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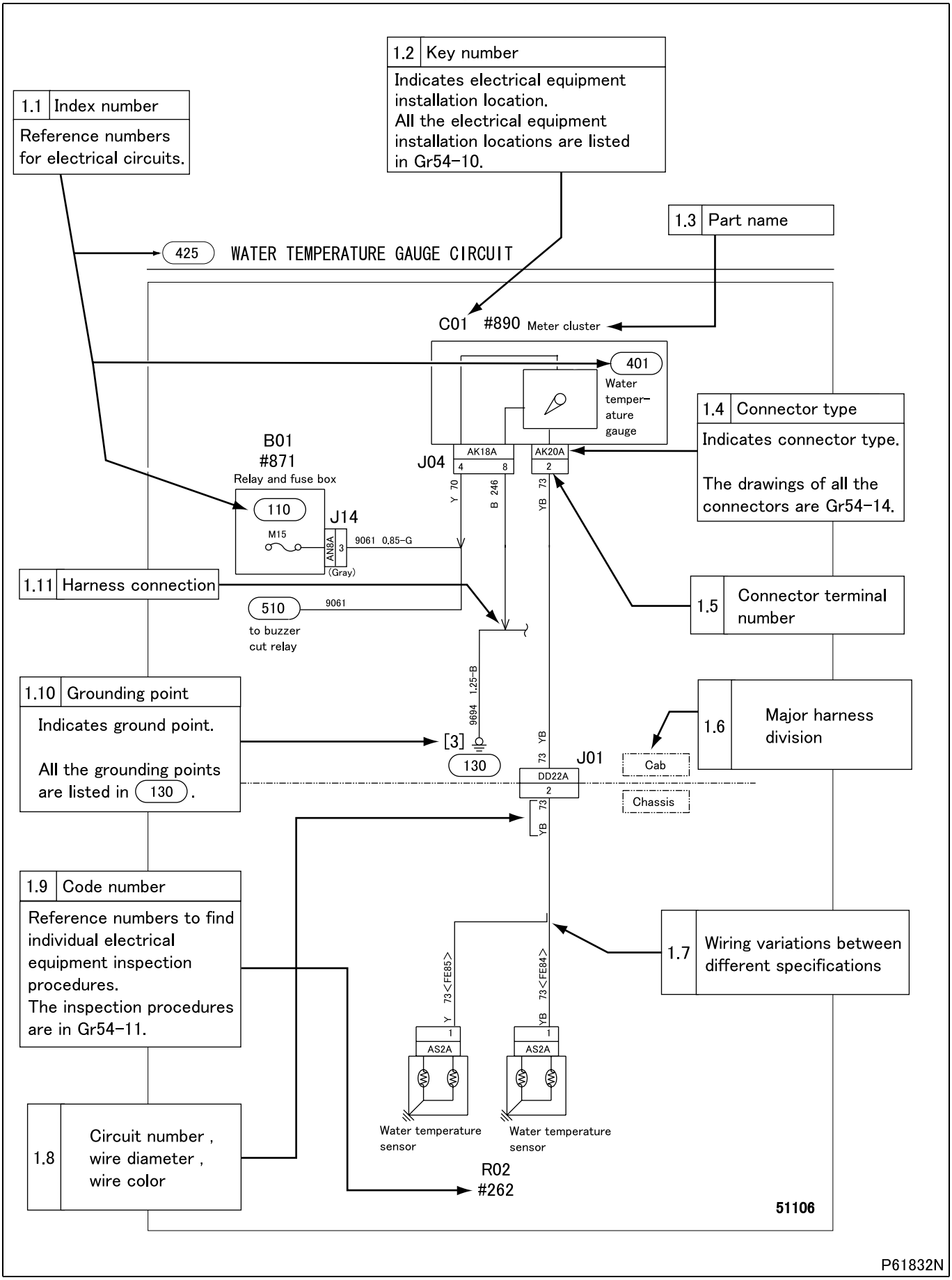
54-14 CONNECTOR CONFIGURATION CHART

CONNECTOR CONFIGURATION CHART 54-14-2

HOW TO READ THIS GROUP

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HOW TO READ CIRCUITS (ELECTRICAL)



1.1 Index number: (100) to (999)

- Index numbers are used as reference numbers for electrical circuits. Each electrical circuit has been assigned its own index number.

1.2 Key number: A01 to Z99

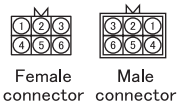
- Key numbers indicate parts installation locations. The installation location of a part can be easily found using its key number shown in a circuit diagram.
  All of the electrical equipment installation locations are listed in Gr54-10.

1.3 Part name

1.4 Connector type (type indication)

- A list of the connectors used is included in Gr54-14.

1.5 Connector terminal number



Connector terminal numbering starts with the upper left corner for female connectors and with the upper right corner for male connectors.

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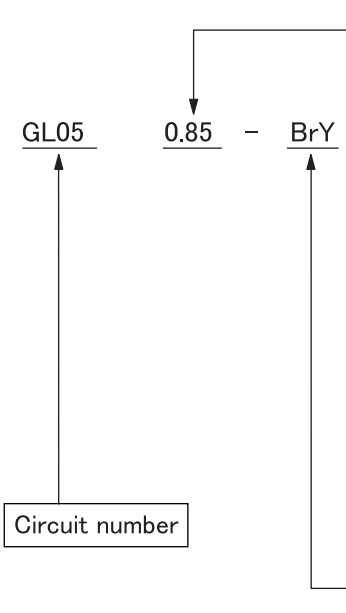
1.6 Major harness division

- Major harness divisions are shown.

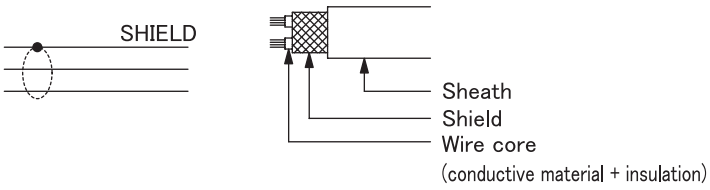
1.7 Wiring variations between different specifications

- Variations in wiring/circuit between different vehicle specifications are clearly indicated as shown.

1.8 Circuit number, wire diameter, wire color



"Wire diameter" represents the cross section of the wire's conductive material. For example, "0.85" corresponds to 0.85 mm^2. On the circuit diagrams, the unit "mm^2" is omitted. Wires with a conductive cross section of 0.5 mm^2 are shown without the wire diameter or unit. As indicated below, shielding wires are marked with "SHIELD," and shielded wires are circled by a dotted line.



On the circuit drawings, twisted wires are indicated as shown below.



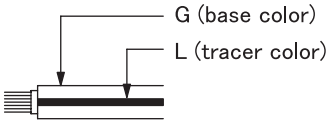
Wire colors are represented by the first letter of the color.
Colors that all start with the letter "B" are indicated as follows.

- BLACK → B
- BLUE → L
- BROWN → Br

Wires that have both base and tracer colors are indicated by two letters.

RY (Yellow tracer on Red base)

GL (Blue tracer on Green base)



P50680E

1.9 Code number: #001 to #999

- Code numbers are reference numbers to find individual electrical equipment inspection procedures. The inspection procedure for a electrical equipment can be found using its code number shown in a circuit diagram.

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1.10 Grounding point: [1] to [99]

- Locations where wires are grounded to the vehicle. All of the grounding points are listed in (130).

1.11 Harness connection

- The arrow in the wiring diagram indicates where harnesses are connected, and NOT the flow of electricity.

Wire color

Wire color		Base color + tracer											
B	Black	BW	Black/white	BY	Black/yellow	BR	Black/red	BG	Black/green	BL	Black/blue		
Br	Brown	BrW	Brown/white	BrB	Brown/black	BrY	Brown/yellow	BrR	Brown/red	BrG	Brown/green		
G	Green	GW	Green/white	GR	Green/red	GY	Green/yellow	GB	Green/black	GL	Green/blue	GO	Green/orange
Gr Gy	Gray	GrL GyL	Gray/blue	GrR GyR	Gray/red								
L	Blue	LW	Blue/white	LR	Blue/red	LY	Blue/yellow	LB	Blue/black	LO	Blue/orange	LG	Blue/green
Lg	Light green	LgR	Light green/red	LgY	Light green/yellow	LgB	Light green/black	LgW	Light green/white				
O	Orange	OL	Orange/blue	OB	Orange/black	OG	Orange/green						
P	Pink	PB	Pink/black	PG	Pink/green	PL	Pink/blue	PN	Pink/white				
Pu	Purple												
R	Red	RW	Red/white	RB	Red/black	RY	Red/yellow	RG	Red/green	RL	Red/blue	RO	Red/orange
Sb	Sky blue												
V	Violet	VY	Violet/yellow	VW	Violet/white	VR	Violet/red	VG	Violet/green				
W	White	WR	White/red	WB	White/black	WL	White/blue	WG	White/green	WO	White/orange		
Y	Yellow	YR	Yellow/red	YB	Yellow/black	YG	Yellow/green	YL	Yellow/blue	YW	Yellow/white	YO	Yellow/orange
		YP	Yellow/pink	YV	Yellow/violet								

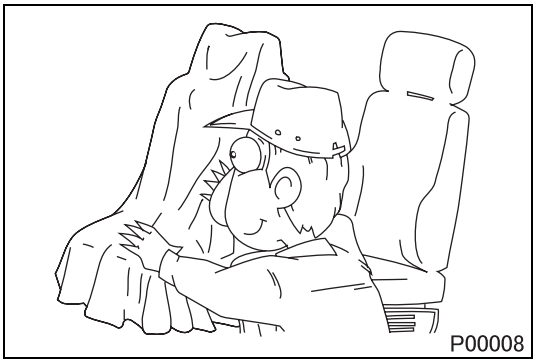
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54-00A GENERAL

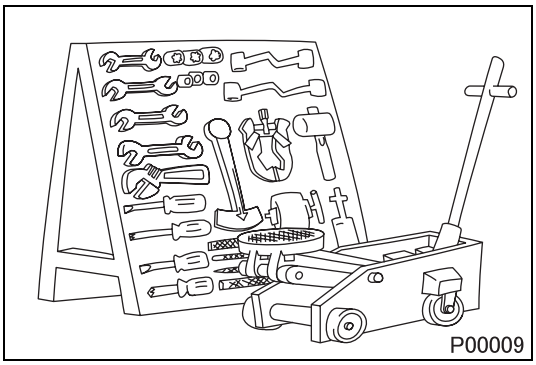
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PRECAUTIONS FOR MAINTENANCE OPERATION

- Before performing service operations, inquire into the customer's complaints and ascertain the condition by checking the total distance travelled, the conditions under which the vehicle is operated, and other relevant factors about the vehicle. And note the necessary information. This information will help you to service the vehicle efficiently.
- Check the location of the fault, and identify its cause. Based on your findings, determine whether parts must be removed or disassembled. Then, follow the service procedure given in this manual.


P00008

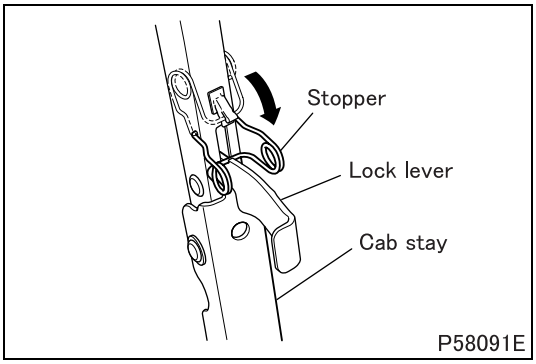
- Perform service operations on a level surface. Before starting, take the following preparatory steps:
  - To prevent soiling and damage, place covers over the seats, trim and floor in the cab and over the paintwork of the body.


P00009

- Prepare all the general and special tools necessary for the job.

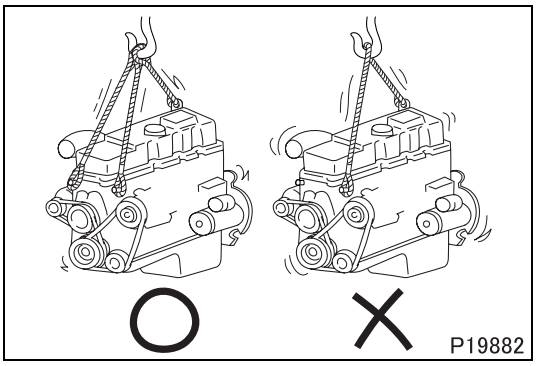
WARNING ⚠

- **Special tools must be used wherever specified in this manual. Do not attempt to use other tools since they could cause injuries and/or vehicle damage.**



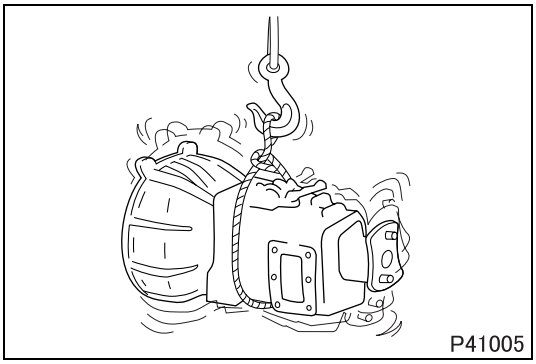
P58091E

- After tilting the manual tilt type cab, be sure to engage the stopper with the lock lever to lock the cab stay securely.

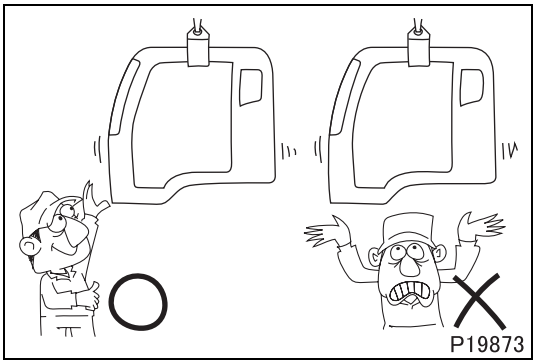

P19882

- Take extreme care when removing/installing heavy items such as engine, transmission and axle. When lifting heavy items using a cable etc., observe the following precautions.
  - Identify the mass of the item being lifted. Use tha cable that is strong enough to support the mass.

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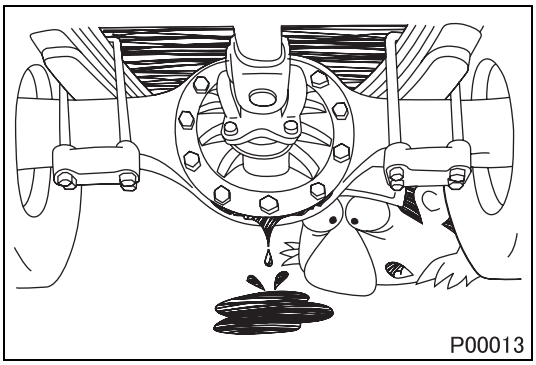
- If lifting eyes are not provided on the item being lifted, tie a cable around the item taking into account the item's center of gravity.



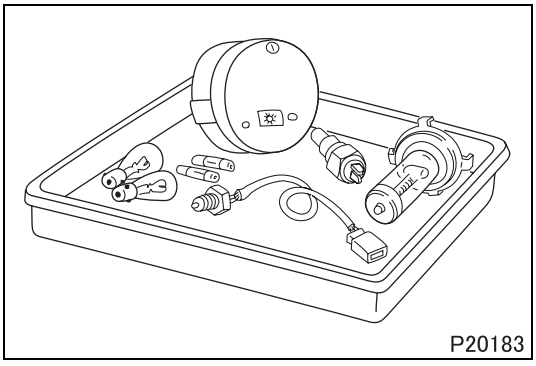
- Do not allow anyone to pass or stay under a lifted item which may possibly fall.



- Never work in shoes that have oily soles.
  When working with a partner or in a group, use pre-arranged signals and pay constant attention to safety. Be careful not to touch switches and levers unintentionally.



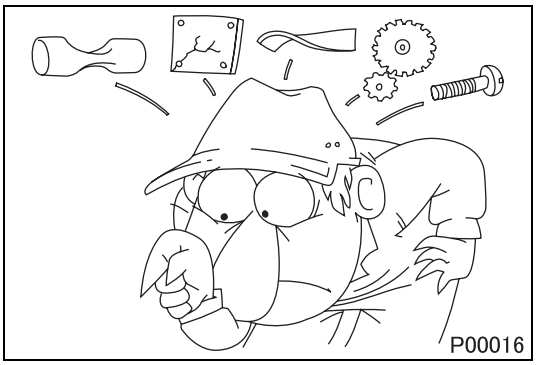
- Inspect for oil leakage etc. before washing the vehicle. If the order is reversed, any oil leakage or fault that may exist could go unnoticed during inspection.



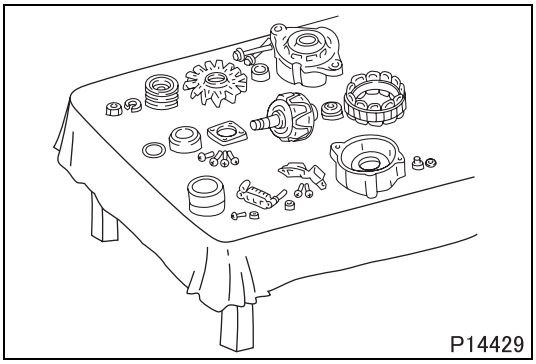
- Prepare replacement parts ready for installation.

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- Oil seals, packings, O-rings and other rubber parts, gaskets, and split pins must be replaced with new ones after removal. Use only approved replacement parts.



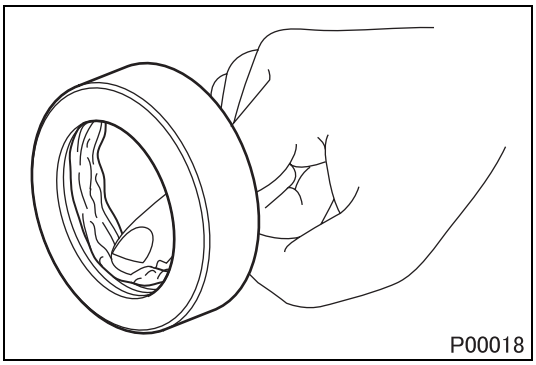
- When disassembling parts, visually check them for wear, cracks, damage, deformation, deterioration, rust, corrosion, defective rotation, fatigue, clogging and any other possible defect.



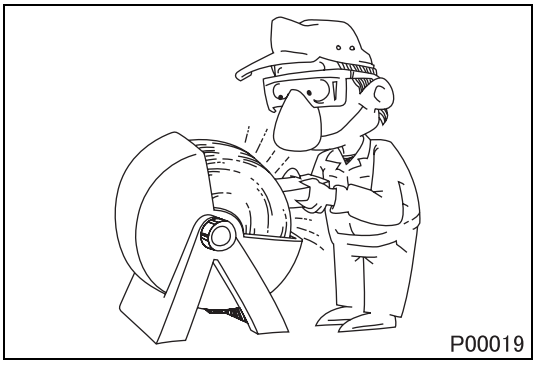
- To facilitate correct reassembly of parts, make alignment marks on them before disassembly and arrange disassembled parts neatly. Make punch marks and other alignment marks where they will not detract from parts' functionality and appearance.
- After removing parts from the vehicle, cover the area to keep it free of dust.

CAUTION ⚠

- **Be careful not to mix up identical parts, similar parts and parts that have left/right alignments.**
- **Keep new replacement parts and original (removed) parts separately.**

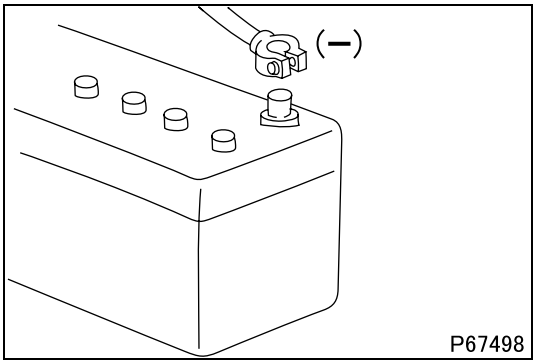


- Apply the specified oil or grease to U-seals, oil seals, dust seals and bearings before reassembly.
- Always use the specified oils and greases when performing inspection or replacement. Immediately wipe away any excess oil or grease with a rag.



- Wear safety goggles when using a grinder or welder. Wear gloves when necessary, and watch out for sharp edges and other items that might wound your hands.

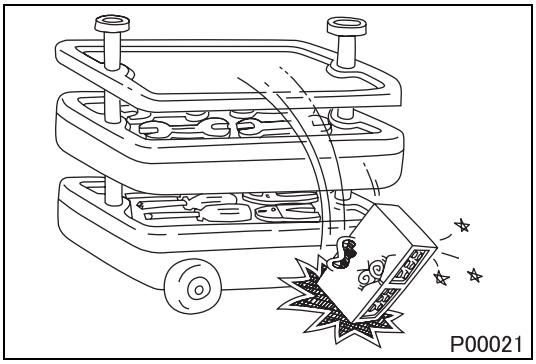
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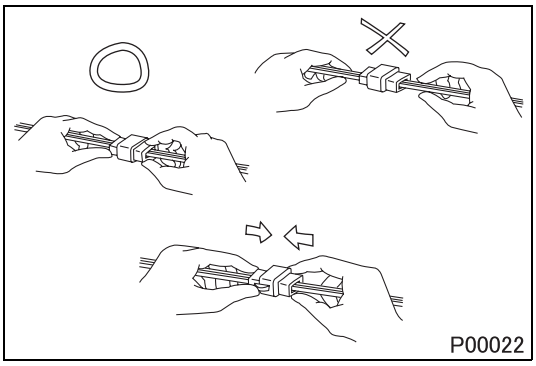
- Before working on the electrical system, disconnect the (–) battery cable to prevent short circuits.

CAUTION ⚠

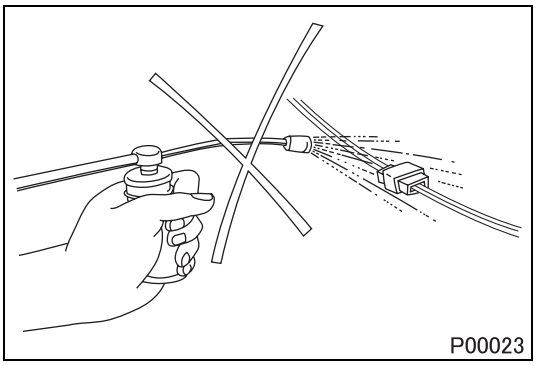
- **Make sure the starter switch and lighting switches are OFF before disconnecting or connecting battery cable. Semiconductor components may otherwise be damaged.**



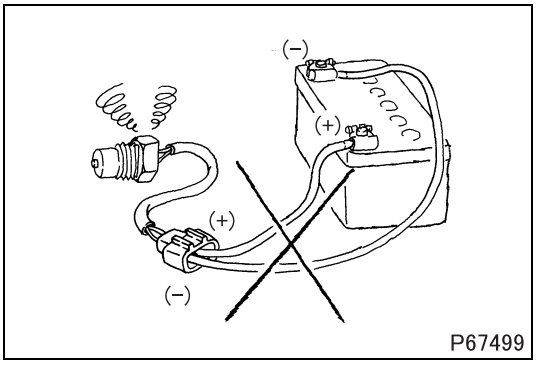
- Carefully handle sensors relays, and other items that are sensitive to shock and heat. Do not remove or paint the cover of any control unit.



- When separating connectors, grasp the connectors themselves rather than the harnesses.
- To separate locking connectors, first push them in the direction of the arrows. To reconnect locking connectors, push them together until they click.



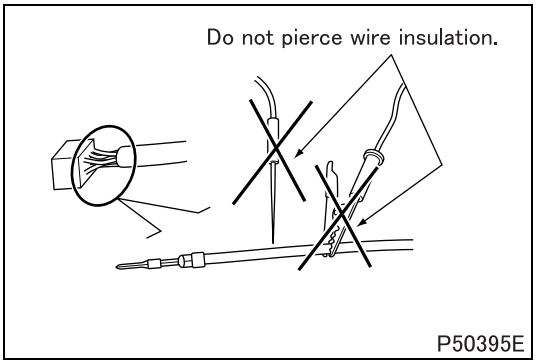
- Before washing the vehicle, cover electrical parts to keep them dry. (Use plastic sheets or the like.) Keep water away from harness connectors and sensors and immediately wipe off any water that gets on them.



- When applying a voltage to a part for inspection purposes, check that the (+) and (–) cables are connected properly then gradually increase the voltage from zero. Do not exceed the specified voltage.
  Remember that control units and sensors do not necessarily operate on the battery voltage.

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1. Handling Precautions for Electric Circuits



CAUTION ⚠

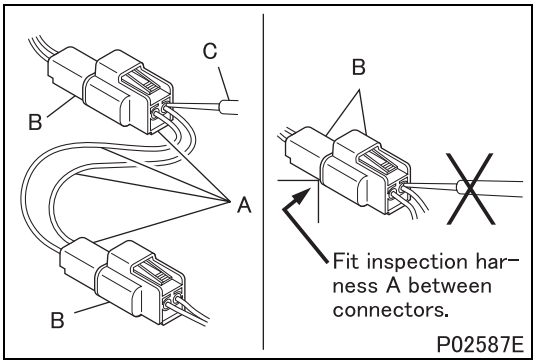
- **Do not pierce wire insulation with test probes or alligator clips when performing electrical inspections. Doing so can, particularly with the chassis harness, hasten corrosion.**

1.1 Inspection of harnesses

(1) Inspections with connectors fitted together

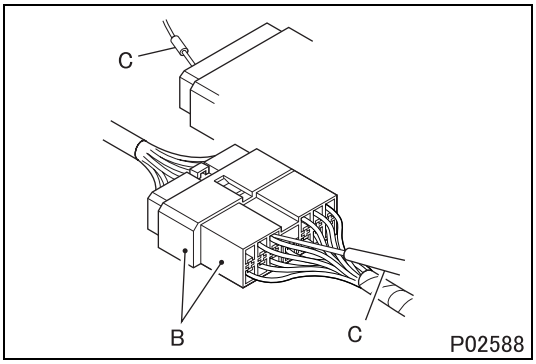
(1.1) Waterproof connectors

- Connect an inspection harness and connector **A** between the connectors **B** of the circuit to be inspected. Perform the inspection by applying a test probe **C** to the connectors of the inspection harness. Do not insert the test probe **C** into the wire-entry sides of the waterproof connectors since this would damage their waterproof seals and lead to rust.



(1.2) Non-waterproof connectors

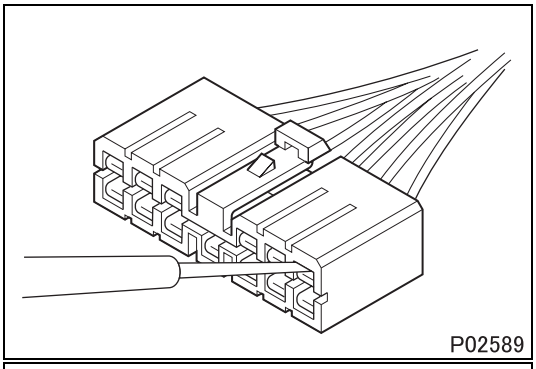
- Perform the inspection by inserting a test probe **C** into the wire-entry sides of the connectors. An extra-narrow probe is required for control unit connectors, which are smaller than other types of connector. Do not force a regular-size probe into control unit connectors since this would cause damage.



(2) Inspections with connectors separated

(2.1) Inspections on female terminals

- Perform the inspection by carefully inserting a test probe into the terminals. Do not force the test probe into the terminals since this could deform them and cause poor connections.

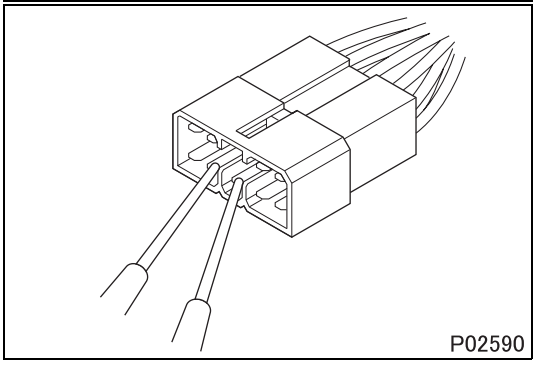


(2.2) Inspections on male terminals

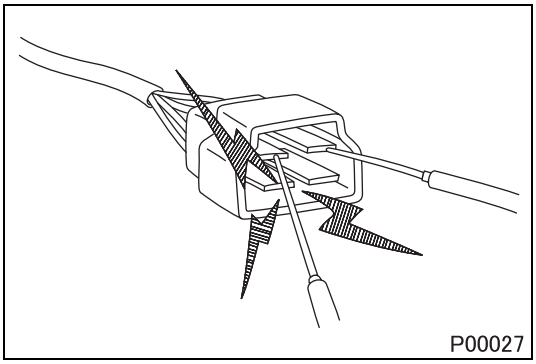
- Perform the inspection by applying test probes directly to the pins.

CAUTION ⚠

- **Be careful not to short-circuit pins together with the test probes. With control unit connectors, short-circuiting of pins can cause damage to the control unit's internal circuitry.**



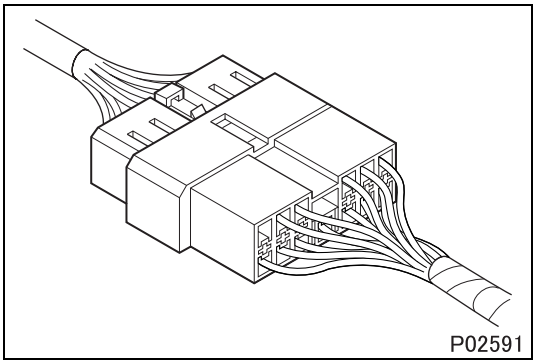
https://truckmanualshub.com/


P00027

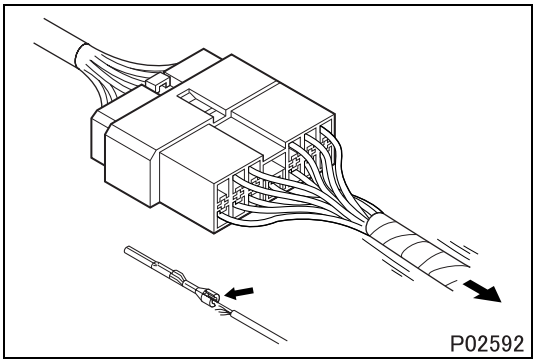
- When using a multimeter to check continuity, do not allow the test probes to touch the wrong terminals.

1.2 Inspection of connectors

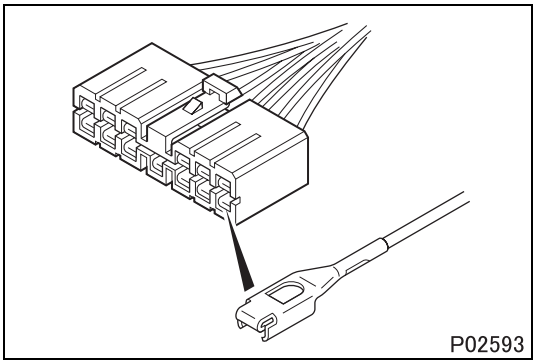
(1) Visual inspection


P02591

- Check that the connectors are fitted together securely.

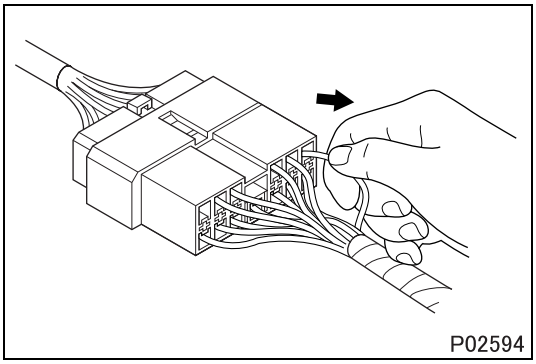

P02592

- Check whether wires have been separated from their terminals due to pulling of the harness.


P02593

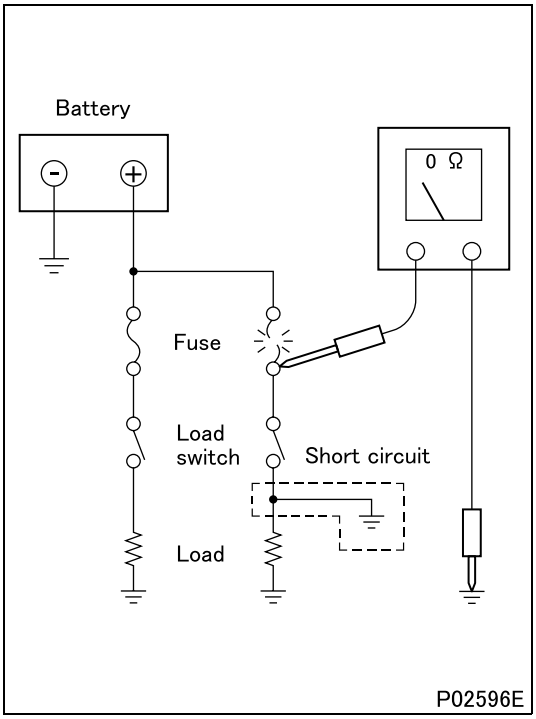
- Check that male and female terminals fit together tightly.
- Check for defective connections caused by loose terminals, by rust on terminals, or by contamination of terminals by foreign substances.

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P02594

(2) Checking for loose terminals

- If connector terminal retainers become damaged, male and female terminals may not mate with each other when the connector bodies are fitted together. To check for such terminals, gently pull each wire and see whether any terminals slip out of their connector housings.

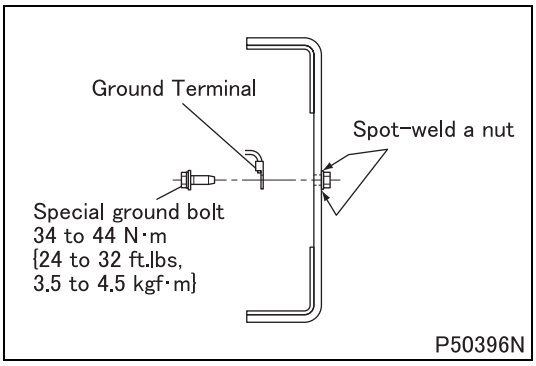


P02596E

1.3 Inspections when a fuse blows

- Remove the fuse, then measure the resistance between ground and the fuse's load side.
  Next, close the switch of each circuit connected to the fuse. If the resistance measurement between any switch and ground is zero, there is a short circuit between the switch and the load. If the resistance measurement is not zero, the circuit is not currently short-circuited; the fuse probably blew due to a momentary short circuit.

- The main causes of short circuits are as follows:
  - Harnesses trapped between chassis parts
  - Harness insulation damage due to friction or heat
  - Moisture in connectors or circuitry
  - Human error (accidental short-circuiting of components)



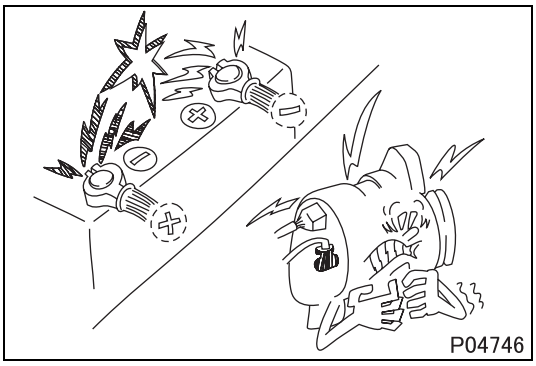
P50396N

1.4 Inspection of chassis ground

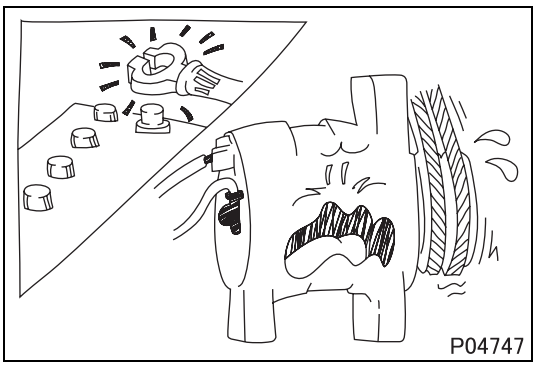
- A special ground bolt is used to tighten a ground terminal. When servicing the ground point, be sure to follow the procedures described below:
  - When reinstalling the ground bolt
    Tighten the ground bolt to the specified torque.
  - When relocating the ground point
    A special ground bolt must be used. Spot-weld a nut to a frame and tighten the ground bolt to the specified torque. Be sure to apply touch-up paint to the welded point.

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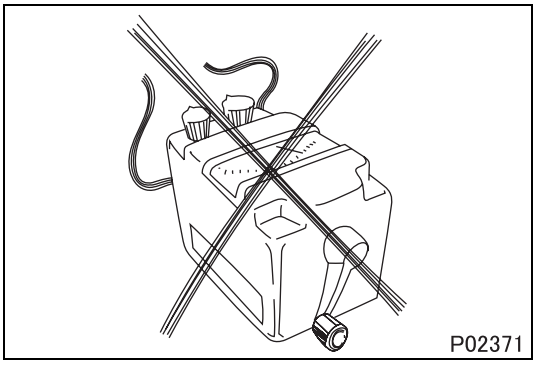
2. Service Precautions for Alternators



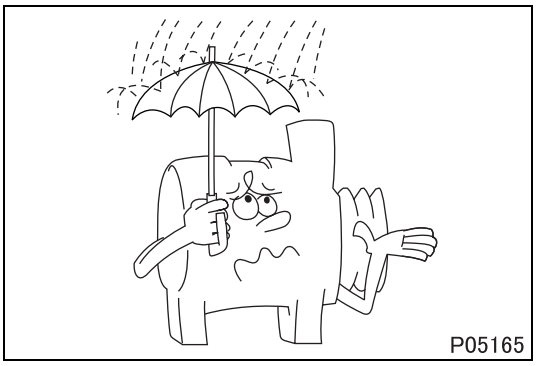
- When servicing alternators, observe the following precautions:
  - Never reverse the polarity of battery connections.
    If the polarity of the battery connections were to be reversed, a large current would flow from the battery to the alternator, damaging the diodes and regulator.



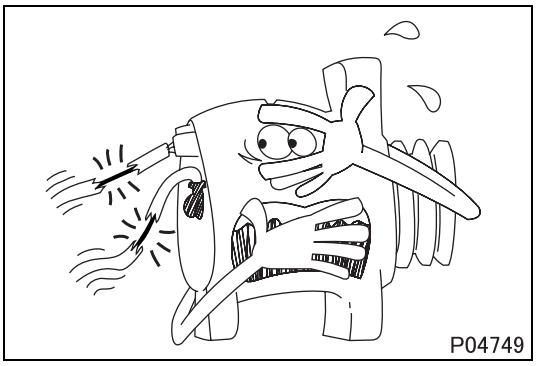
- Never disconnect the battery cables with the engine running.
  Disconnection of the battery cables during engine operation would cause a surge voltage, leading to deterioration of the diodes and regulator.



- Never perform inspections using a high-voltage multimeter.
  The use of a high-voltage multimeter could damage the diodes and regulator.

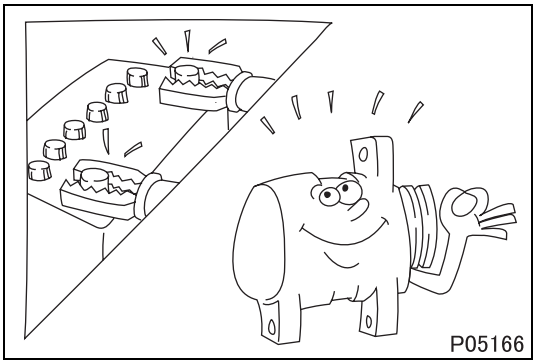


- Keep alternators dry.
  Water on alternators can cause internal short circuits and damage.



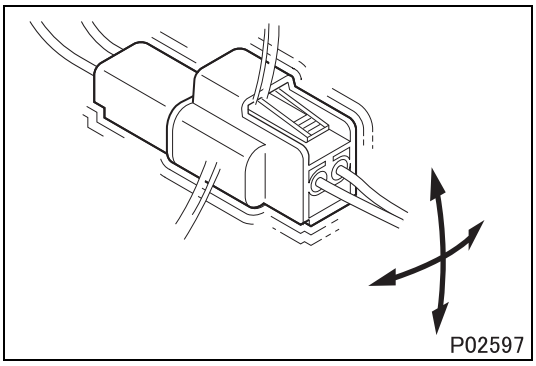
- Never operate an alternator with the B and L terminals short-circuited. Operation with the B and L terminals connected together would damage the diode trio.

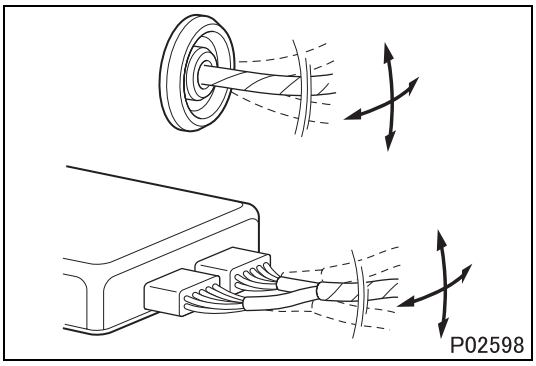
https://truckmanualshub.com/

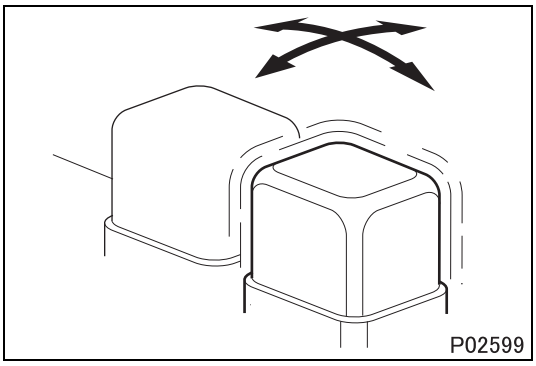


- Disconnect the battery cables (+) and (–) before quick-charging the battery with a quick charger.
  Unless the battery cables are disconnected, quick-charging can damage the diodes and regulator.

3. Intermittent Faults





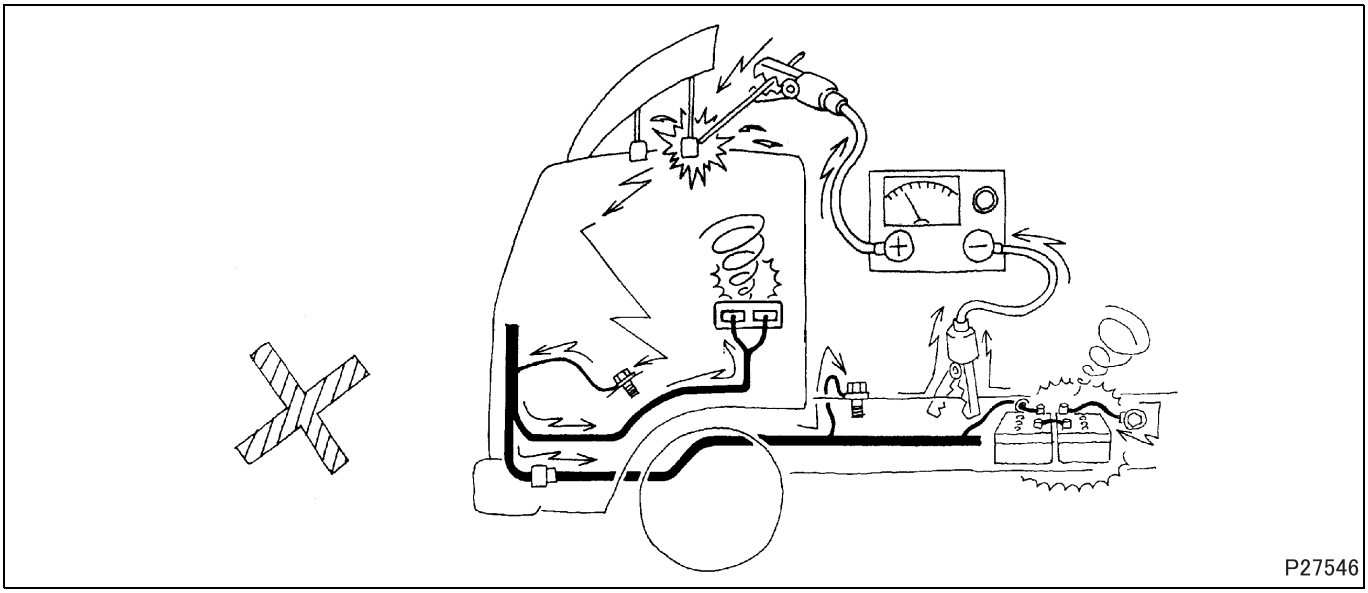


- An intermittent fault typically occurs only under certain operating conditions. Once these conditions have been identified, the cause of the intermittent fault can be ascertained easily. First, ask the customer about the vehicle operating conditions and weather conditions under which the fault occurs. Also ask about the frequency with which the fault occurs and about the fault symptoms. Then, reproduce the fault based on this information.
  In accordance with the conditions under which the fault occurs, determine whether the fault is caused by vibration, heat or other factors. if vibration is a possible factor, see if the fault can be reproduced by performing the following checks on individual connectors and other parts:
  - Gently move connectors up and down and to left and right.
  - Gently move wiring harnesses up and down and to left and right.
  - Gently wiggle sensors and other devices by hand.
  - Gently wiggle wiring harnesses on suspension systems and other moving parts.

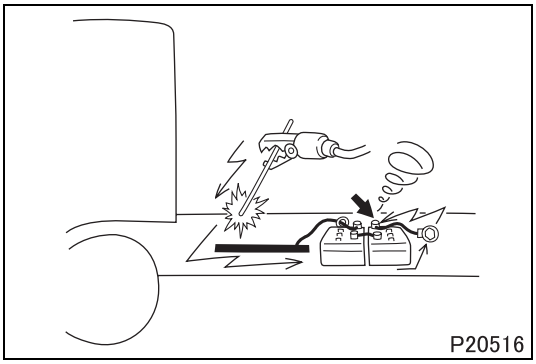
- Connectors and other parts to be checked are those included or given as likely fault locations in inspection procedures corresponding to diagnosis codes and/or fault symptoms.

4. Precautions for Arc Welding

- When arc welding is performed, current from the welder flows to ground via the vehicle's metal parts. Unless appropriate steps are taken, this current can damage control units, other electrical devices and wiring harnesses. And any electrical device near the point on the vehicle to which the (–) cable of the welder is connected, might be largely damaged.



- Current flows backward as shown below.



4.1 From battery (–) cable

To prevent damage to the battery and to electrical devices that are connected directly to the battery, it is essential to disconnect the battery's (–) cable.

4.2 Procedure

- Turn the starter switch to the LOCK position.
- Disconnect the battery's (–) cable.
- Cover all parts of the vehicle that may be damaged by welding sparks.
- Connect the welder's (–) cable to the vehicle as close as possible to the area being welded. Do not connect the welder's (–) cable to the cab if the frame is being welded, and vice versa.
- Set the welding current in accordance with the part being welded.

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54-00B SPECIFICATIONS

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SPECIFICATIONS

Battery

Item		Specifications
Model		130E41L
Voltage × Quantity	V	12 × 2
Capacity (5-hour rating)	Ah	92
Cold Cranking Amperage		799

Alternator

Item		Specifications
Manufacturer		MITSUBISHI ELECTRIC
Type		Alternator with built-in regulator (without brush, external fan)
Model		A4TU1593
Output	V-A	12–100

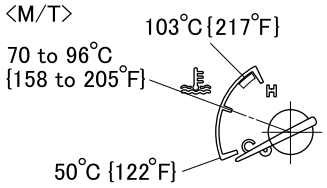
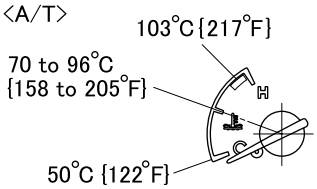
Starter

Item			Specifications
Starter	Manufacturer		MITSUBISHI ELECTRIC
	Model		M8T55371
	Output	V-kW	12–3.0
	Reduction gear mechanism		Planetary gears
	Magnetic switch operating voltage	V	8 or less
Starter relay	Model		U001X13972
	Excitation current	V-A	12–4
	Closing voltage	V	8 or less
	Opening voltage	V	3.5 or less
	Allowable cutoff current	A	200
Glow relay	Model		U1T11872
	Excitation current	V-A	12–4
	Closing voltage	V	8 or less
	Opening voltage	V	3.5 or less
	Allowable cutoff current	A	60
	Temperature fuse capacity	A	127
Glow plug	Model		Sheathed type
	Excitation current	V-A	11–5

Lighting

Item			Specifications
Headlamp	Model		Unconventional, rectangular, 2-lamp-system, semi-sealed beam
	Type		Parabola reflector type
	Upper beam (HIGH)	W	HB2 halogen 60/55 (HIGH/LOW)
	Lower beam (LOW)	W	
	Parking lamp	W	5
Front side turn signal lamp (serving also as hazard warning lamp)		W	21
Clearance and side marker lamp		W	7.5
Rear combination lamp	Stop and tail lamp (stop/tail)	W	21/5 (double filament type)
	Rear turn signal lamp (serving also as hazard warning lamp)	W	21
	Backup lamp	W	21
License plate lamp		W	7.5
Identification lamp		W	7.5
Cab lamp		W	10

Meter

Item			Specifications
Meter cluster	Manufacturer		DENSO
	Voltage	V	12
	Speedometer indicating range	km/h {MPH}	0 to 160 ($^{+3.5}_{0}$ at 60 km/h) {0 to 100 ($^{+2.5}_{0}$ at 40 MPH)}
	Tachometer indicating range	rpm	0 to 4000(± 150 at 3000rpm)
	Water temperature gauge indicating range		〈M/T〉  P58273N 〈A/T〉  P57939N
	Meter warning buzzer	Rated current mA	50 or less
		Sound pressure dB	60 $^{+6}_{0}$ (at 1 m {3.3 ft.})

A/T: Automatic transmission
M/T: Manual transmission

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Relay, Radio, Motor, Horn, Buzzer

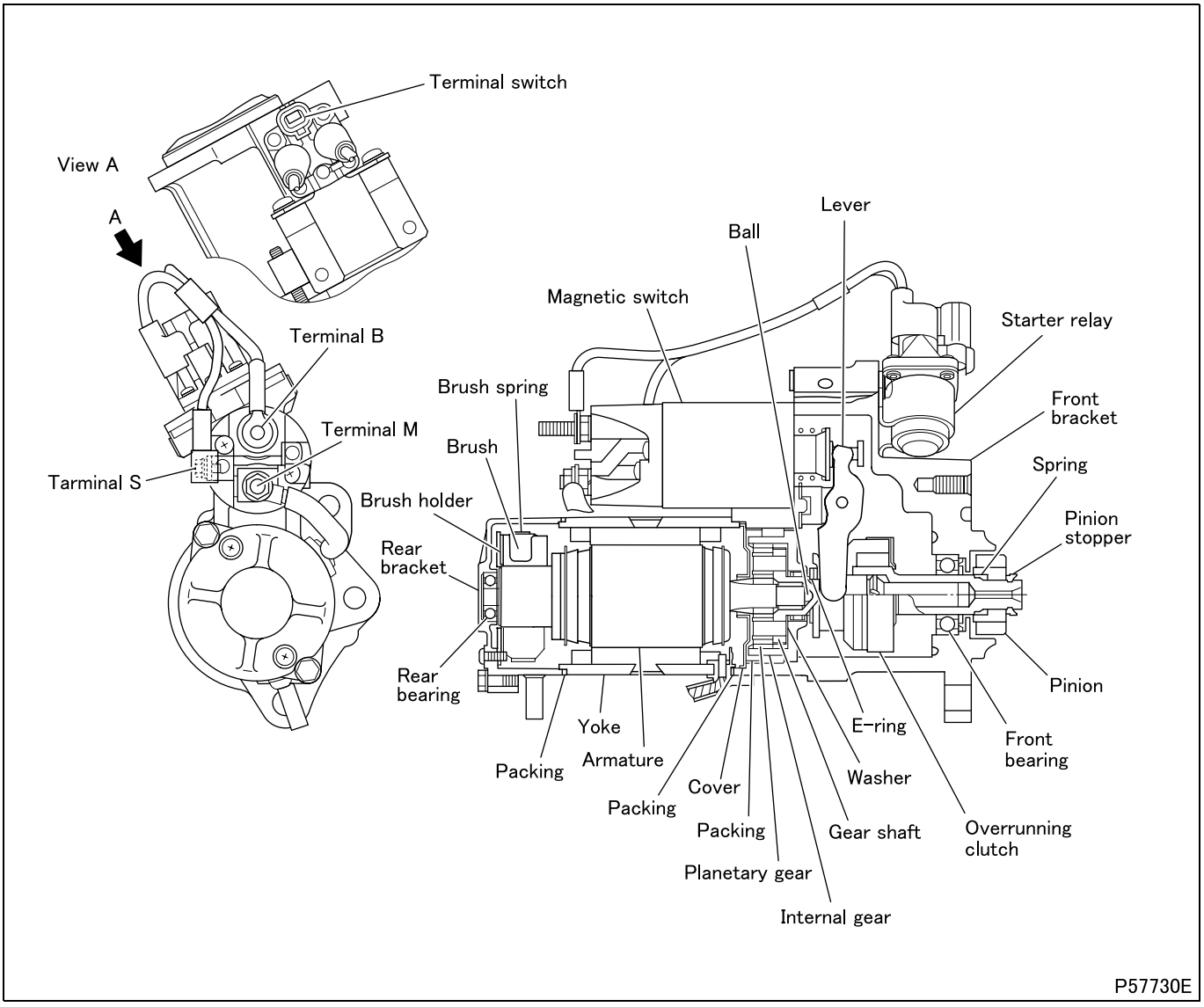
Item			Specifications
Minimum operating voltage of relay		V	8 or less
Loudspeaker	Rated input	W	15
	Maximum input	W	25
	Impedance	Ω	4 ± 0.6
Wiper motor	Rated voltage	V	12
	No-load current	A	4 or less
	Bound current	A	30 or less
Washer motor	Rated voltage	V	12
	Rated current	A	3.8 or less
Power window motor	Rated voltage	V	12
	Rated current	A	5 or less
Electric horn	Rated voltage	V	12
	Current consumption	A	3 or less
	Sound pressure	dB	110 ± 5 (at 2 m {6.6 ft.})
Back buzzer	Rated voltage	V	12
	Rated current	mA	50 or less
	Sound pressure	dB	85 ± 10 (at 1 m {3.3 ft.})
Cab tilt buzzer	Rated voltage	V	12
	Rated current	mA	66 or less
	Sound pressure	dB	73 ± 10 (at 1 m {3.3 ft.})
Hydraulic warning buzzer (only attached hydraulic brake)	Rated voltage	V	12
	Rated current	mA	100 or less
	Sound pressure	dB	90 to 105 (at 1 m {3.3 ft.})

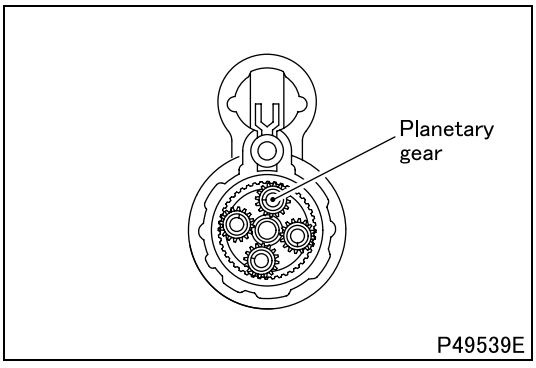
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54-00C STRUCTURE AND OPERATION

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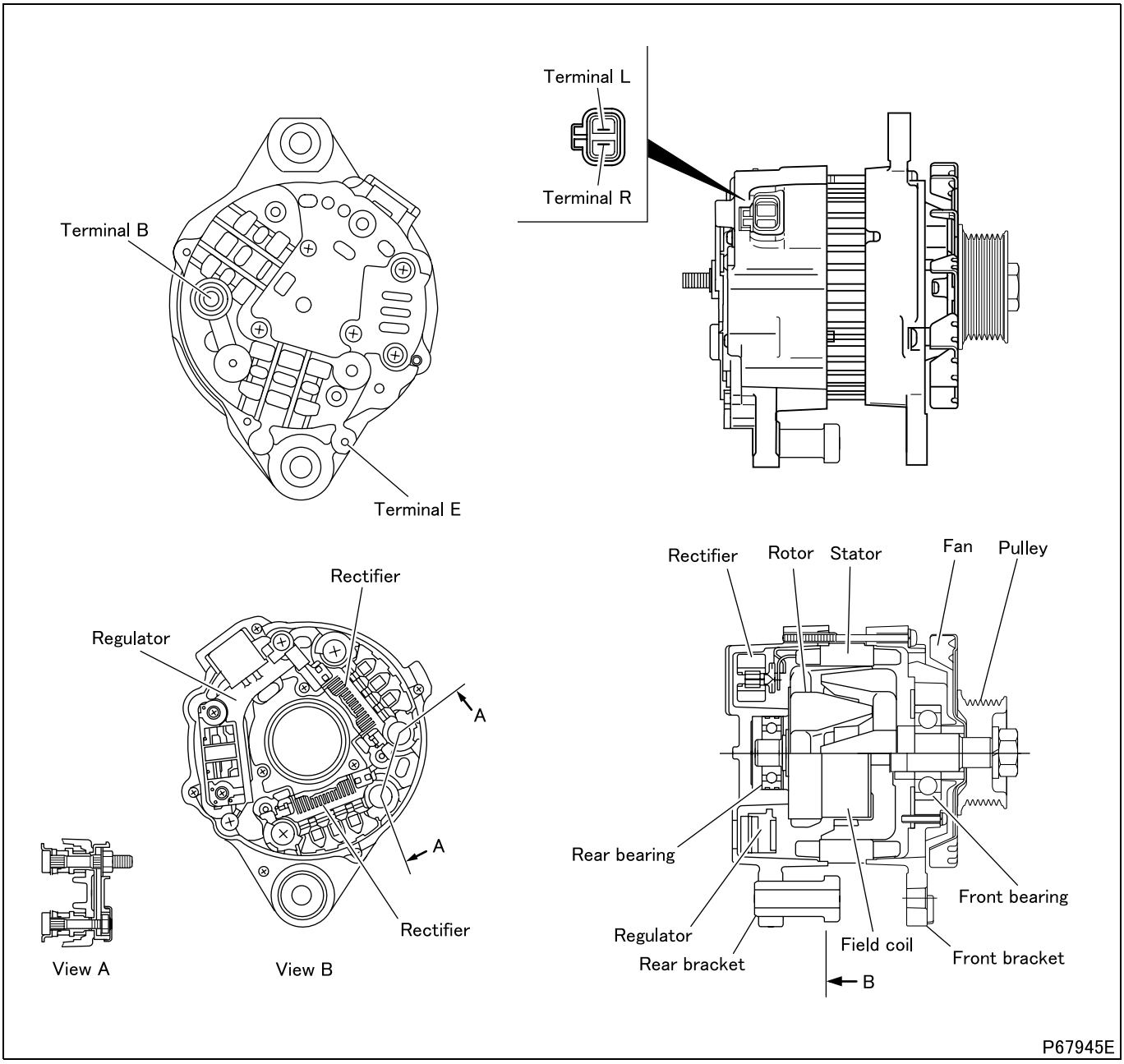
1. Starter



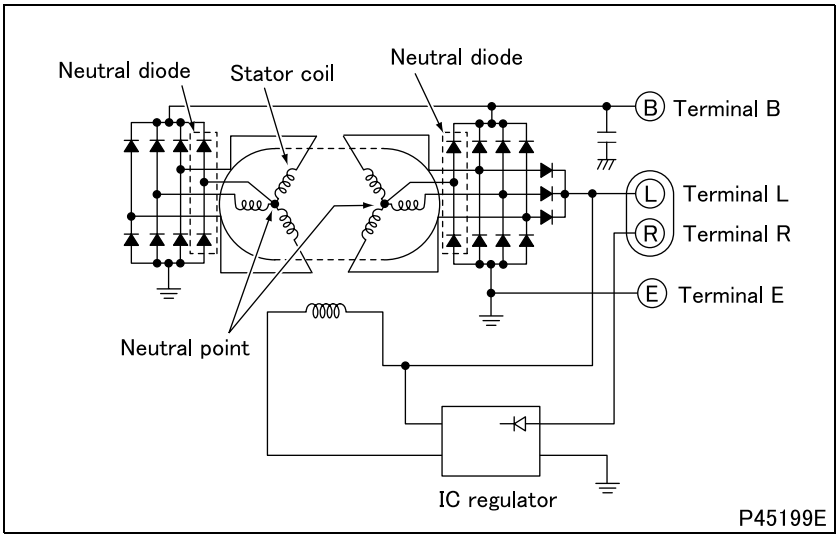


- This starter uses planetary gears as its reduction gearing mechanism.

2. Alternator

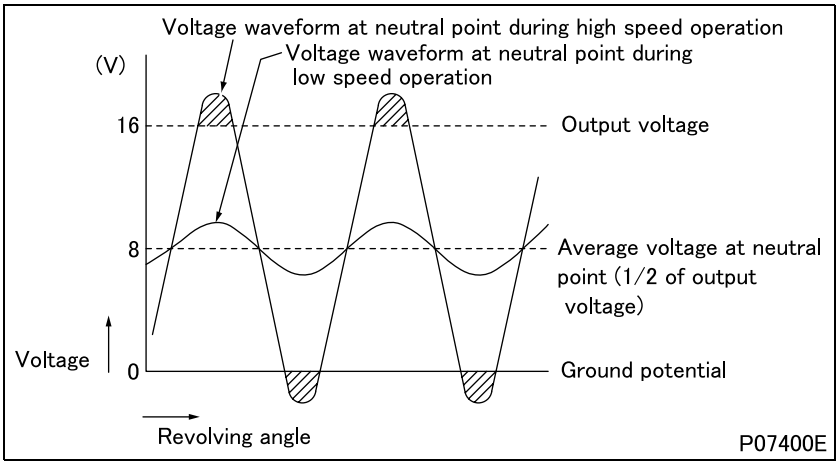


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2.1 Features of alternator with neutral diodes

- The alternator is the same as the current alternator except that neutral diodes have been added.
- These neutral diodes enable this alternator to provide higher DC output during operation at high speeds than the alternator without neutral diodes.

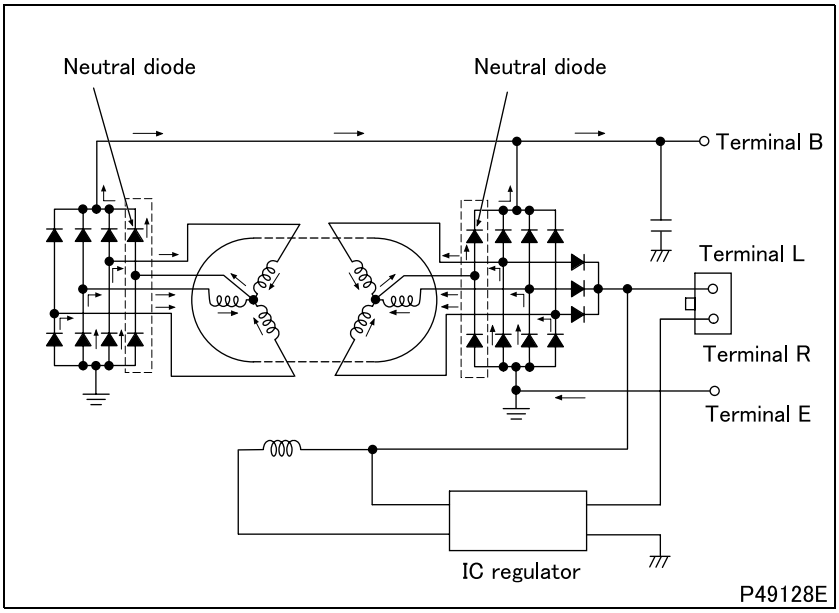


2.2 Variations of voltage at neutral point and operation of neutral diodes

- The potential at the neutral point varies up and down with the neutral point DC voltage (1/2 of output voltage) as a center as shown.
- When the alternator is operated at high speeds, the voltage at the neutral point can increase to exceed the output voltage (16V) and decrease to become lower than the ground voltage (0V). To adjust these over-voltage and under-voltage (shaded portions of diagram) the current from the excess voltages is taken by neutral diodes and added to the DC output.

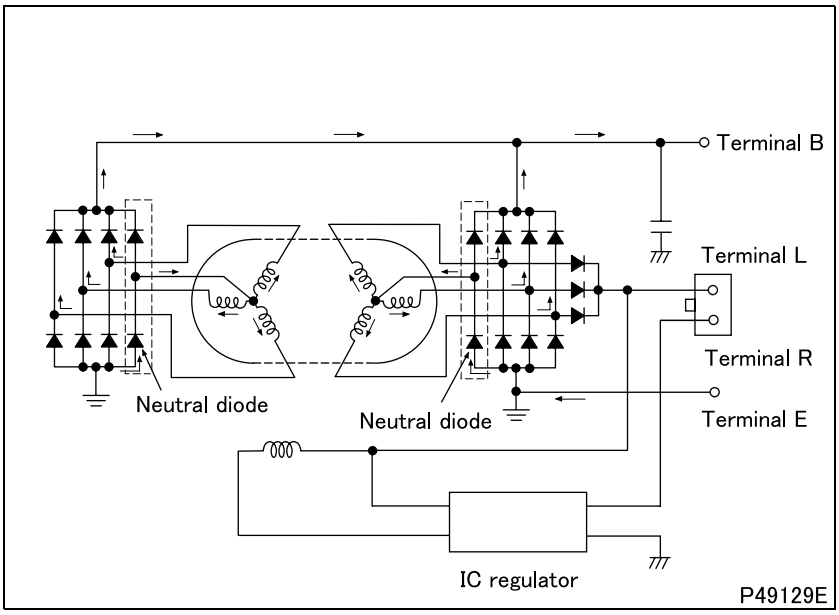
The operation of neutral diodes for each voltage and potential is as follows.

- When the voltage at neutral point is in the range from 0 to 16V, the other six diodes are operated. Neutral diodes are not operated.



2.3 When the voltage at neutral point exceeds 16V

- The positive neutral diode adds extra output to the DC output for supply to each electric equipment.



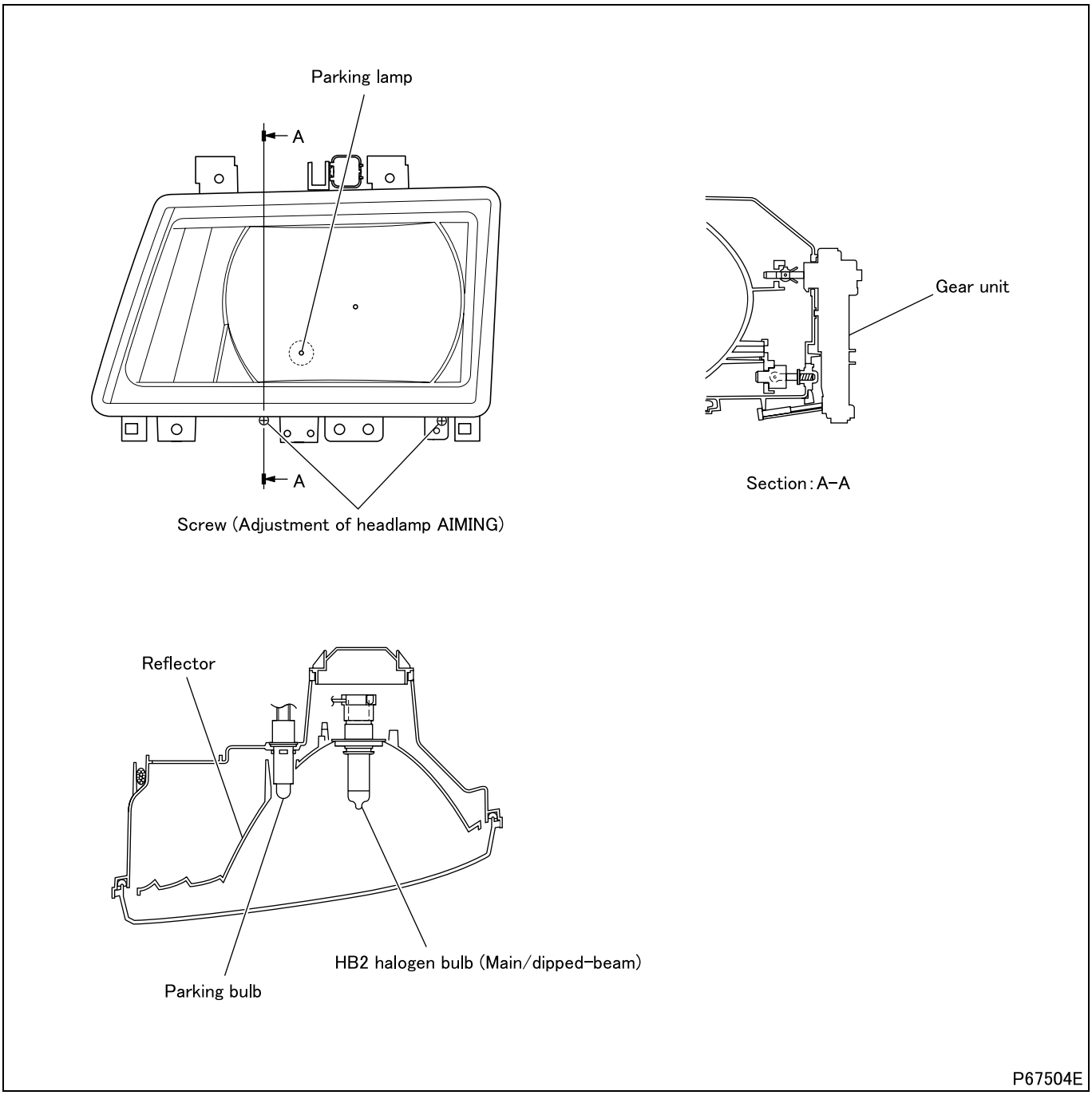
2.4 When the voltage at neutral point drops below 0V

- The negative neutral diode supplies the output from neutral point through other three diodes.

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3. Headlamps

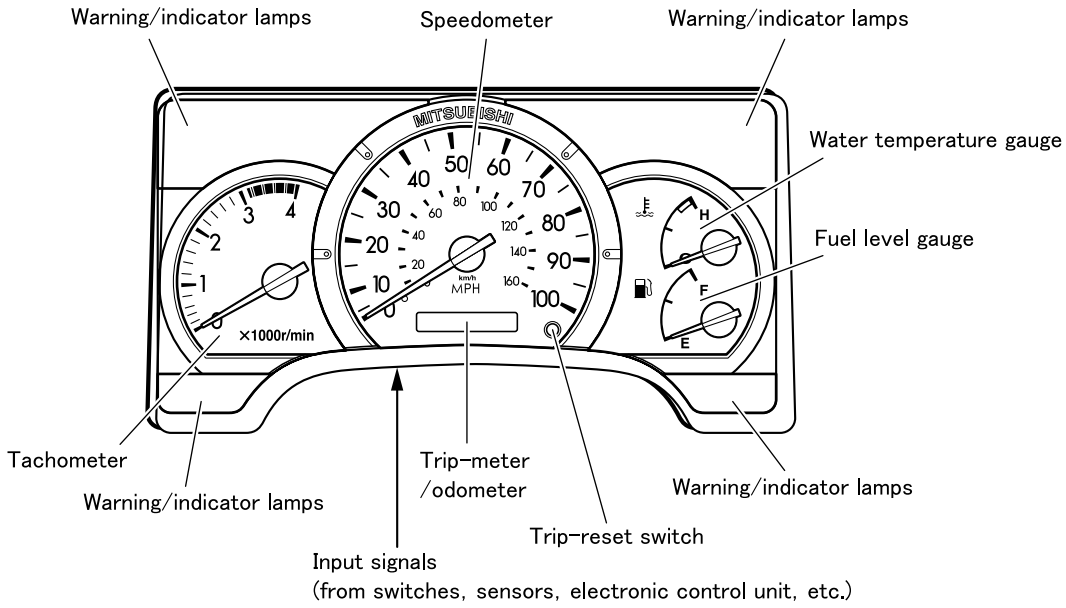
<Unconventional, rectangular 2-lamp halogen headlamp>



(Left headlamps are shown in this illustration)

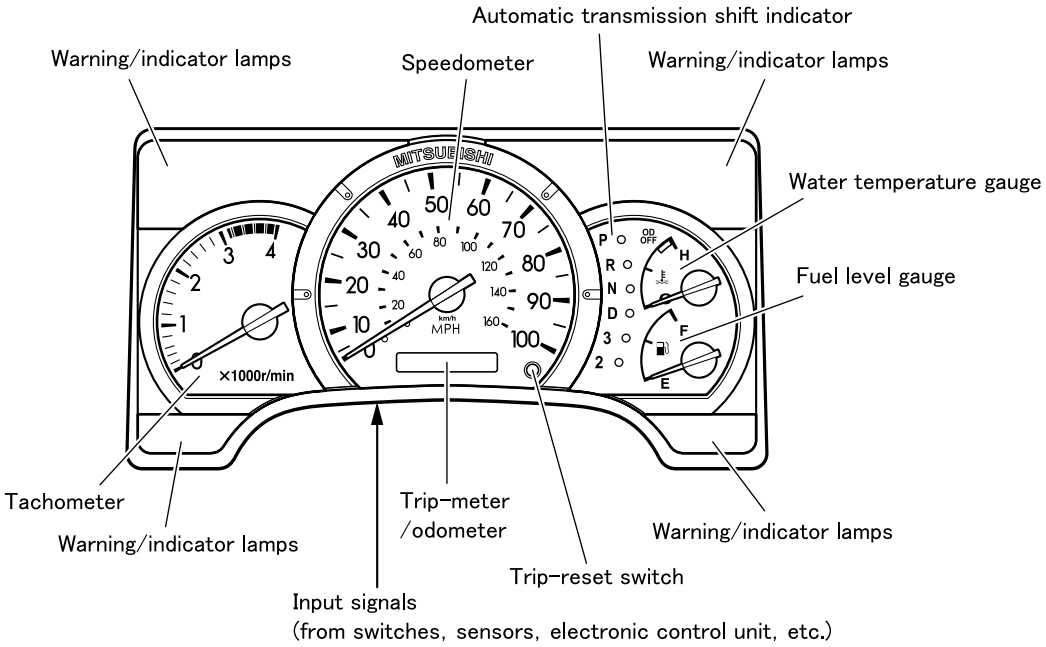
4. Meter Cluster

<Manual transmission>



P64157E

<Automatic transmission>

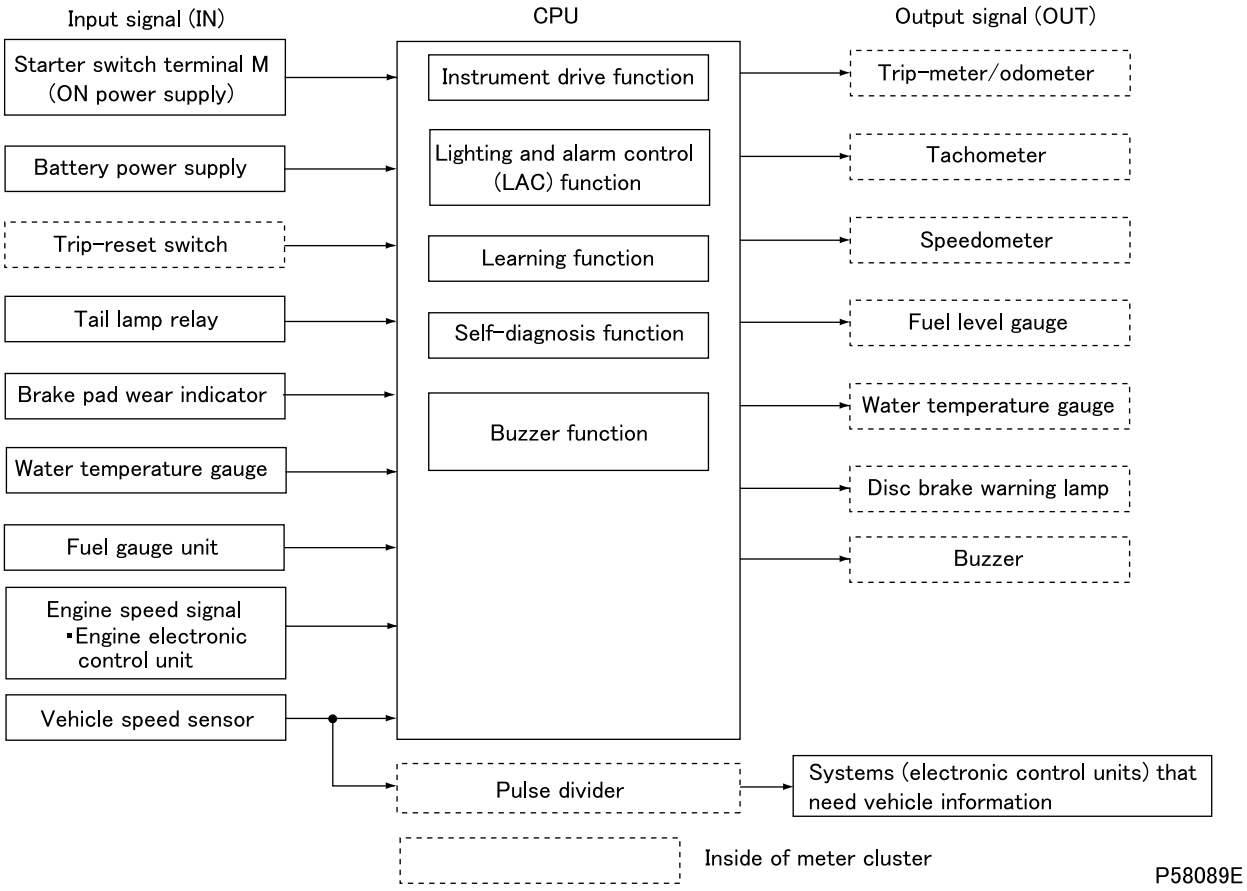


P64158E

- The meter cluster incorporates a CPU, which contains the lighting and alarm control (LAC) function, learning function, and self-diagnosis function.

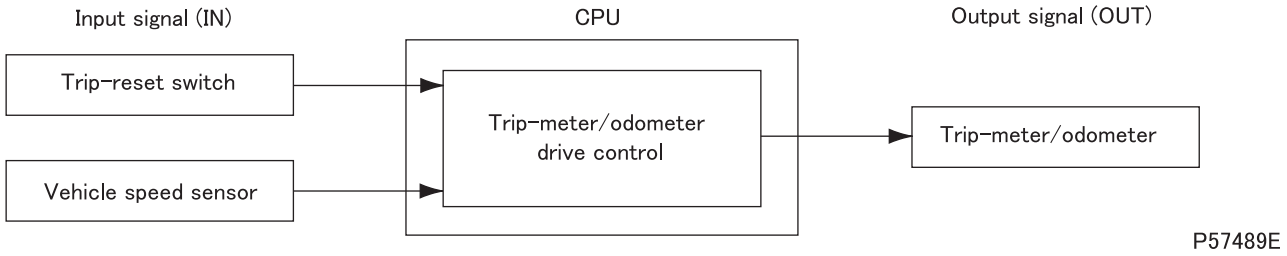
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4.1 Electronic control unit in the meter cluster system block diagram

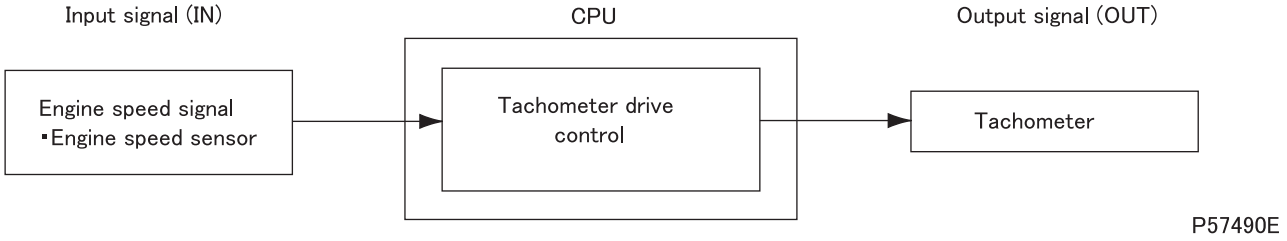


4.2 Instrument drive function

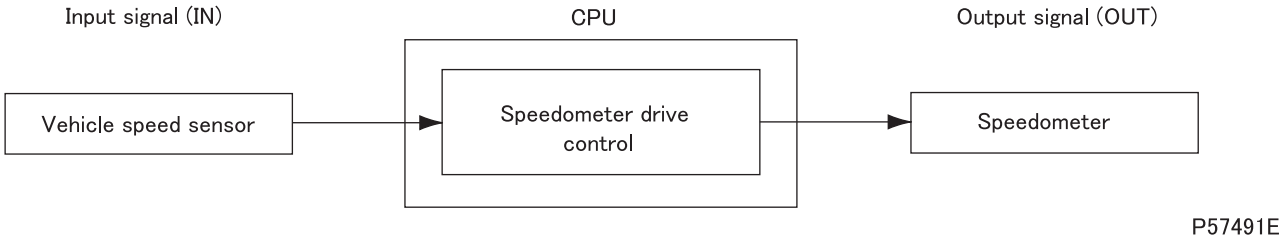
(1) Trip-meter/odometer



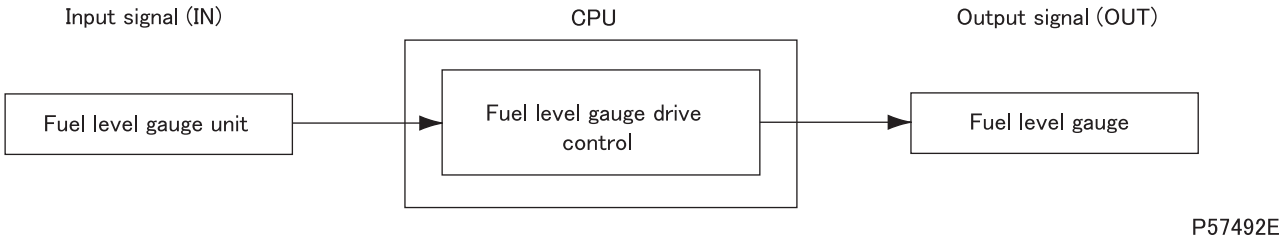
(2) Tachometer



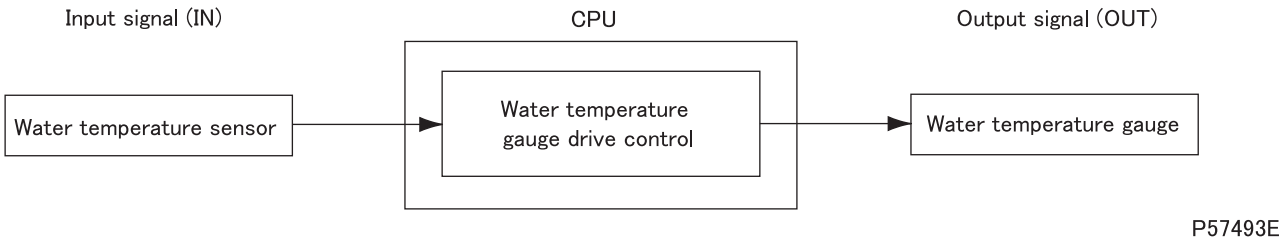
(3) Speedometer



(4) Fuel level gauge



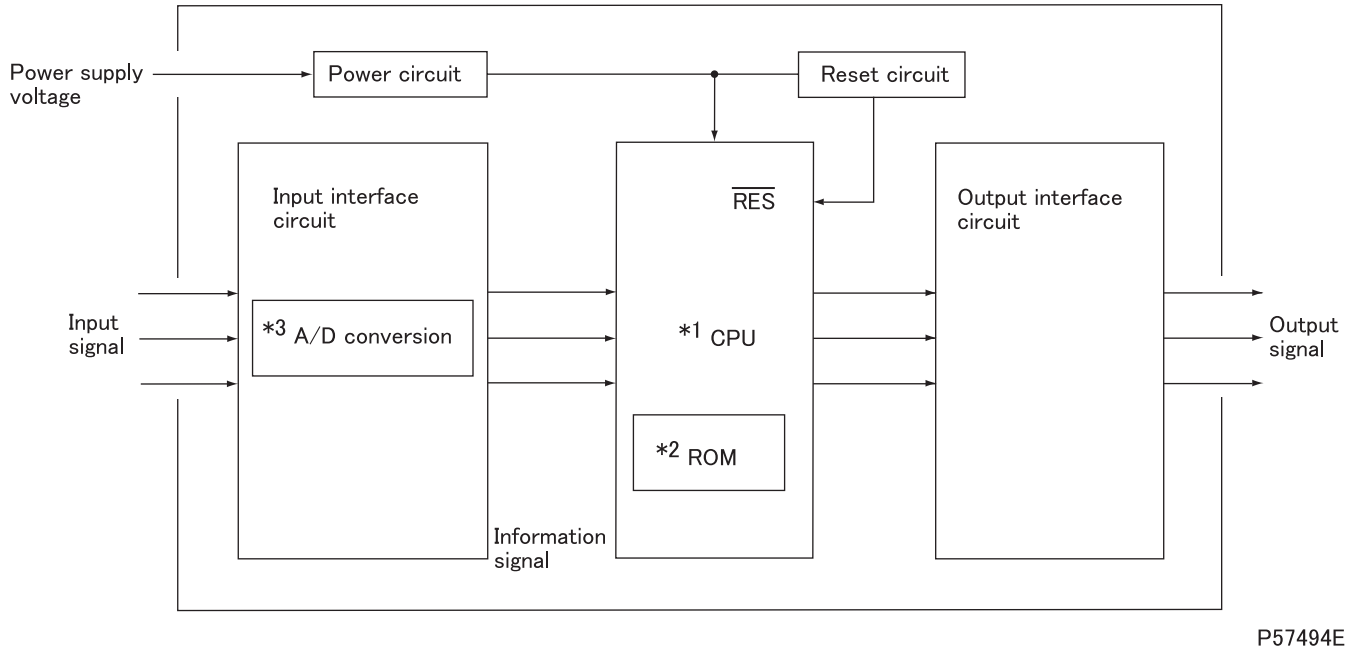
(5) Water temperature gauge



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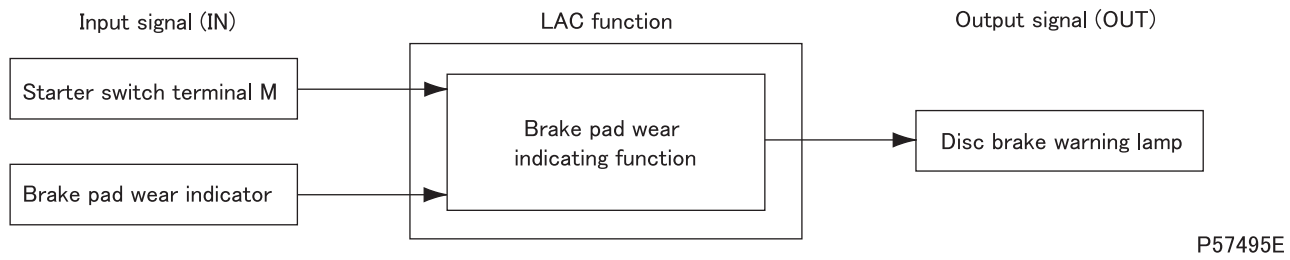
4.3 Lighting and alarm control (LAC) function

(1) Internal structure of LAC



- Internally, the LAC is essentially made up of the input interface circuit, *1CPU, *2ROM, and output interface circuit.
  - *1CPU:
    An abbreviation for Central Processing Unit. It compares the input information and the information stored in the ROM, makes a decision and sends commands to the outputs.
  - *2ROM:
    An abbreviation for Read-Only Memory. Its contents are only for reading. It stores fixed data and programs, and such retained information is not deleted even after power is cut off.
- Information sources such as the sensor and switch send input signals to the input interface circuit.
- The input interface circuit performs *3A/D conversion of the input signals, and the converted signals are transmitted to the CPU as information signals.
  - *3A/D conversion:
    An abbreviation for Analog/Digital conversion. It converts analog signals to digital signals. This conversion enables calculation to be made in the CPU.
- The CPU compares the received signals with the data in the ROM, makes a decision, and sends the results to the output interface circuit.
- The output interface circuit transmits these results to each system as output signals to instruct operations.
- Performing these series of operations continuously enables optimum control of each function.

(2) LAC function system block diagram



(3) Brake pad wear indicating function

- The LAC function determines ON or OFF state of the brake pad wear indicator, and causes the disc brake warning lamp to turn on if necessary.

4.4 Learning function

- The learning function makes the electronic control unit in the meter cluster recognize the specifications of the vehicle, without which the meter cluster cannot provide proper indications.
- There are the following two learning items:
  - "With" or "without" brake pad wear indicator.
  - "With" or "without" clutch disc wear indicator.

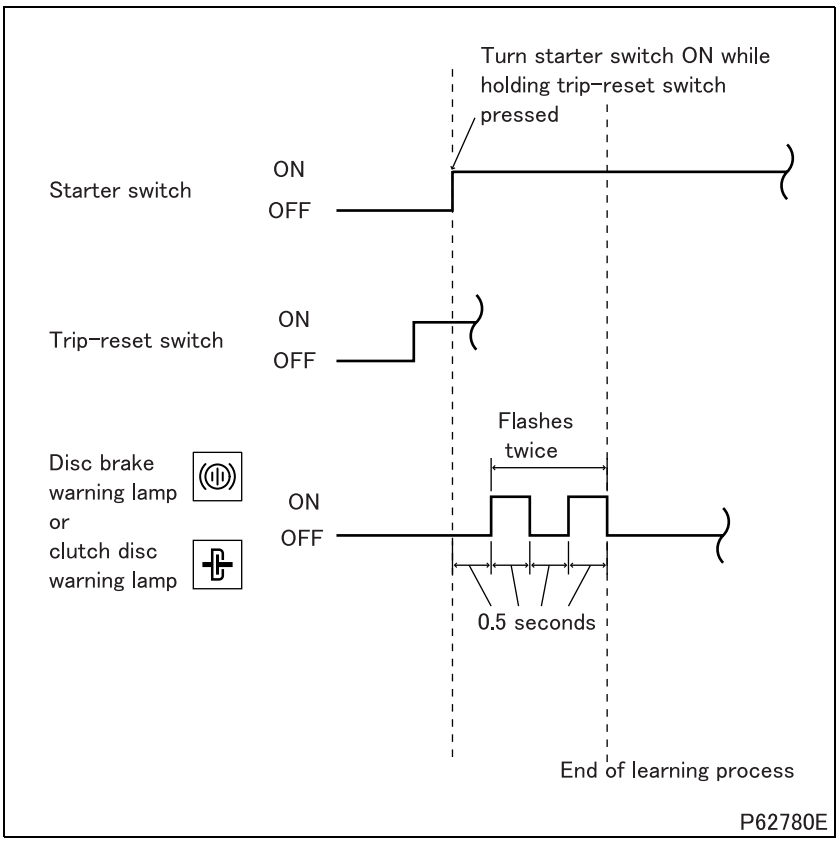
CAUTION ⚠

- **When making the electronic control unit recognize "with" for the brake pad wear indicator or clutch disc wear indicator switch, make sure that there is no open circuit in any of the relevant brake pad wear indicator or clutch disc wear indicator switch circuits. (If any circuit is found open, replace the corresponding switch.)**

(1) Learning operation

- The learning operation method differs depending on the odometer reading as follows:
  - Less than 3 km/h {1.86 mph} (for when the meter cluster is replaced with a new one).
  - 3 km/h {1.86 mph} or more (for when re-learning is required due to such a reason as wrong initial learning).

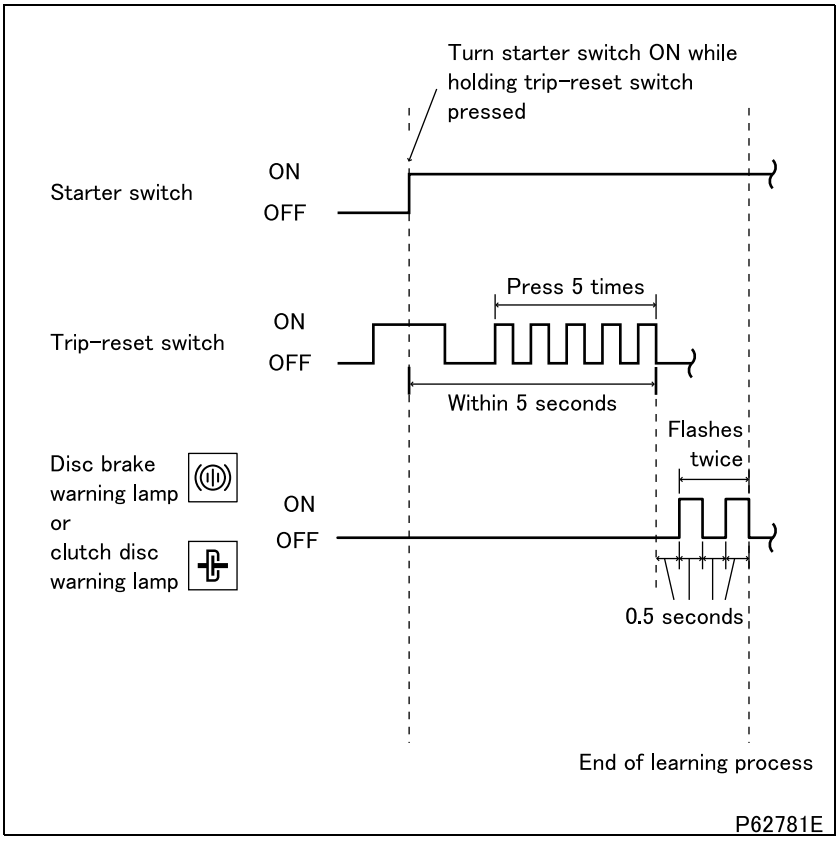
(2) Learning operation for odometer reading of less than 3 km



- Turn the starter switch to ON while holding the trip-reset switch pressed, then release the reset switch.
- After 0.5 seconds, the disc brake warning lamp or clutch disc warning lamp will flash twice, indicating completion of the learning process.
- If the vehicle is not equipped with the brake pad wear indicator or clutch disc wear indicator switch, the corresponding warning lamp does not flash.

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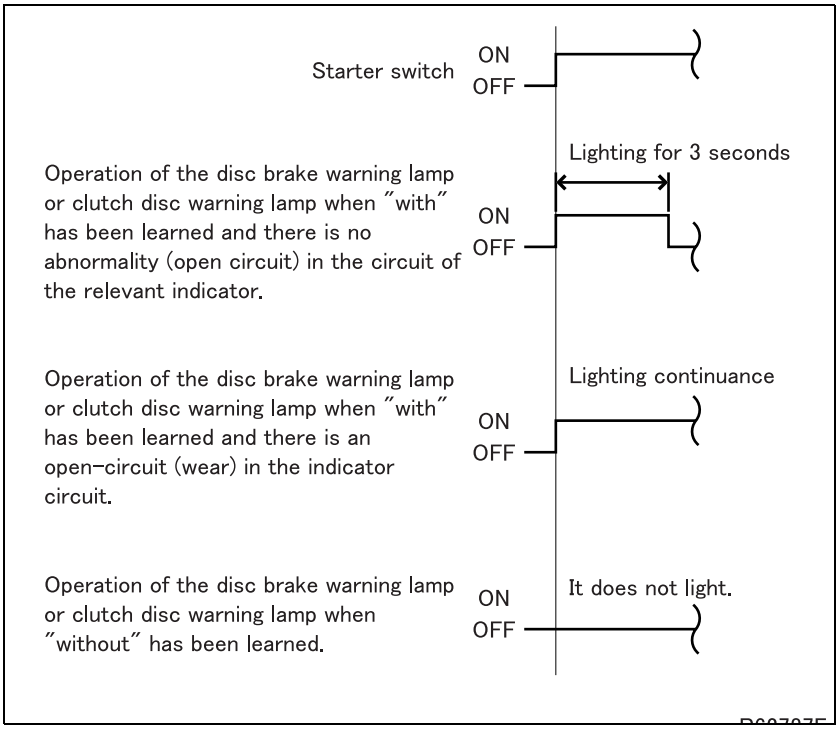
(3) Learning operation for odometer reading of 3 km or more



- Turn the starter switch to ON while holding the trip-reset switch pressed, then release the reset switch.
- Within 5 seconds after turning the starter switch to oON, press again the trip-reset switch 5 times.
- After 0.5 seconds, the disc brake warning lamp or clutch disc warning lamp will flash twice, indicating completion of the learning process.
- If the vehicle is not equipped with the brake pad wear indicator or clutch disc wear indicator switch, the corresponding warning lamp does not flash.

(4) Learning result confirmation and open-circuit checking

- After every learning operation, turn the starter switch to OFF and then to ON again to make sure that the indicator lamp for which “equipment” has been learnt illuminates.



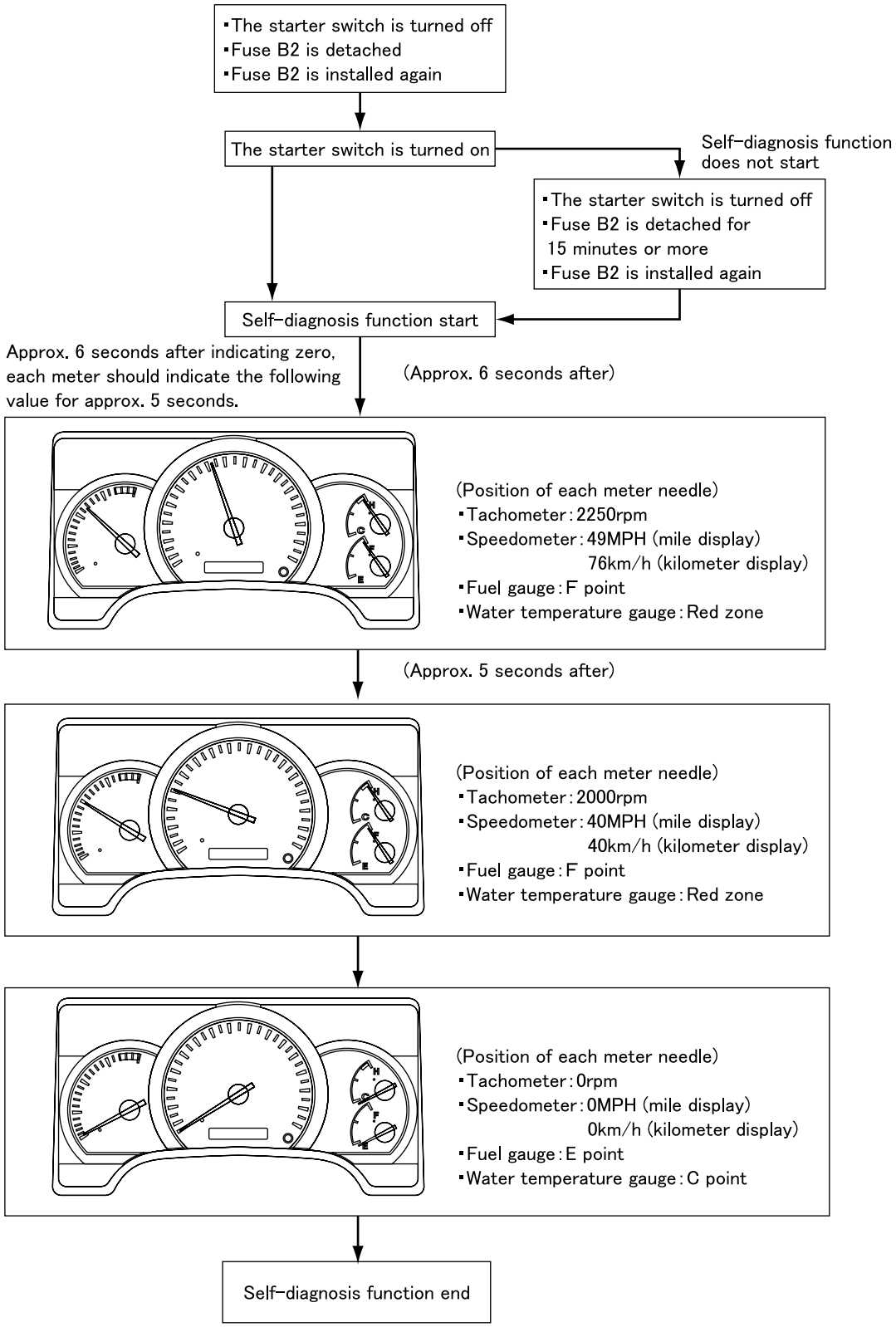
- The open-circuit checking function checks that the indicator lamp(s) for which “equipment” has been learned illuminates normally when the starter switch is turned to ON.

4.5 Self-diagnosis function

- This function is used to check meters in the meter cluster for normal operation when the meter cluster is replaced.

(1) Diagnosis procedure

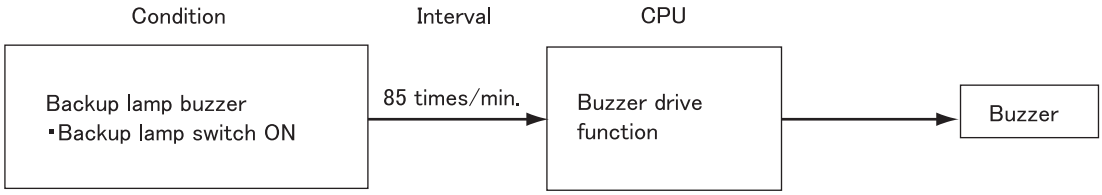
- If any meter does not function as follows, the meter cluster may be faulty.



P107068E

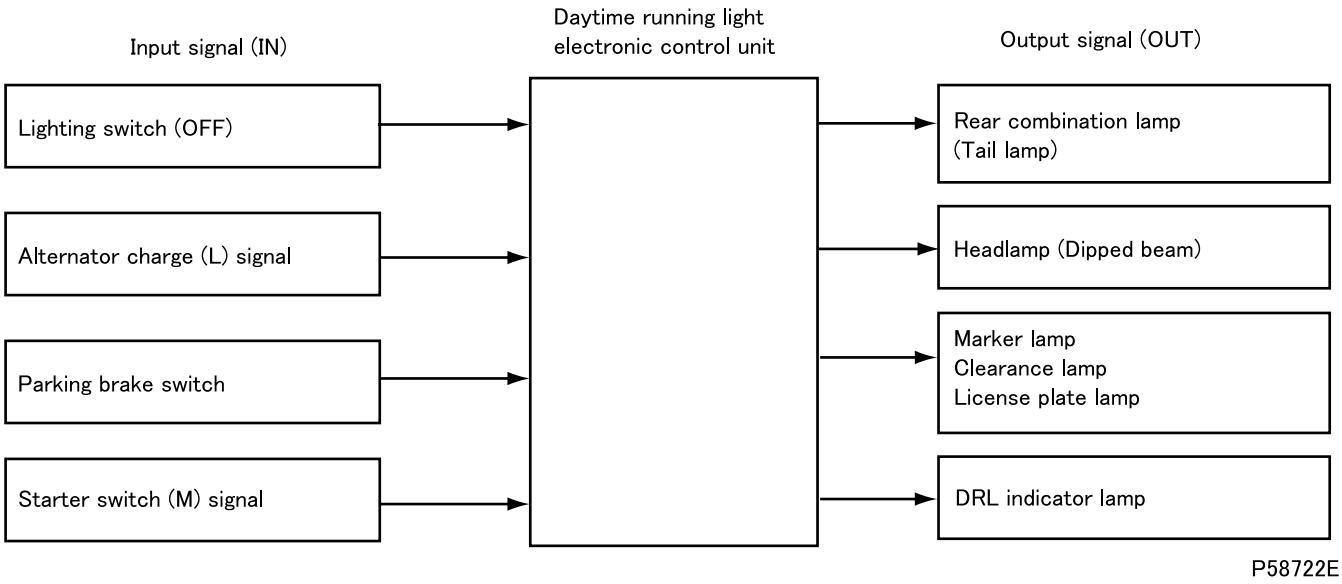
https://truckmanualshub.com/

4.6 Buzzer sounding function



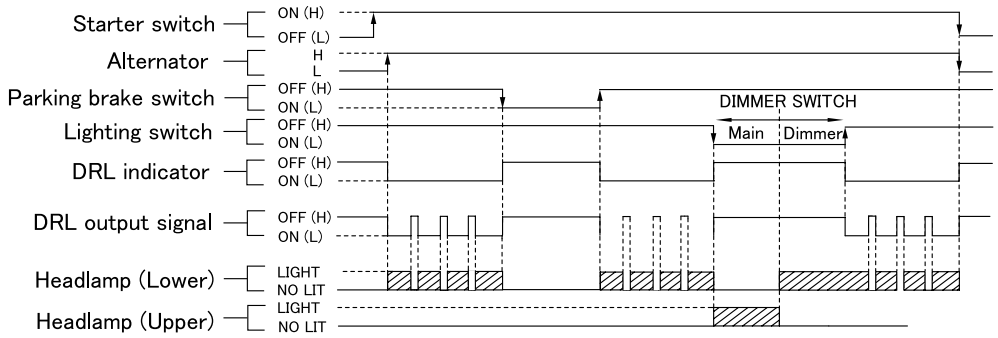
P62494E

5. Daytime Running Light System



- In a daytime running light system, regardless the position of lighting switch while engine is running, the dipped beam of the headlamp and the tail lamp of the rear combinations, position lamp, license plate lamp will light on.
- Except for that the lighting switch is OFF or when the passing switch is ON, the same lamps as usual switch operation will light.

