

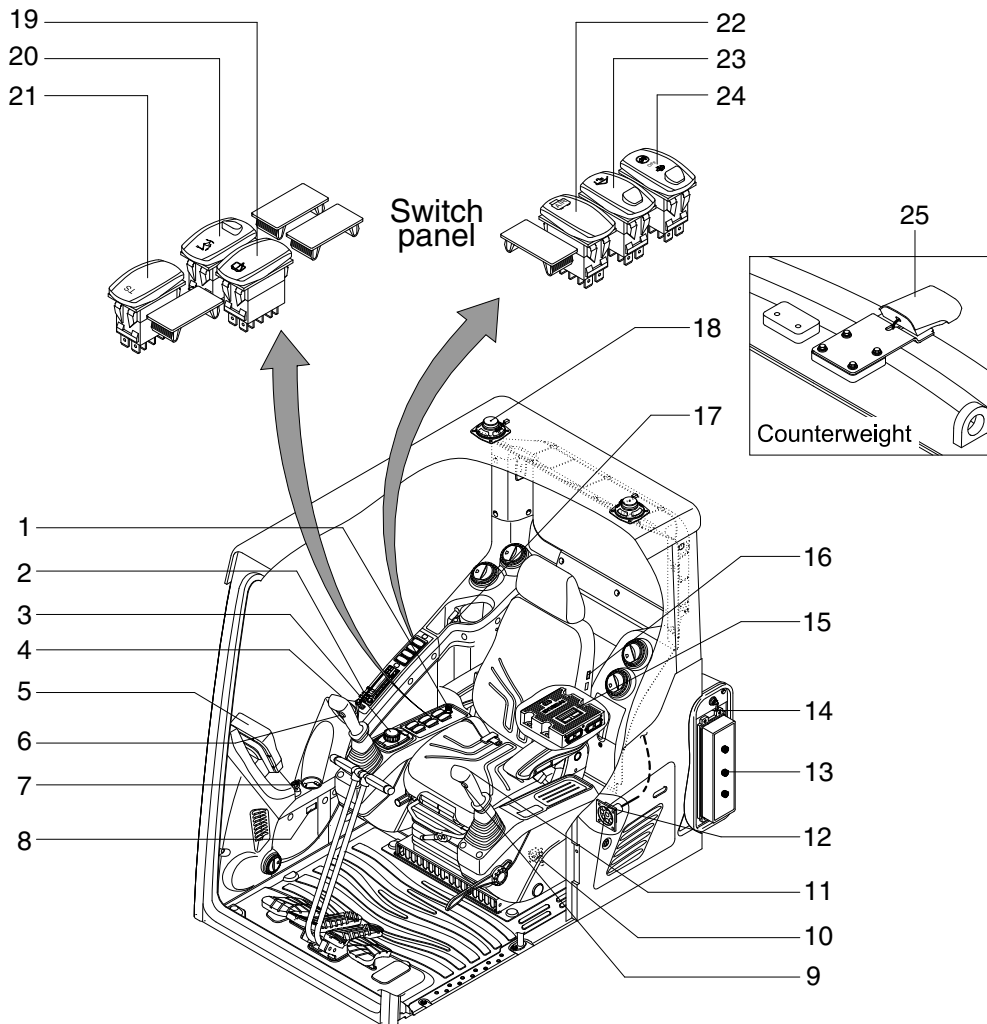
## SECTION 4 ELECTRICAL SYSTEM

|                                                  |      |
|--------------------------------------------------|------|
| Group 1 Component Location .....                 | 4-1  |
| Group 2 Electrical Circuit .....                 | 4-3  |
| Group 3 Electrical Component Specification ..... | 4-23 |
| Group 4 Connectors .....                         | 4-34 |

# SECTION 4 ELECTRICAL SYSTEM

## GROUP 1 COMPONENT LOCATION

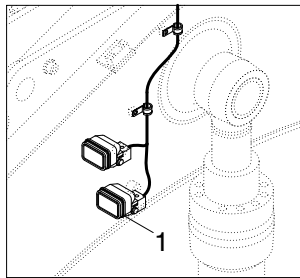
### 1. LOCATION 1



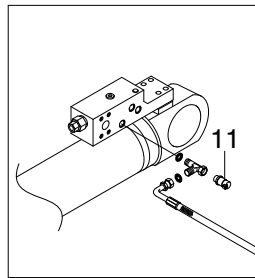
380L4EL15

- |                            |                                 |                                |
|----------------------------|---------------------------------|--------------------------------|
| 1 Cigar lighter            | 10 Emergency engine stop switch | 19 Lower wiper & washer switch |
| 2 Radio & USB player       | 11 One touch decel switch       | 20 Boom floating switch        |
| 3 Haptic controller        | 12 RS232 & J1939 service socket | 21 Travel straight switch      |
| 4 Horn switch              | 13 Fuse & relay box             | 22 Air compressor switch       |
| 5 Cluster                  | 14 Master switch                | 23 Quick clamp switch          |
| 6 Breaker operation switch | 15 Machine control unit         | 24 DPF switch                  |
| 7 Starting switch          | 16 Seat heater switch           | 25 Rear view camera            |
| 8 Service meter            | 17 Service socket               |                                |
| 9 Power max switch         | 18 Speaker                      |                                |

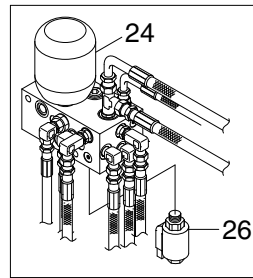
## 2. LOCATION 2



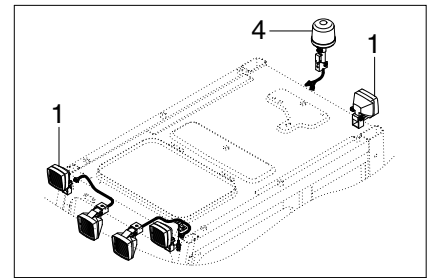
BOOM



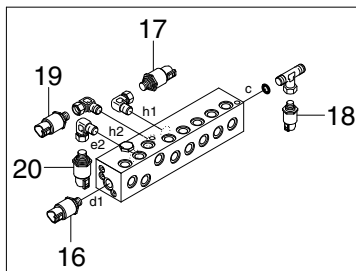
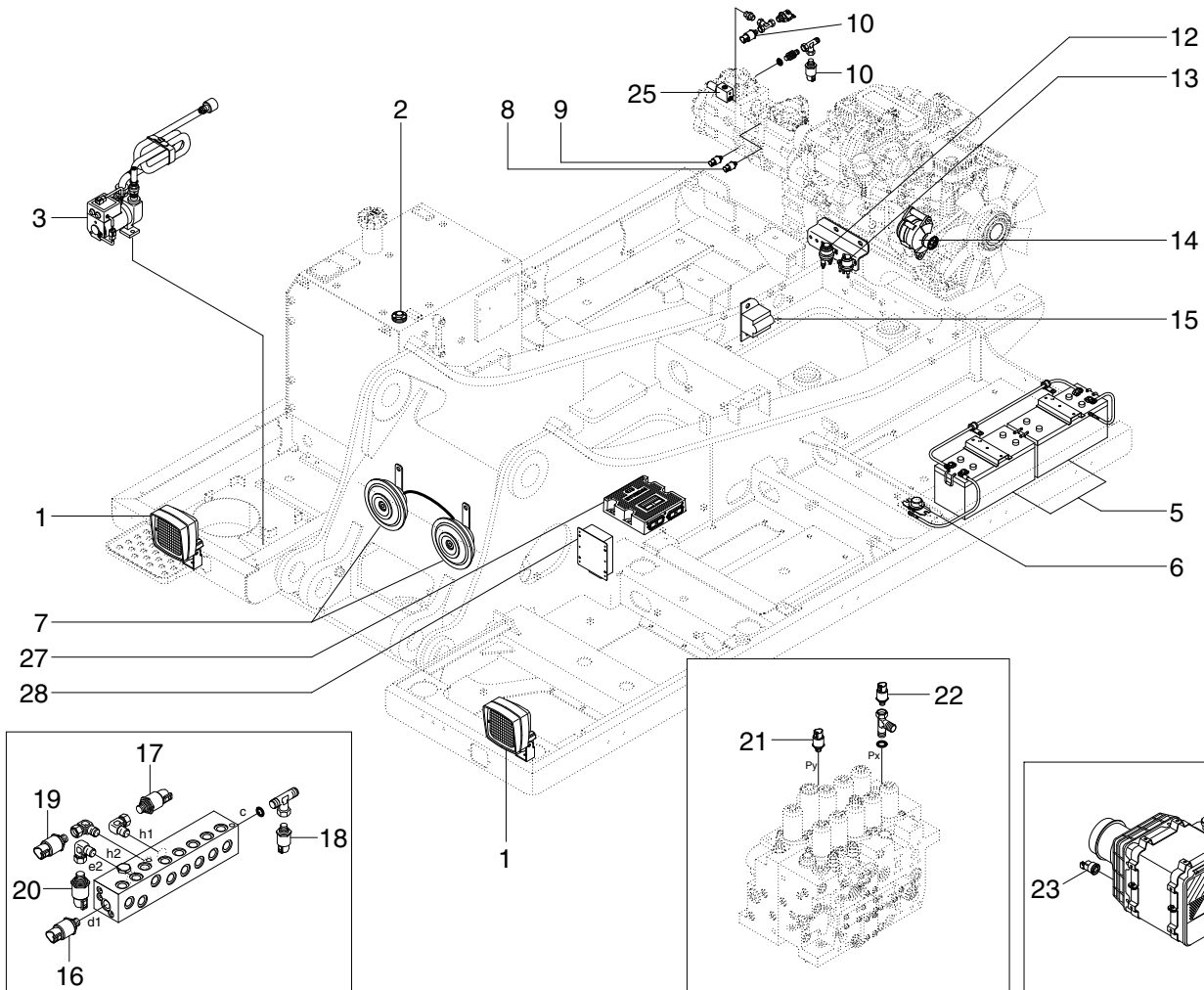
BOOM SAFETY VALVE



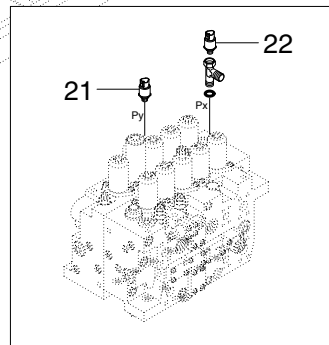
SOLENOID VALVE



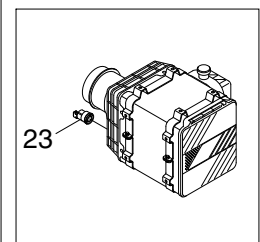
CAB



SHUTTLE BLOCK



MAIN CONTROL VALVE



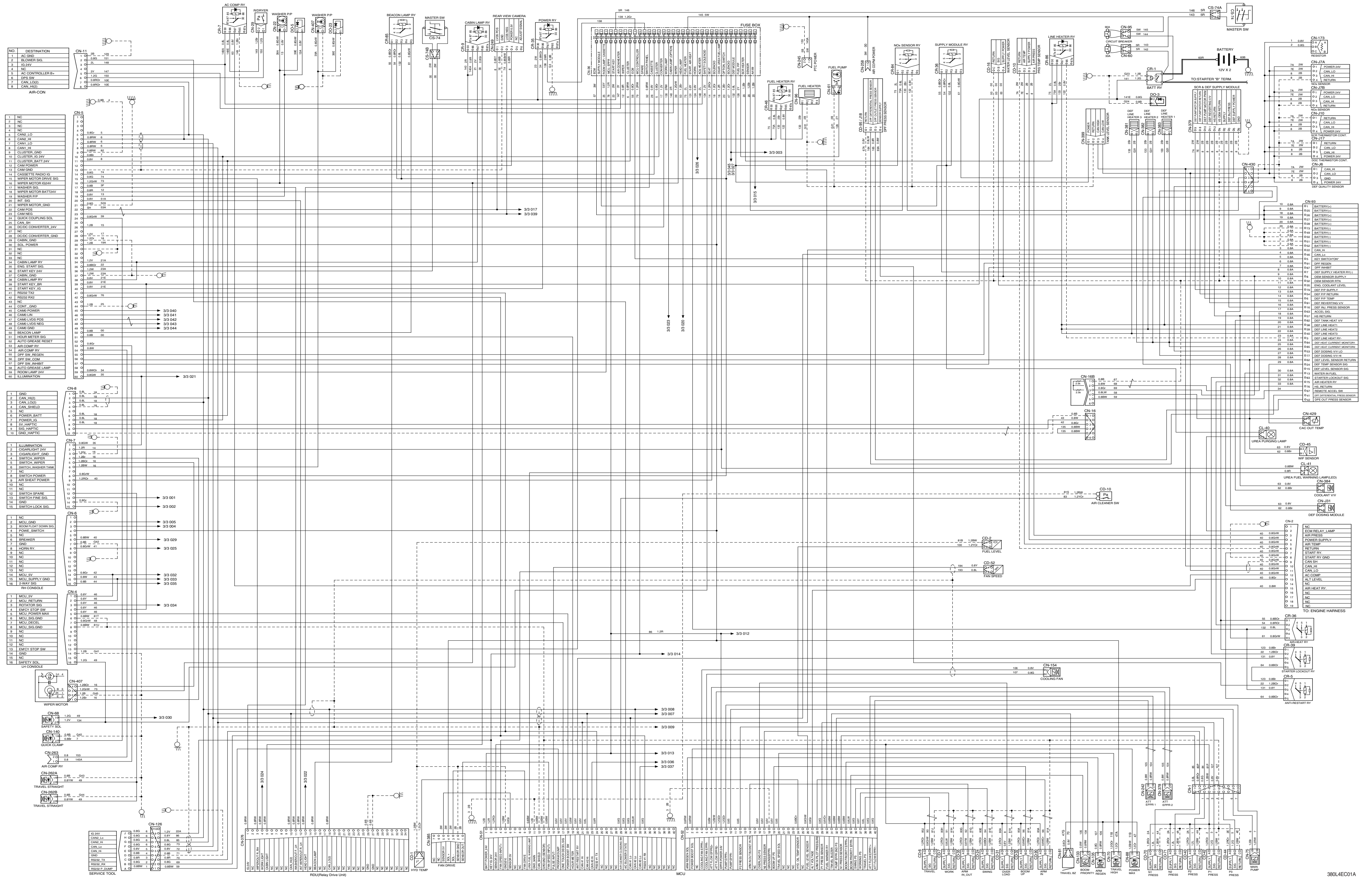
AIR CLEANER

380L4EL16

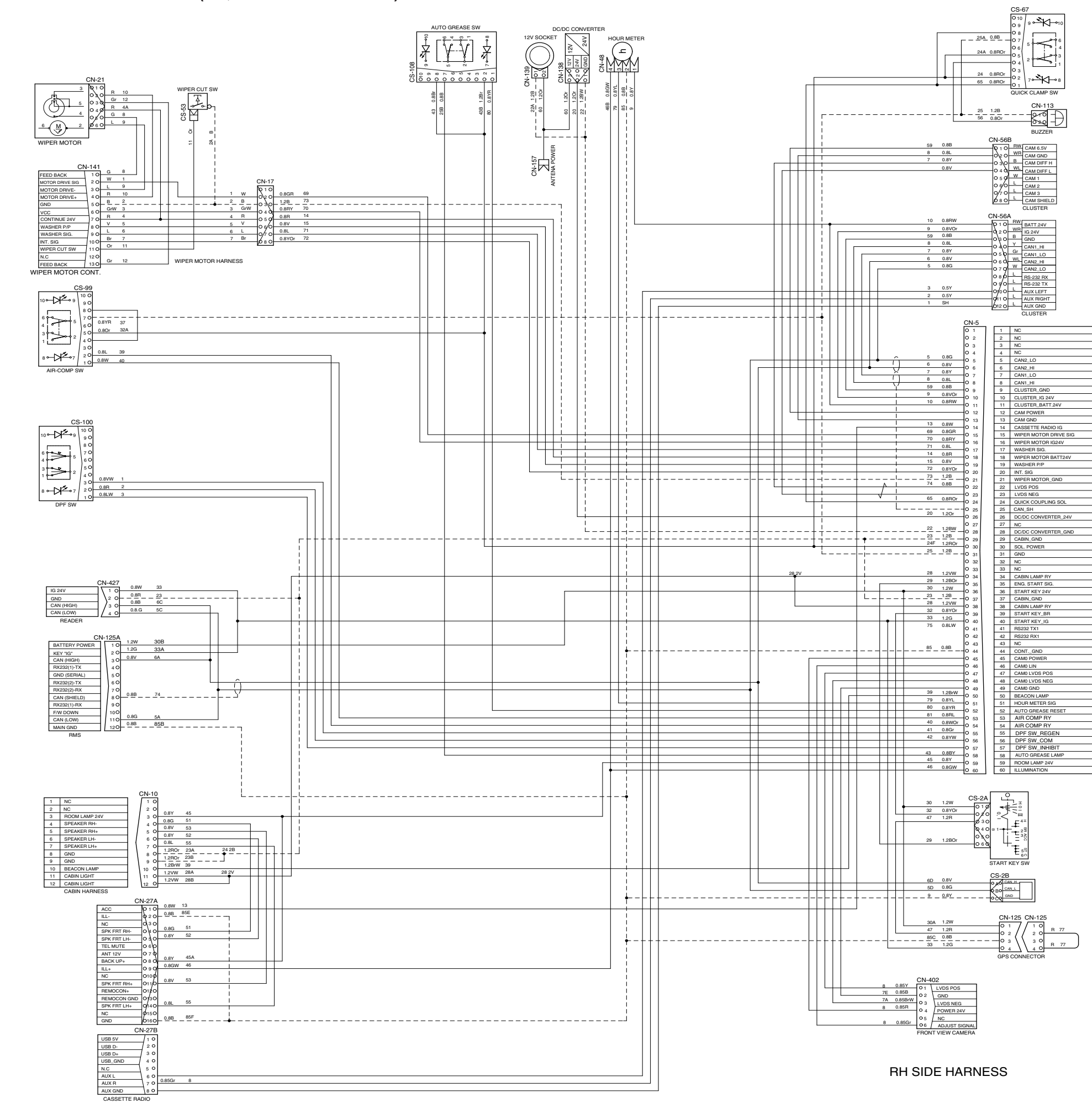
- |                         |                                  |                             |
|-------------------------|----------------------------------|-----------------------------|
| 1 Lamp                  | 11 Overload pressure sensor      | 21 Attach pressure sensor   |
| 2 Fuel sender           | 12 Start relay                   | 22 Travel pressure sensor   |
| 3 Fuel filler pump      | 13 Heater relay                  | 23 Air cleaner sensor       |
| 4 Beacon lamp           | 14 Alternator                    | 24 4 cartridge valve        |
| 5 Battery               | 15 Travel alarm buzzer           | 25 Pump EPPR valve          |
| 6 Battery relay         | 16 Arm/Bucket in pressure sensor | 26 Boom priority EPPR valve |
| 7 Horn                  | 17 Boom up pressure sensor       | 27 MCU 1                    |
| 8 P1 pressure sensor    | 18 Swing pressure sensor         | 28 MCU 2                    |
| 9 P2 pressure sensor    | 19 Boom down pressure sensor     |                             |
| 10 EPPR pressure sensor | 20 Arm in/swing pressure sensor  |                             |

