

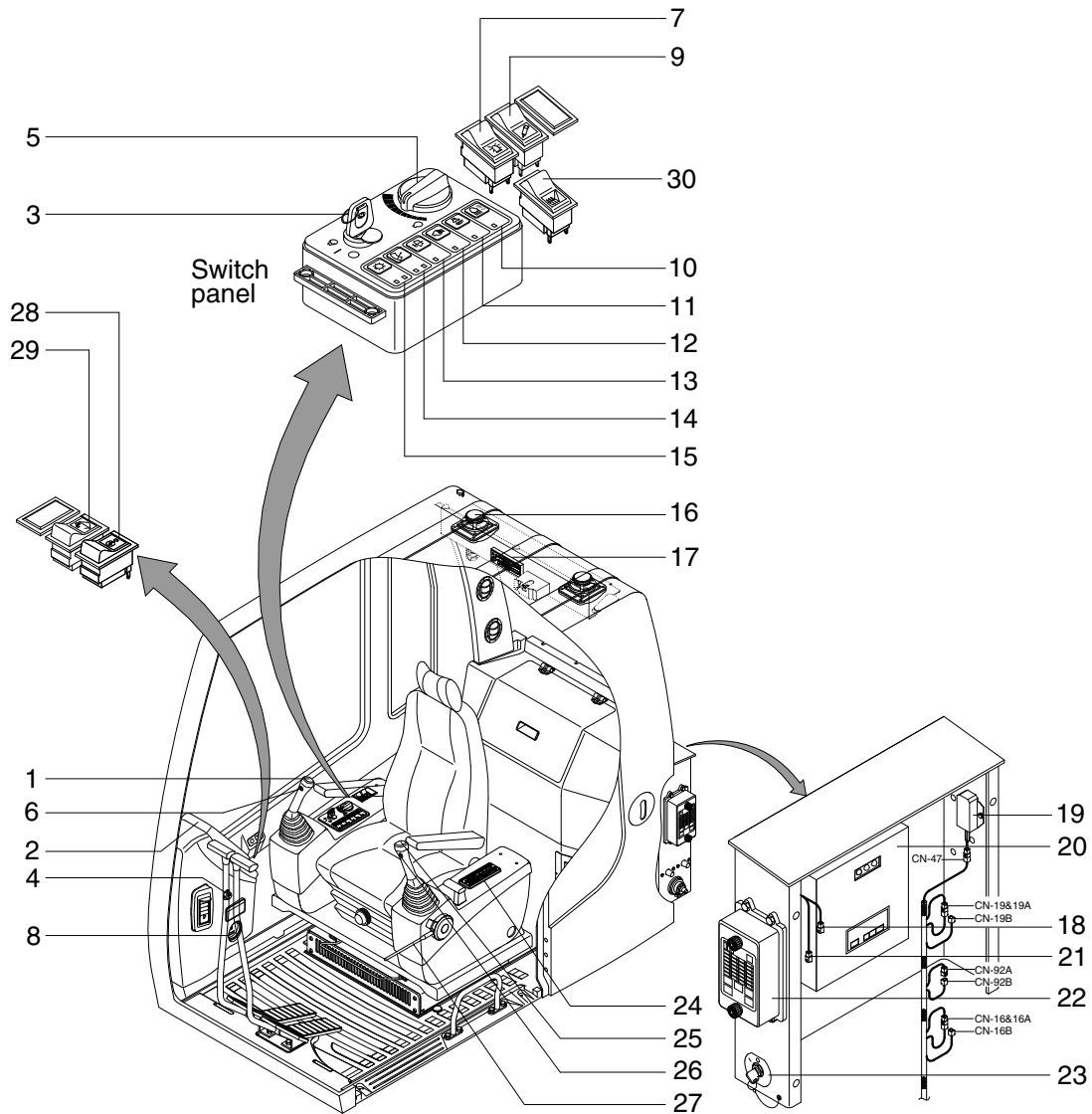
SECTION 4 ELECTRICAL SYSTEM

| | |
|--|------|
| Group 1 Component Location | 4-1 |
| Group 2 Electrical Circuit | 4-3 |
| Group 3 Electrical Component Specification | 4-18 |
| Group 4 Connectors | 4-28 |

SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

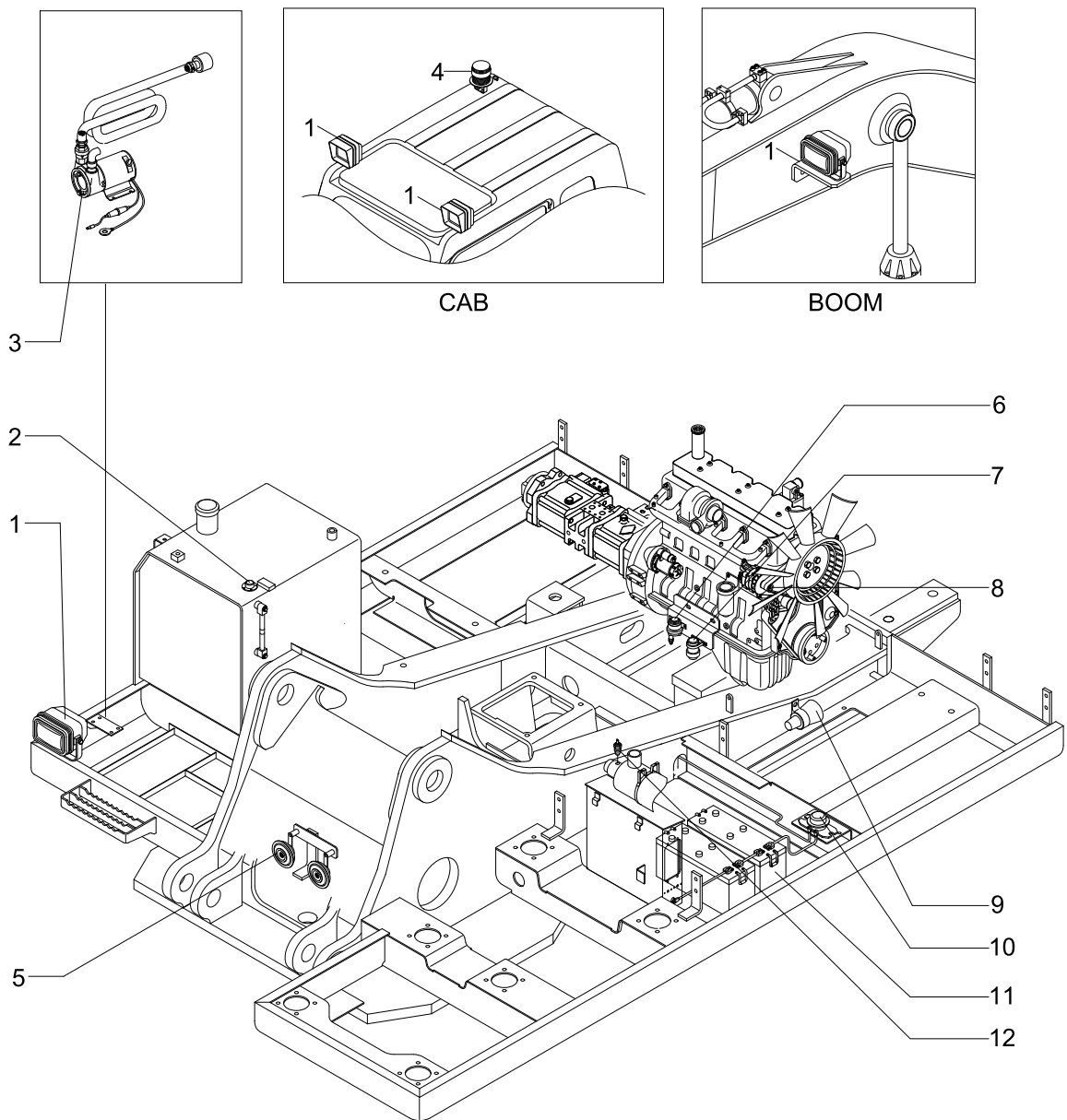
1. LOCATION 1



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- | | | | | | |
|----|--------------------------|----|--------------------------|----|-------------------------------|
| 1 | Horn switch | 11 | Travel alarm stop switch | 21 | J1939 serial connector |
| 2 | Cluster | 12 | Preheat switch | 22 | Fuse box |
| 3 | Starting switch | 13 | Washer switch | 23 | Master switch |
| 4 | Cigar lighter | 14 | Wiper switch | 24 | Air con & heater switch panel |
| 5 | Accel dial | 15 | Main light switch | 25 | One touch decel switch |
| 6 | Breaker switch | 16 | Speaker | 26 | Power max switch |
| 7 | Beacon switch | 17 | Cassette & radio | 27 | Safety lever |
| 8 | Service meter | 18 | RS232 serial connector | 28 | Overload switch |
| 9 | Breaker selection switch | 19 | Prolix resistor | 29 | Quick coupler switch |
| 10 | Cab light switch | 20 | CPU controller | 30 | Heated seat switch |

