

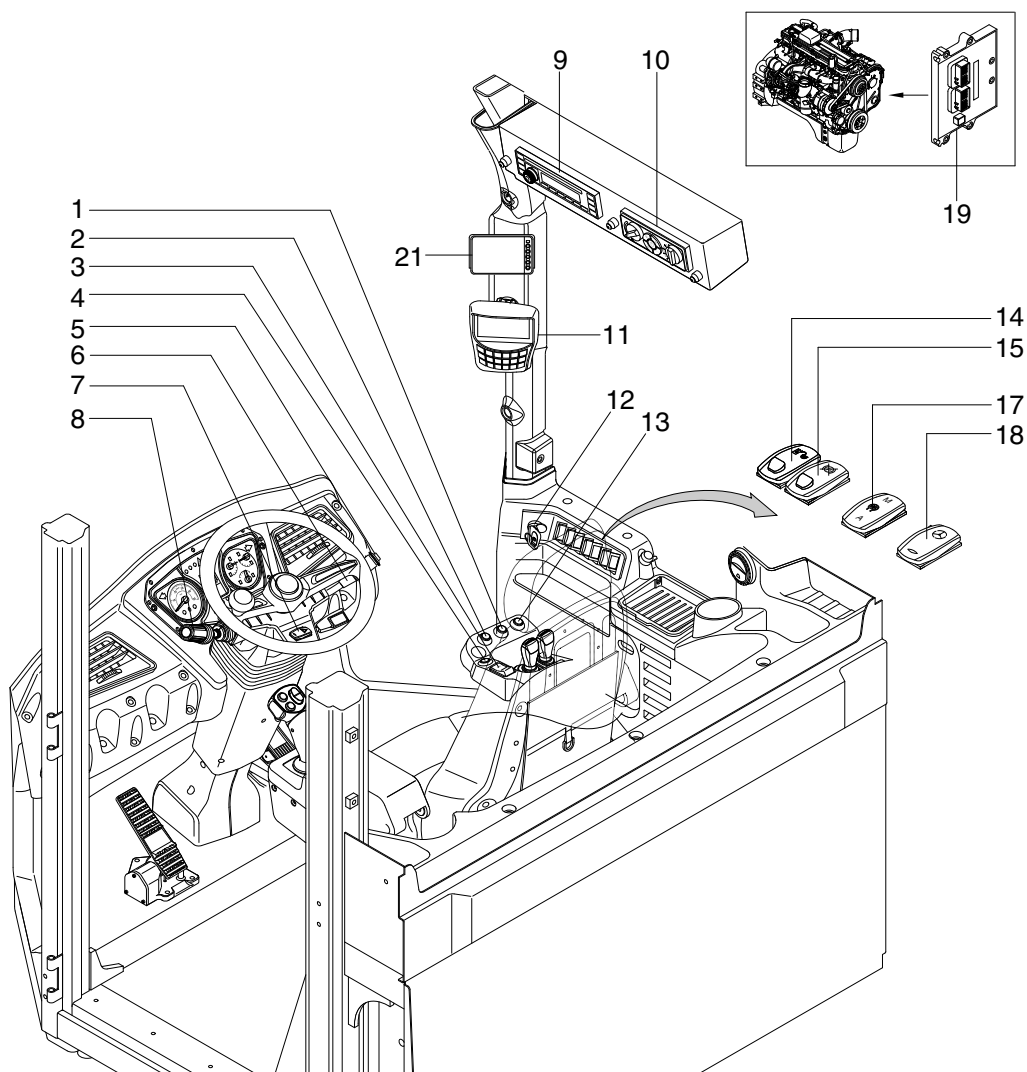
## SECTION 7 ELECTRICAL SYSTEM

|                                                  |      |
|--------------------------------------------------|------|
| Group 1 Component Location .....                 | 7-1  |
| Group 2 Electrical Circuit .....                 | 7-3  |
| Group 3 Electrical Component Specification ..... | 7-22 |
| Group 4 Connectors .....                         | 7-29 |
| Group 5 Troubleshooting .....                    | 7-52 |

# SECTION 7 ELECTRICAL SYSTEM

## GROUP 1 COMPONENT LOCATION

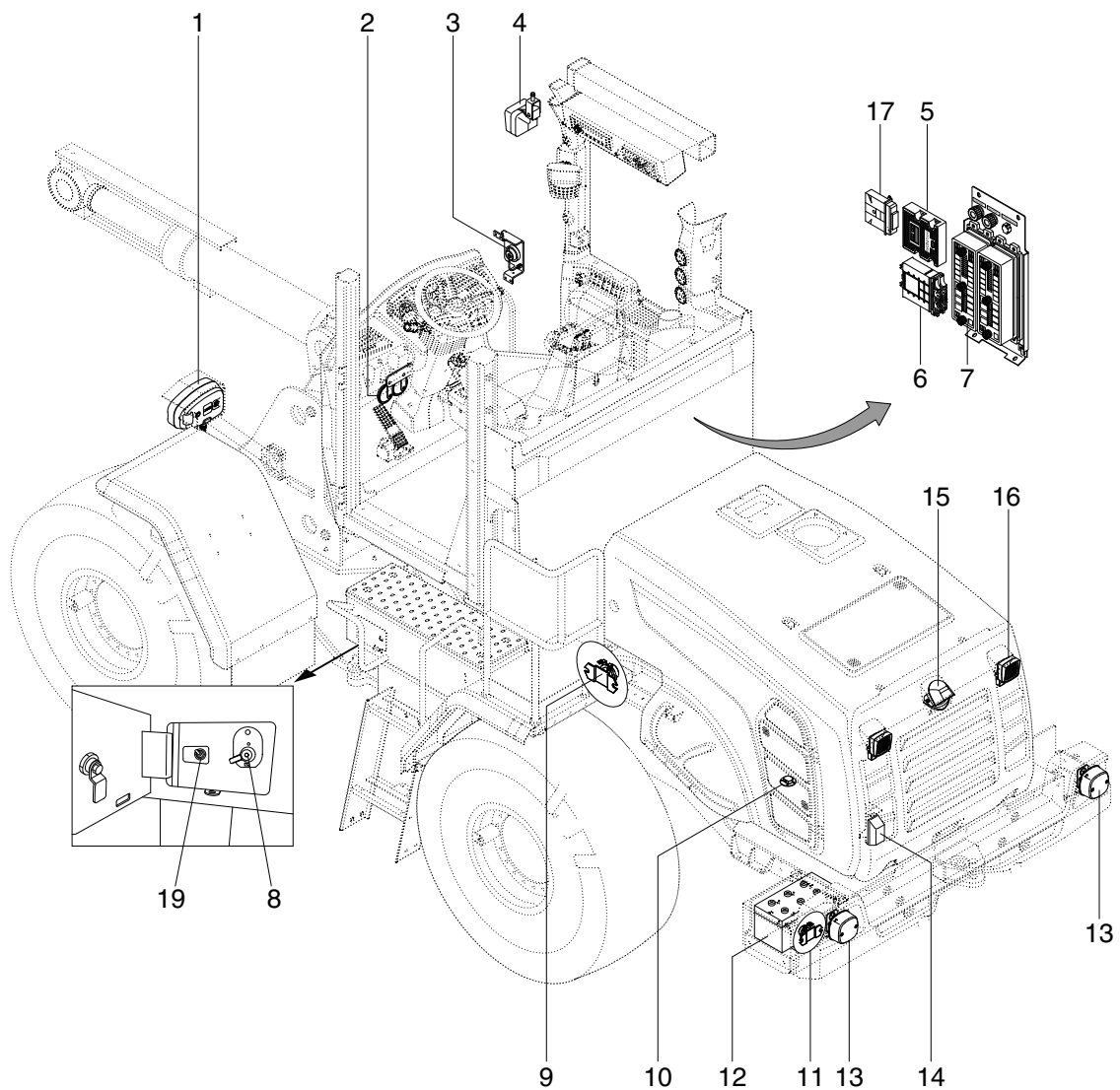
### 1. LOCATION 1



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- |                         |                           |                                   |
|-------------------------|---------------------------|-----------------------------------|
| 1 Kick down button      | 8 Gear select lever       | 14 Pilot cut off switch           |
| 2 Horn button           | 9 Radio & USB player      | 15 Parking brake switch           |
| 3 FNR switch            | 10 Aircon & heater switch | 17 Differential lock switch (opt) |
| 4 FNR select button     | 11 Monitor                | 18 Emergency test switch          |
| 5 Hone button           | 12 Starting switch        | 19 Engine control unit (ECU)      |
| 6 Multi function switch | Starting button (opt)     | 21 Camera monitor                 |
| 7 Hazard switch         | 13 Work load button       |                                   |

## 2. LOCATION 2



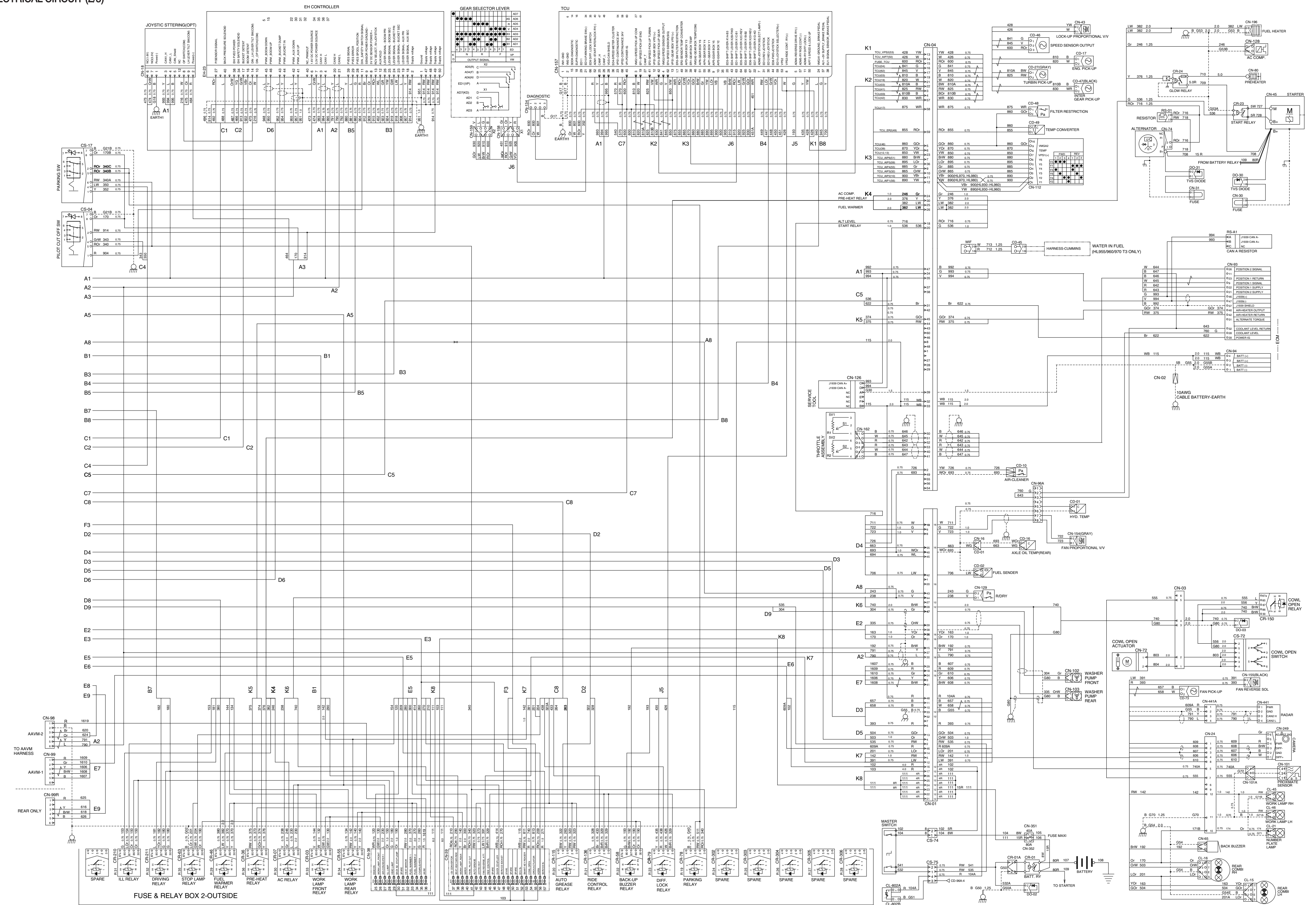
960A7EL21

- |                                   |                      |                                                         |
|-----------------------------------|----------------------|---------------------------------------------------------|
| 1 Head lamp                       | 8 Master switch      | 15 Camera (opt)                                         |
| 2 Horn                            | 9 Start relay        | 16 Work lamp                                            |
| 3 Angle sensor                    | 10 Fuel sender       | 17 Control unit (electro hydraulic & joystick steering) |
| 4 Work lamp                       | 11 Battery relay     | 19 Engine hood open switch                              |
| 5 Machine control unit (MCU)      | 12 Battery           |                                                         |
| 6 Transmission control unit (TCU) | 13 Rear combi lamp   |                                                         |
| 7 Fuse and relay box              | 14 Number plate lamp |                                                         |

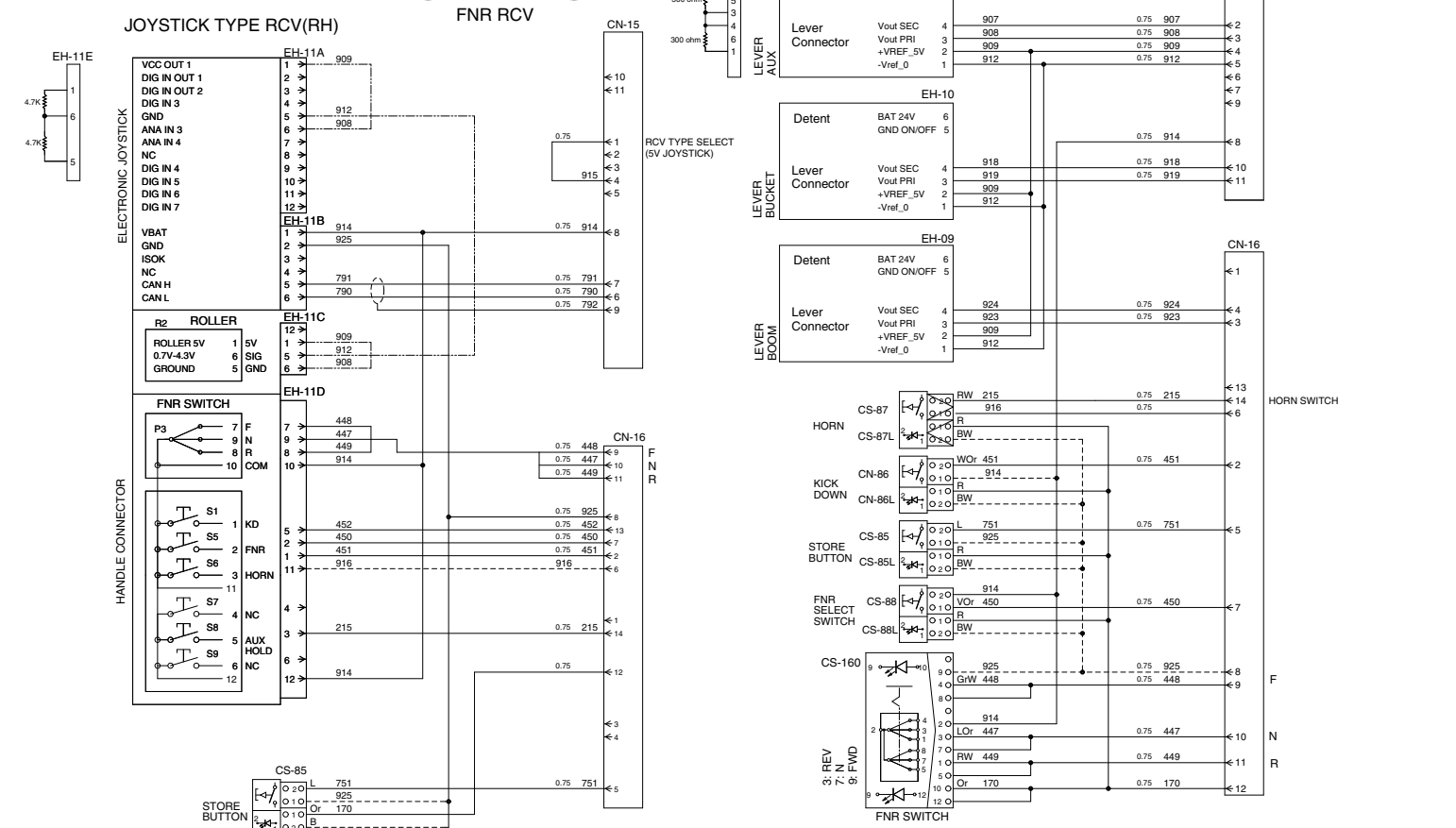
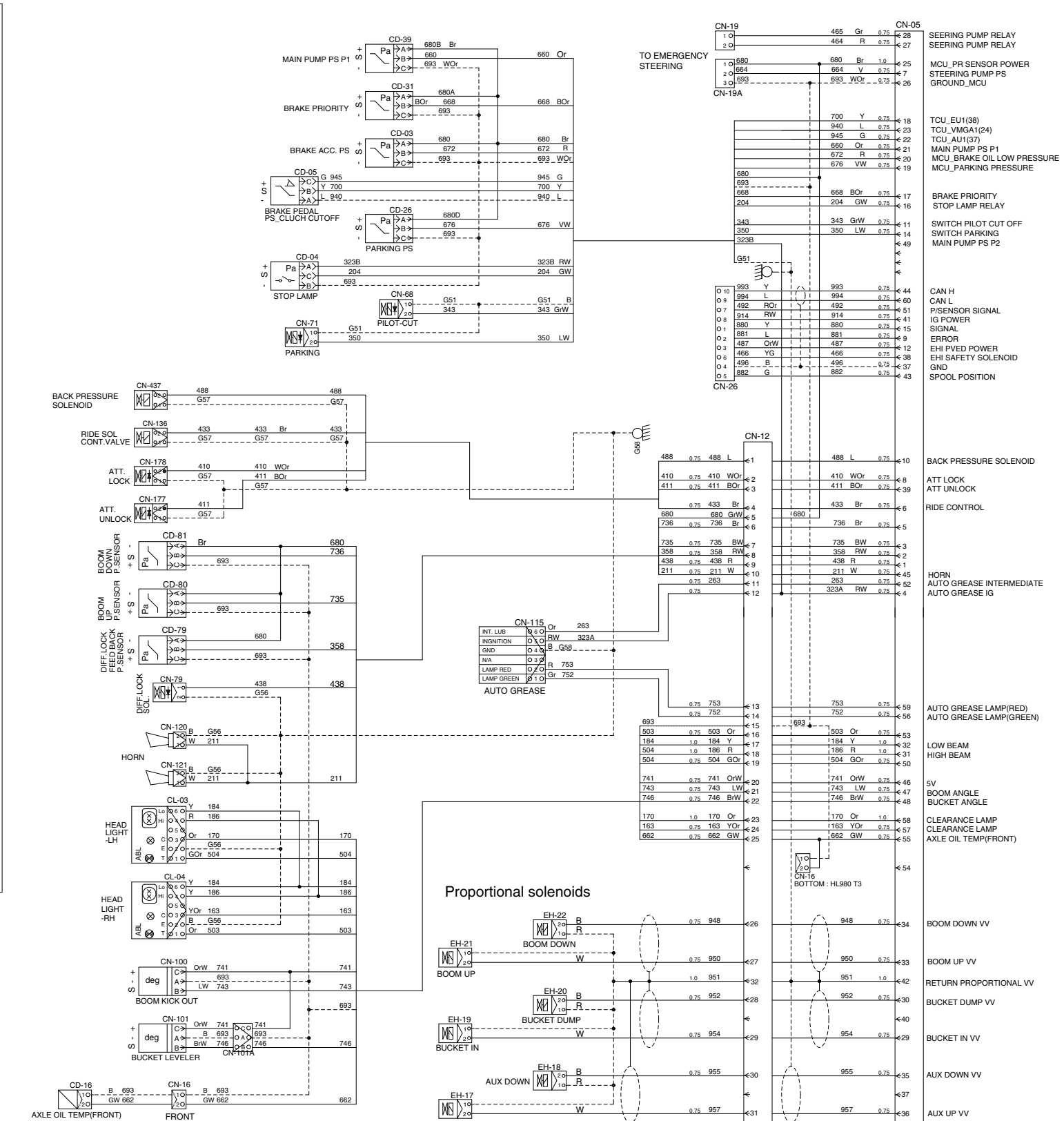
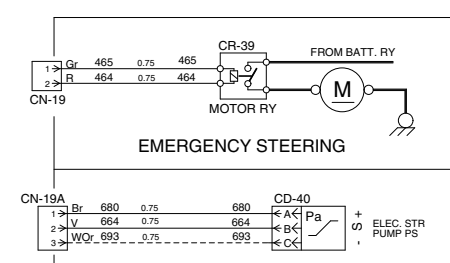
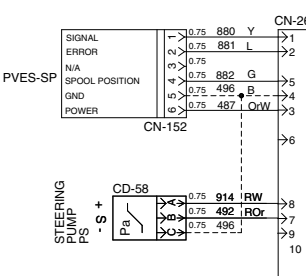
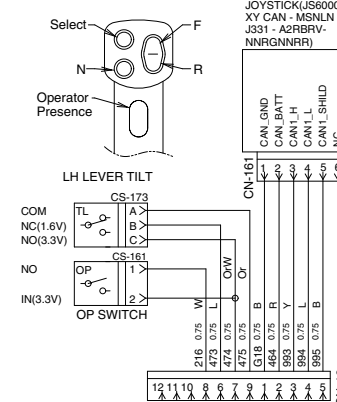
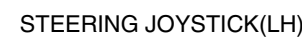
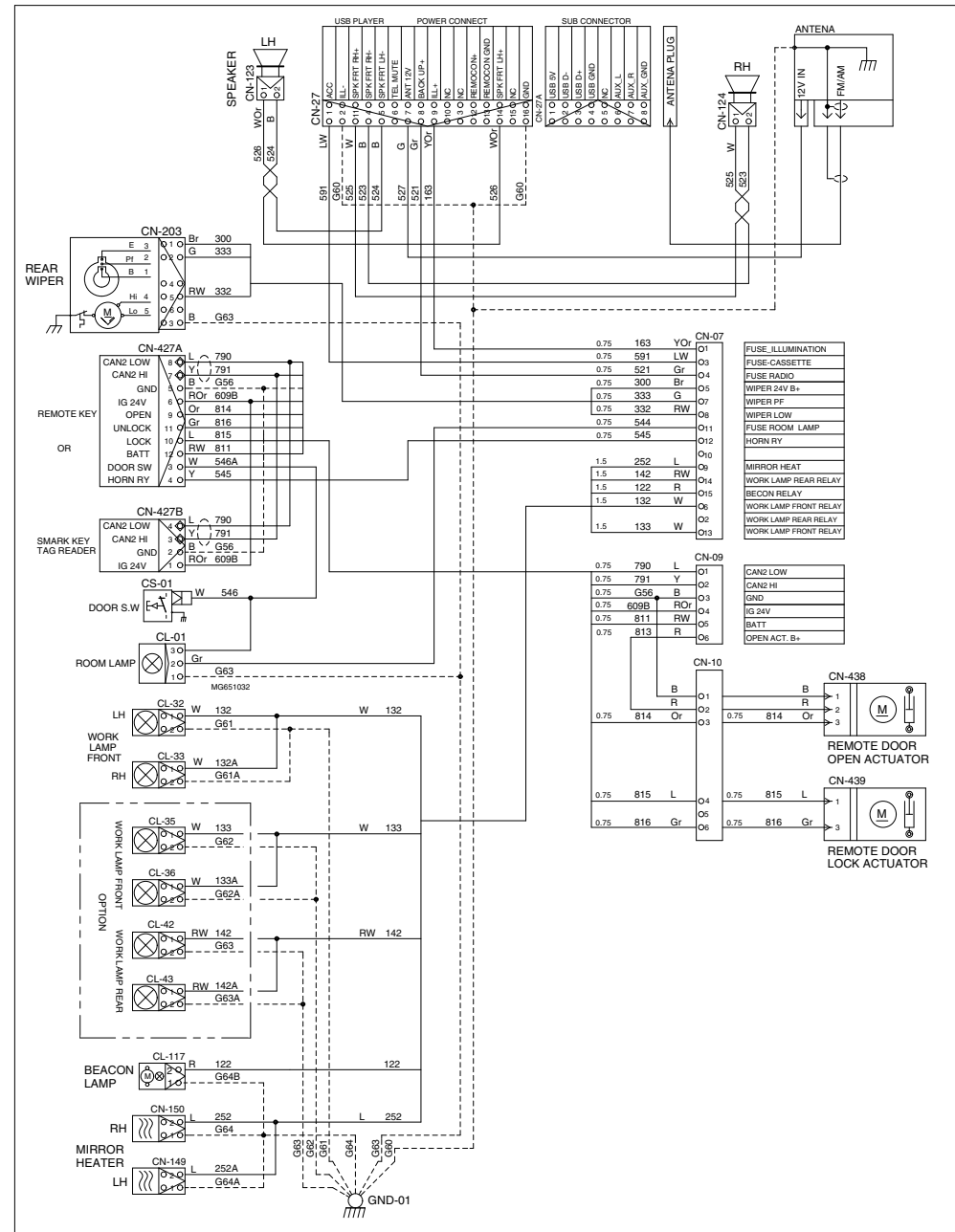
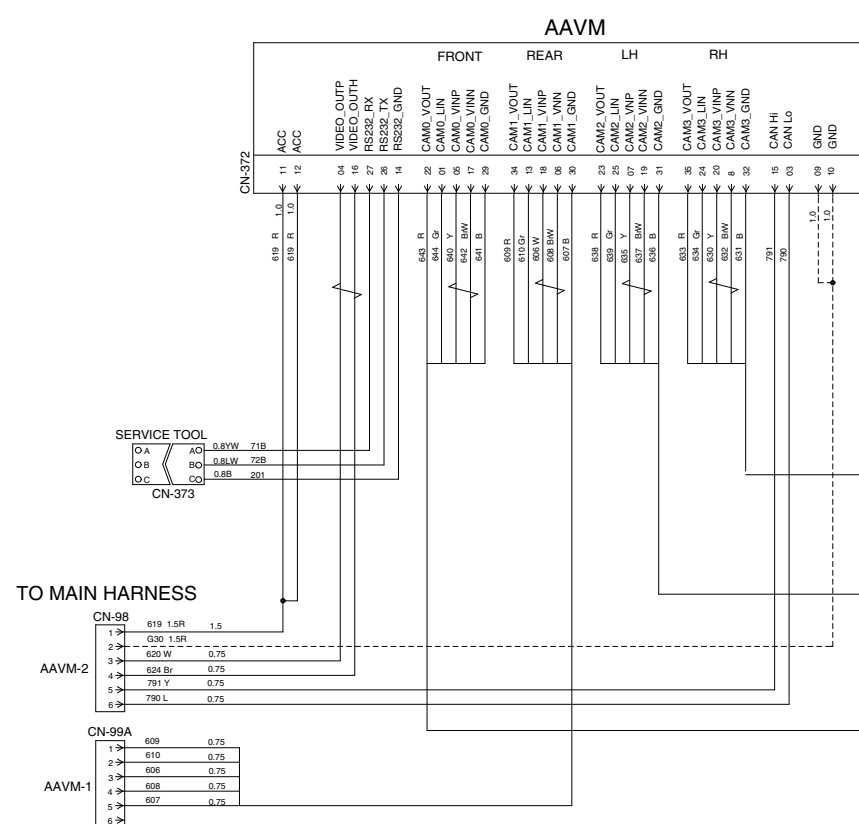
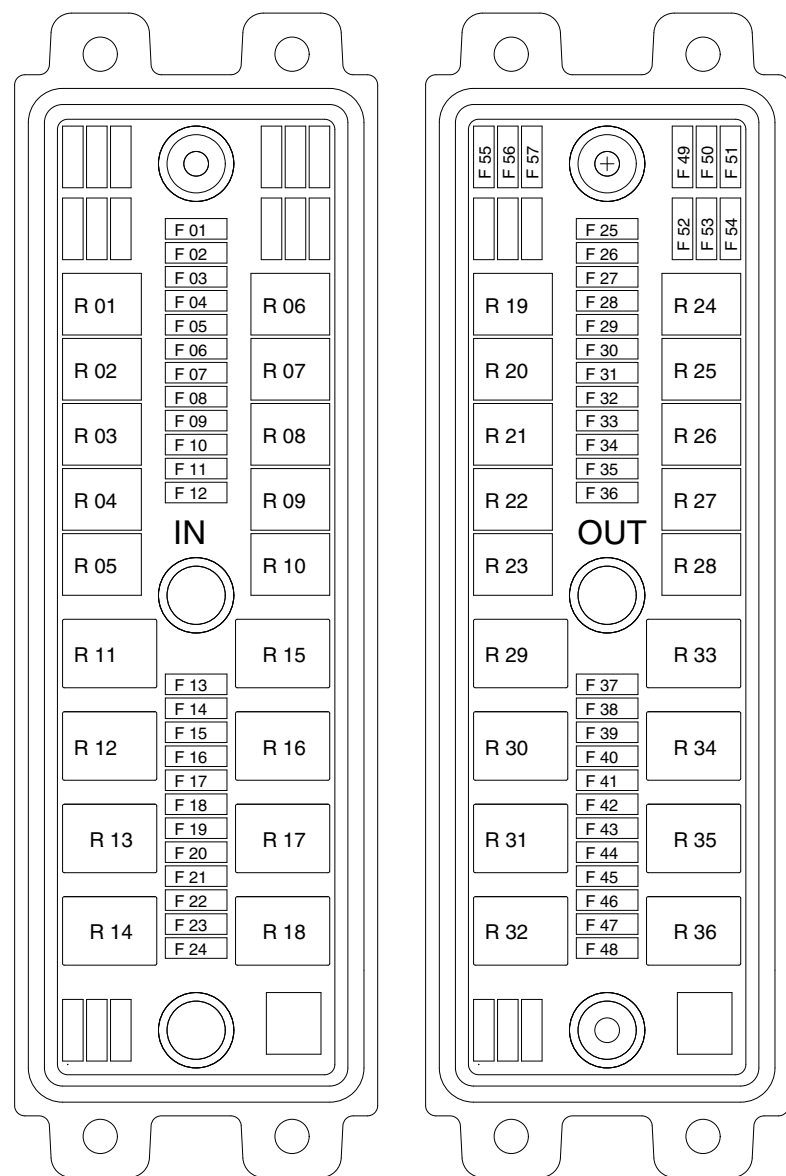
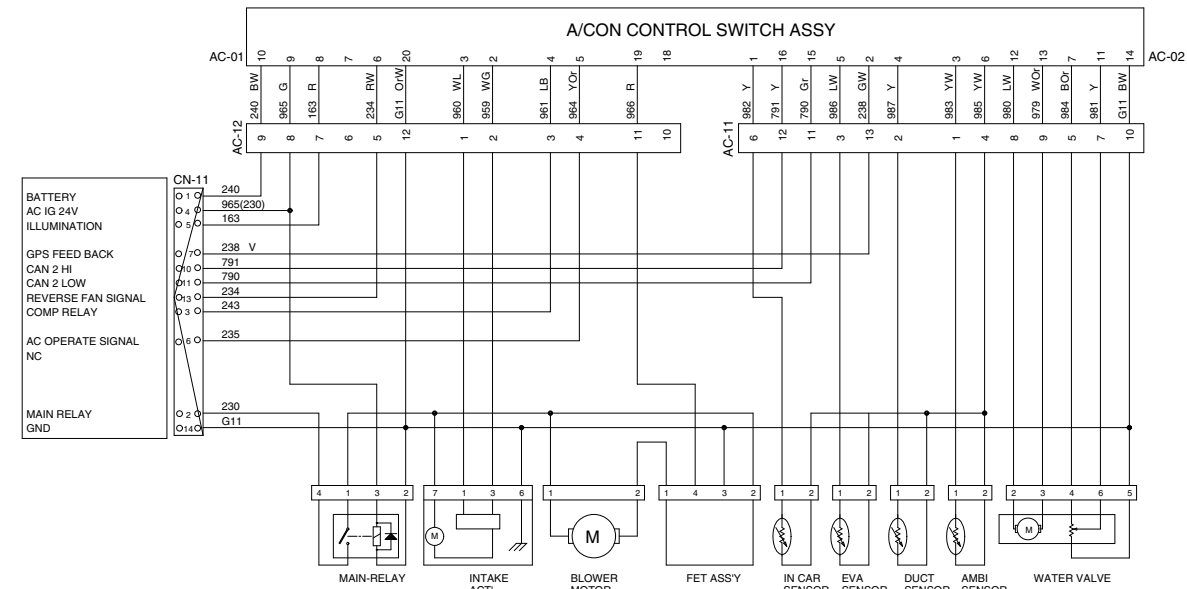
• ELECTRICAL CIRCUIT (1/3)



