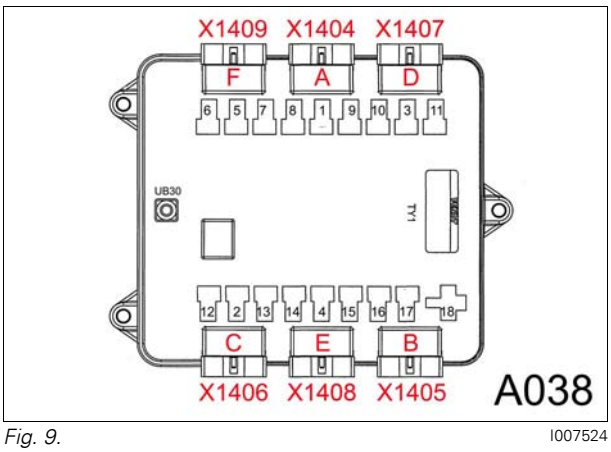



*Fig. 9.* I007524

**NOTE:** *see also §7, Page 8 "Various measurement possibilities using the adapter box (160-pin)"*

# 4 Checking the A039 - MFA, multifunction armrest




*Fig. 10.* I007527

Intermediate adapter cable (A) X899.980.304.204 and adapter cable (B) X899.980.208.205 for connection to **A039** - MFA, multifunction armrest

**Left front end**, at connector (S1)
**YELLOW** adapter cable connection
(Measurement: cabling to component)

**Right front end**, at connector (S2)
**GREEN** adapter cable connection
(Measurement: to electronics box)

**NOTE:** *Check the connector coding when connecting the adapter cable.*

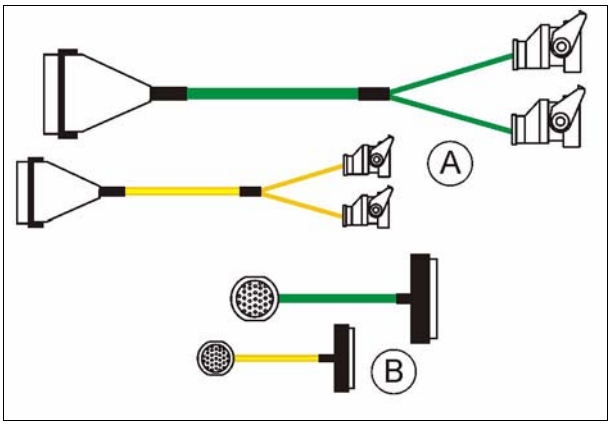



*Fig. 11.* I007526

**IMPORTANT:** *Check the adapter box pin range*

**X1401** = pins 1-29

See the adapter box measuring range area outlined in **BLUE**.

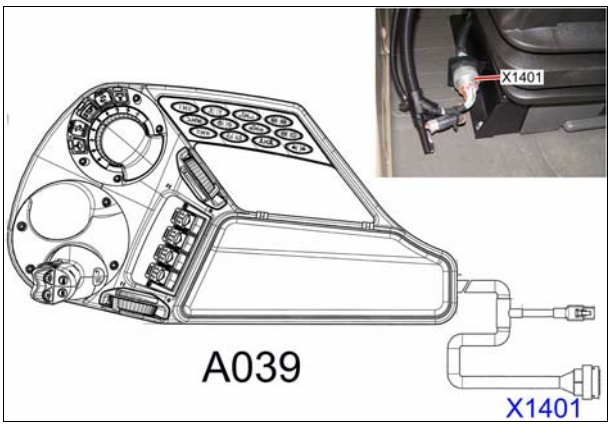



*Fig. 12.* I007531

**NOTE:** *see also §7, Page 8 "Various measurement possibilities using the adapter box (160-pin)"*

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# 5 Checking the A050 ECU, basic control unit

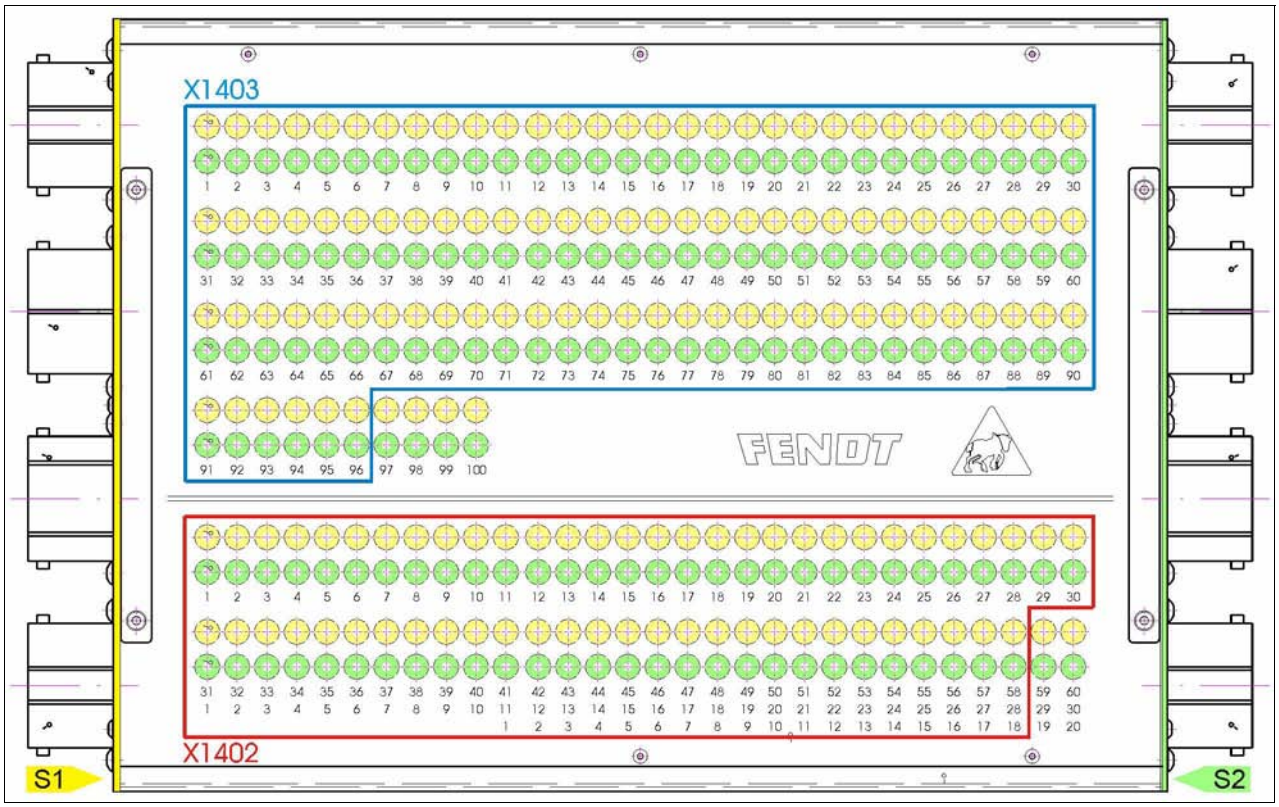



*Fig. 13.* I007438

Adapter cable X899.980.304.201 for connection to **A050** - ECU, basic control unit

**Left front end** (S1)
**YELLOW** adapter cable connection
(Measurement: cabling to component)

**Right front end** (S2)
**GREEN** adapter cable connection
(Measurement: to electronics box)

**NOTE:** *Check the connector coding when connecting the adapter cable.*

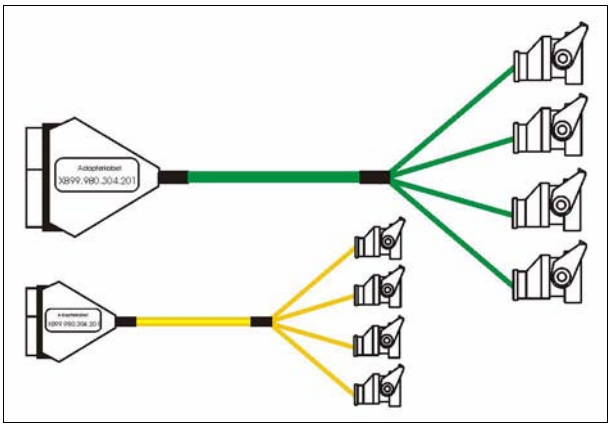


*Fig. 14.* I007447

**IMPORTANT:** *Check the adapter box pin range*

**X1403** = pins 1-96
See the adapter box measuring range outlined in **BLUE** — pin designation **AXX** on the wiring diagram and in the Vario diagnostics

**X1402** = pins 1-58
See the adapter box measuring range outlined in **RED** — pin designation **BXX** on the wiring diagram and in the Vario diagnostics

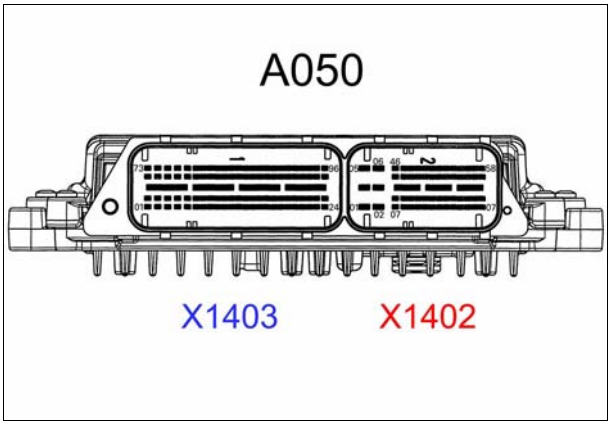



*Fig. 15.* I007431

**NOTE:** *see also §7, Page 8 "Various measurement possibilities using the adapter box (160-pin)"*

# 6 Checking the A051 ECU, engine control unit (EDC 7)

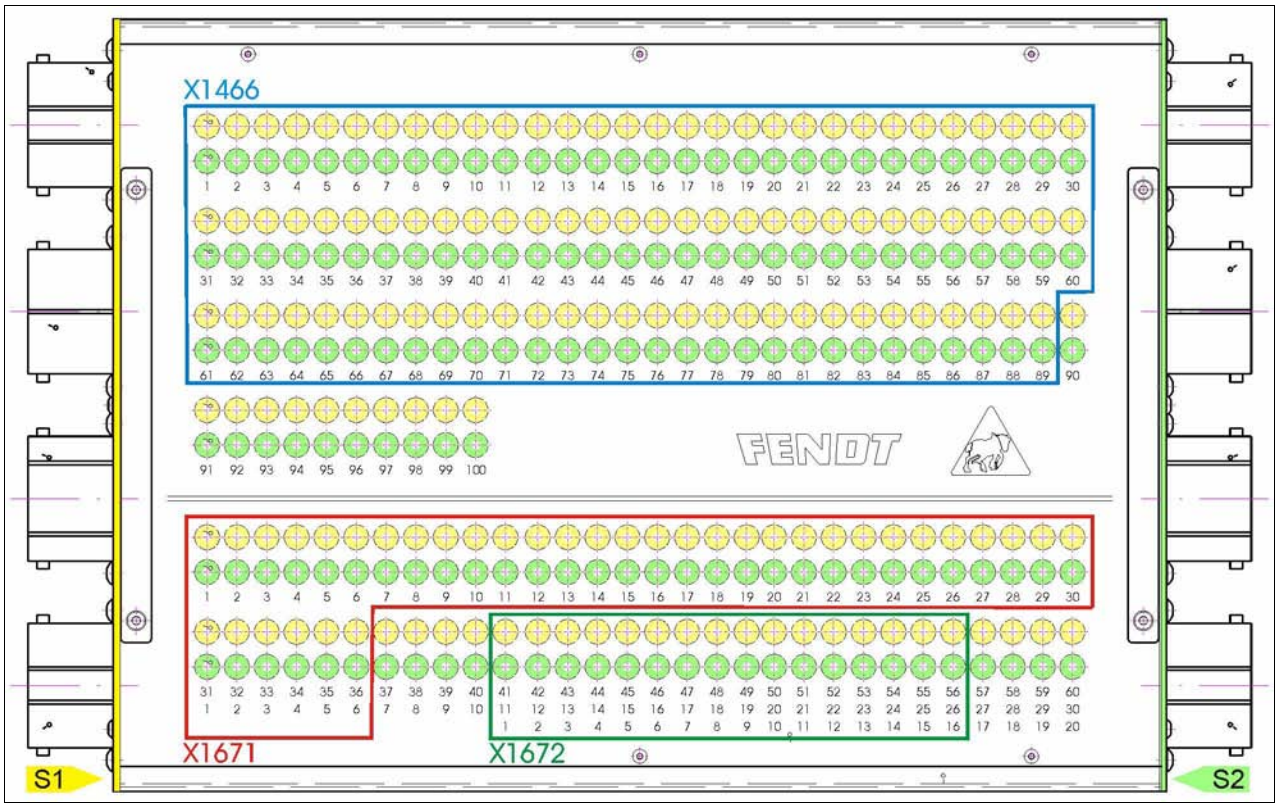



*Fig. 16.* I007496

Adapter cable X899.980.304.202 for connection to **A051** - ECU, engine control unit (EDC 7).

**Left front end** (S1)
**YELLOW** adapter cable connection
(Measurement: cabling to component)

**Right front end** (S2)
**GREEN** adapter cable connection
(Measurement: to electronics box)

**NOTE:** *Check the connector coding when connecting the adapter cable.*

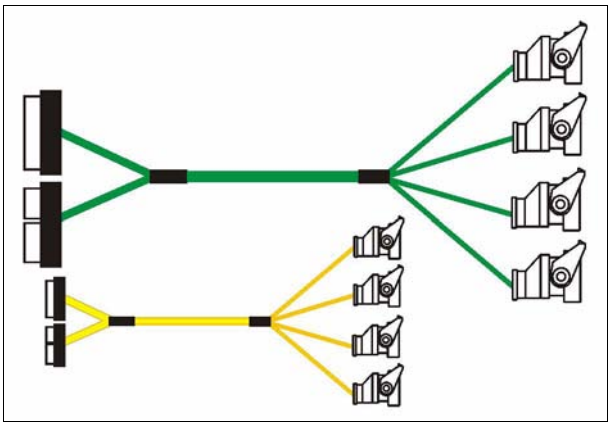


*Fig. 17.* I007497

**IMPORTANT:** *Check the adapter box pin range*

**X1466** = pins 1-89
See the adapter box measuring range area outlined in **BLUE**.

**X1671** = pins 1-36
See the adapter box measuring range area outlined in **RED**.

**X1672** = pins 1-16
See the adapter box measuring range area outlined in **GREEN**.

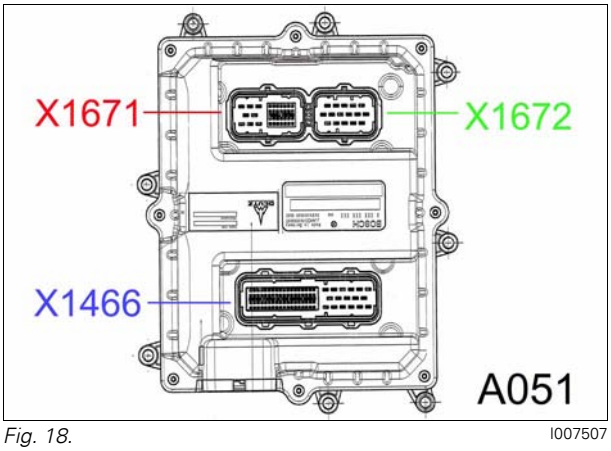



*Fig. 18.* I007507

**NOTE:** *see also §7, Page 8 "Various measurement possibilities using the adapter box (160-pin)"*

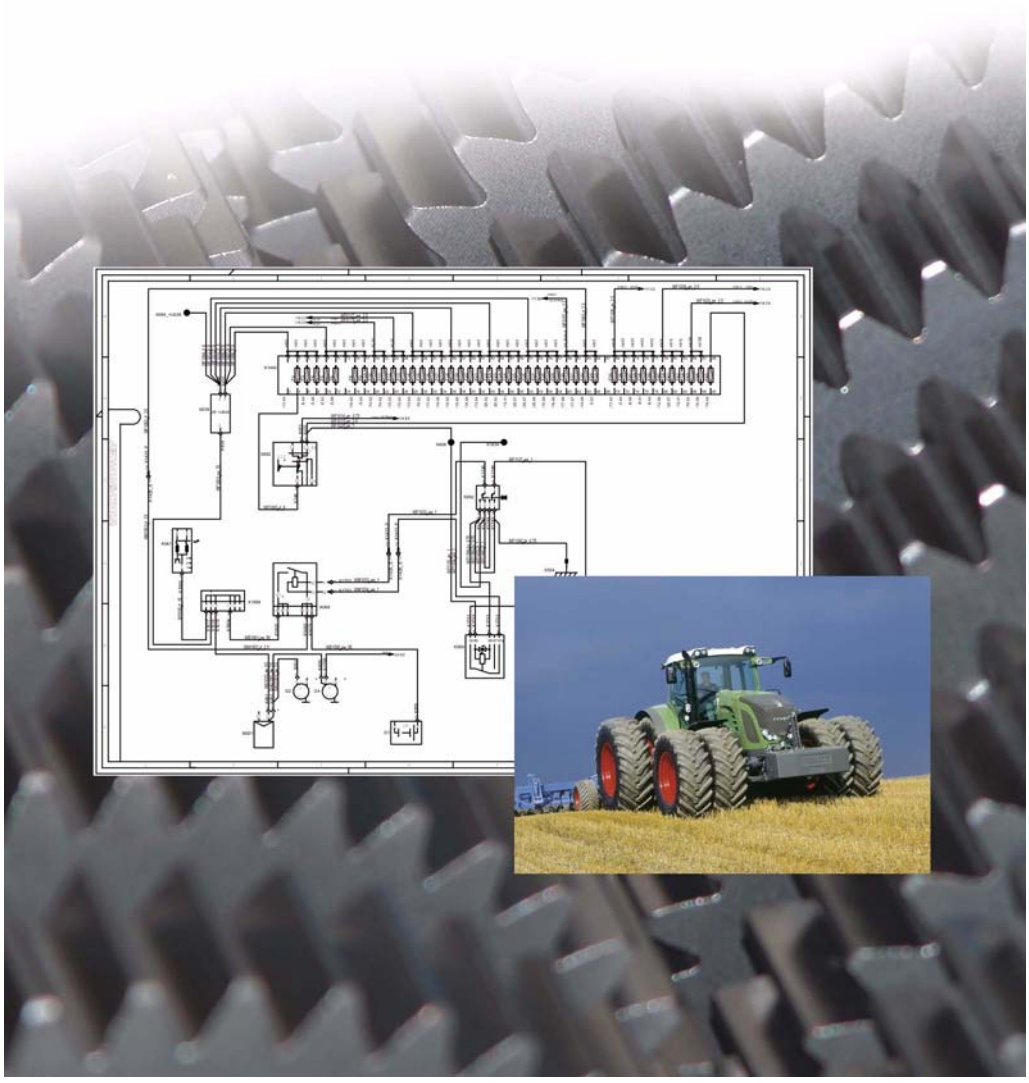
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Service Training

# Electrical and hydraulic circuit diagrams

## FENDT 900 Vario COM III

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925 .. 1001 - 2053
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M000300

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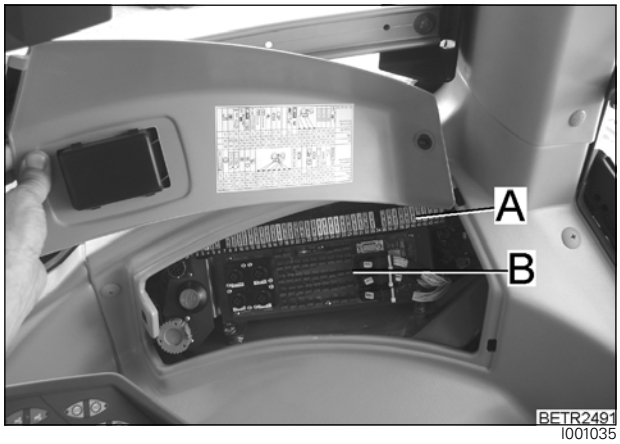
Hydraulic circuit diagram - 931.952.000.002 ..... 85
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# Fuse assignment

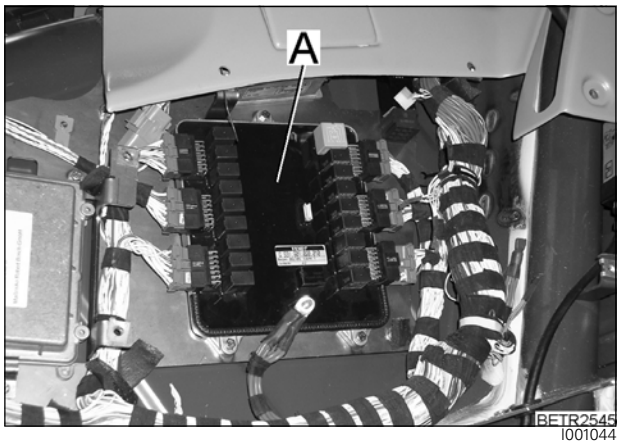
C

**DANGER:**
**Use only genuine fuses! The use of over-rated fuses will destroy the electrical unit! Fire hazard!**




**X1440** - Fuse holder **(A)**
**A013** - PCB, microfuses **(B)**

Remove panel from right side of cab

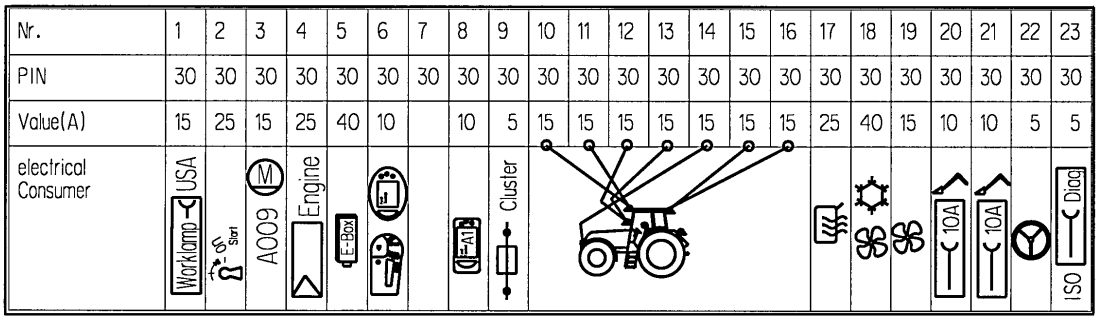



**A038** - ECU, central electrical system

Remove panel from right side of cab

**NOTE:**
**When working on the**
**A038 - ECU, central electrical system**
**Disconnect the battery**

## X1440 - Fuse holder (Fuse nos 1-23)




BETR2496
I001045

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **1** | - | - | - |
| **2** | 30 | 25 | Ignition switch |
| **3** | 30 | 15 | Transmission control unit |
| **4** | 30 | 25 | Engine control unit |
| **5** | 30 | 40 | EXT supply (E-box) |
| **6** | 30 | 10 | Multifunction armrest supply, Terminal |

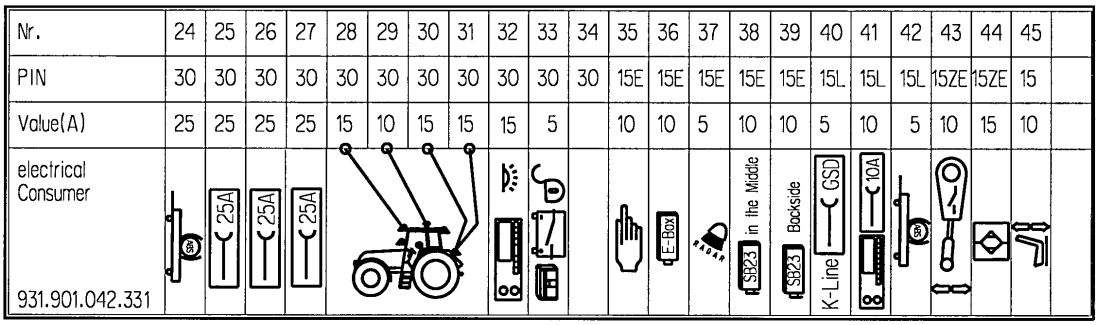
OVERALL SYSTEM/ELECTRICAL SYSTEM

# Fuse assignment

C

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **7** | - | - | - |
| **8** | 30 | 10 | Terminal A1 |
| **9** | 30 | 5 | Microfuse board supply, electrics control panel |
| **10** | 30 | 15 | External work light, front roof |
| **11** | 30 | 15 | Internal work light, front roof |
| **12** | 30 | 15 | Work light, A pillar |
| **13** | 30 | 15 | Work light, A pillar |
| **14** | 30 | 15 | Work light, corner light |
| **15** | 30 | 15 | External work light, rear roof |
| **16** | 30 | 15 | Internal work light, rear roof |
| **17** | 30 | 25 | Heated rear windscreen |
| **18** | 30 | 15 | Air conditioning system (fan) |
| **19** | 30 | 15 | Primary fan, air conditioning system |
| **20** | 30 | 10 | 3. Hydraulic circuit |
| **21** | 30 | 10 | 4. Hydraulic circuit |
| **22** | 30 | 5 | Autoguide |
| **23** | 30 | 5 | ISO socket (cab)(X028) and<br>ISO diagnostics (X1539) |

## X1440 - Fuse holder (Fuse nos 24-45)



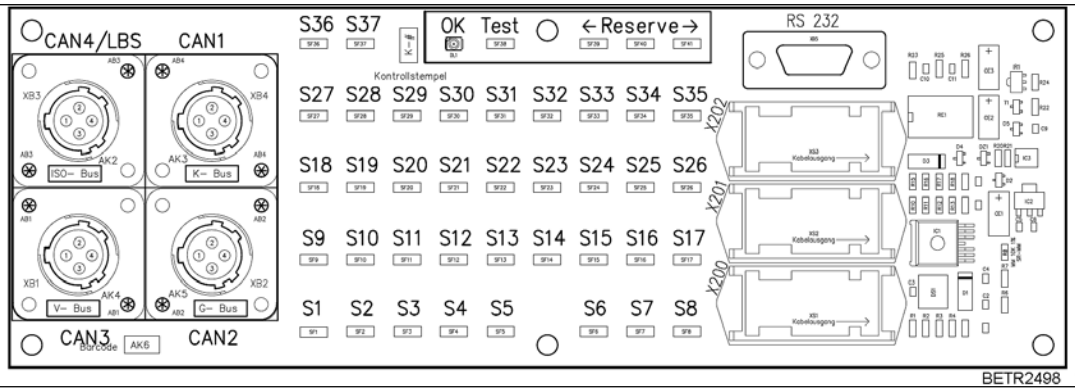

BETR2497
I001110

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **24** | 30 | 25 | ABS socket |
| **25** | 30 | 25 | 25 A socket |
| **26** | 30 | 25 | 25 A socket |
| **27** | 30 | 25 | 25 A socket |
| **28** | 30 | 15 | Internal work light, front roof |
| **29** | 30 | 10 | Rotating beacons |
| **30** | 30 | 15 | Work light, rear lamp |
| **31** | 30 | 15 | Work light, rear lamp |
| **32** | 30 | 15 | Cab light, radio |
| **33** | 30 | 5 | Instrument panel supply, disconnect relay ON |
| **34** | - | - | - |
| **35** | 15E | 10 | Transmission emergency actuation |
| **36** | 15E | 10 | Electronics supply, Terminal 15 ON |
| **37** | 15E | 5 | Radar sensor |
| **38** | 15E | 10 | Electrical valves (SB23 centre connection) |

# Fuse assignment

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **39** | 15E | 10 | Electrical valves (SB23 rear connection) |
| **40** | 15L | 5 | Implement socket (GSD), ISO socket (cab) |
| **41** | 15L | 10 | 10A socket, radio |
| **42** | 15L | 5 | ABS socket |
| **43** | 15ZE | 10 | Steering column switch supply |
| **44** | 15ZE | 10 | Compressed air dryer |
| **45** | 15ZSS | 15 | Seat, electric mirror adjustment |

## A013 - PCB, microfuses




I001049

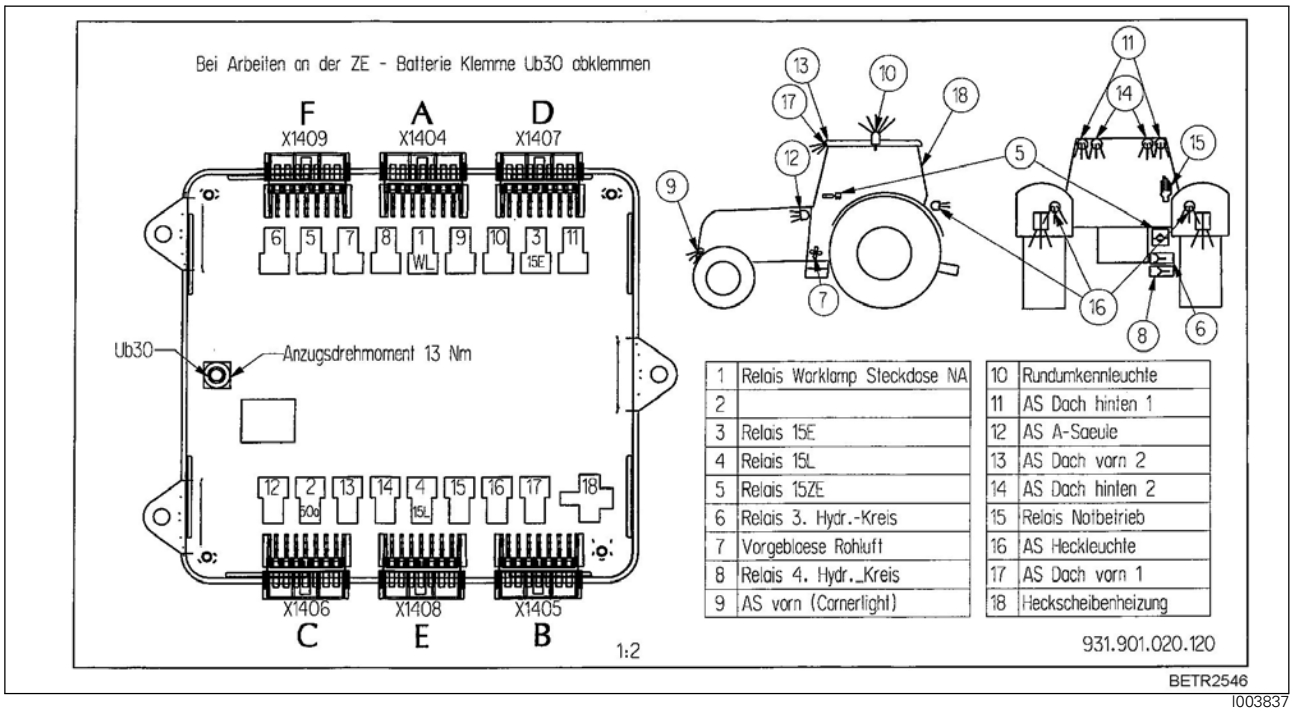
| Fuse no. | Connector/PIN | Component |
|---|---|---|
| **S4** | X200/14 | **X015** - External control socket (Contact 58 R) |
| **S5** | X200/13 | **B017** - Sensor, clutch pedal |
| **S6** | X200/12 | **B016** - Sensor, travel range detection |
| **S7** | X200/11 | **B014** - Sensor, collecting shaft |
| **S8** | X200/10 | **B015** - Sensor, bevel pinion |
| **S9** | X201/1 | **B068** - Sensor, wheel position (right) |
| **S12** | X200/7 | **B040** - Sensor, front power lift position |
| **S13** | X200/6 | **B032** - Sensor, draft sensing pin, left |
| **S14** | X200/5 | **B031** - Sensor, draft sensing pin, right |
| **S15** | X200/4 | **B030** - Sensor, rear power lift position |
| **S16** | X201/4 | **B067** - Sensor, steering angle |
| **S17** | X201/5 | **B066** - Sensor, wheel position (left) |
| **S19** | X201/7 | **B055** - Sensor, foot throttle |
| **S29** | X202 / 7 | **B081** - Steering wheel sensor (360°) |
| **S31** | X202/5 | **B039** - Sensor, high-pressure 2 |
| **S32** | X202/4 | **B008** - Sensor, high-pressure 1 |
| **S33** | X202/1 | **B010** - Sensor, engine speed |
| **S35** | X202/10 | **B020** - Sensor, rear PTO speed (stub shaft) |
| **S36** | X202/8 | **B002** - Sensor, front PTO speed |
| **S34** | X202/11 | **B021** - Sensor, rear PTO speed (clutch) |

**NOTE:**

**Unlisted fuses in A013 - PCB, microfuses not currently assigned**

Service Training

## Central electrical system - relay assignment




I003837

| Relay | Consumer | Relay | Consumer |
|---|---|---|---|
| 1 | Relay socket NA | 10 | Rotating beacon |
| 2 | | 11 | Work light, rear roof 1 (external) |
| 3 | Relay 15E | 12 | Work light, A pillar |
| 4 | Relay 15L | 13 | Work light, front roof 2 (internal) |
| 5 | Relay 15ZE | 14 | Work light, rear roof 2 (internal) |
| 6 | 3rd hydraulic circuit relay | 15 | Relay, emergency operation |
| 7 | Primary fan, intake air | 16 | Work light, rear lamp |
| 8 | 4th hydraulic circuit relay | 17 | Work light, front roof 1 (external) |
| 9 | Front work light | 18 | Rear window heater |

**NOTE:**

**For details on testing the relay supply voltage, please refer to workshop manual chapter 9000 Reg. E Measuring and testing A038 - ECU, central electrical system**

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **A007** - Instrument panel | X100<br>X101 | 2, 8, 9, 10, 17 |
| **A009** - Actuator unit | X037 | 2, 10, 11 |
| **A011** - Radar sensor | X479 | 13 |
| **A013** - PCB, microfuses | X200<br>X201<br>X202 | 3, 8, 9, 10, 11, 12, 14, 15 |
| **A015** - Radio | X1315<br>X1316<br>X1768 | 24, 29 |
| **A036** - Control panel, dashboard right/left | X1357 | 2, 8, 9, 10, 17 |
| **A038** - ECU, central electrical system | X454<br>X455<br>X456<br>X1404<br>X1405<br>X1406<br>X1407<br>X1408<br>X1409 | 4, 7, 18, 19, 20, 21, 22, 23 |
| **A039** - MFA, multifunction armrest | X1401 | 2, 8, 9, 10, 11, 17, 23 |
| **A050** - ECU, basic control unit | X1402<br>X1403 | 5, 8, 9, 10, 11, 12, 14, 15, 16, 26 |
| **A051** - ECU, engine control unit (EDC 7). | X1466<br>X1671<br>X1672 | 6, 8, 9, 10, 26, 27 |
| **A053** - ECU, air conditioning control | X920<br>X921 | 6, 20, 23 |
| **A055** - ECU, data transfer | X1411 | 6, 8, 28 |
| **A058** - TopDock (Auto-Guide) | X1728 | 6, 28 |
| **A059** - Terminal (Auto-Guide) | X1732 | 6, 24 |
| **A060** - Hands-free device | X1765 | 29 |
| **A073** - Terminal (A4) | X1830 | 2, 8, 9, 10 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **B002** - Sensor, front PTO speed | X151 | 15 |
| **B004** - Vacuum switch (air filter) | X153 | 26 |
| **B008** - Sensor, high-pressure 1 | X157 | 11 |
| **B009** - Discharge temperature sensor | X158 | 11 |
| **B010** - Sensor, engine speed | X159 | 11 |
| **B013** - Sensor, hydraulic oil temperature | X162 | 17 |
| **B014** - Sensor, collecting shaft | X163 | 11 |
| **B015** - Sensor, bevel pinion | X164 | 11 |
| **B016** - Sensor, travel range detection | X165 | 11 |
| **B017** - Sensor, clutch pedal | X166 | 11 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **B019** - Sensor, compressed air supply (circuit 2) | X168 | 17 |
| **B020** - Sensor, rear PTO speed (stub shaft) | X169 | 15 |
| **B021** - Sensor, rear PTO speed (clutch) | X170 | 15 |
| **B030** - Sensor, rear power lift position | X178 | 12 |
| **B031** - Sensor, draft sensing pin, right | X179 | 12 |
| **B032** - Sensor, draft sensing pin, left | X180 | 12 |
| **B034** - Immersed tube sensor (fuel) | X182 | 17 |
| **B039** - Sensor, high-pressure 2 | X177 | 11 |
| **B040** - Sensor, front power lift position | X188 | 12 |
| **B050** - Loudspeaker, left | X289<br>X290 | 24 |
| **B051** - Loudspeaker, right | X311<br>X312 | 24 |
| **B055** - Sensor, foot throttle | X898 | 26 |
| **B060** - Compressed air supply sensor (circuit 1) | X1410 | 17 |
| **B061** - Loudspeaker | X1620<br>X1621 | 24 |
| **B062** - Loudspeaker | X1622<br>X1623 | 24 |
| **B063** - Pressure switch, filter contamination (hydraulic circuit) | X1500 | 12 |
| **B066** - Sensor, wheel position (left) | X1509 | 14 |
| **B067** - Sensor, steering angle | X1508 | 14 |
| **B068** - Sensor, wheel position (right) | X1507 | 14 |
| **B071** - Sensor, output temperature | X1536 | 20 |
| **B073** - Sensor, solar (irradiation) | X1535 | 20 |
| **B074** - Sensor, internal temperature | X1545 | 20 |
| **B076** - Sensor, external temperature | X1538 | 20 |
| **B077** - Engine fan (speed sensor/magnetic clutch) | X1532 | 26 |
| **B081** - Steering wheel sensor (360°) | X1519 | 14 |
| **B083** - Immobiliser control | X1494 | 28 |
| **B084** - Sensor, hydraulic oil level | X214 | 17 |
| **B085** - Camshaft speed sensor | X1654 | 27 |
| **B086** - Rail pressure sensor | X1655 | 27 |
| **B087** - Fuel low pressure sensor | X1656 | 27 |
| **B088** - Crankshaft speed sensor | X1657 | 27 |
| **B089** - Engine temperature sensor (Deutz) | X1658 | 27 |
| **B090** - Sensor, oil pressure | X1659 | 27 |
| **B091** - Sensor, water in fuel | X1660 | 27 |
| **B092** - Sensor, charge air pressure/temperature | X1661 | 27 |
| **B095** - Microphone | X1766 | 29 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **E003** - H4 additional headlight, right | X352 | 18 |
| **E004** - H4 additional headlight, left | X353 | 18 |
| **E009** - Licence plate lighting, right | X374<br>X375 | 19 |
| **E010** - Licence plate lighting, left | X376<br>X377 | 19 |
| **E019** - Lighting, cab | X308<br>X309<br>X310 | 19 |
| **E020** - Lighting (EPC) | X842<br>X843<br>X844 | 19 |
| **E021** - Rotating beacon, right | X346 | 21 |
| **E022** - Rotating beacon, left | X345 | 21 |
| **E023** - Rear window heater | X259<br>X260 | 19 |
| **E050** - Work lights, front left roof, internal | X798 | 20 |
| **E051** - Work lights, front right roof, internal | X799 | 20 |
| **E054** - Wide vehicle marker lights, right | X896 | 19 |
| **E055** - Wide vehicle marker lights, left | X897 | 19 |
| **E063** - Heater element, air dryer (temperature-controlled) | X1556 | 23 |
| **E064** - Rear direction indicator, left | X916 | 21 |
| **E065** - Rear direction indicator, right | X917 | 21 |
| **E066** - Brake and tail light left | X918 | 18, 19 |
| **E067** - Brake and tail light right | X919 | 18, 19 |
| **E070** - Work lights, front right roof, external | X1291 | 19 |
| **E071** - Work lights, front left roof, external | X1292 | 19 |
| **E074** - Work light, right (cornerlight) | X1289 | 18 |
| **E075** - Work light, left (cornerlight) | X1290 | 18 |
| **E078** - Work light, rear right mudguard (optional Xenon) | X1285 | 22 |
| **E079** - Work light, rear left mudguard (optional Xenon) | X1286 | 22 |
| **E082** - Work light, rear right external (roof) | X1561<br>X1562 | 21 |
| **E083** - Work light, rear right internal (roof) | X1570<br>X1571 | 22 |
| **E084** - Work light, rear left internal (roof) | X1572<br>X1573 | 22 |
| **E085** - Work light, rear left external (roof) | X1563<br>X1564 | 21 |
| **E086** - Side lamp, front right | X1685<br>X1686 | 19 |
| **E087** - Side lamp, front left | X1687<br>X1688 | 19 |
| **E088** - Direction direction indicator, front right | X1689<br>X1690 | 20 |
| **E089** - Direction direction indicator, front left | X1691<br>X1692 | 20 |

Service Training

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **E098** - Drive headlight (main beam), right | X1603 | 18 |
| **E099** - Drive headlight (dipped beam), right | X1604 | 18 |
| **E100** - Drive headlight (main beam), left | X1605 | 18 |
| **E101** - Drive headlight (dipped beam), left | X1606 | 18 |
| **E106** - Exterior mirror (adjustment/heater), right | X868 | 23 |
| **E107** - Exterior mirror (adjustment/heater), left | X869 | 23 |
| **E108** - Work light, right A pillar (optional Xenon) | X1613 | 20 |
| **E109** - Work light, left A pillar (optional Xenon) | X1614 | 20 |
| **E116** - Work lights, Xenon front right roof, external | X1802 | 19 |
| **E117** - Work lights, Xenon front left roof, external | X1802 | 19 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **G001** - Battery 1 | X058<br>X059<br>X060<br>X066 | 7, 9 |
| **G002** - Alternator 1 | X062<br>X064 | 7, 17 |
| **G004** - Alternator 2 | X449<br>X450 | 7, 17 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **H005** - Horn | X998<br>X999 | 22 |
| **H006** - Audio warning signal | X204 | 17 |
| **H009** - Blip signal, reversing | X1544 | 11 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **K061** - ISO bus disconnect relay | X1592<br>X1593<br>X1594<br>X1595 | 7, 8, 25 |
| **K063** - Heater flange relay | X1663<br>X1664<br>X1665 | 27 |
| **K065** - Starter relay | X1648 | 26 |
| **K068** - Relay, battery disconnect (impulse) | X1679<br>X1680<br>X1805 | 7 |
| **K069** - Relay, safety function (battery disconnect) | X1753 | 7 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **M001** - starter. | X057<br>X061 | 7, 26 |
| **M002** - Front wiper motor | X347 | 21 |
| **M003** - Wiper pump, front | X301 | 22 |
| **M004** - Rear wiper motor | X258 | 21 |
| **M005** - Wiper pump, rear | X303 | 22 |
| **M010** - Fuel pump | X300 | 22 |
| **M015** - Actuator motor, top/middle air flap | X1546 | 23 |
| **M016** - Servomotor, bottom air valve | X1547 | 23 |
| **M017** - Primary fan | X1555 | 23 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **R002** - Heater flange | X991 | 27 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **S002** - Switch, ignition | X072<br>X246 | 7, 26 |
| **S005** - Switch, right brake | X217 | 11 |
| **S006** - Switch, left brake | X218 | 11 |
| **S012** - Switch, starter lockout | X082 | 22, 26 |
| **S013** - Emergency mode button | X224 | 22 |
| **S017** - Filter contamination switch | X228 | 11 |
| **S019** - Button, rear PTO, external left | X229 | 15 |
| **S020** - Button, rear PTO, external right | X230 | 15 |
| **S021** - Button, front power lift, external raise | X231 | 12 |
| **S022** - Button, front power lift, external lower | X232 | 12 |
| **S025** - Switch, LS pump pressure monitor | X235 | 12 |
| **S026** - Switch, steering pump flow controller | X236 | 12 |
| **S027** - Button, rear power lift, right-hand external raise | X237 | 12 |
| **S028** - Button, rear power lift, right-hand external lower | X238 | 12 |
| **S029** - Button, rear power lift, left-hand external raise | X239 | 12 |
| **S030** - Button, rear power lift, left-hand external lower | X240 | 12 |
| **S032** - Switch, left door contact | X299 | 19 |
| **S034** - Switch, coolant level | X244 | 26 |
| **S035** - Switch, high-pressure/low-pressure (air conditioning system) | X341 | 23 |
| **S045** - Switch, reversing driver stand | X213 | 11 |
| **S047** - Switch, engine brake | X140 | 26 |
| **S067** - Button, valve actuation, external raise | X1114 | 12 |
| **S068** - Button, valve actuation, external lower | X1115 | 12 |
| **S075** - Switch, guard rail pump flow monitor | X1499 | 12 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **S076** - Switch, clutch fluid | X1542<br>X1543 | 17 |
| **S079** - Switch, steering column | X1590<br>X1591 | 11, 21, 22 |
| **S080** - Switch, hand brake | X1467 | 11 |
| **S085** - Switch, reverse operation (RÜFA) actuation | X1650 | 19 |
| **S086** - Switch, brake wearing, right | X1651 | 16 |
| **S087** - Switch, brake wearing, left | X1652 | 16 |
| **S092** - Battery disconnect switch | X1749 | 7 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **U001** - Immobiliser aerial | X1693 | 28 |
| **U002** - Radio aerial | X1669<br>X1670 | 24 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X007** - Implement socket | 17 |
| **X008** - Socket, on-board computer counter input | 12 |
| **X015** - External control socket | 12, 18, 23 |
| **X017** - Front socket | 19 |
| **X018** - Rear socket | 18, 19 |
| **X028** - ISO socket (cab) | 25 |
| **X037** - Separation point on A009 | 10, 11 |
| **X057** - Separation point on M001 | 7 |
| **X058** - Battery terminal (+ UB 30) | 7 |
| **X059** - Separation point on G001 | 9 |
| **X060** - Separation point on G001 | 9 |
| **X061** - Separation point on M001 | 7 |
| **X062** - Separation point on G002 | 7 |
| **X064** - Separation point on G002 | 17 |
| **X066** - Separation point on G001 | 9 |
| **X072** - Separation point on S002 | 7, 26 |
| **X082** - Separation point on S012 | 22, 26 |
| **X086** - Separation point on Y006 | 27 |
| **X100 [blau]** - Separation point on A007 | 10, 17 |
| **X101 [gelb]** - Separation point on A007 | 8, 9, 17 |
| **X140** - Separation point on S047 | 26 |
| **X151** - Separation point on B002 | 15 |
| **X153** - Separation point on B004 | 26 |
| **X157** - Separation point on B008 | 11 |
| **X158** - Separation point on B009 | 11 |
| **X159** - Separation point on B010 | 11 |
| **X162** - Separation point on B013 | 17 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X163** - Separation point on B014 | 11 |
| **X164** - Separation point on B015 | 11 |
| **X165** - Separation point on B016 | 11 |
| **X166** - Separation point on B017 | 11 |
| **X168** - Separation point on B019 | 17 |
| **X169** - Separation point on B020 | 15 |
| **X170** - Separation point on B021 | 15 |
| **X177** - Separation point on B039 | 11 |
| **X178** - Separation point on B030 | 12 |
| **X179** - Separation point on B031 | 12 |
| **X180** - Separation point on B032 | 12 |
| **X182** - Separation point on B034 | 17 |
| **X188** - Separation point on B040 | 12 |
| **X200** - Separation point on A013 | 8, 10, 11, 12 |
| **X201** - Separation point on A013 | 8, 9, 10, 14 |
| **X202** - Separation point on A013 | 10, 11, 14, 15 |
| **X204** - Separation point on H006 | 17 |
| **X213** - Separation point on S045 | 11 |
| **X214** - Separation point on B084 | 17 |
| **X217** - Separation point on S005 | 11 |
| **X218** - Separation point on S006 | 11 |
| **X224** - Separation point on S013 | 22 |
| **X228** - Separation point on S017 | 11 |
| **X229** - Separation point on S019 | 15 |
| **X230** - Separation point on S020 | 15 |
| **X231** - Separation point on S021 | 12 |
| **X232** - Separation point on S022 | 12 |
| **X235** - Separation point on S025 | 12 |
| **X236** - Separation point on S026 | 12 |
| **X237** - Separation point on S027 | 12 |
| **X238** - Separation point on S028 | 12 |
| **X239** - Separation point on S029 | 12 |
| **X240** - Separation point on S030 | 12 |
| **X244** - Separation point on S034 | 26 |
| **X246** - Separation point on S002 | 7 |
| **X254** - 10 amp socket | 25 |
| **X255** - 25 A socket (+ UB 30) | 25 |
| **X256** - 25 amp socket (earth) | 25 |
| **X258** - Separation point on M004 | 21 |
| **X259** - Separation point on E023 | 19 |
| **X260** - Separation point on E023 | 19 |
| **X289** - Separation point on B051 | 24 |
| **X290** - Separation point on B051 | 24 |
| **X299** - Separation point on S032 | 19 |
| **X300** - Separation point on M010 | 22 |
| **X301** - Separation point on M003 | 22 |
| **X303** - Separation point on M005 | 22 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X308** - Separation point on E019 | 19 |
| **X309** - Separation point on E019 | 19 |
| **X310** - Separation point on E019 | 19 |
| **X311** - Separation point on B050 | 24 |
| **X312** - Separation point on B050 | 24 |
| **X315** - Separation point on Y002 | 11 |
| **X316** - Separation point on Y003 | 11 |
| **X317** - Separation point on Y004 | 22 |
| **X318** - Separation point on Y005 | 11 |
| **X319** - Separation point on Y008 | 15 |
| **X320** - Separation point on Y009 | 11 |
| **X321** - Separation point on Y010 | 11 |
| **X322** - Separation point on Y011 | 15 |
| **X323** - Separation point on Y012 | 12 |
| **X332** - Separation point on Y021 | 12 |
| **X333** - Separation point on Y022 | 12 |
| **X336** - Separation point on Y032 | 12 |
| **X341** - Separation point on S035 | 23 |
| **X342** - Separation point on Y024 | 23 |
| **X345** - Separation point on E022 | 21 |
| **X346** - Separation point on E021 | 21 |
| **X347** - Separation point on M002 | 21 |
| **X352** - Separation point on E003 | 18 |
| **X353** - Separation point on E004 | 18 |
| **X360** - Separation point on Y026 | 15 |
| **X361** - Separation point on Y027 | 15 |
| **X374** - Separation point on E009 | 19 |
| **X375** - Separation point on E009 | 19 |
| **X376** - Separation point on E010 | 19 |
| **X377** - Separation point on E010 | 19 |
| **X400** - Rear ISO implement socket | 25 |
| **X449** - Separation point on G004 | 17 |
| **X450** - Separation point on G004 | 7 |
| **X454** - Separation point on A038 | 7 |
| **X455** - Separation point on A038 | 7 |
| **X456** - Separation point on A038 | 7 |
| **X479** - Separation point on A011 | 13 |
| **X497** - Separation point, ISO preparation | 25 |
| **X510** - Earth pin, engine left | 9, 12, 13 |
| **X511** - Earth pin, engine | 8, 9, 14, 15 |
| **X512** - Earth pin, engine | 9 |
| **X513** - Earth pin, engine | 9, 13, 19, 22 |
| **X520** - Earth pin, oil sump right | 9, 18 |
| **X521** - Earth pin, engine | 9 |
| **X532** - Earth pin, cab body | 9, 18, 19, 20, 21 |
| **X533** - Earth pin, cab body | 9, 12, 17, 19, 24, 25 |
| **X534** - Earth pin, cab body | 9, 19, 21, 22, 25 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X550** - Earth pin, operator platform right | 9 |
| **X551** - Earth pin, operator platform right | 9, 17, 19, 22 |
| **X552** - Earth pin, operator platform | 9, 20, 21, 23 |
| **X553** - Earth pin, operator platform | 9, 24, 25, 26 |
| **X554** - Earth pin, operator platform | 7, 8, 9, 11, 19, 25, 28 |
| **X558** - Earth pin, transmission | 9, 17 |
| **X559** - Earth pin, transmission | 9, 25 |
| **X570** - Earth pin, transmission | 9, 12, 15, 19, 22 |
| **X571** - Earth pin, transmission | 9, 11, 13 |
| **X572** - Earth pin, transmission | 9, 12, 14, 18, 23 |
| **X573** - Earth pin, transmission | 9 |
| **X574** - Earth pin, transmission | 9, 19, 21 |
| **X596** - Connector, earth (X1048 socket, ABS) | 17 |
| **X598** - Connector, K bus_High | 10, 18 |
| **X599** - Connector, K bus_Low | 10, 18 |
| **X608** - Connector, + UB 15 | 7, 21, 22 |
| **X619** - Connector, electronics earth | 9 |
| **X620** - Connector, sensor system earth | 9, 12, 14 |
| **X621** - Connector, sensor system earth | 9, 11 |
| **X627** - Connector, electronics earth | 9, 11, 12 |
| **X629** - Connector, + UB 30 | 8 |
| **X631** - Connector, rear PTO LED ON | 15 |
| **X635** - Connector, sensor system earth (instrument panel) | 17 |
| **X643** - Connector, instrument panel earth | 9 |
| **X650** - Connector, headlight 56b (dipped beam) | 18 |
| **X651** - Connector, headlight 56a (main beam) | 18 |
| **X657** - Connector, auxiliary lighting 56a (main beam) | 18 |
| **X658** - Connector, auxiliary lighting 56b (dipped beam) | 18 |
| **X659** - Connector, work light (cornerlight) | 18 |
| **X660** - Connector, sensor system earth | 9, 11, 26 |
| **X661** - Connector, electronics earth | 9, 18, 19 |
| **X668** - Connector, sensor system earth | 9, 12 |
| **X669** - Connector, sensor system earth | 9, 14, 15 |
| **X671** - Connector, sensor system earth | 9, 11, 12 |
| **X672** - Connector, sensor system earth | 9, 11 |
| **X673** - Connector, sensor system earth | 9, 11, 12 |
| **X674** - Connector, sensor system earth | 9, 15, 16 |
| **X678** - Connector, sensor system earth | 17 |
| **X684** - Connector, ISO socket earth | 25 |
| **X692** - Connector, +UB 30 (A051) | 8 |
| **X694** - Connector, +UB 30 (A038) | 7, 19, 20, 21, 22, 23 |
| **X698** - Connector, sensor system earth | 17 |
| **X707** - Connector, ISO bus_Low | 10 |
| **X708** - Connector, ISO bus_High | 10 |
| **X711** - Connector, V bus_High | 10, 13 |
| **X712** - Connector, V bus_Low | 10, 13 |
| **X714** - Connector, G bus_Low | 10 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X715** - Connector, G bus_High | 10 |
| **X718** - Connector, K bus_Low | 10 |
| **X719** - Connector, K bus_High | 10 |
| **X725** - Connector, K bus_High | 10, 25 |
| **X726** - Connector, K bus_Low | 10, 25 |
| **X727** - Connector, ISO bus_High | 25 |
| **X728** - Connector, ISO bus_Low | 25 |
| **X738** - Connector, serial RXD | 10, 24 |
| **X739** - Connector, serial TXD | 10, 24 |
| **X760** - Connector, earth | 19, 21, 22 |
| **X761** - Connector, earth | 19, 21, 22 |
| **X762** - Connector, + UB 15 | 21 |
| **X766** - Connector, air conditioning earth | 18, 20 |
| **X769** - Connector, signal (E021/E022) | 21 |
| **X789** - Connector, signal (E083/E084) | 22 |
| **X793** - Connector, signal (E082/E085) | 21 |
| **X794** - Connector, earth (A051) | 9 |
| **X796** - Cable coupling (M002) | 20, 21, 23 |
| **X797** - Connector, air conditioning coupler signal | 23 |
| **X798** - Separation point on E050 | 20 |
| **X799** - Separation point on E051 | 20 |
| **X810** - EDC diagnostics socket (engine control unit) | 26 |
| **X814** - Connector, +UB30 (X1048 socket, ABS) | 17 |
| **X834** - Separation point on E070 | 19 |
| **X835** - Separation point on E071 | 19 |
| **X836** - Separation point on E0116 / E117 | 19 |
| **X837** - Separation point on X1048 socket, ABS | 17 |
| **X838** - Separation point on X015 socket, external control | 12, 18, 23 |
| **X842** - Separation point on E020 | 19 |
| **X843** - Separation point on E020 | 19 |
| **X844** - Separation point on E020 | 19 |
| **X845** - 25 A socket (+ UB 30) | 25 |
| **X846** - 25 amp socket (earth) | 25 |
| **X847** - 25 A socket (+ UB 30) | 25 |
| **X848** - 25 amp socket (earth) | 25 |
| **X868** - Separation point on E106 | 23 |
| **X869** - Separation point on E107 | 23 |
| **X896** - Separation point on E054 | 19 |
| **X897** - Separation point on E055 | 19 |
| **X898** - Separation point on B055 | 26 |
| **X899** - Connector, earth | 18 |
| **X916** - Separation point on E064 | 21 |
| **X917** - Separation point on E065 | 21 |
| **X918** - Separation point on E066 | 18, 19 |
| **X919** - Separation point on E067 | 18, 19 |
| **X920** - Separation point on A053 | 20, 23 |
| **X921** - Separation point on A053 | 23 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X991** - Separation point on R002 | 27 |
| **X998** - Separation point on H005 | 22 |
| **X999** - Separation point on H005 | 22 |
| **X1041** - Separation point on Y053 | 11 |
| **X1048** - Socket ABS | 17 |
| **X1114** - Separation point on S067 | 12 |
| **X1115** - Separation point on S068 | 12 |
| **X1153** - Separation point on Y088 | 16 |
| **X1285** - Separation point on E078 | 22 |
| **X1286** - Separation point on E079 | 22 |
| **X1289** - Separation point on E074 | 18 |
| **X1290** - Separation point on E075 | 18 |
| **X1291** - Separation point on E070 | 19 |
| **X1292** - Separation point on E071 | 19 |
| **X1315** - Separation point on radio (compact plug) | 24 |
| **X1316** - Separation point on radio (compact plug) | 24 |
| **X1343** - Connector, G bus_High | 10, 28 |
| **X1344** - Connector, G bus_Low | 10, 28 |
| **X1357 [weiß]** - Separation point on A036 | 8, 9, 10, 17 |
| **X1401** - Separation point on A039 | 8, 9, 10, 11, 17, 23, |
| **X1402 [B]** - Separation point on A050 | 8, 10, 11, 12, 14, 15, 16, 26 |
| **X1403 [A]** - Separation point on A050 | 8, 9, 10, 11, 12, 14, 15, 16, |
| **X1404 [A]** - Separation point on A038 | 18 |
| **X1405 [B]** - Separation point on A038 | 19 |
| **X1406 [C]** - Separation point on A038 | 20 |
| **X1407 [D]** - Separation point on A038 | 21 |
| **X1408 [E]** - Separation point on A038 | 22 |
| **X1409 [F]** - Separation point on A038 | 23 |
| **X1410** - Separation point on B060 | 17 |
| **X1411** - Separation point on A055 | 8, 28 |
| **X1417** - Cable coupling, operator platform/cab | 10, 18, 19, 25 |
| **X1418** - Cable coupling, operator platform/transmission | 11, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 |
| **X1419** - Cab cable coupling | 12, 17, 23, 25 |
| **X1420** - Cab cable coupling | 19, 20, 21, 22, 24, 25 |
| **X1421** - Cable coupling, operator platform | 12, 15, 18, 19, 21, 22 |
| **X1422** - Cable coupling, mudguard | 12, 15, 18, 19, 21, 22 |
| **X1423** - Cable coupling, operator platform/transmission | 9, 10, 11, 12, 13, 15, 17, 18, 23 |
| **X1424** - Cable coupling, operator platform | 10, 13, 14, 15, 16, 17, 19, 20, 25, 26 |
| **X1425** - Cable coupling, operator platform | 7, 8, 9, 11, 12, 18, 22, 23 |
| **X1436** - Cable coupling, tractor bonnet (drive light, cornerlight) | 18 |
| **X1440** - Fuse holder | 7, 8, 11, 13, 17, 18, 19, 20, 21, 22, 23, 24, 25 |
| **X1459** - Separation point on Y055 | 12 |
| **X1461** - Connector, sensor system earth (left mudguard) | 12, 15 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1462** - Connector, sensor system earth (right mudguard) | 12, 15 |
| **X1463** - Connector, G bus_High | 10 |
| **X1464** - Connector, G bus_Low | 10 |
| **X1466** - Separation point on A051 | 8, 9, 10, 26 |
| **X1467** - Separation point on S080 | 11 |
| **X1470** - Separation point, control valve | 13 |
| **X1471** - Separation point, control valve | 13 |
| **X1472** - Separation point, control valve | 13 |
| **X1473** - Separation point, control valve | 13 |
| **X1474** - Separation point, control valve | 13 |
| **X1477** - Separation point, control valve | 13 |
| **X1478** - Separation point, control valve | 13 |
| **X1479** - Separation point, control valve | 13 |
| **X1480** - Separation point, control valve | 13 |
| **X1481** - Separation point, control valve | 13 |
| **X1482** - Separation point, control valve | 13 |
| **X1483** - Separation point, control valve | 13 |
| **X1484** - Separation point, control valve | 13 |
| **X1485** - Separation point, control valve | 13 |
| **X1486** - Separation point, control valve | 13 |
| **X1487** - Separation point, control valve | 13 |
| **X1488** - Separation point, control valve | 13 |
| **X1489** - Separation point, control valve | 13 |
| **X1490** - Separation point, control valve | 13 |
| **X1494** - Separation point on B083 | 28 |
| **X1497** - Separation point on Y060 | 12 |
| **X1498** - Separation point on Y061 | 12 |
| **X1499** - Separation point on S075 | 12 |
| **X1500** - Separation point on B063 | 12 |
| **X1501** - Separation point on Y062 | 12 |
| **X1502** - Separation point on Y084 | 12 |
| **X1503** - Separation point on Y063 | 14 |
| **X1504** - Separation point on Y064 | 14 |
| **X1507** - Separation point on B068 | 14 |
| **X1508** - Separation point on B067 | 14 |
| **X1509** - Separation point on B066 | 14 |
| **X1510** - Separation point on Y065 | 14 |
| **X1512** - Separation point on Y067 | 14 |
| **X1513** - Separation point on Y085 | 14 |
| **X1514** - Separation point on Y086 | 14 |
| **X1517** - Separation point on Y082 | 14 |
| **X1518** - Separation point on Y083 | 14 |
| **X1519** - Separation point on B081 | 14 |
| **X1525** - Connector, sensor + UB (from instrument panel) | 17 |
| **X1528** - Connector, sensor system supply | 26 |
| **X1532** - Separation point on B077 | 26 |
| **X1535** - Separation point on B073 | 20 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1536** - Separation point on B071 | 20 |
| **X1538** - Separation point on B076 | 20 |
| **X1539** - ISO bus diagnostics socket | 25 |
| **X1542** - Separation point on S076 | 17 |
| **X1543** - Separation point on S076 | 17 |
| **X1544** - Separation point on H009 | 11 |
| **X1545** - Separation point on B074 | 20 |
| **X1546** - Separation point on M015 | 23 |
| **X1547** - Separation point on M016 | 23 |
| **X1555** - Separation point on M017 | 23 |
| **X1556** - Separation point on E063 | 23 |
| **X1561** - Separation point on E082 | 21 |
| **X1562** - Separation point on E082 | 21 |
| **X1563** - Separation point on E085 | 21 |
| **X1564** - Separation point on E085 | 21 |
| **X1565** - Connector, position light | 19 |
| **X1570** - Separation point on E083 | 22 |
| **X1571** - Separation point on E083 | 22 |
| **X1572** - Separation point on E084 | 22 |
| **X1573** - Separation point on E084 | 22 |
| **X1578** - Connector, + UB 15 | 8, 18, 24 |
| **X1586** - V bus cable coupling (Auto-Guide) | 13 |
| **X1587** - Cable coupling, Y087 | 13 |
| **X1588** - Separation point on Y087 | 13 |
| **X1589** - Separation point on Y087 | 13 |
| **X1590** - Separation point on S079 | 11, 21 |
| **X1591** - Separation point on S079 | 21, 22 |
| **X1592** - Separation point on K061 | 8 |
| **X1593** - Separation point on K061 | 7 |
| **X1594** - Separation point on K061 | 25 |
| **X1595** - Separation point on K061 | 25 |
| **X1597** - Cable coupling A059 | 10, 24 |
| **X1600** - Cable coupling, to rear work lights (roof) | 19, 20, 23 |
| **X1603** - Separation point on E098 | 18 |
| **X1604** - Separation point on E099 | 18 |
| **X1605** - Separation point on E100 | 18 |
| **X1606** - Separation point on E101 | 18 |
| **X1611** - Separation point on X400 PCB, ISO (bus terminal) | 25 |
| **X1612** - Separation point on X400 PCB, ISO (bus terminal) | 25 |
| **X1613** - Separation point on E108 | 20 |
| **X1614** - Separation point on E109 | 20 |
| **X1616** - Separation point on X1806 - +UB 30 distributor | 7 |
| **X1617** - Separation point on X1806 - +UB 30 distributor | 7 |
| **X1618** - Separation point on X1806 - +UB 30 distributor | 7 |
| **X1620** - Separation point on B061 | 24 |
| **X1621** - Separation point on B061 | 24 |
| **X1622** - Separation point on B062 | 24 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1623** - Separation point on B062 | 24 |
| **X1624** - Cable coupling to front position lights | 19, 20 |
| **X1633** - Separation point, Auto-Guide TopDock | 25 |
| **X1634** - Connector (+ UB 30) | 7, 8, 28 |
| **X1635** - Cable coupling, operator platform | 8, 10 |
| **X1636** - Vario-Doc cable coupling | 8, 28 |
| **X1637** - Connector, ISO bus_Low (A055 Vario-Doc) | 28 |
| **X1638** - Connector, ISO bus_High (A055 Vario-Doc) | 28 |
| **X1639** - Connector, K bus_High | 28 |
| **X1640** - Connector, K bus_Low | 28 |
| **X1648** - Separation point on K065 | 26 |
| **X1649** - Separation point, 10 amp socket | 25 |
| **X1650** - Separation point on S085 | 19 |
| **X1651** - Separation point on S086 | 16 |
| **X1652** - Separation point on S087 | 16 |
| **X1654** - Separation point on B085 | 27 |
| **X1655** - Separation point on B086 | 27 |
| **X1656** - Separation point on B087 | 27 |
| **X1657** - Separation point on B088 | 27 |
| **X1658** - Separation point on B089 | 27 |
| **X1659** - Separation point on B090 | 27 |
| **X1660** - Separation point on B091 | 27 |
| **X1661** - Separation point on B092 | 27 |
| **X1662** - Separation point on Y091 | 27 |
| **X1663** - Separation point on K063 | 27 |
| **X1664** - Separation point on K063 | 27 |
| **X1665** - Separation point on K063 | 27 |
| **X1667** - Separation point on Y092 | 21 |
| **X1668** - Separation point on Y093 | 19 |
| **X1669** - Separation point on U002 | 24 |
| **X1670** - Separation point on U002 | 24 |
| **X1671** - Separation point on A051 | 27 |
| **X1672** - Separation point on A051 | 27 |
| **X1673** - Cylinder head cable coupling (injectors) | 27 |
| **X1674** - Separation point on Y094 | 27 |
| **X1675** - Connector, earth | 27 |
| **X1676** - Connector + UB 12 VDC | 27 |
| **X1677** - Cylinder head cable coupling (injectors) | 27 |
| **X1678** - Connector, front work light | 20 |
| **X1679** - Separation point on K068 | 7 |
| **X1680** - Separation point on K068 | 7 |
| **X1681** - Cable coupling, E051 | 20 |
| **X1682** - Cable coupling, E050 | 20 |
| **X1683** - Cable coupling, camera socket | 24 |
| **X1685** - Separation point on E086 | 19 |
| **X1686** - Separation point on E086 | 19 |
| **X1687** - Separation point on E087 | 19 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1688** - Separation point on E087 | 19 |
| **X1689** - Separation point on E088 | 20 |
| **X1690** - Separation point on E088 | 20 |
| **X1691** - Separation point on E089 | 20 |
| **X1692** - Separation point on E089 | 20 |
| **X1693** - Separation point on U001 | 28 |
| **X1700** - Separation point on K063 | 27 |
| **X1702** - Separation point on K063 | 27 |
| **X1703** - Separation point on G004 | 7 |
| **X1728** - Separation point on A058 | 28 |
| **X1729** - Connector, ISO bus_Low | 24 |
| **X1730** - Connector, ISO bus_Low | 24 |
| **X1731** - Connector, ISO bus_High | 24 |
| **X1732** - Separation point on A059 | 24 |
| **X1734** - Connector, ISO bus_High | 24 |
| **X1735** - Connector, earth (Auto-Guide) | 24 |
| **X1740** - Connector, Auto-Guide (+UB 15) | 24 |
| **X1742** - Connector, Auto-Guide (+UB 30) | 24 |
| **X1749** - Separation point on S092 | 7 |
| **X1751** - Separation point, left frame earth point | 11, 22 |
| **X1752** - Separation point on K068 | 7 |
| **X1753** - Separation point on K069 | 7 |
| **X1765** - Separation point on A060 | 29 |
| **X1766** - Separation point on B095 | 29 |
| **X1767** - Separation point on radio to B050/B051 | 29 |
| **X1768** - Separation point on radio from A060 | 29 |
| **X1787** - Connector, + UB 15 | 8, 28 |
| **X1802** - Separation point on E116 / E117 | 19 |
| **X1804** - Separation point on X1806 | 7 |
| **X1805** - Separation point on K068 | 7 |
| **X1806** - +UB 30 distributor | 7 |
| **X1830** - Separation point on A073 | 10 |
| **X4000** - Separation point on X1633_ P | 28 |
| **X4001** - Separation point on X1633_ S | 28 |
| **X4002** - Auto-Guide diagnostics socket | 28 |
| **X4003** - Connector, ISO bus_Low | 28 |
| **X4004** - Connector, ISO bus_High | 28 |
| **X4005** - Connector, V bus_Low | 28 |
| **X4006** - Connector, V bus_High | 28 |
| **X4024** - Connector, earth E020 | 19 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **Y002** - Solenoid valve, travel range I | X315 | 11 |
| **Y003** - Solenoid valve, travel range II | X316 | 11 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