## GROUP 2 ELECTRICAL CIRCUIT

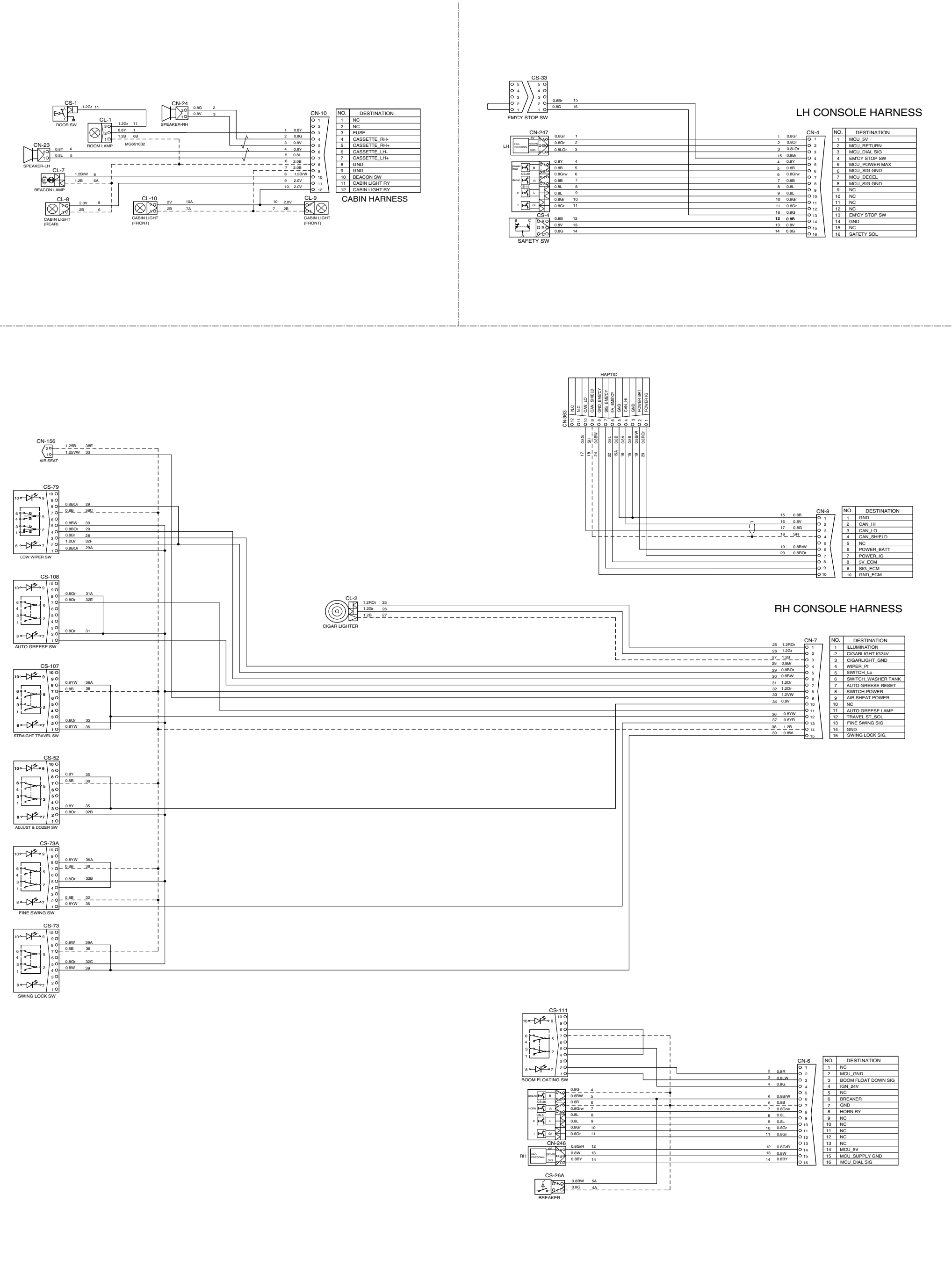
ELECTRICAL CIRCUIT (1/6, SERIAL NO. : #0261)



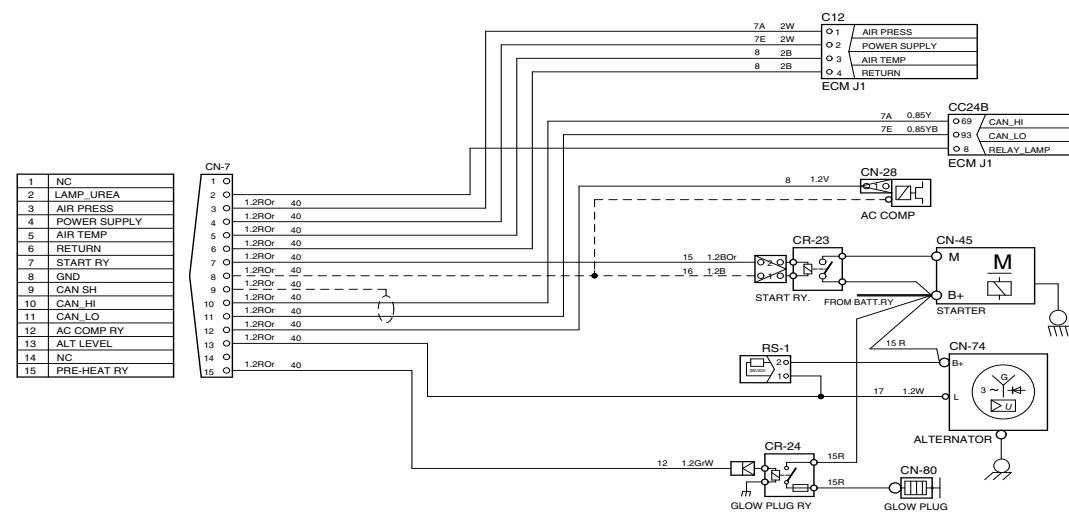
ELECTRICAL CIRCUIT (2/6, SERIAL NO. : -#0261)



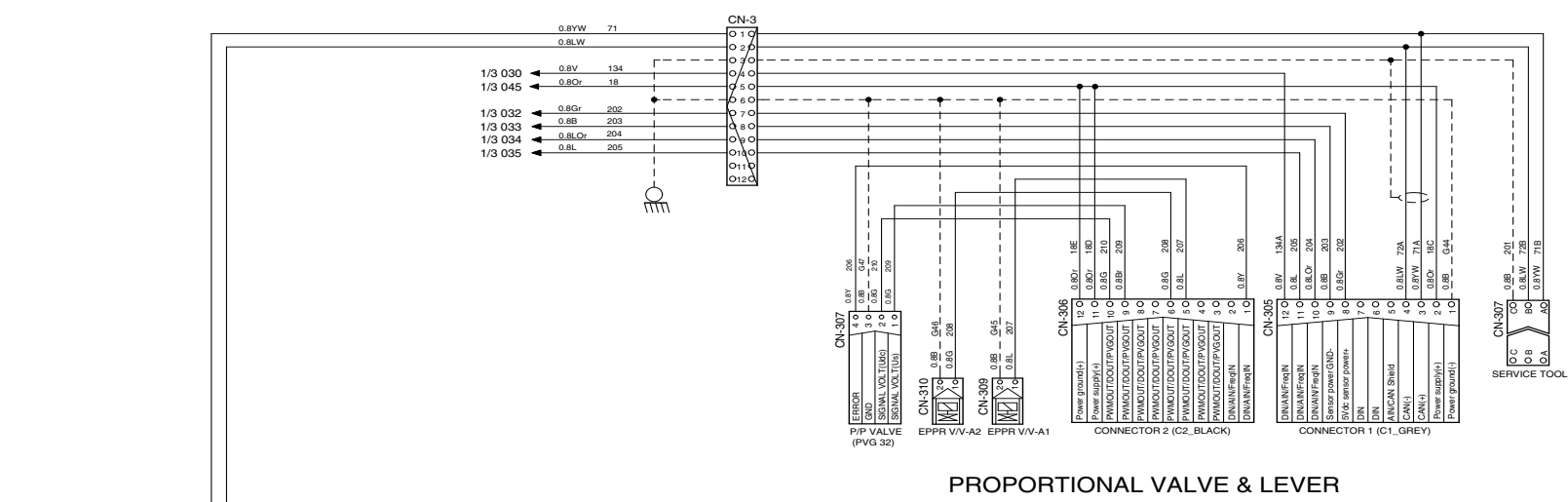
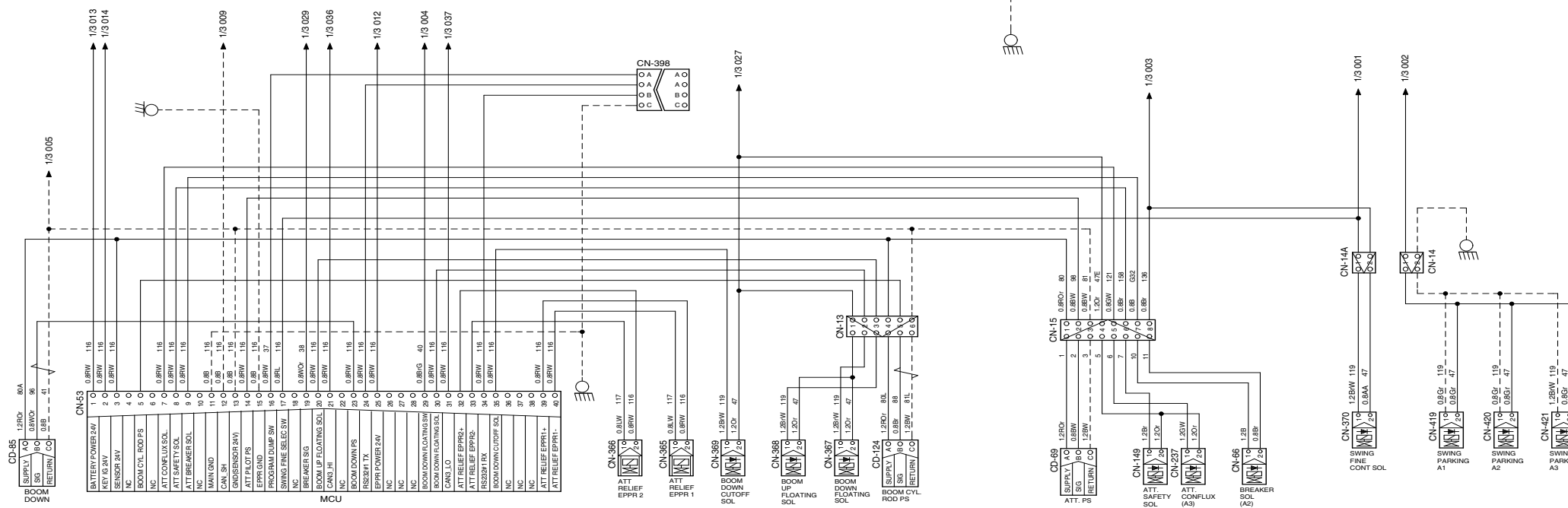
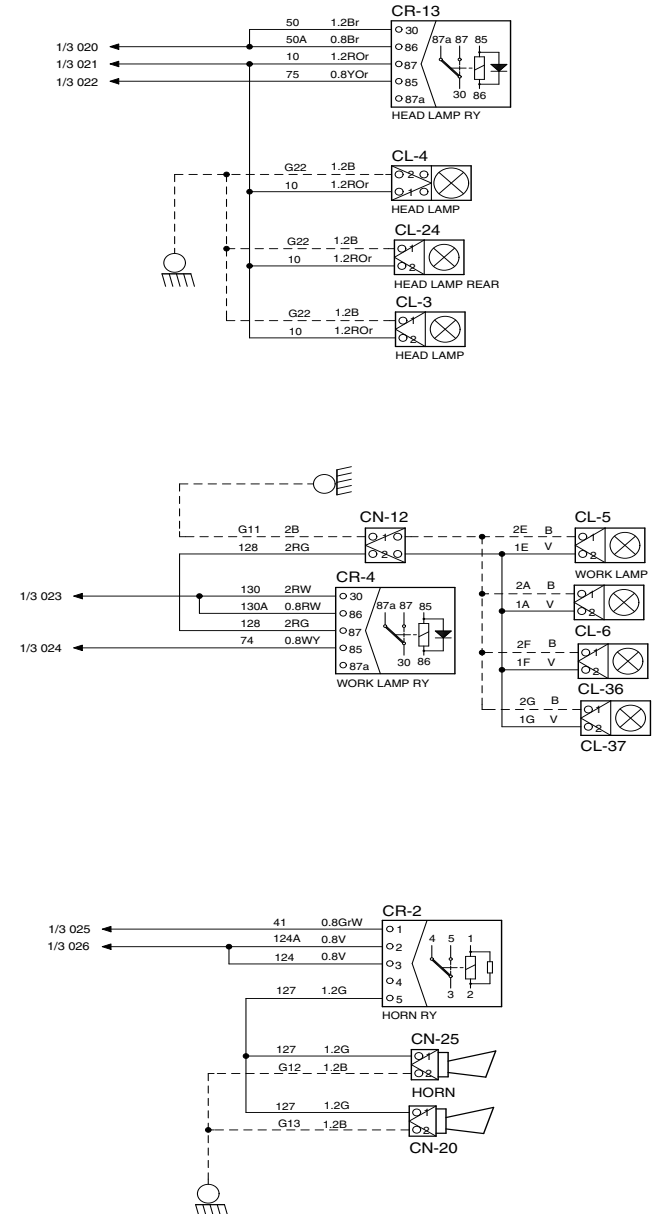
RH SIDE HARNESS



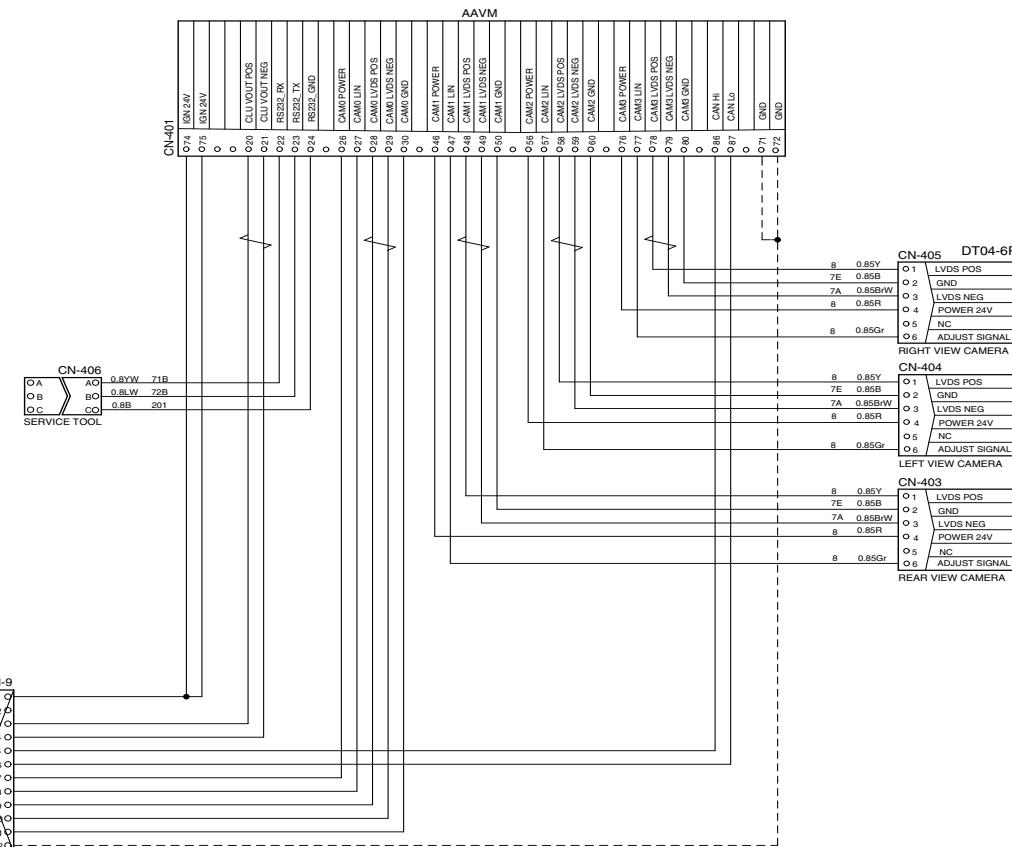
ELECTRICAL CIRCUIT (3/6, SERIAL NO. : -#0261)