• ELECTRICAL CIRCUIT (2/3)



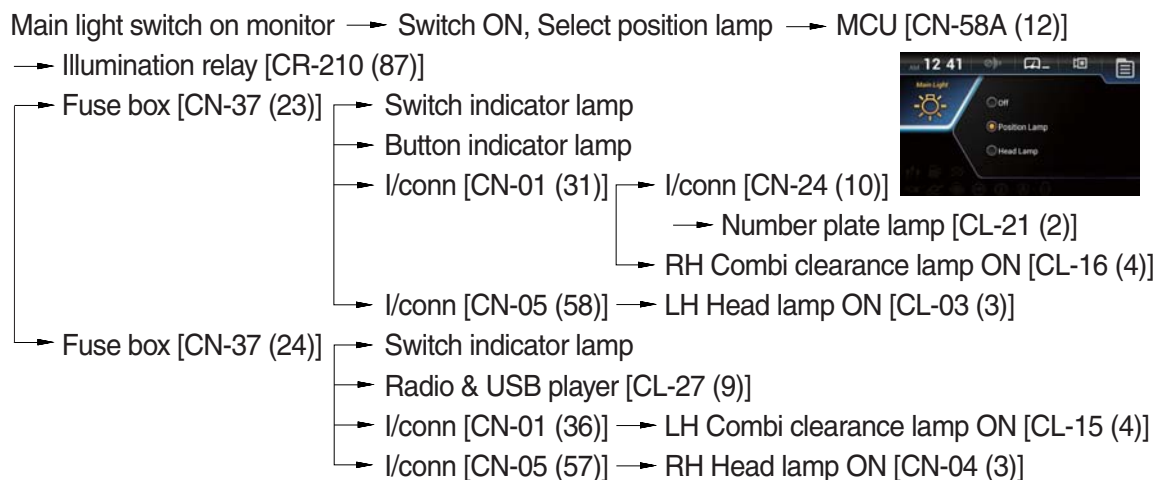
### • ELECTRICAL CIRCUIT (3/3)



## MEMORANDUM

## 1. ILLUMINATION CIRCUIT

### 1) OPERATING FLOW



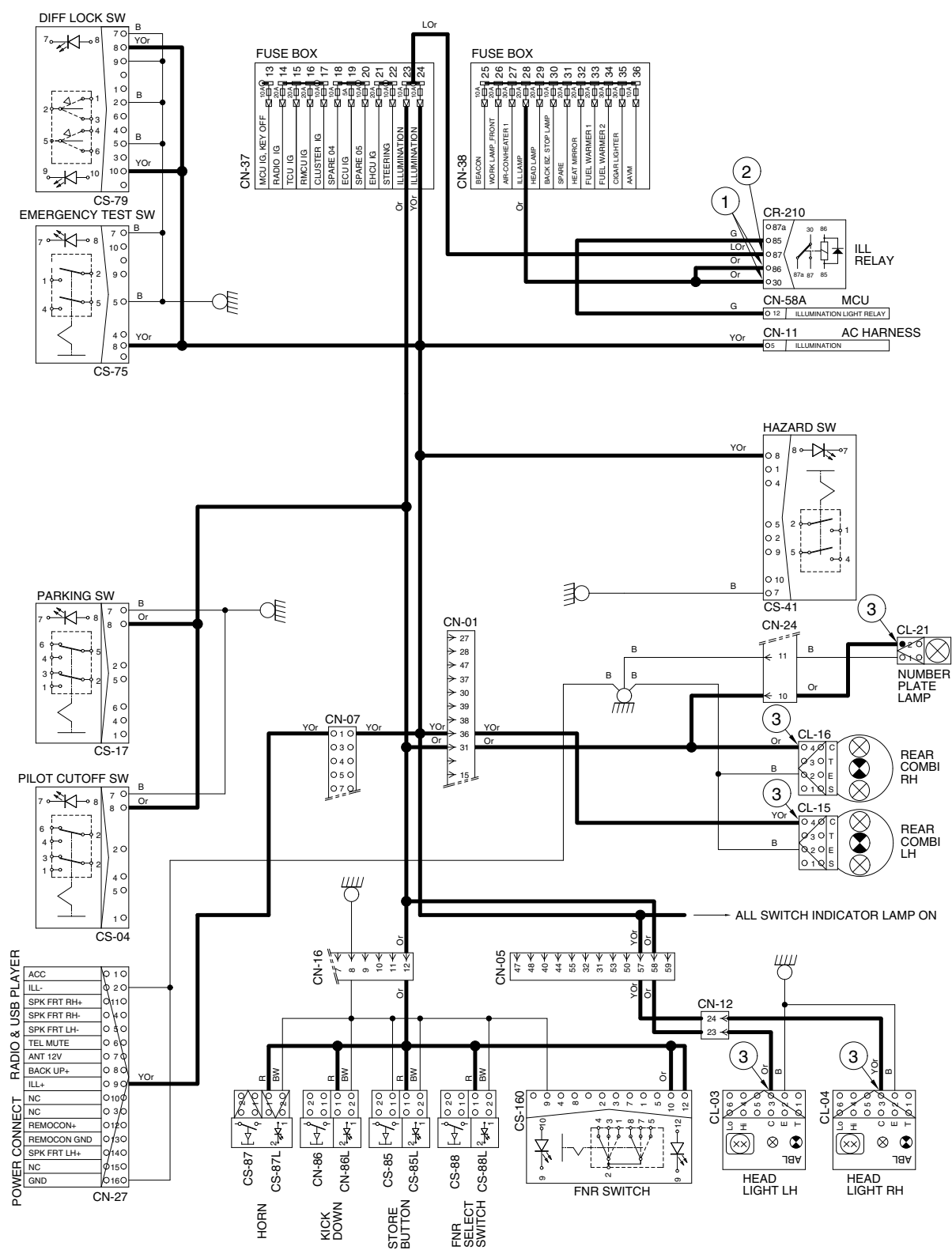
### 2) CHECK POINT

| Engine | Key switch | Check point                                                           | Voltage |
|--------|------------|-----------------------------------------------------------------------|---------|
| OFF    | ON         | ① - GND (relay input)<br>② - GND (relay output)<br>③ - GND (to light) | 20~25V  |

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

# ILLUMINATION CIRCUIT

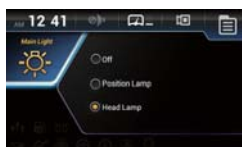
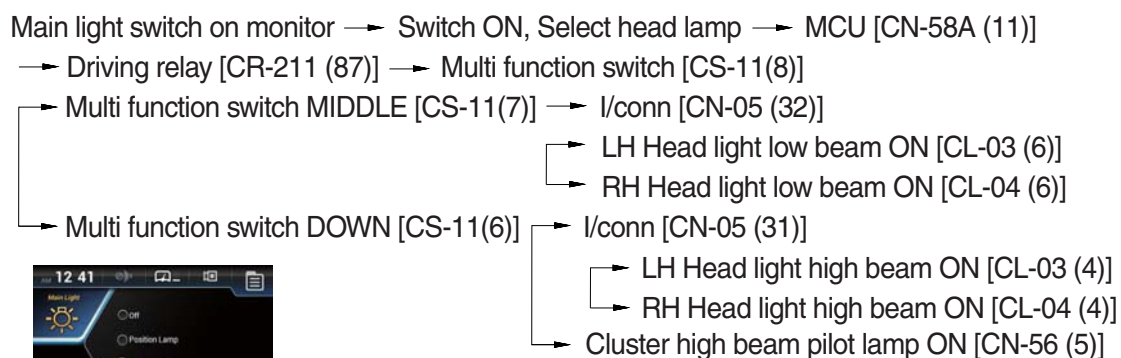


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※ The circuit diagram may differ from the equipment, so please check before a repair.

## 2. HEAD LIGHT CIRCUIT

### 1) OPERATING FLOW



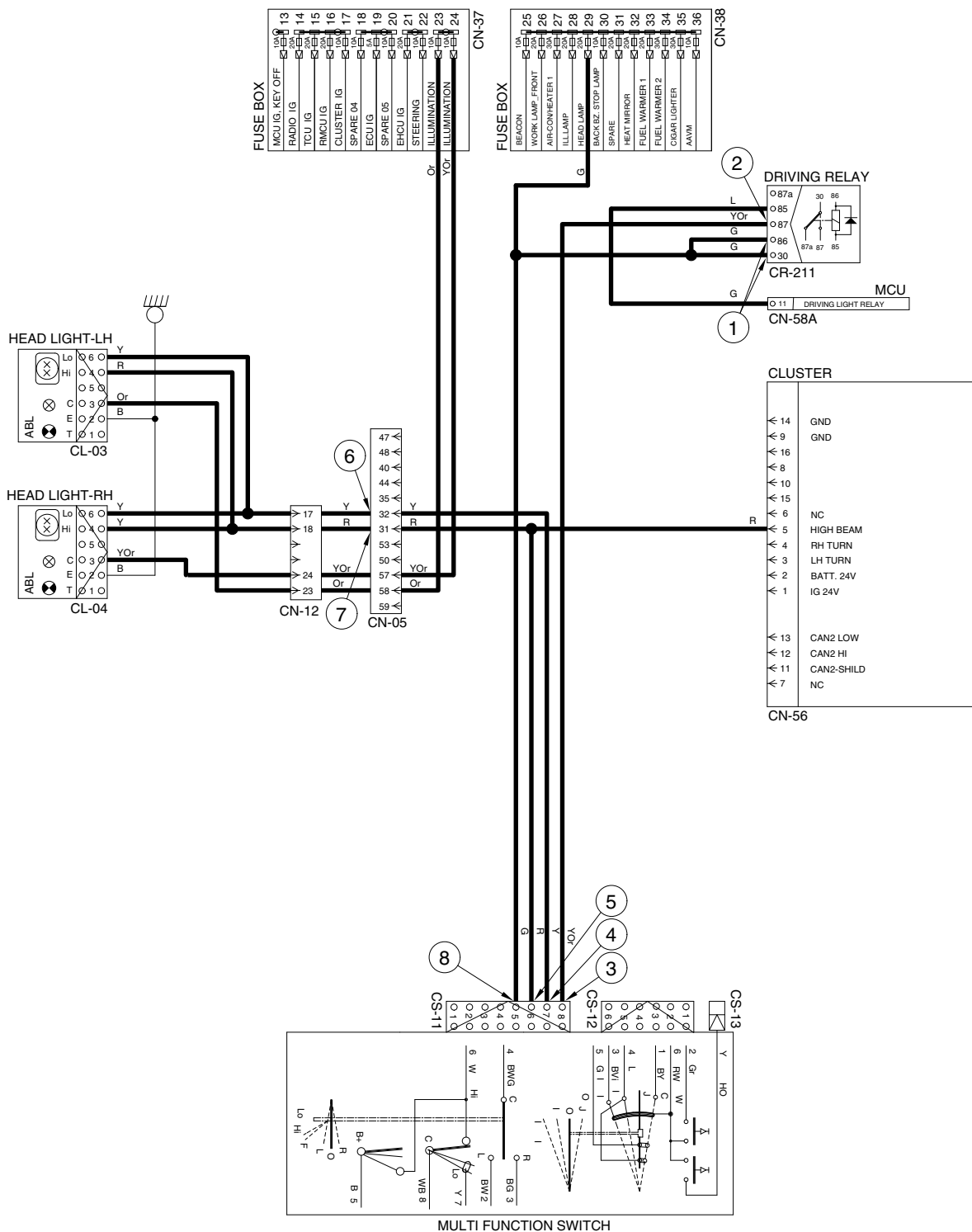
### 2) CHECK POINT

| Engine | Key switch | Check point                                                                                                                                                                                                                               | Voltage |
|--------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| OFF    | ON         | ① - GND (relay input)<br>② - GND (relay output)<br>③ - GND (multi function input)<br>④ - GND (multi function output)<br>⑤ - GND (multi function output)<br>⑥ - GND (low beam)<br>⑦ - GND (high beam)<br>⑧ - GND (passing B <sup>+</sup> ) | 20~25V  |

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

# HEAD LIGHT CIRCUIT



970SA7EL05

※ The circuit diagram may differ from the equipment, so please check before a repair.

### 3. WORK LIGHT SWITCH

#### 1) OPERATING FLOW

※ Main light switch on monitor : Select position lamp.