**C**

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **Y004** - Solenoid valve, turbo-clutch | X317 | 22 |
| **Y005** - Solenoid valve, speed governor | X318 | 11 |
| **Y006** - Solenoid valve, engine brake | X086 | 27 |
| **Y008** - Solenoid valve, rear PTO (clutch) | X319 | 15 |
| **Y009** - Solenoid valve, 4WD | X320 | 11 |
| **Y010** - Solenoid valve, differential lock | X321 | 11 |
| **Y011** - Front PTO solenoid valve (clutch) | X322 | 15 |
| **Y012** - Oil pre-heater/load suspension solenoid valve | X323 | 12 |
| **Y021** - Lifting solenoid valve (standard front power lift) | X332 | 12 |
| **Y021** - Front pressure compensator lock valve | X332 | 12 |
| **Y022** - Lowering solenoid valve (standard front power lift) | X333 | 12 |
| **Y022** - Field pressure control solenoid valve (front), | X333 | 12 |
| **Y024** - Magnetic clutch, air conditioning compressor | X342 | 23 |
| **Y026** - Solenoid valve, rear PTO, stage I | X360 | 15 |
| **Y027** - Solenoid valve, rear PTO, stage II | X361 | 15 |
| **Y032** - Control pressure solenoid valve | X336 | 12 |
| **Y053** - Active hold function solenoid valve | X1041 | 11 |
| **Y055** - Rear pressure compensator lock valve | X1459 | 12 |
| **Y060** - Hydraulic oil pre-heater solenoid valve (rear) | X1497 | 12 |
| **Y061** - hydraulic oil pre-heater solenoid valve (middle) | X1498 | 12 |
| **Y062** - Solenoid valve, field pressure control (rear) | X1501 | 12 |
| **Y063** - Wobble stabiliser solenoid valve | X1503 | 14 |
| **Y064** - Suspension load pressure/lowering solenoid valve | X1504 | 14 |
| **Y065** - Raise suspension solenoid valve | X1510 | 14 |
| **Y067** - Lock suspension solenoid valve | X1512 | 14 |
| **Y070 [FKH]** - Cut-off valve, front power lift enhanced control | X1470<br>X1471 | 13 |
| **Y071 [2.1]** - Auxiliary control valve (olive) | X1472<br>X1473 | 13 |
| **Y072 [2.2]** - Auxiliary control valve (grey) | X1474<br>X1477 | 13 |
| **Y074 [1.1]** - Auxiliary control valve (yellow) | X1478<br>X1479 | 13 |
| **Y075 [1.2]** - Auxiliary control valve (blue) | X1480<br>X1481 | 13 |
| **Y076 [1.3]** - Auxiliary control valve (red) | X1482<br>X1483 | 13 |
| **Y077 [HKH]** - Cut-off valve, rear EPC | X1484<br>X1485 | 13 |
| **Y078 [1.4]** - Auxiliary control valve (green) | X1486<br>X1487 | 13 |
| **Y079 [1.5]** - Auxiliary control valve (brown) | X1488<br>X1489 | 13 |
| **Y080 [1.6]** - Auxiliary control valve (violet) | X1490 | 13 |
| **Y082** - Solenoid valve, lower link stabiliser, lock | X1517 | 14 |
| **Y083** - Solenoid valve, lower link stabiliser, release | X1518 | 14 |
| **Y084** - Solenoid valve, Power Beyond | X1502 | 12 |

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **Y085** - Pilot pressure/switch-off solenoid valve (Auto-Guide) | X1513 | 14 |
| **Y086** - Solenoid valve, steering disconnect (Auto-Guide) | X1514 | 14 |
| **Y087** - Steering valve block, Auto-Guide | X1588<br>X1589 | 13 |
| **Y088** - Solenoid valve, release trailer brake | X1153 | 16 |
| **Y091** - Dispensing unit (fuel) | X1662 | 27 |
| **Y092** - Solenoid valve, reverse operation (RÜFA), rotate to left | X1667 | 21 |
| **Y093** - Solenoid valve, reverse operation (RÜFA), rotate to right | X1668 | 19 |
| **Y094** - Actuator unit, AGR (exhaust gas recirculation) | X1674 | 27 |
| **Y095** - Injector valve 1 (injector) | - | 27 |
| **Y096** - Injector valve 2 (injector) | - | 27 |
| **Y097** - Injector valve 3 (injector) | - | 27 |
| **Y098** - Injector valve 4 (injector) | - | 27 |
| **Y100** - Injector valve 5 (injector) | - | 27 |
| **Y101** - Injector valve 6 (injector) | - | 27 |

Service Training

OVERALL SYSTEM/ELECTRICAL SYSTEM

# Component list for circuit diagram set 931.901.000.003_b

C

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Blue instrument panel

A007

| | | | |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | Alternator 1 LED | | /17.A4 |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | Loud buzzer | | /17.A4 |
| 9 | Quiet buzzer | | /17.A4 |
| 10 | PTO speed signal | | /17.A4 |
| 11 | Theoretical speed signal | | /17.A4 |
| 12 | Actual speed signal | | /17.A4 |
| 13 | Control bus_Low | | /10.A3 |
| 14 | | | |
| 15 | Linkage position signal | | /17.A4 |
| 16 | Hydraulic oil temp. sensor | | /17.A4 |
| 17 | | | |
| 18 | Compressed air supply sensor 2 | | /17.A4 |
| 19 | Brake fluid switch | | /17.A4 |
| 20 | | | |
| 21 | ABS LED | | /17.A4 |
| 22 | Linkage position signal | | /17.A4 |
| 23 | | | |
| 24 | Alternator 2 LED | | /17.A4 |
| 25 | | | |
| 26 | Control bus_High | | /10.A3 |

Actuator unit

A009

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | Transmission bus_High | | /10.F8 |
| 1 | Actuator unit reference F/R | sw 1 | /11.G5 |
| 2 | UB 30 | sw 1 | /11.G5 |
| 3 | Transmission bus_Low | sw 1 | /10.F8 |
| 4 | UB actuator unit | sw 1 | /11.G5 |
| 5 | Electronics earth | sw 1 | /11.G5 |
| 6 | Earth | sw 1 | /11.G6 |
| 7 | | | |
| 8 | | | |

Terminal A4

A073

| | | | |
|---|---|---|---|
| | | | |
| 1 | Serial Tx | | /10.B1 |
| 2 | Serial Rx | | /10.B1 |
| 3 | Control bus_High | | /10.B1 |
| 4 | Control bus_Low | | /10.B1 |
| 5 | ISO bus_High | | /10.B1 |
| 6 | ISO bus_Low | | /10.B1 |
| 7 | | | |
| 8 | UB 15 | | /8.F5 |
| 9 | UB 30 | | /8.F5 |
| 10 | Electronics earth | | /9.B5 |
| 11 | Serial earth | | /9.B6 |
| 12 | Earth 31 | | /9.B6 |

Yellow instrument panel

A007

| | | | |
|---|---|---|---|
| 1 | Enter key | | /17.A6 |
| 2 | ESC key | | /17.A7 |
| 3 | UP arrow key | | /17.A7 |
| 4 | DOWN arrow key | | /17.A7 |
| 5 | Sensor system earth | | /17.A6 |
| 6 | | | |
| 7 | | | |
| 8 | UB 30 | | /8.G5 |
| 9 | UB 15 | | /8.G5 |
| 10 | 58 | | /17.A7 |
| 11 | Earth 31 | | /9.A5 |
| 12 | Electronics earth | | /9.A5 |
| 13 | UB sensors | | /17.A6 |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | Sensor system earth | | /17.A6 |
| 21 | Fuel supply sensor | | /17.A6 |
| 22 | Hydraulic oil supply sensor | | /17.A6 |
| 23 | | | |
| 24 | Compressed air supply sensor 1 | | /17.A6 |
| 25 | | | |
| 26 | | | |

Keypad

A036

| | | | |
|---|---|---|---|
| 1 | UB 30 | | /8.B7 |
| 2 | UB 15 | | /8.B7 |
| 3 | Earth | | /9.B4 |
| 4 | Control bus_High In | | /10.B3 |
| 5 | Electronics earth | | /9.B4 |
| 6 | Control bus_Low In | | /10.B3 |
| 7 | Control bus_High Out | | /10.B3 |
| 8 | Control bus_Low Out | | /10.B3 |
| 9 | | | |
| 10 | Enter key | | /17.B8 |
| 11 | ESC key | | /17.B8 |
| 12 | UP arrow key | | /17.B8 |
| 13 | DOWN arrow key | | /17.B8 |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |

MFA

A039

| | | | | |
|---|---|---|---|---|
| 1 | | | | |
| 2 | Driver seat switch | ws_0,5 | 1 | /11.D4 |
| 3 | Driver seat switch | ws_0,5 | 1 | /11.D4 |
| 4 | | ws_0,75 | 2 | |
| 5 | Right/left horizontal mirror | ws_0,75 | 3 | |
| 6 | Right/left vertical mirror | ws_0,75 | 4 | /23.A3 |
| 7 | Right horizontal mirror | ws_0,75 | 5 | /23.A3 |
| 8 | Left horizontal mirror | ws_0,75 | 6 | /23.A3 |
| 9 | Right vertical mirror | ws_0,75 | 7 | /23.A3 |
| 10 | Left vertical mirror | gr_0,75 | 8 | /23.A3 |
| 11 | UB 15 | br_0,75 | 9 | /23.A3 |
| 12 | Earth 31 | br_1 | 10 | /9.C6 |
| 13 | Earth 31 | gn_1 | 11 | /17.F2 |
| 14 | UB 15 | ws_0,5 | 12 | /17.F3 |
| 15 | Serial Tx | ws_0,5 | 13 | /10.B2 |
| 16 | Serial Rx | ws_0,5 | 14 | /10.B2 |
| 17 | Control bus_High In | ws_0,5 | 15 | /10.B2 |
| 18 | Control bus_High Out | ws_0,5 | 16 | /10.B2 |
| 19 | Control bus_Low In | ws_0,5 | 17 | /10.B2 |
| 20 | Control bus_Low Out | ws_0,5 | 18 | /10.B2 |
| 21 | ISO bus_High In | ws_0,5 | 19 | /10.B2 |
| 22 | ISO bus_High Out | ws_0,5 | 20 | /10.B2 |
| 23 | ISO bus_Low In | ws_0,5 | 21 | /10.B2 |
| 24 | ISO bus_Low Out | | 22 | /10.B2 |
| 25 | | | 23 | /10.B2 |
| 26 | UB 15E | gn_1,5 | 24 | |
| 27 | UB 30E | br_ws_0,75 | 25 | /8.F5 |
| 28 | Electronics earth | br_gy_0,5 | 26 | /8.F5 |
| 29 | Serial earth | br_1,5 | 27 | /9.C5 |
| 30 | Earth 31 | | 28 | /9.C6 |
| 31 | | | 29 | /9.C6 |
| | | | 30 | |
| | | | 31 | |

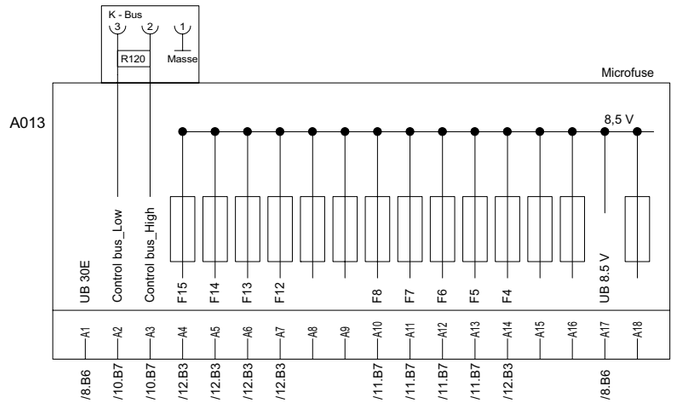
Overview of instrument panel/actuator unit/keyboard/A4 terminal/multifunction armrest (MFA) Sheet 2

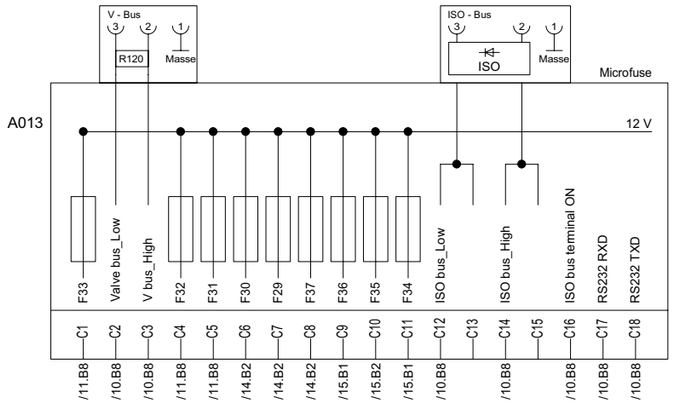
**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

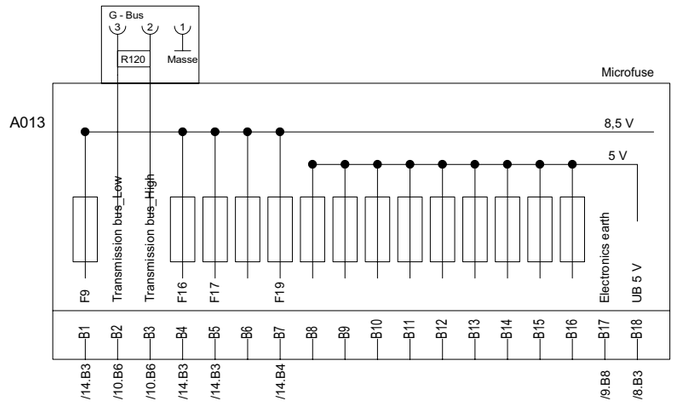
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Overview of microfuse

Sheet 3

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

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FENDT Service-Training Dokumentation

08/2008

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A038 ZE

| | | | |
|---|---|---|---|
| /20.B5 | C1 | – | Work light indic. relay (30) |
| /20.B5 | C2 | – | Front RH direction indicator |
| /20.B5 | C3 | – | Work light indic. relay (87) |
| | C4 | – | |
| /20.B5 | C5 | – | Front LH direction indicator |
| | C6 | – | |
| | C7 | – | |
| /20.B6 | C8 | – | Evaporator temperature sensor |
| /20.B6 | C9 | – | Solar sensor 1 |
| /20.B6 | C10 | – | Internal temperature sensor |
| /20.B6 | C11 | – | Output temperature sensor |
| | C12 | – | |
| | C13 | – | |
| /20.B6 | C14 | – | UB stepper motor |
| /20.B6 | C15 | – | High/low pressure switch |
| | C16 | – | |
| /20.B6 | C17 | – | External temperature sensor |
| /20.B6 | C18 | – | Door contact switch |
| /20.B6 | C19 | – | Rel., F int. wk lts, roof (30) |
| /20.B6 | C20 | – | Solar sensor 2 |
| /20.B6 | C21 | – | Rel., F int. wk lts, roof (87) |

A038 ZE

| | | | |
|---|---|---|---|
| /19.B5 | B1 | – | Reverse op. (turning right) |
| /19.B5 | B2 | – | Rev.op. (steer. col. straight) |
| /19.B5 | B3 | – | Right indicator socket |
| /19.B5 | B4 | – | Socket 58R |
| /19.B5 | B5 | – | Left indicator socket |
| /19.B6 | B6 | – | Main beam/dipped beam switch |
| /19.B5 | B7 | – | Socket 58L |
| /19.B5 | B8 | – | Position light 58 |
| /19.B6 | B9 | – | Fan diagnostics |
| /19.B6 | B10 | – | Rel., F ext. wk lts, roof (30) |
| /19.B6 | B11 | – | Left tail light |
| /19.B6 | B12 | – | Rel., F ext. wk lts, roof (87) |
| /19.B6 | B13 | – | Right tail light |
| /19.B6 | B14 | – | LH wide load (NA indicator 2) |
| /19.B6 | B15 | – | RH wide load (NA indicator 2) |
| /19.B6 | B16 | – | Rear window heater relay (30) |
| /19.B6 | B17 | – | Rear window heater relay (30) |
| /19.B5 | B18 | – | Lighting, cab |
| /19.B5 | B19 | – | Rear window heater relay (87) |
| /19.B5 | B20 | – | Rear window heater relay (87) |
| /19.B6 | B21 | – | Earth 31 |

A038 ZE

| | | | |
|---|---|---|---|
| /18.B6 | A1 | – | Wk light corner light rel.(87) |
| /18.B6 | A2 | – | Electronics earth |
| /18.B6 | A3 | – | Wk light corner light rel.(30) |
| | A4 | – | |
| /18.B6 | A5 | – | Right brake light |
| /18.B6 | A6 | – | Left brake light |
| /18.B6 | A7 | – | Work light relay (NA) (30) |
| /18.B6 | A8 | – | Socket 54 |
| /18.B6 | A9 | – | Control bus_Low |
| /18.B6 | A10 | – | Headlight 56b |
| /18.B6 | A11 | – | Additional headlight 56a |
| /18.B6 | A12 | – | Control bus_High |
| /18.B6 | A13 | – | Work light relay (NA) (87) |
| /18.B6 | A14 | – | Air conditioning earth |
| /18.B7 | A15 | – | UB 15 |
| | A16 | – | |
| /18.B6 | A17 | – | Headlight 56a |
| /18.B7 | A18 | – | UB 5 V air conditioning |
| /18.B6 | A19 | – | 4th hydr. circuit relay (87) |
| /18.B6 | A20 | – | Additional headlight 56b |
| /18.B6 | A21 | – | 4th hydr. circuit relay (30) |

A038 ZE

| | | | |
|---|---|---|---|
| /23.B6 | F1 | – | Primary fan relay (30) |
| /23.B5 | F2 | – | Stepper motor earth |
| /23.B5 | F3 | – | Primary fan relay (87) |
| | F4 | – | |
| /23.B6 | F5 | – | Internal fan temp. signal |
| /23.B5 | F6 | – | Stepper motor earth |
| /23.B5 | F7 | – | 15ZE relay (30) |
| /23.B5 | F8 | – | Fan governor |
| /23.B6 | F9 | – | Fuel pump |
| /23.B5 | F10 | – | Stepper motor earth |
| | F11 | – | |
| /23.B5 | F12 | – | Stepper motor earth |
| /23.B6 | F13 | – | 15ZE relay (87) |
| | F14 | – | |
| /23.B6 | F15 | – | Lower air conditioning flap |
| | F16 | – | |
| /23.B5 | F17 | – | Middle/upper air con flap |
| /23.B6 | F18 | – | Middle/upper air con flap |
| /23.B6 | F19 | – | 3rd hydr. circuit relay (30) |
| /23.B6 | F20 | – | Lower air conditioning flap |
| /23.B6 | F21 | – | 3rd hydr. circuit relay (87) |

A038 ZE

| | | | |
|---|---|---|---|
| /22.B4 | E1 | – | Rel., R int. wk lts, roof (30) |
| /22.B5 | E2 | – | Air con magnetic clutch |
| /22.B4 | E3 | – | Rel., R int. wk lts, roof (87) |
| | E4 | – | |
| | E5 | – | |
| /22.B5 | E6 | – | Exterior mirror heater |
| /22.B4 | E7 | – | 15E relay (30) |
| /22.B5 | E8 | – | 50a |
| /22.B4 | E9 | – | Left indicator switch |
| /22.B4 | E10 | – | 15E relay (86) |
| /22.B4 | E11 | – | Right indicator switch |
| /22.B4 | E12 | – | Rear washer system |
| /22.B4 | E13 | – | 15E relay (87) |
| /22.B4 | E14 | – | Main light flash switch |
| /22.B4 | E15 | – | Front washer system |
| /22.B4 | E16 | – | Emergency actuation relay (86) |
| /22.B4 | E17 | – | Emergency actuation relay (86) |
| /22.B4 | E18 | – | Emergency actuation relay (87) |
| /22.B4 | E19 | – | Emergency actuation relay (30) |
| /22.B4 | E20 | – | Rr mudguard wk light rel. (87) |
| /22.B4 | E21 | – | Rr mudguard wk light rel. (30) |

A038 ZE

| | | | |
|---|---|---|---|
| /21.B4 | D1 | – | Rel, R ext. wk lts, roof (30) |
| /21.B5 | D2 | – | Reverse op. (turning left) |
| /21.B4 | D3 | – | Rel., R ext. wk lts, roof (87) |
| | D4 | – | |
| /21.B5 | D5 | – | Front wiper 53 |
| | D6 | – | |
| /21.B4 | D7 | – | Relay 15L (30) |
| /21.B5 | D8 | – | Rear wiper 53 |
| /21.B5 | D9 | – | Front wiper 31b |
| /21.B5 | D10 | – | Front washer ON |
| /21.B4 | D11 | – | Rear wiper 31B |
| | D12 | – | |
| /21.B4 | D13 | – | Relay 15L (87) |
| /21.B5 | D14 | – | Front wiper ON |
| /21.B5 | D15 | – | Front wiper intermittent |
| /21.B4 | D16 | – | Relay 15L (86) |
| /21.B4 | D17 | – | Rear left direction indicator |
| | D18 | – | |
| /21.B4 | D19 | – | Rotating beacon relay (30) |
| /21.B4 | D20 | – | Rear right direction indicator |
| /21.B4 | D21 | – | Rotating beacon relay (87) |

Overview of central electrical system ZE — Sheet 4

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

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EXT

A050

| | | |
|---|---|---|
| /14.B6 | A1 | Wobble stabiliser SV |
| /16.B3 | A2 | Hyd. tr. brake release SV_High |
| /16.B3 | A3 | Hydr. trailer brake 2 SV_High |
| /11.B6 | A4 | Active hold function SV |
| | A5 | |
| /14.B6 | A6 | Pilot pressure SV_High |
| /14.B6 | A7 | Steering switch off SV_High |
| /15.B2 | A8 | Front PTO sensor |
| /11.B5 | A9 | Bevel pinion speed sensor |
| /15.B3 | A10 | Rear PTO sensor |
| /11.B6 | A11 | Engine speed sensor |
| /12.B1 | A12 | Radar sensor |
| /11.B5 | A13 | Collector speed sensor |
| /8.B1 | A14 | ISO disconnect relay ON |
| /11.B6 | A15 | UB actuator unit |
| /12.B2 | A16 | LH draught sensing pin sens. |
| /12.B2 | A17 | RH draught sensing pin sens. |
| /12.B2 | A18 | Ext. rear power lift sensor |
| | A19 | |
| | A20 | |
| /12.B2 | A21 | Rear power lift pos. sensor |
| /9.B2 | A22 | Earth 31 |
| /9.B2 | A23 | Earth 31 |
| /9.B2 | A24 | Earth 31 |
| | A25 | |
| /14.B6 | A26 | Suspension load pressure SV |
| | A27 | |
| | A28 | |
| | A29 | |
| | A30 | |
| /12.B2 | A31 | Rear pressure compens. lock SV |
| | A32 | |
| /15.B3 | A33 | Rear PTO clutch speed sensor |
| /11.B5 | A34 | Filter contamination switch |
| /12.B1 | A35 | LS pump pressure switch |
| /12.B2 | A36 | Ext. front power lift low. btn |
| /12.B2 | A37 | Ext. front power lift rai. btn |
| /12.B2 | A38 | Front power lift pos. sensor |
| /16.B3 | A39 | Brake pressure sensor |
| | A40 | |
| | A41 | |
| /12.B1 | A42 | Filter monitor switch |
| /12.B1 | A43 | Guard rail pump flow switch |
| | A44 | |
| /9.B2 | A45 | Sensor system earth |
| /9.B2 | A46 | Sensor system earth |
| | A47 | |
| /12.B2 | A48 | Constant pump flow switch |
| /12.B2 | A49 | Raise/lock FKH press. comp. SV |
| /12.B2 | A50 | POWER BEYOND solenoid valve |
| /11.B5 | A51 | Neutral/TC solenoid valve |
| /12.B2 | A52 | Control pressure SV |
| /15.B3 | A53 | Rear PTO level 2 SV |
| /15.B3 | A54 | Rear PTO level 1 SV. |
| | A55 | |
| /12.B2 | A56 | Rear power lift field pres. SV |
| /11.B5 | A57 | Bevel pinion direction sensor |
| /11.B5 | A58 | Actuator unit reference F/R |
| /11.B5 | A59 | Collector direction sensor |
| /10.B4 | A60 | ISO bus_Low |
| /10.B4 | A61 | ISO bus_High |
| /10.B4 | A62 | Valve bus_Low |
| /10.B4 | A63 | V bus_High |
| /14.B6 | A64 | Right wheel position sensor |
| /14.B6 | A65 | Steering angle sensor |
| /14.B6 | A66 | Left wheel position sensor |
| /11.B5 | A67 | High pressure 1 sensor |
| | A68 | |
| /11.B5 | A69 | Travel range detection sensor |
| /11.B5 | A70 | High pressure 2 sensor |
| | A71 | |
| /14.B6 | A72 | Lower link stabil. release SV |
| /12.B2 | A73 | Lower FPL/FPL field pres. SV |
| /12.B2 | A74 | Front pre-heater SV |
| /11.B6 | A75 | Speed governor solenoid valve |
| | A76 | |
| /15.B3 | A77 | Rear PTO clutch solenoid valve |
| /14.B6 | A78 | Steering wheel off SV_Low |
| /14.B6 | A79 | Pilot pressure SV_Low |
| | A80 | |
| /11.B6 | A81 | Active hold function earth SV |
| | A82 | |
| /16.B3 | A83 | Hydr. trailer brake 2 SV_Low |
| | A84 | |
| /16.B3 | A85 | Hydr. tr. brake release SV_Low |
| /15.B3 | A86 | Front PTO clutch SV |
| /12.B2 | A87 | Load suspension solenoid valve |
| /12.B2 | A88 | Rear pre-heater solenoid valve |
| /11.B6 | A89 | 4WD solenoid valve |
| /11.B6 | A90 | Diff. solenoid valve |
| /11.B6 | A91 | Travel range 2 solenoid valve |
| /11.B6 | A92 | Travel range 1 solenoid valve |
| /14.B6 | A93 | Raise susp. solenoid valve |
| | A94 | |
| /14.B6 | A95 | Suspension lock solenoid valve |
| /14.B6 | A96 | Lower link stabiliser lock SV |

EXT

A050

| | | |
|---|---|---|
| /8.B2 | B1 | UB 30 |
| /9.B3 | B2 | Earth 31 |
| /8.B2 | B3 | UB 30 |
| /8.B2 | B4 | UB 30 |
| /8.B2 | B5 | UB 30 |
| /8.B2 | B6 | UB 30 |
| /9.B3 | B7 | Earth 31 |
| | B8 | |
| /11.B3 | B9 | Reverse operation positioning |
| /11.B3 | B10 | Quick reverse switch R |
| /11.B3 | B11 | Right brake switch |
| /12.B4 | B12 | Ext. RH rr power lift low. btn |
| /12.B4 | B13 | Event counter |
| /11.B3 | B14 | Driver seat switch |
| /10.B5 | B15 | Control bus_High |
| /10.B5 | B16 | Control bus_Low |
| /14.B2 | B17 | Steering wheel sensor |
| /26.B7 | B18 | Foot throttle sensor |
| /8.B2 | B19 | UB 5 V |
| /9.B3 | B20 | Earth 31 |
| /11.B3 | B21 | Emergency actuation ON signal |
| /11.B3 | B22 | Quick reverse switch F |
| /11.B3 | B23 | Discharge temperature sensor |
| /11.B3 | B24 | Left brake switch |
| /16.B4 | B25 | Left brake pad wear switch |
| | B26 | |
| /16.B4 | B27 | Hand brake sensor |
| | B28 | |
| /11.B3 | B29 | Clutch pedal sensor |
| | B30 | |
| | B31 | |
| /8.B2 | B32 | UB 8.5 V |
| /9.B3 | B33 | Earth 31 |
| /11.B3 | B34 | Hand brake switch |
| /12.B4 | B35 | External raise valve button |
| /15.B5 | B36 | Left external rear PTO button |
| /12.B4 | B37 | Ext. RH raise rr pwr lift btn |
| | B38 | |
| /12.B4 | B39 | Ext. LH raise rr pwr lift btn |
| /8.B2 | B40 | UB 15 |
| /15.B5 | B41 | Rear PTO LED on |
| /11.B3 | B42 | Reverse warning signal |
| /10.B5 | B43 | ISO bus terminal ON |
| /14.B2 | B44 | Auto-Guide activation |
| /9.B3 | B45 | UB electronics |
| /11.B3 | B46 | Earth 31 |
| /12.B4 | B47 | External lower valve button |
| /12.B4 | B48 | Ext. LH rr power lift low. btn |
| | B49 | |
| /15.B5 | B50 | External right rear PTO button |
| /16.B4 | B51 | Right brake pad wear switch |
| | B52 | |
| /10.B5 | B53 | Transmission bus_High |
| /10.B5 | B54 | Transmission bus_Low |
| | B55 | |
| /8.B2 | B56 | ISO disconnect relay ON |
| | B57 | |
| /8.B2 | B58 | UB electronics |

Overview of EXT

Sheet 5

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

FENDT Service-Training Dokumentation

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EDC

A051

| | | |
|---|---|---|
| 1 | | |
| 2 | UB 30 | /8.F7 |
| 3 | UB 30 | /8.F7 |
| 4 | | |
| 5 | Earth 31 | /9.A1 |
| 6 | Earth 31 | /9.A1 |
| 7 | | |
| 8 | UB 30 | /8.F7 |
| 9 | UB 30 | /8.F7 |
| 10 | Earth 31 | /9.A1 |
| 11 | Earth 31 | /9.A1 |
| 12 | | |
| 13 | | |
| 14 | Fan solenoid valve (86) | /26.A2 |
| 15 | Fan solenoid valve (85) | /26.A2 |
| 16 | | |
| 17 | Start relay | /26.A3 |
| 18 | | |
| 19 | | |
| 20 | UB sensors | |
| 21 | | /26.A3 |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | Electronics earth | |
| 29 | | /26.A2 |
| 30 | | |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | Transmission bus_Low | /10.G1 |
| 35 | Transmission bus_High | /10.G1 |
| 36 | | |
| 37 | Start relay | /26.A3 |
| 38 | | |
| 39 | | |
| 40 | UB 15 | /8.F6 |
| 41 | | |
| 42 | Vacuum switch | /26.A2 |
| 43 | | |
| 44 | | |
| 45 | | |
| 46 | | |
| 47 | Engine brake switch | /26.A3 |
| 48 | | |
| 49 | | |
| 50 | | |
| 51 | | |
| 52 | | |
| 53 | | |
| 54 | | |
| 55 | Coolant level sensor | |
| 56 | | /26.A2 |
| 57 | | |
| 58 | | |
| 59 | | |
| 60 | | |
| 61 | | |
| 62 | | |
| 63 | | |
| 64 | | |
| 65 | | |
| 66 | Starter lockout switch | /26.A3 |
| 67 | Fan earth | /26.A2 |
| 68 | UB fan | /26.A2 |
| 69 | Fan speed sensor | /26.A2 |
| 70 | | |
| 71 | | |
| 72 | | |
| 73 | | |
| 74 | 50a | /26.A3 |
| 75 | | |
| 76 | | |
| 77 | UB 5 V foot throttle | /26.A3 |
| 78 | Foot throttle earth | /26.A3 |
| 79 | Foot throttle sensor | /26.A3 |
| 80 | | |
| 81 | | |
| 82 | | |
| 83 | | |
| 84 | | |
| 85 | | |
| 86 | | |
| 87 | | |
| 88 | | |
| 89 | ISO characteristic curve | /26.A3 |

EDC

A051

| | | |
|---|---|---|
| 1 | | |
| 2 | UB actuators | /27.A3 |
| 3 | | /27.A3 |
| 4 | | /27.A3 |
| 5 | AGR earth | /27.A3 |
| 6 | Engine brake solenoid valve | /27.A3 |
| 7 | Heater flange relay | /27.A3 |
| 8 | Pre-heating sensor switch | /27.A3 |
| 9 | Camshaft speed sensor | /27.A4 |
| 10 | Camshaft speed sensor earth | /27.A4 |
| 11 | AGR solenoid valve | /27.A3 |
| 12 | Rail sensor earth | /27.A4 |
| 13 | UB rail sensor | /27.A4 |
| 14 | Rail sensor | /27.A4 |
| 15 | Coolant temp. sensor | /27.A4 |
| 16 | UB fuel low pressure sensor | /27.A4 |
| 17 | | /27.A4 |
| 18 | Fuel low pressure sensor earth | /27.A4 |
| 19 | Crankshaft speed sensor earth | /27.A4 |
| 20 | | /27.A4 |
| 21 | | /27.A4 |
| 22 | Fuel low pressure sensor | /27.A4 |
| 23 | Crankshaft speed sensor | /27.A4 |
| 24 | Oil pressure sensor earth | /27.A4 |
| 25 | Charge air pres. sensor earth | /27.A4 |
| 26 | Coolant temp. sensor earth | /27.A4 |
| 27 | Oil pressure sensor | /27.A4 |
| 28 | Water in fuel sensor | /27.A4 |
| 29 | | /27.A4 |
| 30 | | /27.A4 |
| 31 | | /27.A4 |
| 32 | UB oil pressure sensor | /27.A4 |
| 33 | UB charge air pressure sensor | /27.A4 |
| 34 | Charge air pressure sensor | /27.A4 |
| 35 | | /27.A4 |
| 36 | Charge air temperature sensor | /27.A5 |

EDC

A051

| | | |
|---|---|---|
| 1 | | |
| 2 | Injectors 4, 5 and 6 High | /27.A7 |
| 3 | Injectors 1, 2 and 3 High | /27.A7 |
| 4 | | /27.A7 |
| 5 | | /27.A7 |
| 6 | Injector 3 Low | /27.A7 |
| 7 | | /27.A7 |
| 8 | | /27.A7 |
| 9 | Dispensing unit_High | /27.A7 |
| 10 | Dispensing unit_Low | /27.A7 |
| 11 | | /27.A7 |
| 12 | Injector 2 Low | /27.A7 |
| 13 | Injector 1 Low | /27.A7 |
| 14 | Injector 6 Low | /27.A7 |
| 15 | Injector 5 Low | /27.A7 |
| 16 | Injector 4 Low | /27.A7 |

Vario-Doc

A055

| | | |
|---|---|---|
| 1 | | |
| 2 | Control bus_High | /28.B7 |
| 3 | Control bus_Low | /28.B7 |
| 4 | UB 15 | /8.F3 |
| 5 | | |
| 6 | | |
| 7 | ISO bus_High | /28.B7 |
| 8 | ISO bus_Low | /28.B7 |
| 9 | UB 30 | /8.F3 |
| 10 | | |
| 11 | Earth | /8.F3 |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Air conditioning

A053

| | | |
|---|---|---|
| 1 | Stepper pin 1 | /23.E5 |
| 2 | Stepper pins 2 and 5 | /20.E6 |
| 3 | Stepper pin 3 | /23.E5 |
| 4 | Stepper pin 4 | /23.E5 |
| 5 | | |
| 6 | Stepper pin 6 | /23.E5 |
| 7 | Evaporator temperature sensor | /20.E6 |
| 8 | Sensor system earth | /20.E6 |

Air conditioning

A053

| | | |
|---|---|---|
| 1 | UB 12 V | /23.E4 |
| 2 | Fan governor | /23.E4 |
| 3 | Fan diagnostics | /23.E4 |
| 4 | Earth 31 | /23.E4 |

TopDock B4

A058

| | | |
|---|---|---|
| 1 | UB 30 | /28.F1 |
| 2 | UB 30 | /28.F1 |
| 3 | ISO bus_Low | /28.F1 |
| 4 | ISO bus_High | /28.F1 |
| 5 | Valve bus_Low | /28.F1 |
| 6 | V bus_High | /28.F1 |
| 7 | Serial earth | /28.F2 |
| 8 | Earth | /28.F1 |
| 9 | Earth | /28.F2 |
| 10 | Auto-Guide activation | /28.F1 |
| 11 | Serial Tx | /28.F2 |
| 12 | Serial Rx | /28.F2 |
| 13 | | /28.F2 |

Auto-Guide terminal

A059

| | | |
|---|---|---|
| 1 | UB 30 | /24.B1 |
| 2 | | /24.B1 |
| 3 | | /24.B1 |
| 4 | Earth | /24.B1 |
| 5 | ISO bus_High | /24.B1 |
| 6 | ISO bus_Low | /24.B2 |
| 7 | UB 15 | /24.B1 |

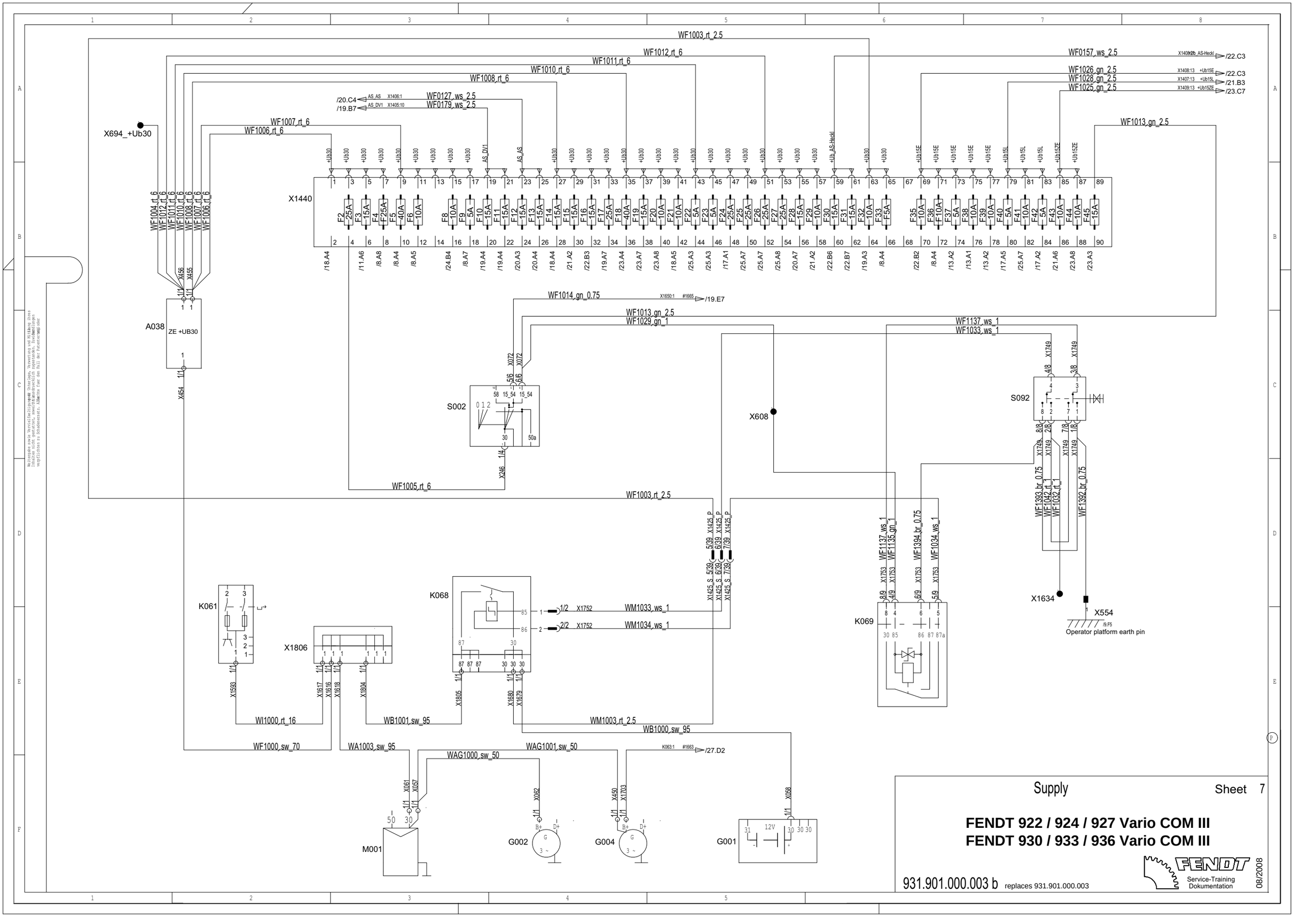
Overview of EDC/Vario-Doc/air conditioning/B4 TopDock/Auto-Guide terminal Sheet 6