2. LOCATION 2

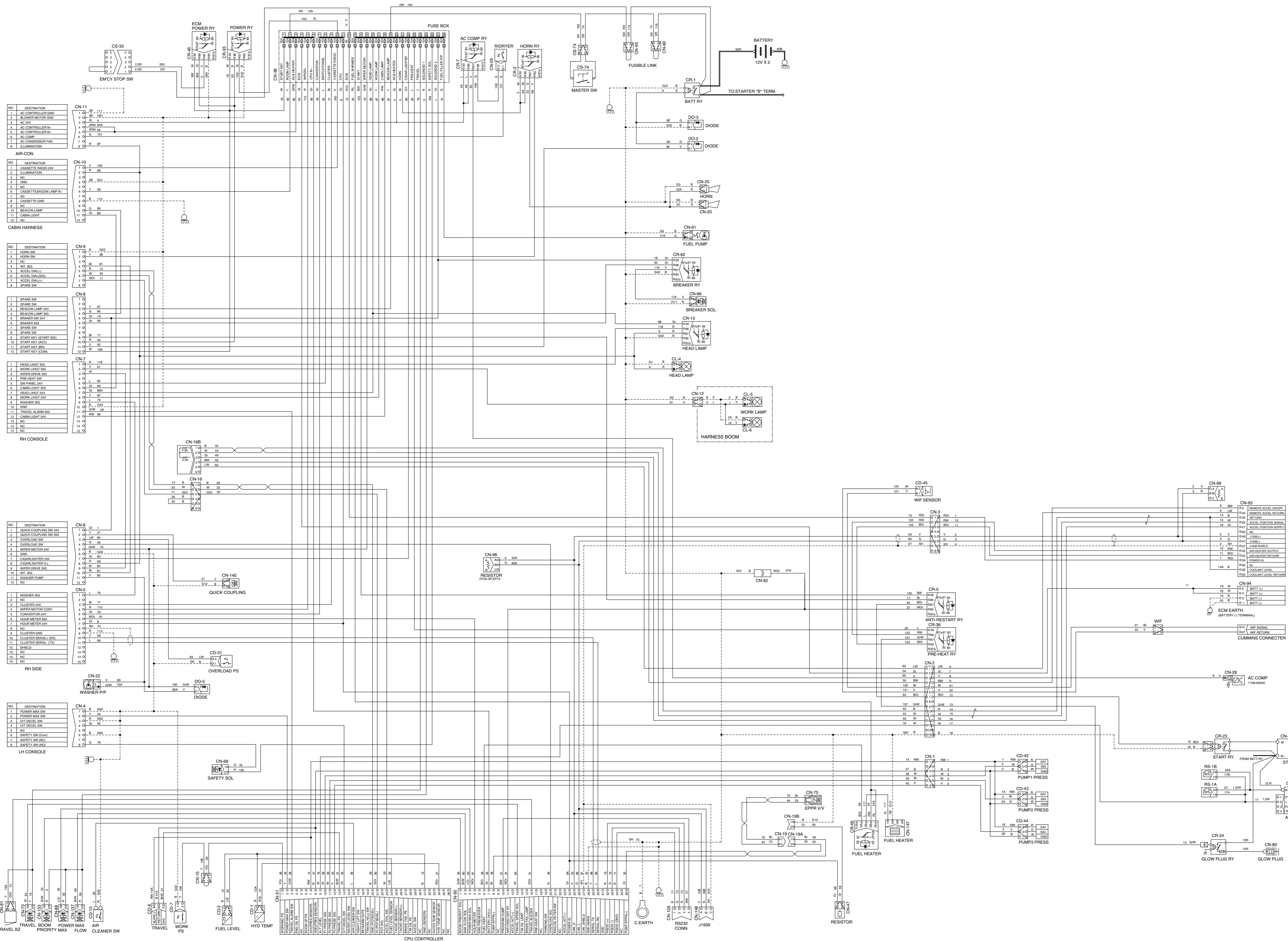


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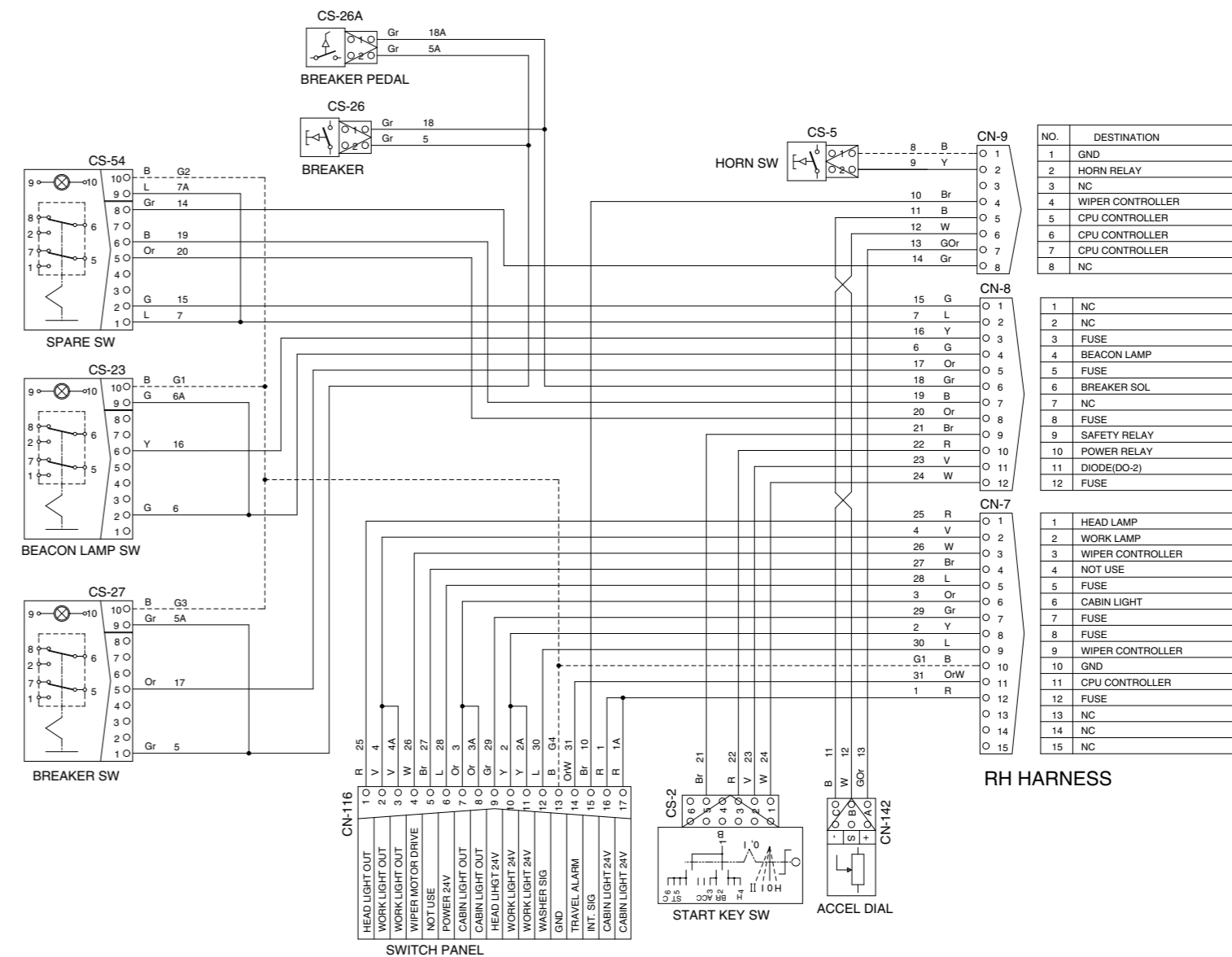
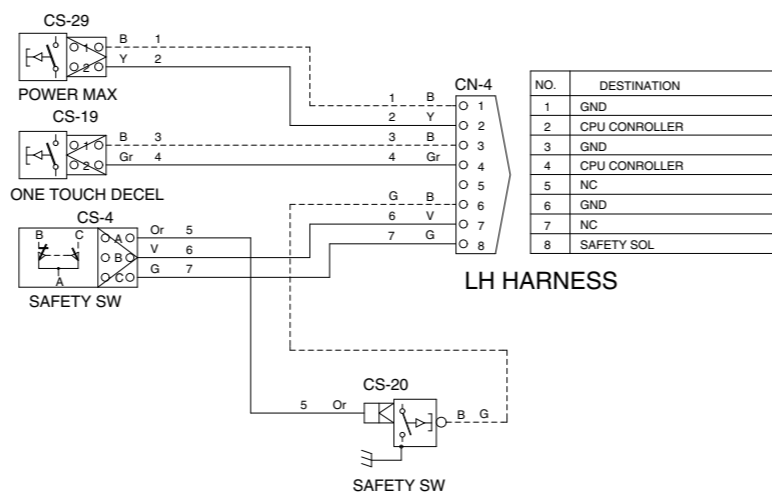
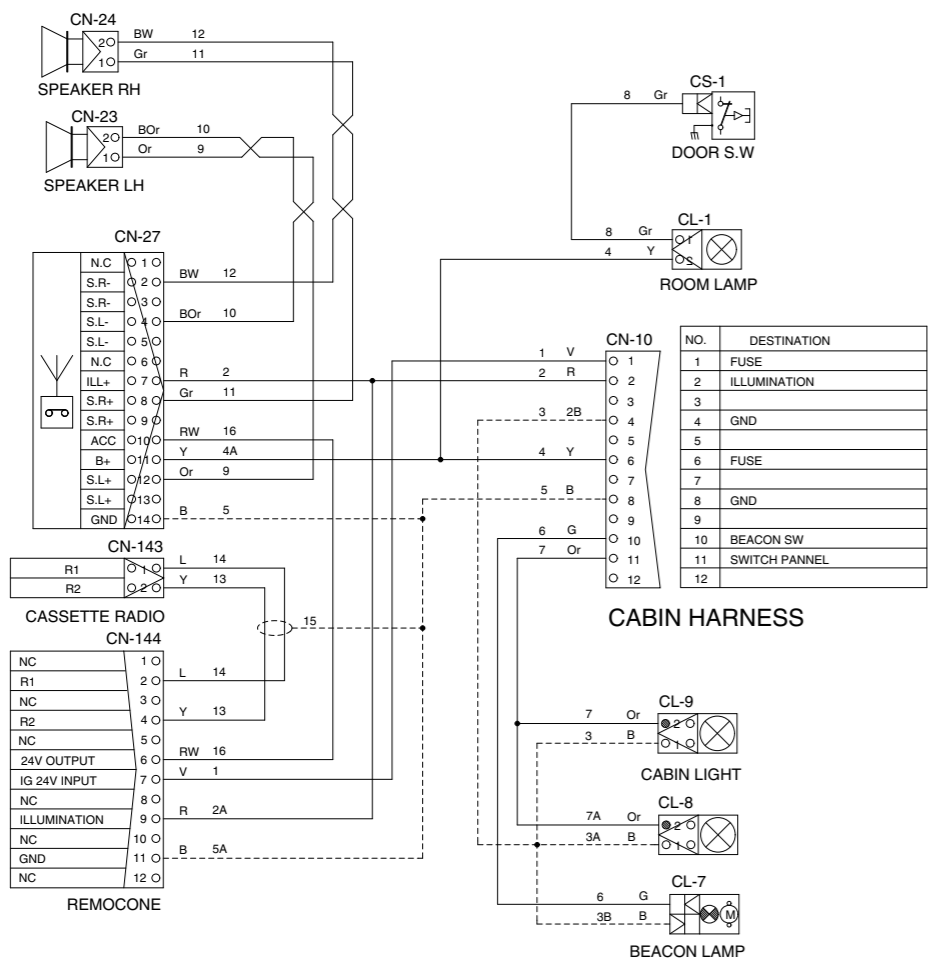
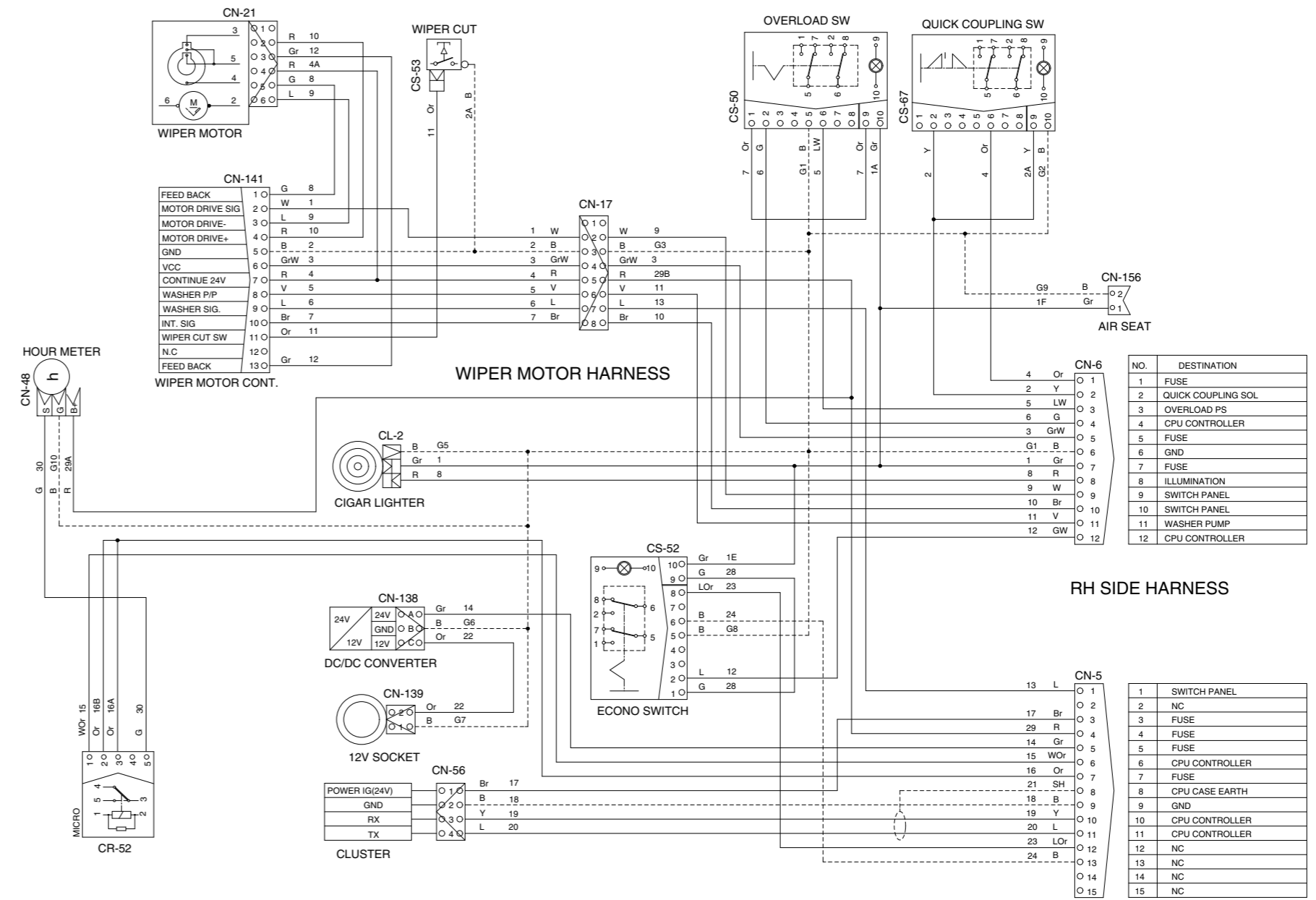
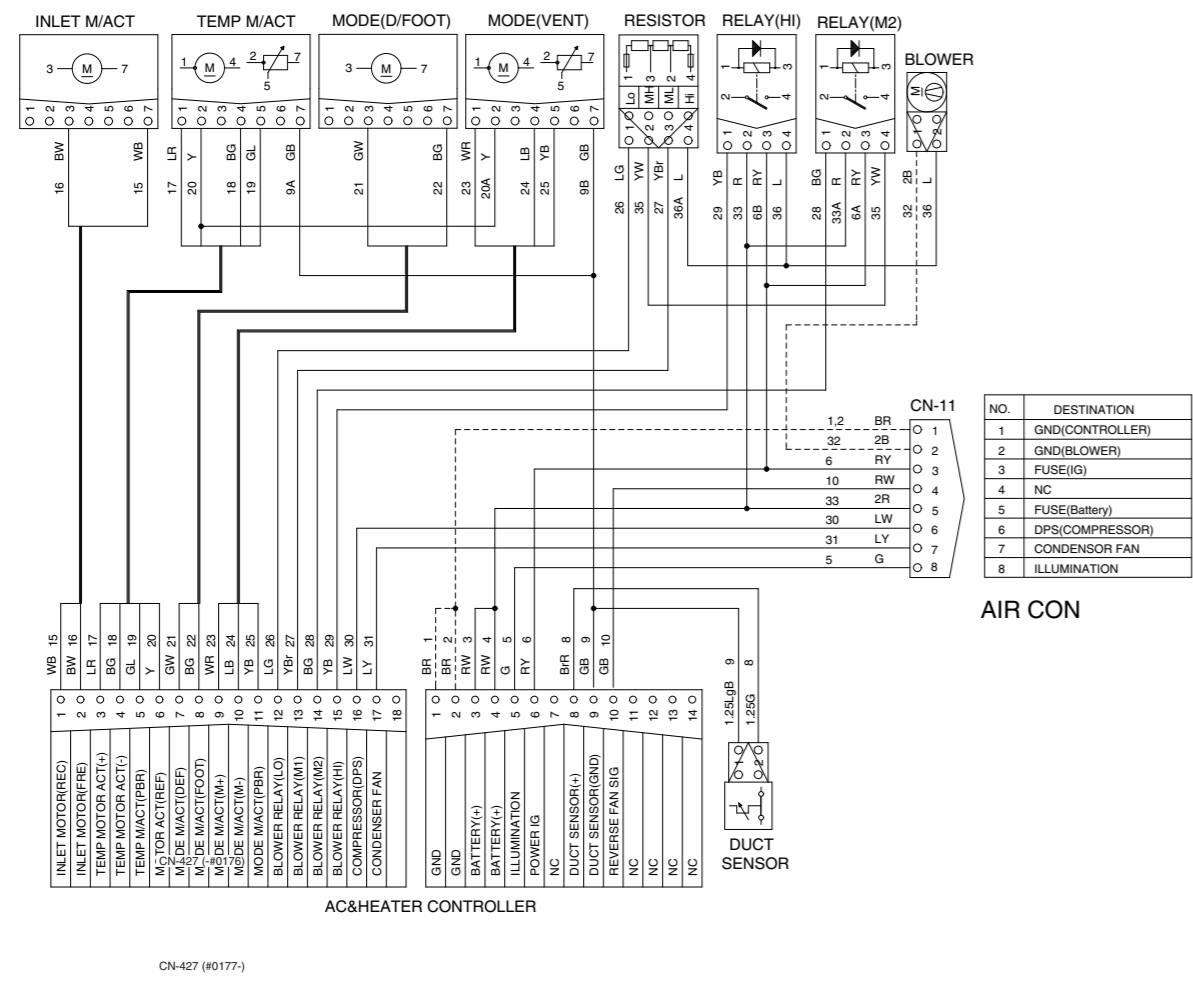
- | | | | | | |
|---|------------------|---|--------------|----|---------------------|
| 1 | Lamp | 5 | Horn | 9 | Travel alarm buzzer |
| 2 | Fuel sender | 6 | Start relay | 10 | Battery relay |
| 3 | Fuel filler pump | 7 | Heater relay | 11 | Battery |
| 4 | Beacon lamp | 8 | Alternator | 12 | Air cleaner switch |

GROUP 2 ELECTRICAL CIRCUIT

ELECTRICAL CIRCUIT (1/2)



ELECTRICAL CIRCUIT (2/2)

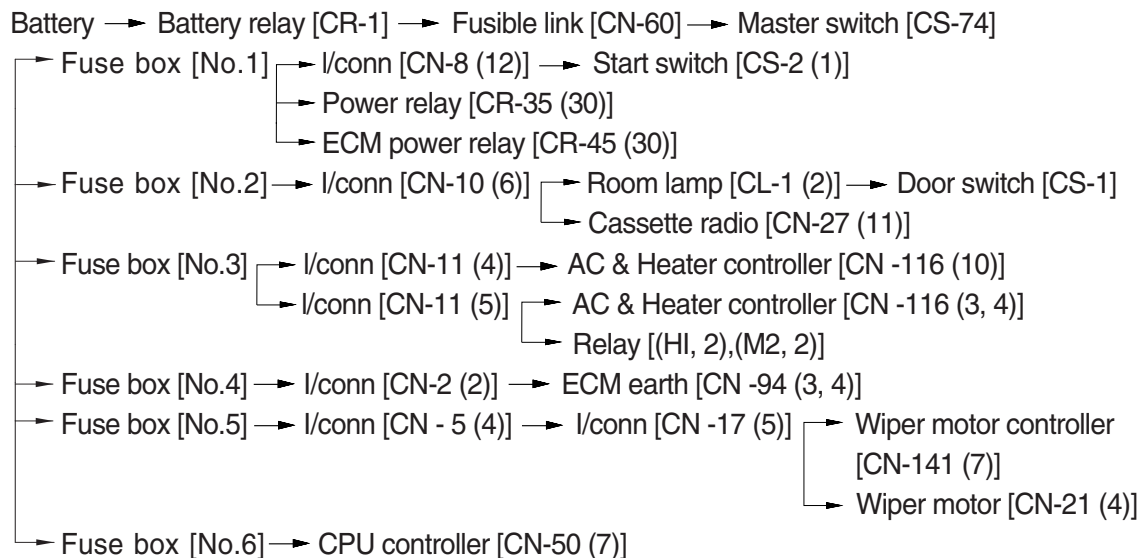


1. POWER CIRCUIT

The negative terminal of battery is grounded to the machine chassis directly.

When the start switch is in the OFF position, the current flows from the positive battery terminal as shown below.

1) OPERATING FLOW



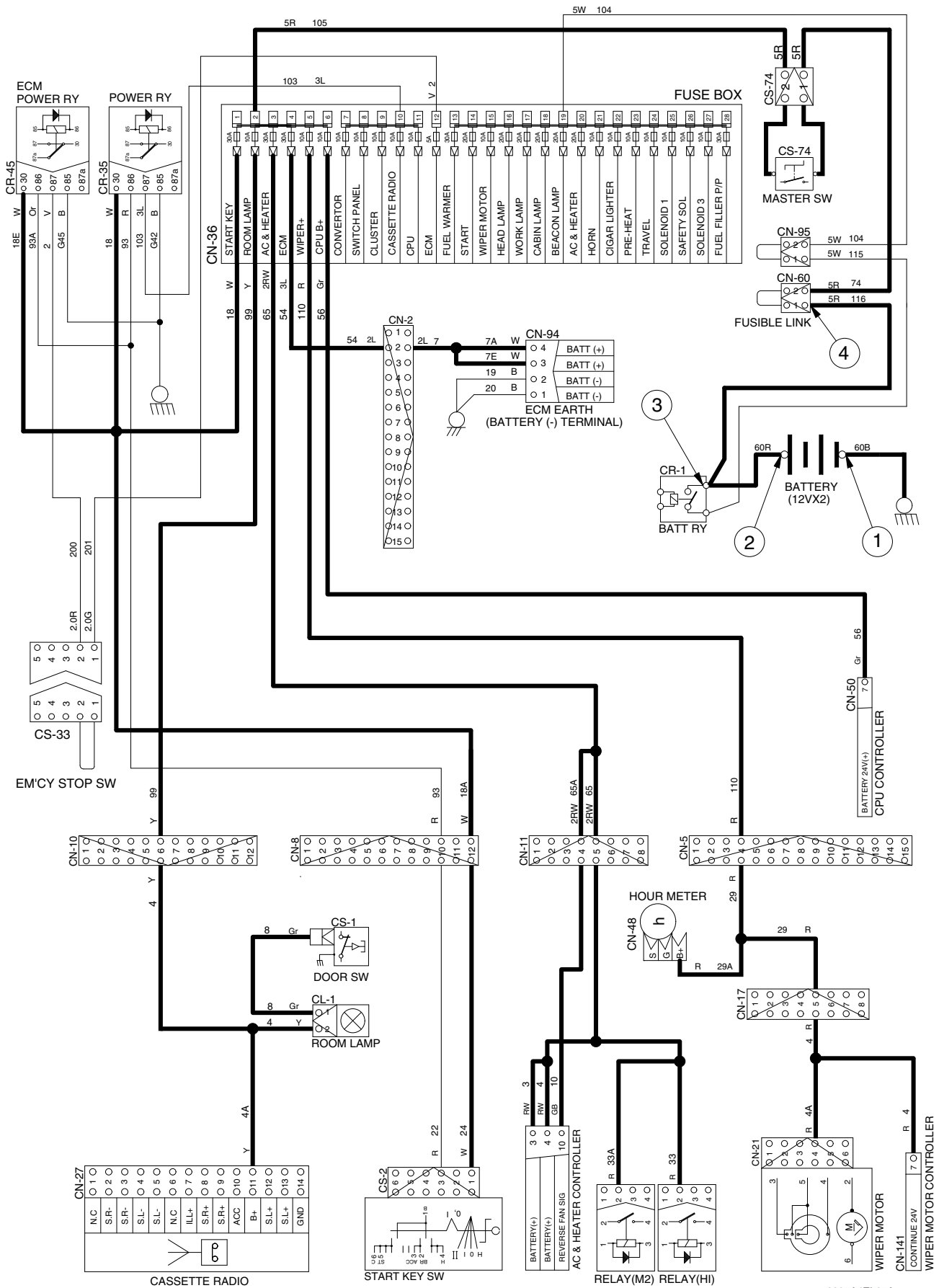
※ I/conn : Intermediate connector

2) CHECK POINT

| Engine | Start switch | Check point | Voltage |
|--------|--------------|------------------------|----------|
| STOP | OFF | ① - GND (battery 1EA) | 10~12.5V |
| | | ② - GND (battery 2EA) | 20~25V |
| | | ③ - GND (battery 2EA) | 20~25V |
| | | ④ - GND (fusible link) | 20~25V |