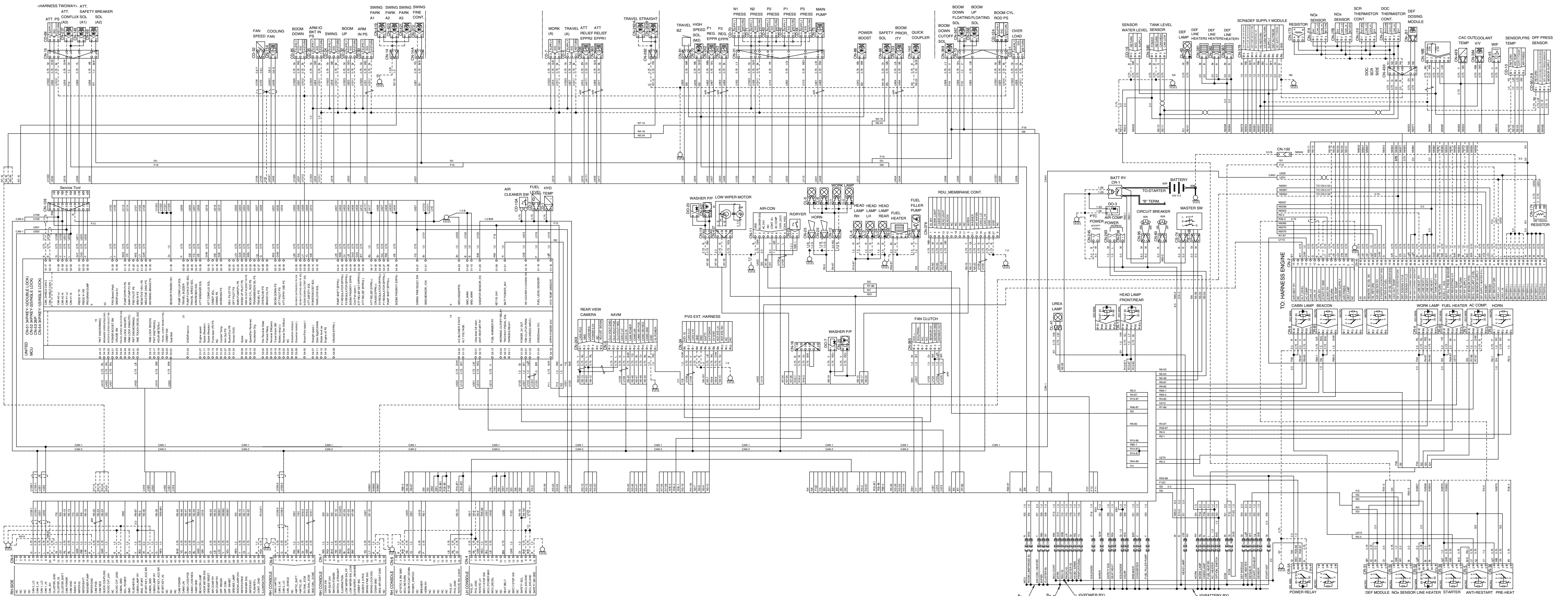
ENGINE HARNESS



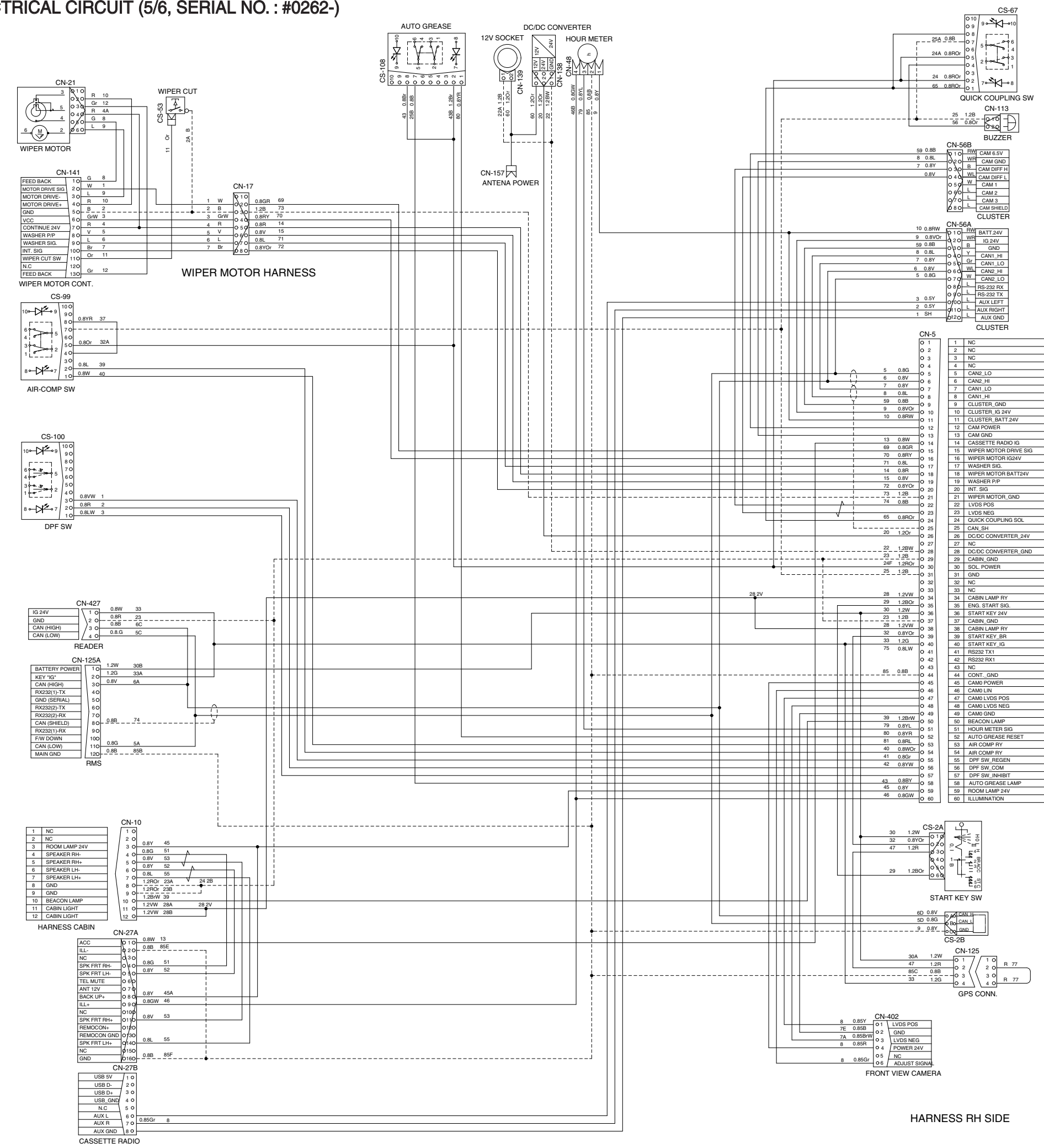
PROPORTIONAL VALVE & LEVER



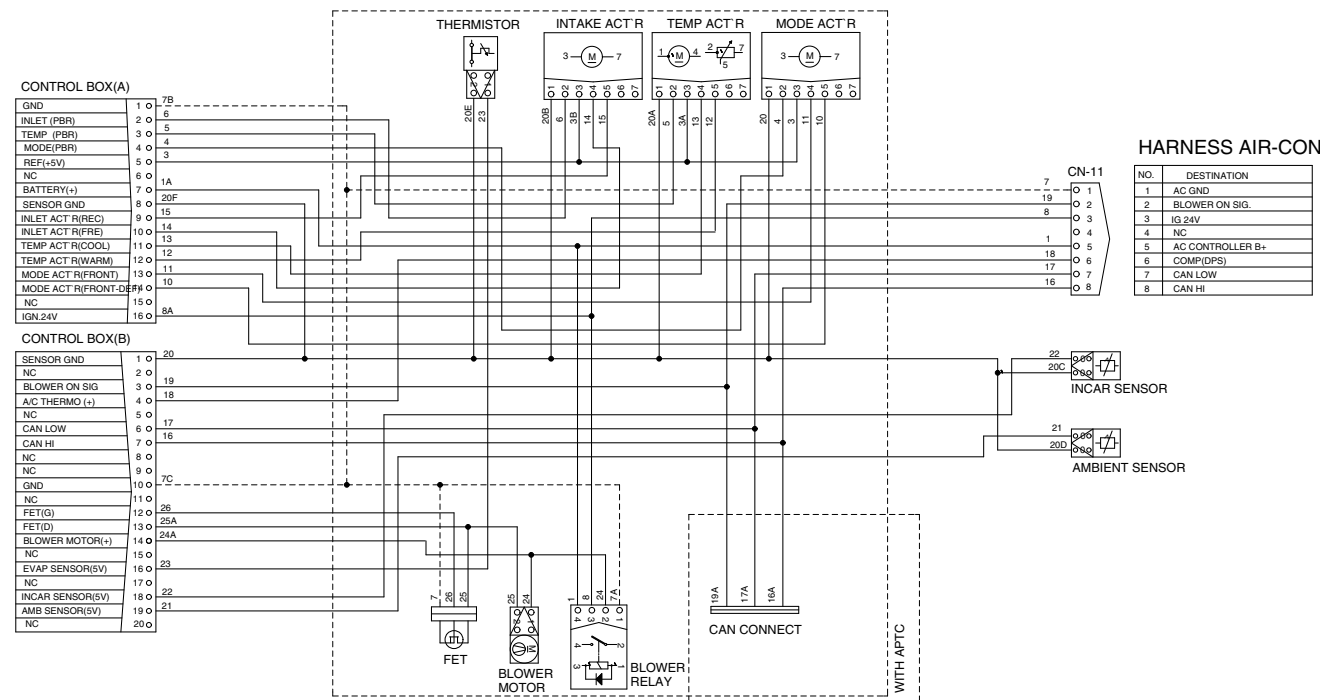
ELECTRICAL CIRCUIT (4/6, SERIAL NO. : #0262-)



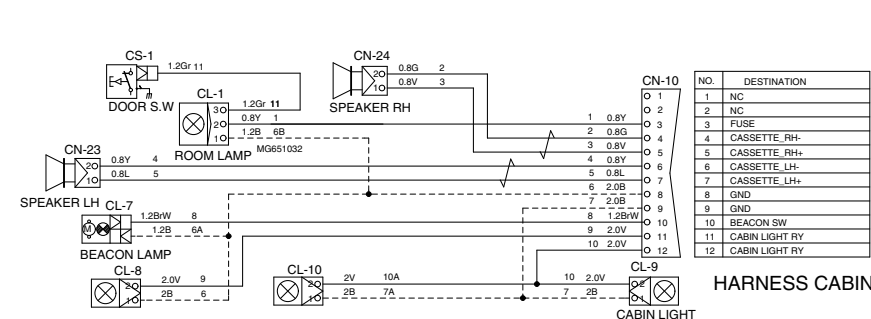
ELECTRICAL CIRCUIT (5/6, SERIAL NO. : #0262-)



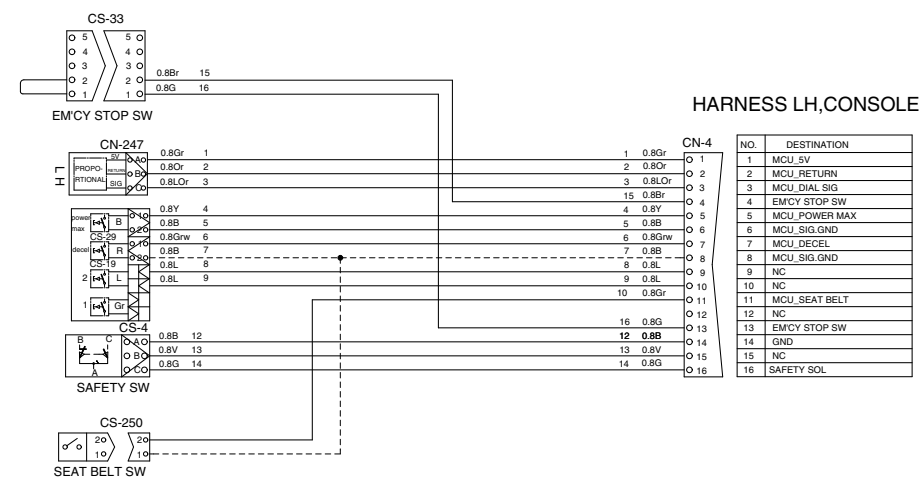
HARNESS RH SIDE



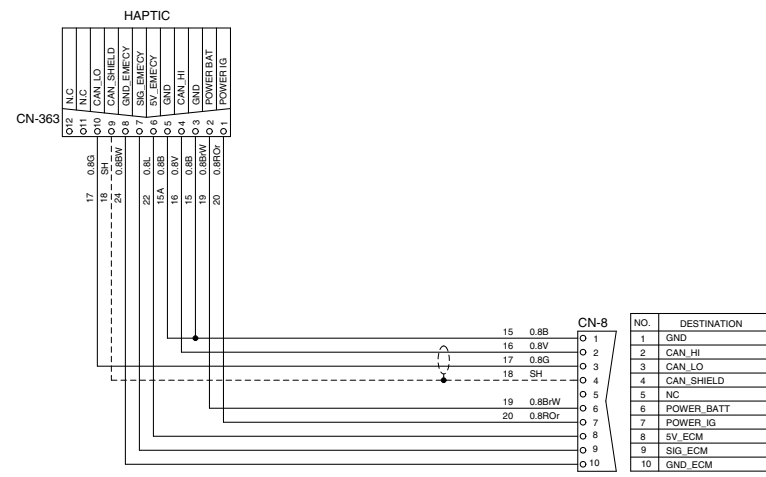
HARNESS AIR-CON



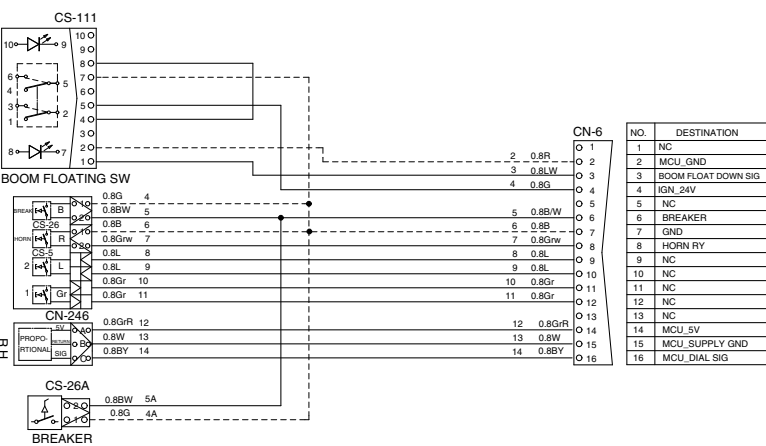
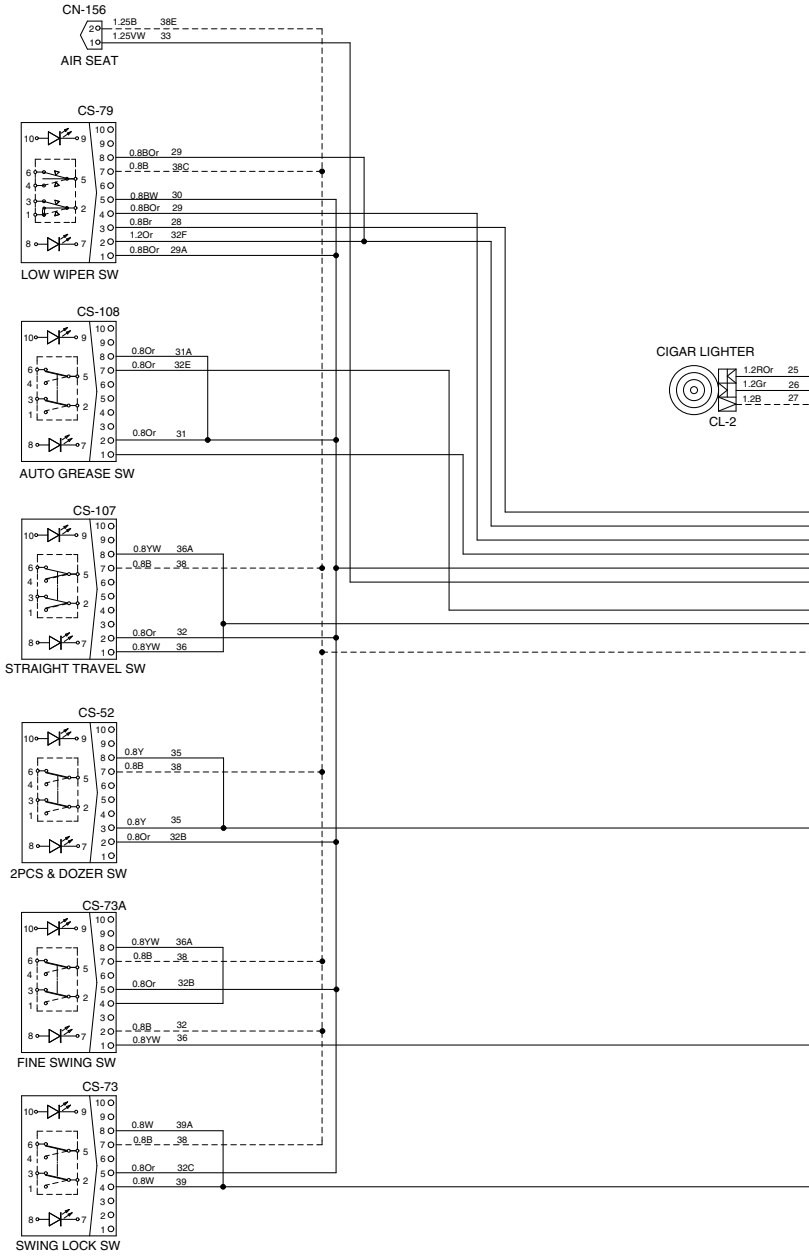
HARNESS CABIN



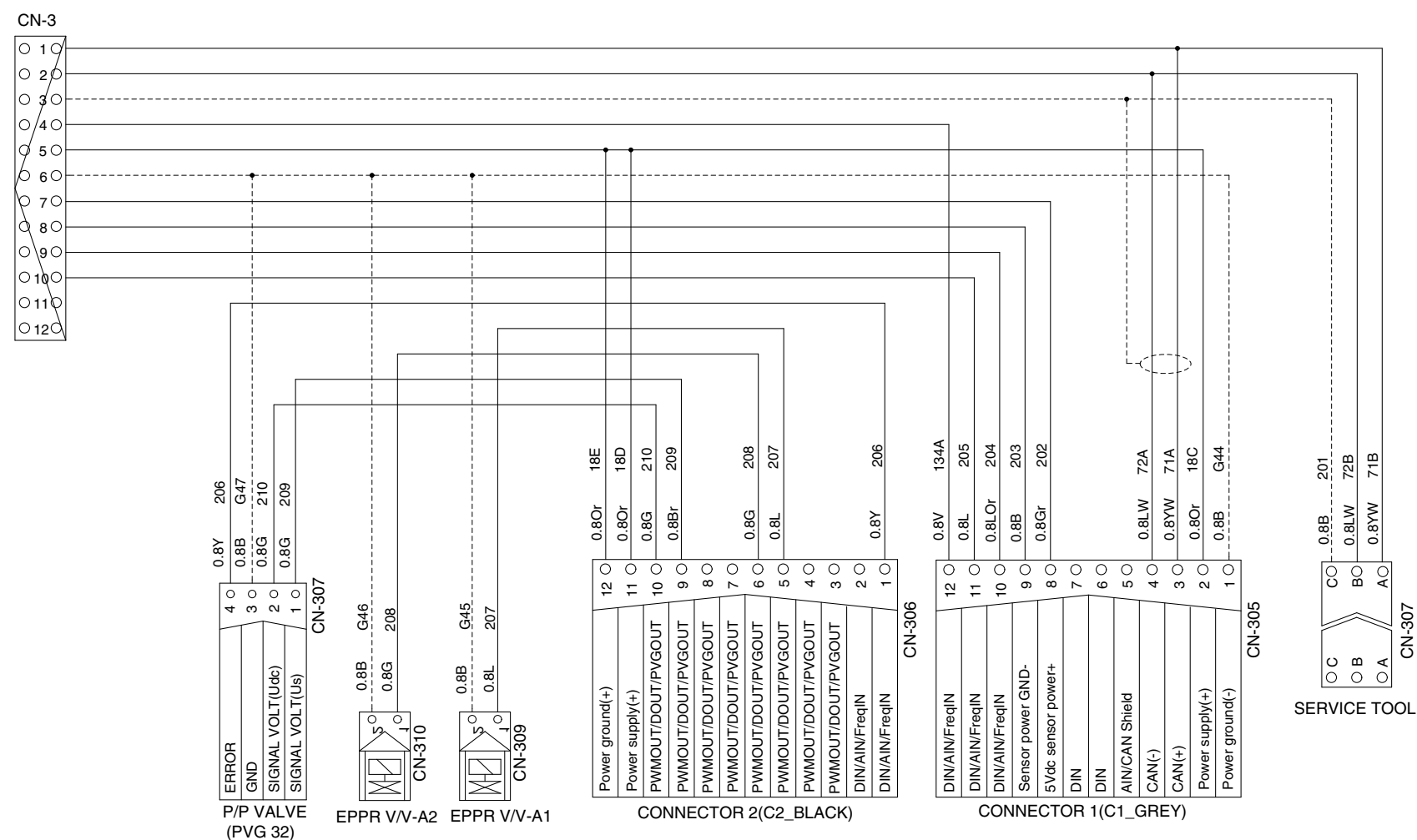
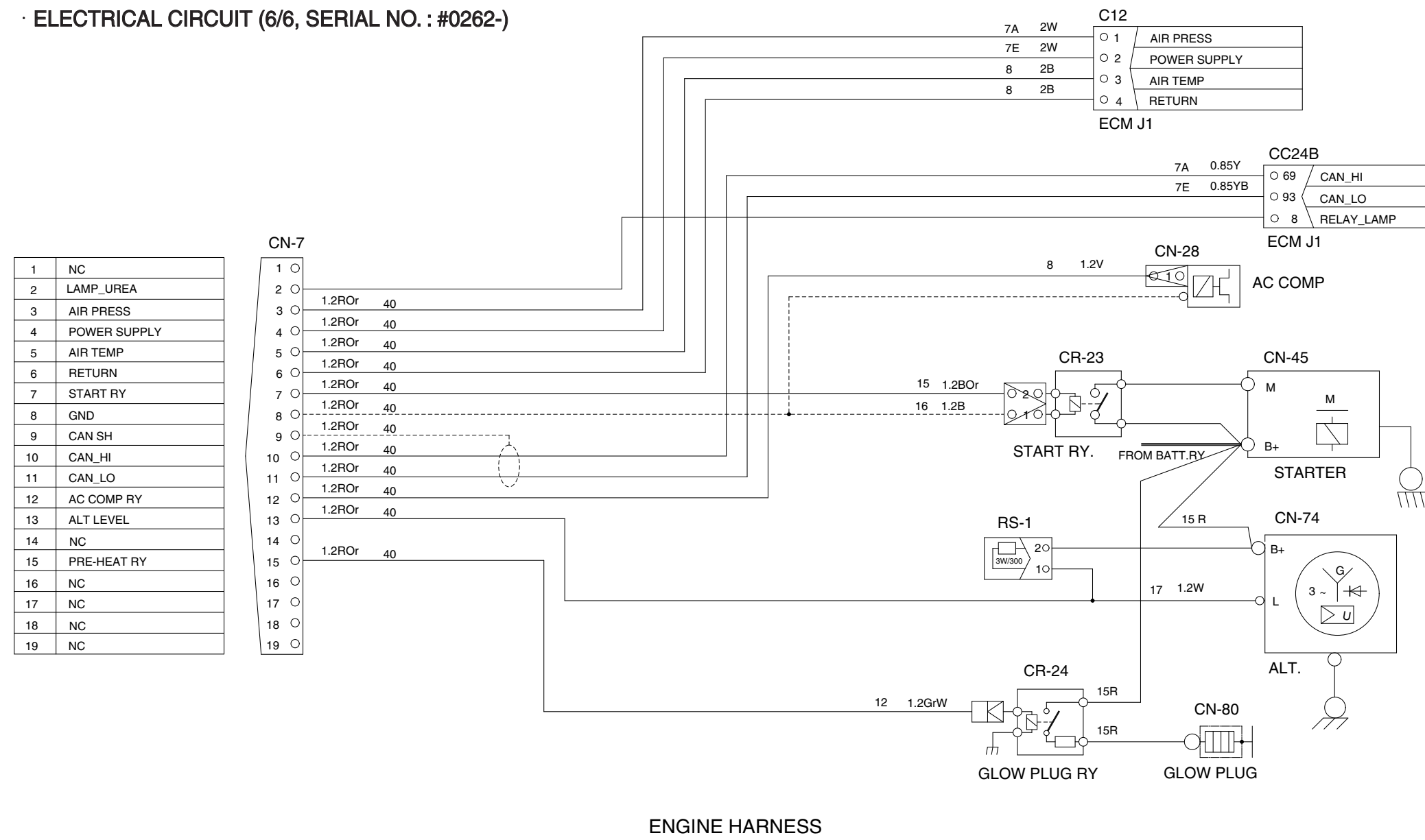
HARNESS LH, CONSOLE