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

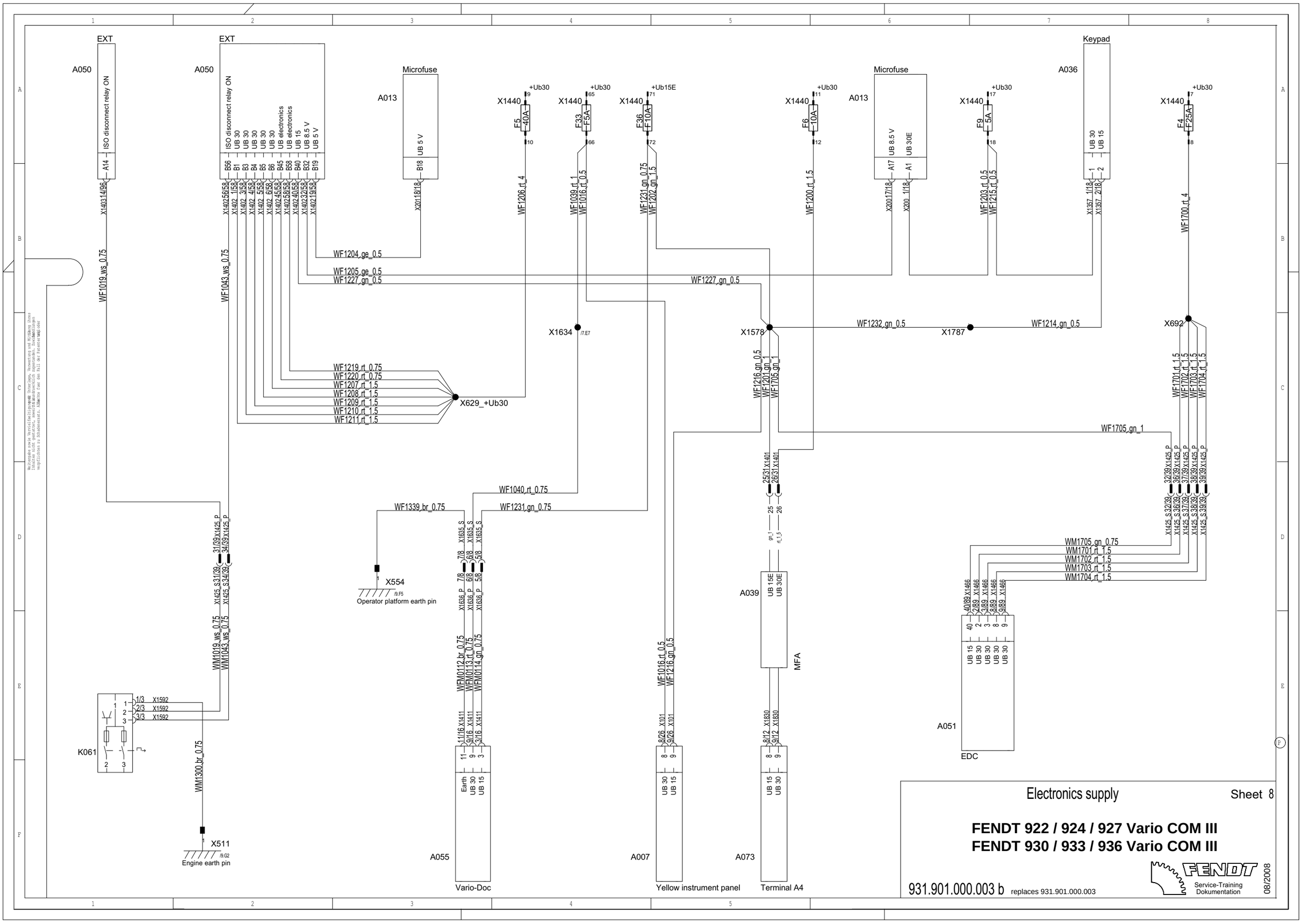
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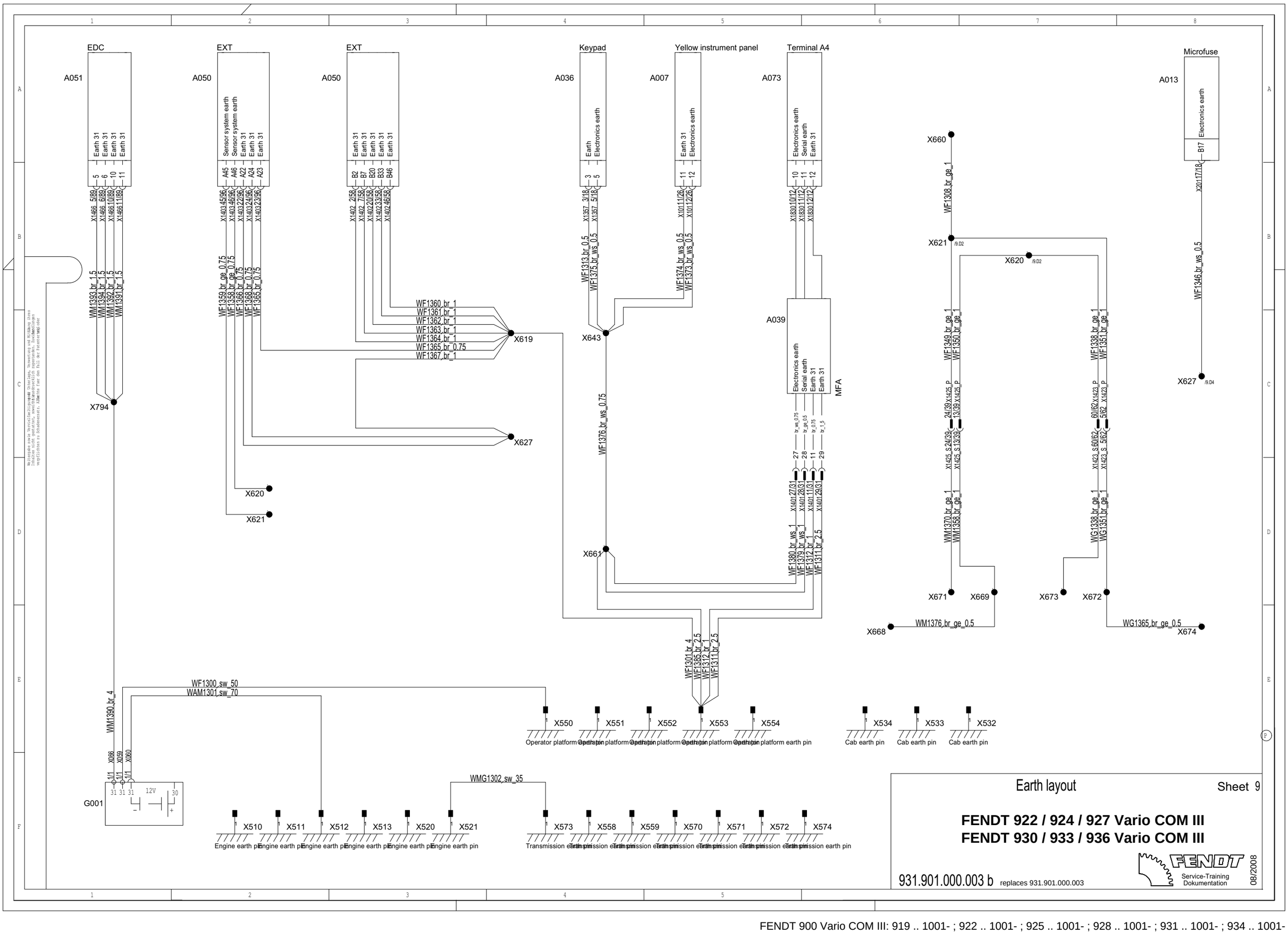
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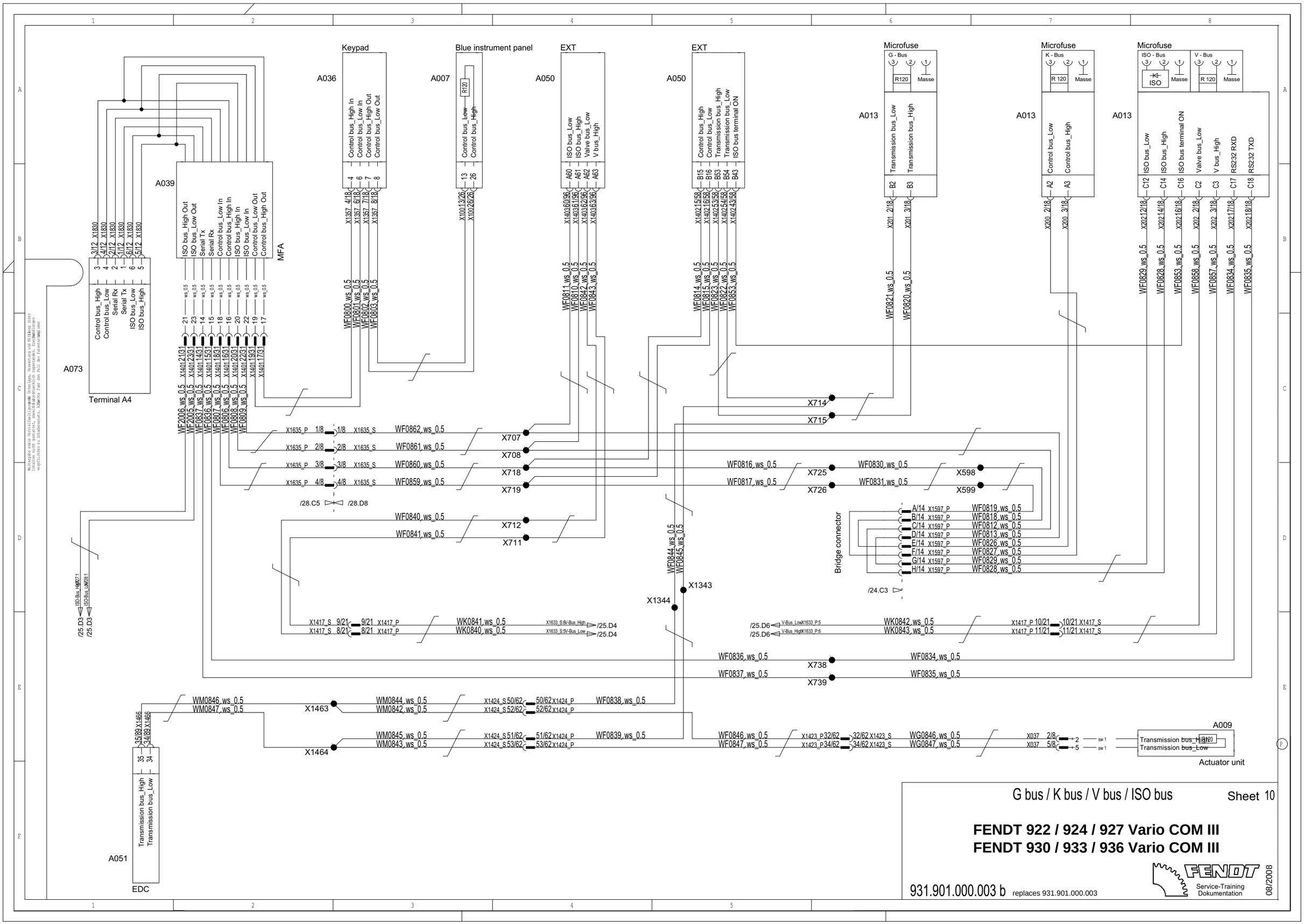
https://truckmanualshub.com/



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FENDT 900 Vario COM III: 919 .. 1001- ; 922 .. 1001- ; 925 .. 1001- ; 928 .. 1001- ; 931 .. 1001- ; 934 .. 1001-

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# Transmission control system

Sheet 11

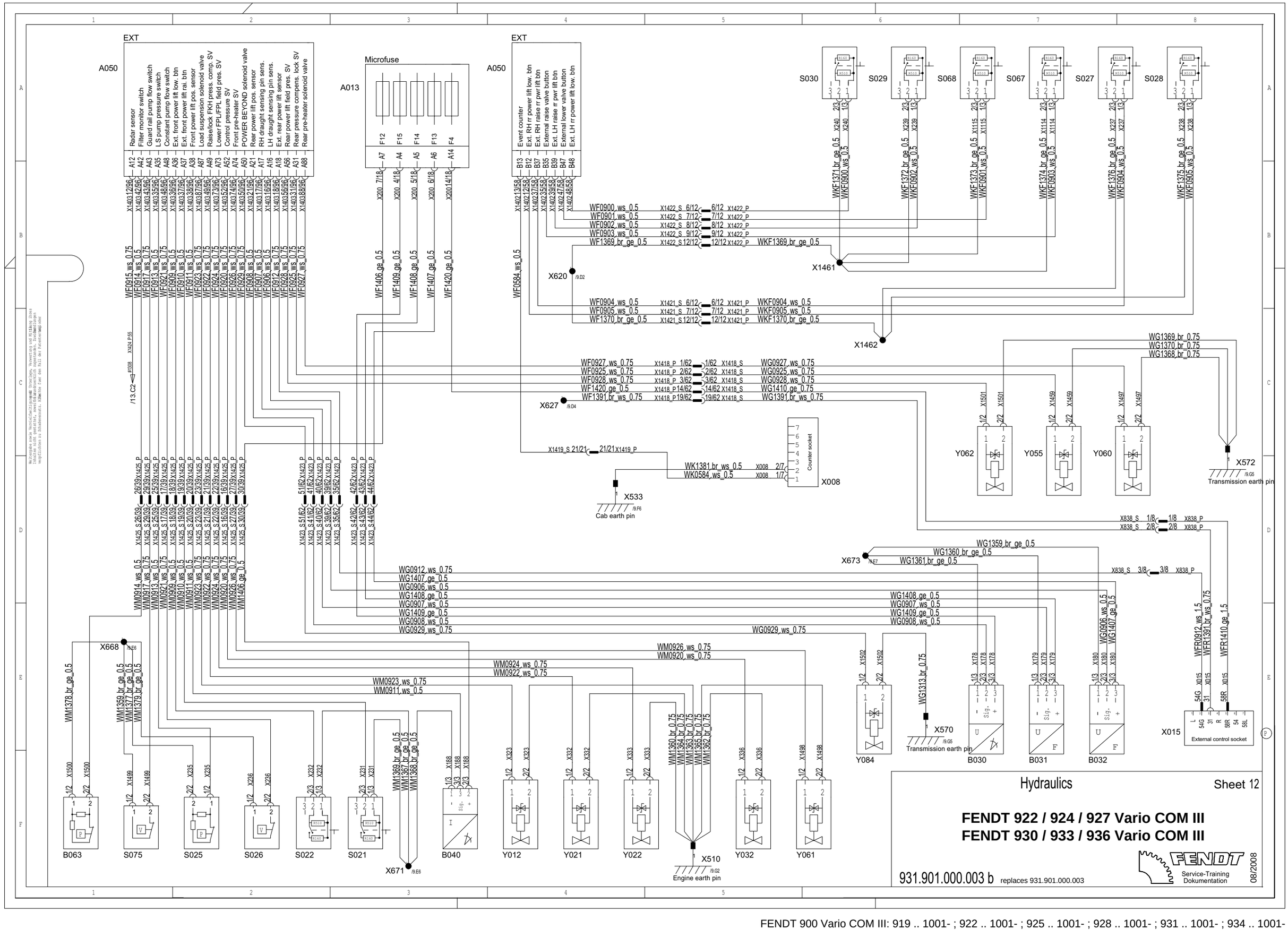
**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

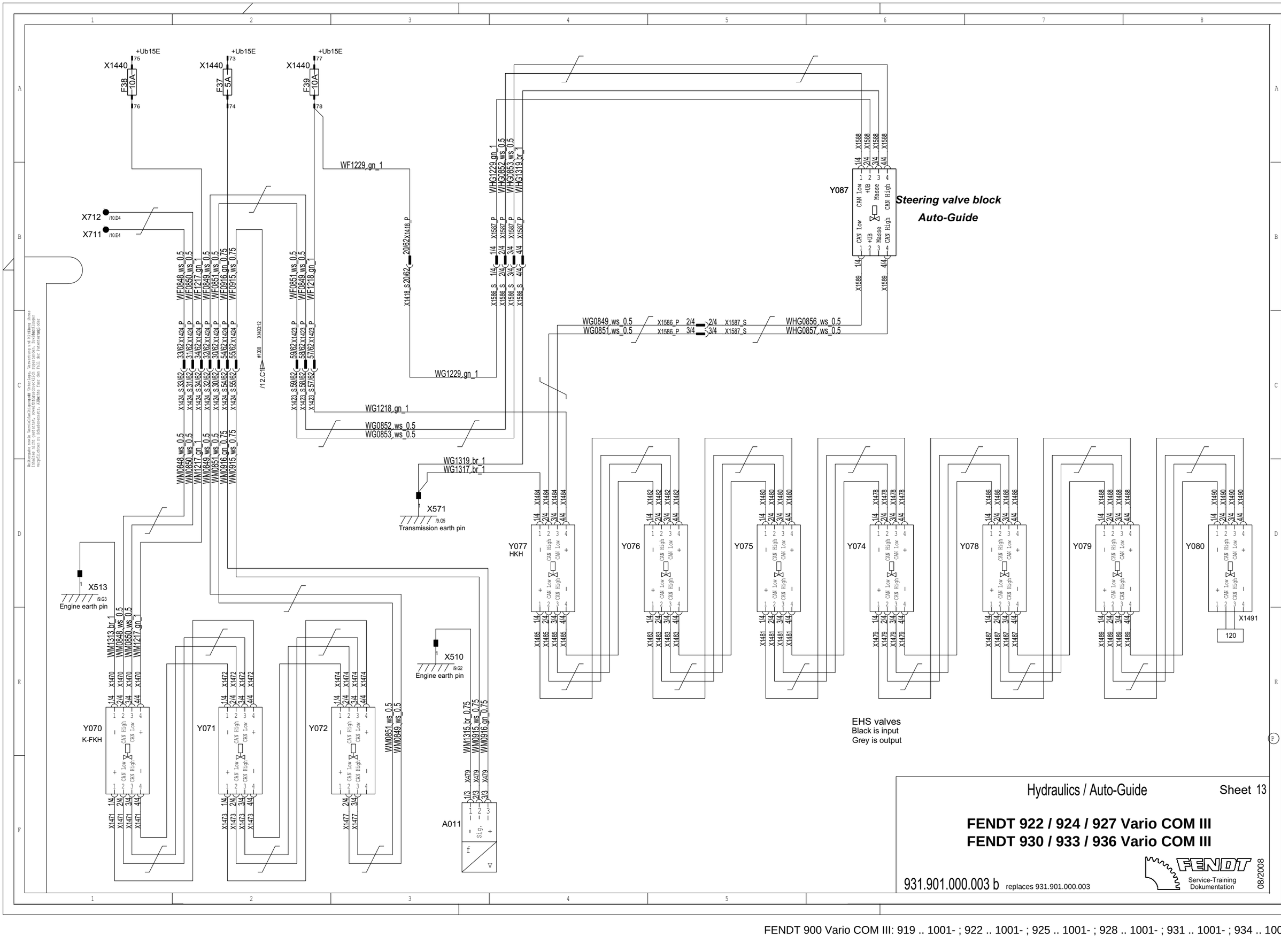
FENDT Service-Training Dokumentation

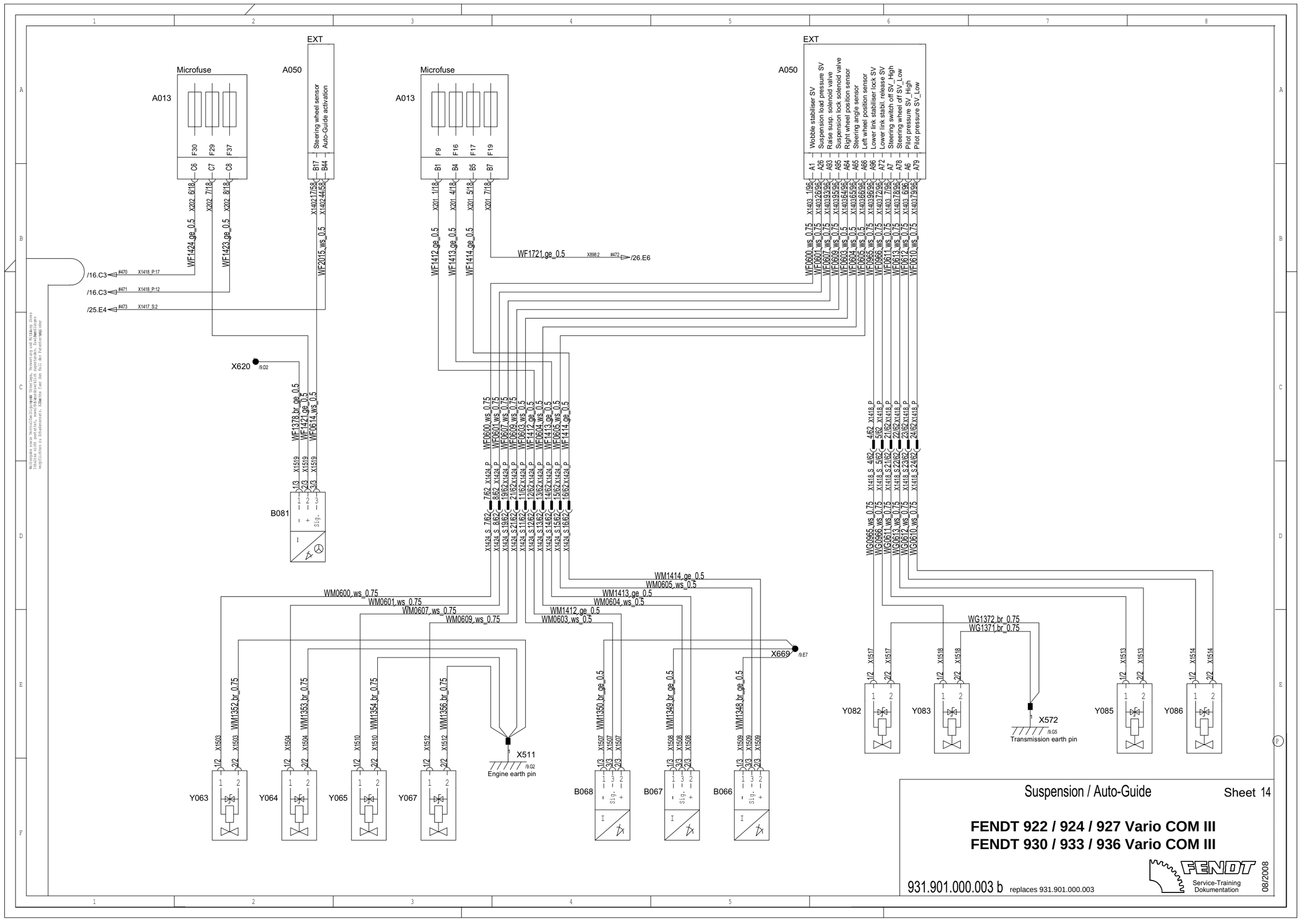
08/2008

https://truckmanualshub.com/

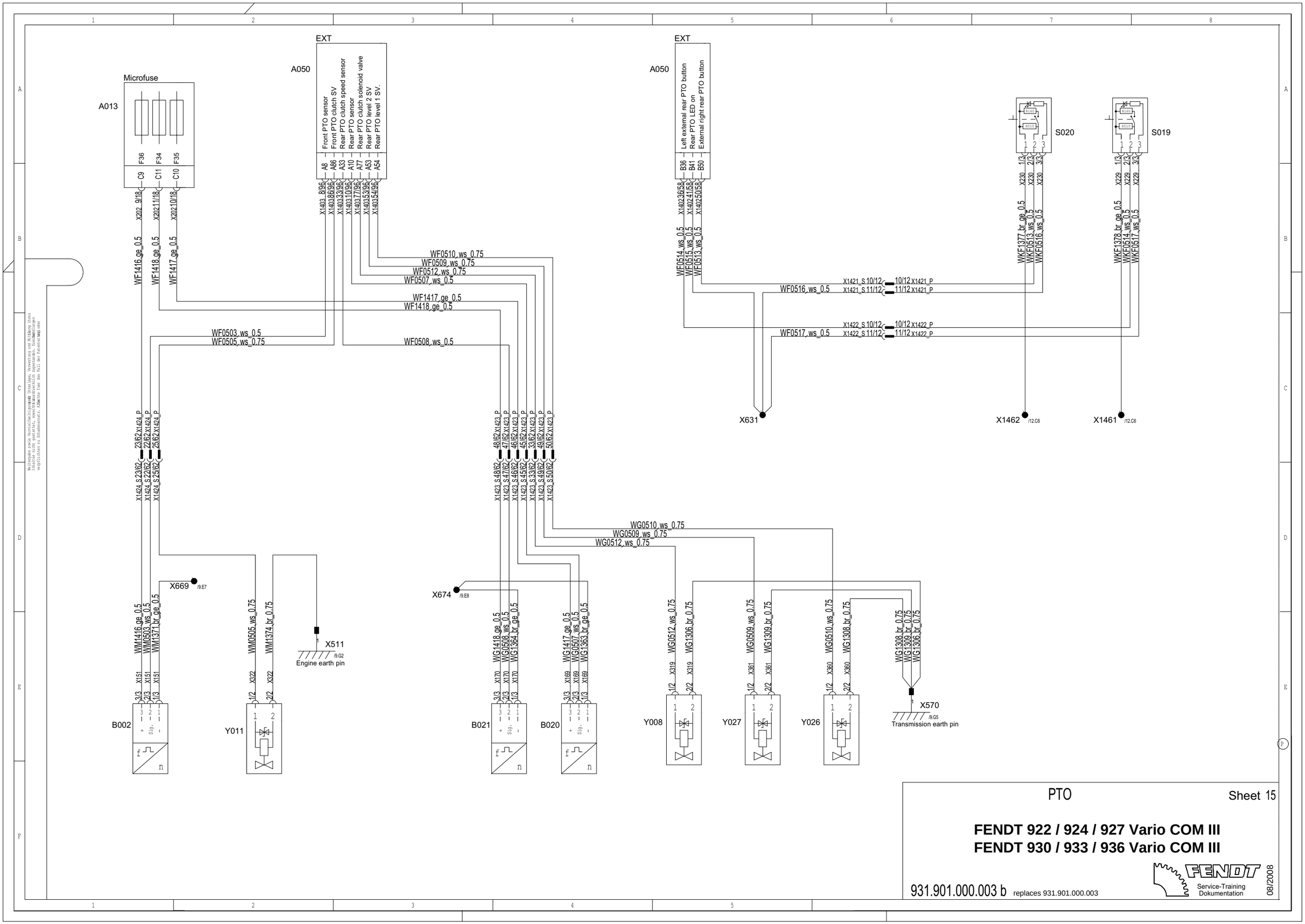


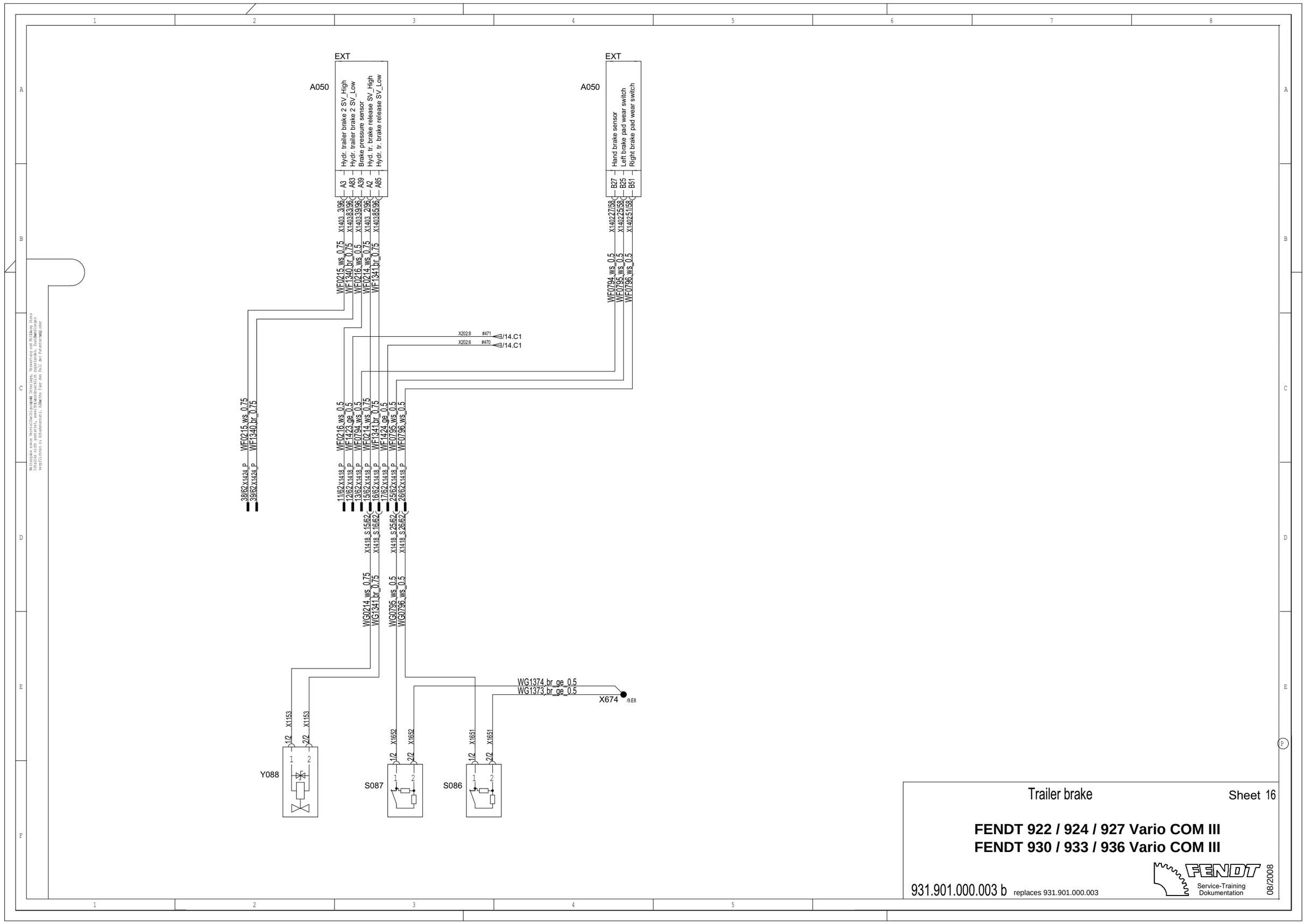
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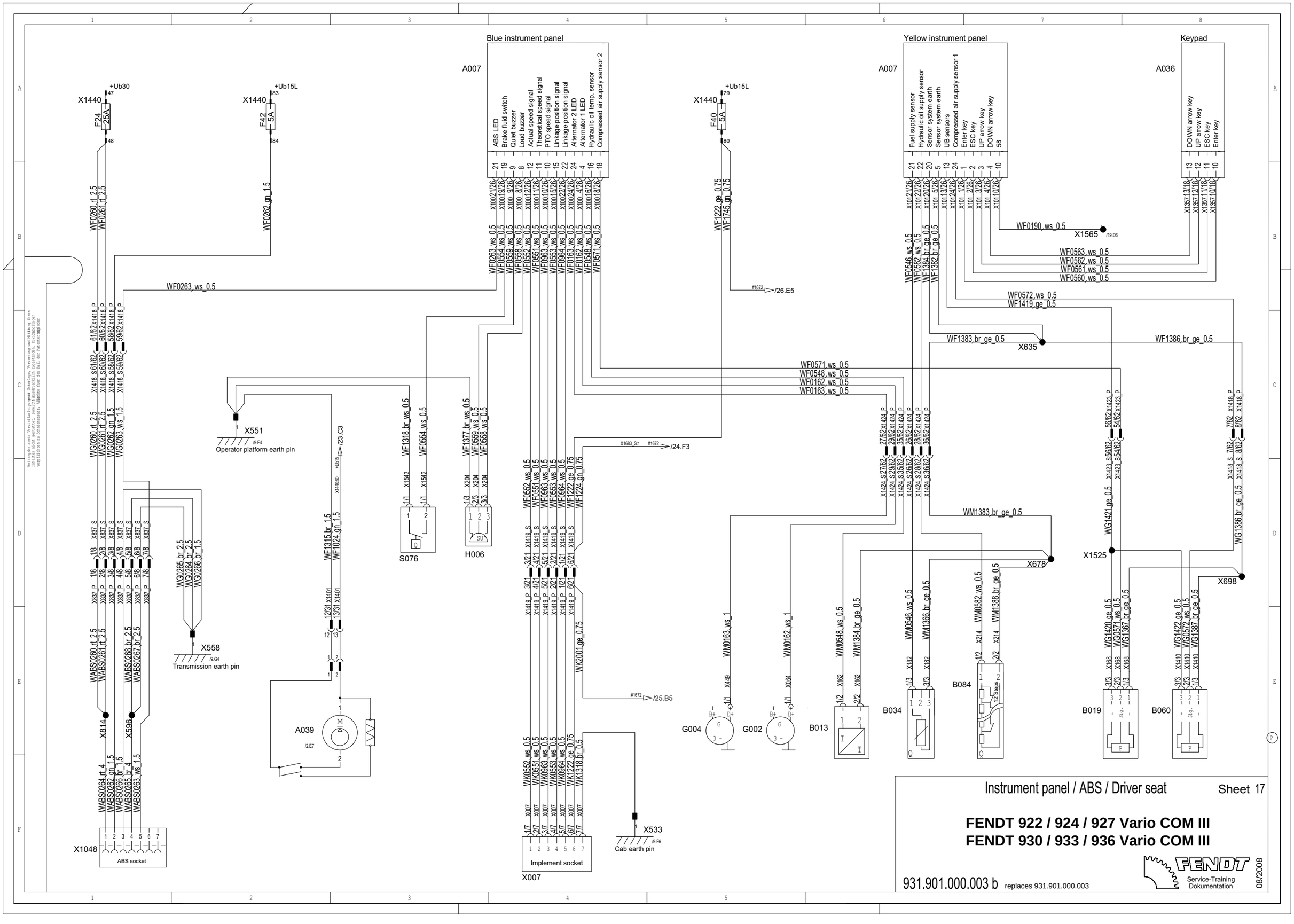

EXT
A050
Steering wheel sensor
Auto-Guide activation
B17
B44
Microfuse
A013
F30
F29
F37
C6
C7
C8
X202 6/18
X202 7/18
X202 8/18
WF1424,ge_0.5
WF1423,ge_0.5
X1402 17/58
X1402 44/58
WF2015,ws_0.5
/16.C3 #470 X1418 P:17
/16.C3 #471 X1418 P:12
/25.E4 #473 X1417 S:2
X620 /9.D2
WF1378,br_ge_0.5
WF1421,ge_0.5
WF0614,ws_0.5
X1519
1/3
2/3
3/3
B081
Sig.
Microfuse
A013
F9
F16
F17
F19
B1
B4
B5
B7
X201 1/18
X201 4/18
X201 5/18
X201 7/18
WF1412,ge_0.5
WF1413,ge_0.5
WF1414,ge_0.5
WF1721,ge_0.5
X898:2 #472 /26.E6
EXT
A050
A1 Wobble stabiliser SV
A26 Suspension load pressure SV
A93 Raise susp. solenoid valve
A95 Suspension lock solenoid valve
A64 Right wheel position sensor
A65 Steering angle sensor
A66 Left wheel position sensor
A96 Lower link stabiliser lock SV
A72 Lower link stabil. release SV
A7 Steering switch off SV_High
A78 Steering wheel off SV_Low
A6 Pilot pressure SV_High
A79 Pilot pressure SV_Low
X1403 1/96
X1403 2/96
X1403 3/96
X1403 4/96
X1403 5/96
X1403 6/96
X1403 7/96
X1403 8/96
WF0600,ws_0.75
WF0601,ws_0.75
WF0607,ws_0.75
WF0609,ws_0.75
WF0603,ws_0.5
WF0604,ws_0.5
WF0605,ws_0.5
WF0965,ws_0.75
WF0966,ws_0.75
WF0611,ws_0.75
WF0613,ws_0.75
WF0612,ws_0.75
WF0610,ws_0.75
WF0600,ws_0.75
WF0601,ws_0.75
WF0607,ws_0.75
WF0609,ws_0.75
WF0603,ws_0.5
WF0604,ws_0.5
WF1412,ge_0.5
WF1413,ge_0.5
WF0605,ws_0.5
WF1414,ge_0.5
WF0965,ws_0.75
WF0966,ws_0.75
WF0611,ws_0.75
WF0613,ws_0.75
WF0612,ws_0.75
WF0610,ws_0.75
4/62 X1418_P
5/62 X1418_P
21/62 X1418_P
22/62 X1418_P
23/62 X1418_P
24/62 X1418_P
X1418_S 4/62
X1418_S 5/62
X1418_S 21/62
X1418_S 22/62
X1418_S 23/62
X1418_S 24/62
7/62 X1424_P
8/62 X1424_P
19/62 X1424_P
21/62 X1424_P
11/62 X1424_P
12/62 X1424_P
13/62 X1424_P
14/62 X1424_P
15/62 X1424_P
16/62 X1424_P
X1424_S 7/62
X1424_S 8/62
X1424_S 19/62
X1424_S 21/62
X1424_S 11/62
X1424_S 12/62
X1424_S 13/62
X1424_S 14/62
X1424_S 15/62
X1424_S 16/62
WM1414,ge_0.5
WM0605,ws_0.5
WM1413,ge_0.5
WM0604,ws_0.5
WM1412,ge_0.5
WM0603,ws_0.5
WM0600,ws_0.75
WM0601,ws_0.75
WM0607,ws_0.75
WM0609,ws_0.75
X669 /9.E7
WG1372,br_0.75
WG1371,br_0.75
X1517
X1518
X1513
X1514
1/2
2/2
Y082
Y083
Y085
Y086
X572
/9.G5
Transmission earth pin
X511
/9.G2
Engine earth pin
WM1352,br_0.75
WM1353,br_0.75
WM1354,br_0.75
WM1356,br_0.75
WM1350,br_ge_0.5
WM1349,br_ge_0.5
WM1348,br_ge_0.5
X1503
X1504
X1510
X1512
X1507
X1508
X1509
Y063
Y064
Y065
Y067
B068
B067
B066
Sig.
Suspension / Auto-Guide
Sheet 14
FENDT 922 / 924 / 927 Vario COM III
FENDT 930 / 933 / 936 Vario COM III
931.901.000.003 b
replaces 931.901.000.003
FENDT
Service-Training
Dokumentation
08/2008

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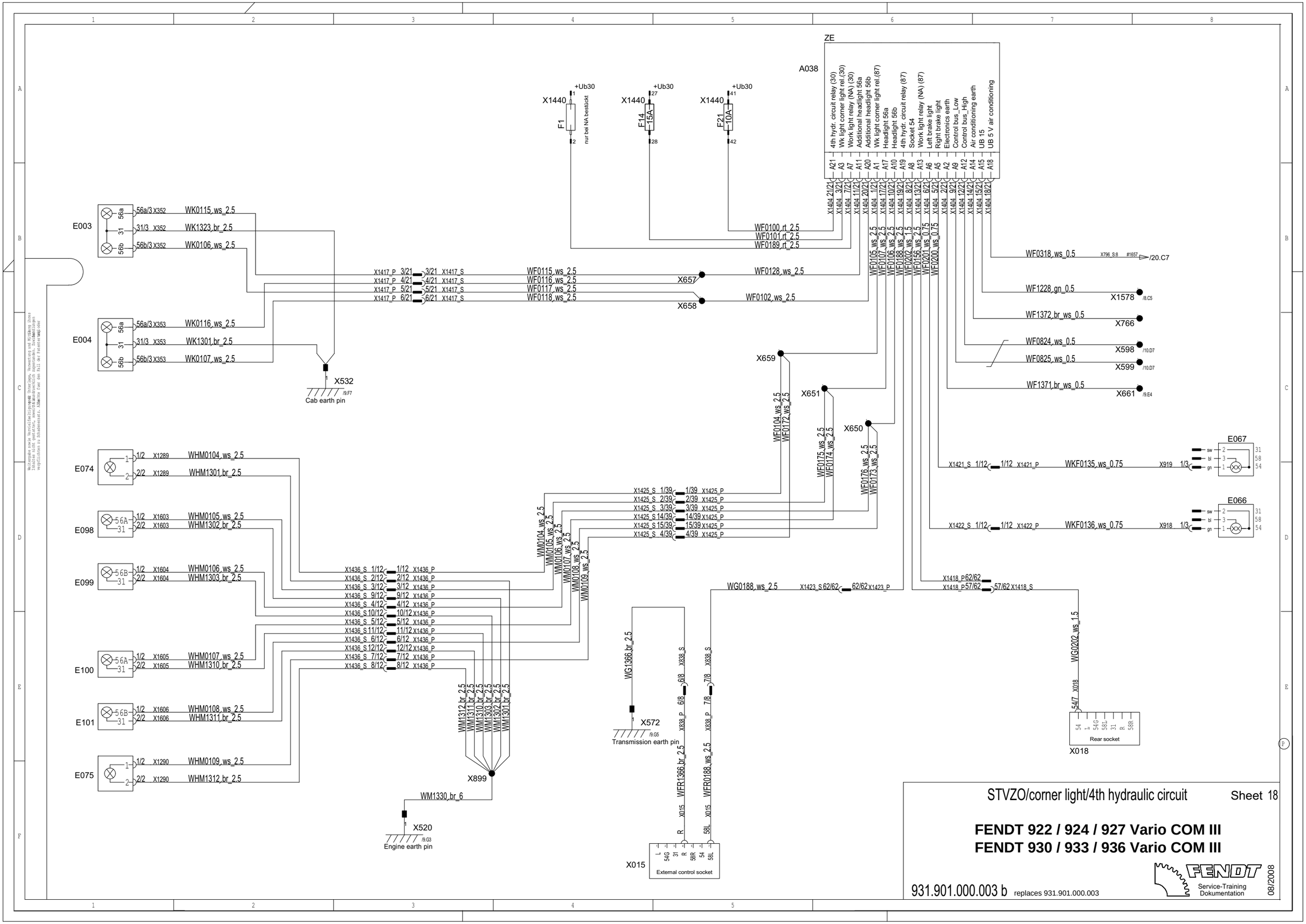



EXT
A050
Hydr. trailer brake 2 SV_High
Hydr. trailer brake 2 SV_Low
Brake pressure sensor
Hyd. tr. brake release SV_High
Hydr. tr. brake release SV_Low
A3
A83
A39
A2
A85
X1403_3/96
X1403_39/96
X1403_2/96
X1403_85/96
WF0215_ws_0.75
WF1340_br_0.75
WF0216_ws_0.5
WF0214_ws_0.75
WF1341_br_0.75
EXT
A050
Hand brake sensor
Left brake pad wear switch
Right brake pad wear switch
B27
B25
B51
X140227/58
X140229/58
X140251/58
WF0794_ws_0.5
WF0795_ws_0.5
WF0796_ws_0.5
X202:8 #471 /14.C1
X202:6 #470 /14.C1
38/62 X1424_P WF0215_ws_0.75
39/62 X1424_P WF1340_br_0.75
11/62 X1418_P WF0216_ws_0.5
12/62 X1418_P WF1423_ge_0.5
13/62 X1418_P WF0794_ws_0.5
15/62 X1418_P WF0214_ws_0.75
16/62 X1418_P WF1341_br_0.75
17/62 X1418_P WF1424_ge_0.5
25/62 X1418_P WF0795_ws_0.5
26/62 X1418_P WF0796_ws_0.5
X1418_S15/62 WG0214_ws_0.75
X1418_S16/62 WG1341_br_0.75
X1418_S25/62 WG0795_ws_0.5
X1418_S26/62 WG0796_ws_0.5
WG1374_br_ge_0.5
WG1373_br_ge_0.5
X674 /9.E8
Y088
S087
S086
X1153 1/2 2/2
X1652 1/2 2/2
X1651 1/2 2/2
Trailer brake
Sheet 16
FENDT 922 / 924 / 927 Vario COM III
FENDT 930 / 933 / 936 Vario COM III
931.901.000.003 b replaces 931.901.000.003
FENDT Service-Training Dokumentation
08/2008

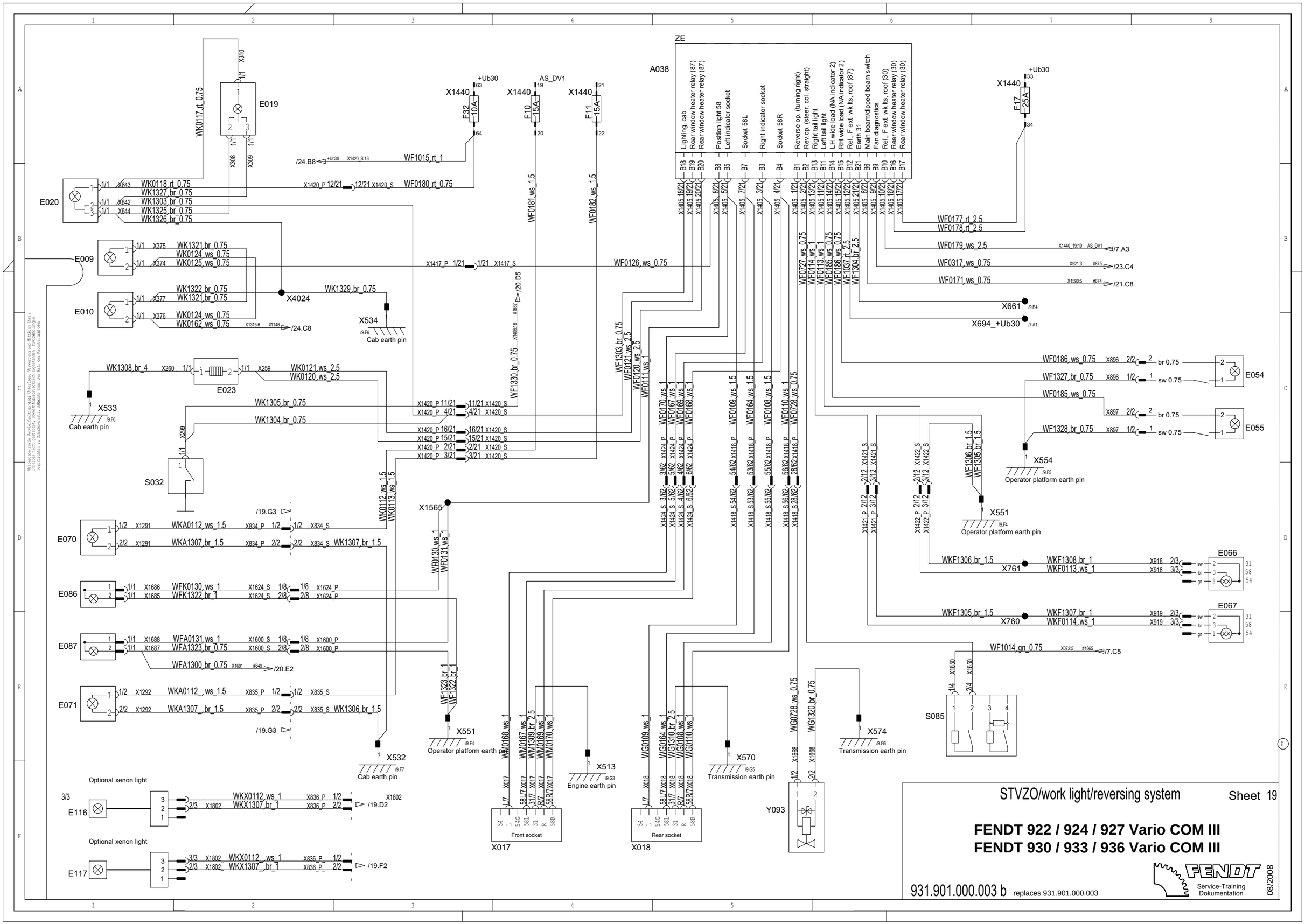
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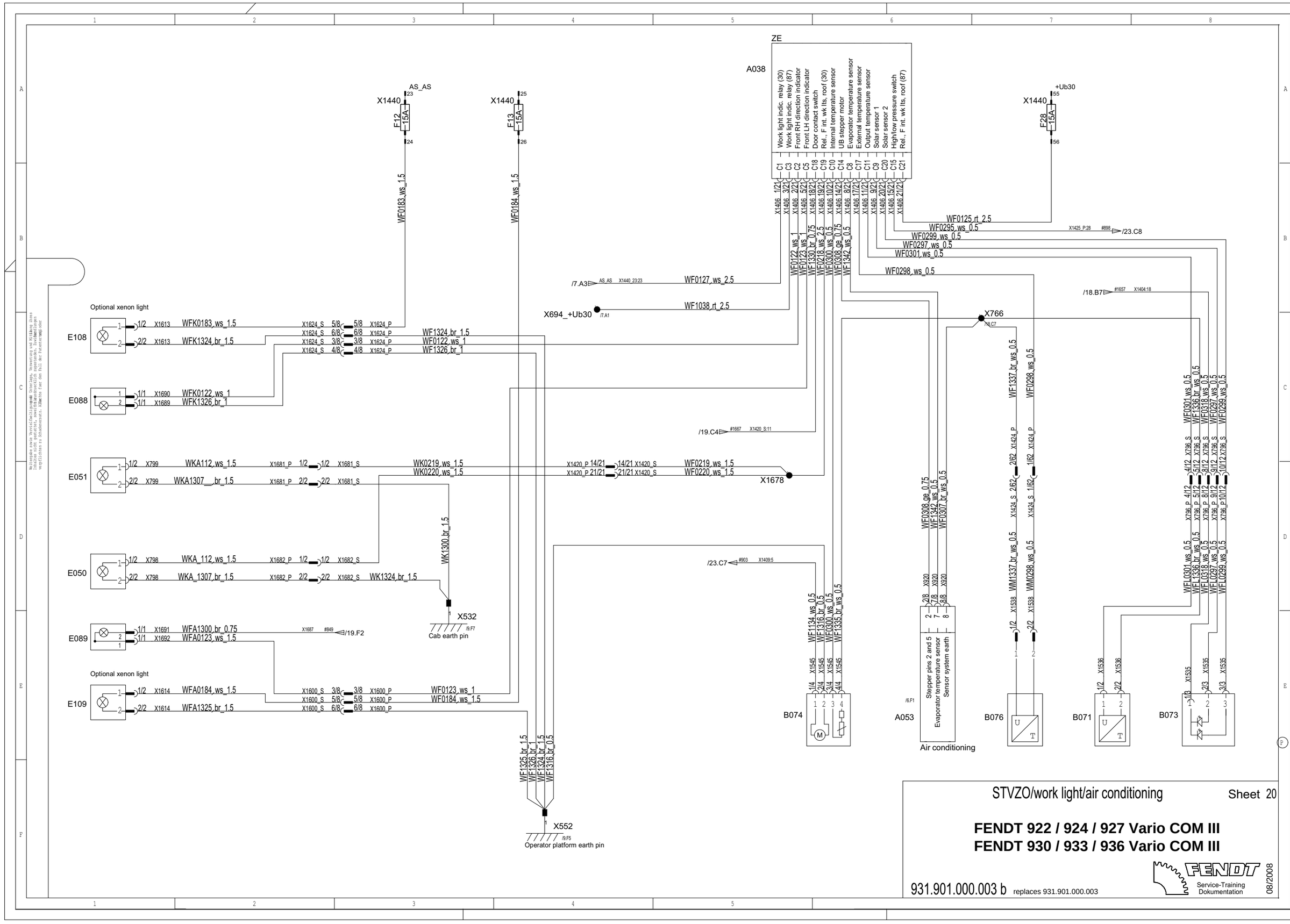
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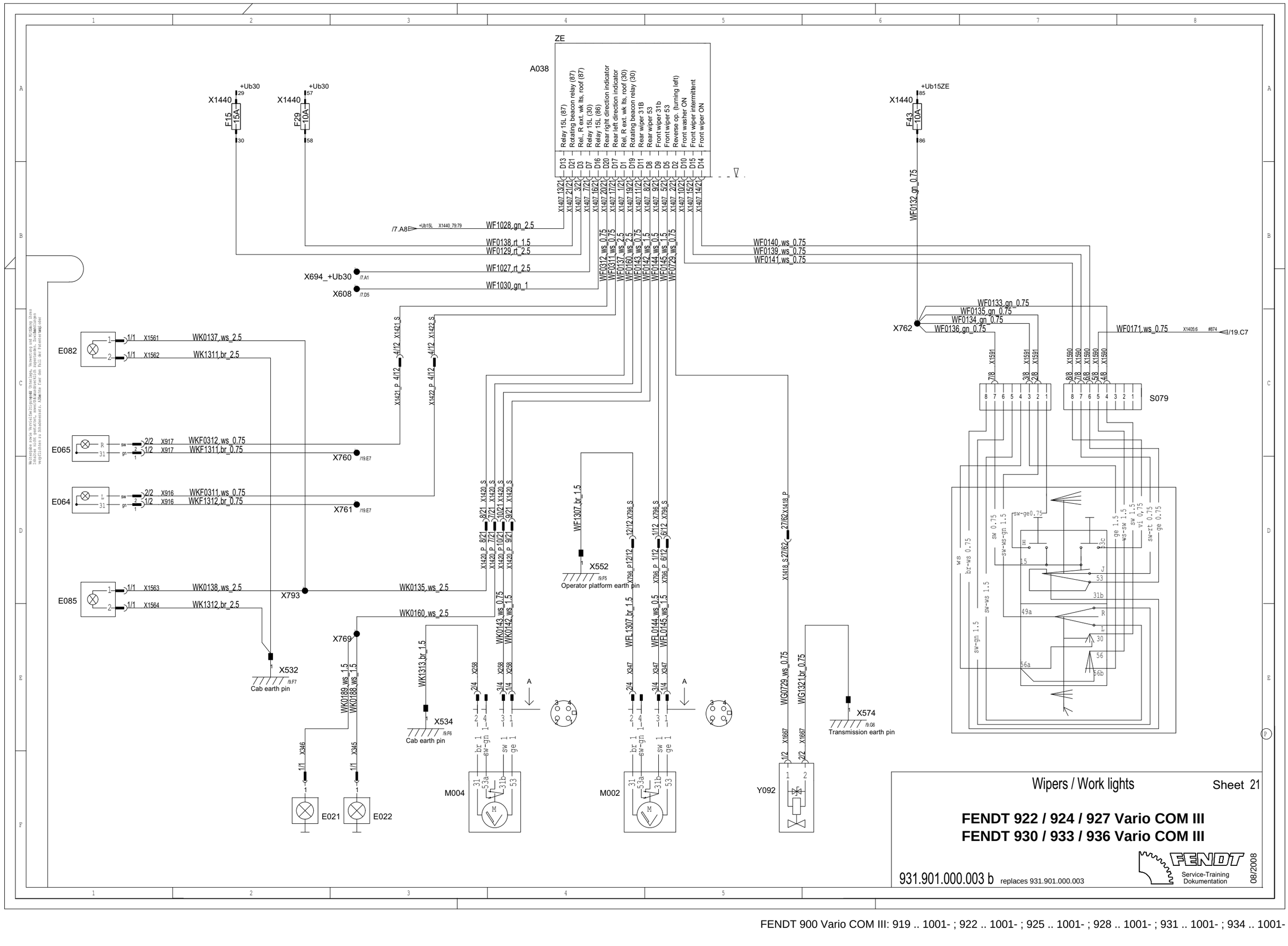