※ GND : Ground

POWER CIRCUIT



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2. STARTING CIRCUIT

1) OPERATING FLOW

Battery (+) terminal → Battery relay [CR-1] → Fusible link [CN-60] → Master switch [CS-74]
 → Fuse box [No.1] → I/conn [CN-8 (12)] → Start switch [CS-2 (1)]

(1) When start key switch is in ON position

→ Start switch ON [CS-2 (2)] → I/conn [CN-8 (11)] → Battery relay [CR-1]
 → Battery relay operating (all power is supplied with the electric component)
 → Start switch ON [CS-2 (3)] → I/conn [CN-8 (10)]
 → Power relay [CR-35 (86) → (87)] → Fuse box [No.11] → Cpu controller [CN-50 (24)]
 → ECM power relay [CR-45 (86) → (87)] → Emergency stop switch [CS-33 (2) → (1)]
 → Fuse box [No.12] → I/conn [CN-3 (1)] → ECM [CN-93 (39)]

(2) When start key switch is in START position

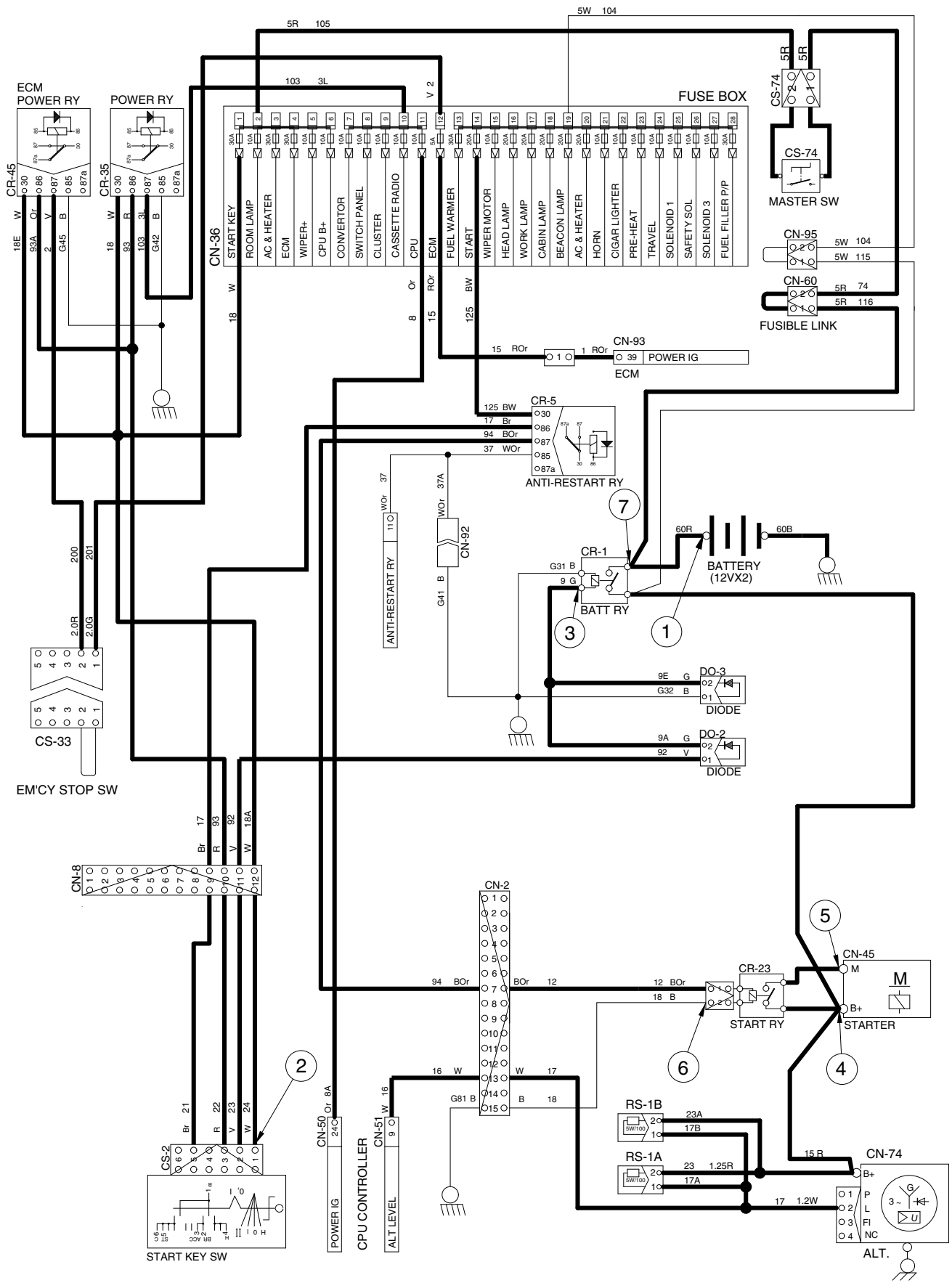
Start switch START [CS-2 (5)] → I/conn [CN-8 (9)] → Anti-restart relay [CR-5 (86) → (87)]
 → I/conn [CN-2 (7)] → Start relay [CR-23] → Start motor operating

2) CHECK POINT

| Engine | Start switch | Check point | Voltage |
|-----------|--------------|---|---------|
| OPERATING | START | ① - GND (battery) ② - GND (start key) ③ - GND (battery relay M4) ④ - GND (starter B ⁺) ⑤ - GND (starter M) ⑥ - GND (start relay) ⑦ - GND (battery relay M8) | 20~25V |

※ GND : Ground

STARTING CIRCUIT



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3. CHARGING CIRCUIT

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

Charging current generated by operating alternator flows into the battery through the battery relay (CR-1).

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

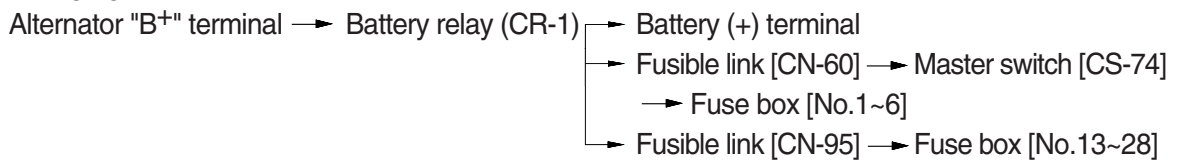
1) OPERATING FLOW

(1) Warning flow

Alternator [CN-74 (2)] → I/conn [CN-2 (13)] → CPU alternator level [CN-51 (9)]

Cluster charging warning lamp (Via serial interface)

(2) Charging flow

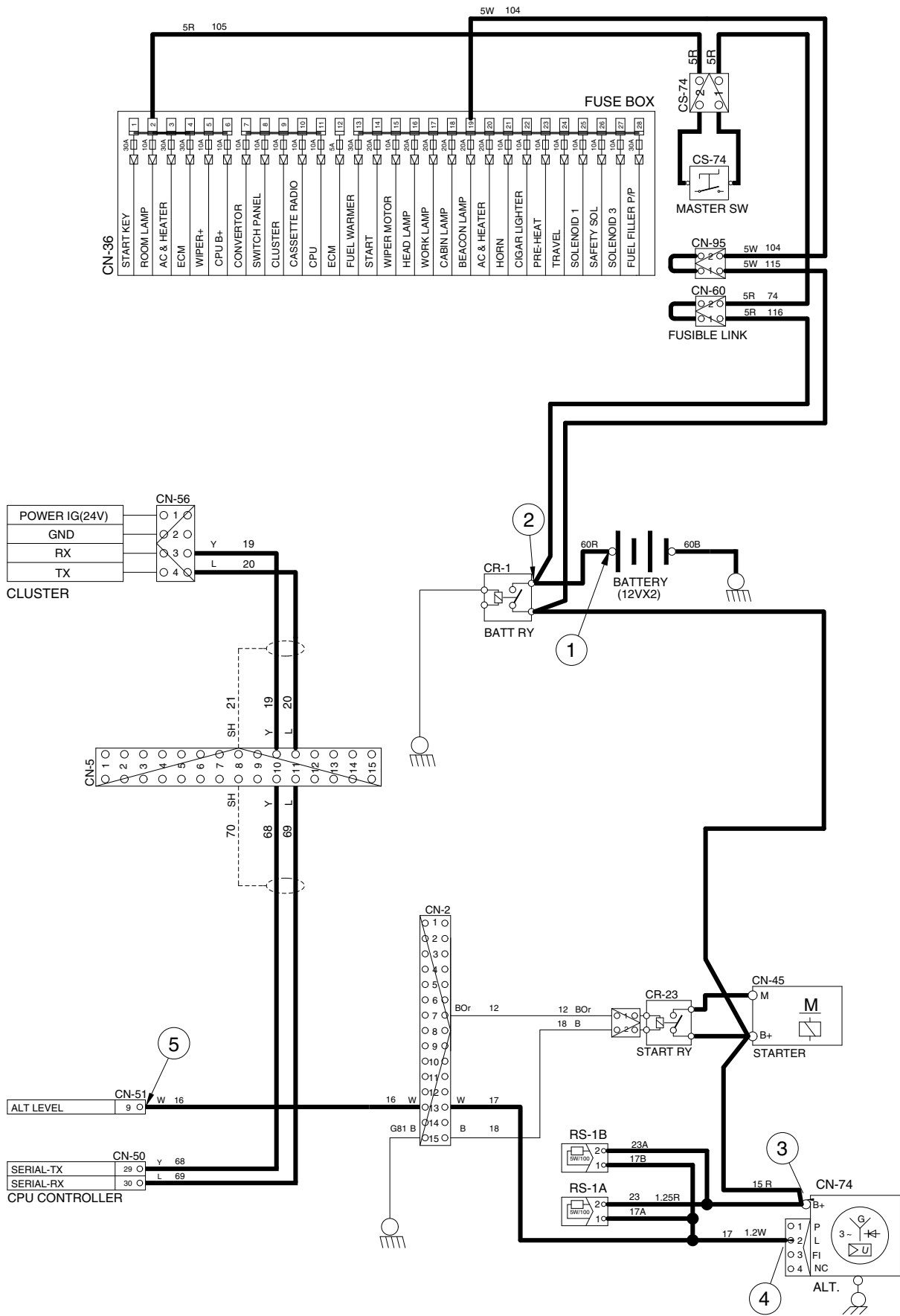


2) CHECK POINT

| Engine | Start switch | Check point | Voltage |
|-----------|--------------|---|---------|
| OPERATING | ON | ① - GND (battery voltage) ② - GND (battery relay) ③ - GND (alternator B ⁺ terminal) ④ - GND (alternator 2 terminal) ⑤ - GND (CPU controller) | 20~30V |

※ GND : Ground

CHARGING CIRCUIT



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4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.16) → I/conn [CN-7 (7)] → Switch panel [CN-116 (9)]
 → Head light relay [CR-13 (30)]

Fuse box (No.17) → I/conn [CN-7 (8)] → Switch panel [CN-116 (10, 11)]

(1) Head light switch ON

Head light switch ON [CN-116 (1)] → I/conn [CN-7 (1)] → Head light relay [CR-13 (86)]

- Head light ON [CL-4 (1)]
- I/conn [CN-10 (2)] → Cassette radio illumination ON [CN-27 (7)]
 → Remote controller illumination ON [CN-114 (9)]
- I/conn [CN-11 (8)] → AC & Heater controller illumination ON [CN-116 (5)]
- I/conn [CN-6 (8)] → Cigar lighter [CL-2]

(2) Work light switch ON

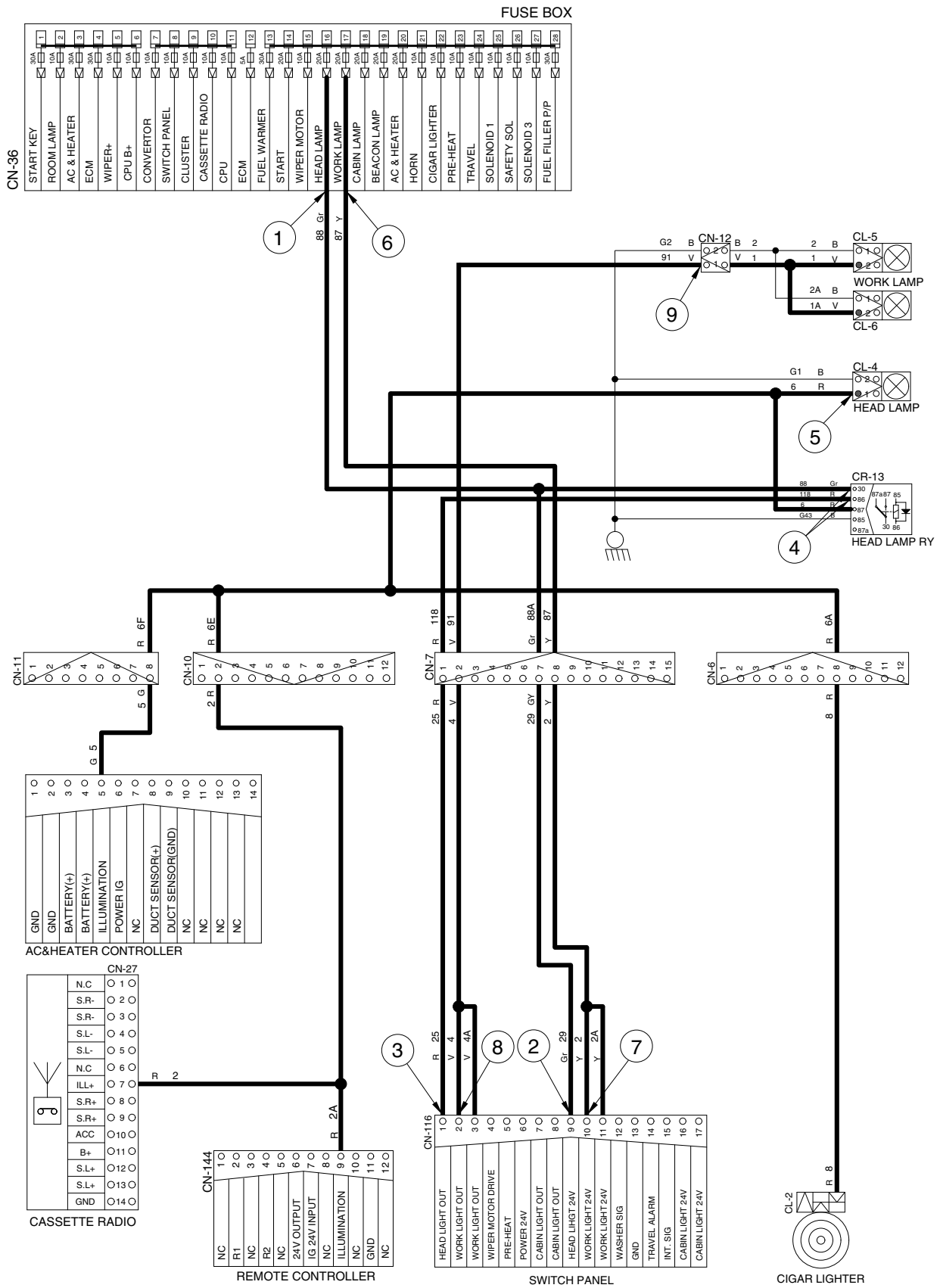
Work light switch ON [CN-116 (2, 3)] → I/conn [CN-7 (2)] → I/conn [CN-12 (1)]
 → Work light ON [CL-5 (2), CL-6 (2)]

2) CHECK POINT

| Engine | Start switch | Check point | Voltage |
|--------|--------------|---|---------|
| STOP | ON | ① - GND (fuse box) ② - GND (switch power input) ③ - GND (switch power output) ④ - GND (head light relay) | 20~25V |
| STOP | ON | ⑤ - GND (head light) ⑥ - GND (fuse box) ⑦ - GND (switch power input) ⑧ - GND (switch power output) ⑨ - GND (work light) | 20~25V |

※ GND : Ground

HEAD AND WORK LIGHT CIRCUIT



5. BEACON LAMP AND CAB LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.19) → I/conn [CN-8 (3)] → Beacon lamp switch [CS-23 (6)]

Fuse box (No.18) → I/conn [CN-7 (12)] → Switch panel [CN-116 (16, 17)]

(1) Beacon lamp switch ON

Beacon lamp switch ON [CS-23 (2)] → Switch Indicator lamp ON [CS-23 (9)]
 → I/conn [CN-8 (4)] → I/conn [CN-10 (10)]
 → Beacon lamp ON [CL-7]

(2) Cab light switch ON

Cab light switch ON [CN-116 (7, 8)] → I/conn [CN-7 (6)] → I/conn [CN-10 (11)]