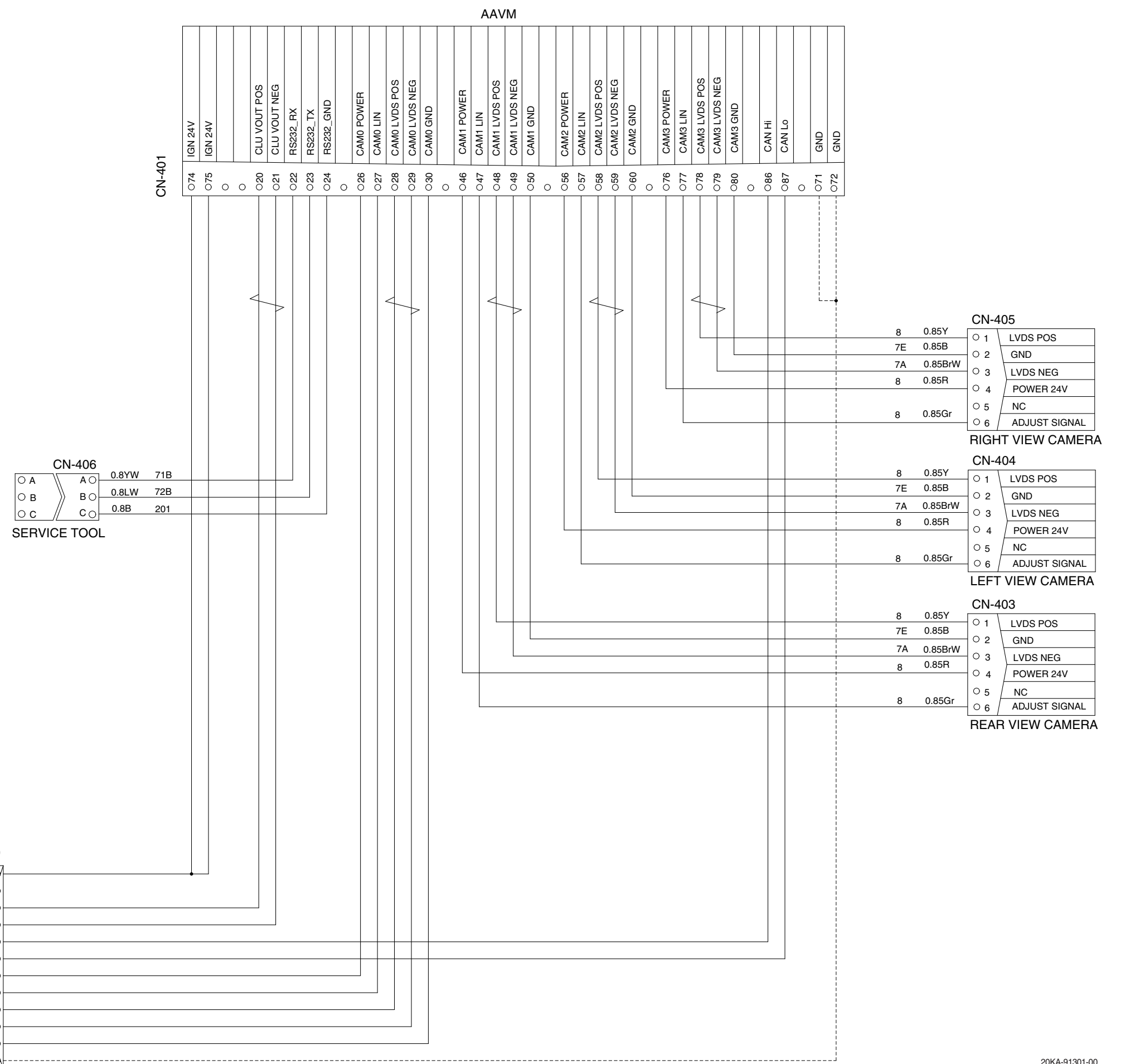
HARNESS RH, CONSOLE



· ELECTRICAL CIRCUIT (6/6, SERIAL NO. : #0262-)



## PROPORTIONAL VALVE & LEVER



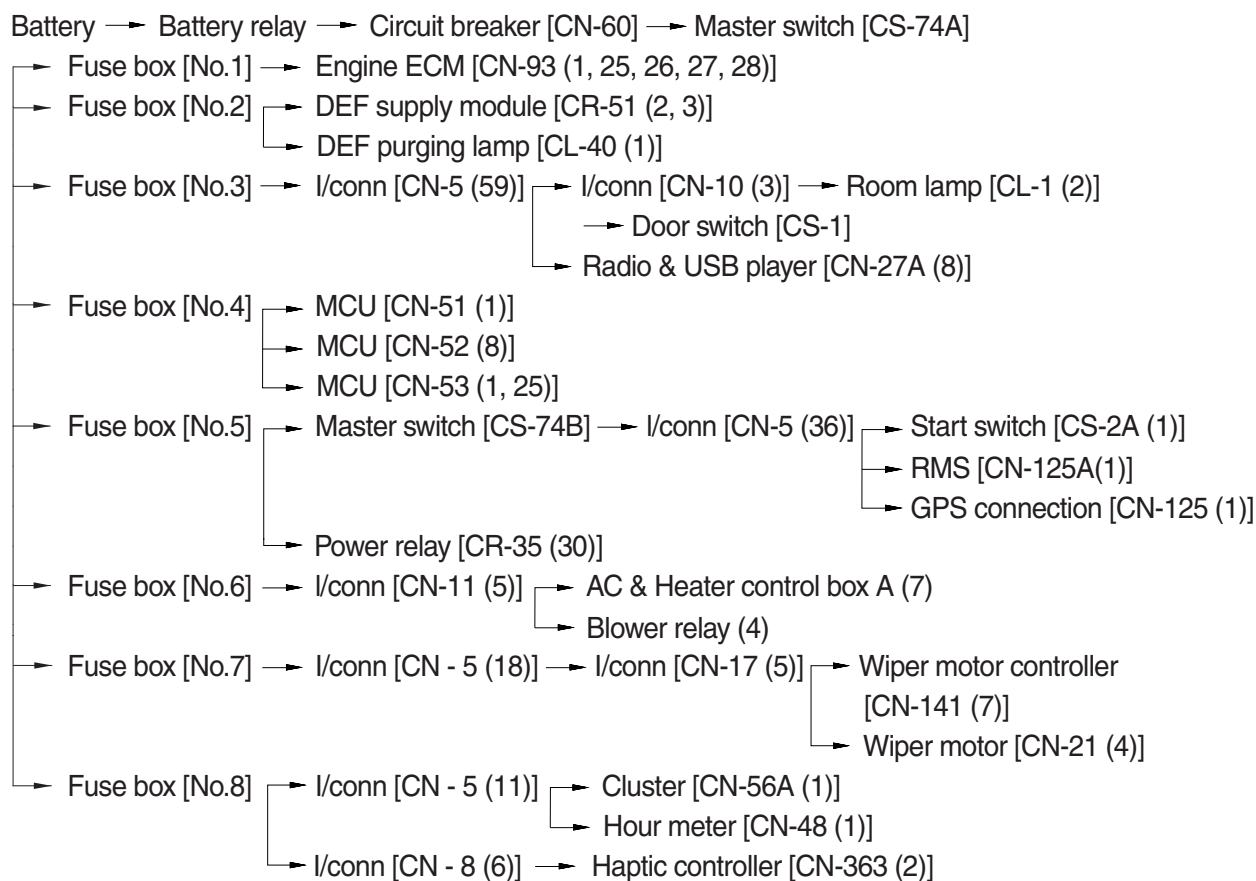
## MEMORANDUM

## 1. POWER CIRCUIT

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

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

### 1) OPERATING FLOW



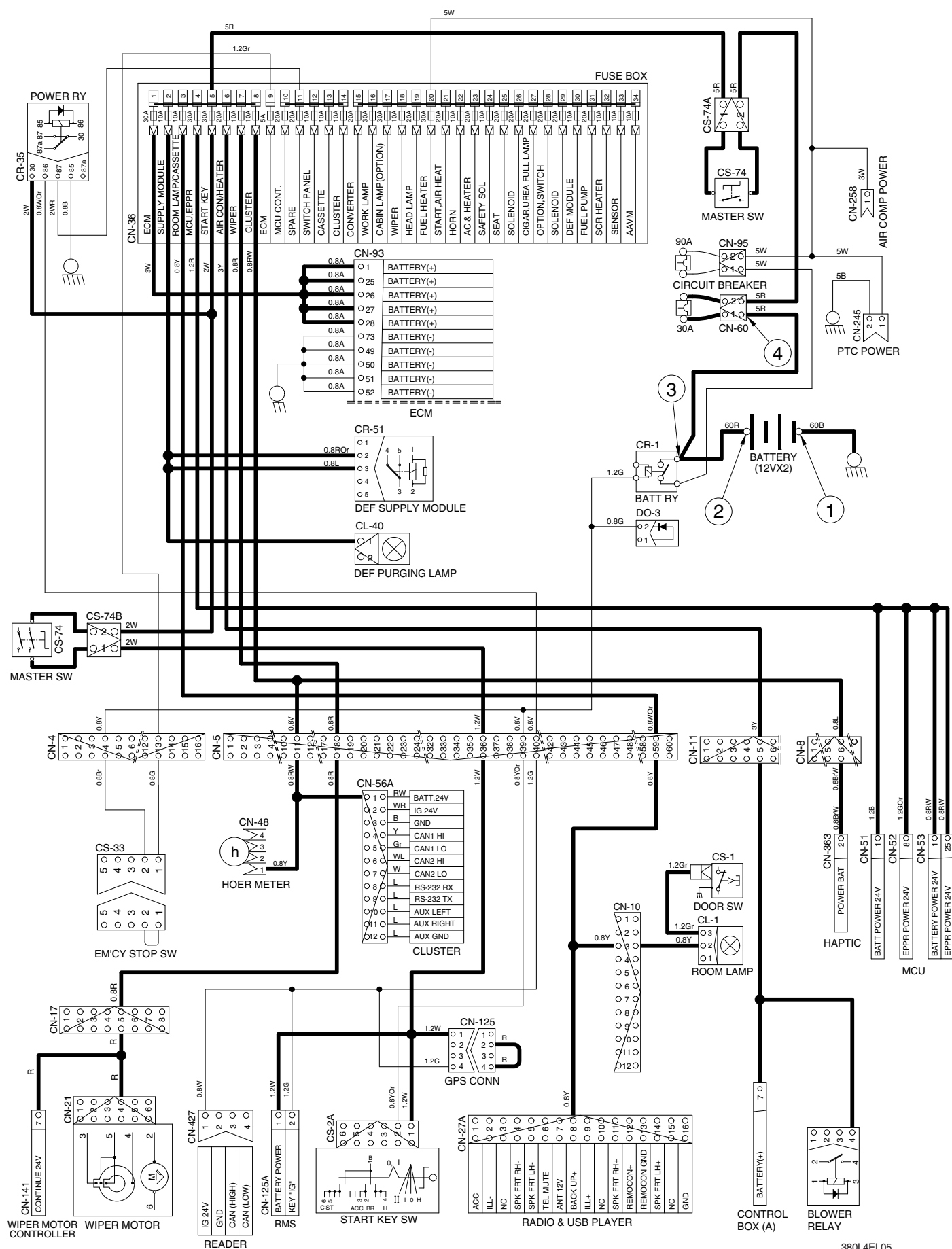
※ I/conn : Intermediate connector

### 2) CHECK POINT

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

※ GND : Ground

## POWER CIRCUIT



380L4EL05

## 1) OPERATING FLOW

Battery(+) terminal → Battery relay [CR-1] → Circuit breaker [CN-60] → Master switch [CS-74A]  
 → Fuse box [No.5] → Master switch [CS-74B] → I/conn [CN-5 (36)] → Start switch [CS-2A (1)]  
                                     ↳ Power relay [CR-35 (30)]

```

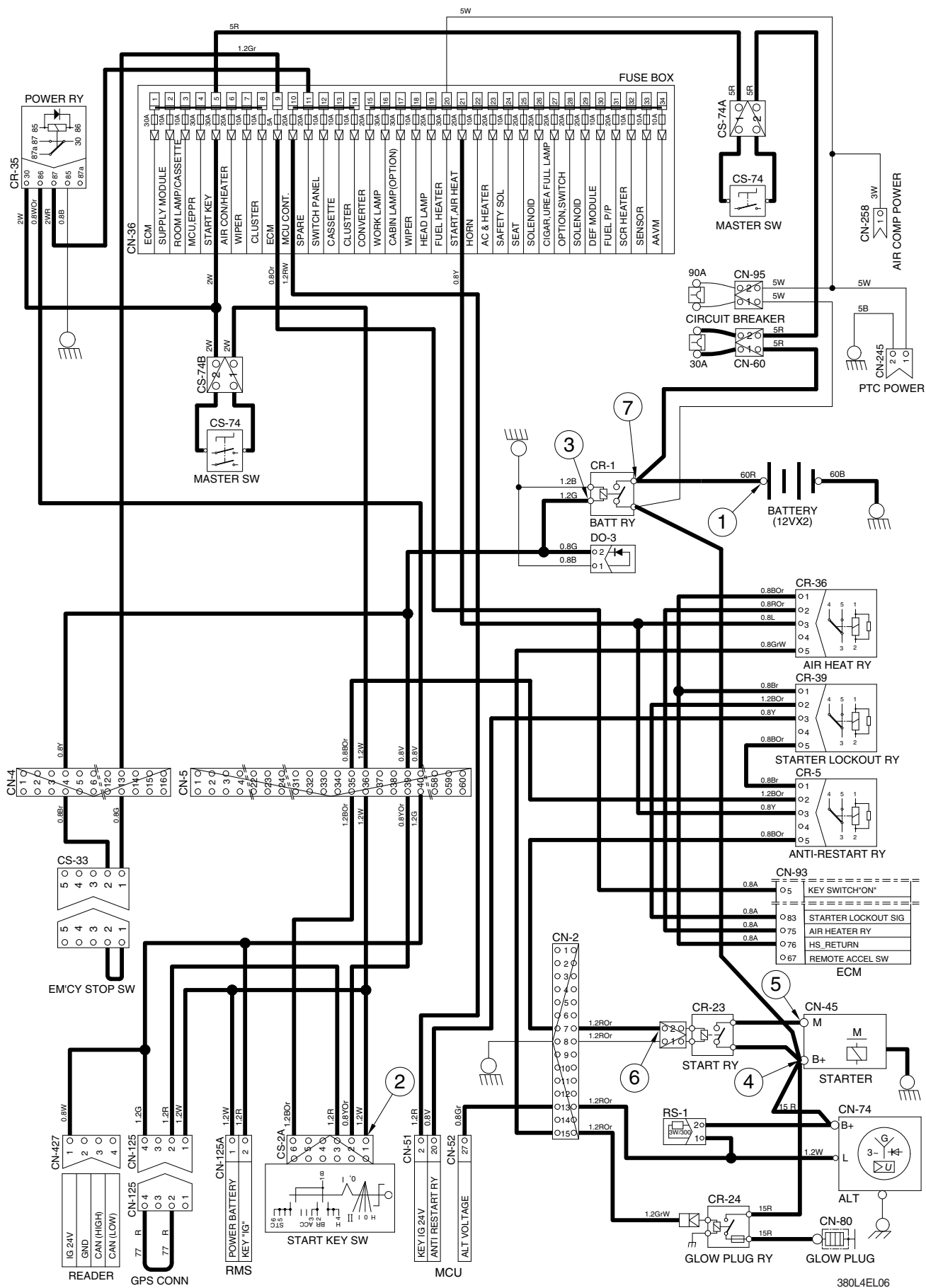
graph LR
    A[Start switch ON [CS-2A (2)]] --> B[I/conn [CN-5 (39)]]
    A --> C[Battery relay [CR-1]]
    C --> D[Battery relay operating (all power is supplied with the electric component)]
    A --> E[I/conn [CN-4 (4)]]
    E --> F[Emergency engine stop sw [CS-33 (2)→(1)]]
    F --> G[I/conn [CN-4 (13)]]
    G --> H[Fuse box [No. 9]]
    H --> I[Engine ECM [CN-93 (5)]]
    A --> J[Start switch ON [CS-2A (3)]]
    J --> K[GPS conn [CN-125 (2)→(4)]]
    J --> L[I/conn [CN-5 (40)]]
    L --> M[Power relay [CR-35 (86)→(87)]]
    M --> N[Fuse box [No.10]]
    N --> O[MCU [CN-51 (2)]]
    J --> P[Reader [CN-427 (1)]]
    J --> Q[RMS [CN-125A (2)]]

```

Start switch START [CS-2A (6)] → I/conn [CN-5 (35)] → Anti-restart relay [CR-5 (2) → (5)] → I/conn [CN-2 (7)] → Start relay [CR-23 (2)] → Starter motor is activated.

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

## STARTING CIRCUIT



### 3. 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-1].

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

#### 1) OPERATING FLOW

##### (1) Warning flow

Alternator "L" terminal → I/conn [CN-2 (13)] → MCU alternator voltage [CN-52 (27)]  
→ Cluster charging warning lamp (via CAN interface)

##### (2) Charging flow

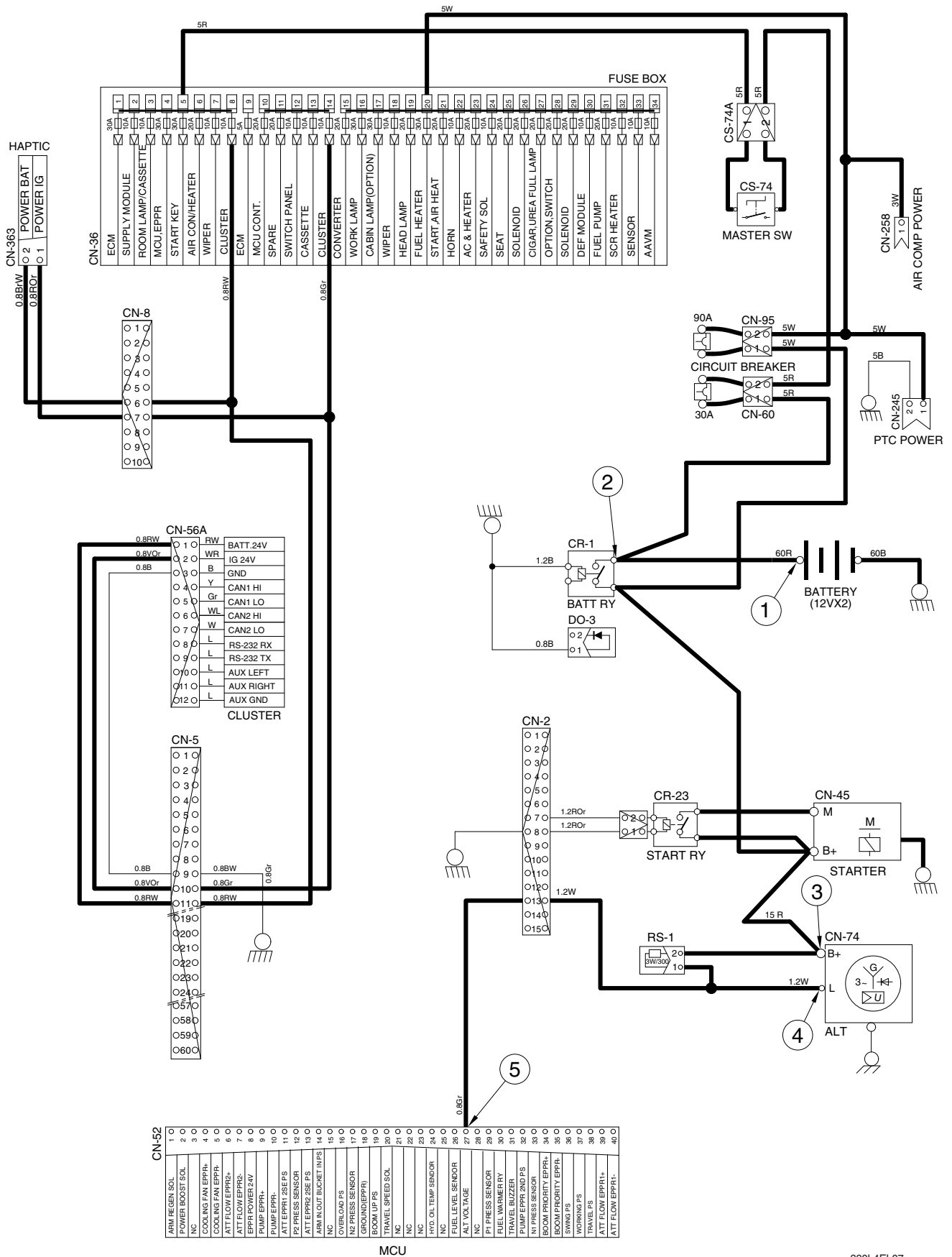
Alternator "B+" terminal → Starter [CN-45 (B+)] → Battery relay  
→ Battery (+) terminal  
→ Circuit breaker [CN-60] → Master switch [CS-74A]  
→ Fuse box [No. 1~8]  
→ Circuit breaker [CN-95] → Fuse box [No. 15~34]

#### 2) CHECK POINT

| Engine | Start switch | Check point                                                                                                                                              | Voltage |
|--------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Run    | ON           | ① - GND (battery voltage)<br>② - GND (battery relay)<br>③ - GND (alternator B <sup>+</sup> terminal)<br>④ - GND (alternator L terminal)<br>⑤ - GND (MCU) | 20~25V  |

※ GND : Ground

# CHARGING CIRCUIT



## 4. HEAD AND WORK LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.19) → Head light relay [CR-13 (30, 86)]

Fuse box (No.16) → Work light relay [CR-4 (30, 86)]

#### (1) Head light switch ON

Head light switch ON [CN-376 (13)] → Head light relay [CR-13 (85) → (87)]

→ Head light ON [CL-3 (2), CL-4 (1), CL-24 (2)]

→ I/conn [CN-7 (1)] → Cigar light [CL-2]

→ I/conn [CN-5 (60)] → Radio & USB player illumination ON [CN-27A (9)]  
→ Hour meter [CN-48 (4)]

#### (2) Work light switch ON

Work light switch ON [CN-376 (4)] → Work light relay [CR-4 (85) → (87)]