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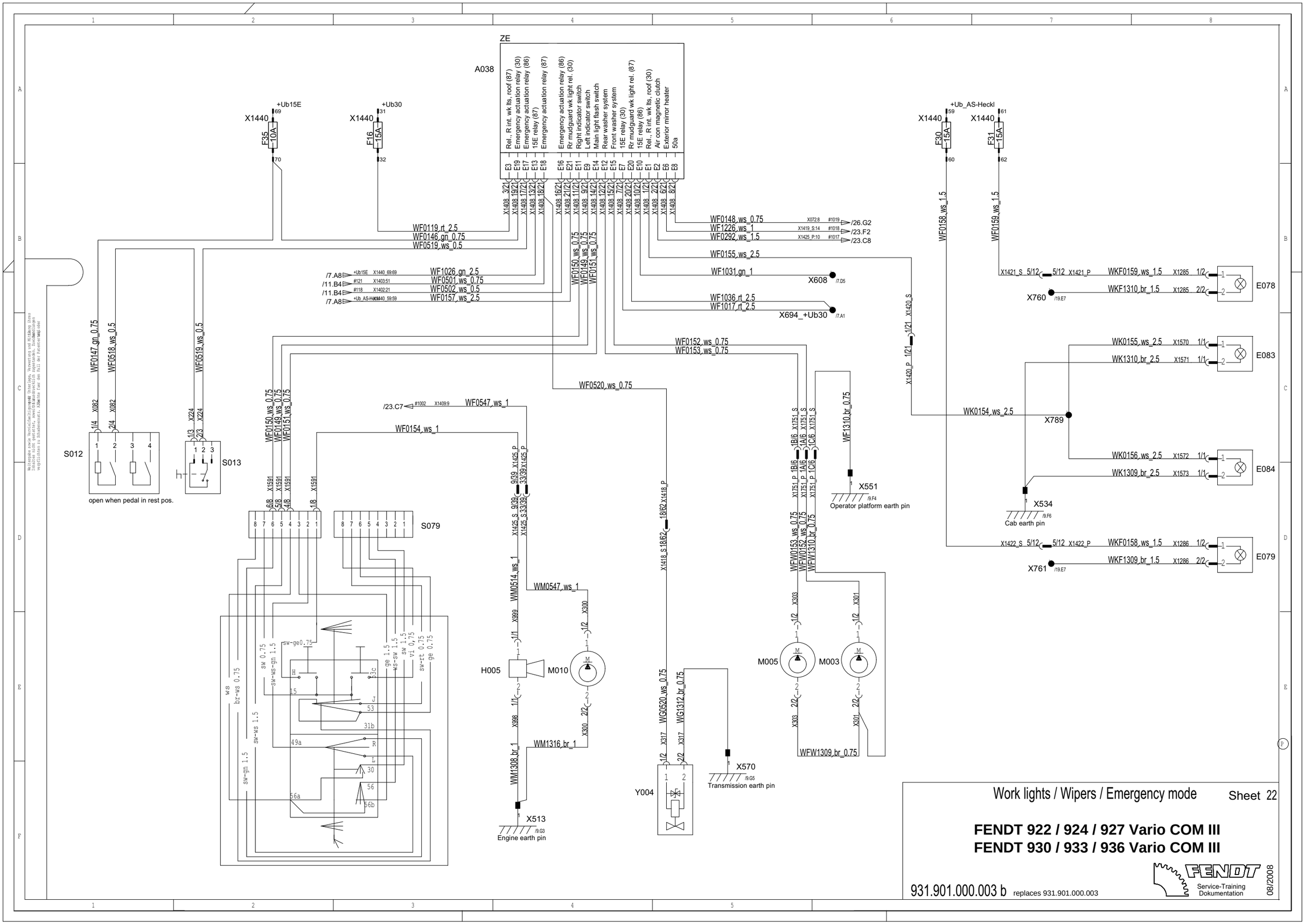



FENDT 900 Vario COM III: 919 .. 1001- ; 922 .. 1001- ; 925 .. 1001- ; 928 .. 1001- ; 931 .. 1001- ; 934 .. 1001-

https://truckmanualshub.com/

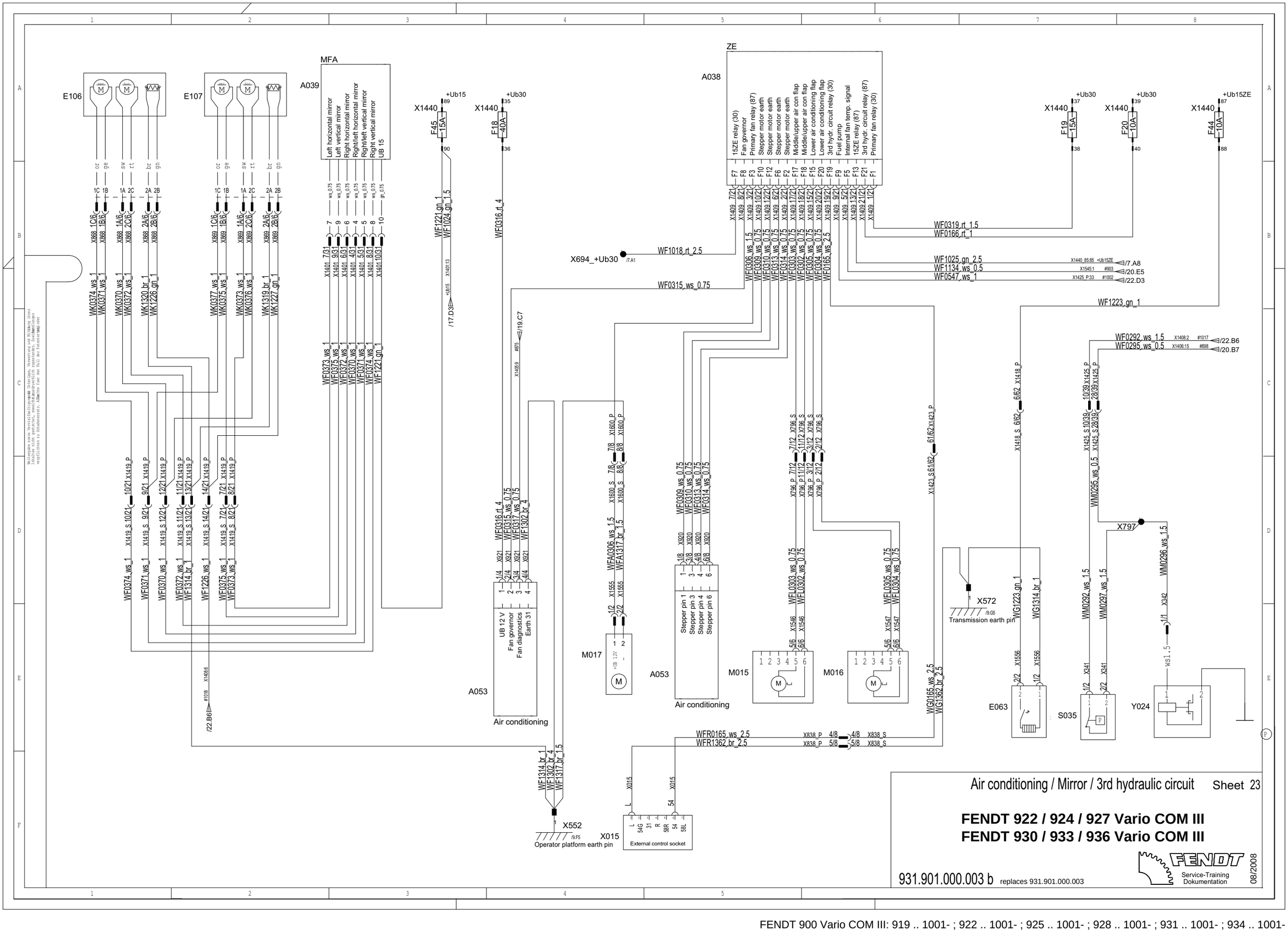


https://truckmanualshub.com/

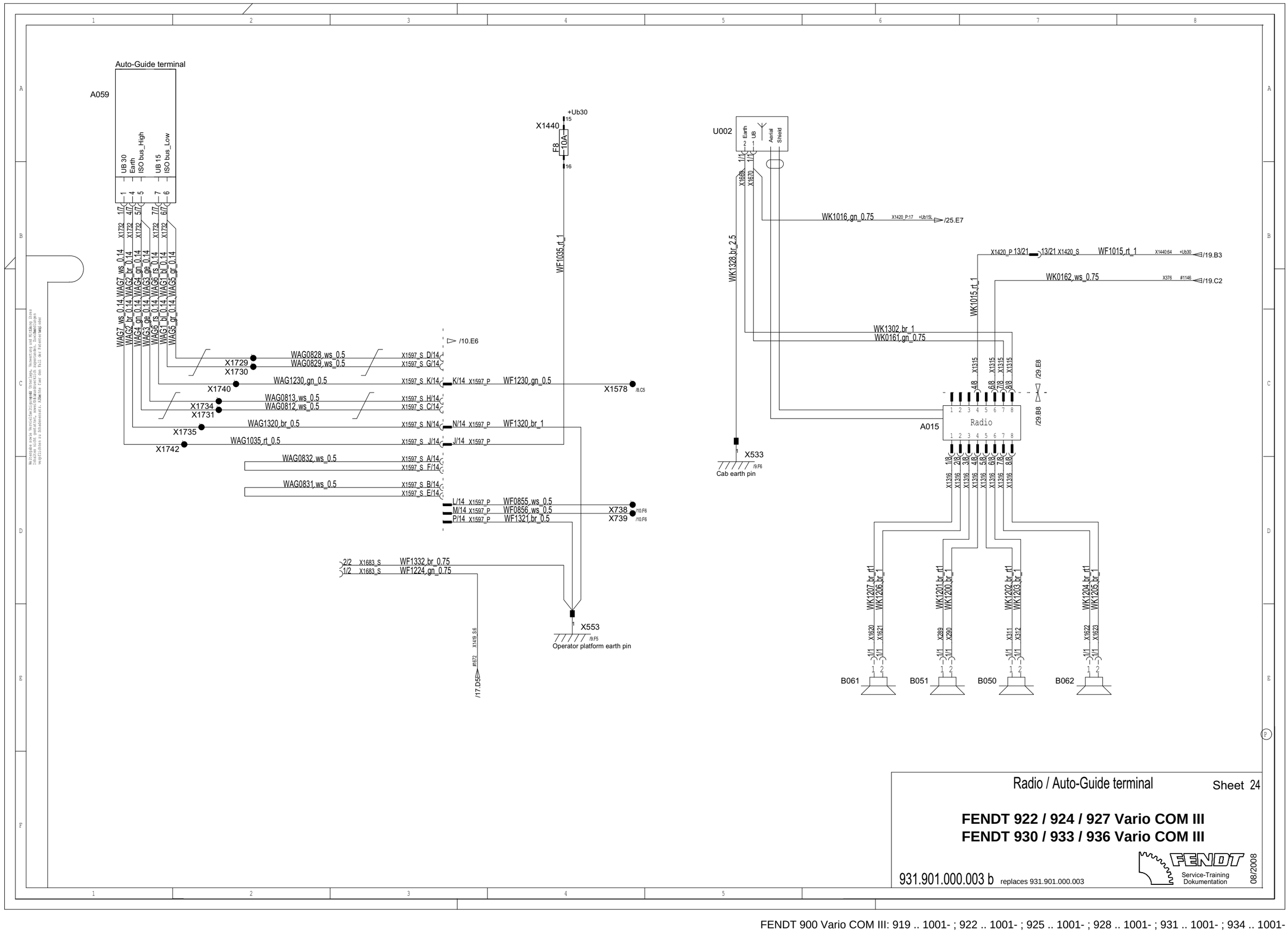



FENDT 900 Vario COM III: 919 .. 1001- ; 922 .. 1001- ; 925 .. 1001- ; 928 .. 1001- ; 931 .. 1001- ; 934 .. 1001-

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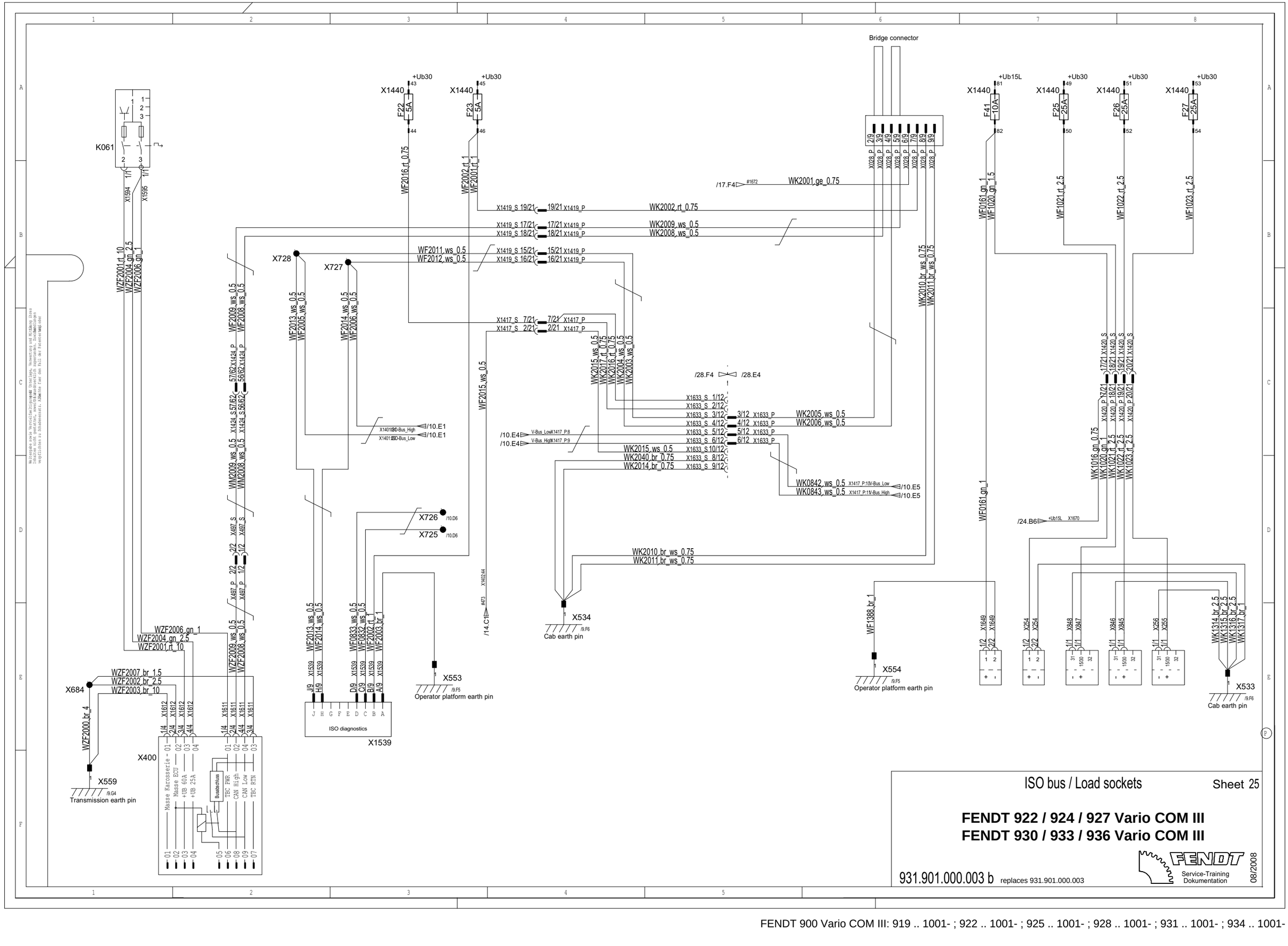

Radio / Auto-Guide terminal Sheet 24

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

FENDT Service-Training Dokumentation 08/2008

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ISO bus / Load sockets — Sheet 25

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

FENDT Service-Training Dokumentation 08/2008

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EDC

A051

Fan speed sensor 69
Fan earth 67
Fan solenoid valve (85) 15
Fan solenoid valve (86) 14
UB fan 68
Electronics earth 29
Coolant level sensor 55
Vacuum switch 42
UB sensors 21
50a 74
Engine brake switch 47
Starter lockout switch 66
ISO characteristic curve 89
Foot throttle sensor 79
Foot throttle earth 78
UB 5 V foot throttle 77
Start relay 37
Start relay 17

EXT

A050

Foot throttle sensor B18

X1528

WM1721,br_0.75
WM1715,ws_0.75
WM1711,ge_0.75
WM1710,br_0.75
WM1712,ws_0.75
WM1728,ws_0.5
WM1714,ws_0.75
WM1708,ws_0.75
WM1736,ws_0.75
WM1717,ge_0.75
WM1718,ge_0.75
WM1719,ge_0.75

WM1724,ws_0.75
WM1726,br_0.75
WM1723,br_0.75
WM1722,ws_0.75
WM1725,ws_0.75

WM1716,br_0.75
WM1707,ws_0.75
WM1709,ws_0.75
WM1720,ge_0.75

WF1736,ws_0.75
WF1719,ge_0.75
WF1708,ws_0.75
WF1718,ge_0.75
WF1714,ws_0.75
WF1728,ws_0.75
WF1711,ge_0.75
WF1710,br_0.75
WF1712,ws_0.75

B077 Sig. - 85 86 +
S034
B004
S002 58 15_54 30 50a
S047 1/2 2/2
S012 3/4 4/4
open when pedal in rest pos.
X553 /9.F5 Operator platform earth p
X810_S A/12 B/12 K/12 A B C D E F G H J K L M
ISO characteristic curve
X660 /9.B6
B055 Sig. - + Sig. - + I U
K065 87 30
M001 50 30
1/2 X1648 85
2/2 X1648 86
/14.B4 #472 X201:7
/17.C5 #1672
/22.B6 #1019 X1408:8 WF0148,ws_0.75

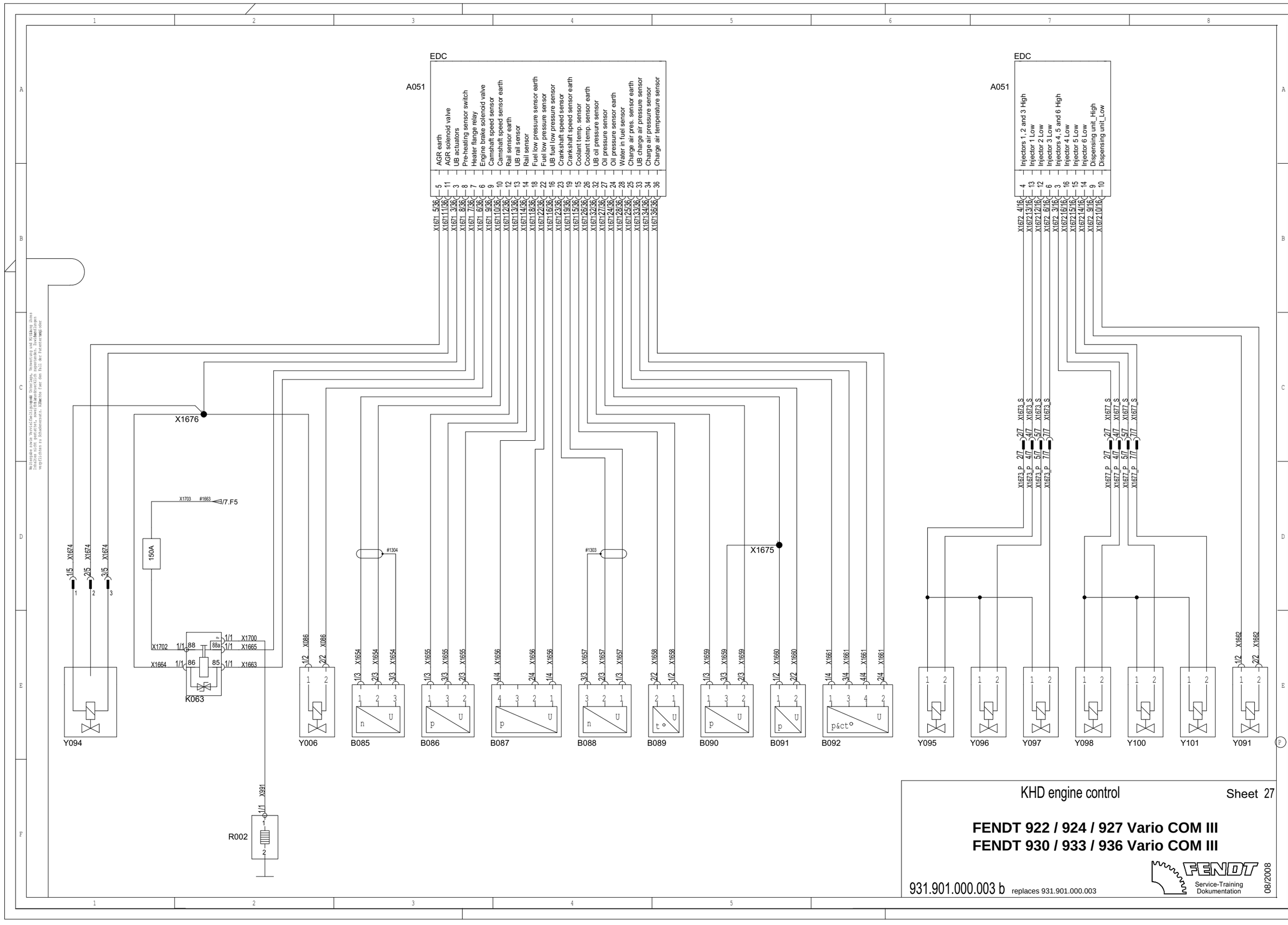
EDC engine control Sheet 26

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

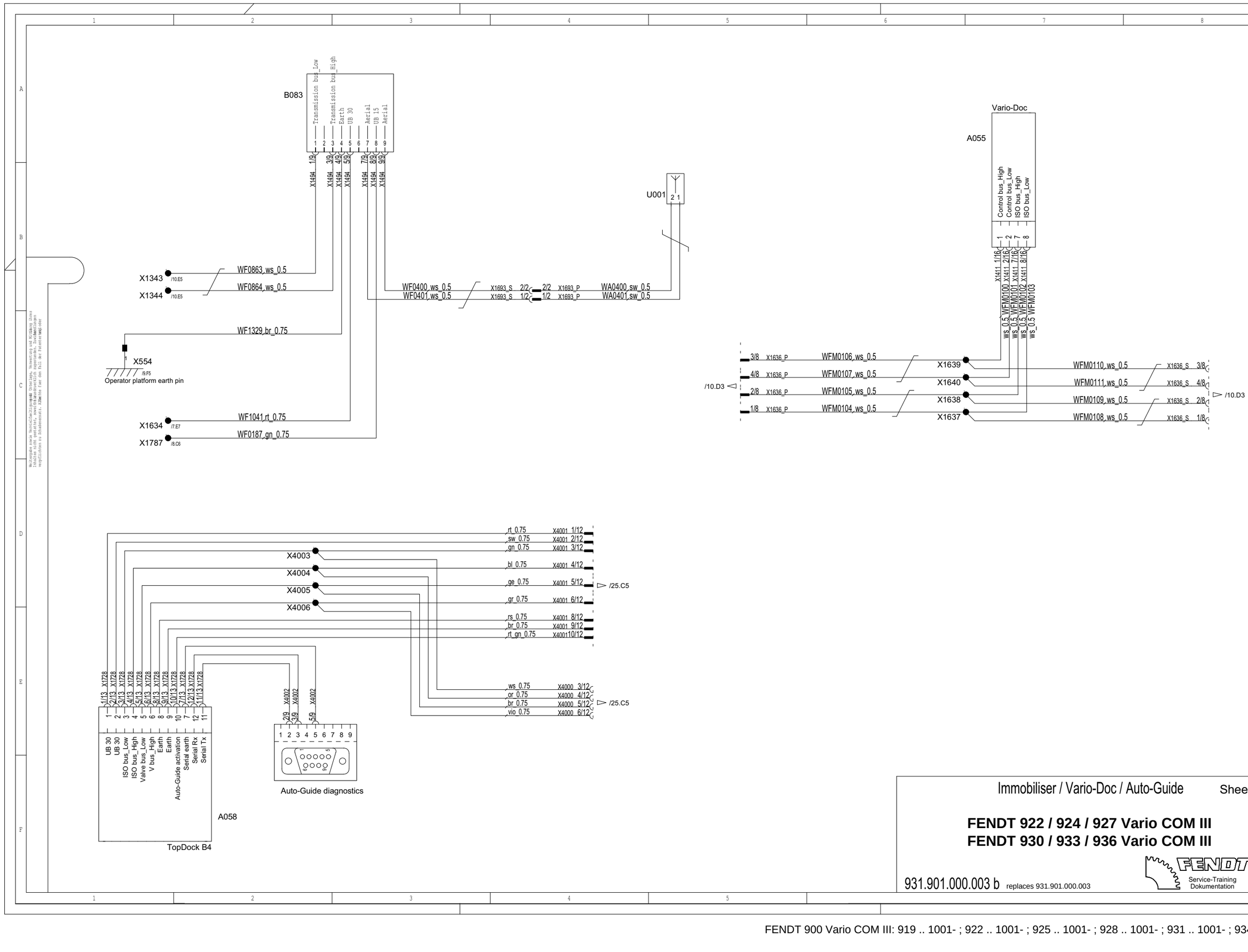
931.901.000.003 b replaces 931.901.000.003

FENDT Service-Training Dokumentation 08/2008

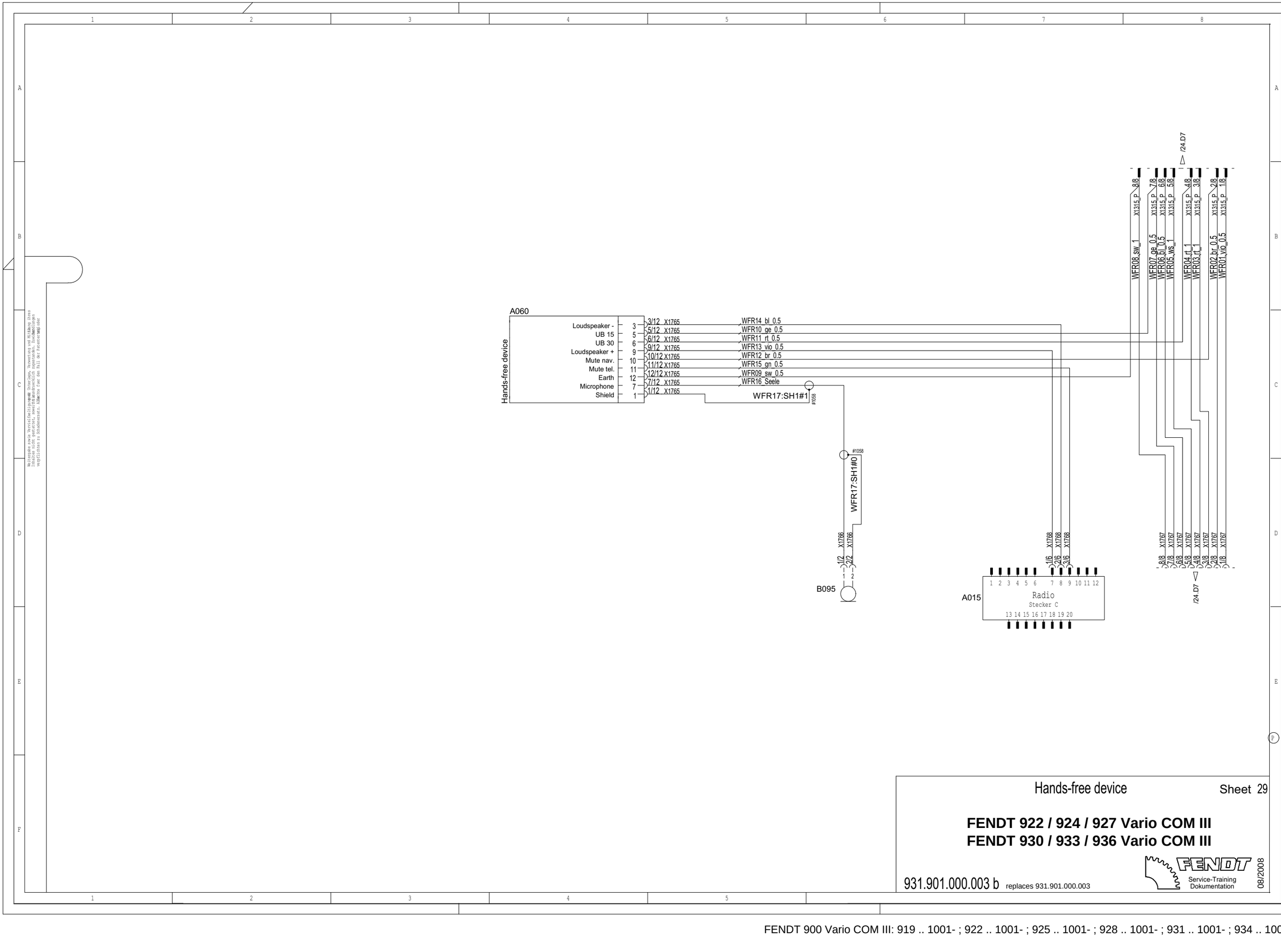
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https://truckmanualshub.com/




Hands-free device Sheet 29

**FENDT 922 / 924 / 927 Vario COM III**
**FENDT 930 / 933 / 936 Vario COM III**

931.901.000.003 b replaces 931.901.000.003

FENDT Service-Training Dokumentation 08/2008

https://truckmanualshub.com/

7

Frontzapfwelle:
eigener, unabhängiger
Hydraulikkreis
siehe 931.150.200

ø8x1 DSV 6A7 HA HZW DSH 6A5

5Z2 6A1 6A3 1000 750 6A6

6V1 6V4 6V3 6V6 6V5

5 6

M18 ZWK M11 M10 VR M14 750 M13 1000 M16 DS M15

ø15x1.5 ø12x1 ø10x1

4Z1 ø8x0.75 4Z4 Nur bei Variante RÜFA

4Z2 V=0.3 l $p_o$=10 bar 4S2 4S1 ø12,7

M9 PH M22 T M6 P PHA M7 I M8 II

4V5 4V4 p=18 bar 4V6 4V3 4V1 4V2

4Z3 ø0.3

4

ø6.4

1Z4 ø15x1.5 3Z2 ø6.4 ø8x2 3Z1 3A3 10x1

SM M2 3V1 3V2 ø6.4 ø6.4

4A1

unter Last 100 L/min
Lastlos 110 L/min
ø28x1.5 1V6 p=25bar 1S2

1Z3 1V1 Δp=3.5bar Δp=7bar Δp=5bar

$\beta_{10}$=75 (10µm abs)

ø28x1.5 1V2 Δp=6.5bar 1V3 Δp=6.5bar p=50bar 1V5 1Z2

M1 KV 68 L/min AS M3 ES M4 42 L/min PU M5

1

3A1 3A2

3

2V4 ø1 2V1 p=0- 540bar 2V5 R(Kanal oben) Δp=7bar

1P2 23.4ccm/U p=10bar 1V4 1S1 2P1 233ccm/U 2V2 2V6 p=0- 540bar ø1 2V3 2A1 233ccm/U 2A2 233ccm/U

1Z1 Δp=0.25bar ($\beta_{50}$≈75) 200µm 15µm nom.

ø12.7 ø12.7 V(Kanal unten)

2

6A4 AR

Schaltplan nach ISO 1219
Bauteilbezeichnung typ-
uebergreifend.
Gueltig ab:
919/21/0101
922/21/0101
925/21/0101
928/21/0101
931/21/0101
934/21/0101

| Transmission hydraulic system | 931.100.000.002 |
|---|---|
| - manuelle Änderung nicht zulässig - | CAD |

TRANSMISSION/TRANSMISSION CONTROL SYSTEM

# Transmission hydraulic system diagram - 931.100.000.002

C

| Item | DIN | Designation | Item | DIN | Designation |
|---|---|---|---|---|---|
| **Switching circuits:** | | | **Valves:** | | |
| 1 | | Valve block, feed/lubrication | 1V1 | | Radiator bypass valve |
| 2 | | Main circuit | 1V2 | | Pressure-limiting valve, discharge |
| 3 | | Displacement | 1V3 | | Pressure-limiting valve, feed |
| 4 | | Valve block, enhanced hydraulics | 1V4 | | Pressure-limiting valve, lubrication |
| 5 | | Brake and rear axle | 1V5 | | Pressure-limiting valve, servo pump |
| 6 | | Valve block, rear axle | 1V6 | | Pressure-limiting valve, servo circuit |
| 7 | | Front PTO | 2V1 | | Feed valve, forward |
| **Pumps:** | | | 2V2 | | Feed valve, reverse |
| 1P1 | | Servo pump | 2V3 | | High-pressure limiting valve, forward |
| 1P2 | | Lubrication pump | 2V4 | | High-pressure limiting valve, reverse |
| 2P1 | | Hydraulic pump | 2V5 | | Purge valve |
| **Drives:** | | | 2V6 | | Shuttle valve |
| 2A1 | | Hydraulic motor | 3V1 | | Hydraulic pump governor |
| 2A2 | | Hydraulic motor | 3V2 | | Hydraulic motor governor |
| 3A1 | | Variable displacement cylinder, hydraulic pump | 4V1 | Y002 | Solenoid valve, travel range 1 |
| 3A2 | | Variable displacement cylinder, hydraulic motor | 4V2 | Y003 | Solenoid valve, travel range 2 |
| 3A3 | | Speed governor, emergency mode | 4V3 | Y005 | Solenoid valve, speed governor |
| 4A1 | | Range selector | 4V4 | Y004 | Turbo clutch solenoid valve |
| 6A1 | | Clutch, rear PTO | 4V5 | | Pressure-limiting valve, clutch |
| 6A3 | | Selector cylinder, PTO 750 | 4V6 | | Pressure reducing valve, rear axle |
| 6A4 | | 4WD clutch | 6V1 | Y008 | Solenoid valve, rear PTO |
| 6A5 | | Differential lock, rear axle | 6V3 | Y026 | Solenoid valve, PTO 540E |
| 6A6 | | Selector cylinder, PTO 1000 | 6V4 | Y009 | 4WD solenoid valve |
| 6A7 | | Differential lock, front axle | 6V5 | Y010 | Solenoid valve, differential lock |
| **Buzzers:** | | | 6V6 | Y027 | Solenoid valve, PTO 1000 |
| 1S1 | B009 | Discharge temperature | **Measuring points:** | | |
| 1S2 | S017 | Transmission oil contamination switch | M1 | | Radiator feed |
| 4S1 | B008 | Sensor, high-pressure 1 | M2 | | Pressure lubrication |
| 4S2 | B039 | Sensor, high-pressure 2 | M3 | | Outlet pressure |
| **Other components:** | | | M4 | | Inlet pressure |
| 1Z1 | | Suction filter with bypass | M5 | | Pressure, servo pump |
| 1Z2 | | Pressure filter with bypass | M6 | | System pressure, transmission |
| 1Z3 | | Transmission oil cooler | M7 | | Switching pressure, travel range 1 |
| 1Z4 | | Transmission lubrication | M8 | | Switching pressure, travel range 2 |
| 3Z1 | | Actuator shaft | M9 | | High-pressure |
| 3Z2 | A009 | Actuator unit | M10 | | System pressure, rear axle |
| 4Z1 | | Clutch pedal with sensor cylinder | M11 | | Pressure, PTO clutch |
| 4Z2 | | Pressure accumulator | M13 | | Switching pressure, PTO 540E |
| 4Z3 | | Strainer insert | M14 | | Pressure, 4WD clutch |
| 4Z4 | | Rotary feedthrough RÜFA | M15 | | Pressure, differential lock |
| 5Z2 | | Lubrication, rear PTO | M16 | | Switching pressure, PTO 1000 |
| | | | M18 | | Lubrication pressure, rear axle |
| | | | M22 | | Clutch and turbo-clutch valve leakage |

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Anhängerbremse
RH 3/4" Stecker
Case Drain
LS 3/8" Muffe
PB 3/4" Muffe
P_EXT
LS_EXT
0.2mm
APE
DRVE
DFE
SRVE 0.5L/min
1.1
Gelb 1.1- 1.1+
Blau 1.2- 1.2+
Rot 1.3- 1.3+
Grün 1.4- 1.4+
Braun 1.5- 1.5+
Violett 1.6- 1.6+
Wegeventil SB 23 LS-EHS 2
1.2
1.3
1.4
1.5
1.6
EHR Heck
MVKH
230+20bar
dw HKH
ZHKH1 d=100/40 H=272
ZHKH2 d=100/40 H=272
UL-Abstützung
DBVKH
SVUL
MVUL
MEE
EPH
MVVH 1,9mm Q=25L/min
Leckölauffang-behälter
ZL d=140/115 H=310 V=1.55ZL
Hy. ABV
VBL
PVL 180bar
DWL
zum Betriebsbremskreis
zum Feststellbremskreis
OETR 38-54°C
RVL1
RVL2
RVL3
MS
ZSB
M1
M2
DSPP P0=20bar V0=0.16L Vgl=0.08L
DFP
DWP 10bar
MVP
DRVP 16+4bar
WVP
VBP
HP
RLF b16x200 ISO MTO-Kap.=83g @ 2.5bar
DSF 2bar
RVN
PNL 8ccm Antrieb Altradwelle
SFN2 0.5x0.22mm Sieb
SFN1 0.5x0.22mm Sieb
DFWN
DFWH
PH 22.5ccm 55L/min
Motor n_nenn=2200U/min i=0.869 i=0.896
TG
SFH 1.0x0.24mm Sieb
Heizstab
GDR
PR A10VN085 215L/min
SFR 0.45mm Sieb
BF 7µm
EF 0.8mm
FSS
M7
MVVM Q=10L/min 1.2mm
EPM
Wegeventil SB 23 LS-EHS 2
2.2
2.1
EHR Front
MVKF
MVFH
RVF1
RVFH
250bar
DBVF1
AVF1
AVF2
DBV1
DRVF
RVFS
DRF
MVL
WV1
WV2
DBVL 175+5bar
DBVKF
FSP P0=75bar V0=0.75L
ZFKH1 d=80/36 H=210
ZFKH2 d=80/36 H=210
dw FKH
ASP1 (unten) P0=45bar V0=2.0L
ASP2 (oben) P0=45bar V0=2.0L
Federung 60 km/h-Ausf.
VBF
MVFF
MVFW
DBVF2 250bar
ZF1 d=80/63 H=155
ZF2 d=80/63 H=155
ZSP P0=70bar V0=1.4L
DS1 8bar
0.15mm Kerbe
2.2- 2.2+ Grau
2.1- 2.1+ Oliv
Leckölauffang-behälter
RF
Maximale Ausstattung
mit dw EHR, dw FKH,
mit UL-Verstellung
ab Serie Dez. 2006

ASCO GmbH 67616 Marnheiderdorf
SCHALTPLAN_HYDRAULIK _931.952.000.002

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OVERALL SYSTEM/HYDRAULIC EQUIPMENT

# Hydraulic circuit diagram - 931.952.000.002

C

| | |
|---|---|
| **1.1 [Y074]** - Control valve, position 1 (yellow) | **1.2 [Y075]** - Control valve, position 2 (blue) |
| **1.3 [Y076]** - Control valve, position 3 (red) | **1.4 [Y078]** - Control valve, position 4 (green) |
| **1.5 [Y079]** - Control valve, position 5 (brown) | **1.6 [Y080]** - Control valve, position 6 (purple) |
| **2.1 [Y071]** - Control valve, position 7 (olive) | **2.2 [Y072]** - Control valve, position 8 (grey) |

| | |
|---|---|
| **APE** - Entry plate for external pressure supply | **ASP1** - Accumulator, suspension 1 |
| **ASP2** - Accumulator, suspension 2 | **AVF1** - Lock valve, suspension 1 |
| **AVF2** - Lock valve, suspension 2 | |

| | |
|---|---|
| **BF** - Ventilation filter | |

| | |
|---|---|
| **DBV1** - Main pressure-limiting valve | **DBVF1** - Pressure-limiting valve, suspension 1 |
| **DBVF2** - Pressure-limiting valve, suspension 2 | **DBVKF [Y022]** - Field pressure valve, DA front power lift enhanced control |
| **DBVKH [Y062]** - Field pressure valve, DA rear power lift | **DBV-L** - Pressure-limiting valve, 175 bar steering |
| **DFE** - Pressure filter, external LS | **DFP** - Pressure filter, pilot pressure |
| **DFWH** - Flow monitor, auxiliary pump | **DRVE [Y084]** - Pressure cut-off valve, Power Beyond |
| **DRVF [Y064]** - Suspension load pressure/lower | **DRVP** - Pressure cut-off valve, pilot pressure |
| **DS1** - Pressure switch, LS pump monitor | **DSF [B063]** - Pressure switch, filter monitor |
| **DWKF** - Pressure compensator, front power lift, SA | **DWL** - Pressure compensator, steering |
| **DWP** - Pressure compensator, pilot pressure | |

| | |
|---|---|
| **EHR Heck [Y077]** - Cut-off valve, rear EPC | **EHR Front [Y070]** - Cut-off valve, front power lift enhanced control |
| **EPH** - End plate, rear valve block | **EPM** - End plate, centre |

| | |
|---|---|
| **FKH** - Front power lift | **FKH Standard** - Cut-off valve, standard front power lift |
| **FSP** - Front power lift accumulator | **FSS [B084]** - Level switch |

| | |
|---|---|
| **GDR** - Silencer, LS pump | |

| | |
|---|---|
| **HKH** - Rear power lift | **HP** - Hand pump, pilot pressure – emergency supply |
| **Hy.ABV** - Hydraulic trailer brake | |

| | |
|---|---|
| **K** - Hydraulic oil cooler | |

| | |
|---|---|
| **LE** - Steering unit | |





OVERALL SYSTEM/HYDRAULIC EQUIPMENT

Hydraulic circuit diagram - 931.952.000.002

C

| | |
|---|---|
| **M1** - Measuring point, emergency pumps | **M2** - Measuring point, auxiliary pumps |
| **M3** - Measuring point, LS pump | **M4** - Measuring point, LS pressure |
| **M5** - Measuring point, control pressure | **M6** - Rear return flow reference pressure measuring point |
| **M7** - Front return flow reference pressure measuring point | **MVFF [Y067]** - Solenoid valve, lock suspension |
| **MVFH [Y065]** - Solenoid valve, raise suspension | **MVFW [Y063]** - Solenoid valve, wobble stabiliser |
| **MVKF [Y021]** - Front pressure compensator lock valve (SA/DA) | **MVKFH [Y021]** - Lifting solenoid valve (standard front power lift) |
| **MVKFS [Y022]** - Lowering solenoid valve (standard front power lift) | **MVKH [Y055]** - Rear pressure compensator lock valve (SA/DA) |
| **MVL [Y012]** - Solenoid valve, charge function (suspension, oil pre-heater) | **MVP [Y032]** - Solenoid valve, pilot pressure |
| **MVUL [Y082]** - Solenoid valve, lower link stabiliser lock | **MVVH [Y060]** - Solenoid valve, rear pre-heater |
| **MVVM [Y061]** - Solenoid valve, central pre-heater | |

| | |
|---|---|
| **OETR** - Oil temperature regulator | |

| | |
|---|---|
| **PH** - Auxiliary pump | **PNL** - Emergency steering pump |
| **PR** - LS pump | **PVL** - Priority valve, steering |

| | |
|---|---|
| **RLF** - Return line filter | **RVF1** - Non-return valve, suspension 1 |
| **RVFH** - Non-return valve, raise suspension | **RVFS** - Non-return valve, lower suspension |
| **RVL1-3** - Non-return valve, steering 1-3 | **RVN** - Non-return valve, emergency steering pump |

| | |
|---|---|
| **SFH** - Auxiliary pump suction filter | **SFN1+2** - Suction filter, emergency steering pump 1+2 |
| **SFR** - Suction filter, LS pump | **SRVE** - Flow cut-off valve, external LS relief |
| **SVUL [Y083]** - Solenoid valve, lower link stabiliser release | |

| | |
|---|---|
| **TG [B013]** - Temperature sensor | |

| | |
|---|---|
| **VBF** - Valve block, suspension | **VBL** - Valve block, steering |
| **VBP** - Valve block, pilot pressure supply | |

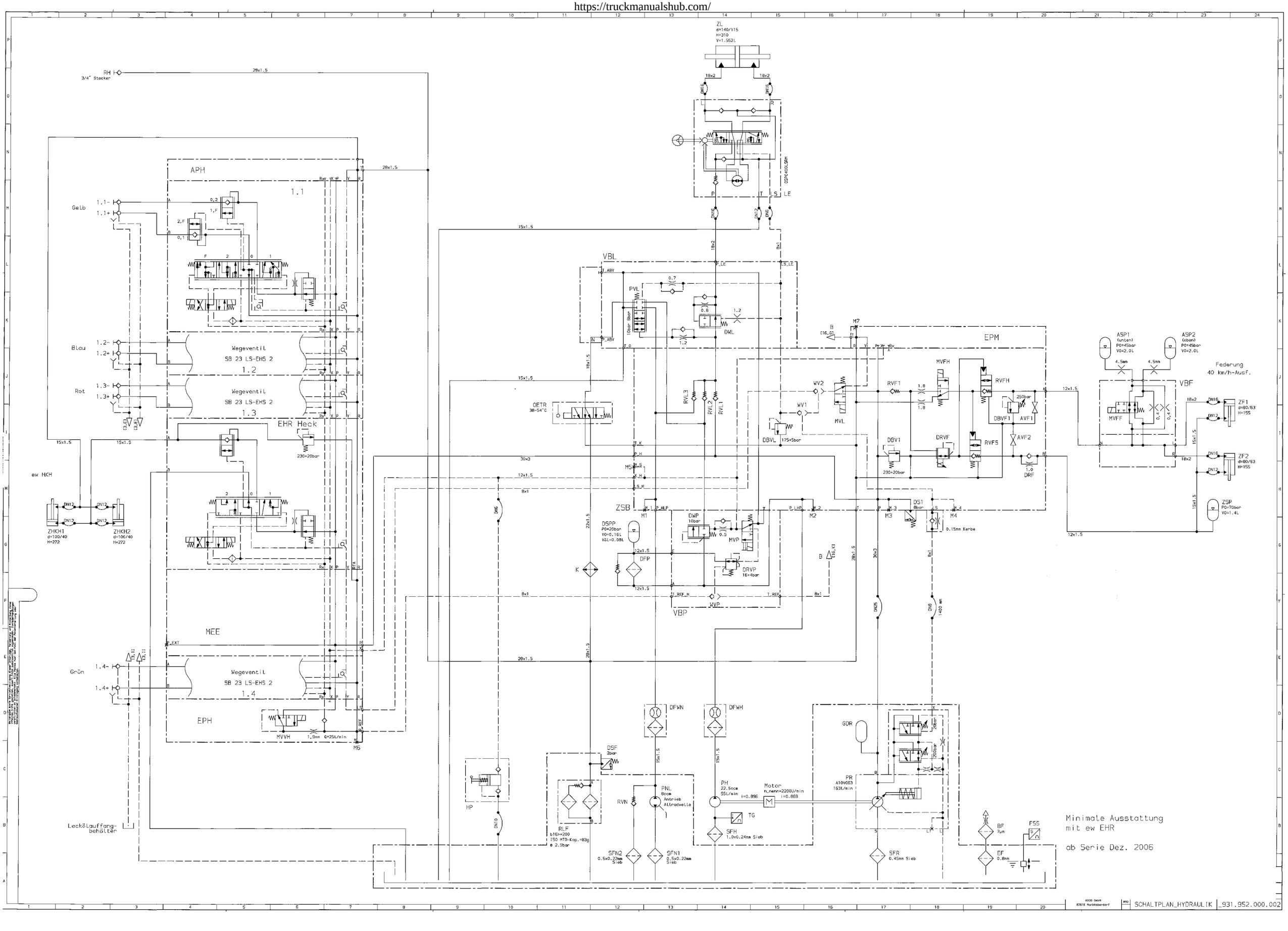
| | |
|---|---|
| **WV1** - LS shuttle valve 1 | **WV2** - LS shuttle valve 2 |
| **WVP** - Shuttle valve, pilot pressure | |

| | |
|---|---|
| **ZF1** - Federungszylinder 1 | **ZL** - Steering cylinder |
| **ZSB** - Central control block | **ZSP** - Auxiliary accumulator, suspension |

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RH
3/4" Stecker
Case Drain
LS
3/8" Muffe
APE
DFE
0.2mm
DRVE
SRVE
0.5l/min
1.1
Gelb
1.1-
1.1+
Wegeventil
SB 23 LS-EHS 2
1.2
BLau
1.2-
1.2+
1.3
Rot
1.3-
1.3+
EHR Heck
dw HKH
MVKH
ZHKH1
d=100/40
H=272
ZHKH2
d=100/40
H=272
DBVKH
MEE
PB
3/4" Muffe
1.4
Grün
1.4-
1.4+
1.5
Braun
1.5-
1.5+
EPH
MVVH
1,9mm Q=25l/min
Leckölauffang-
behälter
ZL
d=140/115
H=310
V=1.552L
VBL
PVL
DWL
QETR
36-54°C
RVL1
RVL2
RVL3
MS2
ZSB
DSPP
P0=20bar
V0=0.16L
V&L=0.08L
DFP
DWP
10bar
MVP
DRVP
16+4bar
VBP
WVP
DFWN
DFWH
DSF
2bar
RLF
b16x200
150 MTD-Kap.=83g
ø 2.5bar
RVN
PNL
80cm
Antrieb
Altradwelle
SFN2
0.5x0.22mm
Sieb
SFN1
0.5x0.22mm
Sieb
HP
PH
22.5ccm
55l/min
Motor
n_Nenn=2200U/min
i=0.869
i=0.896
TG
SFH
1.0x0.24mm Sieb
Heizstab
GDR
PR
A10VN085
215l/min
SFR
0.45mm Sieb
BF
7µm
EF
0.8mm
FSS
M7
EPM
MVVM
Wegeventil
SB 23 LS-EHS 2
2.1
EHR Front
MVKFS
MVKFH
DWKF
AVKF
2.1-
2.1+
Leckölauffang-
behälter
FSP
P0=75bar
V0=0.75L
ew FKH
ZFKH1
d=80/36
H=210
ZFKH2
d=80/36
H=210
WV1
WV2
MVL
RVF1
MVFH
RVFH
DBVF1
AVF1
DBV1
DRVF
RVFS
AVF2
DRF
DS1
8bar
0.15mm Kerbe
ASP1
(unten)
P0=45bar
V0=2.0L
ASP2
(oben)
P0=45bar
V0=2.0L
Federung
60 km/h-Ausf.
VBF
MVFF
MVFW
DBVF2
250bar
ZF1
d=80/63
H=155
ZF2
d=80/63
H=155
ZSP
P0=70bar
V0=1.4L
RF
Mittlere Ausstattung
mit dw EHR, ew FKH,
ab Serie Dez. 2006
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_931.952.000.002

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VBLE1 und VBLE2 nur bei Variante el-hyd.Lenkung

ZL

VBLE1

EPLE

PVLE

APLE

DRVLE
13+2bar

VLE1
25bar

0.6mm

0.8mm

MVLE1

MVLE2

1.4mm

WVLE

M1

M2

M3

M4

LS-LE

LS

P

VBLE2

L-V

R-V

L

R

VLE2

VLE3

L-LE

R-LE

LS-LE1

LS-LE2

DDFL

Nur bei Variante RÜFA

180°

0°

DN16 12

DN16 13

DN6 9

DN16 11

DN12 14

12 DN16

13 DN16

9 DN5

11 DN16

14 DN12

L

R

P

T

LS

LE

05PC4001LSRM

VBL

T_ABV

P_ABV

T_O

P_LE

LS_LE

0.7

PVL

10bar 6bar

0.8

1.2

DWL

1.2

HP

DN10

Varianten elektrohydraulische Lenkung
und RÜFA

ab Serie Dez. 2006

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15.2.2007 16:02:12 /martens

AGCO GmbH
87616 Marktoberdorf

RSD SCHALTPLAN_HYDRAULIK _931.952.000.002

OVERALL SYSTEM/HYDRAULIC EQUIPMENT

# Hydraulic circuit diagram (Auto-Guide) - 931.952.000.002

**C**

**APLE** - Connection plate for el.-hyd. steering system
**DRVLE** - Pilot pressure cut-off valve, el.-hyd. steering system
**MVLE1 [Y085]** - Solenoid valve, pilot pressure/switch-off (Auto-Guide)
**MVLE2 [Y086]** - Solenoid valve, steering disconnect (Auto-Guide)
**PVLE** - Proportional valve, el.-hyd. steering system
**VBLE1** - Valve block, el.-hyd. steering system 1
**VBLE2** - Valve block, el.-hyd. steering system 2
**VLE1** - LE priority valve (oversteering valve)
**VLE2+3** - LE switch off 1 + 2 valves
**WVLE** - LS shuttle valve, el.-hyd. steering system

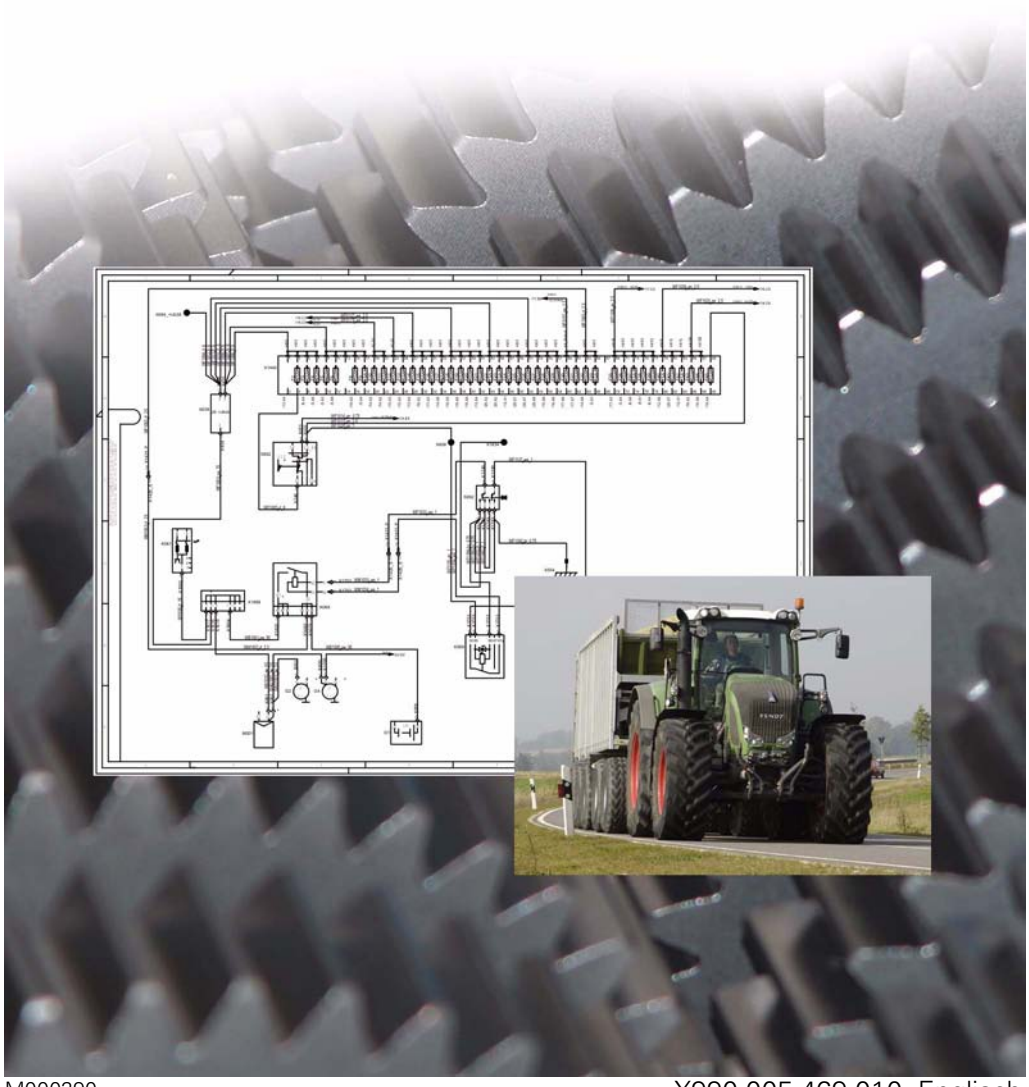
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Service Training

# Electrical and hydraulic circuit diagrams

## FENDT 900 Vario COM III

919 .. 1847-
922 .. 2004-
925 .. 2054-
928 .. 2291-
931 .. 1908-
934 .. 2790-



M000290

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# Electrical and hydraulic circuit diagrams

**9000 Overall system/electrical system**

| C | Documents and diagrams | |
|---|---|---|
| 1 | Fuse assignment | 1 |
| 2 | Component list for circuit diagram set 931.901.000.004 | 6 |

**9000 Electrical system/overall system**

| C | Documents and diagrams | |
|---|---|---|
| 1 | Overview of instrument panel/actuator unit/keyboard/A4 terminal/multifunction armrest (MFA) - Sheet 2 | 1 |
| 2 | Overview of microfuse - Sheet 3 | 3 |
| 3 | Overview of central electrical system - Sheet 4 | 5 |
| 4 | Overview of EXT - Sheet 5 | 7 |
| 5 | Overview of EDC/Vario-Doc/air conditioning/B4 TopDock/Auto-Guide terminal - Sheet 6 | 9 |
| 6 | Supply - Sheet 7 | 11 |
| 7 | Electronics supply - Sheet 8 | 13 |
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**1005 Transmission/transmission control system**

| C | Documents and diagrams | |
|---|---|---|
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**9600 Overall system/hydraulic equipment**

| C | Documents and diagrams | |
|---|---|---|
| 1 | Hydraulic circuit diagram - 931.952.000.002 | 59 |
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# 1 Fuse assignment