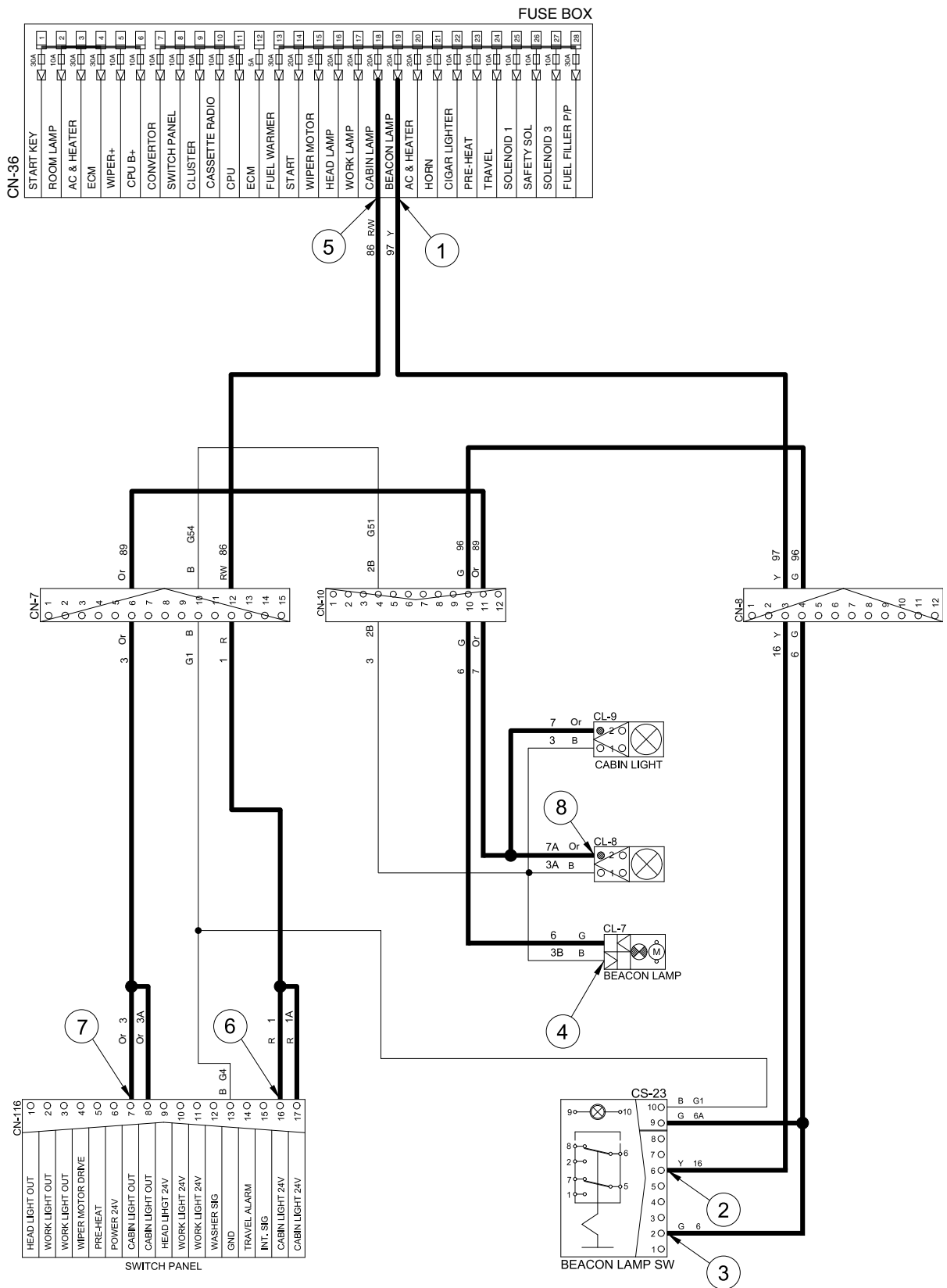
→ Cab light ON [CL-8 (2), CL-9 (2)]

2) CHECK POINT

| Engine | Start switch | Check point | Voltage |
|--------|--------------|--|---------|
| STOP | ON | ① - GND (fuse box) ② - GND (switch power input) ③ - GND (switch power output) ④ - GND (beacon lamp) | 20~25V |
| STOP | ON | ⑤ - GND (fuse box) ⑥ - GND (switch power input) ⑦ - GND (switch power output) ⑧ - GND (cab light) | 20~25V |

※ GND : Ground

BEACON LAMP AND CAB LIGHT CIRCUIT



6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.8) → I/conn [CN-7 (5)] → Switch panel [CN-116 (6)]

Fuse box (No.5) → I/conn [CN-5 (4)] → I/conn [CN-17 (5)] → Wiper motor controller [CN-141 (7)]
 → Wiper motor [CN-21(4)]

Fuse box (No.15) → I/conn [CN-6 (5)] → I/conn [CN-17 (4)] → Wiper motor controller [CN-141 (6)]
 → Washer pump [CN-22 (2)]

(2) Wiper switch ON : 1st step (Intermittent)

Wiper switch ON [CN-116 (15)] → I/conn [CN-9 (4)] → I/conn [CN-6 (10)] → I/conn [CN-17 (8)]
 → Wiper motor controller [CN-141 (10) → (3)] → Wiper motor intermittently operating [CN-21 (6)]

(3) Wiper switch ON : 2nd step (Low speed)

Wiper switch ON [CN-116 (4)] → I/conn [CN-7 (3)] → I/conn [CN-6 (9)] → I/conn [CN-17 (2)]
 Wiper motor controller [CN-141 (2) → (4)] → Wiper motor operating [CN-21 (2)]

(4) Washer switch ON

Washer switch ON [CN-116 (12)] → I/conn [CN-7 (9)] → I/conn [CN-5 (1)] → I/conn [CN-17 (7)]
 → Wiper motor controller [CN-141 (9) → (8)] → I/conn [CN-17 (6)] → I/conn [CN-6 (11)]
 → Washer pump [CN-22 (1)] → Washer operating

Wiper switch ON [CN-116 (4)] → I/conn [CN-7 (3)] → I/conn [CN-6 (9)] → I/conn [CN-17 (2)]
 Wiper motor controller [CN-141 (2) → (4)] → Wiper motor operating [CN-21 (2)]

(5) Auto parking (When switch OFF)

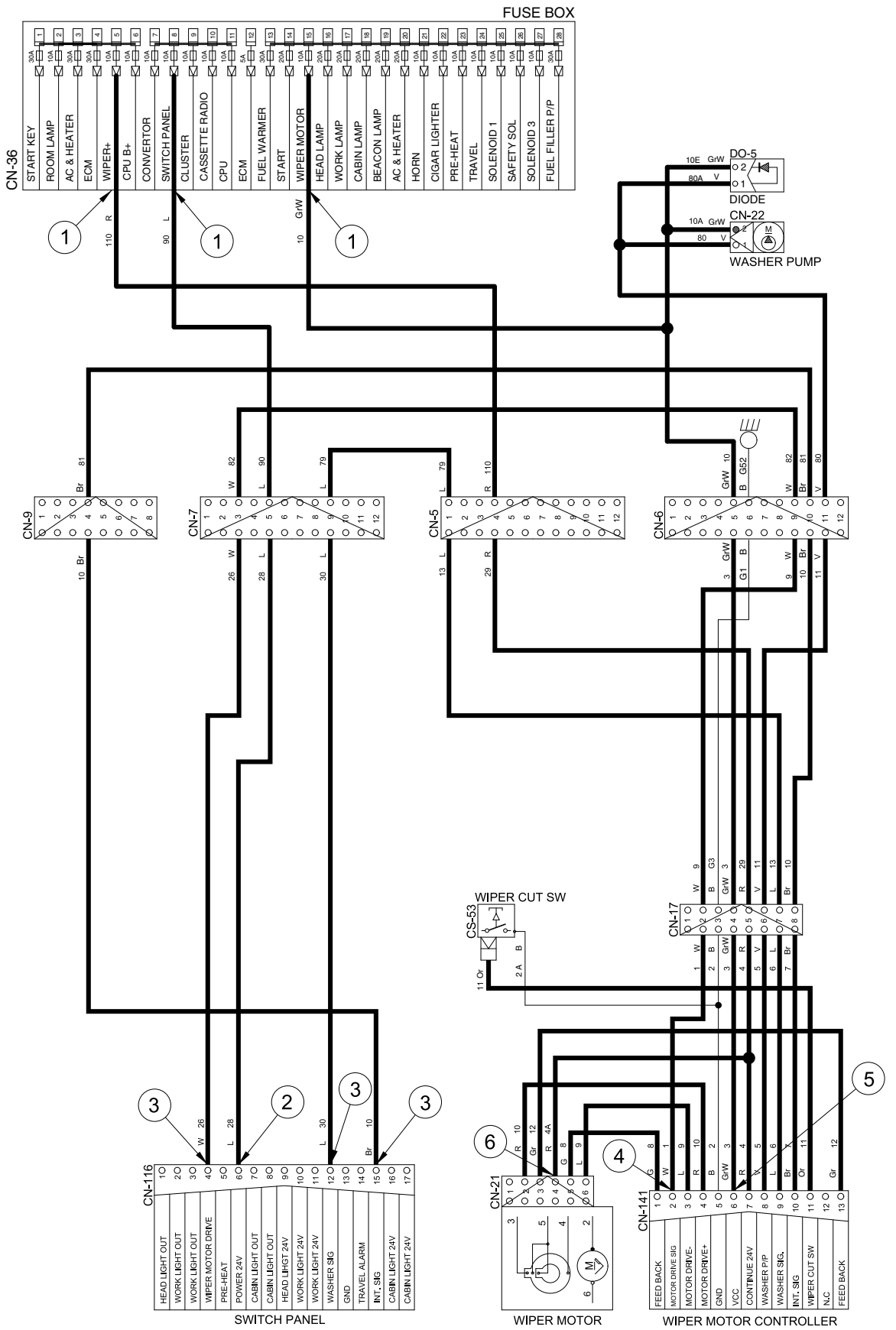
Switch OFF [CN-116 (4)] → Wiper motor parking position by wiper motor controller

2) CHECK POINT

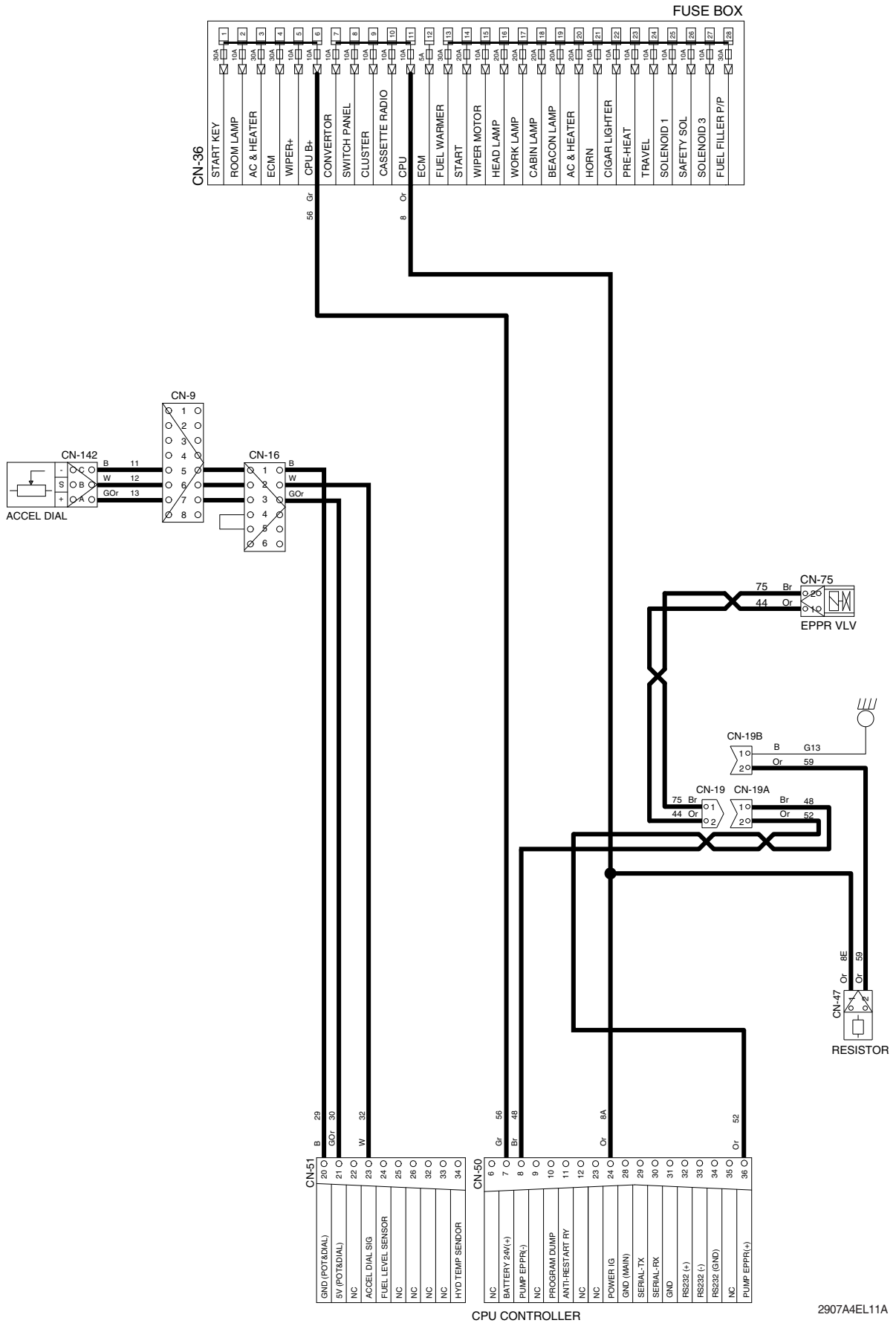
| Engine | Start switch | Check point | Voltage |
|--------|--------------|-------------------------------|----------|
| STOP | ON | ① - GND (fuse box) | 24V |
| | | ② - GND (switch power input) | |
| | | ③ - GND (switch power output) | 0 ~ 5V |
| | | ④ - GND (wiper Power input) | |
| | | ⑤ - GND (wiper power output) | 0 or 24V |
| | | ⑥ - GND (wiper motor) | |

※ GND : Ground

WIPER AND WASHER CIRCUIT

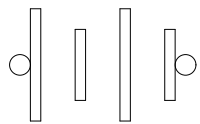
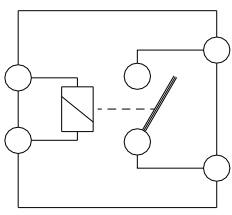
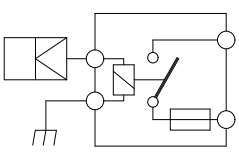
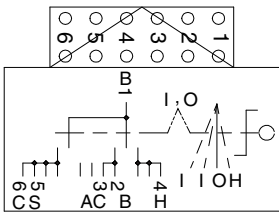
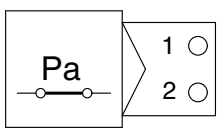


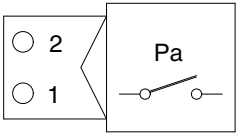
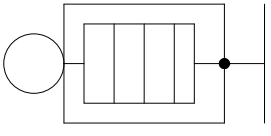
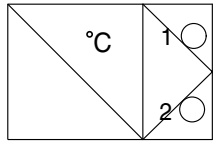
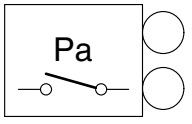
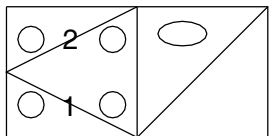
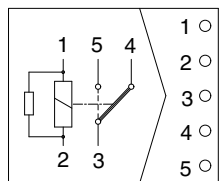
7. CONTROLLER CIRCUIT

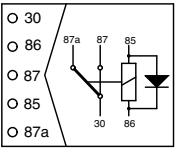
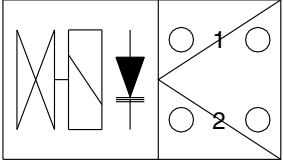
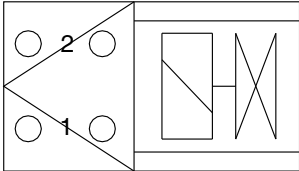
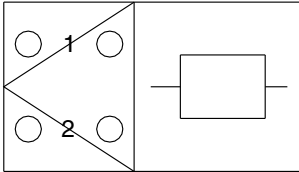
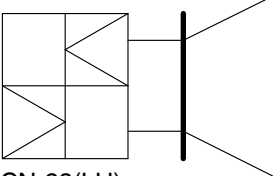
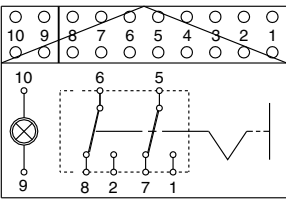


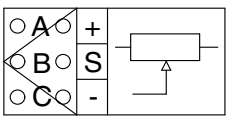
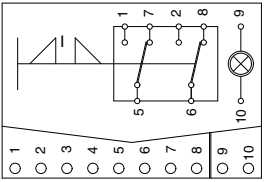
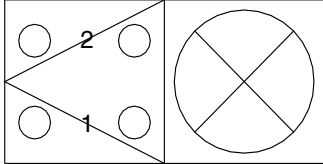
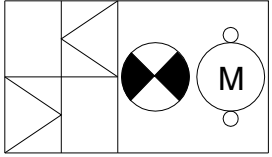
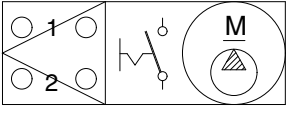
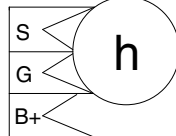
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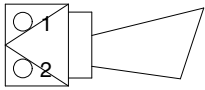
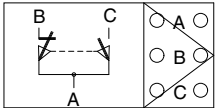
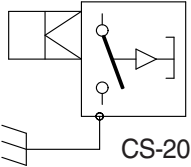
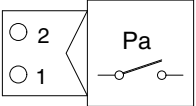
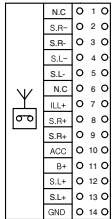
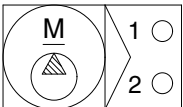
GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