##### (1) Work lamp switch (select Front)

MCU [CN-58A (88)] → Front work lamp relay [CR-03 (87)] → I/conn [CN-07 (06)]

- LH Front work lamp ON [CL-32 (1)]
- RH Front work lamp ON [CL-33 (1)]



##### (2) Work lamp switch (select Rear)

MCU [CN-58A (44)] → Rear work lamp relay [CR-55 (87)] → I/conn [CN-01 (05)]

- I/conn [CN-24 (12)]
  - LH Rear work lamp ON [CL-46 (1)]
  - RH Rear work lamp ON [CL-45 (1)]



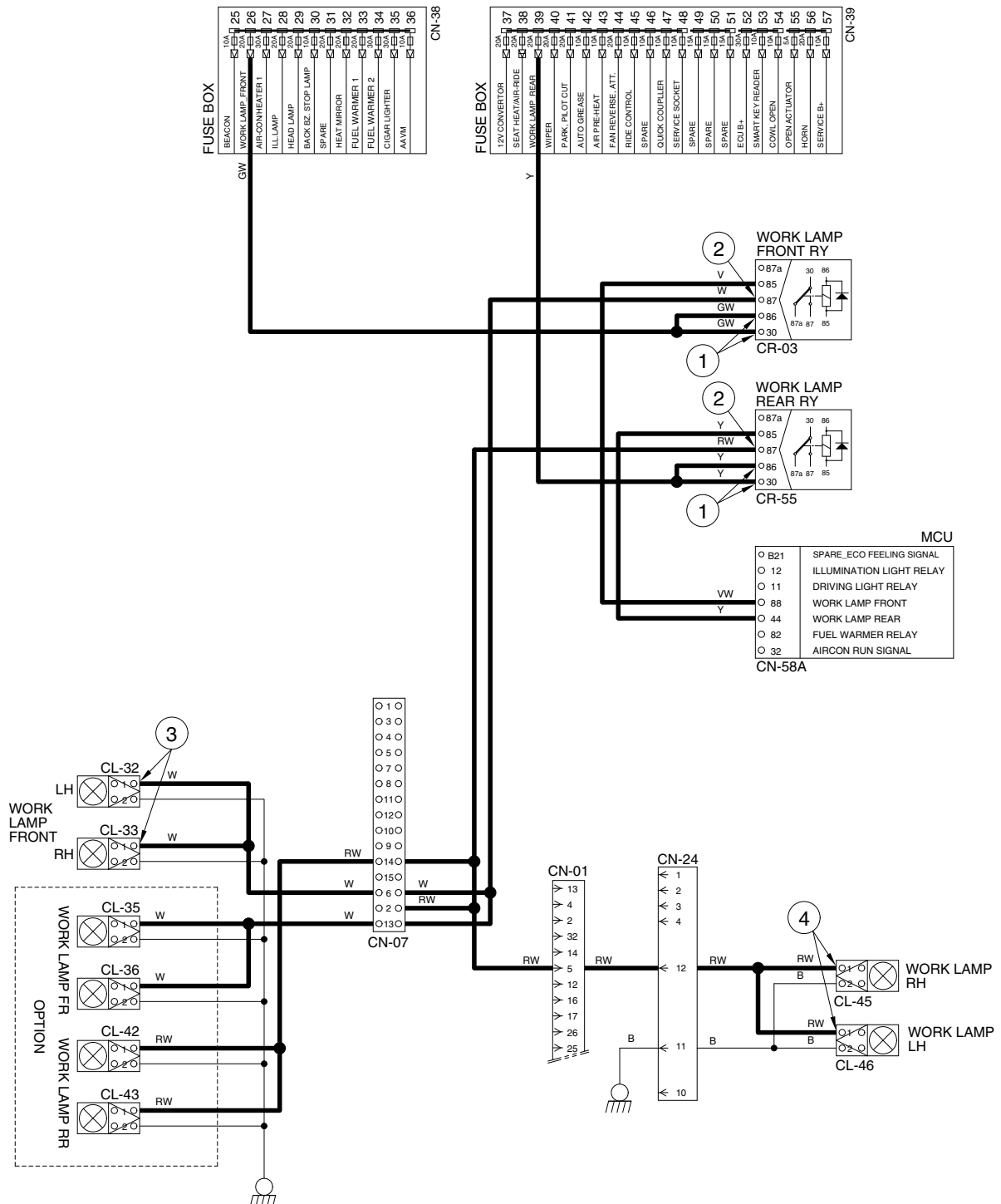
#### 2) CHECK POINT

| Engine | Key switch | Check point                                                                                                                  | Voltage |
|--------|------------|------------------------------------------------------------------------------------------------------------------------------|---------|
| OFF    | ON         | ① - GND (work lamp power input)<br>② - GND (work lamp power output)<br>③ - GND (front work lamp)<br>④ - GND (rear work lamp) | 20~25V  |

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

# WORK LIGHT SWITCH

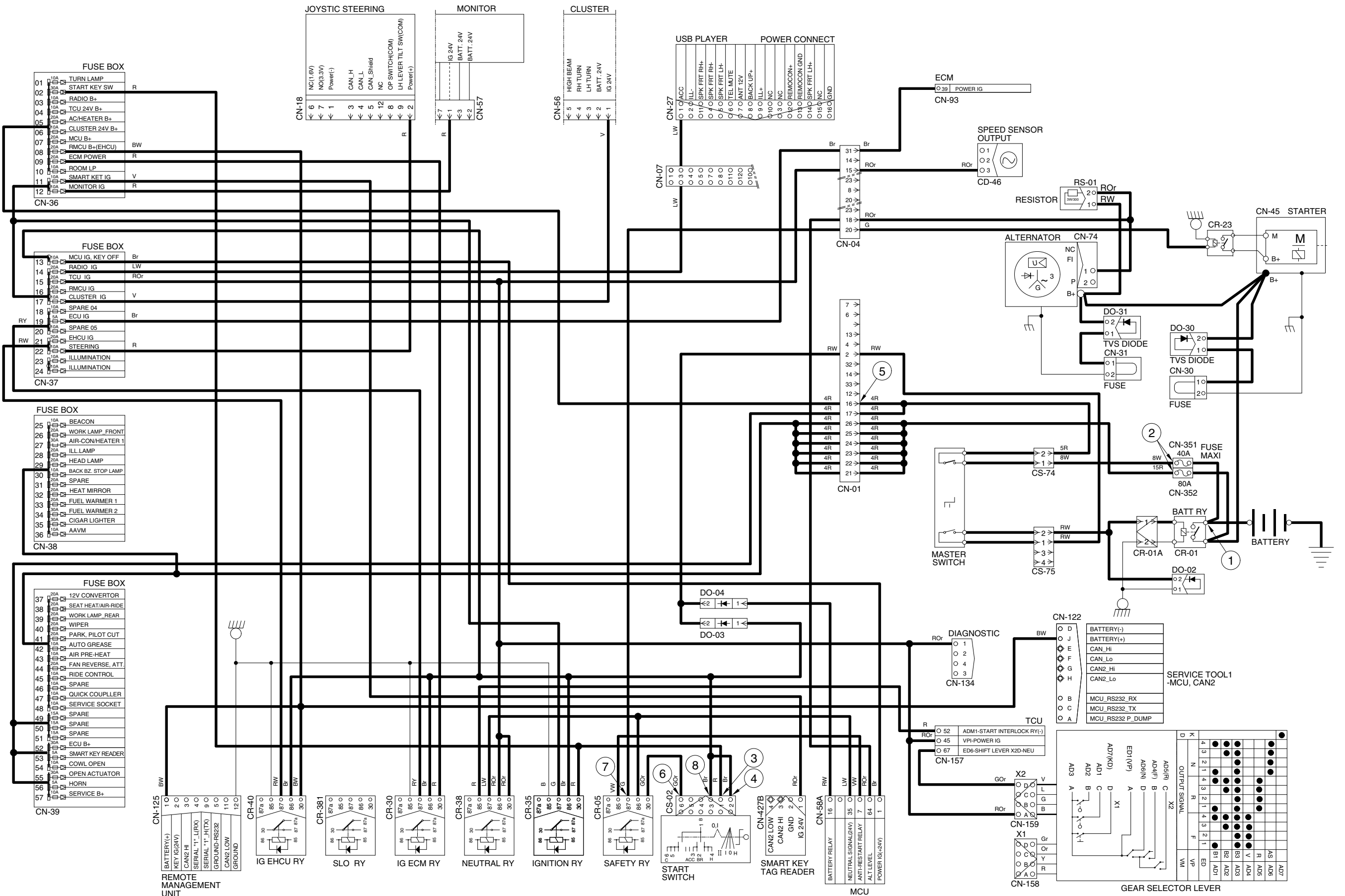


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※ The circuit diagram may differ from the equipment, so please check before a repair.



# STARTING CIRCUIT



※ The circuit diagram may differ from the equipment, so please check before a repair.

## 5. CHARGING CIRCUIT

When the starter is activated and the engine is started, the operator releases the key switch to the ON position.

Charging current generated by operating alternator flows into the battery through the battery relay (CR-01).

The current also flows from alternator to each electrical component and controller through the fuse box.

### 1) OPERATING FLOW

#### (1) Warning flow

Alternator [CN-74 (1)] → I/conn [CN-04 (18)] → MCU [CN-58A (64)]

→ Cluster charge warning lamp ON

#### (2) Charging flow

Alternator → Starter [CN-45 (B<sup>+</sup>)] → Battery relay [CR-01]

→ Battery (+) terminal → Charging

→ Fusible link [CN-351 (40A)] → Master switch [CS-74 (1)→(2)] → I/conn [CN-01 (16, 17)]

→ Fuse box [CN-36, 39]

→ Fusible link [CN-352 (80A)] → I/conn [CN-01 (21~26)] → Fuse box [CN-38, 39]

### 2) CHECK POINT

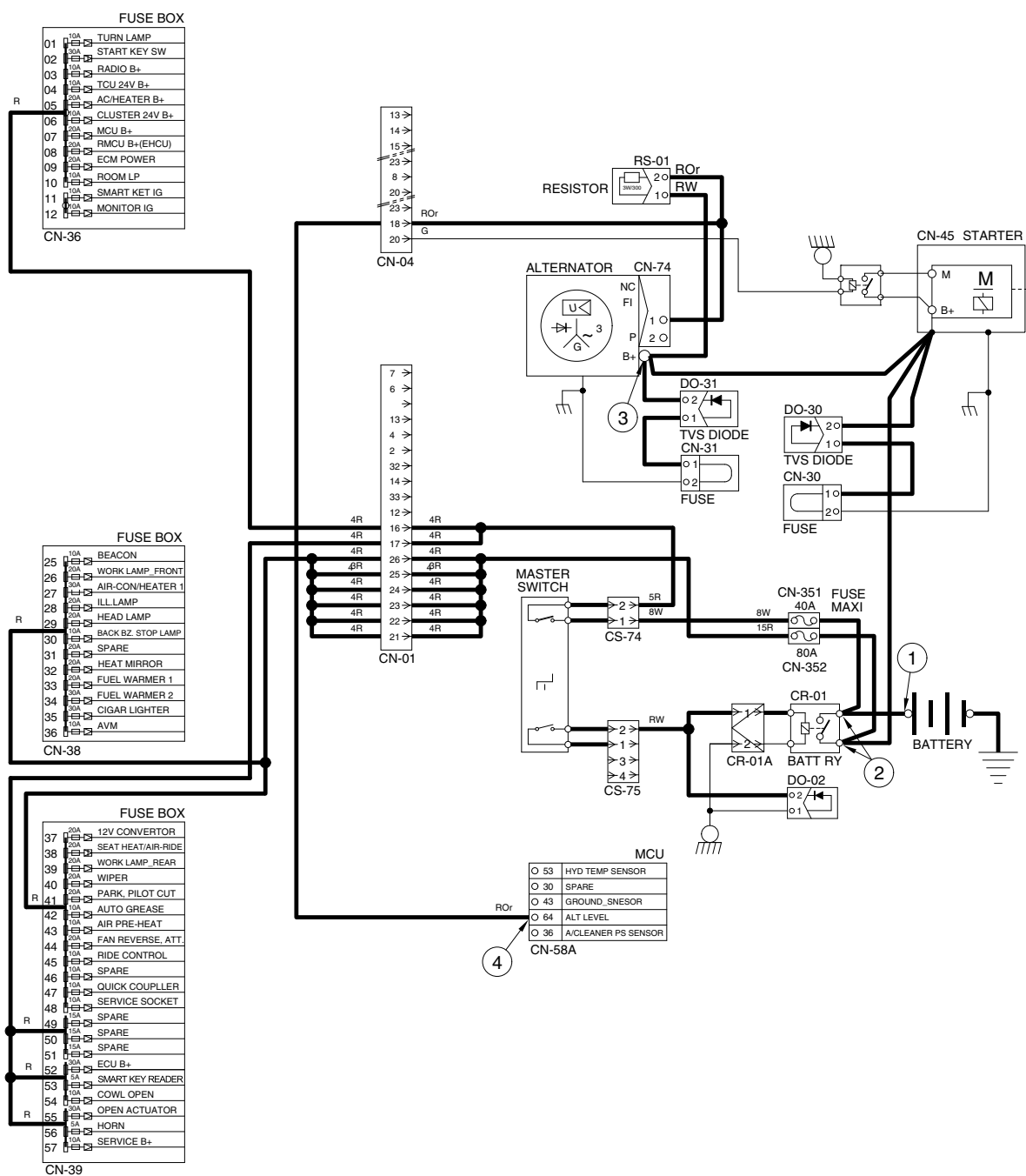
| Engine | Key switch | Check point                                                                                           | Voltage |
|--------|------------|-------------------------------------------------------------------------------------------------------|---------|
| OFF    | ON         | ① - GND (battery)<br>② - GND (battery relay)<br>③ - GND (alternator B <sup>+</sup> )<br>④ - GND (MCU) | 20~28V  |

※ GND : Ground

※ MCU : Machine control unit

※ The circuit diagram may differ from the equipment, so please check before a repair.

# CHARGING CIRCUIT



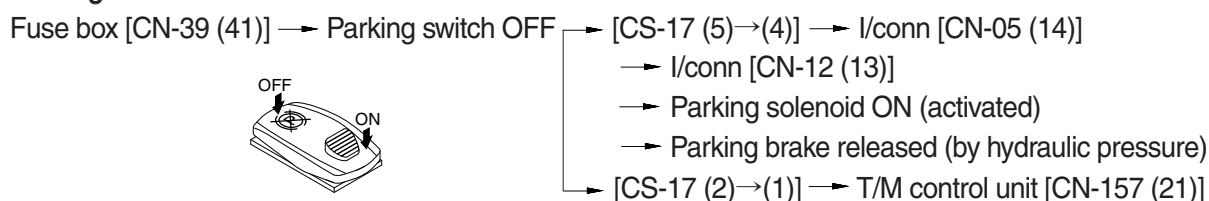
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※ The circuit diagram may differ from the equipment, so please check before a repair.

## 6. ELECTRIC PARKING, PILOT CUT OFF CIRCUIT

### 1) OPERATING FLOW

#### (1) Parking OFF



#### (2) Parking ON

Fuse box [CN-39 (41)] → Parking switch ON → Parking solenoid [CN-71] OFF  
 → Parking brake applied [By spring force]

#### (3) Pilot cut off ON

Fuse box [CN-39 (41)] → Pilot cut off switch ON → Pilot cut off switch [CS-4 (5) → (4)]  
 → I/conn [CN-05 (11)] → I/conn [CN-12 (12)] → Pilot cut off solenoid ON [CN-68] (activate)  
 → Pilot cut off released

#### (4) Pilot cut off OFF

Fuse box [CN-39 (41)] → Pilot cut off switch OFF → Pilot cut off solenoid [CN-68] OFF  
 → Pilot cut off applied

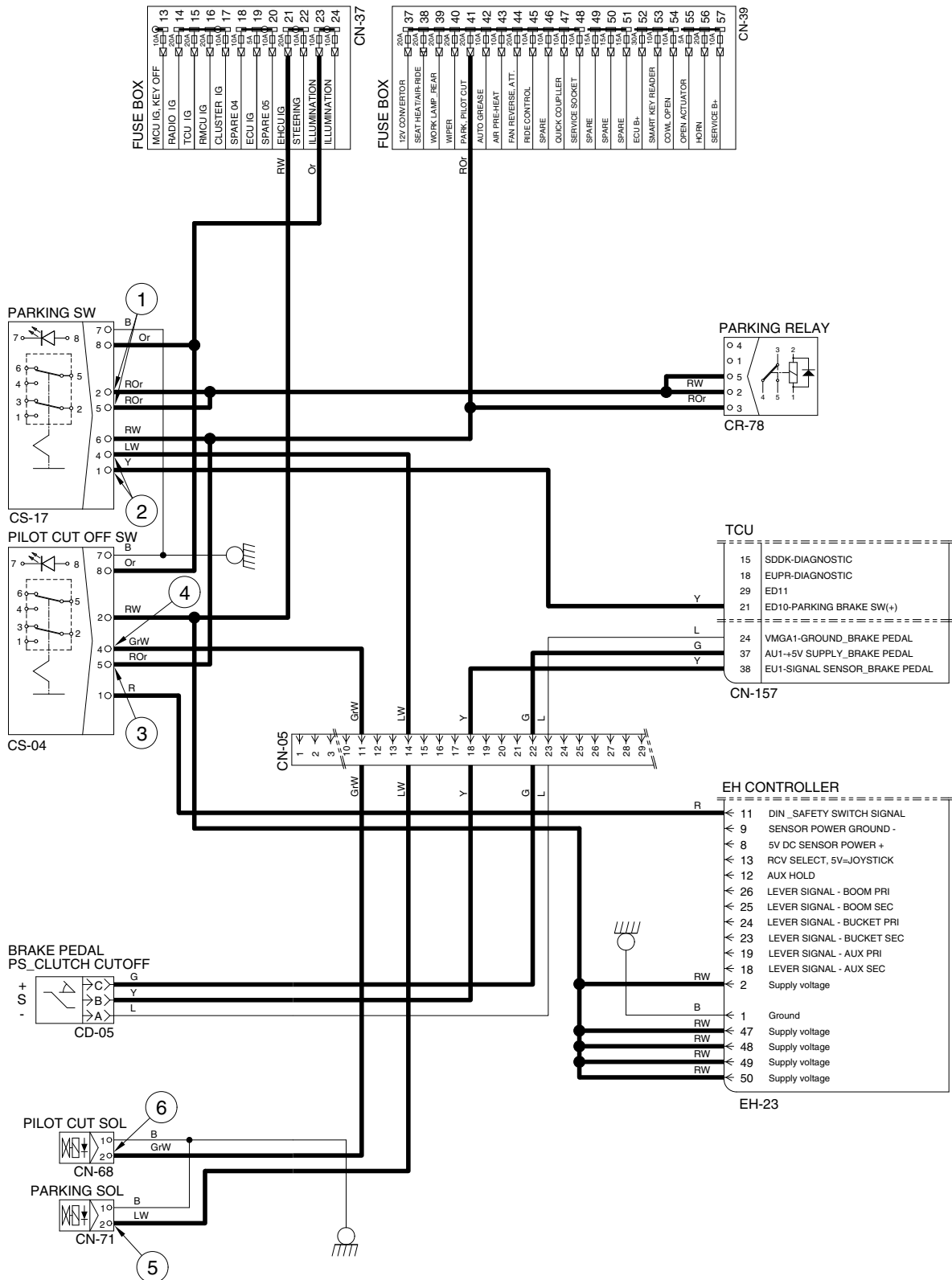
### 2) CHECK POINT

| Engine  | Key switch | Check point                                                                                                                                                                                                          | Voltage |
|---------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Running | ON         | ① - GND (parking switch input)<br>② - GND (parking switch output)<br>③ - GND (pilot cut off switch input)<br>④ - GND (pilot cut off switch output)<br>⑤ - GND (parking solenoid)<br>⑥ - GND (pilot cut off solenoid) | 20~25V  |

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

# ELECTRIC PARKING, PILOT CUT OFF CIRCUIT

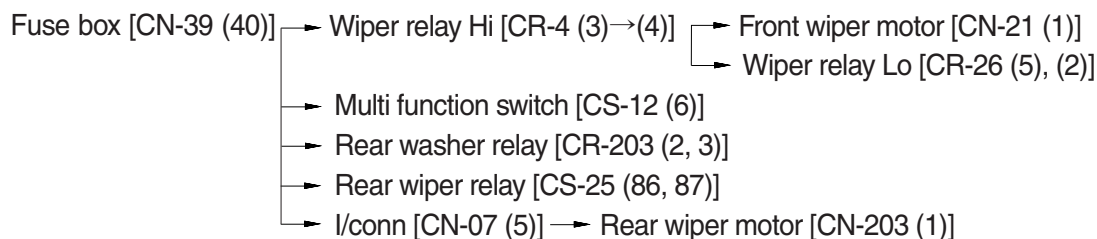


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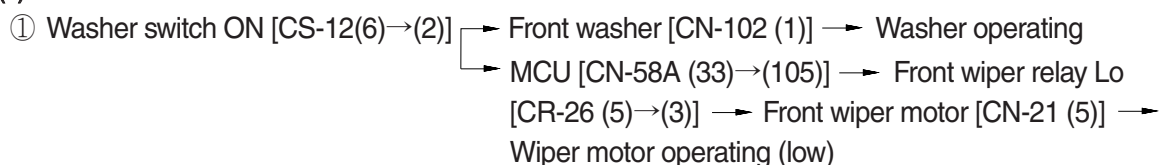
※ The circuit diagram may differ from the equipment, so please check before a repair.

## 7. WIPER AND WASHER CIRCUIT

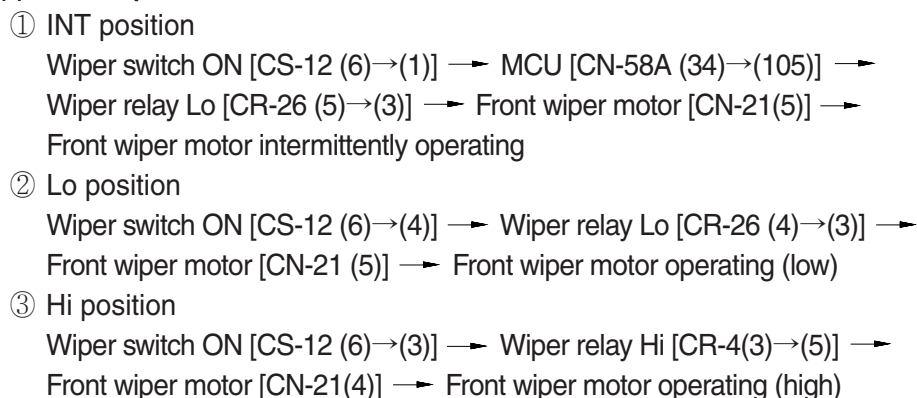
### 1) OPERATING FLOW



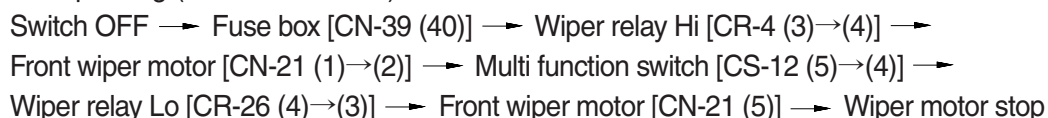
#### (1) Front washer switch ON



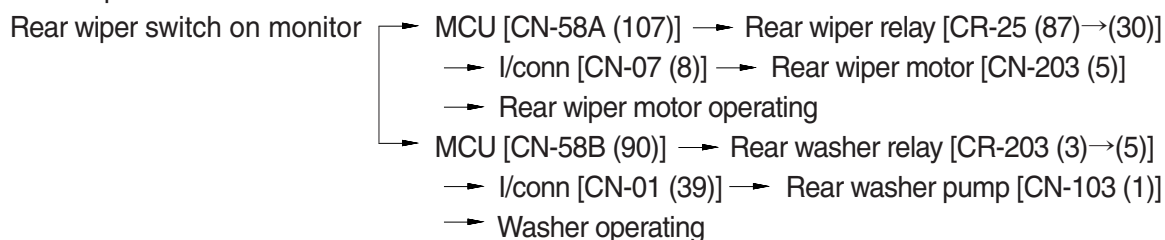
#### (2) Front wiper switch ON



#### (3) Auto-parking (when switch OFF)



#### (4) Rear wiper and washer switch



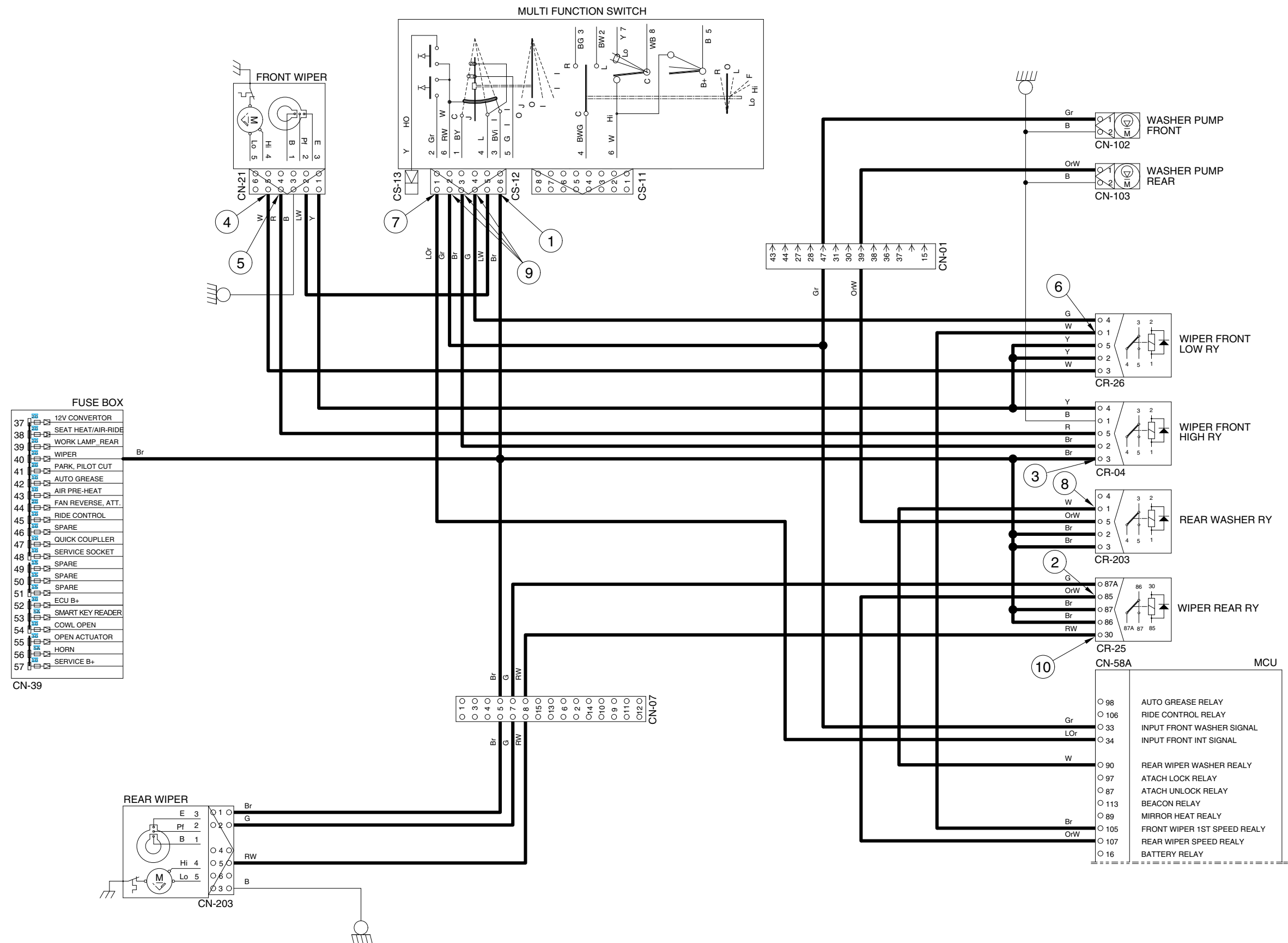
### 2) CHECK POINT

| Condition                                            | Check point                                  |                                          |
|------------------------------------------------------|----------------------------------------------|------------------------------------------|
| Engine : Stop<br>Key switch : ON<br>Voltage : 20~25V | ① - GND (front wiper switch power input)     | ⑥ - GND (wiper relay power input)        |
|                                                      | ② - GND (rear wiper relay power input)       | ⑦ - GND (front washer power output)      |
|                                                      | ③ - GND (wiper relay power input)            | ⑧ - GND (rear washer power output)       |
|                                                      | ④ - GND (front wiper motor Lo power input)   | ⑨ - GND (front wiper motor power output) |
|                                                      | ⑤ - GND (front wiper motor High power input) | ⑩ - GND (rear wiper motor power output)  |