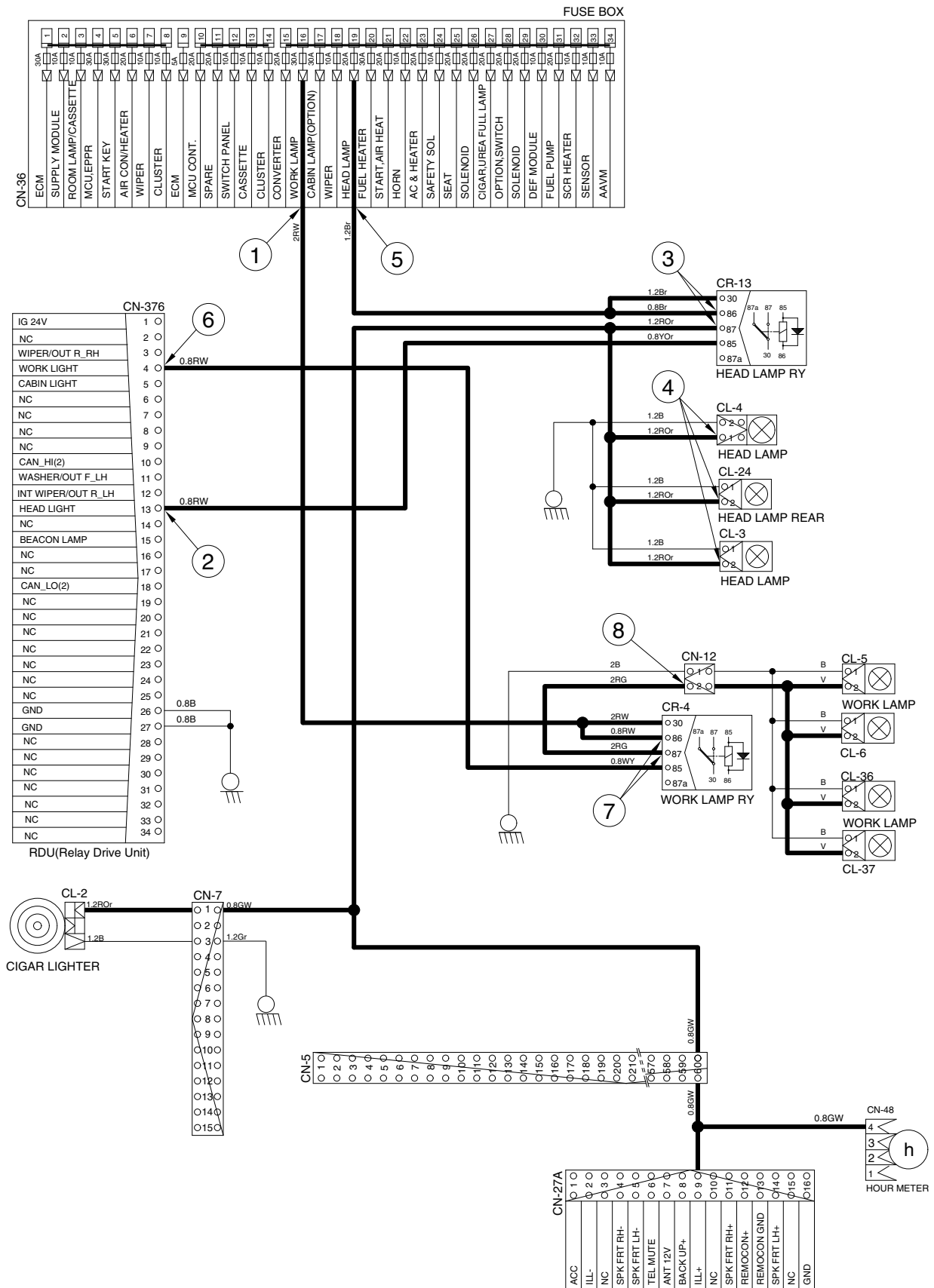
→ I/conn [CN-12 (2)] → Work light ON [CL-5 (2), CL-6 (2), CL-36 (2), CL-37 (2)]

### 2) CHECK POINT

| Engine | Start switch | Check point                                                                                                                                                                                                                                  | Voltage |
|--------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| STOP   | ON           | ① - GND (fuse box)<br>② - GND (head light switch power output)<br>③ - GND (head light relay)<br>④ - GND (head light)<br>⑤ - GND (fuse box)<br>⑥ - GND (work light switch power output)<br>⑦ - GND (work light relay)<br>⑧ - 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.28) → Beacon lamp relay [CR-45 (2, 3)]

Fuse box (No.17) → Cab light relay [CR-9 (30, 86)]

#### (1) Beacon lamp switch ON

Beacon lamp switch ON [CN-376 (15)] → Beacon lamp relay [CR-45 (1)→ (5)]

→ I/conn [CN-5 (50)] → I/conn [CN-10 (10)] → Beacon lamp ON [CL-7]

#### (2) Cab light switch ON

Cab light switch ON [CN-376 (5)] → Cab lamp relay [CR-9 (85) → (87)]

→ I/conn [CN-5 (34, 38)] → I/conn [CN-10 (11)] → Cab light ON [CL-8 (2)]

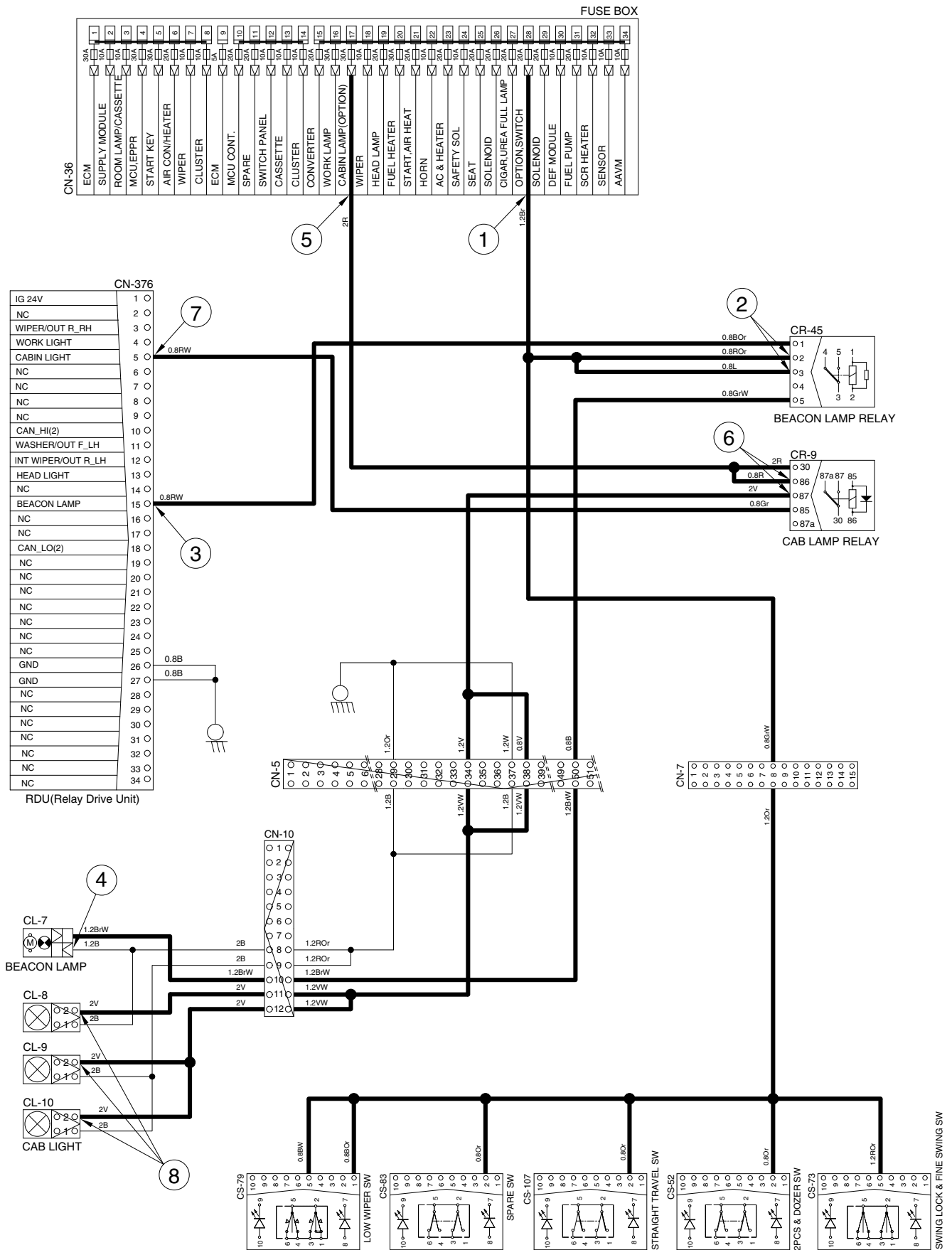
→ I/conn [CN-10 (12)] → Cab light ON [CL-9 (2), CL-10 (2)]

### 2) CHECK POINT

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

※ GND : Ground

# BEACON LAMP AND CAB LIGHT CIRCUIT



380L4EL09

## 6. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

#### (1) Key switch ON

Fuse box (No.12) → Relay drive unit [CN-376 (1)]

Fuse box (No.7) → I/conn [CN-5 (18)] → I/conn [CN-17 (5)] → Wiper motor controller [CN-141(7)]  
 → Wiper motor [CN-21(4)]

Fuse box (No.18) → I/conn [CN-5 (16)] → I/conn [CN-17 (4)] → Wiper motor controller [CN-141 (6)]  
 → Low wiper motor [CN-407 (3)]  
 → Washer pump [CN-22 (2)]

#### (2) Wiper switch ON (Intermittent)

Wiper switch ON [CN-376 (12)] → I/conn [CN-5 (20)] → I/conn [CN-17 (8)]

→ Wiper motor controller [CN-141 (10)→(3)] → Wiper motor [CN-21 (6)] → Intermittently operating

#### (3) Wiper switch ON (continual)

Wiper switch ON [CN-376 (3)] → I/conn[CN-5 (15)] → I/conn[CN-17 (2)]

→ Wiper motor controller [CN-141 (2) → (4)] → Wiper motor [CN-21 (2)] → Continual operating

#### (4) Washer switch ON

Washer switch ON [CN-376 (11)] → I/conn [CN-5 (17)] → I/conn [CN-17 (7)]

→ Wiper motor controller [CN-141 (9) → (8)] → I/conn [CN-17 (6)] → I/conn [CN-5 (19)]

→ Washer pump [CN-22 (1)] → Washer operating

Wiper switch ON [CN-376 (3)] → I/conn[CN-5 (15)] → I/conn[CN-17 (2)]

→ Wiper motor controller [CN-141 (2) → (4)] → Wiper motor [CN-21 (2)] → Continual operating

#### (5) Auto parking (when switch OFF)

Switch OFF [CN-376 (3, 12)] → Wiper motor parking position by wiper motor controller

### 2) OPERATING FLOW (LOW WIPER)

#### (1) Key switch ON

Fuse box (No. 28) → I/conn [CN-7 (8)] → Low wiper switch [CS-79 (1, 5)]

#### (2) Wiper switch ON (1st)

Wiper switch ON [CS-79 (2 → 3)] → I/conn [CN-7 (4)] → Wiper motor [CN-407 (1)] → Wiper operating

#### (3) Wiper switch ON (2nd)

Wiper switch ON [CS-79 (5 → 4)] → I/conn [CN-7 (6)] → Washer pump [CN-407 (2)] → Washer operating

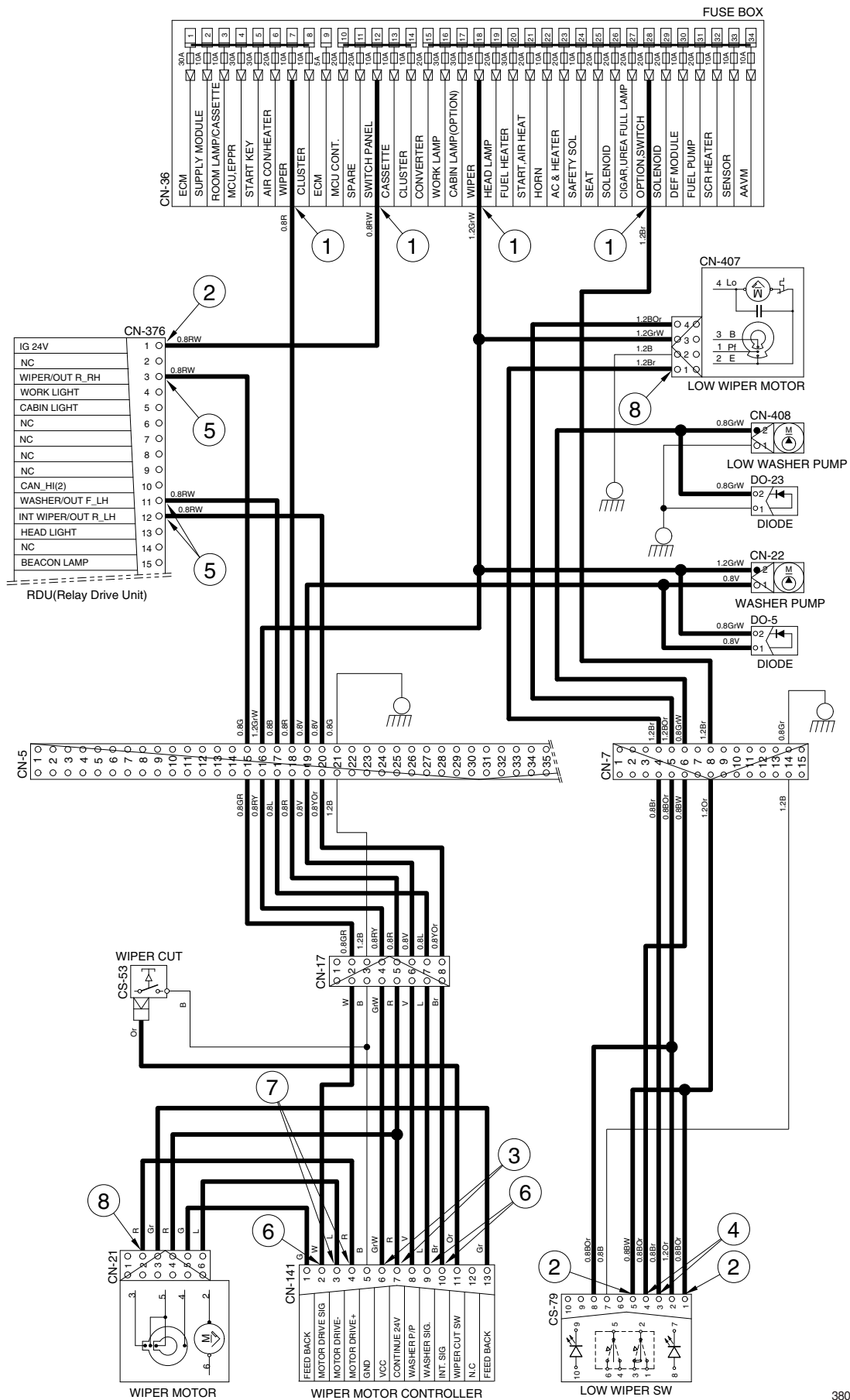
Wiper switch ON [CS-79 (2 → 3)] → I/conn [CN-7 (4)] → Wiper motor [CN-407 (1)] → Wiper operating

### 3) CHECK POINT

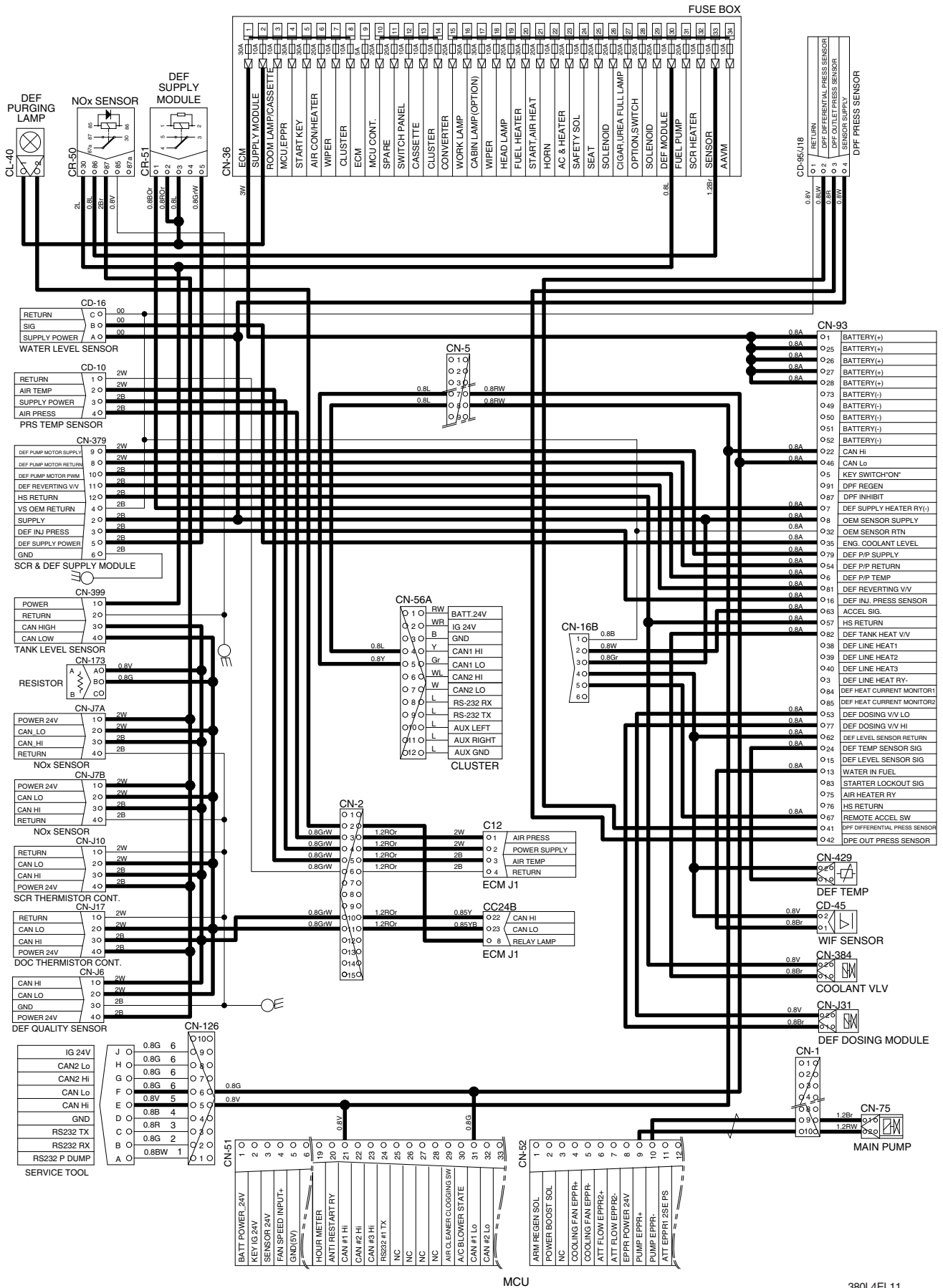
| Engine | Start switch | Check point                   | Voltage |
|--------|--------------|-------------------------------|---------|
| STOP   | ON           | ① - GND (fuse box)            | 20~25V  |
|        |              | ② - GND (switch power input)  |         |
|        |              | ③ - GND (wiper power input)   |         |
|        |              | ④ - GND (switch power output) |         |
|        |              | ⑤ - GND (switch power output) | 0 ~ 5V  |
|        |              | ⑥ - GND (wiper power input)   |         |
|        |              | ⑦ - GND (wiper power output)  | 24V     |
|        |              | ⑧ - GND (low wiper motor)     |         |