**DANGER: Use only genuine fuses! The use of over-rated fuses will destroy the electrical unit! Fire hazard!**

**X1440** - Fuse holder **(A)**
**A013** - PCB, microfuses **(B)**

Remove panel from right side of cab

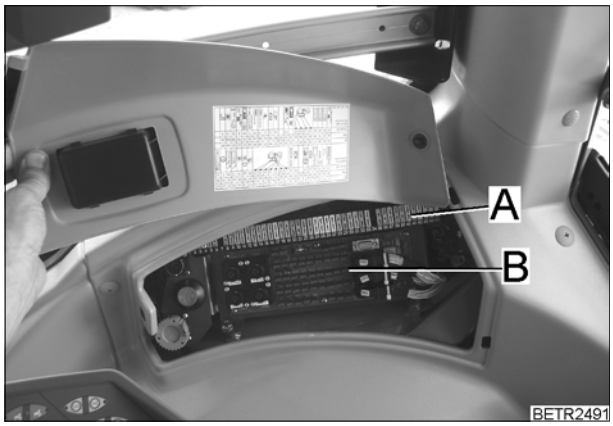



*Fig. 1.* I001035

**A038** - ECU, central electrical system

Remove panel from right side of cab

**NOTE:** *When working on the* ***A038*** *- ECU, central electrical system Disconnect the battery*

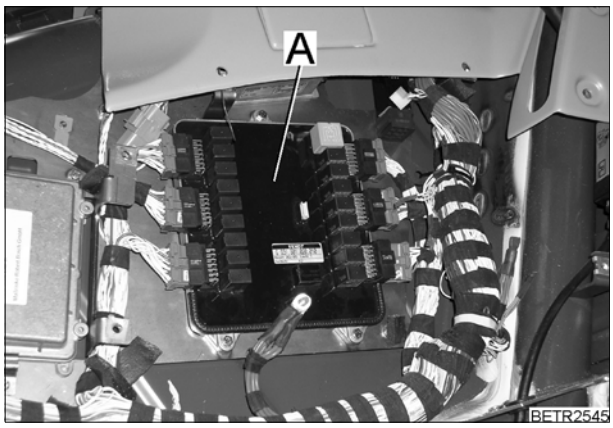



*Fig. 2.* I001044

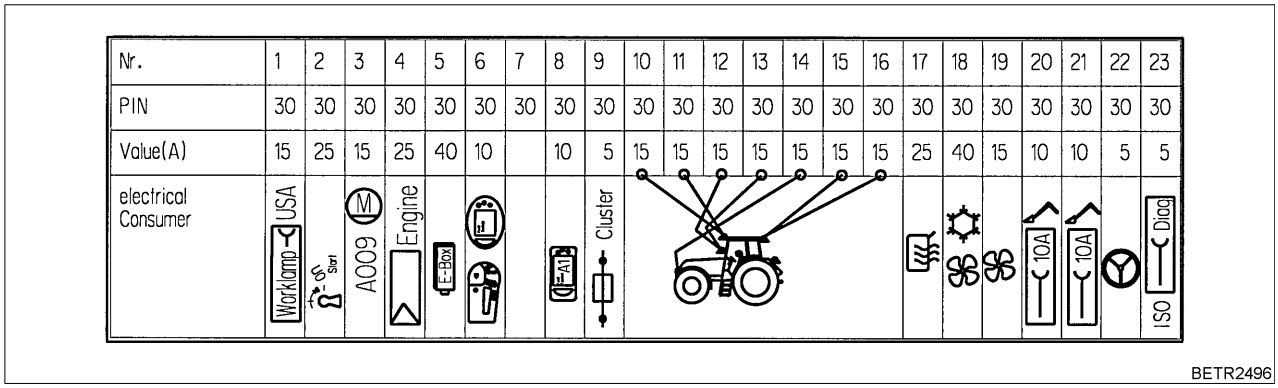
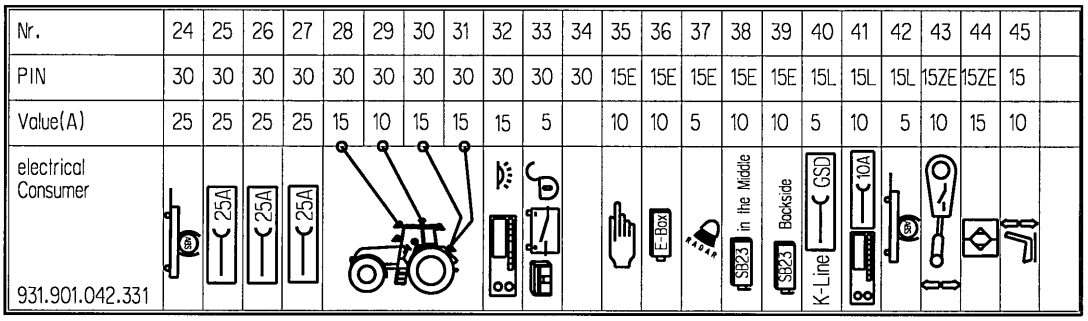



*Fig. 3.* ***X1440*** *- Fuse holder (Fuse nos 1-23)* I001045

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **1** | - | - | - |
| **2** | 30 | 25 | Ignition switch |
| **3** | 30 | 15 | Transmission control unit |
| **4** | 30 | 25 | Engine control unit |
| **5** | 30 | 40 | EXT supply (E-box) |
| **6** | 30 | 10 | Multifunction armrest supply, Terminal |
| **7** | - | - | - |
| **8** | 30 | 10 | Terminal A1 |

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **9** | 30 | 5 | Microfuse board supply,<br>electrics control panel, tachograph |
| **10** | 30 | 15 | External work light, front roof |
| **11** | 30 | 15 | Internal work light, front roof |
| **12** | 30 | 15 | Work light, A pillar |
| **13** | 30 | 15 | Work light, A pillar |
| **14** | 30 | 15 | Work light, corner light |
| **15** | 30 | 15 | External work light, rear roof |
| **16** | 30 | 15 | Internal work light, rear roof |
| **17** | 30 | 25 | Heated rear windscreen |
| **18** | 30 | 15 | Air conditioning system (fan) |
| **19** | 30 | 15 | Primary fan, air conditioning system |
| **20** | 30 | 10 | 3. Hydraulic circuit |
| **21** | 30 | 10 | 4. Hydraulic circuit |
| **22** | 30 | 5 | Autoguide |
| **23** | 30 | 5 | ISO socket (cab)(X028) and<br>ISO diagnostics (X1539) |




BETR2497

*Fig. 4.* ***X1440*** *- Fuse holder (Fuse nos 24-45)* I001110

| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **24** | 30 | 25 | ABS socket |
| **25** | 30 | 25 | 25 A socket |
| **26** | 30 | 25 | 25 A socket |
| **27** | 30 | 25 | 25 A socket |
| **28** | 30 | 15 | Internal work light, front roof |
| **29** | 30 | 10 | Rotating beacons |
| **30** | 30 | 15 | Work light, rear lamp |
| **31** | 30 | 15 | Work light, rear lamp |
| **32** | 30 | 15 | Cab light, radio |
| **33** | 30 | 5 | Instrument panel supply, disconnect relay ON |
| **34** | - | - | - |
| **35** | 15E | 10 | Transmission emergency actuation |
| **36** | 15E | 10 | Electronics supply, Terminal 15 ON |
| **37** | 15E | 5 | Radar sensor, tachograph |
| **38** | 15E | 10 | Electrical valves (SB23 centre connection) |
| **39** | 15E | 10 | Electrical valves (SB23 rear connection) |

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| Fuse no. | PIN | Value (A) | Consumer |
|---|---|---|---|
| **40** | 15L | 5 | Implement socket (GSD), ISO socket (cab) |
| **41** | 15L | 10 | 10A socket, radio |
| **42** | 15L | 5 | ABS socket |
| **43** | 15ZE | 10 | Steering column switch supply |
| **44** | 15ZE | 10 | Compressed air dryer |
| **45** | 15ZSS | 15 | Seat, electric mirror adjustment |

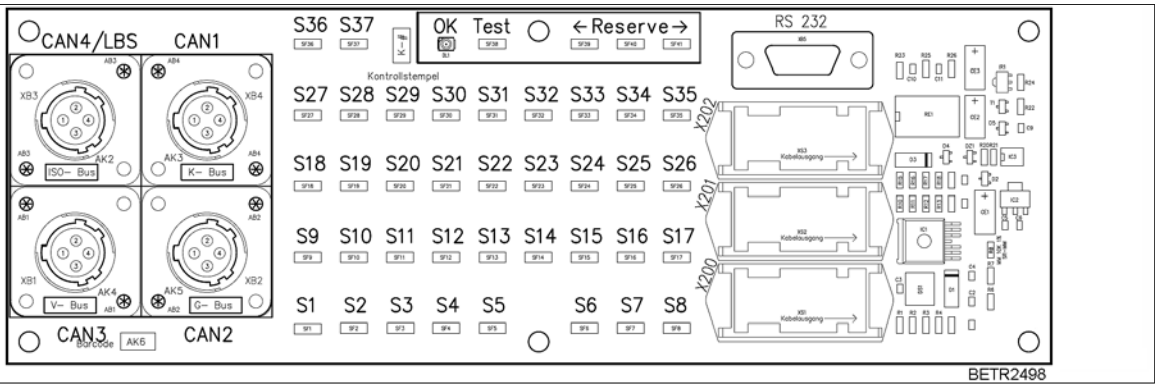



*Fig. 5.* ***A013*** *- PCB, microfuses* I001049

| Fuse no. | Connector/PIN | Component |
|---|---|---|
| **S4** | X200/14 | **X015** - External control socket (Contact 58 R) |
| **S5** | X200/13 | **B017** - Sensor, clutch pedal |
| **S6** | X200/12 | **B016** - Sensor, travel range detection |
| **S7** | X200/11 | **B014** - Sensor, collecting shaft |
| **S8** | X200/10 | **B015** - Sensor, bevel pinion |
| **S9** | X201/1 | **B068** - Sensor, wheel position (right) |
| **S12** | X200/7 | **B040** - Sensor, front power lift position |
| **S13** | X200/6 | **B032** - Sensor, draft sensing pin, left |
| **S14** | X200/5 | **B031** - Sensor, draft sensing pin, right |
| **S15** | X200/4 | **B030** - Sensor, rear power lift position |
| **S16** | X201/4 | **B067** - Sensor, steering angle |
| **S17** | X201/5 | **B066** - Sensor, wheel position (left) |
| **S19** | X201/7 | **B055** - Sensor, foot throttle |
| **S29** | X202 / 7 | **B081** - Steering wheel sensor (360°) |
| **S31** | X202/5 | **B039** - Sensor, high-pressure 2 |
| **S32** | X202/4 | **B008** - Sensor, high-pressure 1 |
| **S33** | X202/1 | **B010** - Sensor, engine speed |
| **S35** | X202/10 | **B020** - Sensor, rear PTO speed (stub shaft) |
| **S36** | X202/8 | **B002** - Sensor, front PTO speed |
| **S37** | X202/11 | **B021** - Sensor, rear PTO speed (clutch) |

**NOTE:** *Unlisted fuses in* ***A013*** *- PCB, microfuses not currently assigned*

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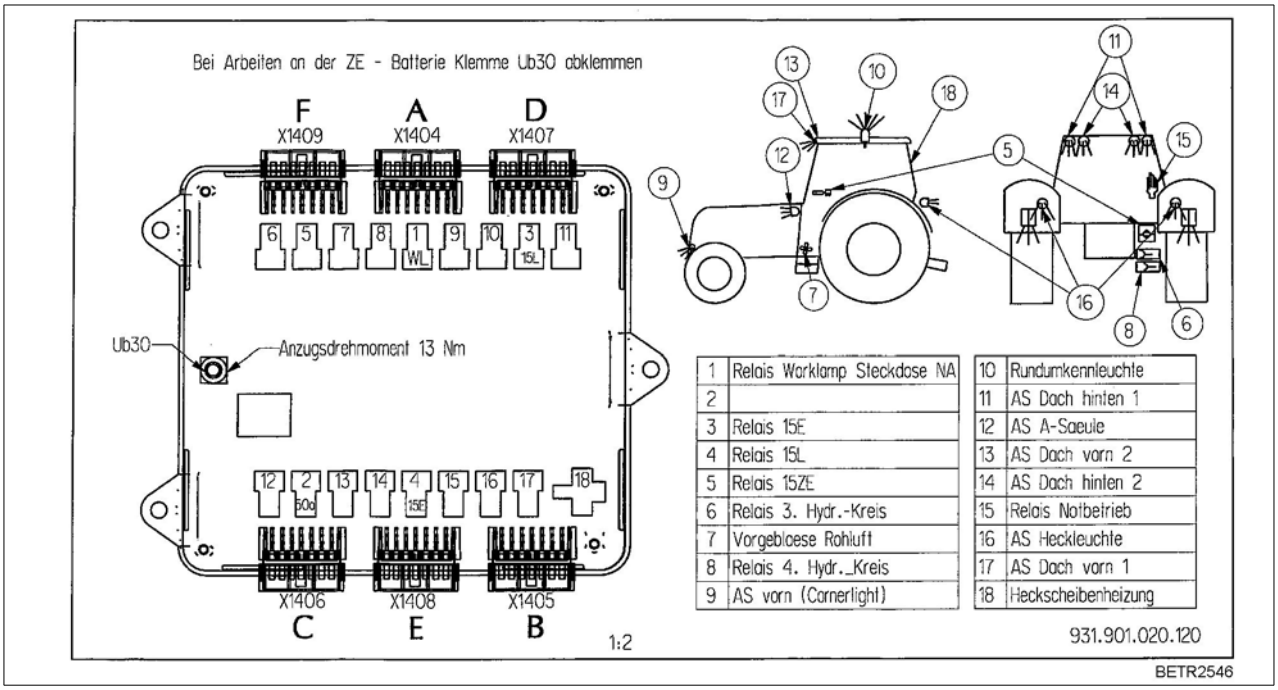



*Fig. 6. Central electrical system - relay assignment* I003837

| Relay | Consumer | Relay | Consumer |
|---|---|---|---|
| 1 | Relay socket NA | 10 | Rotating beacon |
| 2 | | 11 | Work light, rear roof 1 (external) |
| 3 | Relay 15E | 12 | Work light, A pillar |
| 4 | Relay 15L | 13 | Work light, front roof 2 (internal) |
| 5 | Relay 15ZE | 14 | Work light, rear roof 2 (internal) |
| 6 | 3rd hydraulic circuit relay | 15 | Relay, emergency operation |
| 7 | Primary fan, intake air | 16 | Work light, rear lamp |
| 8 | 4th hydraulic circuit relay | 17 | Work light, front roof 1 (external) |
| 9 | Front work light | 18 | Rear window heater |

**NOTE:** *When testing the relay supply voltage, see WHB Chapter 9000 Reg. E, Measuring and testing **A038** - ECU, central electrical system*

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# 2 Component list for circuit diagram set 931.901.000.004

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **A007** - Instrument panel | X100<br>X101 | 2, 8, 9, 10, 17 |
| **A009** - Actuator unit | X037 | 2, 10, 11 |
| **A011** - Radar sensor | X479 | 13 |
| **A013** - PCB, microfuses | X200<br>X201<br>X202 | 3, 8, 9, 10, 11, 12, 14, 15 |
| **A015** - Radio | X1315<br>X1316<br>X1768 | 24, 29 |
| **A036** - Control panel, dashboard right/left | X1357 | 2, 8, 9, 10, 17 |
| **A038** - ECU, central electrical system | X454<br>X455<br>X456<br>X1404<br>X1405<br>X1406<br>X1407<br>X1408<br>X1409 | 4, 7, 18, 19, 20, 21, 22, 23 |
| **A039** - MFA, multifunction armrest | X1401 | 2, 8, 9, 10, 11, 17, 23 |
| **A050** - ECU, basic control unit | X1402<br>X1403 | 5, 8, 9, 10, 11, 12, 14, 15, 16, 26 |
| **A051** - ECU, engine control unit (EDC 7). | X1466<br>X1671<br>X1672 | 6, 8, 9, 10, 26, 27 |
| **A053** - ECU, air conditioning control | X920<br>X921 | 6, 20, 23 |
| **A055** - ECU, data transfer | X1411 | 6, 8, 28 |
| **A058** - TopDock (Auto-Guide) | X1728 | 6, 28 |
| **A059** - Terminal (Auto-Guide) | X1732 | 6, 24 |
| **A060** - Hands-free device | X1765 | 29 |
| **A073** - Terminal (A4) | X1830 | 2, 8, 9, 10 |
| **A075** - ECU, tail light LED, right | X1785 | 28 |
| **A076** - ECU, tail light LED, left | X1786 | 28 |
| **A077** - Immobiliser ECU | X1852 | 28 |
| **A078** - Tachograph ECU | X2025<br>X2026 | 29 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **B002** - Sensor, front PTO speed | X151 | 15 |
| **B004** - Vacuum switch (air filter) | X153 | 26 |
| **B008** - Sensor, high-pressure 1 | X157 | 11 |
| **B009** - Discharge temperature sensor | X158 | 11 |
| **B010** - Sensor, engine speed | X159 | 11 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **B013** - Sensor, hydraulic oil temperature | X162 | 17 |
| **B014** - Sensor, collecting shaft | X163 | 11 |
| **B015** - Sensor, bevel pinion | X164 | 11 |
| **B016** - Sensor, travel range detection | X165 | 11 |
| **B017** - Sensor, clutch pedal | X166 | 11 |
| **B019** - Sensor, compressed air supply (circuit 2) | X168 | 17 |
| **B020** - Sensor, rear PTO speed (stub shaft) | X169 | 15 |
| **B021** - Sensor, rear PTO speed (clutch) | X170 | 15 |
| **B030** - Sensor, rear power lift position | X178 | 12 |
| **B031** - Sensor, draft sensing pin, right | X179 | 12 |
| **B032** - Sensor, draft sensing pin, left | X180 | 12 |
| **B034** - Immersed tube sensor (fuel) | X182 | 17 |
| **B039** - Sensor, high-pressure 2 | X177 | 11 |
| **B040** - Sensor, front power lift position | X188 | 12 |
| **B050** - Loudspeaker, left | X289<br>X290 | 24 |
| **B051** - Loudspeaker, right | X311<br>X312 | 24 |
| **B055** - Sensor, foot throttle | X898 | 26 |
| **B060** - Compressed air supply sensor (circuit 1) | X1410 | 17 |
| **B061** - Loudspeaker | X1620<br>X1621 | 24 |
| **B062** - Loudspeaker | X1622<br>X1623 | 24 |
| **B063** - Pressure switch, filter contamination (hydraulic circuit) | X1500 | 12 |
| **B066** - Sensor, wheel position (left) | X1509 | 14 |
| **B067** - Sensor, steering angle | X1508 | 14 |
| **B068** - Sensor, wheel position (right) | X1507 | 14 |
| **B071** - Sensor, output temperature | X1536 | 20 |
| **B073** - Sensor, solar (irradiation) | X1535 | 20 |
| **B074** - Sensor, internal temperature | X1545 | 20 |
| **B076** - Sensor, external temperature | X1538 | 20 |
| **B077** - Engine fan (speed sensor/magnetic clutch) | X1532 | 26 |
| **B081** - Steering wheel sensor (360°) | X1519 | 14 |
| **B084** - Sensor, hydraulic oil level | X214 | 17 |
| **B085** - Camshaft speed sensor | X1654 | 27 |
| **B086** - Rail pressure sensor | X1655 | 27 |
| **B087** - Fuel low pressure sensor | X1656 | 27 |
| **B088** - Crankshaft speed sensor | X1657 | 27 |
| **B089** - Engine temperature sensor (Deutz) | X1658 | 27 |
| **B090** - Sensor, oil pressure | X1659 | 27 |
| **B091** - Sensor, water in fuel | X1660 | 27 |
| **B092** - Sensor, charge air pressure/temperature | X1661 | 27 |
| **B095** - Microphone | X1766 | 29 |
| **B101** - KITAS sensor | X2136 | 29 |

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| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **E003** - H4 additional headlight, right | X352 | 18 |
| **E004** - H4 additional headlight, left | X353 | 18 |
| **E009** - Licence plate lighting, right | X374<br>X375 | 19 |
| **E010** - Licence plate lighting, left | X376<br>X377 | 19 |
| **E019** - Lighting, cab | X308<br>X309<br>X310 | 19 |
| **E020** - Lighting (EPC) | X842<br>X843<br>X844 | 19 |
| **E021** - Rotating beacon, right | X346 | 21 |
| **E022** - Rotating beacon, left | X345 | 21 |
| **E023** - Rear window heater | X259<br>X260 | 19 |
| **E050** - Work lights, front left roof, internal | X798 | 20 |
| **E051** - Work lights, front right roof, internal | X799 | 20 |
| **E054** - Wide vehicle marker lights, right | X896 | 19 |
| **E055** - Wide vehicle marker lights, left | X897 | 19 |
| **E063** - Heater element, air dryer (temperature-controlled) | X1556 | 23 |
| **E064** - Rear direction indicator, left | X916 | 21 |
| **E065** - Rear direction indicator, right | X917 | 21 |
| **E066** - Brake and tail light left | X918 | 18, 19 |
| **E067** - Brake and tail light right | X919 | 18, 19 |
| **E070** - Work lights, front right roof, external | X1291 | 19 |
| **E071** - Work lights, front left roof, external | X1292 | 19 |
| **E074** - Work light, right (cornerlight) | X1289 | 18 |
| **E075** - Work light, left (cornerlight) | X1290 | 18 |
| **E078** - Work light, rear right mudguard (optional Xenon) | X1285 | 22 |
| **E079** - Work light, rear left mudguard (optional Xenon) | X1286 | 22 |
| **E082** - Work light, rear right external (roof) | X1561<br>X1562 | 21 |
| **E083** - Work light, rear right internal (roof) | X1570<br>X1571 | 22 |
| **E084** - Work light, rear left internal (roof) | X1572<br>X1573 | 22 |
| **E085** - Work light, rear left external (roof) | X1563<br>X1564 | 21 |
| **E086** - Side lamp, front right | X1685<br>X1686 | 19 |
| **E087** - Side lamp, front left | X1687<br>X1688 | 19 |
| **E088** - Direction direction indicator, front right | X1689<br>X1690 | 20 |
| **E089** - Direction direction indicator, front left | X1691<br>X1692 | 20 |
| **E098** - Drive headlight (main beam), right | X1603 | 18 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **E099** - Drive headlight (dipped beam), right | X1604 | 18 |
| **E100** - Drive headlight (main beam), left | X1605 | 18 |
| **E101** - Drive headlight (dipped beam), left | X1606 | 18 |
| **E106** - Exterior mirror (adjustment/heater), right | X868 | 23 |
| **E107** - Exterior mirror (adjustment/heater), left | X869 | 23 |
| **E108** - Work light, right A pillar (optional Xenon) | X1613 | 20 |
| **E109** - Work light, left A pillar (optional Xenon) | X1614 | 20 |
| **E116** - Work lights, Xenon front right roof, external | X1802 | 19 |
| **E117** - Work lights, Xenon front left roof, external | X1802 | 19 |
| **E130** - LED for rear direction indicator, left | X916 | 21 |
| **E131** - LED for rear direction indicator, right | X917 | 21 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **G001** - Battery 1 | X058<br>X059<br>X060<br>X066 | 7, 9 |
| **G002** - Alternator 1 | X062<br>X064 | 7, 17 |
| **G004** - Alternator 2 | X449<br>X450 | 7, 17 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **H005** - Horn | X998<br>X999 | 22 |
| **H006** - Audio warning signal | X204 | 17 |
| **H009** - Blip signal, reversing | X1544 | 11 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **K061** - ISO bus disconnect relay | X1592<br>X1593<br>X1594<br>X1595 | 7, 8, 25 |
| **K063** - Heater flange relay | X1663<br>X1664<br>X1665 | 27 |
| **K065** - Starter relay | X1648 | 26 |
| **K068** - Relay, battery disconnect (impulse) | X1679<br>X1680<br>X1805 | 7 |
| **K069** - Relay, safety function (battery disconnect) | X1753 | 7 |

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| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **M001** - starter. | X057<br>X061 | 7, 26 |
| **M002** - Front wiper motor | X347 | 21 |
| **M003** - Wiper pump, front | X301 | 22 |
| **M004** - Rear wiper motor | X258 | 21 |
| **M005** - Wiper pump, rear | X303 | 22 |
| **M010** - Fuel pump | X300 | 22 |
| **M015** - Actuator motor, top/middle air flap | X1546 | 23 |
| **M016** - Servomotor, bottom air valve | X1547 | 23 |
| **M017** - Primary fan | X1555 | 23 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **R002** - Heater flange | X991 | 27 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **S002** - Switch, ignition | X072<br>X246 | 7, 26 |
| **S005** - Switch, right brake | X217 | 11 |
| **S006** - Switch, left brake | X218 | 11 |
| **S012** - Switch, starter lockout | X082 | 22, 26 |
| **S013** - Emergency mode button | X224 | 22 |
| **S017** - Filter contamination switch | X228 | 11 |
| **S019** - Button, rear PTO, external left | X229 | 15 |
| **S020** - Button, rear PTO, external right | X230 | 15 |
| **S021** - Button, front power lift, external raise | X231 | 12 |
| **S022** - Button, front power lift, external lower | X232 | 12 |
| **S025** - Switch, LS pump pressure monitor | X235 | 12 |
| **S026** - Switch, steering pump flow controller | X236 | 12 |
| **S027** - Button, rear power lift, right-hand external raise | X237 | 12 |
| **S028** - Button, rear power lift, right-hand external lower | X238 | 12 |
| **S029** - Button, rear power lift, left-hand external raise | X239 | 12 |
| **S030** - Button, rear power lift, left-hand external lower | X240 | 12 |
| **S032** - Switch, left door contact | X299 | 19 |
| **S034** - Switch, coolant level | X244 | 26 |
| **S035** - Switch, high-pressure/low-pressure (air conditioning system) | X341 | 23 |
| **S045** - Switch, reversing driver stand | X213 | 11 |
| **S047** - Switch, engine brake | X140 | 26 |
| **S067** - Button, valve actuation, external raise | X1114 | 12 |
| **S068** - Button, valve actuation, external lower | X1115 | 12 |
| **S075** - Switch, guard rail pump flow monitor | X1499 | 12 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **S076** - Switch, clutch fluid | X1542<br>X1543 | 17 |
| **S079** - Switch, steering column | X1590<br>X1591 | 11, 21, 22 |
| **S080** - Switch, hand brake | X1467 | 11 |
| **S085** - Switch, reverse operation (RÜFA) actuation | X1650 | 19 |
| **S086** - Switch, brake wearing, right | X1651 | 16 |
| **S087** - Switch, brake wearing, left | X1652 | 16 |
| **S092** - Battery disconnect switch | X1749 | 7 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **U002** - Radio aerial | X1669<br>X1670 | 24 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X007** - Implement socket | 17 |
| **X008** - Socket, on-board computer counter input | 12 |
| **X015** - External control socket | 12, 18, 23 |
| **X017** - Front socket | 19 |
| **X018** - Rear socket | 18, 19 |
| **X028** - ISO socket (cab) | 25 |
| **X037** - Separation point on A009 | 10, 11 |
| **X057** - Separation point on M001 | 7 |
| **X058** - Battery terminal (+ UB 30) | 7 |
| **X059** - Separation point on G001 | 9 |
| **X060** - Separation point on G001 | 9 |
| **X061** - Separation point on M001 | 7 |
| **X062** - Separation point on G002 | 7 |
| **X064** - Separation point on G002 | 17 |
| **X066** - Separation point on G001 | 9 |
| **X072** - Separation point on S002 | 7, 26 |
| **X082** - Separation point on S012 | 22, 26 |
| **X086** - Separation point on Y006 | 27 |
| **X100 [blau]** - Separation point on A007 | 10, 17 |
| **X101 [gelb]** - Separation point on A007 | 8, 9, 17 |
| **X140** - Separation point on S047 | 26 |
| **X151** - Separation point on B002 | 15 |
| **X153** - Separation point on B004 | 26 |
| **X157** - Separation point on B008 | 11 |
| **X158** - Separation point on B009 | 11 |
| **X159** - Separation point on B010 | 11 |
| **X162** - Separation point on B013 | 17 |
| **X163** - Separation point on B014 | 11 |

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| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X164** - Separation point on B015 | 11 |
| **X165** - Separation point on B016 | 11 |
| **X166** - Separation point on B017 | 11 |
| **X168** - Separation point on B019 | 17 |
| **X169** - Separation point on B020 | 15 |
| **X170** - Separation point on B021 | 15 |
| **X177** - Separation point on B039 | 11 |
| **X178** - Separation point on B030 | 12 |
| **X179** - Separation point on B031 | 12 |
| **X180** - Separation point on B032 | 12 |
| **X182** - Separation point on B034 | 17 |
| **X188** - Separation point on B040 | 12 |
| **X200** - Separation point on A013 | 8, 10, 11, 12 |
| **X201** - Separation point on A013 | 8, 9, 10, 14 |
| **X202** - Separation point on A013 | 10, 11, 14, 15 |
| **X204** - Separation point on H006 | 17 |
| **X213** - Separation point on S045 | 11 |
| **X214** - Separation point on B084 | 17 |
| **X217** - Separation point on S005 | 11 |
| **X218** - Separation point on S006 | 11 |
| **X224** - Separation point on S013 | 22 |
| **X228** - Separation point on S017 | 11 |
| **X229** - Separation point on S019 | 15 |
| **X230** - Separation point on S020 | 15 |
| **X231** - Separation point on S021 | 12 |
| **X232** - Separation point on S022 | 12 |
| **X235** - Separation point on S025 | 12 |
| **X236** - Separation point on S026 | 12 |
| **X237** - Separation point on S027 | 12 |
| **X238** - Separation point on S028 | 12 |
| **X239** - Separation point on S029 | 12 |
| **X240** - Separation point on S030 | 12 |
| **X244** - Separation point on S034 | 26 |
| **X246** - Separation point on S002 | 7 |
| **X254** - 10 amp socket | 25 |
| **X255** - 25 A socket (+ UB 30) | 25 |
| **X256** - 25 amp socket (earth) | 25 |
| **X258** - Separation point on M004 | 21 |
| **X259** - Separation point on E023 | 19 |
| **X260** - Separation point on E023 | 19 |
| **X289** - Separation point on B051 | 24 |
| **X290** - Separation point on B051 | 24 |
| **X299** - Separation point on S032 | 19 |
| **X300** - Separation point on M010 | 22 |
| **X301** - Separation point on M003 | 22 |
| **X303** - Separation point on M005 | 22 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X308** - Separation point on E019 | 19 |
| **X309** - Separation point on E019 | 19 |
| **X310** - Separation point on E019 | 19 |
| **X311** - Separation point on B050 | 24 |
| **X312** - Separation point on B050 | 24 |
| **X315** - Separation point on Y002 | 11 |
| **X316** - Separation point on Y003 | 11 |
| **X317** - Separation point on Y004 | 22 |
| **X318** - Separation point on Y005 | 11 |
| **X319** - Separation point on Y008 | 15 |
| **X320** - Separation point on Y009 | 11 |
| **X321** - Separation point on Y010 | 11 |
| **X322** - Separation point on Y011 | 15 |
| **X323** - Separation point on Y012 | 12 |
| **X332** - Separation point on Y021 | 12 |
| **X333** - Separation point on Y022 | 12 |
| **X336** - Separation point on Y032 | 12 |
| **X341** - Separation point on S035 | 23 |
| **X342** - Separation point on Y024 | 23 |
| **X345** - Separation point on E022 | 21 |
| **X346** - Separation point on E021 | 21 |
| **X347** - Separation point on M002 | 21 |
| **X352** - Separation point on E003 | 18 |
| **X353** - Separation point on E004 | 18 |
| **X360** - Separation point on Y026 | 15 |
| **X361** - Separation point on Y027 | 15 |
| **X374** - Separation point on E009 | 19 |
| **X375** - Separation point on E009 | 19 |
| **X376** - Separation point on E010 | 19 |
| **X377** - Separation point on E010 | 19 |
| **X400** - Rear ISO implement socket | 25 |
| **X449** - Separation point on G004 | 17 |
| **X450** - Separation point on G004 | 7 |
| **X454** - Separation point on A038 | 7 |
| **X455** - Separation point on A038 | 7 |
| **X456** - Separation point on A038 | 7 |
| **X479** - Separation point on A011 | 13 |
| **X497** - Separation point, ISO preparation | 25 |
| **X510** - Earth pin, engine left | 9, 12, 13 |
| **X511** - Earth pin, engine | 8, 9, 14, 15 |
| **X512** - Earth pin, engine | 9 |
| **X513** - Earth pin, engine | 9, 13, 19, 22 |
| **X520** - Earth pin, oil sump right | 9, 18 |
| **X521** - Earth pin, engine | 9 |
| **X532** - Earth pin, cab body | 9, 18, 19, 20, 21 |
| **X533** - Earth pin, cab body | 9, 12, 17, 19, 24, 25 |

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| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X534** - Earth pin, cab body | 9, 19, 21, 22, 25 |
| **X550** - Earth pin, operator platform right | 9 |
| **X551** - Earth pin, operator platform right | 9, 17, 19, 22 |
| **X552** - Earth pin, operator platform | 9, 20, 21, 23 |
| **X553** - Earth pin, operator platform | 9, 24, 25, 26 |
| **X554** - Earth pin, operator platform | 7, 8, 9, 11, 19, 25, 28 |
| **X558** - Earth pin, transmission | 9, 17 |
| **X559** - Earth pin, transmission | 9, 25 |
| **X570** - Earth pin, transmission | 9, 12, 15, 19, 22 |
| **X571** - Earth pin, transmission | 9, 11, 13 |
| **X572** - Earth pin, transmission | 9, 12, 14, 18, 23 |
| **X573** - Earth pin, transmission | 9 |
| **X574** - Earth pin, transmission | 9, 19, 21 |
| **X596** - Connector, earth (X1048 socket, ABS) | 17 |
| **X598** - Connector, K bus_High | 10, 18 |
| **X599** - Connector, K bus_Low | 10, 18 |
| **X608** - Connector, + UB 15 | 7, 21, 22 |
| **X619** - Connector, electronics earth | 9 |
| **X620** - Connector, sensor system earth | 9, 12, 14 |
| **X621** - Connector, sensor system earth | 9, 11 |
| **X627** - Connector, electronics earth | 9, 11, 12 |
| **X629** - Connector, + UB 30 | 8 |
| **X631** - Connector, rear PTO LED ON | 15 |
| **X635** - Connector, sensor system earth (instrument panel) | 17 |
| **X643** - Connector, instrument panel earth | 9 |
| **X650** - Connector, headlight 56b (dipped beam) | 18 |
| **X651** - Connector, headlight 56a (main beam) | 18 |
| **X657** - Connector, auxiliary lighting 56a (main beam) | 18 |
| **X658** - Connector, auxiliary lighting 56b (dipped beam) | 18 |
| **X659** - Connector, work light (cornerlight) | 18 |
| **X660** - Connector, sensor system earth | 9, 11, 26 |
| **X661** - Connector, electronics earth | 9, 18, 19 |
| **X668** - Connector, sensor system earth | 9, 12 |
| **X669** - Connector, sensor system earth | 9, 14, 15 |
| **X671** - Connector, sensor system earth | 9, 11, 12 |
| **X672** - Connector, sensor system earth | 9, 11 |
| **X673** - Connector, sensor system earth | 9, 11, 12 |
| **X674** - Connector, sensor system earth | 9, 15, 16 |
| **X678** - Connector, sensor system earth | 17 |
| **X684** - Connector, ISO socket earth | 25 |
| **X692** - Connector, +UB 30 (A051) | 8 |
| **X694** - Connector, +UB 30 (A038) | 7, 19, 20, 21, 22, 23 |
| **X698** - Connector, sensor system earth | 17 |
| **X707** - Connector, ISO bus_Low | 10 |
| **X708** - Connector, ISO bus_High | 10 |
| **X711** - Connector, V bus_High | 10, 13 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X712** - Connector, V bus_Low | 10, 13 |
| **X714** - Connector, G bus_Low | 10 |
| **X715** - Connector, G bus_High | 10 |
| **X718** - Connector, K bus_Low | 10 |
| **X719** - Connector, K bus_High | 10 |
| **X725** - Connector, K bus_High | 10, 25 |
| **X726** - Connector, K bus_Low | 10, 25 |
| **X727** - Connector, ISO bus_High | 25 |
| **X728** - Connector, ISO bus_Low | 25 |
| **X738** - Connector, serial RXD | 10, 24 |
| **X739** - Connector, serial TXD | 10, 24 |
| **X760** - Connector, earth | 19, 21, 22 |
| **X761** - Connector, earth | 19, 21, 22 |
| **X762** - Connector, + UB 15 | 21 |
| **X766** - Connector, air conditioning earth | 18, 20 |
| **X769** - Connector, signal (E021/E022) | 21 |
| **X789** - Connector, signal (E083/E084) | 22 |
| **X793** - Connector, signal (E082/E085) | 21 |
| **X794** - Connector, earth (A051) | 9 |
| **X796** - Cable coupling (M002) | 20, 21, 23 |
| **X797** - Connector, air conditioning coupler signal | 23 |
| **X798** - Separation point on E050 | 20 |
| **X799** - Separation point on E051 | 20 |
| **X810** - EDC diagnostics socket (engine control unit) | 26 |
| **X814** - Connector, +UB30 (X1048 socket, ABS) | 17 |
| **X834** - Separation point on E070 | 19 |
| **X835** - Separation point on E071 | 19 |
| **X836** - Separation point on E0116 / E117 | 19 |
| **X837** - Separation point on X1048 socket, ABS | 17 |
| **X838** - Separation point on X015 socket, external control | 12, 18, 23 |
| **X842** - Separation point on E020 | 19 |
| **X843** - Separation point on E020 | 19 |
| **X844** - Separation point on E020 | 19 |
| **X845** - 25 A socket (+ UB 30) | 25 |
| **X846** - 25 amp socket (earth) | 25 |
| **X847** - 25 A socket (+ UB 30) | 25 |
| **X848** - 25 amp socket (earth) | 25 |
| **X868** - Separation point on E106 | 23 |
| **X869** - Separation point on E107 | 23 |
| **X896** - Separation point on E054 | 19 |
| **X897** - Separation point on E055 | 19 |
| **X898** - Separation point on B055 | 26 |
| **X899** - Connector, earth | 18 |
| **X916** - Separation point on E064 | 21 |
| **X916** - Separation point on E118 | 21 |
| **X917** - Separation point on E065 | 21 |

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| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X917** - Separation point on E119 | 21 |
| **X918** - Separation point on E066 | 18, 19 |
| **X919** - Separation point on E067 | 18, 19 |
| **X920** - Separation point on A053 | 20, 23 |
| **X921** - Separation point on A053 | 23 |
| **X991** - Separation point on R002 | 27 |
| **X998** - Separation point on H005 | 22 |
| **X999** - Separation point on H005 | 22 |
| **X1041** - Separation point on Y053 | 11 |
| **X1048** - Socket ABS | 17 |
| **X1114** - Separation point on S067 | 12 |
| **X1115** - Separation point on S068 | 12 |
| **X1153** - Separation point on Y088 | 16 |
| **X1285** - Separation point on E078 | 22 |
| **X1286** - Separation point on E079 | 22 |
| **X1289** - Separation point on E074 | 18 |
| **X1290** - Separation point on E075 | 18 |
| **X1291** - Separation point on E070 | 19 |
| **X1292** - Separation point on E071 | 19 |
| **X1315** - Separation point on radio (compact plug) | 24 |
| **X1316** - Separation point on radio (compact plug) | 24 |
| **X1343** - Connector, G bus_High | 10, 28 |
| **X1344** - Connector, G bus_Low | 10, 28 |
| **X1357 [weiß]** - Separation point on A036 | 8, 9, 10, 17 |
| **X1401** - Separation point on A039 | 8, 9, 10, 11, 17, 23, |
| **X1402 [B]** - Separation point on A050 | 8, 10, 11, 12, 14, 15, 16, 26 |
| **X1403 [A]** - Separation point on A050 | 8, 9, 10, 11, 12, 14, 15, 16, |
| **X1404 [A]** - Separation point on A038 | 18 |
| **X1405 [B]** - Separation point on A038 | 19 |
| **X1406 [C]** - Separation point on A038 | 20 |
| **X1407 [D]** - Separation point on A038 | 21 |
| **X1408 [E]** - Separation point on A038 | 22 |
| **X1409 [F]** - Separation point on A038 | 23 |
| **X1410** - Separation point on B060 | 17 |
| **X1411** - Separation point on A055 | 8, 28 |
| **X1417** - Cable coupling, operator platform/cab | 10, 18, 19, 25 |
| **X1418** - Cable coupling, operator platform/transmission | 11, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 |
| **X1419** - Cab cable coupling | 12, 17, 23, 25 |
| **X1420** - Cab cable coupling | 19, 20, 21, 22, 24, 25 |
| **X1421** - Cable coupling, operator platform | 12, 15, 18, 19, 21, 22 |
| **X1422** - Cable coupling, mudguard | 12, 15, 18, 19, 21, 22 |
| **X1423** - Cable coupling, operator platform/transmission | 9, 10, 11, 12, 13, 15, 17, 18, 23 |
| **X1424** - Cable coupling, operator platform | 10, 13, 14, 15, 16, 17, 19, 20, 25, 26 |
| **X1425** - Cable coupling, operator platform | 7, 8, 9, 11, 12, 18, 22, 23 |
| **X1436** - Cable coupling, tractor bonnet (drive light, cornerlight) | 18 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1440** - Fuse holder | 7, 8, 11, 13, 17, 18, 19, 20, 21, 22, 23, 24, 25 |
| **X1459** - Separation point on Y055 | 12 |
| **X1461** - Connector, sensor system earth (left mudguard) | 12, 15 |
| **X1462** - Connector, sensor system earth (right mudguard) | 12, 15 |
| **X1463** - Connector, G bus_High | 10 |
| **X1464** - Connector, G bus_Low | 10 |
| **X1466** - Separation point on A051 | 8, 9, 10, 26 |
| **X1467** - Separation point on S080 | 11 |
| **X1470** - Separation point, control valve | 13 |
| **X1471** - Separation point, control valve | 13 |
| **X1472** - Separation point, control valve | 13 |
| **X1473** - Separation point, control valve | 13 |
| **X1474** - Separation point, control valve | 13 |
| **X1477** - Separation point, control valve | 13 |
| **X1478** - Separation point, control valve | 13 |
| **X1479** - Separation point, control valve | 13 |
| **X1480** - Separation point, control valve | 13 |
| **X1481** - Separation point, control valve | 13 |
| **X1482** - Separation point, control valve | 13 |
| **X1483** - Separation point, control valve | 13 |
| **X1484** - Separation point, control valve | 13 |
| **X1485** - Separation point, control valve | 13 |
| **X1486** - Separation point, control valve | 13 |
| **X1487** - Separation point, control valve | 13 |
| **X1488** - Separation point, control valve | 13 |
| **X1489** - Separation point, control valve | 13 |
| **X1490** - Separation point, control valve | 13 |
| **X1497** - Separation point on Y060 | 12 |
| **X1498** - Separation point on Y061 | 12 |
| **X1499** - Separation point on S075 | 12 |
| **X1500** - Separation point on B063 | 12 |
| **X1501** - Separation point on Y062 | 12 |
| **X1502** - Separation point on Y084 | 12 |
| **X1503** - Separation point on Y063 | 14 |
| **X1504** - Separation point on Y064 | 14 |
| **X1507** - Separation point on B068 | 14 |
| **X1508** - Separation point on B067 | 14 |
| **X1509** - Separation point on B066 | 14 |
| **X1510** - Separation point on Y065 | 14 |
| **X1512** - Separation point on Y067 | 14 |
| **X1513** - Separation point on Y085 | 14 |
| **X1514** - Separation point on Y086 | 14 |
| **X1517** - Separation point on Y082 | 14 |
| **X1518** - Separation point on Y083 | 14 |
| **X1519** - Separation point on B081 | 14 |

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| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1525** - Connector, sensor + UB (from instrument panel) | 17 |
| **X1528** - Connector, sensor system supply | 26 |
| **X1532** - Separation point on B077 | 26 |
| **X1535** - Separation point on B073 | 20 |
| **X1536** - Separation point on B071 | 20 |
| **X1538** - Separation point on B076 | 20 |
| **X1539** - ISO bus diagnostics socket | 25 |
| **X1542** - Separation point on S076 | 17 |
| **X1543** - Separation point on S076 | 17 |
| **X1544** - Separation point on H009 | 11 |
| **X1545** - Separation point on B074 | 20 |
| **X1546** - Separation point on M015 | 23 |
| **X1547** - Separation point on M016 | 23 |
| **X1555** - Separation point on M017 | 23 |
| **X1556** - Separation point on E063 | 23 |
| **X1561** - Separation point on E082 | 21 |
| **X1562** - Separation point on E082 | 21 |
| **X1563** - Separation point on E085 | 21 |
| **X1564** - Separation point on E085 | 21 |
| **X1565** - Connector, position light | 19 |
| **X1570** - Separation point on E083 | 22 |
| **X1571** - Separation point on E083 | 22 |
| **X1572** - Separation point on E084 | 22 |
| **X1573** - Separation point on E084 | 22 |
| **X1578** - Connector, + UB 15 | 8, 18, 24 |
| **X1586** - V bus cable coupling (Auto-Guide) | 13 |
| **X1587** - Cable coupling, Y087 | 13 |
| **X1588** - Separation point on Y087 | 13 |
| **X1589** - Separation point on Y087 | 13 |
| **X1590** - Separation point on S079 | 11, 21 |
| **X1591** - Separation point on S079 | 21, 22 |
| **X1592** - Separation point on K061 | 8 |
| **X1593** - Separation point on K061 | 7 |
| **X1594** - Separation point on K061 | 25 |
| **X1595** - Separation point on K061 | 25 |
| **X1597** - Cable coupling A059 | 10, 24 |
| **X1600** - Cable coupling, to rear work lights (roof) | 19, 20, 23 |
| **X1603** - Separation point on E098 | 18 |
| **X1604** - Separation point on E099 | 18 |
| **X1605** - Separation point on E100 | 18 |
| **X1606** - Separation point on E101 | 18 |
| **X1611** - Separation point on X400 PCB, ISO (bus terminal) | 25 |
| **X1612** - Separation point on X400 PCB, ISO (bus terminal) | 25 |
| **X1613** - Separation point on E108 | 20 |
| **X1614** - Separation point on E109 | 20 |
| **X1616** - Separation point on X1806 - +UB 30 distributor | 7 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1617** - Separation point on X1806 - +UB 30 distributor | 7 |
| **X1618** - Separation point on X1806 - +UB 30 distributor | 7 |
| **X1620** - Separation point on B061 | 24 |
| **X1621** - Separation point on B061 | 24 |
| **X1622** - Separation point on B062 | 24 |
| **X1623** - Separation point on B062 | 24 |
| **X1624** - Cable coupling to front position lights | 19, 20 |
| **X1633** - Separation point, Auto-Guide TopDock | 25 |
| **X1634** - Connector (+ UB 30) | 7, 8, 28 |
| **X1635** - Cable coupling, operator platform | 8, 10 |
| **X1636** - Vario-Doc cable coupling | 8, 28 |
| **X1637** - Connector, ISO bus_Low (A055 Vario-Doc) | 28 |
| **X1638** - Connector, ISO bus_High (A055 Vario-Doc) | 28 |
| **X1639** - Connector, K bus_High | 28 |
| **X1640** - Connector, K bus_Low | 28 |
| **X1648** - Separation point on K065 | 26 |
| **X1649** - Separation point, 10 amp socket | 25 |
| **X1650** - Separation point on S085 | 19 |
| **X1651** - Separation point on S086 | 16 |
| **X1652** - Separation point on S087 | 16 |
| **X1654** - Separation point on B085 | 27 |
| **X1655** - Separation point on B086 | 27 |
| **X1656** - Separation point on B087 | 27 |
| **X1657** - Separation point on B088 | 27 |
| **X1658** - Separation point on B089 | 27 |
| **X1659** - Separation point on B090 | 27 |
| **X1660** - Separation point on B091 | 27 |
| **X1661** - Separation point on B092 | 27 |
| **X1662** - Separation point on Y091 | 27 |
| **X1663** - Separation point on K063 | 27 |
| **X1664** - Separation point on K063 | 27 |
| **X1665** - Separation point on K063 | 27 |
| **X1667** - Separation point on Y092 | 21 |
| **X1668** - Separation point on Y093 | 19 |
| **X1669** - Separation point on U002 | 24 |
| **X1670** - Separation point on U002 | 24 |
| **X1671** - Separation point on A051 | 27 |
| **X1672** - Separation point on A051 | 27 |
| **X1673** - Cylinder head cable coupling (injectors) | 27 |
| **X1674** - Separation point on Y094 | 27 |
| **X1675** - Connector, earth | 27 |
| **X1676** - Connector + UB 12 VDC | 27 |
| **X1677** - Cylinder head cable coupling (injectors) | 27 |
| **X1678** - Connector, front work light | 20 |
| **X1679** - Separation point on K068 | 7 |
| **X1680** - Separation point on K068 | 7 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X1681** - Cable coupling, E051 | 20 |
| **X1682** - Cable coupling, E050 | 20 |
| **X1683** - Cable coupling, camera socket | 24 |
| **X1685** - Separation point on E086 | 19 |
| **X1686** - Separation point on E086 | 19 |
| **X1687** - Separation point on E087 | 19 |
| **X1688** - Separation point on E087 | 19 |
| **X1689** - Separation point on E088 | 20 |
| **X1690** - Separation point on E088 | 20 |
| **X1691** - Separation point on E089 | 20 |
| **X1692** - Separation point on E089 | 20 |
| **X1700** - Separation point on K063 | 27 |
| **X1702** - Separation point on K063 | 27 |
| **X1703** - Separation point on G004 | 7 |
| **X1728** - Separation point on A058 | 28 |
| **X1729** - Connector, ISO bus_Low | 24 |
| **X1730** - Connector, ISO bus_Low | 24 |
| **X1731** - Connector, ISO bus_High | 24 |
| **X1732** - Separation point on A059 | 24 |
| **X1734** - Connector, ISO bus_High | 24 |
| **X1735** - Connector, earth (Auto-Guide) | 24 |
| **X1740** - Connector, Auto-Guide (+UB 15) | 24 |
| **X1742** - Connector, Auto-Guide (+UB 30) | 24 |
| **X1749** - Separation point on S092 | 7 |
| **X1751** - Separation point, left frame earth point | 11, 22 |
| **X1752** - Separation point on K068 | 7 |
| **X1753** - Separation point on K069 | 7 |
| **X1765** - Separation point on A060 | 29 |
| **X1766** - Separation point on B095 | 29 |
| **X1767** - Separation point on radio to B050/B051 | 29 |
| **X1768** - Separation point on radio from A060 | 29 |
| **X1785** - Separation point on A075 | 28 |
| **X1786** - Separation point on A076 | 28 |
| **X1787** - Connector, + UB 15 | 8, 28 |
| **X1802** - Separation point on E116 / E117 | 19 |
| **X1804** - Separation point on X1806 | 7 |
| **X1805** - Separation point on K068 | 7 |
| **X1806** - +UB 30 distributor | 7 |
| **X1830** - Separation point on A073 | 10 |
| **X1852** - Separation point on A077 | 28 |
| **X2025** - Separation point on A078 | 29 |
| **X2026** - Separation point on A078 | 29 |
| **X2136** - Separation point on B101 | 29 |
| **X4000** - Separation point on X1633_ P | 28 |
| **X4001** - Separation point on X1633_ S | 28 |
| **X4002** - Auto-Guide diagnostics socket | 28 |

| DIN component designation | Circuit diagram sheet no. |
|---|---|
| **X4003** - Connector, ISO bus_Low | 28 |
| **X4004** - Connector, ISO bus_High | 28 |
| **X4005** - Connector, V bus_Low | 28 |
| **X4006** - Connector, V bus_High | 28 |
| **X4007** - Earth pin, operator platform | 28 |
| **X4024** - Connector, earth E020 | 19 |
| **X4091** - Connector, +UB 15 on A078 | 19, 29 |
| **X5028** - Connector, cab earth pin | 9, 29 |

| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **Y002** - Solenoid valve, travel range I | X315 | 11 |
| **Y003** - Solenoid valve, travel range II | X316 | 11 |
| **Y004** - Solenoid valve, turbo-clutch | X317 | 22 |
| **Y005** - Solenoid valve, speed governor | X318 | 11 |
| **Y006** - Solenoid valve, engine brake | X086 | 27 |
| **Y008** - Solenoid valve, rear PTO (clutch) | X319 | 15 |
| **Y009** - Solenoid valve, 4WD | X320 | 11 |
| **Y010** - Solenoid valve, differential lock | X321 | 11 |
| **Y011** - Front PTO solenoid valve (clutch) | X322 | 15 |
| **Y012** - Oil pre-heater/load suspension solenoid valve | X323 | 12 |
| **Y021** - Lifting solenoid valve (standard front power lift) | X332 | 12 |
| **Y021** - Front pressure compensator lock valve | X332 | 12 |
| **Y022** - Lowering solenoid valve (standard front power lift) | X333 | 12 |
| **Y022** - Field pressure control solenoid valve (front), | X333 | 12 |
| **Y024** - Magnetic clutch, air conditioning compressor | X342 | 23 |
| **Y026** - Solenoid valve, rear PTO, stage I | X360 | 15 |
| **Y027** - Solenoid valve, rear PTO, stage II | X361 | 15 |
| **Y032** - Control pressure solenoid valve | X336 | 12 |
| **Y053** - Active hold function solenoid valve | X1041 | 11 |
| **Y055** - Rear pressure compensator lock valve | X1459 | 12 |
| **Y060** - Hydraulic oil pre-heater solenoid valve (rear) | X1497 | 12 |
| **Y061** - hydraulic oil pre-heater solenoid valve (middle) | X1498 | 12 |
| **Y062** - Solenoid valve, field pressure control (rear) | X1501 | 12 |
| **Y063** - Wobble stabiliser solenoid valve | X1503 | 14 |
| **Y064** - Suspension load pressure/lowering solenoid valve | X1504 | 14 |
| **Y065** - Raise suspension solenoid valve | X1510 | 14 |
| **Y067** - Lock suspension solenoid valve | X1512 | 14 |
| **Y070 [FKH]** - Cut-off valve, front power lift enhanced control | X1470<br>X1471 | 13 |
| **Y071 [2.1]** - Auxiliary control valve (olive) | X1472<br>X1473 | 13 |
| **Y072 [2.2]** - Auxiliary control valve (grey) | X1474<br>X1477 | 13 |
| **Y074 [1.1]** - Auxiliary control valve (yellow) | X1478<br>X1479 | 13 |