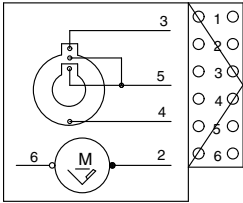
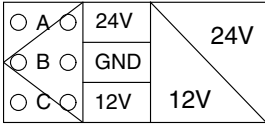
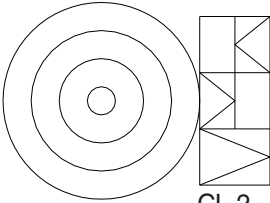
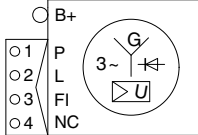

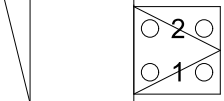
| Part name | Symbol | Specifications | Check |
|---------------------------|---|---|--|
| Battery |  | 12V × 160Ah (2EA) | ※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging |
| Battery relay |  <p style="text-align: center;">CR-1</p> | Rated load : 24V 100A(continuity) 1000A(30seconds) | ※ Check coil resistance(M4 to M4) Normal : About 50Ω ※ Check contact Normal : ∞Ω |
| Glow plug relay |  <p style="text-align: center;">CR-24</p> | 24V 200A | ※ Check contact Normal : 0.942Ω (For terminal 1-GND) |
| Start key |  | B-BR : 24V 1A B-ACC : 24V 10A B-ST : 24V 40A | ※ Check contact OFF : ∞Ω (For each terminal) ON : 0Ω (For terminal 1-3 and 1-2) START : 0Ω (For terminal 1-5) |
| Pressure switch (Working) |  <p style="text-align: center;">CD-7</p> | 10kgf/cm ² (N.C TYPE) | ※ Check contact Normal : 0.1Ω |

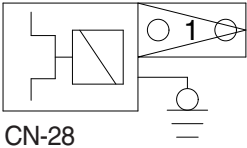
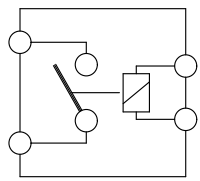
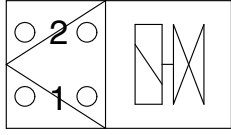
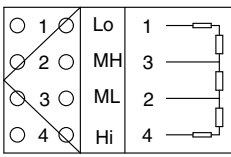
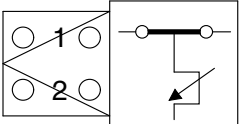
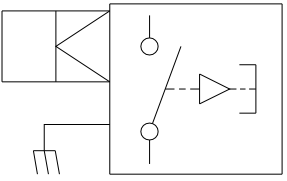
| Part name | Symbol | Specifications | Check |
|-----------------------------------|--|--------------------------------------|---|
| Pressure switch (For overload) |  <p>CD-31</p> | 3~6kgf/cm ² (N.O TYPE) | ※ Check contact Normal : ∞Ω |
| Glow plug |  <p>CN-80</p> | 24V 200A | ※ Check resistance 0.25~0.12Ω |
| Temperature sensor (Hydraulic) |  <p>CD-1</p> | - | ※ Check resistance 50 °C : 804Ω 80 °C : 310Ω 100 °C : 180Ω |
| Air cleaner pressure switch |  <p>CD-10</p> | - | ※ Check contact High level : ∞Ω Low level : 0Ω |
| Fuel sender |  <p>CD-2</p> | - | ※ Check resistance Full : 50Ω 6/12 : 350Ω 11/12 : 100Ω 5/12 : 400Ω 10/12 : 150Ω 4/12 : 450Ω 9/12 : 200Ω 3/12 : 500Ω 8/12 : 250Ω 2/12 : 550Ω 7/12 : 300Ω 1/12 : 600Ω Empty warning : 700Ω |
| Relay |  <p>CR-52</p> | 24V 20A | ※ Check resistance Normal : About 160Ω (For terminal 1-2) 0 Ω (For terminal 3-4) ∞ Ω (For terminal 3-5) |

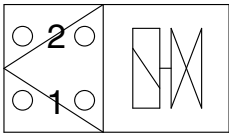
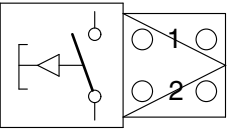
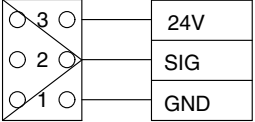
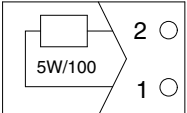
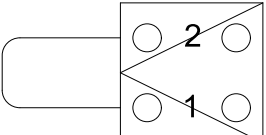
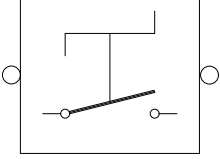
| Part name | Symbol | Specifications | Check |
|--------------------------|---|----------------|---|
| Relay |  <p>CR-2 CR-5 CR-7 CR-13 CR-35 CR-36 CR-45 CR-46 CR-62</p> | 24V 16A | ※ Check resistance Normal : About 160 Ω (For terminal 85-86) 0 Ω (For terminal 30-87a) ∞ Ω (For terminal 30-87) |
| Solenoid valve |  <p>CN-66 CN-68 CN-70 CN-88 CN-133 CN-137</p> | 24V 1A | ※ Check resistance Normal : 15~25Ω (For terminal 1-2) |
| EPPR valve |  <p>CN-75</p> | 700mA | ※ Check resistance Normal : 15~25Ω (For terminal 1-2) |
| Resistor |  <p>CN-47</p> | 45Ω 20W±5% | ※ Check resistance Normal : 45Ω |
| Speaker |  <p>CN-23(LH) CN-24(RH)</p> | 20W | ※ Check disconnection Normal : A few Ω |
| Switch (Locking type) |  <p>CS-23 CS-27 CS-50 CS-52 CS-54</p> | 24V 8A | ※ Check contact Normal ON : 0 Ω (For terminal 1-5, 2-6) ∞ Ω (For terminal 5-7, 6-8) OFF : ∞ Ω (For terminal 1-5, 2-6) 0 Ω (For terminal 5-7, 6-8) |

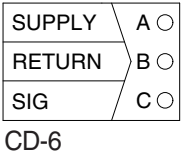
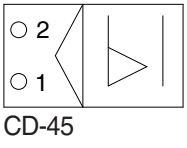
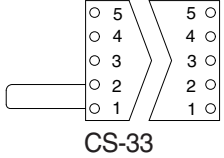
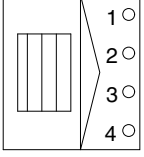
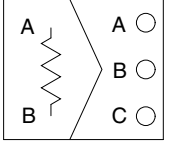
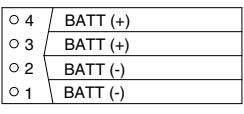
| Part name | Symbol | Specifications | Check |
|--|---|--|---|
| Accel dial |  <p>CN-142</p> | - | ※ Check resist Normal : About 5kΩ (For terminal A-C) Normal : About 5V (For terminal A-C) : 2~4.5V (For terminal C-B) |
| Switch |  <p>CS-67</p> | 24V 8A | ※ Check disconnection Normal : 1.0Ω ON : 0Ω (For terminal 1-5, 2-6) ∞Ω (For terminal 5-7, 6-8) OFF : ∞Ω (For terminal 1-5, 6-8) 0Ω (For terminal 5-7, 6-8) |
| Head lamp, Work lamp, Room lamp, Cab lamp |  <p>CL-1 CL-4 CL-5 CL-6 CL-8 CL-9</p> | 24V 70W (H3 Type) 24V 10W (Room lamp) | ※ Check disconnection Normal : A few Ω |
| Beacon lamp |  <p>CL-7</p> | 21V 70A (H1 type) | ※ Check disconnection Normal : A few Ω |
| Fuel filler pump |  <p>CN-61</p> | 24V 10A 35 l /min | ※ Check resistance Normal : 1.0Ω |
| Hour meter |  <p>CN-48</p> | 16~32V | ※ Check operation Supply power(24V) to terminal No.2 and connect terminal No.B and ground |

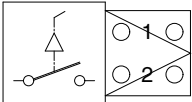
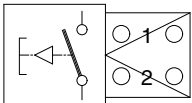
| Part name | Symbol | Specifications | Check |
|-----------------|--|-----------------------|--|
| Horn |  CN-20 CN-25 | DC22~28V 2A | ※ Check operation Supply power(24V) to each terminal and connect ground. |
| Safety switch 1 |  CS-4 | 24V 15A (N.C TYPE) | ※ Check contact Normal : 0Ω (For terminal 1-2) ∞Ω (For terminal 1-3) Operating : ∞Ω (For terminal 1-2) 0Ω (For terminal 1-3) |
| Safety switch 2 |  CS-20 | 24V (N.C TYPE) | ※ Check contact Normal : 0Ω (One pin to ground) |
| Receiver dryer |  CN-29 | 24V 2.5A | ※ Check contact Normal : ∞Ω |
| Cassette radio |  CN-27 | 24V 2A | ※ Check voltage 20~25V (For terminal 10-14, 11-14) |
| Washer pump |  CN-22 | 24V 3.8A | ※ Check contact Normal : 10.7Ω (For terminal 1-2) |

| Part name | Symbol | Specifications | Check |
|-----------------|--|------------------------|---|
| Wiper motor |  <p>CN-21</p> | 24V 2A | ※ Check disconnection Normal : 7Ω (For terminal 2-6) |
| DC/DC Converter |  <p>CN-138</p> | 12V 3A | 24V(A-B) 12V (B-C) |
| Cigar lighter |  <p>CL-2</p> | 24V 5A 1.4W | ※ Check coil resistance Normal : About 1MΩ ※ Check contact Normal : ∞Ω Operating time : 5~15sec |
| Alternator |  <p>CN-74</p> | 24V 55A | ※ Check contact Normal : 0Ω (For terminal B ⁺ -2) Normal : 24~27.5V |
| Starter |  <p>CN-45</p> | Delco Remy 28MT 24V | ※ Check contact Normal : 0.1Ω |
| Travel alarm |  <p>CN-81</p> | 24V 0.5A | ※ Check contact Normal : 5.2Ω |

| Part name | Symbol | Specifications | Check |
|-----------------------------|---|---------------------|---|
| Aircon compressor |  CN-28 | 24V 79W | ※ Check contact Normal : 13.4Ω |
| Start relay |  CR-23 | 24V 300A | ※ Check contact Normal : 0.94Ω (For terminal 1-2) |
| Blower |  | 24V 9.5A | ※ Check resistance Normal : 2.5Ω (For terminal 1-2) |
| Aircon resistor |  | - | ※ Check resistance Normal : 1.12Ω (For terminal 4-2) 2.07Ω (For terminal 2-3) 3.17Ω (For terminal 3-1) |
| Duct sensor |  | 1 °C OFF 4 °C ON | ※ Check resistance Normal : 0Ω (For terminal 1-2), the atmosphere temp : Over 4 °C |
| Switch (Door, wiper cut) |  CS-1 CS-53 | 24V 2W | ※ Check resistance Normal : About 5MΩ |

| Part name | Symbol | Specifications | Check |
|--|---|----------------|---|
| Quick coupler |  <p>CN-140</p> | 24V 6A | ※Check contact Normal : 28.9MΩ (For terminal 1-2) |
| Switch (Power max, one touch decal, horn) |  <p>CS-26 CS-29</p> | 24V 6A | ※Check resistance Normal : ∞Ω |
| Transducer |  <p>CD-32 CD-33 CD-42 CD-43 CD-44</p> | 500bar | 0bar : 1V(For terminal 1-2) 500bar : 5V(For terminal 1-2) |
| Resistor |  <p>RS-1A RS-1B</p> | 5W 100Ω | ※Check resistance Normal : 100Ω |
| Fusible link |  <p>CN-60 CN-95</p> | 60A | ※Check disconnection normal : 0Ω (Connect ring terminal and check resist between terminal 1 and 2) |
| Master switch |  <p>CS-74</p> | 6-36V | ※Check disconnection Normal : 0.1Ω |

| Part name | Symbol | Specifications | Check |
|---------------------------|--|----------------|---|
| Pressure switch (working) |  <p>CD-6</p> | 8~30V | ※ Check contact Normal : 0.1Ω |
| WIF sensor |  <p>CD-45</p> | - | - |
| Em'cy stop switch |  <p>CS-33</p> | - | - |
| Fuel heater |  <p>CN-147</p> | - | - |
| Resistor |  <p>CN-98 CN-99</p> | 3W 120Ω | ※ Check resistance Normal - A-B : 120Ω |
| ECM earth |  <p>CN-94</p> | - | - |

| Part name | Symbol | Specifications | Check |
|---------------|---|----------------|--|
| Breaker pedal |  <p data-bbox="470 436 558 459">CS-26A</p> | 24V 6A | ※ Check resistance Normal : $\infty \Omega$ |
| Horn switch |  <p data-bbox="491 716 654 739">CS-5 CS-19</p> | 24V 6A | ※ Check resistance Normal : $\infty \Omega$ |

GROUP 4 CONNECTORS

1. CONNECTOR DESTINATION

| Connector number | Type | No. of pin | Destination | Connector part No. | |
|------------------|-----------|------------|--|--------------------|--------------|
| | | | | Female | Male |
| CN-1 | AMP | 6 | l/conn(Frame harness-Engine harness) | S816-006002 | S816-106002 |
| CN-2 | AMP | 15 | l/conn(Frame harness-Engine harness) | 2-85262-1 | 368301-1 |
| CN-3 | AMP | 8 | l/conn(Frame harness-Engine harness) | S816-008002 | S816-108002 |
| CN-4 | AMP | 8 | l/conn(Frame harness-Console harness LH) | S816-008002 | S816-108002 |
| CN-5 | AMP | 15 | l/conn(Frame harness-Side harness RH) | 2-85262-1 | 368301-1 |
| CN-6 | AMP | 12 | l/conn(Frame harness-Side harness RH) | S816-012002 | S816-112002 |
| CN-7 | AMP | 15 | l/conn(Frame harness-Console harness RH) | 2-85262-1 | 368301-1 |
| CN-8 | AMP | 12 | l/conn(Frame harness-Console harness RH) | S816-012002 | S816-112002 |
| CN-9 | AMP | 8 | l/conn(Frame harness-Console harness RH) | S816-008002 | S816-108002 |
| CN-10 | DEUTSCH | 12 | l/conn(Frame harness-Cab harness) | DT06-12S | DT04-12P |
| CN-11 | DEUTSCH | 8 | l/conn(Frame harness-Aircon harness) | DT06-8S | - |
| CN-12 | DEUTSCH | 2 | l/conn(Frame harness-Boom wire harness) | DT06-2S-P012 | DT04-2P |
| CN-15 | AMP | 2 | Auto idle pressure | S816-002002 | S816-102002 |
| CN-16 | AMP | 6 | Emergency engine speed control | - | S816-106002 |
| CN-16A | AMP | 6 | Emergency engine speed control | S816-006002 | - |
| CN-16B | AMP | 6 | Emergency engine speed control | S816-006002 | - |
| CN-17 | DEUTSCH | 8 | l/conn(wiper harness) | DT06-8S | DT04-8P |
| CN-19 | AMP | 2 | Emergency CPU controller | - | S816-102002 |
| CN-19A | AMP | 2 | Emergency CPU controller | S816-002002 | - |
| CN-19B | AMP | 2 | Emergency CPU controller | - | S816-102002 |
| CN-20 | MOLEX | 2 | Horn | 35825-0211 | - |
| CN-21 | AMP | 6 | Wiper motor | 925276-0 | - |
| CN-21A | AMP | 6 | Wiper motor | S816-006202 | - |
| CN-22 | KET | 2 | Washer tank | MG640605 | - |
| CN-23 | KET | 2 | Speaker-LH | MG610070 | - |
| CN-24 | KET | 2 | Speaker-RH | MG610070 | - |
| CN-25 | MOLEX | 2 | Horn | 35825-0211 | - |
| CN-27 | AMP | 14 | Cassette radio | 173852 | - |
| CN-28 | MWP | 1 | Aircon compressor | NMWP01F-B | - |
| CN-29 | KET | 2 | Receiver dryer | MG640795 | - |
| CN-36 | DEUTSCH | 3 | Fuse box | 21N8-20041 | - |
| CN-45 | RING-TERM | - | Starter | S820-414000 | - |
| CN-47 | FASTEN | 2 | Resistor | S810-002202 | - |
| CN-48 | AMP | 2 | Hour meter | GP890469 | - |
| CN-50 | AMP | 36 | CPU controller | 3441111-1 | - |
| CN-51 | AMP | 36 | CPU controller | 3441111-1 | - |
| CN-56 | DEUTSCH | 4 | Cluster | - | DT04-4P-E004 |