※ GND : Ground

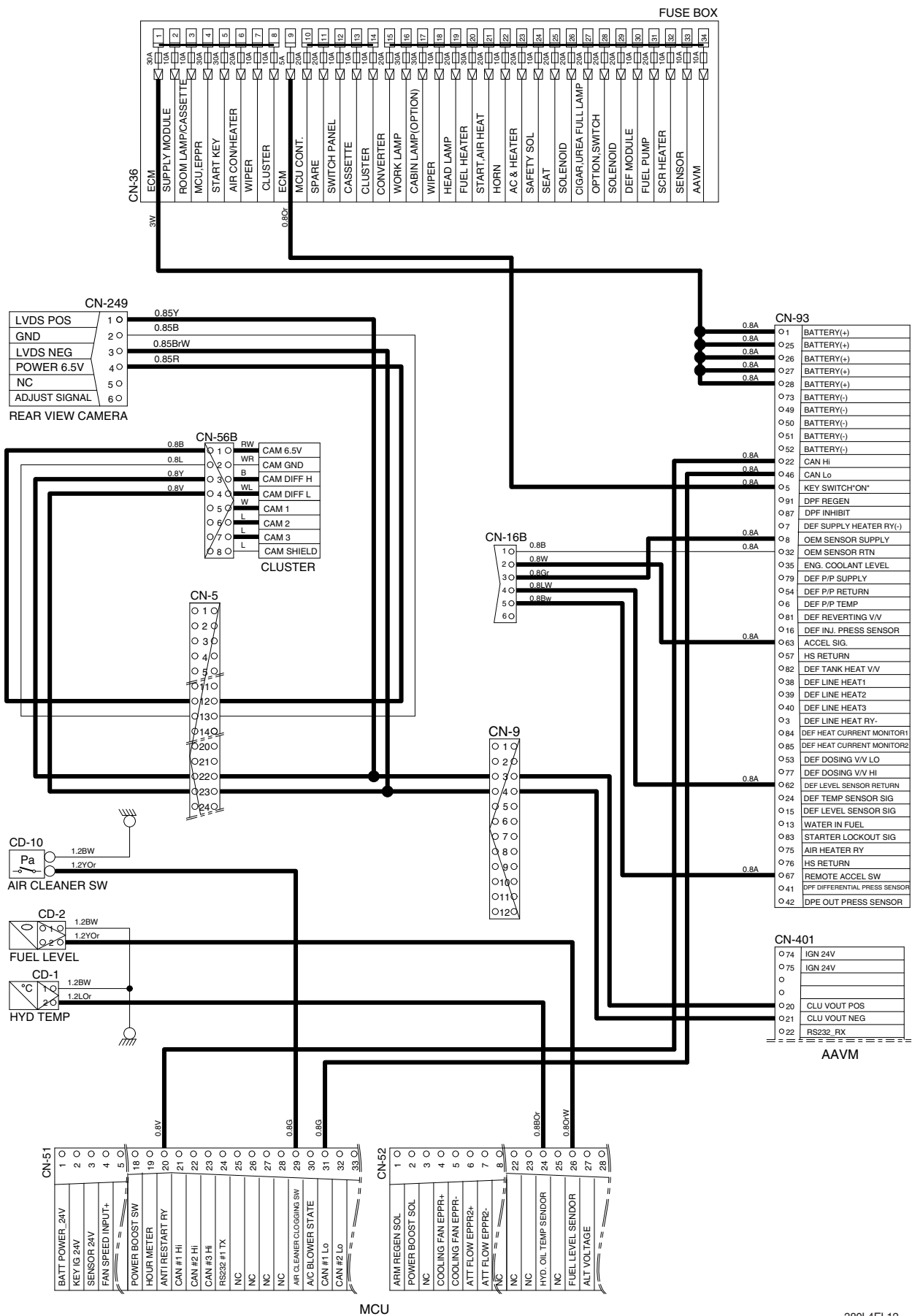
# WIPER AND WASHER CIRCUIT



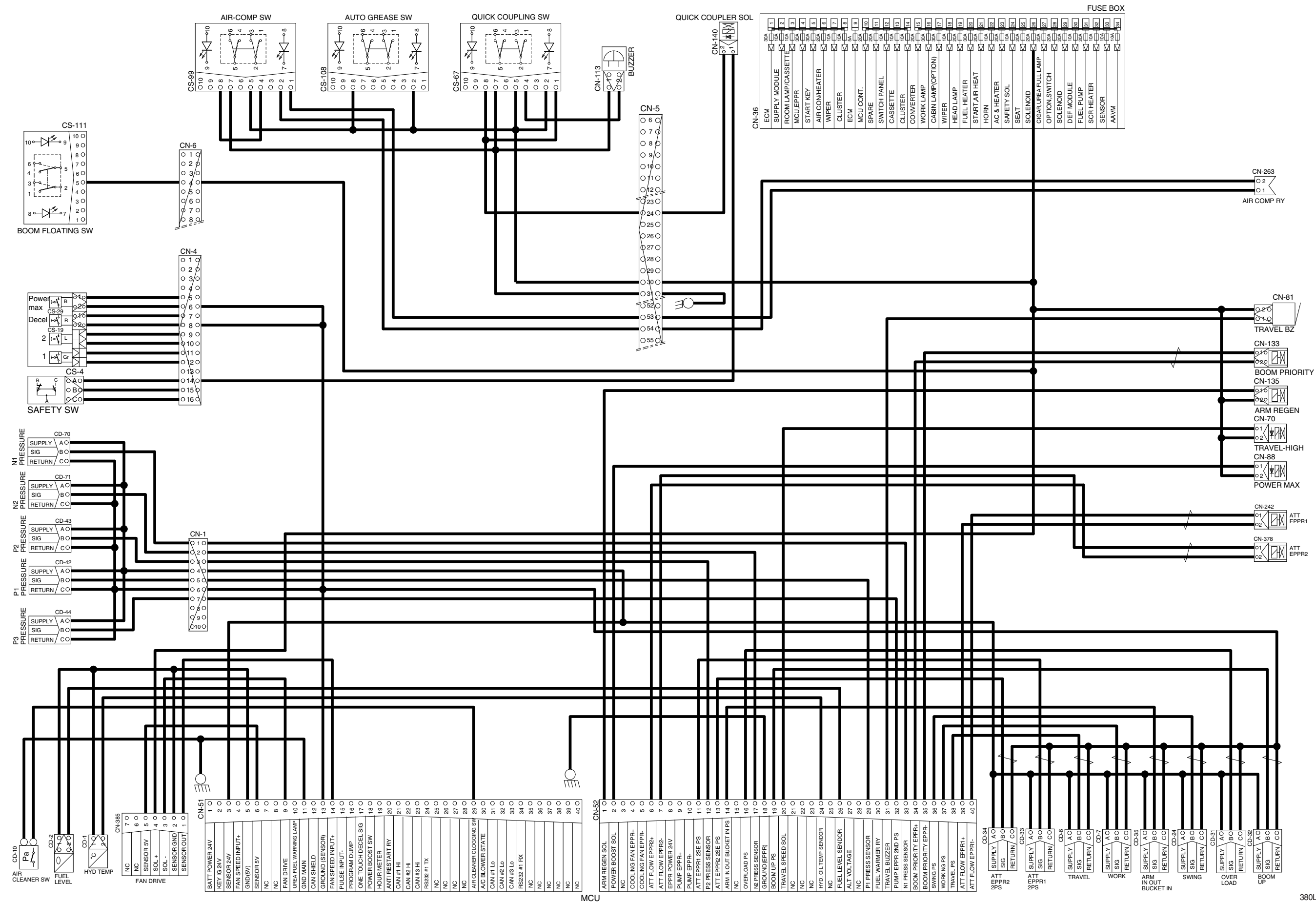
# CONTROLLER CIRCUIT



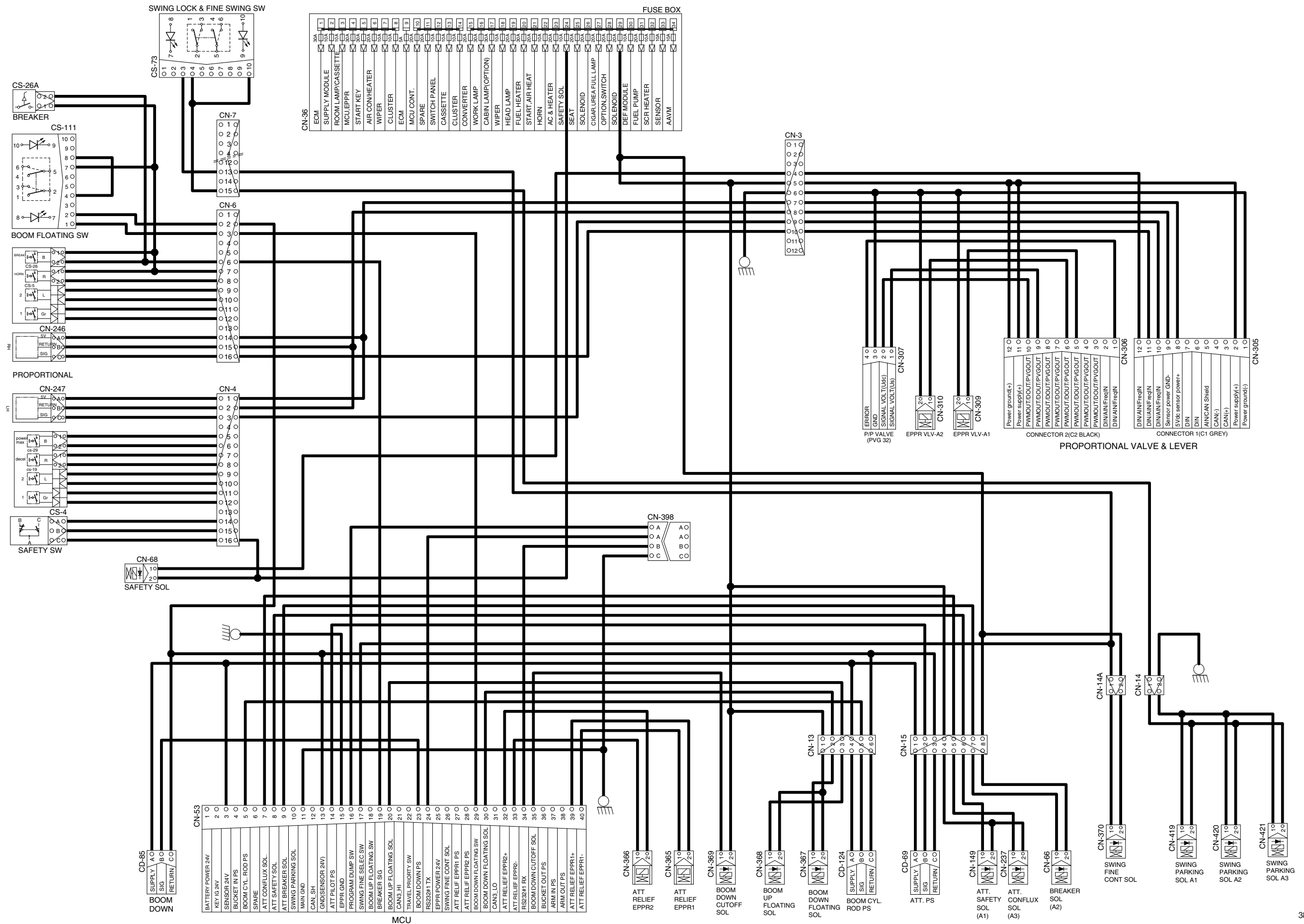
MONITORING CIRCUIT



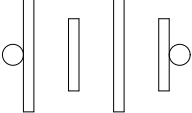
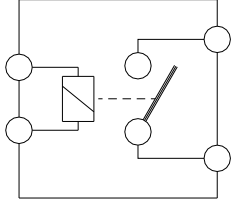
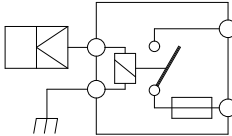
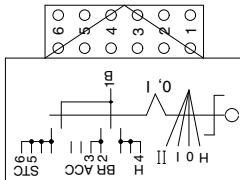
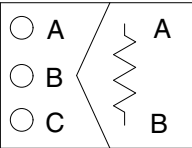
ELECTRIC CIRCUIT FOR HYDRAULIC (1/2)

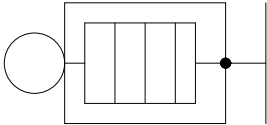
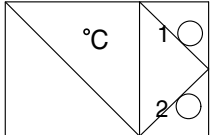
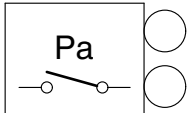
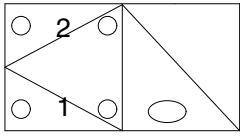
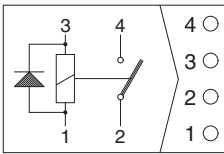
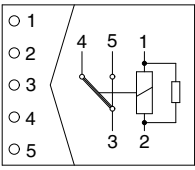


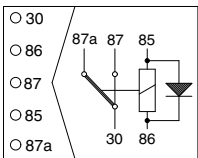
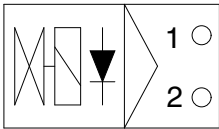
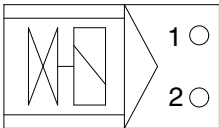
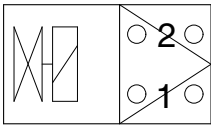
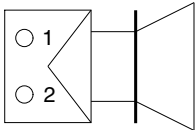
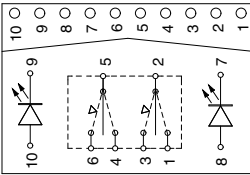
## ELECTRIC CIRCUIT FOR HYDRAULIC (2/2)

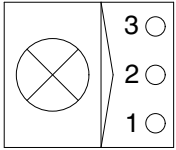
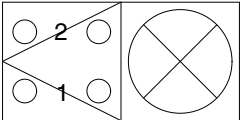
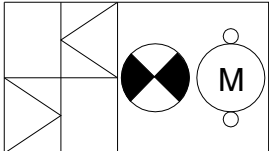
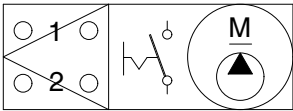
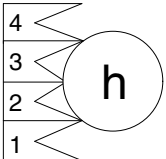
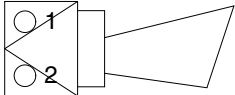


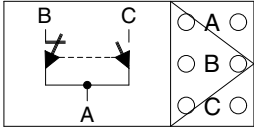
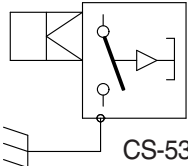
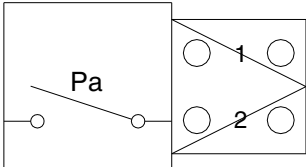
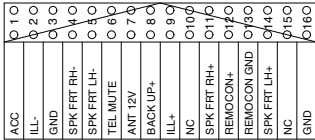
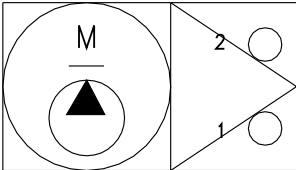
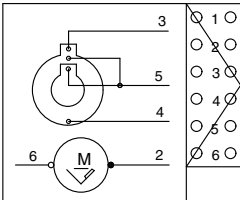
## GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

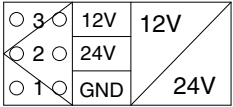
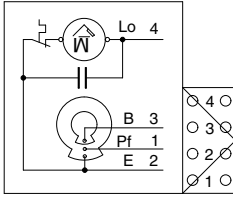
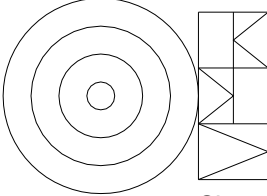
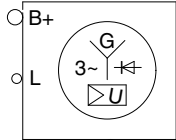
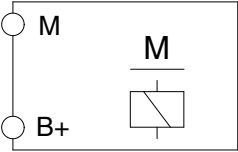
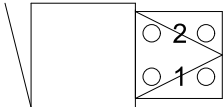
| Part name       | Symbol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Specifications                                                | Check                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Battery         |                                                                                                                                                                                                                                                                                                                                                                                                                            | 12V × 160Ah<br>(2EA)                                          | ※ Check specific gravity<br>1.280 over : Over charged<br>1.280 ~ 1.250 : Normal<br>1.250 below : Recharging               |
| Battery relay   | <br>CR-1                                                                                                                                                                                                                                                                                                                                                                                                                   | Rated load :<br>24V<br>100A (continuity)<br>1000A (30seconds) | ※ Check coil resistance(M4 to M4)<br>Normal : About 50 Ω<br>※ Check contact<br>Normal : ∞ Ω                               |
| Glow plug relay | <br>CR-24                                                                                                                                                                                                                                                                                                                                                                                                                 | 24V 200A                                                      | ※ Check contact<br>Normal : 0.942 Ω<br>(For terminal 1-GND)                                                               |
| Start key       | <br>CS-2A                                                                                                                                                                                                                                                                                                                                                                                                                | B-BR : 24V 1A<br>B-ACC : 24V 10A<br>B-ST : 24V 40A            | ※ Check contact<br>OFF : ∞ Ω (for each terminal)<br>ON : 0 Ω (for terminal 1-3 and 1-2)<br>START : 0 Ω (for terminal 1-6) |
| Pressure sensor | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <input type="radio"/> A<br/><input type="radio"/> B<br/><input type="radio"/> C         </div> <div style="border: 1px solid black; padding: 5px; text-align: center;">           SUPPLY<br/>SIG<br/>RETURN         </div> </div> <div style="margin-top: 5px;">       CD-6 CD-7 CD-24 CD-31 CD-32<br/>       CD-33 CD-34 CD-35 CD-42 CD-43<br/>       CD-44 CD-69 CD-70 CD-71 CD-85<br/>       CD-90 CD-124     </div> | 8~30V                                                         | ※ Check contact<br>Normal : 0.1 Ω                                                                                         |
| Resistor        | <br>CN-173 CN-174                                                                                                                                                                                                                                                                                                                                                                                                        | 4W                                                            | ※ Check resistance<br>A-B : 120 Ω                                                                                         |

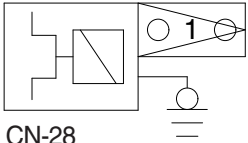
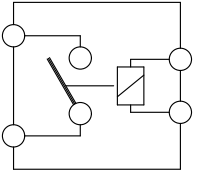
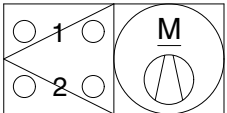
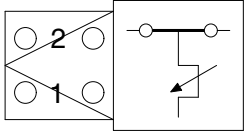
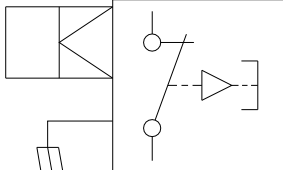
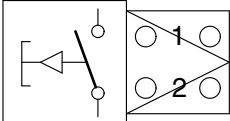
| Part name                      | Symbol                                                                                                                      | Specifications | Check                                                                                                                                                                                                                                             |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Glow plug                      | <br>CN-80                                  | 24V 200A       | ※ Check resistance<br>0.25~0.12 Ω                                                                                                                                                                                                                 |
| Temperature sensor (hydraulic) | <br>CD-1                                   | -              | ※ Check resistance<br>50°C : 804 Ω<br>80°C : 310 Ω<br>100°C : 180 Ω                                                                                                                                                                               |
| Air cleaner pressure switch    | <br>CD-10                                 | N.O TYPE       | ※ Check contact<br>High level : ∞ Ω<br>Low level : 0 Ω                                                                                                                                                                                            |
| Fuel sender                    | <br>CD-2                                 | -              | ※ Check resistance<br>Full : 50 Ω      6/12 : 350 Ω<br>11/12 : 100 Ω    5/12 : 400 Ω<br>10/12 : 150 Ω    4/12 : 450 Ω<br>9/12 : 200 Ω     3/12 : 500 Ω<br>8/12 : 250 Ω     2/12 : 550 Ω<br>7/12 : 300 Ω     1/12 : 600 Ω<br>Empty warning : 700 Ω |
| Relay (A/C blower)             |                                          | 24V 20A        | ※ Check resistance<br>Normal : About 200 Ω<br>(for terminal 1-3)<br>0 Ω<br>(for terminal 2-4)                                                                                                                                                     |
| Relay                          | <br>CR-2 CR-5 CR-36<br>CR-39 CR-45 CR-51 | 24V 16A        | ※ Check resistance<br>Normal : About 160 Ω<br>(for terminal 1-2)<br>0 Ω (for terminal 3-4)<br>∞ Ω (for terminal 3-5)                                                                                                                              |

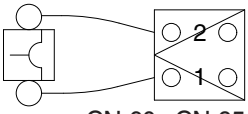
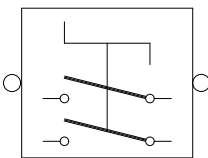
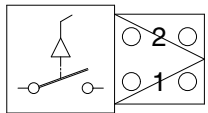
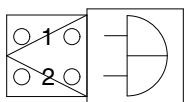
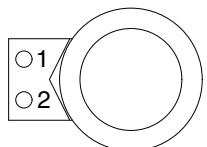
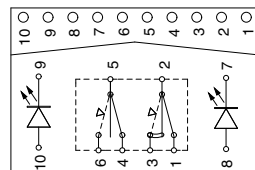
| Part name                | Symbol                                                                                                                                                                                                                | Specifications | Check                                                                                                                                                              |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Relay                    | <br>CR-4 CR-7 CR-9 CR-13<br>CR-35 CR-46 CR-50 CR-52                                                                                  | 24V 16A        | ※ Check resistance<br>Normal : About 160 Ω<br>(for terminal 85-86)<br>0 Ω (for terminal 30-87a)<br>∞ Ω (for terminal 30-87)                                        |
| Solenoid valve           | <br>CN-66 CN-68 CN-70 CN-88<br>CN-135 CN-140 CN-149 CN-237<br>CN-262A CN-262B CN-367 CN-368<br>CN-369 CN-370 CN-419 CN-420<br>CN-421 | 24V 1A         | ※ Check resistance<br>Normal : 15~25 Ω<br>(for terminal 1-2)                                                                                                       |
| EPPR valve               | <br>CN-75 CN-133 CN-154<br>CN-242 CN-309 CN-310<br>CN-365 CN-366 CN-378                                                              | 700mA          | ※ Check resistance<br>Normal : 15~25 Ω<br>(for terminal 1-2)                                                                                                       |
| EPPR valve               | <br>CN-384 CN-J31                                                                                                                  | 700mA          | ※ Check resistance<br>Normal : 15~25 Ω<br>(for terminal 1-2)                                                                                                       |
| Speaker                  | <br>CN-23(LH)<br>CN-24(RH)                                                                                                         | 20W            | ※ Check resistance<br>Normal : A few Ω                                                                                                                             |
| Switch<br>(locking type) | <br>CS-52 CS-67 CS-83 CS-99<br>CS-107 CS-108 CS-111                                                                                | 24V 1.5A       | ※ Check contact<br>Normal<br>ON : 0 Ω (for terminal 3-7, 4-8)<br>∞ Ω (for terminal 7-9, 8-10)<br>OFF : ∞ Ω (for terminal 3-7, 4-8)<br>0 Ω (for terminal 7-9, 8-10) |