※ GND : Ground

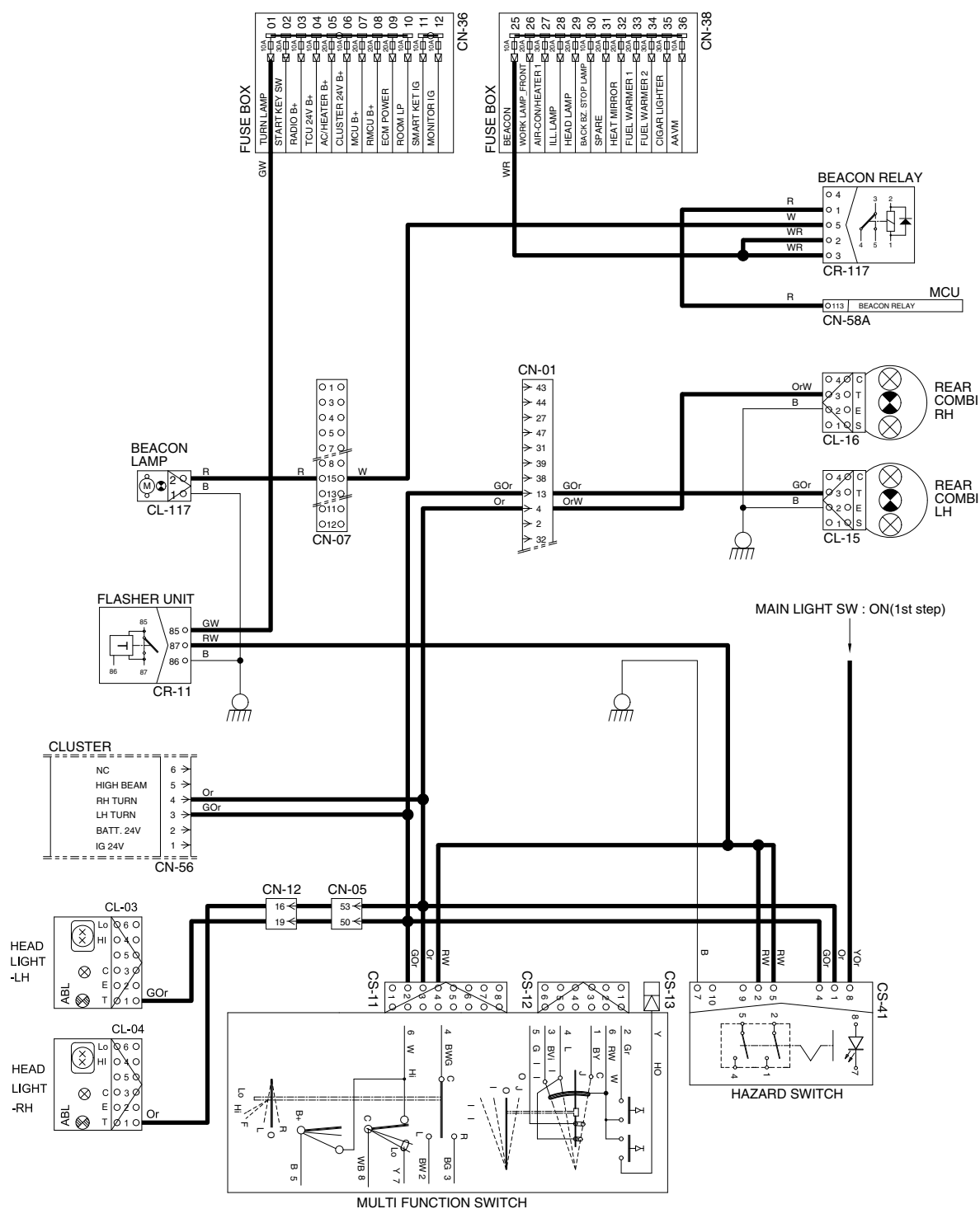
※ The circuit diagram may differ from the equipment, so please check before a repair.

## WIPER AND WASHER CIRCUIT



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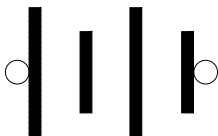
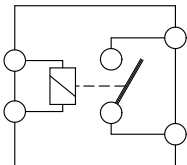
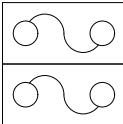
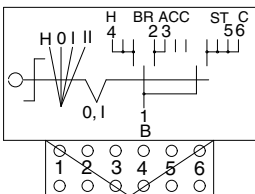
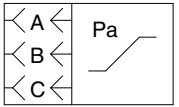
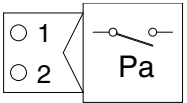
# HAZARD, TURN AND ROTARY CIRCUIT

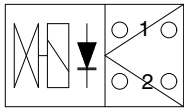
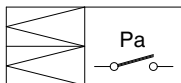
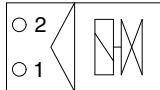
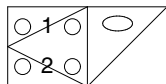
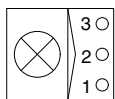
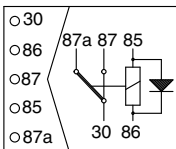


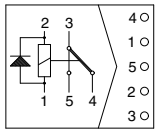
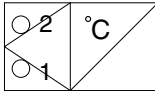
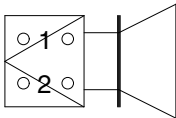
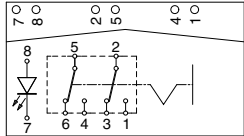
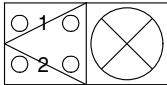
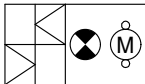
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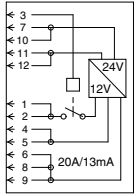
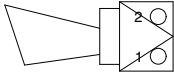
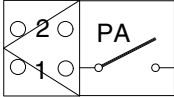
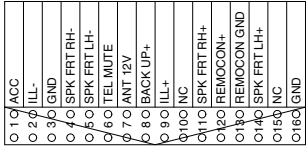
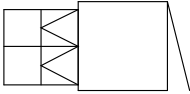
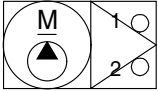
※ The circuit diagram may differ from the equipment, so please check before a repair.

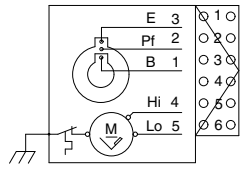
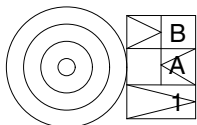
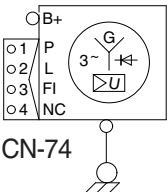
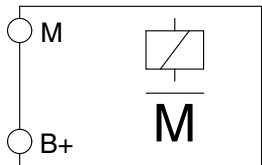
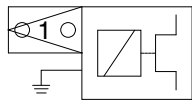
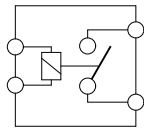
## GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

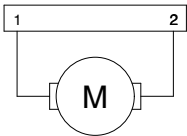
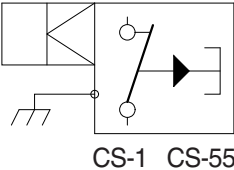
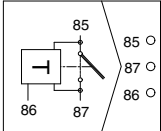
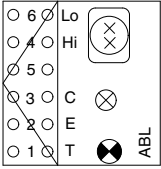
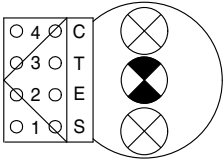
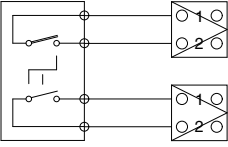
| Part name       | Symbol                                                                                                                                            | Specifications                                             | Check item                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Battery         |                                                                  | 12V × 200Ah<br>(2EA)                                       | Gravity<br>1.280 over : over charged<br>1.280 ~ 1.250 : normal<br>1.250 below : discharged                                   |
| Battery relay   | <br>CR-1                                                         | Rated load : 24V<br>100A (continuity)<br>1000A (30seconds) | Coil resistance<br>broken : approx 50 Ω<br>connected : ∞ Ω                                                                   |
| Fusible link    | <br>CN-351 (40A), CN-352 (80A)                                  | 24V                                                        | Resistance between ring terminal and each connector pin<br>0 Ω : normal                                                      |
| Start key       | <br>CS-2                                                       | B-BR : 24V 1A<br>B-ACC : 24V 10A<br>B-ST : 20V 40A         | Resistance between each pin<br>Key off : ∞ Ω (for each pin)<br>Key on : 0 Ω (for pin 1-2 & 1-3)<br>Start : 0 Ω (for pin 1-5) |
| Pressure switch | <br>CD-3 CD-26 CD-31<br>CD-39 CD-40 CD-58<br>CD-79 CD-80 CD-81 | N.C Type                                                   | Resistance<br>0 Ω : normal (close)                                                                                           |
| Pressure switch | <br>CD-48 CD-129                                               | N.O Type                                                   | Resistance<br>∞ Ω : normal (open)                                                                                            |

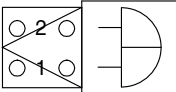
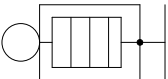
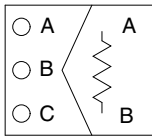
| Part name                                                                         | Symbol                                                                                                                                                                                 | Specifications            | Check item                                                                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Pilot cut off,<br>parking brake,<br>diff lock,<br>attach lock,<br>unlock solenoid | <br>CN-68 CN-177<br>CN-71 CN-178<br>CN-79                                                             | 24V 1A                    | Resistance<br>normal : 15~25Ω                                                                                                   |
| Air cleaner<br>pressure switch                                                    | <br>CD-10                                                                                             | Max load : 6W<br>N.O Type | Resistance<br>∞Ω : normal (open)                                                                                                |
| Lock-up,<br>Ride control<br>valve / Fan sole-<br>noid                             | <br>CN-43 CN-136<br>CN-154 CN-155                                                                     | 24V 1.2A                  | ※ Check LED lamp<br>※ Check resistance<br>about 24Ω                                                                             |
| Fuel sender                                                                       | <br>CD-2                                                                                            | -                         | Resistance at fuel levels<br>full level : 200Ω<br>9/12 level : 500Ω<br>6/12 level : 800Ω<br>3/12 level : 1100Ω<br>empty : 1300Ω |
| Room lamp                                                                         | <br>CL-1                                                                                            | 24V 10W                   | Resistance<br>normal : 1.2Ω                                                                                                     |
| Relay<br>(5pin)                                                                   | <br>CR-3 CR-5 CR-7 CR-30 CR-35<br>CR-36 CR-38 CR-40 CR-46 CR-55<br>CR-56 CR-63 CR-210 CR-211 CR-381 | 24V 20A                   | Resistance<br>normal : about 160Ω<br>(for pin 85~86)<br>0Ω (for pin 30~87)<br>∞Ω (for pin 30~87)                                |

| Part name                                 | Symbol                                                                                                                                                                | Specifications                                       | Check item                                                                                    |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Relay<br>(5 pin)                          | <br>CR-2 CR-4 CR-25 CR-26<br>CR-37 CR-58 CR-79 CR-115<br>CR-117 CR-136 CR-302 CR-303 | 24V 20A                                              | Resistance<br>normal : about 160Ω<br>(for pin 1~2)<br>0Ω (for pin 3~4)<br>∞Ω (for pin 3~5)    |
| Hydraulic,<br>transmission<br>temperature | <br>CD-1 CD-49                                                                       | —                                                    | Resistance<br>normal : ∞Ω<br>105. C over : 0Ω                                                 |
| Speaker                                   | <br>CN-123 (LH)<br>CN-124 (RH)                                                      | 4Ω 20W                                               | Resistance<br>normal : 4Ω                                                                     |
| Switch<br>(Locking type)                  | <br>CS-4 CS-17<br>CS-75                                                            | 24V 8A                                               | Resistance at switch off position<br>∞Ω between pin 1-5 and 2-6<br>0Ω between pin 5-7 and 6-8 |
| Work lamp,<br>Number plate<br>lamp        | <br>CL-21 CL-32 CL-33<br>CL-35 CL-36 CL-42<br>CL-43 CL-45 CL-46                    | Work lamp<br>24V 70W<br>Number plate lamp<br>24V 10W | Resistance<br>normal : 1.2Ω                                                                   |
| Beacon lamp                               | <br>CL-117                                                                         | 24V 70W<br>(H1 TYPE)                                 | Resistance<br>normal : 1.1Ω                                                                   |

| Part name          | Symbol                                                                                                         | Specifications    | Check item                                                                                                                             |
|--------------------|----------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| DC/DC Converter    | <br>CN-138                    | 12V 3A            | Resistance<br>8.8Ω (for pin A-B)<br>7.7Ω (for pin B-C)                                                                                 |
| Horn               | <br>CN-120 CN-121             | 24V 2A            | Operation by external power source<br>- connect 24V power to (+) terminal<br>- ground the (-) terminal                                 |
| Receiver dryer     | <br>CN-29                    | 24V 2.5A          | Resistance<br>0Ω : $2.1 \pm 0.3 \sim 27 \pm 2 \text{ kgf/cm}^2$<br>$\infty \Omega$ : $\sim 2.1 \pm 0.3, 27 \pm 2 \sim \text{kgf/cm}^2$ |
| Radio & USB player | <br>CN-27                   | 24V 20W+20W       | Resistance<br>Power ON : $4\Omega + 4\Omega$<br>(for pin 1-6, 4-8)                                                                     |
| Back up buzzer     | <br>CN-65                   | 24V 0.5A<br>110dB | Resistance<br>normal : $5.2\Omega$                                                                                                     |
| Washer pump        | <br>CN-102 (FR) CN-103 (RR) | 24V 2.5A          | Resistance<br>normal : $26.4 \Omega$<br>(for pin1-2)                                                                                   |

| Part name         | Symbol                                                                                                          | Specifications                      | Check item                                                                                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Wiper motor       |  <p>CN-21 (FR) CN-102 (RR)</p> | 24V 1.5A<br>2-speed<br>Auto parking | -                                                                                                                                   |
| Cigar lighter     |  <p>CL-2</p>                   | 24V 5A 1.4W                         | Coil resistance<br>normal : about 1M $\Omega$                                                                                       |
| Alternator        |  <p>CN-74</p>                 | Denso<br>24V 70A                    | Voltage<br>normal : 24~28V                                                                                                          |
| Starter           |  <p>CN-45</p>                | 24V-7.8kW                           | Operating or not                                                                                                                    |
| Aircon compressor |  <p>CN-28</p>                | 24V 79W                             | Resistance<br>normal : 13.4 $\Omega$                                                                                                |
| Start relay       |  <p>CR-23</p>                | 24V 300A                            | Coil resistance<br>normal : 1-2 $\Omega$<br>Switch connection<br>$\infty \Omega$ at normal open position<br>0 $\Omega$ when engaged |

| Part name         | Symbol                                                                              | Specifications                                                   | Check item                                            |
|-------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------|
| Blower motor      |    | 24V 9.5A                                                         | Resistance at each switch position<br>normal : 0.5-2Ω |
| Door switch       |    | 24V 2W                                                           | Resistance<br>normal : about 5MΩ                      |
| Flasher unit      |    | 24V<br>85 ~ 190 C/M<br>50dB                                      | -                                                     |
| Head lamp         |  | 24V 75W/70W<br>(H4 TYPE)<br>24V 4W<br>(T4W)                      | Resistance<br>normal : a fewΩ                         |
| Combi lamp (rear) |  | 24V 5W<br>(R5W)<br>2 × 24V 21W<br>(P21W)                         | -                                                     |
| Master switch     |  | Continuous capacity :<br>180Amp<br>Push in capacity :<br>1000Amp | -                                                     |

| Part name      | Symbol                                                                                      | Specifications                         | Check item                 |
|----------------|---------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|
| Warning buzzer | <br>CN-26  | 24V 200mA<br>$90 \pm 5\text{dB}$ (ℓ m) | -                          |
| Preheater      | <br>CN-80  | 24V 200A                               | Resistance<br>0.25~0.12Ω   |
| Resistor       | <br>CN-99 | 4W                                     | Resistance<br>A - B : 120Ω |

## GROUP 4 CONNECTORS

### 1. CONNECTOR DESTINATION

| Connector number | Type      | No. of pin | Destination                                | Connector part No. |                    |
|------------------|-----------|------------|--------------------------------------------|--------------------|--------------------|
|                  |           |            |                                            | Female             | Male               |
| CN-1             | DEUTSCH   | 48         | I/conn (Frame harness-Main harness)        | DRB16-48SAE-L018   | DRB12-48PAE-L018   |
| CN-4             | DEUTSCH   | 60         | I/conn (Engine harness-Main harness)       | DRB16-60SAE-L018   | DRB12-60PAE-L018   |
| CN-5             | DEUTSCH   | 60         | I/conn (Front harness-Main harness)        | DRB16-60SBE-L018   | DRB12-60PBE-L018   |
| CN-7             | AMP       | 15         | I/conn (Main harness-Cab harness)          | 2-85262-1          | 368301-1           |
| CN-9             | DEUTSCH   | 6          | I/conn (Main harness-Cab harness)          | 174264-2           | 174262-2           |
| CN-11            | AMP       | 15         | I/conn (Main harness-Aircon harness)       | 2-85262-1          | 368301-1           |
| CN-12            | DEUTSCH   | 35         | I/conn (Front harness-Bottom harness)      | 2-85262-1          | HDP24-24-35PN-L015 |
| CN-14            | DEUTSCH   | 12         | I/conn (Frame harness-Grill harness)       | DT06-12S           | DT04-12P           |
| CN-15            | KET       | 11         | I/conn (RH console harness-Main harness)   | MG651350           | MG641353           |
| CN-16            | KET       | 14         | I/conn (RH console harness-Main harness)   | MG651110           | MG641113           |
| CN-18            | DEUTSCH   | 12         | LH seat console                            | DT06-12S           | DT04-12P           |
| CN-19            | DEUTSCH   | 2          | I/conn (Emer steer harness-Bottom harness) | DT06-2S            | DT04-2P            |
| CN-21            | AMP       | 6          | Front wiper motor                          | 936257-2           | -                  |
| CN-22            | DEUTSCH   | 2          | Compressor                                 | DTP06-2S           |                    |
| CN-24            | DEUTSCH   | 12         | Grill harness                              | DT06-12S           | -                  |
| CN-26            | TYCO      | 10         | EHI unit                                   | 174655-2           | 174657-2           |
| CN-26A           | AMP       | 10         | Joystick steering                          | -                  | 174657-2           |
| CN-27            | MK II     | 16         | Radio and USB player                       | PK145-16017        | -                  |
| CN-27A           | MK II     | 8          | USB connector                              | 174984-2           | -                  |
| CN-31            | DEUTSCH   | 3          | Brake priority                             | DT06-3S            | -                  |
| CN-36~39         | -         | -          | Fuse box assy                              | 21WF-17031         | -                  |
| CN-43            | AMP       | 2          | Lock-up                                    | 282028             | -                  |
| CN-45            | Ring term | -          | Starter                                    | R14-12             | ST 710246-2        |
| CN-48            | AMP       | 1          | Hour meter                                 | 2-520193-2         | -                  |
| CN-49            | AMP       | 2          | Torque converter temperature               | 85202-1            | -                  |
| CN-56            | KUM       | 16         | Cluster                                    | KPK145-16017       | -                  |
| CN-57            | AMP       | 20         | Monitor                                    | 174047-2           | -                  |
| CN-57C           | DEUTSCH   | 4          | Camera monitor                             | DT06-4S-EP06       | -                  |
| CN-58A           | AMP       | 81         | MCU (machine control unit)                 | 1473244-1          | -                  |
| CN-58B           | AMP       | 40         | MCU (machine control unit)                 | 1473252-1          | -                  |
| CN-64            | MOLEX     | 4          | Smart key                                  | 39012040           | -                  |
| CN-65            | DEUTSCH   | 2          | Back up buzzer                             | DT06-2S            | -                  |
| CN-68            | DEUTSCH   | 2          | Pilot cut off                              | DT06-2S            | -                  |
| CN-71            | DEUTSCH   | 2          | Parking solenoid                           | DT06-2S            | -                  |
| CN-72            | DEUTSCH   | 2          | Cowl open activator                        | DT06-2S            | -                  |

| Connector number | Type        | No. of pin | Destination                                 | Connector part No. |              |
|------------------|-------------|------------|---------------------------------------------|--------------------|--------------|
|                  |             |            |                                             | Female             | Male         |
| CN-74            | PACKARD     | 4          | Alternator                                  | 1218-6568          | -            |
| CN-79            | DEUTSCH     | 2          | Differential lock solenoid                  | DT06-2S            | -            |
| CN-79A           | DEUTSCH     | 2          | Differential lock foot switch               | DT06-2S-EP06       | DT04-2P-E005 |
| CN-93            | DEUTSCH     | -          | ECM (engine control module)                 | DRC26-50S-04       | -            |
| CN-94            | DEUTSCH     | -          | ECM power                                   | DT06-4S-EP06       | -            |
| CN-99,99R        | DEUTSCH     | 6          | Rear camera                                 | DT06-6S            | DT04-6P      |
| CN-100           | DEUTSCH     | 3          | Boom kick out                               | DT06-3S            | -            |
| CN-101           | DEUTSCH     | 3          | Bucket leveler                              | DT06-3S            | -            |
| CN-102           | KET         | 2          | Front washer tank                           | MG640605           | -            |
| CN-103           | KET         | 2          | Rear washer tank                            | MG640605           | -            |
| CN-112           | -           | 16         | Gear box                                    | 21L7-60290         | -            |
| CN-115           | DEUTSCH     | 6          | Auto grease                                 | DT06-6S            | DT04-6P      |
| CN-120,121       | DEUTSCH     | 2          | Horn                                        | DT06-2S            | -            |
| CN-122           | DEUTSCH     | 9          | Machine service tool                        | HD10-9-96P         | -            |
| CN-123           | KET         | 2          | Speaker (LH)                                | 7123-1520          | -            |
| CN-124           | KET         | 2          | Speaker (RH)                                | 7123-1520          | -            |
| CN-125           | DEUTSCH     | 12         | RMCU(remote management control unit)        | DT06-12S           | DT04-12P     |
| CN-126           | DEUTSCH     | 9          | Engine service tool                         | HD10-9-1939P       | -            |
| CN-128           | KET         | 1          | Aircon compressor                           | PB625-01027        | -            |
| CN-129           | KET         | 2          | Receiver drier                              | MG640795           | -            |
| CN-134           | AMP         | 6          | Diagnostic (TCU)                            | 1-480705-0         | -            |
| CN-136           | DEUTSCH     | 2          | Ride control solenoid                       | DT06-2S            | -            |
| CN-136A          | Econoseal J | 2          | I/conn (Ride control harness-Front harness) | S816-002002        | S816-102002  |
| CN-137           | AMP         | 1          | 12V socket                                  | 172434-2           | -            |
| CN-138           | AMP         | 12         | DC/DC Converter                             | 1-967622-1         | -            |
| CN-139           | AMP         | 2          | 12V socket                                  | 172434-2           | -            |
| CN-149           | DEUTSCH     | 2          | Mirror heat (LH)                            | DT06-2S            | DT04-2P      |
| CN-150           | DEUTSCH     | 2          | Mirror heat (RH)                            | DT06-2S            | DT04-2P      |
| CN-152           | AMP         | 4          | Proportional valve                          | 2-967059-1         | -            |
| CN-154           | DEUTSCH     | 2          | Fan speed solenoid                          | DT06-2S            | -            |
| CN-155           | DEUTSCH     | 2          | Fan reverse solenoid                        | DT06-2S            | -            |
| CN-156           | DEUTSCH     | 2          | Seat heat (with switch)                     | -                  | DT04-2P-E005 |
| CN-157           | AMP         | 68         | Transmission control unit                   | 963598-1           | -            |
| CN-158           | PACKARD     | 4          | Gear shift lever                            | 1201-0974          | -            |
| CN-159           | PACKARD     | 4          | Gear shift lever                            | 1201-5797          | -            |
| CN-160           | CARLING     | 12         | FNR joystick lever                          | LC3-01             | -            |
| CN-162           | AMP         | 6          | Throttle pedal                              | 174262-2           | -            |
| CN-163           | AMP         | 2          | ECO feeling switch                          | 174352-2           | -            |