5.1 Timing chart

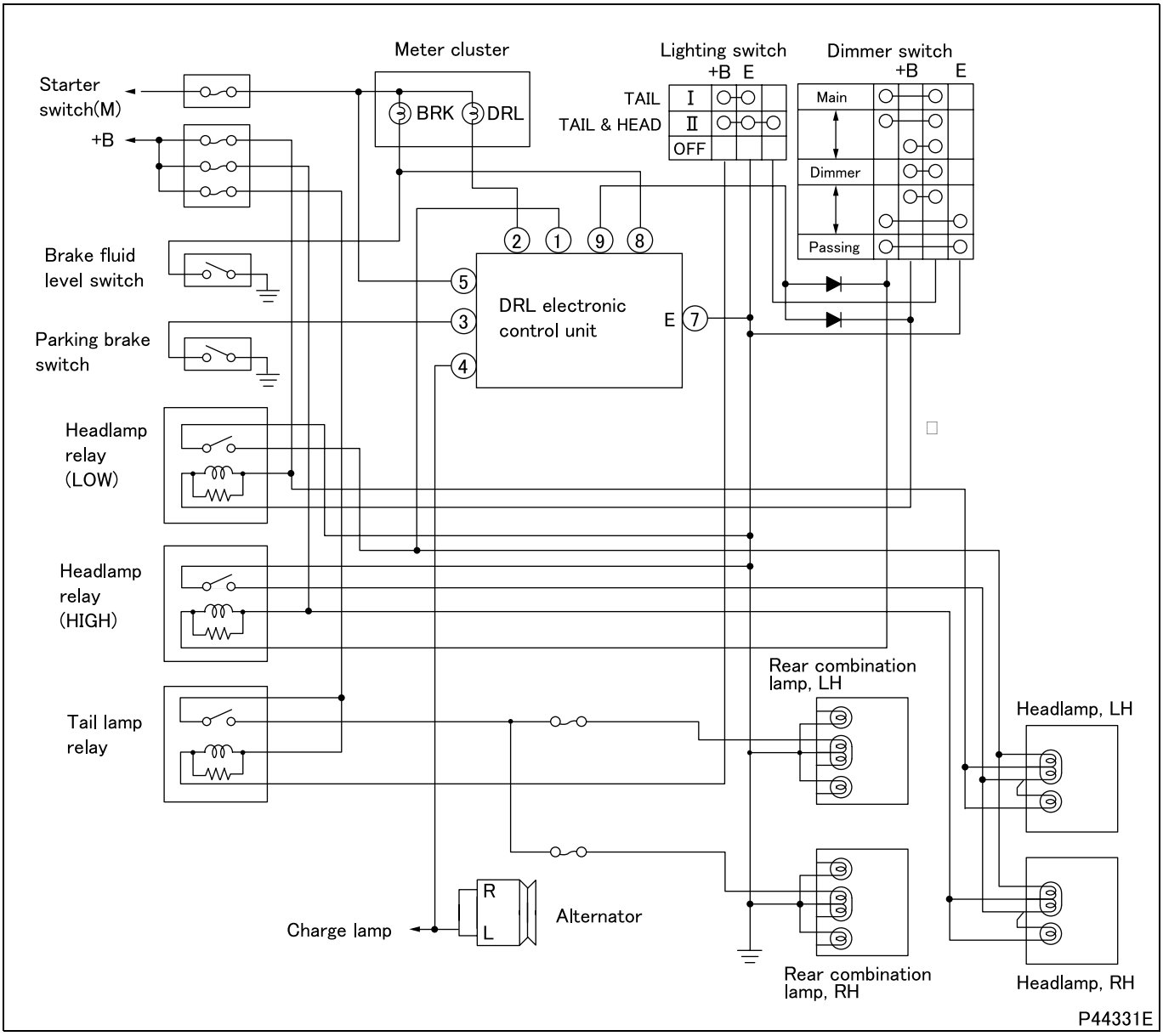


Headlamps repeat ON/OFF operations at 120 Hz according to the above timing chart. Because of the cyclic ON/OFF operations, the headlamps are dimmer than when the headlamp switch is ON.
Explanation of timing chart

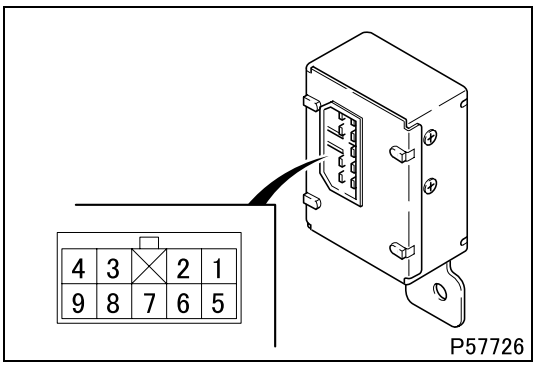
- After the engine starts, when alternator begins generating electricity with starter switch in the ON position, headlamps light.
- When parking brake switch is ON, the DRL turns off to switch off the headlamps.

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5.2 Daytime running light electronic control unit circuit diagram



5.3 DRL electronic control unit



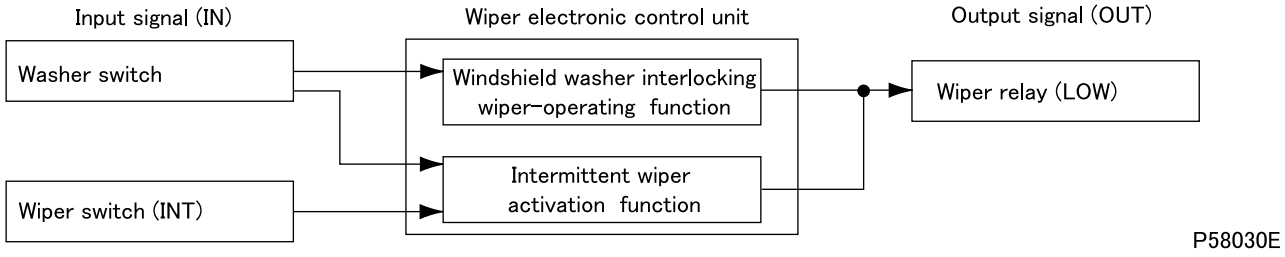
Terminal No.	Connecting destinations	Terminal No.	Connecting destinations
1	Head lamp (Dipped)	6	–
2	DRL indicator lamp	7	Ground
3	Parking brake switch	8	Parking brake indicator lamp
4	Alternator L terminal	9	Lighting switch
5	Starter switch M terminal	–	–

6. Wiper Control

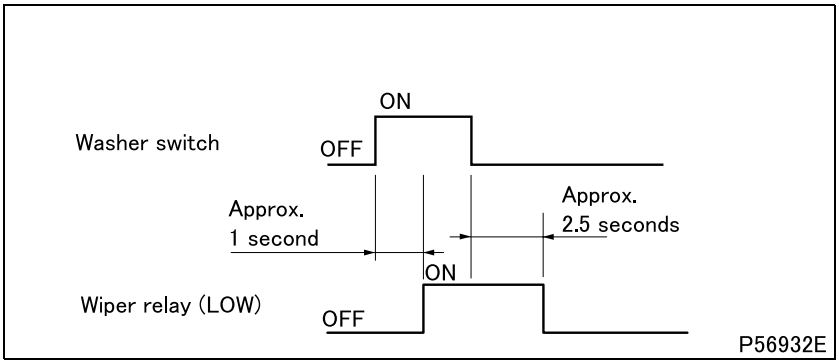
6.1 Outline

- This wiper electronic control unit is an integrated control unit controlling the following functions.
  - Windshield washer interlocking wiper-operating function.
  - Intermittent wiper activation function.

(1) System function schematic

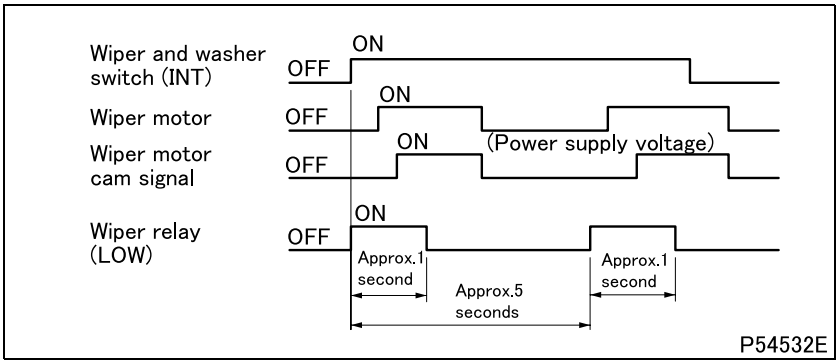


6.2 Windshield washer interlocking wiper-operating function



- This function causes the windshield wipers to operate a few times at low speed when the windshield washer switch is turned ON.
- As shown in the drawing, the wiper electronic control unit introduces a short delay between detecting the ON condition of the wiper and washer switch (washer switch) and activating the wiper relay.

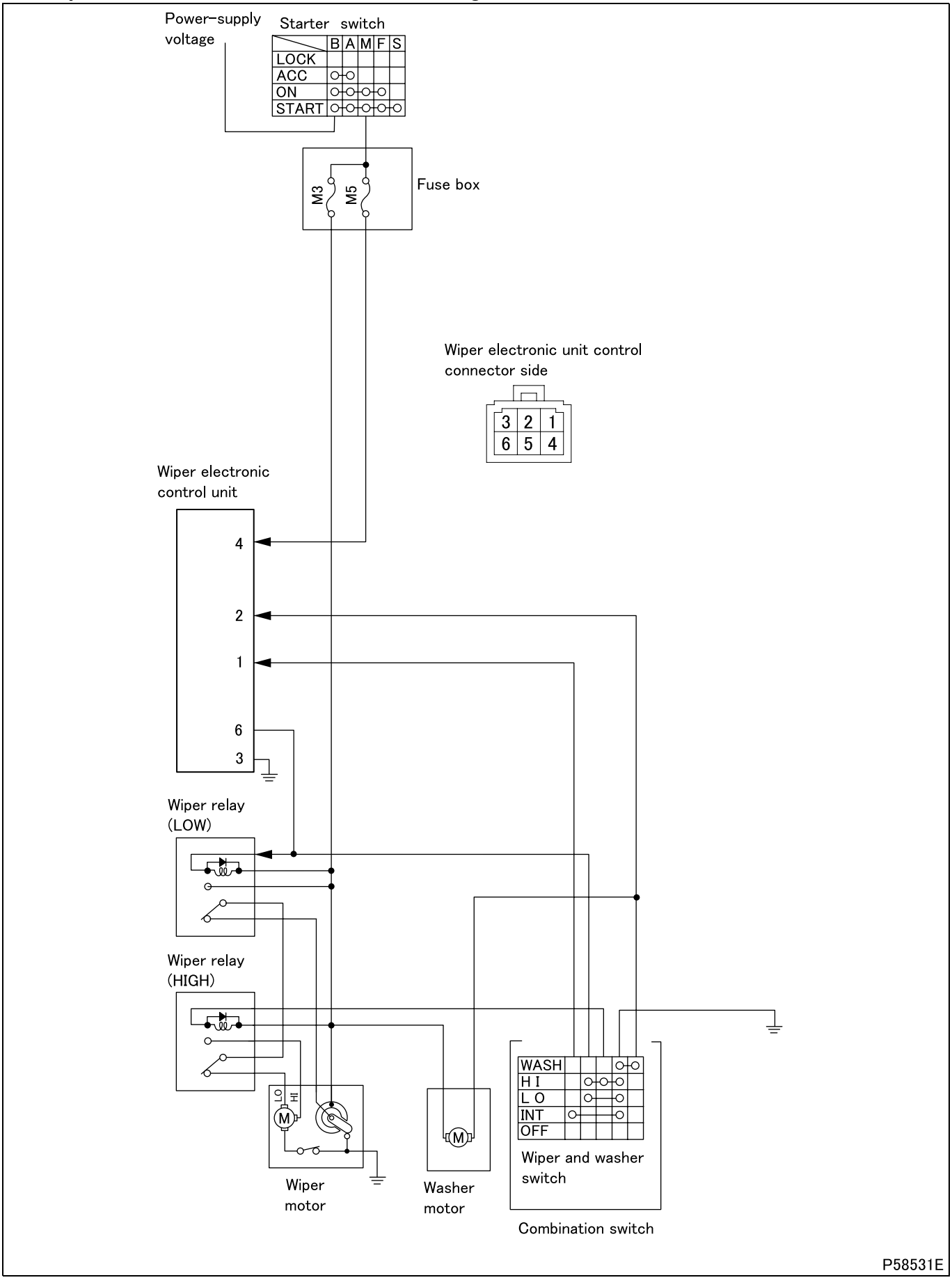
6.3 Intermittent wiper activation function



- Wiper electronic control unit causes intermittent wiper operation to take place as shown in the drawing.

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6.4 Wiper electronic control unit connection diagram



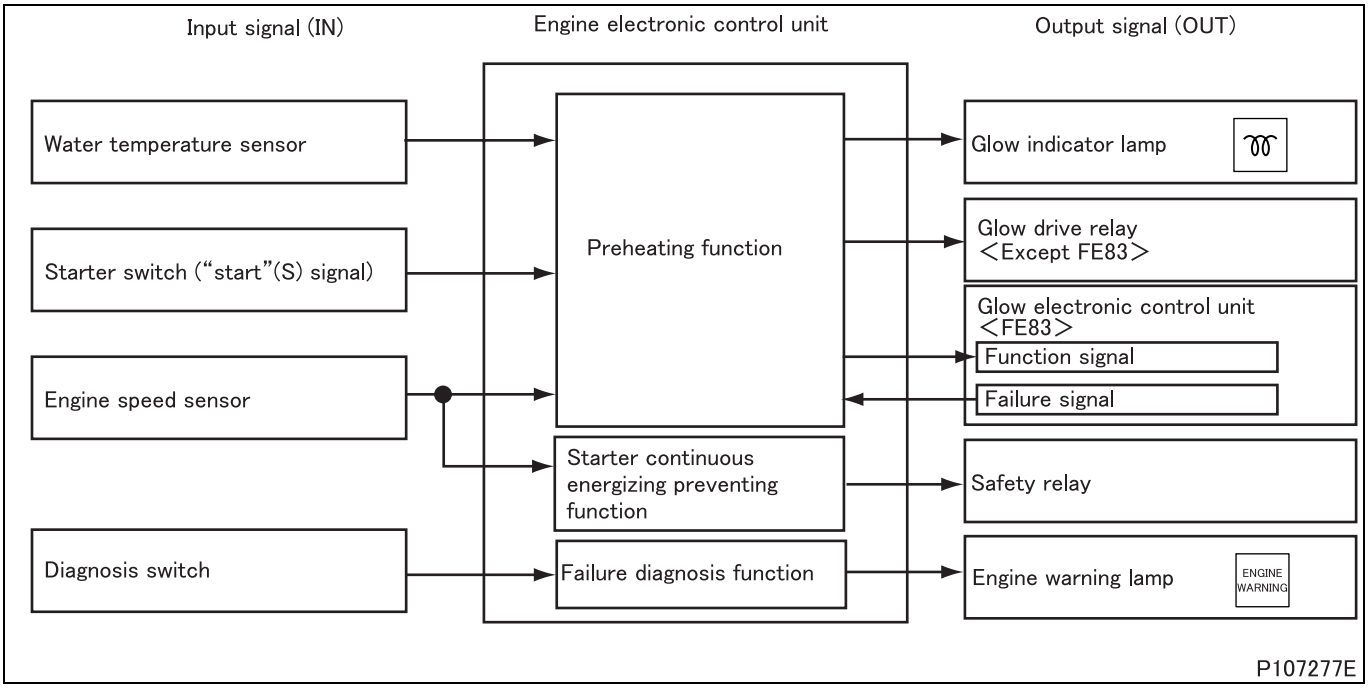
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7. Starter Continuous Energizing Preventing Function and Preheating Function

7.1 Outline

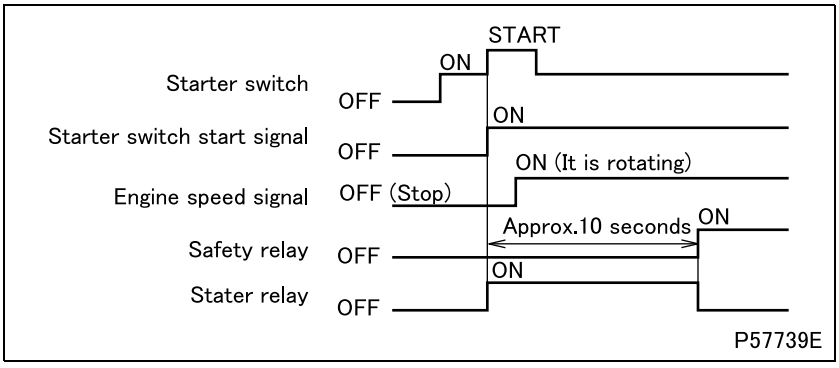
- These functions are controlled by the engine electronic control unit.

(1) System function schematic



Information signal	Parts name	Major function and operation
Engine water temperature signal	Water temperature sensor	Engine water temperature detection
Starter switch “start” (S) signal	Starter switch	Start position detection
Engine speed signal	Engine speed sensor	Engine speed detection
Failure diagnosis signal	Diagnosis switch	Output of diagnosis code
	Memory clear switch	Erasure of diagnosis code Transmission of past diagnostic code
Engine warning signal	Engine warning lamp	Abnormality of each function
Safety relay activation signal	Safety relay	Release of starter continuous energizing

7.2 Starter continuous energizing preventing function



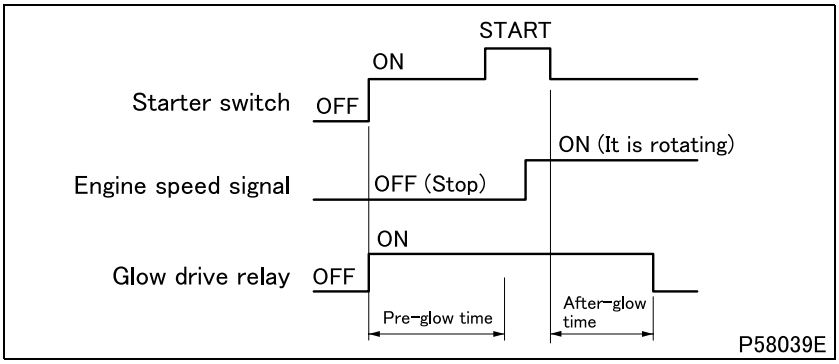
- This function is provided to prevent starter over-run.
- If the starter operates for longer than a predetermined period following engine startup, the Engine electronic control unit deems that it has been energized continuously for too long. The Engine electronic control unit then stops the flow of current to the starter and starter relay, thereby preventing the starter from seizing.

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- If the engine electronic control unit determines, based on the engine speed signal it receives, that the engine has run at or above the specified speed for longer than the specified time period after start-up, the unit trips the safety relay open.

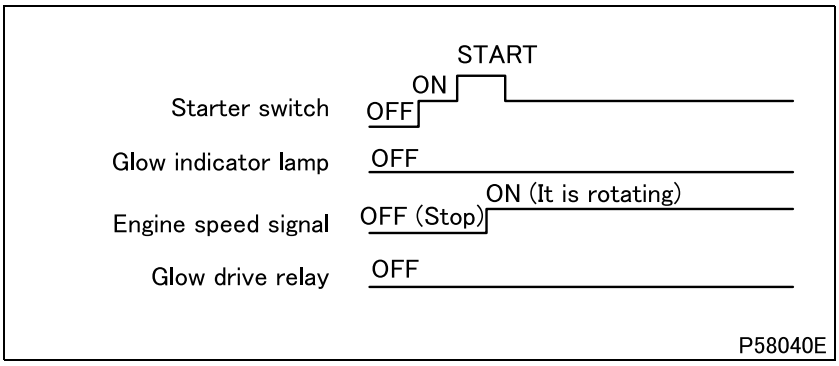
7.3 Preheating function

- This preheating function aims to enhance the engine start up when the engine coolant temperature is low in cold weather.
  Engine electronic control unit the entire function as follows:



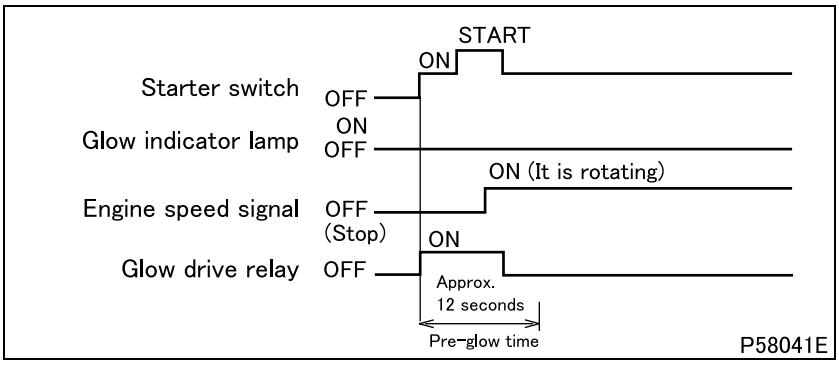
(1) Pre-glow and After-glow

The preheating is operated with a pre-glow before the engine starts and an after-glow after the engine starts. They are controlled by the starter switch (S terminal) signal, engine water temperature signal and the engine speed signal.

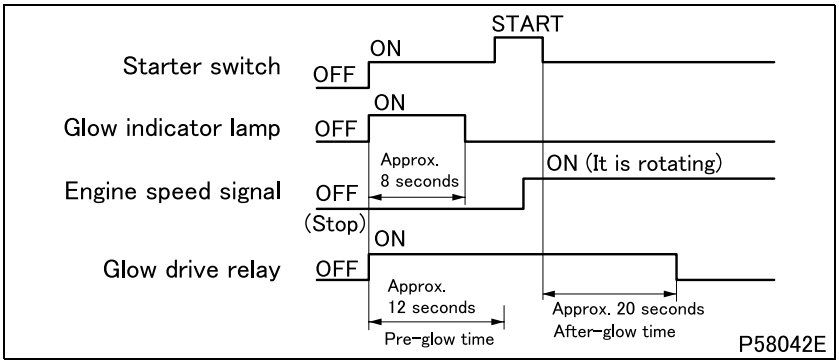


(2) Operation mode

- When the engine coolant temperature is 60°C {140°F} or more.



- When the engine coolant temperature is 0 to 60°C {32 to 140°F}.



- When the engine coolant temperature is 0°C {32°F} or less.

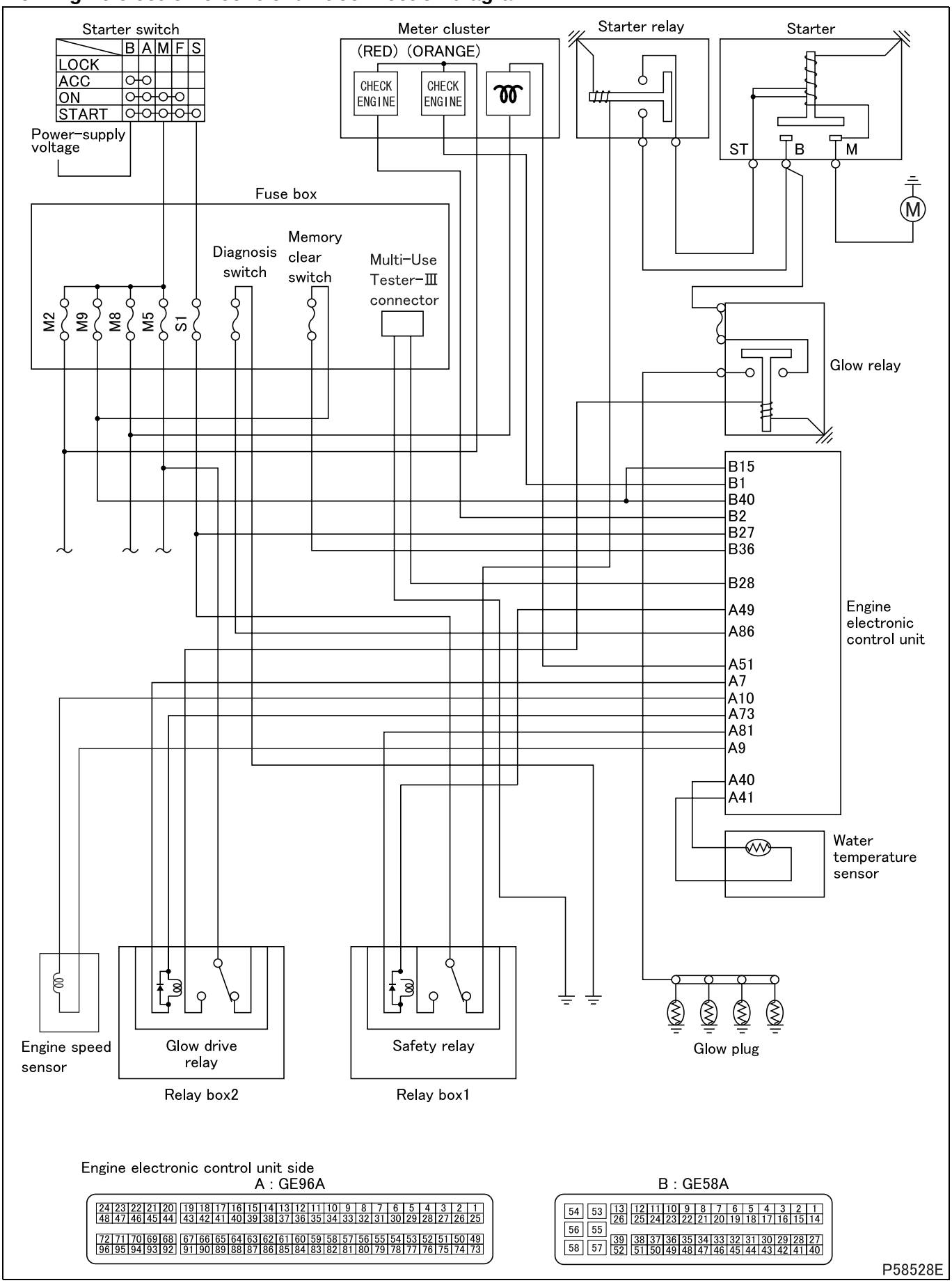
7.4 Fault diagnosis function

- While the starter switch is in the ON position, the sensors and other components are continuously monitored for faults. In the event that a component is found faulty, an indication is made in the meter cluster to alert the driver, the fault location is memorized in the form of a diagnosis code, and backup control necessitated by the fault is initiated.
- While the backup control is taking place, the system's functionality is limited to ensure vehicle and driver safety. It is possible to read the memorized diagnosis code using a Multi-Use Tester or from flashing of the warning lamp.

NOTE

- **Diagnosis codes shown by the Multi-Use Tester and those indicated by flashing of the warning lamp are different.**
- **The Multi-Use Tester is capable of showing more detailed diagnosis codes.**

7.5 Engine electronic control unit connection diagram



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54-00D TROUBLESHOOTING

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1. Power and Charging

Possible causes \ Symptoms		Battery electrolyte decreases too early.	Battery overheating.	Battery is normal but over-discharged.	Charge warning lamp does not light when starter switch is turned ON, with engine stopped.	Alternator is normal but battery over-discharged.	Reference Gr
Connector connection faulty, harness broken, grounding faulty				O		O	
Fuse blown				O	O	O	
V-belts loose				O		O	Gr14
V-belts damaged				O		O	Gr14
Battery faulty		O				O	
Alternator	Stator coil broken			O			
	Stator coil short-circuited with core			O			
	Field coil broken			O			
	Rectifier faulty			O			
	Regulator faulty		O	O	O		
	Wiring faulty			O			
Meter cluster faulty					O		

2. Engine Starting, Stopping and Preheating

Symptoms / Possible causes		Starter does not operate.	Starter operates but engine does not start			Engine does not stop.	Engine cannot be preheated.	Engine is hard to start.	Engine warm-up function does not operate.	Reference Gr
			Pinion does not engage with ring gear.	Pinion engages with ring gear but does not rotate.	Flywheel rotates but engine does not start.					
Connector connection faulty, harness broken, grounding faulty		O			O	O	O		O	
High-current fuse blown		O								
Fuse blown		O				O	O		O	
Battery insufficiently charged		O		O						
Starter	Magnetic switch contacts stuck or fused together	O								
	Open circuit in magnetic switch coil	O								
	Overrunning clutch malfunctioning			O						
	Pinion worn or damaged		O							
Starter relay defective		O								
Starter switch defective		O				O				
Flywheel ring gear worn or damaged			O							Gr11
Glow plugs defective							O	O		
Glow relay faulty <Except FE83>							O	O		
Glow drive relay faulty <Except FE83>							O	O		
Glow electronic control unit faulty <FE83>							O	O		Gr13EA
Safety relay defective		O								
Water temperature sensor defective							O	O	O	
Engine electronic control unit defective		O					O	O	O	Gr13EA
Exhaust brake system defective								O	O	Gr35
Connecting plate faulty connection							O	O		
Transmission neutral switch defective									O	
Neutral start relay defective <A/T>		O								
Inhibitor switch defective <A/T>		O								
Warm-up switch defective									O	

A/T: Automatic transmission

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3. Lighting

Symptoms / Possible causes		Headlamp				Tail lamp does not light.	Stop lamp does not light.	Identification lamp, clearance and side marker lamp	Parking lamp does not light.	License plate lamp does not light.	Backup lamp does not light.	Back buzzer does not sound.	Reference Gr
		Does not light.	Dim.	Does not switch to main beam.	Does not switch to dipped beam.								
Connector connection faulty, harness broken, grounding faulty		O				O	O	O	O	O	O	O	
Fuse blown		O				O	O	O	O	O	O	O	
Battery voltage insufficient			O										
Alternator output insufficient			O										
Bulb burnt-out		O				O	O	O	O	O	O	O	
Combination switch	Lighting switch faulty	O				O		O	O	O		O	
	Dimmer switch faulty			O	O								
Headlamp relay (HIGH, LOW) faulty		O		O	O								
Tail lamp relay faulty						O		O	O	O		O	
Stop lamp relay faulty							O						
Stop lamp switch faulty							O						
Backup lamp switch faulty											O		

Symptoms / Possible causes		Turn signal lamp (serving also as hazard warning lamp)					Cab lamp does not light.	Interior illumination lamps for meters, radio system, etc. do not light.	Reference Gr
		Does not blink.	Stay ON.	Blinks too slowly.	Blinks too quickly.	Blinks irregularly.			
Connector connection faulty, harness broken, grounding faulty		O					O	O	
Fuse blown		O					O		
Battery voltage insufficient			O						
Alternator output insufficient			O						
Bulb burnt-out		O			O		O	O	
Power (wattage) of bulb is lower than specified value					O				
Power (wattage) of bulb is higher than specified value				O					
Combination switch	Lighting switch faulty							O	
	Turn signal lamp switch faulty	O							
Tail lamp relay faulty								O	
Turn signal lamp relay faulty		O							
Flasher unit faulty		O	O	O	O	O			
Cab lamp switch faulty							O		
Cab lamp faulty							O		
Door switch faulty							O		
Hazard warning lamp switch faulty		O	O						
Rheostat switch faulty								O	

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Symptoms / Possible causes		Van body dome light does not light.	Daytime running light system does not operate after engine starts, and headlamps do not light.	Reference Gr
Connector connection faulty, harness broken, grounding faulty		O	O	
Fuse blown		O		
Battery capacity insufficient				
Alternator output insufficient				
Bulb burnt-out		O		
Power (wattage) of bulb is lower than specified value				
Power (wattage) of bulb is higher than specified value				
Combination switch	Lighting switch faulty	O		
	Turn signal lamp switch faulty			
	Dimmer switch faulty			
Relay box	Headlamp relay (HIGH, LOW) faulty		O	
	Tail lamp relay faulty		O	
	Stop lamp relay faulty			
	Turn signal lamp relay faulty			
	Daytime running light relay		O	
Stop lamp switch faulty				
Flasher unit faulty				
Backup lamp switch faulty				
Back buzzer faulty				
Cab lamp switch faulty				
Cab lamp faulty				
Door switch faulty				
Hazard warning lamp switch faulty				
Rheostat switch faulty				
Van body dome light relay faulty		O		
Van body dome light switch faulty		O		
Daytime running light electronic control unit faulty			O	

4. Meter

Symptoms / Possible causes		Pointer does not move.	Pointer movement unstable.	Indication error large.	Abnormal noise from meter.	Reference Gr
Connector connection faulty, harness broken, grounding faulty		O	O			
Fuse blown		O				
Internal circuits of meter cluster faulty		O	O	O		
Printed wiring board of meter cluster faulty		O				
Tachometer	Engine speed sensor coil open-circuited	O				
	Engine speed sensor improperly mounted	O	O			
	Tachometer faulty	O	O	O	O	
Speedometer or tachograph	Vehicle speed sensor faulty	O				
	Vehicle speed sensor improperly mounted		O			
	Specified tires not used			O		Gr31
	Tires worn or inflation pressure incorrect			O		Gr31
	Specified L-joint of transmission not used (difference in gear ratio)			O		Gr22
	Specified speedometer gear of transmission not used (difference in gear ratio)			O		Gr22
	Installation angle of speedometer gear bushing on transmission incorrect (not set at correct gear ratio position)			O		Gr22
	Speedometer or tachograph faulty	O	O	O	O	
Water temperature gauge	Water temperature sensor faulty	O		O		
	Water temperature gauge faulty	O		O		
	Thermostat does not close	O				Gr14
Fuel gauge	Fuel level sensor faulty	O		O		
	Fuel gauge faulty	O		O		

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5. Cigarette Lighter and Audio

Symtoms / Possible causes	Cigarette lighter			Audio	Reference Gr
	Does not glow.	Does not return.	Night lamp does not light up.	Radio does not work.	
Connector connection faulty, harness disconnection, grounding faulty	O		O	O	
Fuse blown	O		O	O	
Cigarette lighter faulty	O	O			
Tail lamp relay faulty			O		
Antenna and antenna cable connection faulty				O	
Radio amplifier faulty				O	
Radio tuner faulty				O	
Cassette deck head and pinch roller faulty					
Speaker faulty				O	
Left and right speaker impedance different					

Accessory Noise Generation Source

Accessory	Noise	Symptoms
Alternator	Whistling	High pitch sound when accelerator pedal suddenly pressed (Stops soon after engine stopped)
Water temperature gauge	Scratching	Occurs when engine running (Continues for a while after engine stops)
Engine oil pressure switch	Rattling	Depends on engine speed (Does not occur during idling)
Fuel level sensor	Scratching	Occurs when engine suddenly revved, while running on rough roads, or starter switch turned ON
Flasher unit	Banging	When turn signal blinks
Horn	Hissing	Occurs when horn button pressed or released
Wiper motor	Whining	Depends on windshield wiper speed
Washer motor	Whining	When windshield washer operates

6. Horn

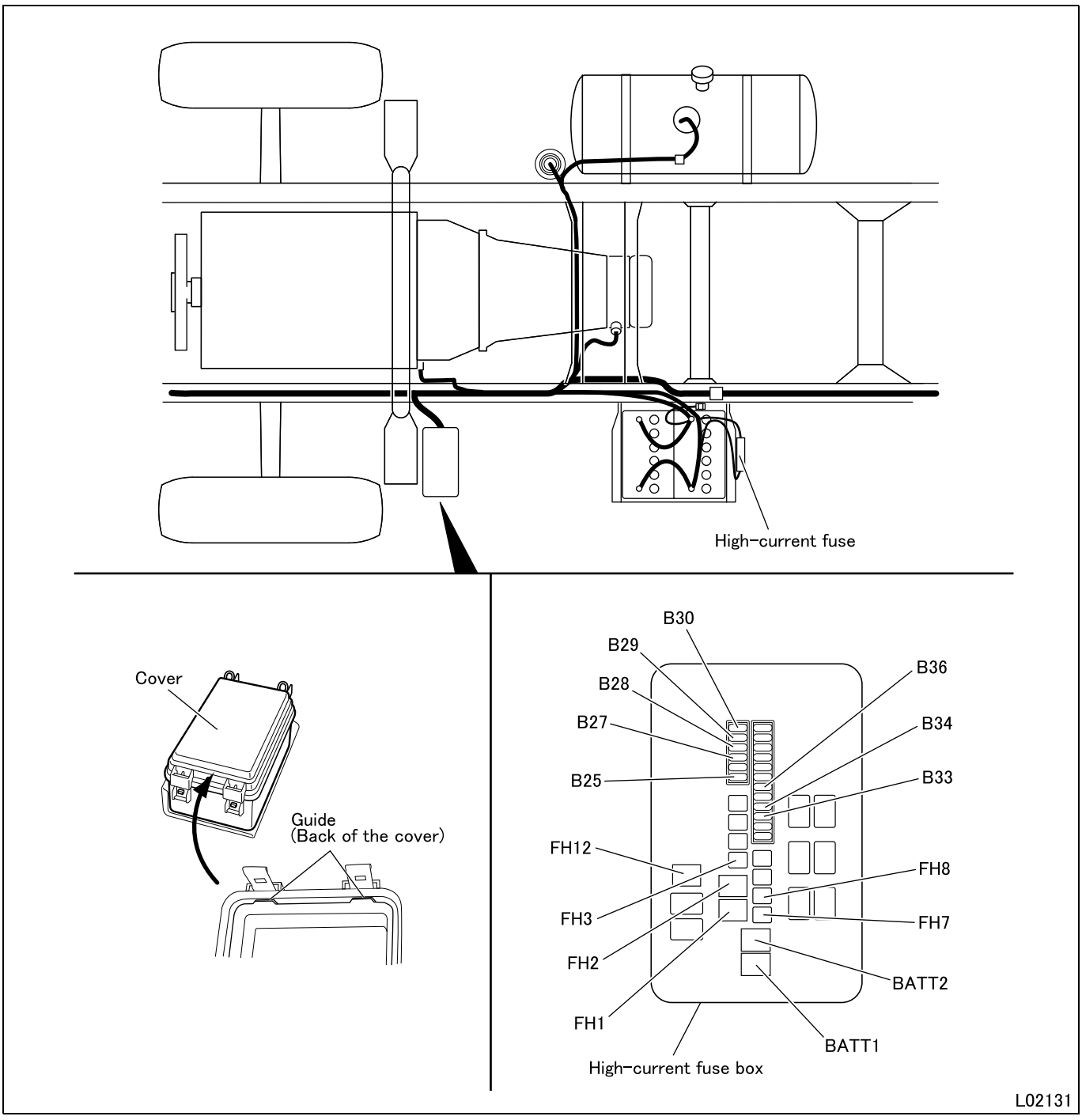
Symptoms / Possible causes	Horn				Reference Gr
	No sound	Continuous sound	Small sound	Sound quality poor	
Connector connection faulty, harness disconnection, grounding faulty	O				
Fuse blown	O				
Horn switch faulty	O	O			
Horn faulty	O		O	O	
Horn stay warped			O	O	
Battery voltage insufficient	O		O		

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54-01 POWER, CHARGE AND GROUND CIRCUIT

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HIGH-CURRENT FUSE BOX



WARNING ⚠

- **To prevent possible injury, be sure to disconnect the negative (–) cable of the battery and insulate it with tape before removing high-current fuses.**

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CAUTION ⚠

- **With the negative (–) cable of the battery connected, some high-current fuses are always under battery voltage. An arc will be generated when any of these high-current fuses is replaced without disconnecting the battery negative cable, and this could cause the related electric devices to be damaged.**
- **If a fuse blows out, identify and remedy the cause, then replace the fuse.**
- **Be sure to use the fuse with the specified ampere.**
- **When installing the cover on the high-current fuse box, lightly press the cover directly down until the guide on the cover securely fits in the guide on the fuse box. Do not push the cover inward with excessive force, as doing so could easily damage the guides.**

High-current fuse

Main load	Capacity
Alternator (terminal B)	120A

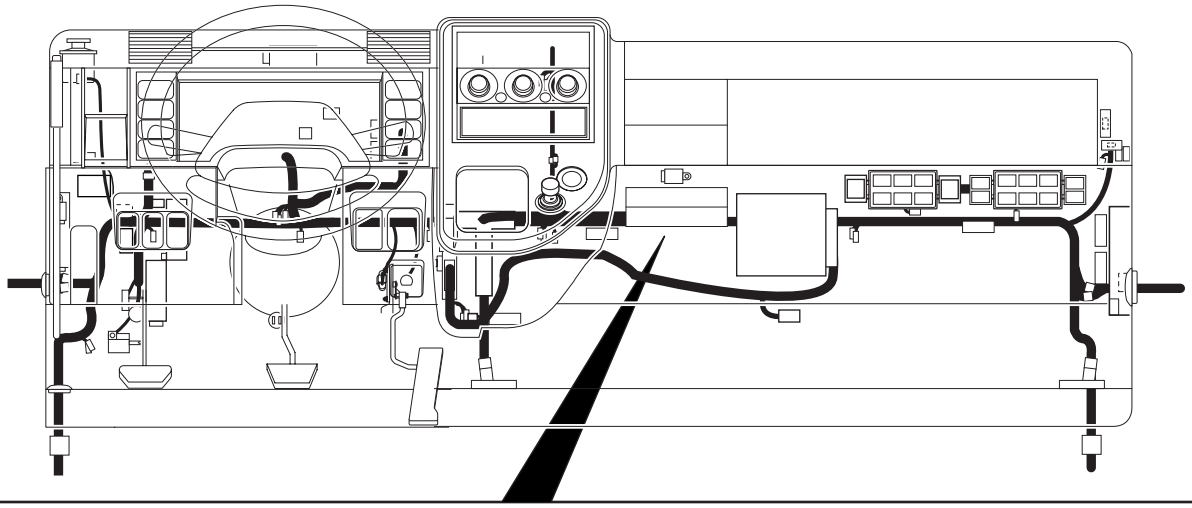
High-current fuse box

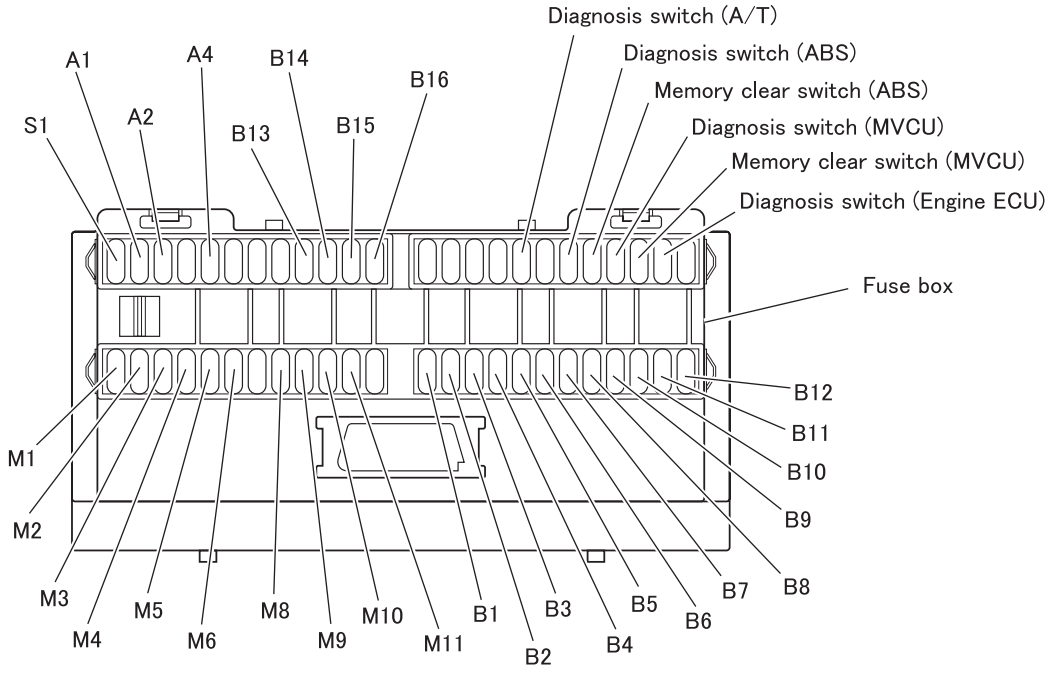
Fuse No.	Main load	Capacity
FH1	Fuse box (S1, A1 to A5, M1 to M12)	60A
FH2	Fuse box (B1 to B12)	60A
FH3	Fuse box (B13 to B16)	40A
FH7	ABS motor	40A
FH8	ABS solenoid	40A
FH12	Hydraulic booster	60A
B25	Tail lamp	15A
B27	Horn	10A
B28	Air-conditioner	10A
B29	Condenser fan	25A
B30	Blower fan	30A
B33	Van body dome light	10A
B34	ATF cooler fan	20A
B36	Engine electronic drive unit	20A
BATT1	Alternator	120A
BATT2	Glow	60A

ABS: Anti-lock brake system
ATF: Automatic transmission fluid

https://truckmanualshub.com/

FUSE BOX





ABS : Anti-lock brake system
ECU : Electronic control unit
A/T : Automatic transmission
MVCU : Multifunction vehicle control unit

L03343

WARNING ⚠

- **To prevent possible injury, be sure to disconnect the negative (–) cable of the battery and insulate it with tape before removing high-current fuses.**

CAUTION ⚠

- **With the negative (–) cable of the battery connected, some high-current fuses are always under battery voltage. An arc will be generated when any of these high-current fuses is replaced without disconnecting the battery negative cable, and this could cause the related electric devices to be damaged.**
- **If a fuse blows out, identify and remedy the cause, then replace the fuse.**
- **Be sure to use the fuse with the specified ampere.**

Fuse box

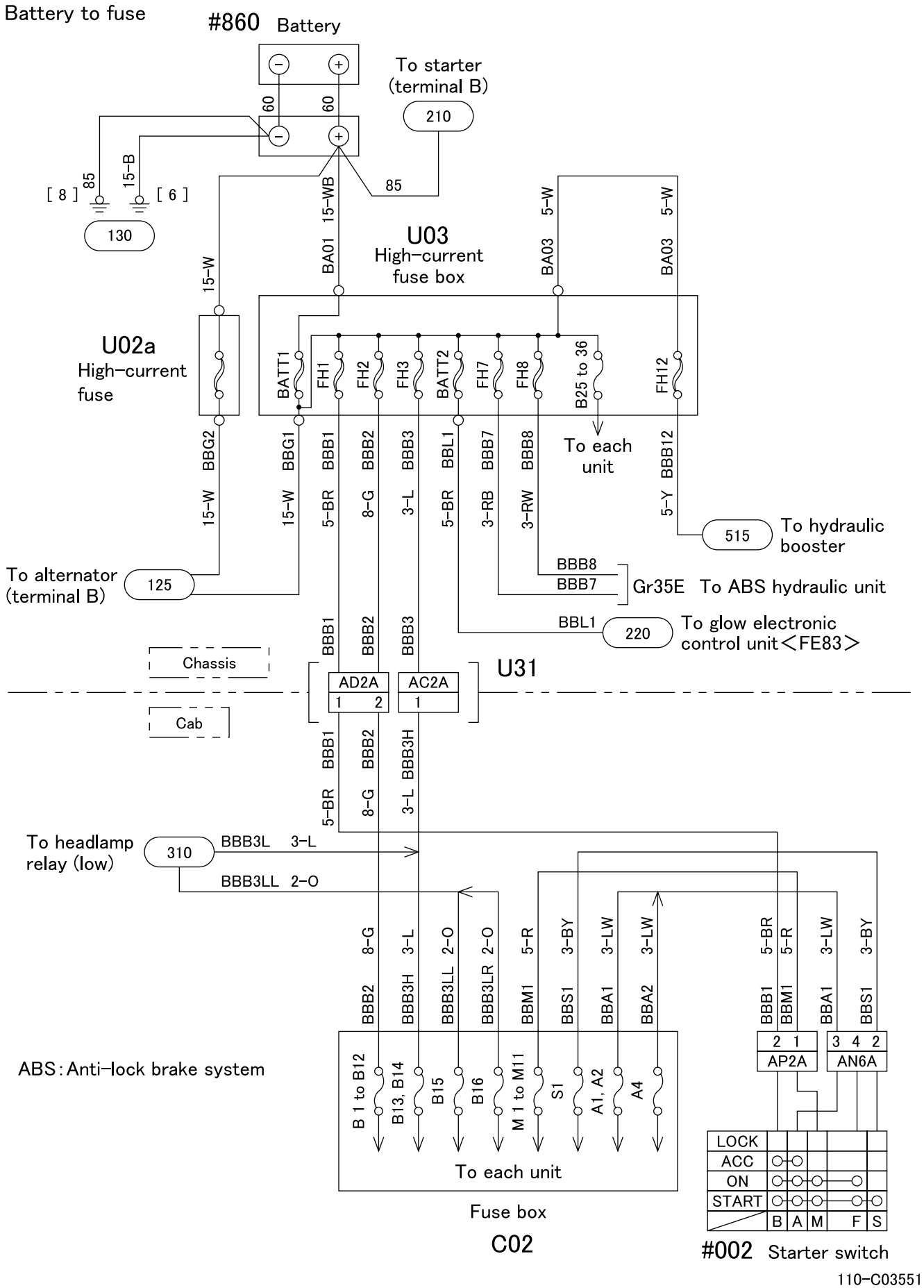
Fuse No.	Main load	Capacity
A1	Cigarette lighter	15A
A2	Audio	10A
A4	Opt (ACC)	10A
B1	Stop lamp	15A
B2	Meter	10A
B3	Turn signal lamp	15A
B4	Opt (B)	10A
B5	Audio	10A
B6	Cab lamp	10A
B7	Power window (driver)	30A
B8	Power window (assistant)	30A
B9	Engine electronic control unit	20A
B10	MVCU	10A
B11	Mirror heater	20A
B12	Automatic transmission	10A
B13	Tester	15A
B14	Headlamp (HI)	20A
B15	Headlamp, LH (LO)	20A
B16	Headlamp, RH (LO)	20A
M1	Backup lamp	10A
M2	Meter	10A
M3	Wiper	15A
M4	Opt (M)	10A
M5	Relay control	10A
M6	Automatic transmission	10A
M8	Exhaust brake	10A
M9	Engine electronic control unit	5A
M10	MVCU	10A
M11	ABS	10A
S1	Starter	10A

Diagnosis fuse

Fuse No.	Main load	Capacity
A/T	Diagnosis switch	5A
ABS	Diagnosis switch	5A
ABS	Memory clear switch	10A
MVCU	Diagnosis switch	5A
MVCU	Memory clear switch	10A
Engine ECU	Diagnosis switch	5A

ABS: Anti-lock brake system
A/T: Automatic transmission
ECU: Electronic control unit
MVCU: Multifunction vehicle control unit

https://truckmanualshub.com/

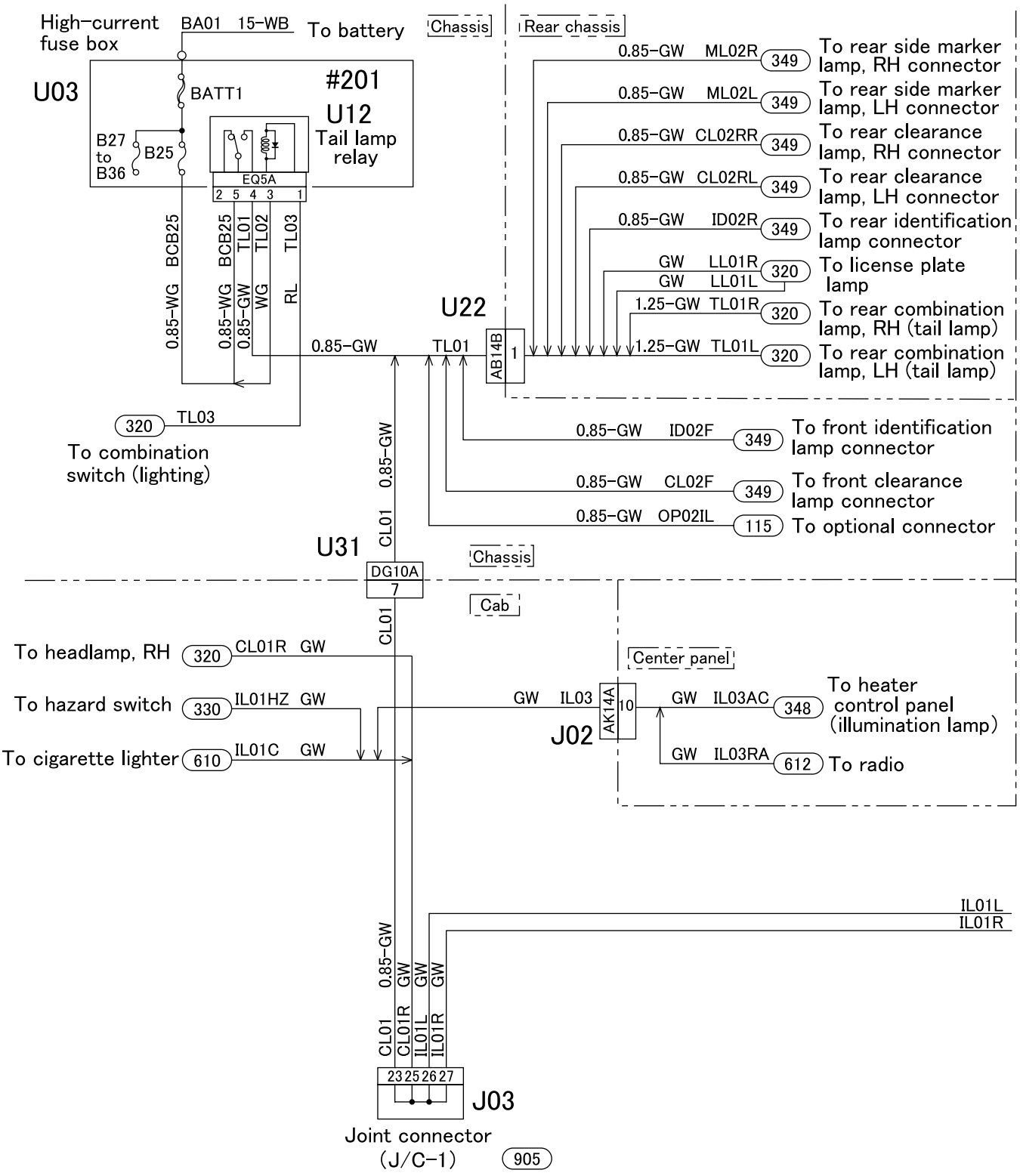


https://truckmanualshub.com/

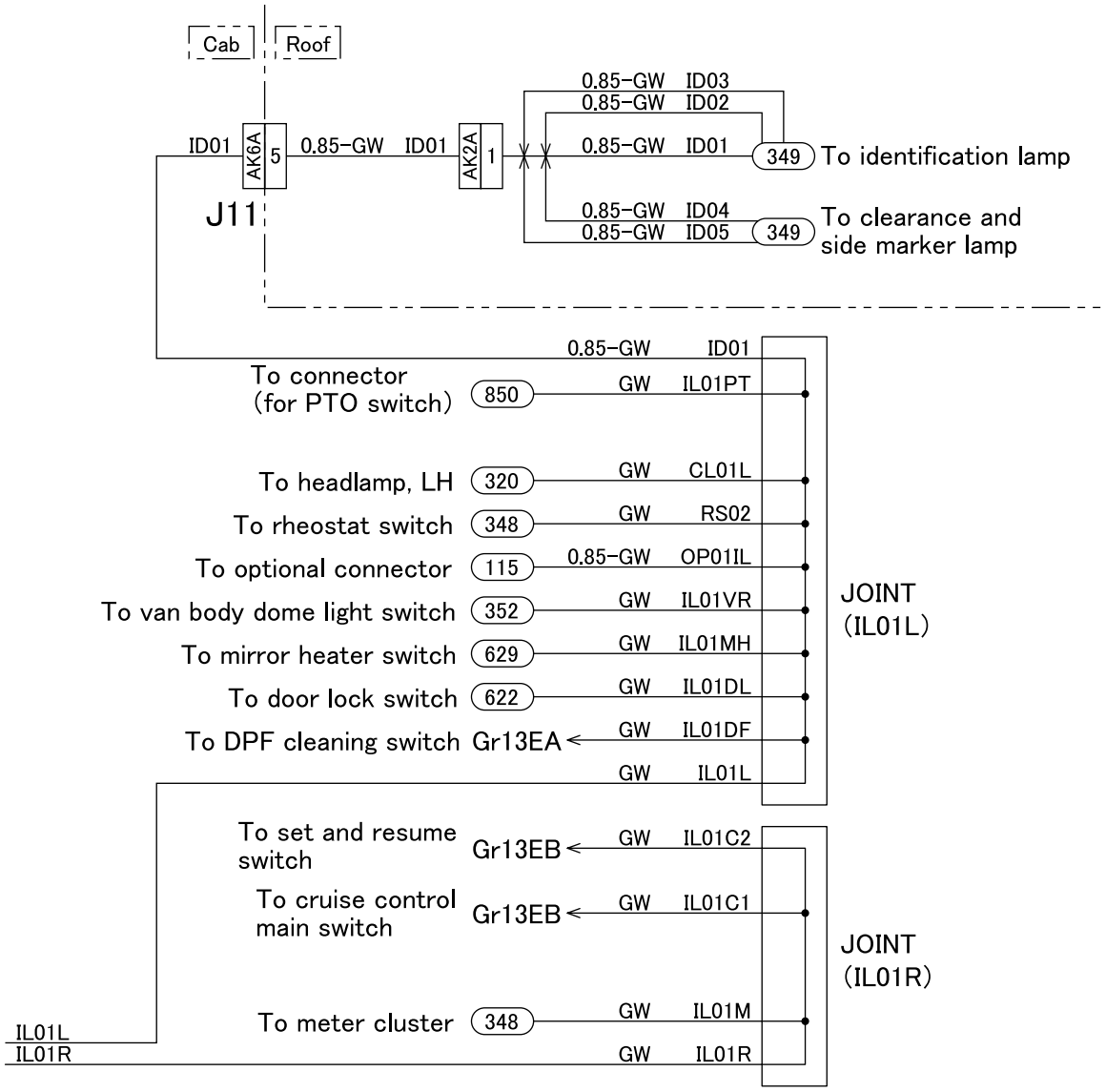
M E M O

https://truckmanualshub.com/

High-current fuse box
(Fuse B25)



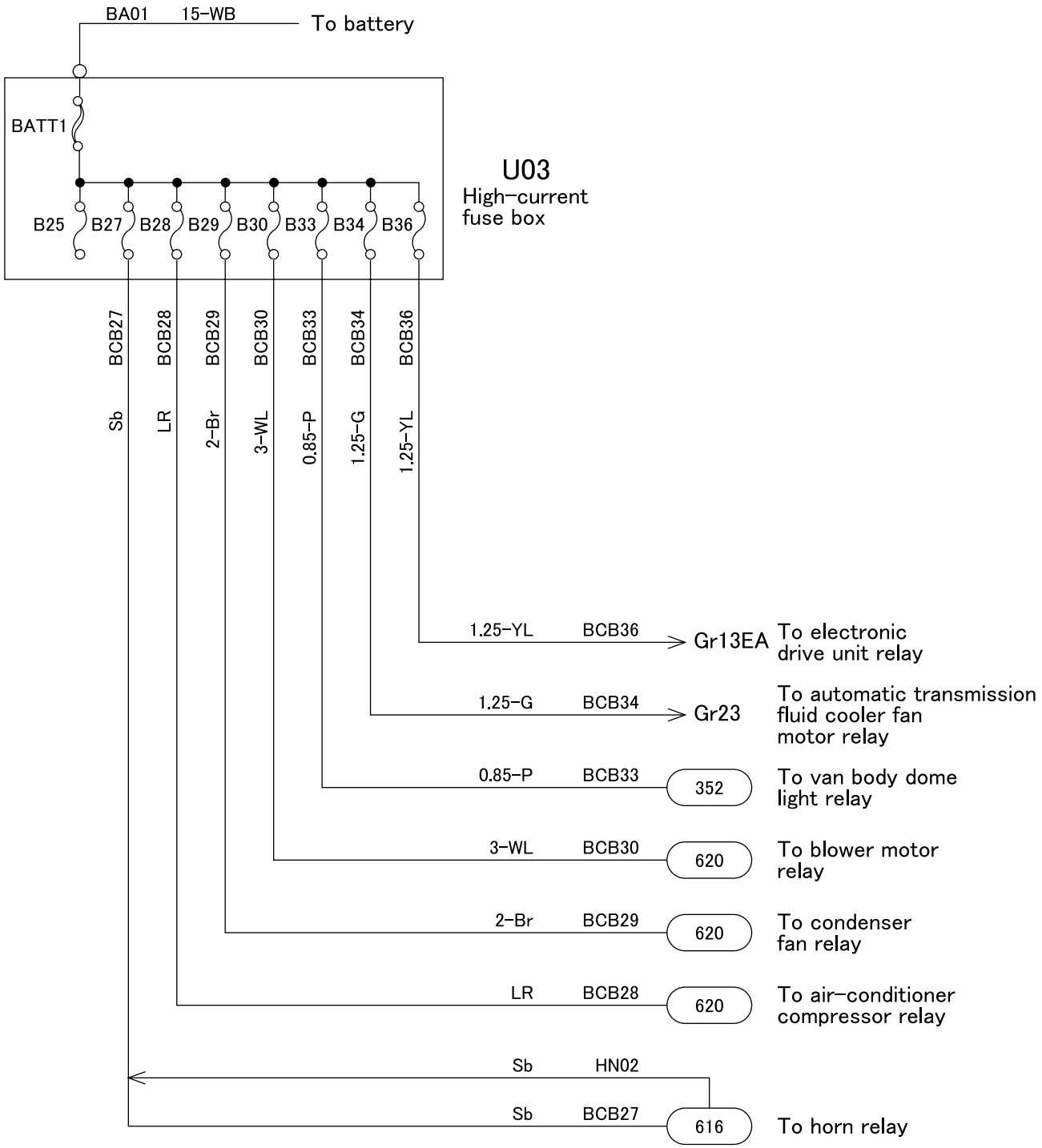
110-C05265-1



DPF : Diesel particulate filter
PTO : Power take-off

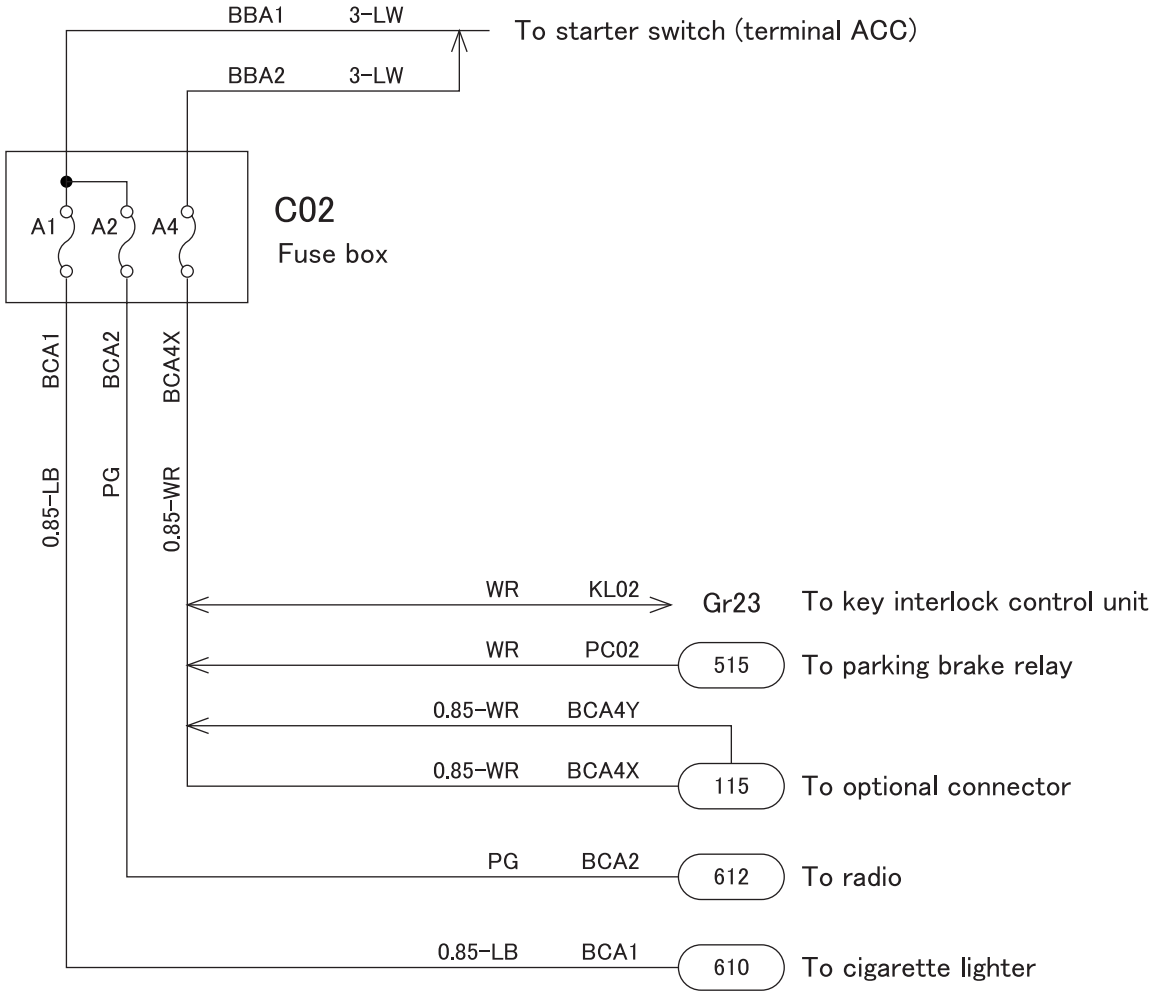
https://truckmanualshub.com/

High-current fuse box
(Fuse B27 to B36)



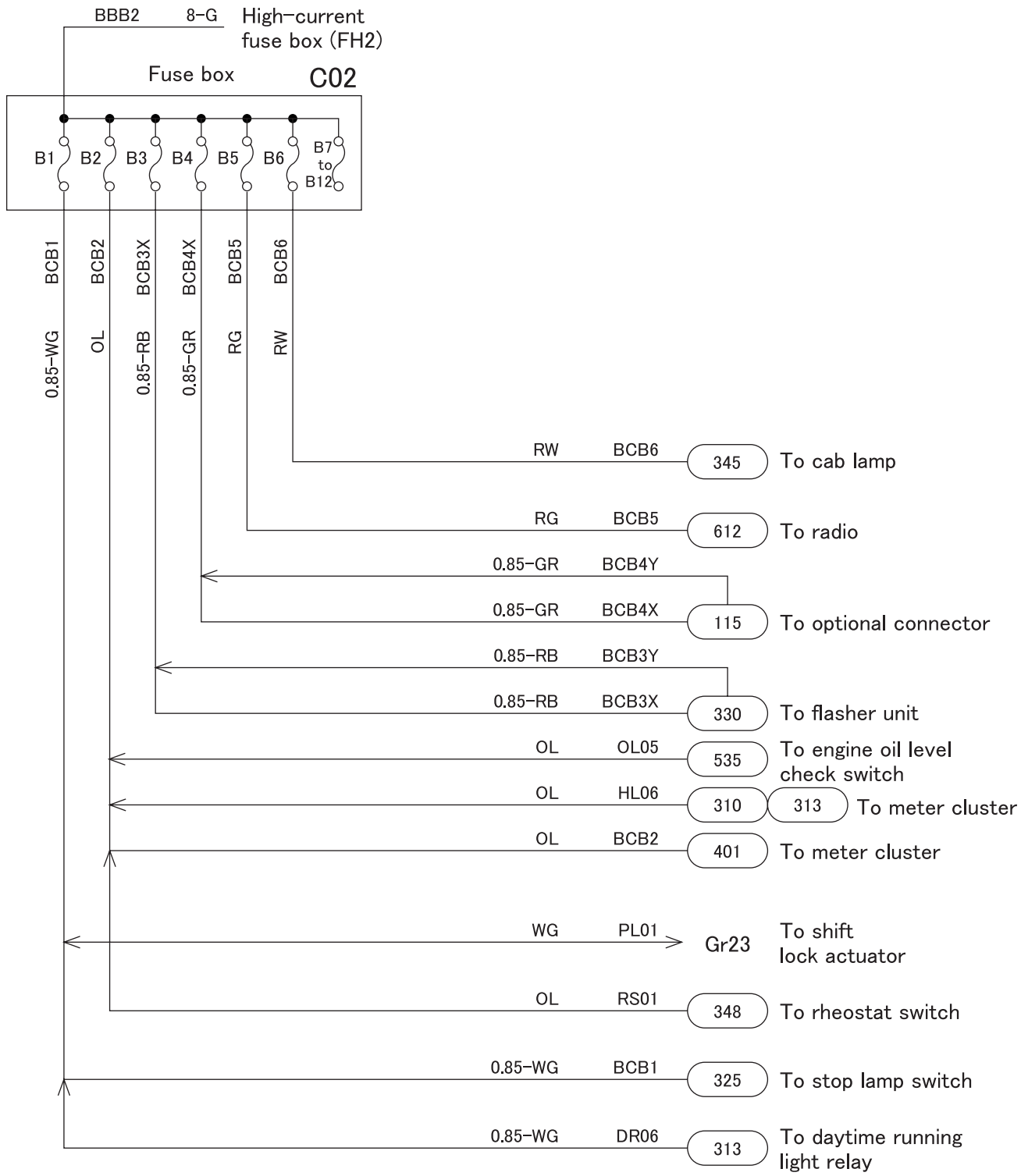
110-C03553

Fuse box
(Fuse A1 to A4)



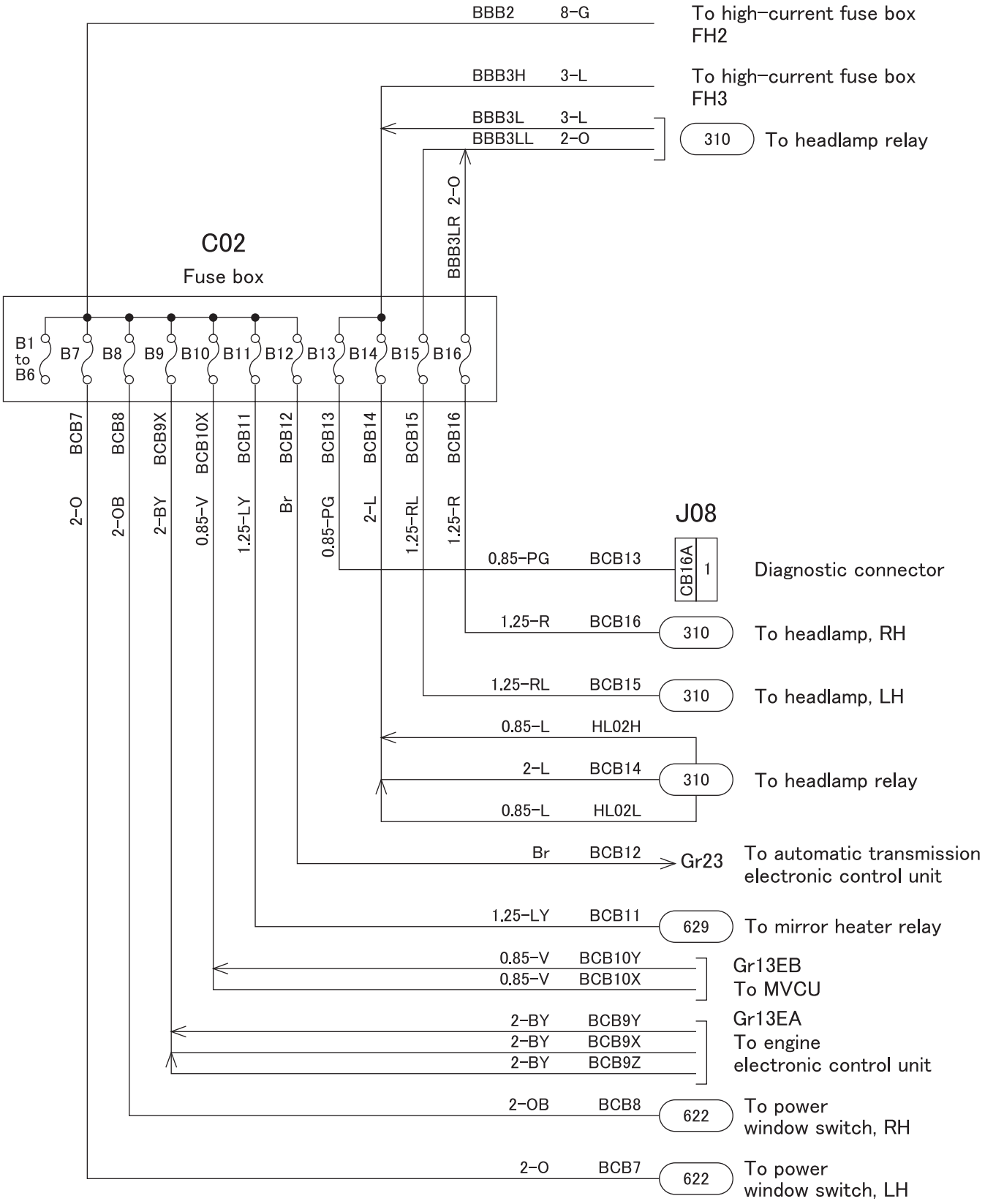
https://truckmanualshub.com/

Fuse box
(Fuse B1 to B6)



110-C03555

Fuse box
(Fuse B7 to B16)

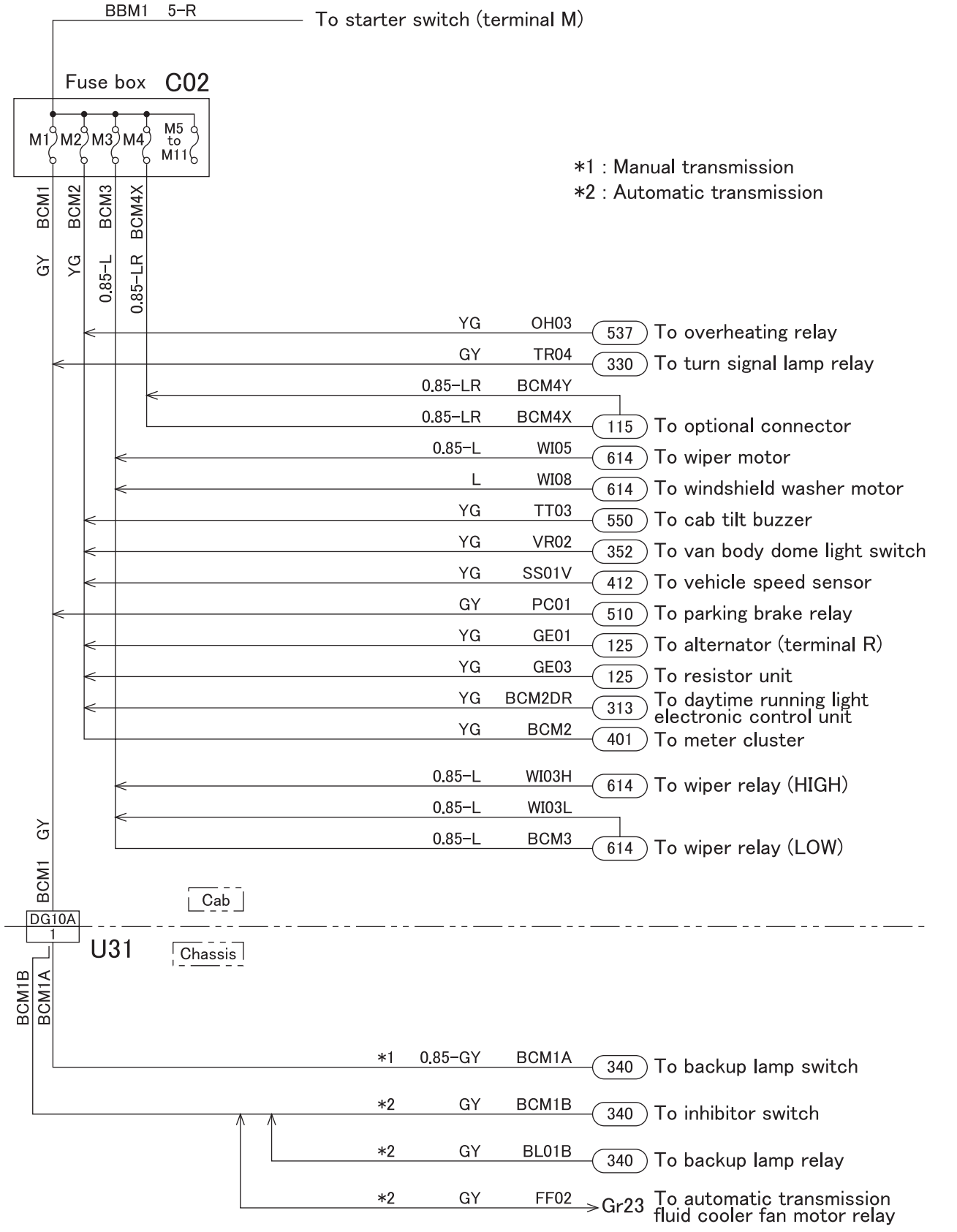


MVCU : Multifunction vehicle control unit

110-C03556

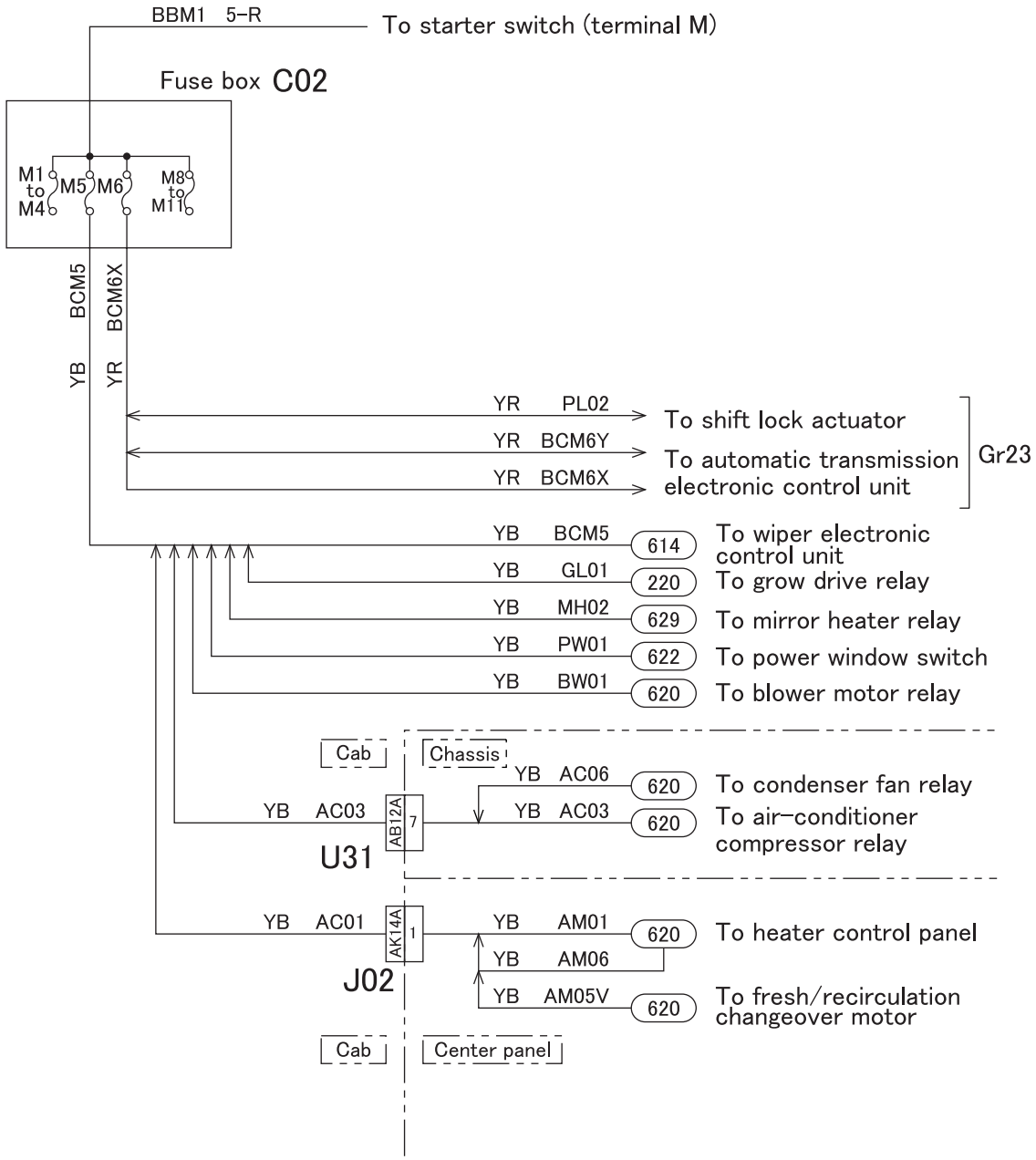
https://truckmanualshub.com/

Fuse box
(Fuse M1 to M4)



110-C03557

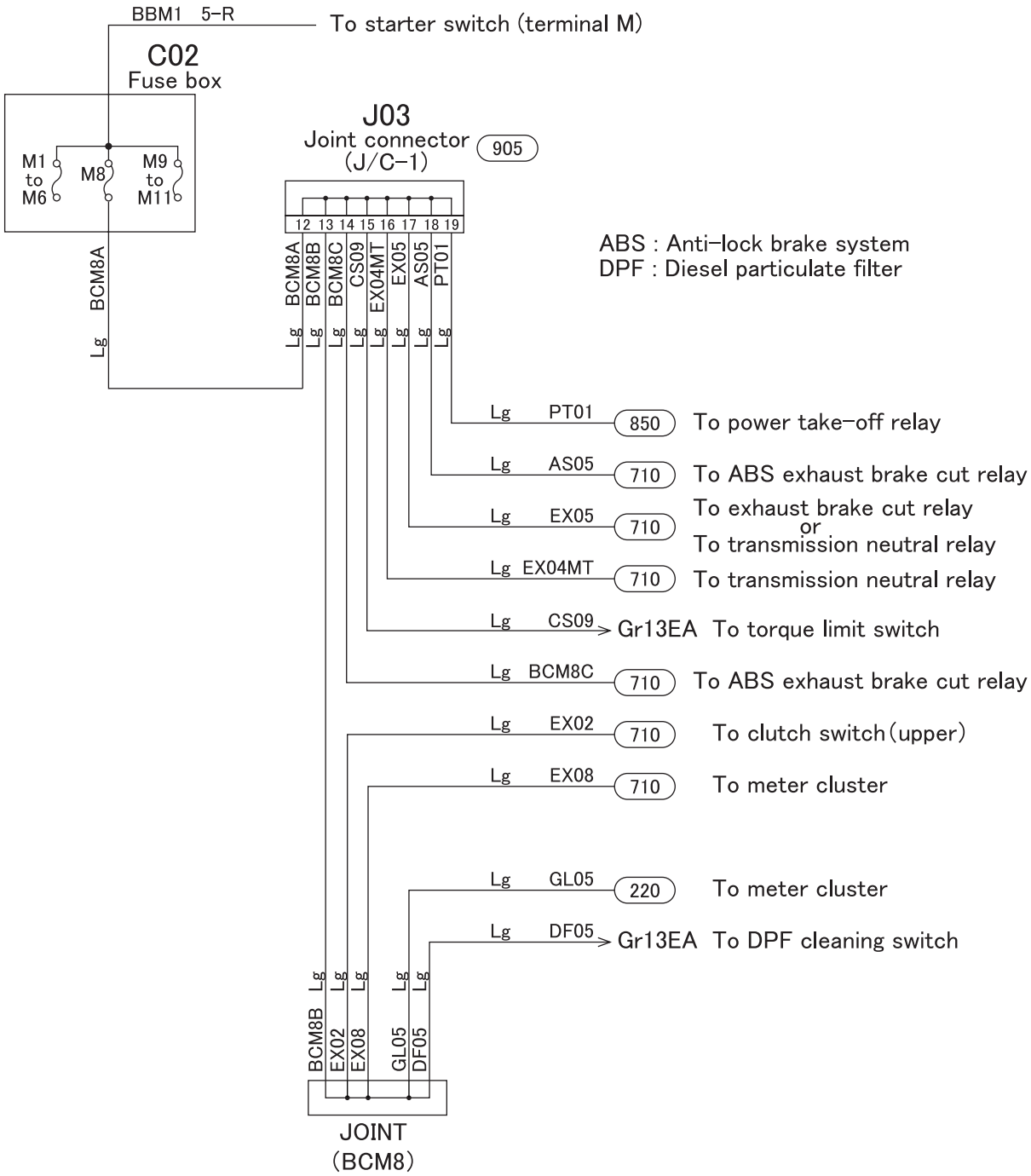
Fuse box
(Fuse M5, M6)



110-C03558

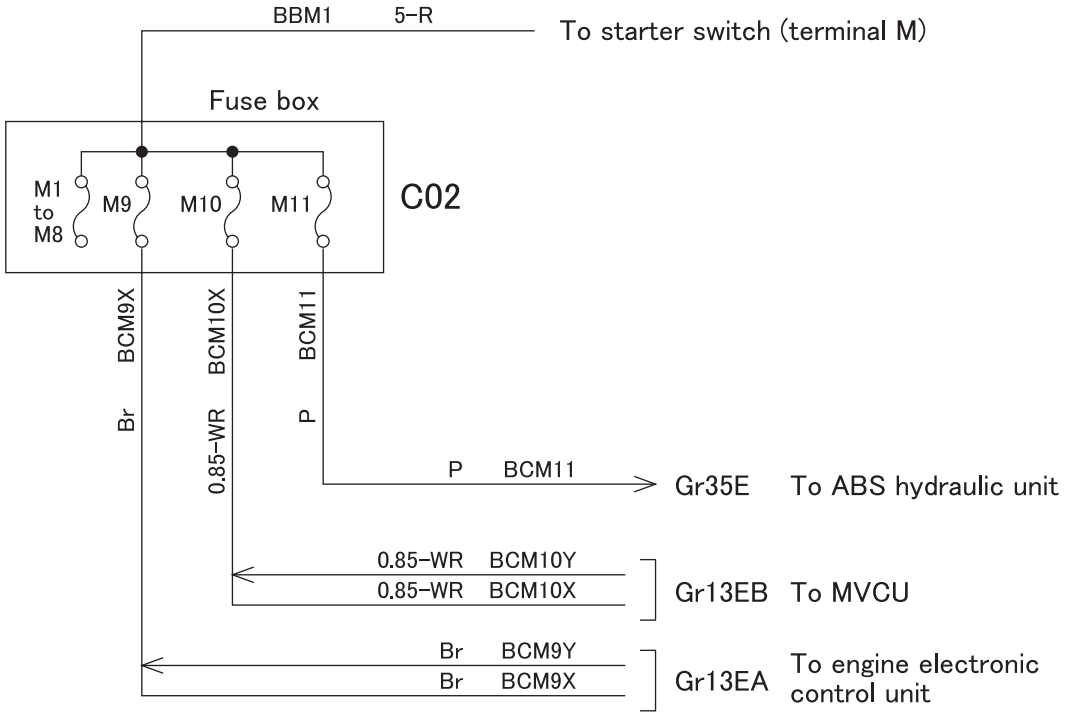
https://truckmanualshub.com/

Fuse box
(Fuse M8)



110-C05180

Fuse box
(Fuse M9 to M11)

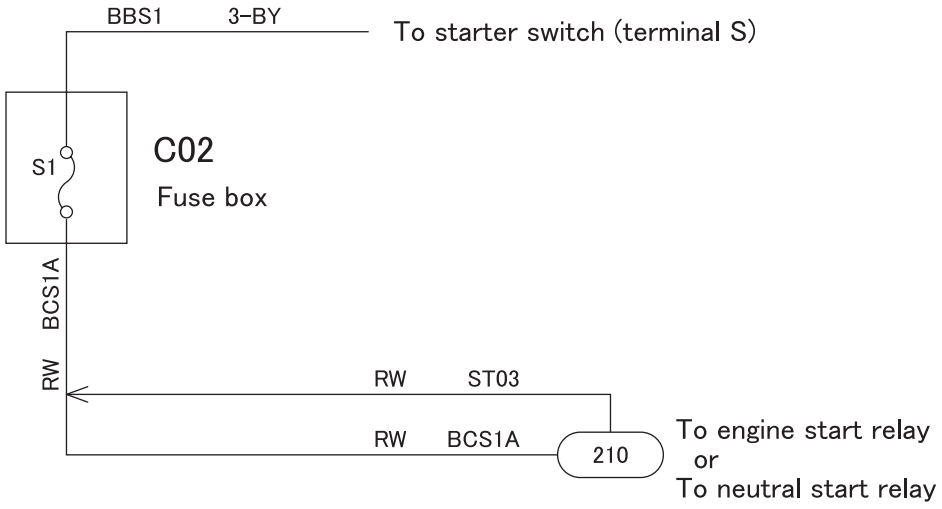


ABS : Anti-lock brake system

MVCU : Multifunction vehicle control unit

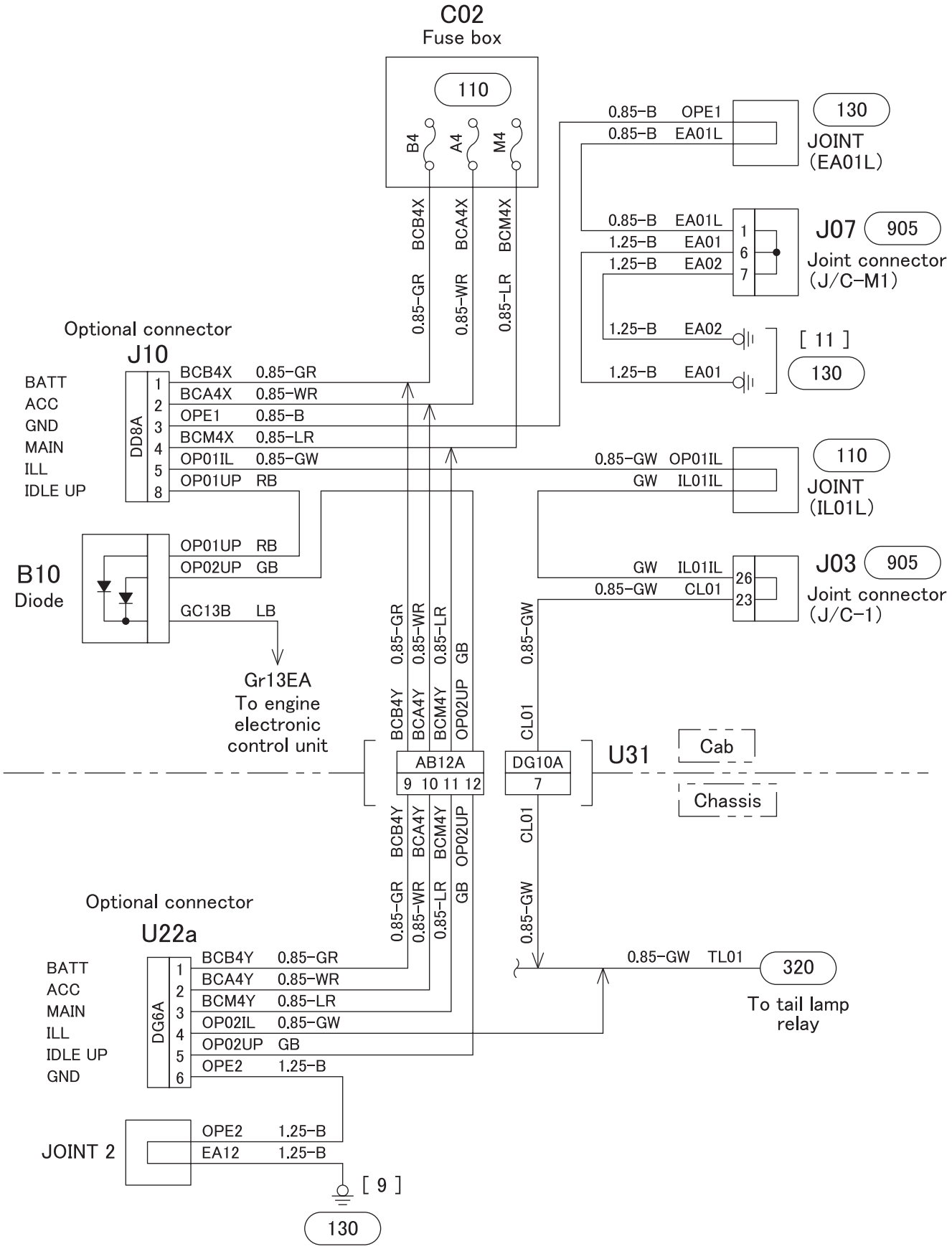
https://truckmanualshub.com/

Fuse box
(Fuse S1)



110-C03561

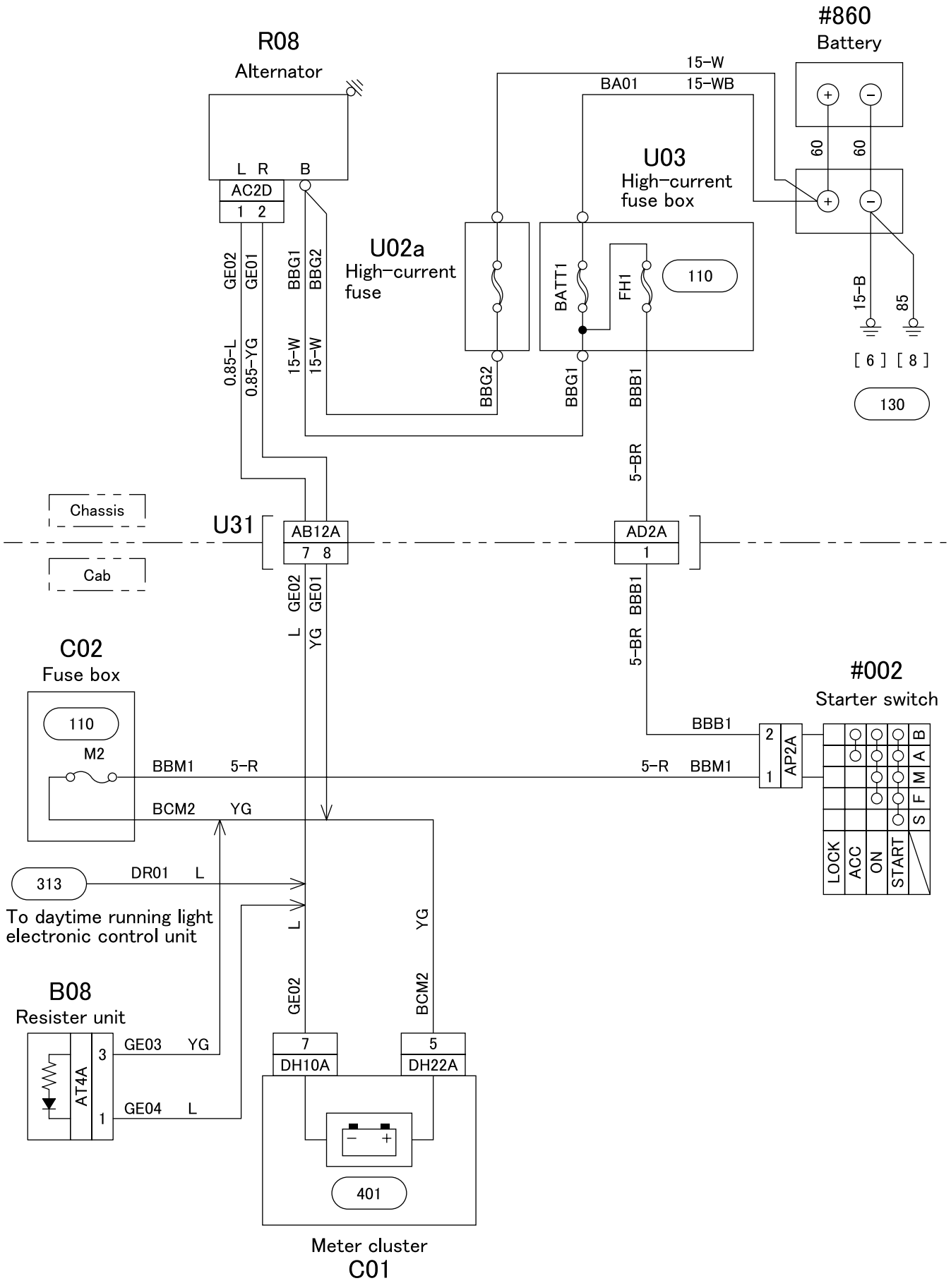
https://truckmanualshub.com/



115-C03562

https://truckmanualshub.com/

125 BATTERY CHARGING CIRCUIT

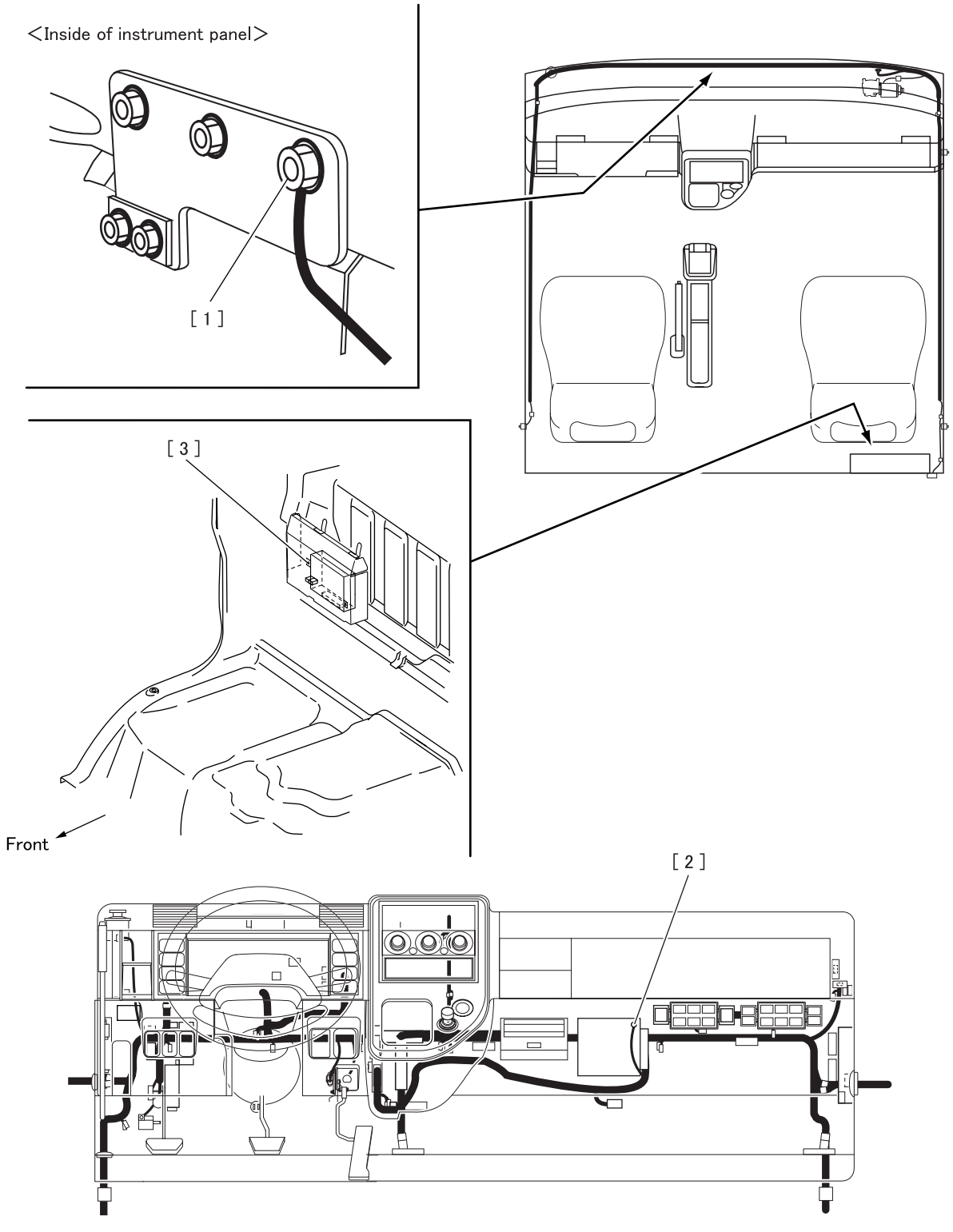


125-C03563

M E M O

https://truckmanualshub.com/

[1] to [3] Cab ground



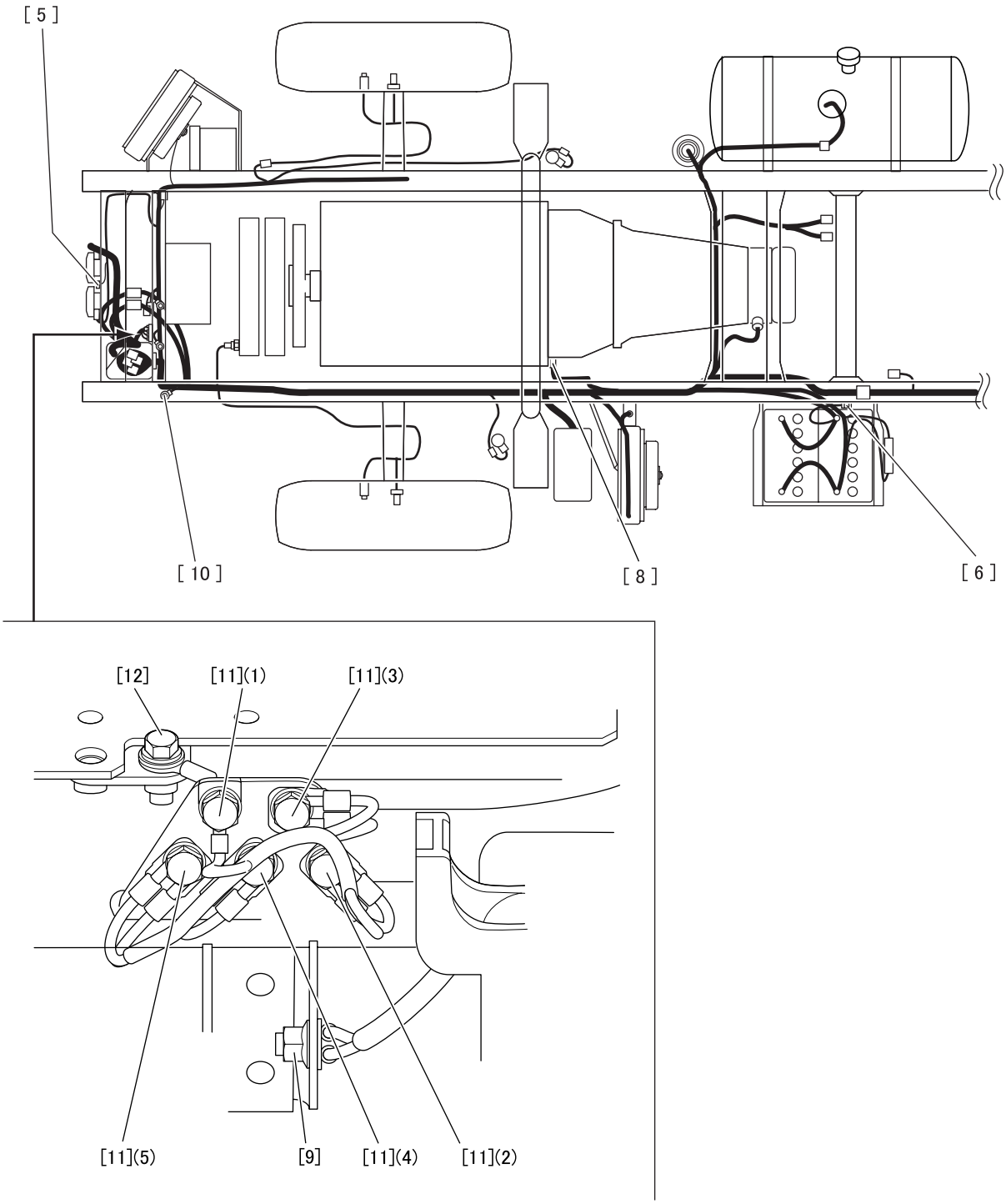
L02133

Location	Circuit No.	Wire diameter-wire color	Destination	Remarks
[1]	MVE3	B	MVCU case ground	–
	GCE5	B	Engine ECU case ground	–
	EA10	5-B	Frame ground	–
[2]	–	1.25-B	Cab ground	Engine ECU case ground
[3]	–	1.25-B	Cab ground	MVCU case ground