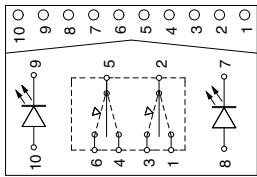
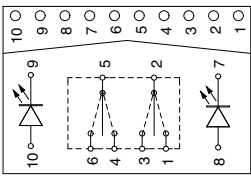
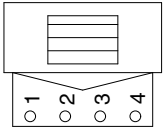
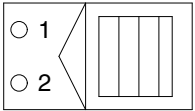
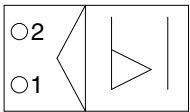
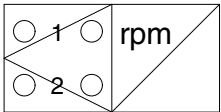
| Part name                            | Symbol                                                                                                                                           | Specifications       | Check                                                                                                                                                      |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Room lamp                            | <br>CL-1                                                        | 24V 10W              | ※ Check disconnection<br>Normal : 1.0 Ω<br>ON : 0 Ω (For terminal 1-2)<br>∞ Ω (For terminal 1-3)<br>OFF : ∞ Ω (For terminal 1-2)<br>0 Ω (For terminal 1-3) |
| Head lamp,<br>Work lamp,<br>Cab lamp | <br>CL-3 CL-4 CL-5 CL-6<br>CL-8 CL-9 CL-10 CL-24<br>CL-36 CL-37 | 24V 65W<br>(H3 Type) | ※ Check disconnection<br>Normal : 1.2 Ω                                                                                                                    |
| Beacon lamp                          | <br>CL                                                         | 21V 70W<br>(H1 Type) | ※ Check disconnection<br>Normal : A few Ω                                                                                                                  |
| Fuel filler pump                     | <br>CN-61                                                     | 24V 10A<br>35 l /min | ※ Check resistance<br>Normal : 1.0 Ω                                                                                                                       |
| Hour meter                           | <br>CN-48                                                     | 16~32V               | ※ Check operation<br>Supply power(24V) to terminal<br>No.2 and connect terminal No.1<br>and ground                                                         |
| Horn                                 | <br>CN-20 CN-25                                               | DC22~28V<br>2A       | ※ Check operation<br>Supply power(24V) to each<br>terminal and connect ground.                                                                             |

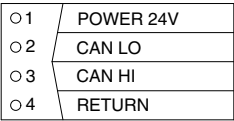
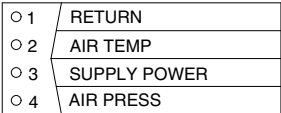
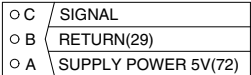
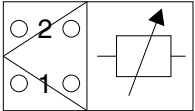
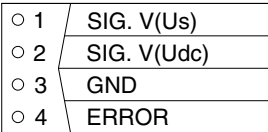
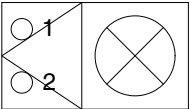
| Part name          | Symbol                                                                                                  | Specifications        | Check                                                                                                                                                |
|--------------------|---------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety switch      |  <p>CS-20</p>          | 24V 15A<br>(N.C TYPE) | ※ Check contact<br>Normal : 1.0 Ω<br>ON : 0 Ω (for terminal A-B)<br>∞ Ω (for terminal A-C)<br>OFF : ∞ Ω (for terminal A-B)<br>0 Ω (for terminal A-C) |
| Wiper cut switch   |  <p>CS-53</p>          | 24V<br>(N.O TYPE)     | ※ Check contact<br>Normal : 0 Ω (one pin to ground)                                                                                                  |
| Receiver dryer     |  <p>CN-29</p>         | 24V 2.5A              | ※ Check contact<br>Normal : ∞ Ω                                                                                                                      |
| Radio & USB player |  <p>CN-27A</p>       | 24V 2A                | ※ Check voltage<br>20~25V<br>(for terminal 1-3, 3-8)                                                                                                 |
| Washer pump        |  <p>CN-22 CN-408</p> | 24V 3.8A              | ※ Check contact<br>Normal : 10.7 Ω (for terminal 1-2)                                                                                                |
| Wiper motor        |  <p>CN-21</p>        | 24V 2A                | ※ Check disconnection<br>Normal : 7 Ω (for terminal 2-6)                                                                                             |

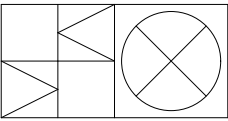
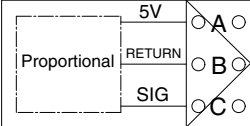
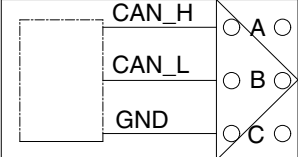
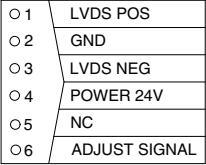
| Part name       | Symbol                                                                                       | Specifications     | Check                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| DC/DC Converter | <br>CN-138  | 12V 3A             | ※ Check voltage<br>24V (for terminal 1-2)<br>12V (for terminal 1-3)                                                              |
| Low wiper motor | <br>CN-407  | 24V                | -                                                                                                                                |
| Cigar lighter   | <br>CL-2   | 24V 5A 1.4W        | ※ Check coil resistance<br>Normal : About 1M $\Omega$<br>※ Check contact<br>Normal : $\infty \Omega$<br>Operating time : 5~15sec |
| Alternator      | <br>CN-74 | Denso<br>24V 95A   | ※ Check contact<br>Normal : 0 $\Omega$ (for terminal B <sup>+</sup> -L)<br>Normal : 24~27.5V                                     |
| Starter         | <br>CN-45 | Denso<br>24V 7.8kW | ※ Check contact<br>Normal : 0.1 $\Omega$                                                                                         |
| Travel alarm    | <br>CN-81 | 24V 0.5A           | ※ Check contact<br>Normal : 5.2 $\Omega$                                                                                         |

| Part name                                                      | Symbol                                                                                                                | Specifications    | Check                                                                                       |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------|
| Air conditioner compressor                                     | <br>CN-28                            | 24V 79W           | ※ Check contact<br>Normal : 13.4 Ω                                                          |
| Start relay                                                    | <br>CR-23                            | 24V 300A          | ※ Check contact<br>Normal : 0.94 Ω (for terminal 1-2)                                       |
| Blower motor                                                   |                                     | 24V 9.5A          | ※ Check resistance<br>Normal : 2.5 Ω (for terminal 1-2)                                     |
| Duct sensor (switch)                                           |                                    | 1°C OFF<br>4°C ON | ※ Check resistance<br>Normal : 0 Ω (for terminal 1-2),<br>the atmosphere temp :<br>Over 4°C |
| Door switch                                                    | <br>CS-1                           | 24V 2W            | ※ Check resistance<br>Normal : About 5M Ω                                                   |
| Switch<br>(power max,<br>one touch<br>decel, horn,<br>breaker) | <br>CS-5    CS-19<br>CS-26   CS-29 | 24V 6A            | ※ Check resistance<br>Normal : ∞ Ω                                                          |

| Part name          | Symbol                                                                                              | Specifications             | Check                                                                                                                                                            |
|--------------------|-----------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circuit breaker    | <br>CN-60 CN-95    | CN-60 : 30A<br>CN-95 : 90A | ※ Check disconnection<br>Normal : 0 Ω<br>(connect ring terminal and check resist between terminal 1 and 2)                                                       |
| Master switch      | <br>CS-74A, CS-74B | 6-36V                      | ※ Check disconnection<br>Normal : 0.1 Ω                                                                                                                          |
| Breaker switch     | <br>CS-26A        | 24V                        | ※ Check resistance<br>Normal : ∞ Ω                                                                                                                               |
| Quick clamp buzzer | <br>CN-113       | 24V 200mA<br>107 ± 4dB     | -                                                                                                                                                                |
| Socket             | <br>CN-139       | 12V 10A                    | -                                                                                                                                                                |
| Switch             | <br>CS-79        | 24V 8A                     | ※ Check contact<br>Normal<br>ON : 0 Ω (for terminal 1-2, 4-5)<br>∞ Ω (for terminal 2-3, 5-6)<br>OFF : ∞ Ω (for terminal 1-2, 4-5)<br>0 Ω (for terminal 2-3, 5-6) |

| Part name               | Symbol                                                                                                          | Specifications | Check                                                                                |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------|
| Switch                  |  <p>CS-100</p>                 | 24V 8A         | ※ Check contact<br>Normal<br>OFF : $\infty \Omega$ (for terminal 1-2, 1-3, 4-5, 5-6) |
| Switch                  |  <p>CS-73</p>                  | 24V 8A         | ※ Check contact<br>Normal<br>OFF : $\infty \Omega$ (for terminal 1-2, 1-3, 4-5, 5-6) |
| Fuel heater             |  <p>CN-96</p>                 | -              | -                                                                                    |
| DEF/AdBlue® line heater |  <p>CN-381 CN-382 CN-383</p> | -              | -                                                                                    |
| WIF sensor              |  <p>CD-45</p>                | -              | -                                                                                    |
| Fan speed sensor        |  <p>CD-52</p>                | -              | -                                                                                    |

| Part name                                                         | Symbol                                                                                                                           | Specifications | Check |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------|-------|
| DEF/AdBlue® sensor                                                | <br>CN-399 CN-J6 CN-J7A<br>CN-J7B CN-J10 CN-J17 | -              |       |
| PRS temp sensor                                                   | <br>CD-10                                       | -              | -     |
| Water level sensor                                                | <br>CD-16                                       | -              | -     |
| Temperature sensor<br>(A/C incar,<br>A/C ambient,<br>DEF/AdBlue®) | <br>CN-429                                    | -              |       |
| Proportional valve sensor                                         | <br>CN-307                                    | -              | -     |
| DEF/AdBlue® fill up warning lamp                                  | <br>CL-40                                     | -              |       |

| Part name                              | Symbol                                                                                                                       | Specifications | Check |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------|-------|
| DEF/AdBlue® fill up warning lamp (LED) | <br>CL-41                                   | -              | -     |
| Proportional valve sensor              | <br>CN-246    CN-247                        | -              | -     |
| Start button                           | <br>CS-2B                                  | -              | -     |
| Camera                                 | <br>CN-249 CN-402 CN-403<br>CN-404 CN-405 | -              | -     |

## GROUP 4 CONNECTORS

### 1. CONNECTOR DESTINATION

| Connector number | Type      | No. of pin | Destination                               | Connector part No. |                |
|------------------|-----------|------------|-------------------------------------------|--------------------|----------------|
|                  |           |            |                                           | Female             | Male           |
| CN-1             | AMP       | 10         | I/conn (Frame harness-Pump PS harness)    | S816-010002        | S816-110002    |
| CN-2             | -         | 15         | I/conn (Frame harness-Engine harness)     | 121583-0135        | 368301-1       |
| CN-3             | TYCO      | 12         | I/conn (Frame harness-Pro vlv harness)    | 174661-2           | 368537-1       |
| CN-4             | AMP       | 16         | I/conn (Console harness LH-Frame harness) | 368047-1           | 368050-1       |
| CN-5             | DEUTSCH   | 60         | I/conn (Side harness RH-Frame harness)    | DRB16-60SAE-L018   | DRB12-60P-L018 |
| CN-6             | AMP       | 16         | I/conn (Console harness RH-Frame harness) | 368050-1           | 368047-1       |
| CN-7             | AMP       | 15         | I/conn (Console harness RH-Frame harness) | 2-85262-1          | 368301-1       |
| CN-8             | AMP       | 10         | I/conn (Console harness RH-Frame harness) | S816-010002        | 174655-2       |
| CN-9             | DEUTSCH   | 12         | I/conn (AAVM harness-Frame harness)       | DT06-12SA-P021     | DT04-12PA-P021 |
| CN-10            | DEUTSCH   | 12         | I/conn (Side harness RH-Cab harness)      | DT06-12S-EP06      | DT04-12PA-P021 |
| CN-11            | DEUTSCH   | 8          | I/conn (Frame harness-Aircon harness)     | DT06-8S-EP06       | -              |
| CN-12            | DEUTSCH   | 2          | I/conn (Frame harness-Boom wire harness)  | DT06-2S-EP06       | DT04-2P-E004   |
| CN-13            | AMP       | 8          | Boom floating                             | 174262-2           | 174264-2       |
| CN-15            | AMP       | 8          | I/conn (Frame harness-2 way harness)      | 174982-2           | 174984-2       |
| CN-16            | AMP       | 6          | Emergency engine start & speed control    | S816-006002        | S816-106002    |
| CN-17            | AMP       | 8          | I/conn (Side harness RH-Wiper harness)    | S816-008002        | S816-108002    |
| CN-18            | AMP       | 2          | Washer tank 2                             | 174352-2           | 174354-2       |
| CN-20            | MOLEX     | 2          | Horn                                      | 36825-0211         | -              |
| CN-21            | AMP       | 6          | Wiper motor                               | S810-006202        | -              |
| CN-22            | KET       | 2          | Washer tank 1                             | MG640605           | -              |
| CN-23            | KET       | 2          | Speaker-LH                                | MG610070           | -              |
| CN-24            | KET       | 2          | Speaker-RH                                | MG610070           | -              |
| CN-25            | MOLEX     | 2          | Horn                                      | 36825-0211         | -              |
| CN-27A           | KUM       | 16         | Radio & USB player                        | PK145-16017        | -              |
| CN-27B           | AMP       | 8          | Radio & USB player                        | -                  | 174984-2       |
| CN-28            | KUM       | 1          | Aircon compressor                         | NMWP01F-B          | -              |
| CN-29            | KET       | 2          | Receiver dryer                            | MG640795           | -              |
| CN-36            | -         | -          | Fuse & relay box                          | 21Q7-10910         | -              |
| CN-45            | RING-TERM | -          | Starter motor B+                          | S820-108000        | -              |
| CN-48            | KET       | 1          | Hour meter                                | 2-520193-2         | -              |
| CN-51            | DEUTSCH   | 40         | MCU                                       | DRC26-40SA         | -              |
| CN-52            | DEUTSCH   | 40         | MCU                                       | DRC26-40SB         | -              |
| CN-53            | DEUTSCH   | 40         | MCU                                       | DRC26-40SC         | -              |
| CN-56A           | AMP       | 12         | Cluster                                   | -                  | 174663-2       |
| CN-56B           | AMP       | 8          | Cluster                                   | -                  | 174984-2       |
| CN-60            | YAZAKI    | 2          | Circuit breaker                           | -                  | 7222-4220-30   |
| CN-61            | DEUTSCH   | 2          | Fuel filler pump                          | DT06-2S-EP06       | -              |

| Connector number | Type        | No. of pin | Destination                         | Connector part No. |                |
|------------------|-------------|------------|-------------------------------------|--------------------|----------------|
|                  |             |            |                                     | Female             | Male           |
| CN-66            | DEUTSCH     | 2          | Breaker solenoid                    | DT06-2S-EP06       | -              |
| CN-68            | DEUTSCH     | 2          | Safety solenoid                     | DT06-2S-EP06       | -              |
| CN-70            | DEUTSCH     | 2          | Travel high solenoid                | DT06-2S-EP06       | -              |
| CN-74            | RING-TERM   | 1          | Alternator "L" terminal             | S820-105000        | -              |
| CN-74            | RING-TERM   | 1          | Alternator "B" terminal             | S820-108000        | -              |
| CN-75            | AMP         | 2          | Pump EPPR valve                     | S816-002002        | -              |
| CN-80            | RING-TERM   | -          | Glow plug                           | S820-306000        | -              |
| CN-81            | DEUTSCH     | 2          | Travel buzzer solenoid              | DT06-2S-EP06       | -              |
| CN-88            | DEUTSCH     | 2          | Power max solenoid                  | DT06-2S-EP06       | -              |
| CN-93            | DELPHI      | 60         | ECM                                 | 13964577           | -              |
| CN-95            | YAZAKI      | 2          | Circuit breaker                     | -                  | 7222-4220-30   |
| CN-100           | KET         | 1          | ECM ground                          | MG640944-5         | -              |
| CN-113           | KET         | 2          | Buzzer                              | MG651205-5         | -              |
| CN-125           | Econoseal J | 4          | GPS connector                       | S816-004002        | S816-104002    |
| CN-125A          | DEUTSCH     | 12         | GPS                                 | DT06-12S-P021      | DT04-12PA-P021 |
| CN-126           | AMP         | 10         | I/conn (Frame harness-Service tool) | 2-1418390-1        | S816-110002    |
| CN-126           | DEUTSCH     | 4          | RS232                               | DT06-4S            | DT06-4P        |
| CN-133           | DEUTSCH     | 2          | Boom priority solenoid              | DT06-2S-EP06       | -              |
| CN-135           | DEUTSCH     | 2          | Arm regeneration solenoid           | DT06-2S-EP06       | -              |
| CN-138           | FASTEN      | 3          | DC/DC Converter                     | S810-003202        | -              |
| CN-139           | FASTEN      | 2          | 12V socket                          | 172434-2           | -              |
| CN-140           | DEUTSCH     | 2          | Quick clamp solenoid                | DT06-2S-EP06       | DT04-2P-E005   |
| CN-141           | AMP         | 13         | Wiper motor controller              | 172498-1           | -              |
| CN-147           | AMP         | 4          | Fuel heater                         | 2-967325-3         | -              |
| CN-149           | DEUTSCH     | 2          | Attach safety solenoid              | DT06-2S-EP06       | -              |
| CN-154           | DEUTSCH     | 2          | Cooling fan                         | DT06-2S-EP06       | -              |
| CN-156           | DEUTSCH     | 2          | Air seat heat                       | DT06-2S-EP06       | DT04-2P        |
| CN-157           | AMP         | 1          | Antena power                        | S822-014002        | -              |
| CN-173           | DEUTSCH     | 3          | Resistor                            | DT06-3S-EP06       | -              |
| CN-174           | DEUTSCH     | 3          | Resistor                            | DT06-3S-EP06       | DT04-3P-EP10   |
| CN-237           | DEUTSCH     | 2          | Attach conflux solenoid             | DT06-2S-EP06       | -              |
| CN-242           | DEUTSCH     | 2          | Attach EPPR 1                       | DT06-2S-EP06       | -              |
| CN-245           | FCI         | 4          | PTC power                           | 180900-0           | -              |
| CN-246           | DEUTSCH     | 3          | Proportional valve-RH               | DT06-3S            | DT04-3P        |
| CN-247           | DEUTSCH     | 3          | Proportional valve-LH               | DT06-3S            | DT04-3P        |
| CN-249           | DEUTSCH     | 4          | Rear view camera                    | DT06-4S-E005       | DT04-4P-E005   |
| CN-258           | KET         | 1          | Air compressor power                | MG640944-5         | MG650943-5     |
| CN-262           | DEUTSCH     | 2          | Straight travel solenoid            | DT06-2S-EP06       | DT04-2P-E005   |
| CN-262A          | DEUTSCH     | 2          | Straight travel solenoid 1          | DT06-2S-EP06       | -              |