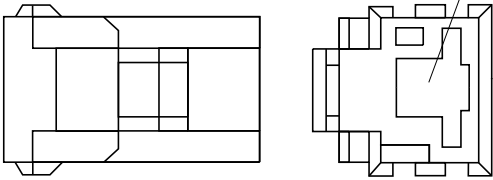
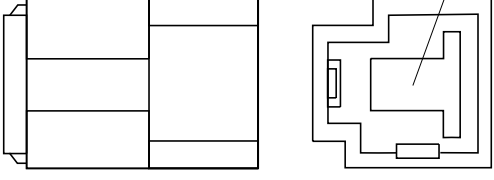
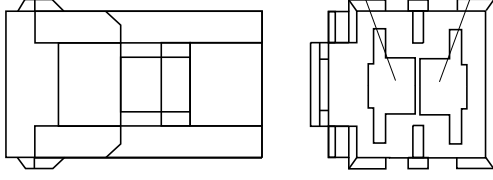
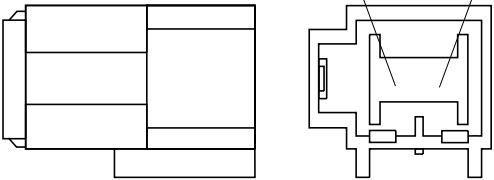
| Connector number | Type        | No. of pin | Destination                                  | Connector part No. |             |
|------------------|-------------|------------|----------------------------------------------|--------------------|-------------|
|                  |             |            |                                              | Female             | Male        |
| CN-171           | DEUTSCH     | 3          | Service socket                               | DT06-3S-EP06       | -           |
| CN-177           | DEUTSCH     | 2          | Quick coupler unlock solenoid                | DT06-2S            | -           |
| CN-177A          | Econoseal J | 3          | I/conn (Front harness-Quick coupler harness) | S816-003002        | S816-103002 |
| CN-178           | DEUTSCH     | 2          | Quick coupler lock solenoid                  | DT06-2S            | -           |
| CN-196           | PACKARD     | 4          | Fuel heater                                  | 2-967325-3         | -           |
| CN-203           | AMP         | 6          | Rear wiper motor                             | 936257-1           | -           |
| CN-246           | KET         | 1          | PTC power                                    | -                  | MG620659-5  |
| CN-249           | DEUTSCH     | 6          | Camera                                       | DT06-4S            | DT04-6P     |
| CN-250           | DEUTSCH     | 2          | Seat belt alarm                              | DT06-2S-EP06       | -           |
| CN-252           | TYCO        | 6          | Differential lock                            | S816-006602        | S816-106602 |
| CN-313           | DEUTSCH     | 4          | AAVM monitor service tool                    | DT06-4S-EP06       | -           |
| CN-399           | AMP         | 4          | DEF sensor                                   | 1-967325-1         | -           |
| CN-431           | KET         | 20         | AAVM monitor                                 | MG635026           | -           |
| Relay            |             |            |                                              |                    |             |
| CR-1             | Ring term   | -          | Battery relay                                | S820-104002        | -           |
| CR-2             | AMP         | 5          | Horn relay                                   | VCFM-1002          | -           |
| CR-3             | AMP         | 5          | Front work lamp relay                        | VCFM-1002          | -           |
| CR-4             | AMP         | 5          | Wiper relay (Hi)                             | VCFM-1002          | -           |
| CR-5             | HELLA       | 5          | Safety relay                                 | 8JA003526-001      | -           |
| CR-7             | AMP         | 5          | Aircon relay                                 | VCFM-1002          | -           |
| CR-11            | 250         | -          | Flasher unit                                 | S810-003702        | -           |
| CR-23            | Ring term   | -          | Start relay                                  | ST 710289-2        | ST 710384-2 |
| CR-24            | Shur        | 1          | Preheater relay                              | S822-014000        | -           |
| CR-25            | AMP         | 5          | Rear wiper relay                             | VCFM-1002          | -           |
| CR-26            | AMP         | 5          | Wiper relay (low)                            | VCFM-1002          | -           |
| CR-30            | HELLA       | 5          | ECM power relay                              | 8JA003526-001      | -           |
| CR-36            | AMP         | 5          | Preheater relay                              | VCFM-1002          | -           |
| CR-39            | -           | 2          | Emergency steering pump relay                | S820-104000        | -           |
| CR-40            | KET         | 5          | EHCU power relay                             | MG610047-1         | -           |
| CR-46            | HELLA       | 5          | Fuel warmer relay                            | 8JA003526-001      | -           |
| CR-55            | AMP         | 5          | Rear work lamp relay                         | VCFM-1002          | -           |
| CR-56            | KET         | 5          | Mirror heat relay                            | MG610047-1         | -           |
| CR-58            | AMP         | 5          | Back up relay                                | VCFM-1002          | -           |
| CR-63            | AMP         | 5          | Stop lamp relay                              | VCFM-1002          | -           |

| Connector number | Type    | No. of pin | Destination                    | Connector part No. |          |
|------------------|---------|------------|--------------------------------|--------------------|----------|
|                  |         |            |                                | Female             | Male     |
| Switch           |         |            |                                |                    |          |
| CS-1             | AMP     | 1          | Door switch                    | ST730018-3         | -        |
| CS-2             | KET     | 6          | Start key switch               | MG610335-5         | -        |
| CS-4             | CARLING | 10         | Pilot cut off switch           | VC2-01             | -        |
| CS-11            | KET     | 8          | Multi function switch          | MG610339-5         | -        |
| CS-12            | KET     | 6          | Multi function switch          | MG610339-5         | -        |
| CS-13            | KET     | 1          | Multi function switch          | ST730018-3         | -        |
| CS-17            | CARLING | 10         | Parking switch                 | VC2-01             | -        |
| CS-33            | AMP     | 6          | Engine stop switch             | 174262-2           | -        |
| CS-41            | CARLING | 10         | Hazard switch                  | VC2-01             | -        |
| CS-74            | -       | 2          | Master switch                  | S813-030200        | -        |
| CS-75            | CARLING | 10         | Emergency steering test switch | VC2-01             | -        |
| CS-79            | CARLING | 10         | Differential lock switch       | VC2-01             | -        |
| CS-85, 85L       | KET     | 2          | Workload switch                | MG610070           | MG620074 |
| CS-86, 86L       | KET     | 2          | Kick down switch               | MG610070           | MG620074 |
| CS-87, 87L       | KET     | 2          | Horn switch                    | MG610070           | MG620074 |
| CS-88, 88L       | KET     | 2          | FNR select switch              | MG610070           | MG620074 |
| CS-105           | CARLING | 10         | SCR switch                     | VC2-01             | -        |
| Light            |         |            |                                |                    |          |
| CL-1             | KET     | 3          | Room lamp                      | MG651032           | -        |
| CL-3             | DEUTSCH | 6          | Head light (LH)                | DT06-6S            | -        |
| CL-4             | DEUTSCH | 6          | Head light (RH)                | DT06-6S            | -        |
| CL-15            | YAZAKI  | 4          | Combi lamp (RR, LH)            | 7232-7444          | -        |
| CL-16            | YAZAKI  | 4          | Combi lamp (RR, RH)            | 7232-7444          | -        |
| CL-21            | SWP     | 2          | Number plate lamp              | S814-002000        | -        |
| CL-22            | DEUTSCH | 2          | Work light (LH)                | DT06-2S            | -        |
| CL-23            | DEUTSCH | 2          | Work light (RH)                | DT06-2S            | -        |
| CL-32            | DEUTSCH | 2          | Rear work light (RH)           | DT06-2S            | DT04-2P  |
| CL-33            | DEUTSCH | 2          | Rear work light (LH)           | DT06-2S            | DT04-2P  |
| CL-42            | DEUTSCH | 2          | Rear work light (opt)          | DT06-2S            | DT04-2P  |
| CL-45            | DEUTSCH | 2          | Work light (RH)                | DT06-2S-EP06       | -        |
| CL-46            | DEUTSCH | 2          | Work light (LH)                | DT06-2S-EP06       | -        |
| CL-117           | AMP     | 2          | Beacon lamp                    | 174198-2           | -        |

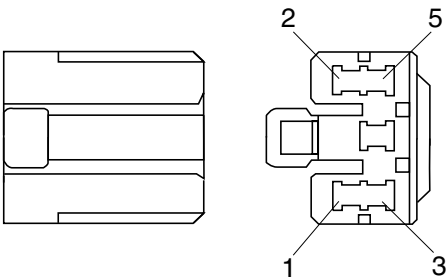
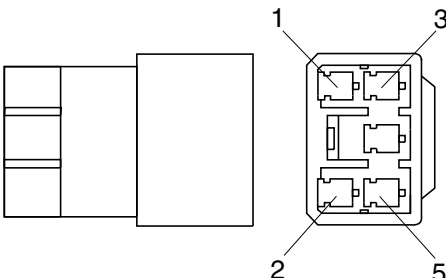
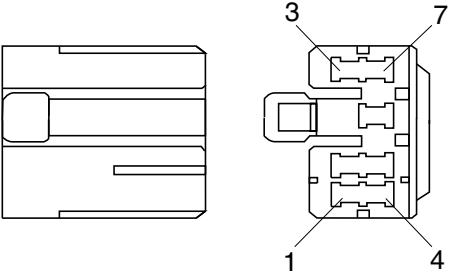
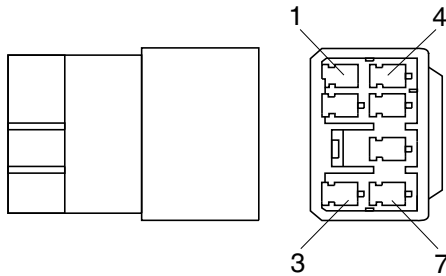
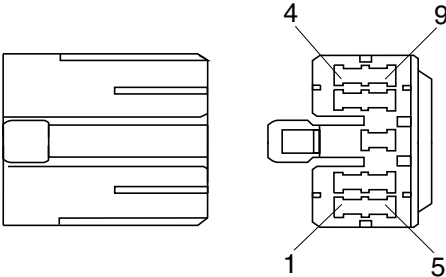
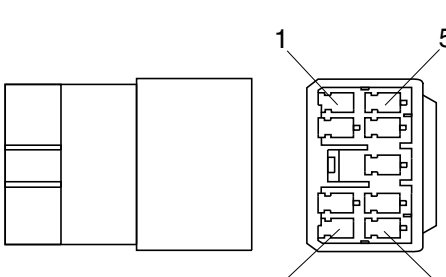
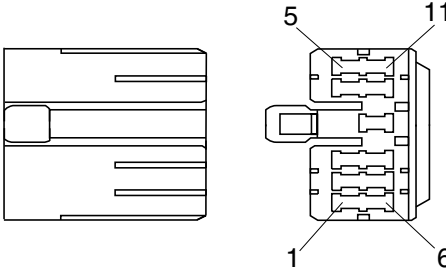
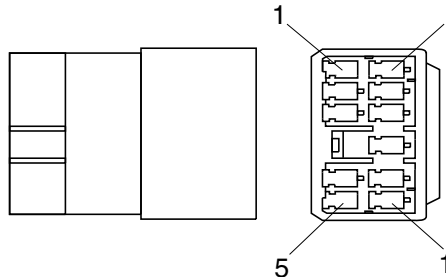
| Connector number | Type     | No. of pin | Destination                    | Connector part No. |         |
|------------------|----------|------------|--------------------------------|--------------------|---------|
|                  |          |            |                                | Female             | Male    |
| Sensor, sender   |          |            |                                |                    |         |
| CD-1             | AMP      | 2          | Hyduaulic oil temp sendor      | 85202-1            | -       |
| CD-2             | YAZAKI   | 2          | Fuel sendor                    | 7123-7424          | -       |
| CD-3             | DEUTSCH  | 3          | Brake fail pressure switch     | DT06-3S            | -       |
| CD-4             | DEUTSCH  | 3          | Stop lamp pressure switch      | DT06-3S            | -       |
| CD-5             | PACKARD  | 3          | Clutch cut off pressure switch | -                  | 1215793 |
| CD-10            | AMP      | 2          | Air cleaner switch             | 85202-1            | -       |
| CD-17            | AMP      | 2          | Engine pick-up sensor          | 85202-1            | -       |
| CD-26            | DEUTSCH  | 3          | Parking pressure switch        | DT06-3S            | -       |
| CD-27            | AMP      | 2          | Turbin pick up sensor          | 85202-1            | -       |
| CD-31            | DEUTSCH  | 3          | Brake priority pressure switch | DT06-3S            | -       |
| CD-39            | DEUTSCH  | 3          | Main pump pressure switch      | DT06-3S            | -       |
| CD-40            | DEUTSCH  | 3          | Steering pump pressure switch  | DT06-3S            | -       |
| CD-43            | AMP      | 2          | Lock up proportional valve     | 282027             | -       |
| CD-45            | DEUTSCH  | 2          | WIF sensor                     | DT06-2S            | -       |
| CD-46            | AMP      | 3          | Output speed sensor            | 282087             | -       |
| CD-47            | AMP      | 2          | Gear chain sensor              | 85202-1            | -       |
| CD-48            | AMP      | 2          | Oil filter restriction sensor  | 282080             | -       |
| CD-49            | AMP      | 2          | Converter temp sensor          | 85202-1            | -       |
| CD-73            | AMP      | 2          | Speed sendor                   | 174352-2           | -       |
| CD-79            | DEUTSCH  | 3          | Diff lock feed back sensor     | DT06-3S            | -       |
| CD-80            | DEUTSCH  | 3          | Boom up positioner sensor      | DT06-3S            | -       |
| CD-81            | DEUTSCH  | 3          | Boom down positioner sensor    | DT06-3S            | -       |
| CD-96            | PACKARD  | 3          | Coolant level sensor           | 12110293           | -       |
| CD-101           | SUMITOMO | 4          | TBAP sensor                    | 6098-0144          | -       |

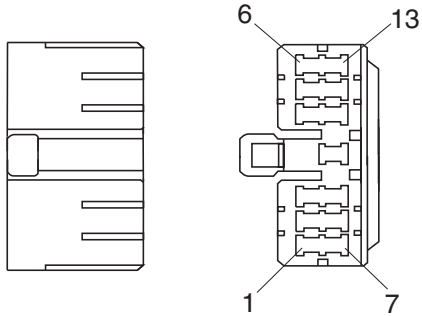
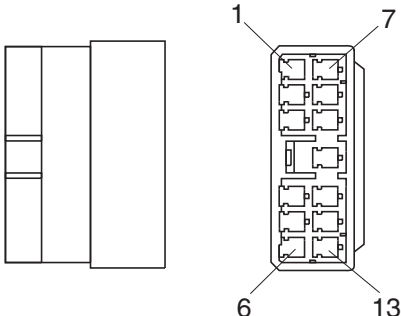
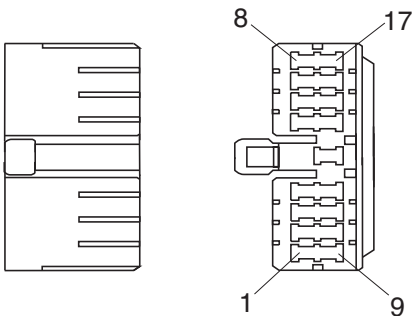
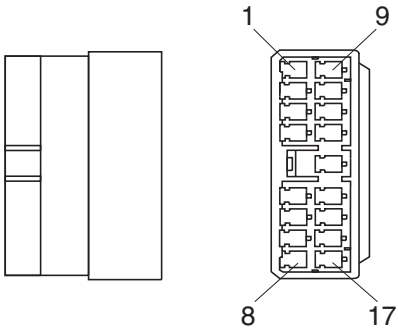
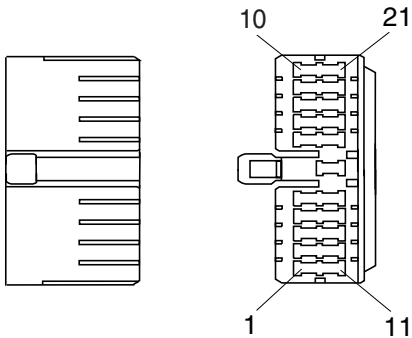
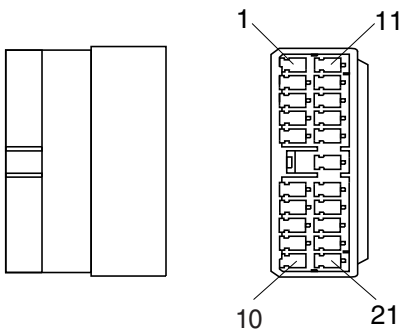
2. CONNECTION TABLE FOR CONNECTORS

1) 58-L TYPE CONNECTOR

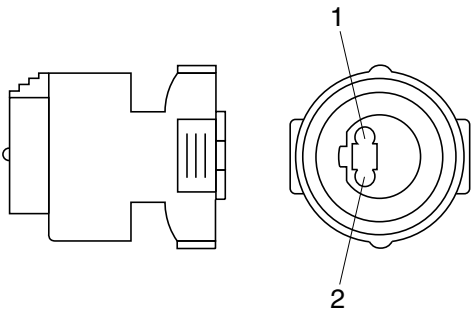
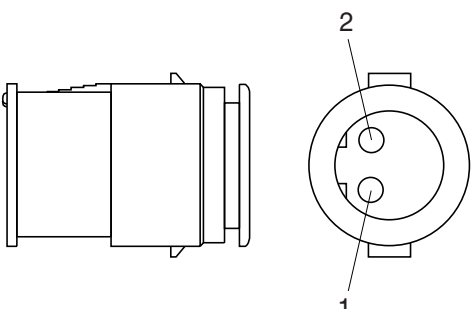
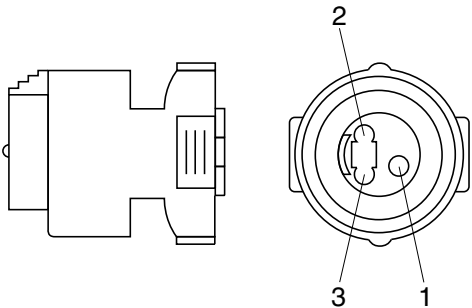
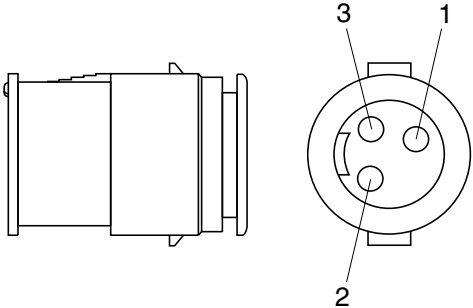
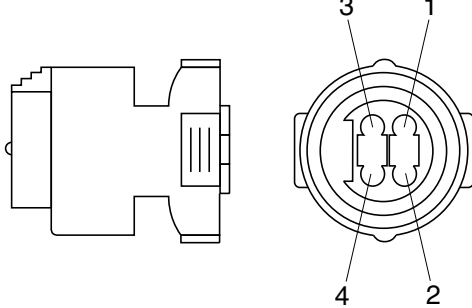
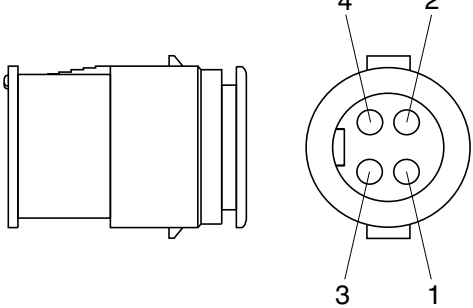
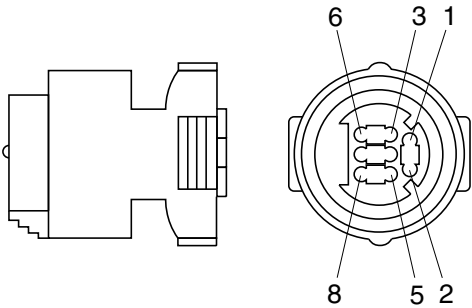
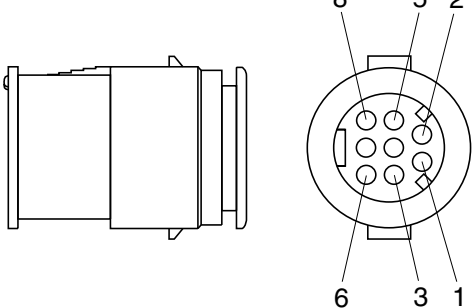
| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male)                                                                              |
|------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1          | <br>S813-030100  | <br>S813-130100  |
| 2          | <br>S813-030200 | <br>S813-130200 |