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| DIN component designation | Separation point | Circuit diagram sheet no. |
|---|---|---|
| **Y075 [1.2]** - Auxiliary control valve (blue) | X1480<br>X1481 | 13 |
| **Y076 [1.3]** - Auxiliary control valve (red) | X1482<br>X1483 | 13 |
| **Y077 [HKH]** - Cut-off valve, rear EPC | X1484<br>X1485 | 13 |
| **Y078 [1.4]** - Auxiliary control valve (green) | X1486<br>X1487 | 13 |
| **Y079 [1.5]** - Auxiliary control valve (brown) | X1488<br>X1489 | 13 |
| **Y080 [1.6]** - Auxiliary control valve (violet) | X1490 | 13 |
| **Y082** - Solenoid valve, lower link stabiliser, lock | X1517 | 14 |
| **Y083** - Solenoid valve, lower link stabiliser, release | X1518 | 14 |
| **Y084** - Solenoid valve, Power Beyond | X1502 | 12 |
| **Y085** - Pilot pressure/switch-off solenoid valve (Auto-Guide) | X1513 | 14 |
| **Y086** - Solenoid valve, steering disconnect (Auto-Guide) | X1514 | 14 |
| **Y087** - Steering valve block, Auto-Guide | X1588<br>X1589 | 13 |
| **Y088** - Solenoid valve, release trailer brake | X1153 | 16 |
| **Y091** - Dispensing unit (fuel) | X1662 | 27 |
| **Y092** - Solenoid valve, reverse operation (RÜFA), rotate to left | X1667 | 21 |
| **Y093** - Solenoid valve, reverse operation (RÜFA), rotate to right | X1668 | 19 |
| **Y094** - Actuator unit, AGR (exhaust gas recirculation) | X1674 | 27 |
| **Y095** - Injector valve 1 (injector) | - | 27 |
| **Y096** - Injector valve 2 (injector) | - | 27 |
| **Y097** - Injector valve 3 (injector) | - | 27 |
| **Y098** - Injector valve 4 (injector) | - | 27 |
| **Y100** - Injector valve 5 (injector) | - | 27 |
| **Y101** - Injector valve 6 (injector) | - | 27 |

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## 9000 Electrical system/overall system

**C Electrical circuit diagrams**

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# 1 Overview of instrument panel/actuator unit/keyboard/A4 terminal/multifunction armrest (MFA) - Sheet 2

**A007** - Instrument panel (Item B2, D2)
**A009** - Actuator unit (Item A4)
**A036** - Control panel, dashboard right/left (Item D4)
**A039** - MFA, multifunction armrest (Item D6)
**A073** - Terminal (A4) (Item B6)

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Blue instrument panel

A007

| | | |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | Alternator 1 LED | /17.A4 |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | Loud buzzer | /17.A4 |
| 9 | Quiet buzzer | /17.A4 |
| 10 | PTO speed signal | /17.A4 |
| 11 | Theoretical speed signal | /17.A4 |
| 12 | Actual speed signal | /17.A4 |
| 13 | Control bus_Low | /10.A3 |
| 14 | | |
| 15 | Linkage position signal | /17.A4 |
| 16 | Hydraulic oil temp. sensor | /17.A4 |
| 17 | | |
| 18 | Compressed air supply sensor 2 | /17.A4 |
| 19 | Brake fluid switch | /17.A4 |
| 20 | | |
| 21 | ABS LED | /17.A4 |
| 22 | Linkage position signal | /17.A4 |
| 23 | | |
| 24 | Alternator 2 LED | /17.A4 |
| 25 | | |
| 26 | Control bus_High | /10.A3 |

Actuator unit

A009

| | | |
|---|---|---|
| 1 | | /10.F8 |
| 2 | sw 1 | /11.G5 |
| 3 | Transmission bus_High | sw 1 |
| 4 | Actuator unit reference F/R | sw 1 |
| 5 | UB 30 | /10.F8 |
| 6 | Transmission bus_Low | sw 1 |
| 7 | UB actuator unit | sw 1 |
| 8 | Electronics earth | /11.G6 |
| | Earth | sw 1 |

Terminal A4

A073

| | | |
|---|---|---|
| 1 | Serial Tx | /10.B1 |
| 2 | Serial Rx | /10.B1 |
| 3 | Control bus_High | /10.B1 |
| 4 | Control bus_Low | /10.B1 |
| 5 | ISO bus_High | /10.B1 |
| 6 | ISO bus_Low | /10.B1 |
| 7 | | |
| 8 | UB 15 | /8.F5 |
| 9 | UB 30 | /8.F5 |
| 10 | Electronics earth | /9.B5 |
| 11 | Serial earth | /9.B6 |
| 12 | Earth 31 | /9.B6 |

Yellow instrument panel

A007

| | | |
|---|---|---|
| 1 | Enter key | /17.A6 |
| 2 | ESC key | /17.A7 |
| 3 | UP arrow key | /17.A7 |
| 4 | DOWN arrow key | /17.A7 |
| 5 | Sensor system earth | /17.A6 |
| 6 | | |
| 7 | | |
| 8 | UB 30 | /8.G5 |
| 9 | UB 15 | /8.G5 |
| 10 | 58 | /17.A7 |
| 11 | Earth 31 | /9.A5 |
| 12 | Electronics earth | /9.A5 |
| 13 | UB sensors | /17.A6 |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | Sensor system earth | /17.A6 |
| 21 | Fuel supply sensor | /17.A6 |
| 22 | Hydraulic oil supply sensor | /17.A6 |
| 23 | | |
| 24 | Compressed air supply sensor 1 | /17.A6 |
| 25 | | |
| 26 | | |

Keypad

A036

| | | |
|---|---|---|
| 1 | UB 30 | /8.B7 |
| 2 | UB 15 | /8.B7 |
| 3 | Earth | /9.B4 |
| 4 | Control bus_High In | /10.B3 |
| 5 | Electronics earth | /9.B4 |
| 6 | Control bus_Low In | /10.B3 |
| 7 | Control bus_High Out | /10.B3 |
| 8 | Control bus_Low Out | /10.B3 |
| 9 | | |
| 10 | Enter key | /17.B8 |
| 11 | ESC key | /17.B8 |
| 12 | UP arrow key | /17.B8 |
| 13 | DOWN arrow key | /17.B8 |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |

MFA

A039

| | | |
|---|---|---|
| 1 | Driver seat switch | /11.D4 |
| 2 | Driver seat switch | /11.D4 |
| 3 | | |
| 4 | Right/left horizontal mirror | /23.A3 |
| 5 | Right/left vertical mirror | /23.A3 |
| 6 | Right horizontal mirror | /23.A3 |
| 7 | Left horizontal mirror | /23.A3 |
| 8 | Right vertical mirror | /23.A3 |
| 9 | Left vertical mirror | /23.A3 |
| 10 | UB 15 | /23.A3 |
| 11 | Earth 31 | /9.C6 |
| 12 | Earth 31 | /17.F2 |
| 13 | UB 15 | /17.F3 |
| 14 | Serial Tx | /10.B2 |
| 15 | Serial Rx | /10.B2 |
| 16 | Control bus_High In | /10.B2 |
| 17 | Control bus_High Out | /10.B2 |
| 18 | Control bus_Low In | /10.B2 |
| 19 | Control bus_Low Out | /10.B2 |
| 20 | ISO bus_High In | /10.B2 |
| 21 | ISO bus_High Out | /10.B2 |
| 22 | ISO bus_Low In | /10.B2 |
| 23 | ISO bus_Low Out | /10.B2 |
| 24 | | |
| 25 | UB 15E | /8.F5 |
| 26 | UB 30E | /8.F5 |
| 27 | Electronics earth | /9.C5 |
| 28 | Serial earth | /9.C6 |
| 29 | Earth 31 | /9.C6 |
| 30 | | |
| 31 | | |

Overview of instrument panel/actuator unit/keyboard/
A4 terminal/multifunction armrest (MFA) - Sheet 2

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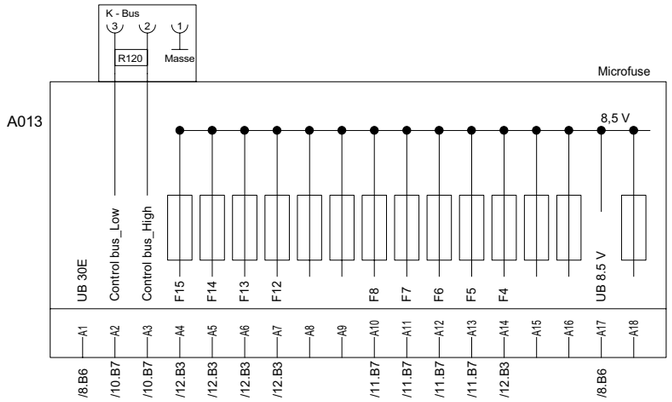
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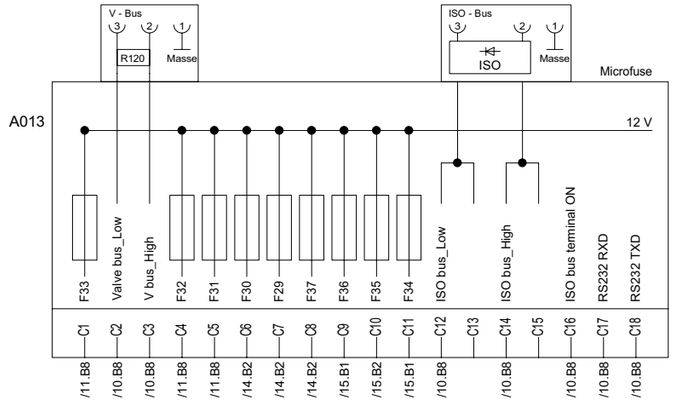


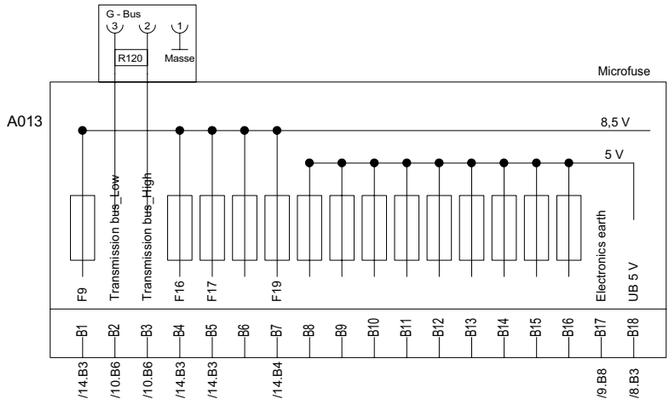
# 1 Overview of instrument panel/actuator unit/keyboard/A4 terminal/multifunction armrest (MFA) - Sheet 2

**A007** - Instrument panel (Item B2, D2)
**A009** - Actuator unit (Item A4)
**A036** - Control panel, dashboard right/left (Item D4)
**A039** - MFA, multifunction armrest (Item D6)
**A073** - Terminal (A4) (Item B6)

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Overview of microfuse - Sheet 3

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# 2 Overview of microfuse - Sheet 3

**A013** - PCB, microfuses

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A038 ZE

| | | | |
|---|---|---|---|
| /20.B5 | C1 | – | Work light indic. relay (30) |
| /20.B5 | C2 | – | Front RH direction indicator |
| /20.B5 | C3 | – | Work light indic. relay (87) |
| | C4 | – | |
| /20.B5 | C5 | – | Front LH direction indicator |
| | C6 | – | |
| | C7 | – | |
| /20.B6 | C8 | – | Evaporator temperature sensor |
| /20.B6 | C9 | – | Solar sensor 1 |
| /20.B6 | C10 | – | Internal temperature sensor |
| /20.B6 | C11 | – | Output temperature sensor |
| | C12 | – | |
| | C13 | – | |
| /20.B6 | C14 | – | UB stepper motor |
| /20.B6 | C15 | – | High/low pressure switch |
| | C16 | – | |
| /20.B6 | C17 | – | External temperature sensor |
| /20.B6 | C18 | – | Door contact switch |
| /20.B6 | C19 | – | Rel., F int. wk lts, roof (30) |
| /20.B6 | C20 | – | Solar sensor 2 |
| /20.B6 | C21 | – | Rel., F int. wk lts, roof (87) |

A038 ZE

| | | | |
|---|---|---|---|
| /19.B5 | B1 | – | Reverse op. (turning right) |
| /19.B5 | B2 | – | Rev.op. (steer. col. straight) |
| /19.B5 | B3 | – | Right indicator socket |
| /19.B5 | B4 | – | Socket 58R |
| /19.B5 | B5 | – | Left indicator socket |
| /19.B6 | B6 | – | Main beam/dipped beam switch |
| /19.B5 | B7 | – | Socket 58L |
| /19.B5 | B8 | – | Position light 58 |
| /19.B6 | B9 | – | Fan diagnostics |
| /19.B6 | B10 | – | Rel., F ext. wk lts, roof (30) |
| /19.B6 | B11 | – | Left tail light |
| /19.B6 | B12 | – | Rel., F ext. wk lts, roof (87) |
| /19.B6 | B13 | – | Right tail light |
| /19.B6 | B14 | – | LH wide load (NA indicator 2) |
| /19.B6 | B15 | – | RH wide load (NA indicator 2) |
| /19.B6 | B16 | – | Rear window heater relay (30) |
| /19.B6 | B17 | – | Rear window heater relay (30) |
| /19.B5 | B18 | – | Lighting, cab |
| /19.B5 | B19 | – | Rear window heater relay (87) |
| /19.B5 | B20 | – | Rear window heater relay (87) |
| /19.B6 | B21 | – | Earth 31 |

A038 ZE

| | | | |
|---|---|---|---|
| /18.B6 | A1 | – | Wk light corner light rel.(87) |
| /18.B6 | A2 | – | Electronics earth |
| /18.B6 | A3 | – | Wk light corner light rel.(30) |
| | A4 | – | |
| /18.B6 | A5 | – | Right brake light |
| /18.B6 | A6 | – | Left brake light |
| /18.B6 | A7 | – | Work light relay (NA) (30) |
| /18.B6 | A8 | – | Socket 54 |
| /18.B6 | A9 | – | Control bus_Low |
| /18.B6 | A10 | – | Headlight 56b |
| /18.B6 | A11 | – | Additional headlight 56a |
| /18.B6 | A12 | – | Control bus_High |
| /18.B6 | A13 | – | Work light relay (NA) (87) |
| /18.B6 | A14 | – | Air conditioning earth |
| /18.B7 | A15 | – | UB 15 |
| | A16 | – | |
| /18.B6 | A17 | – | Headlight 56a |
| /18.B7 | A18 | – | UB 5 V air conditioning |
| /18.B6 | A19 | – | 4th hydr. circuit relay (87) |
| /18.B6 | A20 | – | Additional headlight 56b |
| /18.B6 | A21 | – | 4th hydr. circuit relay (30) |

A038 ZE

| | | | |
|---|---|---|---|
| /23.B6 | F1 | – | Primary fan relay (30) |
| /23.B5 | F2 | – | Stepper motor earth |
| /23.B5 | F3 | – | Primary fan relay (87) |
| | F4 | – | |
| /23.B6 | F5 | – | Internal fan temp. signal |
| /23.B5 | F6 | – | Stepper motor earth |
| /23.B5 | F7 | – | 15ZE relay (30) |
| /23.B5 | F8 | – | Fan governor |
| /23.B6 | F9 | – | Fuel pump |
| /23.B5 | F10 | – | Stepper motor earth |
| | F11 | – | |
| /23.B5 | F12 | – | Stepper motor earth |
| /23.B6 | F13 | – | 15ZE relay (87) |
| | F14 | – | |
| /23.B6 | F15 | – | Lower air conditioning flap |
| | F16 | – | |
| /23.B5 | F17 | – | Middle/upper air con flap |
| /23.B6 | F18 | – | Middle/upper air con flap |
| /23.B6 | F19 | – | 3rd hydr. circuit relay (30) |
| /23.B6 | F20 | – | Lower air conditioning flap |
| /23.B6 | F21 | – | 3rd hydr. circuit relay (87) |

A038 ZE

| | | | |
|---|---|---|---|
| /22.B4 | E1 | – | Rel., R int. wk lts, roof (30) |
| /22.B5 | E2 | – | Air con magnetic clutch |
| /22.B4 | E3 | – | Rel., R int. wk lts, roof (87) |
| | E4 | – | |
| | E5 | – | |
| /22.B5 | E6 | – | Exterior mirror heater |
| /22.B4 | E7 | – | 15E relay (30) |
| /22.B5 | E8 | – | 50a |
| /22.B4 | E9 | – | Left indicator switch |
| /22.B4 | E10 | – | 15E relay (86) |
| /22.B4 | E11 | – | Right indicator switch |
| /22.B4 | E12 | – | Rear washer system |
| /22.B4 | E13 | – | 15E relay (87) |
| /22.B4 | E14 | – | Main light flash switch |
| /22.B4 | E15 | – | Front washer system |
| /22.B4 | E16 | – | Emergency actuation relay (86) |
| /22.B4 | E17 | – | Emergency actuation relay (86) |
| /22.B4 | E18 | – | Emergency actuation relay (87) |
| /22.B4 | E19 | – | Emergency actuation relay (30) |
| /22.B4 | E20 | – | Rr mudguard wk light rel. (87) |
| /22.B4 | E21 | – | Rr mudguard wk light rel. (30) |

A038 ZE

| | | | |
|---|---|---|---|
| /21.B4 | D1 | – | Rel, R ext. wk lts, roof (30) |
| /21.B5 | D2 | – | Reverse op. (turning left) |
| /21.B4 | D3 | – | Rel., R ext. wk lts, roof (87) |
| | D4 | – | |
| /21.B5 | D5 | – | Front wiper 53 |
| | D6 | – | |
| /21.B4 | D7 | – | Relay 15L (30) |
| /21.B5 | D8 | – | Rear wiper 53 |
| /21.B5 | D9 | – | Front wiper 31b |
| /21.B5 | D10 | – | Front washer ON |
| /21.B4 | D11 | – | Rear wiper 31B |
| | D12 | – | |
| /21.B4 | D13 | – | Relay 15L (87) |
| /21.B5 | D14 | – | Front wiper ON |
| /21.B5 | D15 | – | Front wiper intermittent |
| /21.B4 | D16 | – | Relay 15L (86) |
| /21.B4 | D17 | – | Rear left direction indicator |
| | D18 | – | |
| /21.B4 | D19 | – | Rotating beacon relay (30) |
| /21.B4 | D20 | – | Rear right direction indicator |
| /21.B4 | D21 | – | Rotating beacon relay (87) |

Overview of central electrical system - Sheet 4

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# 3 Overview of central electrical system - Sheet 4

**A038** - ECU, central electrical system

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EXT

A050

| | | | |
|---|---|---|---|
| /8.B2 | B1 | UB 30 | |
| /9.B3 | B2 | Earth 31 | |
| /8.B2 | B3 | UB 30 | |
| /8.B2 | B4 | UB 30 | |
| /8.B2 | B5 | UB 30 | |
| /8.B2 | B6 | UB 30 | |
| /9.B3 | B7 | Earth 31 | |
| | B8 | | |
| /11.B3 | B9 | Reverse operation positioning | |
| /11.B3 | B10 | Quick reverse switch R | |
| /11.B3 | B11 | Right brake switch | |
| /12.B4 | B12 | Ext. RH rr power lift low. btn | |
| /11.B3 | B13 | Event counter | |
| /10.B5 | B14 | Driver seat switch | |
| /10.B5 | B15 | Control bus_High | |
| /10.B5 | B16 | Control bus_Low | |
| /14.B2 | B17 | Steering wheel sensor | |
| /26.B7 | B18 | Foot throttle sensor | |
| /8.B2 | B19 | UB 5 V | |
| /9.B3 | B20 | Earth 31 | |
| /11.B3 | B21 | Emergency actuation ON signal | |
| /11.B3 | B22 | Quick reverse switch F | |
| /11.B3 | B23 | Discharge temperature sensor | |
| /11.B3 | B24 | Left brake switch | |
| /16.B4 | B25 | Left brake pad wear switch | |
| | B26 | | |
| /16.B4 | B27 | Hand brake sensor | |
| | B28 | | |
| /11.B3 | B29 | Clutch pedal sensor | |
| | B30 | | |
| | B31 | | |
| /8.B2 | B32 | UB 8.5 V | |
| /9.B3 | B33 | Earth 31 | |
| /11.B3 | B34 | Hand brake switch | |
| /12.B4 | B35 | External raise valve button | |
| /15.B5 | B36 | Left external rear PTO button | |
| /12.B4 | B37 | Ext. RH raise rr pwr lift btn | |
| | B38 | | |
| /12.B4 | B39 | Ext. LH raise rr pwr lift btn | |
| /8.B2 | B40 | UB 15 | |
| /15.B5 | B41 | Rear PTO LED on | |
| /11.B3 | B42 | Reverse warning signal | |
| /10.B5 | B43 | ISO bus terminal ON | |
| /14.B2 | B44 | Auto-Guide activation | |
| /8.B2 | B45 | UB electronics | |
| /9.B3 | B46 | Earth 31 | |
| /12.B4 | B47 | External lower valve button | |
| /12.B4 | B48 | Ext. LH rr power lift low. btn | |
| | B49 | | |
| /15.B5 | B50 | External right rear PTO button | |
| /16.B4 | B51 | Right brake pad wear switch | |
| | B52 | | |
| /10.B5 | B53 | Transmission bus_High | |
| /10.B5 | B54 | Transmission bus_Low | |
| | B55 | | |
| /8.B2 | B56 | ISO disconnect relay ON | |
| | B57 | | |
| /8.B2 | B58 | UB electronics | |

EXT

A050

| | | | |
|---|---|---|---|
| /14.B6 | A1 | Wobble stabiliser SV | |
| /16.B3 | A2 | Hyd. tr. brake release SV_High | |
| /16.B3 | A3 | Hydr. trailer brake 2 SV_High | |
| /11.B6 | A4 | Active hold function SV | |
| | A5 | | |
| /14.B6 | A6 | Pilot pressure SV_High | |
| /14.B6 | A7 | Steering switch off SV_High | |
| /15.B2 | A8 | Front PTO sensor | |
| /11.B5 | A9 | Bevel pinion speed sensor | |
| /15.B3 | A10 | Rear PTO sensor | |
| /11.B6 | A11 | Engine speed sensor | |
| /12.B1 | A12 | Radar sensor | |
| /11.B5 | A13 | Collector speed sensor | |
| /8.B1 | A14 | ISO disconnect relay ON | |
| /11.B6 | A15 | UB actuator unit | |
| /12.B2 | A16 | LH draught sensing pin sens. | |
| /12.B2 | A17 | RH draught sensing pin sens. | |
| /12.B2 | A18 | Ext. rear power lift sensor | |
| | A19 | | |
| | A20 | | |
| /12.B2 | A21 | Rear power lift pos. sensor | |
| /9.B2 | A22 | Earth 31 | |
| /9.B2 | A23 | Earth 31 | |
| /9.B2 | A24 | Earth 31 | |
| | A25 | | |
| /14.B6 | A26 | Suspension load pressure SV | |
| | A27 | | |
| | A28 | | |
| | A29 | | |
| | A30 | | |
| /12.B2 | A31 | Rear pressure compens. lock SV | |
| | A32 | | |
| /15.B3 | A33 | Rear PTO clutch speed sensor | |
| /11.B5 | A34 | Filter contamination switch | |
| /12.B1 | A35 | LS pump pressure switch | |
| /12.B2 | A36 | Ext. front power lift low. btn | |
| /12.B2 | A37 | Ext. front power lift rai. btn | |
| /12.B2 | A38 | Front power lift pos. sensor | |
| /16.B3 | A39 | Brake pressure sensor | |
| | A40 | | |
| | A41 | | |
| /12.B1 | A42 | Filter monitor switch | |
| /12.B1 | A43 | Guard rail pump flow switch | |
| | A44 | | |
| /9.B2 | A45 | Sensor system earth | |
| /9.B2 | A46 | Sensor system earth | |
| | A47 | | |
| /12.B2 | A48 | Constant pump flow switch | |
| /12.B2 | A49 | Raise/lock FKH press. comp. SV | |
| /12.B2 | A50 | POWER BEYOND solenoid valve | |
| /11.B5 | A51 | Neutral/TC solenoid valve | |
| /12.B2 | A52 | Control pressure SV | |
| /15.B3 | A53 | Rear PTO level 2 SV | |
| /15.B3 | A54 | Rear PTO level 1 SV. | |
| | A55 | | |
| /12.B2 | A56 | Rear power lift field pres. SV | |
| /11.B5 | A57 | Bevel pinion direction sensor | |
| /11.B5 | A58 | Actuator unit reference F/R | |
| /11.B5 | A59 | Collector direction sensor | |
| /10.B4 | A60 | ISO bus_Low | |
| /10.B4 | A61 | ISO bus_High | |
| /10.B4 | A62 | Valve bus_Low | |
| /10.B4 | A63 | V bus_High | |
| /14.B6 | A64 | Right wheel position sensor | |
| /14.B6 | A65 | Steering angle sensor | |
| /14.B6 | A66 | Left wheel position sensor | |
| /11.B5 | A67 | High pressure 1 sensor | |
| | A68 | | |
| /11.B5 | A69 | Travel range detection sensor | |
| /11.B5 | A70 | High pressure 2 sensor | |
| | A71 | | |
| /14.B6 | A72 | Lower link stabil. release SV | |
| /12.B2 | A73 | Lower FPL/FPL field pres. SV | |
| /12.B2 | A74 | Front pre-heater SV | |
| /11.B6 | A75 | Speed governor solenoid valve | |
| | A76 | | |
| /15.B3 | A77 | Rear PTO clutch solenoid valve | |
| /14.B6 | A78 | Steering wheel off SV_Low | |
| /14.B6 | A79 | Pilot pressure SV_Low | |
| | A80 | | |
| /11.B6 | A81 | Active hold function earth SV | |
| | A82 | | |
| /16.B3 | A83 | Hydr. trailer brake 2 SV_Low | |
| | A84 | | |
| /16.B3 | A85 | Hydr. tr. brake release SV_Low | |
| /15.B3 | A86 | Front PTO clutch SV | |
| /12.B2 | A87 | Load suspension solenoid valve | |
| /12.B2 | A88 | Rear pre-heater solenoid valve | |
| /11.B6 | A89 | 4WD solenoid valve | |
| /11.B6 | A90 | Diff. solenoid valve | |
| /11.B6 | A91 | Travel range 2 solenoid valve | |
| /11.B6 | A92 | Travel range 1 solenoid valve | |
| /14.B6 | A93 | Raise susp. solenoid valve | |
| | A94 | | |
| /14.B6 | A95 | Suspension lock solenoid valve | |
| /14.B6 | A96 | Lower link stabiliser lock SV | |

Overview of EXT - Sheet 5

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# 4 Overview of EXT - Sheet 5

**A050** - ECU, basic control unit

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Overview of EDC/Vario-Doc/air conditioning/
B4 TopDock/Auto-Guide terminal - Sheet 6

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# 5 Overview of EDC/Vario-Doc/air conditioning/B4 TopDock/Auto-Guide terminal - Sheet 6

**A051** - ECU, engine control unit (EDC 7). (Item A2, C2, C4)
**A053** - ECU, air conditioning control (Item E1, E2)
**A055** - ECU, data transfer (Item C6)
**A058** - TopDock (Auto-Guide) (Item E4)
**A059** - Terminal (Auto-Guide) (Item E6)

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Supply - Sheet 7

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# 6 Supply - Sheet 7

**A038** - ECU, central electrical system (Item C2)
**G001** - Battery 1 (Item F5)
**G002** - Alternator 1 (Item F4)
**G004** - Alternator 2 (Item F4)
**K061** - ISO bus disconnect relay (Item E2)
**K068** - Relay, battery disconnect (impulse) (Item E3)
**K069** - Relay, safety function (battery disconnect) (Item E6)
**M001** - starter. (Item F3)
**S002** - Switch, ignition (Item C3)
**S092** - Battery disconnect switch (Item C7)

**X554** - Earth pin, operator platform (Item E7)
**X608** - Connector, + UB 15 (Item C5)
**X694** - Connector, +UB 30 (A038) (Item A1)
**X1425** - Cable coupling, operator platform (Item D5)
**X1440** - Fuse holder (Item B 3-7)
**X1634** - Connector (+ UB 30) (Item D7)
**X1806** - +UB 30 distributor (Item E2)

**NOTE:** *The wiring diagram shown includes the optional battery disconnect.*

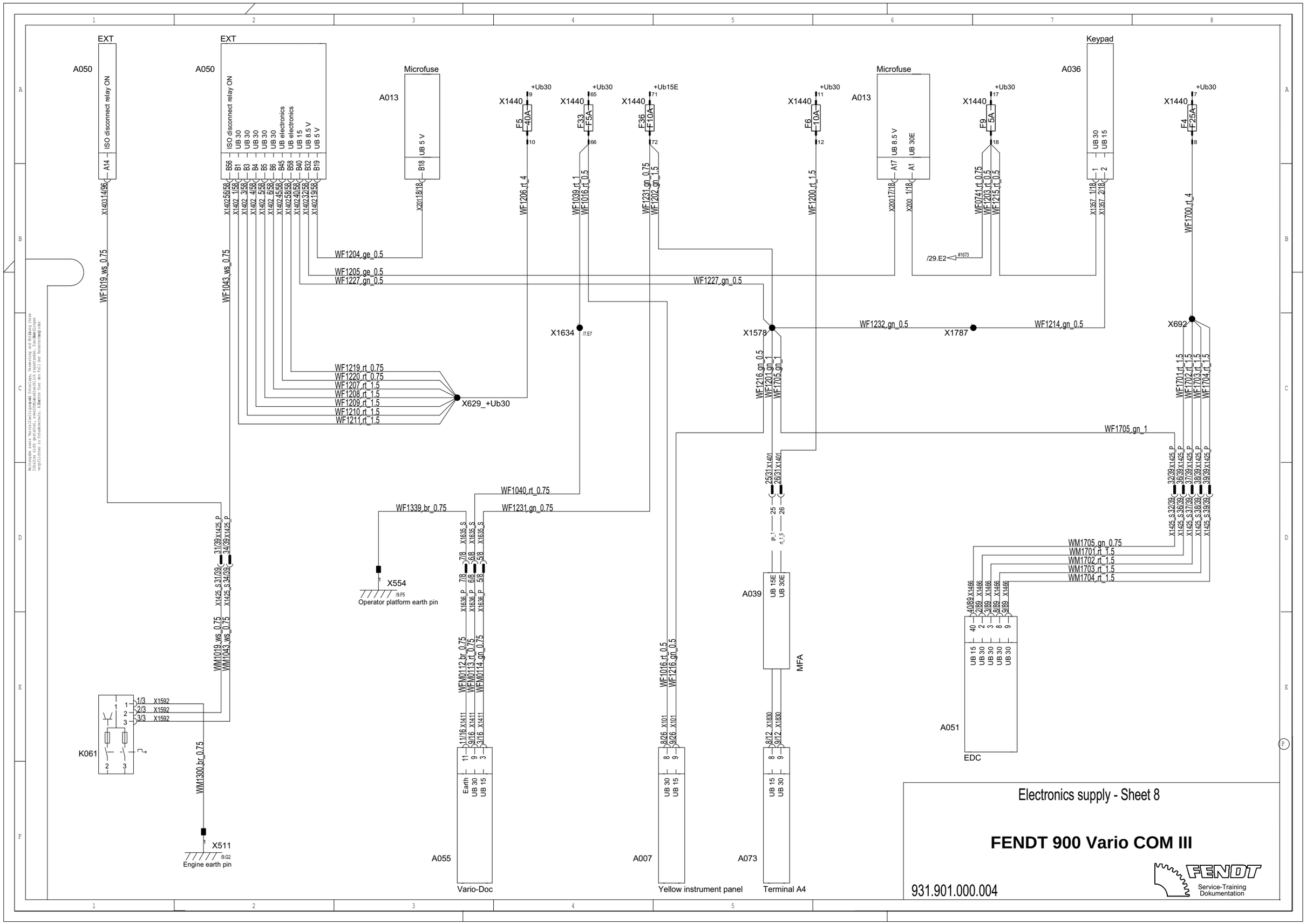
**K068** - Relay, battery disconnect (impulse) (Item E3)
**K069** - Relay, safety function (battery disconnect) (Item E6)
**S092** - Battery disconnect switch (Item C7)
Cable **WB1001,sw_95** (Item E3)

If the optional battery disconnect is **not** installed, the separation points
**X1679** - Separation point on K068 (Item E4)
**X1680** - Separation point on K068 (Item E3)
are connected directly to
**X1806** - +UB 30 distributor (Item E2)

**NOTE:** *The following separation points are all screwed together on one pin:*

**X454** - Separation point on A038 (Item C2)
**X455** - Separation point on A038 (Item B2)
**X456** - Separation point on A038 (Item B2)

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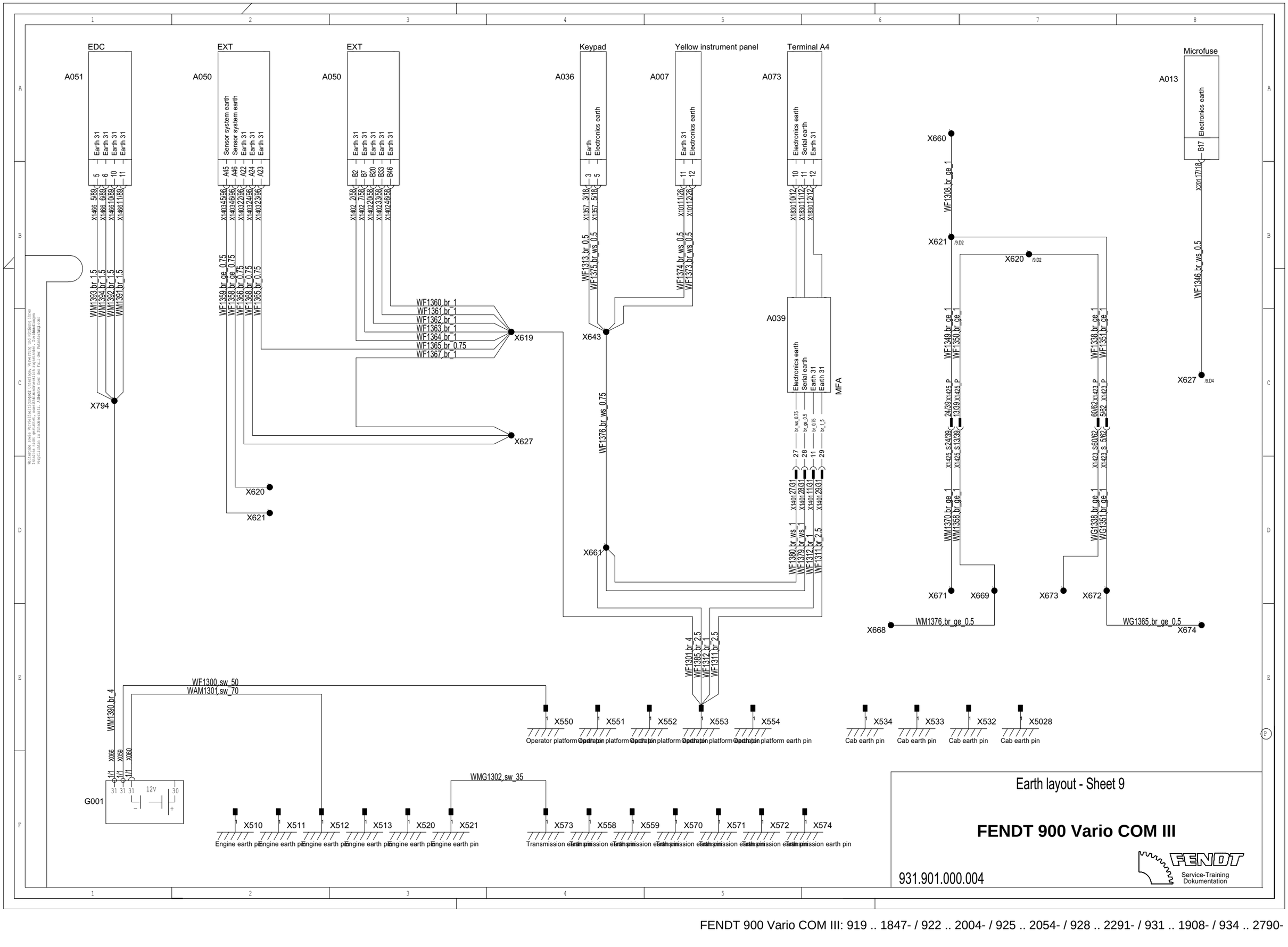

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# 7 Electronics supply - Sheet 8

**A007** - Instrument panel (Item F5)
**A013** - PCB, microfuses (Item A3, A6)
**A036** - Control panel, dashboard right/left (Item A7)
**A039** - MFA, multifunction armrest (Item D5)
**A050** - ECU, basic control unit (Item A1, A2)
**A051** - ECU, engine control unit (EDC 7). (Item E6)
**A055** - ECU, data transfer (Item F3)
**A073** - Terminal (A4) (Item F5)
**K061** - ISO bus disconnect relay (Item E1)
**X511** - Earth pin, engine (Item F2)
**X554** - Earth pin, operator platform (Item D3)
**X629** - Connector, + UB 30 (Item C3)
**X692** - Connector, +UB 30 (A051) (Item C8)
**X1401** - Separation point on A039 (Item D5)
**X1425** - Cable coupling, operator platform (Item D2; D8)
**X1440** - Fuse holder (Item A4 - 8)
**X1578** - Connector, + UB 15 (Item C5)
**X1634** - Connector (+ UB 30) (Item C4)
**X1635** - Cable coupling, operator platform (Item D3)
**X1636** - Vario-Doc cable coupling (Item D3)
**X1787** - Connector, + UB 15 (Item C6)


EDC
A051
Earth 31
X1466 5/89
X1466 6/89
X1466 10/89
X1466 11/89
WM1393,br_1.5
WM1394,br_1.5
WM1392,br_1.5
WM1391,br_1.5
X794
EXT
A050
Sensor system earth
Earth 31
X1403245/96
X1403246/96
X1403222/96
X1403224/96
X1403223/96
A45
A46
A22
A24
A23
WF1359,br_ge_0.75
WF1358,br_ge_0.75
WF1366,br_0.75
WF1368,br_0.75
WF1365,br_0.75
X620
X621
EXT
A050
Earth 31
X1402 2/58
X1402 7/58
X1402220/58
X1402233/58
X1402246/58
B2
B7
B20
B33
B46
WF1360,br_1
WF1361,br_1
WF1362,br_1
WF1363,br_1
WF1364,br_1
WF1365,br_0.75
WF1367,br_1
X619
X627
Keypad
A036
Earth
Electronics earth
X1357 3/18
X1357 5/18
3
5
WF1313,br_0.5
WF1375,br_ws_0.5
X643
WF1376,br_ws_0.75
X661
Yellow instrument panel
A007
Earth 31
Electronics earth
X10011/26
X10012/26
11
12
WF1374,br_ws_0.5
WF1373,br_ws_0.5
Terminal A4
A073
Electronics earth
Serial earth
Earth 31
X1830110/12
X1830111/12
X1830112/12
10
11
12
A039
MFA
Electronics earth
Serial earth
Earth 31
Earth 31
X1401 27/31
X1401 28/31
X1401 11/31
X1401 29/31
br_ws_0.75
br_ge_0.5
br_0.75
br_1.5
27
28
11
29
WF1380,br_ws_1
WF1379,br_ws_1
WF1312,br_1
WF1311,br_2.5
WF13301,br_4
WF1385,br_2.5
WF1312,br_1
WF1311,br_2.5
Microfuse
A013
Electronics earth
B17
X20117/18
WF1346,br_ws_0.5
X627
X660
WF1308,br_ge_1
X621
X620
WF1349,br_ge_1
WF1350,br_ge_1
X1425_S24/39
X1425_S13/39
24/39 X1425_P
13/39 X1425_P
WM1370,br_ge_1
WM1368,br_ge_1
X671
X669
X668
WM1376,br_ge_0.5
WF1338,br_ge_1
WF1351,br_ge_1
X1423_S60/62
X1423_S_5/62
60/62 X1423_P
5/62 X1423_P
WG1338,br_ge_1
WG1351,br_ge_1
X673
X672
WG1365,br_ge_0.5
X674
WF1300,sw_50
WAM1301,sw_70
WM1390,br_4
X086
X059
X060
1/1
1/1
1/1
31 31 31
12V
30
G001
X550
X551
X552
X553
X554
Operator platform earth pin
Operator platform earth pin
Operator platform earth pin
Operator platform earth pin
Operator platform earth pin
X534
X533
X532
X5028
Cab earth pin
Cab earth pin
Cab earth pin
Cab earth pin
WMG1302,sw_35
X510
X511
X512
X513
X520
X521
Engine earth pin
Engine earth pin
Engine earth pin
Engine earth pin
Engine earth pin
Engine earth pin
X573
X558
X559
X570
X571
X572
X574
Transmission earth pin
Transmission earth pin
Transmission earth pin
Transmission earth pin
Transmission earth pin
Transmission earth pin
Transmission earth pin
Earth layout - Sheet 9
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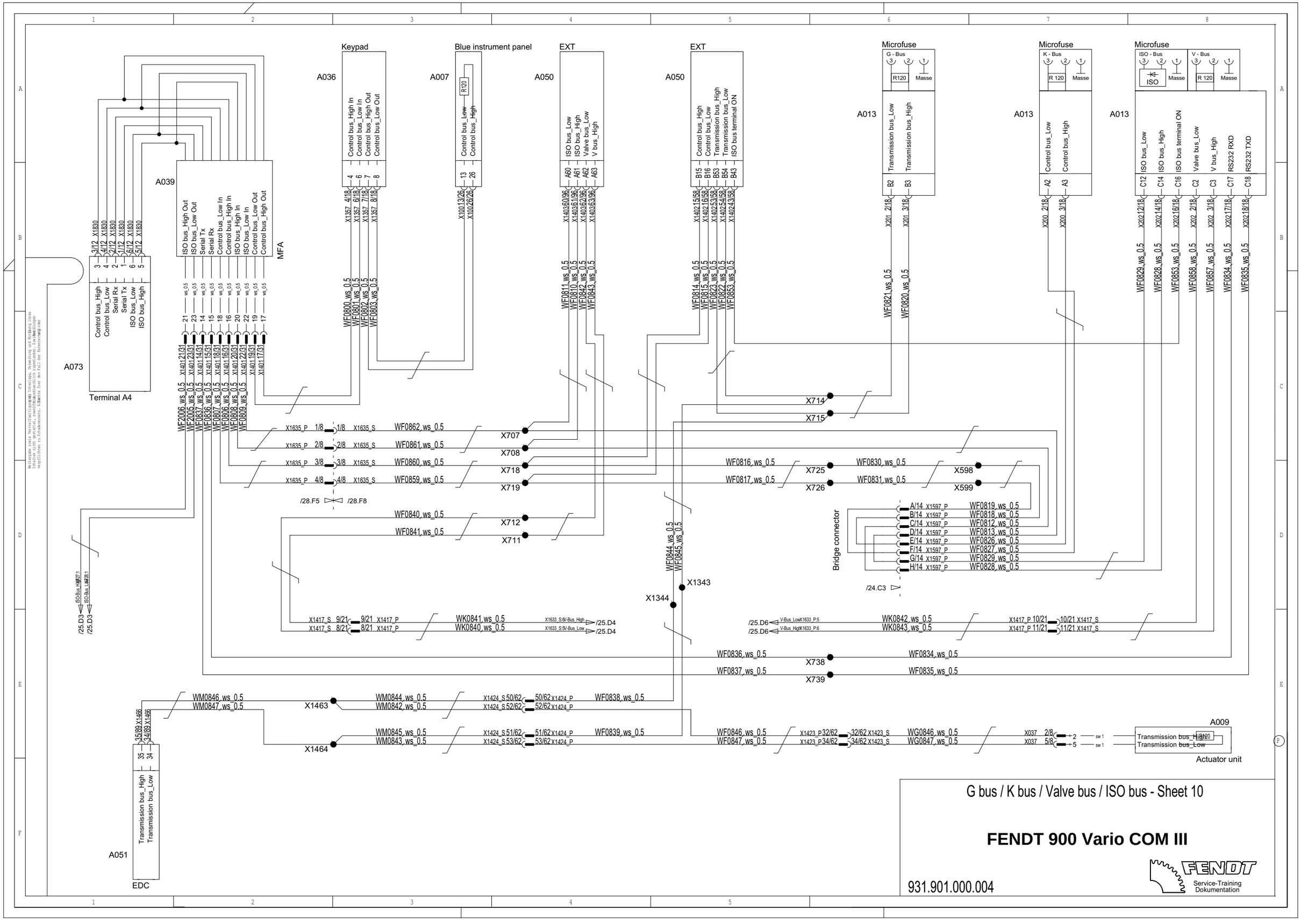
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# 8 Earth layout - Sheet 9

**A007** - Instrument panel (Item A5)
**A013** - PCB, microfuses (Item A8)
**A036** - Control panel, dashboard right/left (Item A4)
**A039** - MFA, multifunction armrest (Item C5)
**A050** - ECU, basic control unit (Item A2, A3)
**A051** - ECU, engine control unit (EDC 7). (Item A1)
**A073** - Terminal (A4) (Item A5)
**G001** - Battery 1 (Item F1)
**X510** - Earth pin, engine left (Item F2)
**X511** - Earth pin, engine (Item F2)
**X512** - Earth pin, engine (Item F2)
**X513** - Earth pin, engine (Item F3)
**X520** - Earth pin, oil sump right (Item F3)
**X521** - Earth pin, engine (Item F3)
**X532** - Earth pin, cab body (Item E7)
**X533** - Earth pin, cab body (Item E6)
**X534** - Earth pin, cab body (Item E6)
**X550** - Earth pin, operator platform right (Item E4)
**X551** - Earth pin, operator platform right (Item E4)
**X552** - Earth pin, operator platform (Item E5)
**X553** - Earth pin, operator platform (Item E5)
**X554** - Earth pin, operator platform (Item E5)
**X558** - Earth pin, transmission (Item F4)
**X559** - Earth pin, transmission (Item F4)
**X570** - Earth pin, transmission (Item F5)
**X571** - Earth pin, transmission (Item F5)
**X572** - Earth pin, transmission (Item F5)
**X573** - Earth pin, transmission (Item F4)
**X574** - Earth pin, transmission (Item F6)
**X619** - Connector, electronics earth (Item C4)
**X620** - Connector, sensor system earth (Item D2, B7)
**X621** - Connector, sensor system earth (Item D2, B6)
**X627** - Connector, electronics earth (Item C4, C8)
**X643** - Connector, instrument panel earth (Item C4)
**X660** - Connector, sensor system earth (Item A6)
**X661** - Connector, electronics earth (Item D4)
**X668** - Connector, sensor system earth (Item E6)
**X669** - Connector, sensor system earth (Item D7)
**X671** - Connector, sensor system earth (Item D6)
**X672** - Connector, sensor system earth (Item D7)
**X673** - Connector, sensor system earth (Item D7)
**X674** - Connector, sensor system earth (Item E8)
**X794** - Connector, earth (A051) (Item C1)
**X1401** - Separation point on A039 (Item D5/6)
**X1423** - Cable coupling, operator platform/transmission (Item C7)
**X1425** - Cable coupling, operator platform (Item C6/7)
**X5028** - Connector, cab earth pin (Item E7)

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# 9 G bus/K bus/V bus/ISO bus - Sheet 10

**A007** - Instrument panel (Item A3)
**A009** - Actuator unit (Item E8)
**A013** - PCB, microfuses (Item A6-8)
**A036** - Control panel, dashboard right/left (Item A3)
**A039** - MFA, multifunction armrest (Item B2)
**A050** - ECU, basic control unit (Item A4-5)
**A051** - ECU, engine control unit (EDC 7). (Item F1)
**A073** - Terminal (A4) (Item C1)
**X037** - Separation point on A009 (Item E7)
**X598** - Connector, K bus_High (Item D 6/7)
**X599** - Connector, K bus_Low (Item D 6/7)
**X707** - Connector, ISO bus_Low (Item C4)
**X708** - Connector, ISO bus_High (Item C4)
**X711** - Connector, V bus_High (Item D4)
**X712** - Connector, V bus_Low (Item D4)
**X714** - Connector, G bus_Low (Item C6)
**X715** - Connector, G bus_High (Item C6)
**X718** - Connector, K bus_Low (Item D4)
**X719** - Connector, K bus_High (Item D4)
**X725** - Connector, K bus_High (Item D6)
**X726** - Connector, K bus_Low (Item D6)
**X738** - Connector, serial RXD (Item E6)
**X739** - Connector, serial TXD (Item E6)
**X1343** - Connector, G bus_High (Item D5)
**X1344** - Connector, G bus_Low (Item D5)
**X1401** - Separation point on A039 (Item C2)
**X1417** - Cable coupling, operator platform/cab (Item E3, E7)
**X1423** - Cable coupling, operator platform/transmission (Item EF 6)
**X1424** - Cable coupling, operator platform (Item E4)
**X1463** - Connector, G bus_High (Item E 2/3)
**X1464** - Connector, G bus_Low (Item E 2/3)
**X1597** - Cable coupling A059 (Item D6)
**X1635** - Cable coupling, operator platform (Item CD 2/3)

**NOTE:** *The bridge connector must be fitted to **X1597** - Cable coupling A059 (Item D6).*

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# Transmission control system - Sheet 11

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## 10 Transmission control system - Sheet 11

**A009** - Actuator unit (Item F5)
**A013** - PCB, microfuses (Item A7, A8)
**A039** - MFA, multifunction armrest (Item CD4)
**A050** - ECU, basic control unit (Item A3, A 5/6)
**B008** - Sensor, high-pressure 1 (Item F4)
**B009** - Discharge temperature sensor (Item F2)
**B010** - Sensor, engine speed (Item D8)
**B014** - Sensor, collecting shaft (Item F3)
**B015** - Sensor, bevel pinion (Item F3)
**B016** - Sensor, travel range detection (Item F4)
**B017** - Sensor, clutch pedal (Item CD 1/2)
**B039** - Sensor, high-pressure 2 (Item F5)
**H009** - Blip signal, reversing (Item A1)
**S005** - Switch, right brake only with/21/ (Item CD2)
**S006** - Switch, left brake (Item CD3)
**S017** - Filter contamination switch (Item F3)
**S045** - Switch, reversing driver stand (Item CD3)
**S079** - Switch, steering column (Item D1)
**S080** - Switch, hand brake (Item F 1/2)
**X037** - Separation point on A009 (Item E5)
**X554** - Earth pin, operator platform (Item B2)
**X571** - Earth pin, transmission (Item E8)
**X621** - Connector, sensor system earth (Item B3)
**X627** - Connector, electronics earth (Item C7)
**X660** - Connector, sensor system earth (Item B1)
**X671** - Connector, sensor system earth (Item C8)
**X672** - Connector, sensor system earth (Item E4)
**X673** - Connector, sensor system earth (Item E1)
**X1401** - Separation point on A039 (Item C4)
**X1418** - Cable coupling, operator platform/transmission (Item C4)
**X1423** - Cable coupling, operator platform/transmission (Item CD 4 -6)
**X1425** - Cable coupling, operator platform (Item C8)
**X1440** - Fuse holder (Item A6)
**X1590** - Separation point on S079 (Item C1)
**X1751** - Separation point, left frame earth point (Item B 1/2)
**Y002** - Solenoid valve, travel range I (Item E8)
**Y003** - Solenoid valve, travel range II (Item E7)
**Y005** - Solenoid valve, speed governor (Item E6)
**Y009** - Solenoid valve, 4WD (Item E7)
**Y010** - Solenoid valve, differential lock (Item E7)
**Y053** - Active hold function solenoid valve (Item E6)

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Hydraulics - Sheet 12

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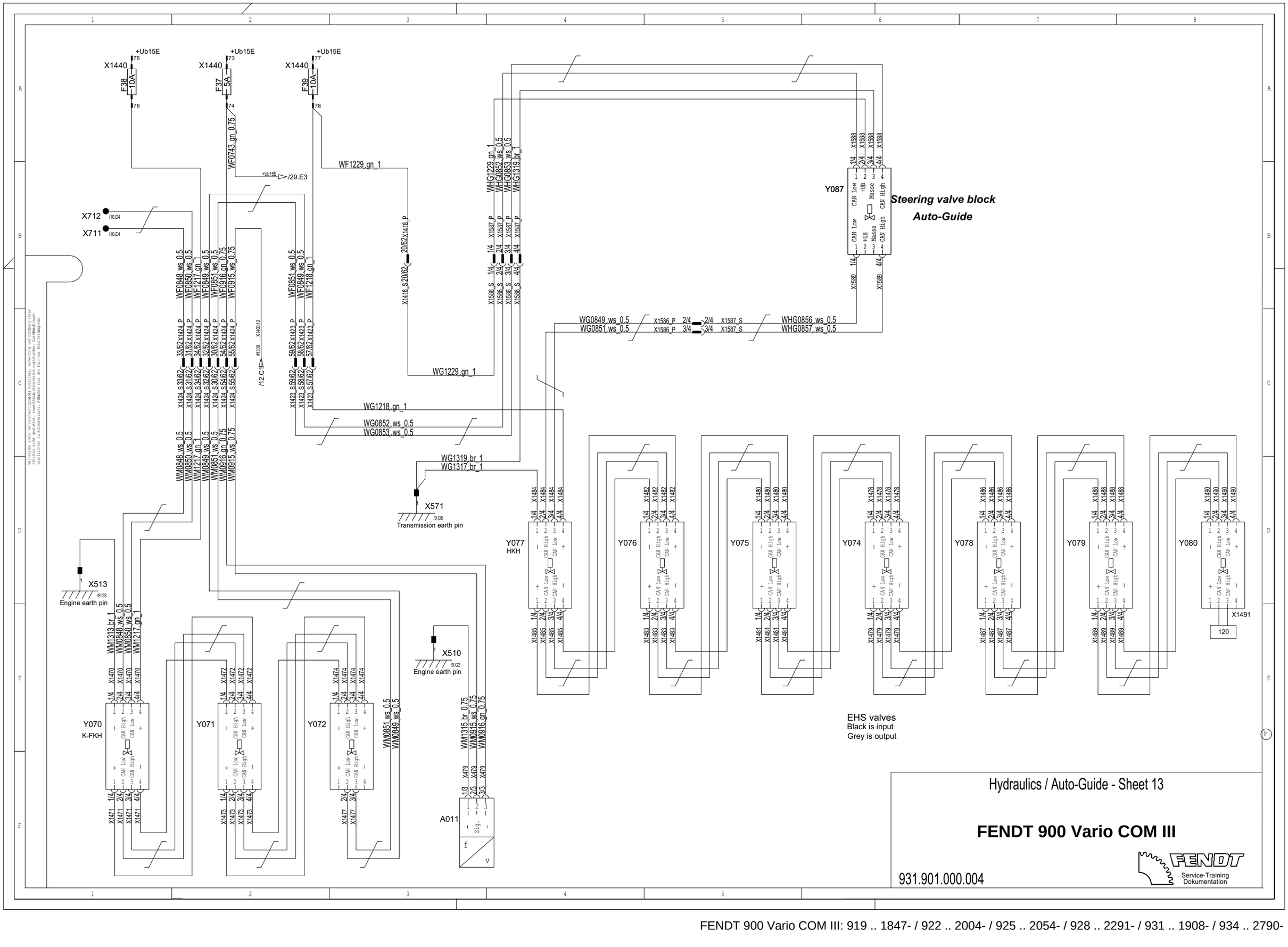
## 11 Hydraulics - Sheet 12