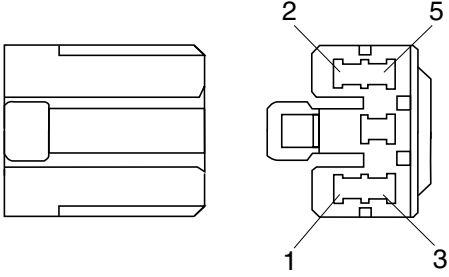
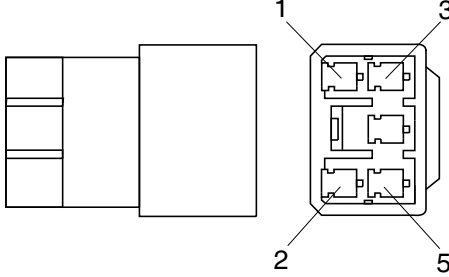
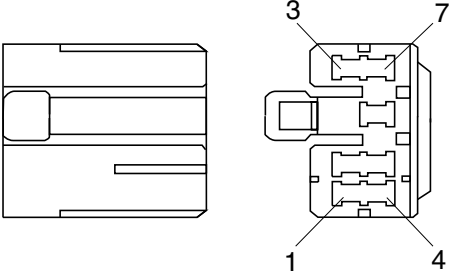
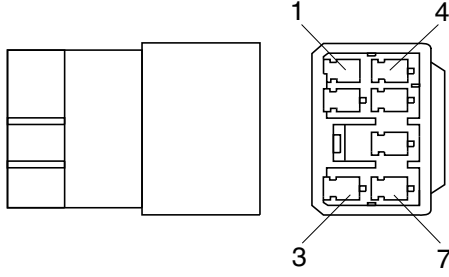
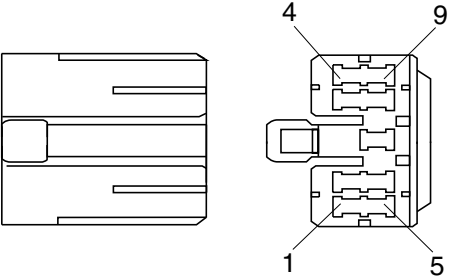
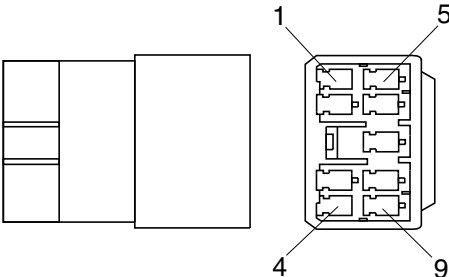
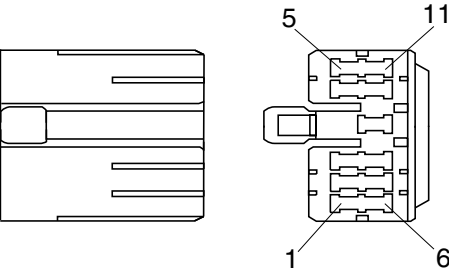
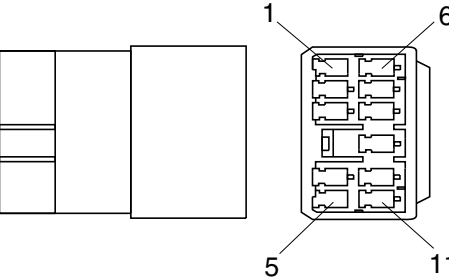
| Connector number | Type | No. of pin | Destination | Connector part No. | |
|------------------|-----------|------------|--|--------------------|--------------|
| | | | | Female | Male |
| CN-60 | YAZAKI | 2 | Fusible link | 21N4-01320 | 7122-4125-50 |
| CN-61 | DEUTSCH | 2 | Fuel filler pump | DT06-2S-P012 | - |
| CN-66 | DEUTSCH | 2 | Breaker solenoid | DT06-2S-P012 | DT04-2P-E004 |
| CN-68 | DEUTSCH | 2 | Safety solenoid | DT06-2S-P012 | - |
| CN-70 | DEUTSCH | 2 | Travel solenoid | DT06-2S-P012 | - |
| CN-74 | - | 4 | Alternator | 1218-6568 | S820-108000 |
| CN-75 | AMP | 2 | EPPR valve | S816-002002 | - |
| CN-80 | RING-TERM | - | Glow | S820-306000 | - |
| CN-81 | DEUTSCH | 2 | Travel buzzer | DT06-2S-P012 | - |
| CN-88 | DEUTSCH | 2 | Power max solenoid | DT06-2S-P012 | - |
| CN-92 | SWP | 1 | Emergency engine starting connector | S814-001100 | S814-101100 |
| CN-93 | DEUTSCH | 50 | ECM | DRC26-50S-04 | - |
| CN-94 | AMP | 4 | ECM earth | DT06-4S-EP06 | - |
| CN-95 | KET | 2 | Fusible link | 21N4-01311 | S813-130200 |
| CN-96 | AMP | 4 | l/conn [Frame harness-Feul warmer harness] | - | 2-967402-2 |
| CN-96A | AMP | 4 | Fuel warmer | 368523-1 | - |
| CN-96B | AMP | 3 | Fuel warmer | 2-967325-2 | - |
| CN-99 | DEUTSCH | 3 | Resistor | DT06-3S-EP06 | DT04-3P-EP10 |
| CN-116 | PA | 17 | Switch panel | S811-017002 | - |
| CN-126 | DEUTSCH | 4 | RS 232 connector | DT06-4S-P012 | DT04-4P-E004 |
| CN-133 | DEUTSCH | 2 | Boom priority solenoid | DT06-2S-P012 | - |
| CN-137 | DEUTSCH | 2 | Max flow solenoid | DT06-2S-P012 | - |
| CN-138 | DEUTSCH | 3 | DC/DC converter | DT06-3S-P012 | - |
| CN-139 | DEUTSCH | 2 | 12V socket | - | DT04-2P-E004 |
| CN-140 | DEUTSCH | 2 | Quick coupler | DT06-2S-P012 | DT04-2P-E004 |
| CN-141 | AMP | 13 | Wiper motor controller | 172498-1 | - |
| CN-142 | DEUTSCH | 3 | Accel dial | DT06-3S-P012 | - |
| CN-143 | KET | 2 | Cassette radio(with remocon) | S816-002002 | - |
| CN-144 | AMP | 12 | Remocon-cassette radio | 174045-2 | - |
| CN-147 | PACKARD | 4 | Fuel heater | 2-967325-3 | - |
| CN-148 | DEUTSCH | 3 | Data link | DT06-3S-P012 | DT04-3P-E004 |
| CN-156 | AMP | 2 | Air seat | - | S816-102002 |
| CN-156A | AMP | 2 | Air seat | S816-002002 | - |
| CN-164 | AMP | 8 | Ext-USB harness | S816-008002 | S816-108002 |
| CN-164 | - | 10 | USB | 316988-6 | - |
| CN-170 | KET | 2 | Heat seat | MG630676 | - |
| CN-170A | DEUTSCH | 2 | Heat seat | - | DT04-2P-E005 |
| CN-174 | DEUTSCH | 3 | Resistor | DT06-3S-P012 | - |

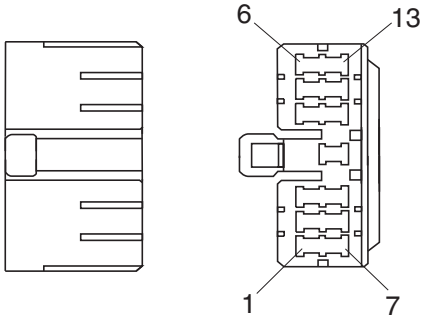
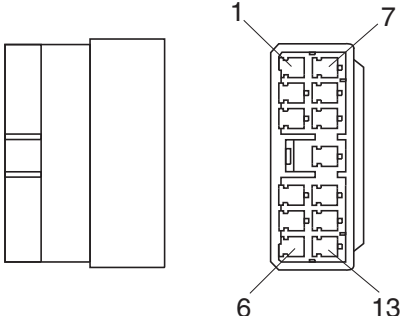
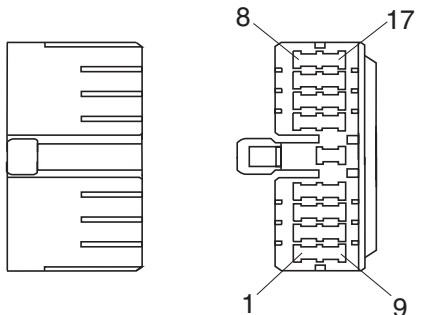
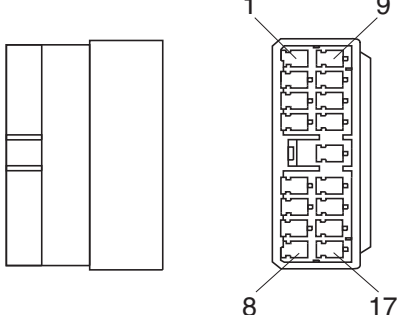
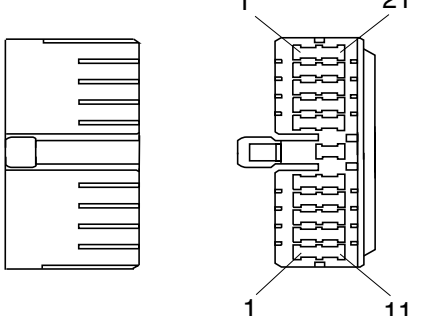
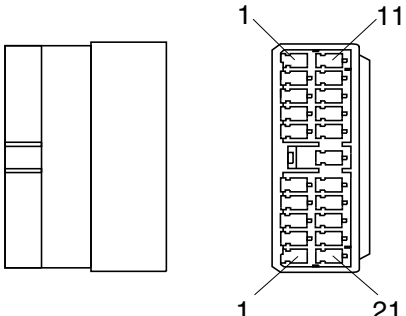
| Connector number | Type | No. of pin | Destination | Connector part No. | |
|------------------|-----------|------------|-----------------------|--------------------|--------------|
| | | | | Female | Male |
| · Relay | | | | | |
| CR-1 | RING-TERM | - | Battery relay (IG) | - | S820-208002 |
| CR-1 | RING-TERM | - | Battery relay (B+) | - | S820-308002 |
| CR-13 | KET | 4 | Head lamp relay | MG640927 | - |
| CR-23 | KET | 2 | Start relay | S814-002001 | - |
| CR-24 | RING-TERM | - | Preheater relay | S822-014000 | - |
| CR-45 | KET | 4 | ECM power | MG640927 | - |
| CR-46 | KET | 4 | Fuel heater relay | MG640927 | - |
| CR-62 | KET | 4 | Breaker relay | MG640927 | - |
| · Switch | | | | | |
| CS-1 | SHUR | 1 | Door switch | S822-014004 | - |
| CS-2 | SWP | 6 | Start key switch | S814-006000 | - |
| CS-4 | DEUTSCH | 3 | Safety switch | DT06-3S-P012 | - |
| CS-5 | DEUTSCH | 2 | Horn switch | - | DT04-2P-E004 |
| CS-19 | DEUTSCH | 2 | One touch decel | - | DT04-2P-E004 |
| CS-20 | AMP | 1 | Safety switch | S822-014002 | - |
| CS-23 | SWF | 10 | Beacon lamp switch | SWF 593757 | - |
| CS-26 | DEUTSCH | 2 | Breaker switch | DT06-2S-P012 | - |
| CS-26A | - | 2 | Breaker pedal | S816-002002 | S816-102002 |
| CS-27 | SWF | 10 | Breaker switch | SWF 593757 | - |
| CS-29 | DEUTSCH | 2 | Power max switch | DT06-2S-P012 | - |
| CS-33 | - | 6 | Emergency stop switch | 174262-2 | 174264-2 |
| CS-50 | SWF | 10 | Overload switch | SWF 593757 | - |
| CS-52 | SWF | 10 | Econo switch | SWF 593757 | - |
| CS-53 | SHUR | 1 | Wiper cut switch | S822-014002 | - |
| CS-54 | SWF | 10 | Spear switch | SWF 593757 | - |
| CS-67 | SWF | 10 | Quick coupler switch | SWF593757 | - |
| CS-74 | AMP | 2 | Master switch | S813-030201 | S816-130201 |
| CS-82 | SWF | 10 | Seat heater switch | SWF593757 | - |
| CS-83 | SWF | 10 | Seat switch | SWF593757 | - |
| CS-84 | SWF | 10 | Fuel warmer switch | SWF593757 | - |
| · Light | | | | | |
| CL-1 | KET | 2 | Room lamp | MG 610392 | - |
| CL-2 | AMP | 1 | Cigar lighter | S822-014002 | - |
| CL-4 | DEUTSCH | 2 | Head lamp | - | DT04-EP-E004 |
| CL-5 | DEUTSCH | 2 | Work lamp-LH | - | DT04-2P |
| CL-6 | DEUTSCH | 2 | Work lamp-RH | - | DT04-2P |
| CL-7 | SHUR | 1 | Beacon lamp | DT06-2S | DT04-2P |
| CL-8 | DEUTSCH | 2 | Cab light-LH | DT04-2S | DT04-2P-E005 |

| Connector number | Type | No. of pin | Destination | Connector part No. | |
|------------------|-----------|------------|---------------------------|--------------------|--------------|
| | | | | Female | Male |
| CL-9 | DEUTSCH | 2 | Cab light-RH | DT04-2S | DT04-2P-E005 |
| · Sensor, sendor | | | | | |
| CD-1 | AMP | 2 | Hydraulic oil temp sender | 85202-1 | - |
| CD-2 | DEUTSCH | 2 | Fuel sender | DT06-2S-P012 | - |
| CD-6 | DEUTSCH | 3 | Travel pressure switch | DT06-2S-EP06 | DT04-2P-E004 |
| CD-7 | KET | 2 | Working pressure switch | MG640795 | - |
| CD-10 | RING-TERM | - | Air cleaner switch | - | S820-104002 |
| CD-31 | DEUTSCH | 2 | Overload pressure switch | DT06-2S-P012 | DT04-2P-E004 |
| CD-42 | AMP | 3 | Pump pressure 1 | S816-003002 | - |
| CD-43 | AMP | 3 | Pump pressure 2 | S816-003002 | - |
| CD-44 | AMP | 3 | Pump pressure 3 | S816-003002 | - |
| CD-45 | DEUTSCH | 2 | WIF sensor | DT06-2S-P012 | - |

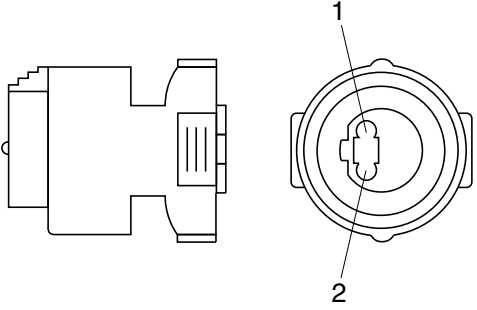
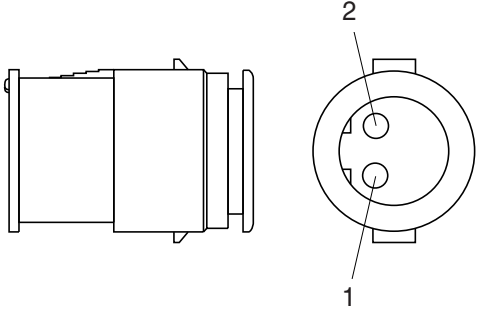
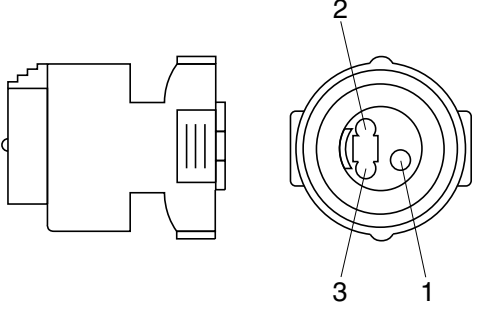
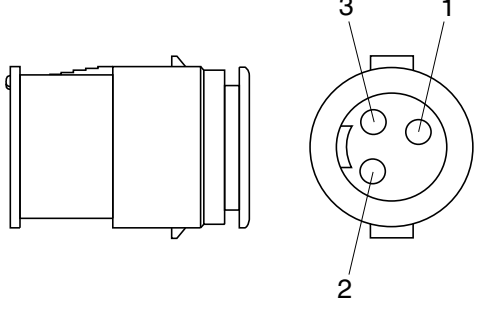
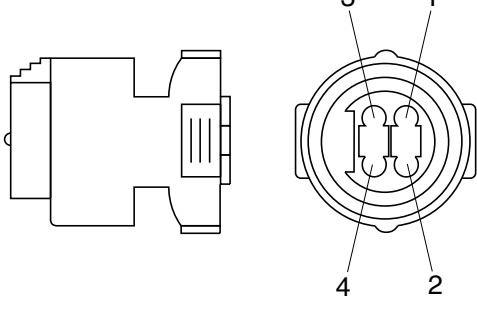
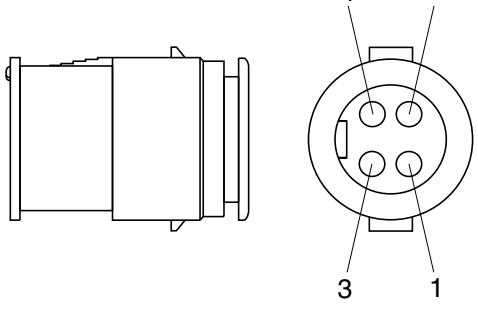
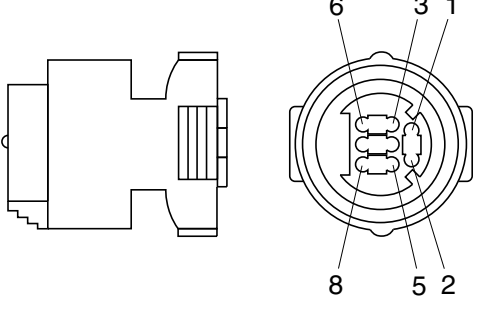
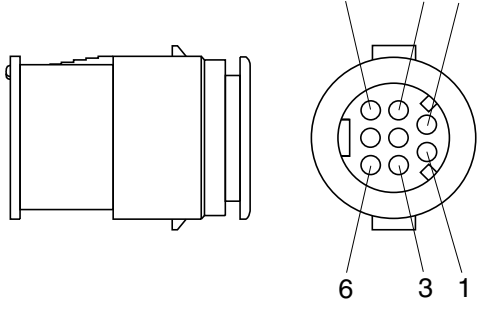
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