ECU: Electronic control unit
MVCU: Multifunction vehicle control unit

https://truckmanualshub.com/

[5] to [12] Chassis ground



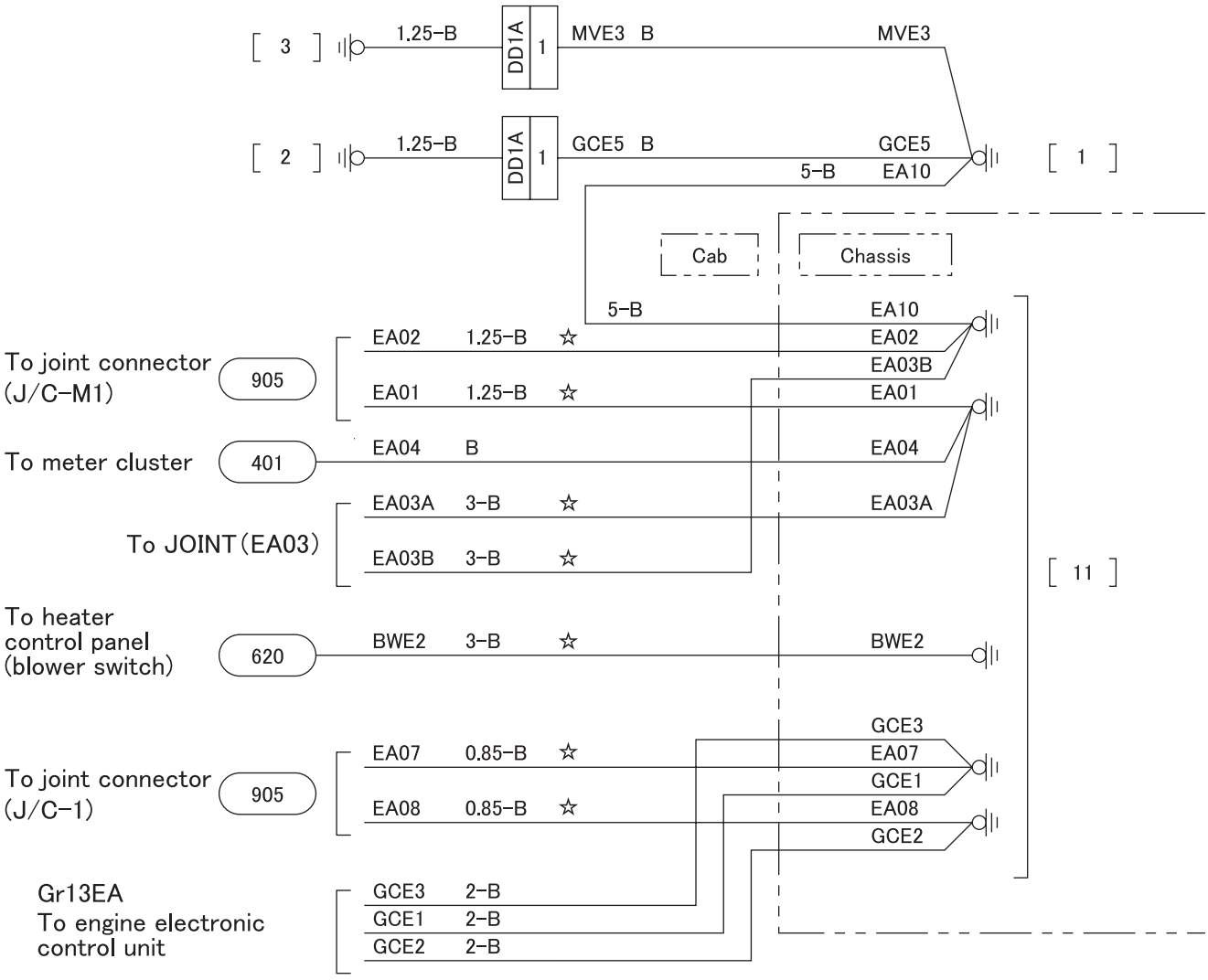
L02134

Location	Circuit No.	Wire diameter-wire color	Destination	Remarks
[5]	HNE1	1.25-B	Horn bracket	–
[6]	–	15-B	Battery	Battery ground
[8]	–	85	Engine	Engine ground
[9]	EA11	1.25-B	JOINT1	–
	EA12	1.25-B	JOINT2	–
[10]	ASE1	3-B	Hydraulic unit	–
	ASE2	3-B	Hydraulic unit	–
[11](1)	BWE2	3-B	Center panel harness	–
[11](2)	EA01	1.25-B	Joint connector (J/C-M1)	–
	EA03A	3-B	JOINT (EA03)	–
	EA04	B	Meter cluster	–
[11](3)	EA07	0.85-B	Joint connector (J/C-1)	–
	GCE1	2-B	Engine electronic control unit	–
	GCE3	2-B	Engine electronic control unit	–
[11](4)	EA08	0.85-B	Joint connector (J/C-1)	–
	GCE2	2-B	Engine electronic control unit	–
[11](5)	EA02	1.25-B	Joint connector (J/C-M1)	–
	EA03B	3-B	JOINT (EA03)	–
	EA10	5-B	Cab ground	–
[12]	ACE2	2-B	Condenser fan motor	–
	EA14	1.25-B	Rear chassis harness	–

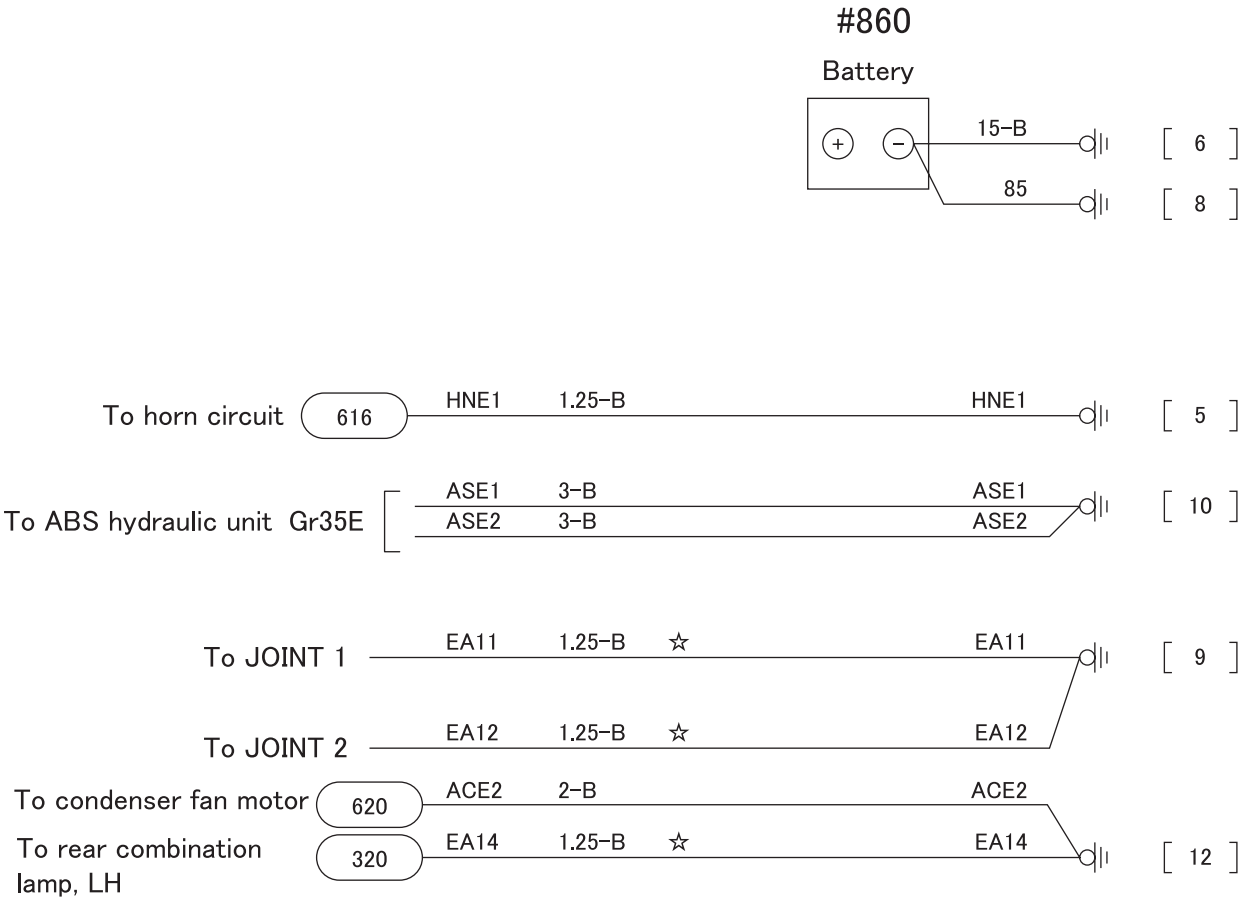
https://truckmanualshub.com/

Entire ground

- This diagram indicates grounding points.
- See the following pages for branching of grounding (wiring for ☆).
  (in circuit No. order)



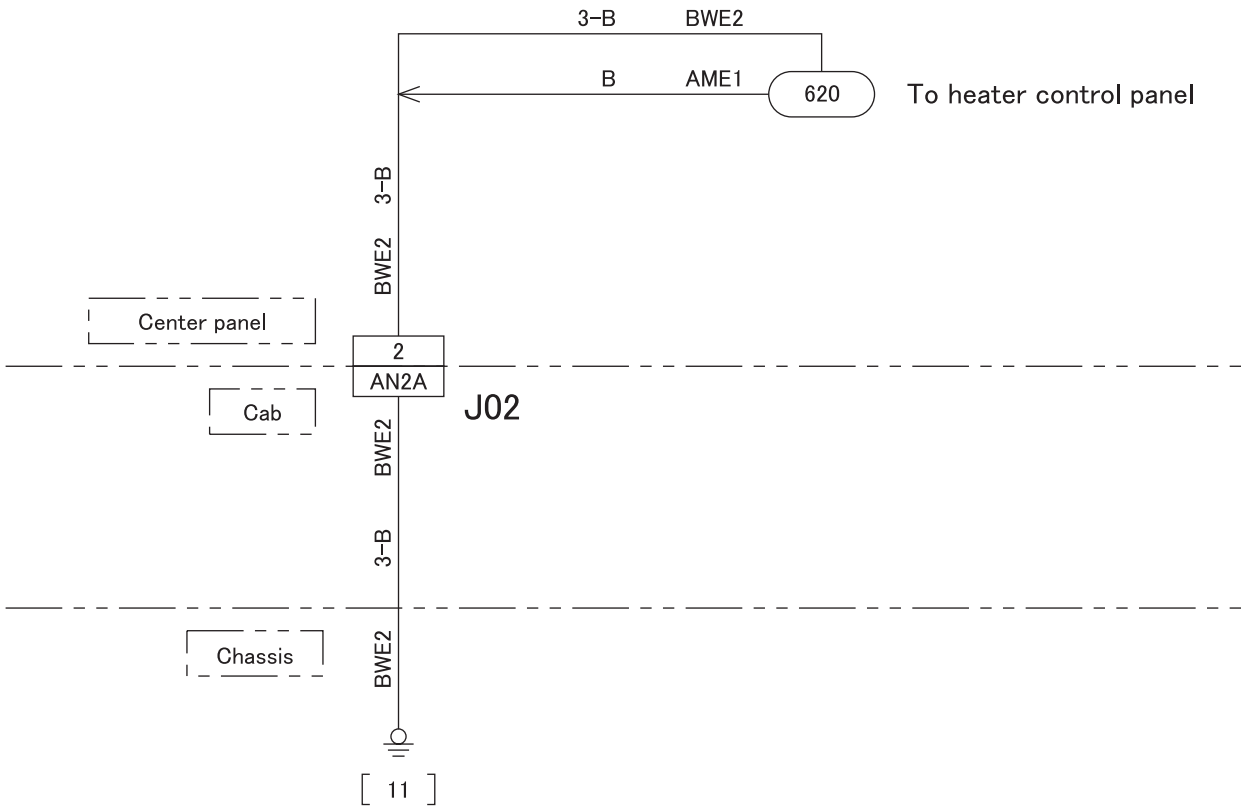
130-C05181-1



ABS : Anti-lock brake system

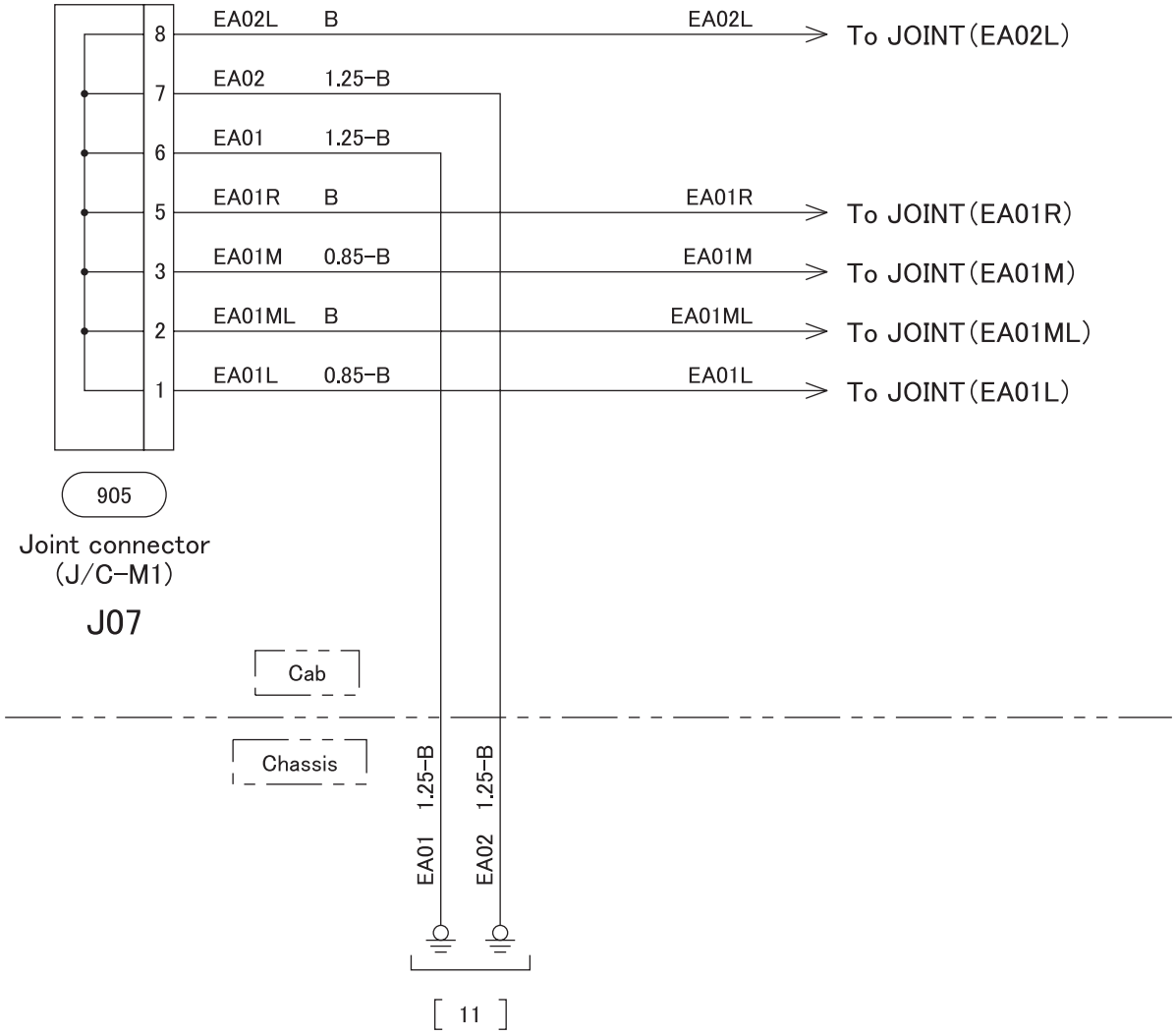
https://truckmanualshub.com/

Circuit No. BWE2 chassis ground



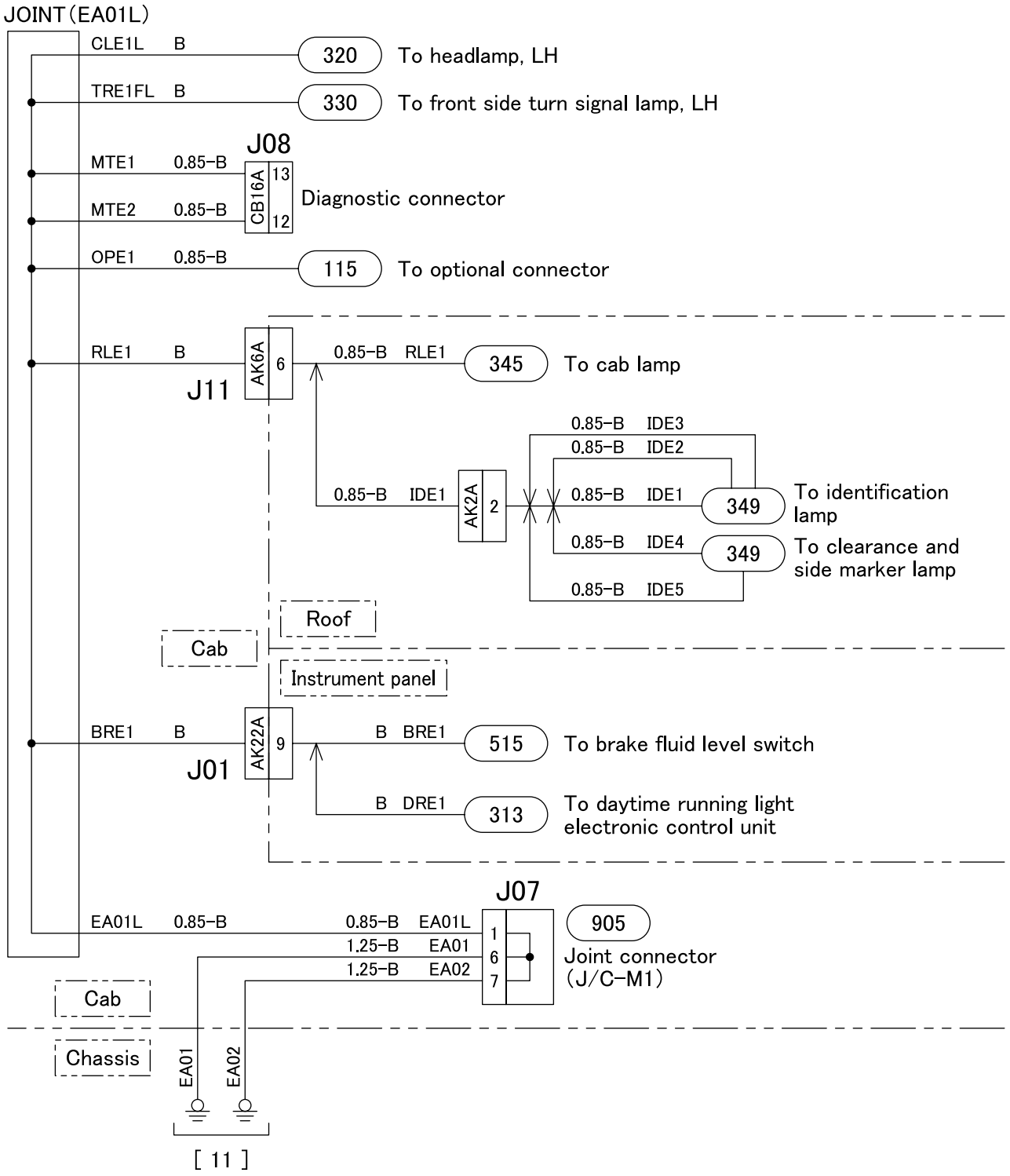
130-C03565

Circuit No. EA01, EA02 chassis ground
＜Main ground＞



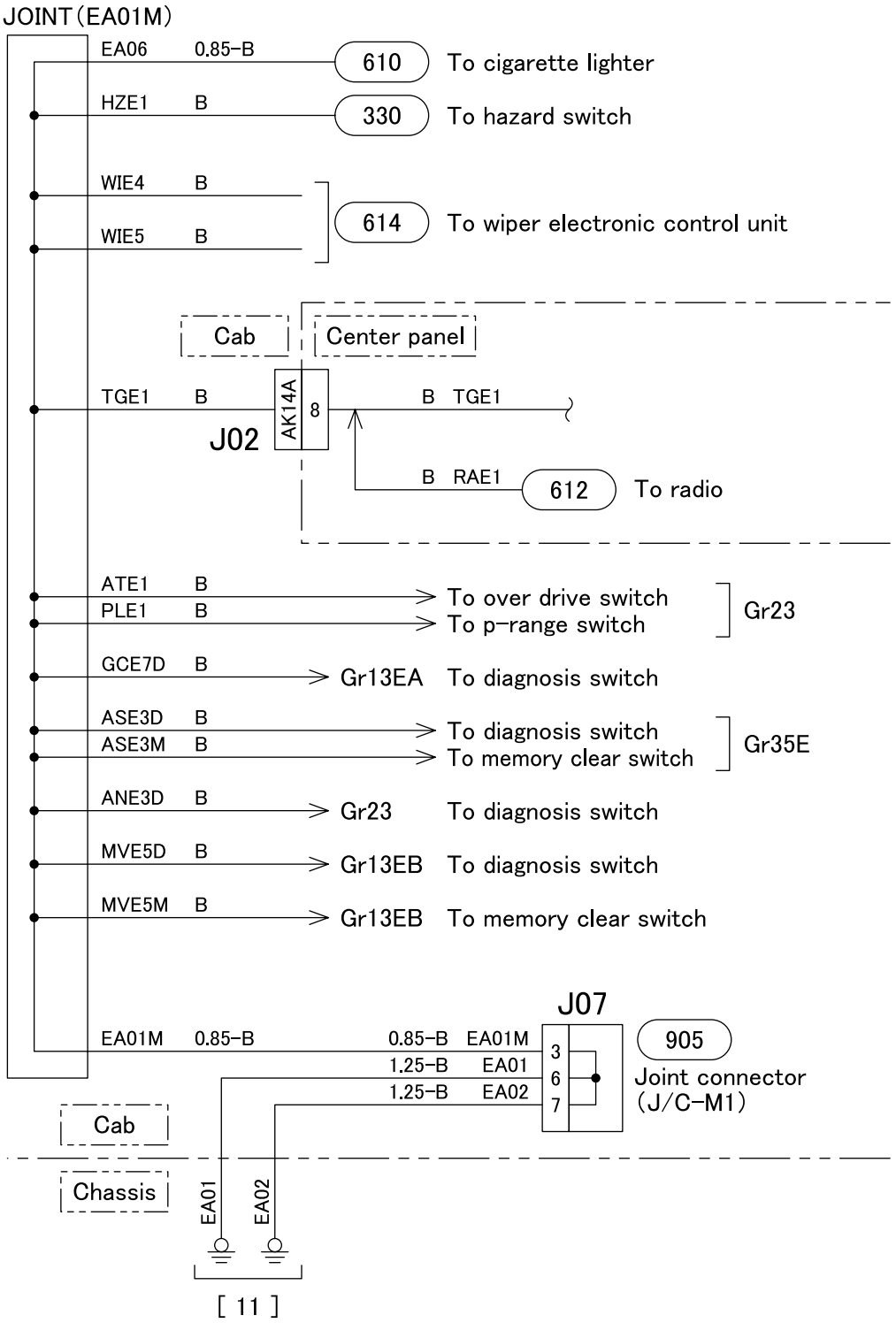
https://truckmanualshub.com/

Circuit No. EA01, EA02 chassis ground
＜JOINT(EA01L)＞



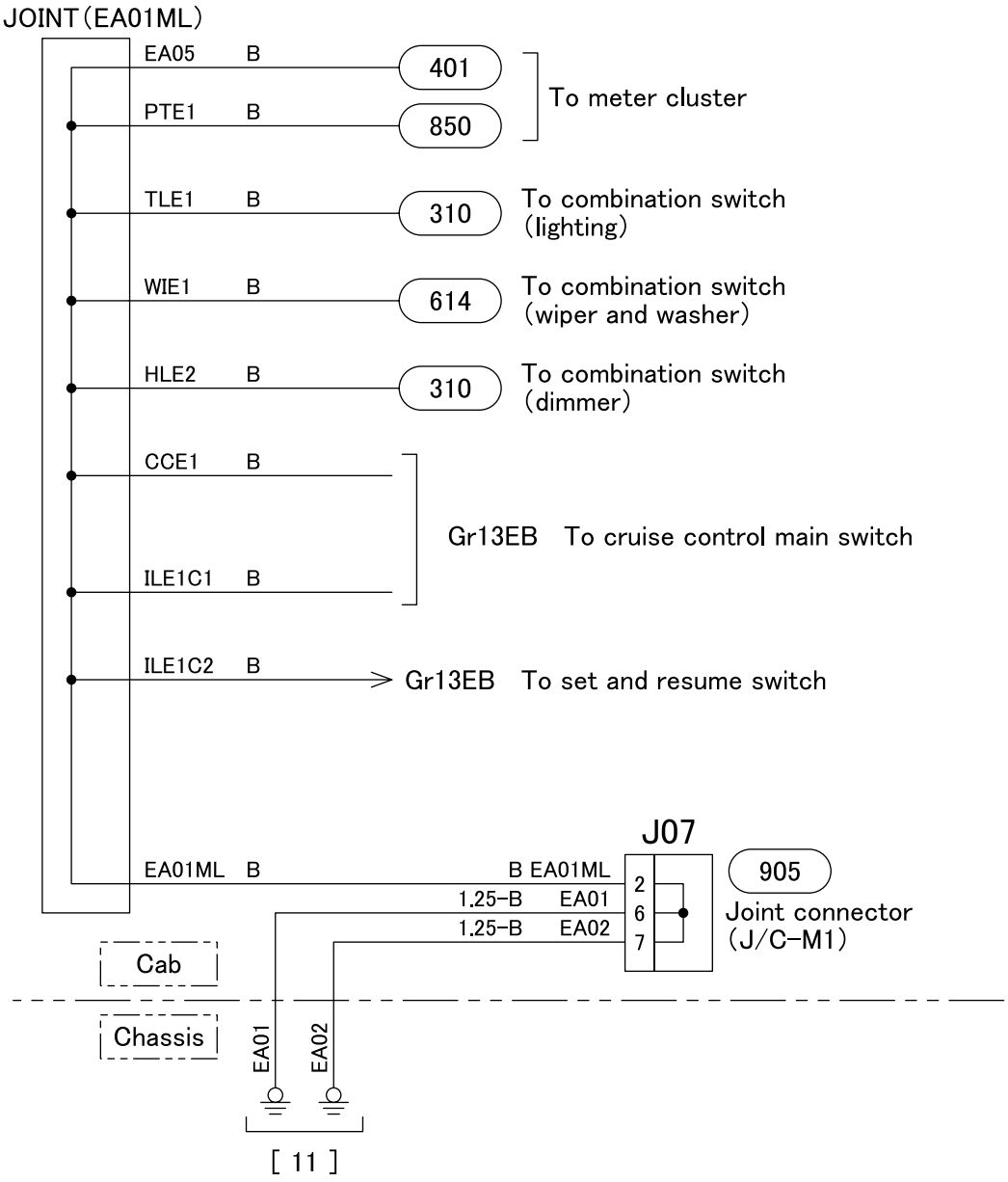
130-C03567

Circuit No. EA01, EA02 chassis ground
＜JOINT(EA01M)＞



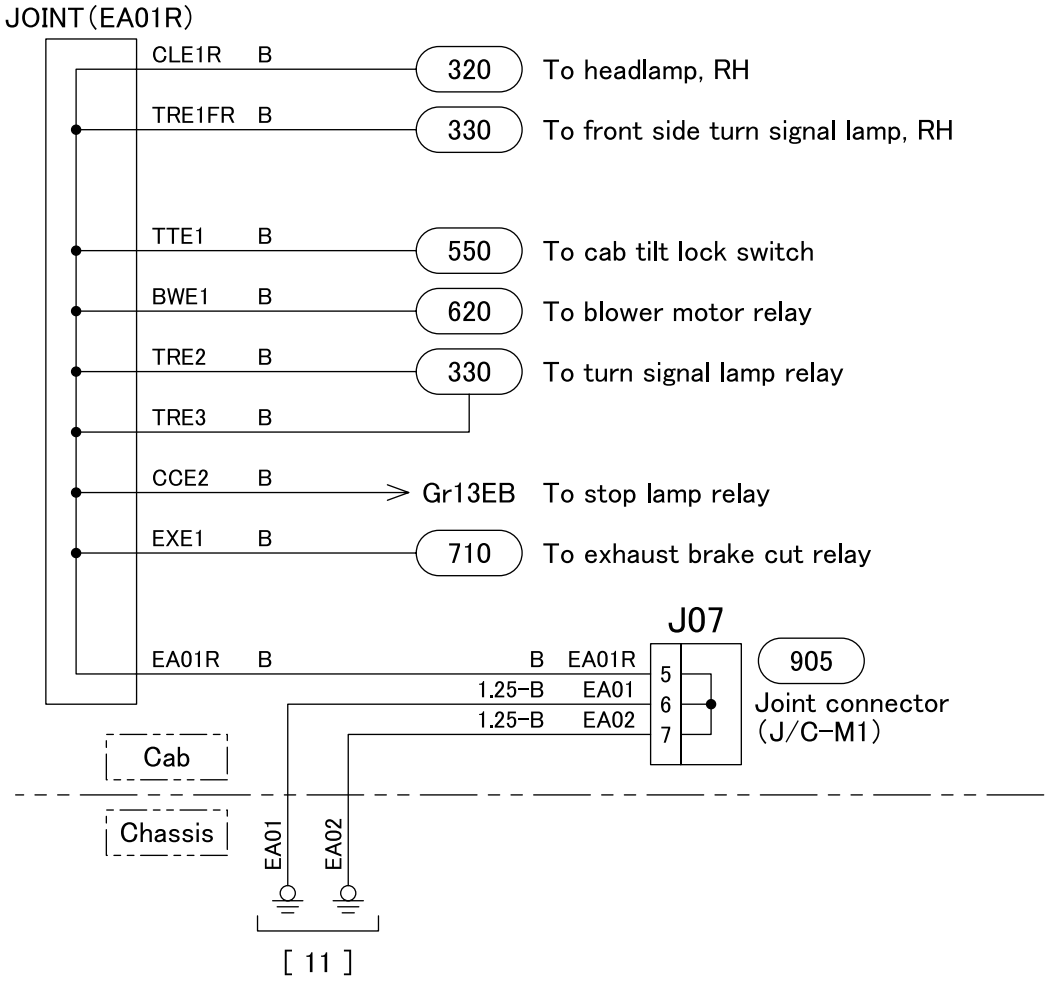
https://truckmanualshub.com/

Circuit No. EA01, EA02 chassis ground
＜JOINT(EA01ML)＞



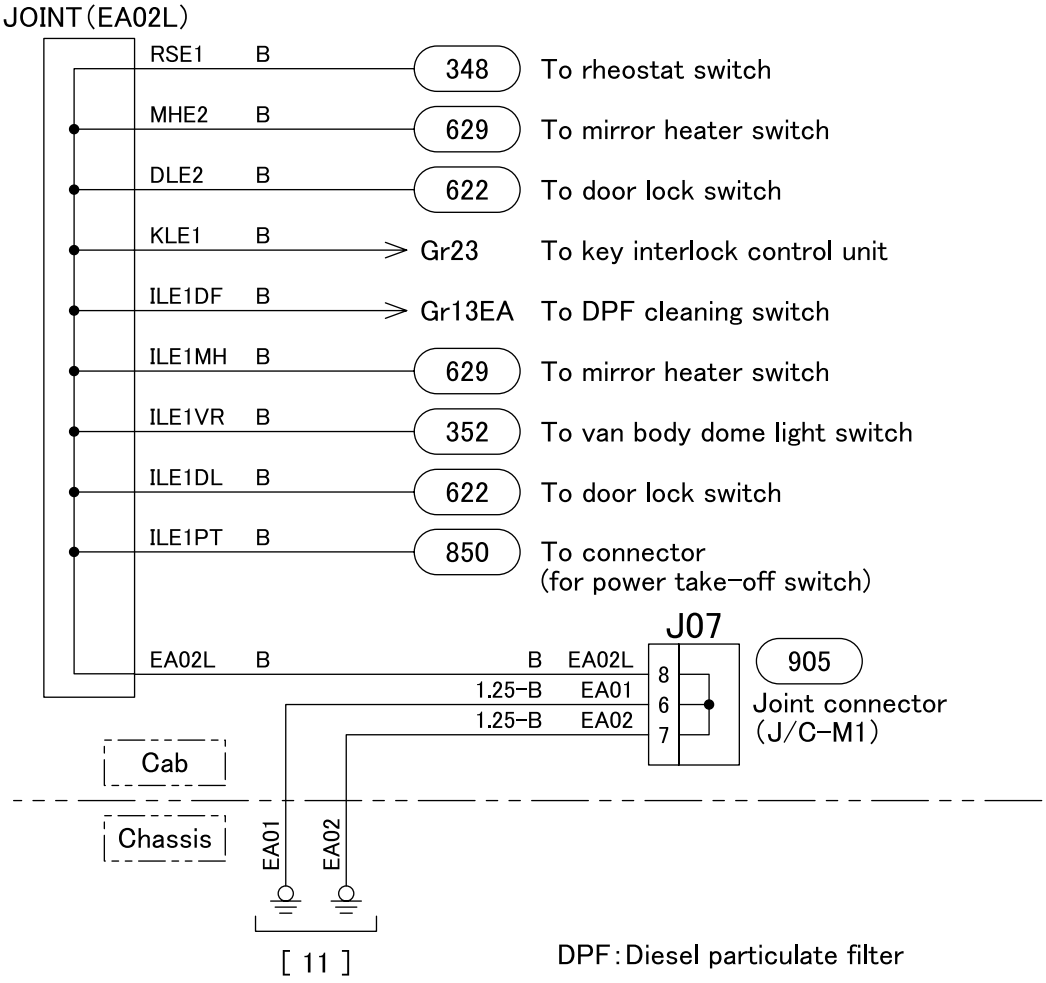
130-C04832

Circuit No. EA01, EA02 chassis ground
＜JOINT(EA01R)＞



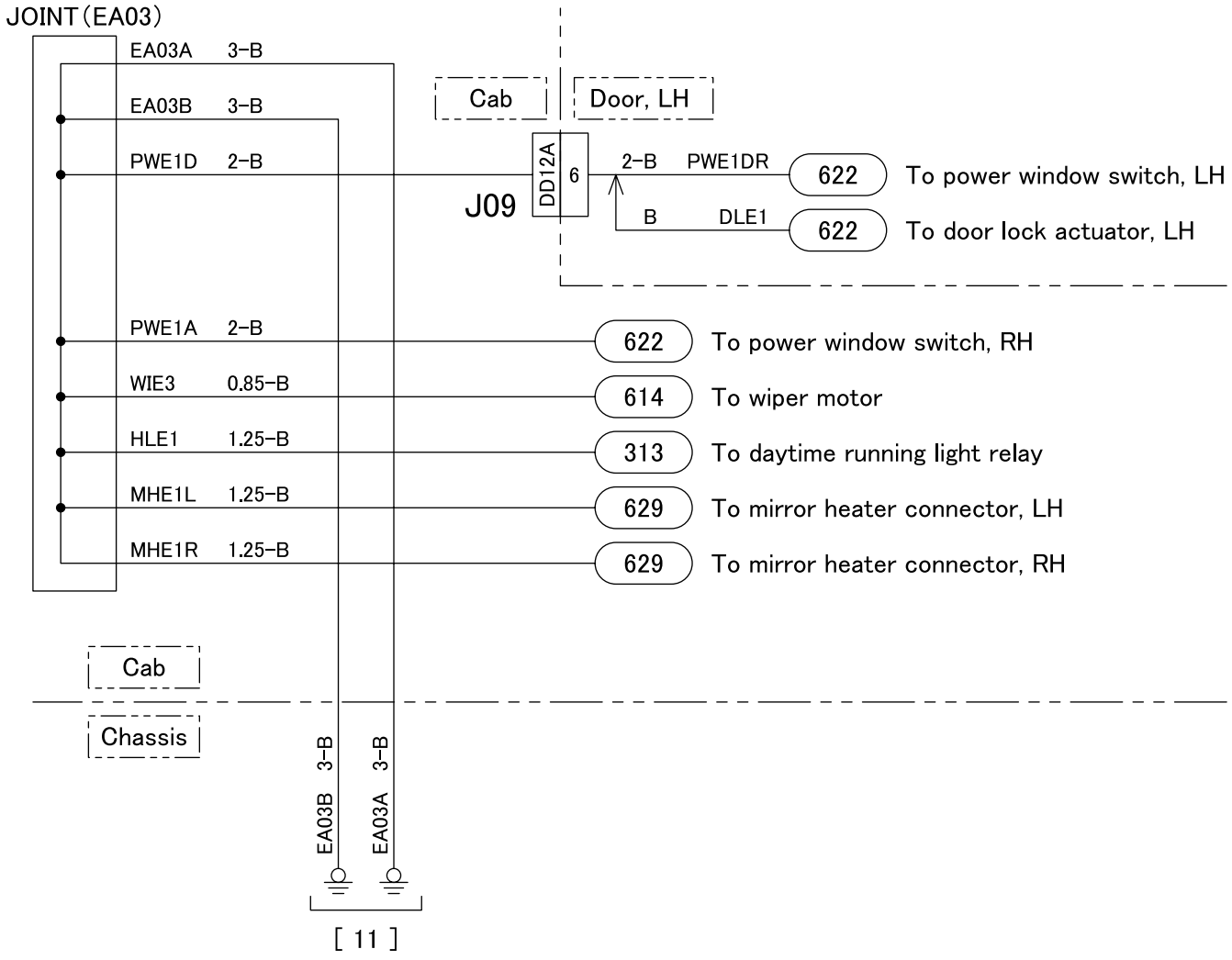
https://truckmanualshub.com/

Circuit No. EA01, EA02 chassis ground
＜JOINT(EA02L)＞



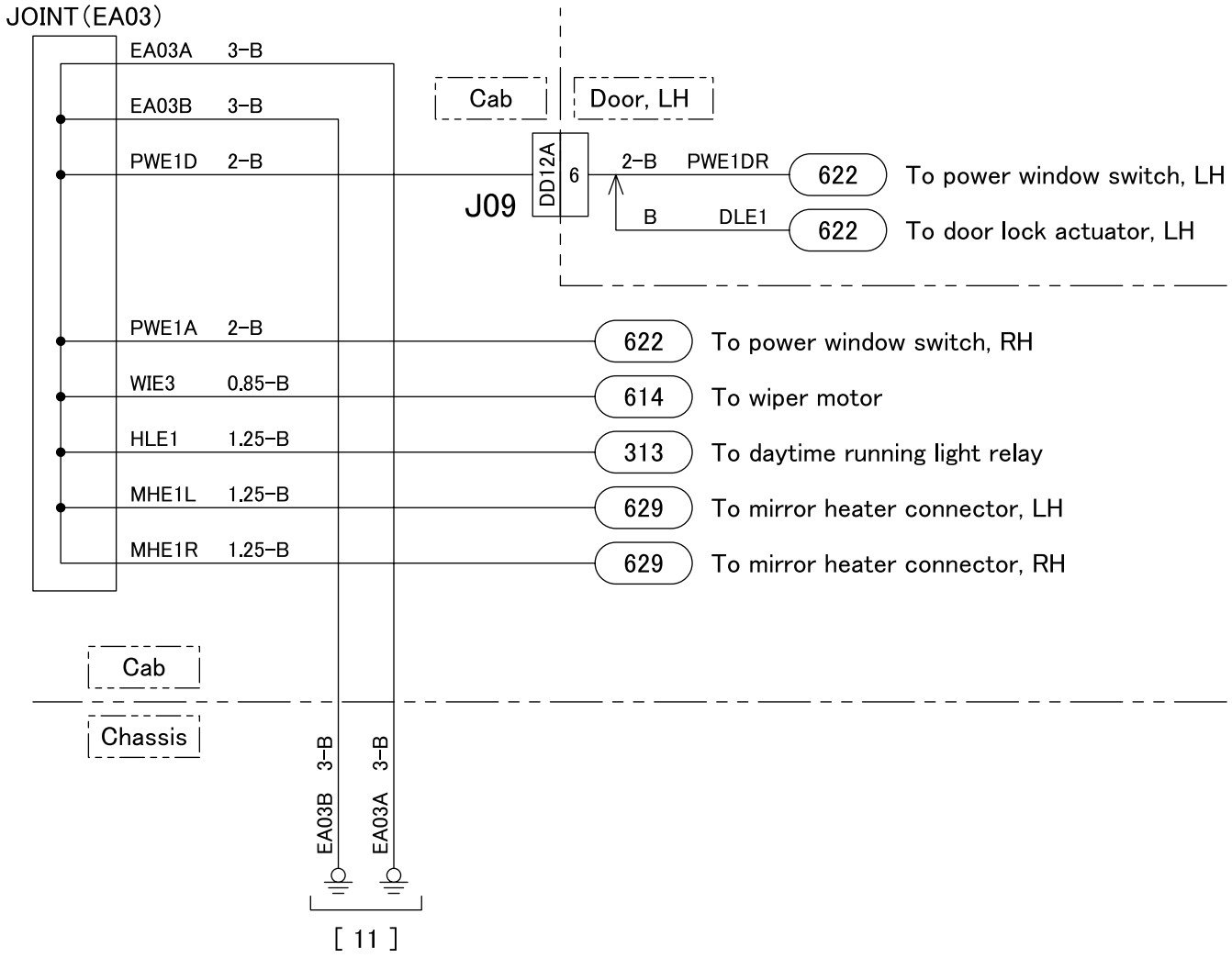
130-C05182

Circuit No. EA03A, EA03B chassis ground



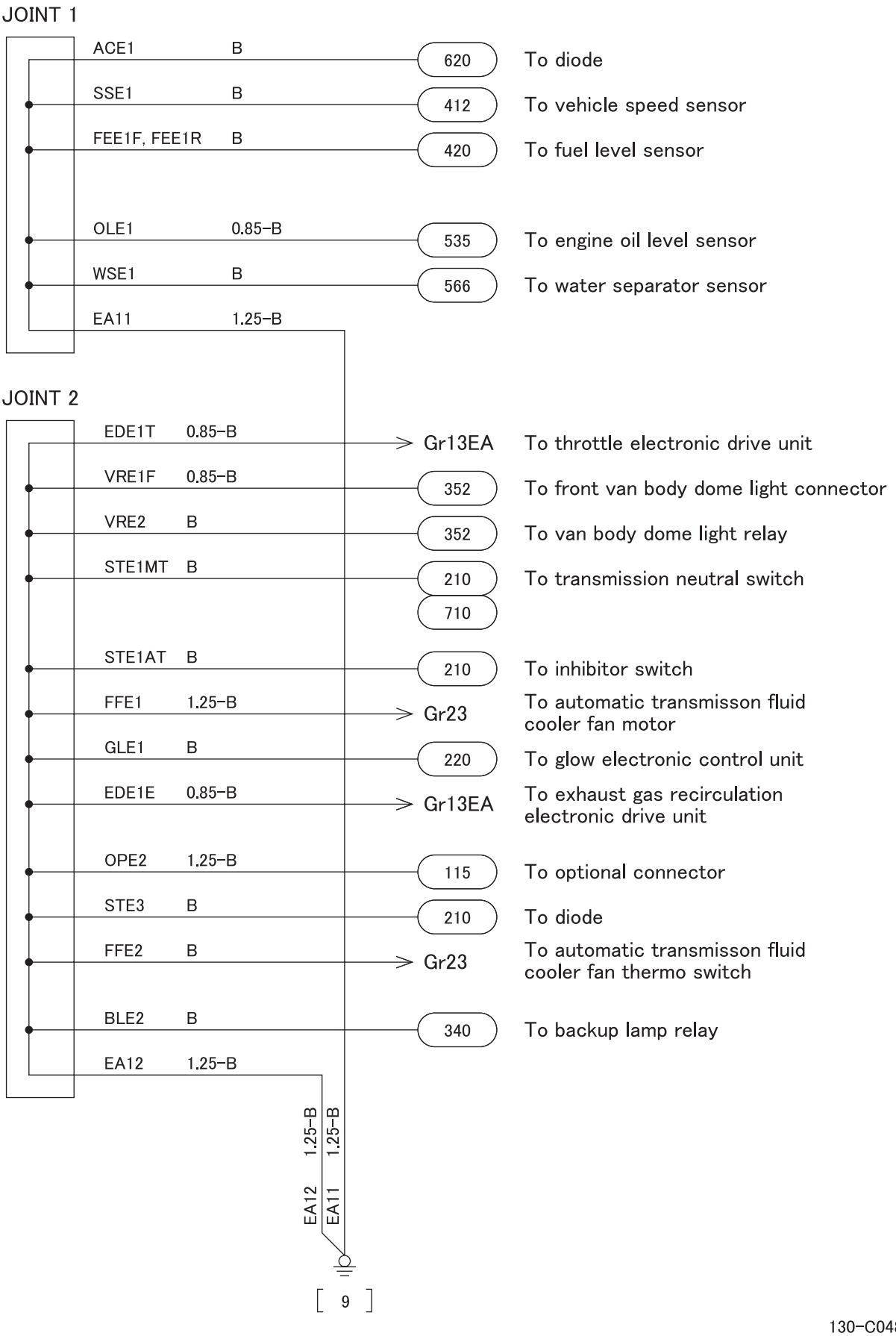
https://truckmanualshub.com/

Circuit No. EA03A, EA03B chassis ground



130-C03572

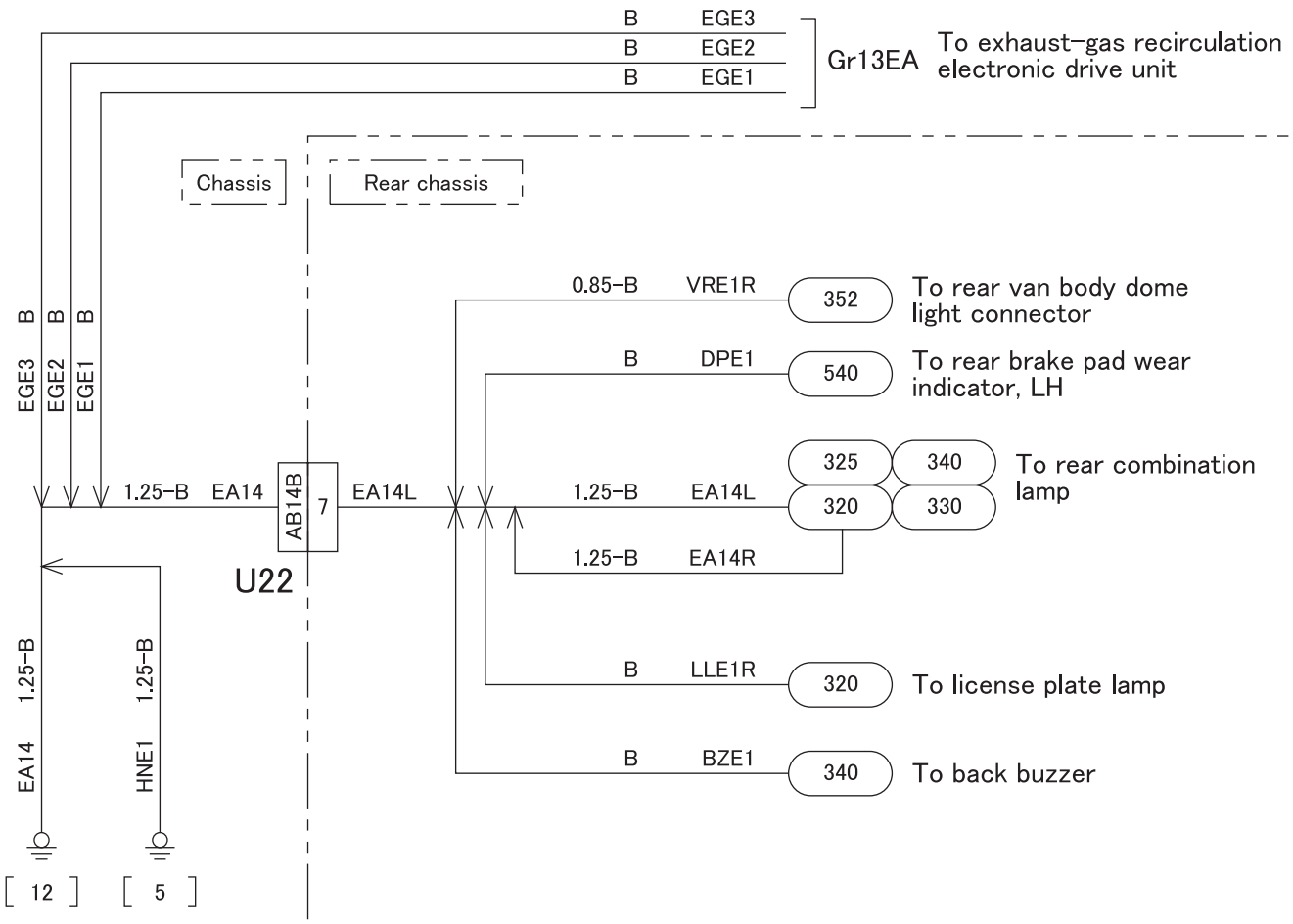
Circuit No. EA11, EA12 chassis ground



130-C04834

https://truckmanualshub.com/

Circuit No.EA14 chassis ground

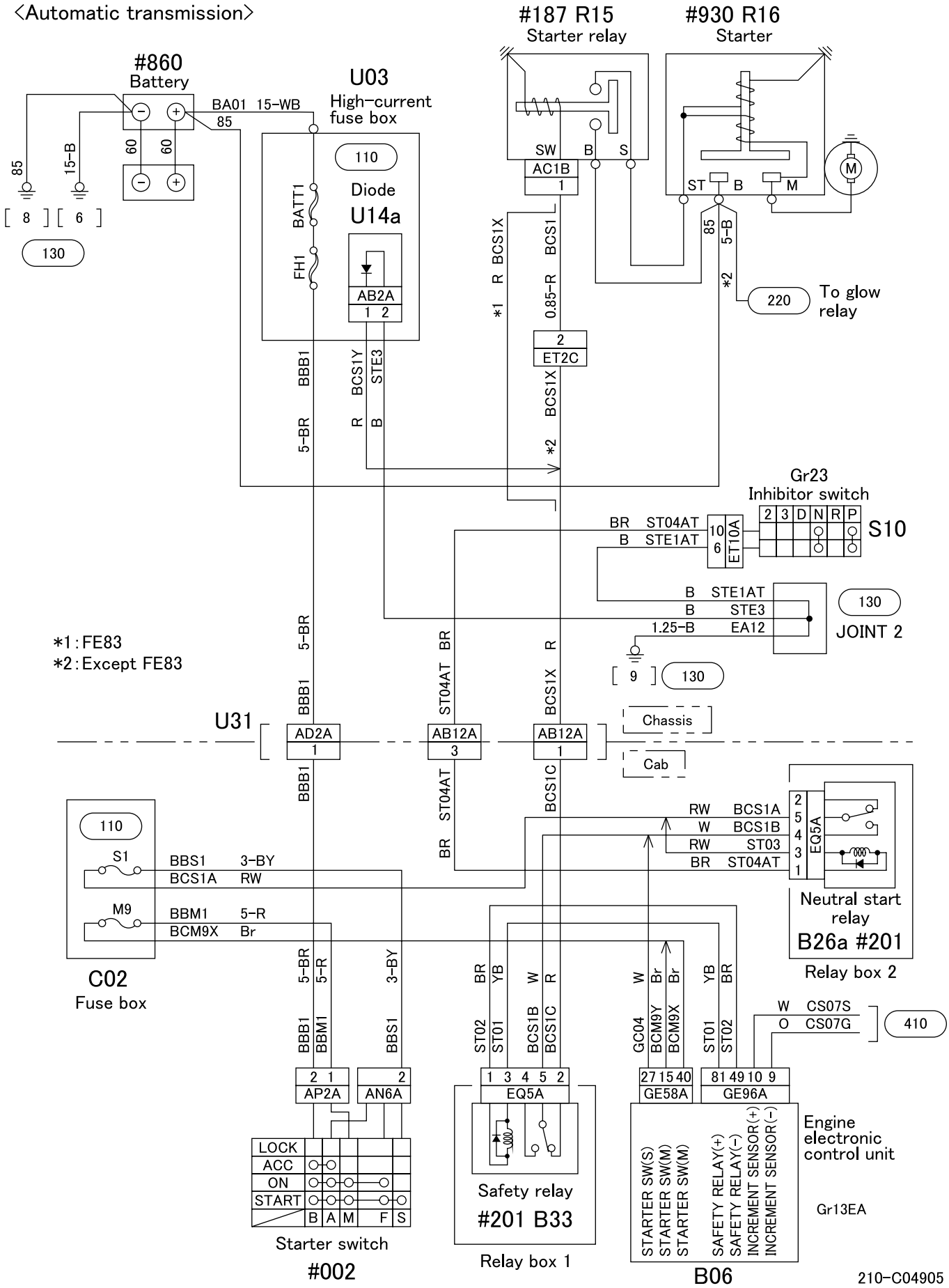


130-C03575

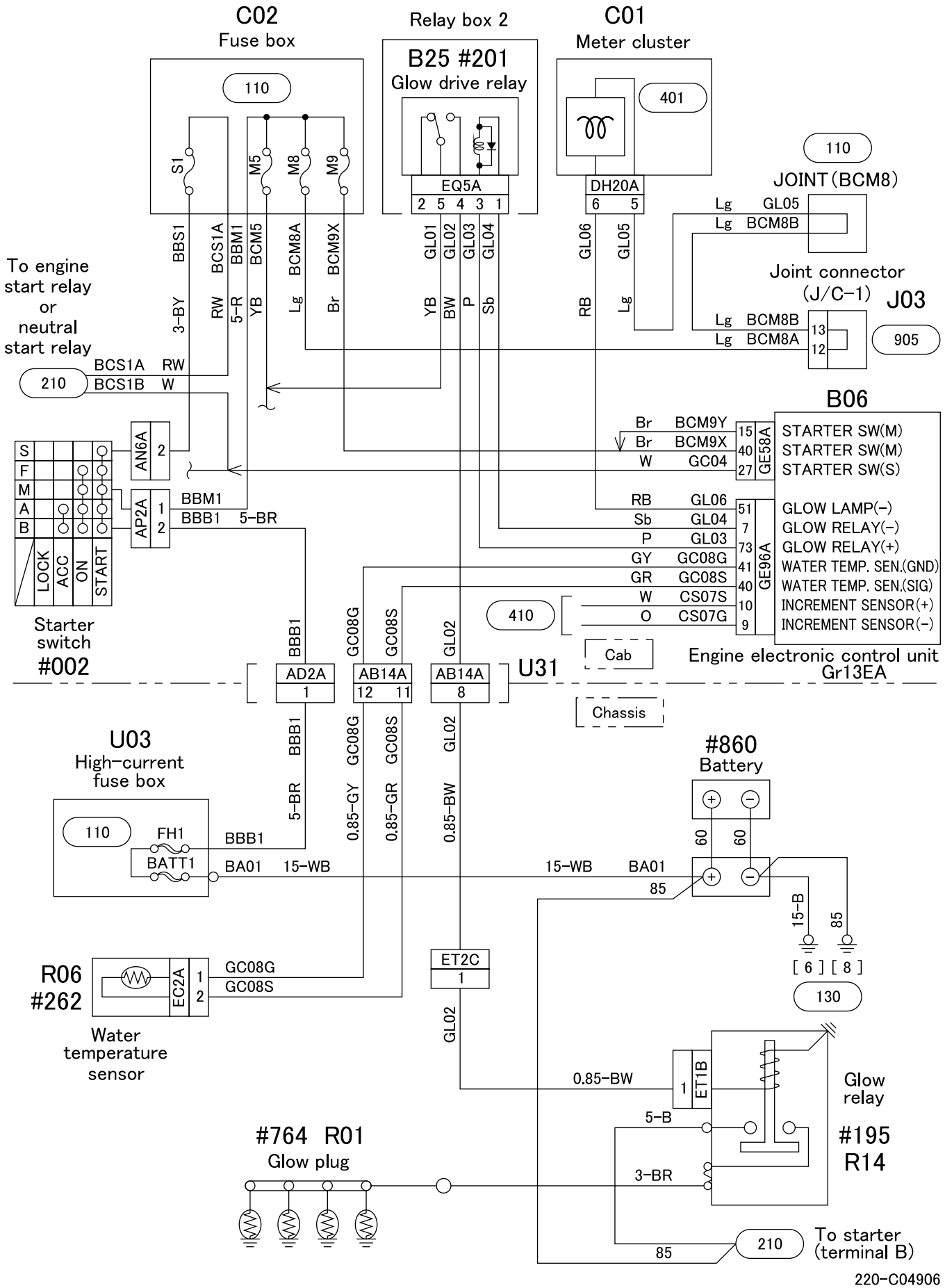
https://truckmanualshub.com/

54-02 STARTING CIRCUIT

https://truckmanualshub.com/



https://truckmanualshub.com/

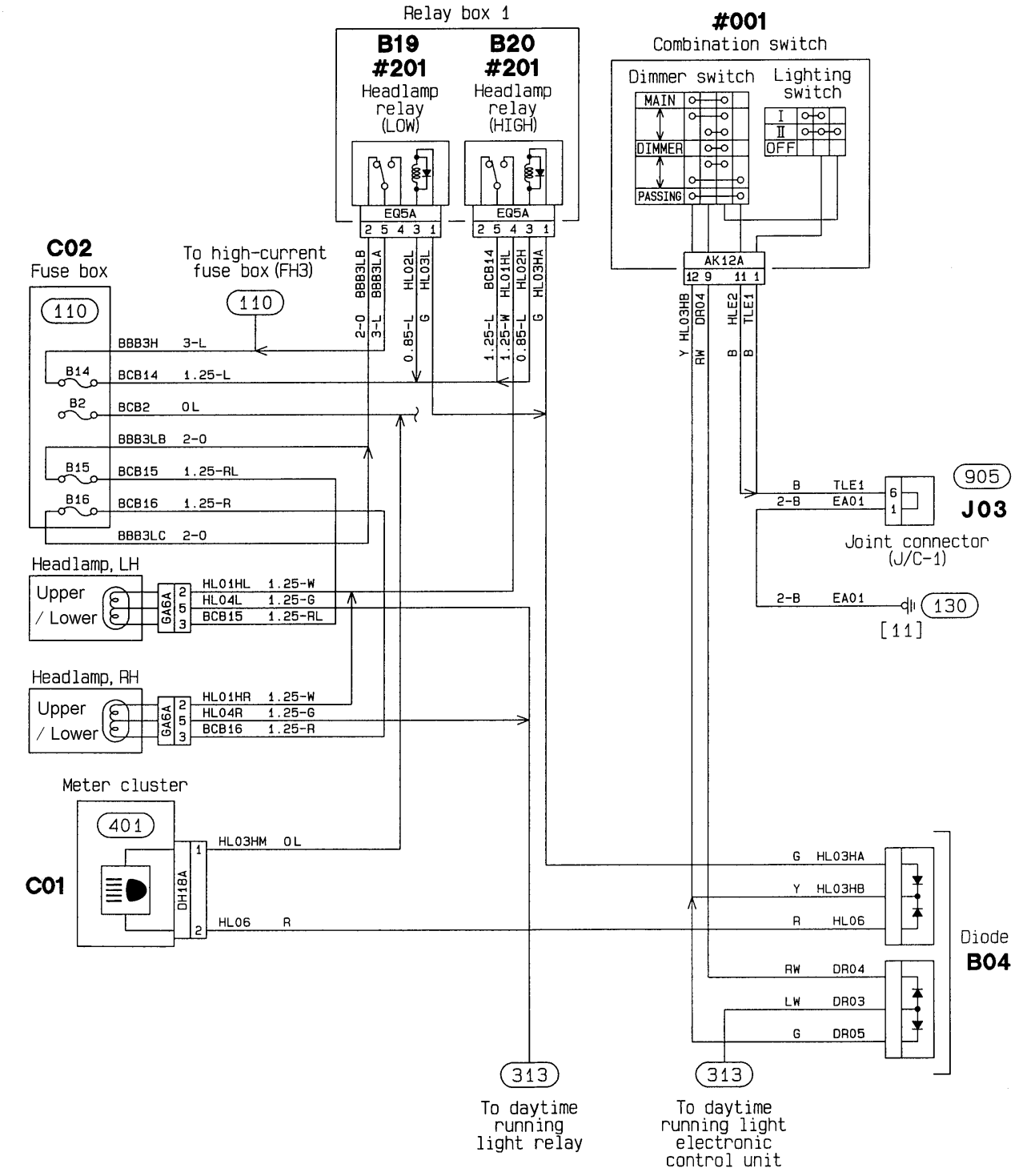


220-C04906

https://truckmanualshub.com/

54-03 LIGHTING CIRCUIT

https://truckmanualshub.com/



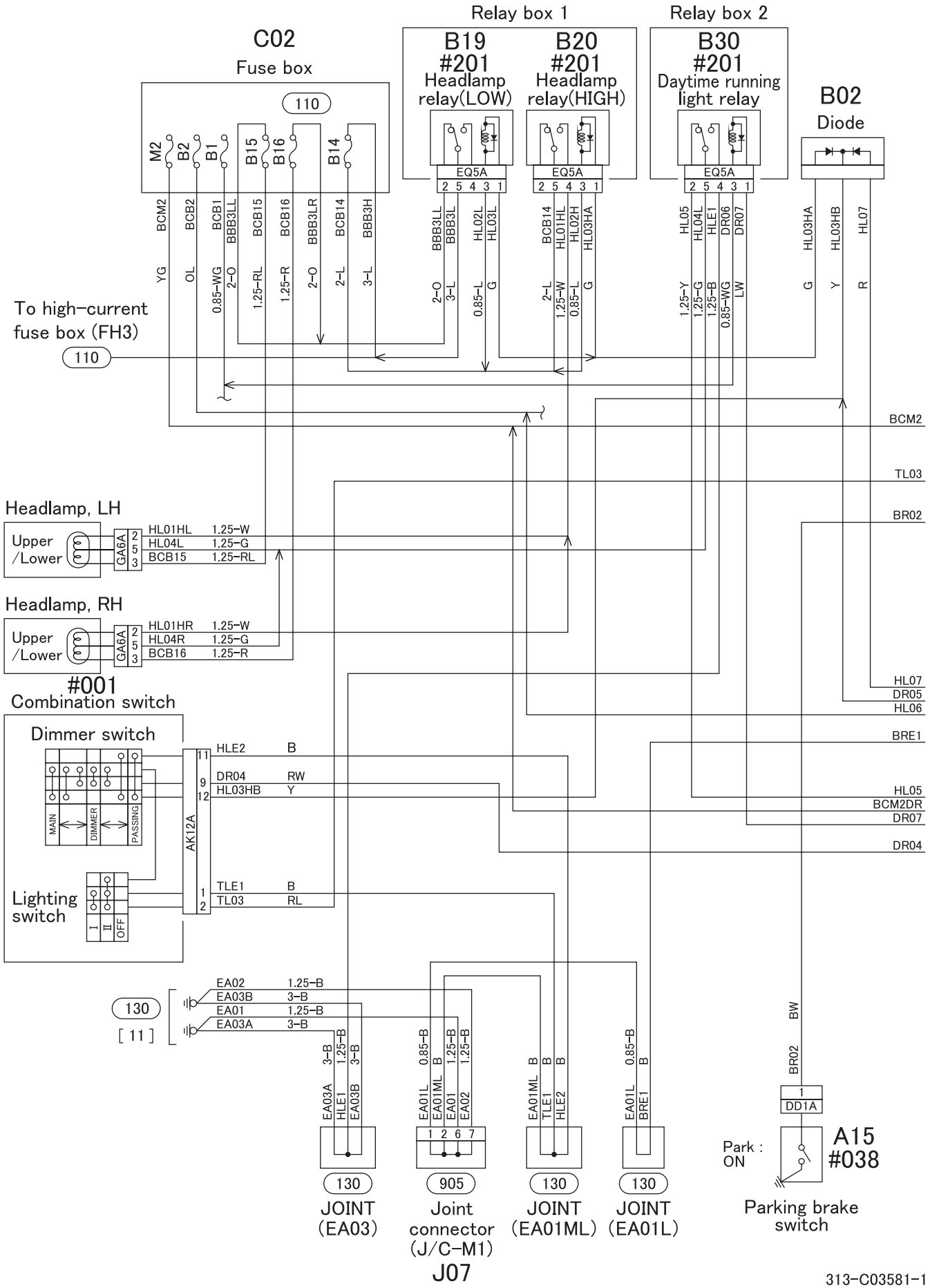
C00493

https://truckmanualshub.com/

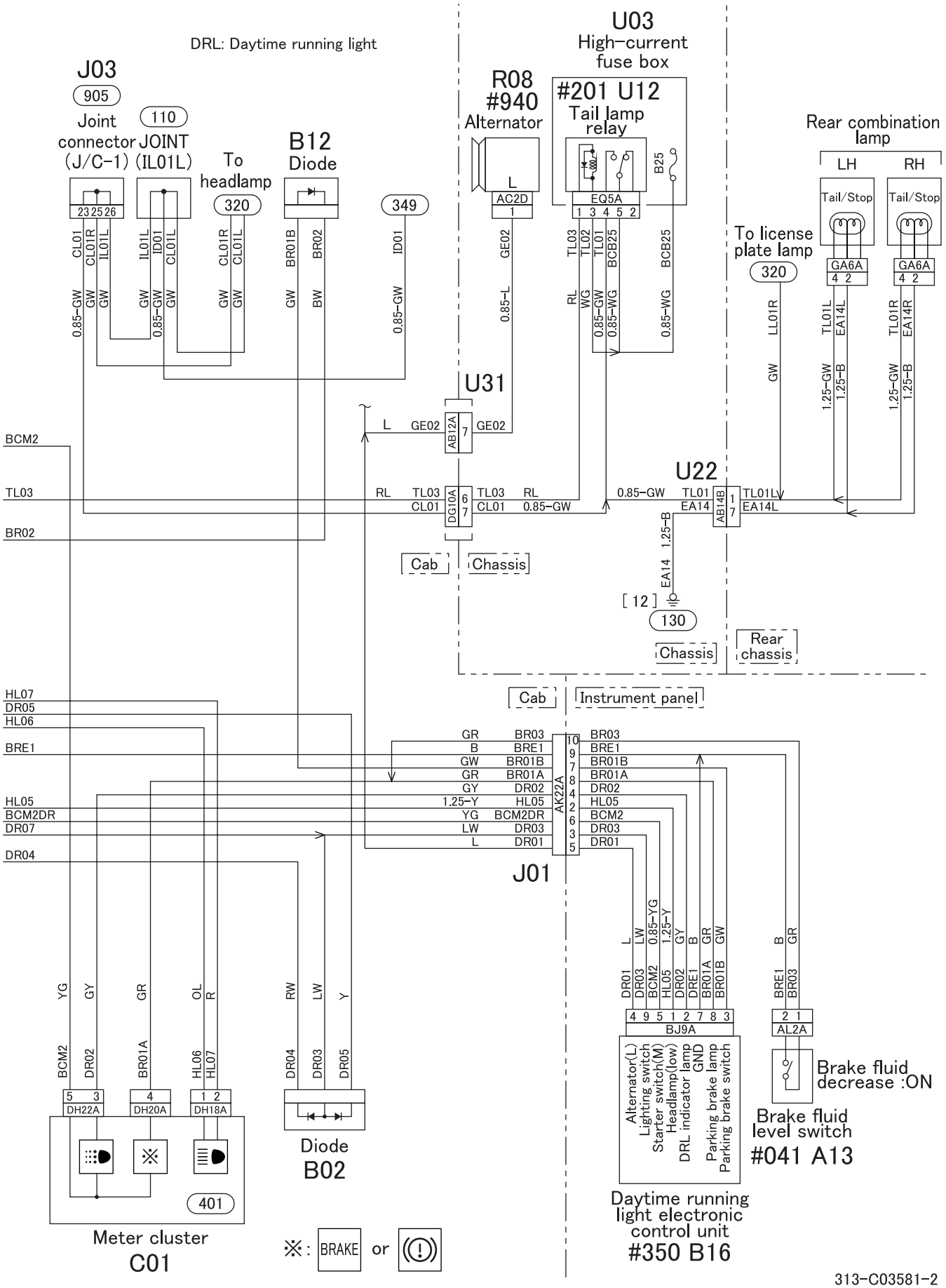
M E M O

https://truckmanualshub.com/

313 DAYTIME RUNNING LIGHT CIRCUIT



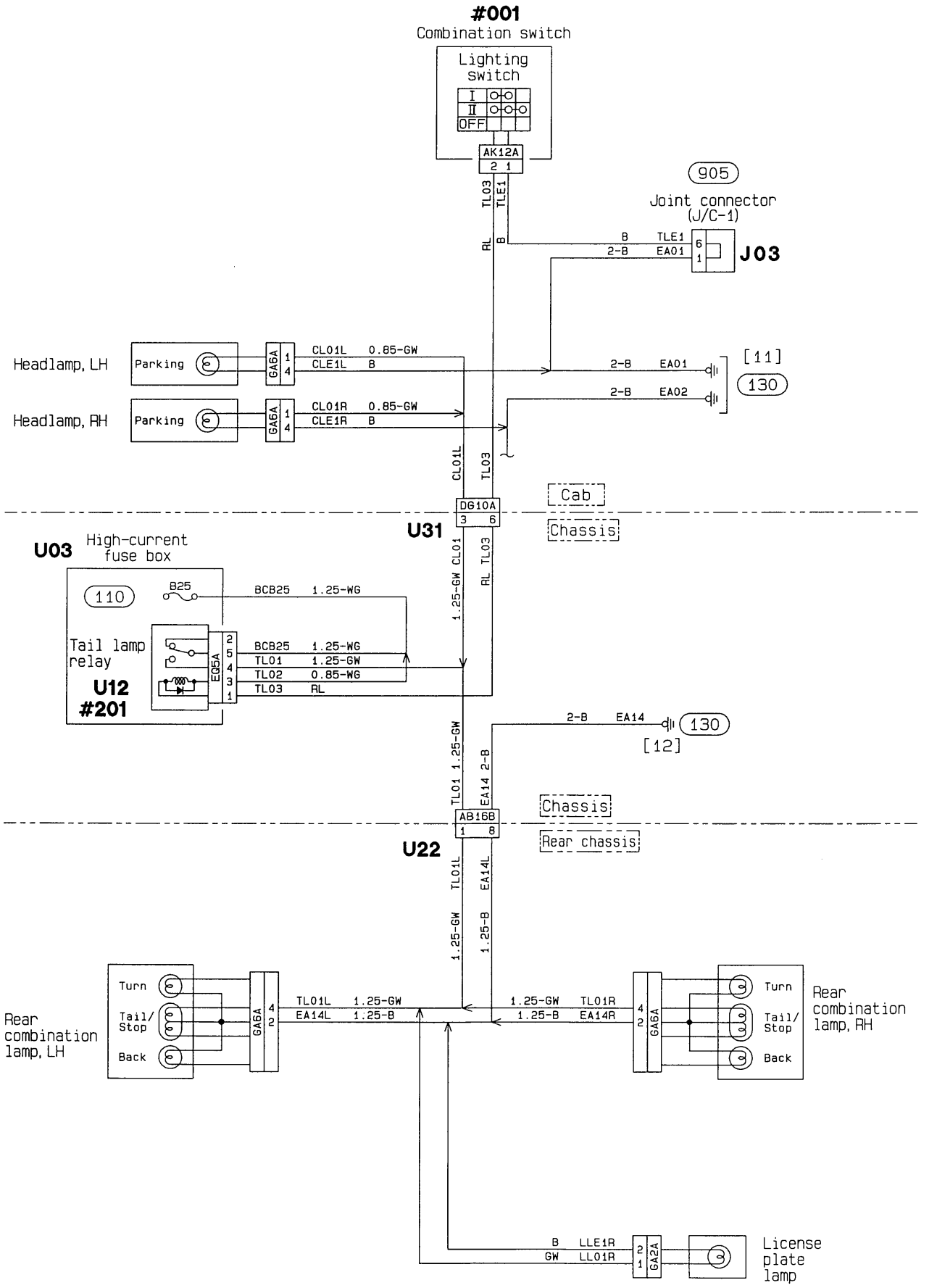
313-C03581-1


DRL: Daytime running light
J03
905
Joint connector (J/C-1)
110
JOINT (IL01L)
To headlamp
320
B12
Diode
349
R08
#940
Alternator
U03
High-current fuse box
#201 U12
Tail lamp relay
B25
Rear combination lamp
LH
RH
Tail/Stop
To license plate lamp
320
GA6A
U31
U22
BCM2
TL03
BR02
Cab
Chassis
[12]
130
Rear chassis
HL07
DR05
HL06
BRE1
HL05
BCM2DR
DR07
DR04
Cab
Instrument panel
J01
AK22A
DH22A
DH20A
DH18A
401
Meter cluster
C01
Diode
B02
※: BRAKE or
BJ9A
Alternator(L)
Lighting switch
Starter switch(M)
Headlamp(low)
DRL indicator lamp
GND
Parking brake lamp
Parking brake switch
Daytime running light electronic control unit
#350 B16
AL2A
Brake fluid decrease :ON
Brake fluid level switch
#041 A13

313-C03581-2

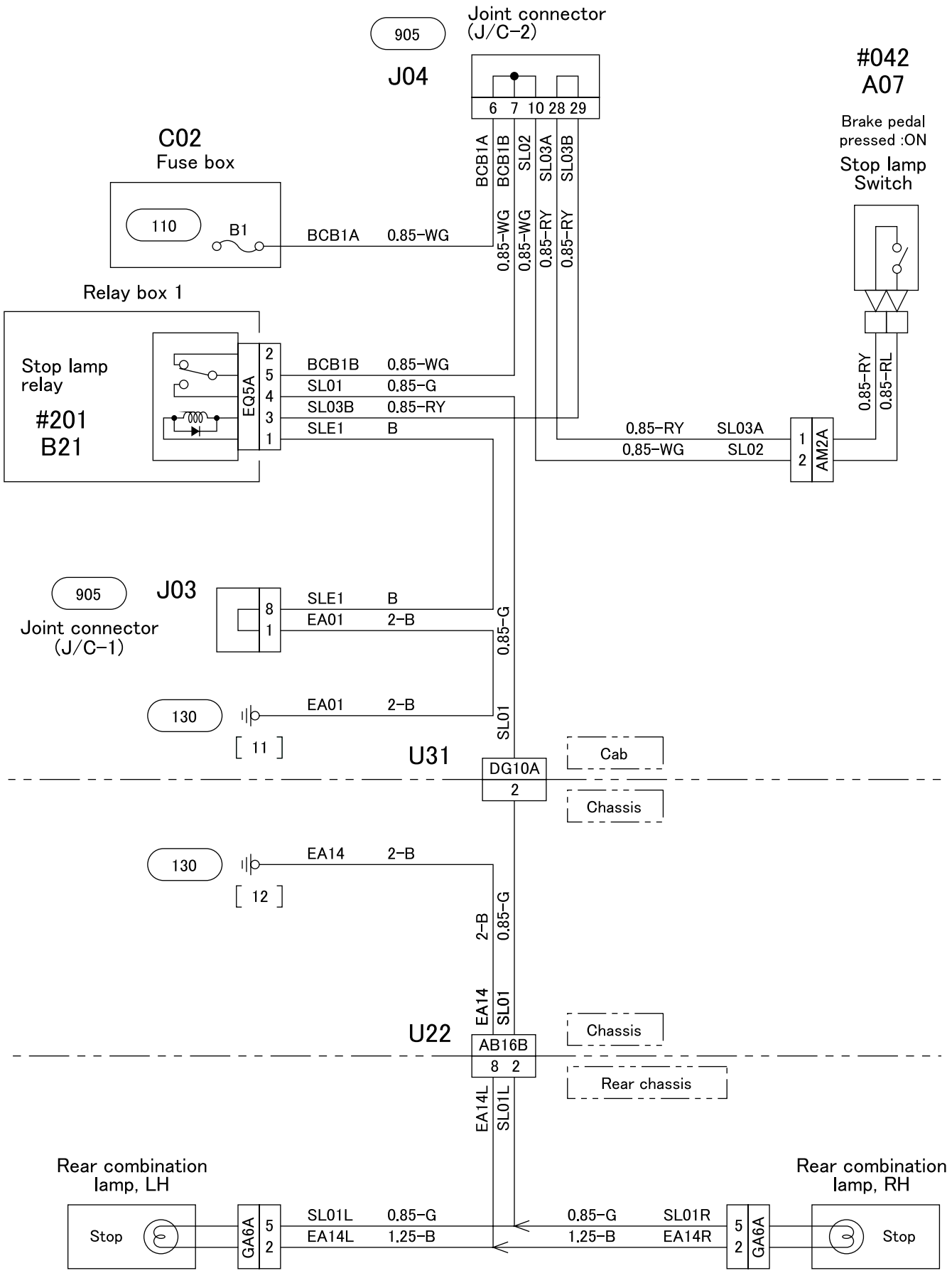
https://truckmanualshub.com/

320 TAIL, CLEARANCE AND LICENSE PLATE LAMPS CIRCUIT



C02277

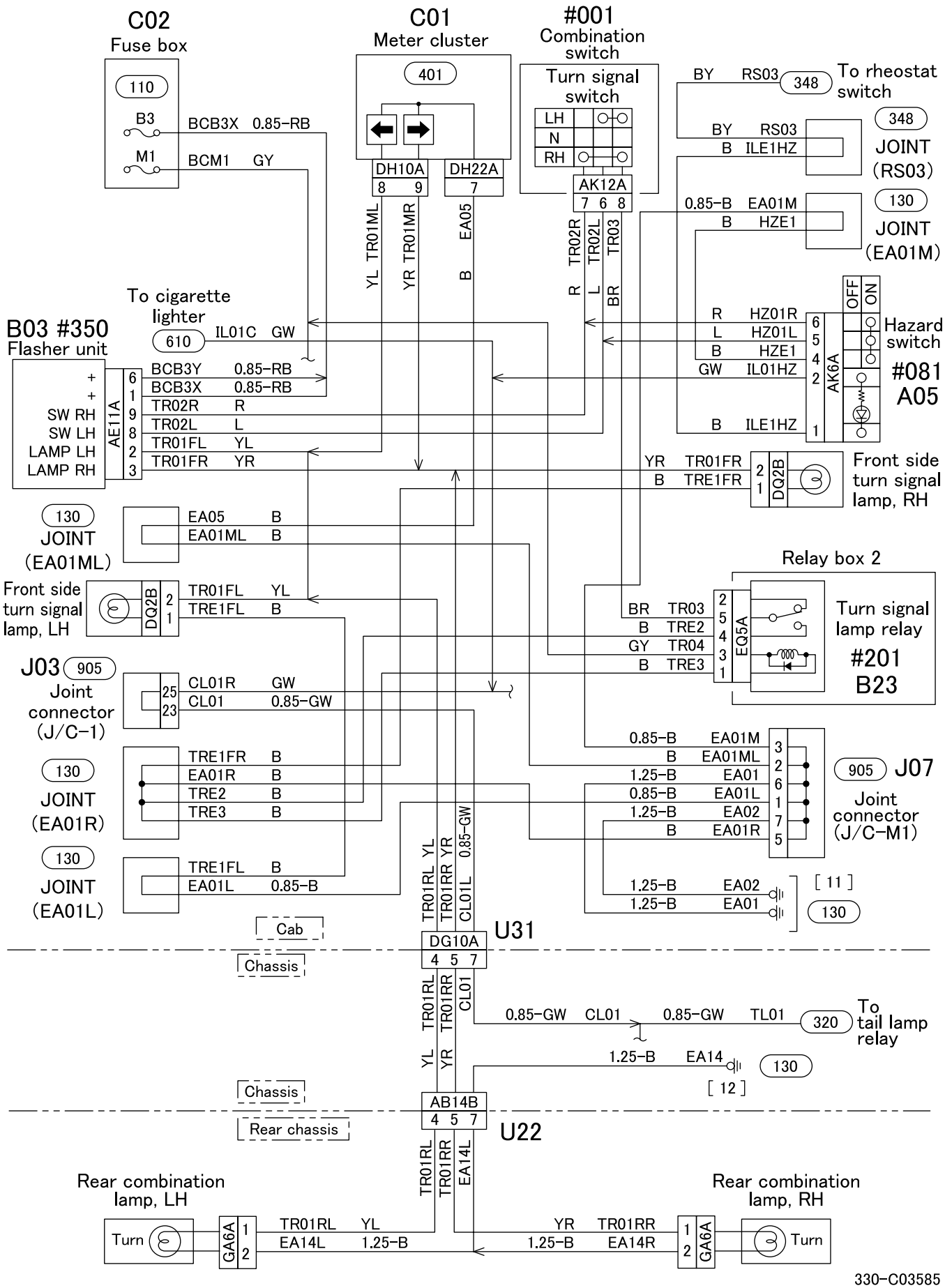
https://truckmanualshub.com/



325-C00496

https://truckmanualshub.com/

330 TURN SIGNAL AND HAZARD LAMP CIRCUIT



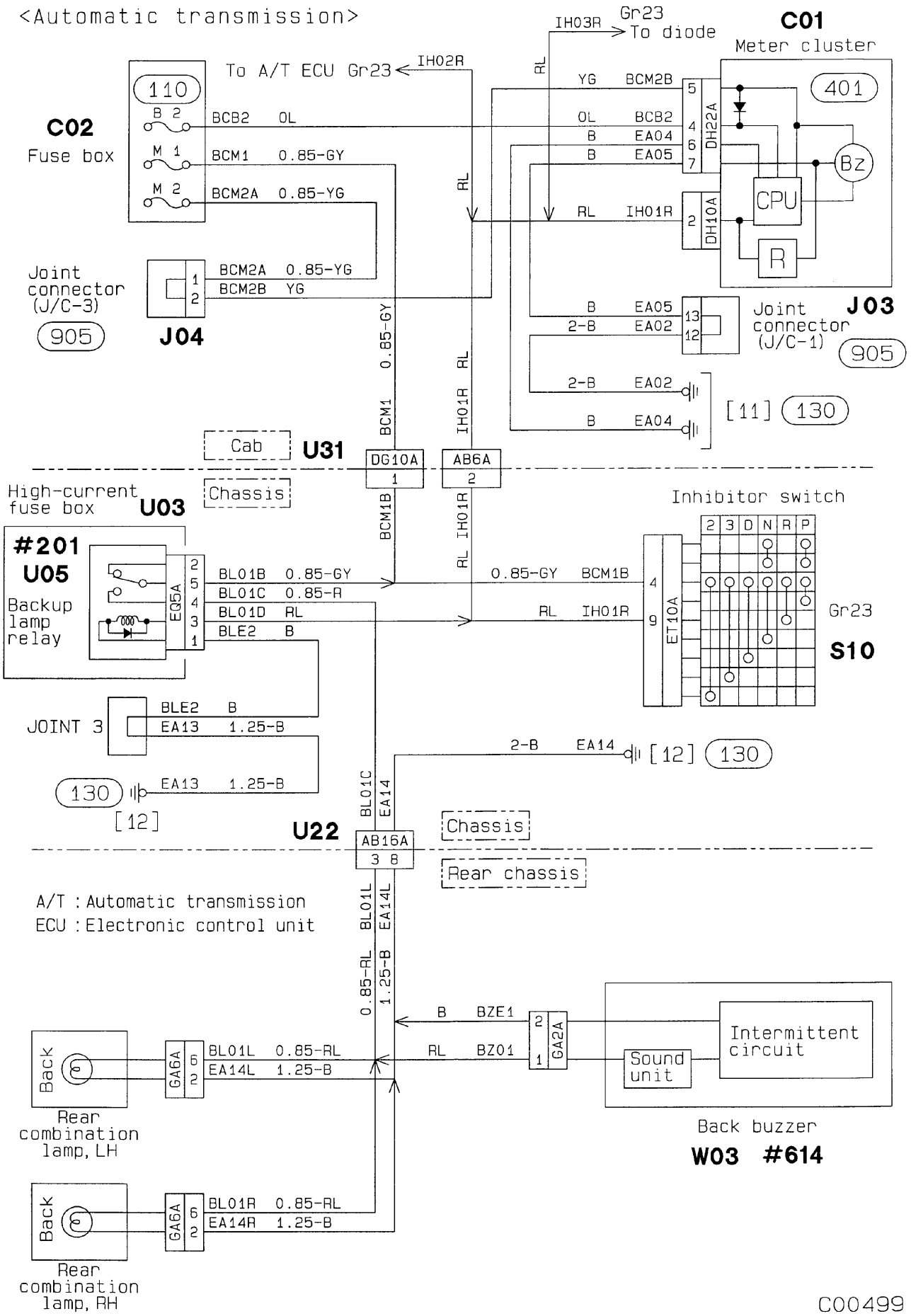
330-C03585

https://truckmanualshub.com/

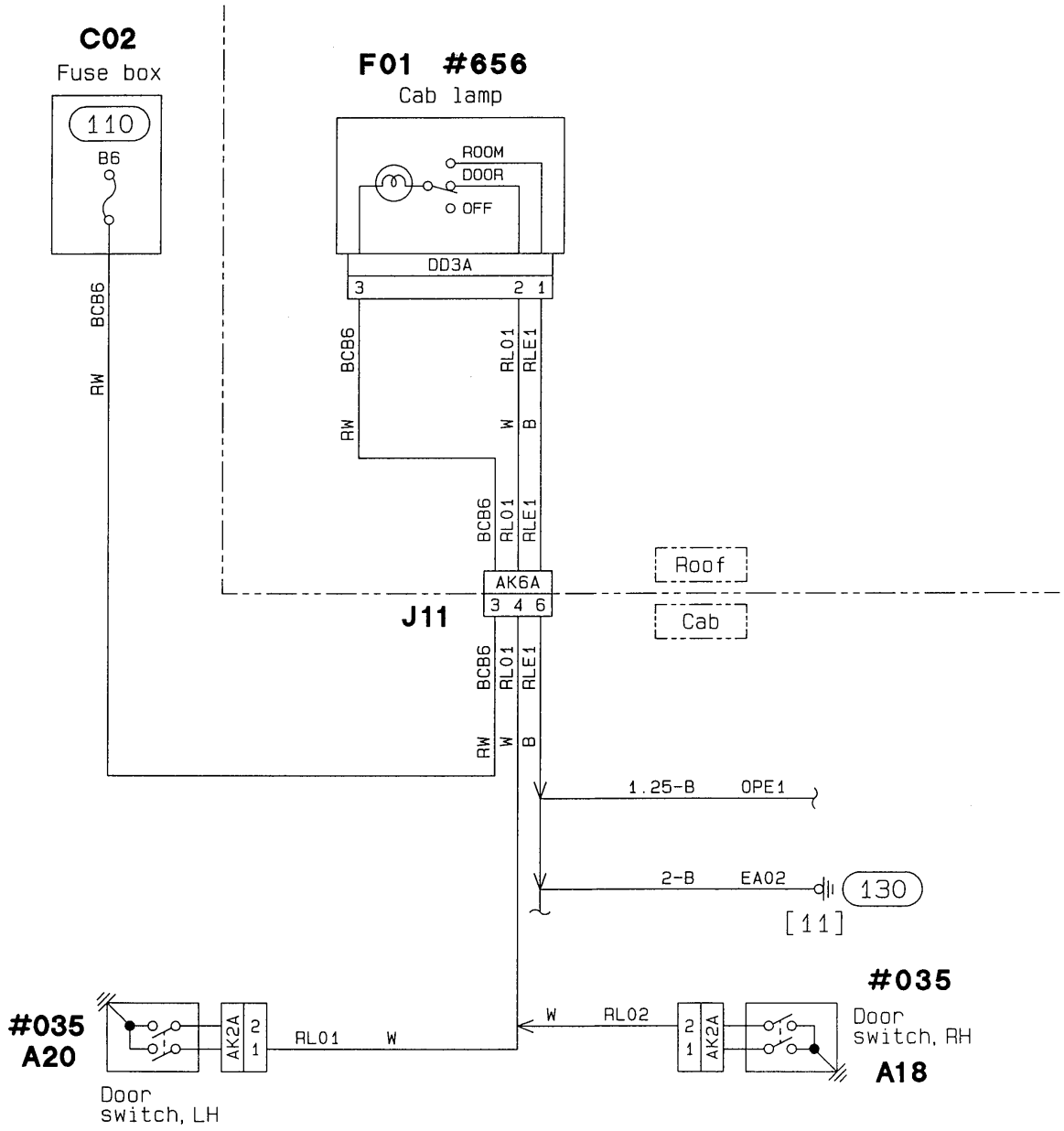
M E M O

https://truckmanualshub.com/

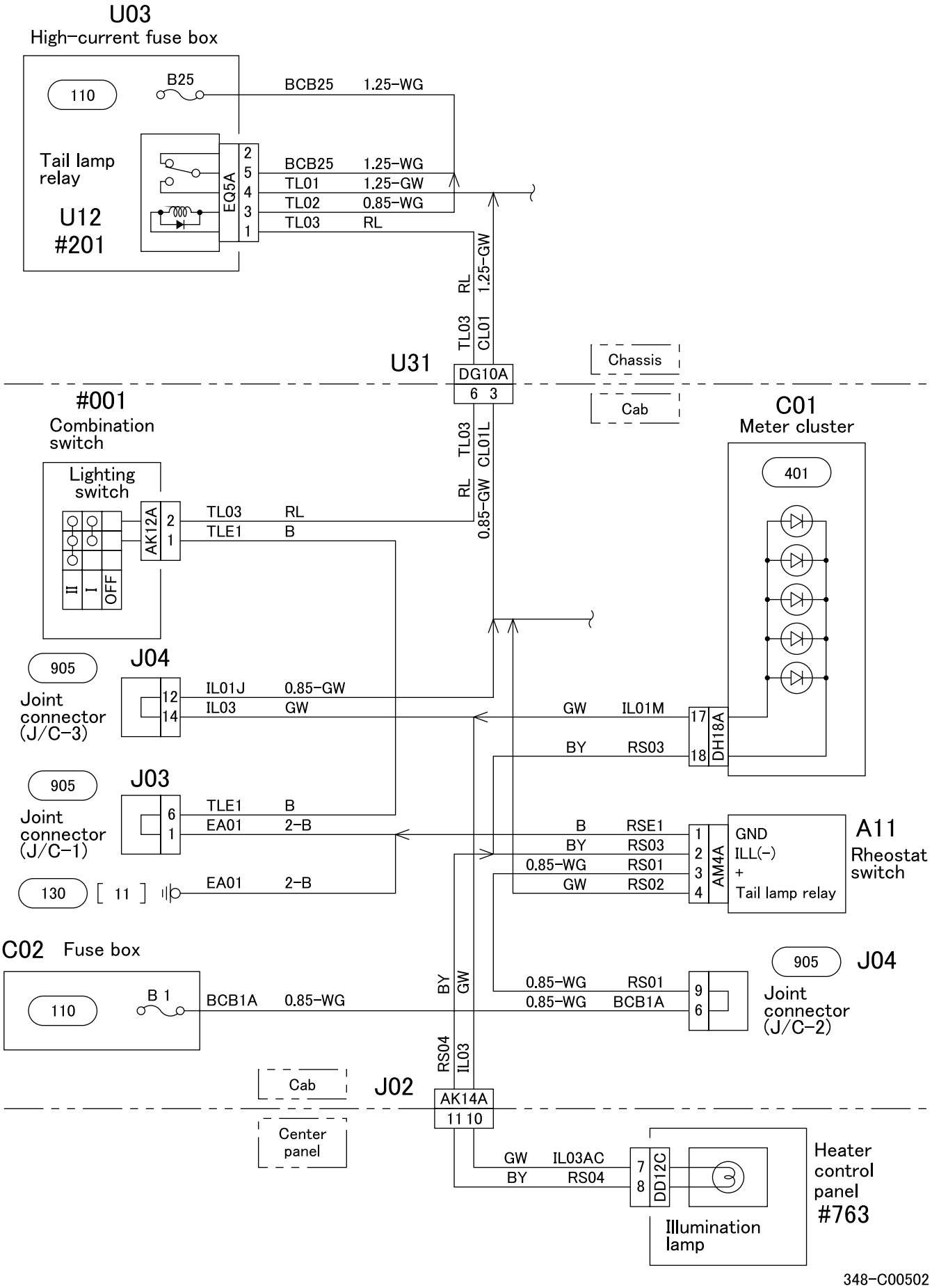
340 BACKUP LAMP CIRCUIT



https://truckmanualshub.com/

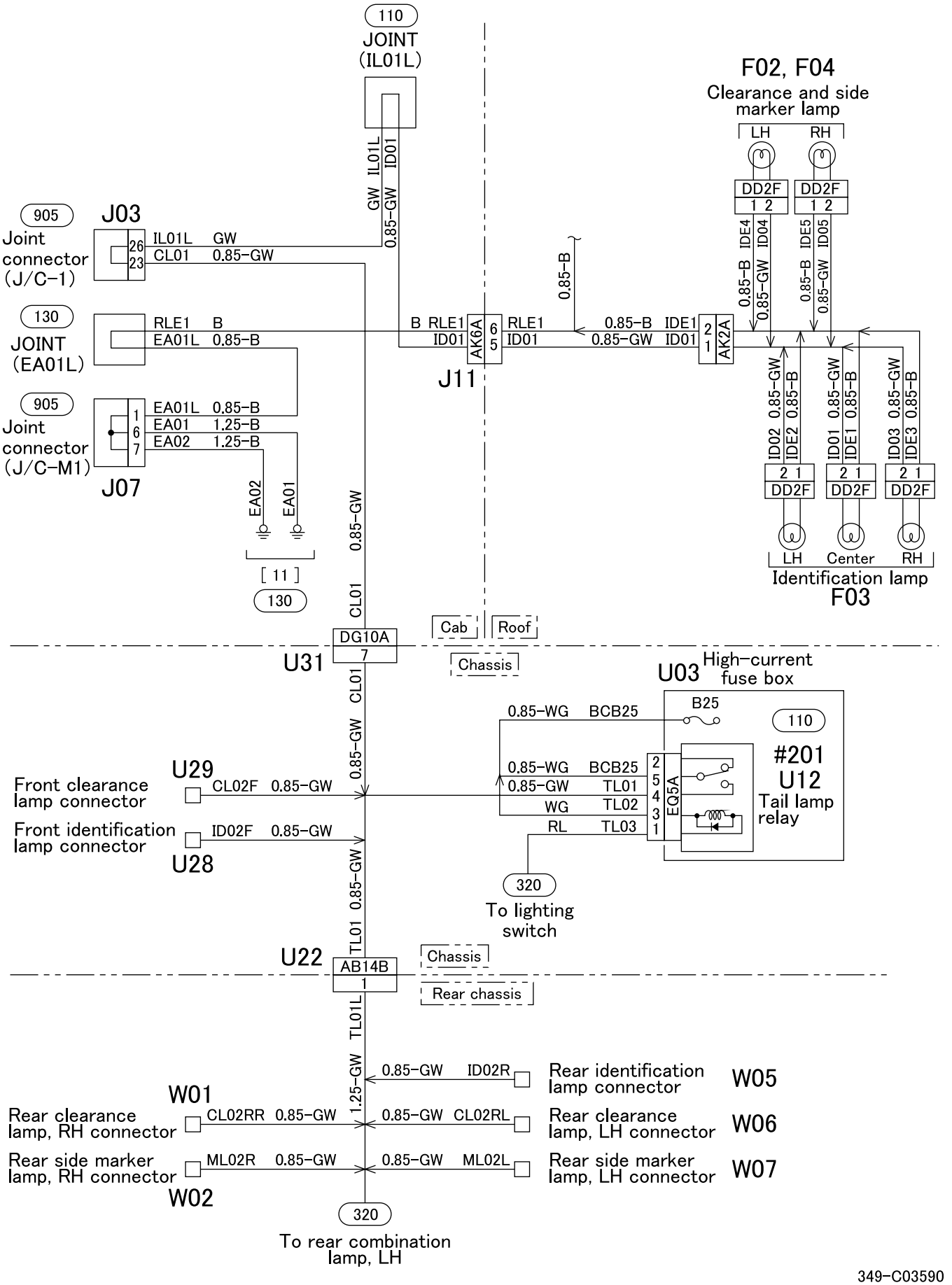


https://truckmanualshub.com/



348-C00502

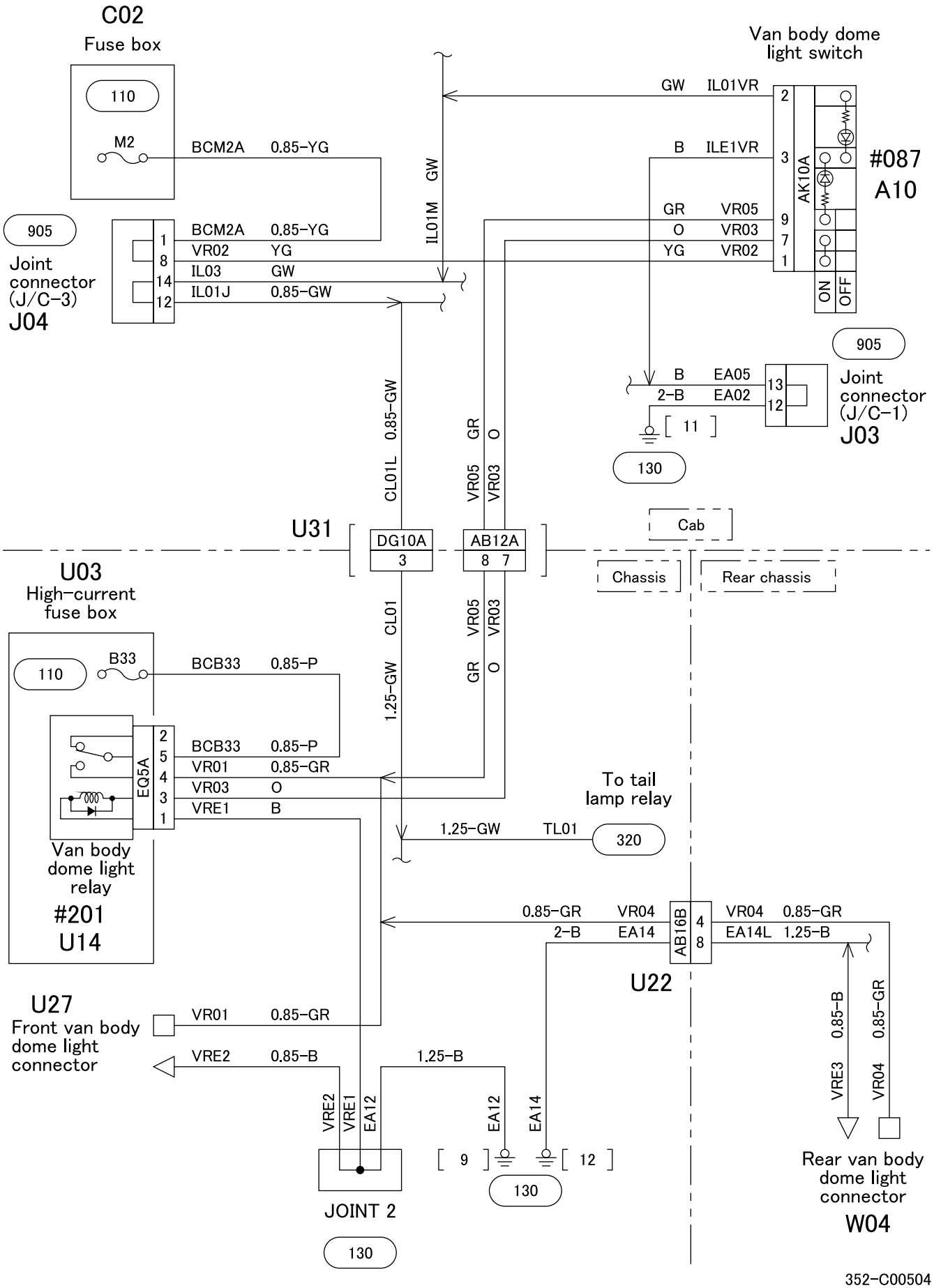
https://truckmanualshub.com/



349-C03590

https://truckmanualshub.com/

352 VAN BODY DOME LIGHT CIRCUIT

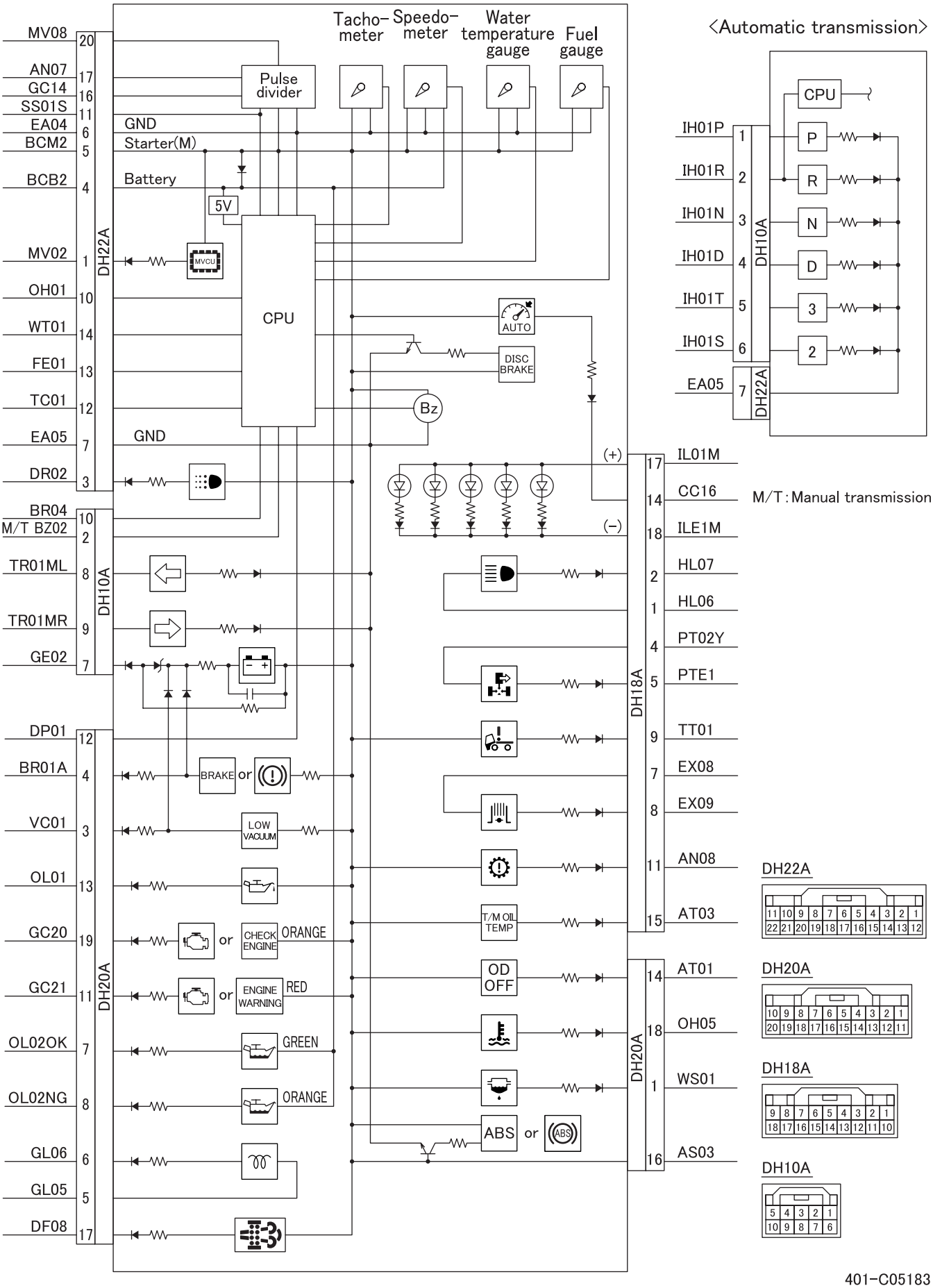


https://truckmanualshub.com/

54-04 METER CIRCUIT

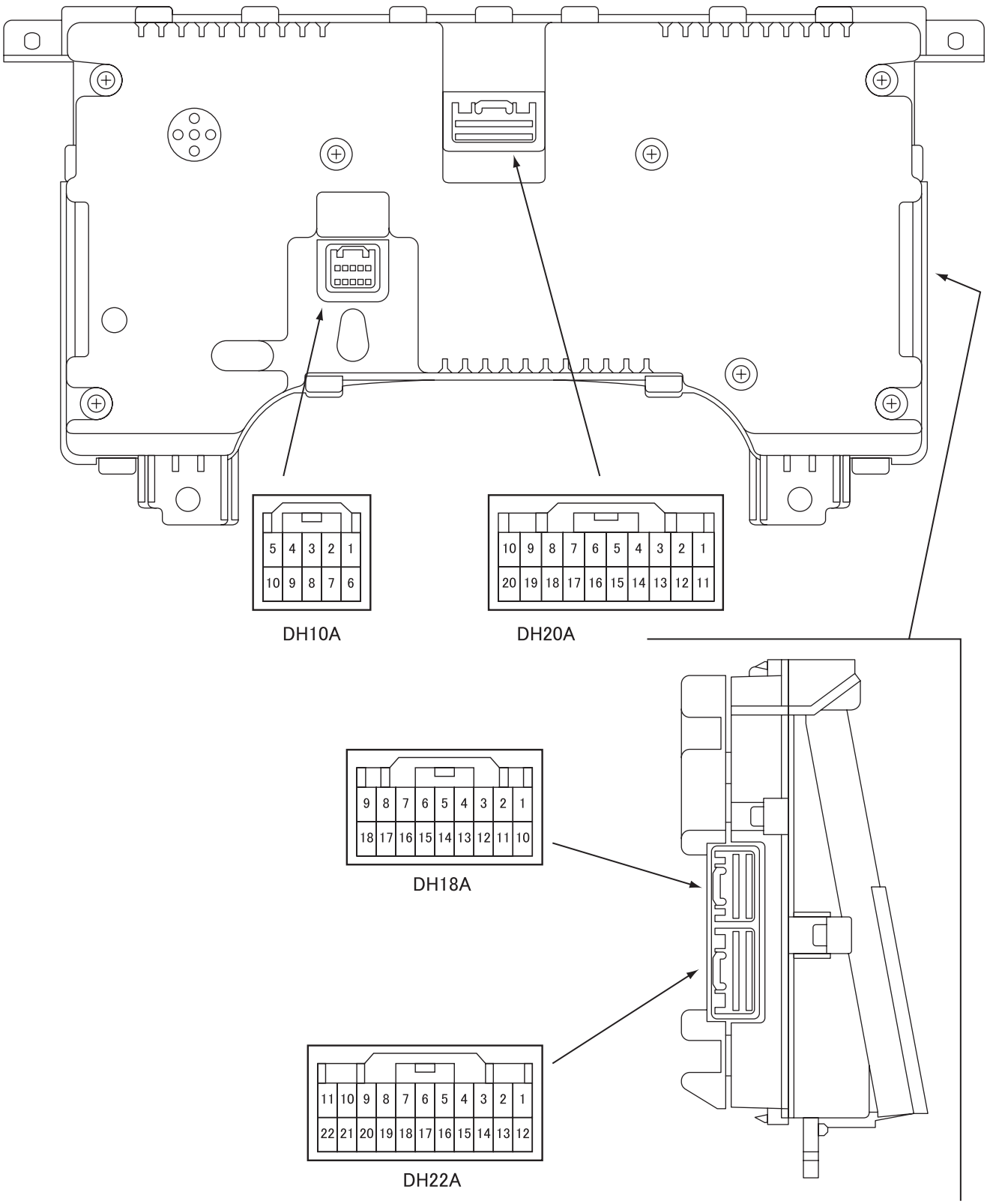
https://truckmanualshub.com/

401 METER CLUSTER INTERNAL CIRCUIT



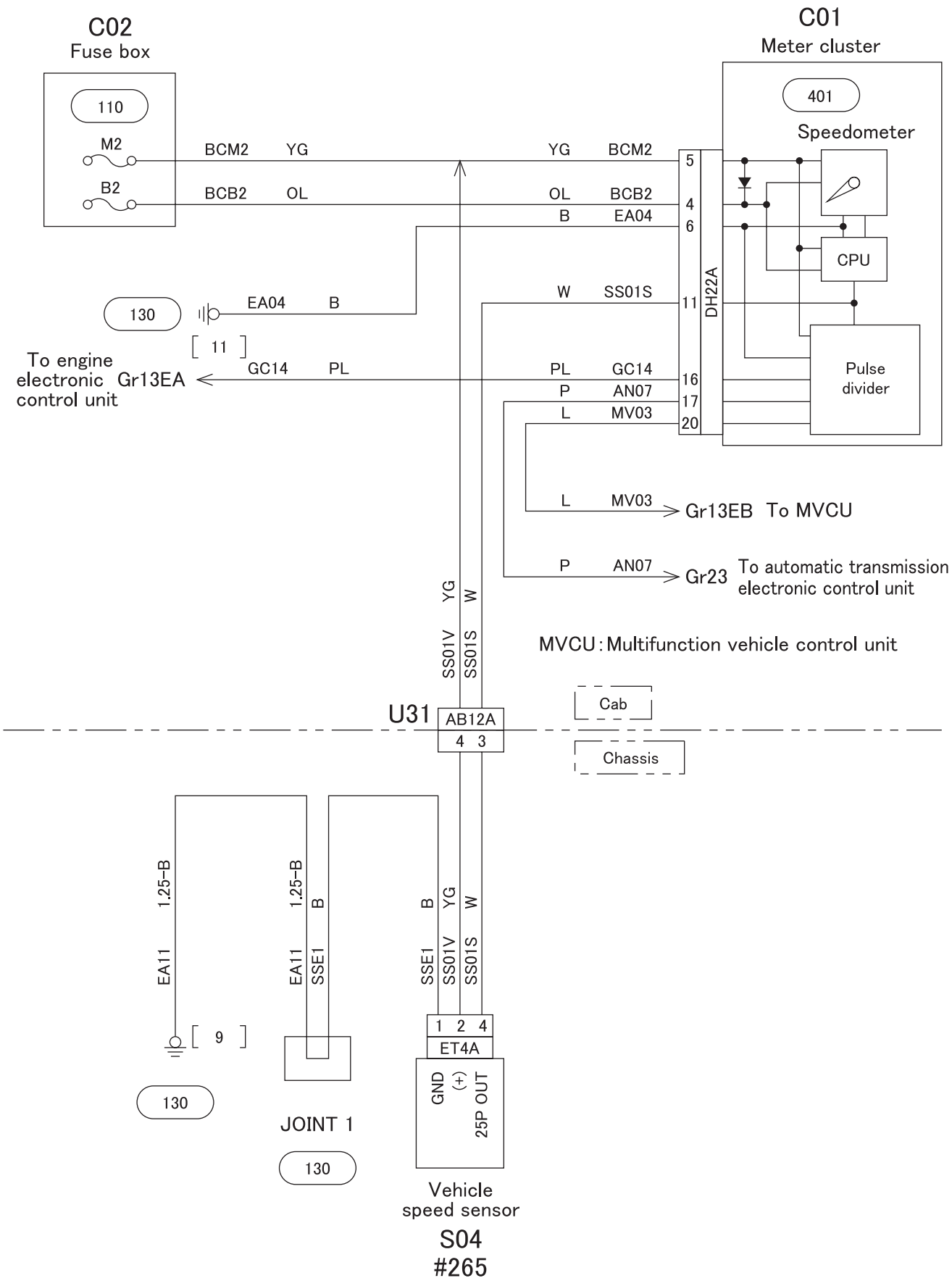
401-C05183

Meter cluster backward view



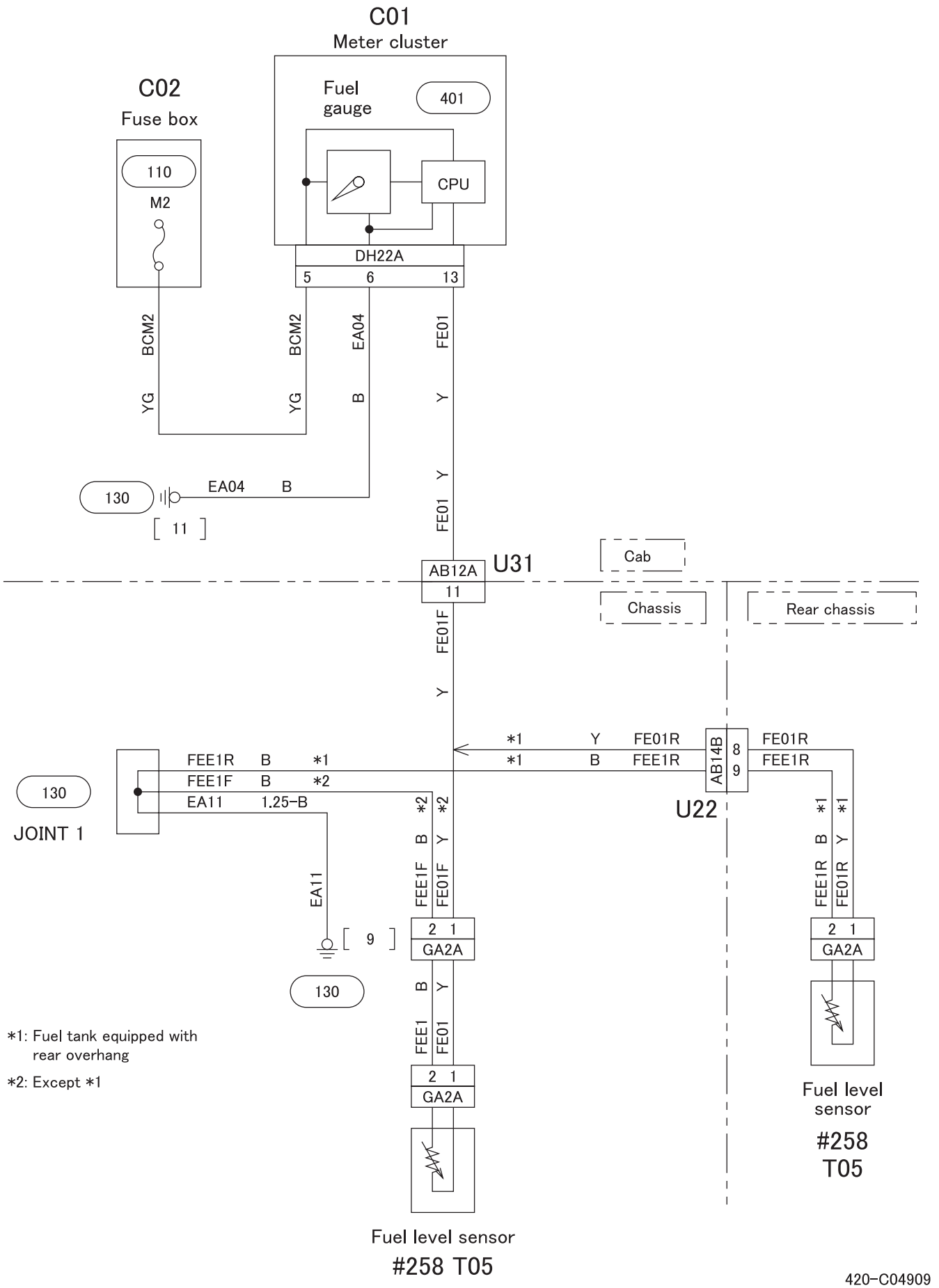
Because a CPU is built into the meter, the inner part of the meter body cannot be disassembled.