## 2) PA TYPE CONNECTOR

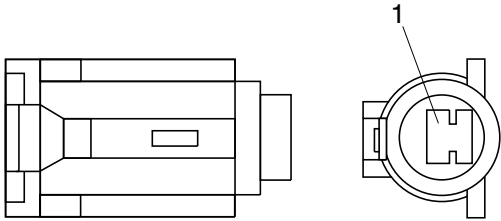
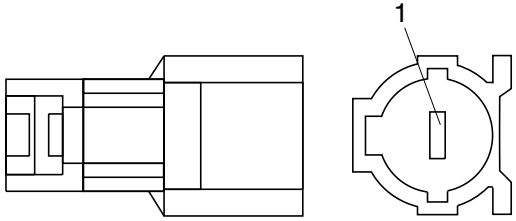
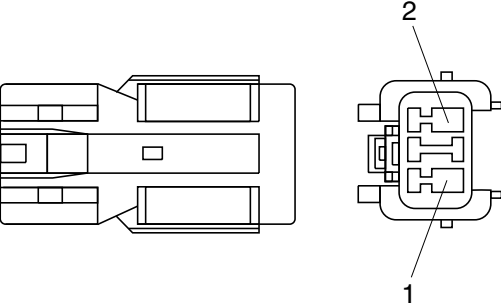
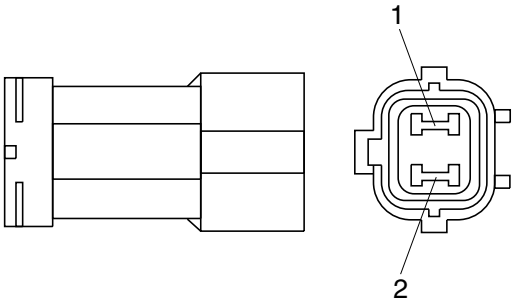
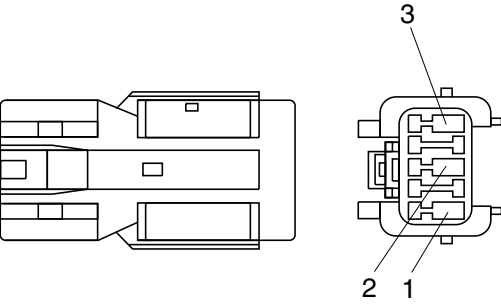
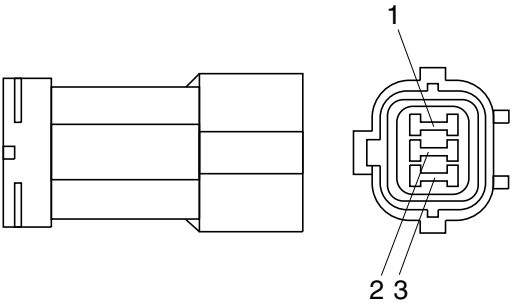
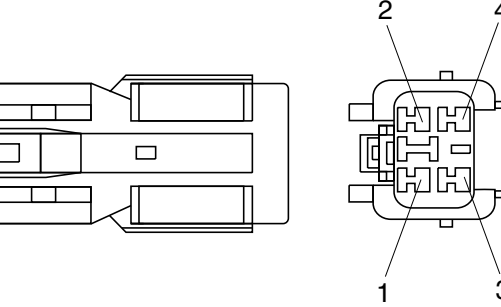
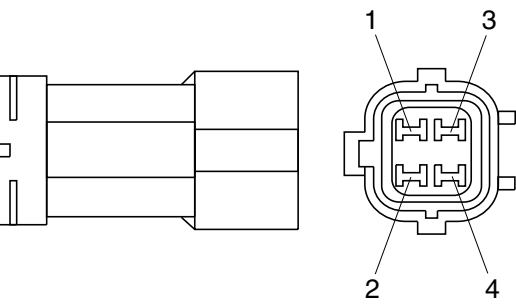
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 5          |  <p>S811-005002</p>   |  <p>S811-105002</p>   |
| 7          |  <p>S811-007002</p>  |  <p>S811-107002</p>  |
| 9          |  <p>S811-009002</p> |  <p>S811-109002</p> |
| 11         |  <p>S811-011002</p> |  <p>S811-111002</p> |

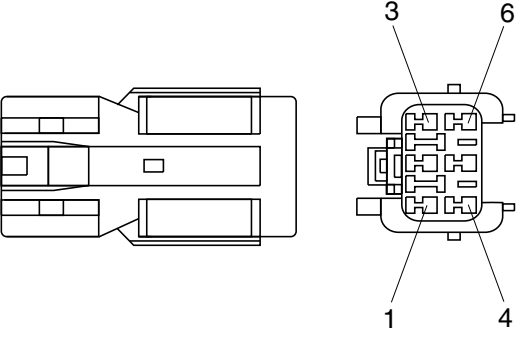
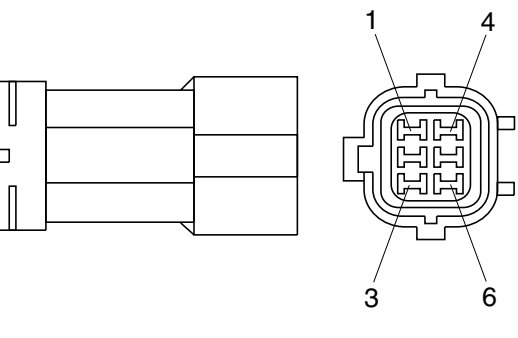
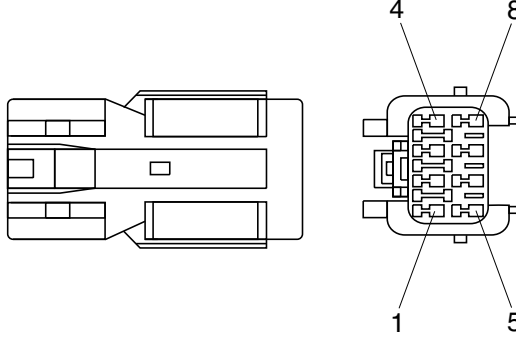
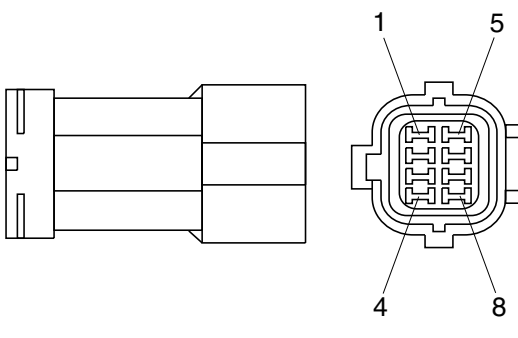
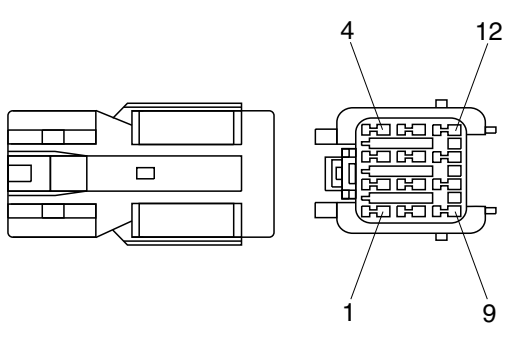
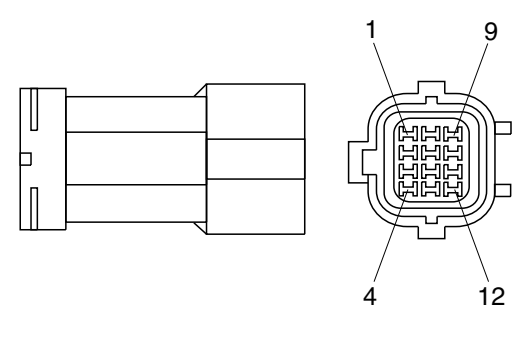
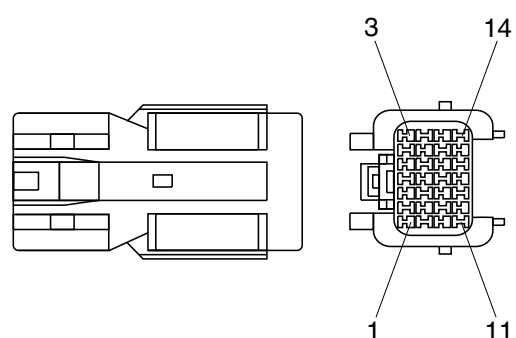
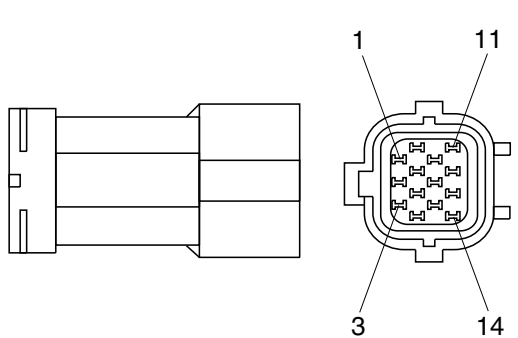
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 13         |  <p>S811-013002</p>   |  <p>S811-113002</p>   |
| 17         |  <p>S811-017002</p>  |  <p>S811-117002</p>  |
| 21         |  <p>S811-021002</p> |  <p>S811-121002</p> |

3) J TYPE CONNECTOR

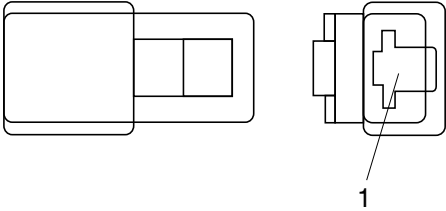
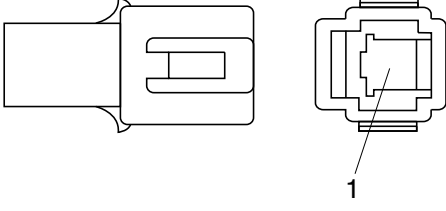
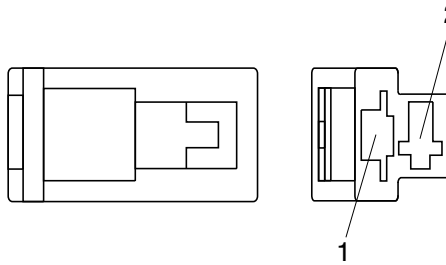
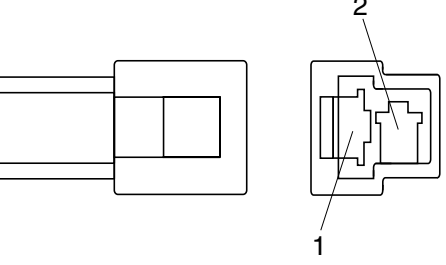
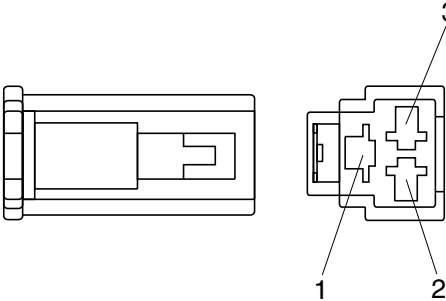
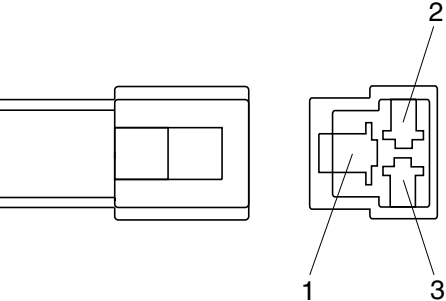
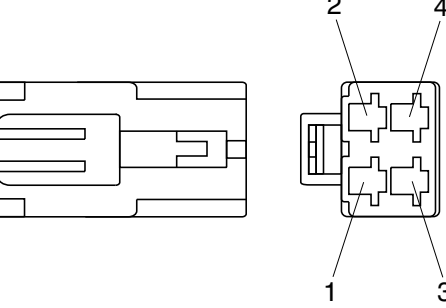
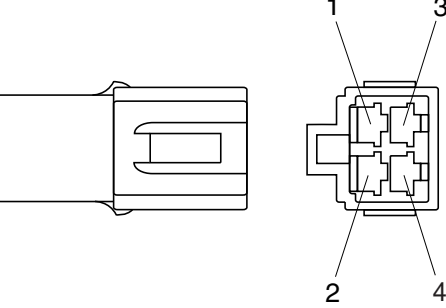
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 2          |  <p>S816-002001</p>   |  <p>S816-102001</p>   |
| 3          |  <p>S816-003001</p>  |  <p>S816-103001</p>  |
| 4          |  <p>S816-004001</p> |  <p>S816-104001</p> |
| 8          |  <p>S816-008001</p> |  <p>S816-108001</p> |

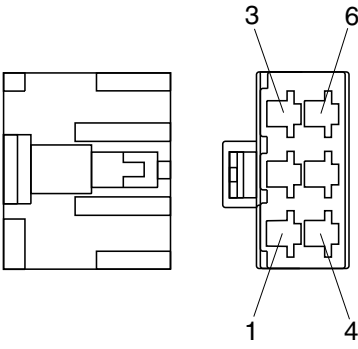
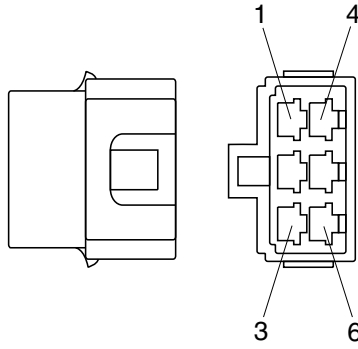
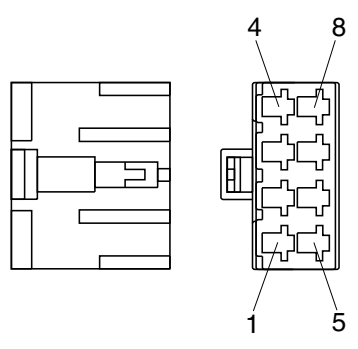
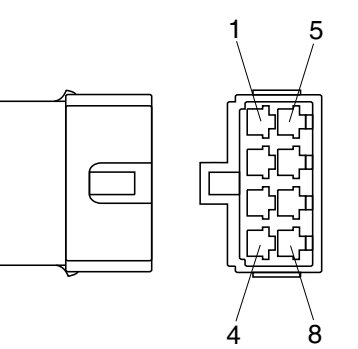
4) SWP TYPE CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                      | Plug connector (male)                                                                               |
|------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1          | <br>S814-001000   | <br>S814-101000   |
| 2          | <br>S814-002000  | <br>S814-102000  |
| 3          | <br>S814-003000 | <br>S814-103000 |
| 4          | <br>S814-004000 | <br>S814-104000 |

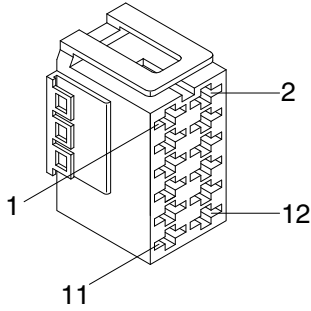
| No. of pin | Receptacle connector (female)                                                                                                        | Plug connector (male)                                                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 6          |  <p data-bbox="686 627 837 660">S814-006000</p>     |  <p data-bbox="1260 627 1412 660">S814-106000</p>     |
| 8          |  <p data-bbox="686 1030 837 1064">S814-008000</p>  |  <p data-bbox="1260 1030 1412 1064">S814-108000</p>  |
| 12         |  <p data-bbox="686 1433 837 1467">S814-012000</p> |  <p data-bbox="1260 1433 1412 1467">S814-112000</p> |
| 14         |  <p data-bbox="686 1836 837 1870">S814-014000</p> |  <p data-bbox="1260 1836 1412 1870">S814-114000</p> |

## 5) CN TYPE CONNECTOR

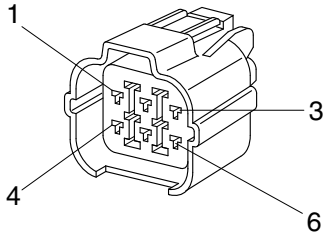
| No. of pin | Receptacle connector (female)                                                                                                        | Plug connector (male)                                                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1          |  <p data-bbox="687 678 839 707">S810-001202</p>     |  <p data-bbox="1262 678 1414 707">S810-101202</p>     |
| 2          |  <p data-bbox="687 1084 839 1113">S810-002202</p>  |  <p data-bbox="1262 1084 1414 1113">S810-102202</p>  |
| 3          |  <p data-bbox="687 1496 839 1525">S810-003202</p> |  <p data-bbox="1262 1496 1414 1525">S810-103202</p> |
| 4          |  <p data-bbox="687 1899 839 1928">S810-004202</p> |  <p data-bbox="1262 1899 1414 1928">S810-104202</p> |

| No. of pin | Receptacle connector (female)                                                                                                       | Plug connector (male)                                                                                                                  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 6          |  <p data-bbox="686 638 837 672">S810-006202</p>    |  <p data-bbox="1244 638 1396 672">S810-106202</p>    |
| 8          |  <p data-bbox="686 1041 837 1075">S810-008202</p> |  <p data-bbox="1244 1041 1396 1075">S810-108202</p> |

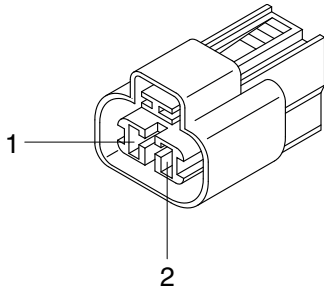
## 6) ITT SWF CONNECTOR

| No. of pin | Receptacle connector (female)                                                                      | Plug connector (male) |
|------------|----------------------------------------------------------------------------------------------------|-----------------------|
| 10         |  <p>SWF589790</p> |                       |

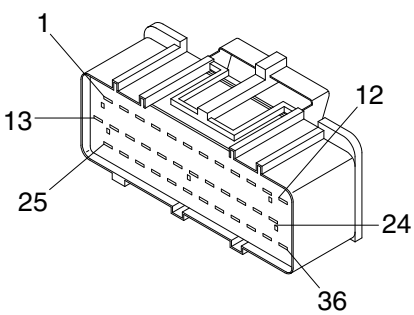
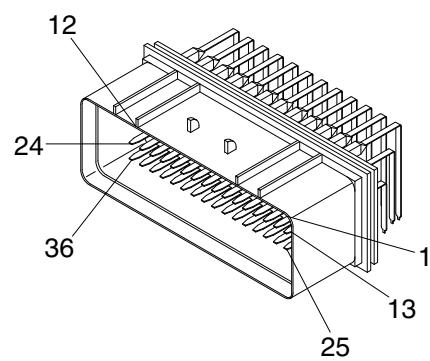
## 7) HW090 SEALED CONNECTOR

| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 6          |  <p>6189-0133</p> |                       |

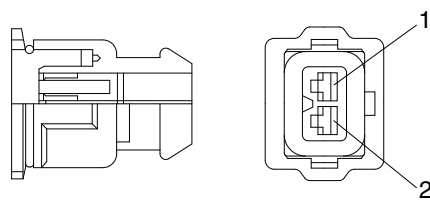
## 8) MWP02F-B CONNECTOR

| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male) |
|------------|--------------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>PH805-02028</p> |                       |

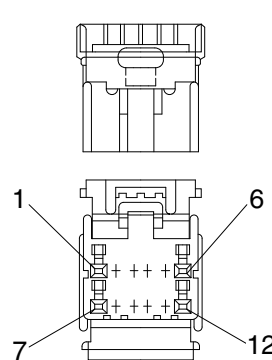
## 9) AMP ECONOSEAL CONNECTOR

| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male)                                                                              |
|------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 36         |  <p>344111-1</p> |  <p>344108-1</p> |

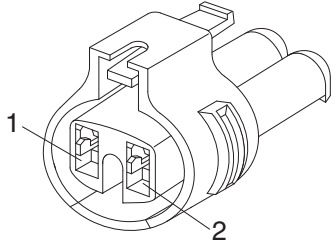
## 10) AMP TIMER CONNECTOR

| No. of pin | Receptacle connector (female)                                                                      | Plug connector (male) |
|------------|----------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>85202-1</p> |                       |

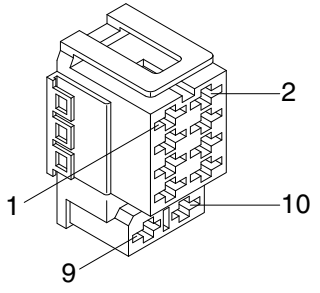
## 11) AMP 040 MULTILOCK CONNECTOR

| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 12         |  <p>174045-2</p> |                       |

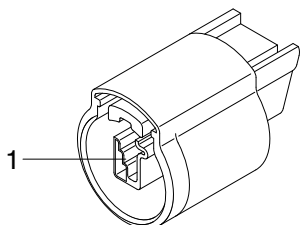
## 12) KET 090 WP CONNECTORS

| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male) |
|------------|---------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>MG640795</p> |                       |

## 13) ITT SWF CONNECTOR

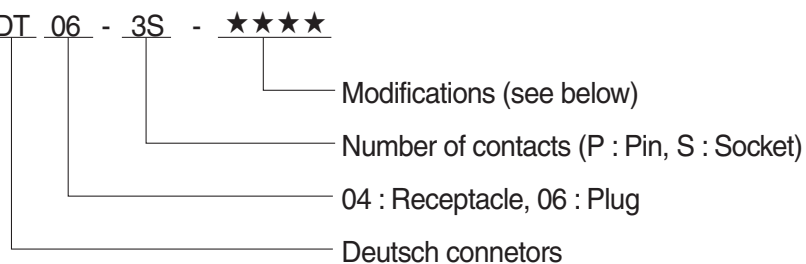
| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 10         |  <p>SWF593757</p> |                       |

## 14) MWP NMWP CONNECTOR

| No. of pin | Receptacle connector (female)                                                                        | Plug connector (male) |
|------------|------------------------------------------------------------------------------------------------------|-----------------------|
| 1          |  <p>NMWP01F-B</p> |                       |

## 15) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★ ★★



### ※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

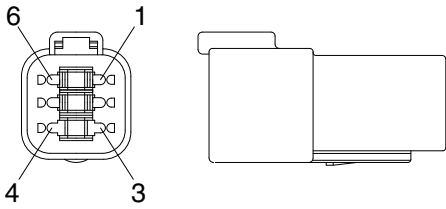
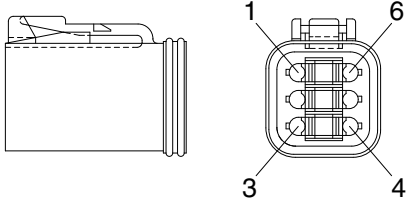
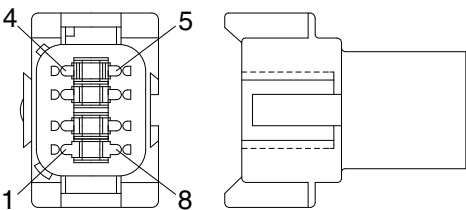
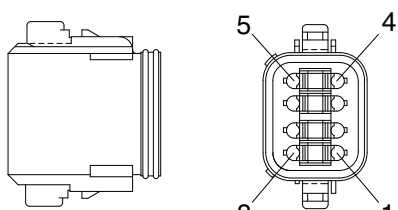
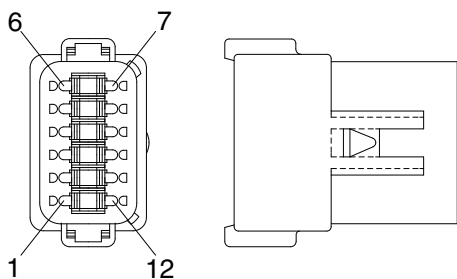
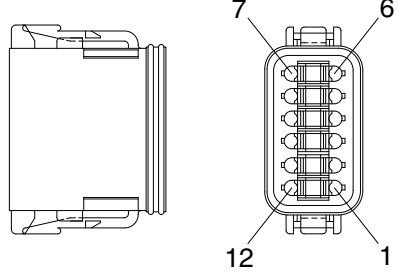
E005 : Combination - E004 & E003