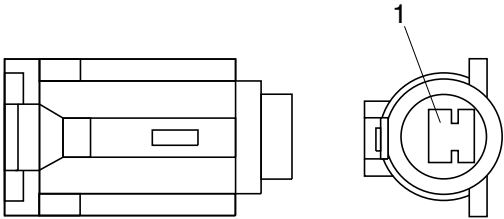
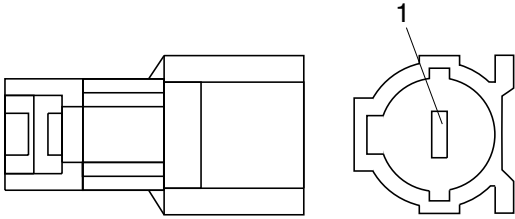
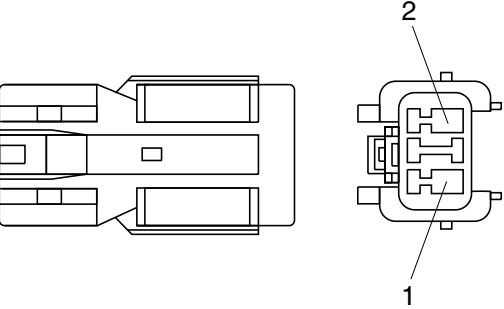
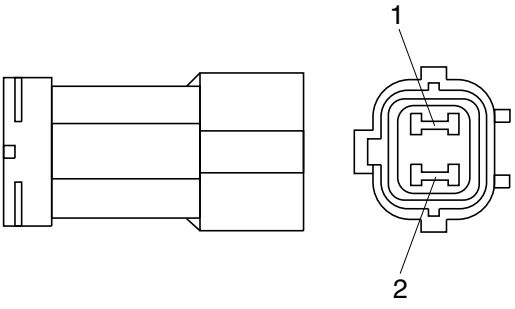
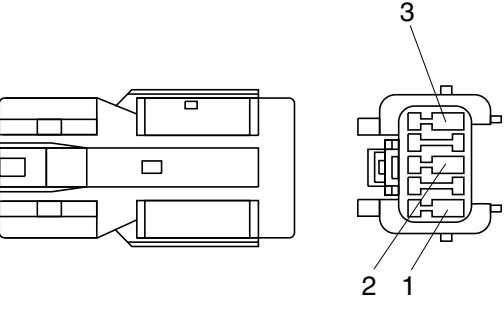
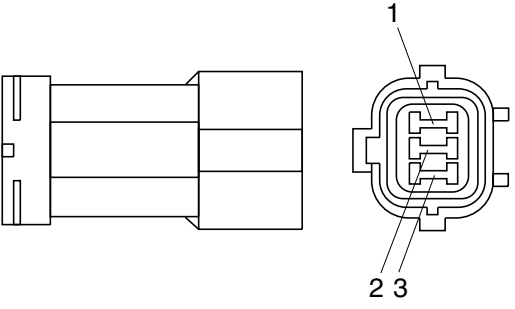
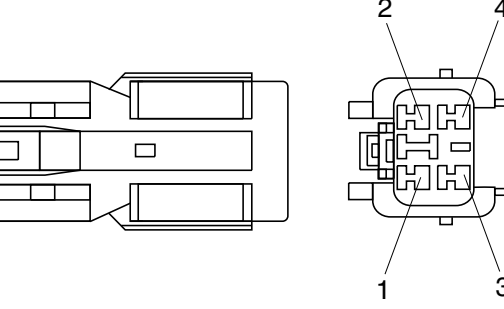
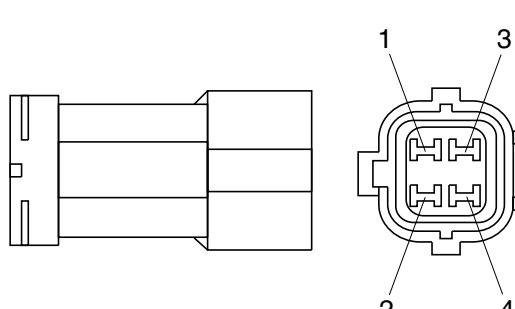
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|--|
| 5 |  <p style="text-align: center;">S811-005002</p> |  <p style="text-align: center;">S811-105002</p> |
| 7 |  <p style="text-align: center;">S811-007002</p> |  <p style="text-align: center;">S811-107002</p> |
| 9 |  <p style="text-align: center;">S811-009002</p> |  <p style="text-align: center;">3S811-109002</p> |
| 11 |  <p style="text-align: center;">S811-011002</p> |  <p style="text-align: center;">S811-111002</p> |

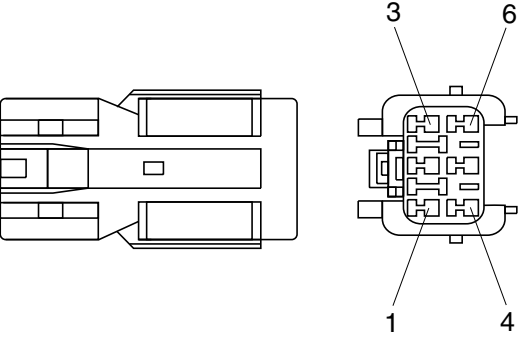
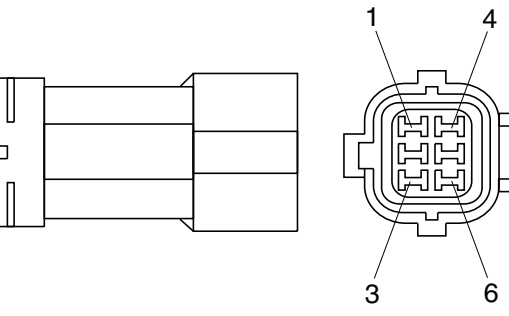
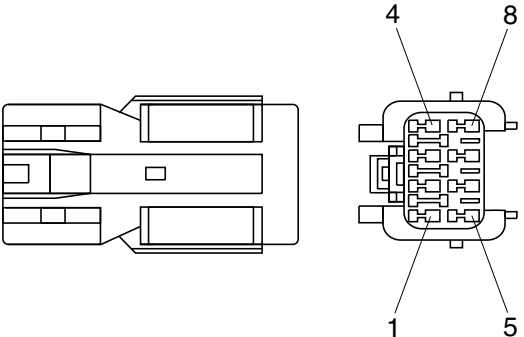
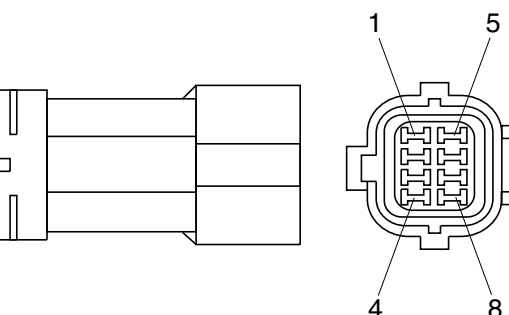
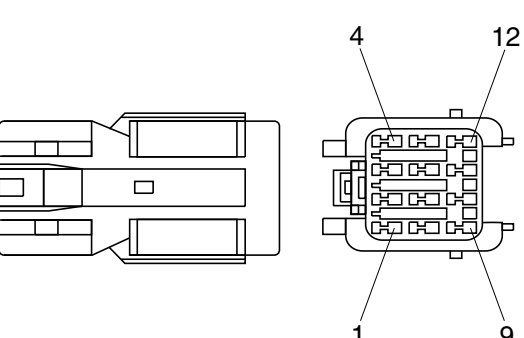
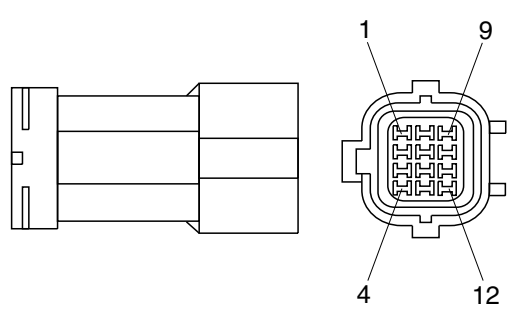
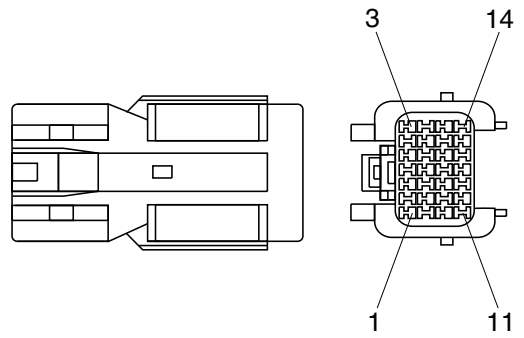
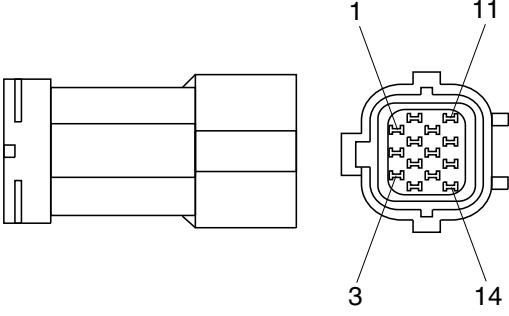
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 13 |  <p style="text-align: center;">S811-013002</p> |  <p style="text-align: center;">S811-113002</p> |
| 17 |  <p style="text-align: center;">S811-017002</p> |  <p style="text-align: center;">S811-117002</p> |
| 21 |  <p style="text-align: center;">S811-021002</p> |  <p style="text-align: center;">S811-121002</p> |
| | | |

J 2) TYPE CONNECTOR

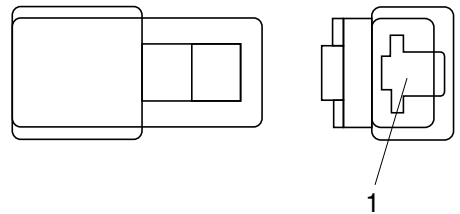
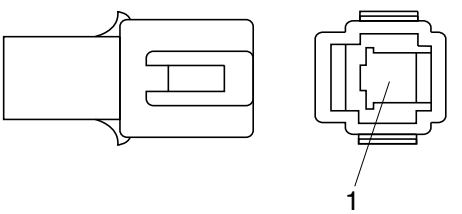
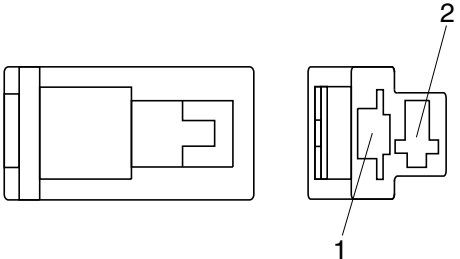
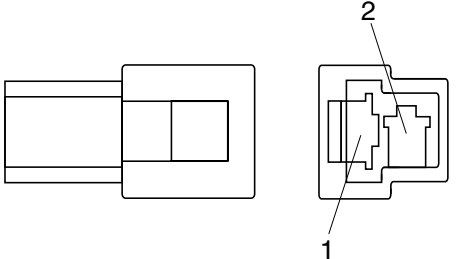
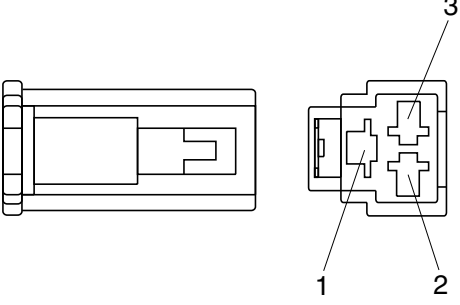
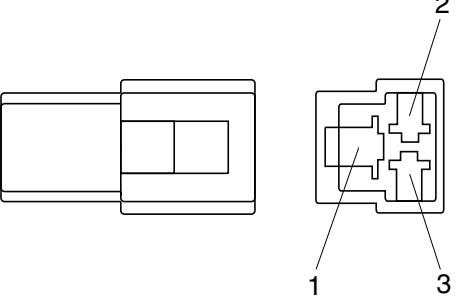
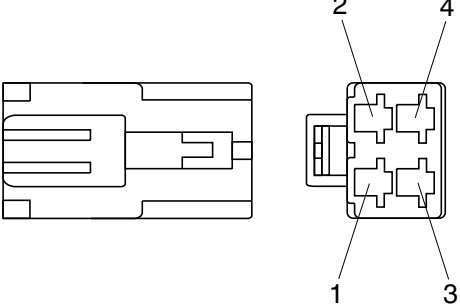
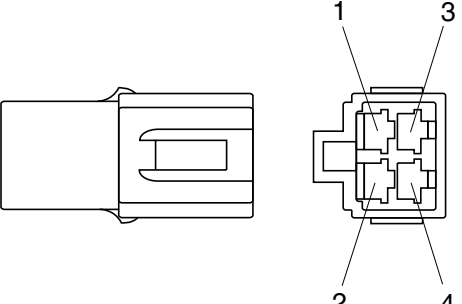
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 2 |  <p style="text-align: center;">S816-002001</p> |  <p style="text-align: center;">S816-102001</p> |
| 3 |  <p style="text-align: center;">S816-003001</p> |  <p style="text-align: center;">S816-103001</p> |
| 4 |  <p style="text-align: center;">S816-004001</p> |  <p style="text-align: center;">S816-104001</p> |
| 8 |  <p style="text-align: center;">S816-008001</p> |  <p style="text-align: center;">S816-108001</p> |

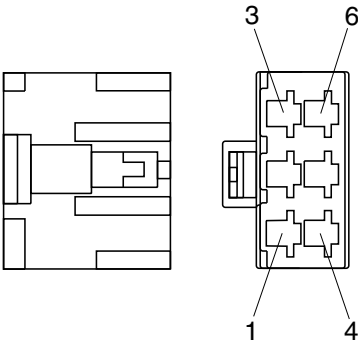
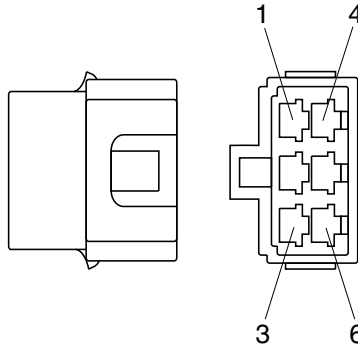
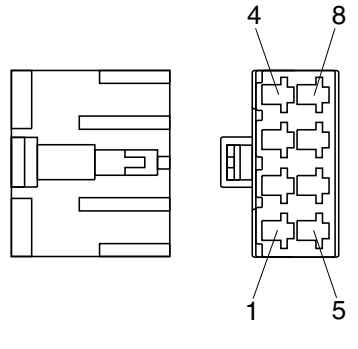
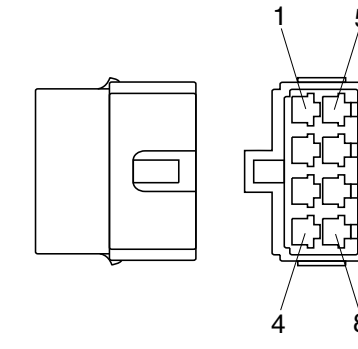
3) SWP TYPE CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 1 |  <p data-bbox="687 680 836 707">S814-001000</p> |  <p data-bbox="1241 680 1390 707">S814-101000</p> |
| 2 |  <p data-bbox="687 1088 836 1115">S814-002000</p> |  <p data-bbox="1241 1088 1390 1115">S814-102000</p> |
| 3 |  <p data-bbox="687 1494 836 1520">S814-003000</p> |  <p data-bbox="1241 1494 1390 1520">S814-103000</p> |
| 4 |  <p data-bbox="687 1897 836 1924">S814-004000</p> |  <p data-bbox="1241 1897 1390 1924">S814-104000</p> |

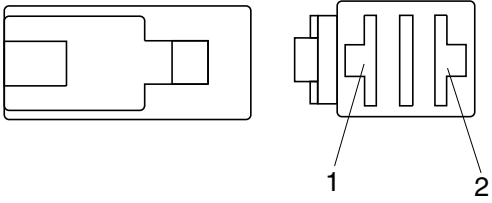
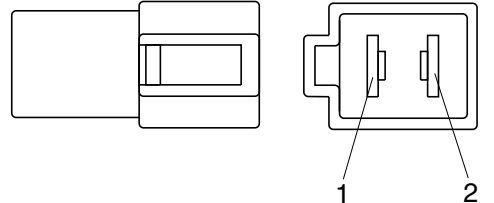
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 6 |  <p data-bbox="686 638 837 672">S814-006000</p> |  <p data-bbox="1244 638 1396 672">S814-106000</p> |
| 8 |  <p data-bbox="686 1041 837 1075">S814-008000</p> |  <p data-bbox="1244 1041 1396 1075">S814-108000</p> |
| 12 |  <p data-bbox="686 1449 837 1482">S814-012000</p> |  <p data-bbox="1244 1449 1396 1482">S814-112000</p> |
| 14 |  <p data-bbox="686 1856 837 1890">S814-014000</p> |  <p data-bbox="1244 1856 1396 1890">S814-114000</p> |