https://truckmanualshub.com/



412-C04908

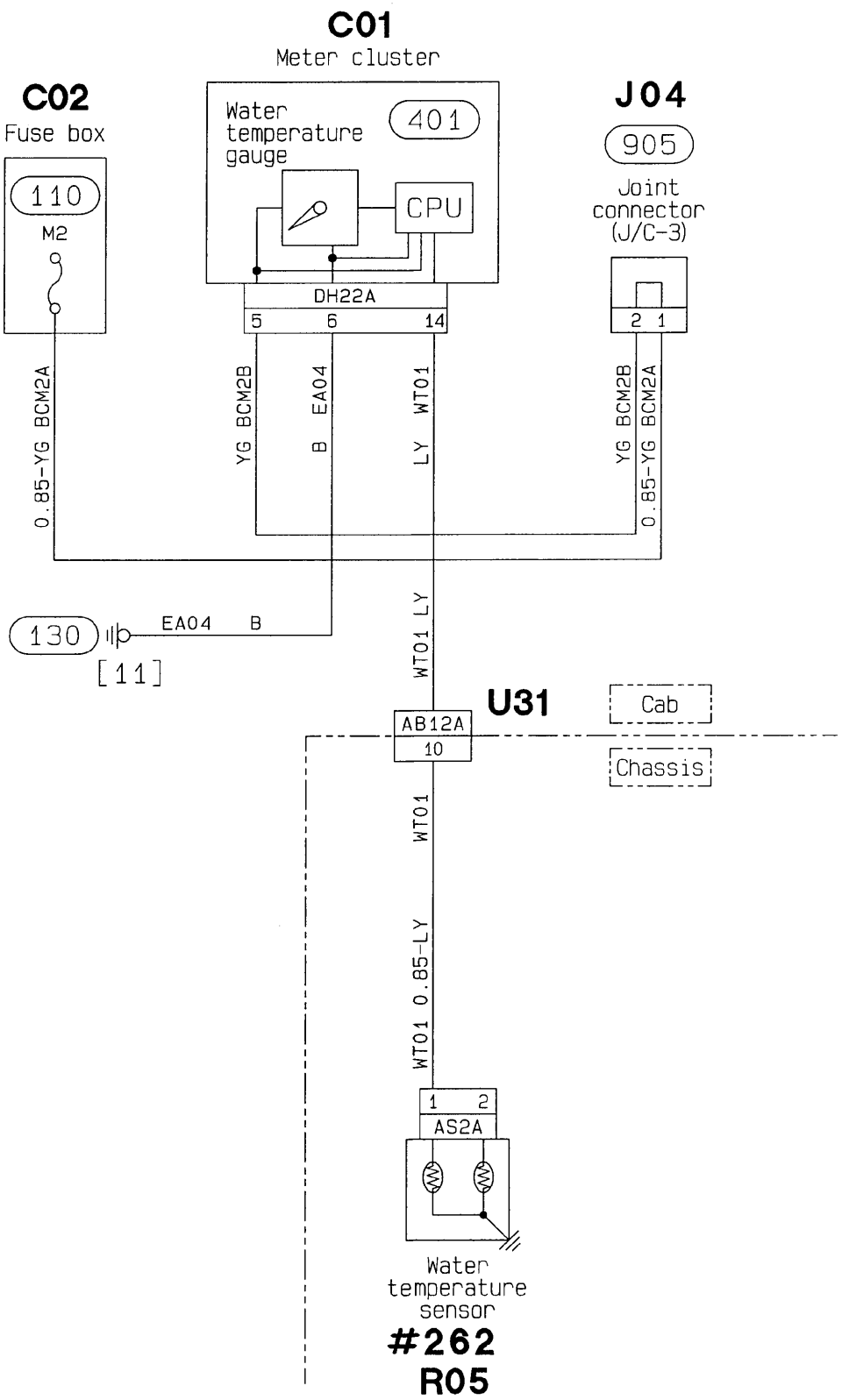
https://truckmanualshub.com/



420-C04909

https://truckmanualshub.com/

425 WATER TEMPERATURE GAUGE CIRCUIT



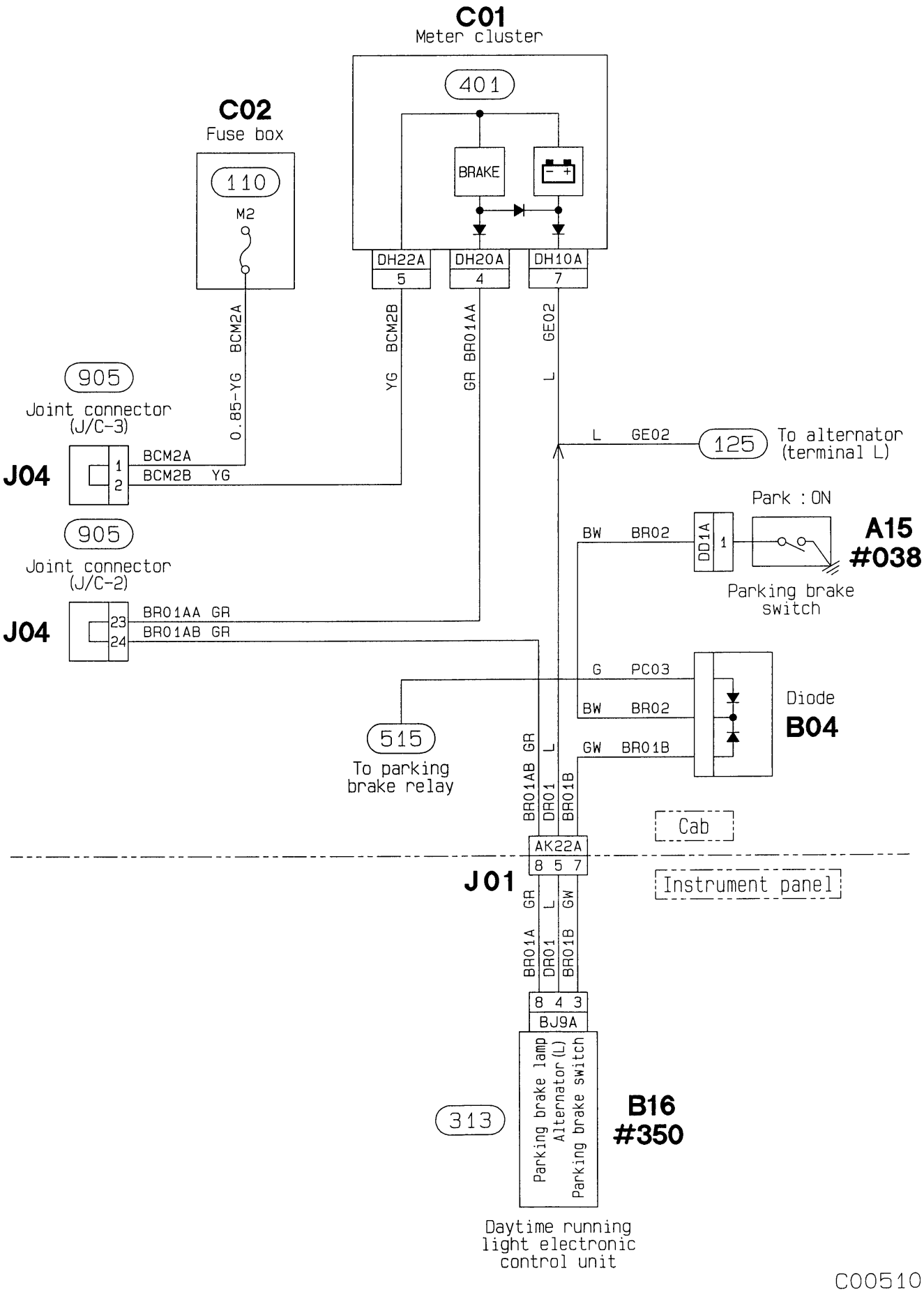
C00509

https://truckmanualshub.com/

54-05 INDICATOR AND WARNING LAMP CIRCUIT

https://truckmanualshub.com/

510 PARKING BRAKE INDICATOR CIRCUIT



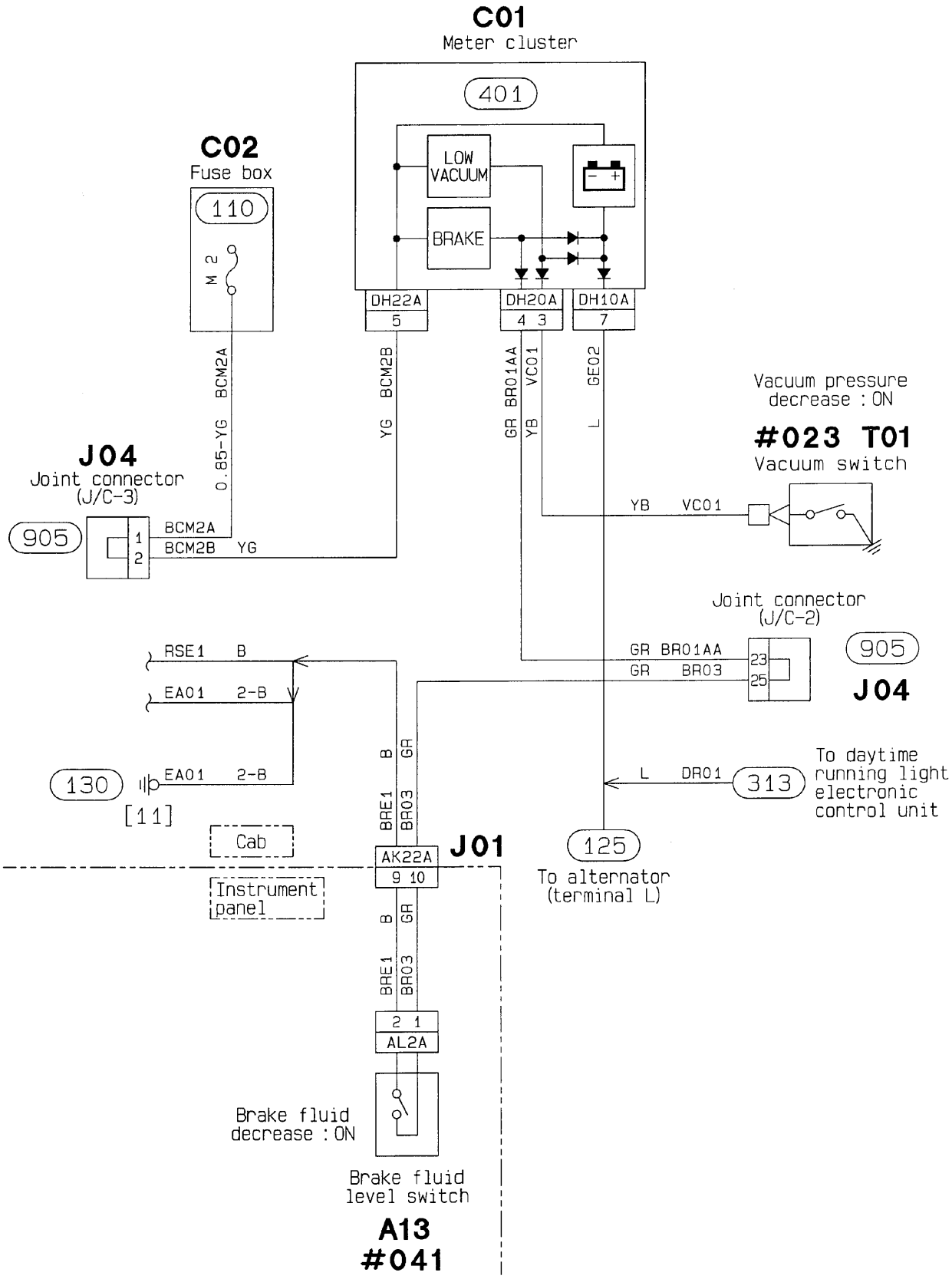
https://truckmanualshub.com/

M E M O

https://truckmanualshub.com/

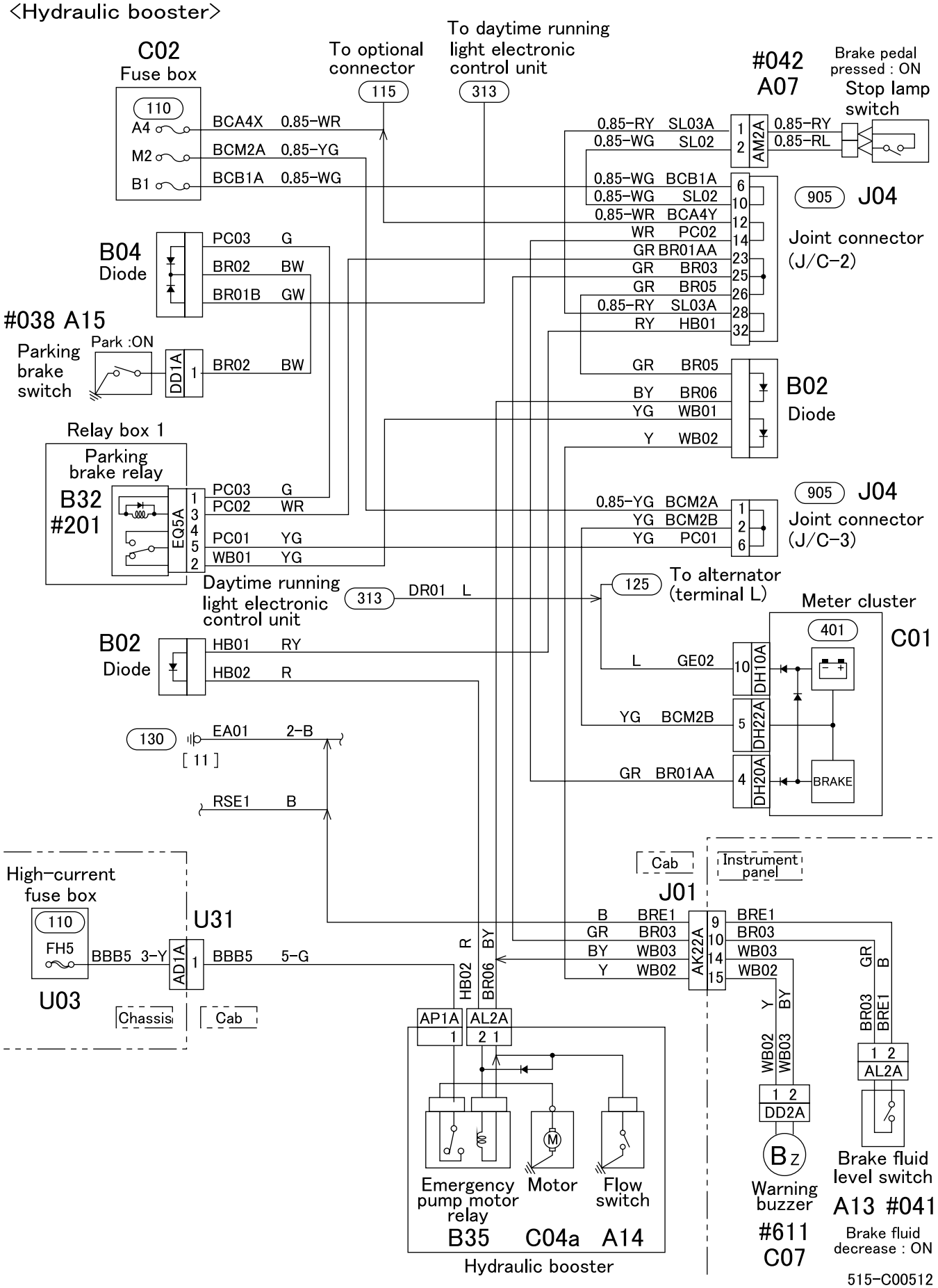
515 BRAKE WARNING CIRCUIT

<Except hydraulic booster>



C00511

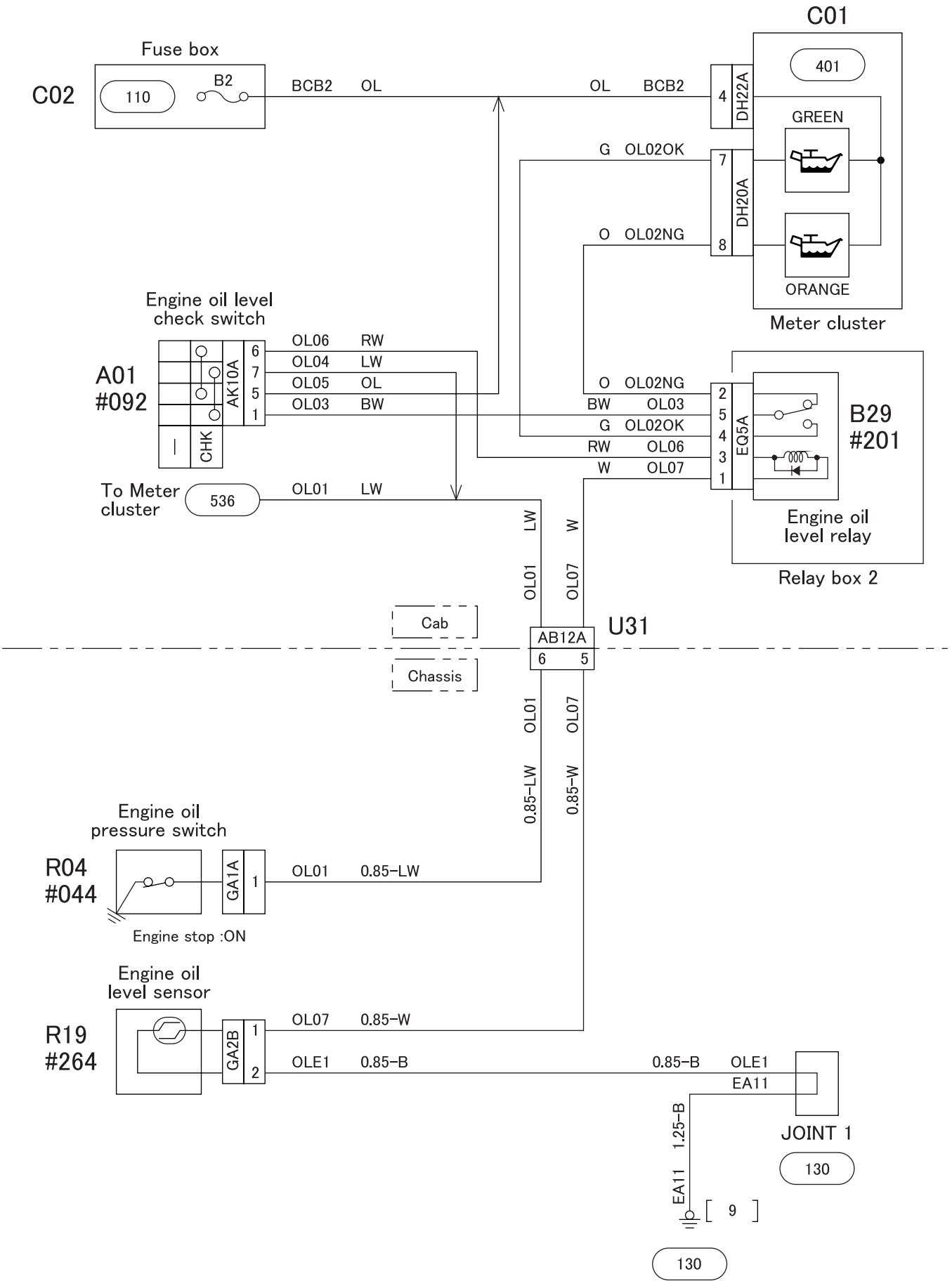
<Hydraulic booster>



515-C00512

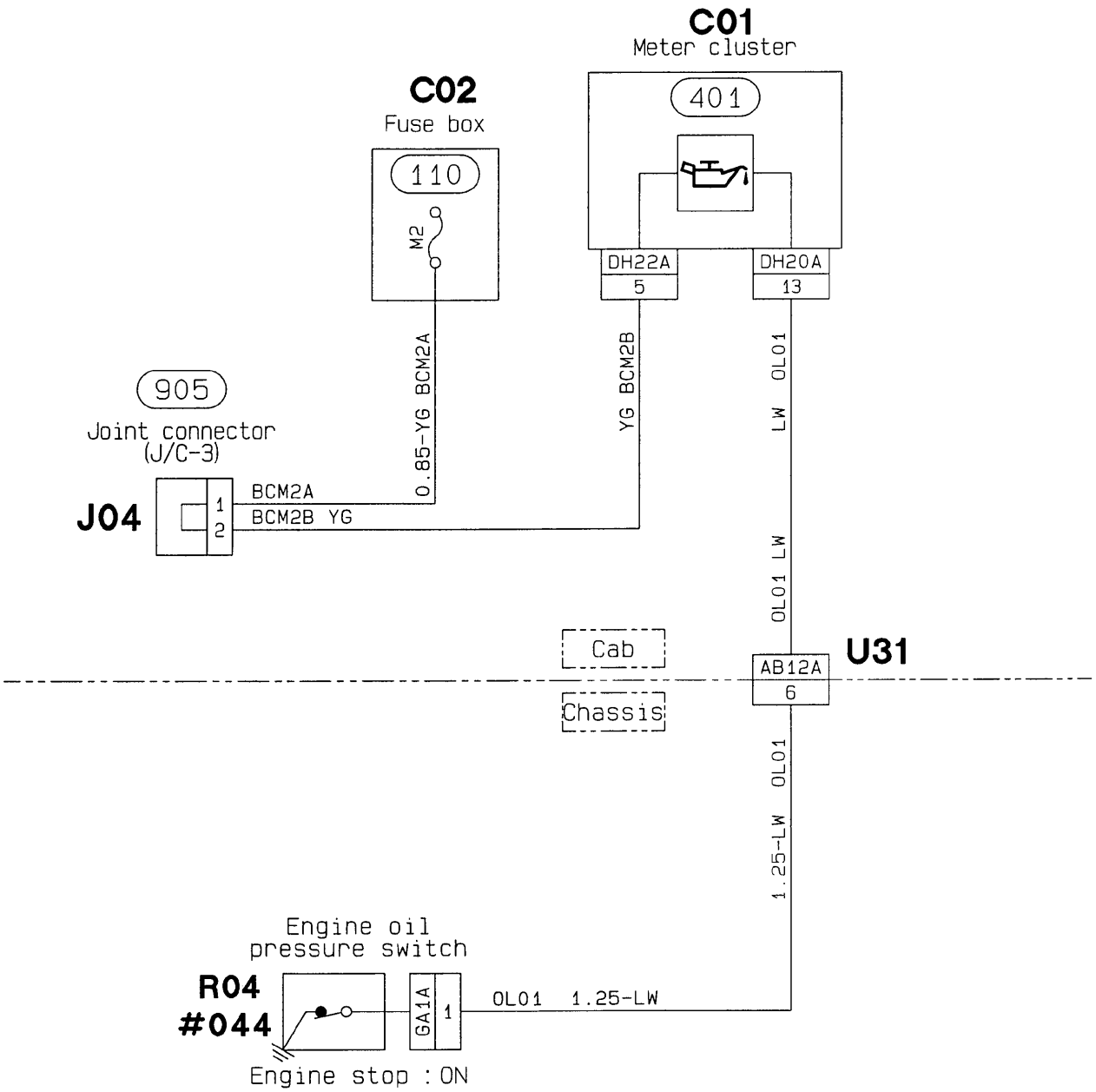
https://truckmanualshub.com/

535 ENGINE OIL LEVEL WARNING CIRCUIT



535-C04910

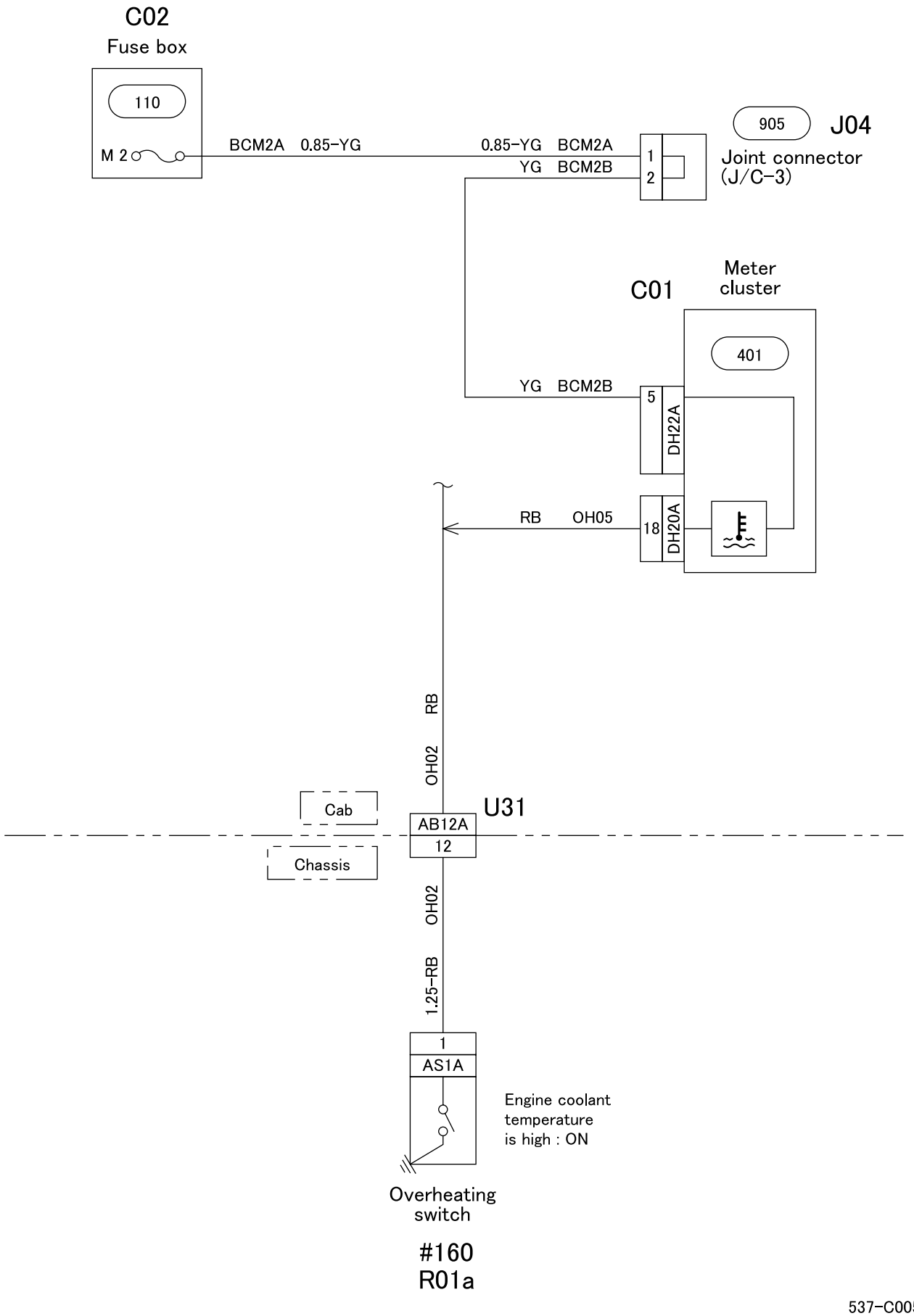
https://truckmanualshub.com/



C00514

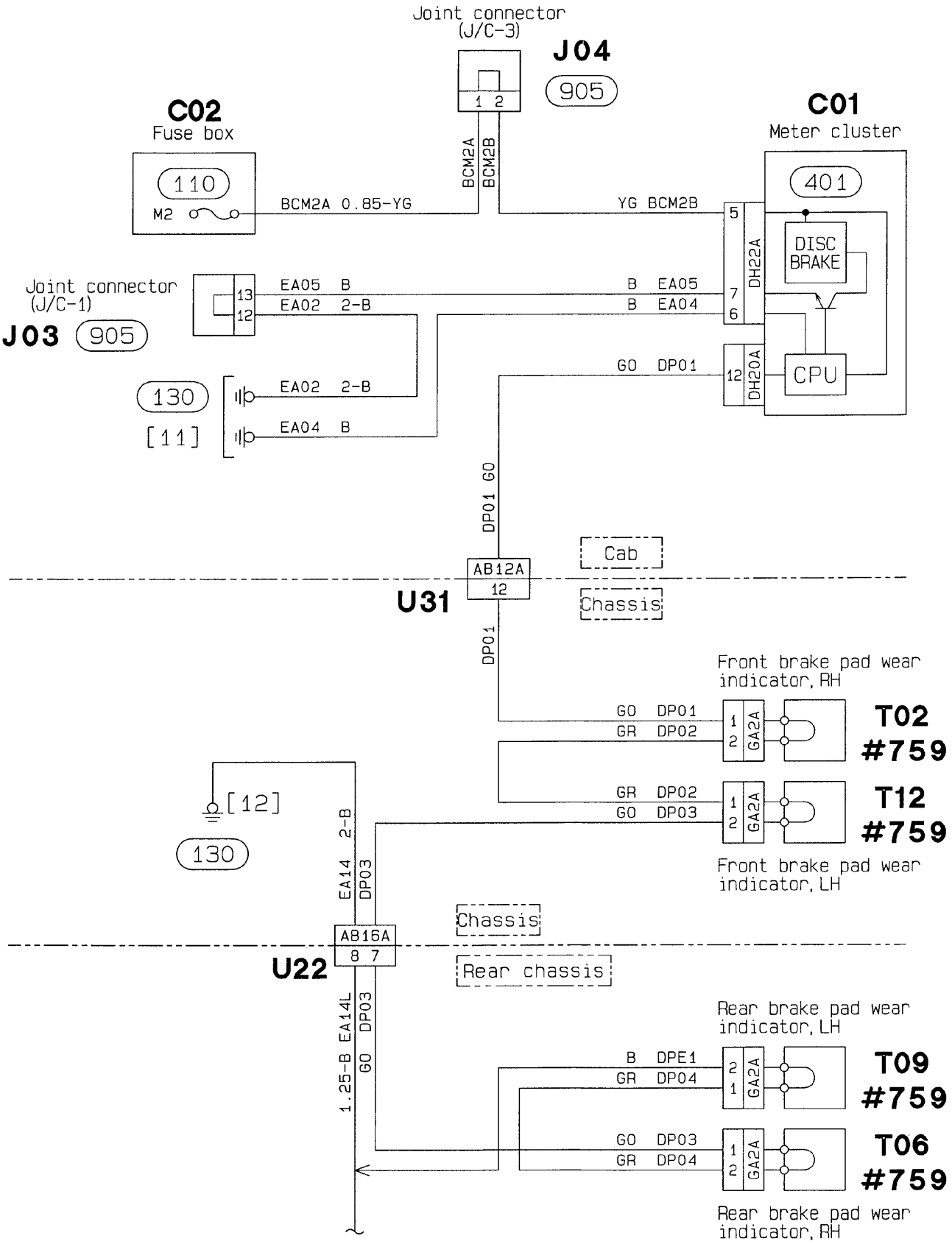
https://truckmanualshub.com/

537 OVERHEATING WARNING CIRCUIT



537-C00515

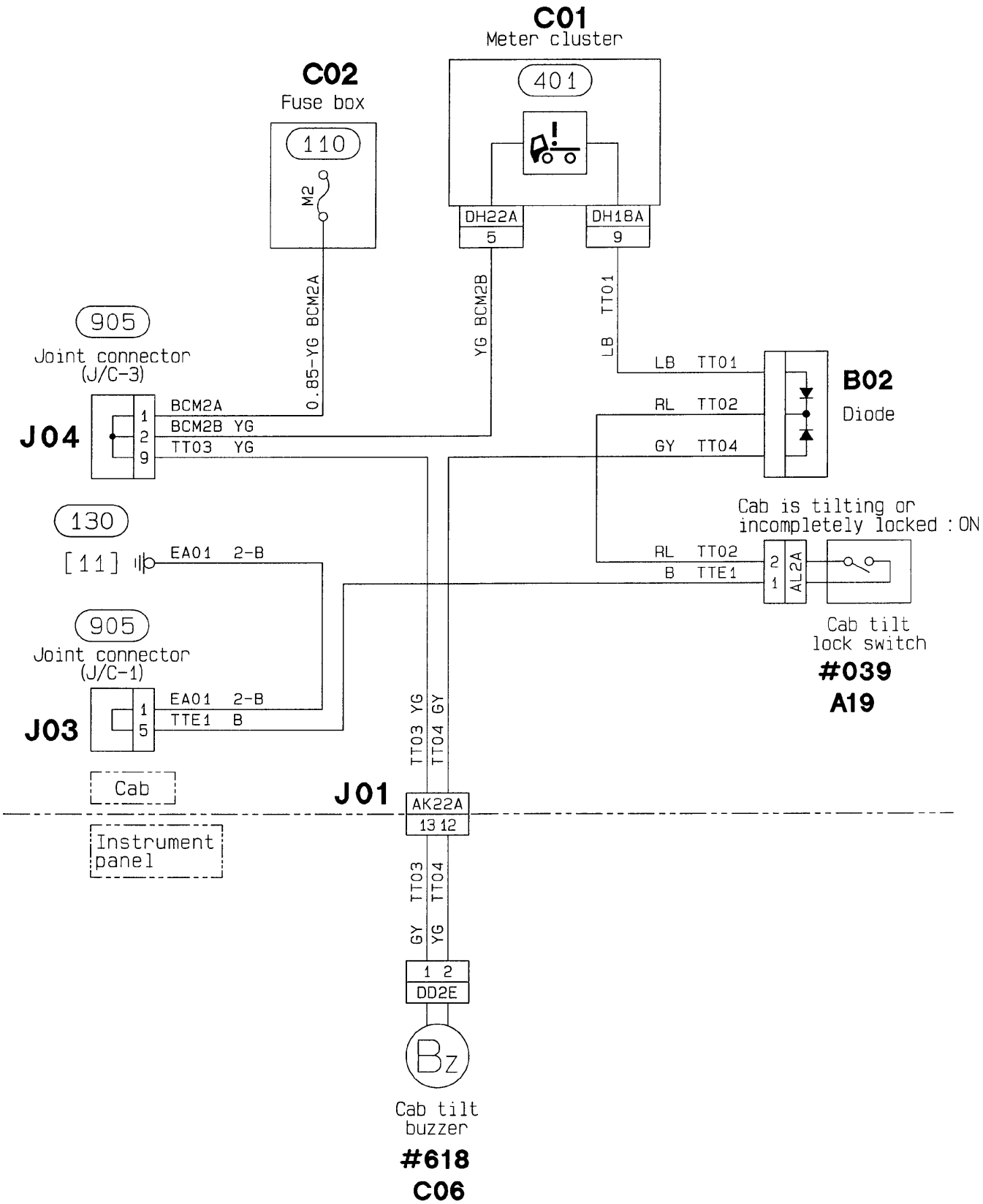
https://truckmanualshub.com/



C00516

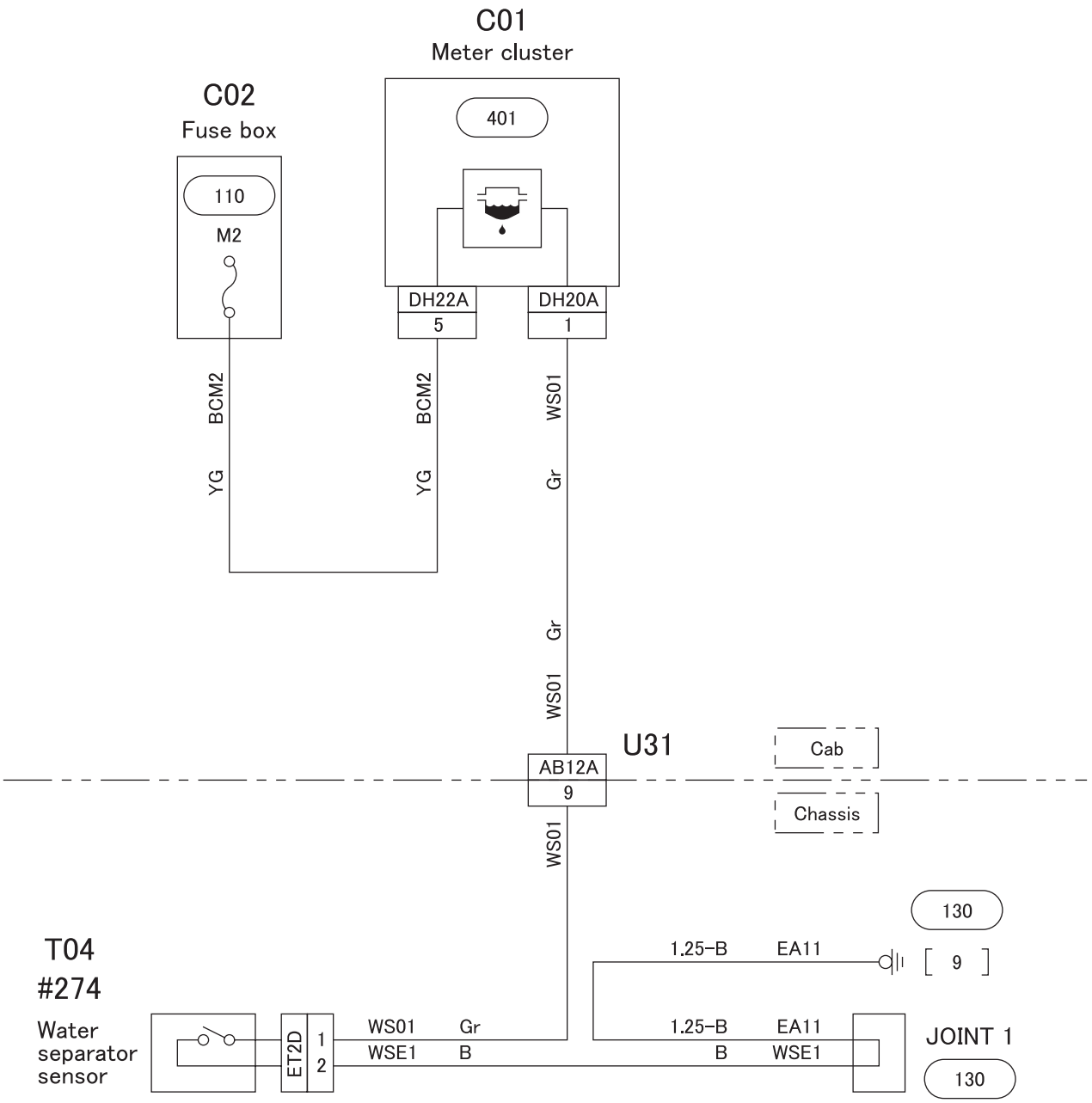
https://truckmanualshub.com/

550 CAB TILT WARNING CIRCUIT



C00517

https://truckmanualshub.com/



If the accumulated water exceeds
the specified limit, the switch turns ON

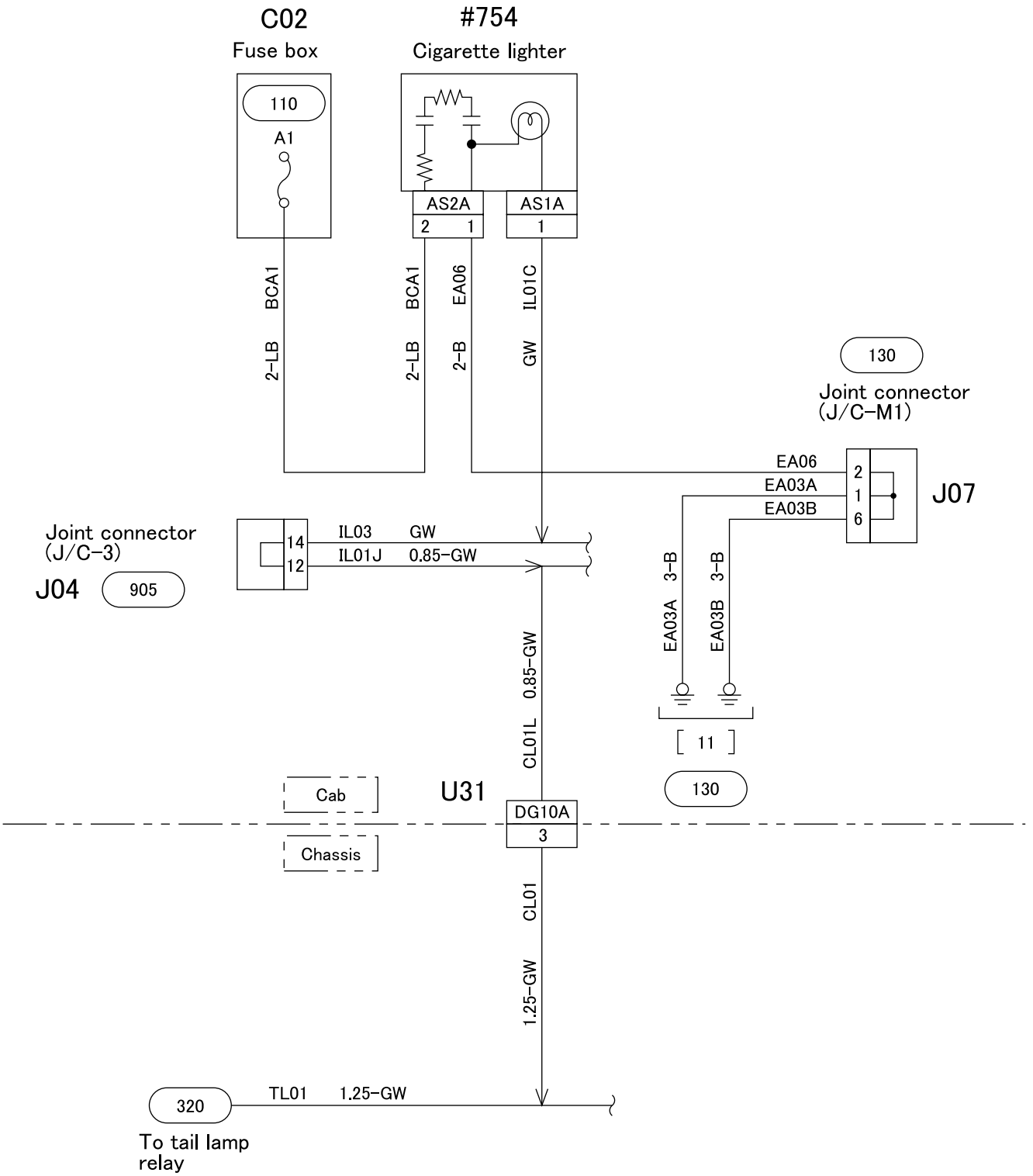
566-C04911

https://truckmanualshub.com/

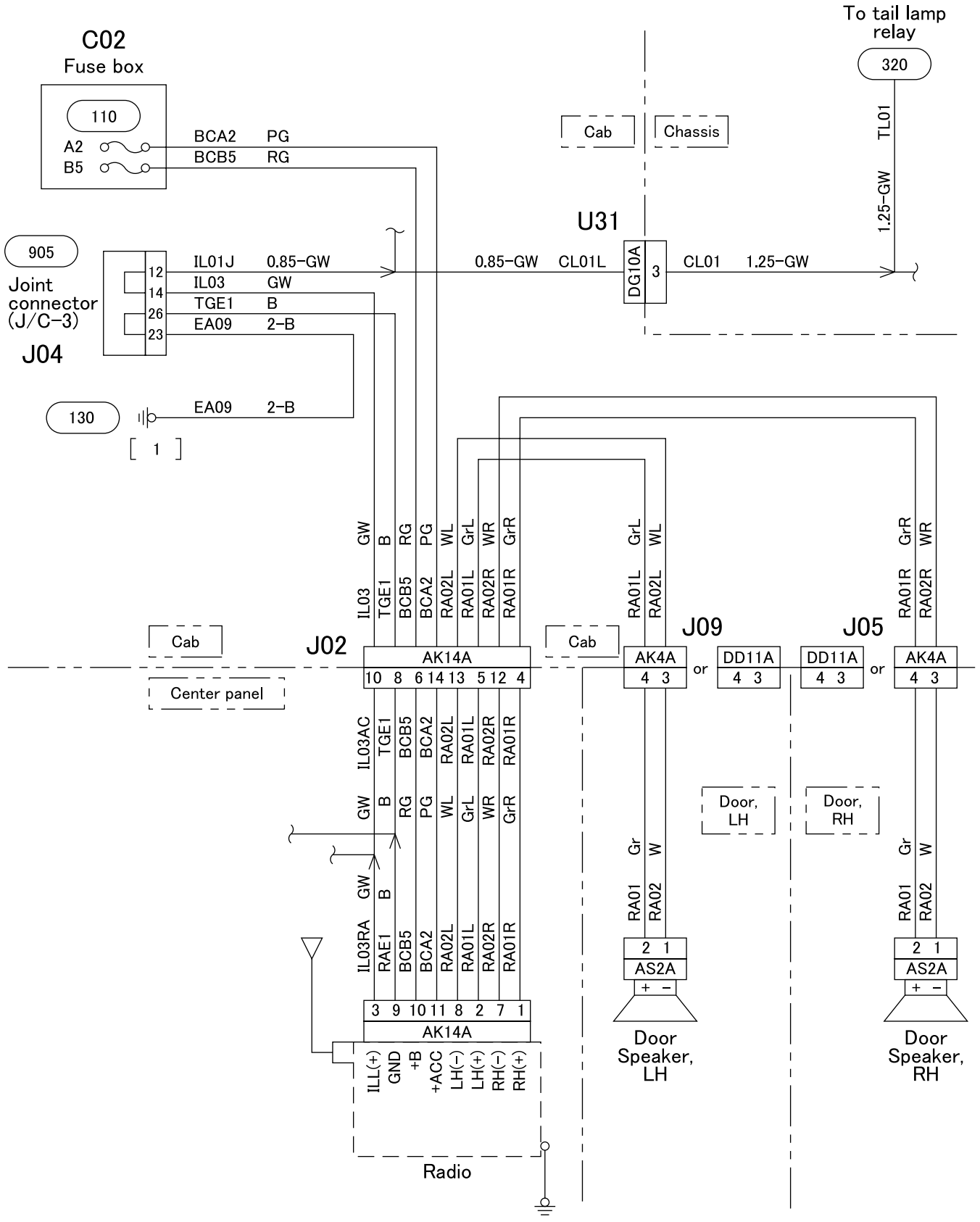
54-06 CAB SIDE ELECTRICAL CIRCUIT

https://truckmanualshub.com/

610 CIGARETTE LIGHTER CIRCUIT



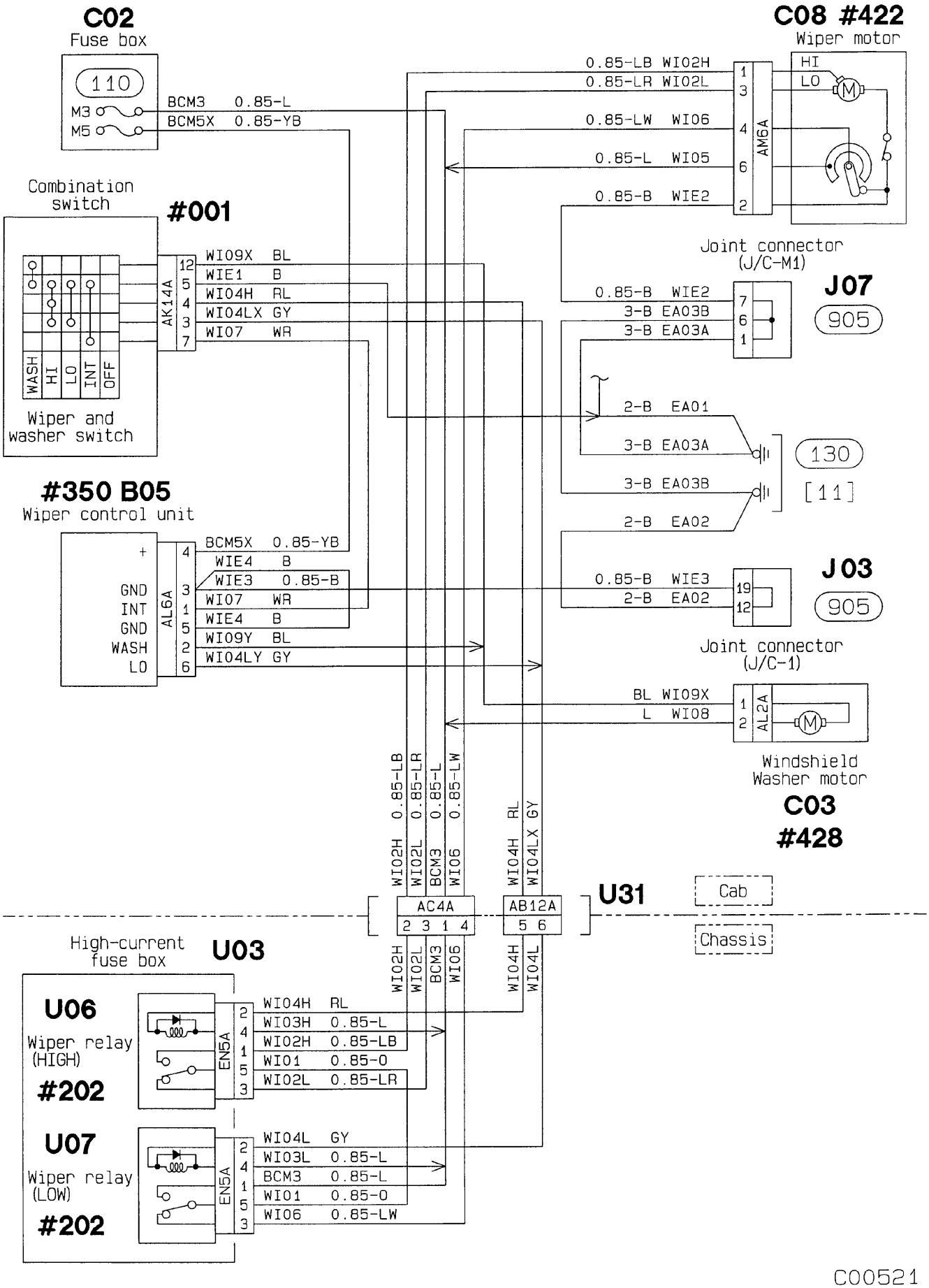
610-C00519

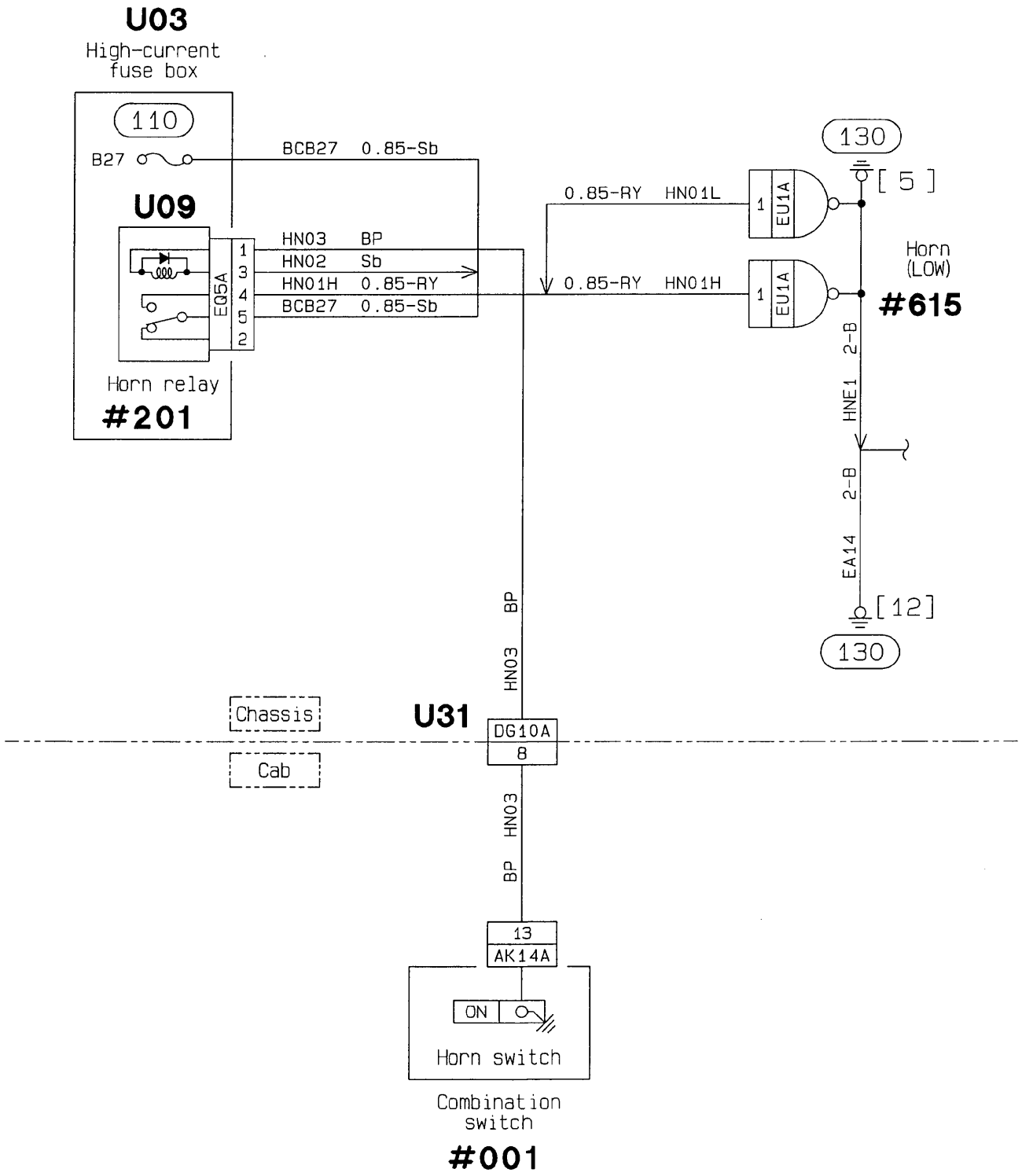

C02
Fuse box
110
A2
B5
BCA2 PG
BCB5 RG
To tail lamp relay
320
TL01
1.25-GW
Cab
Chassis
U31
905
Joint connector (J/C-3)
J04
12
14
26
23
IL01J 0.85-GW
IL03 GW
TGE1 B
EA09 2-B
0.85-GW CL01L
DG10A
3
CL01 1.25-GW
130
EA09 2-B
1
Cab
J02
AK14A
10 8 6 14 13 5 12 4
Center panel
IL03 GW
TGE1 B
BCB5 RG
BCA2 PG
RA02L WL
RA01L GrL
RA02R WR
RA01R GrR
IL03AC
GW
IL03RA
RAE1
GW B
RA01L GrL WL
RA02L
RA02R WR
RA01R GrR
Cab
J09
AK4A
4 3
or
DD11A
4 3
J05
DD11A
4 3
or
AK4A
4 3
Door, LH
Door, RH
RA01 Gr
RA02 W
2 1
AS2A
+ −
Door Speaker, LH
Door Speaker, RH
3 9 10 11 8 2 7 1
AK14A
ILL(+)
GND
+B
+ACC
LH(−)
LH(+)
RH(−)
RH(+)
Radio

612-C00520

https://truckmanualshub.com/

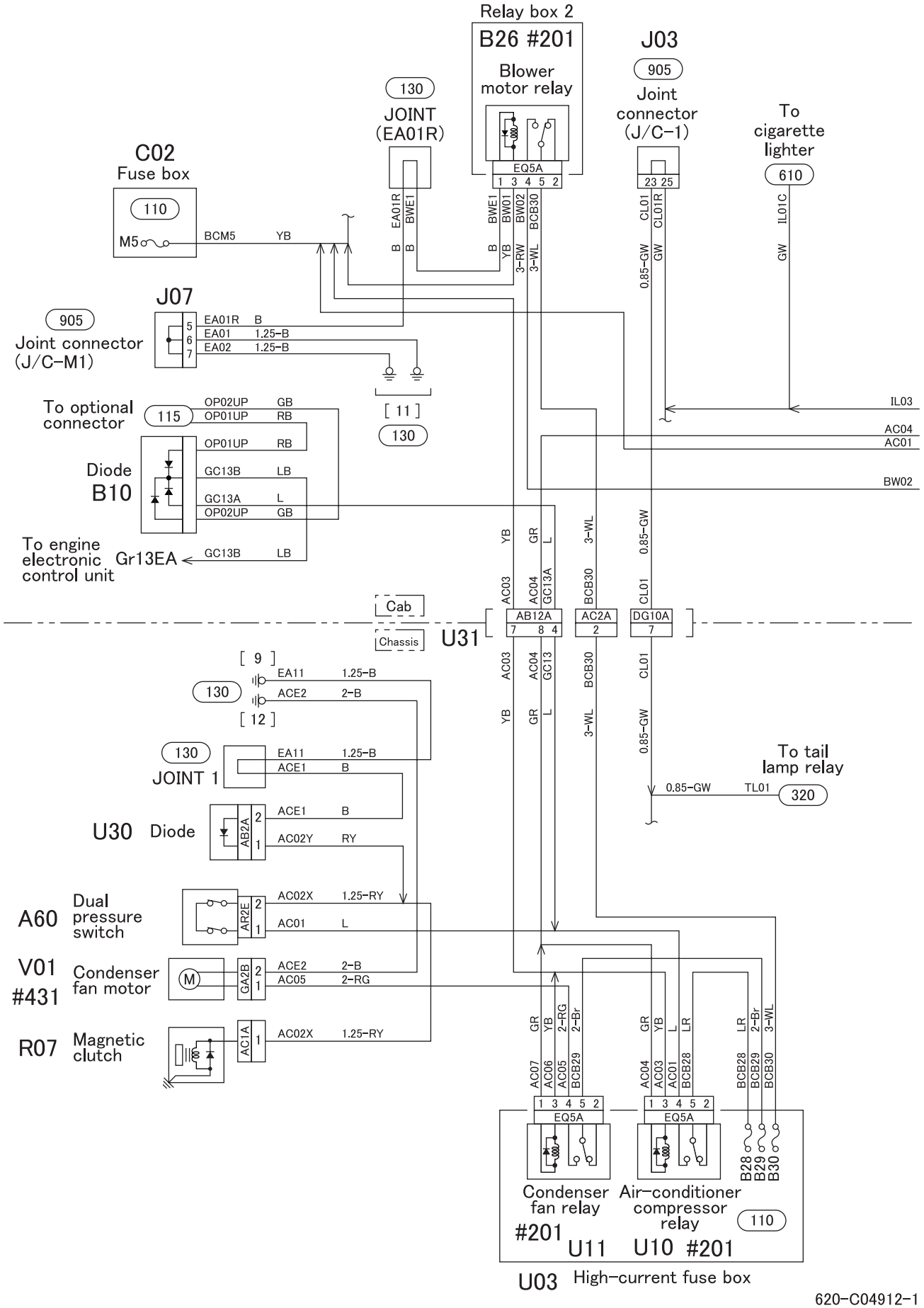
614 WIPER AND WASHER CIRCUIT



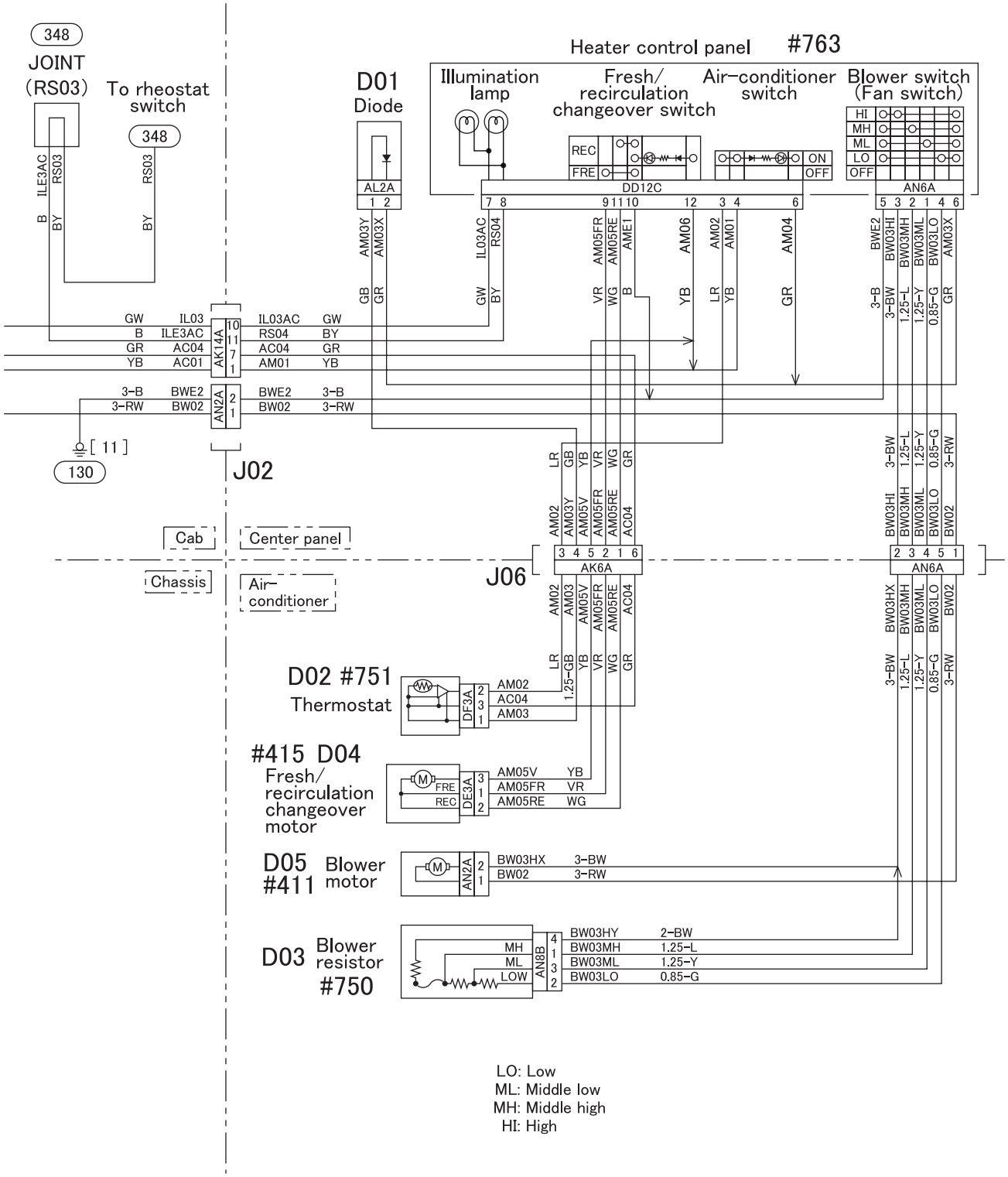

U03
High-current fuse box
110
B27
BCB27 0.85-Sb
U09
EQ5A
1
3
4
5
2
HN03 BP
HN02 Sb
HN01H 0.85-RY
BCB27 0.85-Sb
Horn relay
#201
130
[5]
0.85-RY HN01L
0.85-RY HN01H
1
EU1A
Horn (LOW)
#615
2-B
HNE1
2-B
EA14
[12]
130
BP
HN03
Chassis
Cab
U31
DG10A
8
BP HN03
13
AK14A
ON
Horn switch
Combination switch
#001

C00522

https://truckmanualshub.com/



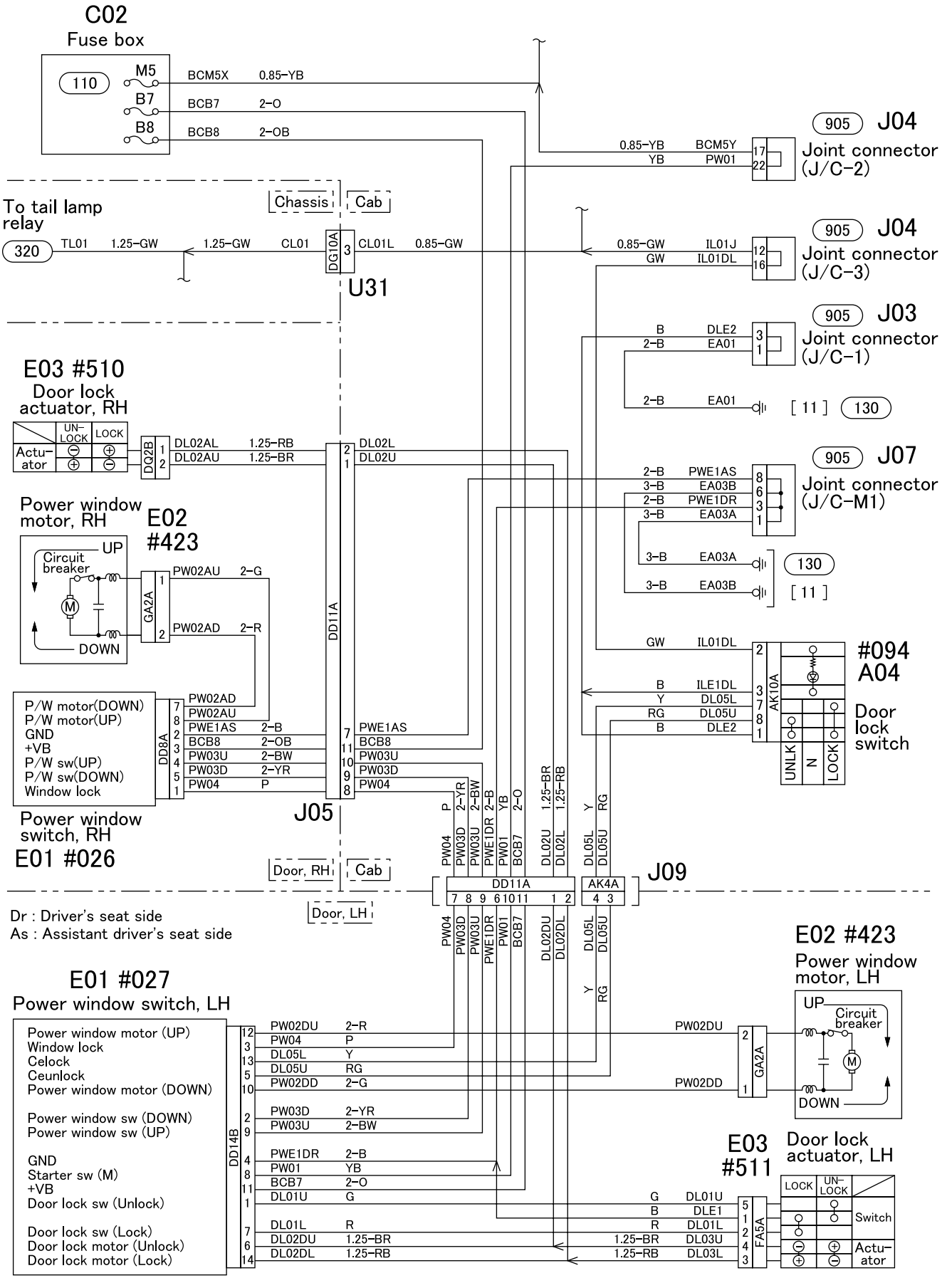
620-C04912-1



LO: Low
ML: Middle low
MH: Middle high
HI: High

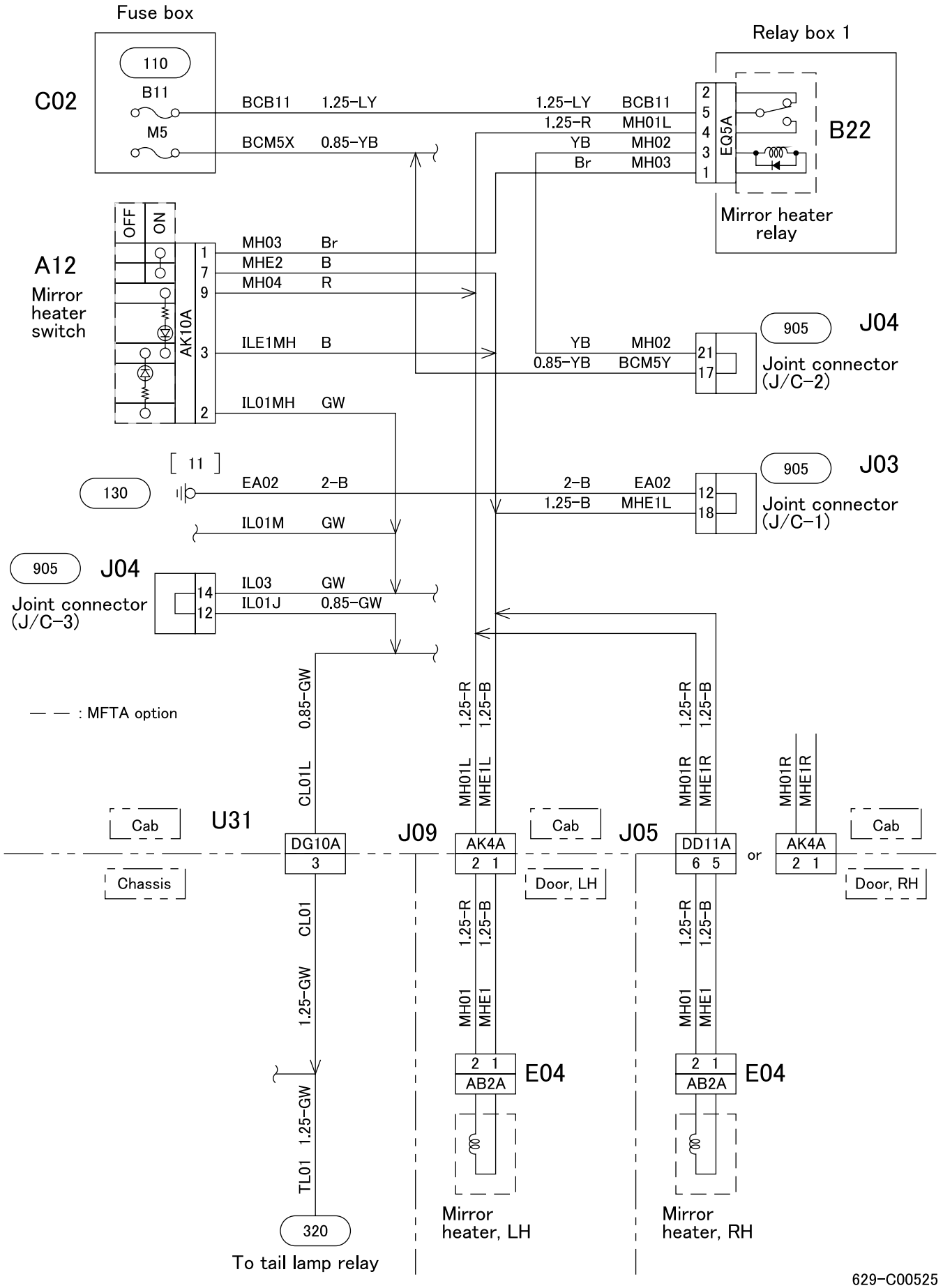
https://truckmanualshub.com/

622 POWER WINDOW AND CENTRAL DOOR LOCK CIRCUIT



622-C00524

https://truckmanualshub.com/

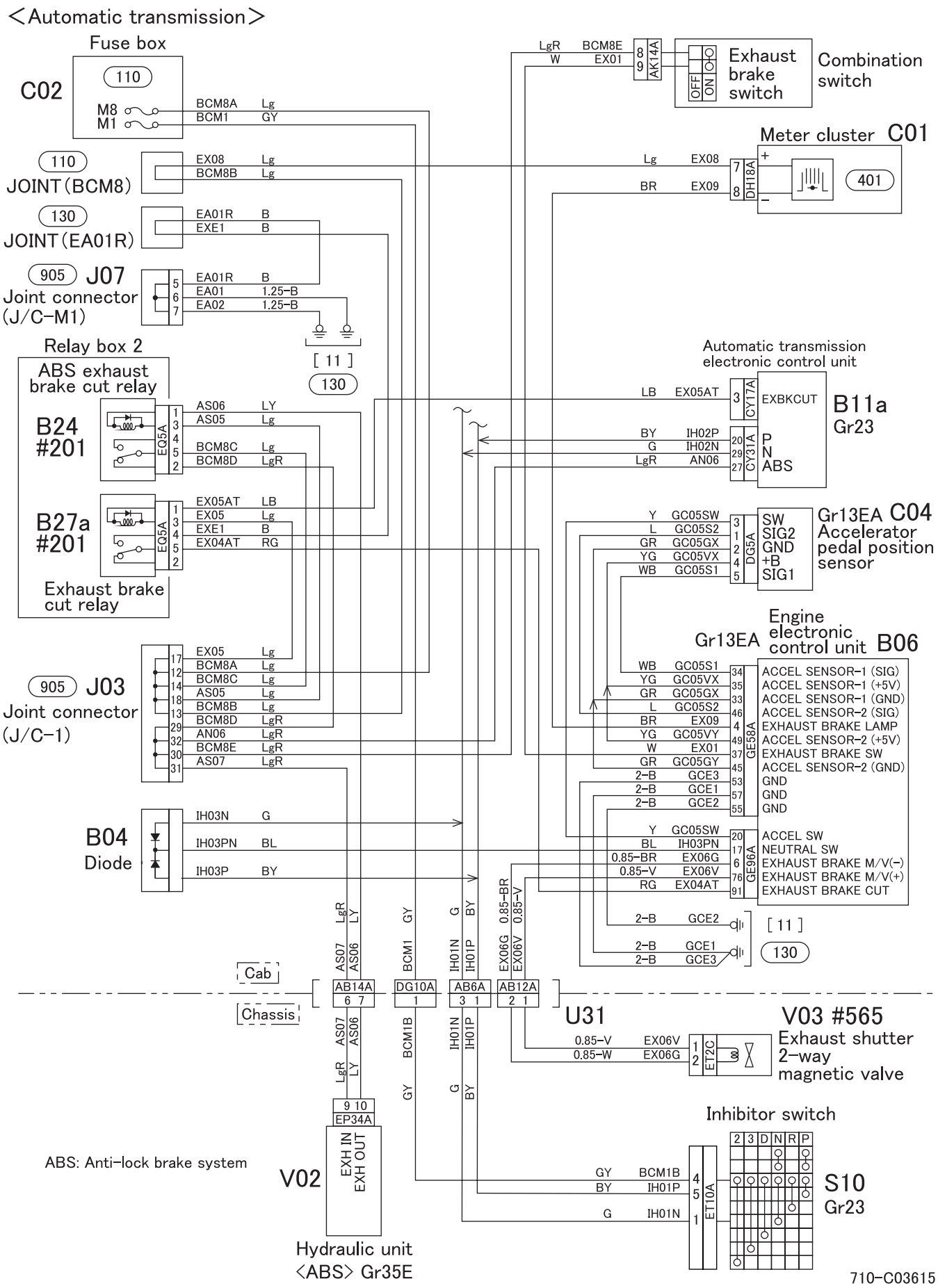


629-C00525

https://truckmanualshub.com/

54-07 CHASSIS SIDE ELECTRICAL CIRCUIT

https://truckmanualshub.com/



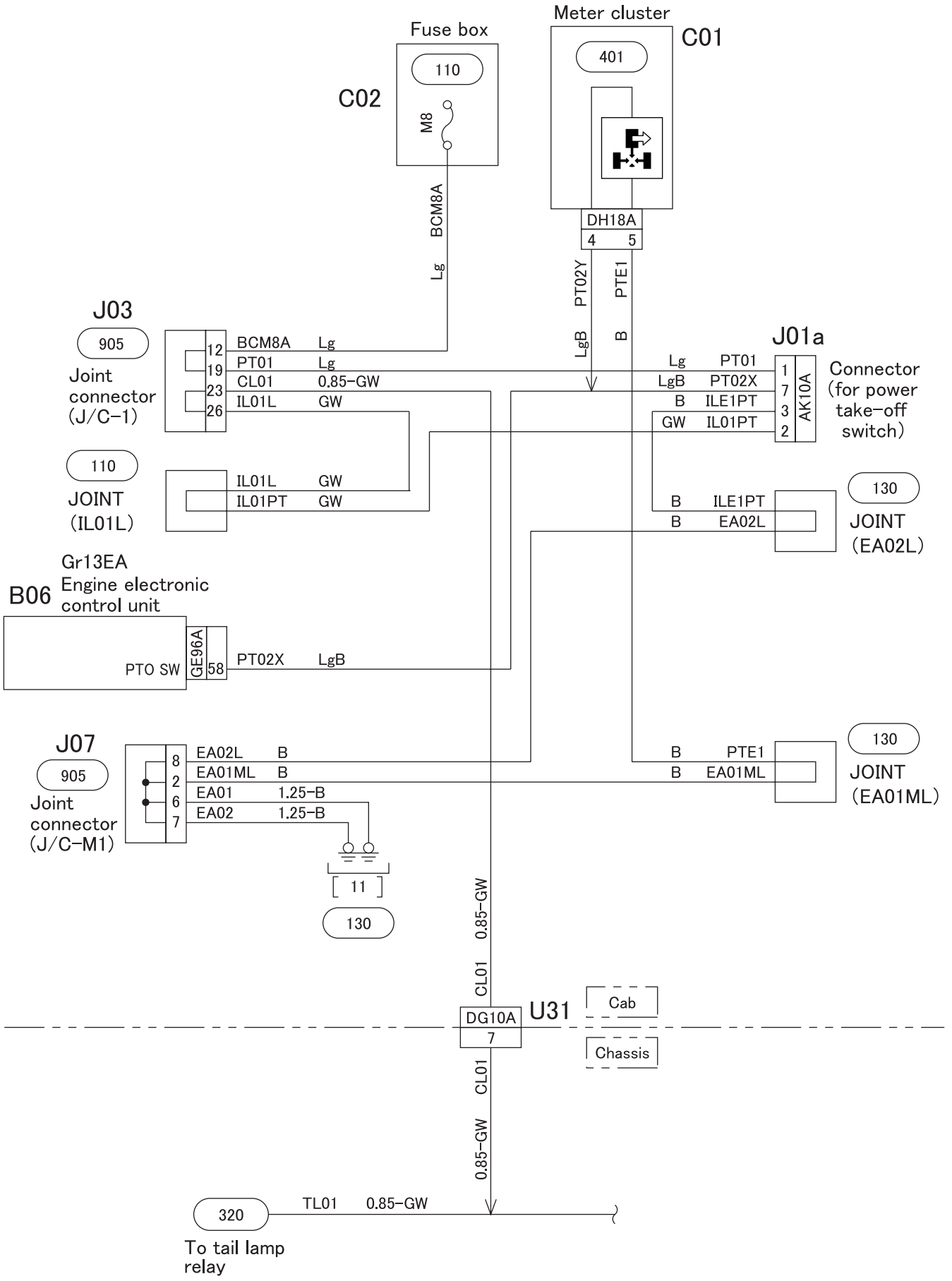
710-C03615

https://truckmanualshub.com/

54-08 ENGINE AND TRANSMISSION SIDE ELECTRICAL CIRCUIT

https://truckmanualshub.com/

850 TRANSMISSION POWER TAKE-OFF CIRCUIT



850-C04913

https://truckmanualshub.com/

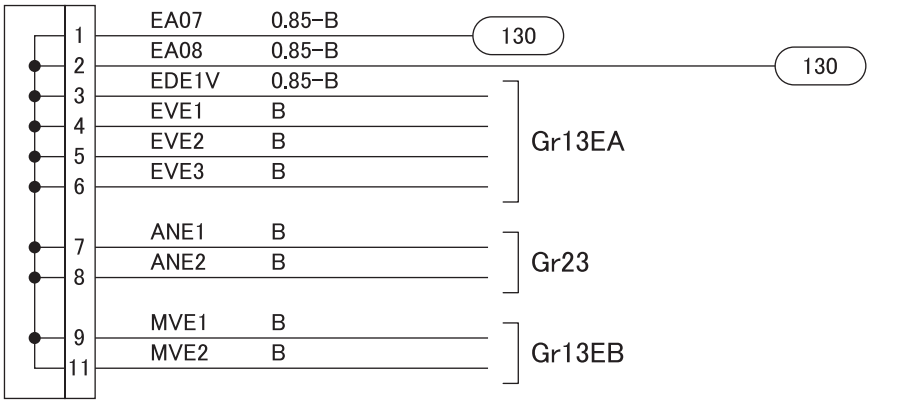
54-09 OTHER CIRCUIT

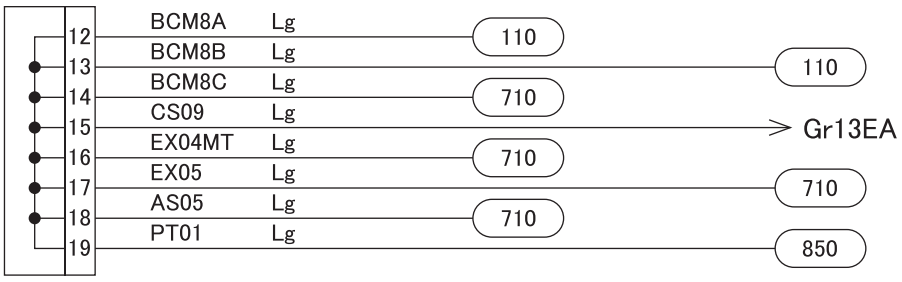
https://truckmanualshub.com/

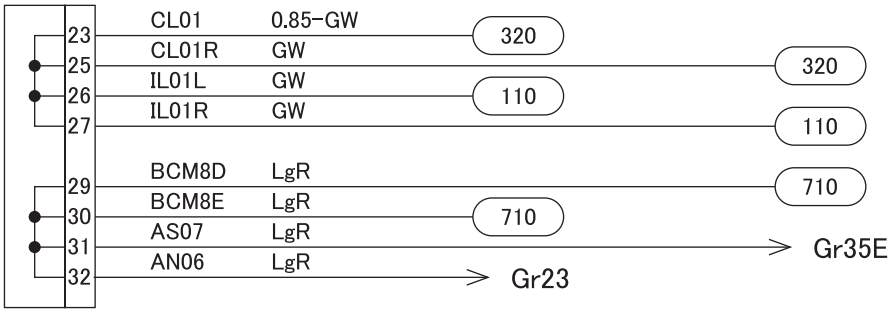
905 JOINT CONNECTOR (J/C)

(J/C-1)

1	2	3	4	5	6	7	8	9	10	11
EA07	EA08	EDE1V	EVE1	EVE2	EVE3	ANE1	ANE2	MVE1		MVE2
12	13	14	15	16	17	18	19	20	21	22
BCM8A	BCM8B	BCM8C	CS09	EX04MT	EX05	AS05	PT01	—		—
23	24	25	26	27	28	29	30	31	32	33
CL01		CL01R	IL01L	IL01R	—	BCM8D	BCM8E	AS07	AN06	—







905-C05184

(J/C-2)

1	2	3	4	5	6	7	8	9	10	11
IJ01V	IJ01Vs	IJ02V	IJ02Vs	IJ03V	IJ03Vs	IJ04V	IJ04Vs		CS12A	CS12B

12	13	14	15	16	17	18	19	20	21	22
IJ01G	IJ01Gs	IJ02G	IJ02Gs	IJ03G	IJ03Gs	IJ04G	IJ04Gs		—	—

1	IJ01V	2-G
2	IJ01Vs	1.25-G
3	IJ02V	2-Y
4	IJ02Vs	1.25-Y
5	IJ03V	2-W
6	IJ03Vs	1.25-W
7	IJ04V	2-L
8	IJ04Vs	1.25-L
10	CS12A	G
11	CS12B	G

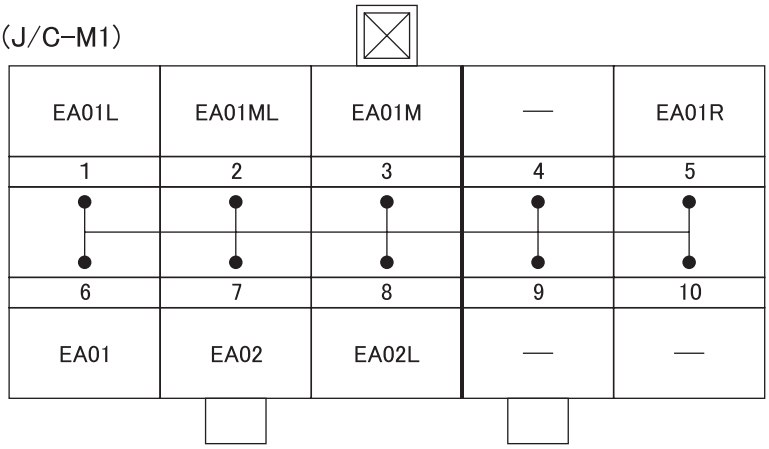
Gr13EA

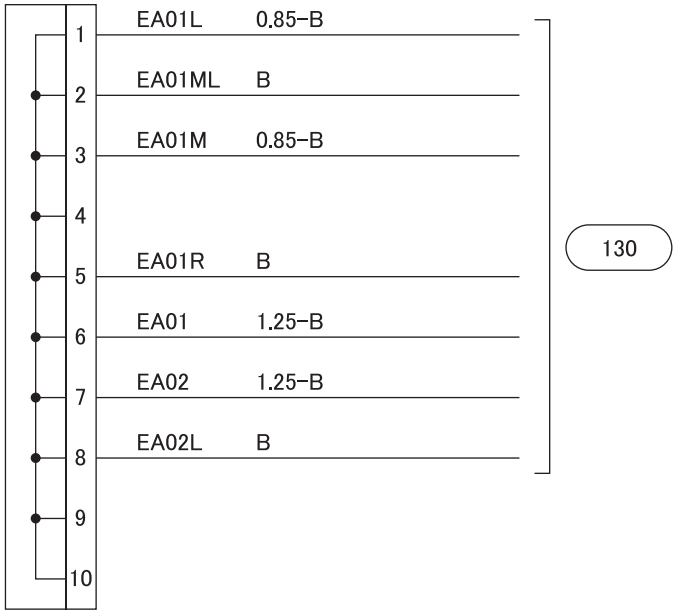
12	IJ01G	2-WR
13	IJ01Gs	1.25-WR
14	IJ02G	2-WB
15	IJ02Gs	1.25-WB
16	IJ03G	2-RB
17	IJ03Gs	1.25-RB
18	IJ04G	2-RW
19	IJ04Gs	1.25-RW

Gr13EA

https://truckmanualshub.com/

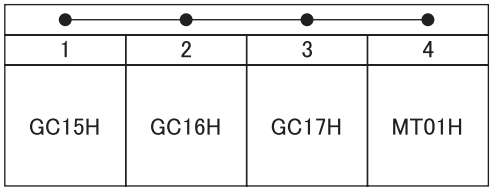
(J/C-M1)

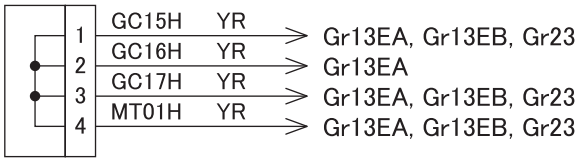




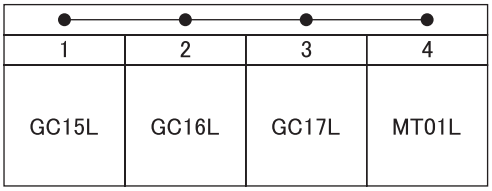
905-C03619

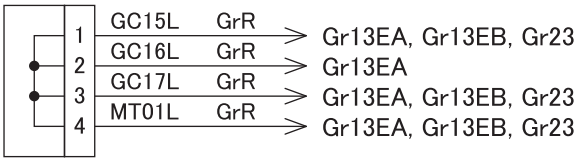
(J/C-040)



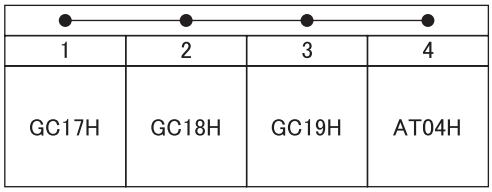


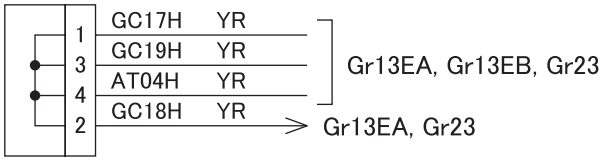
(J/C-040)



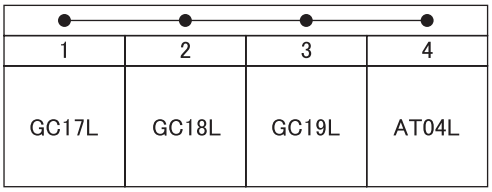


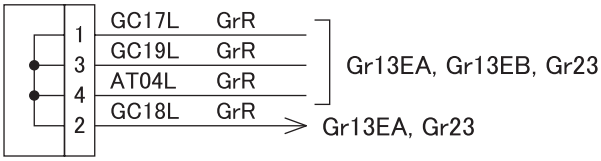
(J/C-040)



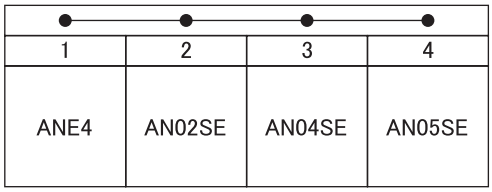


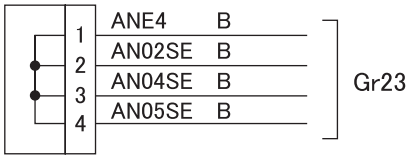
(J/C-040)



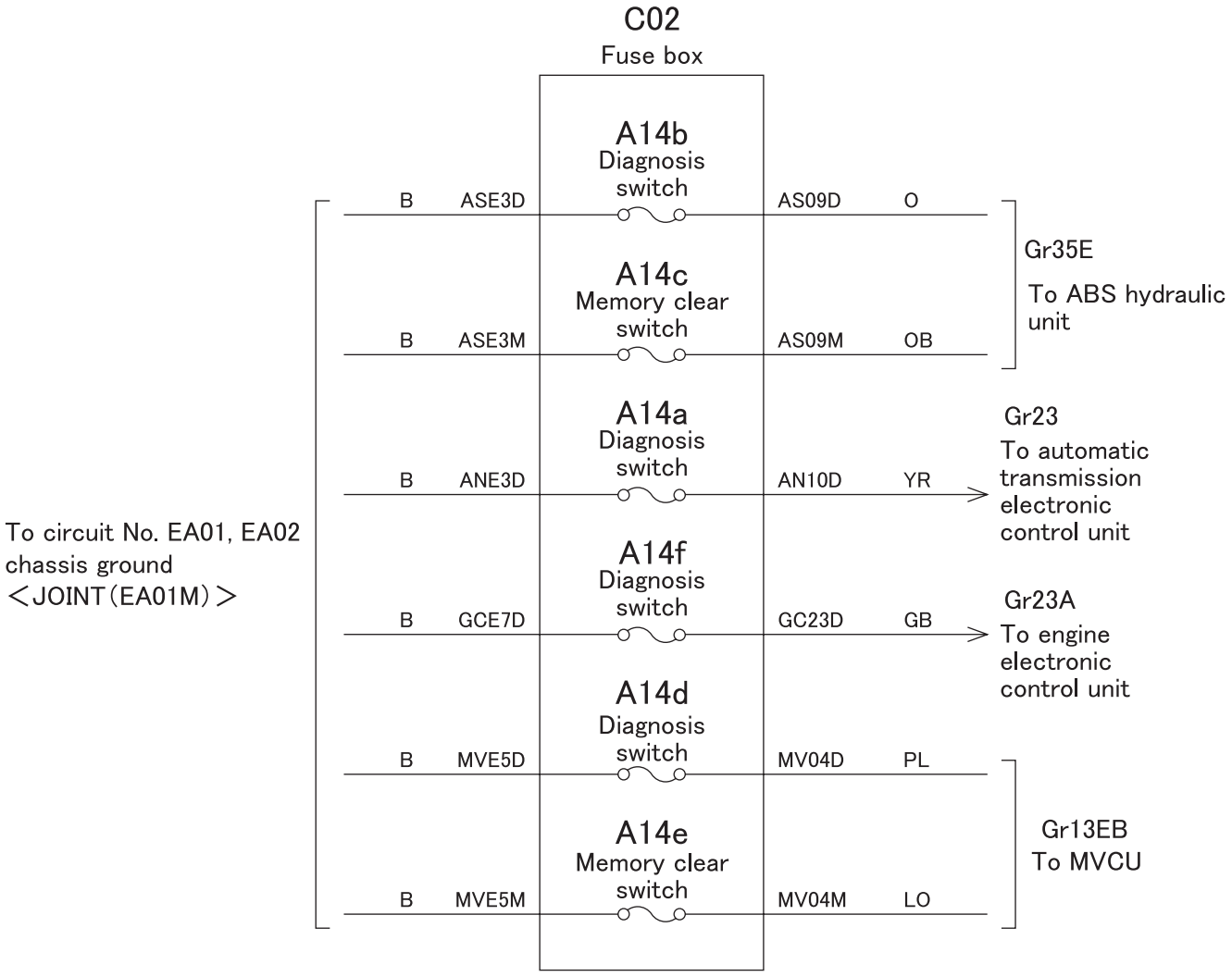


(J/C-040)





https://truckmanualshub.com/



The fuse is substituted for diagnosis switch and the memory clear switch.