EP04 : End cap

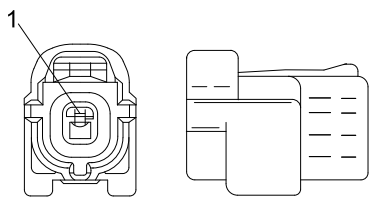
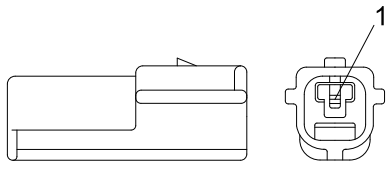
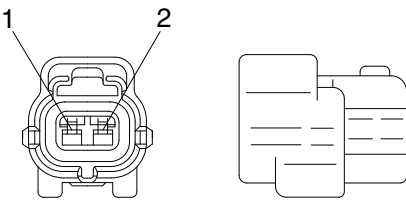
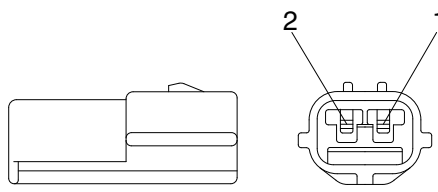
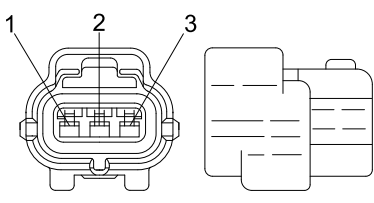
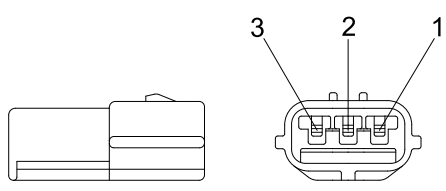
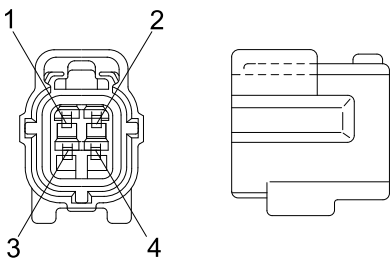
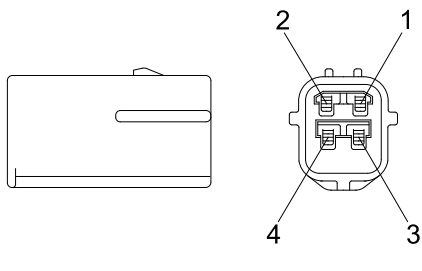
EP06 : Combination P012 & EP04

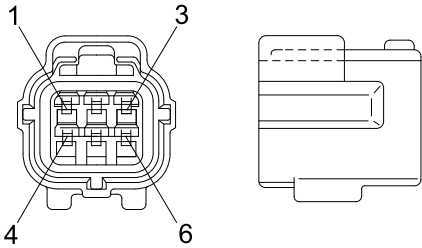
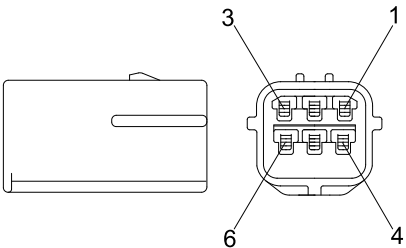
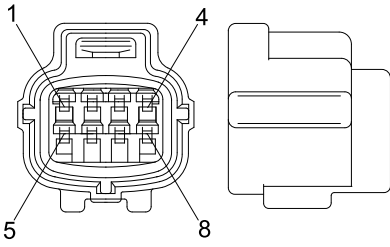
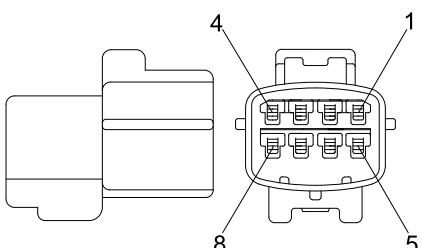
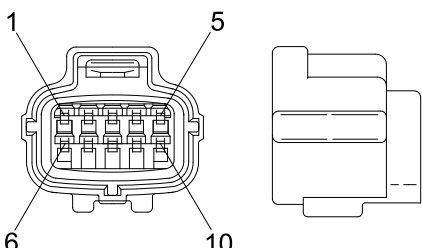
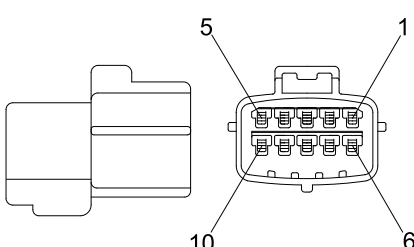
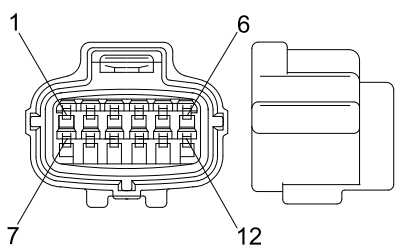
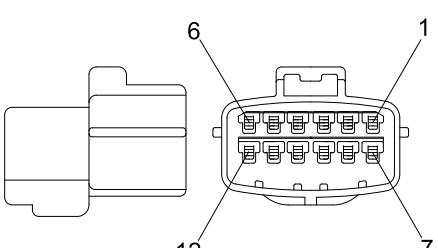
P012 : Front seal enhancement - connectors color to black for 2, 3, 4 & 6pin

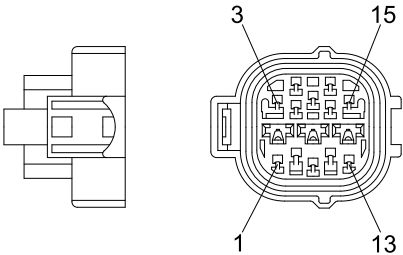
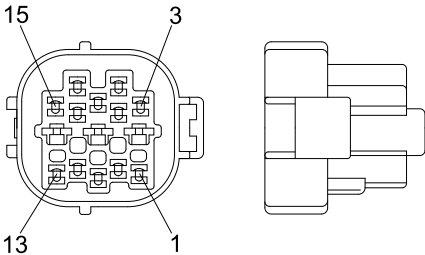
| No. of pin | Receptacle connector (female) | Plug connector (male) |
|------------|-------------------------------|-----------------------|
| 2          |                               |                       |
| 3          |                               |                       |
| 4          |                               |                       |

| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male)                                                                                |
|------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 6          |  <p>DT06-6S</p>    |  <p>DT04-6P</p>    |
| 8          |  <p>DT06-8S</p>    |  <p>DT04-8P</p>    |
| 12         |  <p>DT06-12S</p> |  <p>DT04-12P</p> |

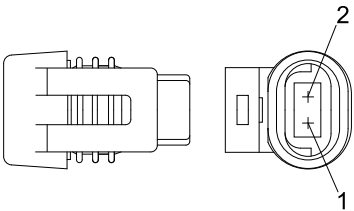
## 16) ECONOSEAL J TYPE CONNECTORS

| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 1          |  <p>S816-001002</p>   |  <p>S816-101002</p>   |
| 2          |  <p>S816-002002</p>  |  <p>S816-102002</p>  |
| 3          |  <p>S816-003002</p> |  <p>S816-103002</p> |
| 4          |  <p>S816-004002</p> |  <p>S816-104002</p> |

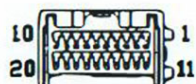
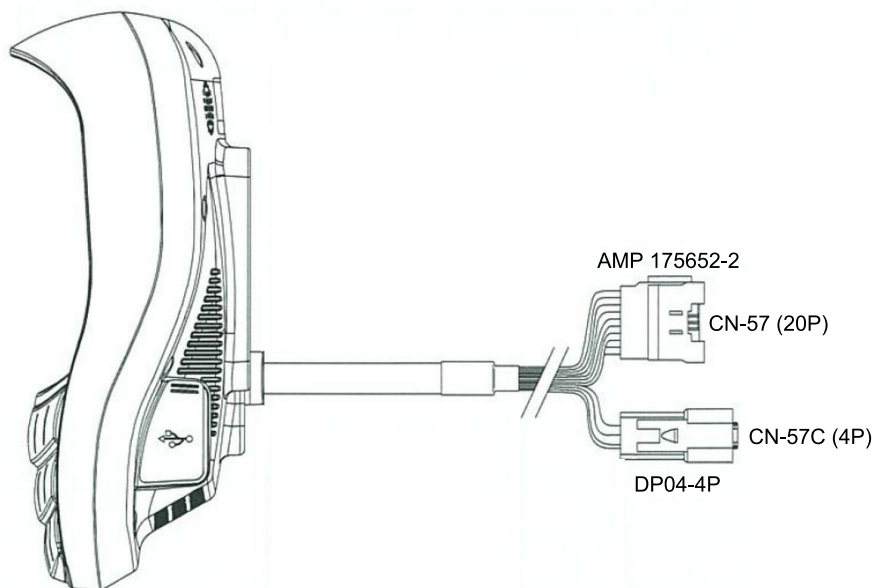
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 6          |  <p>S816-006002</p>   |  <p>S816-106002</p>   |
| 8          |  <p>S816-008002</p>   |  <p>S816-108002</p>   |
| 10         |  <p>S816-010002</p> |  <p>S816-110002</p> |
| 12         |  <p>S816-012002</p> |  <p>S816-112002</p> |

| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male)                                                                               |
|------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 15         |  <p>368301-1</p> |  <p>2-85262-1</p> |

**17) METRI-PACK TYPE CONNECTOR**

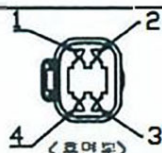
| No. of pin | Receptacle connector (female)                                                                      | Plug connector (male) |
|------------|----------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>12040753</p> |                       |

# 18) MONITOR CONNECTOR (21WD-11400)



PART NO. : AMP 175652-2

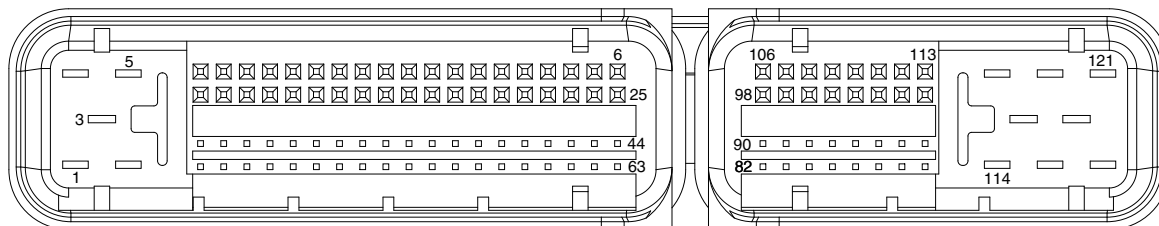
| NO | PIN NAME                   | NO | PIN NAME         |
|----|----------------------------|----|------------------|
| 1  | IG 24V                     | 11 | GND              |
| 2  | BATTERY 24V                | 12 | GND              |
| 3  | BATTERY 24V                | 13 | N.C              |
| 4  | CAMERA CH1 (SINGLE)        | 14 | CAN2 L           |
| 5  | CAMERA CH3 DIFF-           | 15 | CAN2 H           |
| 6  | CAMERA VCC (8V OUTPUT)     | 16 | CAN2 SHIELD      |
| 7  | N.C                        | 17 | CAMERA SHIELD    |
| 8  | N.C                        | 18 | N.C              |
| 9  | CAMERA CH2 DIFF-(OPTIONAL) | 19 | N.C              |
| 10 | CAMERA CH2 DIFF+(OPTIONAL) | 20 | CAMERA CH3 DIFF+ |



PART NO. : DT04-4P

| NO | PIN NAME            | NO | PIN NAME      |
|----|---------------------|----|---------------|
| 1  | CAM VCC (8V OUTPUT) | 3  | CAM CH3 DIFF+ |
| 2  | CAM GND             | 4  | CAM CH3 DIFF- |

## 19)MCU



CN-58A

|       |                             |       |                              |
|-------|-----------------------------|-------|------------------------------|
| ○ 13  | REVERSE DRIVE RELAY         | ○ 61  | CAN2 LOW                     |
| ○ 98  | AUTO GREASE RELAY           | ○ 60  | CAN2 HI                      |
| ○ 106 | RIDE CONTROL RELAY          | ○ B21 | SPARE_ECO FEELING SIGNAL     |
| ○ 33  | INPUT FRONT WASHER SIGNAL   | ○ 12  | ILLUMINATION LIGHT RELAY     |
| ○ 34  | INPUT FRONT INT SIGNAL      | ○ 11  | DRIVING LIGHT RELAY          |
| ○ 90  | REAR WIPER WASHER REALY     | ○ 88  | WORK LAMP FRONT              |
| ○ 97  | ATCH LOCK RELAY             | ○ 44  | WORK LAMP REAR               |
| ○ 87  | ATCH UNLOCK RELAY           | ○ 82  | FUEL WARMER RELAY            |
| ○ 113 | BEACON RELAY                | ○ 32  | AIRCON RUN SIGNAL            |
| ○ 89  | MIRROR HEAT REALY           | ○ 83  | AC COMP. OFF SIG_REVERSE FAN |
| ○ 105 | FRONT WIPER 1ST SPEED REALY | ○     |                              |
| ○ 107 | REAR WIPER SPEED REALY      | ○ 78  | BOOM POSITION SENSOR         |
| ○ 16  | BATTERY RELAY               | ○ 66  | BUCKET POSITION SENSOR       |
| ○ 2   | GND(MAIN)                   | ○ 24  | REF. POWER +5V               |
| ○ 116 | GND(MAIN)                   | ○ 1   | POWER IG(+24V)               |
| ○ 72  | ELEC. STEER MAIN PUMP PS    | ○ 3   | BATTERY POWER(+24V)          |
| ○ 75  | ELEC. STEER PUMP PS         | ○ 4   | BATTERY POWER(+24V)          |
| ○ B21 | SPARE                       | ○ 6   | DETENT CONTROL SOL_BUCKET    |
| ○ 31  | SPARE                       | ○ 45  | DETENT CONTROL SOL_BOOM UP   |
| ○ 35  | NEUTRAL SIGNAL(24V)         | ○ 51  | COUNT_WEIGHT_SET SWITCH      |
| ○ 7   | ANTI-RESTART RELAY          | ○ 29  | AUTO GREASE LAMP(GREEN)      |
| ○ 63  | ELEC. STEERING PUMP RELAY   | ○ 28  | AUTO GREASE LAMP(RED)        |
| ○ 57  | CAN(1)-H                    | ○ 26  | DIFF. LOCK AUTO              |
| ○ 58  | CAN(1)-L                    | ○ 27  | DIFF. LOCK MANUAL            |
| ○ 55  | CAN_SHIELD(GROUND)          | ○ 15  | HOOR METER_HIGH              |
| ○ 77  | BRAKE OIL LOW PS            | ○ A07 | SPARE_5V+                    |
| ○ 71  | PARKING OIL LOW PS          | ○ B40 | SPARE_PEDAL POSITION2        |
| ○ 76  | BRAKE PRIORITY_PR SIGNAL    | ○ A09 | SPARE_PEDAL POSITION2 RETURN |
| ○ 73  | BOOM ROD PR SNSENSOR        | ○ 48  | SEAT BELT WARNING            |
| ○ 68  | BOOM HEAD PR SNSENSOR       | ○ 22  | SPARE_5V+                    |
| ○ 74  | DIFFERTIAL LOCK PR SIGNAL   | ○ B39 | SPARE_PEDAL POSITION1        |
| ○ 5   | +24V PRESSURE SENSOR POWER  | ○ A08 | SPARE_PEDAL POSITION1        |
| ○ 50  | AXLE OIL TEMP (FRONT)       | ○ 42  | PROGRAM DUMP                 |
| ○ 49  | AXLE OIL TEMP(REAR)         | ○ 93  | RS-232(1) RX                 |
| ○ 52  | FUEL LEVEL SENSOR           | ○ 92  | RS-232(1) TX                 |
| ○ 53  | HYD TEMP SENDER             | ○ 94  | SPARE_RS-232 GND             |
| ○ 30  | SPARE(COOLANT LEVEL SENSOR) | ○ A22 | SPARE                        |
| ○ 43  | GROUND_SENSOR               | ○ A32 | SPARE                        |
| ○ 64  | ALT LEVEL                   | ○ 10  | SPARE                        |
| ○ 36  | AIR CLEANER PRESSURE SW     |       |                              |
| ○ 118 | COOLING FAN EPPR-           |       |                              |
| ○ 117 | COOLING FAN EPPR+           |       |                              |
| ○ 8   | REVERSE FAN CONTROL         |       |                              |
| ○ 102 | TACHO SENSOR(+)_REMOTE FAN  |       |                              |
| ○ 101 | TACHO SENSOR(-)_REMOTE FAN  |       |                              |

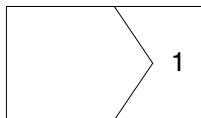
## GROUP 5 TROUBLESHOOTING

### 1. WHEN STARTING SWITCH IS TURNED ON, CLUSTER AND MONITOR LAMP DOES NOT LIGHT UP

- Before carrying out below procedure, check all the related connectors are properly inserted and the fuse No.12, 17 are not blown out and ON/OFF of bulb.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.

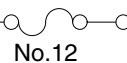
|                                                       |     | Cause                                                                                            | Remedy                          |
|-------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------|---------------------------------|
| Check voltage between CN-56 (1), CN-57(1) and chassis | YES | Defective cluster                                                                                | Replace                         |
|                                                       |     | Defective monitor                                                                                | Replace                         |
|                                                       | NO  | Disconnection in wiring harness or poor contact between CN-56 (1), CN-57 (1) and fuse No. 12, 17 | Repair or replace (after clean) |

#### MONITOR

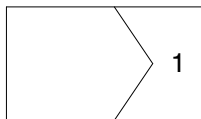


CN-57

FUSE[CN-36]

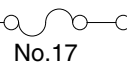


#### CLUSTER



CN-56

FUSE[CN-37]



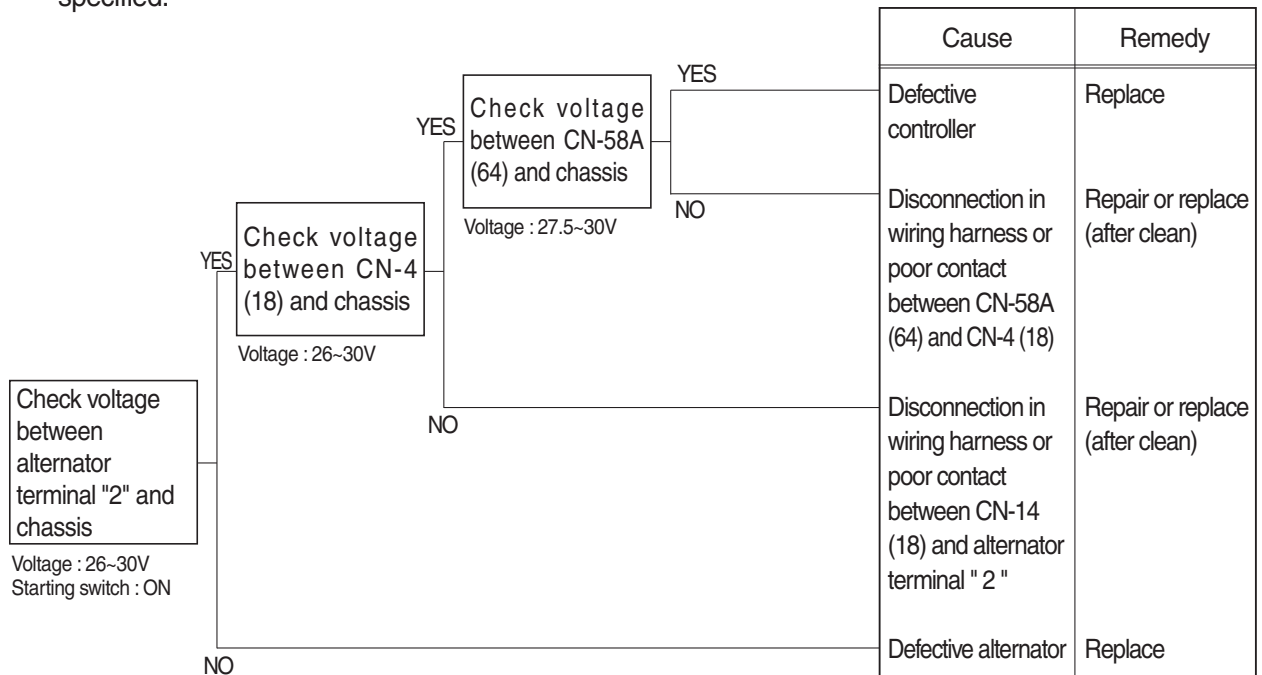
960A7EL24

Check voltage

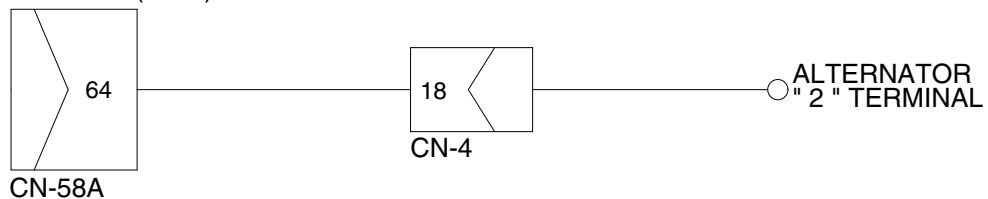
|     |           |
|-----|-----------|
| YES | 20 ~ 30 V |
| NO  | 0 V       |

## 2. WHEN BATTERY LAMP LIGHTS UP (engine is started)

- Before carrying out below procedure, check all the related connectors are properly inserted.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.