4) CN TYPE CONNECTOR

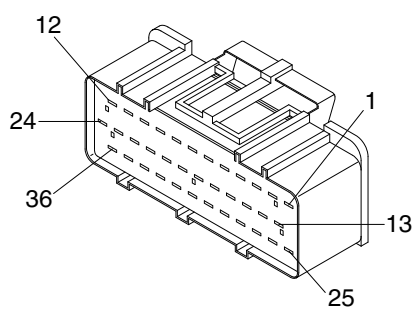
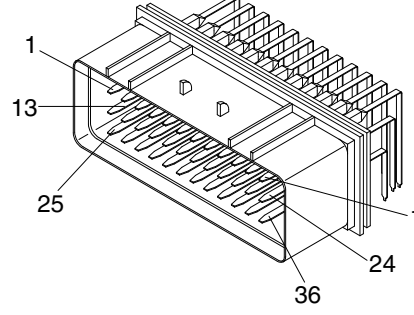
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 1 |  <p data-bbox="686 683 837 712">S810-001202</p> |  <p data-bbox="1244 683 1396 712">S810-101202</p> |
| 2 |  <p data-bbox="686 1086 837 1115">S810-002202</p> |  <p data-bbox="1244 1086 1396 1115">S810-102202</p> |
| 3 |  <p data-bbox="686 1489 837 1518">S810-003202</p> |  <p data-bbox="1244 1489 1396 1518">S810-103202</p> |
| 4 |  <p data-bbox="686 1892 837 1921">S810-004202</p> |  <p data-bbox="1244 1892 1396 1921">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> |
| | | |
| | | |

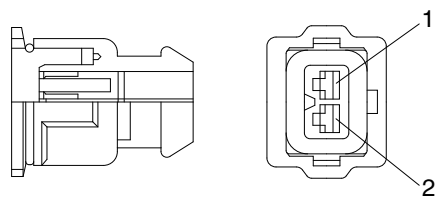
5) 375 FASTEN TYPE CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 2 |  <p style="text-align: center;">S810-002402</p> |  <p style="text-align: center;">S810-102402</p> |

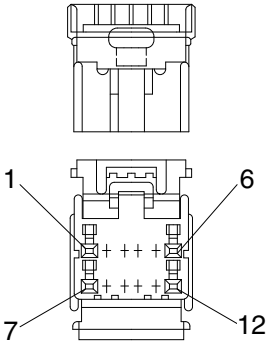
6) AMP ECONOSEAL CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 36 |  <p style="text-align: center;">344111-1</p> |  <p style="text-align: center;">344108-1</p> |

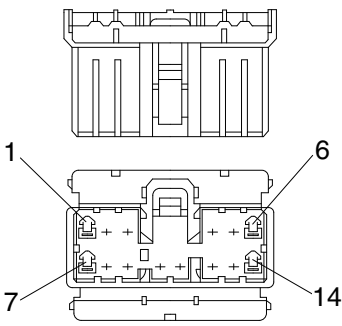
7) AMP TIMER CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 2 |  <p style="text-align: center;">85202-1</p> | |

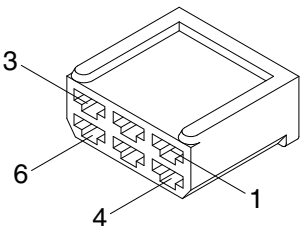
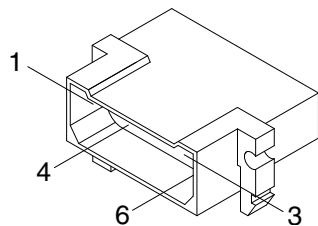
8) AMP 040 MULTILOCK CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 12 |  <p style="text-align: right;">174045-2</p> | |

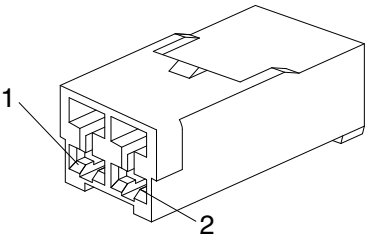
9) AMP 070 MULTILOCK CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|----------------------|
| 14 |  <p style="text-align: right;">173852</p> | |

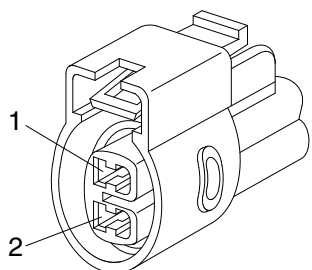
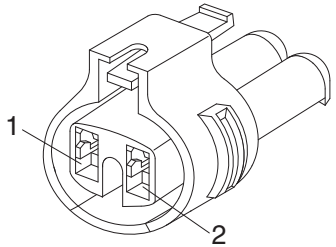
10) AMP FASTIN - FASTON CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 6 |  <p style="text-align: right;">925276-0</p> |  <p style="text-align: right;">480003-9</p> |

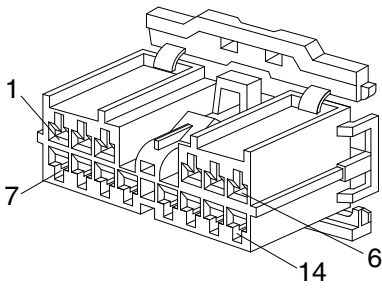
11) KET 090 CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 2 |  <p style="text-align: right;">MG610070</p> | |

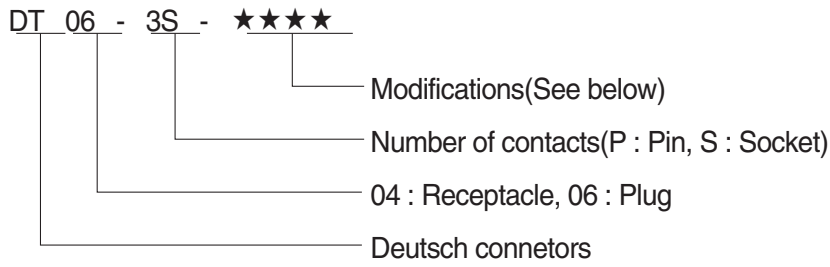
12) KET 090 WP CONNECTORS

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 2 |  <p style="text-align: right;">MG640605</p> | |
| 2 |  <p style="text-align: right;">MG640795</p> | |

13) KET SDL CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 14 |  <p style="text-align: right;">MG610406</p> | |

14) DEUTSCH DT CONNECTORS



※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

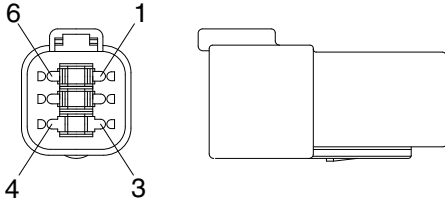
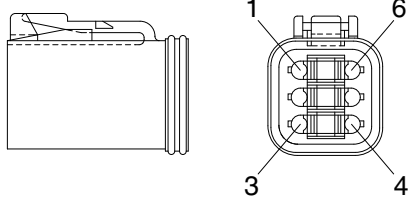
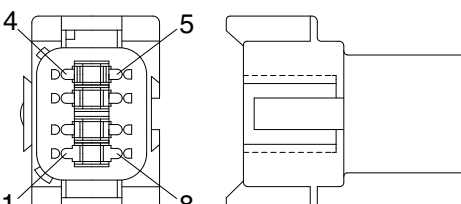
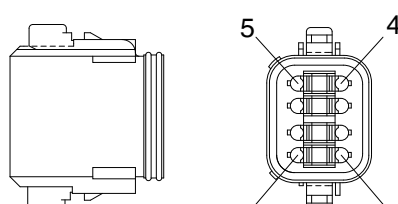
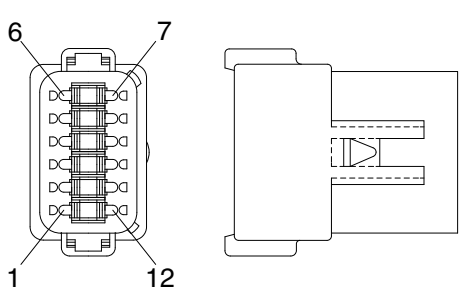
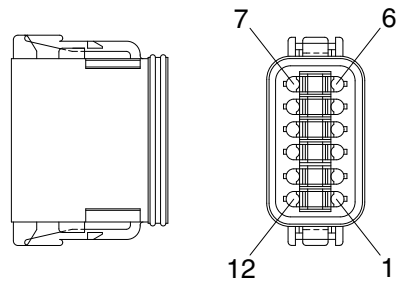
E005 : Combination - E004 & E003

EP04 : End cap

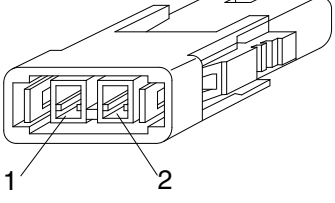
EP06 : Combination P012 & EP04

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

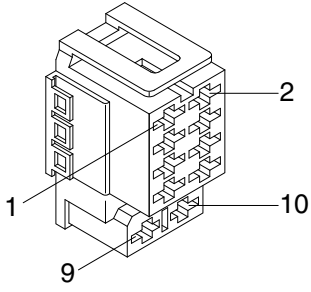
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|---|
| 2 | <p style="text-align: right;">DT06-2S</p> | <p style="text-align: right;">DT04-2P</p> |
| 3 | <p style="text-align: right;">DT06-3S</p> | <p style="text-align: right;">DT04-3P</p> |
| 4 | <p style="text-align: right;">DT06-4S</p> | <p style="text-align: right;">DT04-4P</p> |

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 6 |  <p style="text-align: right;">DT06-6S</p> |  <p style="text-align: right;">DT04-6P</p> |
| 8 |  <p style="text-align: right;">DT06-8S</p> |  <p style="text-align: right;">DT04-8P</p> |
| 12 |  <p style="text-align: right;">DT06-12S</p> |  <p style="text-align: right;">DT04-12P</p> |

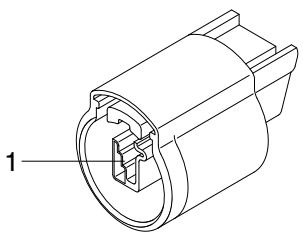
15) MOLEX 2CKTS CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 2 |  <p style="text-align: right;">35215-0200</p> | |

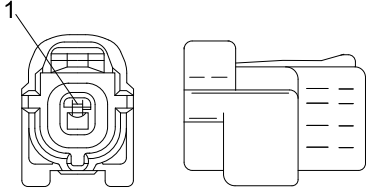
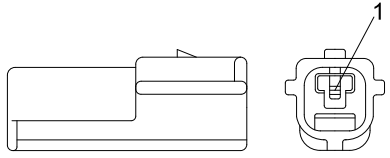
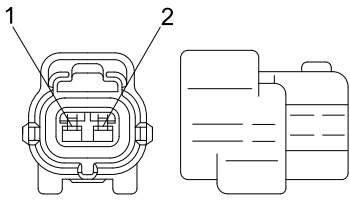
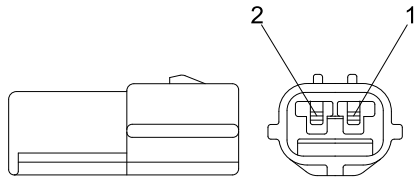
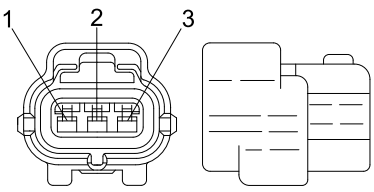
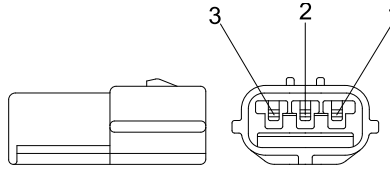
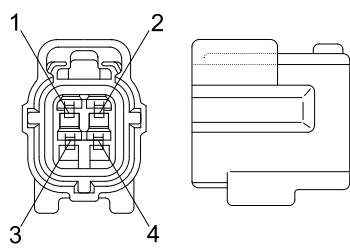
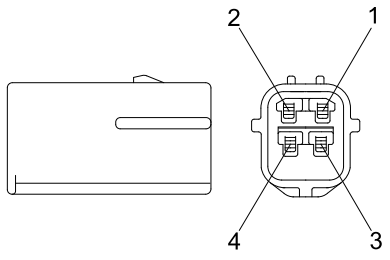
16) ITT SWF CONNECTOR

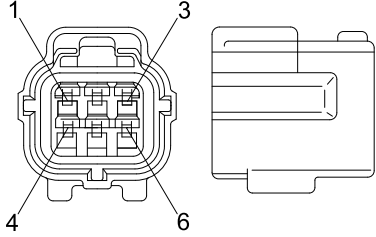
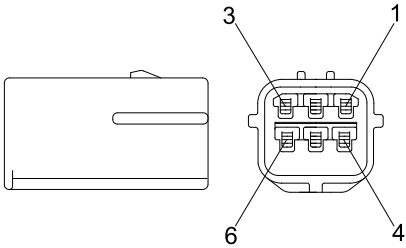
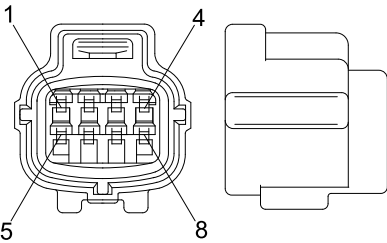
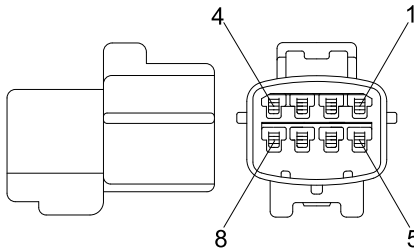
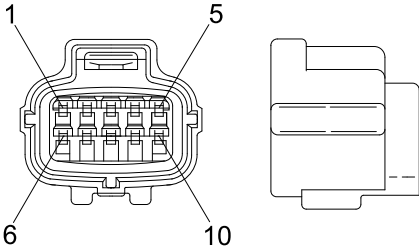
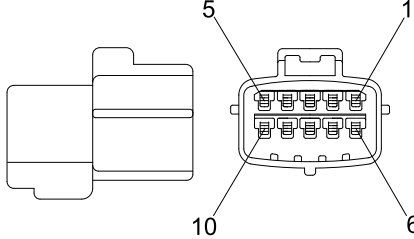
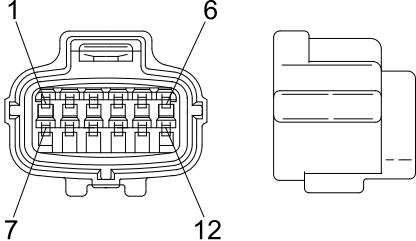
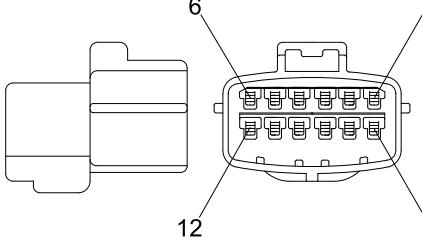
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 10 |  <p style="text-align: right;">SWF593757</p> | |

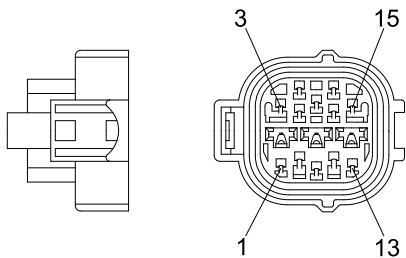
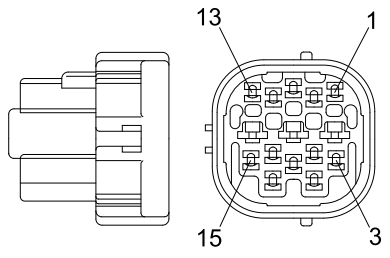
17) MWP NMWP CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|----------------------|
| 1 |  <p style="text-align: right;">NMWP01F-B</p> | |

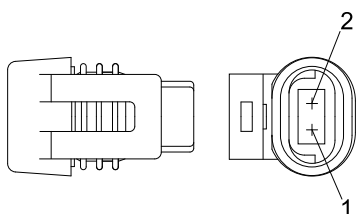
18) ECONOSEAL J TYPE CONNECTORS

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|--|
| 1 |  <p style="text-align: right;">S816-001002</p> |  <p style="text-align: right;">S816-101002</p> |
| 2 |  <p style="text-align: right;">S816-002002</p> |  <p style="text-align: right;">S816-102002</p> |
| 3 |  <p style="text-align: right;">S816-003002</p> |  <p style="text-align: right;">S816-103002</p> |
| 4 |  <p style="text-align: right;">S816-004002</p> |  <p style="text-align: right;">S816-104002</p> |

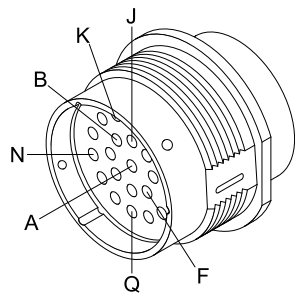
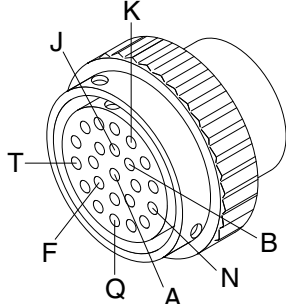
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|---|
| 6 |  <p style="text-align: center;">S816-006002</p> |  <p style="text-align: center;">S816-106002</p> |
| 8 |  <p style="text-align: center;">S816-008002</p> |  <p style="text-align: center;">S816-108002</p> |
| 10 |  <p style="text-align: center;">S816-010002</p> |  <p style="text-align: center;">S816-110002</p> |
| 12 |  <p style="text-align: center;">S816-012002</p> |  <p style="text-align: center;">S816-112002</p> |

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|---|
| 15 |  <p data-bbox="730 633 834 663">368301-1</p> |  <p data-bbox="1278 633 1382 663">2-85262-1</p> |

19) METRI-PACK TYPE CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|--|----------------------|
| 2 |  <p data-bbox="726 1236 829 1265">12040753</p> | |

20) DEUTSCH HD30 CONNECTOR

| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|------------|---|--|
| 23 |  <p data-bbox="667 1839 834 1868">HD36-24-23SN</p> |  <p data-bbox="1220 1839 1388 1868">HD34-24-23PN</p> |