MVCU : Multifunction vehicle control unit
ABS : Anti-lock brake system

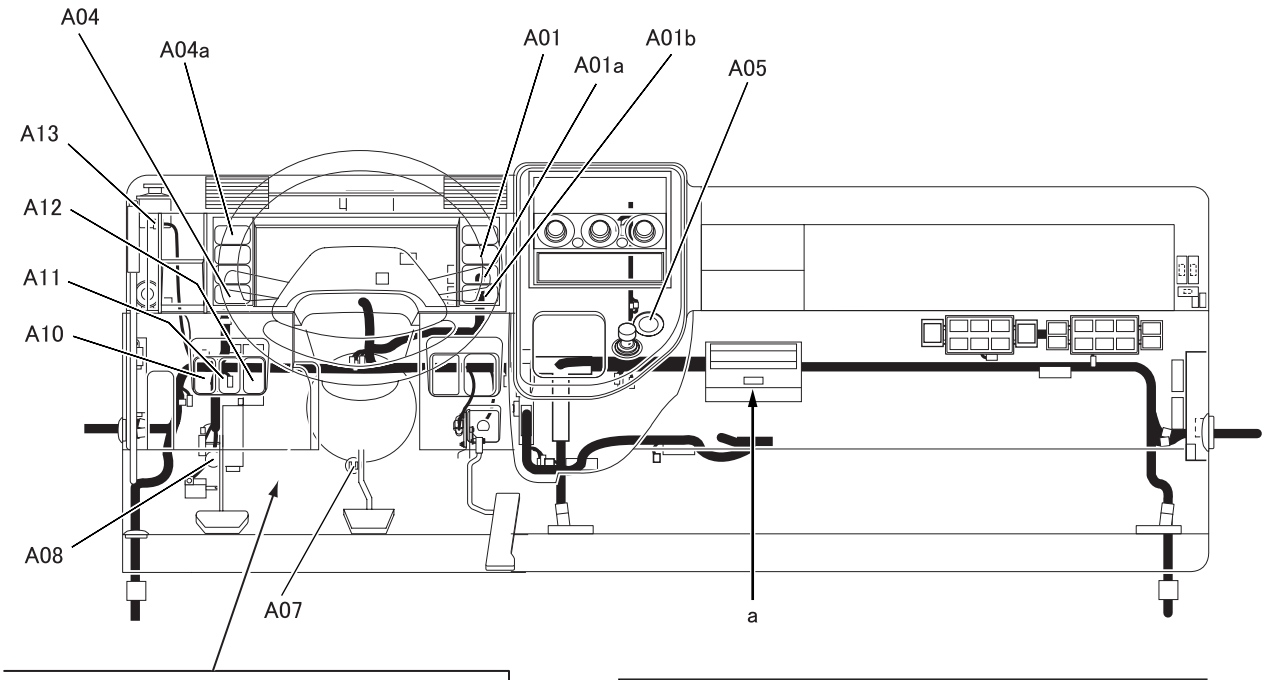
907-C03620

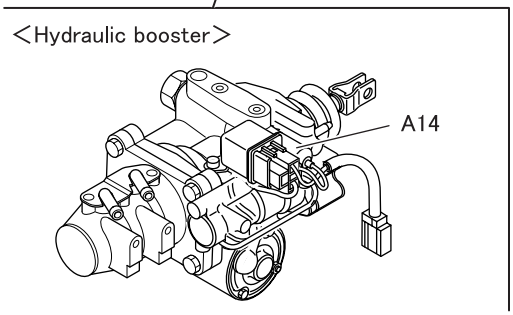
https://truckmanualshub.com/

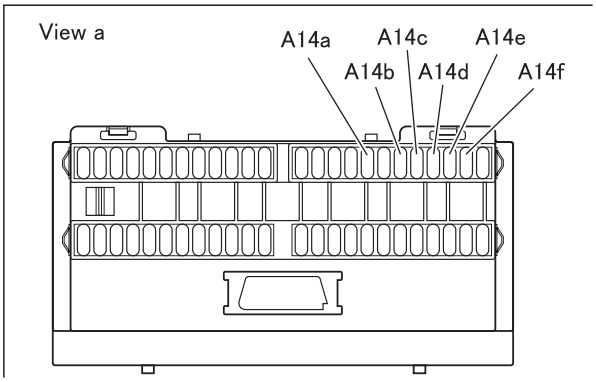
54-10 ELECTRICAL EQUIPMENT INSTALLATION POSITIONS

https://truckmanualshub.com/

A01 to 14







No relevant parts in a missing number

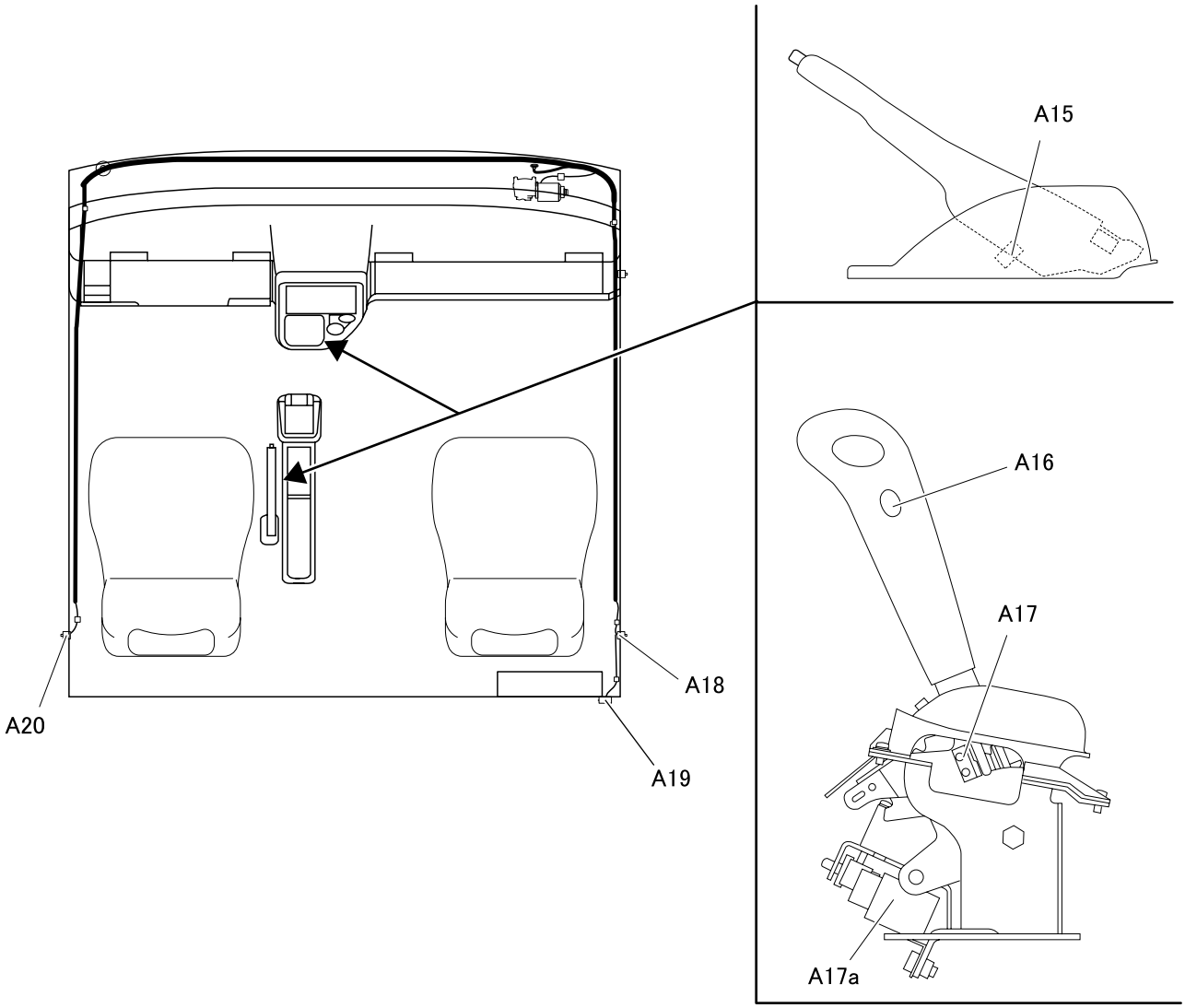
A01	Engine oil level check switch
A01a	Cruise control main switch <A/T>
A01b	Set and resume switch <A/T>
A04	Door lock switch
A04a	DPF cleaning switch
A05	Hazard switch
A07	Stop lamp switch
A08	Clutch switch (upper)
A10	Van body dome light switch
A11	Rheostat switch
A12	Mirror heater switch
A13	Brake fluid level switch
A14	Flow switch <With hydraulic booster>

A14a	Diagnosis switch <A/T>
A14b	Diagnosis switch <ABS>
A14c	Memory clear switch <ABS>
A14d	Diagnosis switch <MVCU>
A14e	Memory clear switch (MVCU)
A14f	Diagnosis switch <Engine ECU>

ECU : Electronic control unit
ABS : Anti-lock brake system
MVCU : Multifunction vehicle control unit
DPF : Diesel particulate filter
A/T : Automatic transmission
PTO : Power take-off
T/M : Transmission

L03481

A15 to 22



No relevant parts in a missing number

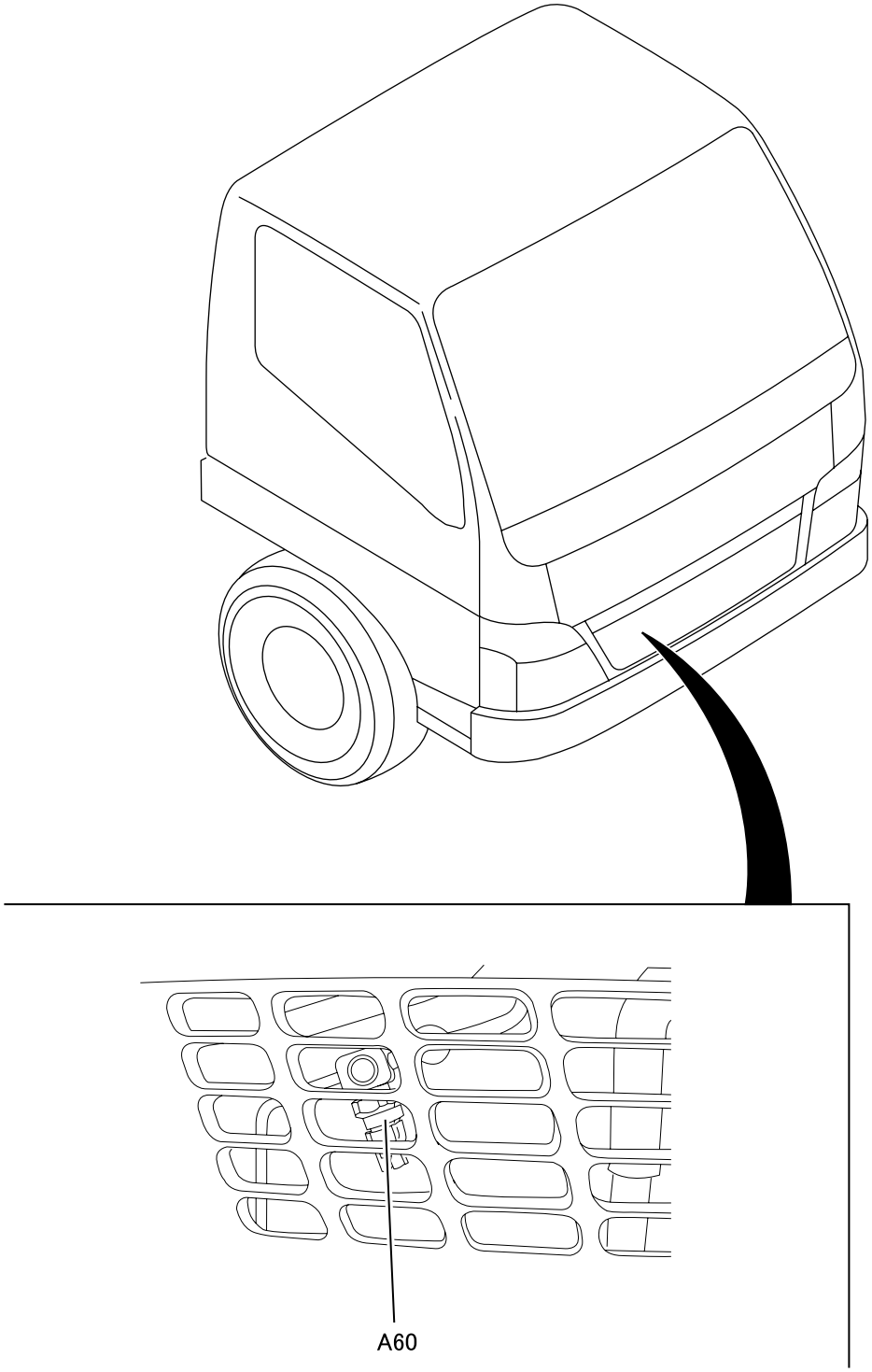
A15 Parking brake switch
A16 O/D switch <A/T>
A17 P range switch <A/T>
A17a Shift lock actuator <A/T>
A18 Front door switch, RH
A19 Cab tilt lock switch
A20 Front door switch, LH

A/T : Automatic transmission
O/D : Over drive

L01266

https://truckmanualshub.com/

A60

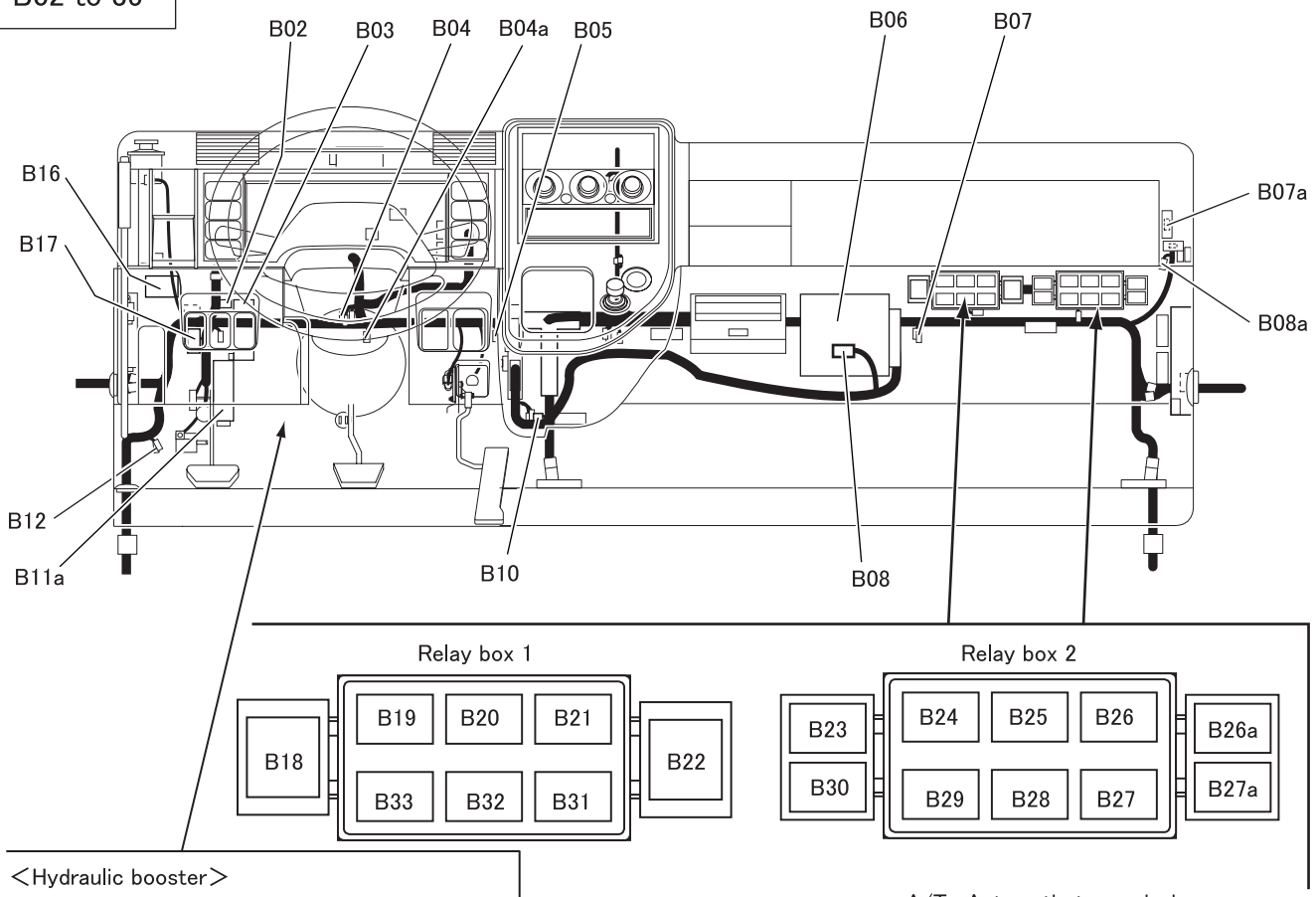


A60 Dual pressure switch ＜With air-conditioner＞

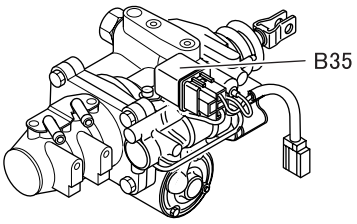
L00160

https://truckmanualshub.com/

B02 to 35



<Hydraulic booster>



A/T : Automatic transmission
ABS : Anti-lock brake system
ECU : Electronic control unit
M/T : Transmission
T/M : Transmission
EDU : Electronic drive unit
MVCU : Multifunction vehicle control unit

No relevant parts in a missing number

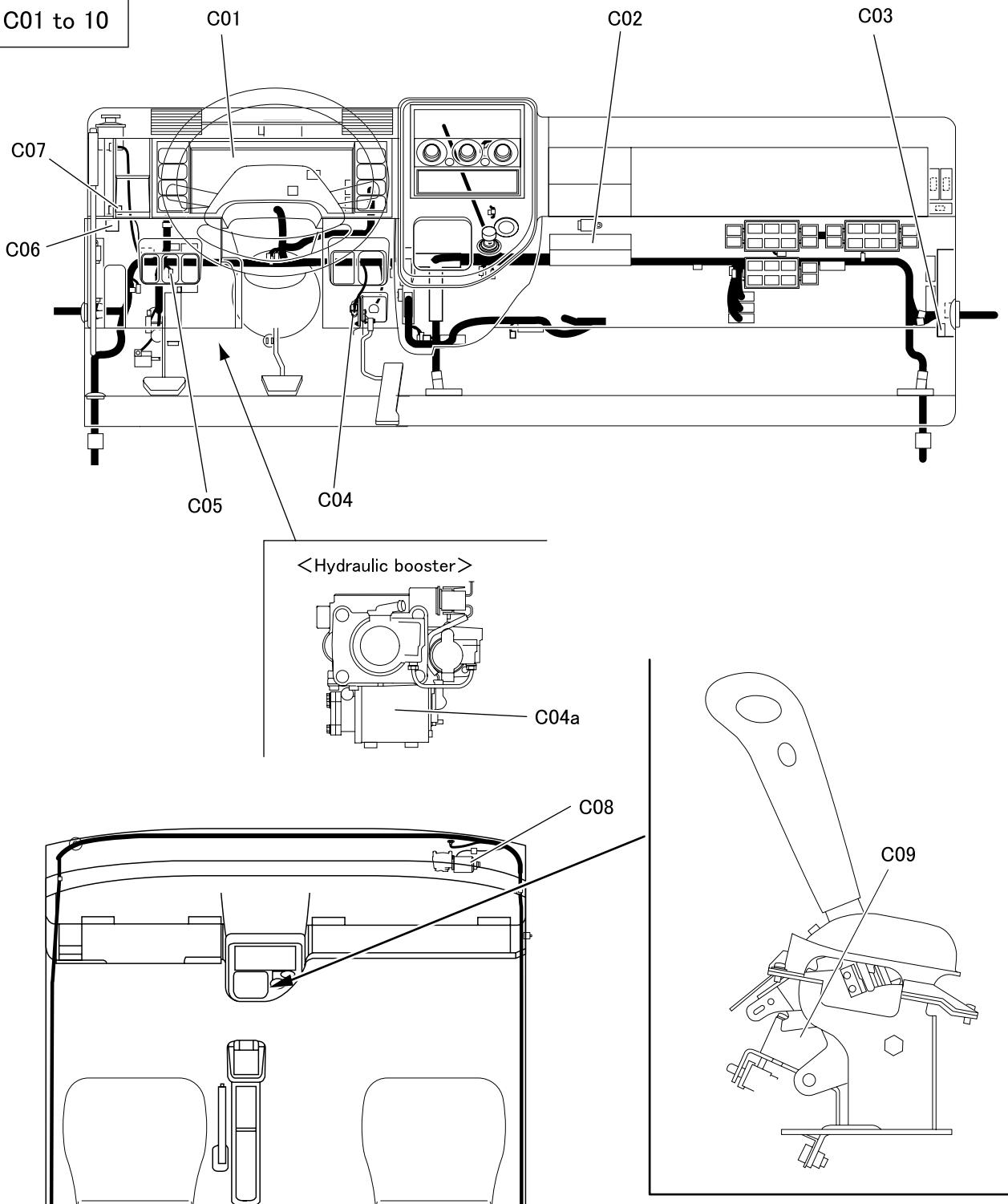
B02	Diode
B03	Flasher unit
B04	Diode
B04a	Diode
B05	Wiper electronic control unit
B06	Engine ECU
B07	Diode
B07a	Turbocharger EDU
B08	Resistor unit
B08a	Resistor unit
B10	Diode
B11a	A/T ECU
B12	Diode
	Resistor unit
B16	Daytime running light ECU
B17	Key interlock control unit
B18	Wiper relay (HIGH)
B19	Headlamp relay (LOW)
B20	Headlamp relay (HIGH)
B21	Stop lamp relay
B22	Wiper relay (LOW)
B23	Turn signal lamp relay
B24	ABS exhaust brake cut relay
B25	Glow drive relay
B26	Blower motor relay
B26a	Engine start relay <M/T>
	Neutral start relay <A/T>
B27	Mirror heater relay
B27a	T/M neutral relay <M/T>
	Exhaust brake cut relay <A/T>
B28	Overheating relay
B29	Engine oil level relay
B30	Daytime running light relay
B31	Cruise control main relay <MVCU>
B32	Parking brake relay <With hydraulic booster>
B33	Safety relay
B35	Emergency pump motor relay
	<With hydraulic booster>

L03482

https://truckmanualshub.com/

C FUSE, METER, SENSOR, BUZZER, MOTOR AND ACTUATOR

C01 to 10



No relevant parts in a missing number

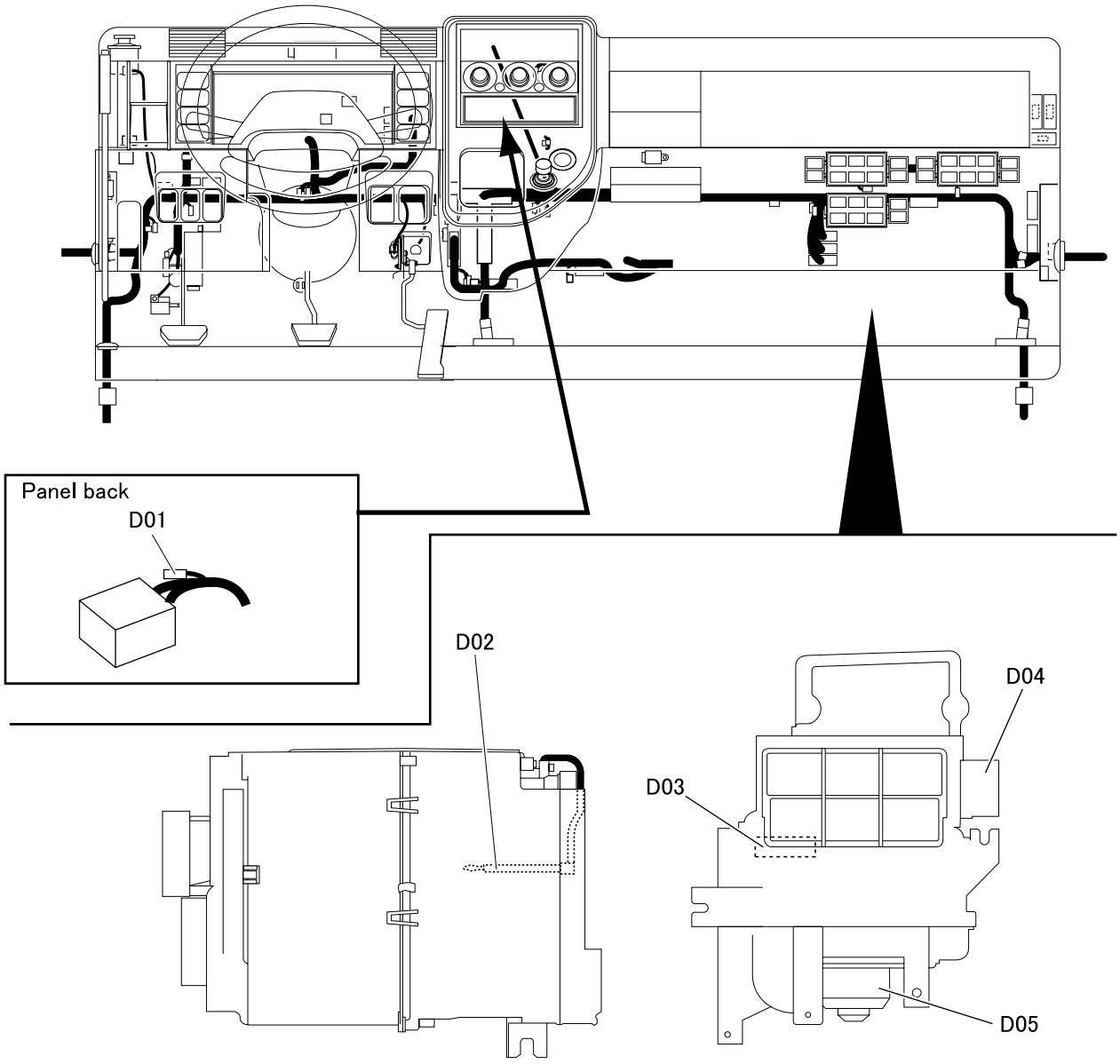
C01 Meter cluster
C02 Fuse box
C03 Windshield washer motor
C04 Accelerator pedal position sensor
C04a Motor <With hydraulic booster>
C05 G sensor <ABS>
C06 Cab tilt buzzer
C07 Warning buzzer
C08 Wiper motor
C09 Shift lock actuator <A/T>

ABS: Anti-lock brake system
A/T: Automatic transmission

L00161

https://truckmanualshub.com/

D01 to 05



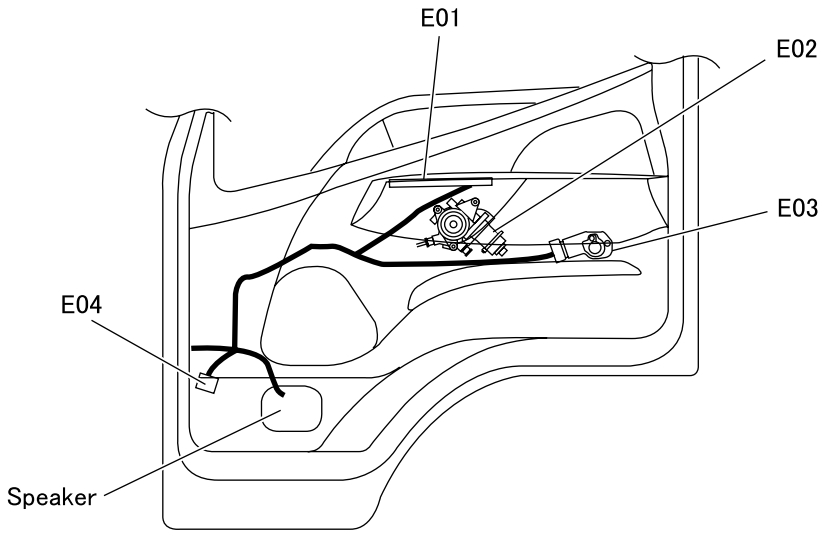
No relevant parts in a missing number

D01 Diode
D02 Thermostat
D03 Blower resistor
D04 Fresh/recirculation changeover motor
D05 Blower motor

L00162

https://truckmanualshub.com/

E01 to 04



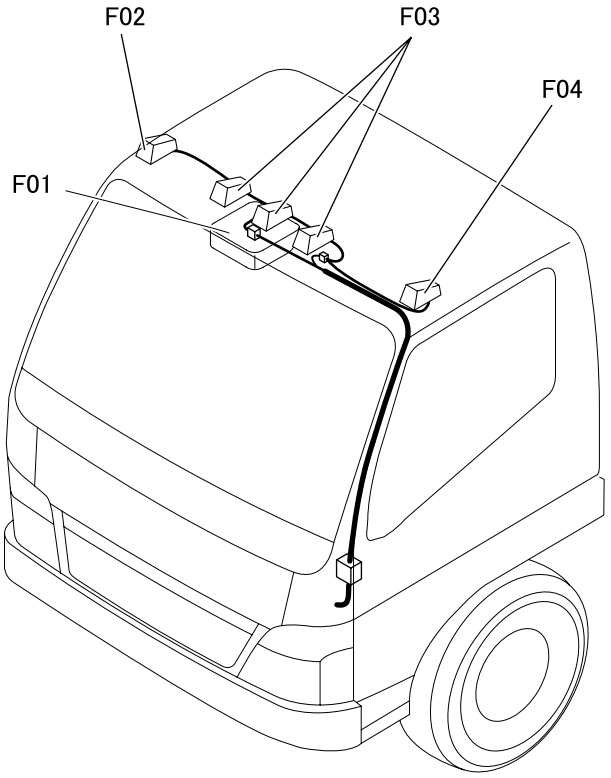
This illustrations show the right side door, the left side door is symmetrical.

No relevant parts in a missing number

E01 Power window switch
E02 Power window motor
E03 Door lock actuator
E04 Mirror heater connector

L00163

F01 to 05



No relevant parts in a missing number

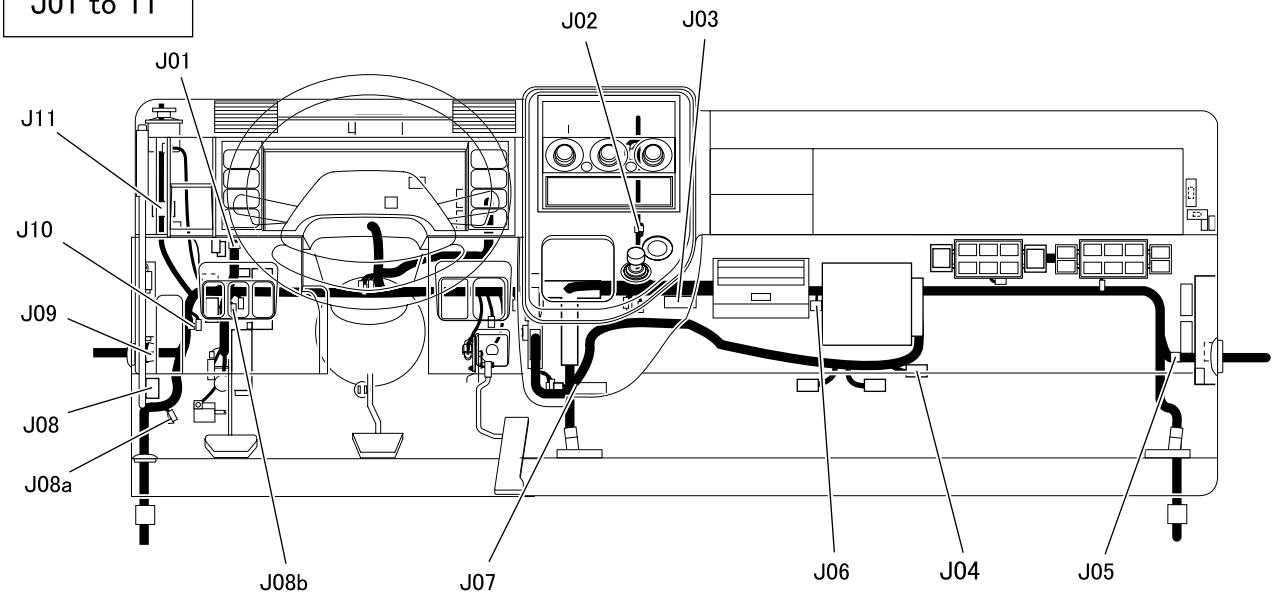
F01 Cab lamp
F02 Clearance and side marker lamp, RH
F03 Identification lamp
F04 Clearance and side marker lamp, LH

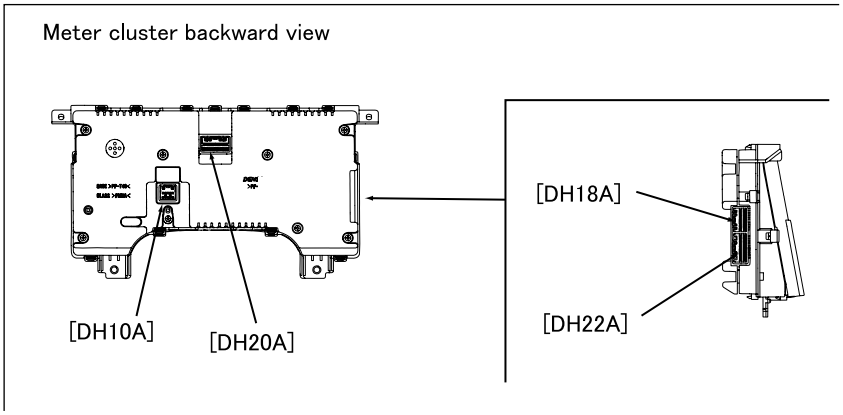
L01268

https://truckmanualshub.com/

J JOINTS OF MAIN HARNESS CONNECTORS

J01 to 11





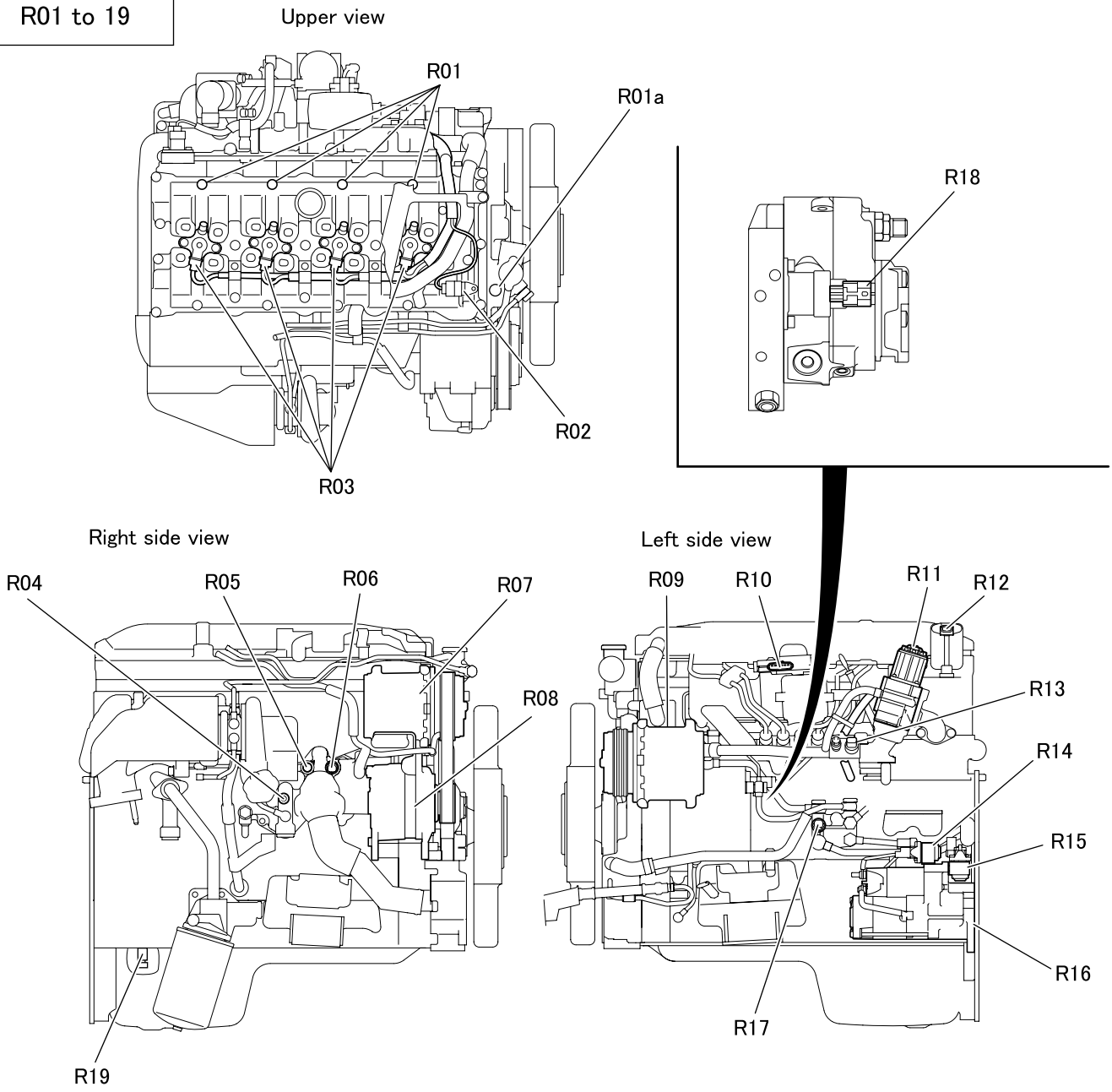
No relevant parts in a missing number

J01 Connection of cab harness and instrument panel harness
J02 Connection of cab harness and center panel harness
J03 Joint connector (J/C-1)
J04 Joint connector (J/C-2)
J05 Connection of cab harness and door harness, RH
J06 Connection of center panel harness and air-conditioner harness
J07 Joint connector (J/C-M1)
J08 Diagnostic connector
J08a Joint connector (J/C-040)
J08b Joint connector (J/C-040) <A/T>
J09 Connection of cab harness and door harness, LH
J10 Optional connector
J11 Connection of cab harness and roof harness

Indicate by connector type [ ].

L02141

R01 to 19



No relevant parts in a missing number

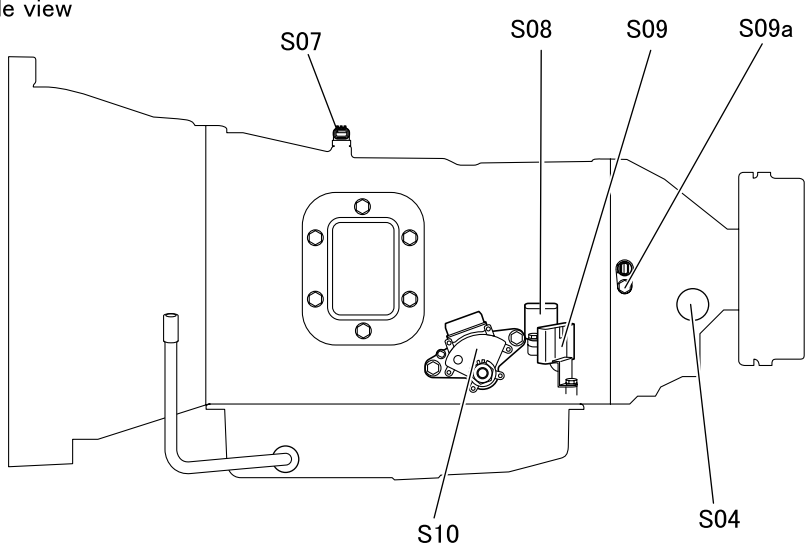
R01	Glow plug	R11	EGR valve (building into motor, position sensor)
R01a	Overheating switch		
R02	Cylinder recognition sensor	R12	Boost pressure sensor
R03	Injectors	R13	Common rail pressure sensor
R04	Engine oil pressure switch	R14	Glow relay
R05	Water temperature sensor (connects to water temperature gauge)	R15	Starter relay
		R16	Starter
R06	Water temperature sensor (connects to engine ECU)	R17	Fuel temperature sensor
		R18	MPROP (rail pressure control valve)
R07	Magnetic clutch	R19	Engine oil level sensor
R08	Alternator		
R09	Magnetic clutch <Freezer>	ECU : Electronic control unit	
R10	Intake throttle (building into motor, position sensor)	EGR : Exhaust gas recirculation	

L00154

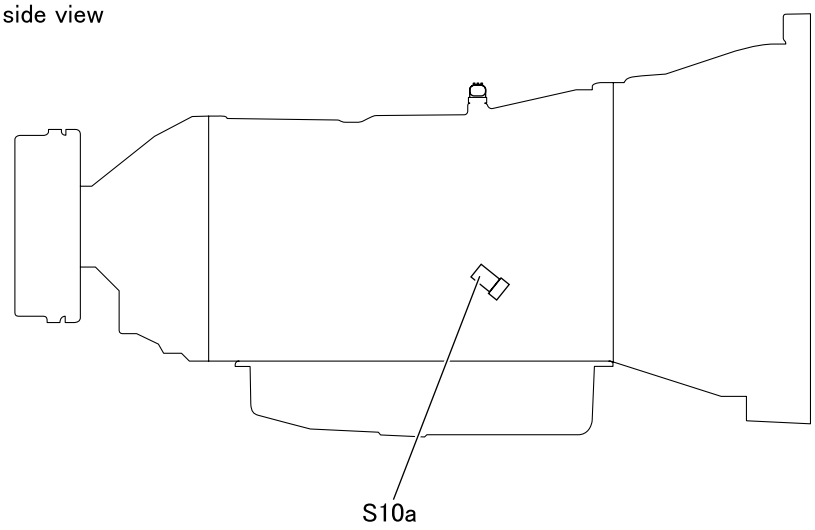
https://truckmanualshub.com/

S01 to 12 ＜Automatic transmission＞

Left side view



Right side view

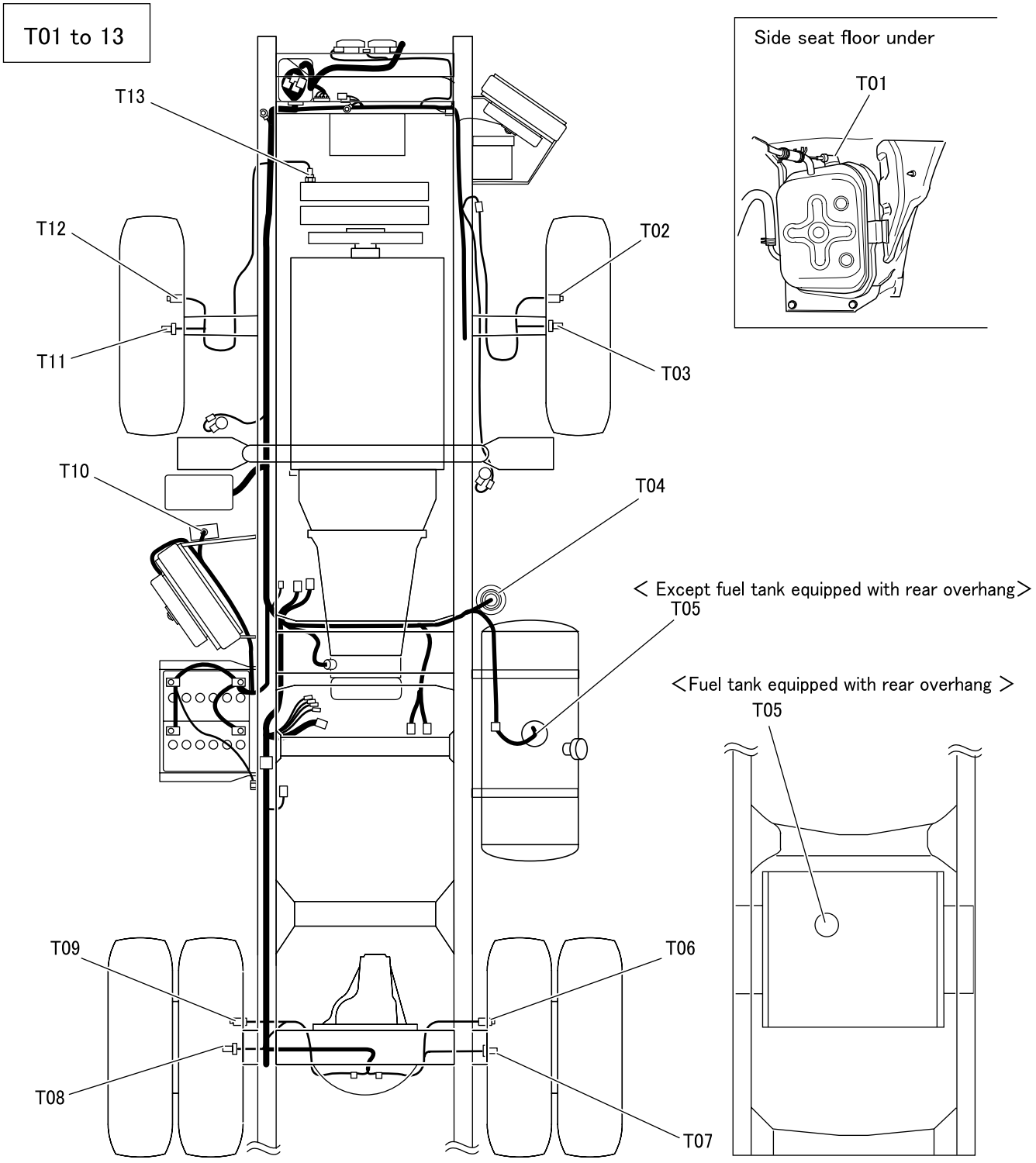


No relevant parts in a missing number

S04 Vehicle speed sensor
S07 Turbine revolution sensor
S08 A/T solenoid connector
S09 A/T solenoid connector
S09a Output speed sensor
S10 Inhibitor switch
S10a A/T fluid temperature sensor

A/T : Automatic transmission

L00156



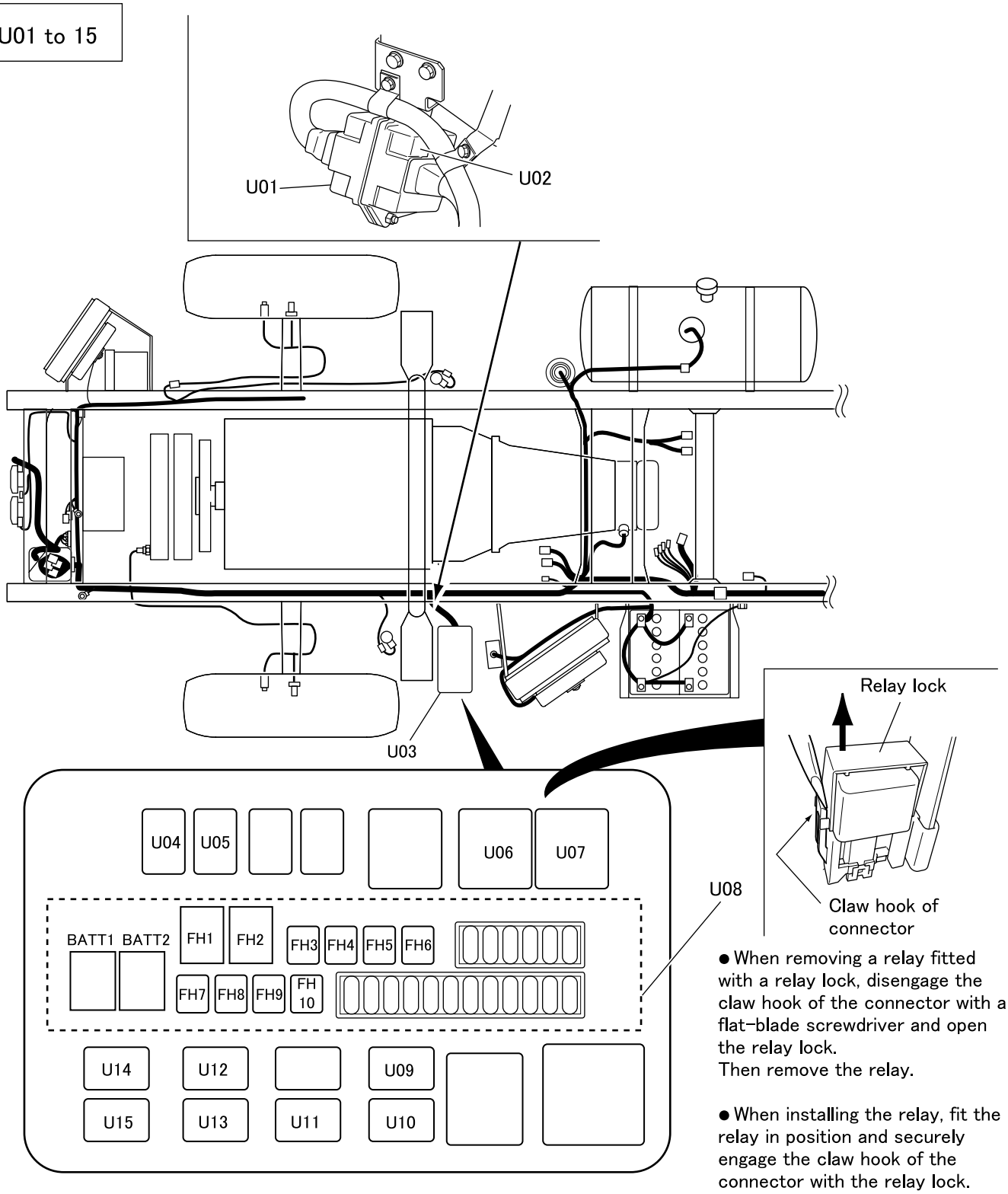
No relevant parts in a missing number

T01	Vacuum switch	T08	Rear wheel speed sensor, LH
T02	Front brake pad wear indicator, RH	T09	Rear brake pad wear indicator, LH
T03	Front wheel speed sensor, RH	T10	Automatic transmission fluid cooler fan thermo switch
T04	Water separator sensor	T11	Front wheel speed sensor, LH
T05	Fuel level sensor	T12	Front brake pad wear indicator, LH
T06	Rear brake pad wear indicator, RH	T13	Boost air temperature sensor
T07	Rear wheel speed sensor, RH		

L00170

https://truckmanualshub.com/

U01 to 15



- When removing a relay fitted with a relay lock, disengage the claw hook of the connector with a flat-blade screwdriver and open the relay lock.
  Then remove the relay.

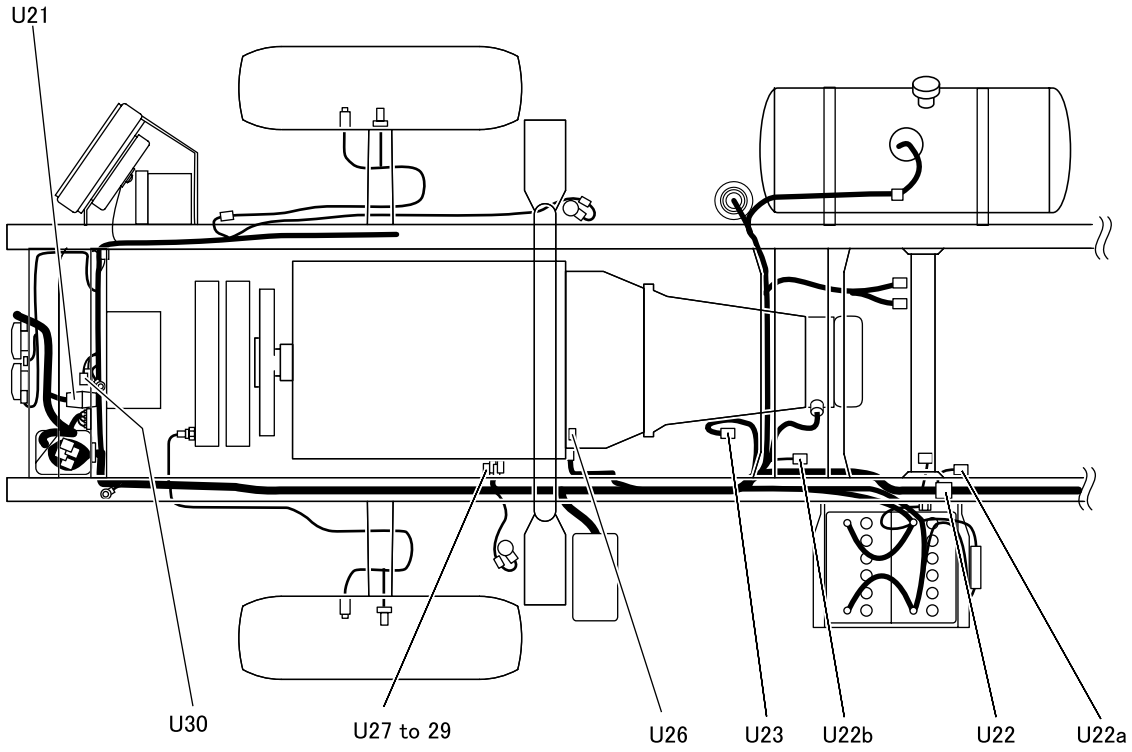
- When installing the relay, fit the relay in position and securely engage the claw hook of the connector with the relay lock.

U01 Throttle EDU
U02 EGR EDU
U03 High-current fuse box
U04 ATF cooler fan motor relay
U05 Backup lamp relay <A/T>
U06 Wiper relay (HIGH)
U07 Wiper relay (LOW)
U08 High-current fuse
U09 Horn relay
U10 Air-conditioner compressor relay
U11 Condenser fan relay
U12 Tail lamp relay
U13 EDU relay
U14 Van body dome light relay
U15 Neutral start relay <A/T>

ATF : Automatic transmission fluid
A/T : Automatic transmission
EDU : Electronic drive unit
EGR : Exhaust gas recirculation

L01269

U21 to 30

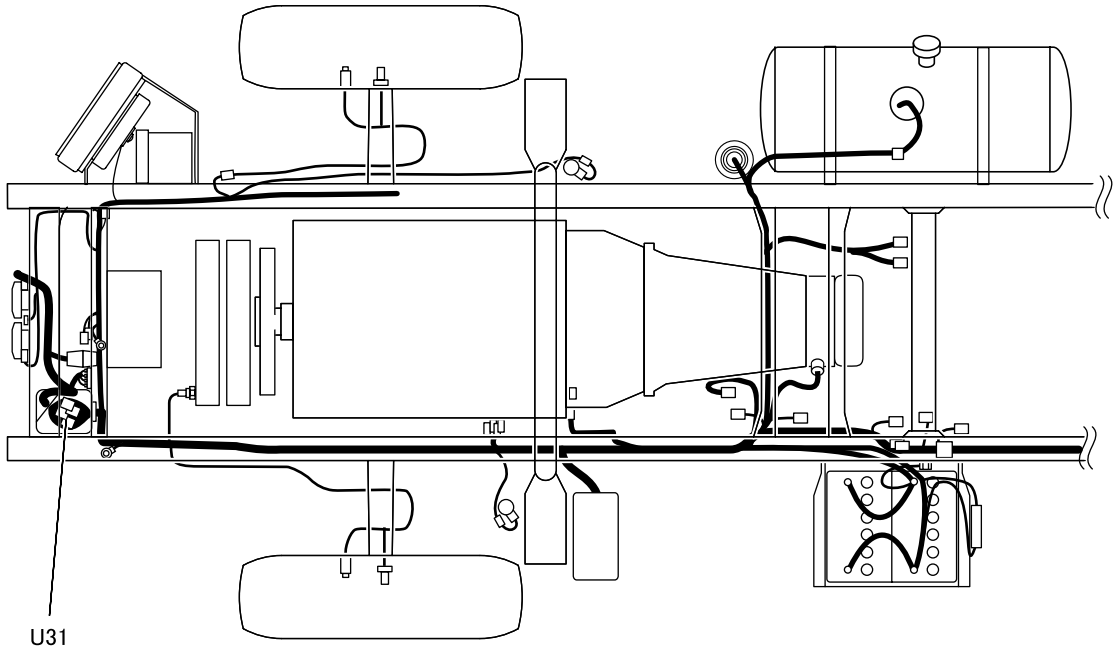


No relevant parts in a missing number

U21	Connection of cab harness and engine harness
U22	Connection of chassis harness and rear chassis harness
U22a	Optional connector
U22b	Power take-off load sensor connector
U23	Transmission power take-off contorol switch connector
U26	Connection of chassis harness and starter harness
U27	Front van body dome light connector
U28	Front identification lamp connector
U29	Front clearance lamp connector
U30	Diode

https://manuals.tb.com

U31



No relevant parts in a missing number

U31 Connection of chassis harness and cab harness ＜In connector box＞

Connector		Main load	Remarks
Type	Color		
AB6A	Black	Automatic transmission	
AB12A	Black	Exhaust brake, air−conditioner, optional connector	
AB12A	Gray	Meter relation (vehicle speed sensor, engine oil pressure switch, alternator, engine oil level sensor, water temperature sensor,water separator sensor, fuel level sensor, front brake pad wear indicator), starter relay	
AB14A	Black	Hydraulic unit, glow ECU, glow relay	
AB14A	Gray	Engine ECU	
AB16A	Natural	Automatic transmission	Cab harness side connector : Male
AB16A	Natural	EDU	Cab harness side connector : Female
AC2A	Black	Battery power supply, blower power supply	
AD1A	Black	Hydraulic booster	
AD2A	Gray	Battery power supply	
DG10A	Gray	Engine ECU (DPF)	Cab harness side connector : Male
DG10A	Gray	Backup lamp switch, inhibitor switch, stop lamp, tail lamp, turn signal lamp, horn, van body dome light	Cab harness side connector : Female
GA12A	Black	Automatic transmission	

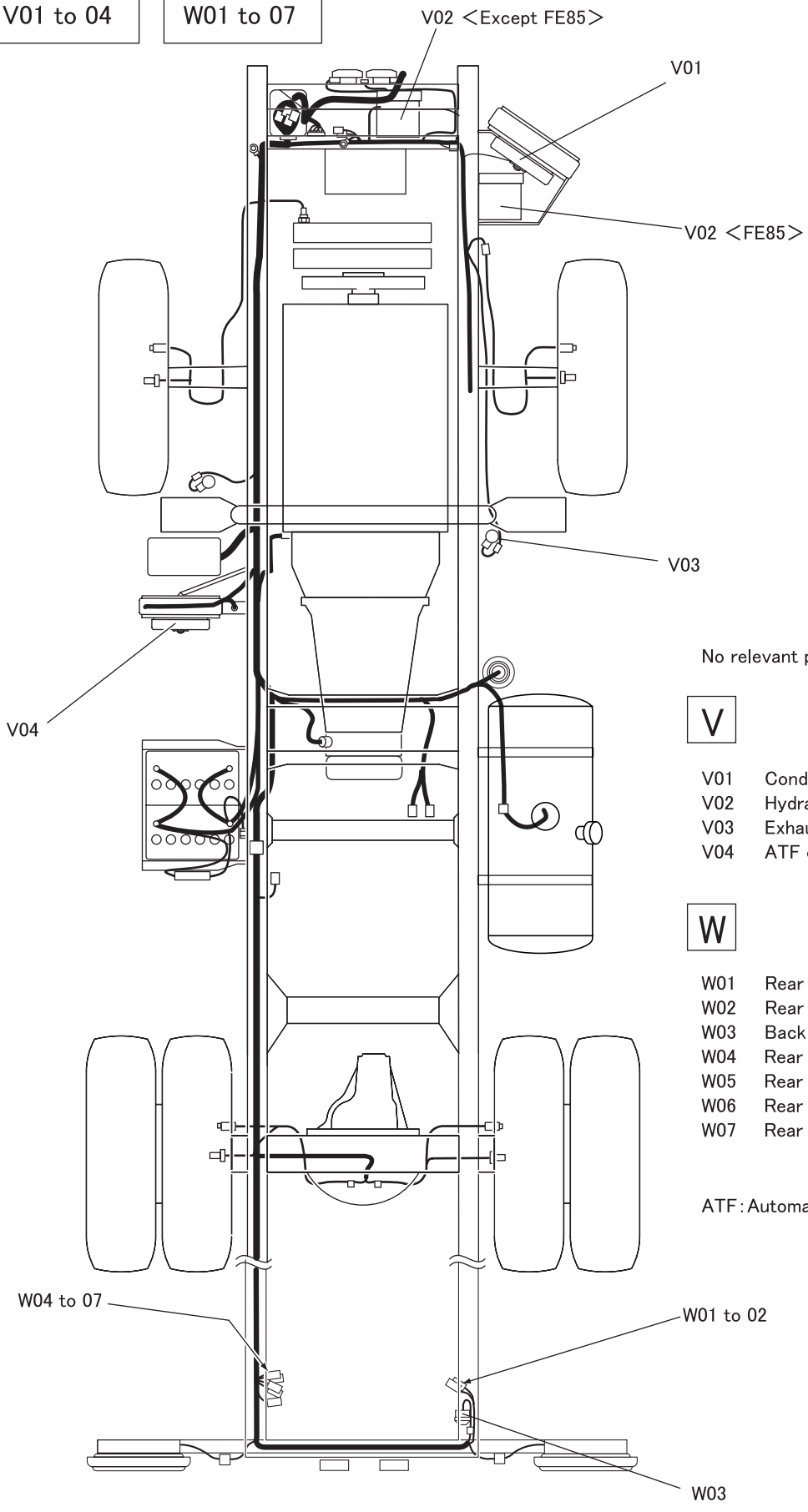
ABS : Anti−lock brake system
ECU : Electronic control unit
EDU : Electronic drive unit
DPF : Diesel particulate filter

L03484

https://truckmanualshub.com/

V01 to 04

W01 to 07



No relevant parts in a missing number

V

V01	Condenser fan motor
V02	Hydraulic unit
V03	Exhaust shutter 3-way magnetic valve
V04	ATF cooler fan motor

W

W01	Rear clearance lamp, RH connector
W02	Rear side marker lamp, RH connector
W03	Back buzzer
W04	Rear van body dome light connector
W05	Rear identification lamp connector
W06	Rear clearance lamp, LH connector
W07	Rear side marker lamp, LH connector

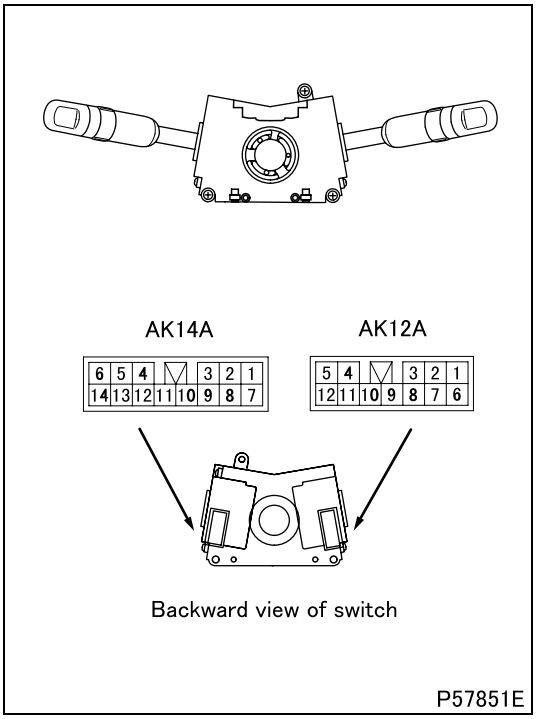
ATF : Automatic transmission fluid

L02147

https://truckmanualshub.com/

54-11 INSPECTION OF ELECTRICAL EQUIPMENT

https://truckmanualshub.com/



#001 Inspection of combination switch

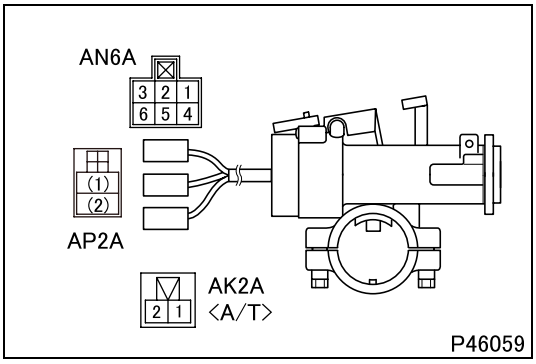
AK12A connector connection table

Switch position			Continuity terminal
Lighting switch	OFF		–
	I		1–2
	II	Dimmer	1–9
		Main	1–9–12
Dimmer switch	Passing		11–12
Turn signal lamp switch	LH		6–8
	N (neutral)		–
	RH		7–8

AK14A connector connection table

Switch position		Continuity terminal
Wiper and washer switch	OFF	–
	INT (interval)	5–7
	LO (low)	3–5
	HI (high)	3–4–5
	WASH (washer)	5–12
Horn switch	OFF	–
	ON	13-body ground
Exhaust brake switch	ON	8–9
	OFF	–

- If any fault is found, replace the switch. (See Gr37.)



#002 Inspection of starter switch

AP2A, AN6A connector connection table

Switch position	Continuity terminal
LOCK	–
ACC	(2)–3, 5–6
ON	(1)–(2)–3–4, 5–6
START	(1)–(2)–2–3–4

- Terminal numbers within parentheses ( ) show terminals of AP2A.

AK2A connector connection table

<Key interlock solenoid (A/T)>

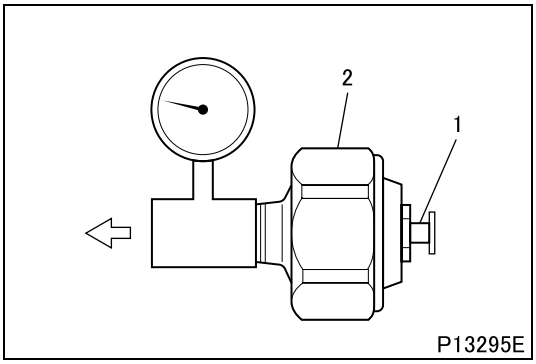
Shift position	Continuity terminal	Remarks
P range: OFF	–	The key must be turned to the lock direction
Without P range: ON	(+) 1–2 (–)	The key must not be turned to the lock direction

A/T: Automatic transmission

- If any fault is found, replace the switch. (See Gr37.)

#011 Inspection of rheostat switch

- The rheostat switch contains a control circuit, because of this it is difficult to inspect the rheostat switch independently, therefore you should inspect the rheostat switch indirectly by inspecting the system harness and the related parts.
- If no fault is found in the related parts but the system is faulty, replace the switch.



#023 Inspection of vacuum switch

- Perform the following checks, and if any fault is found, replace the switch. (See Gr35A.)

(1) Inspection without applying negative pressure

- Make sure that there is no continuity between terminals 1 and 2 (body).

(2) Inspection by applying negative pressure

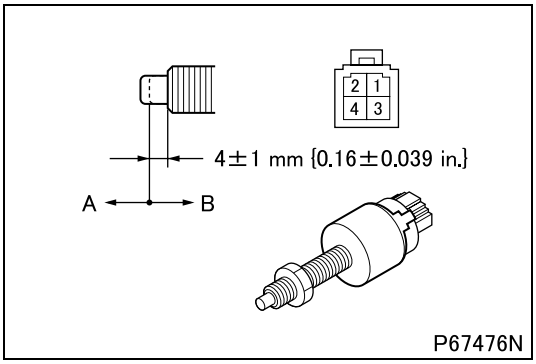
- Gradually apply negative pressure to the switch starting from 0 kPa {0 psi, 0 kgf/cm^2}.
- Measure the degree of air pressure at the moment when continuity is detected between terminals 1 and 2 (body), and make sure to confirm if the value meets the standard.

Standard value	$-(47\ ^{+3.3}_{-4.0})$ kPa {$-(13.8\ ^{+0.98}_{-1.18})$ in.Hg, $-(350\ ^{+25}_{-30})$ mmHg}

#026, #027 Inspection of power window switch

- Because it is not easy to check these swtches individually, determine quality of the switches indirectly by checking related parts, such as harnesses, power window motor, etc. in the system.
- If there is nothing abnormal in related parts, but still something wrong with the system, then replace the switches. (See Gr43.)

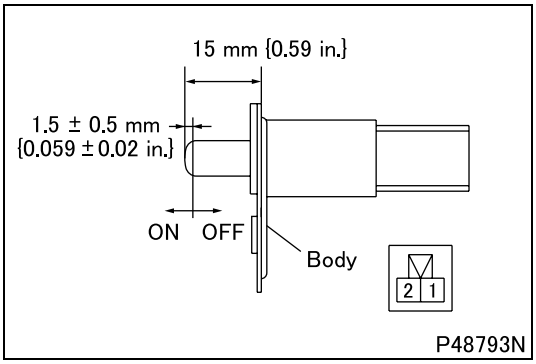
https://truckmanualshub.com/



#031 Inspection of clutch switch

Switch position	Continuity terminal
A	1–4
B	2–3

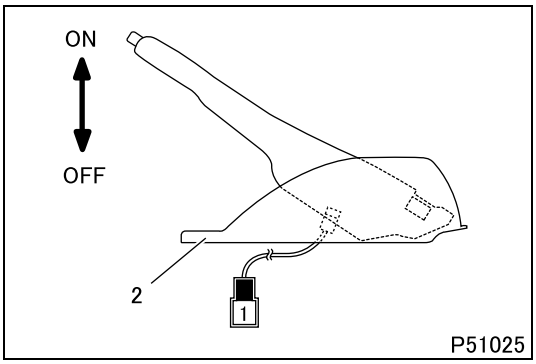
- If any fault is found, replace the switch. (See Gr21.)



#035 Inspection of door switch

Switch position	Continuity terminal
OFF	–
ON	1-body, 2-body

- If any fault is found, replace the switch. (See Gr43.)

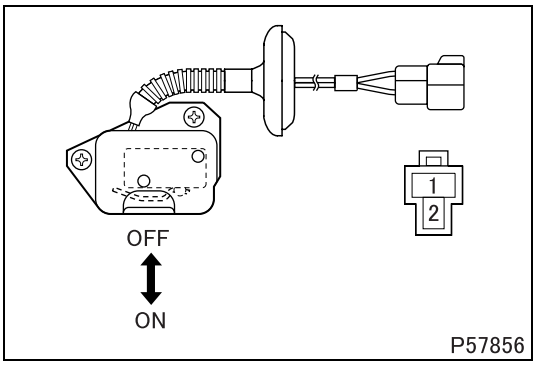


#038 Inspection of parking brake switch

- Measure continuity between terminals 1 and 2 (body) ground.

Pull the parking brake lever	Continuity exists
Release the parking brake lever	Continuity does not exist

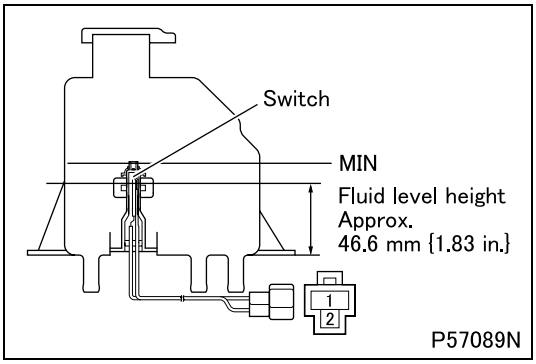
- If any fault is found, replace the switch. (See Gr36.)



#039 Inspection of cab tilt lock switch

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the switch. (See Gr42.)



#041 Inspection of brake fluid level switch

- Gradually drain brake fluid from the brake fluid tank.

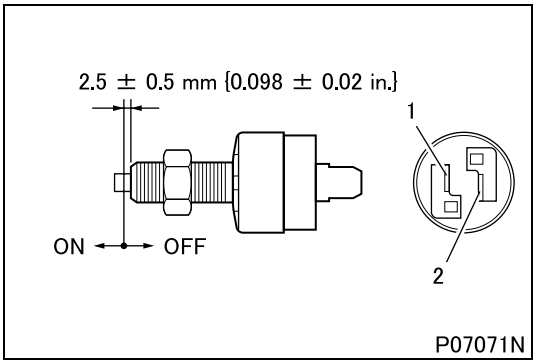
CAUTION ⚠

- **Brake fluid contains ingredients that dissolve paint on the bodywork of a vehicle. Quickly wipe off brake fluid when it is spilled.**

- Measure height of the switch when continuity is detected between terminals 1 and 2.

Standard value	46.6 mm {1.83 in.}

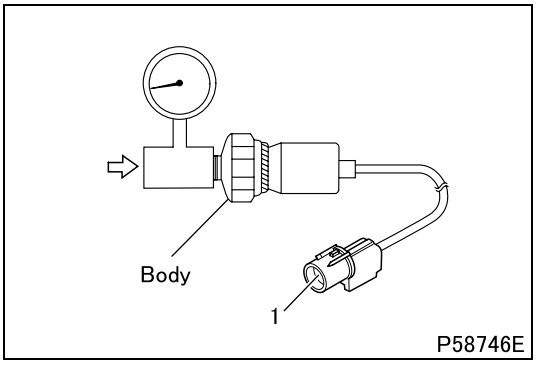
- If the measured value deviates from the standard value, replace the brake fluid tank. (See Gr52.)



#042 Inspection of stop lamp switch

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the switch. (See Gr35A.)



#044 Inspection of engine oil pressure switch

- Perform the following checks, and if any fault is found, replace the switch. (See Gr12.)

(1) Inspection without applying air pressure

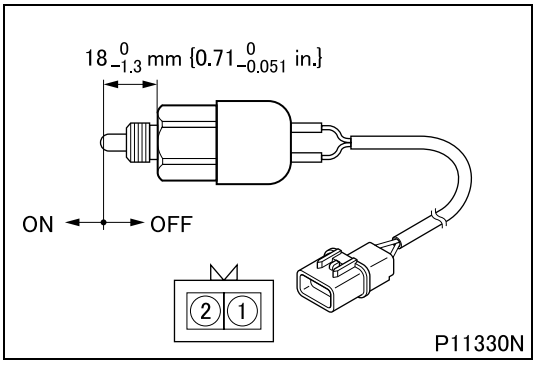
- Make sure that there is continuity between terminals 1 and body.

(2) Inspection by applying air pressure

- Gradually apply air pressure to the switch starting from 0 kPa {0 psi, 0 kgf/cm^2}.

- Measure the degree of air pressure at the moment when continuity is not detected between terminals 1 and body, and make sure to confirm if the value meets the standard.

Standard value (operating pressure)	50 ± 10 kPa {7.1 ± 1.4 psi, 0.5 ± 0.1 kgf/cm^2}

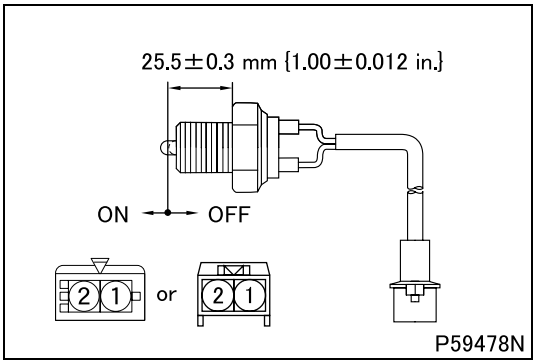


#054 Inspection of switch

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the switch.
  - Backup lamp switch. (See Gr22.)

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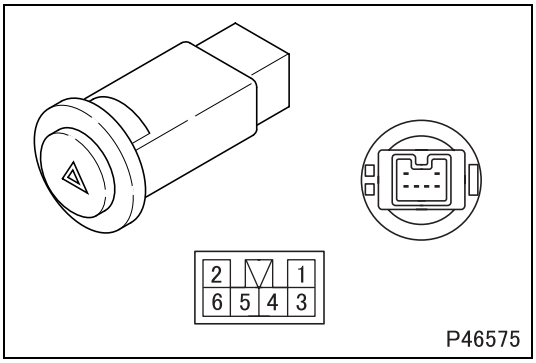


P59478N

#056 Inspection of transmission neutral switch

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the switch. (See Gr22.)

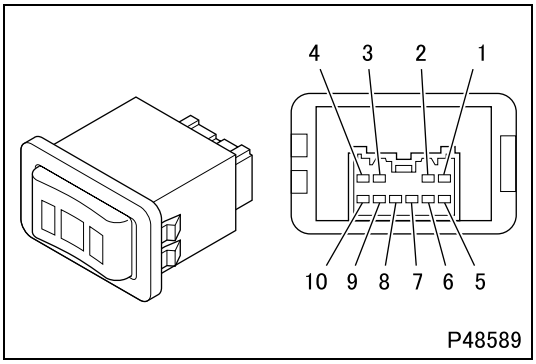


P46575

#081 Inspection of hazard switch

Switch position	Continuity terminal	Night illumination
OFF	–	(+) 2-1 (–)
ON	4–5–6	

- If any fault is found, replace the switch. (See Gr52.)

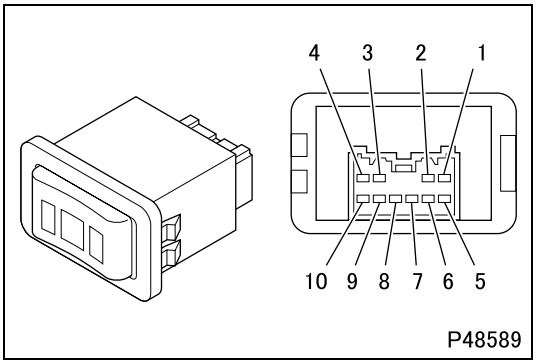


P48589

#087 Inspection of van body dome light switch

Switch position	Continuity terminal	Operation illumination	Night illumination
OFF	1–8	–	(+) 2-3 (–)
ON	1–7	(–) 3–9 (+)	

- If any fault is found, replace the switch.

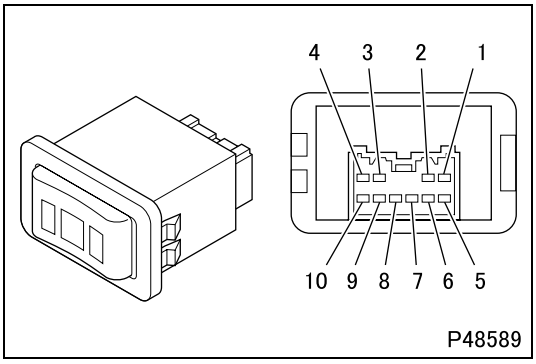


P48589

#089 Inspection of switch

Switch position	Continuity terminal	Night illumination
OFF	1–8	(+) 2-3 (–)
ON	1–7	

- If any fault is found, replace the switch. (See Gr52.)
  - Warm-up switch

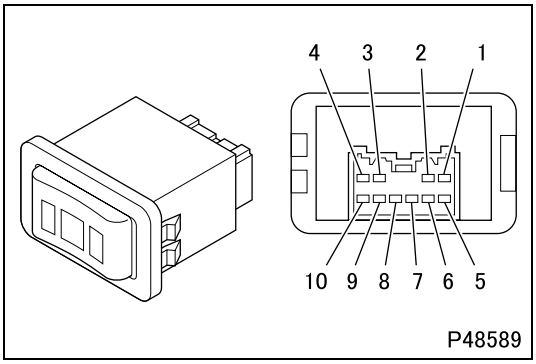


P48589

#092 Inspection of engine oil level check switch

Switch position	Continuity terminal
–	–
CHK	1–7, 5–6

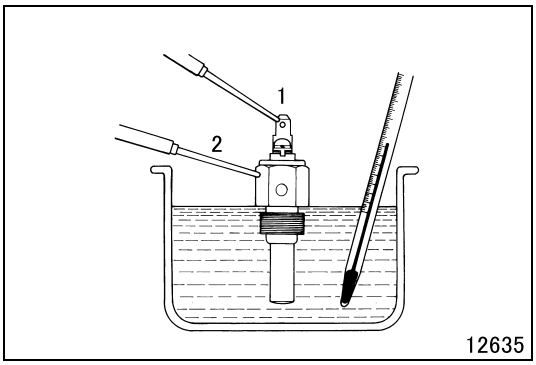
- If any fault is found, replace the switch. (See Gr52.)



#094 Inspection of door lock switch

Switch position	Continuity terminal	Night illumination
LOCK	1–7	(+) 2-3 (–)
Neutral	–	
UNLK	1–8	

- If any fault is found, replace the switch. (See Gr43.)



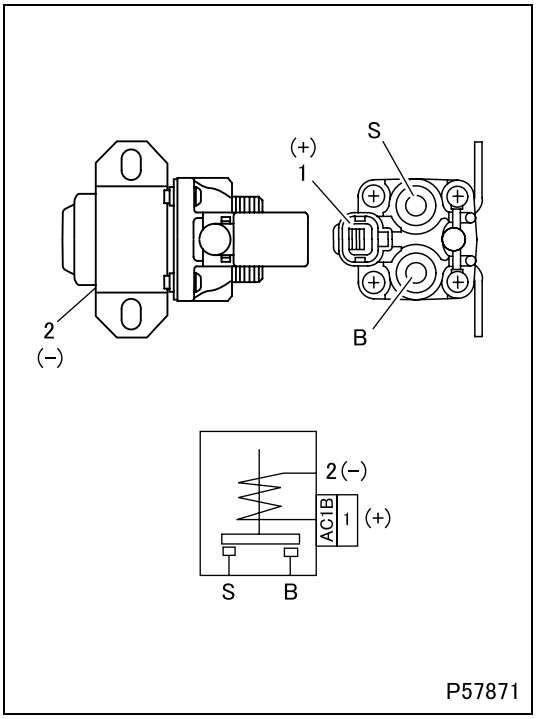
#160 Inspection of overheating switch

- Place the switch in engine oil in a container.
- Raise the oil temperature to the specified values and stir the oil.
- Measure the operating temperature between terminals 1 and 2 (body) respectively.

Standard Value	When temperature increase (OFF→ON)	115 ± 2°C {239 ± 3.6°F}
	When temperature decrease (ON→OFF)	115 ± 4°C {239 ± 7.2°F}

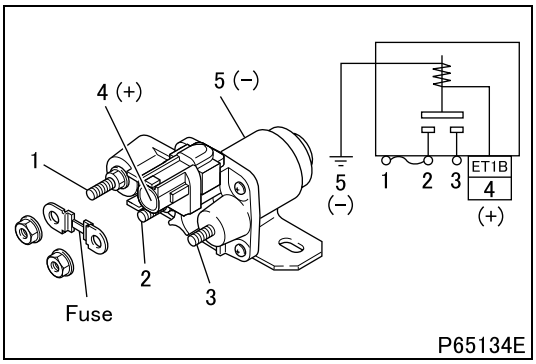
- If the measured value deviates from the standard value, replace the switch. (See Gr14.)

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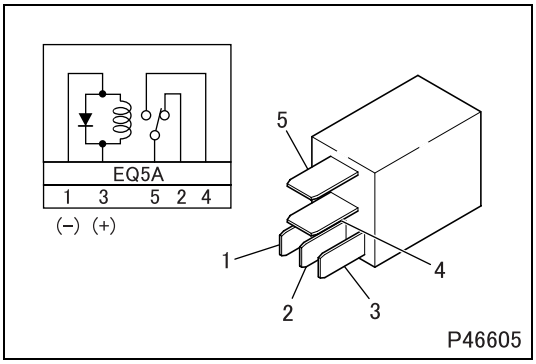
#187 Inspection of starter relay

- Perform continuity check and operation check, and if any fault is found, replace the relay.



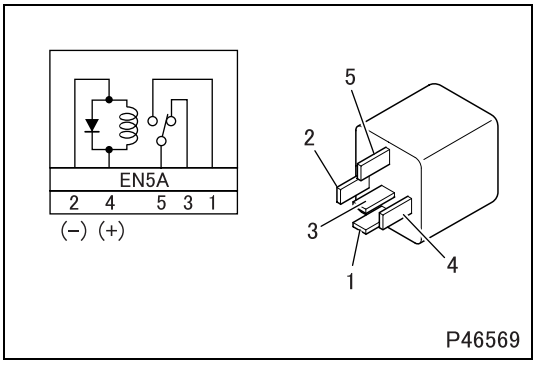
#195 Inspection of glow relay

- Perform continuity check and operation check, and if any fault is found, replace the relay.



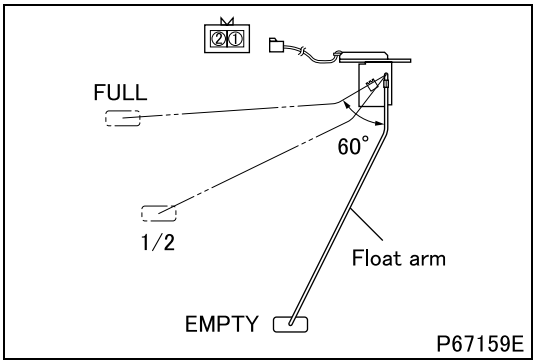
#201 Inspection of relay (normally open type 5 pin)

- Perform continuity check and operation check, and if any fault is found, replace the relay.



#202 Inspection of relay (normally open type 5 pin)

- Perform continuity check and operation check, and if any fault is found, replace the relay.

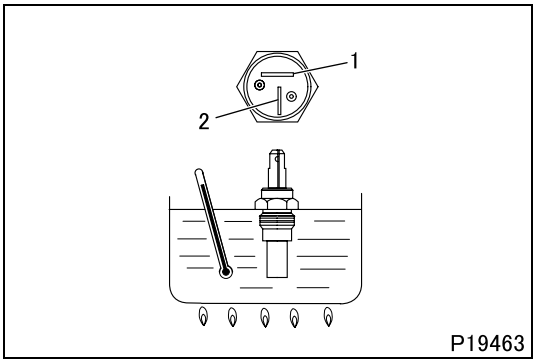


#258 Inspection of fuel level sensor

- Measure resistance values between terminals 1 and 2 when bringing the float arm into contact with stoppers (at EMPTY and FULL positions) and placing it at the midpoint position.

Standard value	at FULL position	0^{+2}_{0} Ω
	at 1/2 position	50 ± 3 Ω
	at EMPTY position	150 ± 10 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr13A.)



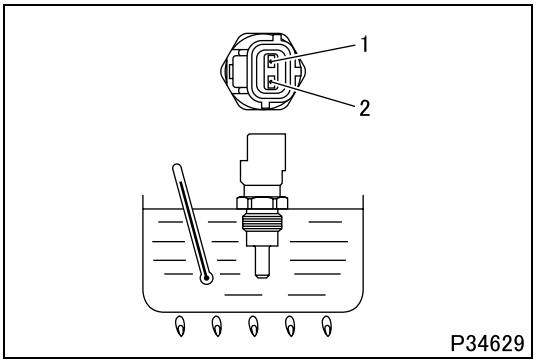
#262 Inspection of water temperature sensor

<For water temperature gauge>

- Dip the sensor in a container filled with engine oil.
- Raise the oil temperature to the specified one while stirring oil.
- Measure resistance values between terminals 1 and 2 and body.
  Terminal 1: water temperature gauge connected side
  Terminal 2: Is not use

Standard value	1 and body (water temperature gauge connected side)	50°C {122°F}	153.9 Ω (reference value)
		80°C {176°F}	$51.9^{+4.9}_{-4.4}$ Ω
		100°C {212°F}	$27.4^{+1.9}_{-1.2}$ Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr14.)



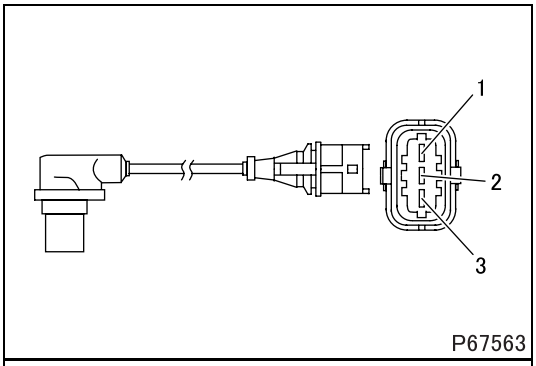
<For engine control>

- Place the sensor in engine oil in a container.
- Raise the oil temperature to the specified values and stir the oil.
- Measure the resistance between terminals 1 and 2.

Standard value	20°C {68°F}	2.45 ± 0.14 kΩ
	80°C {176°F}	322.2 Ω (reference value)
	110°C {230°F}	147.1 ± 2 Ω

- If the measured value deviates from the standard value, replace the sensor. (See Gr14.)

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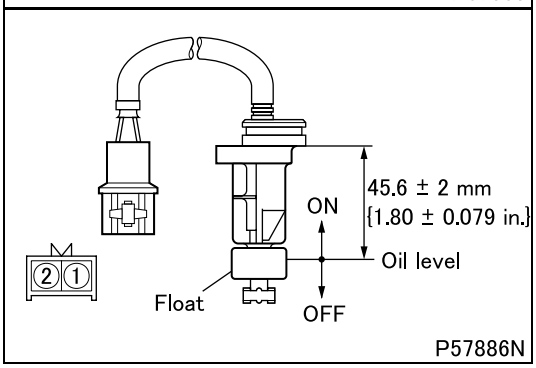


#263 Inspection of engine speed sensor

- Measure the resistance between terminals 1 and 2.

Standard value (at 20°C {68°F})	860 ± 86 Ω

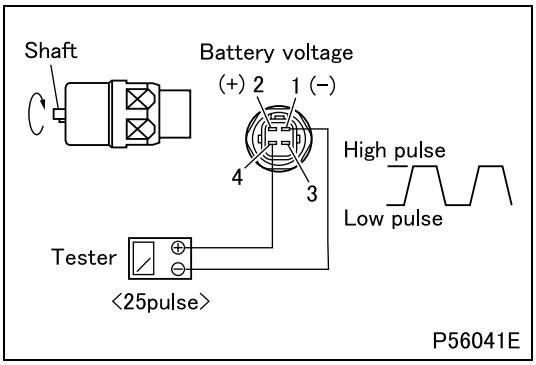
- If the measured value deviates from the standard value, replace the sensor. (See Gr13E.)



#264 Inspection of engine oil level sensor

Switch position	Continuity terminal
OFF	–
ON	1–2

- If any fault is found, replace the sensor. (See Gr12.)

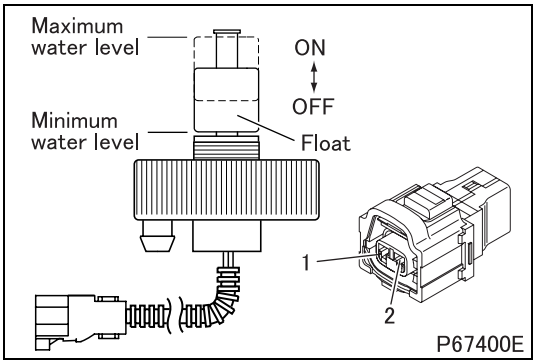


#265 Inspection of vehicle speed sensor

- Rotate the sensor shaft with the battery voltage applied between terminals 1 and 2.
- Measure the maximum value (high pulse voltage) and the minimum value (low pulse voltage) of the voltage generated at each terminal.

Standard value	Between 25 pulse output terminals 1 and 4	Low pulse voltage	0.5 V or less
		High pulse voltage	8 ± 1 V

- If the measurement is not within the range of the standard value, replace the sensor. (See Gr22.)



#274 Inspection of water separator sensor

Condition	Continuity terminal
ON (when coolant quantity is approx. 100 cm^3 {6.10 cu.in.})	1–2
OFF	–

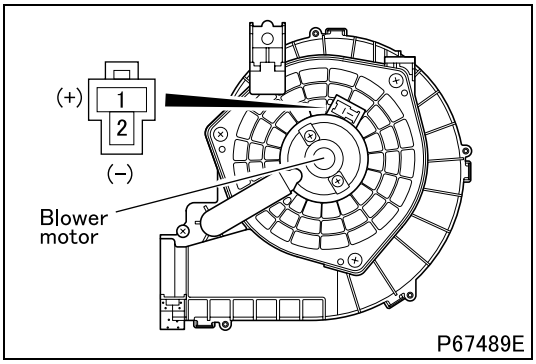
- If any fault is found, replace the sensor (See Gr13A.)

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#350 Inspection of control unit and other units

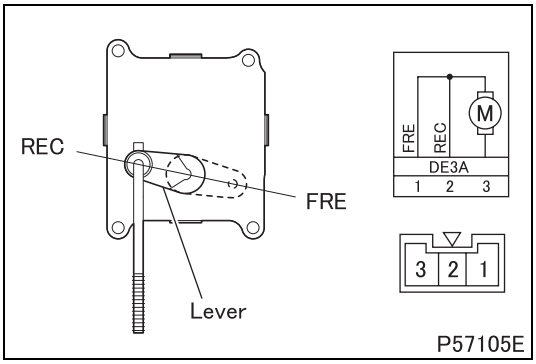
- Since the units alone cannot be readily checked in the off-vehicle state, check the harness, switch and other related parts in each system.
- If any fault is not found in the related parts, and the problem still remains in the system, replace the control units or other units.

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#411 Inspection of blower motor

- Make sure that the motor operates when battery voltage is applied between terminals 1 and 2.
- If any fault is found, replace the motor. (See Gr55.)



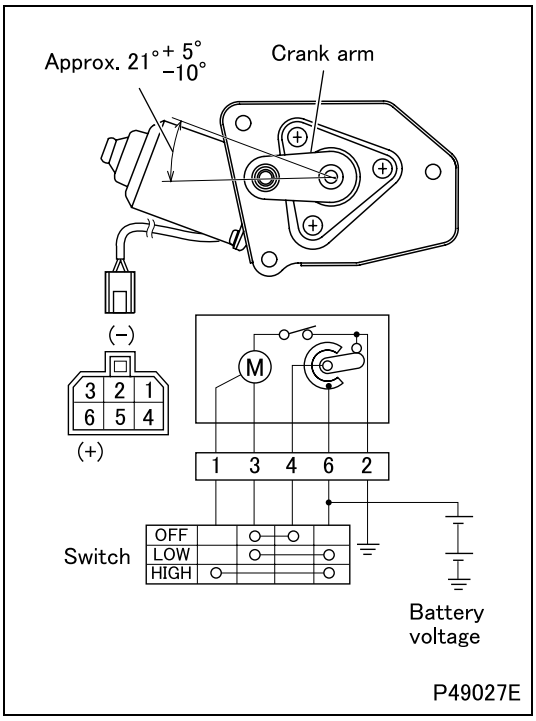
#415 Inspection of fresh/recirculation changeover motor

- Perform the following checks, and if any fault is found, replace the motor. (See Gr55.)
- Make sure that the motor operates when battery voltage is applied between each terminal.

Lever position	Terminal
REC (inside air)	(+) 3–2 (–)
FRE (outside air)	(+) 3–1 (–)

CAUTION ⚠

- **Stop applying battery voltage if the lever stops spontaneously at the REC or FRE position.**



#422 Inspection of wiper motor

- Connect a switch to wiper motor as shown.
- Check the motor for correct operation as follows. If any fault is found, replace the motor. (See Gr51.)

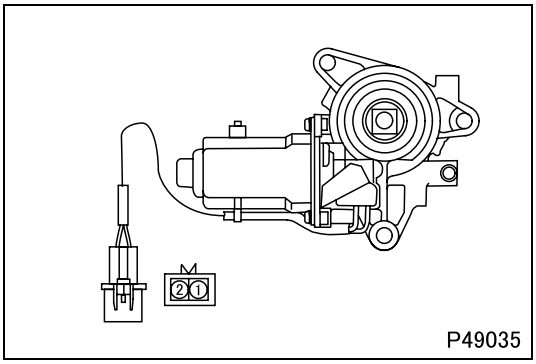
(1) Inspection of motor operation

- Set switch to HIGH position to check that the motor rotates at high speed.
- Set switch to LOW position to check that the motor rotates at low speed.

(2) Inspection of automatic stop position

- Set switch to LOW position to let the motor rotate at low speed.
- When the crank arm is in a position other than automatic stop position (outside the angles shown), set switch to OFF position.
- Check to see that the crank arm stops at the automatic stop position (within the angles range shown).

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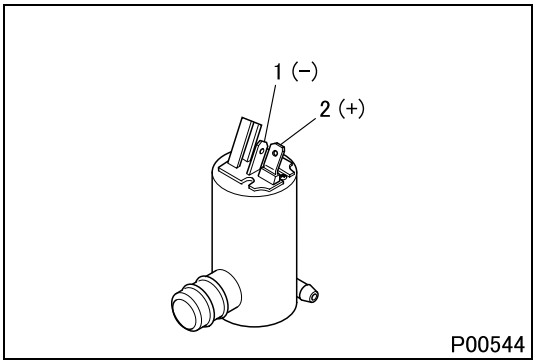


#423 Inspection of power window motor

- Make sure that the motor operates when battery voltage is applied between terminals 1 and 2.

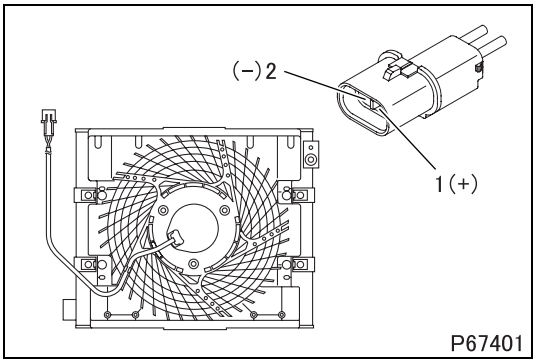
Rotation direction	Terminal
Left	(+) 2–1 (–)
Right	(+) 1–2 (–)

- If any fault is found, replace the motor and the regulator as a set. (See Gr43.)



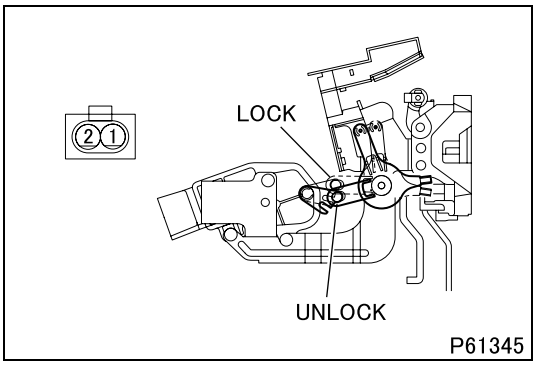
#428 Inspection of windshield washer motor

- Make sure that the motor operates when battery voltage is applied between terminals 1 and 2.
- If any fault is found, replace the motor. (See Gr51.)



#431 Inspection of condenser fan motor

- Make sure that the motor operates when battery voltage is applied between terminals 1 and 2.
- If any fault is found, replace the motor. (See Gr55.)

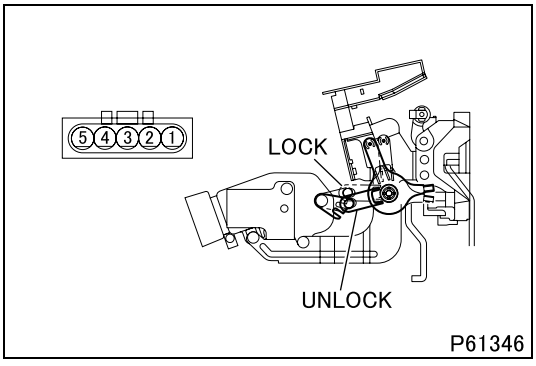


#510 Inspection of door lock actuator (on assistant driver's side)

- Apply battery voltage between each terminals confirm that the actuator operates.

Switch position	Terminal
LOCK	(+) 1–2 (–)
UNLOCK	(+) 2–1 (–)

- If any fault is found, replace the actuator. (See Gr43.)



#511 Inspection of door lock actuator (on driver's side)

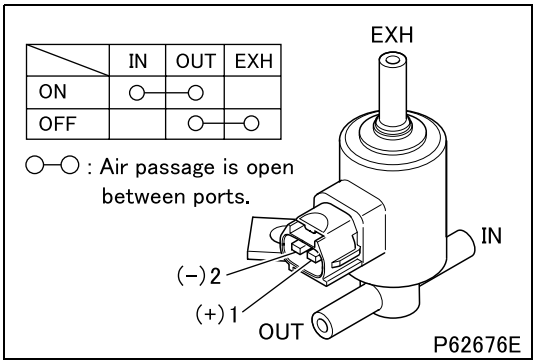
- Apply battery voltage between each terminals confirm that the actuator operates.

Switch position	Continuity terminal	Terminal
LOCK	1–2	(+) 3–4 (–)
UNLOCK	1–5	(+) 4–3 (–)

- If any fault is found, replace the actuator. (See Gr43.)

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#560 to #609 MAGNETIC VALVE



#565 Inspection of magnetic valve

- Perform the following checks, and if any fault is found, replace the 2-way magnetic valve.

(1) Operation check

- Gradually apply DC current between terminals 1 and 2 starting from 0 V.

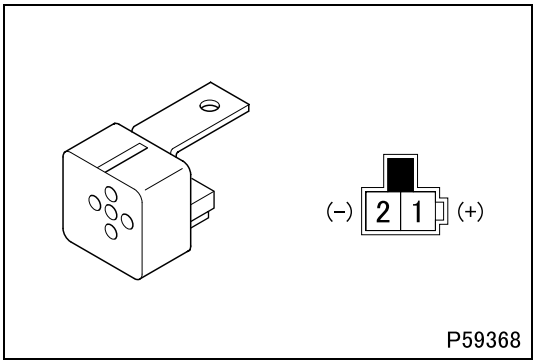
Measure the voltage at which the 2-way magnetic valve operates. (Determine ON/OFF of the magnetic valve by operating noises.)

Standard value (minimum operating voltage)	11 V or less

(2) Inspection of continuity and air tightness

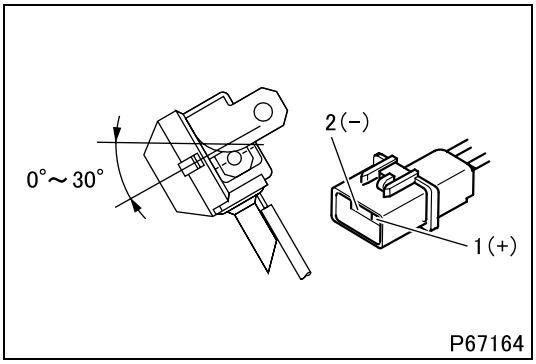
- Negative pressure when inspected: –100 kPa {–29.5 in.Hg, –750 mmHg}

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#611 Inspection of warning buzzer

- Make sure that the buzzer sounds when battery voltage is applied between terminals 1 and 2.
- If any fault is found, replace the buzzer.



#614 Inspection of back buzzer

[Inspection]

- Make sure to confirm if the buzzer intermittently sounds by applying the battery voltage between terminals 1 and 2.
- If any fault is found, replace the buzzer.

[Installation]

- Install the back buzzer to the frame in the range of angles as illustrated.

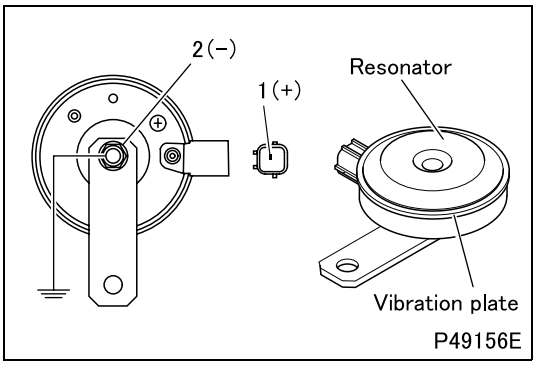
CAUTION ⚠

- **Beware that if the installed angle of the buzzer is out of the range as illustrated, water in the buzzer will not be drained normally.**

#615 Inspection of electric horn

CAUTION ⚠

- **Bending the stay changes the sound quality of the horn, degrading the horn performance.**
- **Never bend or damage the stay.**

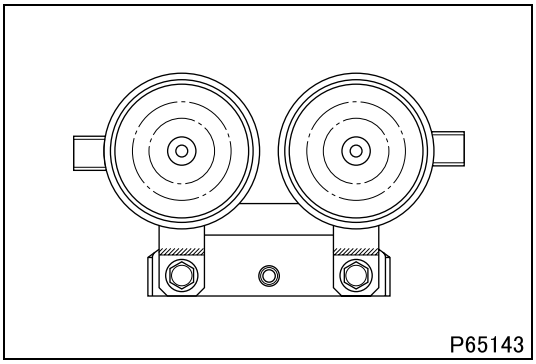


[Inspection]

- Make sure to confirm whether the horn sounds by applying the battery voltage between terminals 1 and 2 (body).
- Remove foreign substances adhered to the resonator and diaphragm.
- If any fault is found, replace the horn.

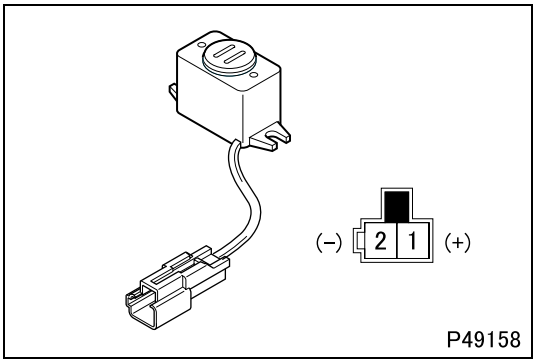
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#610 to #649 BUZZER, HORN



[Installation]

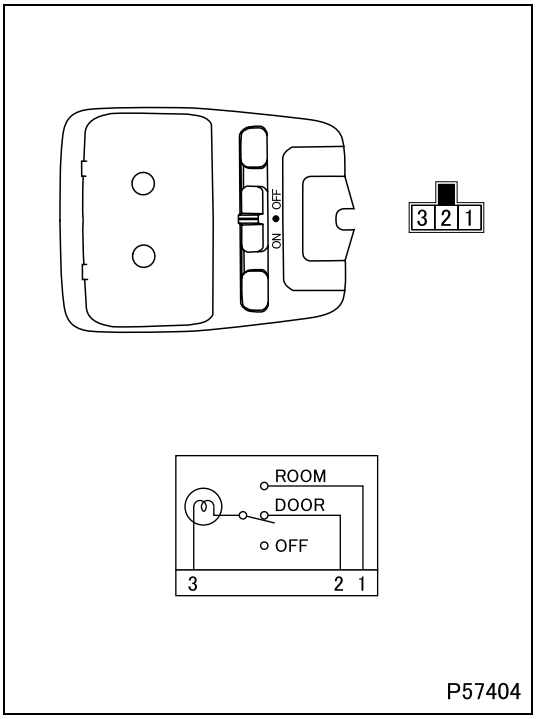
- Install in the direction as illustrated.



#618 Inspection of cab tilt buzzer

- Make sure that the buzzer sounds when battery voltage is applied between terminals 1 and 2.
- If any fault is found, replace the buzzer.

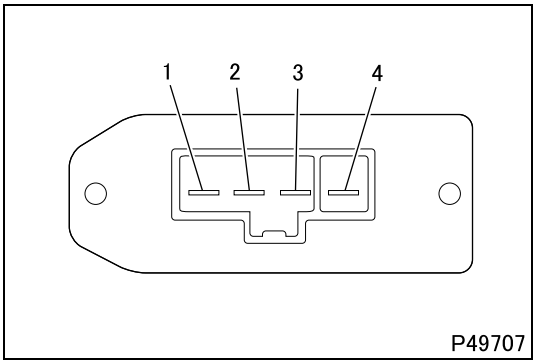
https://truckmanualshub.com/



#656 Inspection of cab lamp

- If any fault is found, replace the lamp.

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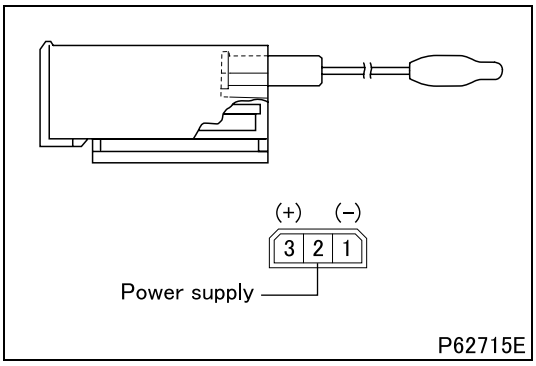


#750 Inspection of blower resistor

- Measure resistance values between each terminals.