**A013** - PCB, microfuses (Item A3)
**A050** - ECU, basic control unit (Item A2, A4)
**B030** - Sensor, rear power lift position (Item E7)
**B031** - Sensor, draft sensing pin, right (Item E7)
**B032** - Sensor, draft sensing pin, left (Item E7)
**B040** - Sensor, front power lift position (Item F3)
**B063** - Pressure switch, filter contamination (hydraulic circuit) (Item F1)
**S021** - Button, front power lift, external raise (Item F3)
**S022** - Button, front power lift, external lower (Item F2)
**S025** - Switch, LS pump pressure monitor (Item F2)
**S026** - Switch, steering pump flow controller (Item F2)
**S027** - Button, rear power lift, right-hand external raise (Item A7)
**S028** - Button, rear power lift, right-hand external lower (Item A8)
**S029** - Button, rear power lift, left-hand external raise (Item A6)
**S030** - Button, rear power lift, left-hand external lower (Item A6)
**S067** - Button, valve actuation, external raise (Item A7)
**S068** - Button, valve actuation, external lower (Item A7)
**S075** - Switch, guard rail pump flow monitor (Item F1)
**X008** - Socket, on-board computer counter input (Item CD 5/6)
**X015** - External control socket (Item E8)
**X510** - Earth pin, engine left (Item F5)
**X533** - Earth pin, cab body (Item D4)
**X570** - Earth pin, transmission (Item E6)
**X572** - Earth pin, transmission (Item D8)
**X620** - Connector, sensor system earth (Item B4)
**X627** - Connector, electronics earth (Item C4)
**X668** - Connector, sensor system earth (Item E1)
**X671** - Connector, sensor system earth (Item F3)
**X673** - Connector, sensor system earth (Item D6)
**X838** - Separation point on X015 socket, external control (Item D8)
**X1418** - Cable coupling, operator platform/transmission (Item C5)
**X1419** - Cab cable coupling (Item CD4)
**X1421** - Cable coupling, operator platform (Item BC5)
**X1422** - Cable coupling, mudguard (Item B 5)
**X1423** - Cable coupling, operator platform/transmission (Item D 2/3)
**X1425** - Cable coupling, operator platform (Item D 1/2)
**X1461** - Connector, sensor system earth (left mudguard) (Item B6)
**X1462** - Connector, sensor system earth (right mudguard) (Item C6)
**Y012** - Oil pre-heater/load suspension solenoid valve (Item F4)

**NOTE:**
**Front power lift standard version**
**Y021** - Lifting solenoid valve (standard front power lift) (Item F4)
**Y022** - Lowering solenoid valve (standard front power lift) (Item F 4/5)

**Front power lift enhanced control version**
**Y021** - Front pressure compensator lock valve (Item F4)
**Y022** - Field pressure control solenoid valve (front), (Item F 4/5)

**Y032** - Control pressure solenoid valve (Item F5)
**Y055** - Rear pressure compensator lock valve (Item CD7)
**Y060** - Hydraulic oil pre-heater solenoid valve (rear) (Item CD7)
**Y061** - hydraulic oil pre-heater solenoid valve (middle) (Item F 5/6)
**Y062** - Solenoid valve, field pressure control (rear) (Item CD7)
**Y084** - Solenoid valve, Power Beyond (Item E6)


+Ub15E
X1440
75
F38
10A
76
73
F37
5A
74
77
F39
10A
78
WF0743 gn 0.75
WF1229 gn 1
+Ub15E /29.E3
X712 /10.D4
X711 /10.E4
WF0848 ws 0.5
WF0850 ws 0.5
WF1217 gn 1
WF0849 ws 0.5
WF0851 ws 0.5
WF0916 gn 0.75
WF0915 ws 0.5
WF1218 gn 1
X1418 S20/62
20/62X1418 P
X1586 S 1/4
X1586 S 2/4
X1586 S 3/4
X1586 S 4/4
X1587 P
WHG1229 gn 1
WHG0852 ws 0.5
WHG0853 ws 0.5
WHG1319 br 1
Y087
Steering valve block
Auto-Guide
CAN Low
+UB
Masse
CAN High
X1588
WG0849 ws 0.5
WG0851 ws 0.5
X1586 P 2/4
X1586 P 3/4
X1587 S
WHG0856 ws 0.5
WHG0857 ws 0.5
WG1229 gn 1
WG1218 gn 1
WG0852 ws 0.5
WG0853 ws 0.5
WG1319 br 1
WG1317 br 1
X571
/9.G5
Transmission earth pin
Y077
HKH
Y076
Y075
Y074
Y078
Y079
Y080
X1484
X1482
X1480
X1478
X1486
X1488
X1490
X1485
X1483
X1481
X1479
X1487
X1489
X1491
120
X513
/9.G3
Engine earth pin
X510
/9.G2
Engine earth pin
WM1313 br 1
WM0848 ws 0.5
WM0850 ws 0.5
WM1217 gn 1
WM0851 ws 0.5
WM0849 ws 0.5
WM1315 br 0.75
WM0915 ws 0.75
WM0916 gn 0.75
Y070
K-FKH
Y071
Y072
X1470
X1472
X1474
X1471
X1473
X1477
A011
X479
Sig.
f
V
EHS valves
Black is input
Grey is output
Hydraulics / Auto-Guide - Sheet 13
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## 12 Hydraulics/Auto-Guide - Sheet 13

**A011** - Radar sensor (Item F 3/4)
**X510** - Earth pin, engine left (Item E3)
**X513** - Earth pin, engine (Item D1)
**X571** - Earth pin, transmission (Item D3)
**X711** - Connector, V bus_High (Item B1)
**X712** - Connector, V bus_Low (Item B1)
**X1418** - Cable coupling, operator platform/transmission (Item B3)
**X1423** - Cable coupling, operator platform/transmission (Item C2)
**X1424** - Cable coupling, operator platform (Item C2)
**X1440** - Fuse holder (Item A1-2)
**X1491** - Rear V bus terminal (120 Ω) (Item E8)
**X1586** - V bus cable coupling (Auto-Guide) (Item B4, C5)
**X1587** - Cable coupling, Y087 (Item B4, C5)
**Y070 [FKH]** - Cut-off valve, front power lift enhanced control (Item EF1)
**Y071 [2.1]** - Auxiliary control valve (olive) (Item EF2)
**Y072 [2.2]** - Auxiliary control valve (grey) (Item EF3)
**Y074 [1.1]** - Auxiliary control valve (yellow) (Item D6)
**Y075 [1.2]** - Auxiliary control valve (blue) (Item D5)
**Y076 [1.3]** - Auxiliary control valve (red) (Item D 4/5)
**Y077 [HKH]** - Cut-off valve, rear EPC (Item D4)
**Y078 [1.4]** - Auxiliary control valve (green) (Item D7)
**Y079 [1.5]** - Auxiliary control valve (brown) (Item D7)
**Y080 [1.6]** - Auxiliary control valve (violet) (Item D8)
**Y087** - Steering valve block, Auto-Guide (Item B6)

**NOTE:** *Wiring diagram shows the maximum number of fittings.*

For tractors with **standard front power lift and without auxiliary control units**, the following components are missing:

**Y070 [FKH]** - Cut-off valve, front power lift enhanced control (Item EF1)
**Y071 [2.1]** - Auxiliary control valve (olive) (Item EF2)
**Y072 [2.2]** - Auxiliary control valve (grey) (Item EF3)

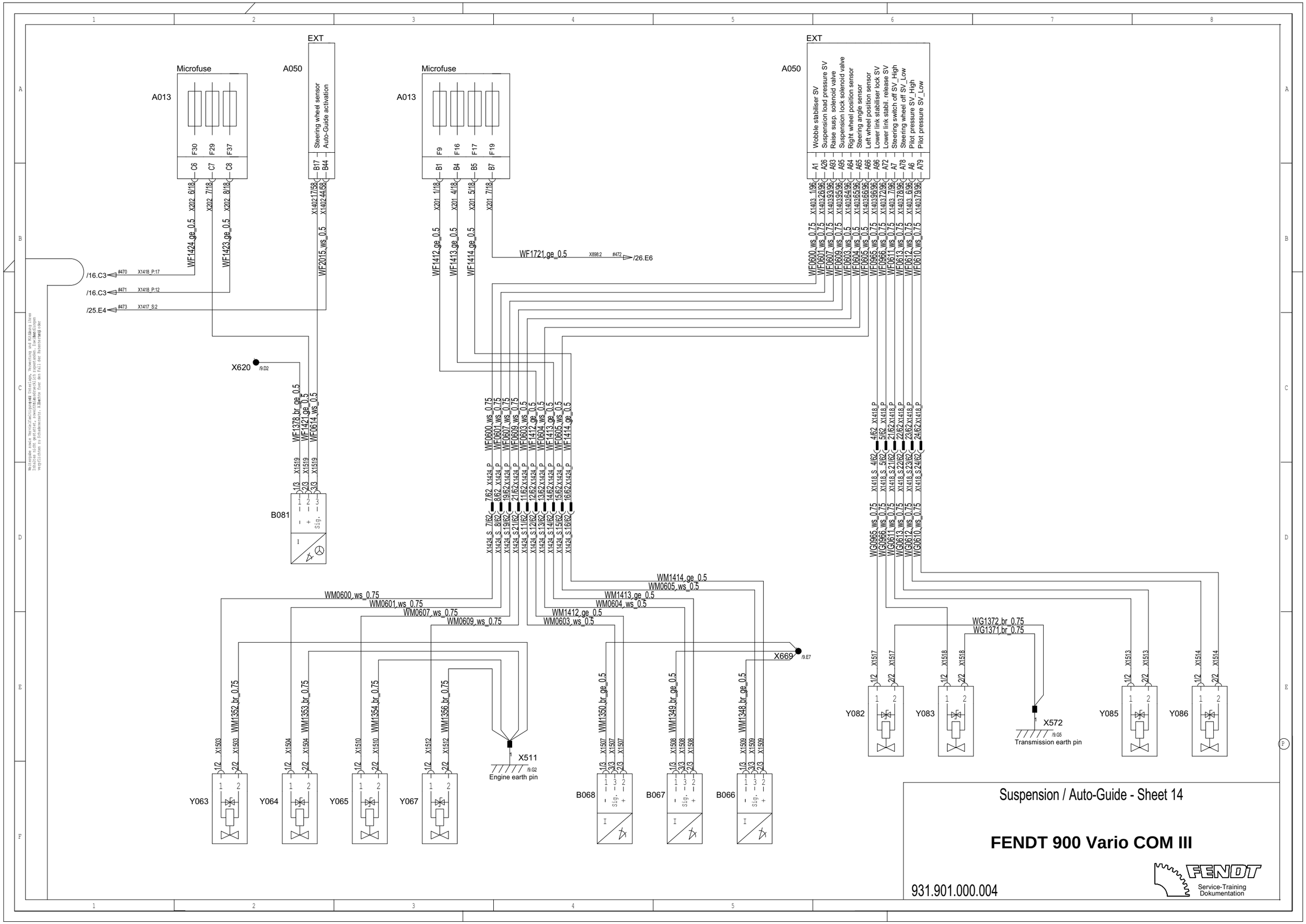
The valve bus is then closed using bridge connector H931.901.042.300 with **separation points X1470 and X1477**

For tractors **without Y087 - Steering valve block, Auto-Guide** , separation point X1586_S (Item B4) is connected to separation point X1586_P (Item C5).

The following components are missing:

**Y087** - Steering valve block, Auto-Guide (Item B6)
along with the corresponding wiring.

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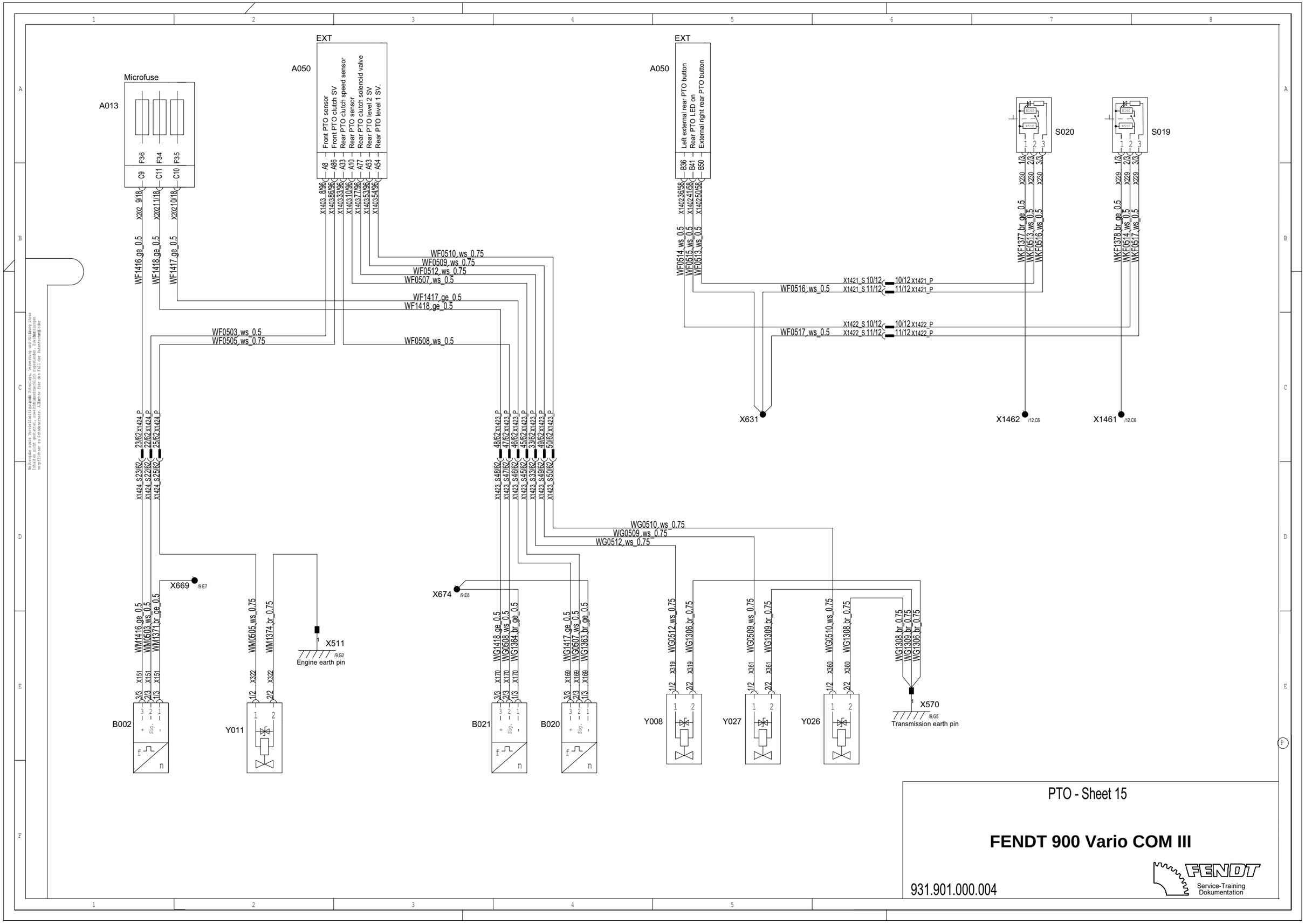


## 13 Suspension/Auto-Guide - Sheet 14

**A013** - PCB, microfuses (Item A2, A3)
**A050** - ECU, basic control unit (Item A2, A6)
**B066** - Sensor, wheel position (left) (Item F5)
**B067** - Sensor, steering angle (Item F5)
**B068** - Sensor, wheel position (right) (Item F4)
**B081** - Steering wheel sensor (360°) (Item D2)
**X511** - Earth pin, engine (Item EF4)
**X572** - Earth pin, transmission (Item E7)
**X620** - Connector, sensor system earth (Item C2)
**X669** - Connector, sensor system earth (Item E5)
**X1418** - Cable coupling, operator platform/transmission (Item C6)
**X1424** - Cable coupling, operator platform (Item D 3-4)
**Y063** - Wobble stabiliser solenoid valve (Item F2)
**Y064** - Suspension load pressure/lowering solenoid valve (Item F2)
**Y065** - Raise suspension solenoid valve (Item F3)
**Y067** - Lock suspension solenoid valve (Item F3)
**Y082** - Solenoid valve, lower link stabiliser, lock (Item E6)
**Y083** - Solenoid valve, lower link stabiliser, release (Item E6)
**Y085** - Pilot pressure/switch-off solenoid valve (Auto-Guide) (Item E7)
**Y086** - Solenoid valve, steering disconnect (Auto-Guide) (Item E8)

**NOTE:** *For safety-related circuits, not only is the positive side connected via the **A050** - ECU, basic control unit but the negative side is too.*
*The positive side is called _High in the E-box.*
*The negative side is called _Low in the E-box.*

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## 14 PTO - Sheet 15

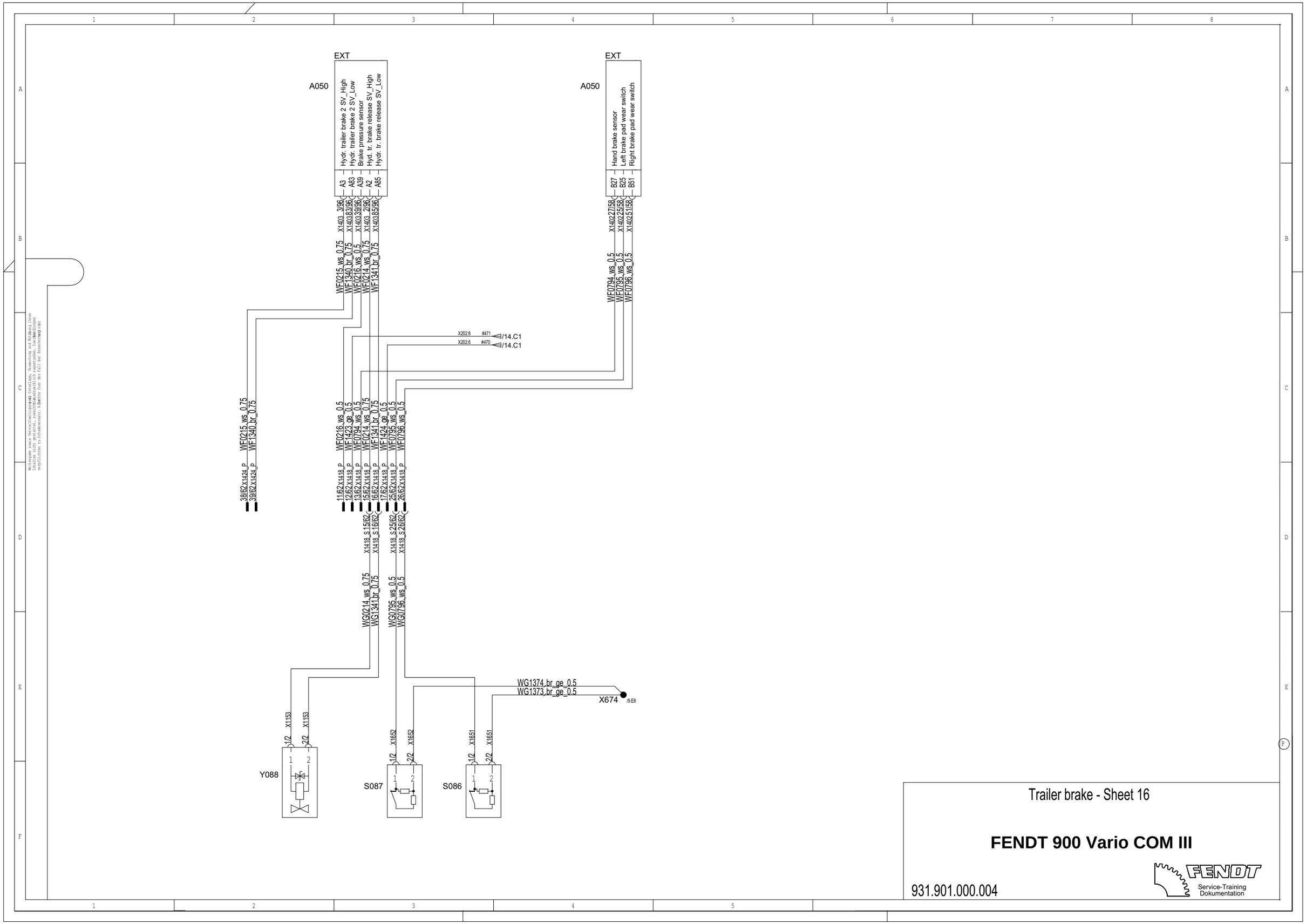
**A013** - PCB, microfuses (Item A 1-2)
**A050** - ECU, basic control unit (Item A 2-3, A5)
**B002** - Sensor, front PTO speed (Item E1)
**B020** - Sensor, rear PTO speed (stub shaft) (Item E4)
**B021** - Sensor, rear PTO speed (clutch) (Item E4)
**S019** - Button, rear PTO, external left (item A 7/8)
**S020** - Button, rear PTO, external right (Item A7)
**X511** - Earth pin, engine (Item E2)
**X570** - Earth pin, transmission (Item E6)
**X631** - Connector, rear PTO LED ON (Item C5)
**X669** - Connector, sensor system earth (Item D2)
**X674** - Connector, sensor system earth (Item D3)
**X1421** - Cable coupling, operator platform (Item B6)
**X1422** - Cable coupling, mudguard (Item C6)
**X1423** - Cable coupling, operator platform/transmission (Item CD4)
**X1424** - Cable coupling, operator platform (Item CD1)
**X1461** - Connector, sensor system earth (left mudguard) (Item C7)
**X1462** - Connector, sensor system earth (right mudguard) (Item C7)
**Y008** - Solenoid valve, rear PTO (clutch) (Item E5)
**Y011** - Front PTO solenoid valve (clutch) (Item E2)
**Y026** - Solenoid valve, rear PTO, stage I (Item E6)
**Y027** - Solenoid valve, rear PTO, stage II (Item E5)

**NOTE:** *The **Y026** - Solenoid valve, rear PTO, stage I (Item E6) can select the following PTO speeds:*

- *540*
- *540 E*
- *1000 E*

*1000 E is available from chassis number 9XX/2X/3501 onwards on request.*

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## 15 Trailer brake - Sheet 16

**A050** - ECU, basic control unit (Item A3, A4)
**S086** - Switch, brake wearing, right (Item F 3/4)
**S087** - Switch, brake wearing, left (Item F3)
**X674** - Connector, sensor system earth (Item E4)
**X1418** - Cable coupling, operator platform/transmission (Item D3)
**X1424** - Cable coupling, operator platform (Item D2)
**Y088** - Solenoid valve, release trailer brake (Item F2)

**NOTE:** *For safety-related circuits, not only is the positive side connected via the **A050** - ECU, basic control unit but the negative side is too.*
*The positive side is called _High in the E-box.*
*The negative side is called _Low in the E-box.*

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Instrument panel/ABS/driver seat - Sheet 17

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## 16 Instrument panel/ABS/driver seat - Sheet 17

**A007** - Instrument panel (Item A4, A 6/7)
**A036** - Control panel, dashboard right/left (Item A8)
**A039** - MFA, multifunction armrest (Item E 2/3)
**B013** - Sensor, hydraulic oil temperature (Item E6)
**B019** - Sensor, compressed air supply (Circuit II) (Item E7)
**B034** - Immersed tube sensor (fuel) (Item E6)
**B060** - Compressed air supply sensor (Circuit I) (Item E8)
**B084** - Sensor, hydraulic oil level (Item E7)
**G002** - Alternator 1 (Item E5)
**G004** - Alternator 2 (Item E5)
**H006** - Audio warning signal (Item D 3/4)
**S076** - Switch, clutch fluid (Item D3)
**X533** - Earth pin, cab body (Item F4)
**X551** - Earth pin, operator platform right (Item C2)
**X558** - Earth pin, transmission (Item E2)
**X596** - Connector, earth (X1048 socket, ABS) (Item E1)
**X635** - Connector, sensor system earth (instrument panel) (Item C7)
**X678** - Connector, sensor system earth (Item D7)
**X698** - Connector, sensor system earth (Item D8)
**X814** - Connector, +UB30 (X1048 socket, ABS) (Item E1)
**X837** - Separation point on X1048 socket, ABS (Item D1)
**X1048** - Socket ABS (Item F1)
**X1401** - Separation point on A039 (Item E 2/3)
**X1418** - Cable coupling, operator platform/transmission (Item C1, C8)
**X1419** - Cab cable coupling (Item D4)
**X1423** - Cable coupling, operator platform/transmission (Item C7)
**X1424** - Cable coupling, operator platform (Item CD6)
**X1440** - Fuse holder (Item A1, A2, A5)
**X1525** - Connector, sensor + UB (from instrument panel) (Item D7)
**X1565** - Connector, position light (Item B7)

**NOTE:** *The wiring diagram shows **A039** - MFA, multifunction armrest (Item E 2/3) with the super deluxe seat wiring. Optional extra versions Fendt Evolution and Fendt Evolution Active are not shown.*

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STVZO/corner light/4th hydraulic circuit - Sheet 18

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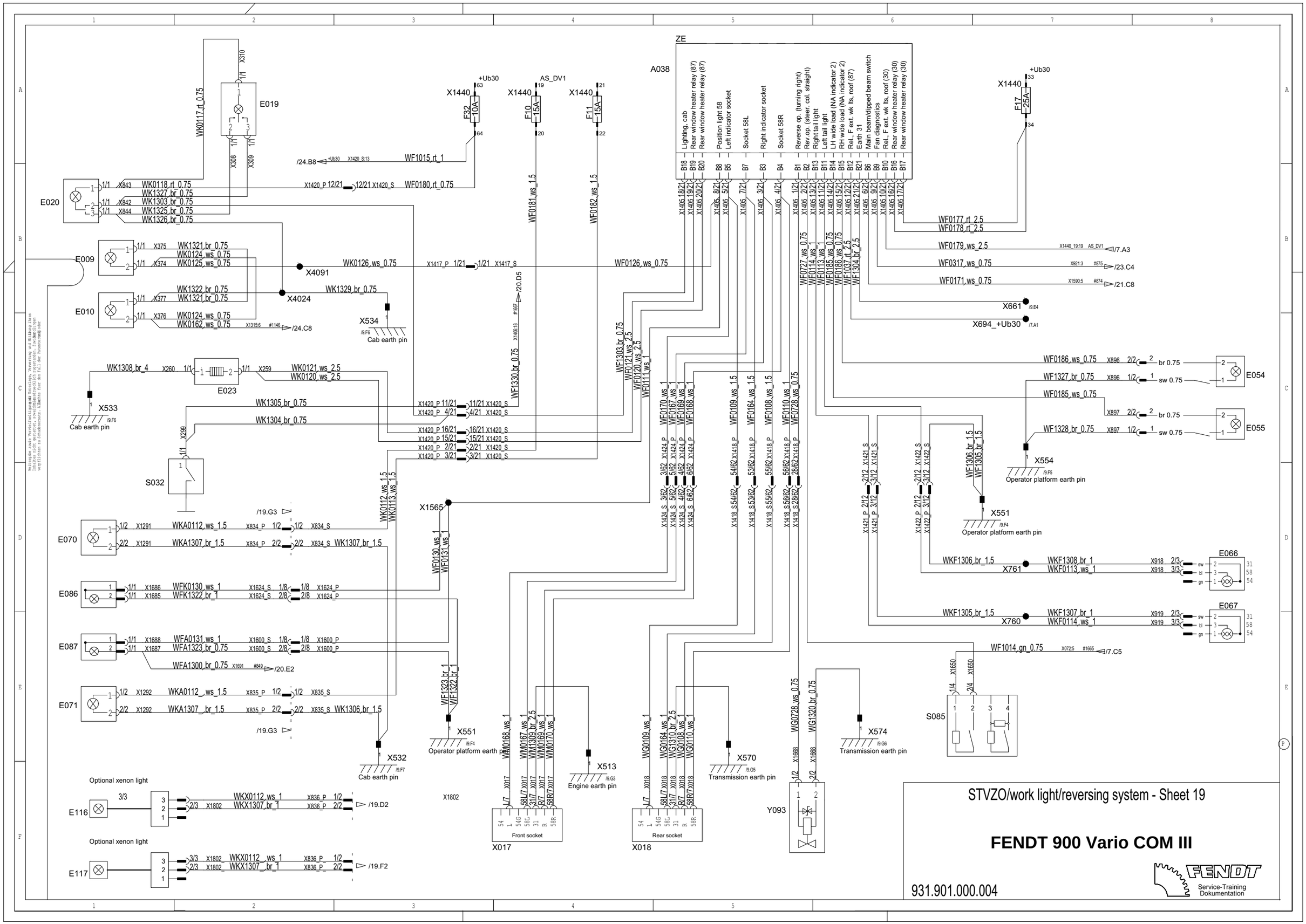


## 17 STVZO/corner light/4th hydraulic circuit - Sheet 18

**A038** - ECU, central electrical system (Item A6)
**E003** - H4 additional headlight, right (Item B1)
**E004** - H4 additional headlight, left (Item C1)
**E066** - Brake and tail light left (Item D8)
**E067** - Brake and tail light right (Item C8)
**E074** - Work light, right (cornerlight) (Item CD1)
**E075** - Work light, left (cornerlight) (Item EF1)
**E098** - Drive headlight (main beam), right (Item D1)
**E099** - Drive headlight (dipped beam), right (Item D1)
**E100** - Drive headlight (main beam), left (Item E1)
**E101** - Drive headlight (dipped beam), left (Item E1)
**X015** - External control socket (Item F5)
**X018** - Rear socket (Item E7)
**X520** - Earth pin, oil sump right (Item F3)
**X532** - Earth pin, cab body (Item C 2/3)
**X572** - Earth pin, transmission (Item E4)
**X598** - Connector, K bus_High (Item C8)
**X599** - Connector, K bus_Low (Item C8)
**X650** - Connector, headlight 56b (dipped beam) (Item C6)
**X651** - Connector, headlight 56a (main beam) (Item C6)
**X657** - Connector, auxiliary lighting 56a (main beam) (Item B 5)
**X658** - Connector, auxiliary lighting 56b (dipped beam) (Item B 5)
**X659** - Connector, work light (cornerlight) (Item C5)
**X661** - Connector, electronics earth (Item C8)
**X766** - Connector, air conditioning earth (Item BC8)
**X838** - Separation point on X015 socket, external control (Item E5)
**X899** - Connector, earth (Item EF 3/4)
**X918** - Separation point on E066 (Item D8)
**X919** - Separation point on E067 (Item C8)
**X1417** - Cable coupling, operator platform/cab (Item B3)
**X1418** - Cable coupling, operator platform/transmission (Item D7)
**X1421** - Cable coupling, operator platform (Item CD7)
**X1422** - Cable coupling, mudguard (Item D7)
**X1423** - Cable coupling, operator platform/transmission (Item D6)
**X1425** - Cable coupling, operator platform (Item D5)
**X1436** - Cable coupling, tractor bonnet (drive light, cornerlight) (Item DE3)
**X1440** - Fuse holder (Item A 4-5)
**X1578** - Connector, + UB 15 (Item B8)

**NOTE:** *The following components are also optionally available as LED tail lights:*
***E066*** *- Brake and tail light left (Item D8)*
***E067*** *- Brake and tail light right (Item C8)*
*In this case, components:*
***A075*** *- ECU, tail light LED, right*
***A076*** *- ECU, tail light LED, left must be fitted. See Sheet 28.*

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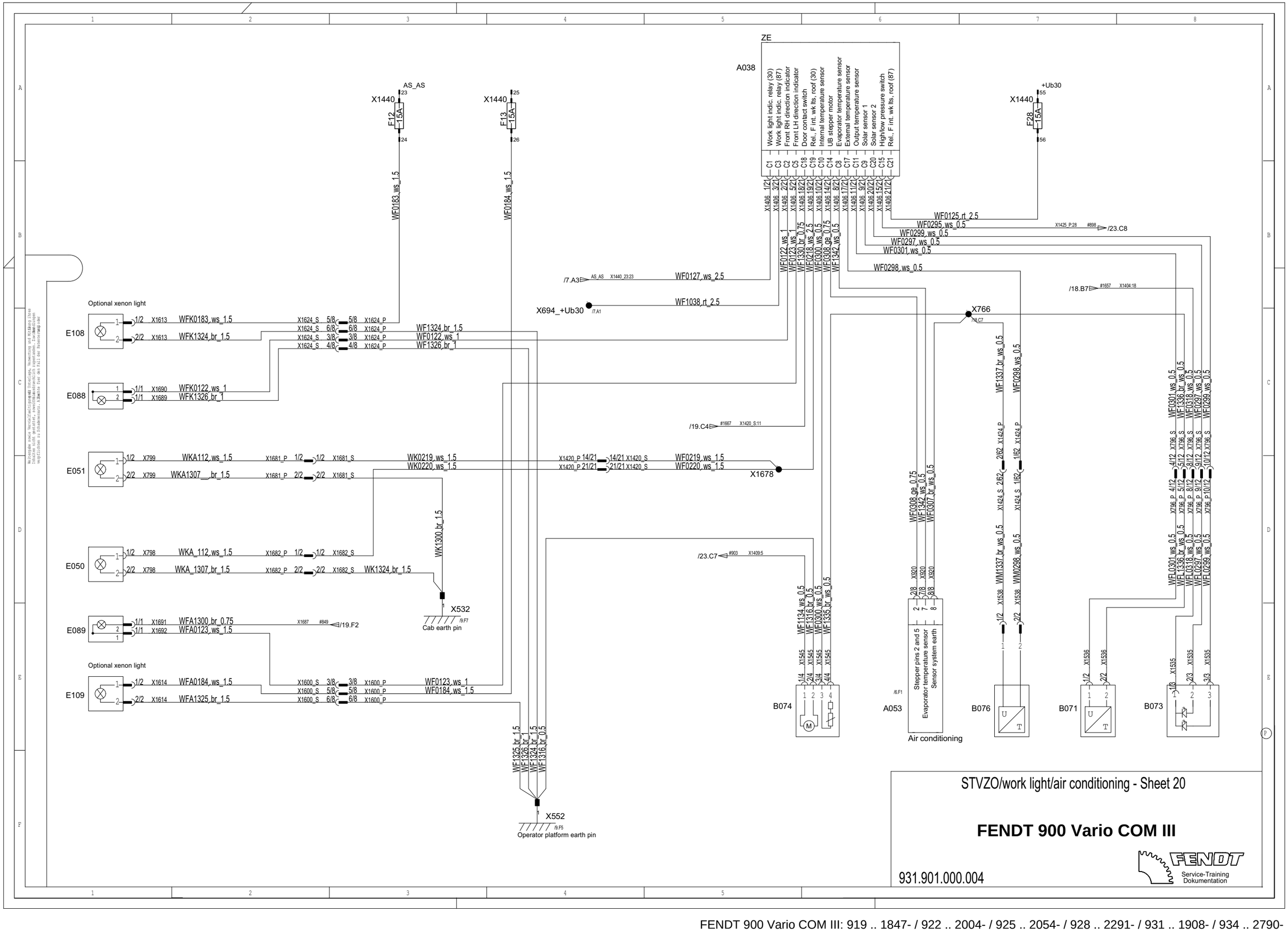

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# 18 STVZO/work light/reversing system - Sheet 19

**A038** - ECU, central electrical system (Item A 5-6)
**E009** - Licence plate lighting, right (Item B1)
**E010** - Licence plate lighting, left (Item BC1)
**E019** - Lighting, cab (Item A2)
**E020** - Lighting (EPC) (Item B1)
**E023** - Rear window heater (Item C2)
**E054** - Wide vehicle marker lights, right (Item C8)
**E055** - Wide vehicle marker lights, left (Item C8)
**E066** - Brake and tail light left (Item D8)
**E067** - Brake and tail light right (Item DE8)
**E070** - Work lights, front right roof, external (Item D1)
**E071** - Work lights, front left roof, external (Item E1)
**E086** - Side lamp, front right (Item D1)
**E087** - Side lamp, front left (Item E1)
**E116** - Work lights, Xenon front right roof, external (Item F1)
**E117** - Work lights, Xenon front left roof, external (Item F1)
**S032** - Switch, left door contact (Item CD 1/2)
**S085** - Switch, reverse operation (RÜFA) actuation (Item E 6/7)
**X017** - Front socket (Item F4)
**X018** - Rear socket (Item F 4/5)
**X513** - Earth pin, engine (Item EF4)
**X532** - Earth pin, cab body (Item EF3)
**X533** - Earth pin, cab body (Item C1)
**X534** - Earth pin, cab body (Item BC3)
**X551** - Earth pin, operator platform right (Item D7, E3)
**X554** - Earth pin, operator platform (Item CD7)
**X570** - Earth pin, transmission (Item EF5)
**X574** - Earth pin, transmission (Item E6)
**X661** - Connector, electronics earth (Item BC7)
**X694** - Connector, +UB 30 (A038) (Item BC7)
**X760** - Connector, signal (raise suspension) (Item DE7)
**X761** - Connector, signal (lower suspension) (Item D7)
**X834** - Separation point on E070 (Item D2)
**X835** - Separation point on E071 (Item E2)
**X836** - Separation point on E0116 / E117 (Item F 2/3)
**X896** - Separation point on E054 (Item C 7/8)
**X897** - Separation point on E055 (Item C 7/8)
**X918** - Separation point on E066 (Item D8)
**X919** - Separation point on E067 (Item DE8)
**X1417** - Cable coupling, operator platform/cab (Item B 3/4)
**X1418** - Cable coupling, operator platform/transmission (Item CD5)
**X1420** - Cab cable coupling (Item B3, C3)
**X1421** - Cable coupling, operator platform (Item D6)
**X1422** - Cable coupling, mudguard (Item D6)
**X1424** - Cable coupling, operator platform (Item CD5)
**X1440** - Fuse holder (Item A3, A4; A7)
**X1565** - Connector, position light (Item D3)
**X1600** - Cable coupling, to rear work lights (roof) (Item E2)
**X1624** - Cable coupling to front position lights (Item DE2)
**X1802** - Separation point on E116 / E117 (Item F2)
**Y093** - Solenoid valve, reverse operation (RÜFA), rotate to right (Item F5)

**NOTE:** *The following components are also optionally available as LED tail lights:*
***E066** - Brake and tail light left (Item D8)*
***E067** - Brake and tail light right (Item C8)*
*In this case, components:*
***A075** - ECU, tail light LED, right*
***A076** - ECU, tail light LED, left must be fitted. See Sheet 28.*

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## 19 STVZO/work light/air conditioning - Sheet 20

**A038** - ECU, central electrical system (Item A 5-6)
**A053** - ECU, air conditioning control (Item E6)
**B071** - Sensor, output temperature (Item E7)
**B073** - Sensor, solar (irradiation) (Item E8)
**B074** - Sensor, internal temperature (Item E5)
**B076** - Sensor, external temperature (Item E7)
**E050** - Work lights, front left roof, internal (Item D1)
**E051** - Work lights, front right roof, internal (Item C1)
**E088** - Direction direction indicator, front right (Item C1)
**E089** - Direction direction indicator, front left (Item E1)
**E108** - Work light, right A pillar (optional Xenon) (Item C1)
**E109** - Work light, left A pillar (optional Xenon) (Item E1)
**X532** - Earth pin, cab body (Item CD3)
**X552** - Earth pin, operator platform (Item F4)
**X694** - Connector, +UB 30 (A038) (Item BC4)
**X766** - Connector, air conditioning earth (Item BC 6/7)
**X796** - Cable coupling (M002) (Item CD8)
**X1420** - Cab cable coupling (Item CD4)
**X1424** - Cable coupling, operator platform (Item CD7)
**X1440** - Fuse holder (Item A3; A4; A7)
**X1538** - Separation point on B076 (Item E7)
**X1600** - Cable coupling, to rear work lights (roof) (Item E3)
**X1624** - Cable coupling to front position lights (Item C 2/3)
**X1678** - Connector, front work light (Item D5)
**X1681** - Cable coupling, E051 (Item D2)
**X1682** - Cable coupling, E050 (Item D2)

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Wipers / Work lights - Sheet 21

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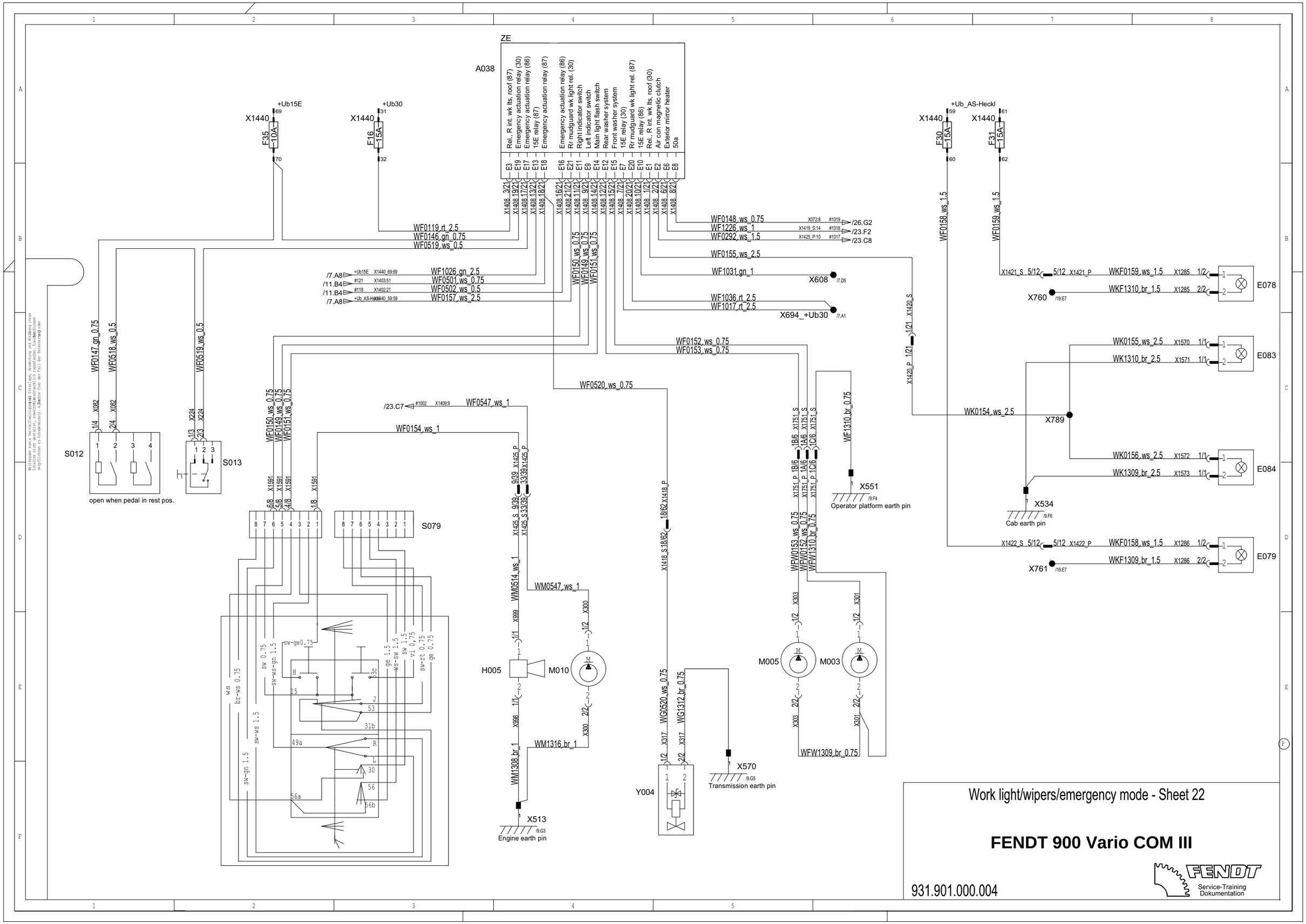


## 20 Wipers/work light - Sheet 21

**A038** - ECU, central electrical system (Item A 4-5)
**E021** - Rotating beacon, right (Item F2)
**E022** - Rotating beacon, left (Item F3)
**E064** - Rear direction indicator, left (Item D1)
**E065** - Rear direction indicator, right (Item C1)
**E082** - Work light, rear right external (roof) (Item C1)
**E085** - Work light, rear left external (roof) (Item DE1)
**E130** - LED for rear direction indicator, left (Item D1)
**E131** - LED for rear direction indicator, right (Item C1)
**M002** - Front wiper motor (Item F 4/5)
**M004** - Rear wiper motor (Item F 3/4)
**S079** - Switch, steering column (Item DE7)
**X258** - Separation point on M004 (Item E 3/4)
**X345** - Separation point on E022 (Item E3)
**X346** - Separation point on E021 (Item E2)
**X347** - Separation point on M002 (Item E 4/5)
**X532** - Earth pin, cab body (Item E2)
**X534** - Earth pin, cab body (Item E3)
**X552** - Earth pin, operator platform (Item D4)
**X574** - Earth pin, transmission (Item E6)
**X608** - Connector, + UB 15 (Item B3)
**X694** - Connector, +UB 30 (A038) (Item B3)
**X760** - Connector, signal (raise suspension) (Item C3)
**X761** - Connector, signal (lower suspension) (Item D3)
**X762** - Connector, pre-heater signal (Item C6)
**X769** - Connector, signal (E021/E022) (Item E3)
**X793** - Connector, signal (E082/E085) (Item D2)
**X796** - Cable coupling (M002) (Item D 4/5)
**X916** - Separation point on E064 (Item D1)
**X917** - Separation point on E065 (Item C1)
**X1418** - Cable coupling, operator platform/transmission (Item D5)
**X1420** - Cab cable coupling (Item D 3/4)
**X1421** - Cable coupling, operator platform (Item C3)
**X1422** - Cable coupling, mudguard (Item C3)
**X1440** - Fuse holder (Item A2, A6)
**X1590** - Separation point on S079 (Item C 7/8)
**X1591** - Separation point on S079 (Item C7)
**Y092** - Solenoid valve, reverse operation (RÜFA), rotate to left (Item F5)

**NOTE:** *If LED tail lights are fitted,*
***E130*** *- LED for rear direction indicator, left (Item D1)*
***E131*** *- LED for rear direction indicator, right (Item C1)*
*the following components are also fitted:*
***A075*** *- ECU, tail light LED, right*
***A076*** *- ECU, tail light LED, left See Sheet 28.*

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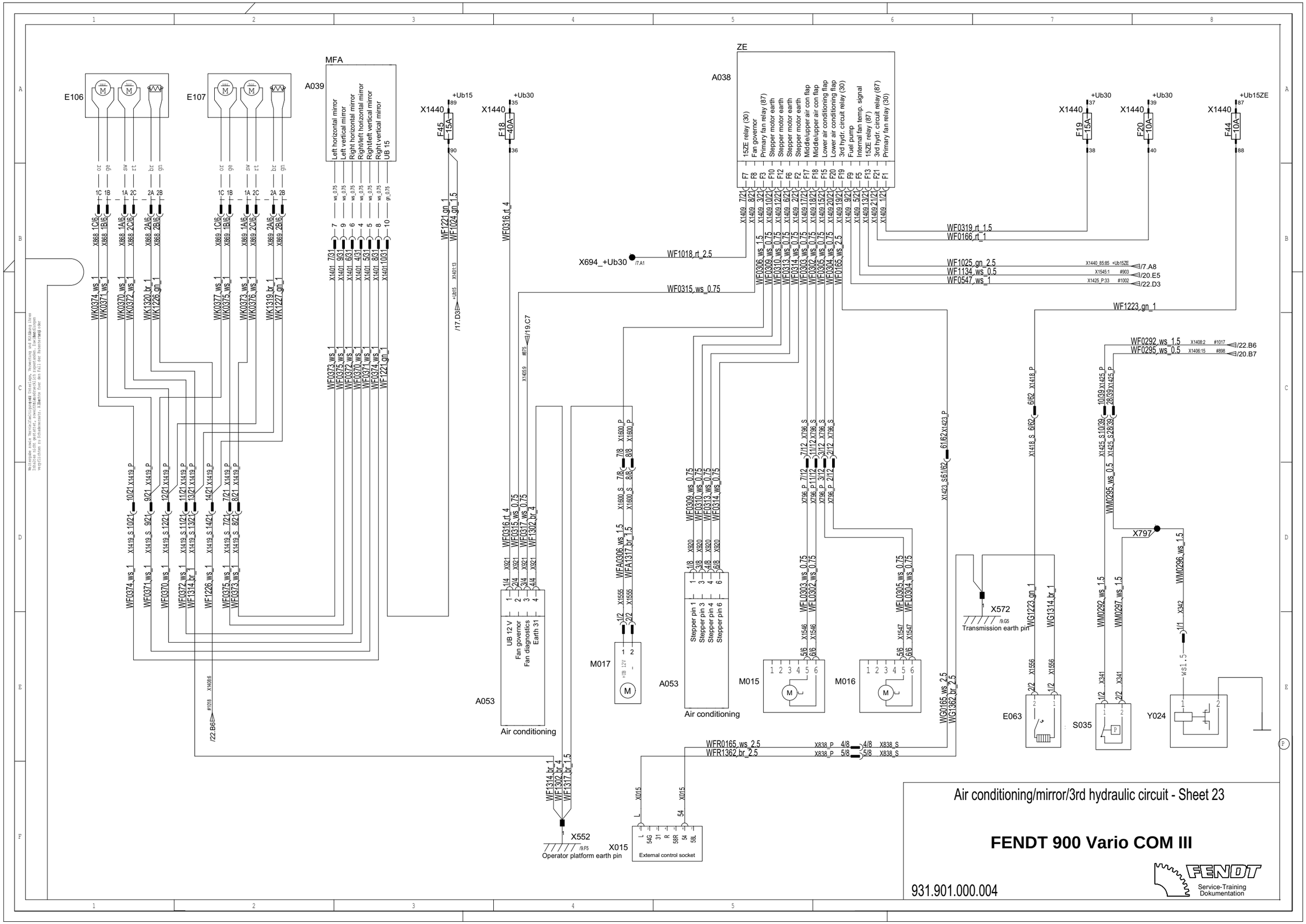
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# 21 Work light/wipers/emergency mode - Sheet 22

**A038** - ECU, central electrical system (Item A 4-5)
**E078** - Work light, rear right mudguard (optional Xenon) (Item B8)
**E079** - Work light, rear left mudguard (optional Xenon) (Item D8)
**E083** - Work light, rear right internal (roof) (Item C8)
**E084** - Work light, rear left internal (roof) (Item CD8)
**H005** - Horn (Item E4)
**M003** - Wiper pump, front (Item E6)
**M005** - Wiper pump, rear (Item E5)
**M010** - Fuel pump (Item E4)
**S012** - Switch, starter lockout (Item CD 1)
**S013** - Emergency mode button (Item CD 2)
**S079** - Switch, steering column (Item. EF 2-3)
**X513** - Earth pin, engine (Item F4)
**X534** - Earth pin, cab body (Item D7)
**X551** - Earth pin, operator platform right (Item D6)
**X570** - Earth pin, transmission (Item E5)
**X608** - Connector, + UB 15 (Item B6)
**X694** - Connector, +UB 30 (A038) (Item BC6)
**X760** - Connector, earth (Item B7)
**X761** - Connector, earth (Item D7)
**X789** - Connector, signal (E083/E084) (Item C7)
**X1418** - Cable coupling, operator platform/transmission (Item D 4/5)
**X1420** - Cab cable coupling (Item C6)
**X1421** - Cable coupling, operator platform (Item B7)
**X1422** - Cable coupling, mudguard (Item D7)
**X1425** - Cable coupling, operator platform (Item D4)
**X1440** - Fuse holder (Item A2, A3, A6, A7)
**X1591** - Separation point on S079 (Item D2)
**X1751** - Separation point, left frame earth point (Item C 5/6)
**Y004** - Solenoid valve, turbo-clutch (Item F5)

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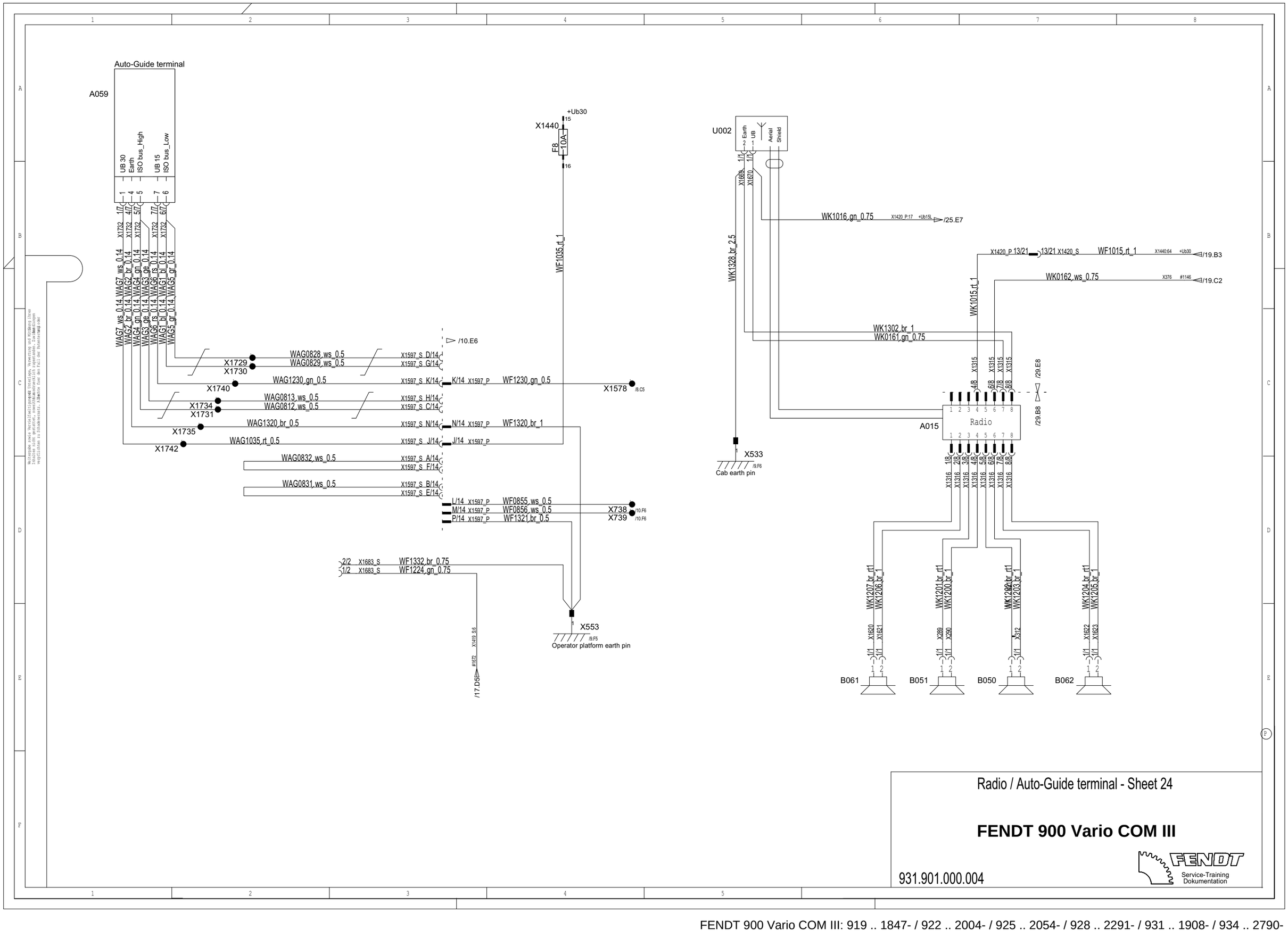
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## 22 Air conditioning/mirror/3rd hydraulic circuit - Sheet 23

**A038** - ECU, central electrical system (Item A 5-6)
**A039** - MFA, multifunction armrest (Item A 2-3)
**A053** - ECU, air conditioning control (Item DE 3/4, DE5)
**E063** - Heater element, air dryer (temperature-controlled) (Item E7)
**E106** - Exterior mirror (adjustment/heater), right (Item A1)
**E107** - Exterior mirror (adjustment/heater), left (Item A2)
**M015** - Actuator motor, top/middle air flap (Item E 5/6)
**M016** - Servomotor, bottom air valve (Item E6)
**M017** - Primary fan (Item E4)
**S035** - Switch, high-pressure/low-pressure (air conditioning system) (Item E7)
**X015** - External control socket (Item F 4/5)
**X342** - Separation point on Y024 (Item E8)
**X552** - Earth pin, operator platform (Item F4)
**X572** - Earth pin, transmission (Item D7)
**X694** - Connector, +UB 30 (A038) (Item B4)
**X796** - Cable coupling (M002) (Item C 5/6)
**X797** - Connector, air conditioning coupler signal (Item D8)
**X838** - Separation point on X015 socket, external control (Item E6)
**X868** - Separation point on E106 (Item B1)
**X869** - Separation point on E107 (Item B2)
**X920** - Separation point on A053 (Item D5)
**X921** - Separation point on A053 (Item D4)
**X1401** - Separation point on A039 (Item B 2/3)
**X1418** - Cable coupling, operator platform/transmission (Item C7)
**X1419** - Cab cable coupling (Item D1-2)
**X1423** - Cable coupling, operator platform/transmission (Item C6)
**X1425** - Cable coupling, operator platform (Item C7)
**X1440** - Fuse holder (Item A3, A4, A7, A8)
**X1555** - Separation point on M017 (Item E4)
**X1600** - Cable coupling, to rear work lights (roof) (Item C4)
**Y024** - Magnetic clutch, air conditioning compressor (Item E8)