### CONTROLLER(MCU)



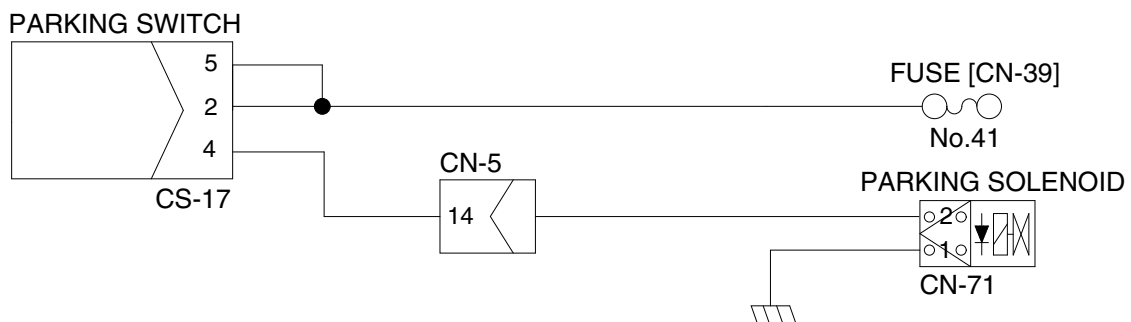
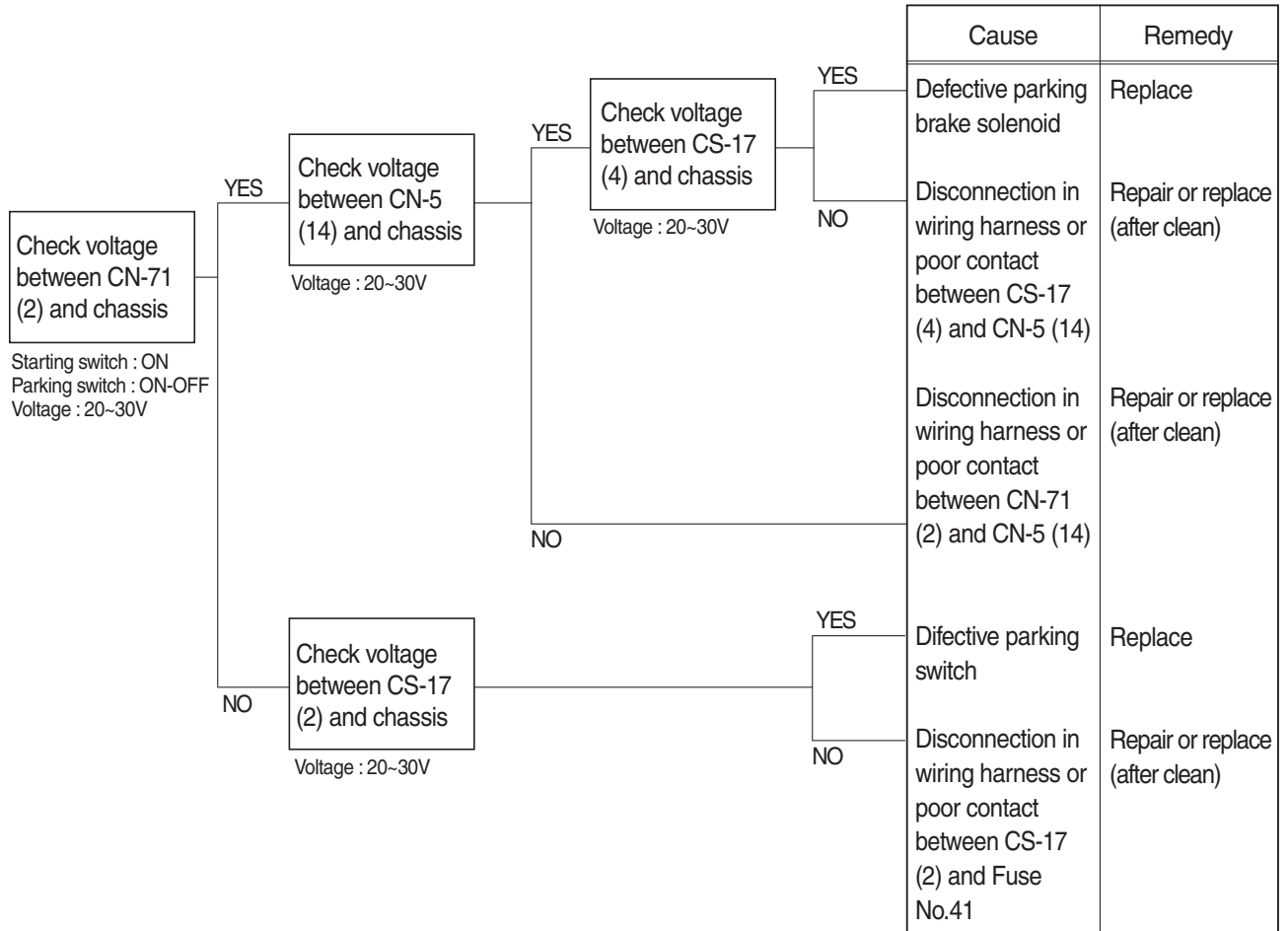
970SA7EL38

### Check valtage

|     |           |
|-----|-----------|
| YES | 20 ~ 30 V |
| NO  | 0 V       |

### 3. WHEN PARKING SOLENOID DOES NOT WORK

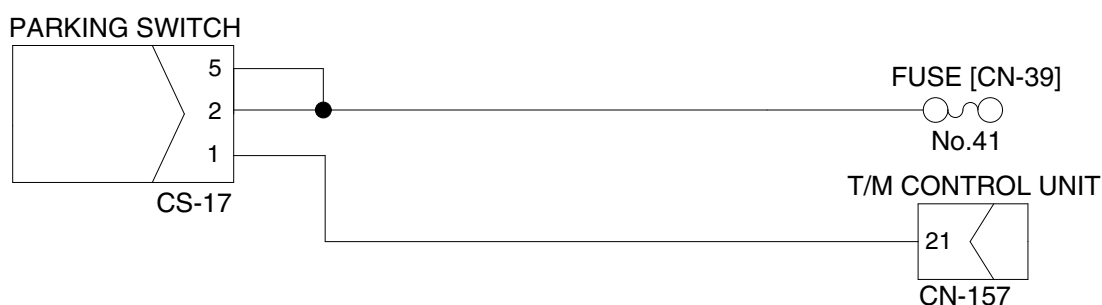
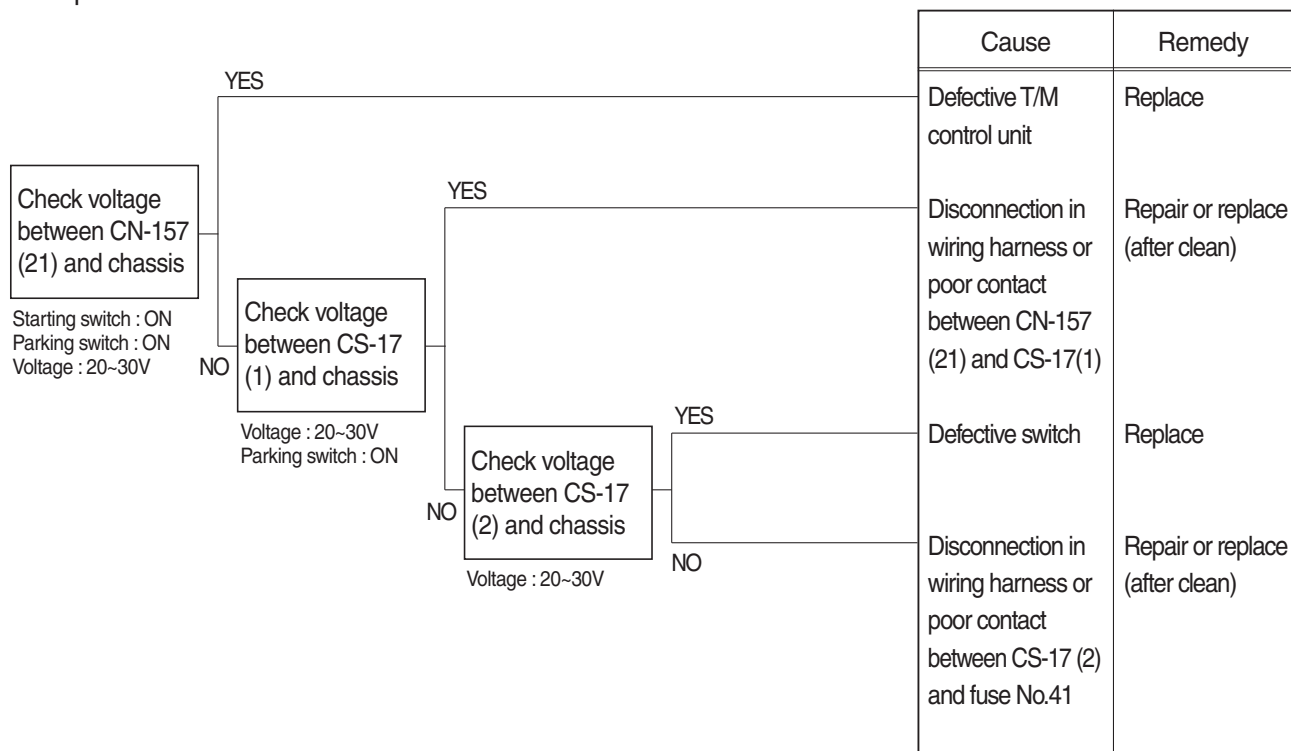
- Before carrying out below procedure, check all the related connectors are properly inserted and the fuse No.41 is not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.



960A7EL39

#### 4. TRANSMISSION IS NOT RETURNED TO NEUTRAL WHEN PARKING BRAKE IS APPLIED

- Before carrying out below procedure, check all the related connectors are properly inserted and the fuse No.15 (transmission control unit) and No.41 are not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.



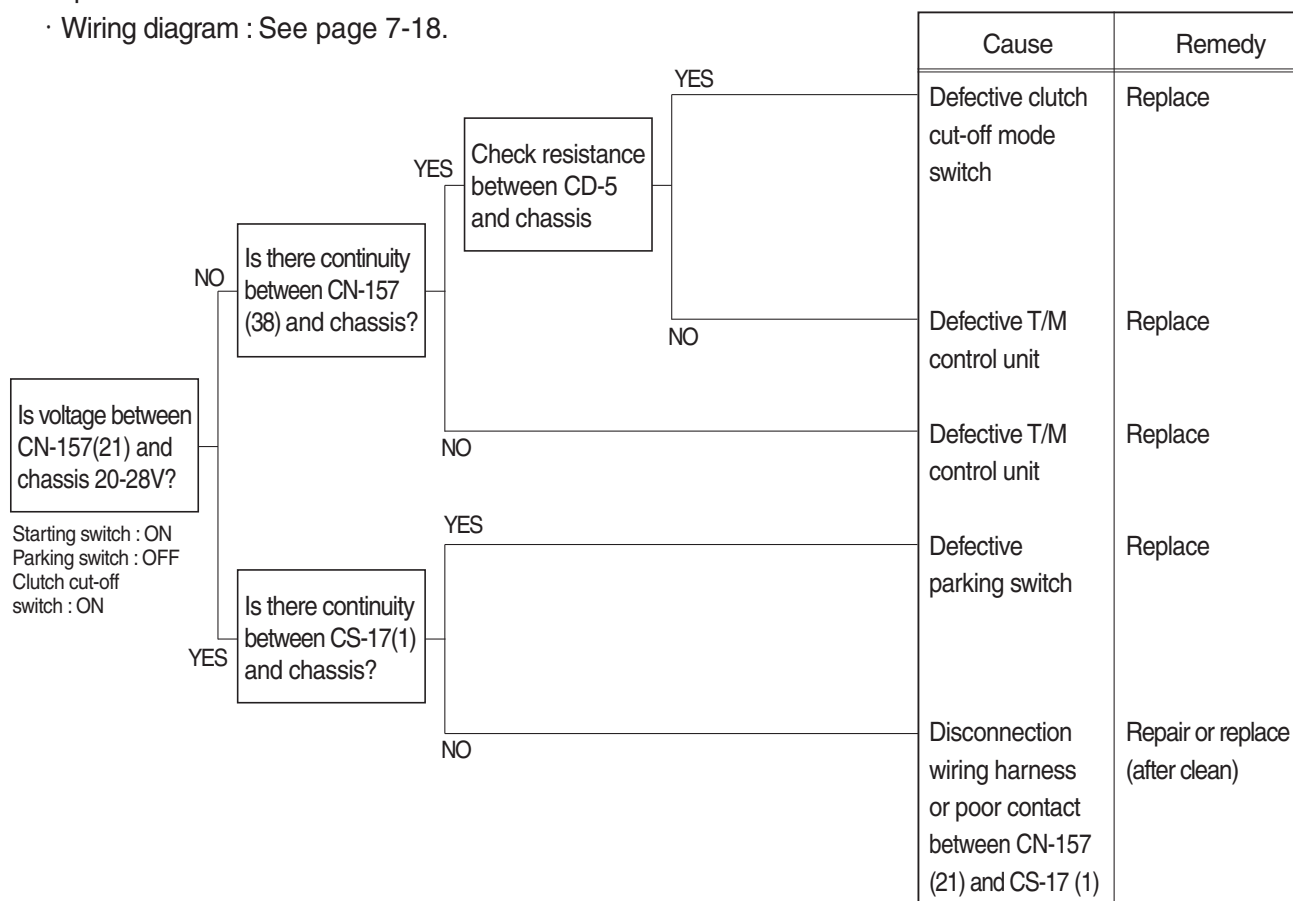
Check resistance

|     |         |
|-----|---------|
| YES | MAX 1Ω  |
| NO  | MIN 1MΩ |

760F7EL40

## 5. MACHINE DOES NOT TRAVEL

- Before carrying out below procedure, check all the related connectors are properly inserted and the fuse No.15 (transmission control unit) is not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.
- Wiring diagram : See page 7-18.

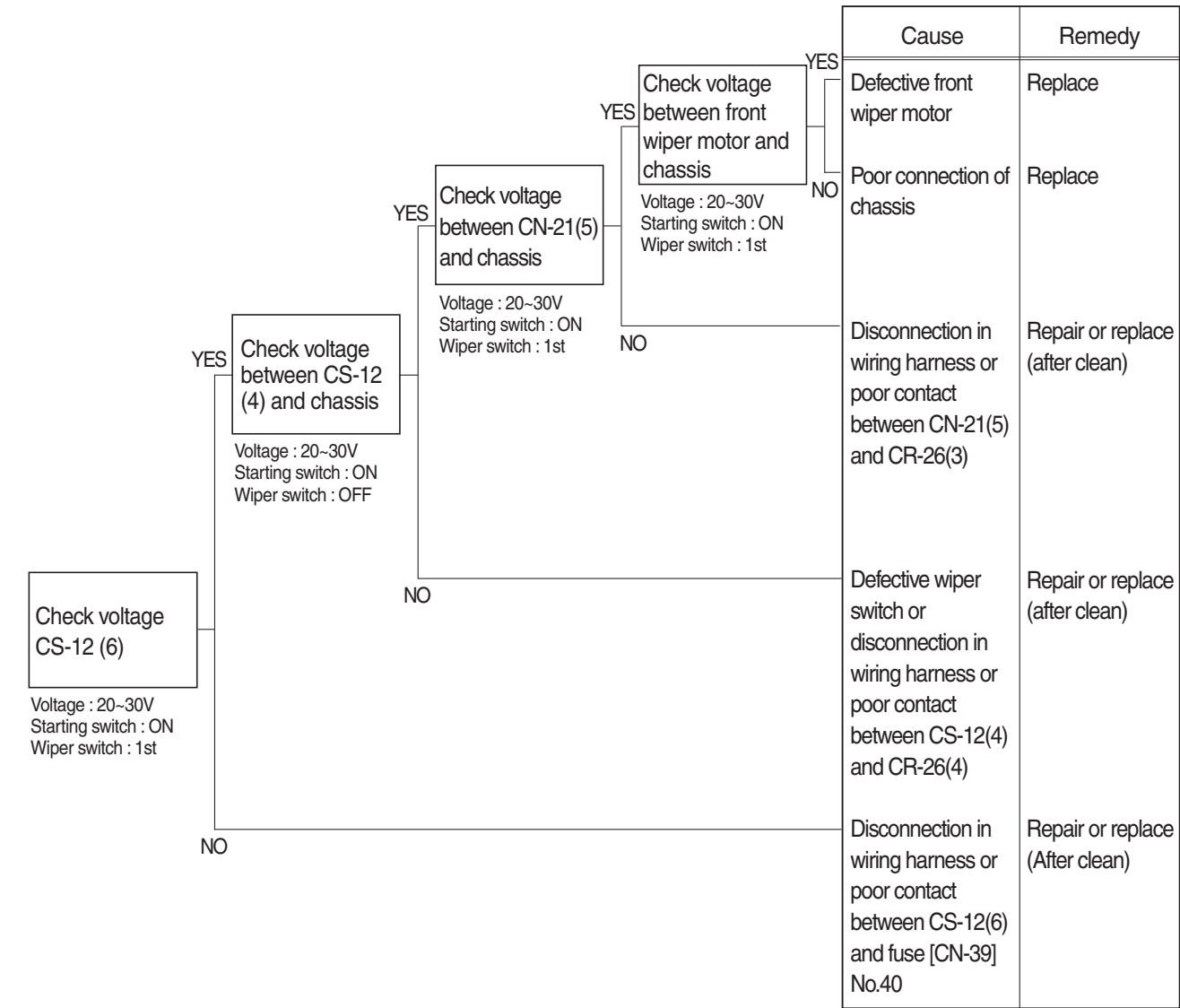


### Check resistance

|     |          |
|-----|----------|
| YES | MAX 1 Ω  |
| NO  | MIN 1M Ω |

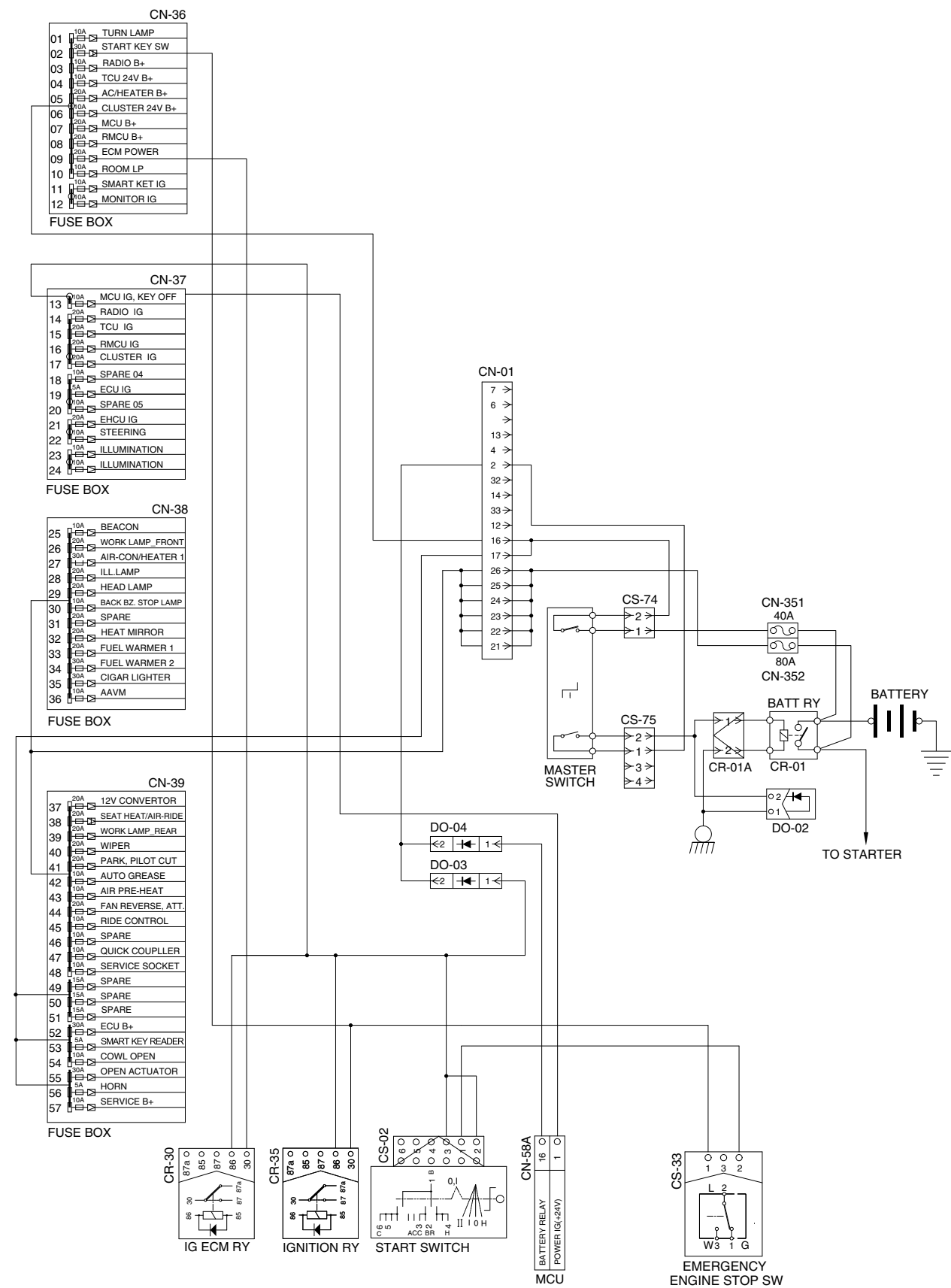
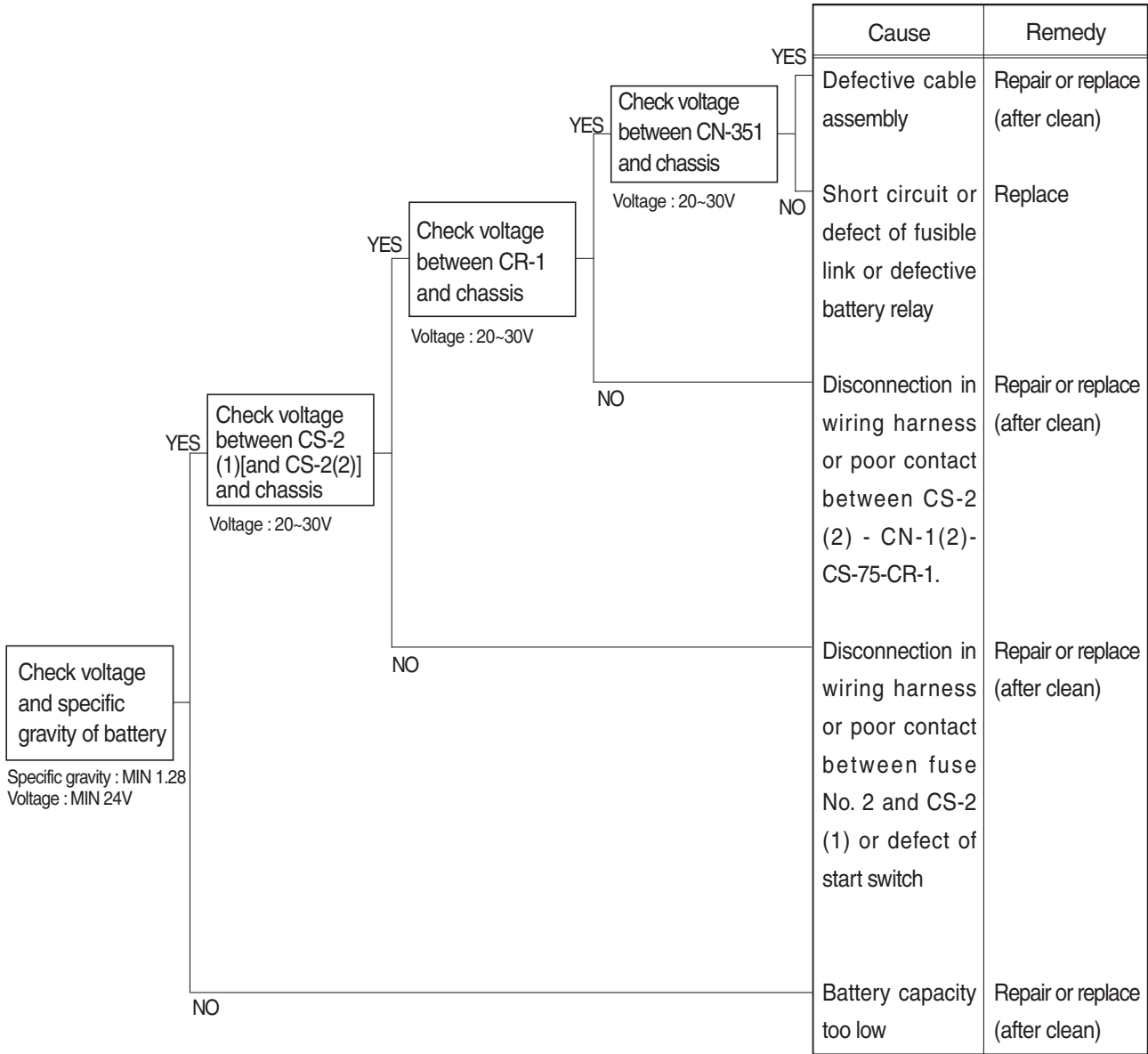
6. WHEN STARTING SWITCH IS TURNED ON, WIPER MOTOR DOES NOT OPERATE

- Before carrying out below procedure, check all the related connectors are properly inserted and the fuse No.40 is not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.



7. WHEN STARTING SWITCH "ON" DOES NOT OPERATE

- Before carrying out below procedure, check all the related connectors are properly inserted the fuse No.2 is not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.



8. WHEN STARTING SWITCH IS TURNED ON, WORK LAMP DOES NOT LIGHTS UP

- Before carrying out below procedure, check all the related connectors are properly inserted, and the fuse No.26, 39 is not blown out.
- After checking, connect the disconnected connectors again immediately unless otherwise specified.