Position	Terminal	Standard value
MEDIUM HIGH	1–4	0.24 Ω
MEDIUM LOW	3–4	0.93 Ω
LOW	2–4	1.5 Ω

- If the measured value deviates from the standard value, replace the blower resistor. (See Gr55.)

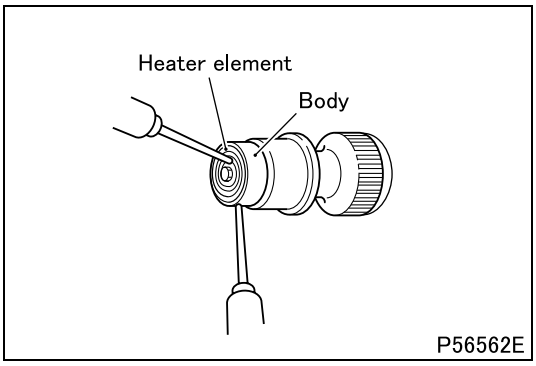


#751 Inspection of thermostat

- Measure resistance values between each terminals 1 and 3 at the specified temperature.

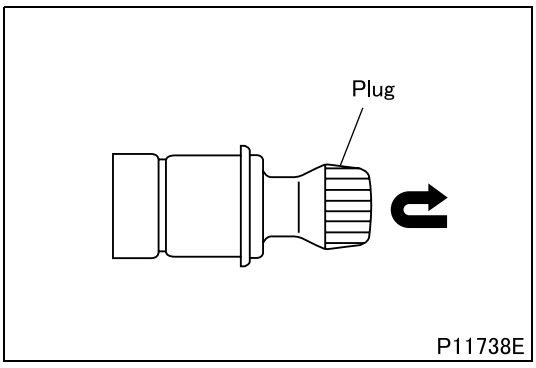
Switch position	Continuity terminal
OFF (4.2°C)	–
ON (5.2°C)	1–3

- If any fault is found, replace the thermostat. (See Gr55.)



#754 Inspection of cigarette lighter

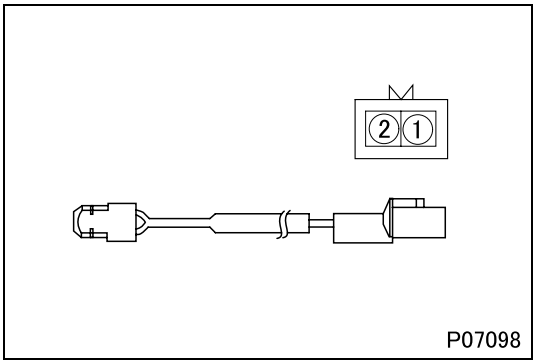
- Perform the following checks, and if any fault is found, replace the cigarette lighter. (See Gr52.)
- Make sure that there is continuity between heater element and body.



- Make sure that when plug is pushed in by hand, it immediately returns to its original position.
- Place the starter switch at ACC or ON position.
- Push plug into the socket in the cab.
- Measure the time required for plug to automatically return.

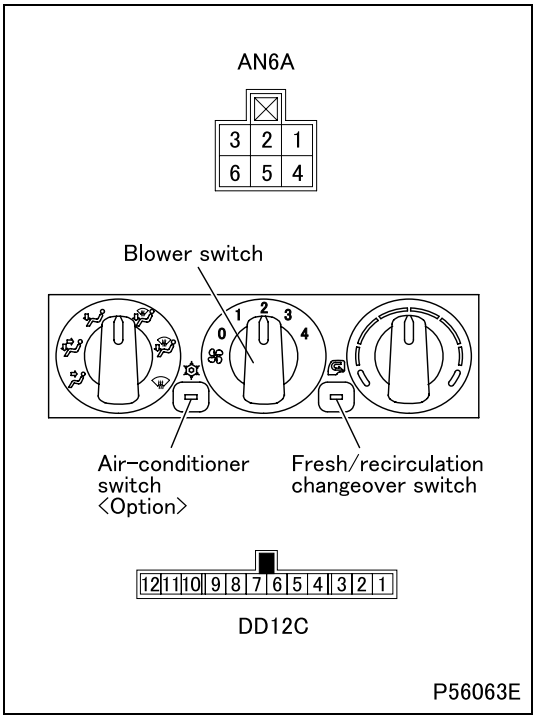
Standard value	15 ± 5 seconds

- Check to see that heater element is red-hot.



#759 Inspection of brake pad wear indicator

- Make sure that there is continuity between terminals 1 and 2.
- If any fault is found, replace the brake pad wear indicator. (See Gr35A.)



#763 Inspection of heater control panel

- Perform the following checks, and if any fault is found, replace the heater control panel. (See Gr52.)

(1) Blower switch <AN6A connector>

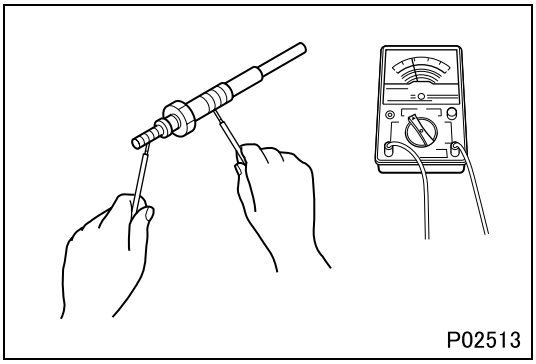
Switch position	Continuity terminal
0 : OFF	–
1 : LO (LOW)	4–5–6
2 : ML (MEDIUM LOW)	1–5–6
3 : MH (MEDIUM HIGH)	2–5–6
4 : HI (HIGH)	3–5–6

(2) Fresh/recirculation changeover switch <DD12C connector>

Switch position	Continuity terminal	Operation illumination	Night illumination
OFF : Fresh air	9–10	–	(+) 7–8 (–)
ON : recirculation air	10–11	(+) 12–10 (–)	

(3) Air-conditioner switch <DD12C connector>

Switch position	Continuity terminal	Operation illumination	Night illumination
OFF	–	–	(+) 7–8 (–)
ON	3–4–6	(+) 3–6 (–) (+) 4–6 (–)	



#764 Inspection of glow plug

- Measure resistance value of glow plug as shown.

Standard value (cold resistance of glow plug)	Approx. 1.0 Ω

- If the measured value deviates from the standard value, replace the glow plug. (See Gr11.)

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#860 BATTERY

DANGER ⚠

- **Since flammable hydrogen gas is generated by the battery be sure to obey the following warnings:**
  - **Do not short-circuit the (+) and (–) terminals on the battery.**
  - **Keep sparks and lit cigarettes away from the battery.**
  - **Do not wear metal objects on your arms and lean over battery.**
- **Because the battery electrolyte is made of diluted sulfuric acid and is corrosive, when handling battery wear safety glasses and rubber gloves to protect the eyes and hands.**

WARNING ⚠

- **Make sure that you disconnect battery cable (–) first when you disconnect battery cables.**

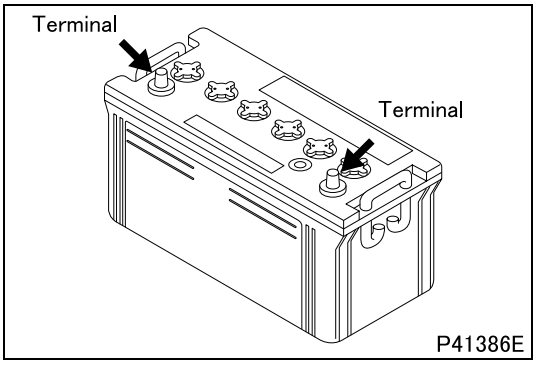
CAUTION ⚠

- **Make sure that all electrical switches of the vehicle are OFF before connecting battery cables.**
- **Make sure that you connect battery cable (+) before you connect battery cable (–).**
- **To prevent a short-circuit be sure that disconnected battery cables do not accidentally touch the battery terminals.**

Service standards

Location	Maintenance item	Standard value	Limit	Remedy
–	Specific gravity of battery electrolyte (20°C {68°F})	1.280	1.220	Charge or replace

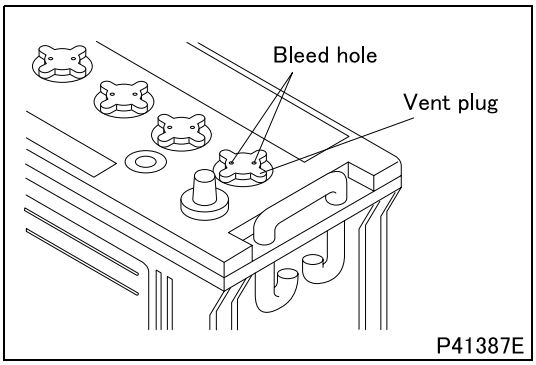
◆Service procedure◆



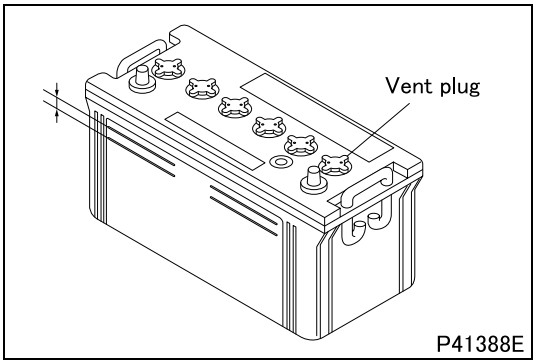
Inspection of battery

(1) Visual inspection

- If terminal is corroded, scrub off the corrosion from it using a wire brush.
- If cracks or defects are found on battery, replace it since the cracks or defects can cause liquid spills.

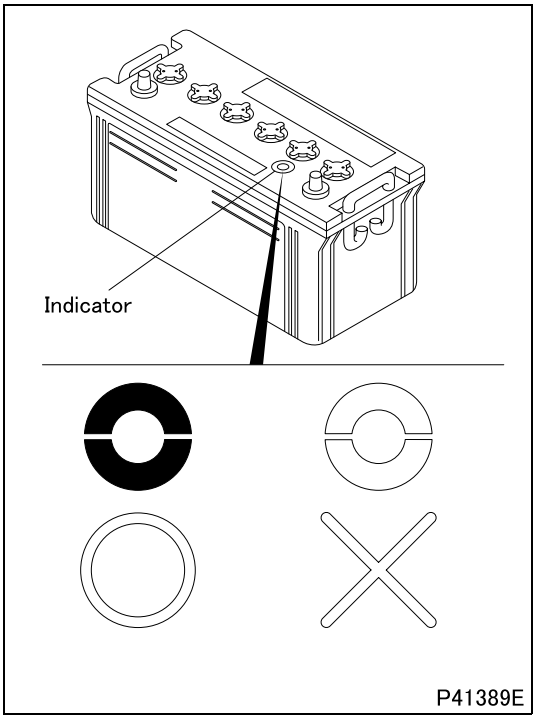


- If bleed hole of vent plug is clogged, clean the hole.



(2) Inspection of fluid level

- Make sure that the battery electrolyte level is between UPPER and LOWER.
- If the level is below LOWER, remove vent plug and fill the battery with distilled water or battery replenisher to UPPER.

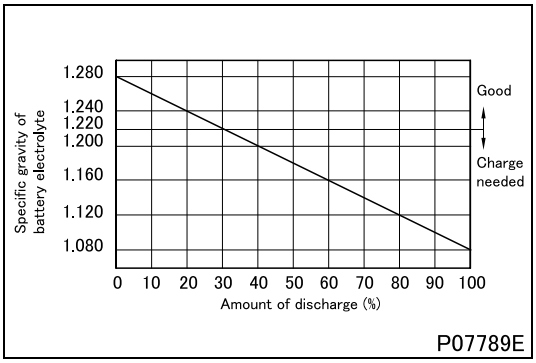


(3) Measurement of specific gravity

You can tell the specific gravity of the battery electrolyte by the color shown in indicator.

Blue : Good
White : Charge or replace

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(4) Charging

- Although, as a rule, battery charging should be done with the battery removed from the vehicle, if you have to charge the battery while it is on the vehicle, make sure that you stop the engine and disconnect battery cable (–).
- Remove vent plug before charging the battery.
- For the recommended charge time and current, see the following table to avoid overcharging.

	Charge current (A)	Charge time (H)	Upper limit of fluid temperature (°C {°F})
Normal charge	Value of 5-hour rating capacity / 10	*Amount of discharge (Ah) / Charge current (A) ×1.2 (to 1.5)	45 {113}
Quick charge	Value of 5-hour rating capacity / 1.5	0.5	55 {131}

* Amount of discharge (Ah) =

$$\text{5-hour rating capacity (Ah)} \times \frac{\text{Amount of discharge (\%)}}{100}$$

- Use the graph shown on the left to calculate the amount of discharge (%).
- Use diluted sulfuric acid, made up of sulfuric acid and refined or distilled water, as the battery electrolyte.

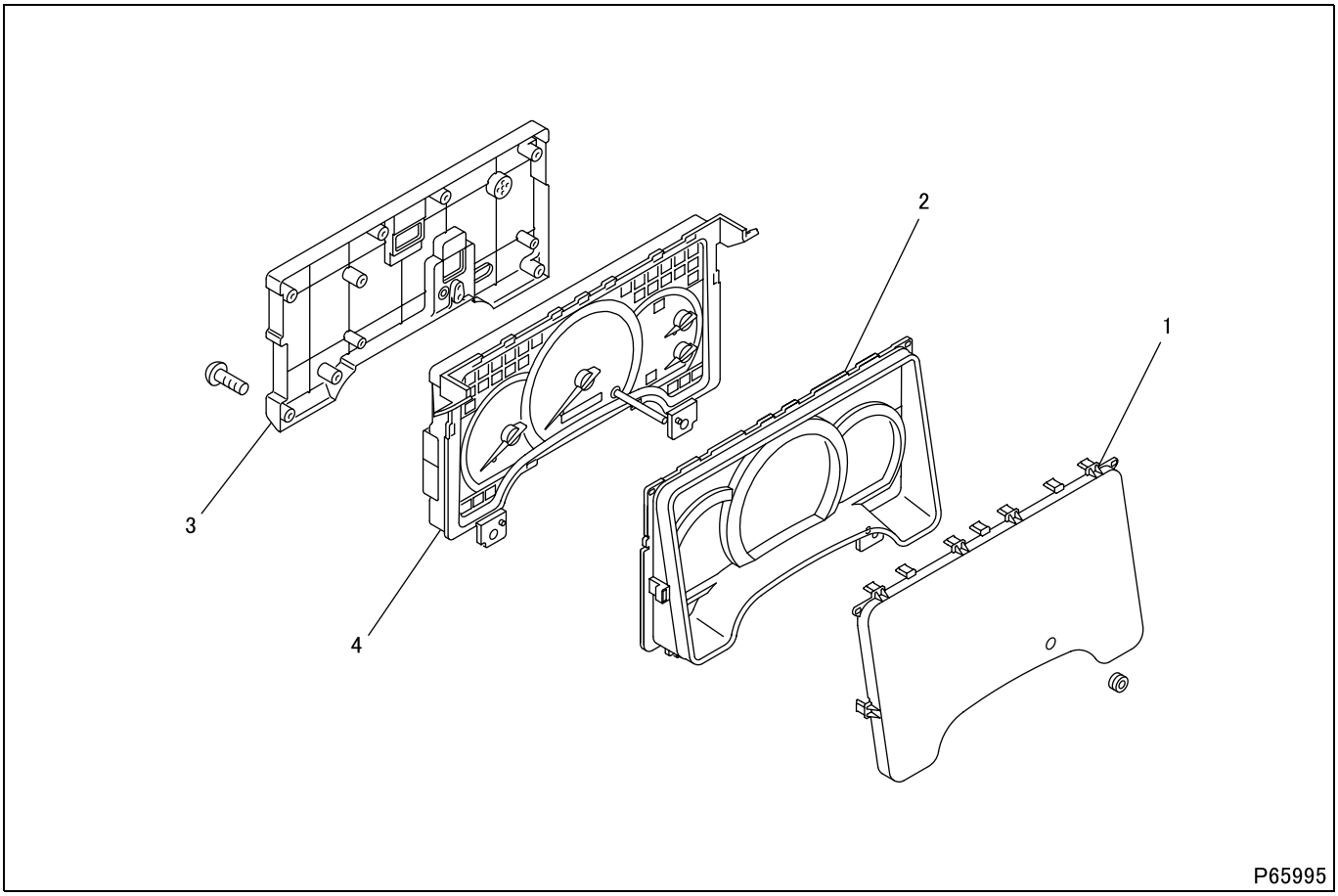
DANGER ⚠

- **Keep naked light away from the battery while charging to prevent explosion.**
- **It is dangerous to generate sparks while charging the battery.**
- **Do not charge battery if the electrolyte level is below LOWER LEVEL, since it can cause early deterioration, heating, or explosion. Make sure to add the fluid to the specified level before charging.**

WARNING ⚠

- **Do not let the battery electrolyte level rise and overflow while charging the battery.**
- **After charging the battery, tighten vent plug, wash away sulfuric acid from the battery using water, and dry the surface.**

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● Disassembly sequence

1 Meter glass
2 Plate
3 Cover
4 Body

● Assembly sequence

Follow the disassembly sequence in reverse.

◆Inspection procedure◆

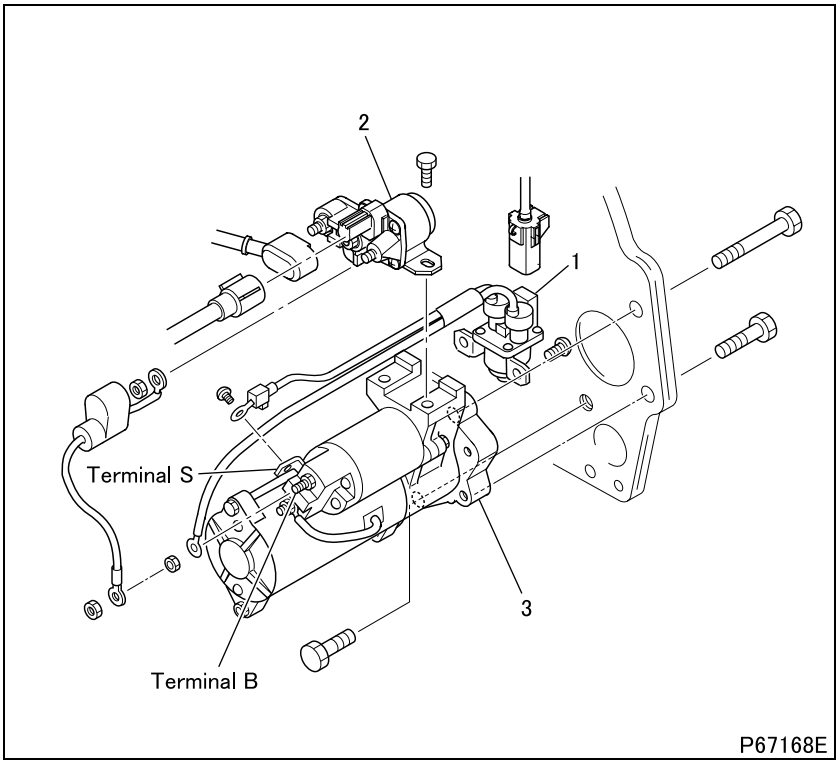
■ Inspection: Meters

- Each sensor signal is converted into digital signal in the meter cluster and then the value is indicated by the corresponding meter on the cluster. Therefore, a single meter inspection cannot be performed.
  Each meter should be checked indirectly by checking its related harnesses and parts.
- If the related harnesses and parts are normal but the meter indication is faulty, replace the meter cluster.

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54-12 STARTER AND ALTERNATOR

#930 STARTER



● Removal sequence

1 Starter relay
2 Glow relay
3 Starter

WARNING ⚠

- **Before removing the starter, disconnect the (–) battery cable and insulate the cable and the (–) battery terminal with tape.**
- **It is dangerous to leave the (–) battery cable connected since the battery cable voltage is always present at terminal B.**

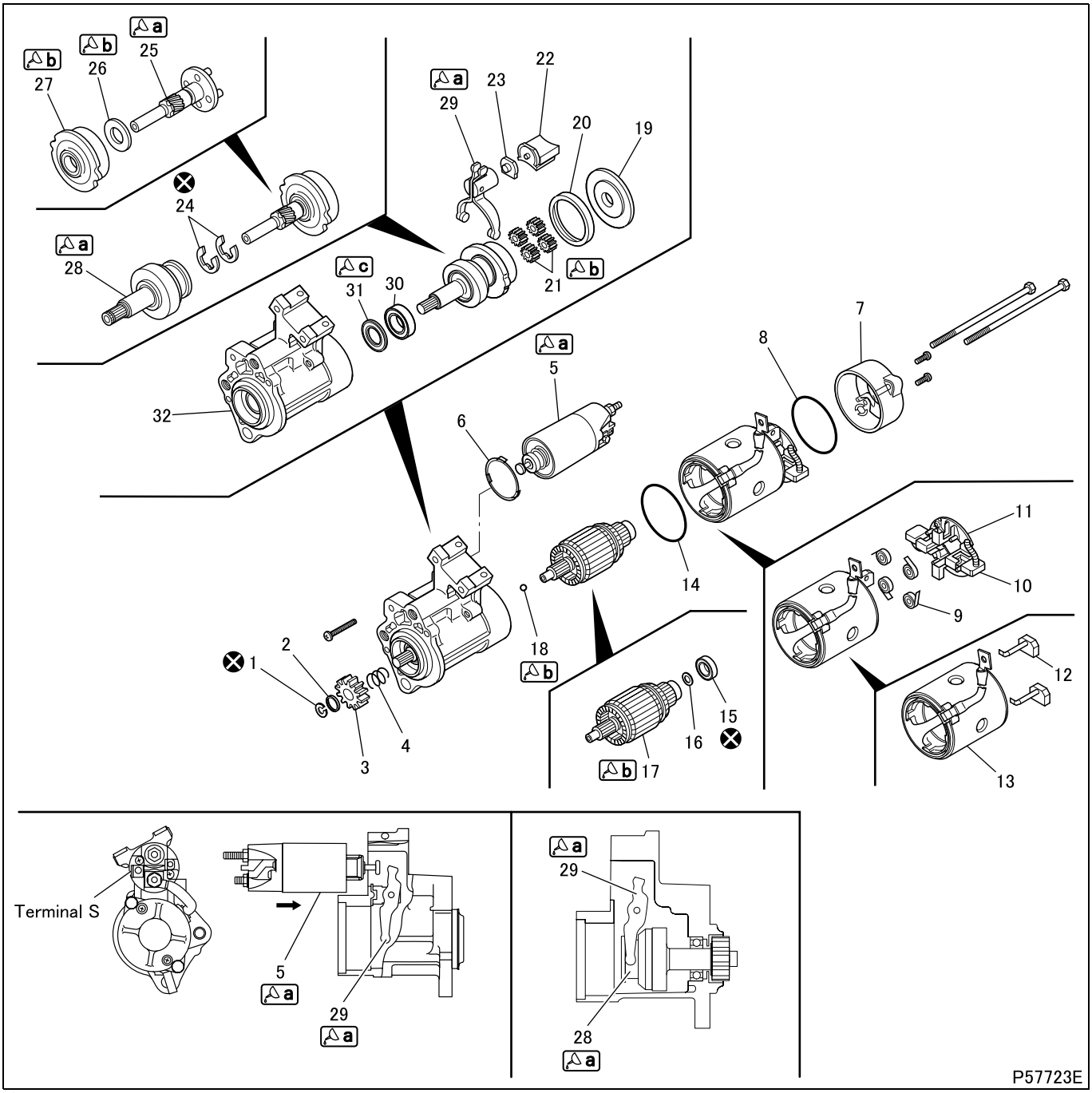
● Installation sequence

Follow the removal sequence in reverse.

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M E M O

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● **Disassembly sequence**

1 Stopper ring
2 Pinion stopper
3 Pinion
4 Spring
5 Magnetic switch
6 Shim
7 Rear bracket
8 Packing
9 Brush spring
10 Brush (–)
11 Brush holder
12 Brush (+)
13 Yoke
14 Packing
15 Rear bearing
16 Washer
17 Armature
18 Ball
19 Cover
20 Rubber packing
21 Planetary gear
22 Rubber packing
23 Plate
24 E-ring
25 Gear shaft
26 Washer
27 Internal gear
28 Overrunning clutch
29 Lever
30 Front bearing
31 Oil seal
32 Front bracket

⊗: Non-reusable parts

CAUTION ⚠

- **Do not remove the rear bearing unless defects are evident.**
- **When the armature is removed, the ball may come out with it. Take care not to lose the ball.**
- **It is not necessary to remove the pinion when only the motor section needs to be disassembled for inspection, like when inspecting brushes and related parts.**
- **Be sure to remove the pinion before disassembling any other parts.**

● Assembly sequence

Follow the disassembly sequence in reverse.

CAUTION ⚠

- **Whenever the magnetic switch is replaced, the pinion gap must be adjusted.**

Service standards (Unit: mm {in.})

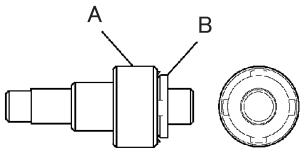
Location	Maintenance item			Standard value	Limit	Remedy
–	Pinion gap			0.5 to 2.0 {0.02 to 0.079}	–	Adjust
–	No-load characteristics	With 11 V applied	Current	180 A or less	–	Inspect
			Rotation speed	3800 rpm or higher	–	
9	Brush spring pressure			29.2 to 39.4 N {6.6 to 8.9 lbs, 3 to 4 kgf}	13.7 N {3.1 lbs, 1.4 kgf}	Replace
10, 12	Brush length			18 {0.71}	11 {0.43}	Replace
17	Commutator outside diameter			32 {1.26}	31.4 {1.24}	Replace
	Runout of commutator periphery			–	0.1 {0.0039} or higher	
	Mold depth between segments			–	0.2 {0.0079} or less	Correct or replace

Lubricant and/or sealant

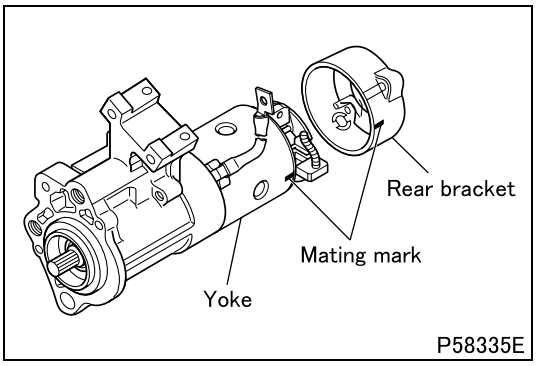
Mark	Points of application	Specified lubricant and/or sealant	Quantity
a	Lever contact surface of magnetic switch	Multipurpose grease [NLGI No. 2 (Li soap)]	As required
	Sliding surfaces of gear shaft and overrunning clutch		
	Splines of overrunning clutch		
	Sliding surfaces of lever and overrunning clutch		
b	Sliding surfaces of armature and gear shaft	Molykote AG650	As required
	Ball		
	Teeth of planetary gear and internal gear		
	Washer		
c	Oil seal	Multipurpose grease [NLGI No.2 (Li soap)] or grease attached to oil seal	As required

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Special tools

Mark	Tool name and shape	Part No.	Application
ⓒa	Bearing remover and installer **A**: Bearing remover and installer **B**: Bearing installer  P50804	MH063596 **A**: MH063614 **B**: MH063618	Removal and installation of front bearing

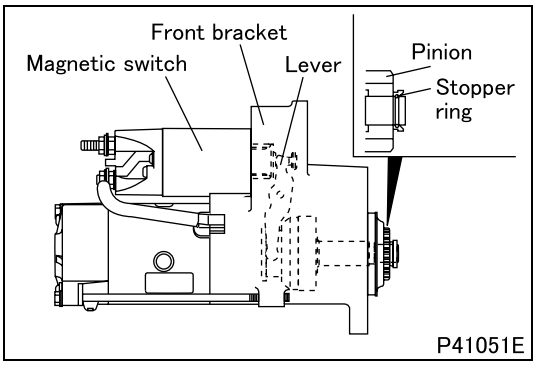
◆Work before disassembly◆



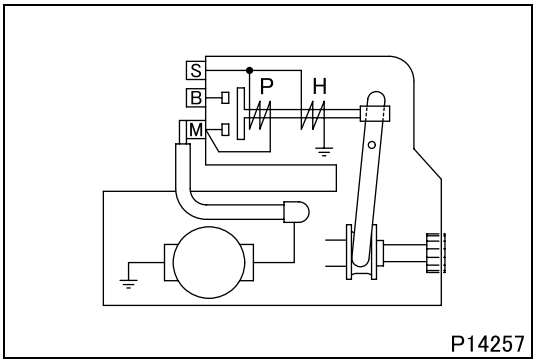
P58335E

■ **Mating mark: Rear bracket and yoke**

◆Disassembly procedure◆



P41051E



P14257

■ **Disassembly: Pinion**

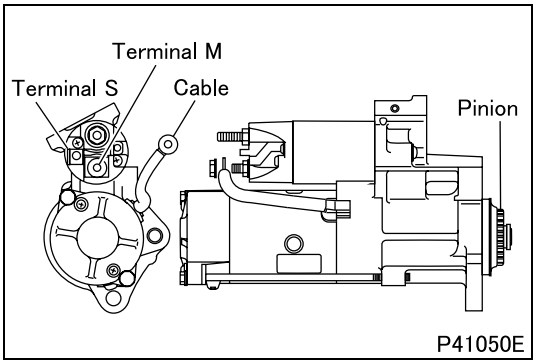
- For removal of the pinion, current must be supplied to the starter such that the pinion springs out.

WARNING ⚠

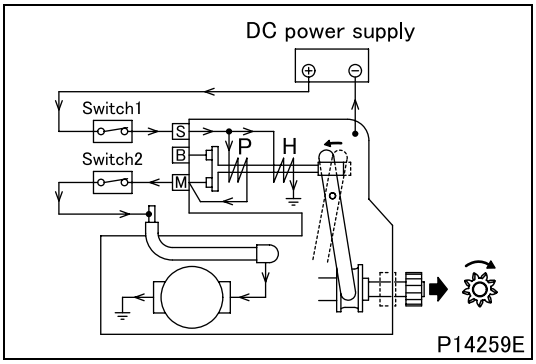
- **When the starter is energized, the pinion will spring out and rotate. Be careful not to touch it with your hands.**
- **The magnetic switch may become very hot during inspections. Be careful when touching it.**

CAUTION ⚠

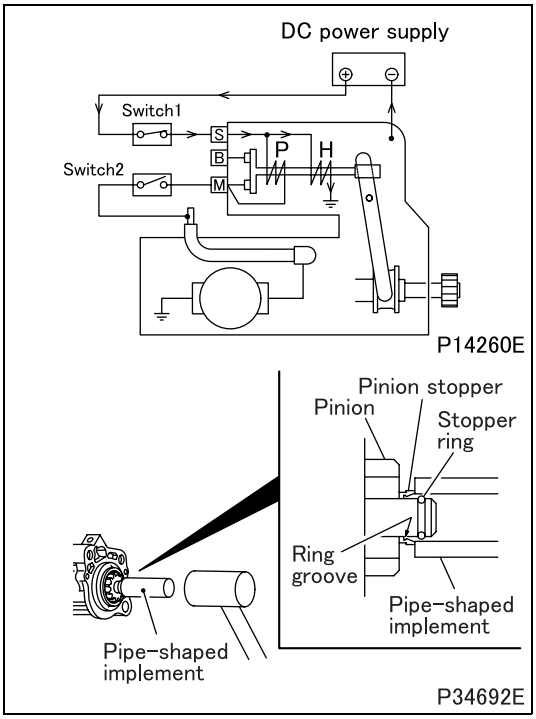
- **Do not energize the pull-in coil P for longer than 10 seconds, and do not energize the holding coil H for longer than 30 seconds. If these periods are exceeded, the coils may overheat and burn out.**
- **To make the pinion spring out, be sure to energize the starter such that its parts are positioned correctly. If the starter is not energized and the lever is pulled to make the pinion come out, the front bracket and/or lever may be damaged by the shock inflicted upon them when the stopper ring is removed.**
- **When current is supplied to the starter, a large current (100 A or higher) will flow. For inspection purposes, use booster cables or similarly thick cables. It is also important to ensure that all connections are secure.**



- Connect the starter as illustrated.



- The following operations are performed with current supplied to the starter. Thus, the entire procedure for removal of the pinion must be completed within 30 seconds.
  - Turn ON switches 1 and 2 to supply current to the starter. The pinion will spring out and rotate.



- After the pinion starts to rotate, quickly (within five seconds) turn OFF switch 2 to stop the pinion's rotation.

CAUTION ⚠

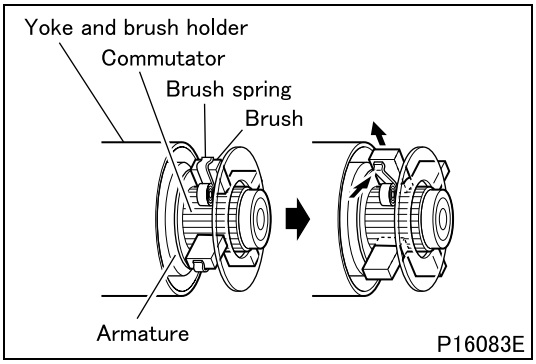
- **When switches 1 and 2 are turned ON, the pull-in coil P and holding coil H are both energized. The circuit is connected such that no voltage is applied to starter terminal B, so current flows to the pull-in coil while the pinion rotates. To prevent the pull-in coil from burning out, it is essential to turn OFF switch 2 quickly (within five seconds) after the pinion starts to rotate.**

- Apply a pipe-shaped implement to the pinion stopper.
- Using a hammer, lightly tap the pipe-shaped implement to remove the stopper ring from the ring groove of the pinion stopper.
- Remove the stopper ring and pinion.
- Turn OFF switch 1 to de-energize the starter.

CAUTION ⚠

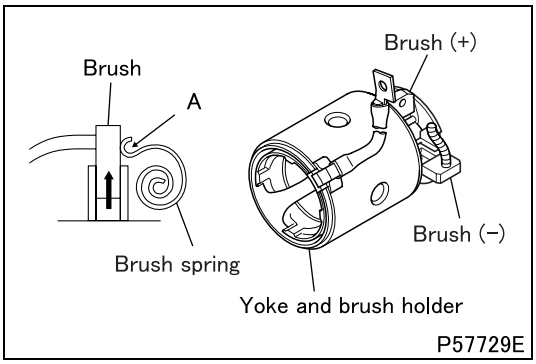
- **When the starter is de-energized, the mechanism will attempt to pull in the pinion. Thus, the stopper ring may slip back into the ring groove of the pinion stopper. If this happens, energize the starter and go through the pinion removal procedure again.**

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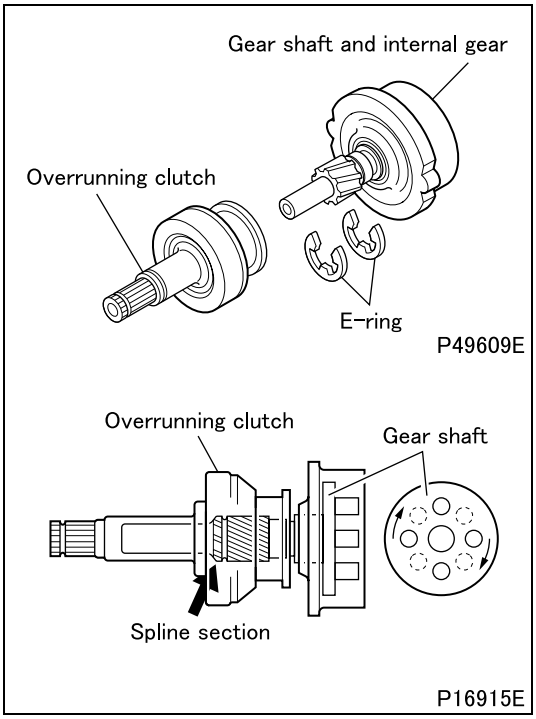


■ **Disassembly: Yoke and brush holder**

- Use the following method to remove the yoke and brush holder in order to prevent the commutator of the armature from being damaged by the brushes.
  - Lift the brushes away from the commutator and hold them lifted by applying the brush springs against the sides of the brush springs.

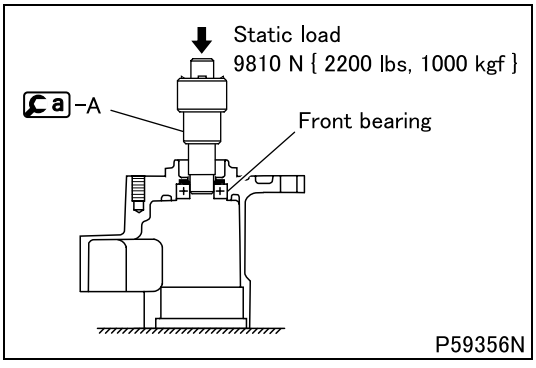


- Pull part A of each brush spring and pull up the brushes.
- Hold the brushes in position with the brush springs as illustrated.
- Remove the yoke and brush holder.



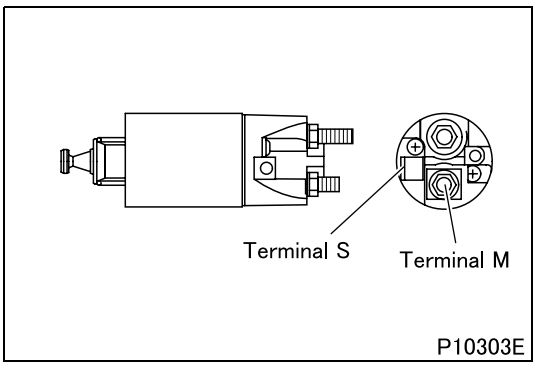
■ **Disassembly: Gear shaft and internal gear**

- Remove the E-rings and then the gear shaft and internal gear from the overrunning clutch.
  Proceed as follows if the gear shaft cannot be removed due to interference of the splined section of gear shaft with internal parts of the overrunning clutch.
  - Press the gear shaft against the overrunning clutch.
  - Turn the gear shaft approx. 1/8 of a turn to change the position of splined section.



■ **Disassembly: Front bearing**

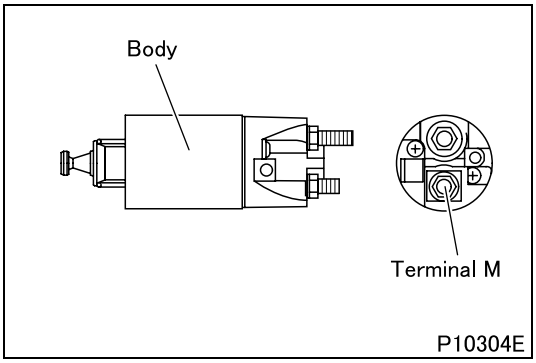
◆Inspection procedure◆



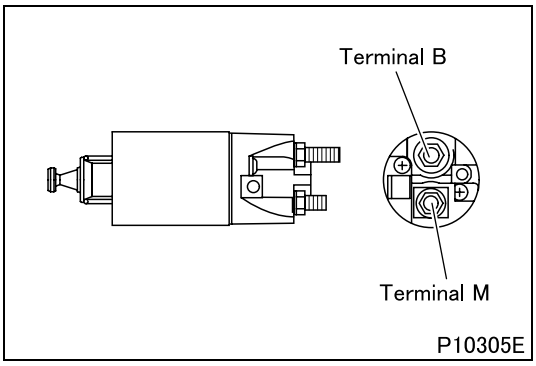
■**Inspection: Magnetic switch**

(1) Test for coil open circuit

- Check that continuity exists between terminals S and M.

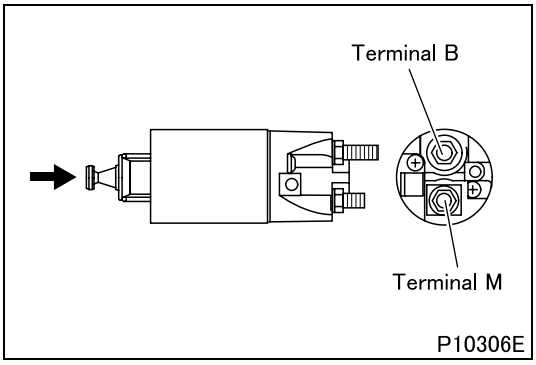


- Check that continuity exists between terminal M and the body.



(2) Test for fused-together contacts

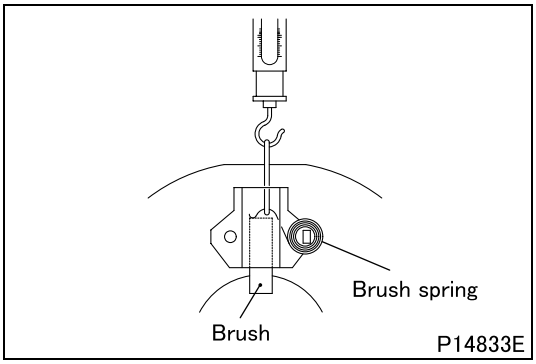
- Check that continuity does not exist between terminals B and M.



(3) Test for contact-to-contact continuity

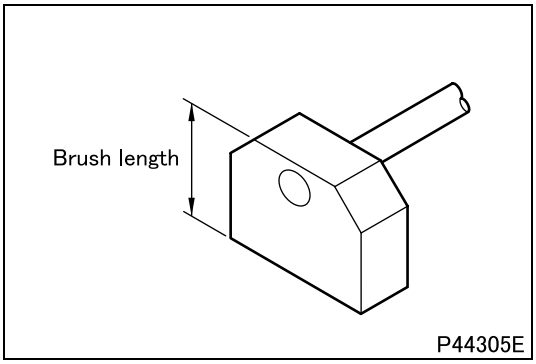
- Push in the end of the magnetic switch to close the internal contacts. Then, check that continuity exists between terminals B and M.

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■ **Inspection: Brush spring**

- Using new brushes, measure the load required to separate each brush spring from its brush.
- If either measurement is lower than the specified limit, replace the brush springs.



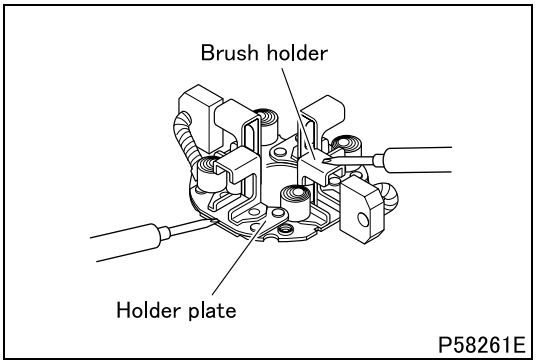
■ **Inspection: Brush (–)**

(1) Brush length

- If either brush (–) is shorter than the limit, it must be replaced.

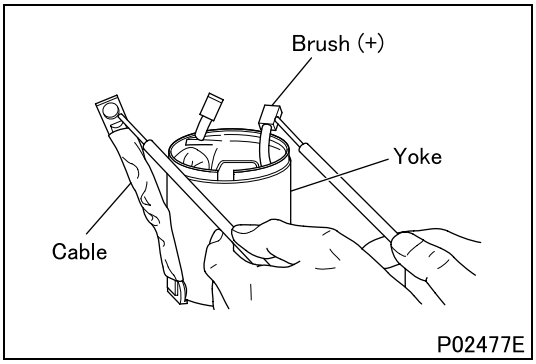
(2) Commutator contact surface of brush

- If the commutator contact surface of either brush is rough or unevenly worn, rectify it with emery paper (#300 to 500).



■ **Inspection: Brush holder**

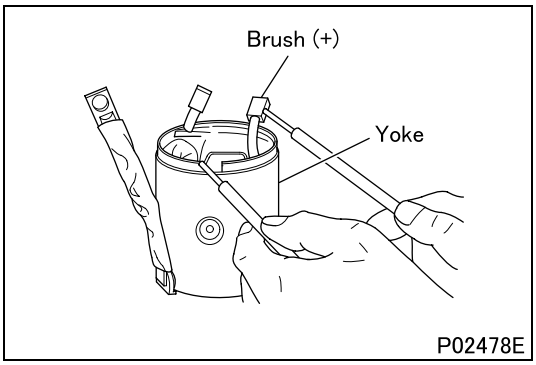
- Thoroughly clean the (+) brush holder and the (–) holder plate, then, check that continuity does not exist between them.
- If continuity exists, there is a short circuit and the brush holder must be replaced.



■ **Inspection: Yoke**

(1) Test for coil open circuit

- Check that continuity exists between the cable and the (+) brush.
- If there is no continuity, there is an open circuit and the yoke or (+) brush must be replaced.

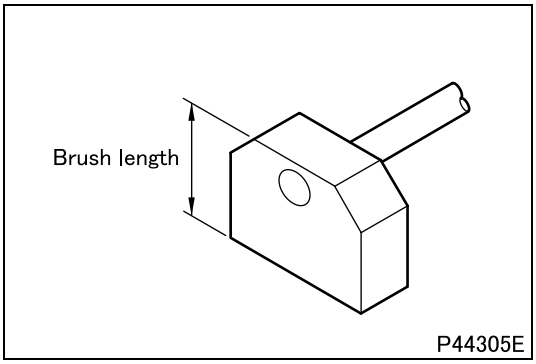


(2) Test for coil grounding

- Check that continuity does not exist between the yoke and the (+) brush.
- If continuity exists, the coil is grounded. Inspect the insulation, and replace the yoke and the (+) brush if the insulation cannot be rectified.

CAUTION ⚠

- **The coil may be grounded to the yoke due to the accumulation of worn-off metal particles from the brushes and/or armature.**



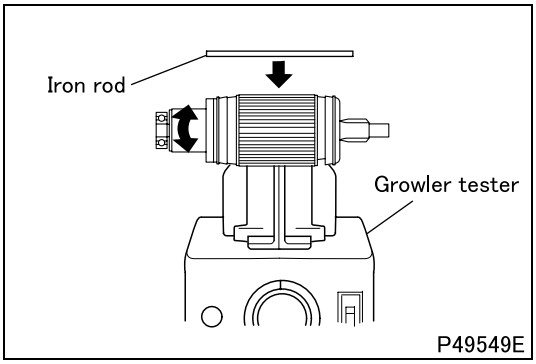
■**Inspection: Brush (+)**

(1) Brush length

- If either brush (+) is shorter than the limit, it must be replaced.

(2) Commutator contact surface of brush

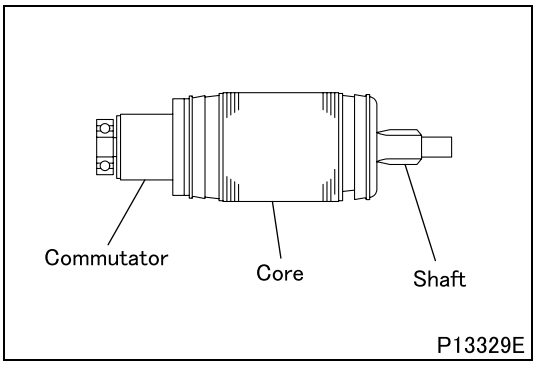
- If the commutator contact surface of either brush is rough or unevenly worn, rectify it with emery paper (#300 to 500).



■ **Inspection: Armature**

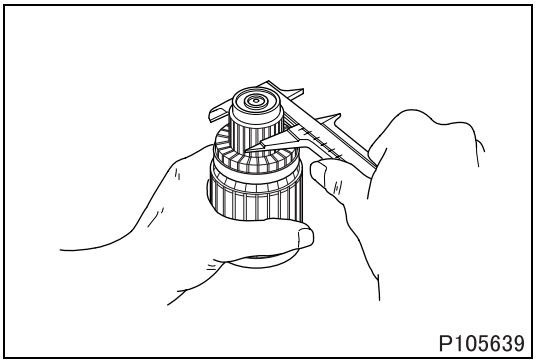
(1) Test for coil short circuit

- Hold an iron rod parallel with the armature.
- Slowly rotate the armature by hand.
- If the iron rod vibrates or is pulled toward the armature, the coil is short-circuited and the armature must be replaced.



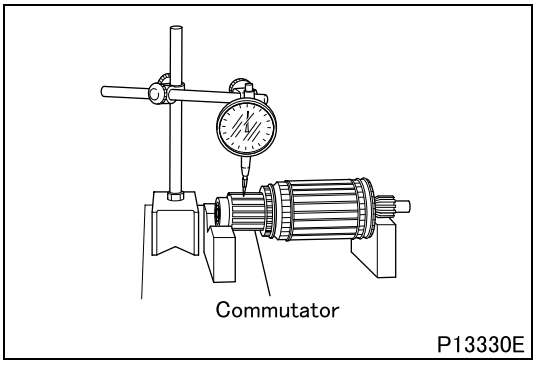
(2) Test for coil grounding

- Check that continuity does not exist between the commutator and the core (or shaft).
- If continuity exists, the coil is grounded and the armature must be replaced.



(3) Commutator outside diameter

- If the measurement is out of specification, replace the armature.



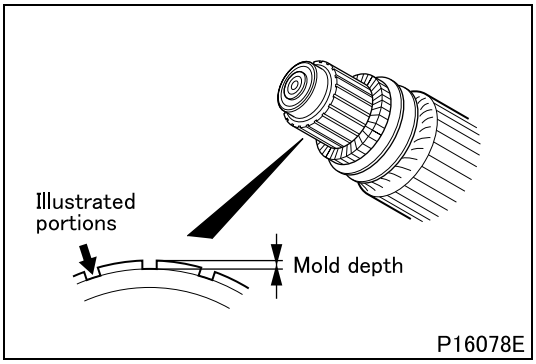
(4) Runout of commutator periphery

- If the reading exceeds the specified limit, rectify the commutator of the armature, making sure the outside diameter stays within specification.

(5) Condition of commutator surface

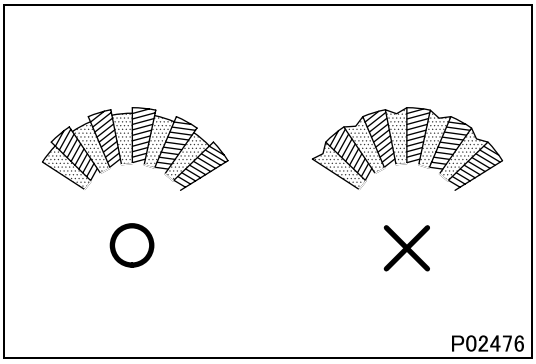
- If the surface is rough or has stepped wear, rectify it with emery paper (#300 to 500).
- After rectifying the surface, check the extent of commutator runout.

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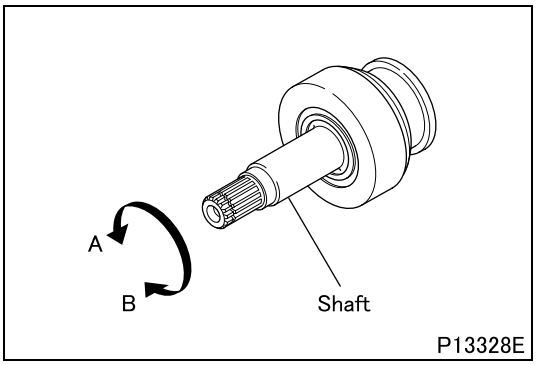
(6) Mold depth between segments

- If the measurement is lower than the specified limit, rectify or replace the armature.
- To rectify the armature, grind the illustrated portions.



- If the mold is worn as illustrated, rectify or replace the armature.

○: Acceptable
×: Unacceptable

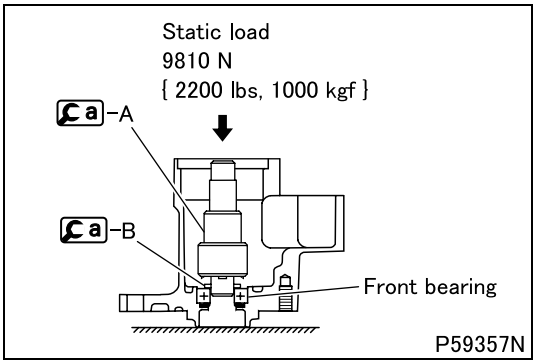


■ Inspection: Overrunning clutch

If the following inspections reveal any abnormality, replace the overrunning clutch.

- Turn the shaft in direction B and check that it rotates smoothly.
- Turn the shaft in direction A and check that it locks.

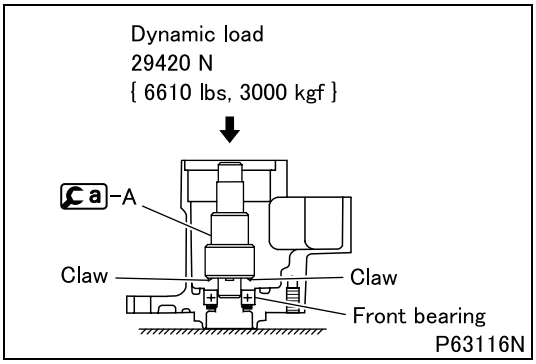
◆Assembly procedure◆



■ Assembly: Front bearing

- Press-fit the front bearing using Ca-A and Ca-B.

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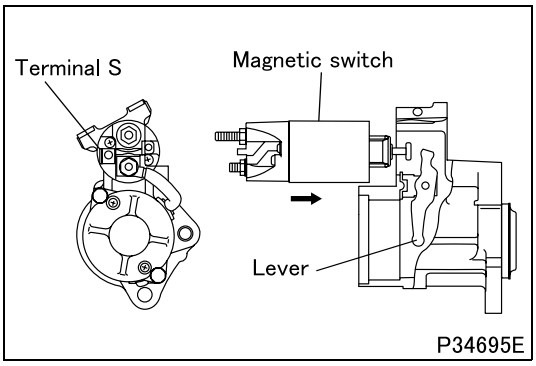
- After the press fitting, caulk the front bearing using the claw on a -A.

CAUTION ⚠

- **Avoid re-caulking previously caulked points.**

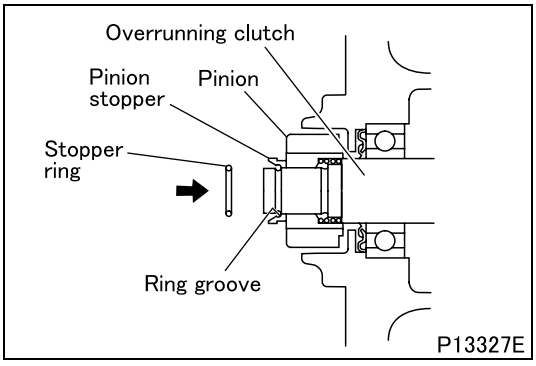
■ Assembly: Yoke and brush holder

- To install the yoke and brush holder, follow the removal sequence in reverse.
  (See "**■ Disassembly: Yoke and brush holder**".)



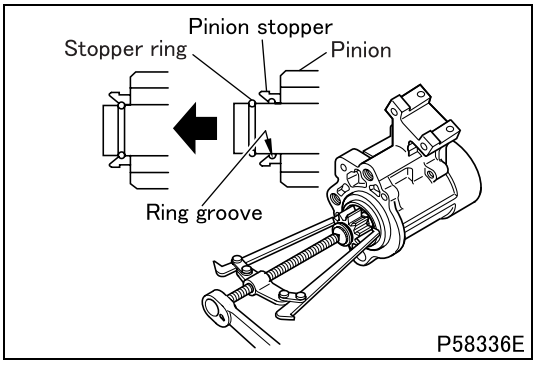
■ Assembly: Magnetic switch

- Fit the magnetic switch onto the lever with terminal S aligned as illustrated.



■ Assembly: Pinion

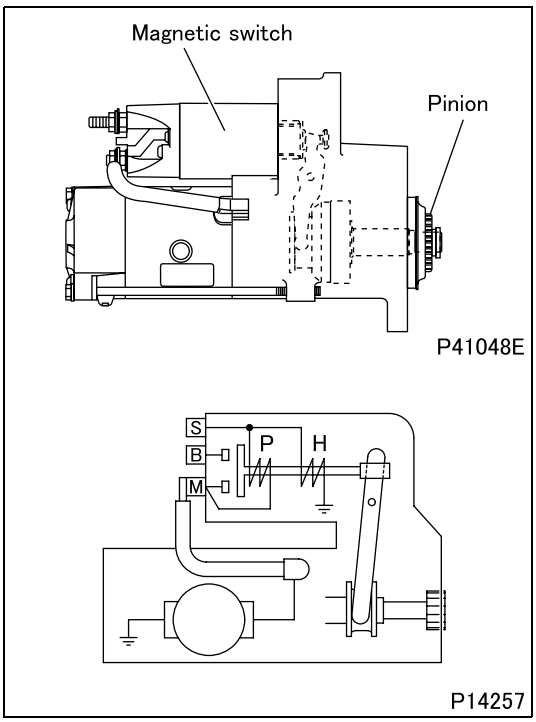
- For installation of the pinion, it is not necessary to supply current to the starter.
  - Fit the pinion stopper and pinion onto the overrunning clutch, making sure they are oriented as illustrated.
  - Fit the stopper ring into the ring groove of the overrunning clutch.

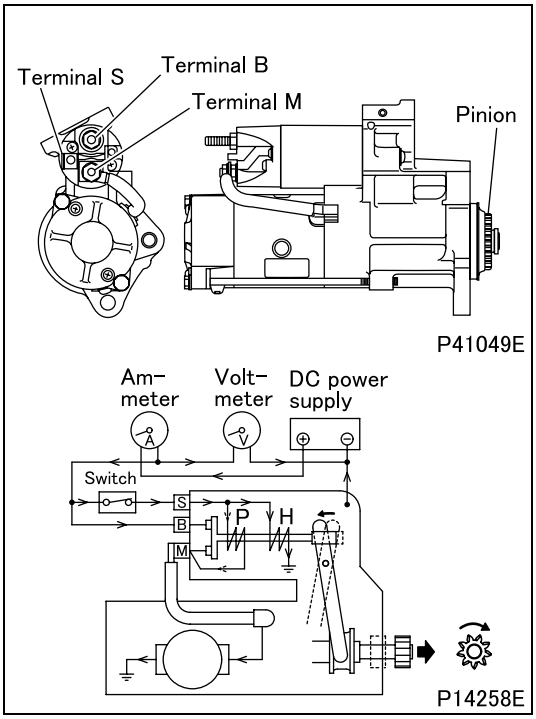


- Pull the pinion hard and securely fit the stopper ring into the ring groove of the pinion stopper.

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◆Inspection after assembly◆





■Inspection: Performance and pinion gap

- After assembling the starter, perform inspections with current supplied to it.

WARNING ⚠

- **When the starter is energized, the pinion will spring out and rotate. Be careful not to touch it with your hands.**
- **The magnetic switch may become very hot during inspections. Be careful when touching it.**

CAUTION ⚠

- **Do not energize the pull-in coil P for longer than 10 seconds, and do not energize the holding coil H for longer than 30 seconds. If these periods are exceeded, the coils may overheat and burn out.**
- **When current is supplied to the starter, a large current (100 A or higher) will flow. For inspection purposes, booster cables or similarly thick cables must therefore be used. It is also important to ensure that all connections are secure.**

(1) Performance test

- Connect the starter as illustrated.
- Set the voltage to 11 volts DC.

CAUTION ⚠

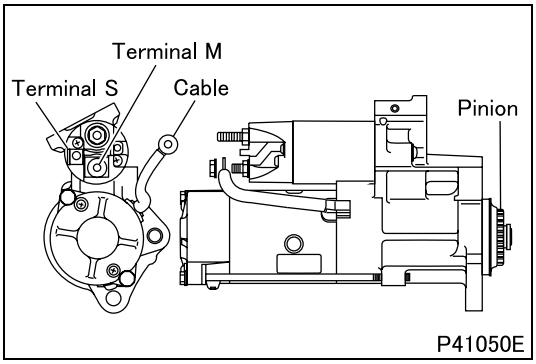
- **The voltage applied must not exceed 12 V.**

- The following operations are performed with current supplied to the starter. Thus, the entire test (consisting of measurement of the current flowing through the starter and measurement of the starter's rotational speed) must be completed within 30 seconds.
  - Turn ON the switch to supply current to the starter. The pinion will spring out and rotate.

CAUTION ⚠

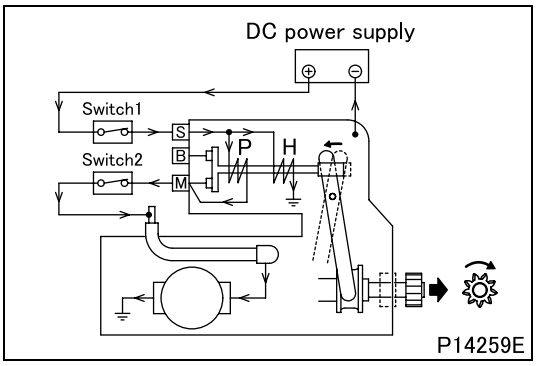
- **When the switch is turned ON, the pull-in coil P and holding coil H are both energized. When the large current from the DC power supply flows from terminal B to terminal M, the supply of current to the pull-in coil P is cut; only the holding coil H remains energized. To prevent the holding coil from burning out, it is essential to complete all operations within 30 seconds.**

  - Measure the current and the starter's rotational speed. To measure the rotational speed, shine a stroboscope on the pinion.
  - Turn OFF the switch to de-energize the starter.
- If either measurement is out of specification, disassemble and inspect the starter again.

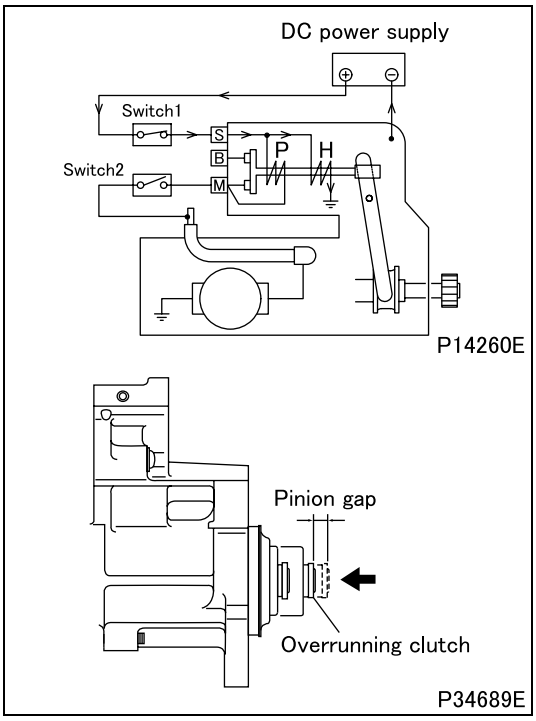


(2) Pinion gap

- Connect the starter as illustrated.



- The following operations are performed with current supplied to the starter. Thus, the entire procedure for measurement of the pinion gap must be completed within 30 seconds.
  - Turn ON switches 1 and 2 to supply current to the starter. The pinion will spring out and rotate.



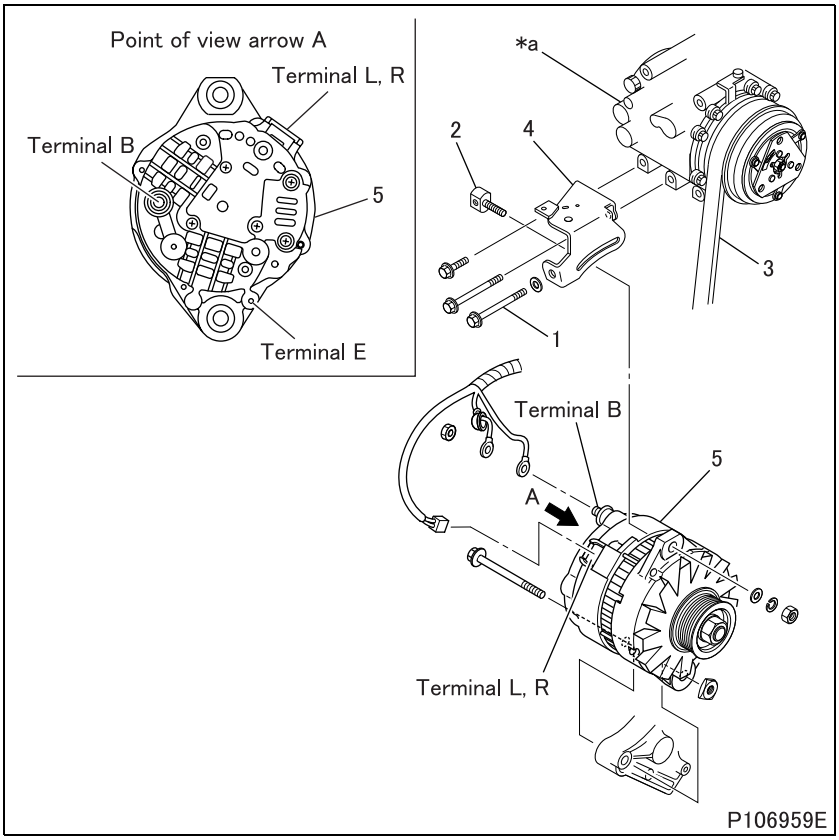
  - After the pinion starts to rotate, quickly (within five seconds) turn OFF switch 2 to stop the pinion's rotation.

CAUTION ⚠

- **When switches 1 and 2 are turned ON, the pull-in coil P and holding coil H are both energized. The circuit is connected such that no voltage is applied to starter terminal B, so current flows to the pull-in coil while the pinion rotates. To prevent the pull-in coil from burning out, it is essential to turn OFF switch 2 quickly (within five seconds) after the pinion starts to rotate.**

  - Pull out the end of the overrunning clutch and then lightly push in the end of the overrunning clutch and measure the amount of movement in the axial direction, i.e., the pinion gap.
  - Turn OFF switch 1 to de-energize the starter.
- If the measurement is out of specification, replace the lever.

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● Removal sequence

1 Adjusting Bolt
2 Adjusting Shaft
3 Belt
4 Adjusting Plate
5 Alternator

WARNING ⚠

- **Before removing the alternator, disconnect the (–) battery cable and insulate the cable and the (–) battery terminal with tape.**
- **It is dangerous to leave the (–) battery cable connected since the battery cable voltage is always present at terminal B.**

● Installation sequence

Follow the removal sequence in reverse.

CAUTION ⚠

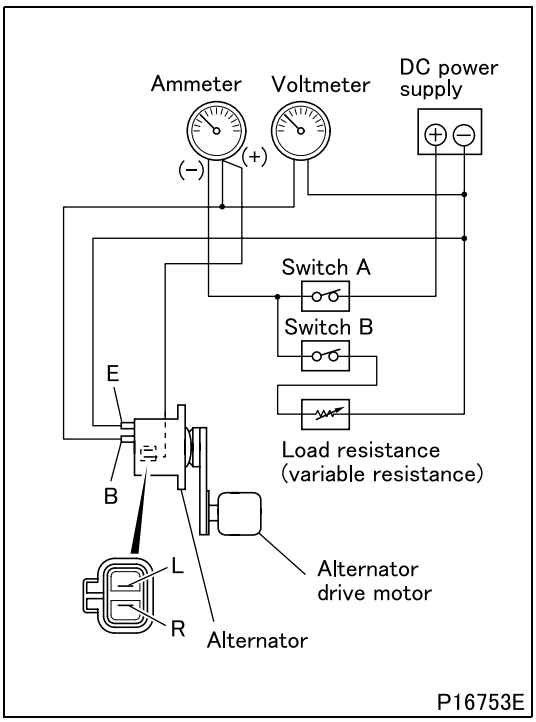
- **Be sure to adjust the V-belt tension. (See Gr14)**

Service standards

Location	Maintenance item		Standard value	Limit	Remedy
4	Alternator output current (*when alternator is hot and producing 13.5 V)	At 1500 rpm	51.5 A or more	–	Inspect
		At 2500 rpm	82.5 A or more	–	
		At 5000 rpm	104 A or more	–	
	Adjustment voltage of regulator (at 5000 rpm, 5A is loaded)		14.7 ± 0.3 V	–	Replace

* The hot condition is that which occurs after the alternator has been running at normal ambient temperature with 5000 rpm and maximum output for 30 minutes.

◆Inspection procedure◆



■Inspection: Alternator

(1) Alternator output current (Bench test)

- Connect the alternator as illustrated.

CAUTION ⚠

- **Wires with sufficient thickness should be used for wiring and each connection should be securely fastened.**

B: Terminal B
E: Terminal E
L: Terminal L
R: Terminal R

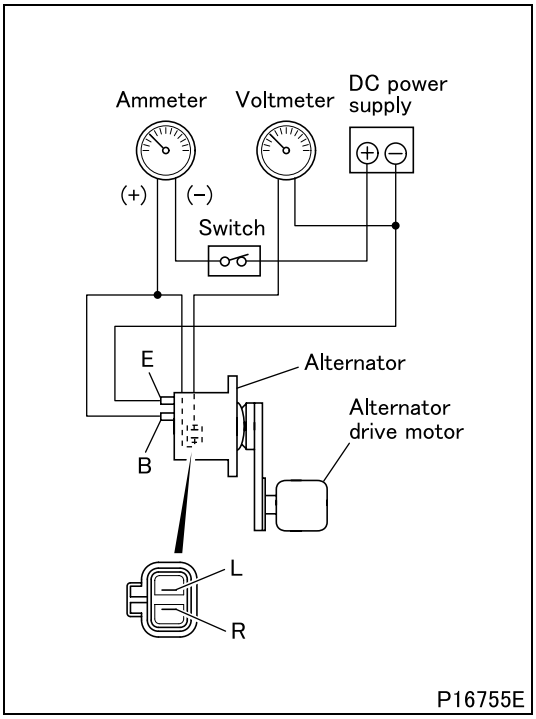
- Increase load resistance to the maximum (condition under which the load current hardly flows).
- Turn switch A and B ON.
- Run alternator at 5000 rpm for 30 minutes by adjusting load resistance so that electric current can conform to the specified standard.

  Alternator nominal current

Current
104 A or more

- Measure the current at each specified revolution of alternator.
- If the measured value is lower than the standard value, disassemble and check alternator.

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(2) Adjustment voltage of regulator (Bench test)

- Connect the alternator as illustrated.

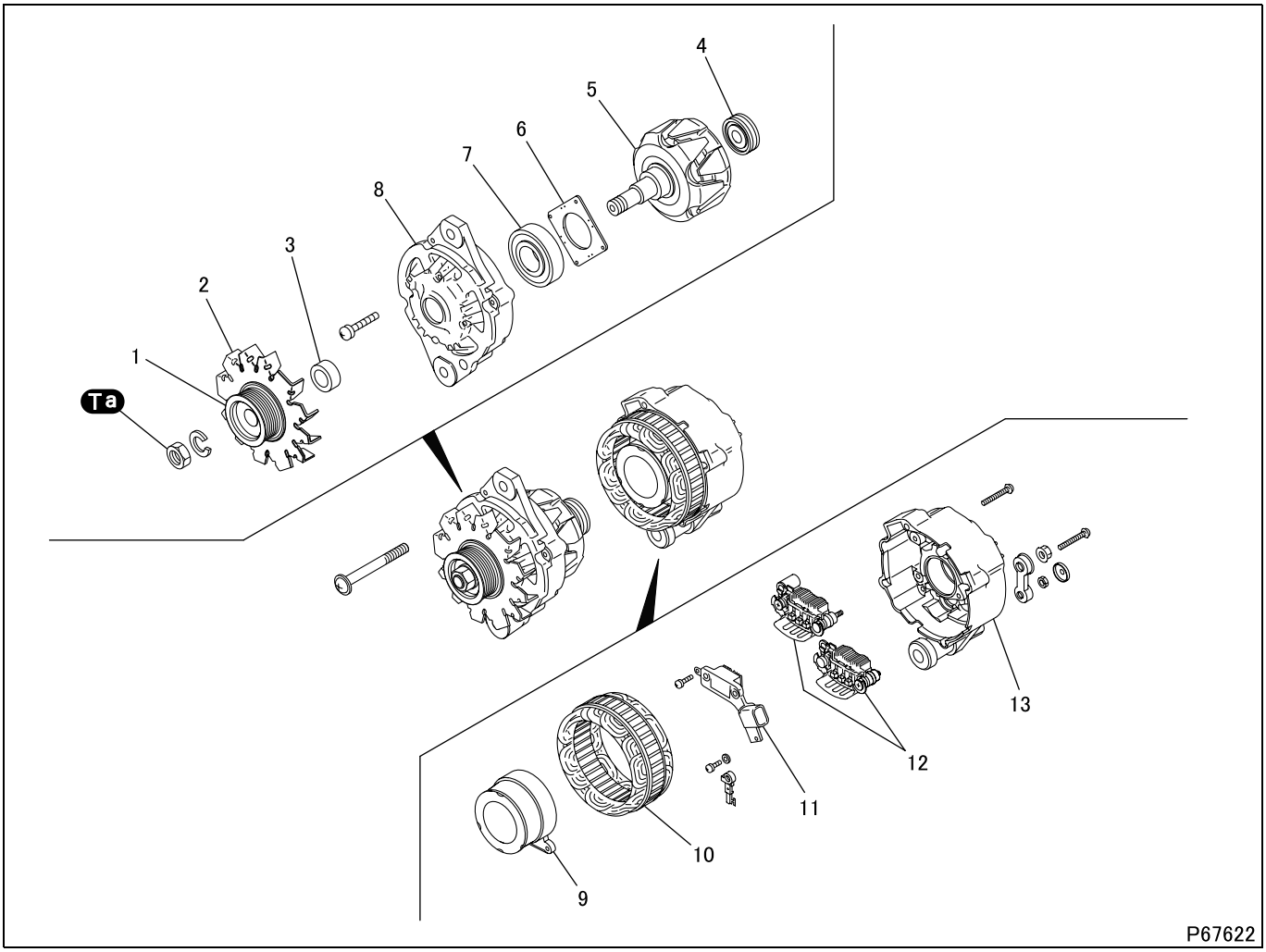
B: Terminal B
E: Terminal E
L: Terminal L
R: Terminal R

- Turn switch ON.
- Run alternator at low speeds.
- Increase the speed of alternator to 5000 rpm and measure the voltage (adjustment voltage) at this speed. At the same time, make sure that the current is 10 amperes or less at 5000 rpm.
- If the measured value deviates from the standard value, do as follows:
  - If higher than the standard value: Replace the regulator.
  - If lower than the standard value: Inspect the alternator related parts before replacing the regulator.

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M E M O

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● Disassembly sequence

1 Pulley
2 Fan
3 Spacer
4 Rear bearing
5 Rotor
6 Cover
7 Front bearing
8 Front bracket
9 Field coil
10 Stator
11 Regulator
12 Rectifier
13 Rear bracket

NOTE

- **Do not remove the rear and front bearing, stator unless faulty.**

● Assembly sequence

Follow the disassembly sequence in reverse.

Tightening torque (Unit: N·m {ft. lbs, kgf·m})

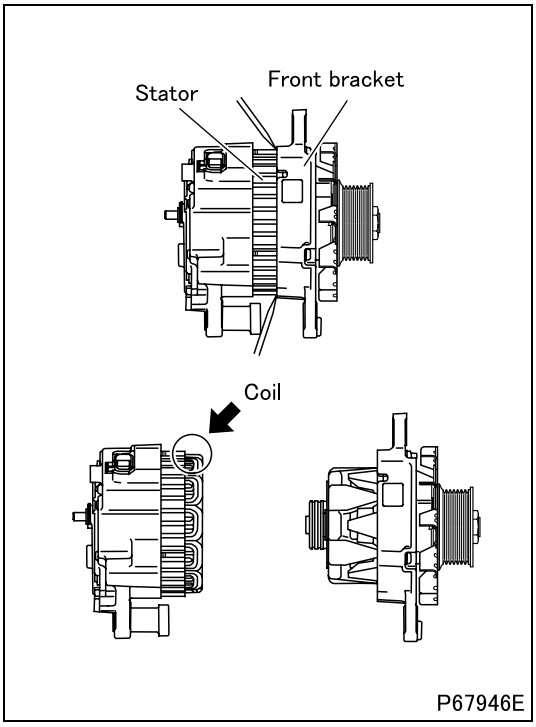
Mark	Parts to be tightened	Tightening torque	Remarks
Ta	Nut (Pulley mounting)	132 to 162 {97 to 120, 13 to 17}	–

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Service standards

Location	Maintenance item	Standard value	Limit	Remedy
9	Field coil resistance (at 20°C {68°F})	1.9 to 2.3 Ω	–	Replace

◆Disassembly procedure◆

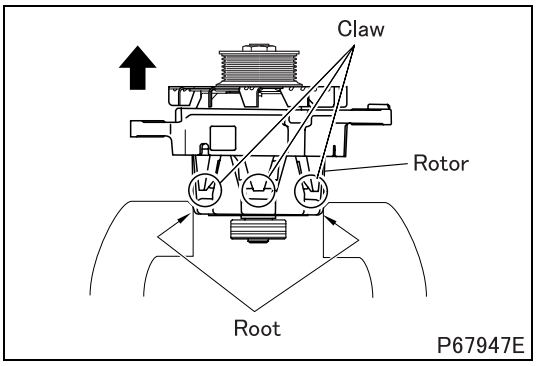


■ Disassembly: Rotor and front bracket

- Insert a screwdriver between front bracket and stator.
- Use the screwdriver to pry rotor and front bracket away from stator and rear bracket.

CAUTION ⚠

- **Be careful not to insert the screwdriver too deep or it will damage coil of stator and might cause a short-circuit.**

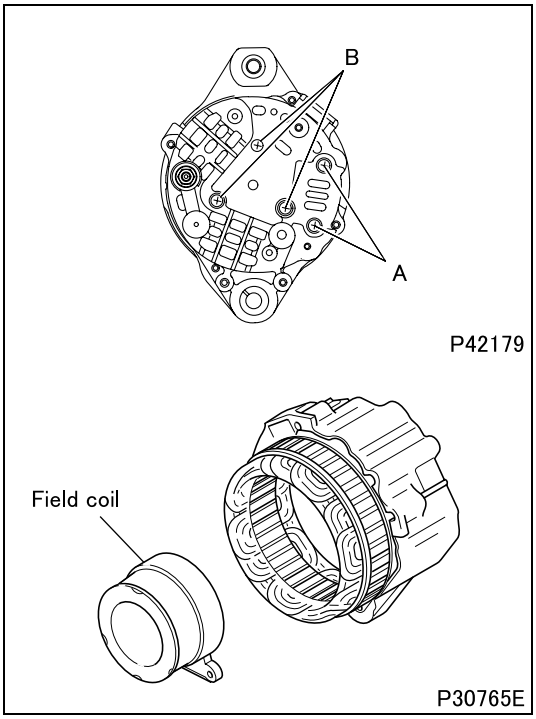


■ Disassembly: Pulley

CAUTION ⚠

- **Make sure to grip the root of the core claws when you hold the rotor in a vice. Gripping claws can damage them.**

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■ **Disassembly: Field coil**

- Remove screw **A** (2 places).

CAUTION ⚠

- **If screw B are removed first, the weight of field coil may be placed on the joining portion with regulator which is fixed with screw A, causing break of the joining portion. To avoid this, remove screw A first.**

- Remove screw **B** (3 places).

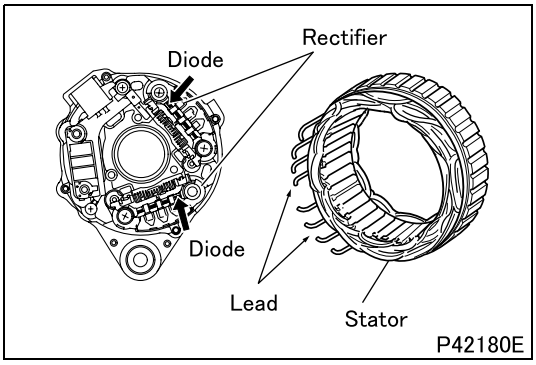
CAUTION ⚠

- **If screw B are removed, the field coil will fall under its own weight. Keep the field coil supported by your hand.**

- Remove field coil.

CAUTION ⚠

- **Do not remove the field coil forcibly. Otherwise the portion that joins with the regulator may be caught by the stator coil.**



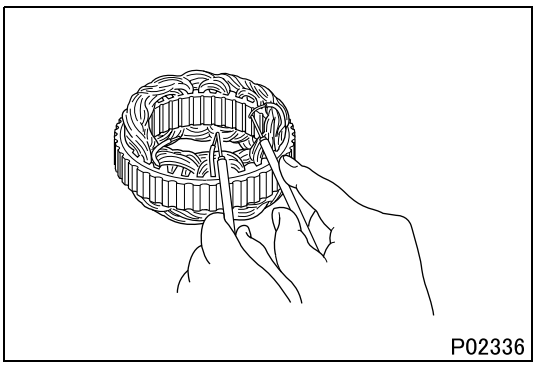
■ **Disassembly: Stator**

- Disconnect lead of stator from rectifier. The lead is soldered to diode of the rectifier at 8 places. (Each of the 2 rectifiers has 4 soldered sections.)

CAUTION ⚠

- **Unsolder within as short a time period as possible (within 5 seconds), otherwise diode can be easily damaged by heat.**

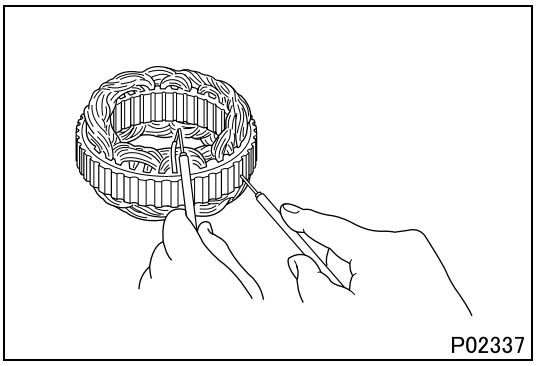
◆Inspection procedure◆



■Inspection: Stator

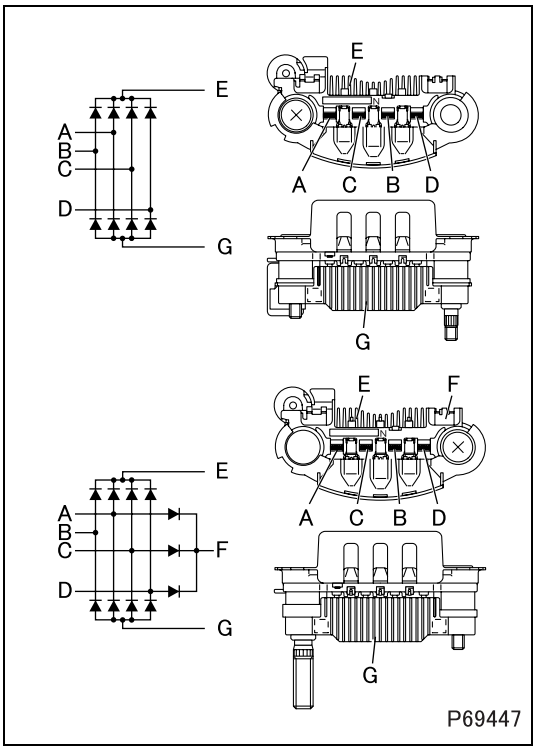
(1) Continuity between each lead wire

- Check that there is continuity between each stator lead.
- If there is no continuity, the lead has broken.



(2) Continuity between each lead wires and the core

- Check that there is no continuity between lead wires and the core.
- If there is continuity, the lead wire has short-circuited.



■Inspection: Rectifier

- Check the function of diodes within rectifier properly. If any fault is found, replace the rectifier.

  If resistance is infinite in both cases, the diode is open.
  If resistance is close to 0 Ω in both cases, the diode has shorted.

  A, B, C, D: Lead connecting area of stator coil
  E, G: Heat sink area
  F: Regulator connecting area

- Inspection should be conducted twice, changing over the positive probe and the negative probe of the tester.

CAUTION ⚠

- **When inspecting using a tester, the current flowing through the rectifier is smaller than usual. Therefore, an incorrect resistance value may be indicated on the tester.**
  Additionally, incorrect indications become larger as the range of the tester gets smaller. Set the tester to a largest possible scale.

◆Assembly procedure◆

■Assembly: Stator

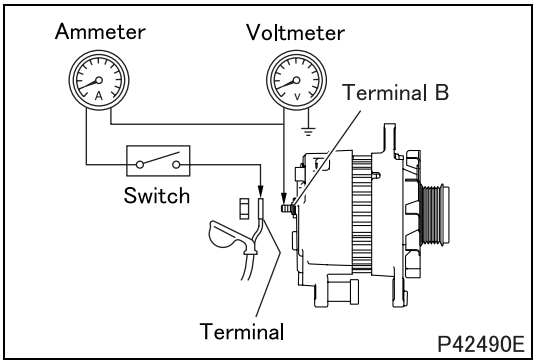
To install the stator, follow the disassembly sequence in reverse.
(See "■ **Disassembly: Stator**".)

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54-13 ON-VEHICLE INSPECTION AND ADJUSTMENT

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#950 INSPECTION OF ALTERNATOR



Performance test

- Connect the meters to the alternator as shown.

WARNING ⚠

- **To prevent possible injury, be sure to disconnect the negative battery cable and insulate the cable and the negative battery terminal with tape before working on the wiring. With the negative (–) battery cable connected, battery voltage is always applied to terminal B.**
- **To connect to switch, use a lead wire with the same or larger diameter than that of the chassis harness connected to terminal B.**

- Turn on switch and make sure that voltmeter indicates battery voltage.
- Start the engine.
- Immediately turn on the switches for all lamps on the vehicle.
- Immediately accelerate the engine to the speed indicated below and measure the alternator's output current.
  Approx. 2400 rpm
- The alternator is considered to be good if the measured value is 70% or more of the nominal output current.
  Alternator nominal output

Voltage	Output current
12 V	100 A

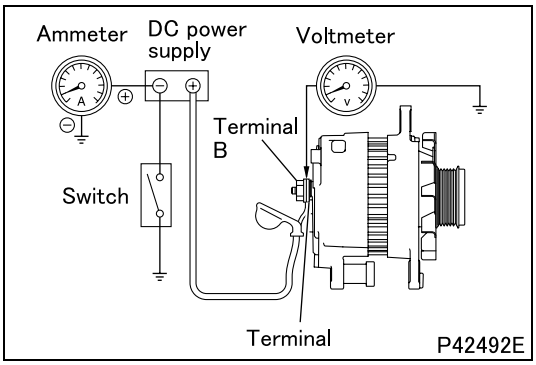
NOTE

- **The on-vehicle inspection is only a simplified check. Use a test bench for accurate checking.**

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Service standards

Location	Maintenance item	Standard value	Limit	Remedy
–	Adjusting voltage	14.7 ± 0.3 V	–	Replace



- Connect the meters to the alternator as shown.

WARNING ⚠

- **To prevent possible injury, be sure to disconnect the negative battery cable and insulate the cable and the negative battery terminal with tape before working on the wiring. With the negative (–) battery cable connected, battery voltage is always applied to terminal B.**
- **To connect to switch, use a lead wire with the same or larger diameter than that of the chassis harness connected to terminal B.**

- Turn off the switches for lamps, heater, etc. so that electric loads may not be applied during the inspection.
- Turn on switch and then start the engine.
- If the output current is 5 amperes or less when the engine speed is raised to the appropriate speed indicated below, then measure the voltage at terminal B.
  Approx. 2400 rpm

CAUTION ⚠

- **If the output current is in the range from 5 to 10 amperes, the measured value (regulated voltage) will be slightly lower.**
  14.4 V ± 0.3 V

- If the output current is 5 amperes or more, do one of the following:
  - Run the engine for a while to charge the battery.
  - Replace the battery with a fully-charged one.
- If the measured value deviates from the standard value, conduct checking again on the test bench.

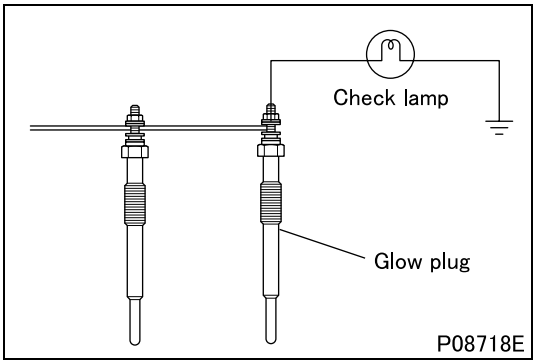
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#955 INSPECTION OF PREHEATING SYSTEM

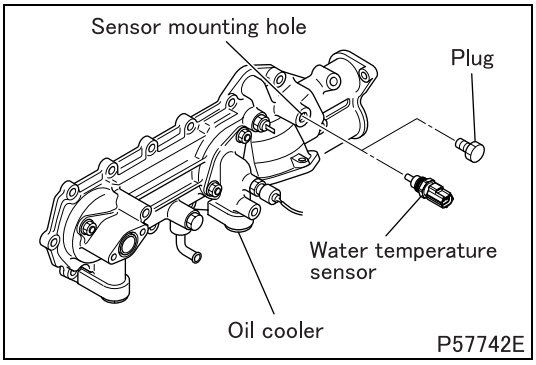
1. Preparation for inspection

Service standards

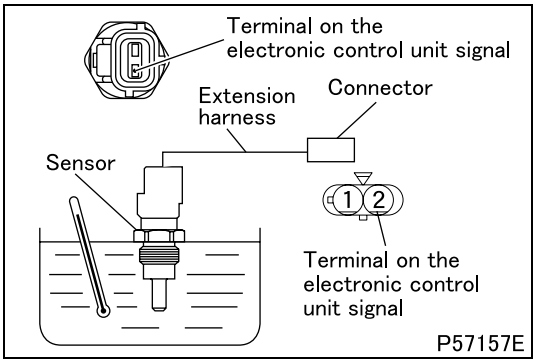
Location	Maintenance item			Standard value	Limit	Remedy
–	Coolant temperature	Pre-glow time	60°C {140°F} or higher	No pre-glow operation	–	Inspect
			0 to 60°C {32 to 140°F}	About 12 seconds	–	
			0°C {32°F} or below	About 12 seconds	–	
		After-glow time	60°C {140°F} or higher	No after-glow operation	–	
			0 to 60°C {32 to 140°F}	No after-glow operation	–	
			0°C {32°F} or below	About 20 seconds	–	
		Indicator lamp ON time	60°C {140°F} or higher	No illumination	–	
			0 to 60°C {32 to 140°F}	No illumination	–	
			0°C {32°F} or below	About 8 seconds	–	



- Turn the starter switch to OFF.
- Connect a check lamp to the glow plug.



- Remove the water temperature sensor from the engine, and close the sensor mounting hole with the plug (M16 × 1.5 mm).



- Connect the extension harness between the water temperature sensor and connector.
- Place the water temperature sensor in a container of water.
- Conduct the following test while changing the temperature of water in the container. If anything abnormal is found, check relevant components.

(1) Pre-glow time and indicator lamp ON time checking

- Turn the starter switch to ON (without starting the engine), and confirm that the pre-glow time and indicator lamp ON time at each water temperature conform with standard values.
- Measure the illuminating time of the check lamp to measure the pre-glow time.
- Measure the meter cluster glow lamp illuminating time to measure the indicator lamp ON time.

(2) After-glow time checking

- Start the engine, and measure how long the illumination of check lamp lasts after the glow lamp on the meter cluster goes out to ensure that the after-glow time conforms with the standard value.

2. Inspection Based on Diagnosis Codes

2.1 Diagnosis code list

NOTE

- **Diagnosis codes shown by the Multi-Use Tester and those indicated by flashing of the warning lamp are different.**
- **The Multi-Use Tester is capable of showing more detailed diagnosis codes.**

Code	Message	Flashes
P0380	Relay for Glow Relay	26
P0381	Glow Lamp	89

2.2 Diagnosis code generation conditions and inspection items

P0380 : Relay for Glow Relay (Warning lamp flashes : 26)

Generation conditions		Glow drive relay short or open circuit, or overload
Recoverability		System recovers if signal becomes with starter switch ON position.
Control effected by electronic control unit		• Suspend glow control
Inspection	Service data	8D : Glow Relay
	Actuator test	AF : Relay for Glow Relay
	Electronic control unit connector	01 : Glow drive relay
	Electrical equipment	#201 : Glow drive relay #350 : Engine electronic control unit
	Electronic circuit diagram	Glow drive relay system (See 220)

P0381 : Glow Lamp (Warning lamp flashes : 89)

Generation conditions		Glow indicator lamp short or open circuit, or overload
Recoverability		System recovers if signal becomes with starter switch ON position.
Control effected by electronic control unit		• Normal control
Inspection	Service data	8E : Glow Relay Indicator Lamp
	Actuator test	B0 : Glow Indicator Lamp
	Electronic control unit connector	02 : Glow indicator lamp
	Electrical equipment	Meter cluster #350 : Engine electronic control unit
	Electronic circuit diagram	Glow drive relay system (See 220)

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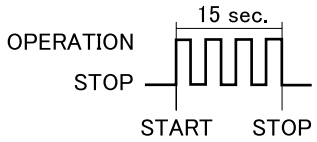
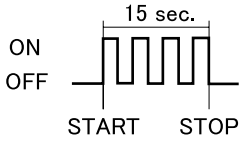
3. Multi-Use Tester Service Data

CAUTION ⚠

- **It is possible to see service data and actuator tests simultaneously.**

No.	Item	Data	Inspection condition	Requirement
8D	Glow Relay	ON/OFF	With engine coolant temperature at or below 60°C {140 °F}, turn starter switch OFF and ON. Inspect immediately after turning ON starter switch.	ON
			With engine coolant temperature at or above 60°C {140 °F} or water temperature at or below 60°C {140 °F}, turn starter switch OFF and ON. Inspect 40 seconds after turning starter switch ON.	OFF
			[Actuator test] AF: Relay for glow relay	
8E	Glow Relay Indicator Lamp	ON/OFF	With engine coolant temperature at or below 60°C {140 °F}, turn starter switch OFF and ON. Inspect immediately after turning ON starter switch.	ON
			With engine coolant temperature at or above 60°C {140 °F} or water temperature at or below 60°C {140 °F}, turn starter switch OFF and ON. Inspect 40 seconds after turning starter switch ON.	OFF
			[Actuator test] B0: Glow indicator lamp	

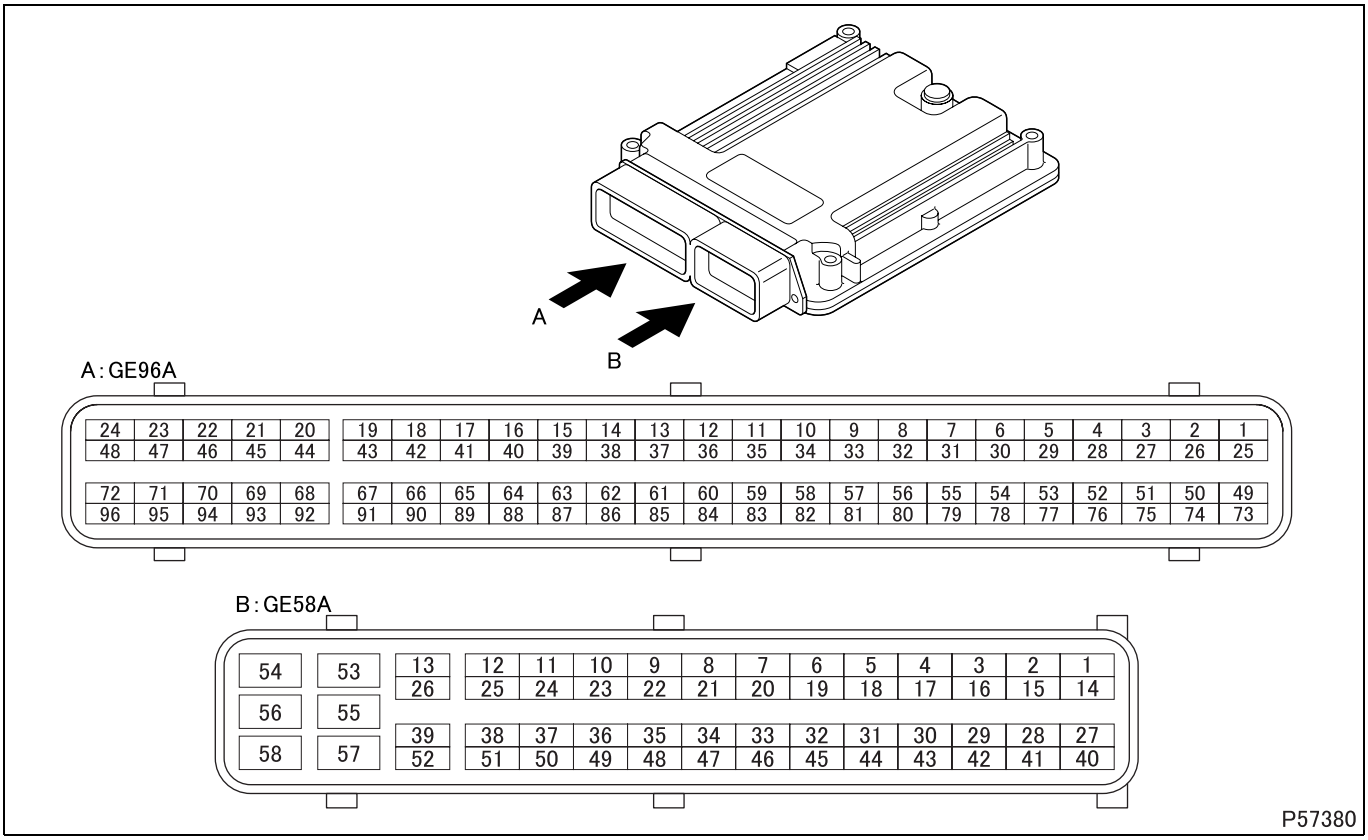
4. Actuator Tests Pertormed Using Multi-Use Tester

No.	Item	Explanation	Confirmation method
AF	Relay for Glow Relay	Glow drive relay drive signal  P57740E	Actuation noise should be heard. [Service data] 8D: Glow relay
B0	Glow Indicator Lamp	Glow indicator lamp illumination signal  P57725E	Actuation noise should be heard. [Service data] 8E: Glow indicator lamp

5. Inspection Performed at Electronic Control Unit Connectors

- The following inspection should assist troubleshooting by enabling you to verify whether or not electronic control unit signals are correctly transmitted via the vehicle harnesses and connectors.
  The numbers in the table **01**, **02**, etc. cross-refers you to the corresponding numbers in the table in "**2. Inspection Based on Diagnosis Codes**".

5.1 Electronic control unit connector terminal layout



5.2 Inspection instructions

CAUTION ⚠

- **Some inspections are performed with the connectors removed. Others are performed with the connectors fitted. Observe the following caution:**
- **Do not touch any terminal other than those specified for the inspection. Be particularly careful not to cause short circuits between terminals using the tester probes.**

Check item	Measurement method
01 Glow drive relay voltage	[Conditions] • Keep the vehicle harnesses connected to the electronic control unit connector halves. (Inspection is made at the back of the vehicle connectors.) • Carry out the actuator test "AF - Relay for Glow Relay" using Multi-Use Tester. [Normal status] Terminals (+) - (–) : A73 - A7 • Battery voltage
02 Glow indicator lamp illumination	[Conditions] • Keep the vehicle harnesses connected to the electronic control unit connector halves. (Inspection is made at the back of the vehicle connectors.) • Carry out the actuator test "B0 - Glow Indicator Lamp" using Multi-Use Tester. [Normal status] Short the terminal A51 to ground. • The glow indicator lamp should illuminate.

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1. Inspection Based on Diagnosis Codes

1.1 Diagnosis code list

NOTE

- **Diagnosis codes shown by the Multi-Use Tester and those indicated by flashing of the warning lamp are different.**
- **The Multi-Use Tester is capable of showing more detailed diagnosis codes.**

Code	Message	Flashes
P0615	Starter Safety Relay	48
P0616		
P0617		

1.2 Diagnosis code generation conditions and inspection items

P0615 : Starter Safety Relay (Warning lamp flashes : 48)

Generation conditions		Safety relay overload
Recoverability		System recovers if signal becomes with starter switch ON position.
Control effected by electronic control unit		• Normal control
Inspection	Service data	8F : Starter safety relay
	Actuator test	B1 : Starter safety relay
	Electronic control unit connector	01 : Safety relay
	Electrical equipment	#201 : Safety relay #350 : Engine electronic control unit
	Electronic circuit diagram	Safety relay system (See 210)

P0616 : Starter Safety Relay (Warning lamp flashes : 48)

Generation conditions		Safety relay ground short or open circuit
Recoverability		System recovers if signal becomes with starter switch ON position.
Control effected by electronic control unit		• Normal control
Inspection	Service data	8F : Starter safety relay
	Actuator test	B1 : Starter safety relay
	Electronic control unit connector	01 : Safety relay
	Electrical equipment	#201 : Safety relay #350 : Engine electronic control unit
	Electronic circuit diagram	Glow drive relay system (See 210)

P0617 : Starter Safety Relay (Warning lamp flashes : 48)

Generation conditions		Safety relay Battery short or open circuit
Recoverability		System recovers if signal becomes with starter switch ON position.
Control effected by electronic control unit		• Normal control
Inspection	Service data	8F : Starter safety relay
	Actuator test	B1 : Starter safety relay
	Electronic control unit connector	01 : Safety relay
	Electrical equipment	#201 : Safety relay #350 : Engine electronic control unit
	Electronic circuit diagram	Glow drive relay system (See 210)

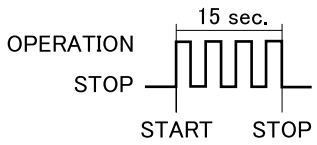
2. Multi-Use Tester Service Data

CAUTION ⚠

- **It is possible to see service data and actuator tests simultaneously.**

No.	Item	Data	Inspection condition	Requirement
8F	Starter Safety Relay	ON/OFF	Carry out the actuator test “B1 - Starter safety relay” using Multi-Use Tester. The relay should be ON.	ON
			When not testing	OFF
			[Actuator test] B1: Starter safety relay	

3. Actuator Tests Performed Using Multi-Use Tester

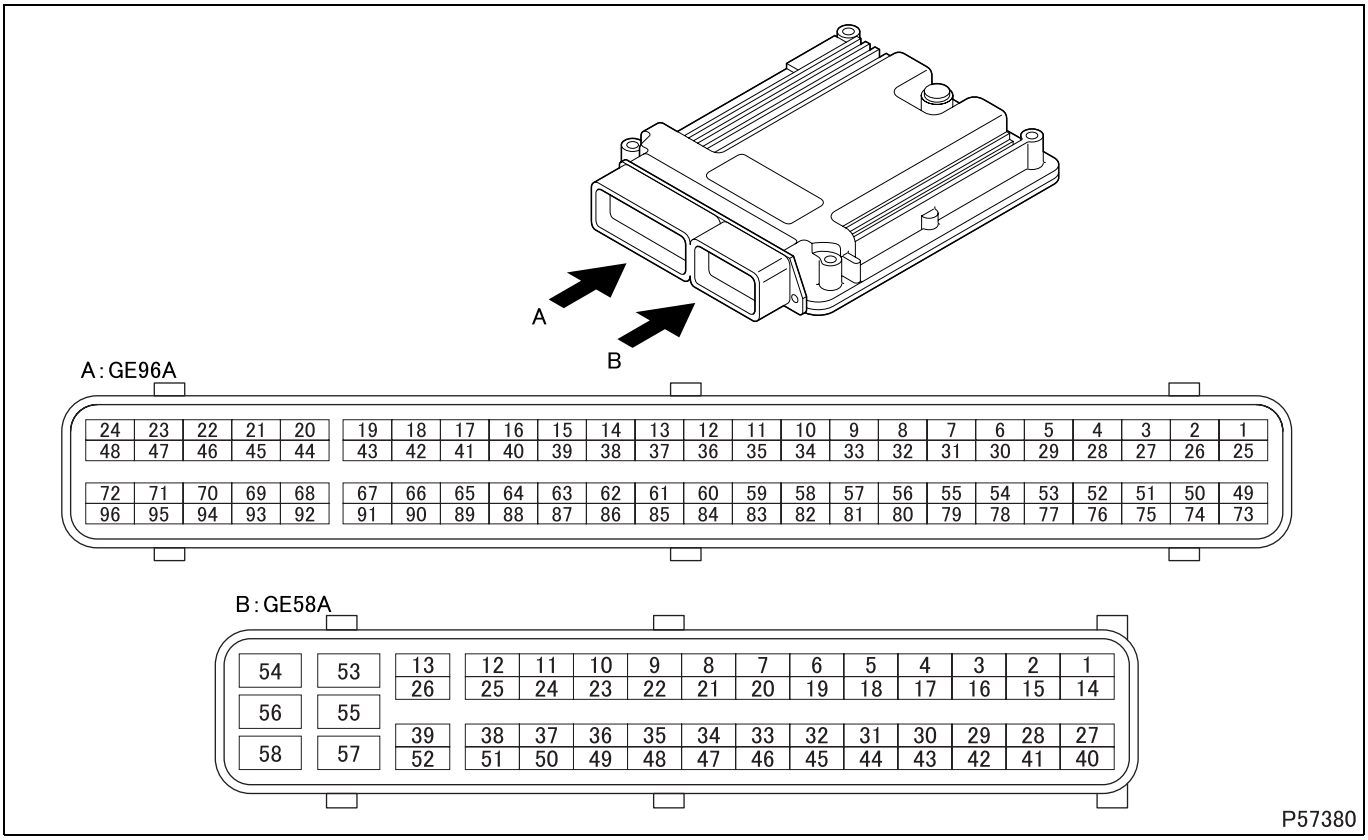
No.	Item	Explanation	Confirmation method
B1	Starter Safety Relay	Starter safety relay drive signal  P57740E	Actuation noise should be heard. [Service data] 8F: Starter safety relay

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4. Inspection Performed at Electronic Control Unit Connectors

- The following inspection should assist troubleshooting by enabling you to verify whether or not electronic control unit signals are correctly transmitted via the vehicle harnesses and connectors.
  The numbers in the table **01**, **02**, etc. cross-refers you to the corresponding numbers in the table in "**1. Inspection Based on Diagnosis Codes**".