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Radio / Auto-Guide terminal - Sheet 24

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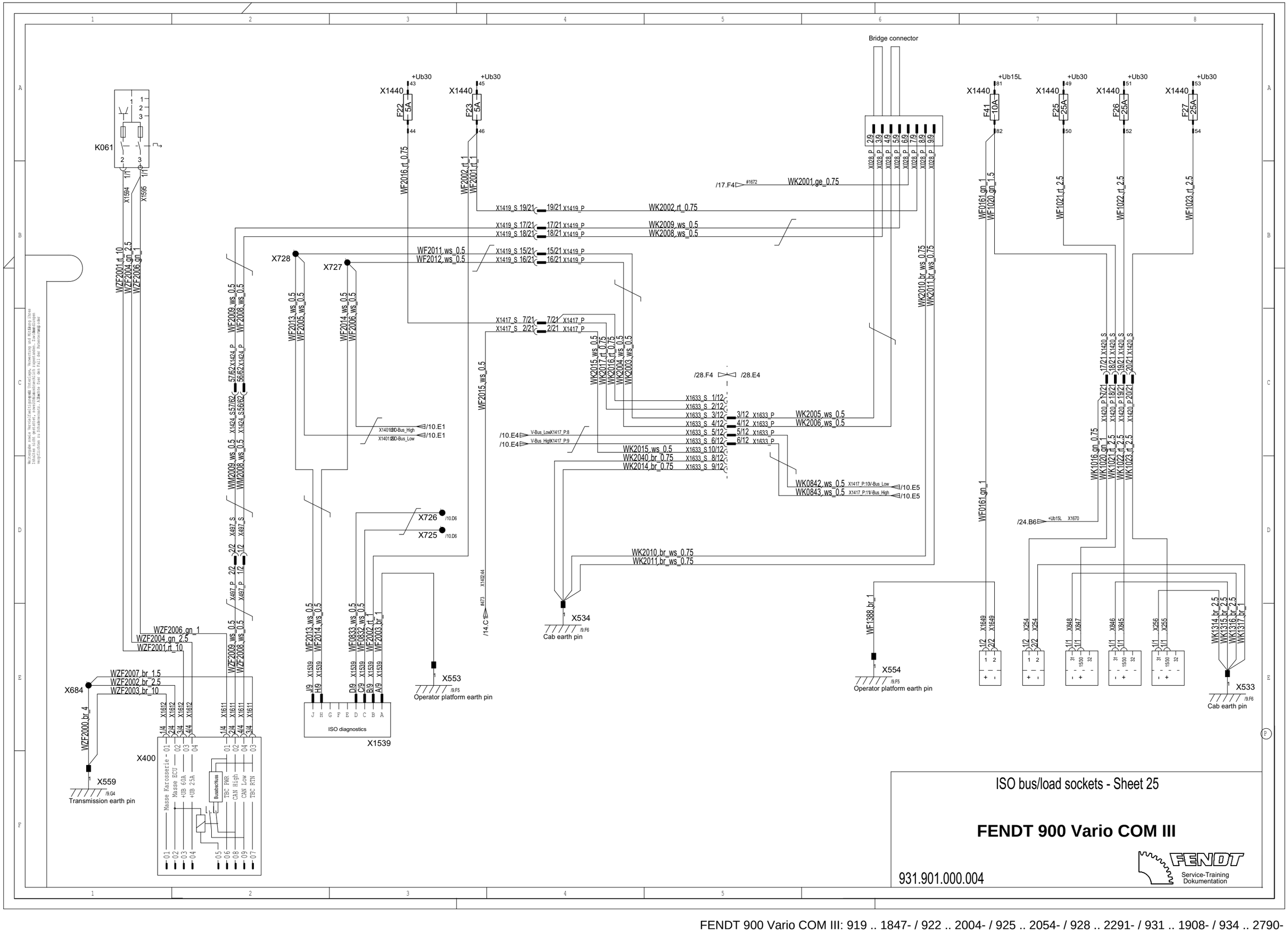
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# 23 Radio/Auto-Guide terminal - Sheet 24

**A015** - Radio (Item C 6-7)
**A059** - Terminal (Auto-Guide) (Item AB1)
**B050** - Loudspeaker, left (Item E7)
**B051** - Loudspeaker, right (Item E6)
**B061** - Loudspeaker (Item E6)
**B062** - Loudspeaker (Item E7)
**U002** - Radio aerial (Item A5)
**X533** - Earth pin, cab body (Item C5)
**X553** - Earth pin, operator platform (Item D4)
**X738** - Connector, serial RXD (Item D4)
**X739** - Connector, serial TXD (Item D4)
**X1315** - Separation point on radio (compact plug) (Item C 6/7)
**X1316** - Separation point on radio (compact plug) (Item C 6/7)
**X1420** - Cab cable coupling (Item B7)
**X1440** - Fuse holder (Item A4)
**X1578** - Connector, + UB 15 (Item C4)
**X1597** - Cable coupling A059 (Item CD3)
**X1683** - Cable coupling, camera socket (Item D2)
**X1729** - Connector, ISO bus_Low (Item C2)
**X1730** - Connector, ISO bus_Low (Item C2)
**X1731** - Connector, ISO bus_High (Item C2)
**X1734** - Connector, ISO bus_High (Item C2)
**X1735** - Connector, earth (Auto-Guide) (Item C2)
**X1740** - Connector, Auto-Guide (+UB 15) (Item C2)
**X1742** - Connector, Auto-Guide (+UB 30) (Item C2)

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## 24 ISO bus/load sockets - Sheet 25

**K061** - ISO bus disconnect relay (Item A1)
**X028** - ISO socket (cab) (Item A6)
**X254** - 10 amp socket (Item E7)
**X255** - 25 A socket (+ UB 30) (Item E8)
**X256** - 25 amp socket (earth) (Item E8)
**X400** - Rear ISO implement socket (Item F2)
**X497** - Separation point, ISO preparation (Item D2)
**X533** - Earth pin, cab body (Item E8)
**X534** - Earth pin, cab body (Item E4)
**X553** - Earth pin, operator platform (Item E3)
**X554** - Earth pin, operator platform (Item E6)
**X559** - Earth pin, transmission (Item F1)
**X684** - Connector, ISO socket earth (Item E1)
**X725** - Connector, K bus_High (Item D3)
**X726** - Connector, K bus_Low (Item D3)
**X727** - Connector, ISO bus_High (Item B3)
**X728** - Connector, ISO bus_Low (Item B2)
**X845** - 25 A socket (+ UB 30) (Item E8)
**X846** - 25 amp socket (earth) (Item E8)
**X847** - 25 A socket (+ UB 30) (Item E7)
**X848** - 25 amp socket (earth) (Item E7)
**X1417** - Cable coupling, operator platform/cab (Item C4)
**X1419** - Cab cable coupling (Item B4)
**X1420** - Cab cable coupling (Item C 7/8)
**X1424** - Cable coupling, operator platform (Item C2)
**X1440** - Fuse holder (Item A3, A7, A8)
**X1539** - ISO bus diagnostics socket (Item E 2/3)
**X1633** - Separation point, Auto-Guide TopDock (Item CD5)
**X1649** - Separation point, 10 amp socket (Item E7)

**NOTE:** *If nothing is connected to **X028** - ISO socket (cab) the short-circuit connector H515.810.210.030 must be fitted.*

EDC

A051

Fan speed sensor — 69 — X1466 69/89
Fan earth — 67 — X1466 67/89
Fan solenoid valve (85) — 15 — X1466 15/89
Fan solenoid valve (86) — 14 — X1466 14/89
UB fan — 68 — X1466 68/89
Electronics earth — 29 — X1466 29/89
Coolant level sensor — 55 — X1466 55/89
Vacuum switch — 42 — X1466 42/89
UB sensors — 21 — X1466 21/89
50a — 74 — X1466 74/89
Engine brake switch — 47 — X1466 47/89
Starter lockout switch — 66 — X1466 66/89
ISO characteristic curve — 89 — X1466 89/89
Foot throttle sensor — 79 — X1466 79/89
Foot throttle earth — 78 — X1466 78/89
UB 5 V foot throttle — 77 — X1466 77/89
Start relay — 37 — X1466 37/89
Start relay — 17 — X1466 17/89

EXT

A050

Foot throttle sensor — B18 — X140 218/58

WM1721 br 0.75
WM1715 ws 0.75
WM1711 ge 0.75
WM1710 br 0.75
WM1712 ws 0.75
WM1728 ws 0.5
WM1714 ws 0.75
WM1708 ws 0.75
WM1736 ws 0.75

WM1717 ge 0.75
X1528
WM1718 ge 0.75
WM1719 ge 0.75

X1424 41/62 X1424 S
X1424 42/62 X1424 S
X1424 43/62 X1424 S
X1424 44/62 X1424 S
X1424 45/62 X1424 S
X1424 46/62 X1424 S
X1424 47/62 X1424 S
X1424 48/62 X1424 S
X1424 49/62 X1424 S

WM1724 ws 0.75
WM1726 br 0.75
WM1723 br 0.75
WM1722 ws 0.75
WM1725 ws 0.75
X1532 1/5 1
X1532 2/5 2
X1532 3/5 3
X1532 4/5 4
X1532 5/5 5

B077 Sig. - 85 86 +
U f

WM1716 br 0.75
WM1707 ws 0.75
X244 2/2 2
X244 1/2 1

S034 Q

WM1709 ws 0.75
WM1720 ge 0.75
X153 2/2 2
X153 1/2 1

B004 P

WF1736 ws 0.75
WF1719 ge 0.75
WF1708 ws 0.75
WF1718 ge 0.75
WF1714 ws 0.75
WF1728 ws 0.75
WF1711 ge 0.75
WF1710 br 0.75
WF1712 ws 0.75

/14.B4 #472 X201:7
X660 /9.B6

/17.C5 #1672
X553
/9.F5
Operator platform earth point

WF1723 br ge 0.5
WF1721 ge 0.5
WF1713 ws 0.5
WF1710 br 0.75
WF1711 ge 0.75
WF1712 ws 0.75
WF1745 gn 0.75
WF1746 br 0.75

X898 1/6 1
X898 2/6 2
X898 3/6 3
X898 4/6 4
X898 5/6 5
X898 6/6 6

B055 Sig. - + Sig. - +
I U

WM1715 ws 0.75
WM1721 br 0.75
X1648 1/2 85
X1648 2/2 86

K065 87 30

M001 50 30

S002 0 1 2 58 15_54 30 50a
8/6
X072

/22.B6 #1019 X1408:8 WF0148 ws 0.75

X140 1/2 1
X140 2/2 2

S047

X082 3/4 3
X082 4/4 4

S012
open when pedal in rest pos.

X810_S
A/12 X810_S
B/12 X810_S
K/12 X810_S
A B C D E F G H J K L M
ISO characteristic curve

EDC engine control - Sheet 26

**FENDT 900 Vario COM III**

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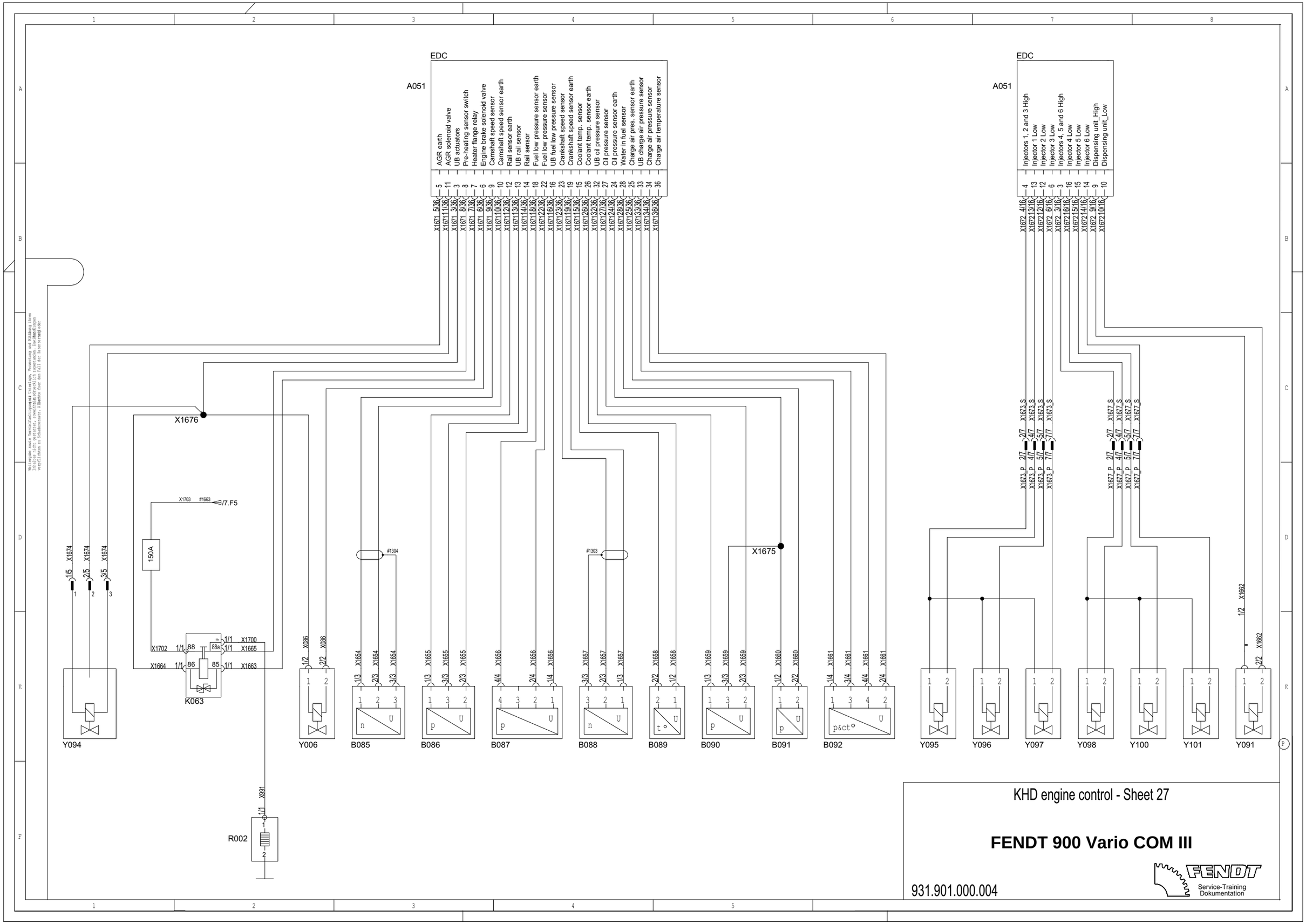
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## 25 EDC engine control - Sheet 26

**A050** - ECU, basic control unit (Item A7)
**A051** - ECU, engine control unit (EDC 7). (Item A 2-3)
**B004** - Vacuum switch (air filter) (Item DE 2/3)
**B055** - Sensor, foot throttle (Item E7)
**B077** - Engine fan (speed sensor/magnetic clutch) (Item DE 1)
**K065** - Starter relay (Item D8)
**M001** - starter. (Item E8)
**S002** - Switch, ignition (Item E3)
**S012** - Switch, starter lockout (Item E4)
**S034** - Switch, coolant level (Item DE2)
**S047** - Switch, engine brake (Item E4)
**X553** - Earth pin, operator platform (Item E5)
**X660** - Connector, sensor system earth (Item D6)
**X810** - EDC diagnostics socket (engine control unit) (Item E 5/6)
**X1424** - Cable coupling, operator platform (Item C5)
**X1528** - Connector, sensor system supply (Item C3)
**X1532** - Separation point on B077 (Item D1)

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## 26 KHD engine control - Sheet 27

**A051** - ECU, engine control unit (EDC 7). (Item A 3-5, A7)
**B085** - Camshaft speed sensor (Item E3)
**B086** - Rail pressure sensor (Item E3)
**B087** - Fuel low pressure sensor (Item E4)
**B088** - Crankshaft speed sensor (Item E4)
**B089** - Engine temperature sensor (Deutz) (Item E5)
**B090** - Sensor, oil pressure (Item E5)
**B091** - Sensor, water in fuel (Item E5)
**B092** - Sensor, charge air pressure/temperature (Item E6)
**K063** - Heater flange relay (Item E2)
**R002** - Heater flange (Item F2)
**X1673** - Cylinder head cable coupling (injectors) (Item C7)
**X1674** - Separation point on Y094 (Item D1)
**X1675** - Connector, earth (Item D5)
**X1676** - Connector + UB 12 VDC (Item C2)
**X1677** - Cylinder head cable coupling (injectors) (Item C7)
**Y006** - Solenoid valve, engine brake (Item E2)
**Y091** - Dispensing unit (fuel) (Item E8)
**Y094** - Actuator unit, AGR (exhaust gas recirculation) (Item E1)
**Y095** - Injector valve 1 (injector) (Item E6)
**Y096** - Injector valve 2 (injector) (Item E7)
**Y097** - Injector valve 3 (injector) (Item E7)
**Y098** - Injector valve 4 (injector) (Item E7)
**Y100** - Injector valve 5 (injector) (Item E8)
**Y101** - Injector valve 6 (injector) (Item E8)

**NOTE:** *The dispensing unit and the injectors are not only actuated via the positive side, but also via the negative side. The positive side is called _High in the E-box. The negative side is called _Low in the E-box.*

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Central electrical system ZE

A038

Rotating beacon relay (87) D21
Rel. R ext. wk lts, roof (30) D1
Reverse op. (turning left) D2
Rel., R ext. wk lts, roof (87) D3
Front wiper 53 D5
Rear wiper 53 D8
Front wiper 31b D9
Front washer ON D10
Rear wiper 31B D11
Relay 15L (87) D13
Front wiper ON D14
Front wiper intermittent D15
Rotating beacon relay (30) D19
Rear left direction indicator D17
Relay 15L (86) D16
Relay 15L (30) D7
Rear right direction indicator D20

X1407_S_21/24 X1407_S_1/21 X1407_S_2/21 X1407_S_3/21 X1407_S_5/21 X1407_S_8/21 X1407_S_9/21 X1407_S_10/21 X1407_S_11/21 X1407_S_13/21 X1407_S_14/21 X1407_S_15/21 X1407_S_19/21 X1407_S_17/21 X1407_S_16/21 X1407_S_7/21 X1407_S_20/21

WLED0138_rt_1.5 WLED0137_ws_2.5 WLED0729_ws_0.75 WLED0123_rt_2.5 WLED0145_ws_0.75 WLED0142_ws_0.75 WLED0144_ws_0.75 WLED0141_ws_0.75 WLED0143_ws_0.75 WLED1028_gn_2.5 WLED0140_ws_0.75 WLED0139_ws_0.75 WLED0160_ws_2.5 WLED1030_gn_1 WLED1027_rt_1.5

21/24 X1407_P 1/21 X1407_P 2/21 X1407_P 3/21 X1407_P 5/21 X1407_P 8/21 X1407_P 9/21 X1407_P 10/21 X1407_P 11/21 X1407_P 13/21 X1407_P 14/21 X1407_P 15/21 X1407_P 19/21 X1407_P 16/21 X1407_P 7/21 X1407_P 20/21 X1407_P 17/21 X1407_P

/21.B5

A075

IN UB 30 OUT Earth UB 15

X1785_2/9 X1785_4/9 X1785_5/9 X1785_6/9 X1785_8/9

A076

IN UB 30 OUT Earth UB 15

X1786_2/9 X1786_4/9 X1786_5/9 X1786_6/9 X1786_8/9

WLED0150_ws_0.75 WLED0148_rt_1 WLED0146_gn_1 WLED0151_ws_0.75 WLED0312_ws_0.75 WLED0311_ws_0.75

WLED0153_br_1 WLED0149_rt_1 WLED0147_gn_1

WLED0152_br_1

X4007

A077

Earth UB 15 UB 30 Transmission bus_Low Transmission bus_High

X1862_1/5 X1862_2/5 X1862_3/5 X1862_4/5 X1862_5/5

WF1329_br_0.75

WF0864_ws_0.5 WF0863_ws_0.5 X1344 X1343 /10.E5

WF1041_rt_0.75 WF0187_gn_0.75 X1634 X1787 /7.E7 /8.C6

X554 /9.F5

Operator platform earth pin

Vario-Doc

A055

Control bus_High Control bus_Low ISO bus_High ISO bus_Low

1 2 7 8

X1411_1/16 X1411_2/16 X1411_7/16 X1411_8/16

WFM0100_ws_0.5 WFM0101_ws_0.5 WFM0102_ws_0.5 WFM0103_ws_0.5

/10.D3

3/8 X1636_P WFM0106_ws_0.5 X1639 WFM0110_ws_0.5 X1636_S 3/8

4/8 X1636_P WFM0107_ws_0.5 X1640 WFM0111_ws_0.5 X1636_S 4/8

2/8 X1636_P WFM0105_ws_0.5 X1638 WFM0109_ws_0.5 X1636_S 2/8

1/8 X1636_P WFM0104_ws_0.5 X1637 WFM0108_ws_0.5 X1636_S 1/8

/10.D3

X4003 X4004 X4005 X4006

rt_0.75 X4001_1/12
sw_0.75 X4001_2/12
gn_0.75 X4001_3/12
bl_0.75 X4001_4/12
ge_0.75 X4001_5/12
gr_0.75 X4001_6/12
rs_0.75 X4001_8/12
br_0.75 X4001_9/12
rt_gn_0.75 X400110/12

/25.C5

ws_0.75 X4000_3/12
or_0.75 X4000_4/12
br_0.75 X4000_5/12
vio_0.75 X4000_6/12

/25.C5

1/13 X1728 2/13 X1728 3/13 X1728 4/13 X1728 5/13 X1728 6/13 X1728 8/13 X1728 9/13 X1728 10/13 X1728 7/13 X1728 12/13 X1728 11/13 X1728

UB 30
UB 30
ISO bus_Low
ISO bus_High
Valve bus_Low
V bus_High
Earth
Earth
Auto-Guide activation
Serial earth
Serial Rx
Serial Tx

A058

TopDock B4

X4002 2/9 X4002 3/9 X4002 5/9

1 2 3 4 5 6 7 8 9

Auto-Guide diagnostics

Immobiliser / Vario-Doc / Auto-Guide / Direction indicator LED - Sheet 28

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## 27 Immobiliser/Vario-Doc/Auto-Guide/direction indicator LED - Sheet 28

**A038** - ECU, central electrical system (Item AB 1/2)
**A055** - ECU, data transfer (Item CD7)
**A058** - TopDock (Auto-Guide) (Item EF 1/2)
**A075** - ECU, tail light LED, right (Item A3)
**A076** - ECU, tail light LED, left (Item A4)
**A077** - Immobiliser ECU (Item A5)
**X554** - Earth pin, operator platform (Item B5)
**X1343** - Connector, G bus_High (Item B7)
**X1344** - Connector, G bus_Low (Item B7)
**X1407 [D]** - Separation point on A038 (Item C 1/2)
**X1634** - Connector (+ UB 30) (Item BC 7)
**X1636** - Vario-Doc cable coupling (Items E5, E8)
**X1637** - Connector, ISO bus_Low (A055 Vario-Doc) (Item E7)
**X1638** - Connector, ISO bus_High (A055 Vario-Doc) (Item E7)
**X1639** - Connector, K bus_High (Item E7)
**X1640** - Connector, K bus_Low (Item E7)
**X1787** - Connector, + UB 15 (Item BC 7)
**X4000** - Separation point on X1633_ P (Item E4)
**X4001** - Separation point on X1633_ S (Item DE4)
**X4002** - Auto-Guide diagnostics socket (Item E2)
**X4003** - Connector, ISO bus_Low (Item D2)
**X4004** - Connector, ISO bus_High (Item D2)
**X4005** - Connector, V bus_Low (Item D2)
**X4006** - Connector, V bus_High (Item E2)
**X4007** - Earth pin, operator platform (Item C3)

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Tachograph
A078
UB sensors
KITAS sensor
Sensor system earth
KITAS sensor
B1
B3
B2
B4
X2025 1/8
X2025 3/8
X2025 2/8
X2025 4/8
WK0730 gn 0.75
WK0731 ws 0.75
WK0732 br 0.75
WK0733 ws 0.75
12/21 X1417_P
13/21 X1417_P
14/21 X1417_P
15/21 X1417_P
X1417_S 12/21
X1417_S 13/21
X1417_S 14/21
X1417_S 15/21
WFO730 gn 0.75
WFO731 ws 0.75
WFO732 br 0.75
WFO733 ws 0.75
6/62 X1423_P
7/62 X1423_P
8/62 X1423_P
9/62 X1423_P
X1423_S 6/62
X1423_S 7/62
X1423_S 8/62
X1423_S 9/62
WG0733 ws 0.75
WG0732 br 0.75
WG0731 ws 0.75
WG0730 gn 0.75
B101
1/4 X2136
2/4 X2136
3/4 X2136
4/4 X2136
Ub
Ub
I/O
Sig.
Sig.

Tachograph
A078
UB 30
UB 15
58
Earth 31
A1
A3
A2
A6
X2026 1/8
X2026 3/8
X2026 2/8
X2026 6/8
WK0741 rt 0.75
WK0743 gn 0.75
WK0742 ws 0.75
WK0746 br 0.75
16/21 X1417_P
17/21 X1417_P
X1417_S 16/21
X1417_S 17/21
X4091 /19.C2
X5028 /9.F7
Cab earth pin
WFO741 rt 0.75
WFO743 gn 0.75
#1573 +Kb.15E
/8.B6
/13.B2

A060
Hands-free device
Loudspeaker -
UB 15
UB 30
Loudspeaker +
Mute nav.
Mute tel.
Earth
Microphone
Shield
3 3/12 X1765 WFR14 bl 0.5
5 5/12 X1765 WFR10 ge 0.5
6 6/12 X1765 WFR11 rt 0.5
9 9/12 X1765 WFR13 vio 0.5
10 10/12 X1765 WFR12 br 0.5
11 11/12 X1765 WFR15 gn 0.5
12 12/12 X1765 WFR09 sw 0.5
7 7/12 X1765 WFR16 Seele
1 1/12 X1765
WFR17:SH1#1
#1058
WFR17:SH1#0
#1058
B095
1/2 X1766
2/2 X1766
1/6 X1768
2/6 X1768
3/6 X1768
A015
1 2 3 4 5 6 7 8 9 10 11 12
Radio
Stecker C
13 14 15 16 17 18 19 20
8/8 X1767
7/8 X1767
6/8 X1767
5/8 X1767
4/8 X1767
3/8 X1767
2/8 X1767
1/8 X1767
/24.D7
WFR08 sw 1
WFR07 ge 0.5
WFR06 bl 0.5
WFR05 ws 1
WFR04 rt 1
WFR03 rt 1
WFR02 br 0.5
WFR01 vio 0.5
X1315_P 8/8
X1315_P 7/8
X1315_P 6/8
X1315_P 5/8
X1315_P 4/8
X1315_P 3/8
X1315_P 2/8
X1315_P 1/8
/24.D7

Hands-free device / tachograph - Sheet 29

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## 28 Hands-free device/tachograph - Sheet 29

**A015** - Radio (Item D7)
**A060** - Hands-free device (Item C4)
**A078** - Tachograph ECU (Item A1, A2)
**B095** - Microphone (Item D6)
**B101** - KITAS sensor (Item F2)
**X1315** - Separation point on radio (compact plug) (Item B8)
**X1417** - Cable coupling, operator platform/cab (Items C1, C2/3)
**X1423** - Cable coupling, operator platform/transmission (Item E1)
**X1767** - Separation point on radio to B050/B051 (Item D8)
**X4091** - Connector, +UB 15 on A078 (Item D3)
**X5028** - Connector, cab earth pin (Item D3)

**NOTE:** *Work on the **A078** - Tachograph ECU may only be undertaken by authorised personnel.*

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7
Frontzapfwelle:
eigener, unabhängiger
Hydraulikkreis
siehe 931.150.200

DSV 6A7 ø8x1
HA
HZW
DSH 6A5
5Z2
6A1
6A3 1000 750 6A6
6V1 6V4 6V3 6V6 6V5
5
6
M18 M11 ZWK M10 M14 VR M13 750 M16 1000 M15 DS
ø15x1.5
ø12x1
ø10x1
4Z1
ø8x0.75
4Z4
Nur bei Variante RÜFA
4Z2 V=0.3 L $p_o$=10 bar
4S1 4S2
M9 PH M22 I M6 P PHA M7 I M8 II
4V5 4V4 4V6 4V3 4V1 4V2
p=18 bar
4Z3 ø0.3
4
ø6.4
1Z4
3Z2
ø15x1.5
ø6.4
ø8x2
3Z1
3A3
10x1
SM M2
3V1 3V2
4A1
ø6.4 ø6.4
unter Last 100 L/min
Lastlos 110 L/min
ø28x1.5
1V6 p=25bar
1S2
Δp=7bar Δp=5bar
$β_{10}$=75 (10µm abs)
1V1 Δp=3.5bar
1Z3
1V2 Δp=6.5bar
1V3 Δp=6.5bar
ø28x1.5
p=50bar
1V5
1Z2
M1 KV
68 L/min
AS M3
ES M4
42 L/min
PU M5
1
3A1 3A2
3
1P2 23.4ccm/U
p=10bar
1V4
1S1
1P1 14ccm/U
2P1 233ccm/U
2V1 2V2
2V4 ø1
p=0- 540bar
2V6
p=0- 540bar
ø1
2V3
R(Kanal oben)
Δp=7bar
2V5
V(Kanal unten)
2A1 233ccm/U
2A2 233ccm/U
2
1Z1
Δp=0.25bar
($β_{50}$≈75)
200µm
15µm nom.
ø12.7
ø12.7
6A4
AR

Schaltplan nach ISO 1219
Bauteilbezeichnung typ-
uebergreifend.
Gueltig ab:
919/21/0101
922/21/0101
925/21/0101
928/21/0101
931/21/0101
934/21/0101

931.100.000.002
CAD

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# 1 Transmission hydraulic system diagram - 931.100.000.002

| Item | DIN | Designation | Item | DIN | Designation |
|---|---|---|---|---|---|
| **Switching circuits:** | | | **Valves:** | | |
| 1 | | Valve block, feed/lubrication | 1V1 | | Radiator bypass valve |
| 2 | | Main circuit | 1V2 | | Pressure-limiting valve, discharge |
| 3 | | Displacement | 1V3 | | Pressure-limiting valve, feed |
| 4 | | Valve block, enhanced hydraulics | 1V4 | | Pressure-limiting valve, lubrication |
| 5 | | Brake and rear axle | 1V5 | | Pressure-limiting valve, servo pump |
| 6 | | Valve block, rear axle | 1V6 | | Pressure-limiting valve, servo circuit |
| 7 | | Front PTO | 2V1 | | Feed valve, forward |
| **Pumps:** | | | 2V2 | | Feed valve, reverse |
| 1P1 | | Servo pump | 2V3 | | High-pressure limiting valve, forward |
| 1P2 | | Lubrication pump | 2V4 | | High-pressure limiting valve, reverse |
| 2P1 | | Hydraulic pump | 2V5 | | Purge valve |
| **Drives:** | | | 2V6 | | Shuttle valve |
| 2A1 | | Hydraulic motor | 3V1 | | Hydraulic pump governor |
| 2A2 | | Hydraulic motor | 3V2 | | Hydraulic motor governor |
| 3A1 | | Variable displacement cylinder, hydraulic pump | 4V1 | Y002 | Solenoid valve, travel range 1 |
| 3A2 | | Variable displacement cylinder, hydraulic motor | 4V2 | Y003 | Solenoid valve, travel range 2 |
| 3A3 | | Speed governor, emergency mode | 4V3 | Y005 | Solenoid valve, speed governor |
| 4A1 | | Range selector | 4V4 | Y004 | Turbo clutch solenoid valve |
| 6A1 | | Clutch, rear PTO | 4V5 | | Pressure-limiting valve, clutch |
| 6A3 | | Selector cylinder, PTO level 1[(1)] | 4V6 | | Pressure reducing valve, rear axle |
| 6A4 | | 4WD clutch | 6V1 | Y008 | Solenoid valve, rear PTO |
| 6A5 | | Differential lock, rear axle | 6V3 | Y026 | Solenoid valve, PTO level 1[(1] |
| 6A6 | | Selector cylinder, PTO level 2 | 6V4 | Y009 | 4WD solenoid valve |
| 6A7 | | Differential lock, front axle | 6V5 | Y010 | Solenoid valve, differential lock |
| **Buzzers:** | | | 6V6 | Y027 | Solenoid valve, PTO level 2 |
| 1S1 | B009 | Discharge temperature | **Measuring points:** | | |
| 1S2 | S017 | Transmission oil contamination switch | M1 | | Radiator feed |
| 4S1 | B008 | Sensor, high-pressure 1 | M2 | | Pressure lubrication |
| 4S2 | B039 | Sensor, high-pressure 2 | M3 | | Outlet pressure |
| **Other components:** | | | M4 | | Inlet pressure |
| 1Z1 | | Suction filter with bypass | M5 | | Pressure, servo pump |
| 1Z2 | | Pressure filter with bypass | M6 | | System pressure, transmission |
| 1Z3 | | Transmission oil cooler | M7 | | Switching pressure, travel range 1 |
| 1Z4 | | Transmission lubrication | M8 | | Switching pressure, travel range 2 |
| 3Z1 | | Actuator shaft | M9 | | High-pressure |
| 3Z2 | A009 | Actuator unit | M10 | | System pressure, rear axle |
| 4Z1 | | Clutch pedal with sensor cylinder | M11 | | Pressure, PTO clutch |
| 4Z2 | | Pressure accumulator | M13 | | Switching pressure, PTO level 1[(1)] |
| 4Z3 | | Strainer insert | M14 | | Pressure, 4WD clutch |
| 4Z4 | | Rotary feedthrough RÜFA | M15 | | Pressure, differential lock |
| 5Z2 | | Lubrication, rear PTO | M16 | | Switching pressure, PTO level 2 |
| | | | M18 | | Lubrication pressure, rear axle |
| | | | M22 | | Clutch and turbo-clutch valve leakage |

1. Depending on the version, level 1 operates at the following PTO speeds: 540/540 E or 1000 E (1000 E is available from chassis number 9XX/2X/3501 onwards on request).

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Anhängerbremse
RH 3/4" Stecker
Case Drain
LS 3/8" Muffe
Gelb
Blau
Rot
dw HKH
UL-Abstützung
Grün
Braun
Violett
Lecköl-auffang-behälter
PB 3/4" Muffe
APE
DRVE
DFE
SRVE 0.5l/min
LS_EXT
0.2mm
1.1
1.1- 1.1+
1.2- 1.2+
1.3- 1.3+
Wegeventil SB 23 LS-EHS 2
1.2
1.3
EHR Heck
230+20bar
MVKH
ZHKH1 d=100/40 H=272
ZHKH2 d=100/40 H=272
DBVKH
SVUL
MVUL
MEE
1.4- 1.4+
1.5- 1.5+
1.6- 1.6+
1.4
1.5
1.6
EPH
MVVH 1,9mm Q=25l/min
M6
ZL d=140/115 H=310 V=1.55Zl
QSPC400LSRM
VBL
Hy.ABV
zum Betriebsbremskreis
zum Feststellbremskreis
PVL
DWL
QETR 38-54°C
RVL3
RVL2
RVL1
MS
ZSB
M1
M2
DSPP P0=20bar V0=0.16L Vgt=0.08L
DWP 10bar
MVP
DFP
DRVP 16+4bar
WVP
VBP
HP
DSF 2bar
RLF b16>=200 150 MTD-Kap.=83g ø 2.5bar
RVN
PNL 8ccm Antrieb Attradwelle
SFN2 0.5x0.22mm Sieb
SFN1 0.5x0.22mm Sieb
DFWN
DFWH
PH 22.5ccm 55l/min
Motor n_nenn=2200U/min i=0.896 i=0.869
TG
SFH 1.0x0.24mm Sieb
Heizstab
GDR
PR A10VN085 215l/min
SFR 0.45mm Sieb
BF 7µm
EF 0.8mm
FSS
WV2
WV1
MVL
DBVL 175+5bar
M7
Q=10L/min 1,2ma
MVVM
EPM
Wegeventil SB 23 LS-EHS 2
2.2
2.1
2.2- 2.2+
2.1- 2.1+
Grau
Oliv
Lecköl-auffang-behälter
EHR Front
MVKF
DBVKF
FSP P0=75bar V0=0.75L
ZFKH1 d=80/35 H=210
ZFKH2 d=80/35 H=210
dw FKH
RVF1
MVFH
RVFH
250bar
DBVF1
AVF1
DBV1
DRVF
RVFS
AVF2
DRF
230+20bar
D51 8bar
0.15mm Kerbe
RF
ASP1 (unten) P0=45bar V0=2.0L
ASP2 (oben) P0=45bar V0=2.0L
Federung 60 km/h-Ausf.
VBF
MVFF
MVFW
DBVF2 250bar
ZF1 d=80/63 H=155
ZF2 d=80/63 H=155
ZSP P0=70bar V0=1.4L

Maximale Ausstattung
mit dw EHR, dw FKH,
mit UL-Verstellung
ab Serie Dez. 2006

ADCO GmbH 87616 Marktoberdorf
931.952.000.002

Hydraulic circuit diagram - 931.952.000.002

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# 1 Hydraulic circuit diagram - 931.952.000.002

| | |
|---|---|
| **1.1 [Y074]** - Control valve, position 1 (yellow) | **1.2 [Y075]** - Control valve, position 2 (blue) |
| **1.3 [Y076]** - Control valve, position 3 (red) | **1.4 [Y078]** - Control valve, position 4 (green) |
| **1.5 [Y079]** - Control valve, position 5 (brown) | **1.6 [Y080]** - Control valve, position 6 (purple) |
| **2.1 [Y071]** - Control valve, position 7 (olive) | **2.2 [Y072]** - Control valve, position 8 (grey) |

| | |
|---|---|
| **APE** - Entry plate for external pressure supply | **ASP1** - Accumulator, suspension 1 |
| **ASP2** - Accumulator, suspension 2 | **AVF1** - Lock valve, suspension 1 |
| **AVF2** - Lock valve, suspension 2 | |

| | |
|---|---|
| **BF** - Ventilation filter | |

| | |
|---|---|
| **DBV1** - Main pressure-limiting valve | **DBVF1** - Pressure-limiting valve, suspension 1 |
| **DBVF2** - Pressure-limiting valve, suspension 2 | **DBVKF [Y022]** - Field pressure valve, DA front power lift enhanced control |
| **DBVKH [Y062]** - Field pressure valve, DA rear power lift | **DBV-L** - Pressure-limiting valve, 175 bar steering |
| **DFE** - Pressure filter, external LS | **DFP** - Pressure filter, pilot pressure |
| **DFWH** - Flow monitor, auxiliary pump | **DRVE [Y084]** - Pressure cut-off valve, Power Beyond |
| **DRVF [Y064]** - Suspension load pressure/lower | **DRVP** - Pressure cut-off valve, pilot pressure |
| **DS1** - Pressure switch, LS pump monitor | **DSF [B063]** - Pressure switch, filter monitor |
| **DWKF** - Pressure compensator, front power lift, SA | **DWL** - Pressure compensator, steering |
| **DWP** - Pressure compensator, pilot pressure | |

| | |
|---|---|
| **EHR Heck [Y077]** - Cut-off valve, rear EPC | **EHR Front [Y070]** - Cut-off valve, front power lift enhanced control |
| **EPH** - End plate, rear valve block | **EPM** - End plate, centre |

| | |
|---|---|
| **FKH** - Front power lift | **FKH Standard** - Cut-off valve, standard front power lift |
| **FSP** - Front power lift accumulator | **FSS [B084]** - Level switch |

| | |
|---|---|
| **GDR** - Silencer, LS pump | |

| | |
|---|---|
| **HKH** - Rear power lift | **HP** - Hand pump, pilot pressure – emergency supply |
| **Hy.ABV** - Hydraulic trailer brake | |

| | |
|---|---|
| **K** - Hydraulic oil cooler | |

| | |
|---|---|
| **LE** - Steering unit | |





| | |
|---|---|
| **M1** - Measuring point, emergency pumps | **M2** - Measuring point, auxiliary pumps |
| **M3** - Measuring point, LS pump | **M4** - Measuring point, LS pressure |
| **M5** - Measuring point, control pressure | **M6** - Rear return flow reference pressure measuring point |
| **M7** - Front return flow reference pressure measuring point | **MVFF [Y067]** - Solenoid valve, lock suspension |
| **MVFH [Y065]** - Solenoid valve, raise suspension | **MVFW [Y063]** - Solenoid valve, wobble stabiliser |
| **MVKF [Y021]** - Front pressure compensator lock valve (SA/DA) | **MVKFH [Y021]** - Lifting solenoid valve (standard front power lift) |
| **MVKFS [Y022]** - Lowering solenoid valve (standard front power lift) | **MVKH [Y055]** - Rear pressure compensator lock valve (SA/DA) |
| **MVL [Y012]** - Solenoid valve, charge function (suspension, oil pre-heater) | **MVP [Y032]** - Solenoid valve, pilot pressure |
| **MVUL [Y082]** - Solenoid valve, lower link stabiliser lock | **MVVH [Y060]** - Solenoid valve, rear pre-heater |
| **MVVM [Y061]** - Solenoid valve, central pre-heater | |

| | |
|---|---|
| **OETR** - Oil temperature regulator | |

| | |
|---|---|
| **PH** - Auxiliary pump | **PNL** - Emergency steering pump |
| **PR** - LS pump | **PVL** - Priority valve, steering |

| | |
|---|---|
| **RLF** - Return line filter | **RVF1** - Non-return valve, suspension 1 |
| **RVFH** - Non-return valve, raise suspension | **RVFS** - Non-return valve, lower suspension |
| **RVL1-3** - Non-return valve, steering 1-3 | **RVN** - Non-return valve, emergency steering pump |

| | |
|---|---|
| **SFH** - Auxiliary pump suction filter | **SFN1+2** - Suction filter, emergency steering pump 1+2 |
| **SFR** - Suction filter, LS pump | **SRVE** - Flow cut-off valve, external LS relief |
| **SVUL [Y083]** - Solenoid valve, lower link stabiliser release | |

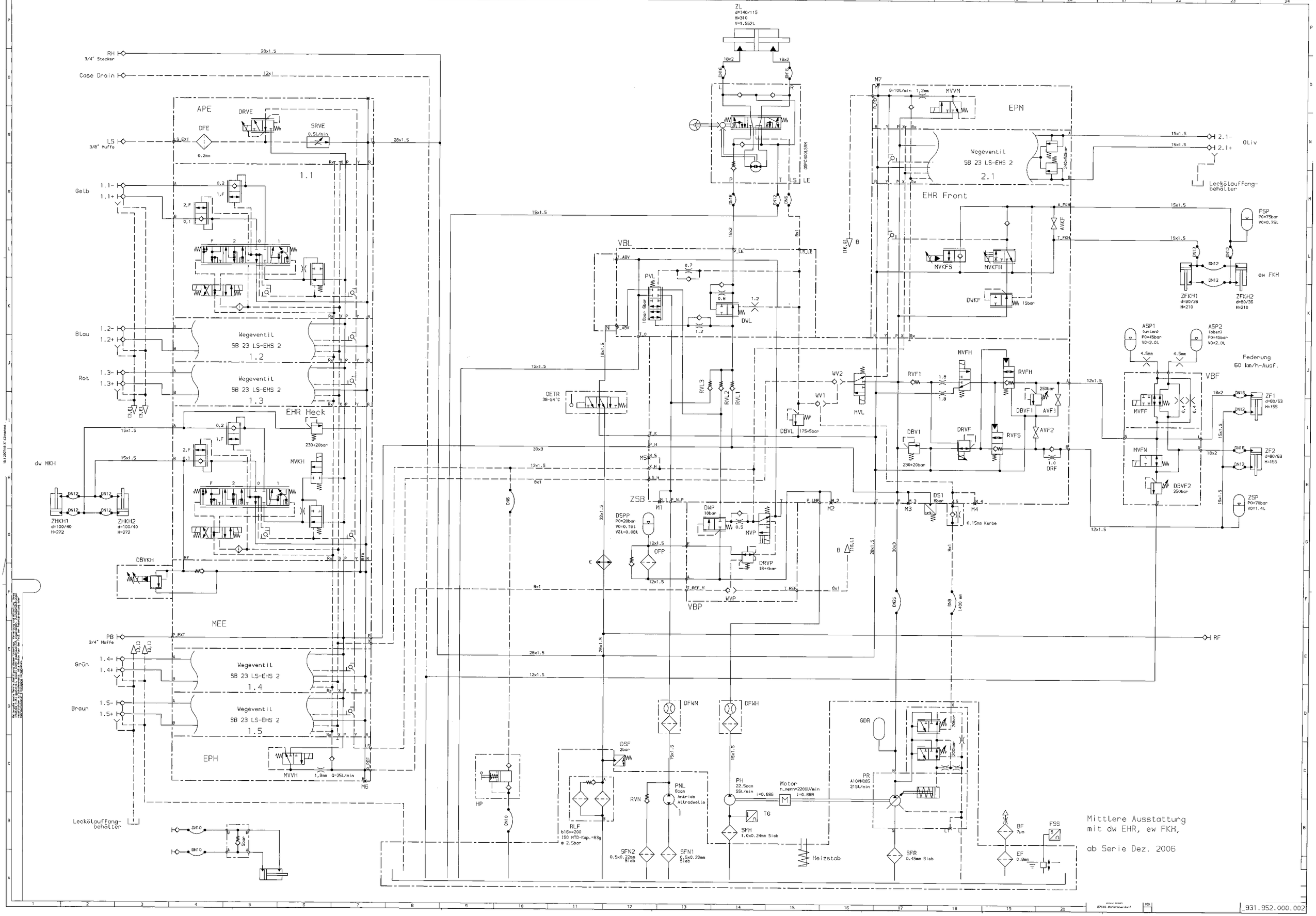
| | |
|---|---|
| **TG [B013]** - Temperature sensor | |

| | |
|---|---|
| **VBF** - Valve block, suspension | **VBL** - Valve block, steering |
| **VBP** - Valve block, pilot pressure supply | |

| | |
|---|---|
| **WV1** - LS shuttle valve 1 | **WV2** - LS shuttle valve 2 |
| **WVP** - Shuttle valve, pilot pressure | |

| | |
|---|---|
| **ZF1** - Federungszylinder 1 | **ZL** - Steering cylinder |
| **ZSB** - Central control block | **ZSP** - Auxiliary accumulator, suspension |

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Hydraulic circuit diagram - 931.952.000.002

https://truckmanualshub.com/



# 1 Hydraulic circuit diagram - 931.952.000.002

| | |
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| | |
|---|---|
| **APE** - Entry plate for external pressure supply | **ASP1** - Accumulator, suspension 1 |
| **ASP2** - Accumulator, suspension 2 | **AVF1** - Lock valve, suspension 1 |
| **AVF2** - Lock valve, suspension 2 | |

| | |
|---|---|
| **BF** - Ventilation filter | |

| | |
|---|---|
| **DBV1** - Main pressure-limiting valve | **DBVF1** - Pressure-limiting valve, suspension 1 |
| **DBVF2** - Pressure-limiting valve, suspension 2 | **DBVKF [Y022]** - Field pressure valve, DA front power lift enhanced control |
| **DBVKH [Y062]** - Field pressure valve, DA rear power lift | **DBV-L** - Pressure-limiting valve, 175 bar steering |
| **DFE** - Pressure filter, external LS | **DFP** - Pressure filter, pilot pressure |
| **DFWH** - Flow monitor, auxiliary pump | **DRVE [Y084]** - Pressure cut-off valve, Power Beyond |
| **DRVF [Y064]** - Suspension load pressure/lower | **DRVP** - Pressure cut-off valve, pilot pressure |
| **DS1** - Pressure switch, LS pump monitor | **DSF [B063]** - Pressure switch, filter monitor |
| **DWKF** - Pressure compensator, front power lift, SA | **DWL** - Pressure compensator, steering |
| **DWP** - Pressure compensator, pilot pressure | |

| | |
|---|---|
| **EHR Heck [Y077]** - Cut-off valve, rear EPC | **EHR Front [Y070]** - Cut-off valve, front power lift enhanced control |
| **EPH** - End plate, rear valve block | **EPM** - End plate, centre |

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|---|---|
| **FKH** - Front power lift | **FKH Standard** - Cut-off valve, standard front power lift |
| **FSP** - Front power lift accumulator | **FSS [B084]** - Level switch |

| | |
|---|---|
| **GDR** - Silencer, LS pump | |

| | |
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| **HKH** - Rear power lift | **HP** - Hand pump, pilot pressure – emergency supply |
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| | |
|---|---|
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| | |
|---|---|
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| **MVVM [Y061]** - Solenoid valve, central pre-heater | |

| | |
|---|---|
| **OETR** - Oil temperature regulator | |

| | |
|---|---|
| **PH** - Auxiliary pump | **PNL** - Emergency steering pump |
| **PR** - LS pump | **PVL** - Priority valve, steering |

| | |
|---|---|
| **RLF** - Return line filter | **RVF1** - Non-return valve, suspension 1 |
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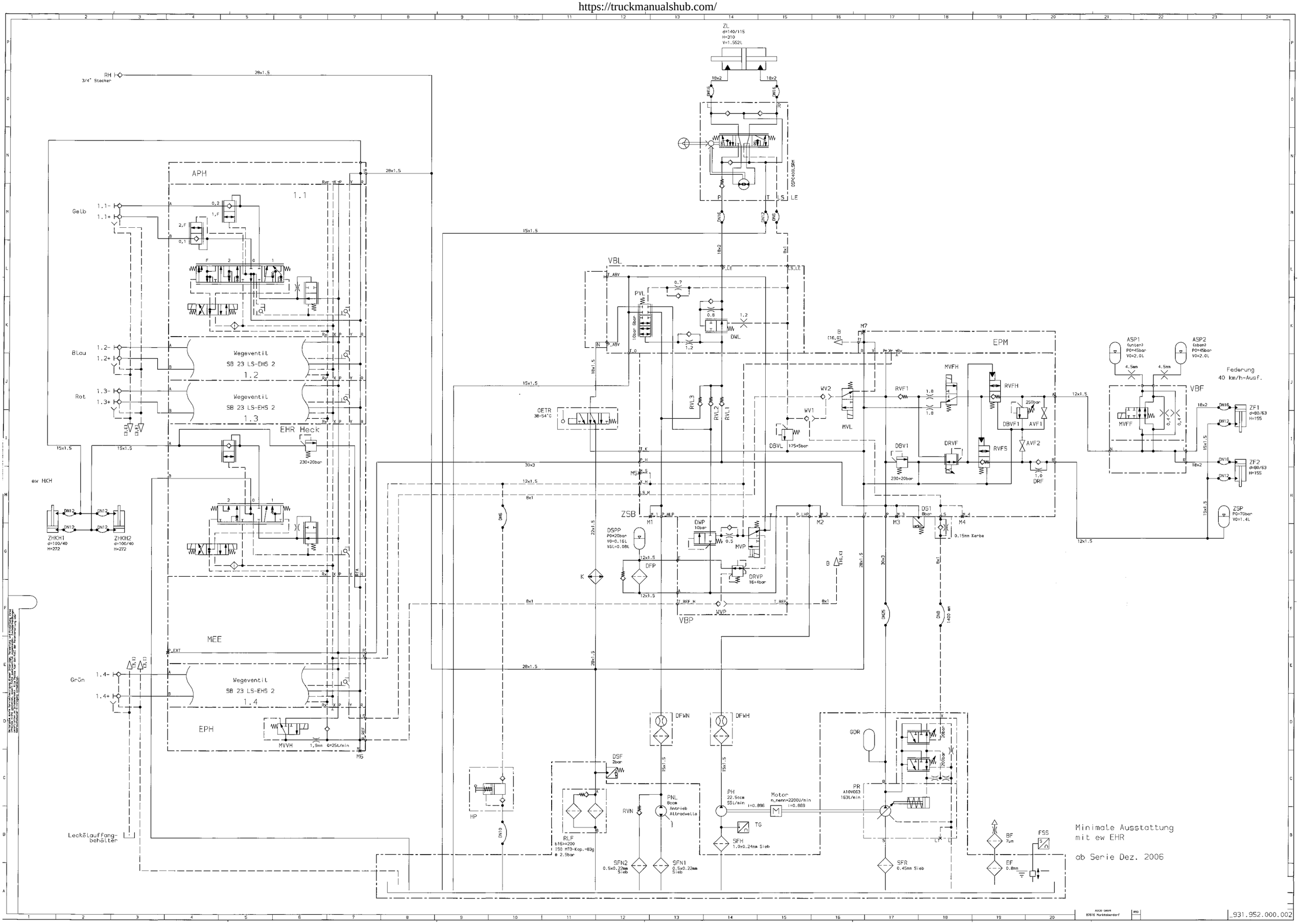
| | |
|---|---|
| **TG [B013]** - Temperature sensor | |

| | |
|---|---|
| **VBF** - Valve block, suspension | **VBL** - Valve block, steering |
| **VBP** - Valve block, pilot pressure supply | |

| | |
|---|---|
| **WV1** - LS shuttle valve 1 | **WV2** - LS shuttle valve 2 |
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| **ZF1** - Federungszylinder 1 | **ZL** - Steering cylinder |
| **ZSB** - Central control block | **ZSP** - Auxiliary accumulator, suspension |

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Hydraulic circuit diagram - 931.952.000.002

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| | |
|---|---|
| **OETR** - Oil temperature regulator | |

| | |
|---|---|
| **PH** - Auxiliary pump | **PNL** - Emergency steering pump |
| **PR** - LS pump | **PVL** - Priority valve, steering |

| | |
|---|---|
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https://truckmanualshub.com/

VBLE1 und VBLE2 nur bei Variante el-hyd.Lenkung

ZL

VBLE1

EPLE

PVLE

APLE

DRVLE
13+2bar

VLE1

0.6mm

0.8mm

25bar

MVLE1

MVLE2

1.4mm

WVLE

VBLE2

VLE2

VLE3

L-V

R-V

L-LE

R-LE

LS-LE1

LS-LE2

DDFL

Nur bei Variante RÜFA

180°

0°

DN16 12

DN16 13

DN6 9

DN16 11

DN12 14

OSPC400LSRM

L R P T LS LE

VBL

T_ABV

P_ABV

T

P_LE

LS_LE

0.7

PVL

10bar 6bar

0.8

1.2

DWL

1.2

HP

DN10

Varianten elektrohydraulische Lenkung
und RÜFA

ab Serie Dez. 2006

AGCO GmbH
87616 Marktoberdorf

RSD

_931.952.000.002

15.2.2007/16:02:12/mattens

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## 2 Hydraulic circuit diagram (Auto-Guide) - 931.952.000.002

**APLE** - Connection plate for el.-hyd. steering system
**DRVLE** - Pilot pressure cut-off valve, el.-hyd. steering system
**MVLE1 [Y085]** - Solenoid valve, pilot pressure/switch-off (Auto-Guide)
**MVLE2 [Y086]** - Solenoid valve, steering disconnect (Auto-Guide)
**PVLE** - Proportional valve, el.-hyd. steering system
**VBLE1** - Valve block, el.-hyd. steering system 1
**VBLE2** - Valve block, el.-hyd. steering system 2
**VLE1** - LE priority valve (oversteering valve)
**VLE2+3** - LE switch off 1 + 2 valves
**WVLE** - LS shuttle valve, el.-hyd. steering system