4.1 Electronic control unit connector terminal layout



4.2 Inspection instructions

CAUTION ⚠

- **Some inspections are performed with the connectors removed. Others are performed with the connectors fitted. Observe the following caution:**
- **Do not touch any terminal other than those specified for the inspection. Be particularly careful not to cause short circuits between terminals using the tester probes.**

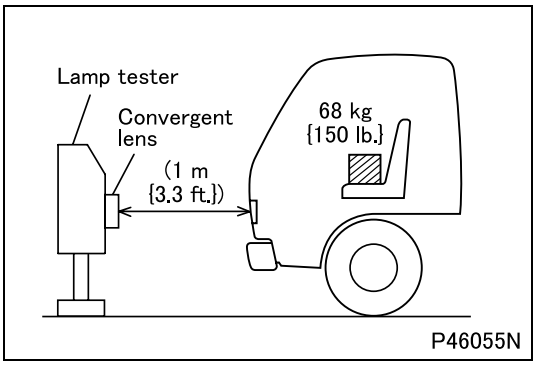
Inspection item	Procedures
01 Safety relay voltage	[Conditions] • Keep the vehicle harnesses connected to the electronic control unit connector halves. (Inspection is made at the back of the vehicle connectors.) [Normal status] Terminals (+) - (–) : A81 - A49 • Relay ON: 12 V • Relay OFF: 0 V

M E M O

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#960 HEADLAMP AIMING

1. Preparation before Adjustment

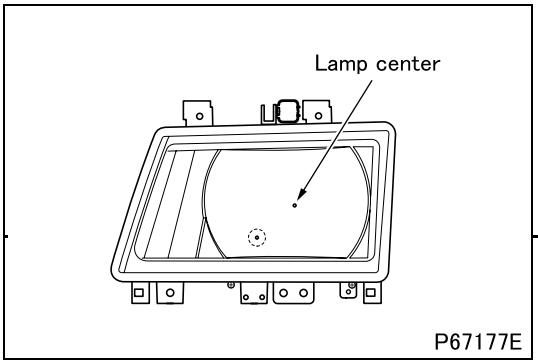


- Park the vehicle on a level place.

WARNING ⚠

- **Be sure to put tire chocks securely in place.**

- Unload the vehicle and make sure no one is in it.
- Inflate the tires to the specified pressure. (See Gr31.)
- Seat one person of an equivalent mass (68 kg {150 lb.}) in the vehicle.
- Start the engine and check that the battery is being charged.
- Place convergent lamp tester and the vehicle facing each other as shown in the drawing.



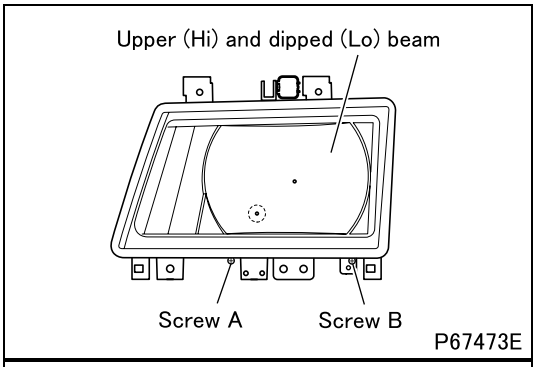
- Turn on the headlamp. Align the center of headlamp bulb and the center of convergent lens of convergent lamp tester. (The drawing shows the left-hand headlamp.)

WARNING ⚠

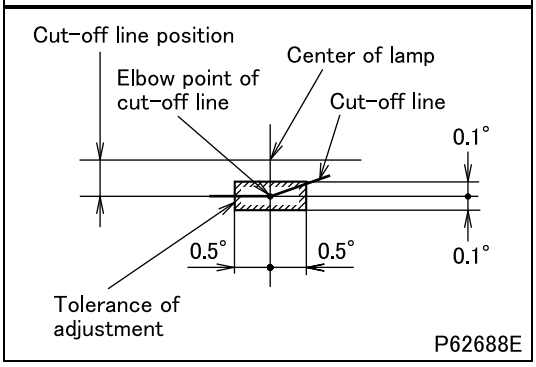
•Do not mask a lit headlamp for more than 10 minutes or the heat generated might cause a fire.

2. Adjustment

2.1 Adjustment of Dipped Beam



- Turn on the low beam.
- Make adjustment by the following procedure so that the elbow point of dipped beam cut-off line is in the illustrated position.
- Vertical adjustment: Turn screw A. and B in this order by the same amount.
- Horizontal adjustment: Turn screw B.



- Adjust the optical axes of the lower beams so that the cut-off line position can conform to the standard value.

	Standard value
Cut-off line position	0.7°

Adjusting direction for optical axis

<Left-hand headlamp>

	Upward	Downward	Leftward	Rightward
Screw A	Counter-clockwise	Clockwise	–	–
Screw B	–	–	Clockwise	Counter-clockwise

<Right-hand headlamp>

	Upward	Downward	Leftward	Rightward
Screw A	Counter-clockwise	Clockwise	–	–
Screw B	–	–	Counter-clockwise	Clockwise

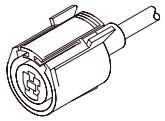
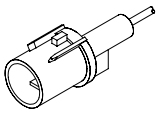
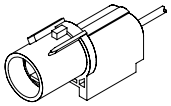
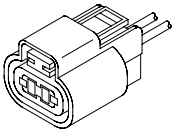
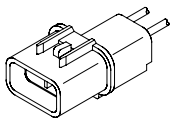
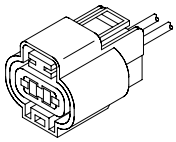
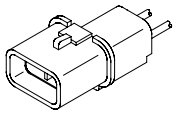
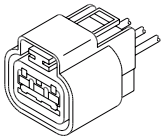
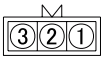
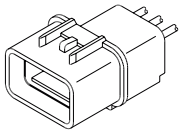
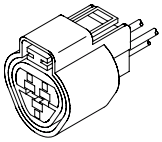
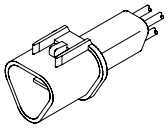
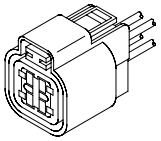
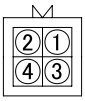
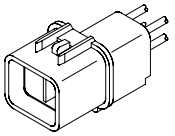
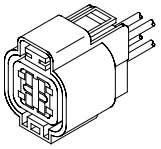
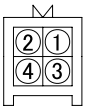
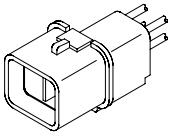
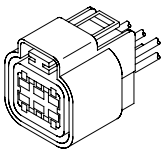
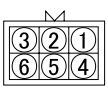
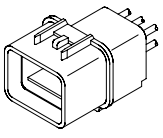
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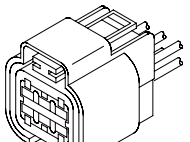
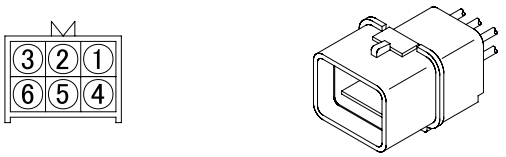
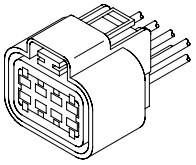
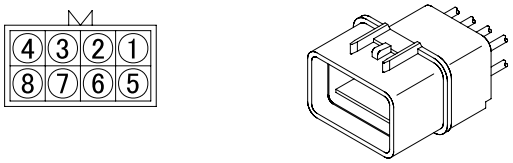
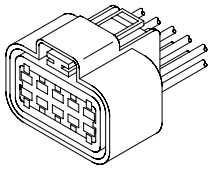
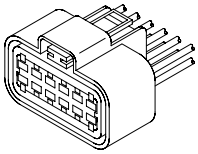
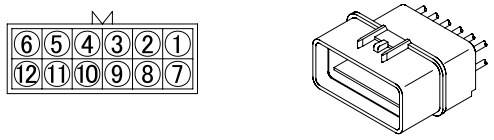
54-14 CONNECTOR CONFIGURATION CHART

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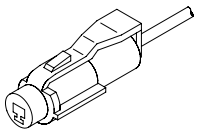
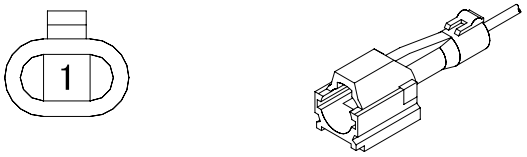
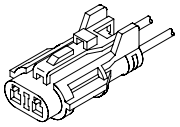
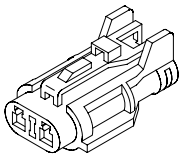
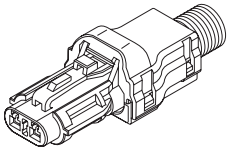
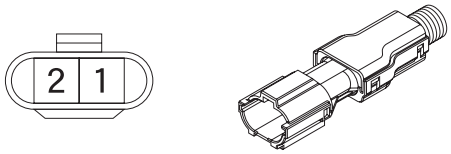
CONNECTOR CONFIGURATION CHART

AA type

Number shows number of pins	Female connector	Male connector
AA1A	 	   
AA2A	 	 
AA2B	 	 
AA3A	 	 
AA3B	 	 
AA4A	 	 
AA4B	 	 
AA6A	 	 

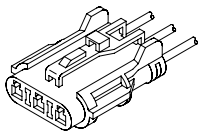
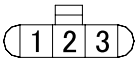
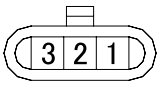
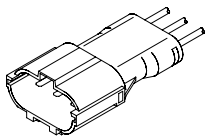
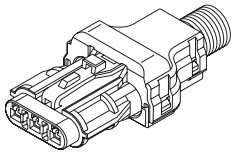
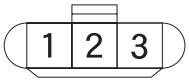
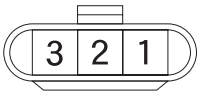
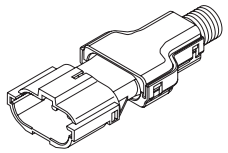
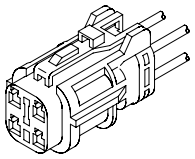
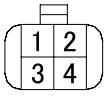
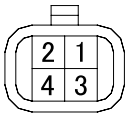
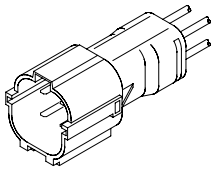
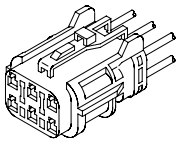
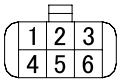
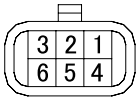
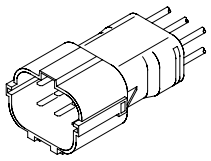
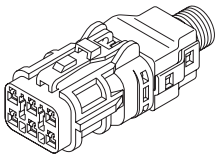
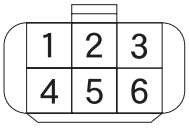
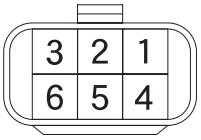
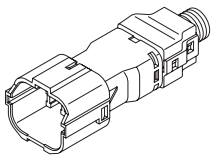
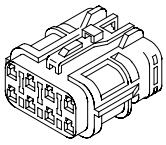
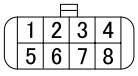
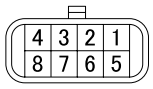
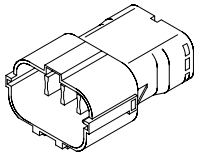
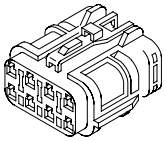
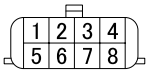
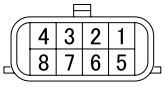
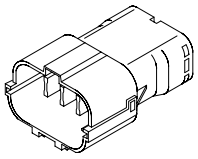
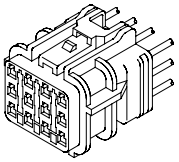
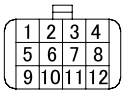
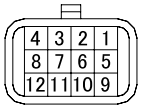
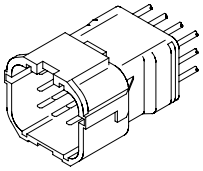
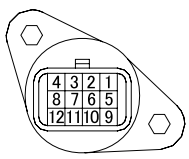
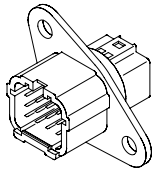
Number shows number of pins	Female connector	Male connector
AA6B		
AA8A		
AA10A		
AA12A		

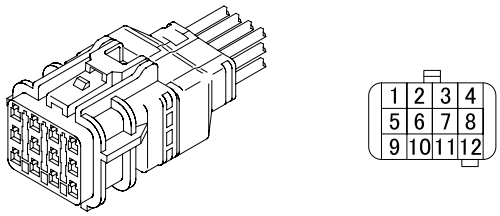
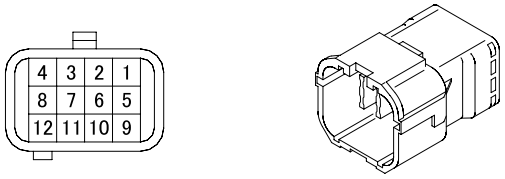
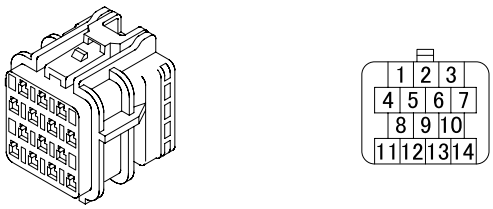
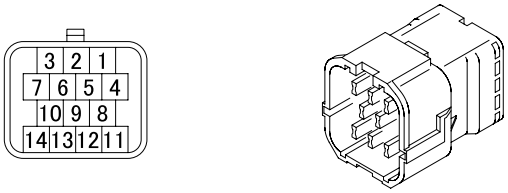
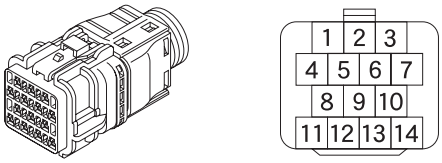
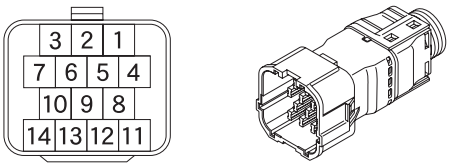
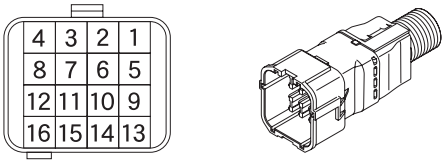
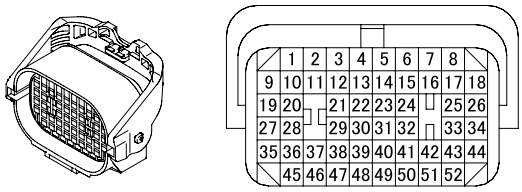
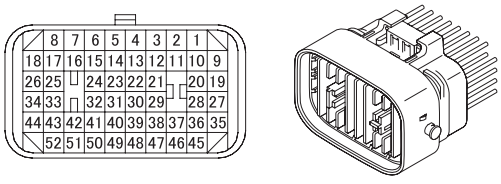
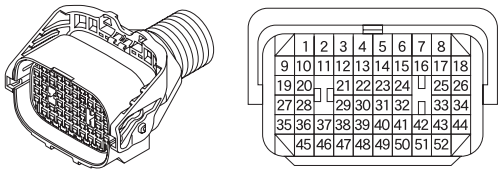
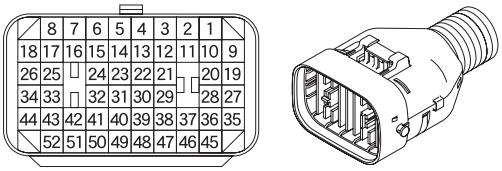
AB type

Number shows number of pins	Female connector	Male connector
AB1A		
AB2A		
AB2B		
AB2C		

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CONNECTOR CONFIGURATION CHART

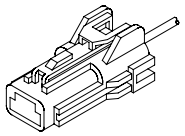
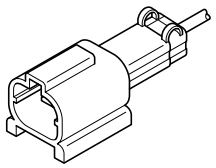
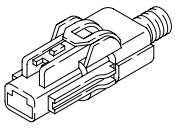
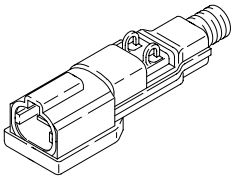
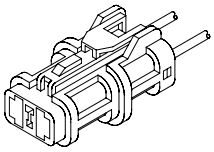
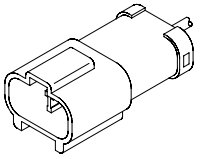
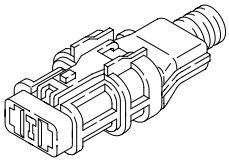
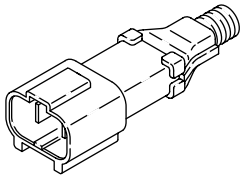
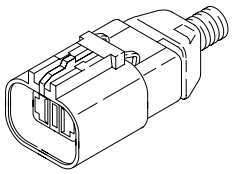
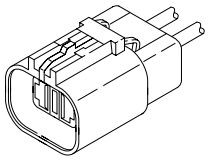
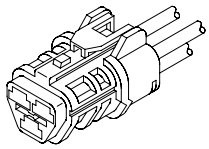
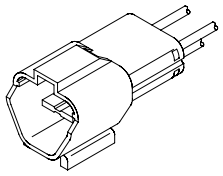
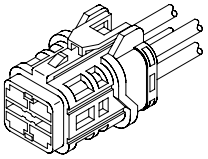
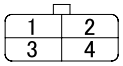
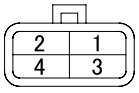
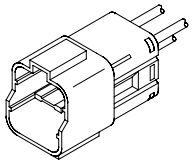
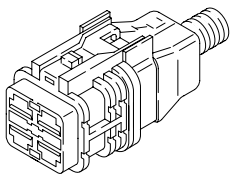
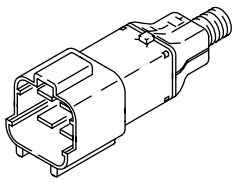
Number shows number of pins	Female connector	Male connector
AB3A	 	 
AB3B	 	 
AB4A	 	 
AB6A	 	 
AB6B	 	 
AB8A	 	 
AB8B	 	 
AB12A	 	   

Number shows number of pins	Female connector	Male connector
AB12B		
AB14A		
AB14B		
AB16A		
AB16B		
AB52A		
AB52B		

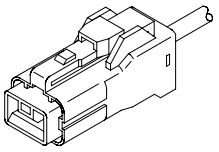
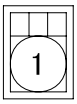
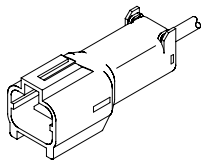
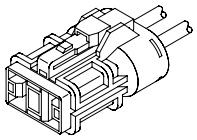
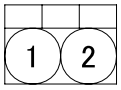
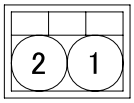
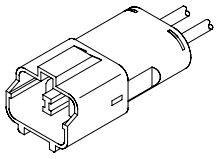
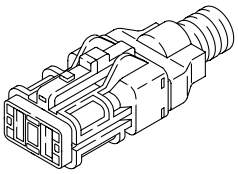
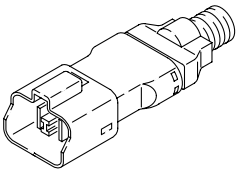
https://truckmanualshub.com/

CONNECTOR CONFIGURATION CHART

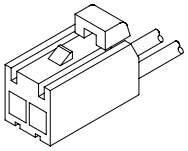
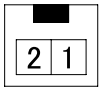
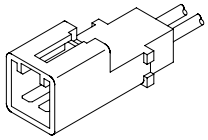
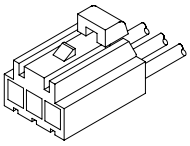
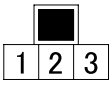
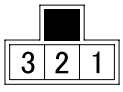
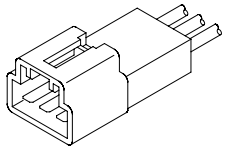
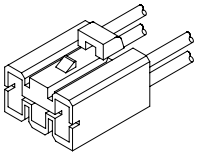
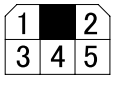
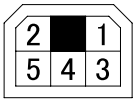
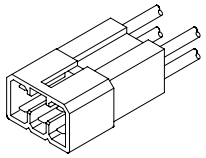
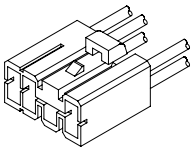
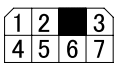
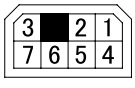
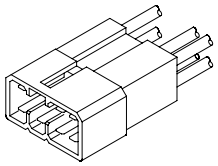
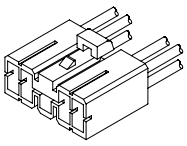
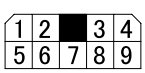
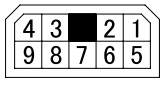
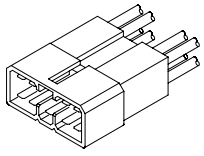
AC type

Number shows number of pins	Female connector	Male connector
AC1A	 	 
AC1B	 	 
AC2A	 	 
AC2B	 	 
AC2C	 	
AC2D	 	
AC3A	 	 
AC4A	 	 
AC4B	 	 

AD type

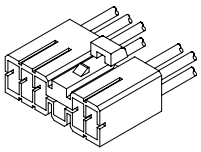
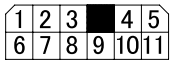
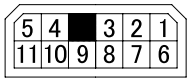
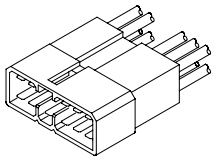
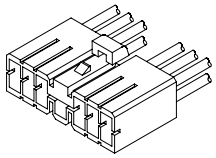
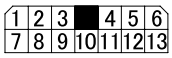
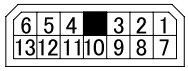
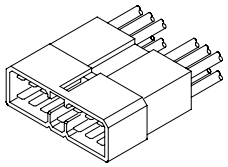
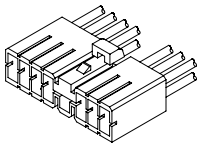
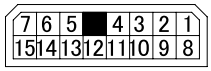
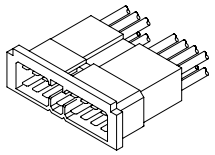
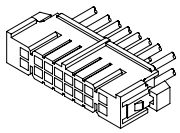
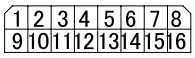
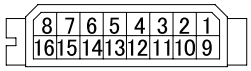
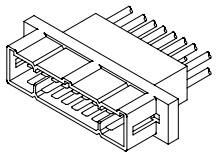
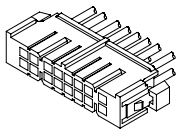
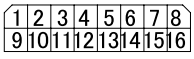
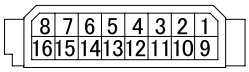
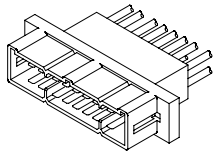
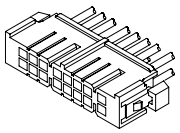
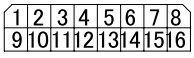
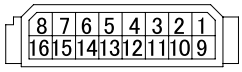
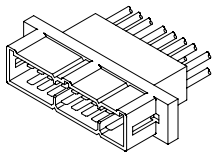
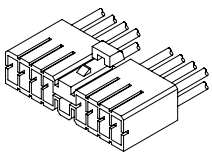
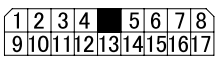
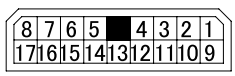
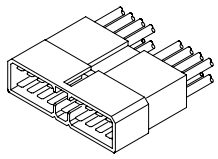
Number shows number of pins	Female connector	Male connector
AD1A	 	 
AD2A	 	 
AD2B	 	 

AE type

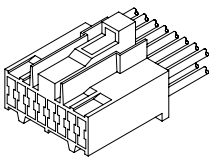
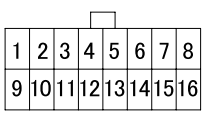
Number shows number of pins	Female connector	Male connector
AE2A	 	 
AE3A	 	 
AE5A	 	 
AE7A	 	 
AE9A	 	 

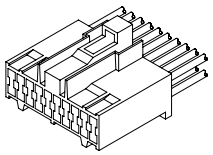
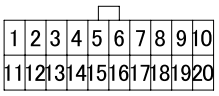
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CONNECTOR CONFIGURATION CHART

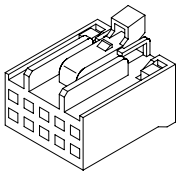
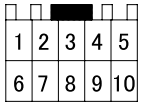
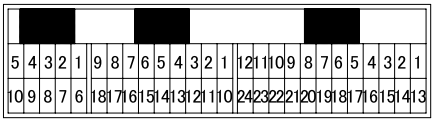
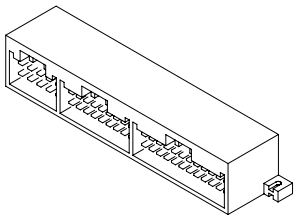
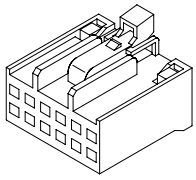
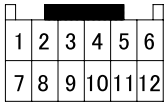
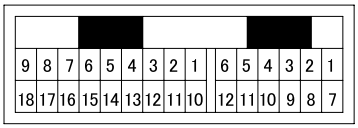
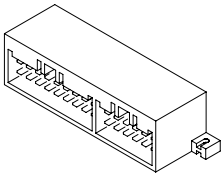
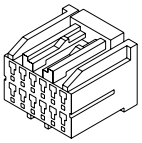
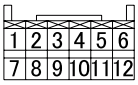
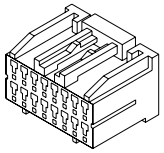
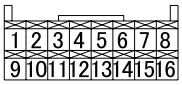
Number shows number of pins	Female connector	Male connector
AE11A	 	 
AE13A	 	 
AE15A	 	 
AE16A	 	 
AE16B	 	 
AE16C	 	 
AE17A	 	 

AG type

Number shows number of pins	Female connector	Male connector
AG16A	 	

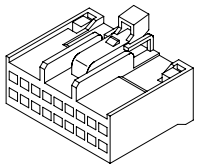
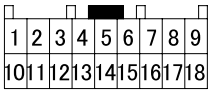
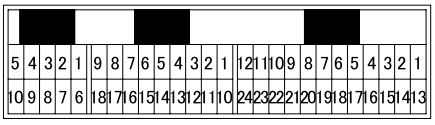
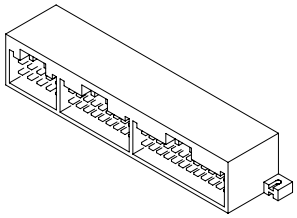
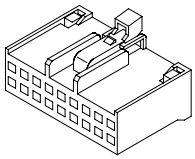
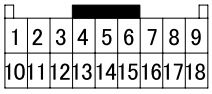
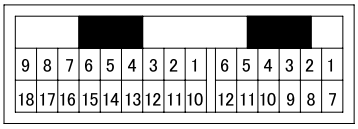
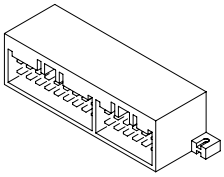
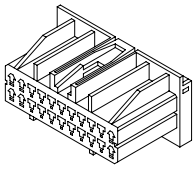
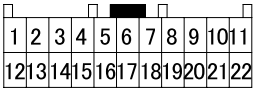
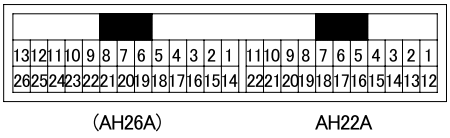
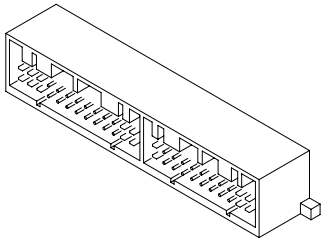
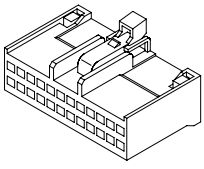
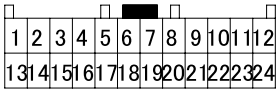
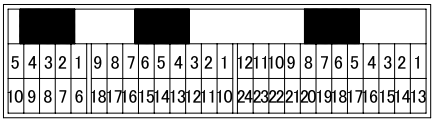
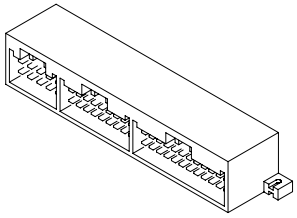
Number shows number of pins	Female connector	Male connector
AG20A	 	

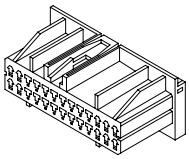
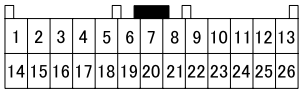
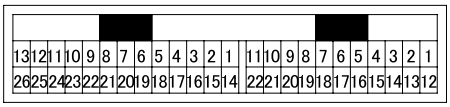
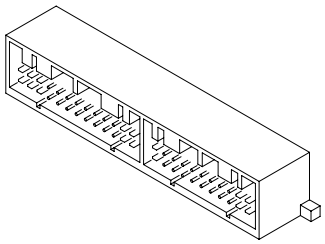
AH type

Number shows number of pins	Female connector	Male connector
AH10A	 	 AH10A （AH18A） （AH24A） 
AH12A	 	 （AH18B） AH12A 
AH12B	 	
AH16A	 	

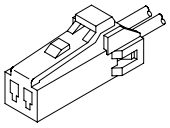
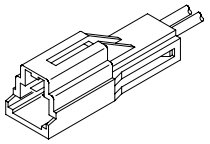
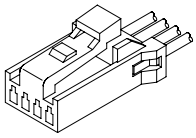
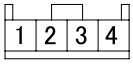
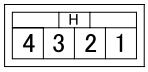
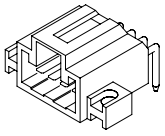
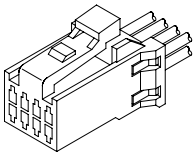
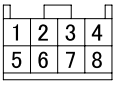
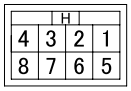
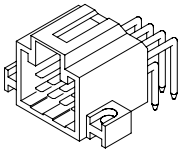
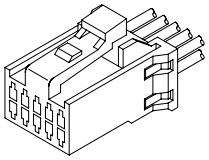
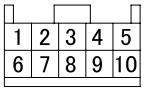
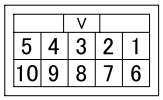
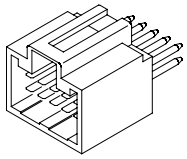
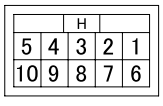
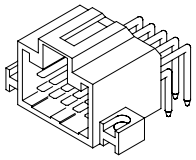
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CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
AH18A	  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	 5 4 3 2 1 9 8 7 6 5 4 3 2 1 12 11 10 9 8 7 6 5 4 3 2 1 10 9 8 7 6 18 17 16 15 14 13 12 11 10 24 23 22 21 20 19 18 17 16 15 14 13 (AH10A) AH18A (AH24A) 
AH18B	  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	 9 8 7 6 5 4 3 2 1 6 5 4 3 2 1 18 17 16 15 14 13 12 11 10 12 11 10 9 8 7 AH18B (AH12A) 
AH22A	  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	 13 12 11 10 9 8 7 6 5 4 3 2 1 11 10 9 8 7 6 5 4 3 2 1 26 25 24 23 22 21 20 19 18 17 16 15 14 22 21 20 19 18 17 16 15 14 13 12 (AH26A) AH22A 
AH24A	  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	 5 4 3 2 1 9 8 7 6 5 4 3 2 1 12 11 10 9 8 7 6 5 4 3 2 1 10 9 8 7 6 18 17 16 15 14 13 12 11 10 24 23 22 21 20 19 18 17 16 15 14 13 (AH10A) (AH18A) AH24A 

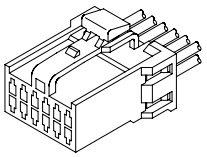
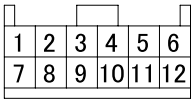
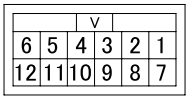
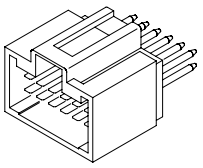
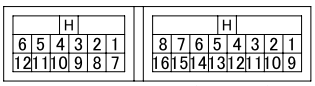
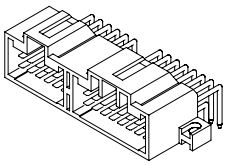
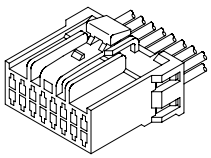
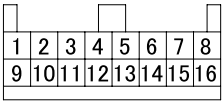
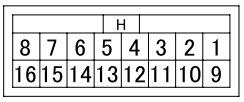
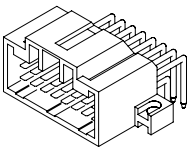
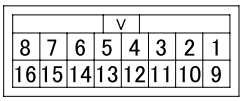
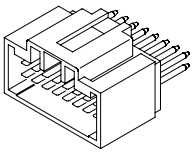
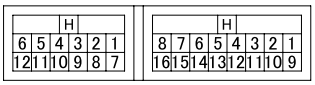
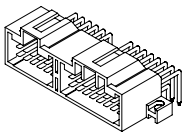
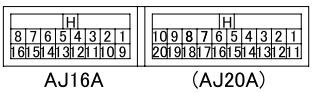
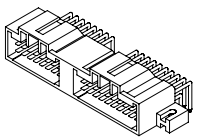
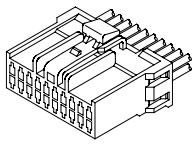
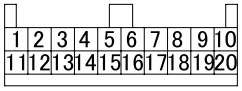
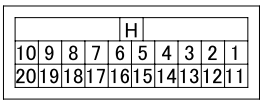
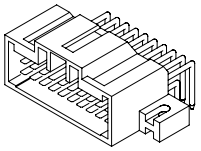
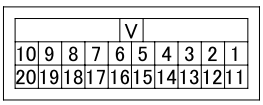
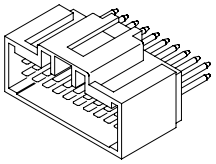
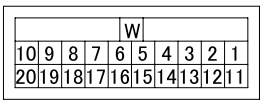
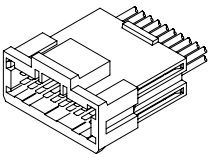
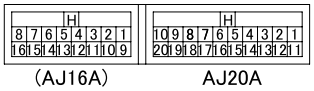
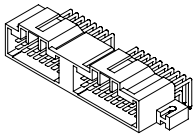
Number shows number of pins	Female connector	Male connector
AH26A	 	 AH26A (AH22A) 

AJ type

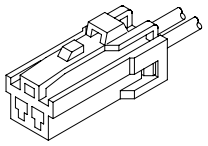
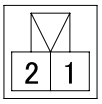
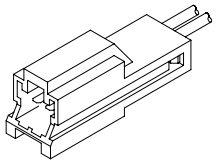
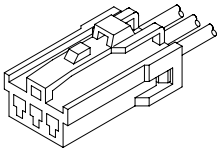
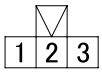
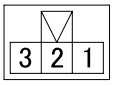
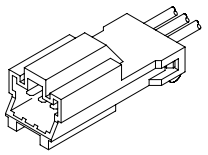
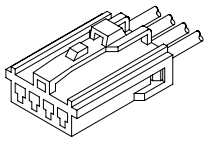
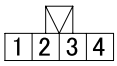
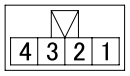
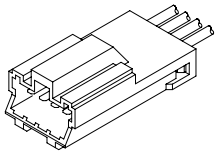
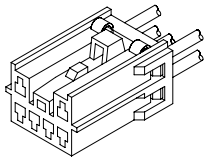
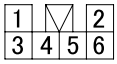
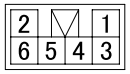
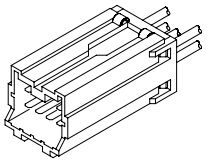
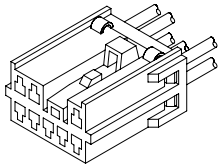
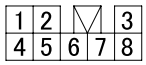
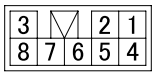
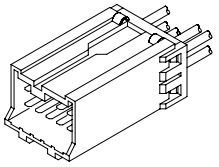
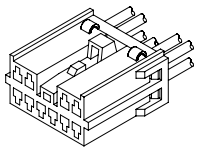
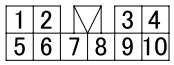
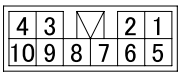
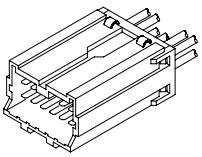
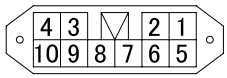
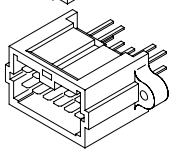
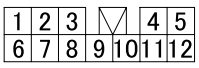
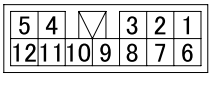
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AJ4A	 	 
AJ8A	 	 
AJ10A	 	   

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CONNECTOR CONFIGURATION CHART

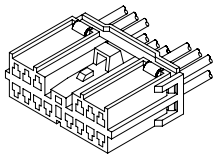
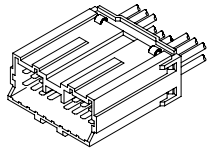
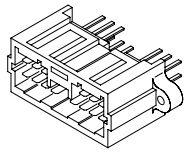
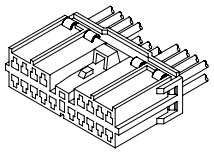
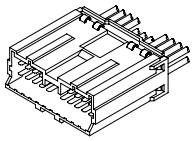
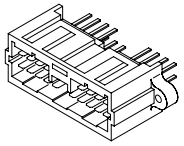
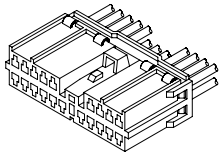
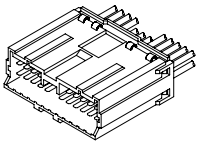
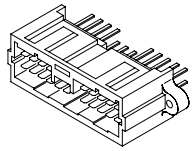
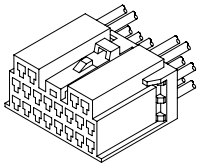
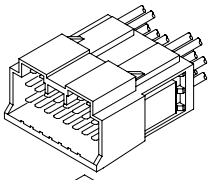
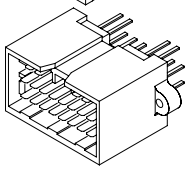
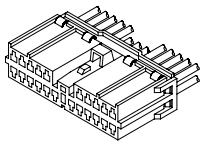
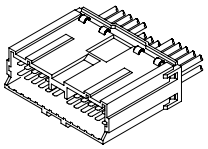
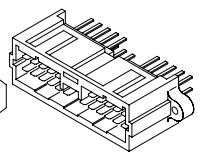
Number shows number of pins	Female connector	Male connector
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AJ16A	 	       
AJ20A	 	       

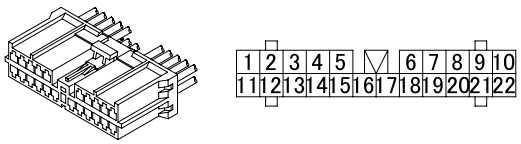
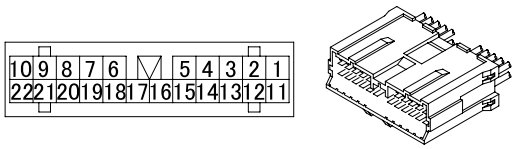
AK type

Number shows number of pins	Female connector	Male connector
AK2A	 	 
AK3A	 	 
AK4A	 	 
AK6A	 	 
AK8A	 	 
AK10A	 	   
AK12A		

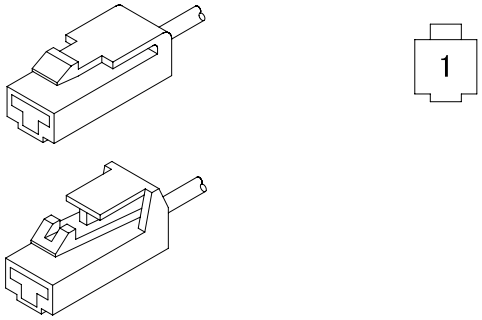
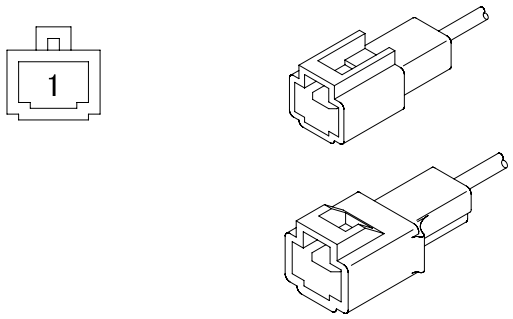
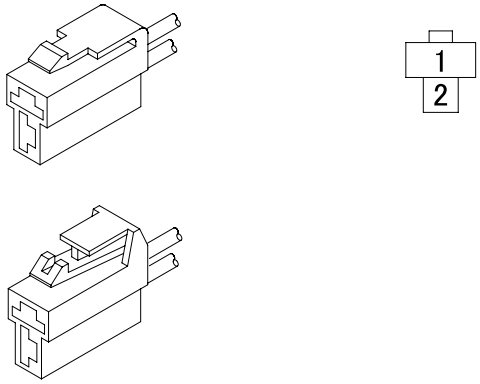
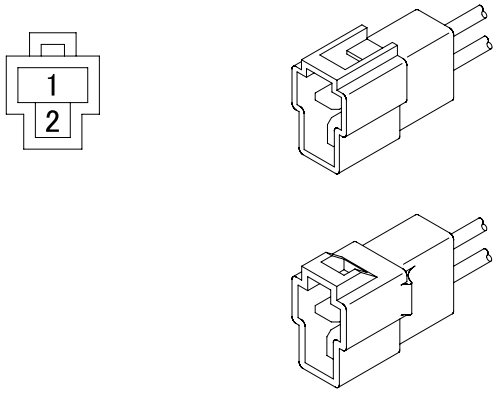
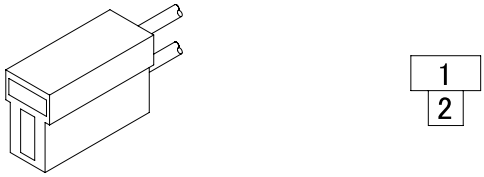
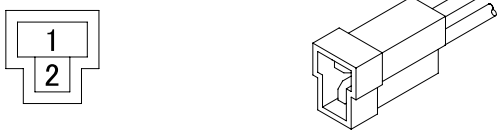
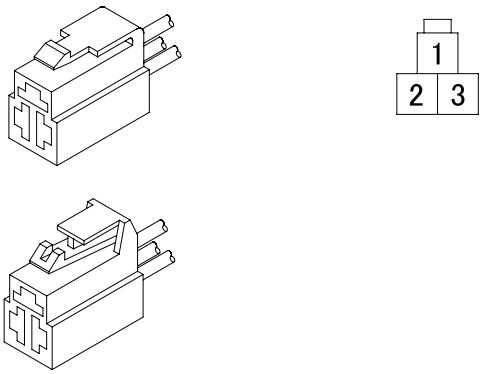
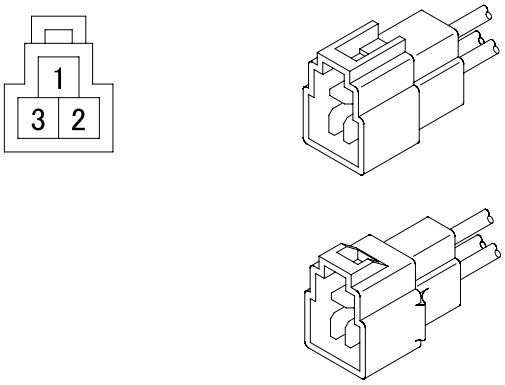
https://truckmanualshub.com/

CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
AK14A	 1 2 3 ▽ 4 5 6 7 8 9 10 11 12 13 14	6 5 4 ▽ 3 2 1 14 13 12 11 10 9 8 7  6 5 4 ▽ 3 2 1 14 13 12 11 10 9 8 7 
AK18A	 1 2 3 4 ▽ 5 6 7 8 9 10 11 12 13 14 15 16 17 18	8 7 6 5 ▽ 4 3 2 1 18 17 16 15 14 13 12 11 10 9  8 7 6 5 ▽ 4 3 2 1 18 17 16 15 14 13 12 11 10 9 
AK20A	 1 2 3 4 5 ▽ 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	9 8 7 6 ▽ 5 4 3 2 1 20 19 18 17 16 15 14 13 12 11 10  9 8 7 6 ▽ 5 4 3 2 1 20 19 18 17 16 15 14 13 12 11 10 
AK20B	 1 2 ▽ 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	4 3 ▽ 2 1 12 11 10 9 8 7 6 5 20 19 18 17 16 15 14 13  4 3 ▽ 2 1 12 11 10 9 8 7 6 5 20 19 18 17 16 15 14 13 
AK22A	 1 2 3 4 5 ▽ 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	10 9 8 7 6 ▽ 5 4 3 2 1 22 21 20 19 18 17 16 15 14 13 12 11  10 9 8 7 6 ▽ 5 4 3 2 1 22 21 20 19 18 17 16 15 14 13 12 11 

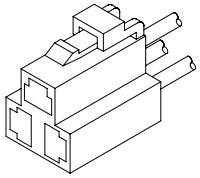
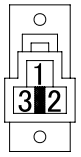
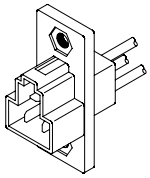
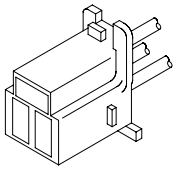
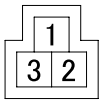
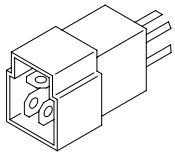
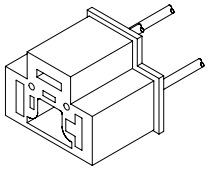
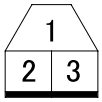
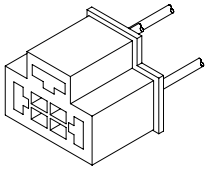
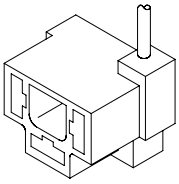
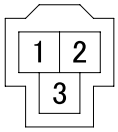
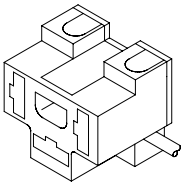
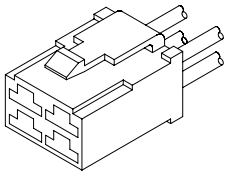
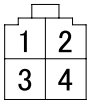
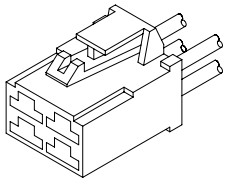
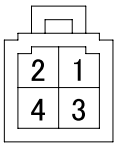
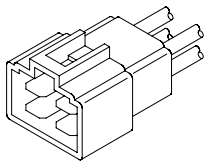
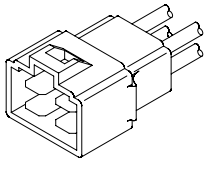
Number shows number of pins	Female connector	Male connector
AK22B		

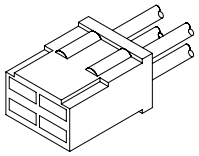
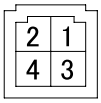
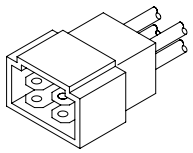
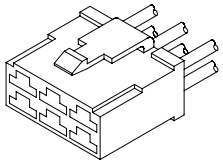
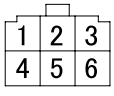
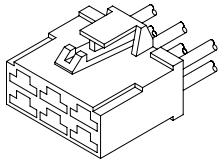
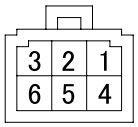
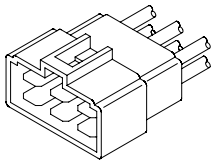
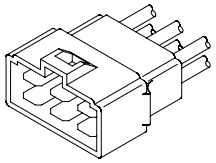
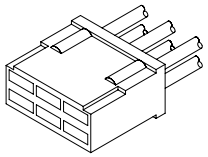
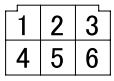
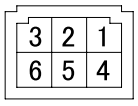
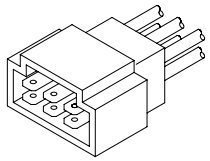
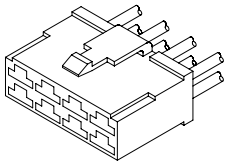
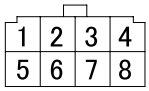
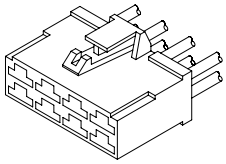
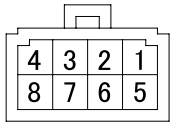
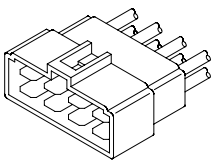
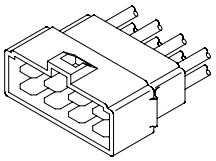
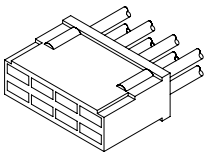
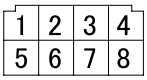
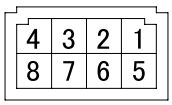
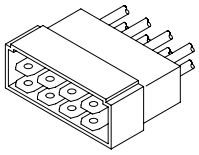
AL type

Number shows number of pins	Female connector	Male connector
AL1A		
AL2A		
AL2B		
AL3A		

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CONNECTOR CONFIGURATION CHART

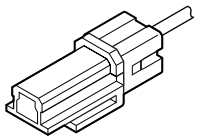
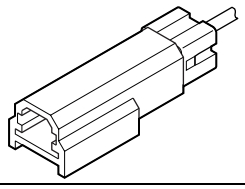
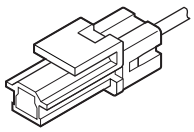
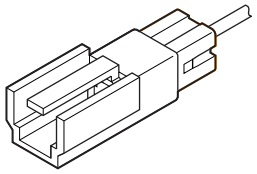
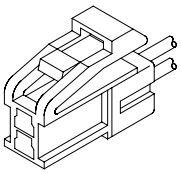
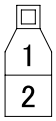
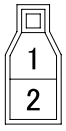
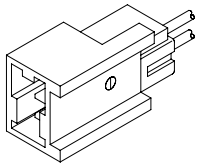
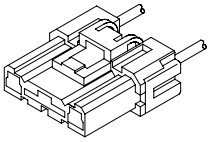
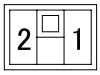
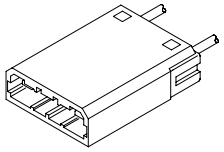
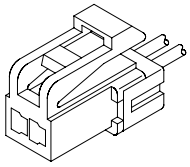
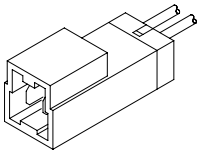
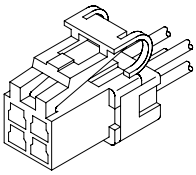
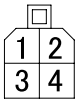
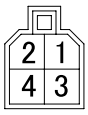
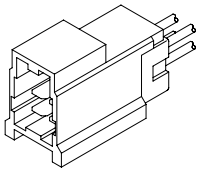
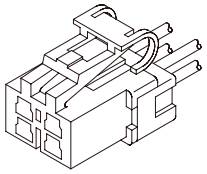
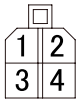
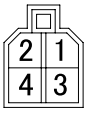
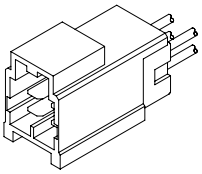
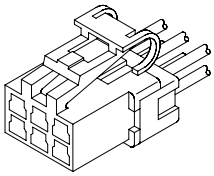
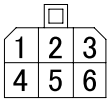
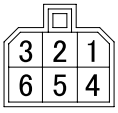
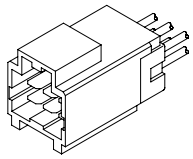
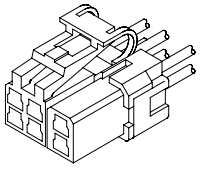
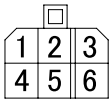
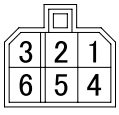
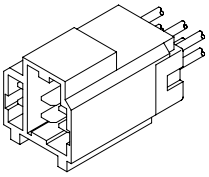
Number shows number of pins	Female connector	Male connector
AL3B	 	 
AL3C	 	 
AL3D	  	
AL3E	  	
AL4A	  	  

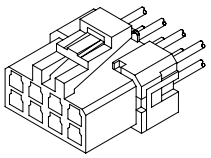
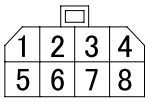
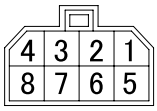
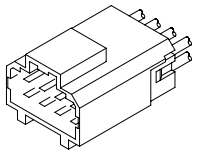
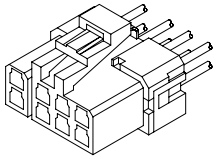
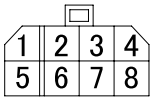
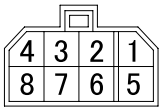
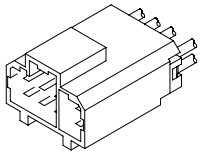
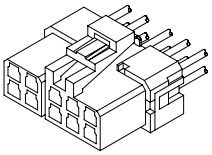
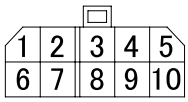
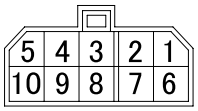
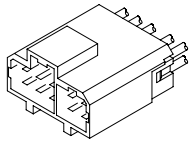
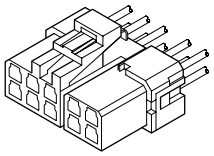
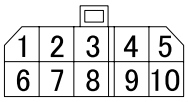
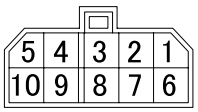
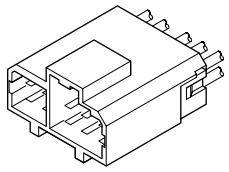
Number shows number of pins	Female connector	Male connector
AL4B	 	 
AL6A	  	  
AL6B	 	 
AL8A	  	  
AL8B	 	 

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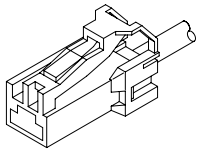
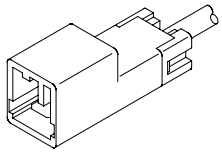
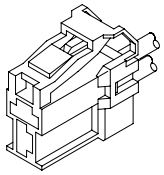
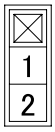
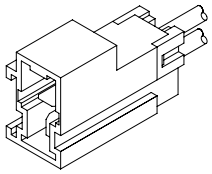
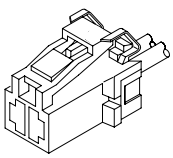
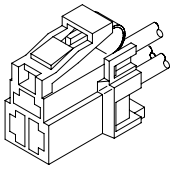
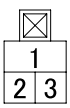
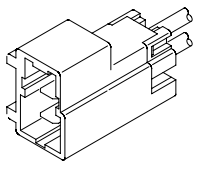
CONNECTOR CONFIGURATION CHART

AM type

Number shows number of pins	Female connector	Male connector
AM1A	 	 
AM1B	 	 
AM2A	 	 
AM2B	 	 
AM2C	 	 
AM4A	 	 
AM4B	 	 
AM6A	 	 
AM6B	 	 

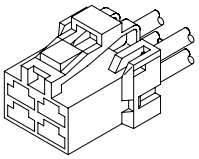
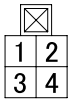
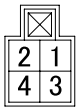
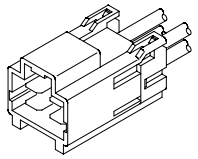
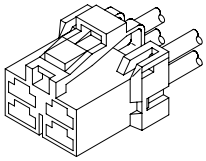
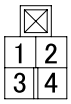
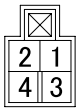
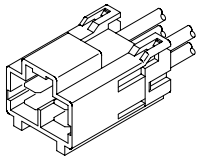
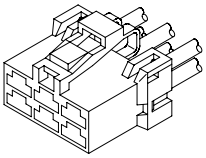
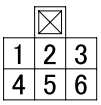
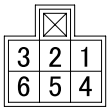
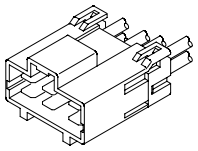
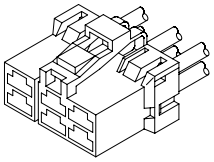
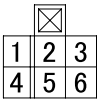
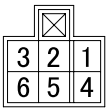
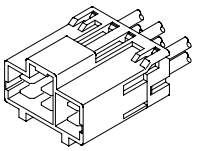
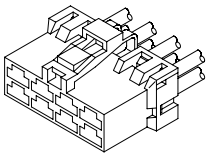
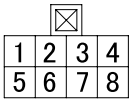
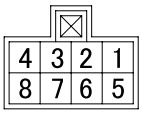
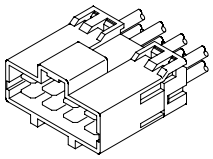
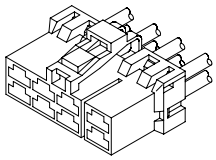
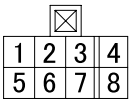
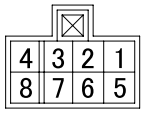
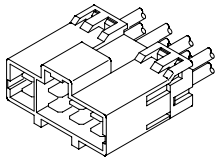
Number shows number of pins	Female connector	Male connector
AM8A	 	 
AM8B	 	 
AM10A	 	 
AM10B	 	 

AN type

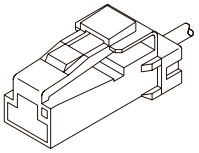
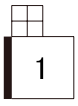
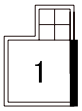
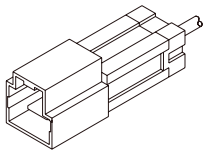
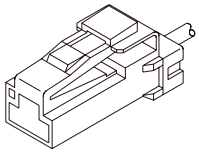
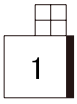
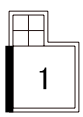
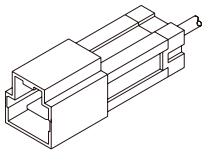
Number shows number of pins	Female connector	Male connector
AN1A	 	 
AN2A	 	 
AN2B	 	
AN3A	 	 

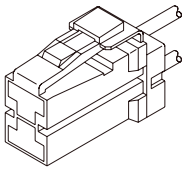
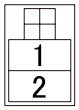
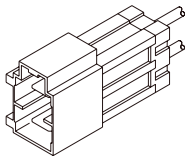
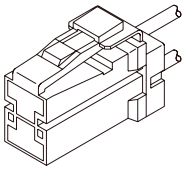
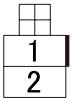
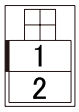
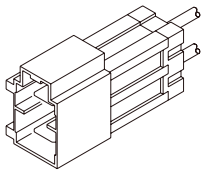
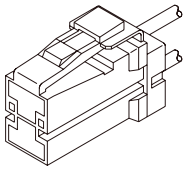
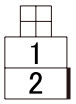
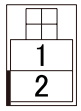
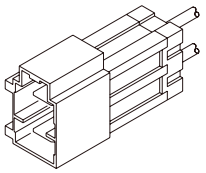
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CONNECTOR CONFIGURATION CHART

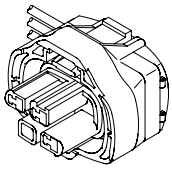
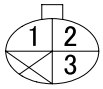
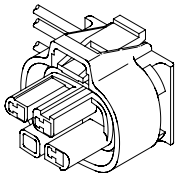
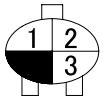
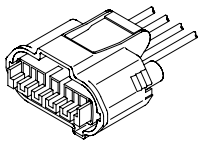
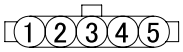
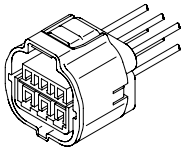
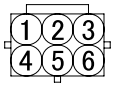
Number shows number of pins	Female connector	Male connector
AN4A	 	 
AN4B	 	 
AN6A	 	 
AN6B	 	 
AN8A	 	 
AN8B	 	 

AP type

Number shows number of pins	Female connector	Male connector
AP1A	 	 
AP1B	 	 

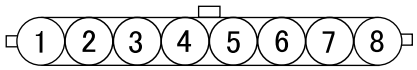
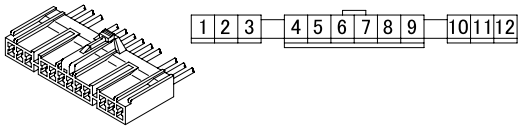
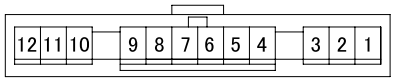
Number shows number of pins	Female connector	Male connector
AP2A	 	 
AP2B	 	 
AP2C	 	 

AQ type

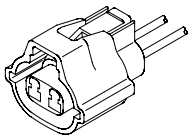
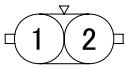
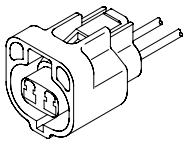
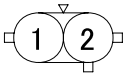
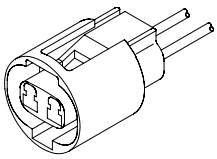
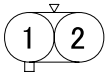
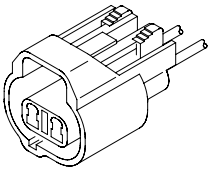
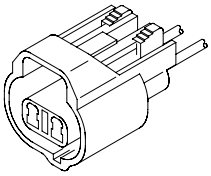
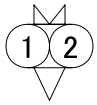
Number shows number of pins	Female connector	Male connector
AQ1A		
AQ3A	 	
AQ3B	 	
AQ5A	 	
AQ6A	 	

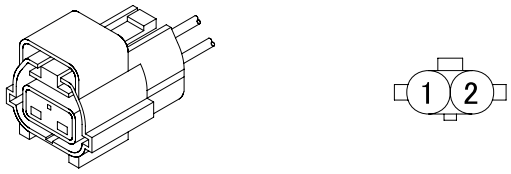
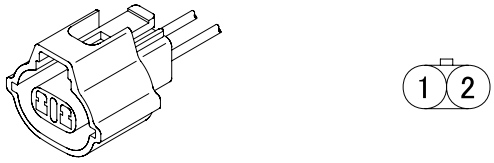
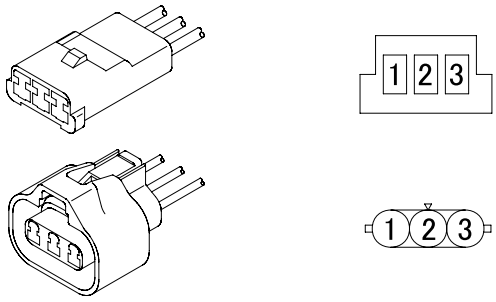
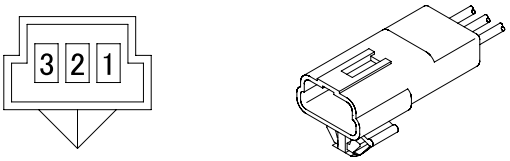
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CONNECTOR CONFIGURATION CHART

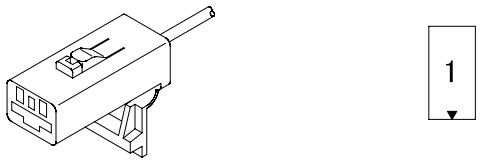
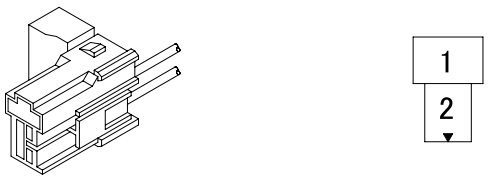
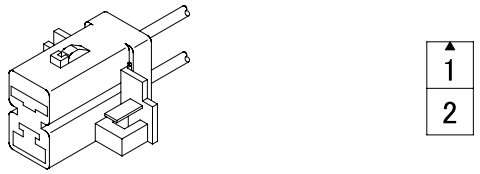
Number shows number of pins	Female connector	Male connector
AQ8A		
AQ12A		

AR type

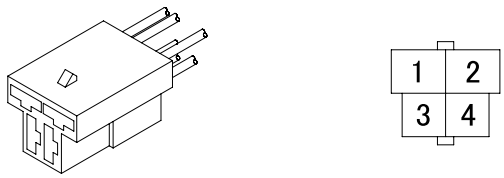
Number shows number of pins	Female connector	Male connector
AR2A	 	
AR2B	 	
AR2C	 	
AR2D	 	
AR2E	 	
AR2F		

Number shows number of pins	Female connector	Male connector
AR2G		
AR2H		
AR3A		

AS type

Number shows number of pins	Female connector	Male connector
AS1A		
AS2A		
AS2B		

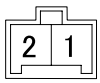
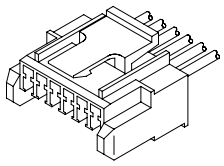
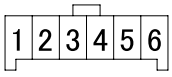
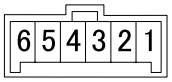
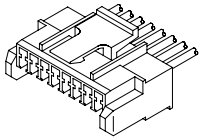
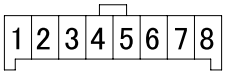
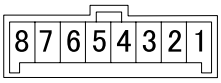
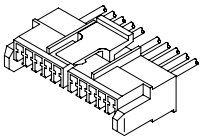
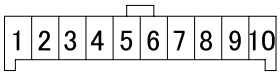
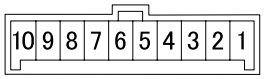
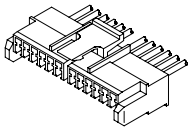
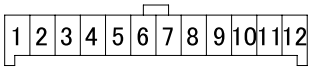
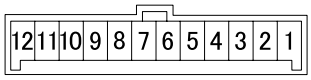
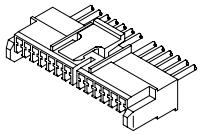
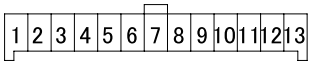
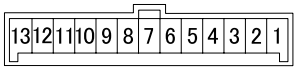
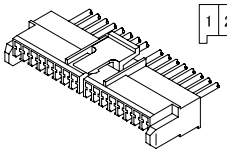
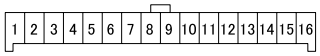
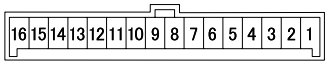
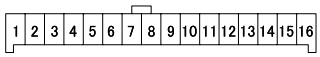
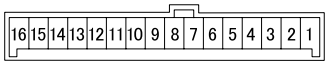
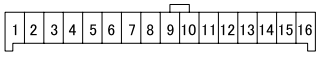
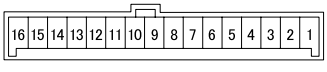
AT type

Number shows number of pins	Female connector	Male connector
AT4A		

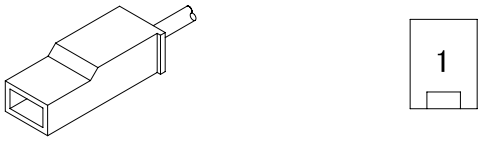
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CONNECTOR CONFIGURATION CHART

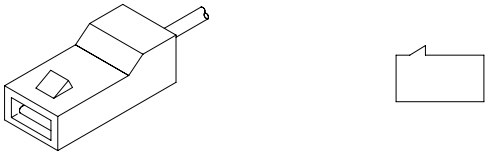
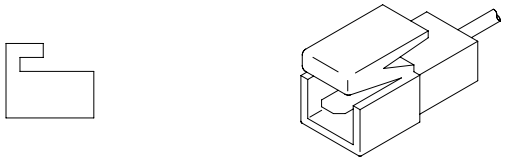
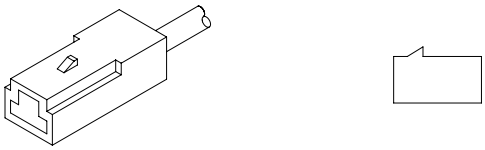
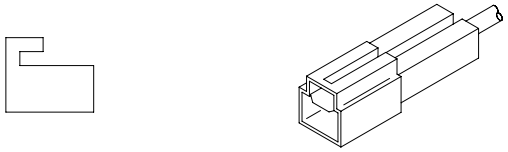
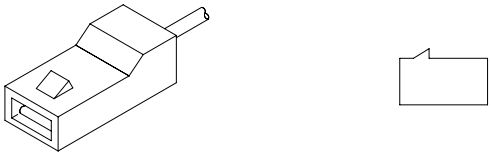
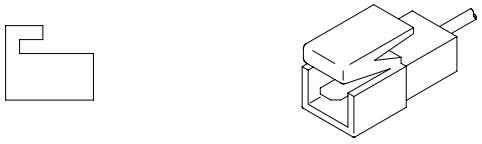
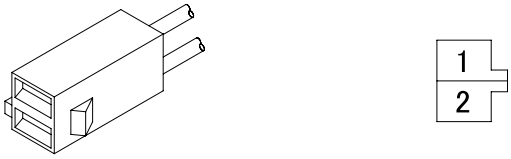
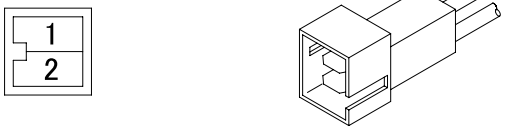
AU type

Number shows number of pins	Female connector	Male connector
AU2A		
AU6A	 	
AU8A	 	
AU10A	 	
AU12A	 	
AU13A	 	
AU16A	 	
AU16B		
AU16C		

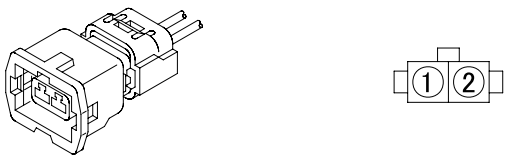
AV type

Number shows number of pins	Female connector	Male connector
AV1A		
AV2A		

AW type

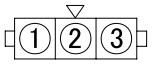
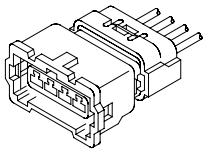
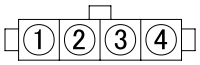
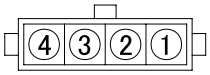
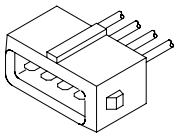
Number shows number of pins	Female connector	Male connector
AW1A		
AW1B		
AW1C		
AW2A		

AX type

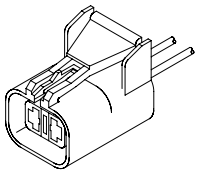
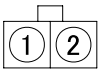
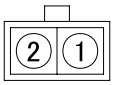
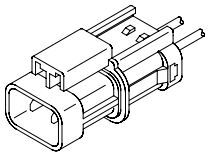
Number shows number of pins	Female connector	Male connector
AX2A		

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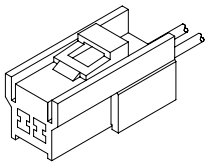
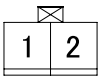
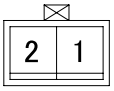
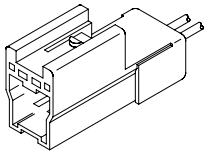
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
AX3A		
AX4A	 	 

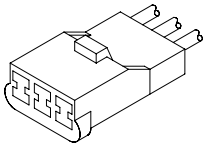
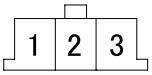
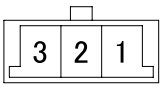
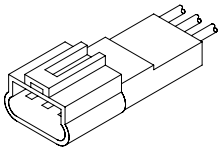
AY type

Number shows number of pins	Female connector	Male connector
AY2A	 	 

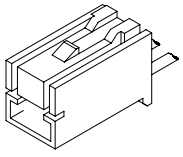
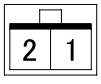
AZ type

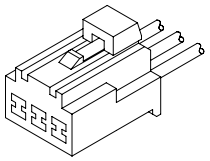
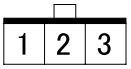
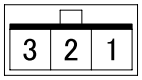
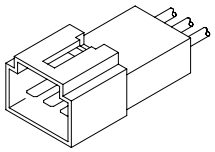
Number shows number of pins	Female connector	Male connector
AZ2A	 	 

BA type

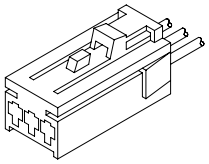
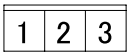
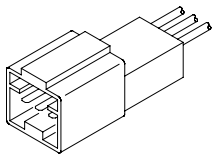
Number shows number of pins	Female connector	Male connector
BA3A	 	 

BB type

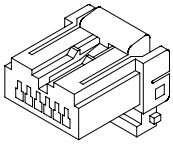
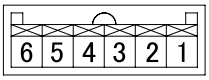
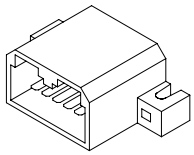
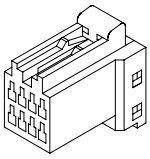
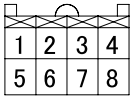
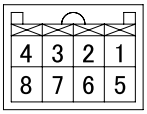
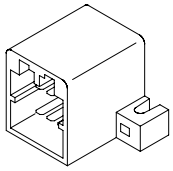
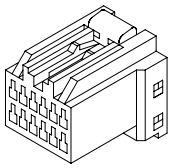
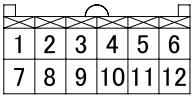
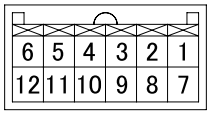
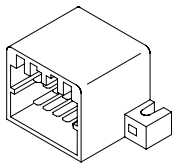
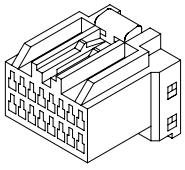
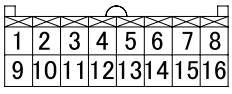
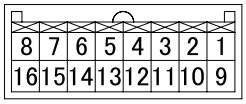
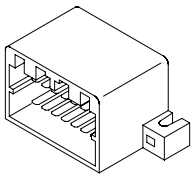
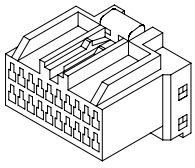
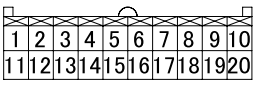
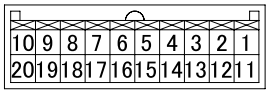
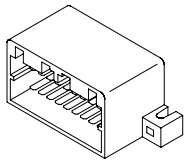
Number shows number of pins	Female connector	Male connector
BB2A	 	

Number shows number of pins	Female connector	Male connector
BB3A	 	 

BC type

Number shows number of pins	Female connector	Male connector
BC3A	 	 

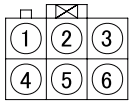
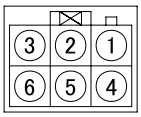
BD type

Number shows number of pins	Female connector	Male connector
BD6A	 	 
BD8A	 	 
BD12A	 	 
BD16A	 	 
BD20A	 	 

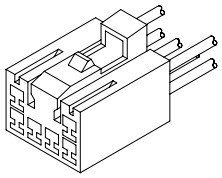
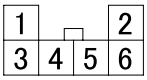
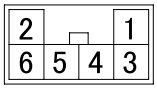
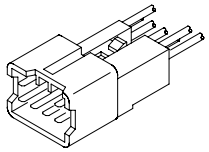
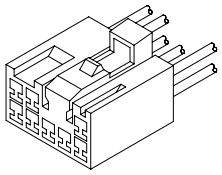
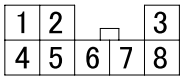
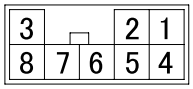
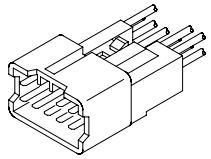
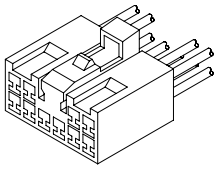
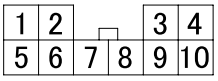
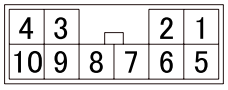
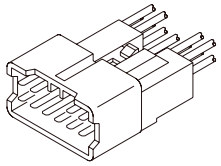
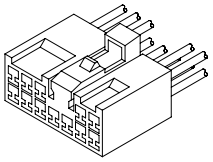
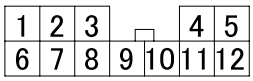
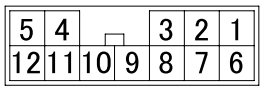
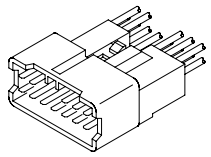
https://truckmanualshub.com/

CONNECTOR CONFIGURATION CHART

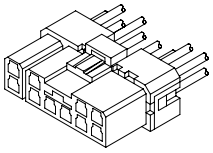
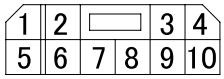
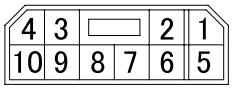
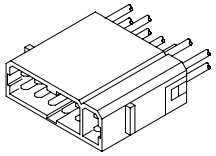
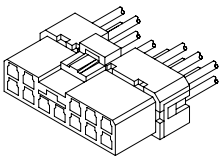
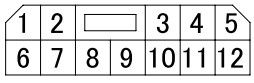
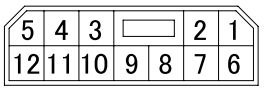
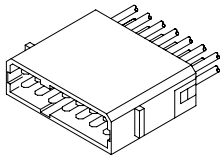
BE type

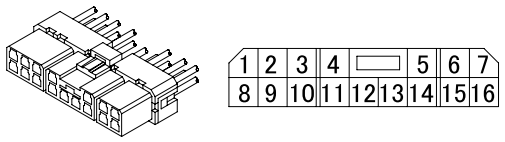
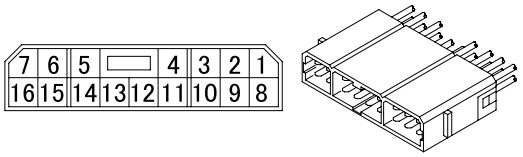
Number shows number of pins	Female connector	Male connector
BE6A		

BF type

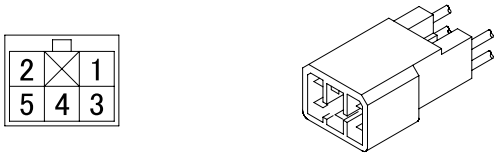
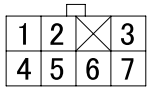
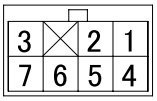
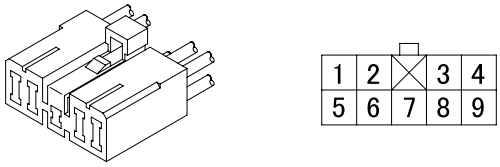
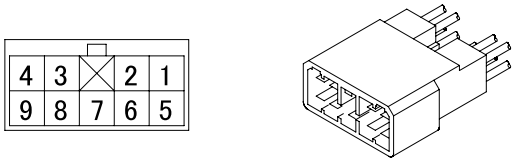
Number shows number of pins	Female connector	Male connector
BF6A	 	 
BF8A	 	 
BF10A	 	 
BF12A	 	 

BG type

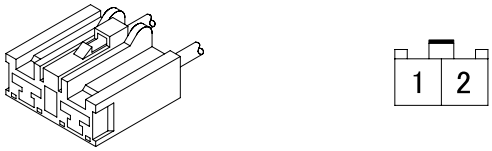
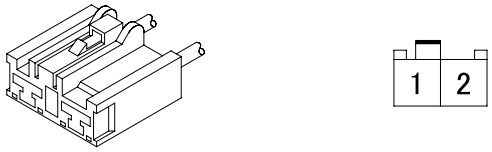
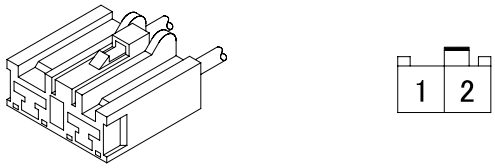
Number shows number of pins	Female connector	Male connector
BG10A	 	 
BG12A	 	 

Number shows number of pins	Female connector	Male connector
BG16A		

BJ type

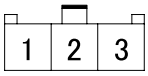
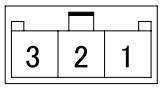
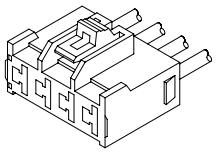
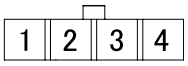
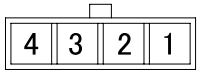
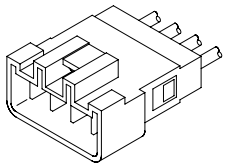
Number shows number of pins	Female connector	Male connector
BJ5A		
BJ7A		
BJ9A		

BM type

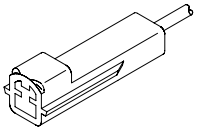
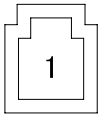
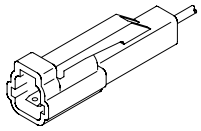
Number shows number of pins	Female connector	Male connector
BM2A		
BM2B		
BM2C		

https://truckmanualshub.com/

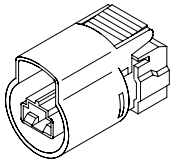
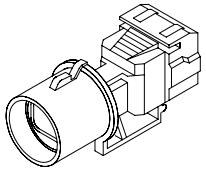
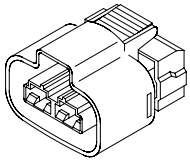
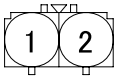
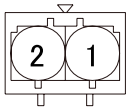
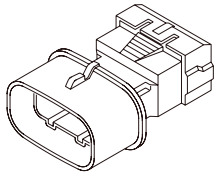
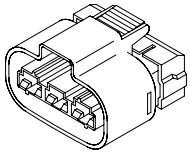
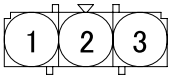
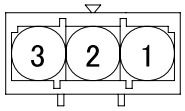
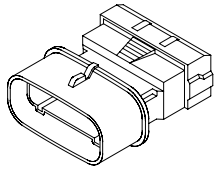
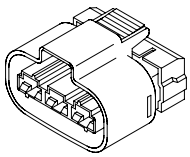
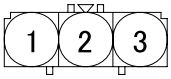
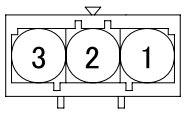
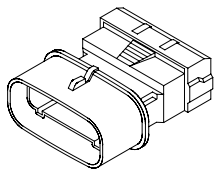
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
BM3A		
BM4A	 	 

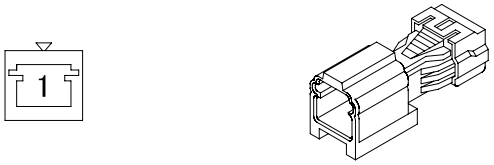
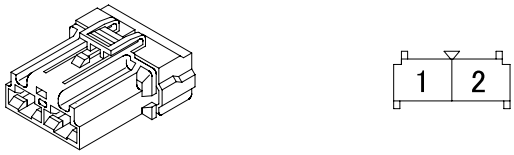
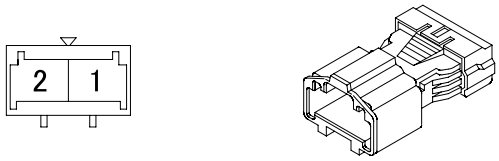
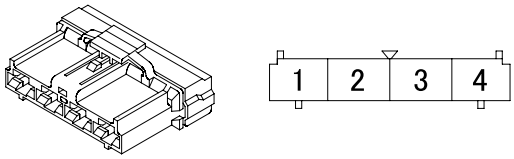
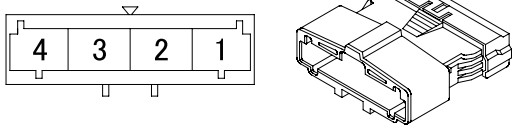
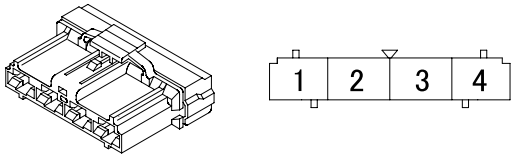
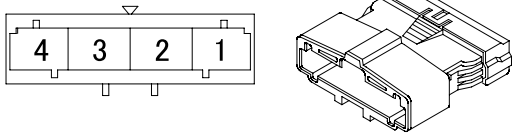
BN type

Number shows number of pins	Female connector	Male connector
BN1A	 	 

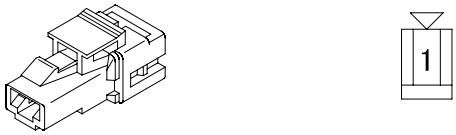
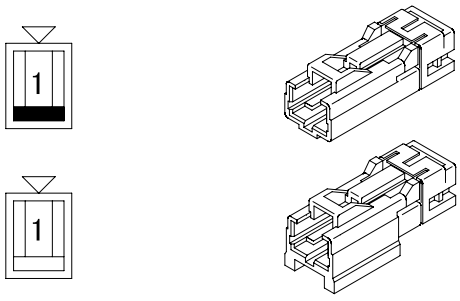
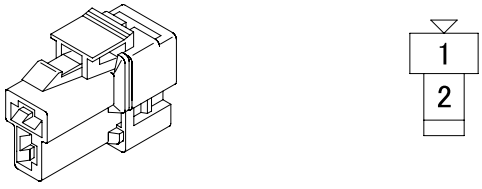
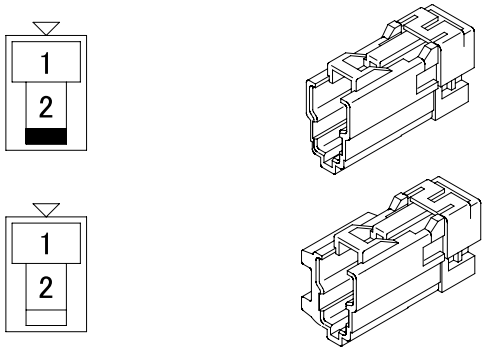
BQ type

Number shows number of pins	Female connector	Male connector
BQ1A	 	 
BQ2A	 	 
BQ3A	 	 
BQ3B	 	 

BR type

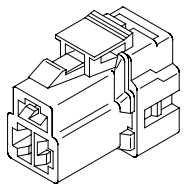
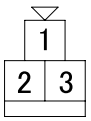
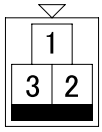
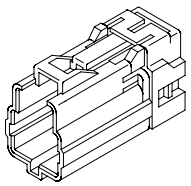
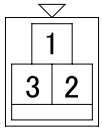
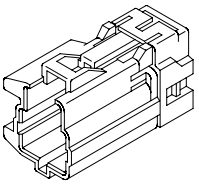
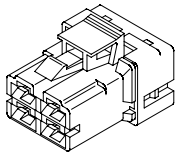
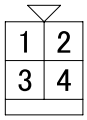
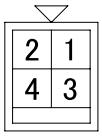
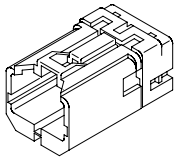
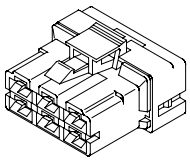
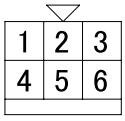
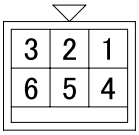
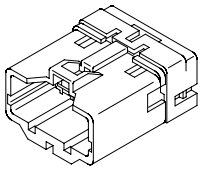
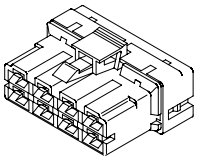
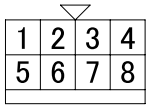
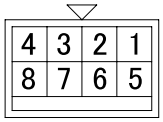
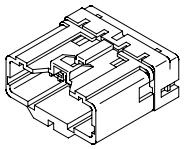
Number shows number of pins	Female connector	Male connector
BR1A		
BR2A		
BR4A		
BR4B		

BS type

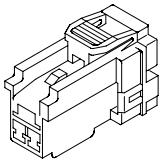
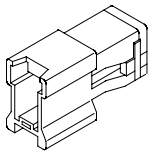
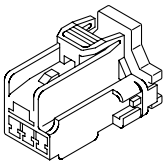
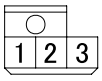
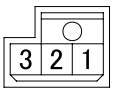
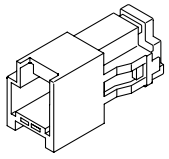
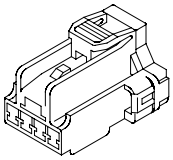
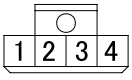
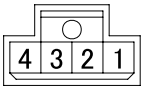
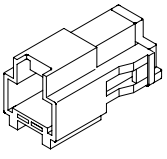
Number shows number of pins	Female connector	Male connector
BS1A		
BS2A		

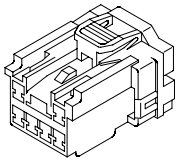
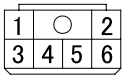
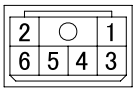
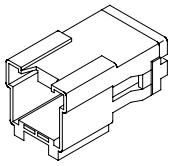
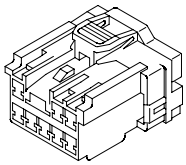
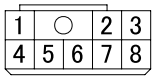
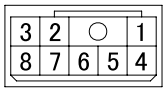
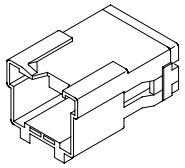
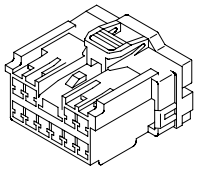
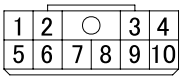
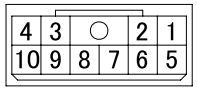
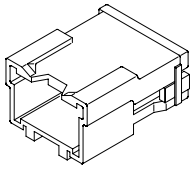
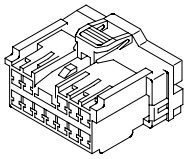
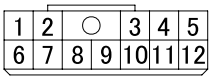
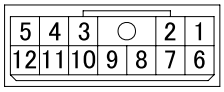
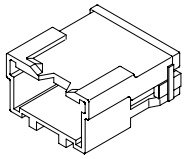
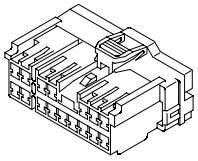
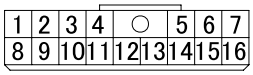
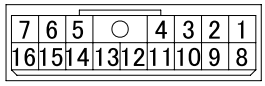
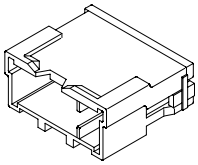
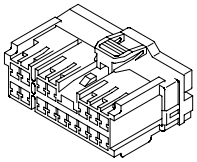
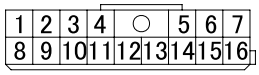
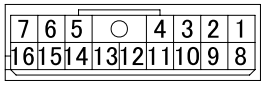
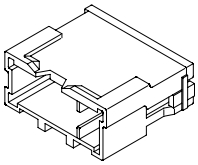
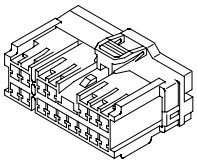
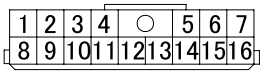
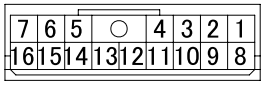
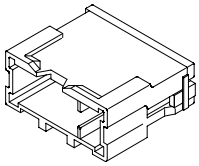
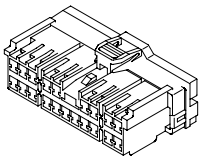
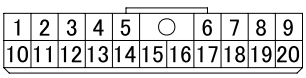
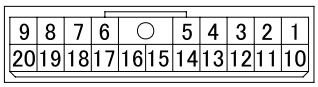
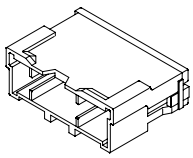
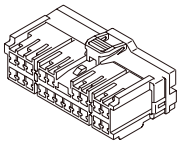
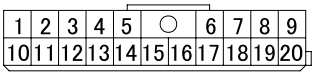
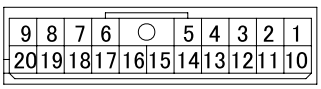
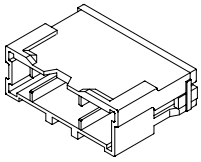
https://truckmanualshub.com/

CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
BS3A	 	   
BS4A	 	 
BS6A	 	 
BS8A	 	 

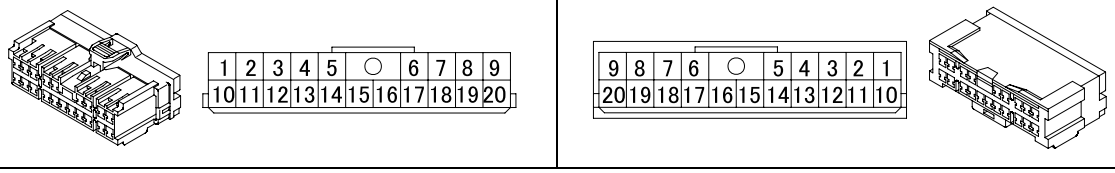
BT type

Number shows number of pins	Female connector	Male connector
BT2A	 	 
BT3A	 	 
BT4A	 	 

Number shows number of pins	Female connector	Male connector
BT6A	 	 
BT8A	 	 
BT10A	 	 
BT12A	 	 
BT16A	 	 
BT16B	 	 
BT16C	 	 
BT20A	 	 
BT20B	 	 

https://truckmanualshub.com/

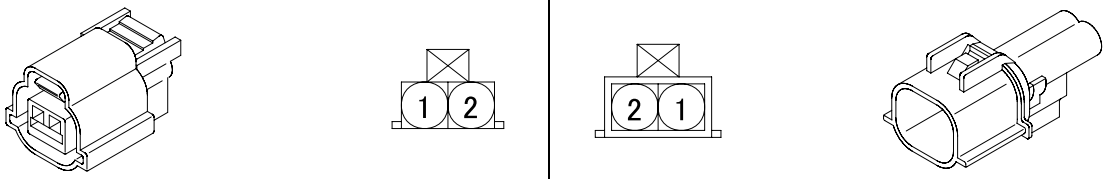
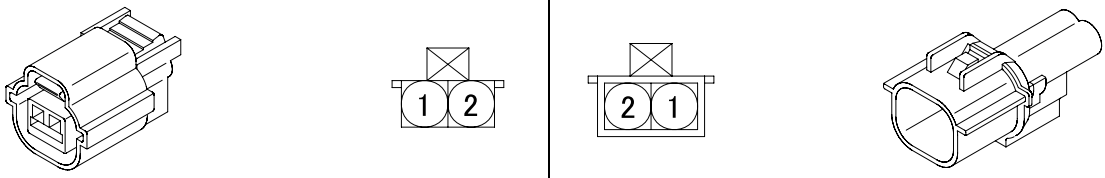
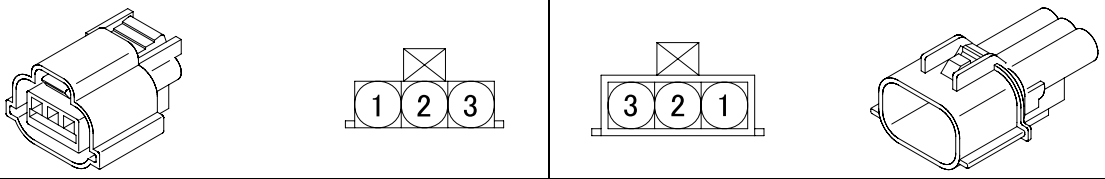
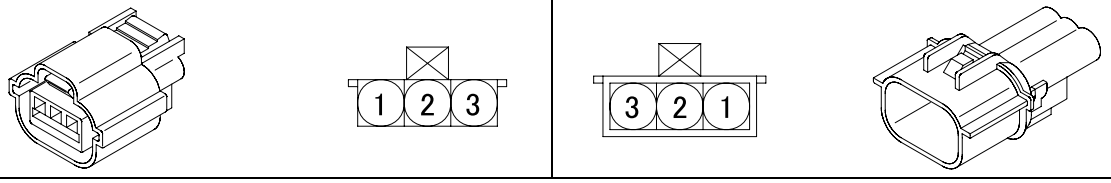
CONNECTOR CONFIGURATION CHART

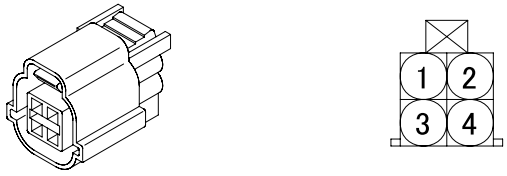
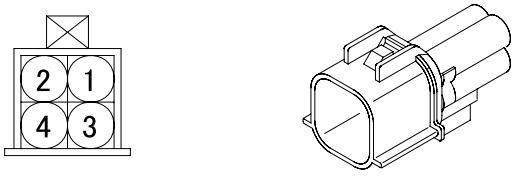
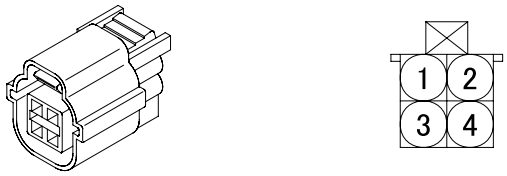
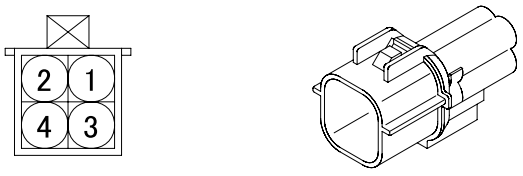
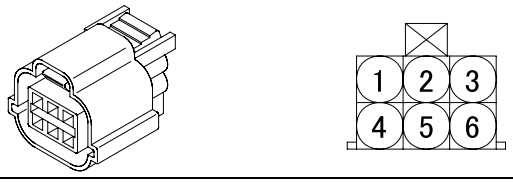
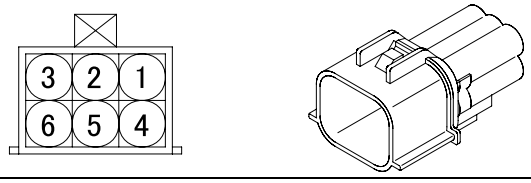
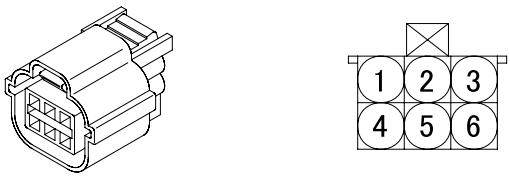
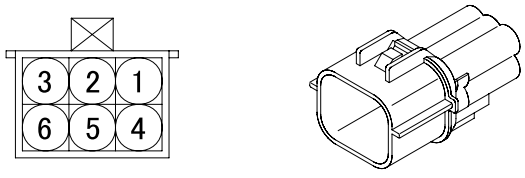
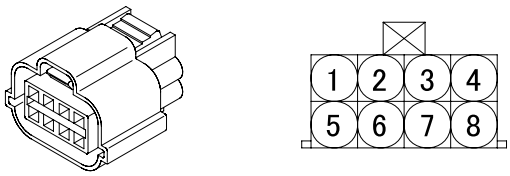
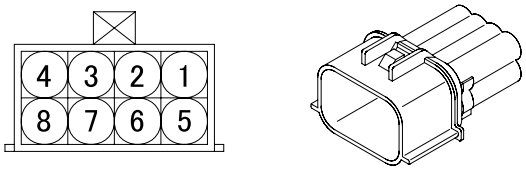
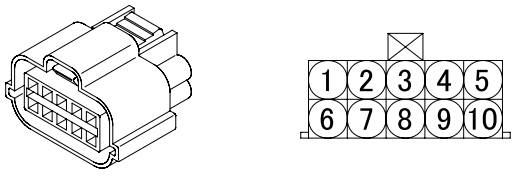
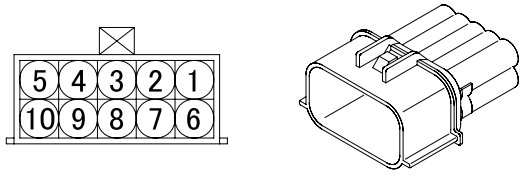
Number shows number of pins	Female connector	Male connector
BT20C		

BU type

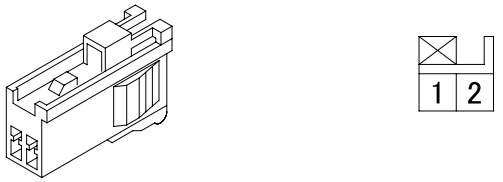
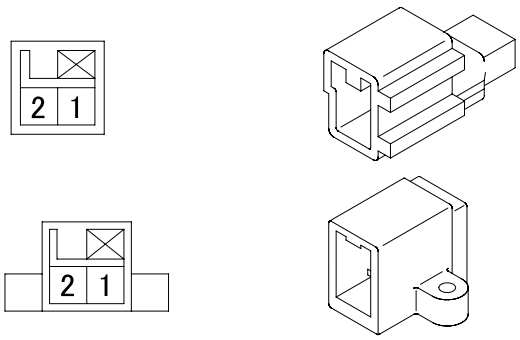
Number shows number of pins	Female connector	Male connector
BU4A		
BU6A		

BW type

Number shows number of pins	Female connector	Male connector
BW2A		
BW2B		
BW3A		
BW3B		

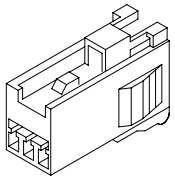
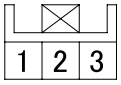
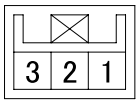
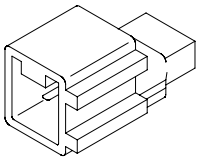
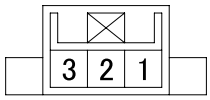
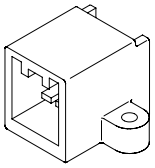
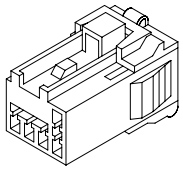
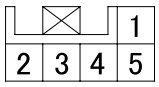
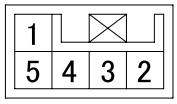
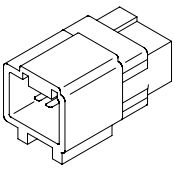
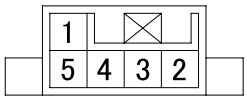
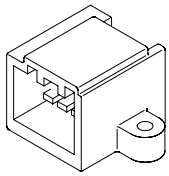
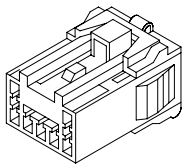
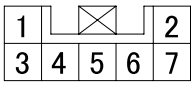
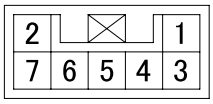
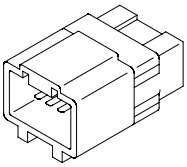
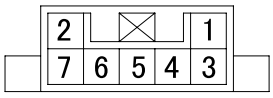
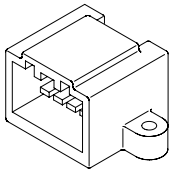
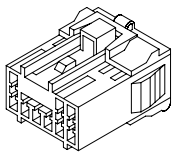
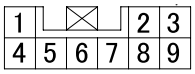
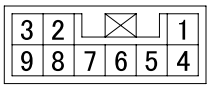
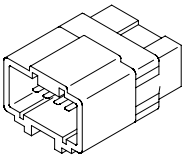
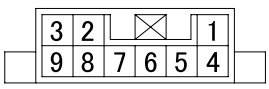
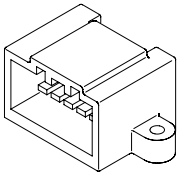
Number shows number of pins	Female connector	Male connector
BW4A		
BW4B		
BW6A		
BW6B		
BW8A		
BW10A		

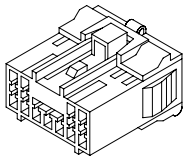
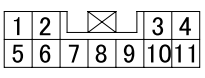
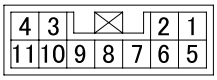
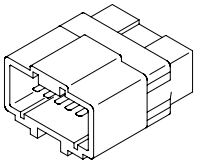
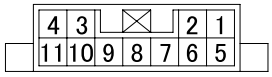
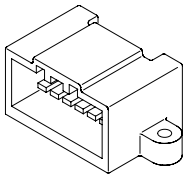
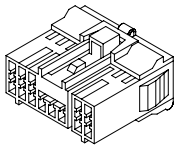
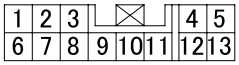
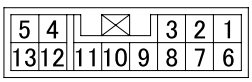
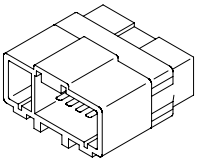
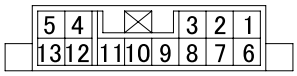
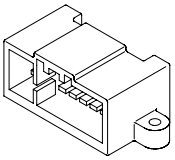
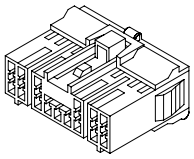
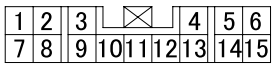
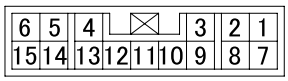
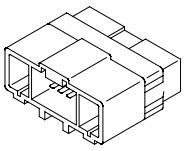
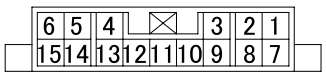
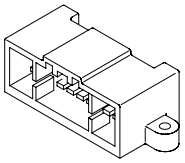
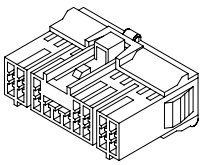
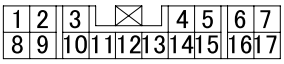
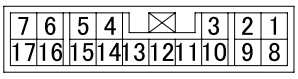
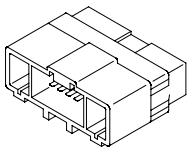
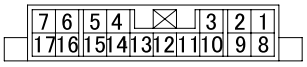
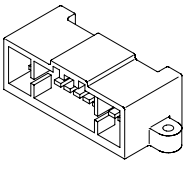
BX type

Number shows number of pins	Female connector	Male connector
BX2A		

https://truckmanualshub.com/

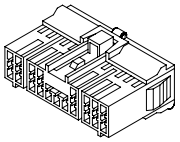
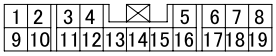
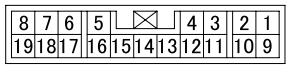
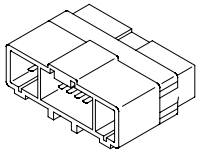
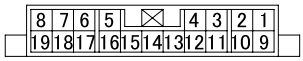
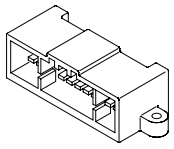
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
BX3A	 	   
BX5A	 	   
BX7A	 	   
BX9A	 	   

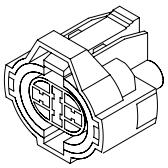
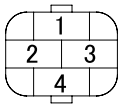
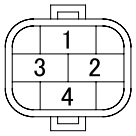
Number shows number of pins	Female connector	Male connector
BX11A	 	   
BX13A	 	   
BX15A	 	   
BX17A	 	   

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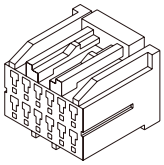
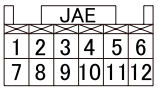
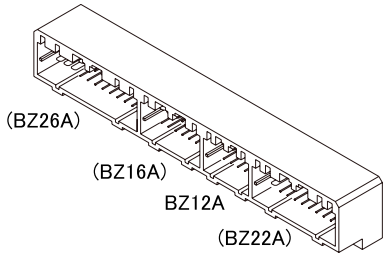
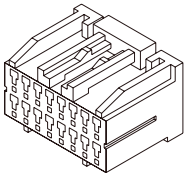
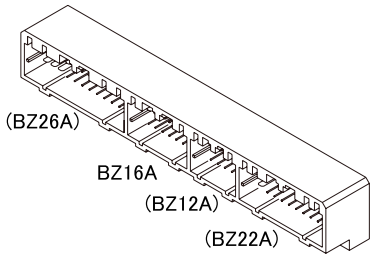
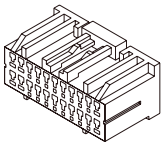
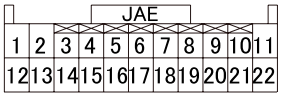
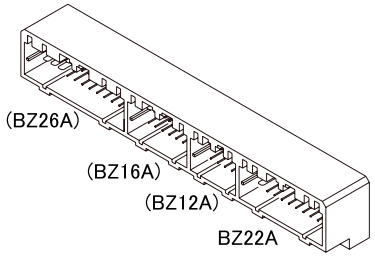
CONNECTOR CONFIGURATION CHART

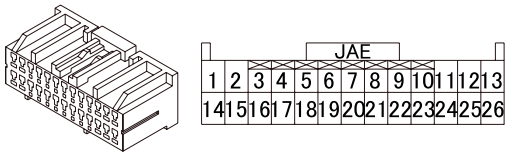
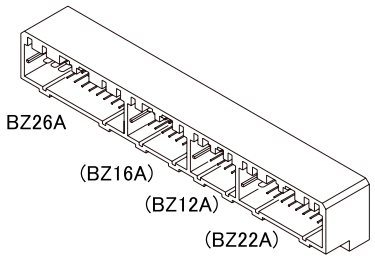
Number shows number of pins	Female connector	Male connector
BX19A	 	   

BY type

Number shows number of pins	Female connector	Male connector
BY4A	 	

BZ type

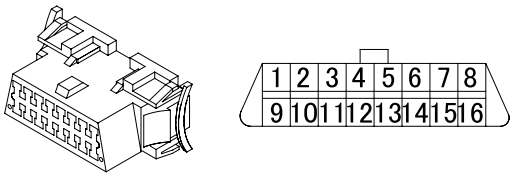
Number shows number of pins	Female connector	Male connector
BZ12A	 	
BZ16A	 	
BZ22A	 	

Number shows number of pins	Female connector	Male connector
BZ26A		

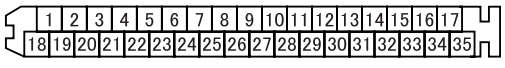
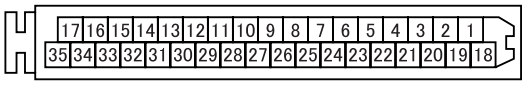
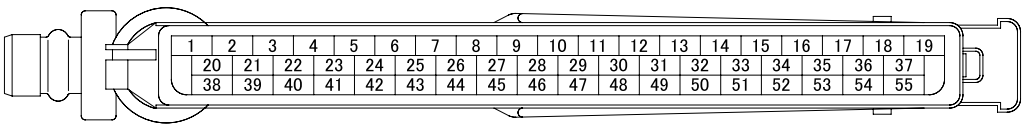
CA type

Number shows number of pins	Female connector	Male connector
CA2A		

CB type

Number shows number of pins	Female connector	Male connector
CB16A		

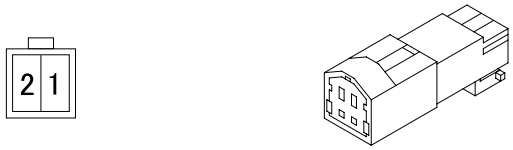
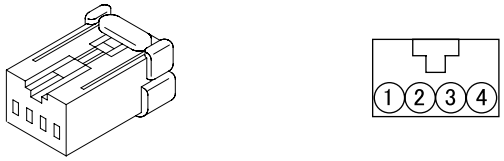
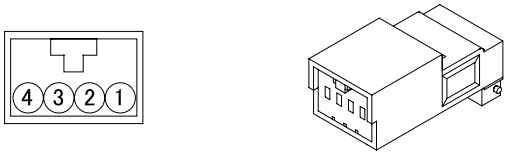
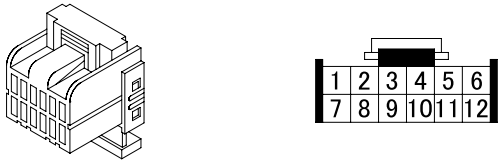
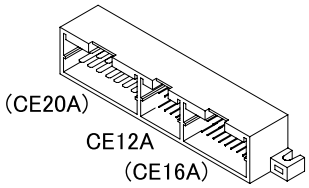
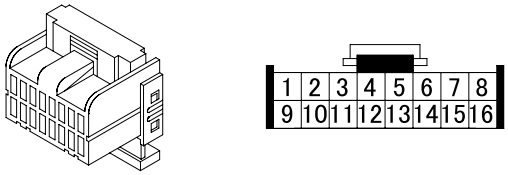
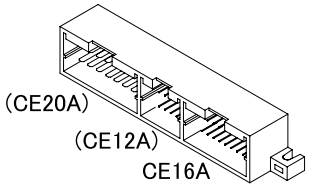
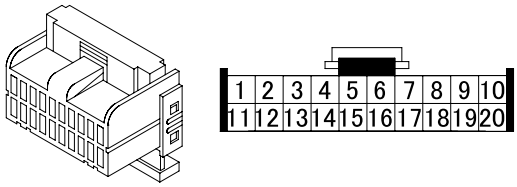
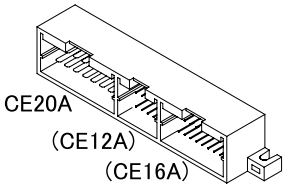
CD type

Number shows number of pins	Female connector	Male connector
CD35A		
CD55A		

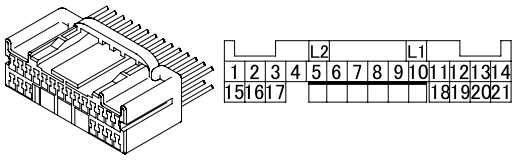
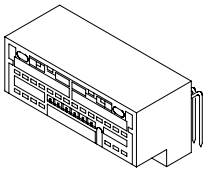
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CONNECTOR CONFIGURATION CHART

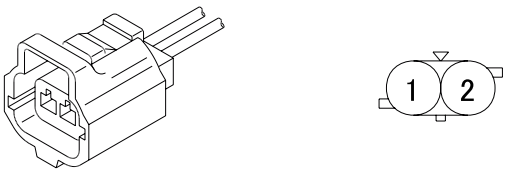
CE type

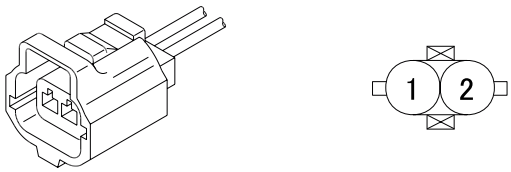
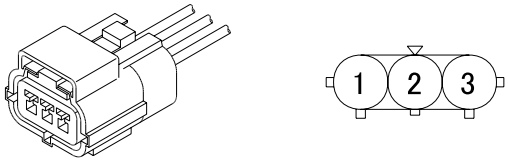
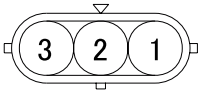
Number shows number of pins	Female connector	Male connector
CE2A		
CE4A		
CE12A		
CE16A		
CE20A		

CF type

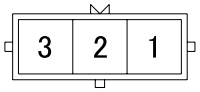
Number shows number of pins	Female connector	Male connector
CF21A		

CH type

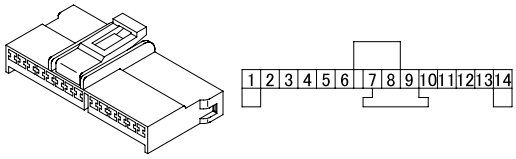
Number shows number of pins	Female connector	Male connector
CH2A		

Number shows number of pins	Female connector	Male connector
CH2B		
CH3A		

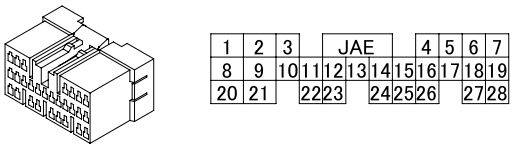
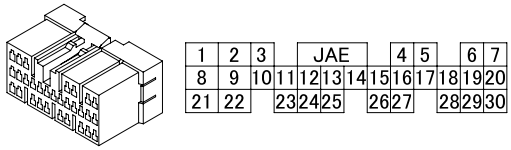
CK type

Number shows number of pins	Female connector	Male connector
CK3A		

CL type

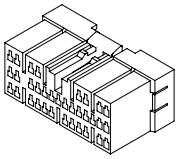
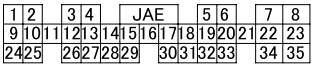
Number shows number of pins	Female connector	Male connector
CL14A		

CM type

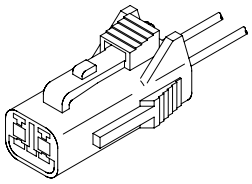
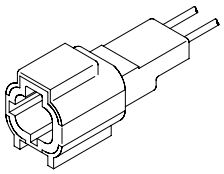
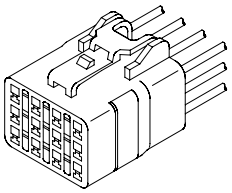
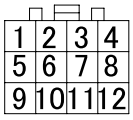
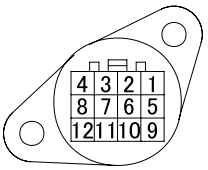
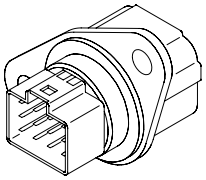
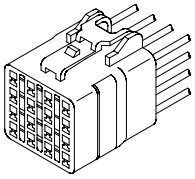
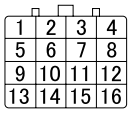
Number shows number of pins	Female connector	Male connector
CM28A		
CM30A		

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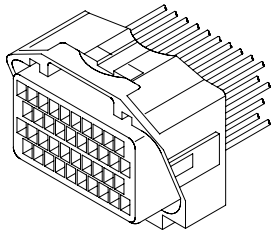
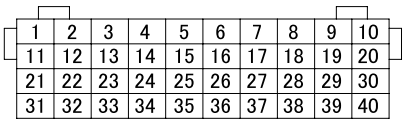
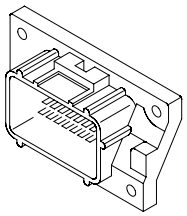
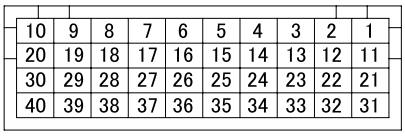
CONNECTOR CONFIGURATION CHART

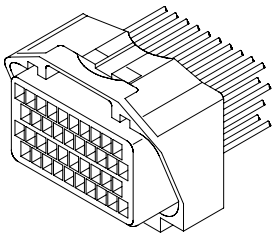
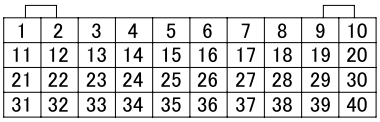
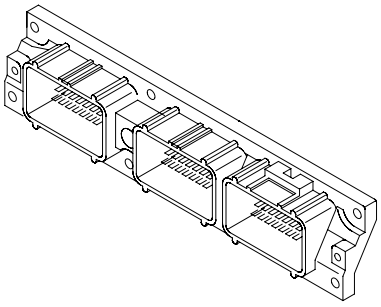
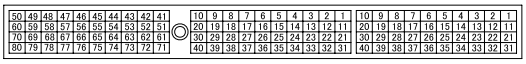
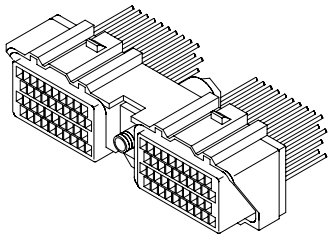
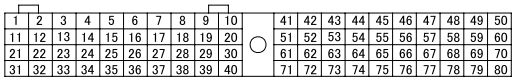
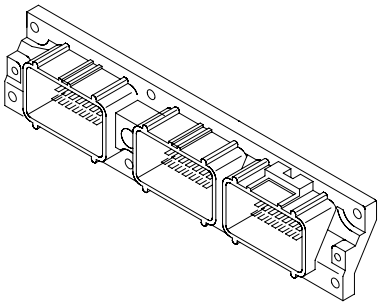
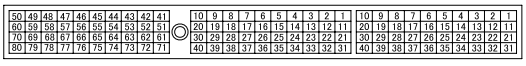
Number shows number of pins	Female connector	Male connector
CM35A	 	

CN type

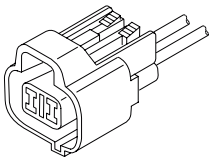
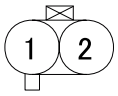
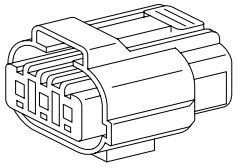
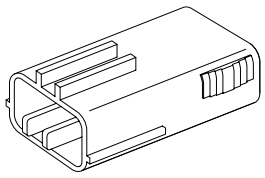
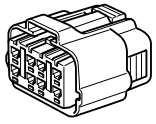
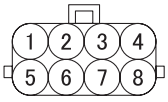
Number shows number of pins	Female connector	Male connector
CN2A	 	 
CN12A	 	 
CN16A	 	

CP type

Number shows number of pins	Female connector	Male connector
CP40A	 	 

Number shows number of pins	Female connector	Male connector
CP40B	  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	  (CP80A) CP40B
CP80A	  1 2 3 4 5 6 7 8 9 10 / 41 42 43 44 45 46 47 48 49 50 11 12 13 14 15 16 17 18 19 20 / 51 52 53 54 55 56 57 58 59 60 21 22 23 24 25 26 27 28 29 30 / 61 62 63 64 65 66 67 68 69 70 31 32 33 34 35 36 37 38 39 40 / 71 72 73 74 75 76 77 78 79 80	  CP80A (CP40B)

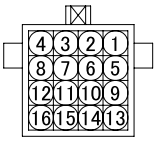
CQ type

Number shows number of pins	Female connector	Male connector
CQ2B	  1 2	
CQ3A		
CQ8A	  1 2 3 4 5 6 7 8	

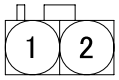
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CONNECTOR CONFIGURATION CHART

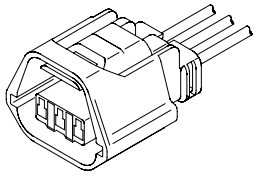
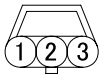
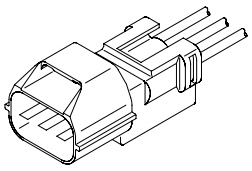
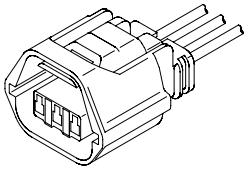
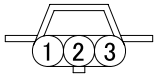
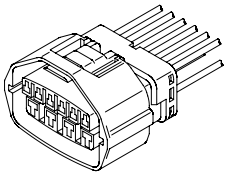
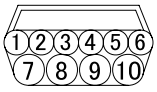
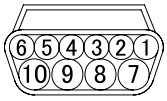
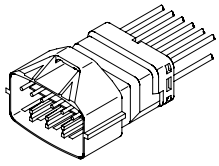
CR type

Number shows number of pins	Female connector	Male connector
CR16A		

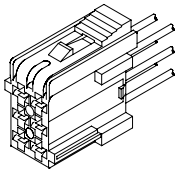
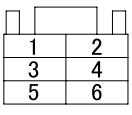
CS type

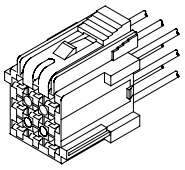
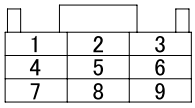
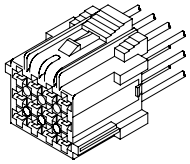
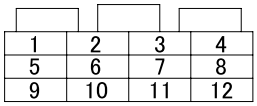
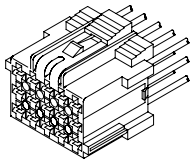
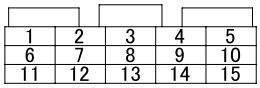
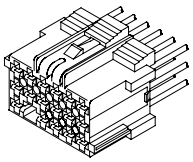
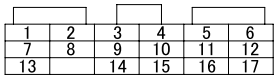
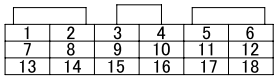
Number shows number of pins	Female connector	Male connector
CS2A		

CT type

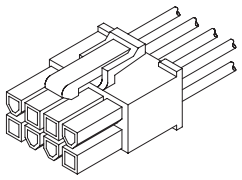
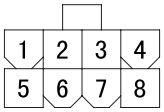
Number shows number of pins	Female connector	Male connector
CT3A	 	 
CT3B	 	
CT10A	 	 

CU type

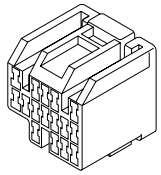
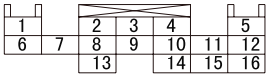
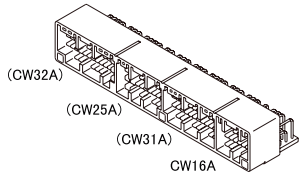
Number shows number of pins	Female connector	Male connector
CU6A	 	

Number shows number of pins	Female connector	Male connector
CU9A	 	
CU12A	 	
CU15A	 	
CU17A	 	
CU18A		

CV type

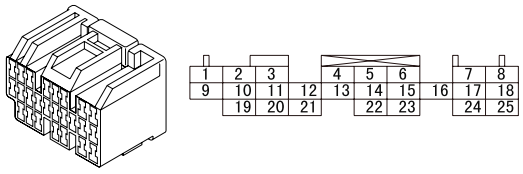
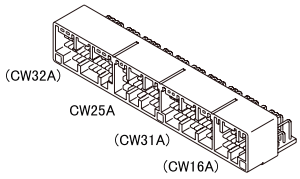
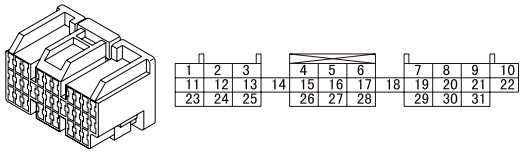
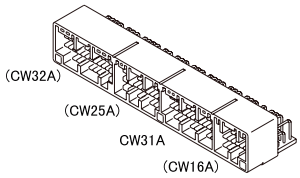
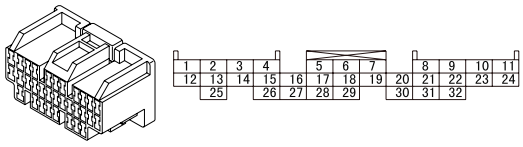
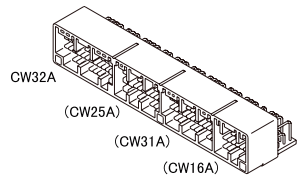
Number shows number of pins	Female connector	Male connector
CV8A	 	

CW type

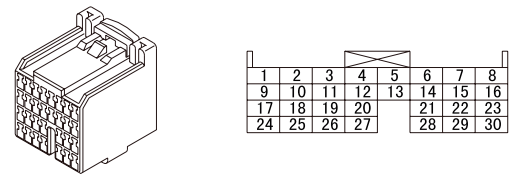
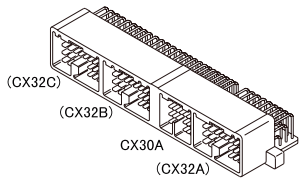
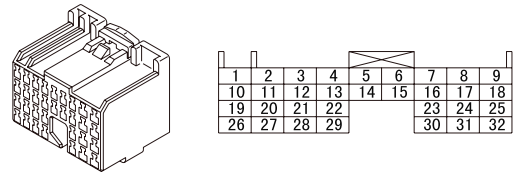
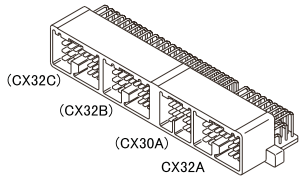
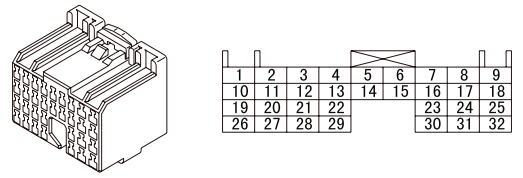
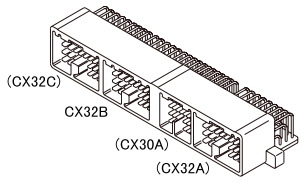
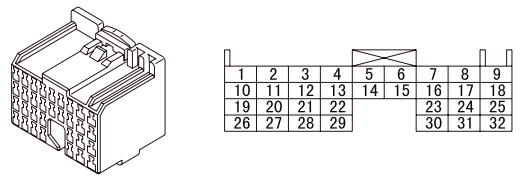
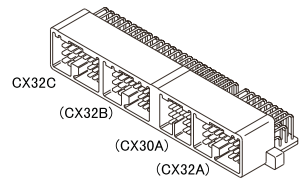
Number shows number of pins	Female connector	Male connector
CW16A	 	

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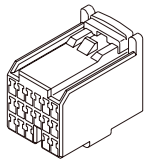
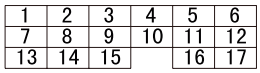
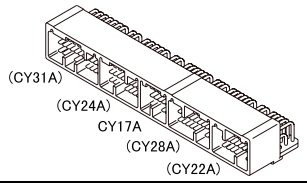
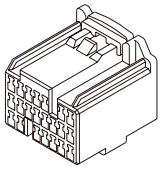
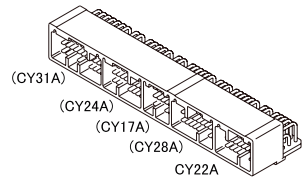
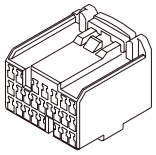
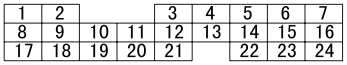
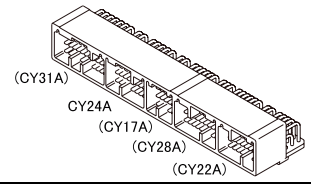
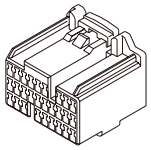
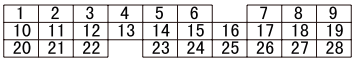
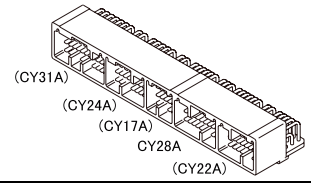
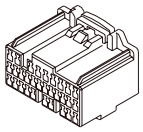
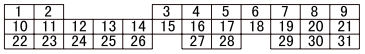
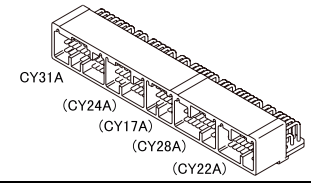
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
CW25A		
CW31A		
CW32A		

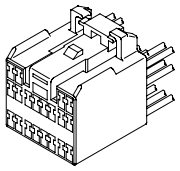
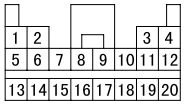
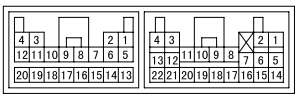
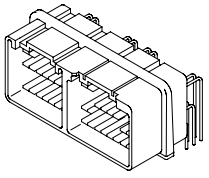
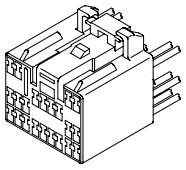
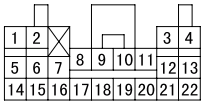
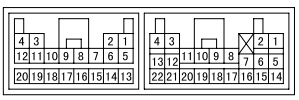
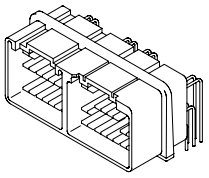
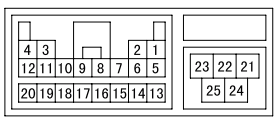
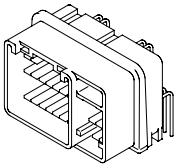
CX type

Number shows number of pins	Female connector	Male connector
CX30A		
CX32A		
CX32B		
CX32C		

CY type

Number shows number of pins	Female connector	Male connector
CY17A	 	
CY22A	 	
CY24A	 	
CY28A	 	
CY31A	 	

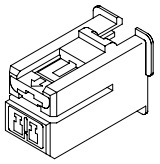
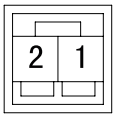
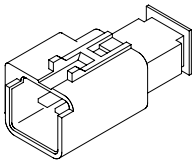
DA type

Number shows number of pins	Female connector	Male connector
DA20A	 	 
DA22A	 	 
DA25A		 

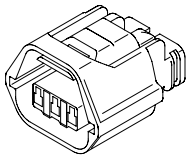
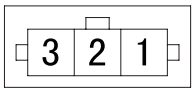
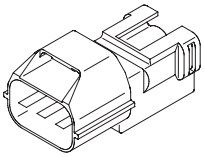
https://truckmanualshub.com/

CONNECTOR CONFIGURATION CHART

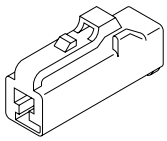
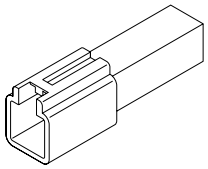
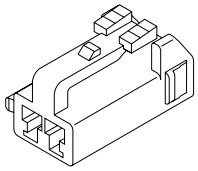
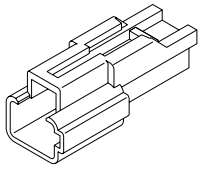
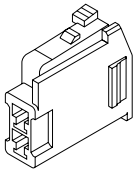
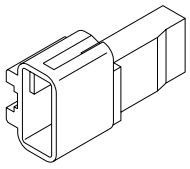
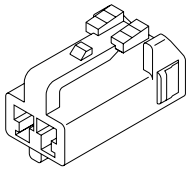
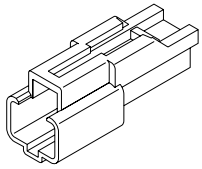
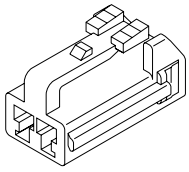
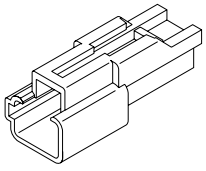
DB type

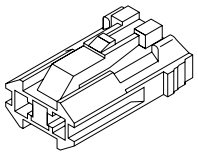
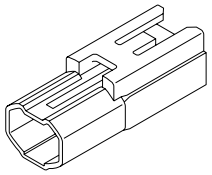
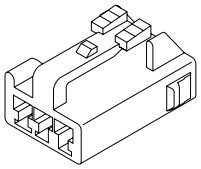
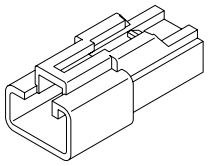
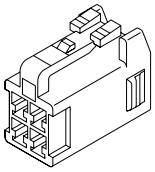
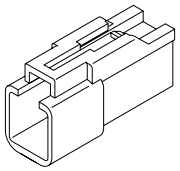
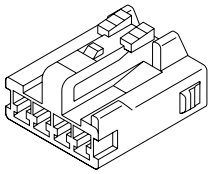
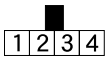
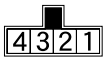
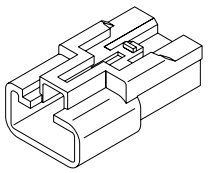
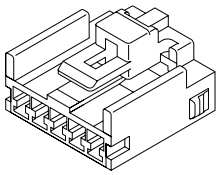
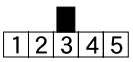
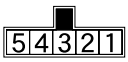
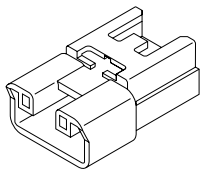
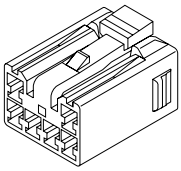
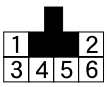
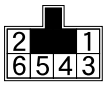
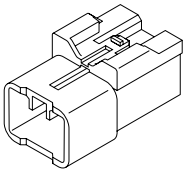
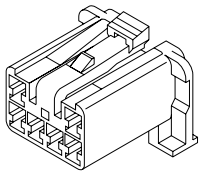
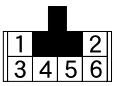
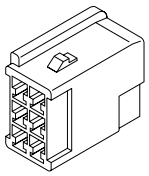
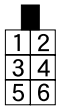
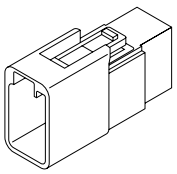
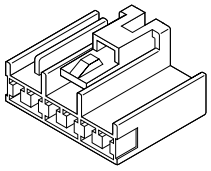
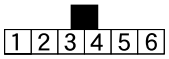
Number shows number of pins	Female connector	Male connector
DB2A	 	 

DC type

Number shows number of pins	Female connector	Male connector
DC3A	 	 

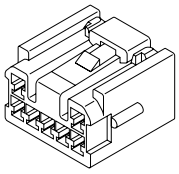
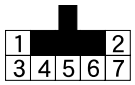
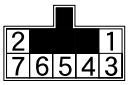
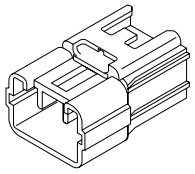
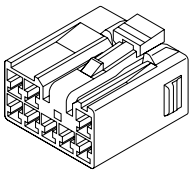
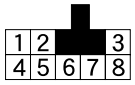
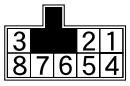
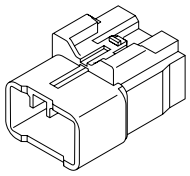
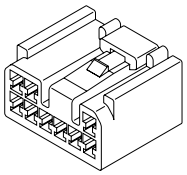
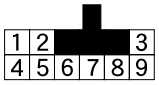
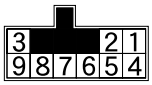
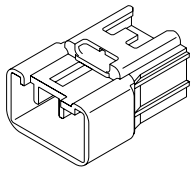
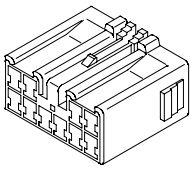
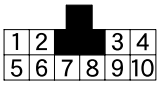
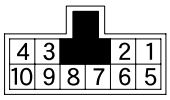
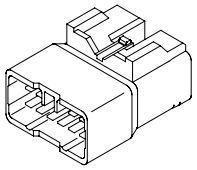
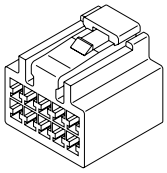
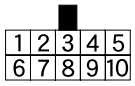
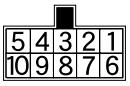
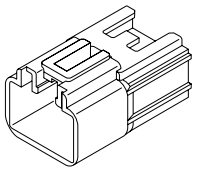
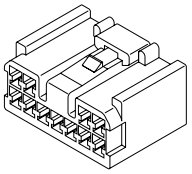
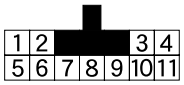
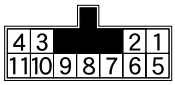
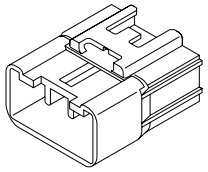
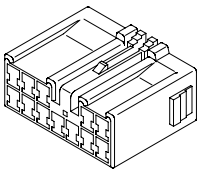
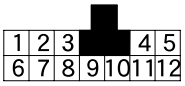
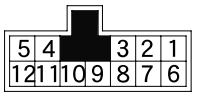
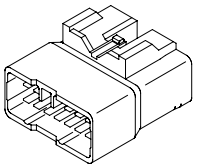
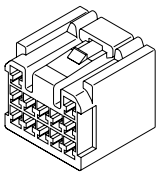
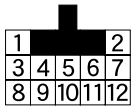
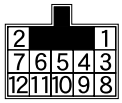
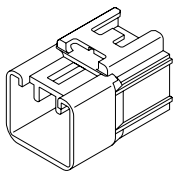
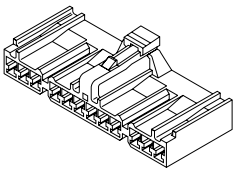
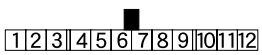
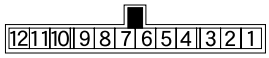
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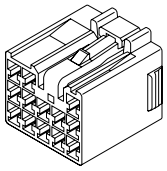
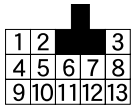
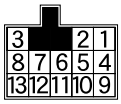
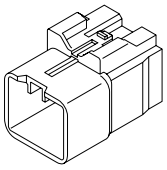
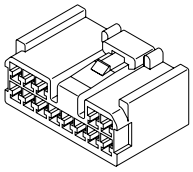
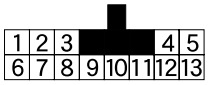
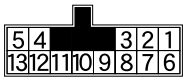
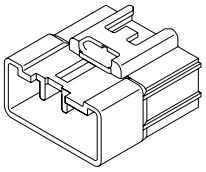
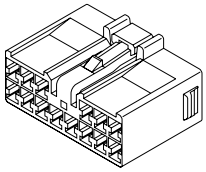
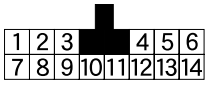
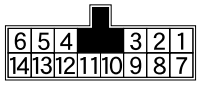
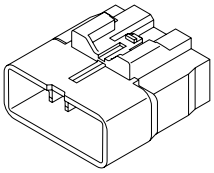
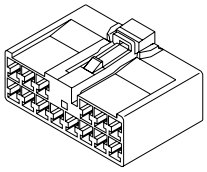
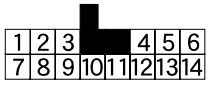
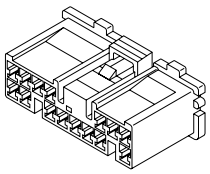
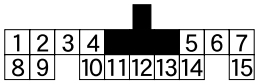
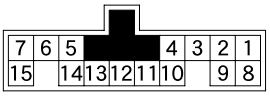
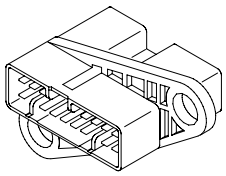
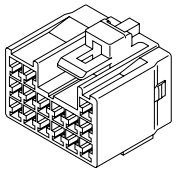
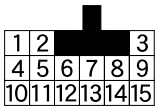
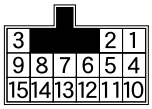
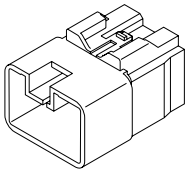
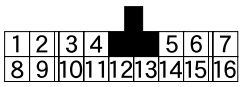
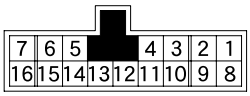
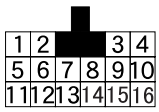
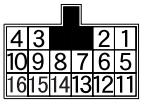
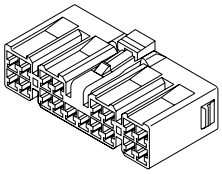
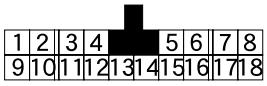
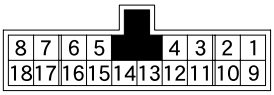
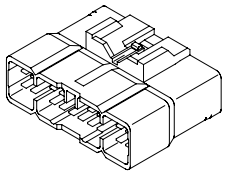
Number shows number of pins	Female connector	Male connector
DD1A	 	 
DD2A	 	 
DD2B	 	 
DD2C	 	 
DD2E	 	 

Number shows number of pins	Female connector	Male connector
DD2F	 	 
DD3A	 	 
DD4A	 	 
DD4C	 	 
DD5A	 	 
DD6A	 	 
DD6B	 	
DD6C	 	 
DD6E	 	

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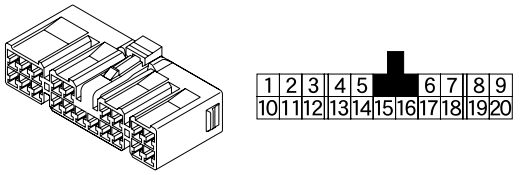
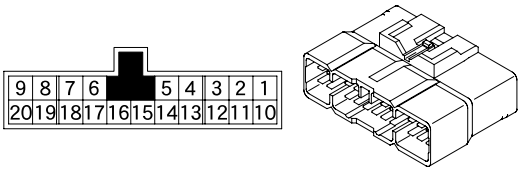
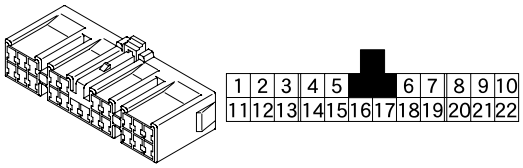
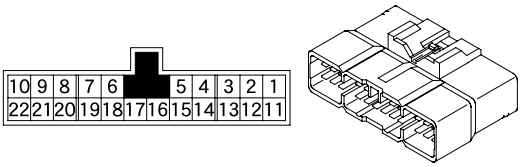
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
DD7A	 	 
DD8A	 	 
DD9A	 	 
DD10A	 	 
DD10B	 	 
DD11A	 	 
DD12A	 	 
DD12B	 	 
DD12C	 	

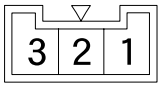
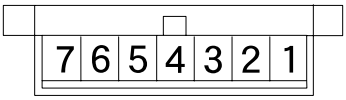
Number shows number of pins	Female connector	Male connector
DD13A	 	 
DD13B	 	 
DD14A	 	 
DD14B	 	
DD15A	 	 
DD15B	 	 
DD16A		
DD16B		
DD18A	 	 

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CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
DD20A		
DD22A		

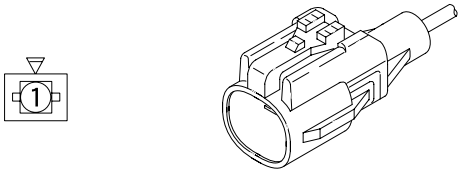
DE type

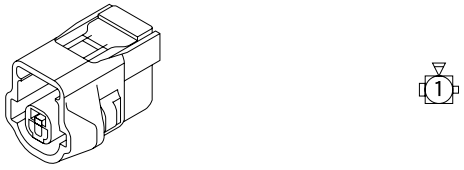
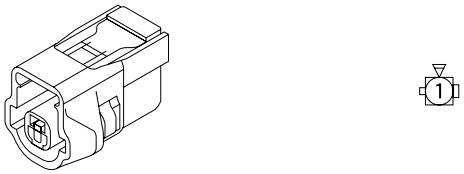
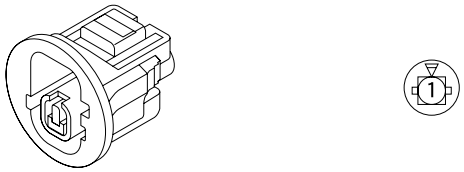
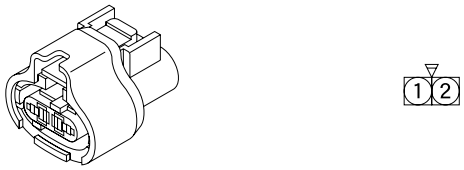
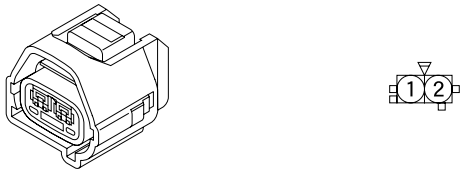
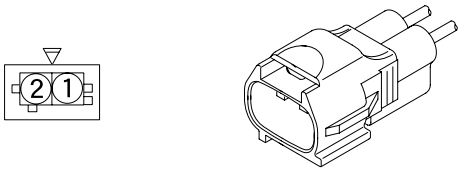
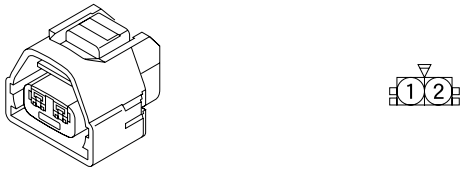
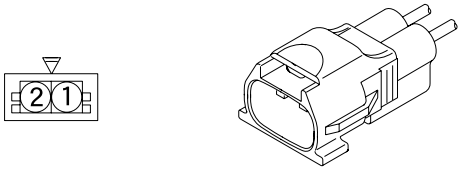
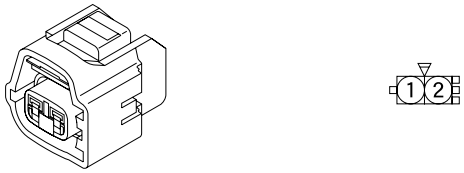
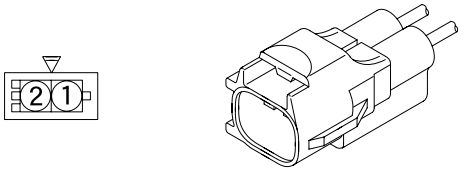
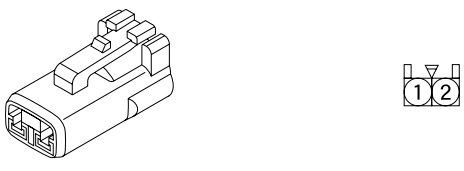
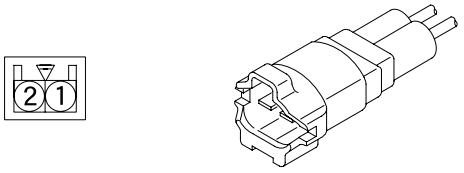
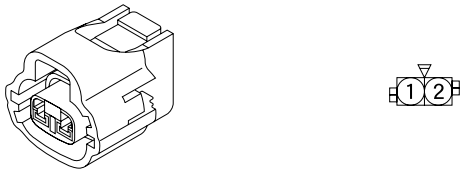
Number shows number of pins	Female connector	Male connector
DE3A		
DE7A		

DF type

Number shows number of pins	Female connector	Male connector
DF3A		

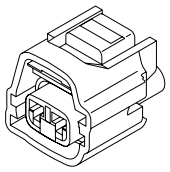
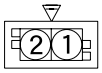
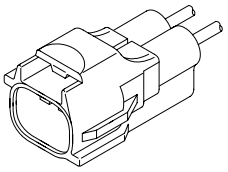
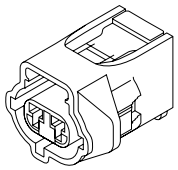
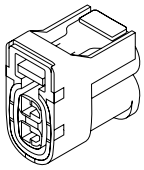
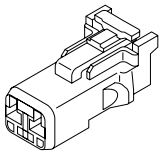
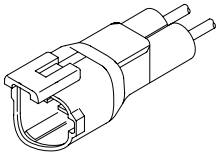
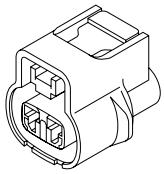
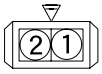
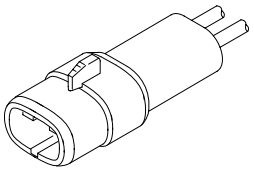
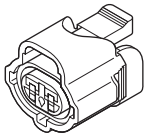
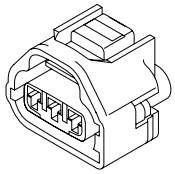
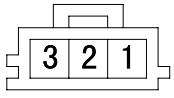
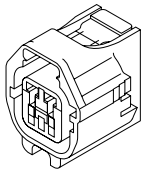
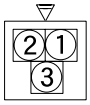
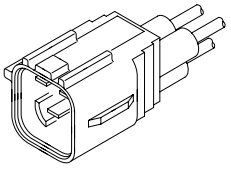
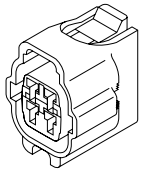
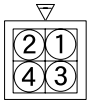
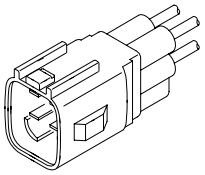
DG type

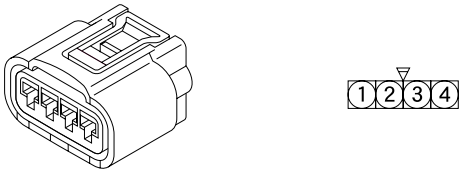
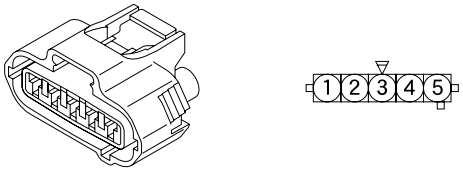
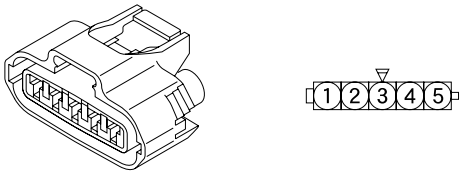
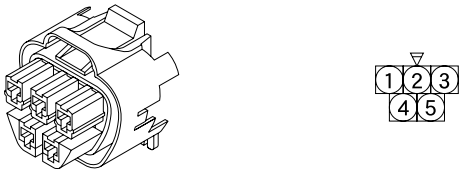
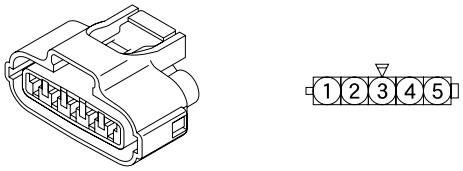
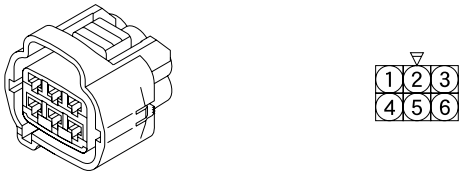
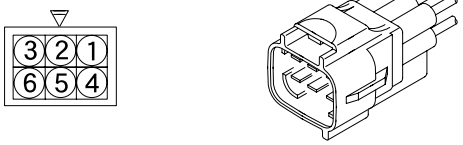
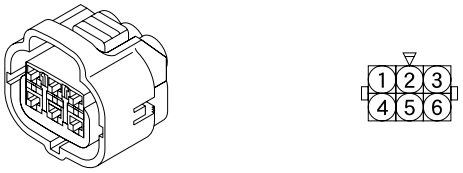
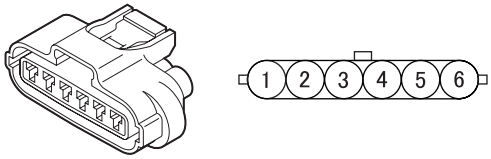
Number shows number of pins	Female connector	Male connector
DG1A		

Number shows number of pins	Female connector	Male connector
DG1B		
DG1C		
DG1D		
DG2A		
DG2B		
DG2C		
DG2D		
DG2E		
DG2F		

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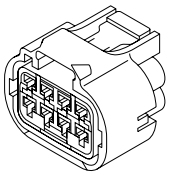
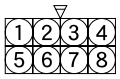
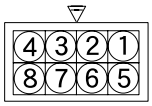
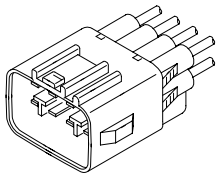
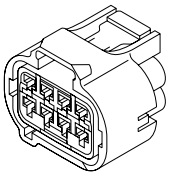
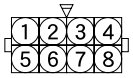
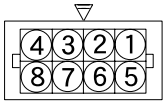
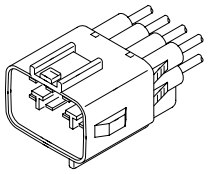
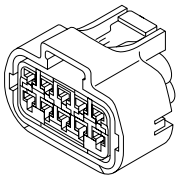
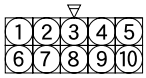
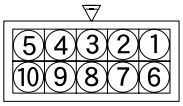
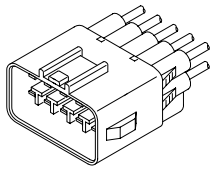
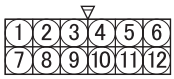
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
DG2G	 	 
DG2H	 	
DG2J	 	
DG2K	 	 
DG2L	 	 
DG2M	 	
DG3A	 	
DG3B	 	 
DG4A	 	 

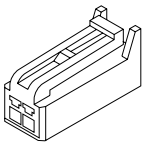
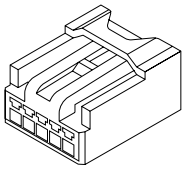
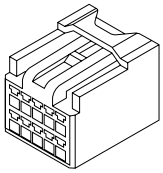
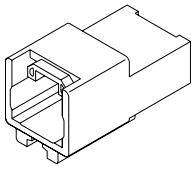
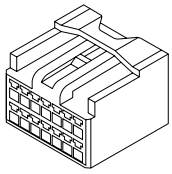
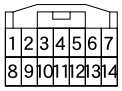
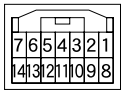
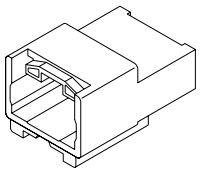
Number shows number of pins	Female connector	Male connector
DG4B		
DG4C		
DG5A		
DG5B		
DG5C		
DG5D		
DG6A		
DG6B		
DG6C		

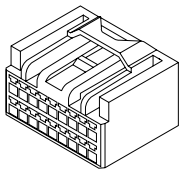
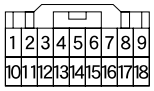
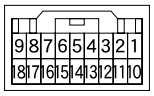
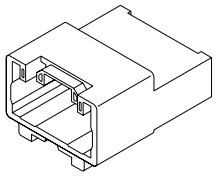
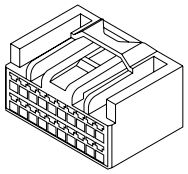
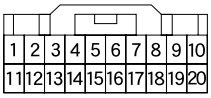
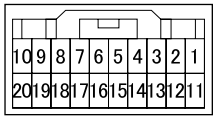
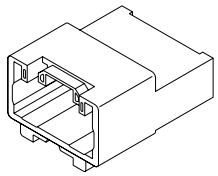
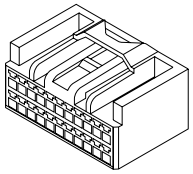
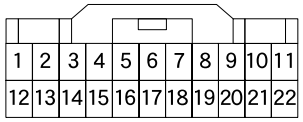
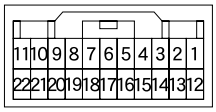
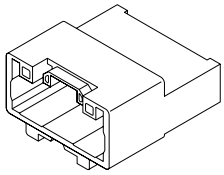
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CONNECTOR CONFIGURATION CHART

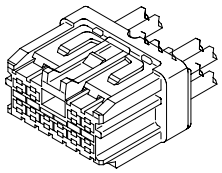
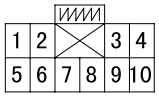
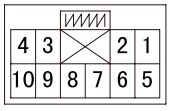
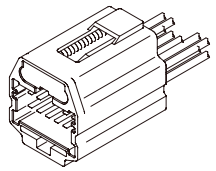
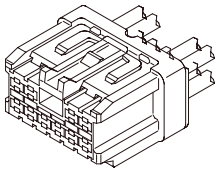
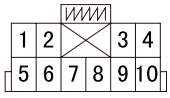
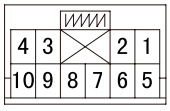
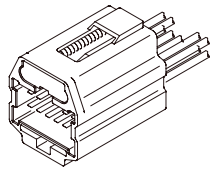
Number shows number of pins	Female connector	Male connector
DG8A	 	 
DG8B	 	 
DG10A	 	 
DG12A		

DH type

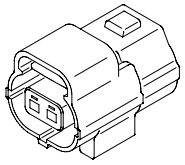
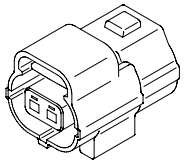
Number shows number of pins	Female connector	Male connector
DH2A	 	
DH5A	 	
DH10A	 	 
DH14A	 	 

Number shows number of pins	Female connector	Male connector
DH18A	 	 
DH20A	 	 
DH22A	 	 

DJ type

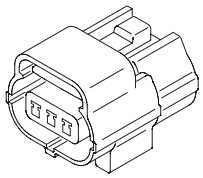
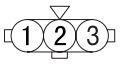
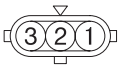
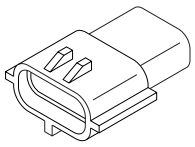
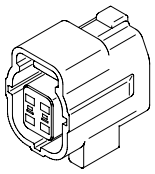
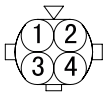
Number shows number of pins	Female connector	Male connector
DJ10A	 	 
DJ10B	 	 

DK type

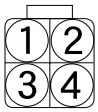
Number shows number of pins	Female connector	Male connector
DK2A	 	
DK2B	 	

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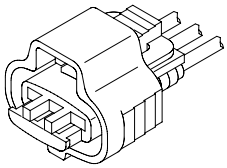
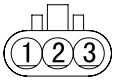
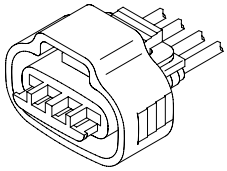
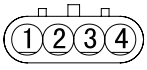
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
DK3A	 	 
DK4A	 	

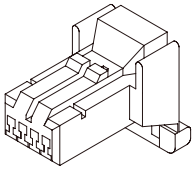
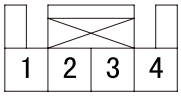
DL type

Number shows number of pins	Female connector	Male connector
DL4A		

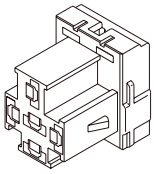
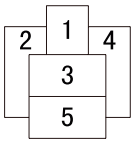
DM type

Number shows number of pins	Female connector	Male connector
DM3A	 	
DM4A	 	

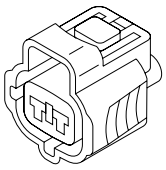
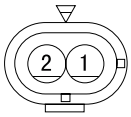
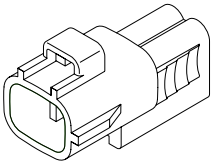
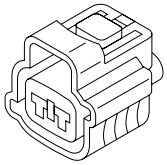
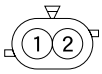
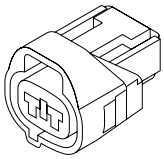
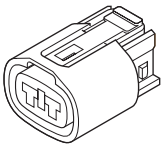
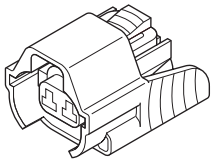
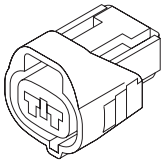
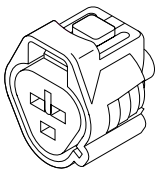
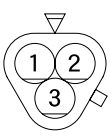
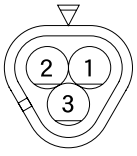
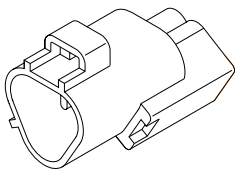
DN type

Number shows number of pins	Female connector	Male connector
DN4A	 	

DP type

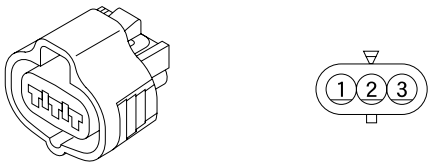
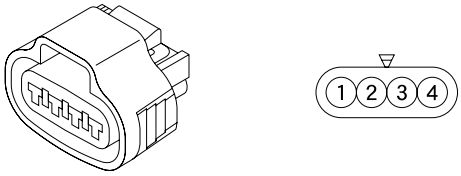
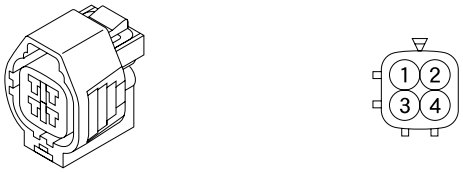
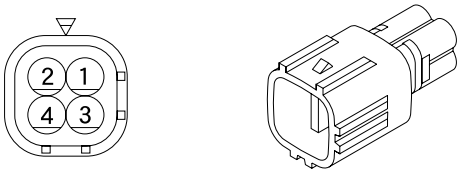
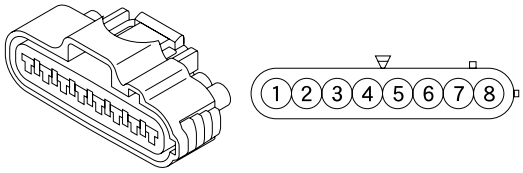
Number shows number of pins	Female connector	Male connector
DP5A	 	

DQ type

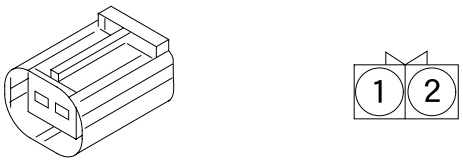
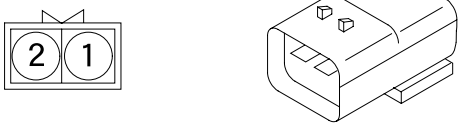
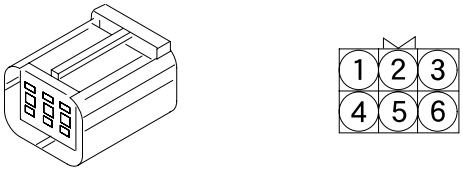
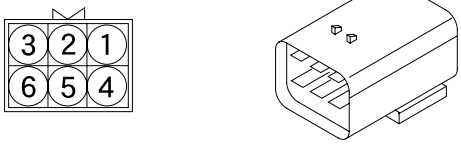
Number shows number of pins	Female connector	Male connector
DQ2A	 	 
DQ2B	 	
DQ2C	 	
DQ2D	 	
DQ2E	 	
DQ2F	 	
DQ3A	 	 

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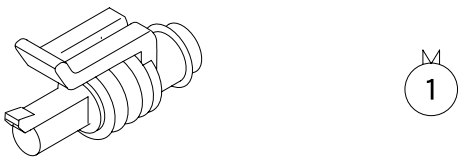
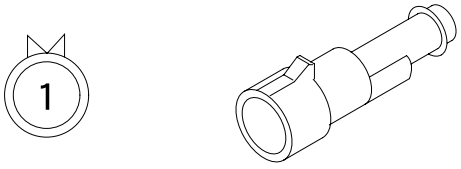
CONNECTOR CONFIGURATION CHART

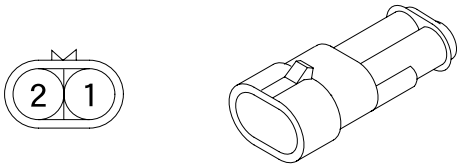
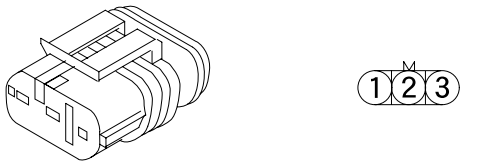
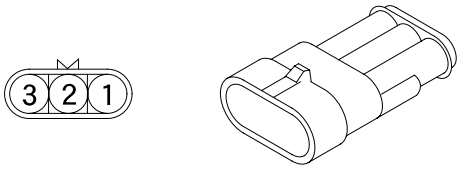
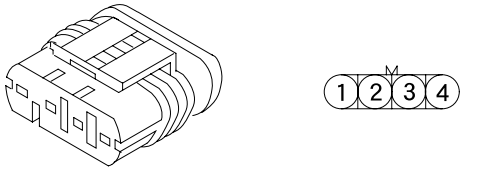
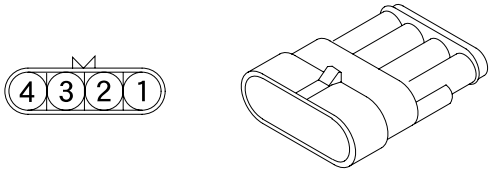
Number shows number of pins	Female connector	Male connector
DQ3B		
DQ4A		
DQ4B		
DQ8A		

DS type

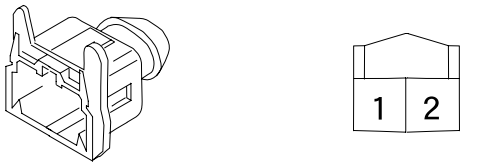
Number shows number of pins	Female connector	Male connector
DS2A		
DS6A		

DT type

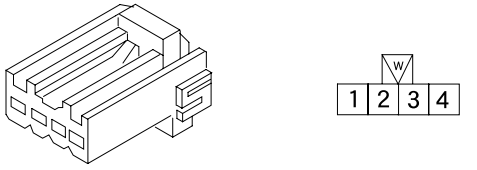
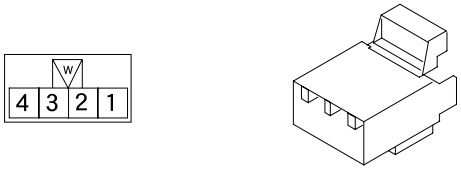
Number shows number of pins	Female connector	Male connector
DT1A		

Number shows number of pins	Female connector	Male connector
DT2A		
DT3A		
DT4A		

DU type

Number shows number of pins	Female connector	Male connector
DU2A		

DV type

Number shows number of pins	Female connector	Male connector
DV4A		

DW type

Number shows number of pins	Female connector	Male connector
DW2A		

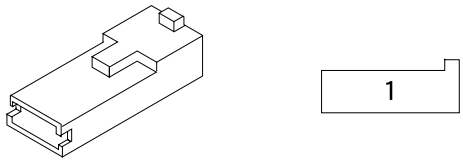
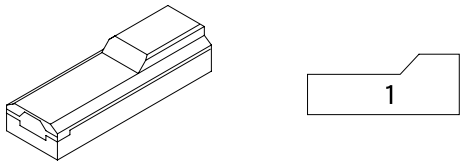
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CONNECTOR CONFIGURATION CHART

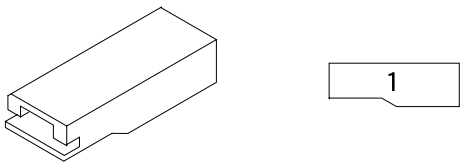
DX type

Number shows number of pins	Female connector	Male connector
DX2A		

DY type

Number shows number of pins	Female connector	Male connector
DY1A		
DY1B		

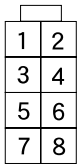
DZ type

Number shows number of pins	Female connector	Male connector
DZ1A		

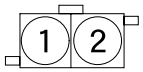
EA type

Number shows number of pins	Female connector	Male connector
EA8A		
EA8B		

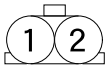
EB type

Number shows number of pins	Female connector	Male connector
EB8A		

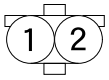
EC type

Number shows number of pins	Female connector	Male connector
EC2A		

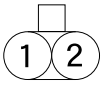
ED type

Number shows number of pins	Female connector	Male connector
ED2A		

EE type

Number shows number of pins	Female connector	Male connector
EE2A		

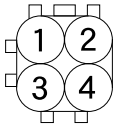
EF type

Number shows number of pins	Female connector	Male connector
EF2A		

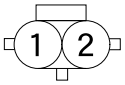
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CONNECTOR CONFIGURATION CHART

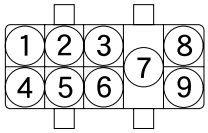
EG type

Number shows number of pins	Female connector	Male connector
EG4A		

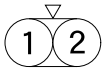
EH type

Number shows number of pins	Female connector	Male connector
EH2A		

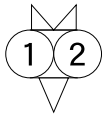
EJ type

Number shows number of pins	Female connector	Male connector
EJ9A		

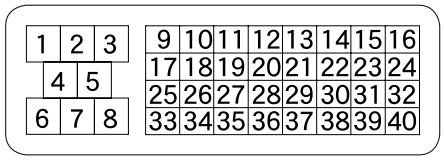
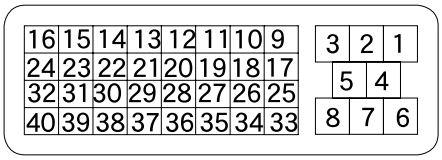
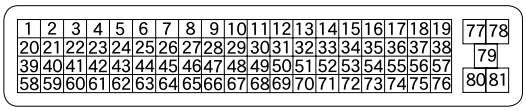
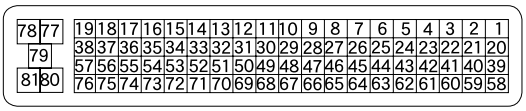
EK type

Number shows number of pins	Female connector	Male connector
EK2A		

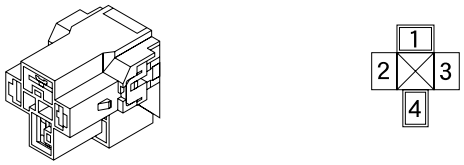
EL type

Number shows number of pins	Female connector	Male connector
EL2A		

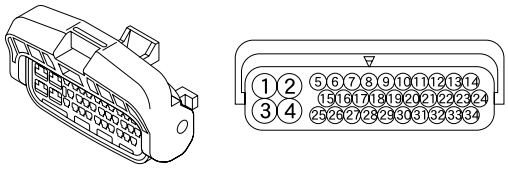
EM type

Number shows number of pins	Female connector	Male connector
EM40A		
EM81A		

EN type

Number shows number of pins	Female connector	Male connector
EN4A		
EN5A		

EP type

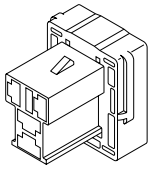
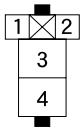
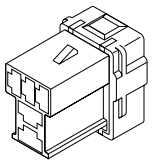
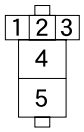
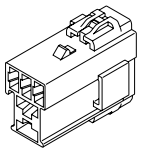
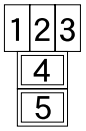
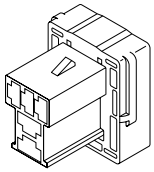
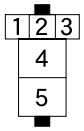
Number shows number of pins	Female connector	Male connector
EP34A		

EQ type

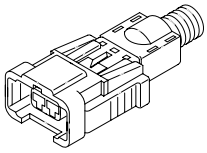
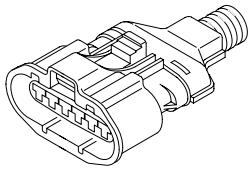
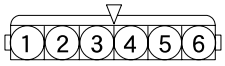
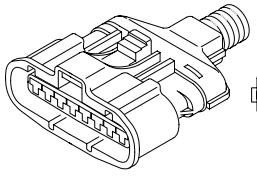
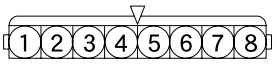
Number shows number of pins	Female connector	Male connector
EQ4A		

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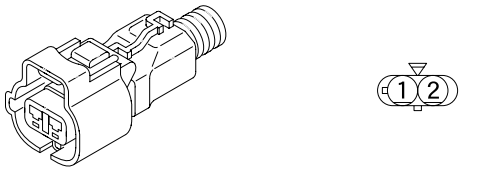
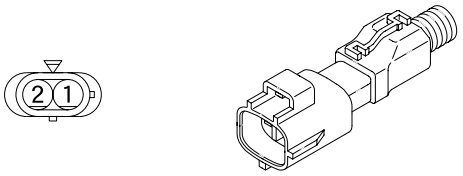
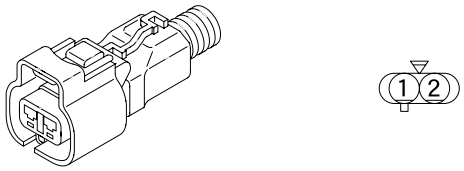
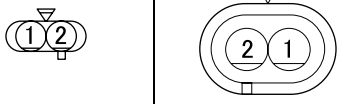
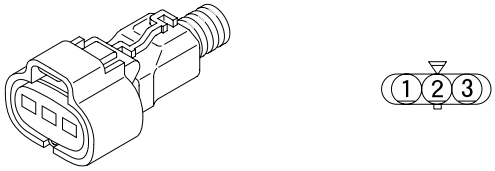
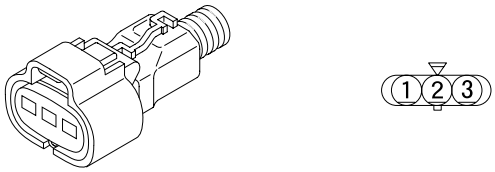
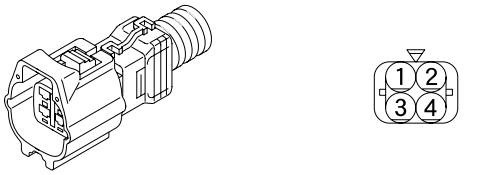
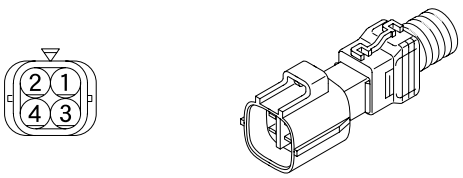
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
EQ4B	 	
EQ5A	   	
EQ5B	 	

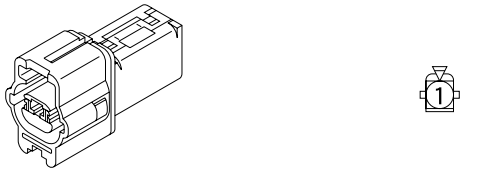
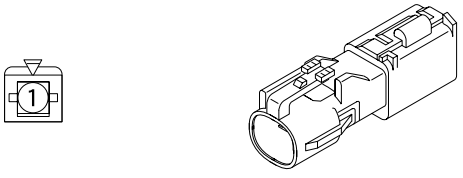
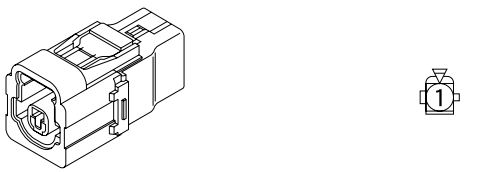
ER type

Number shows number of pins	Female connector	Male connector
ER2A	 	
ER6A	 	
ER8A	 	

ES type

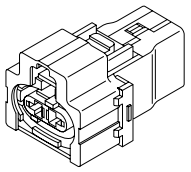
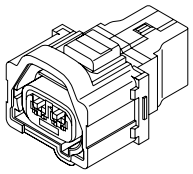
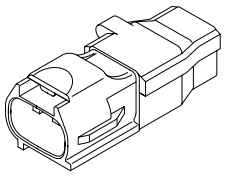
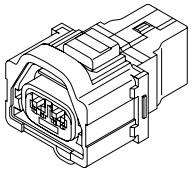
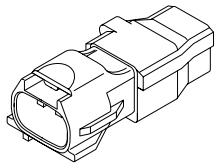
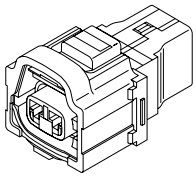
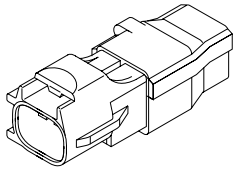
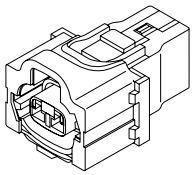
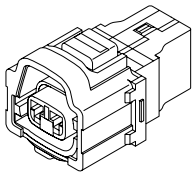
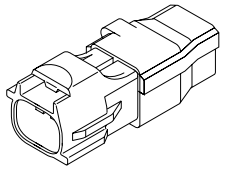
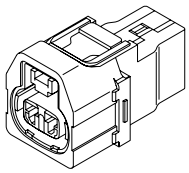
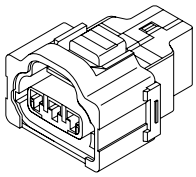
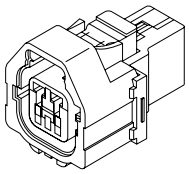
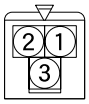
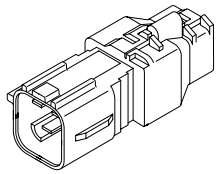
Number shows number of pins	Female connector	Male connector
ES2A		
ES2B		
ES2C		
ES3A		
ES3B		
ES4A		

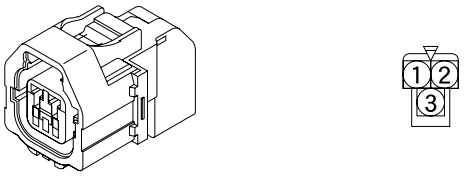
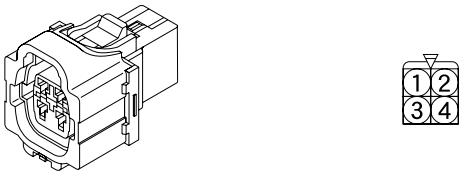
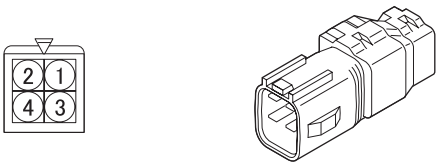
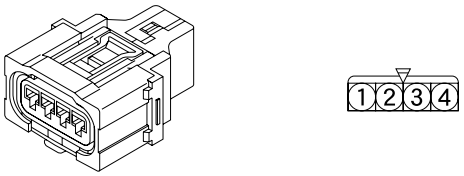
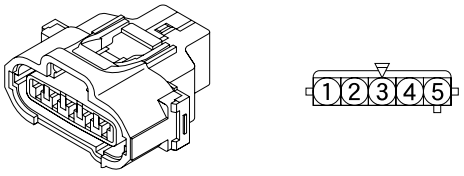
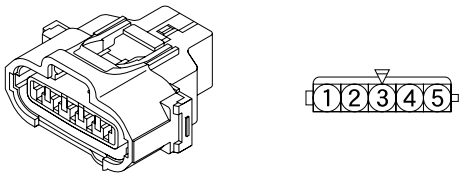
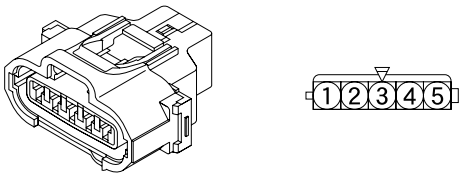
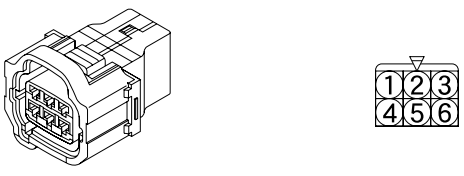
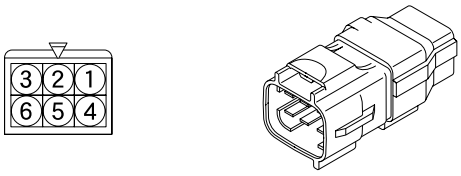
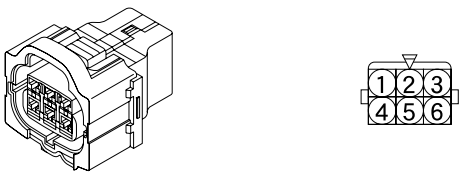
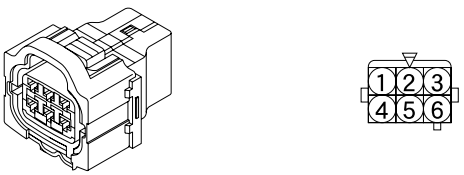
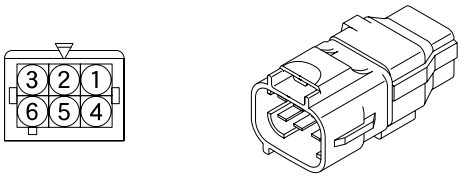
ET type

Number shows number of pins	Female connector	Male connector
ET1A		
ET1B		

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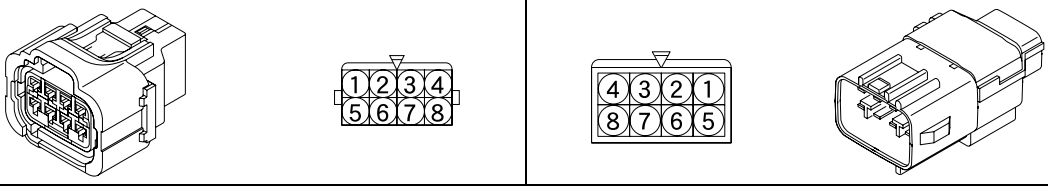
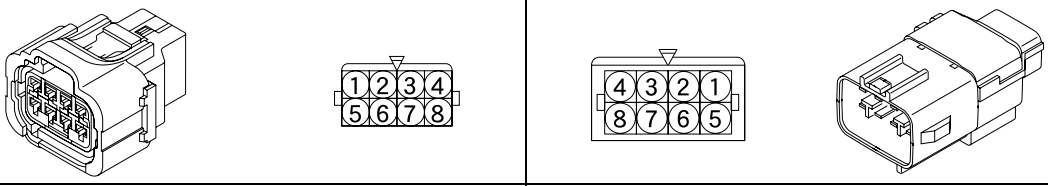
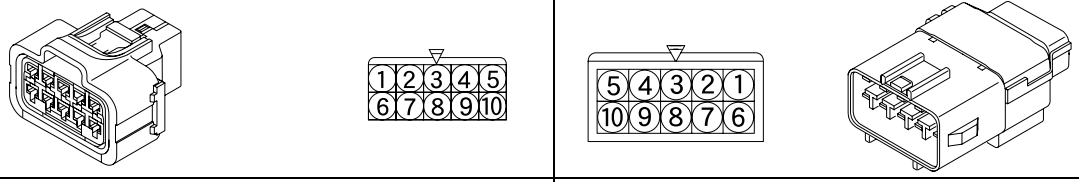
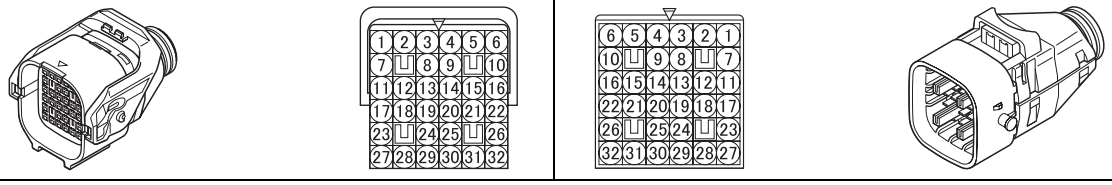
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
ET2A	 	
ET2B	 	 
ET2C	 	 
ET2D	 	 
ET2F	 	
ET2G	 	 
ET2L	 	
ET3A	 	
ET3B	 	 

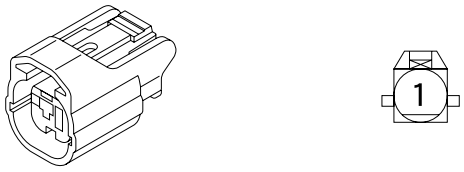
Number shows number of pins	Female connector	Male connector
ET3C		
ET4A		
ET4B		
ET5A		
ET5B		
ET5D		
ET6A		
ET6B		
ET6C		

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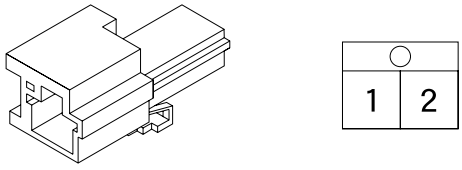
CONNECTOR CONFIGURATION CHART

Number shows number of pins	Female connector	Male connector
ET8A		
ET8B		
ET10A		
ET32A		

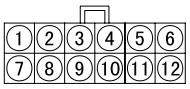
EU type

Number shows number of pins	Female connector	Male connector
EU1A		

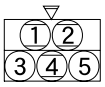
EV type

Number shows number of pins	Female connector	Male connector
EV2A		

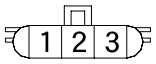
EW type

Number shows number of pins	Female connector	Male connector
EW12A		

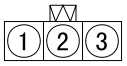
EX type

Number shows number of pins	Female connector	Male connector
EX5A		

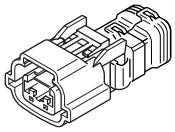
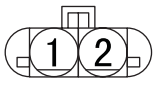
EY type

Number shows number of pins	Female connector	Male connector
EY3A		

EZ type

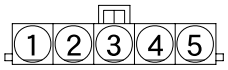
Number shows number of pins	Female connector	Male connector
EZ3A		

FA type

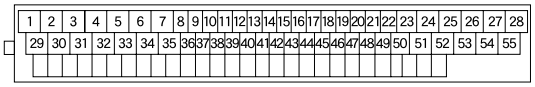
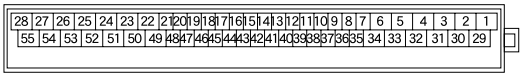
Number shows number of pins	Female connector	Male connector
FA2B	 	

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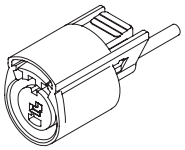
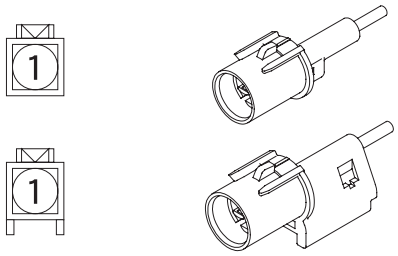
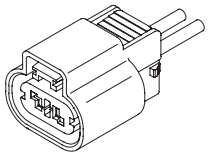
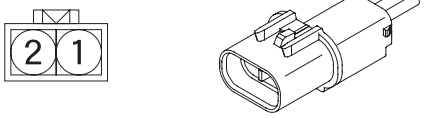
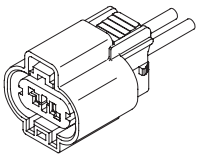
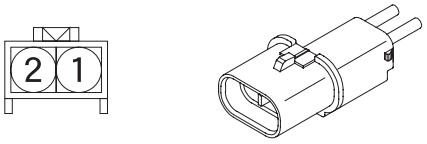
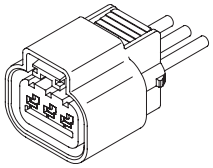
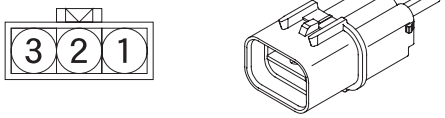
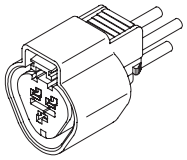
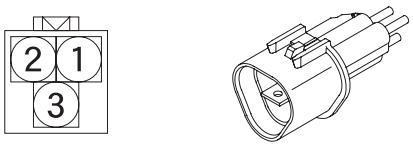
CONNECTOR CONFIGURATION CHART

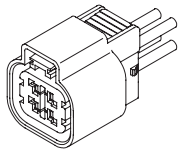
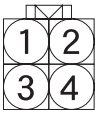
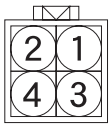
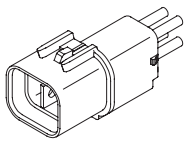
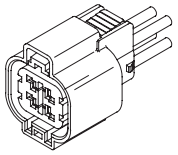
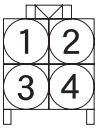
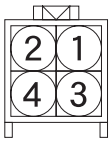
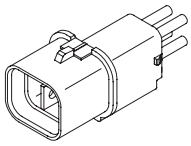
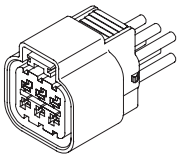
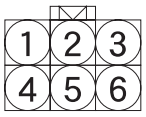
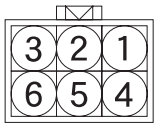
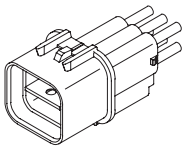
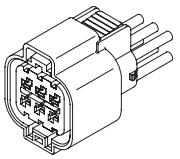
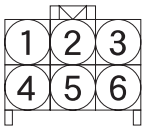
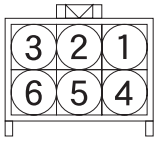
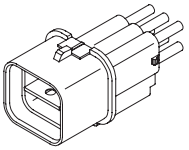
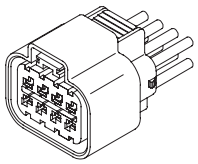
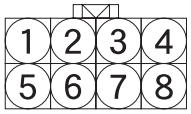
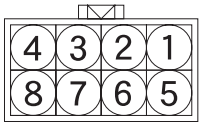
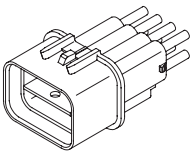
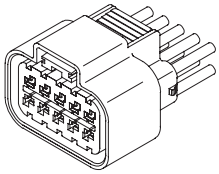
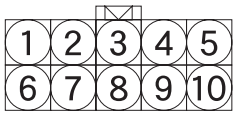
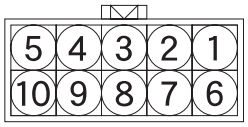
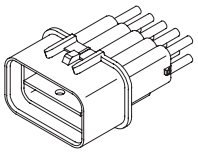
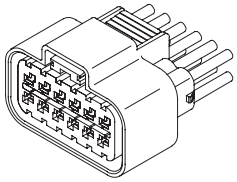
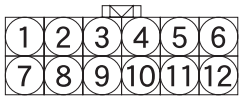
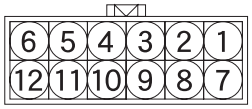
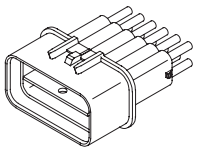
Number shows number of pins	Female connector	Male connector
FA5A		

FB type

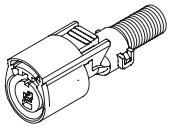
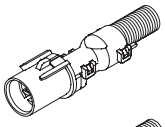
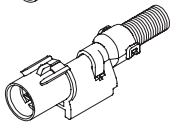
Number shows number of pins	Female connector	Male connector
FB55A		

GA type

Number shows number of pins	Female connector	Male connector
GA1A		
GA2A		
GA2B		
GA3A		
GA3B		

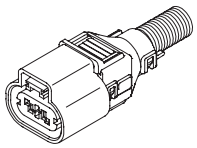
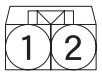
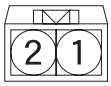
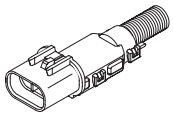
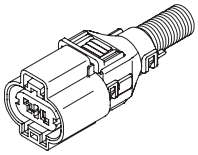
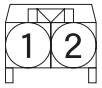
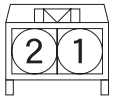
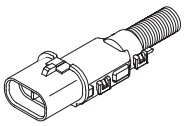
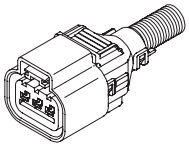
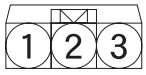
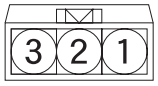
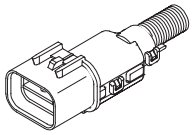
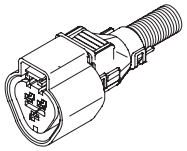
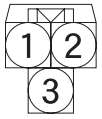
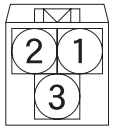
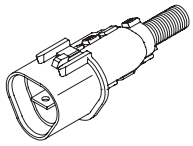
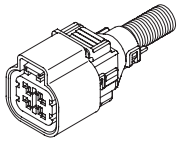
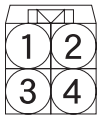
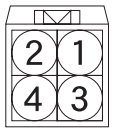
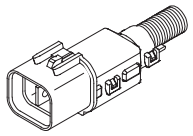
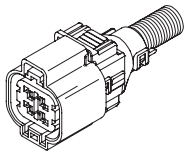
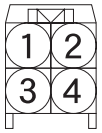
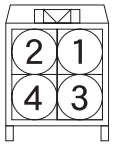
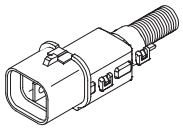
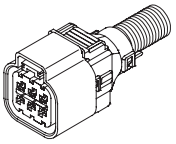
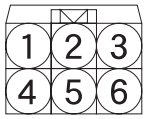
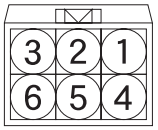
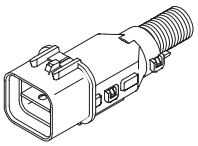
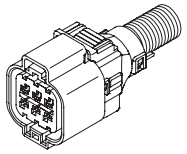
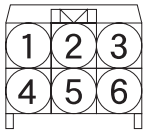
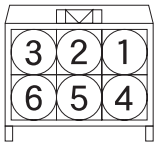
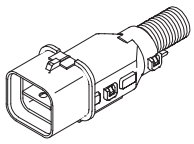
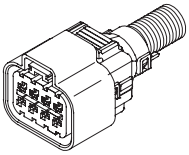
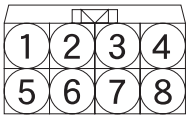
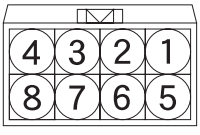
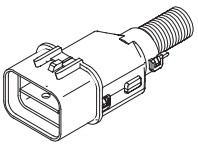
Number shows number of pins	Female connector	Male connector
GA4A	 	 
GA4B	 	 
GA6A	 	 
GA6B	 	 
GA8A	 	 
GA10A	 	 
GA12A	 	 

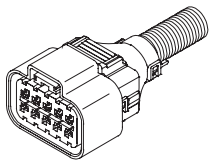
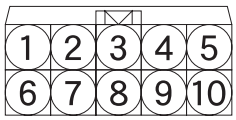
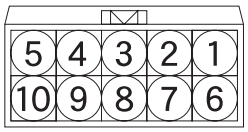
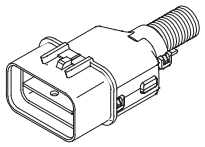
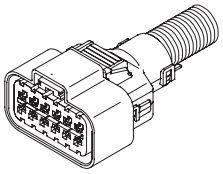
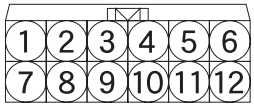
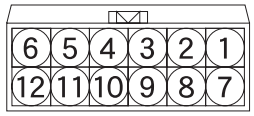
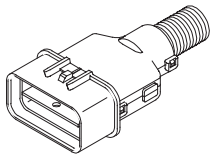
GB type

Number shows number of pins	Female connector	Male connector
GB1A	 	   

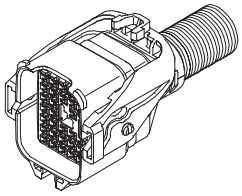
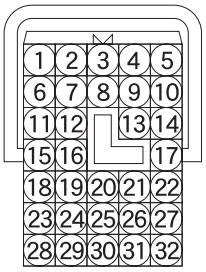
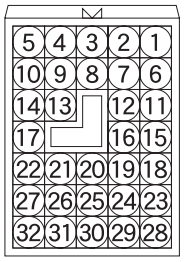
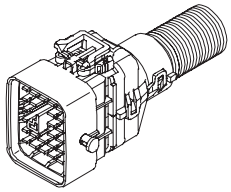
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CONNECTOR CONFIGURATION CHART

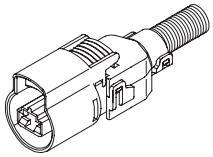
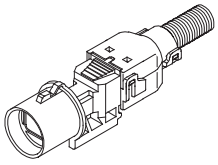
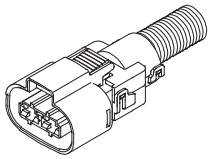
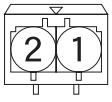
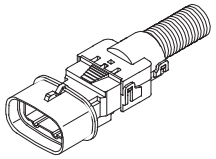
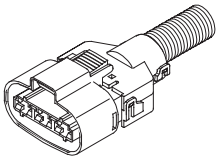
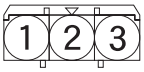
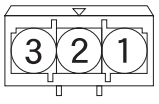
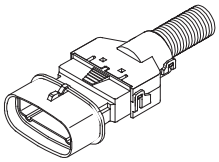
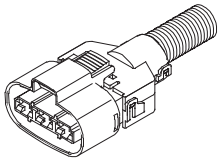
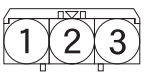
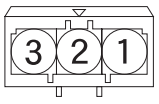
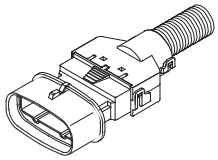
Number shows number of pins	Female connector	Male connector
GB2A	 	 
GB2B	 	 
GB3A	 	 
GB3B	 	 
GB4A	 	 
GB4B	 	 
GB6A	 	 
GB6B	 	 
GB8A	 	 

Number shows number of pins	Female connector	Male connector
GB10A	 	 
GB12A	 	 

GC type

Number shows number of pins	Female connector	Male connector
GC32A	 	 

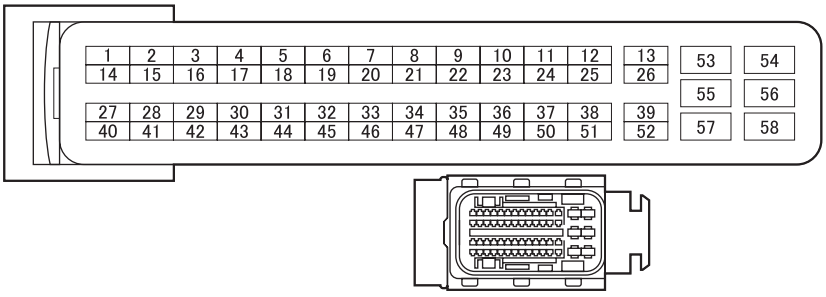
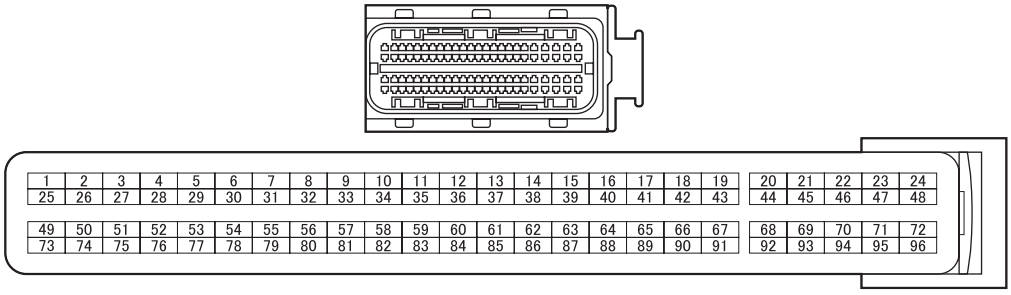
GD type

Number shows number of pins	Female connector	Male connector
GD1A	 	 
GD2A	 	 
GD3A	 	 
GD3B	 	 

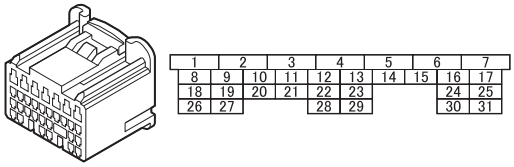
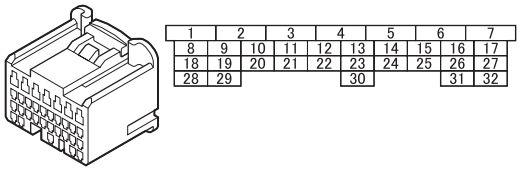
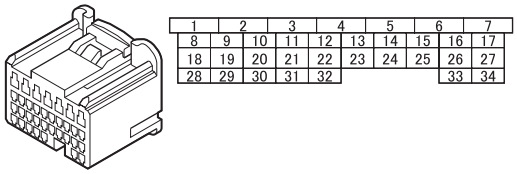
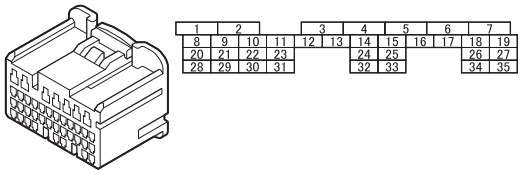
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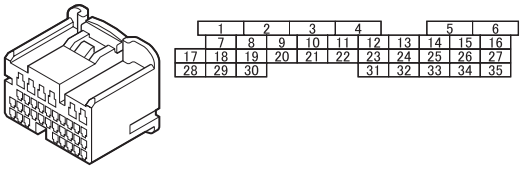
CONNECTOR CONFIGURATION CHART

GE type

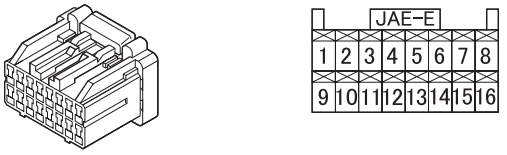
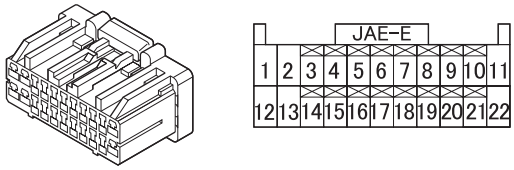
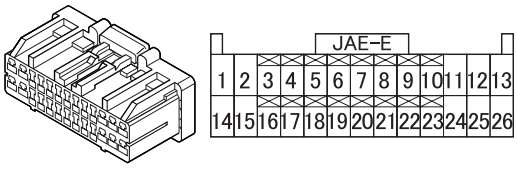
Number shows number of pins	Female connector
GE58A	
GE96A	

GF type

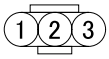
Number shows number of pins	Female connector	Male connector
GF31A		
GF32A		
GF34A		
GF35A		

Number shows number of pins	Female connector	Male connector
GF35B		

GG type

Number shows number of pins	Female connector	Male connector
GG12A		
GG16A		
GG22A		
GG26A		

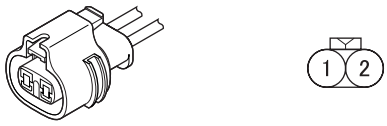
GH type

Number shows number of pins	Female connector	Male connector
GH3A		

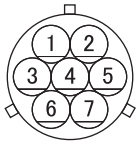
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CONNECTOR CONFIGURATION CHART

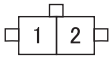
GJ type

Number shows number of pins	Female connector	Male connector
GJ2A		
GJ2B		

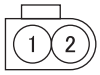
GK type

Number shows number of pins	Female connector	Male connector
GK7A		

GL type

Number shows number of pins	Female connector	Male connector
GL2A		

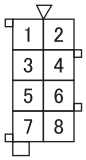
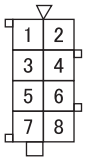
GM type

Number shows number of pins	Female connector	Male connector
GM2A		

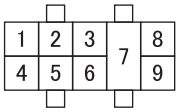
GN type

Number shows number of pins	Female connector	Male connector
GN2A		

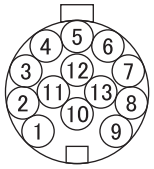
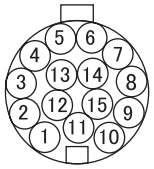
GP type

Number shows number of pins	Female connector	Male connector
GP8A		
GP8B		

GQ type

Number shows number of pins	Female connector	Male connector
GQ9A		

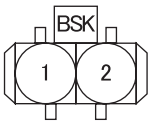
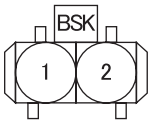
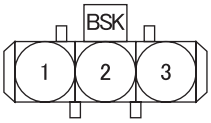
GR type

Number shows number of pins	Female connector	Male connector
GR13A		
GR15A		

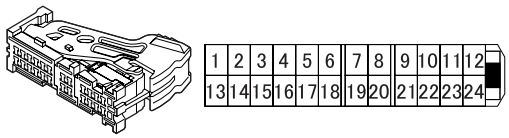
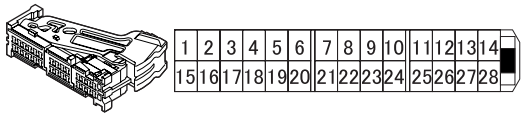
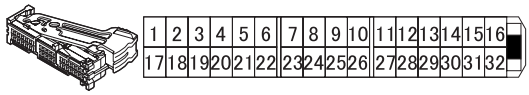
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CONNECTOR CONFIGURATION CHART

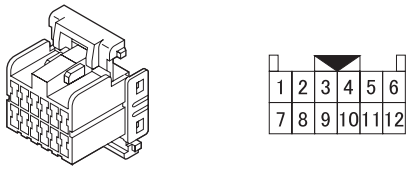
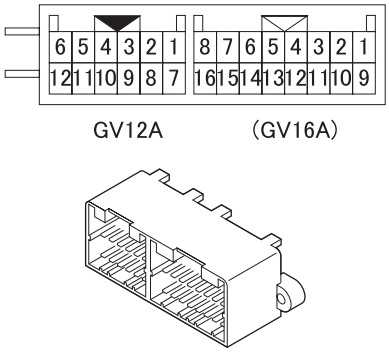
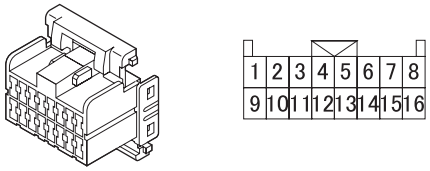
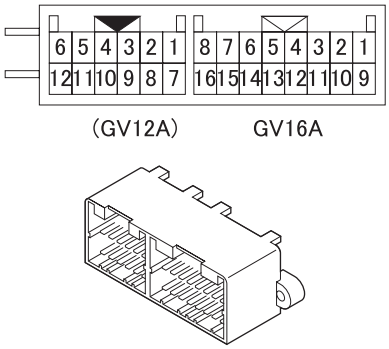
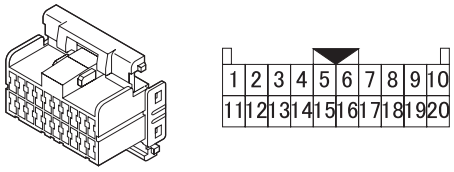
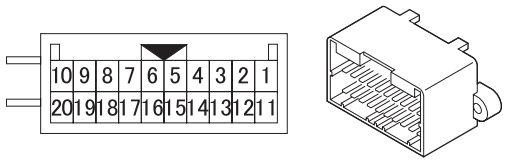
GS type

Number shows number of pins	Female connector	Male connector
GS2A		
GS2B		
GS3A		

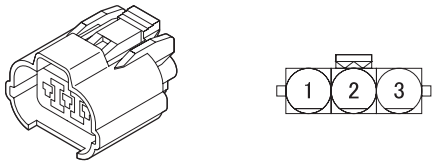
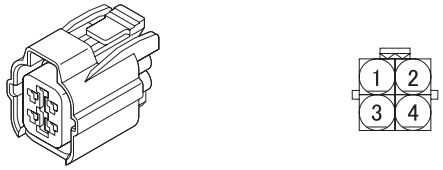
GT type

Number shows number of pins	Female connector	Male connector
GT24A		
GT28A		
GT32A		

GV type

Number shows number of pins	Female connector	Male connector
GV12A		
GV16A		
GV20A		

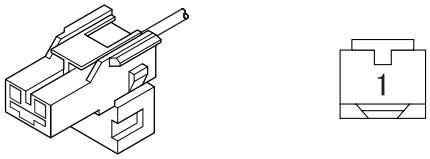
GW type

Number shows number of pins	Female connector	Male connector
GW3A		
GW4A		

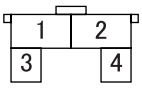
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CONNECTOR CONFIGURATION CHART

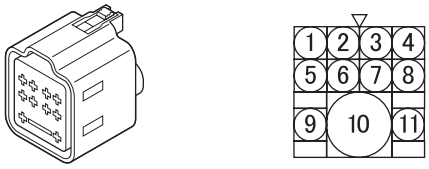
GX type

Number shows number of pins	Female connector	Male connector
GX1A		

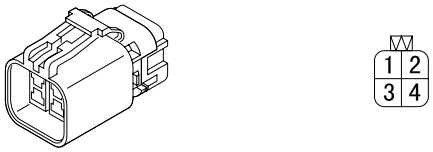
HB type

Number shows number of pins	Female connector	Male connector
HB4A		

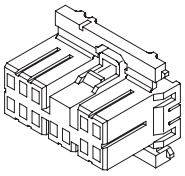
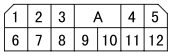
HC type

Number shows number of pins	Female connector	Male connector
HC11A		

PC type

Number shows number of pins	Female connector	Male connector
PC4A		

PE type

Number shows number of pins	Female connector	Male connector
PE12A	 	
PE14A	