| Connector number | Type    | No. of pin | Destination                   | Connector part No. |                |
|------------------|---------|------------|-------------------------------|--------------------|----------------|
|                  |         |            |                               | Female             | Male           |
| CN-262B          | DEUTSCH | 2          | Straight travel solenoid 2    | DT06-2S-EP06       | -              |
| CN-263           | DEUTSCH | 2          | Air compressor relay          | DT06-2S-EP06       | DT04-2P-E005   |
| CN-305           | DEUTSCH | 12         | Proportional-Connector-1      | DTM06-12SA         | -              |
| CN-306           | DEUTSCH | 12         | Proportional-Connector-2      | DTM06-12SB         | -              |
| CN-307           | DEUTSCH | 3          | Proportional-Service tool     | DT06-3S-EP06       | DT04-3P-E005   |
| CN-308           | AMP     | 4          | Proportional-PVG32            | 2-967059-1         | -              |
| CN-309           | DEUTSCH | 2          | Proportional-EPPR valve A1    | DT06-2S-EP06       | -              |
| CN-310           | DEUTSCH | 2          | Proportional-EPPR valve A2    | DT06-2S-EP06       | -              |
| CN-363           | AMP     | 12         | Haptic controller             | 174045-2           | -              |
| CN-365           | DEUTSCH | 2          | Attach relief EPPR valve 1    | DT06-2S-EP06       | DT04-2P-E005   |
| CN-366           | DEUTSCH | 2          | Attach relief EPPR valve 2    | DT06-2S-EP06       | DT04-2P-E005   |
| CN-367           | AMP     | 2          | Boom down floating solenoid   | 85202-1            | -              |
| CN-368           | DEUTSCH | 2          | Boom up floating solenoid     | DT06-2S-EP06       | -              |
| CN-369           | DEUTSCH | 2          | Boom down cut off solenoid    | DT06-2S-EP06       | -              |
| CN-376           | TYCO    | 34         | Relay drive unit              | 4-1437290-1        | -              |
| CN-378           | DEUTSCH | 2          | Attach EPPR 2                 | DT06-2S-EP06       | -              |
| CN-379           | TYCO    | 12         | SCR supply module             | 1-1703639-1        | -              |
| CN-381           | DELPHI  | 2          | DEF/AdBlue® line heater 1     | 12162194           | -              |
| CN-382           | DELPHI  | 2          | DEF/AdBlue® line heater 2     | 12162194           | -              |
| CN-383           | DELPHI  | 2          | DEF/AdBlue® line heater 3     | 12162194           | -              |
| CN-384           | AMP     | 2          | Coolant valve                 | 174352-2           | -              |
| CN-385           | -       | 7          | Fan clutch                    | 965570             | -              |
| CN-398           | DEUTSCH | 4          | RS232                         | DT06-4S-E005       | DT04-4P-E005   |
| CN-399           | TYCO    | 4          | DEF/AdBlue® tank level sensor | 1-967325-1         | -              |
| CN-402           | DEUTSCH | 6          | Front view camera             | DT06-6S-P021       | DT04-6P-P021   |
| CN-403           | DEUTSCH | 6          | Rear view camera              | DT06-6S-EP06       | DT04-6P-EP14   |
| CN-404           | DEUTSCH | 6          | LH view camera                | DT06-6S-EP06       | DT04-6P-EP14   |
| CN-405           | DEUTSCH | 6          | RH view camera                | DT06-6S-EP06       | DT04-6P-EP14   |
| CN-406           | DEUTSCH | 3          | RS-232 (AAVM)                 | DT06-3S-EP06       | DT04-3P-E005   |
| CN-407           | FCI     | 4          | Low wiper motor               | 180900-0           | -              |
| CN-408           | KET     | 2          | Washer tank 2                 | MG640605           | -              |
| CN-419           | DEUTSCH | 2          | Swing parking-A1              | DT06-2S-EP06       | -              |
| CN-420           | DEUTSCH | 2          | Swing parking-A2              | DT06-2S-EP06       | -              |
| CN-421           | DEUTSCH | 2          | Swing parking-A3              | DT06-2S-EP06       | -              |
| CN-427           | MOLEX   | 4          | Reader-RMS                    | 039012040          | 026013096      |
| CN-429           | DELPHI  | 4          | CAC Out temp                  | 12162197           | -              |
| CN-J6            | DEUTSCH | 12         | DEF/AdBlue® quality sensor    | -                  | DT04-12PA-P021 |
| CN-J7A           | TYCO    | 4          | DOC NOx sensor                | 4-1418390-1        | -              |
| CN-J7B           | TYCO    | 4          | SCR NOx sensor                | 1-1418390-1        | -              |
| CN-J10           | TYCO    | 4          | SCR Thermistor                | 3-1418390-1        | -              |

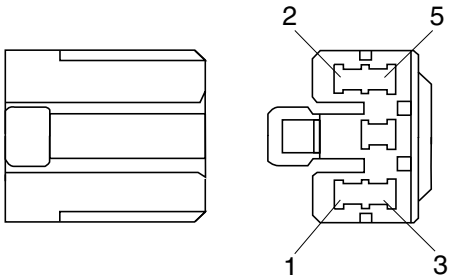
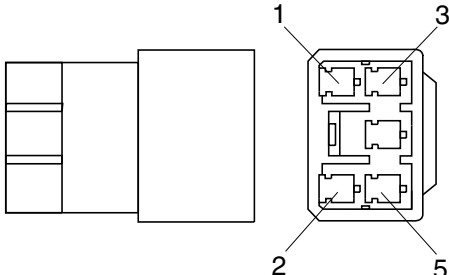
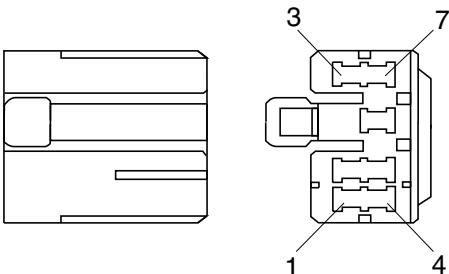
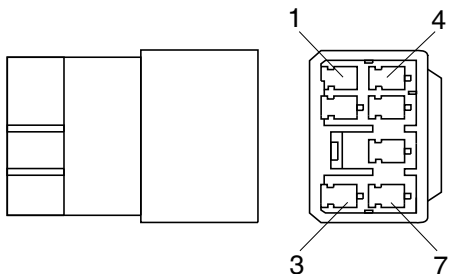
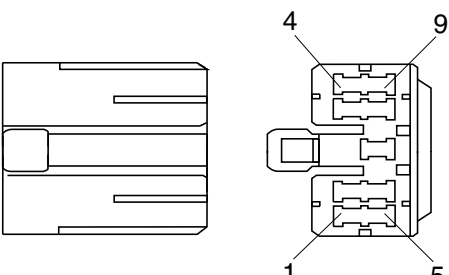
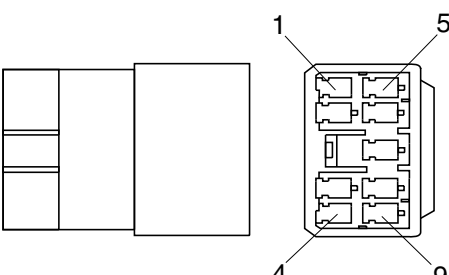
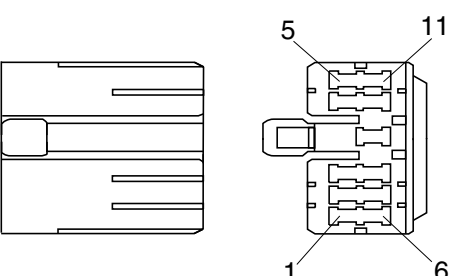
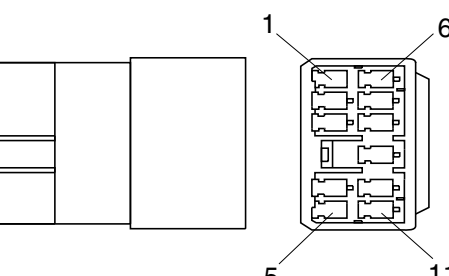
| Connector number | Type      | No. of pin | Destination                  | Connector part No. |              |
|------------------|-----------|------------|------------------------------|--------------------|--------------|
|                  |           |            |                              | Female             | Male         |
| CN-J17           | TYCO      | 4          | DOC Thermistor               | 2-1418390-1        | -            |
| CN-J31           | BOSCH     | 2          | DEF/AdBlue® dosing module    | 1_928_403_874      | -            |
| · Relay          |           |            |                              |                    |              |
| CR-1             | RING-TERM | -          | Battery relay                | ST710289-2         | -            |
| CR-2             | -         | 5          | Horn relay                   | -                  | -            |
| CR-4             | -         | 5          | Working lamp relay           | -                  | -            |
| CR-5             | -         | 5          | Anti restart relay           | -                  | -            |
| CR-7             | -         | 5          | Aircon compressor relay      | -                  | -            |
| CR-9             | -         | 5          | Cabin lamp relay             | -                  | -            |
| CR-12            | FCI       | 4          | Air cleaner relay            | -                  | 54200419     |
| CR-13            | -         | 5          | Head lamp relay              | -                  | -            |
| CR-23            | KET       | 2          | Start relay                  | -                  | S814-102001  |
| CR-24            | RING TERM | 1          | Preheat relay                | S822-014000        | -            |
| CR-35            | -         | 5          | Power relay                  | -                  | -            |
| CR-36            | -         | 5          | Air preheat relay            | -                  | -            |
| CR-39            | -         | 5          | Starter lock out relay       | -                  | -            |
| CR-45            | -         | 5          | Beacon lamp relay            | -                  | -            |
| CR-46            | -         | 5          | Fuel warmer relay            | -                  | -            |
| CR-50            | -         | 5          | NOx sensor relay             | -                  | -            |
| CR-51            | -         | 5          | DEF/AdBlue® module relay     | -                  | -            |
| CR-52            | -         | 5          | Line heater relay            | -                  | -            |
| · Switch         |           |            |                              |                    |              |
| CS-1             | SHUR      | 1          | Door switch                  | S822-014002        | -            |
| CS-2A            | WP        | 6          | Start key switch             | S814-006100        | -            |
| CS-2B            | DEUTSCH   | 3          | Reader                       | DT06-3S-EP06       | DT04-3P-E005 |
| CS-4             | DEUTSCH   | 3          | Safety switch                | DT06-3S            | -            |
| CS-5             | DEUTSCH   | 2          | Horn switch                  | -                  | DT04-2P      |
| CS-19            | DEUTSCH   | 2          | One touch decel switch       | -                  | DT04-2P      |
| CS-26            | DEUTSCH   | 2          | Breaker switch               | DT06-2S            | -            |
| CS-26A           | AMP       | 2          | Breaker pedal switch         | S816-002002        | S816-102002  |
| CS-29            | DEUTSCH   | 2          | Power max switch             | DT06-2S            | -            |
| CS-33            | AMP       | 6          | Emergency engine stop switch | S816-006002        | S816-106002  |
| CS-52            | CARLING   | 10         | Dozer & 2PCS boom switch     | VC2-01             | -            |
| CS-53            | AMP       | 1          | Wiper cut switch             | S822-014002        | -            |
| CS-67            | CARLING   | 10         | Quick clamp switch           | VC2-01             | -            |
| CS-73            | CARLING   | 10         | Swing lock & fine switch     | VC2-01             | -            |
| CS-74A           | -         | 2          | Master switch                | 4-1437290-1        | S813-130201  |
| CS-74B           | DEUTSCH   | 2          | Master switch                | DT06-2S-EP06       | DT04-2P-E005 |
| CS-78            | CARLING   | 10         | Lower wiper switch           | VC2-01             | -            |
| CS-83            | CARLING   | 10         | Spare switch                 | VC2-01             | -            |

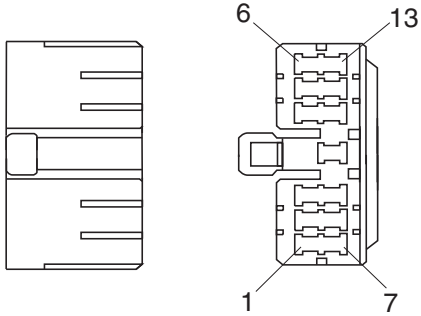
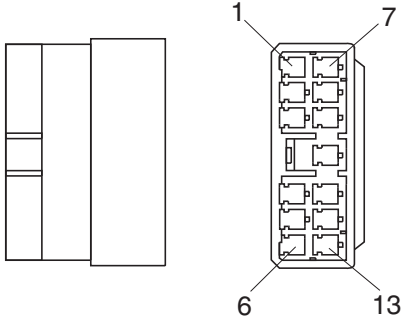
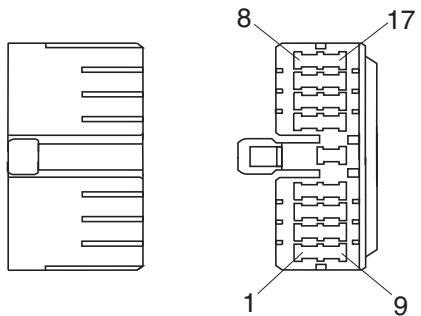
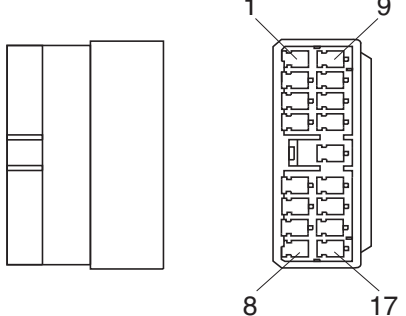
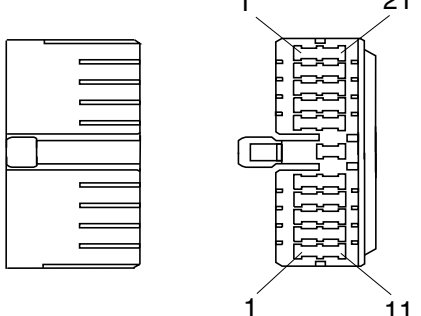
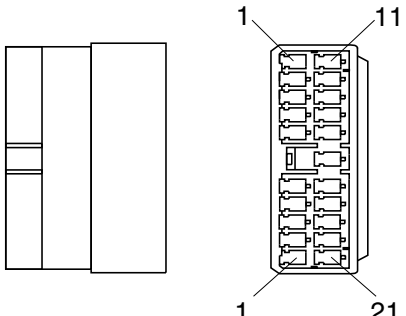
| Connector number | Type     | No. of pin | Destination                      | Connector part No. |              |
|------------------|----------|------------|----------------------------------|--------------------|--------------|
|                  |          |            |                                  | Female             | Male         |
| CS-99            | CARLING  | 10         | Air compressor switch            | VC2-01             | -            |
| CS-100           | CARLING  | 10         | SCR system cleaning switch       | VC2-01             | -            |
| CS-107           | CARLING  | 10         | Travel straight switch           | VC2-01             | -            |
| CS-108           | CARLING  | 10         | Auto grease switch               | VC2-01             | -            |
| CS-111           | CARLING  | 10         | Boom floating switch             | VC2-01             | -            |
| · Light          |          |            |                                  |                    |              |
| CL-1             | KET      | 3          | Room lamp                        | MG651032           | -            |
| CL-2             | AMP      | 1          | Cigar lighter                    | S822-014002        | S822-114002  |
| CL-3             | DEUTSCH  | 2          | Head lamp-LH                     | DT06-2S-EP06       | -            |
| CL-4             | DEUTSCH  | 2          | Head lamp-RH                     | DT06-2S-EP06       | -            |
| CL-5             | DEUTSCH  | 2          | Work lamp-LH                     | DT06-2S-EP06       | -            |
| CL-6             | DEUTSCH  | 2          | Work lamp-RH                     | DT06-2S-EP06       | -            |
| CL-7             | SHUR     | 1          | Beacon lamp                      | S822-014002        | S822-114002  |
| CL-8             | DEUTSCH  | 2          | Cab light-LH                     | DT06-2S-EP06       | DT04-2P      |
| CL-9             | DEUTSCH  | 2          | Cab light-RH                     | DT06-2S-EP06       | DT04-2P      |
| CL-10            | DEUTSCH  | 2          | Cab light                        | DT06-2S-EP06       | DT04-2P      |
| CL-24            | DEUTSCH  | 2          | Work lamp - rear                 | DT06-2S-EP06       | DT04-2P-E005 |
| CL-36            | DEUTSCH  | 2          | Work lamp - LH                   | DT06-2S-EP06       | -            |
| CL-37            | DEUTSCH  | 2          | Work lamp - RH                   | DT06-2S-EP06       | -            |
| CL-40            | DEUTSCH  | 2          | DEF/AdBlue® lamp                 | DT06-2S-EP06       | -            |
| CL-41            | AMP      | 2          | DEF/AdBlue® fill up warning lamp | S822-01400         | -            |
| · Sensor, sender |          |            |                                  |                    |              |
| CD-1             | AMP      | 2          | Hydraulic oil temp sender        | 85202-1            | -            |
| CD-2             | DEUTSCH  | 2          | Fuel sender                      | DT06-2S-EP06       | -            |
| CD-6             | DEUTSCH  | 3          | Travel pressure switch           | DT06-3S-EP06       | -            |
| CD-7             | DEUTSCH  | 3          | Working pressure switch          | DT06-3S-EP06       | -            |
| CD-10            | SUMITOMO | 4          | Air cleaner switch               | 6098-0144          | -            |
| CD-10            | AMP      | 4          | Air cleaner sensor               | 85202-1            | -            |
| CD-16            | AMP      | 3          | Water level sensor               | 12110293           | -            |
| CD-24            | DEUTSCH  | 3          | Swing sensor                     | DT06-3S-EP06       | -            |
| CD-31            | DEUTSCH  | 3          | Overload sensor                  | DT06-3S-EP06       | DT04-3P-E005 |
| CD-32            | DEUTSCH  | 3          | Boom up sensor                   | DT06-3S-EP06       | -            |
| CD-35            | DEUTSCH  | 3          | Arm in/out and bucket in sensor  | DT06-3S-EP06       | -            |
| CD-36            | DEUTSCH  | 3          | Arm out sensor                   | DT06-3S-EP06       | -            |
| CD-42            | DEUTSCH  | 3          | Pump pressure 1                  | DT06-3S-EP06       | -            |
| CD-43            | DEUTSCH  | 3          | Pump pressure 2                  | DT06-3S-EP06       | -            |
| CD-44            | DEUTSCH  | 3          | Pump pressure 3                  | DT06-3S-EP06       | -            |
| CD-45            | DEUTSCH  | 2          | WIF sensor                       | DT06-2S-EP06       | -            |
| CD-52            | AMP      | 1          | Fan rpm sensor                   | ST730135-2         | -            |

| Connector number | Type    | No. of pin | Destination                        | Connector part No. |      |
|------------------|---------|------------|------------------------------------|--------------------|------|
|                  |         |            |                                    | Female             | Male |
| CD-69            | DEUTSCH | 3          | Attach pressure sensor             | DT06-3S-EP06       | -    |
| CD-70            | DEUTSCH | 3          | N1 pressure sensor                 | DT06-3S-EP06       | -    |
| CD-71            | DEUTSCH | 3          | N2 pressure sensor                 | DT06-3S-EP06       | -    |
| CD-85            | DEUTSCH | 3          | Boom down sensor                   | DT06-3S-EP06       | -    |
| CD-87            | DEUTSCH | 3          | Bucket out sensor                  | DT06-3S-EP06       | -    |
| CD-90            | DEUTSCH | 3          | Arm in sensor                      | DT06-3S-EP06       | -    |
| CD-91            | DEUTSCH | 3          | Bucket in sensor                   | DT06-3S-EP06       | -    |
| CD-124           | DEUTSCH | 3          | Boom cylinder rod pressure snensor | DT06-3S-EP06       | -    |

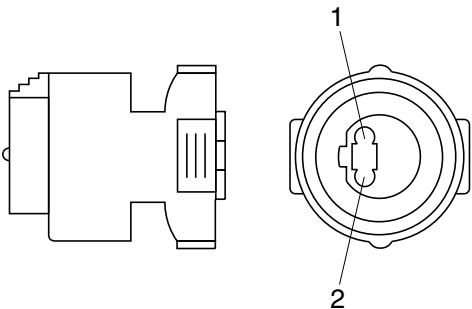
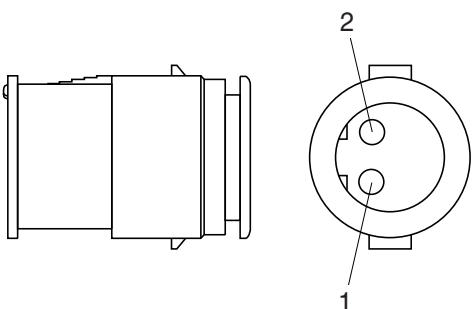
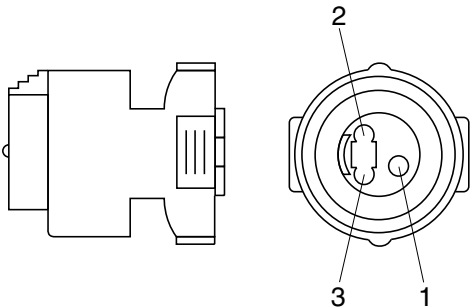
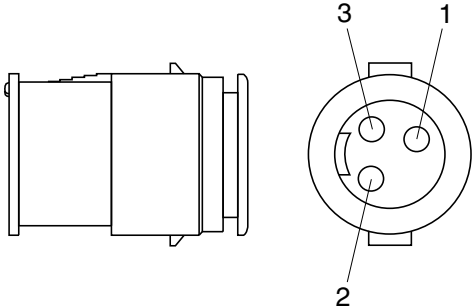
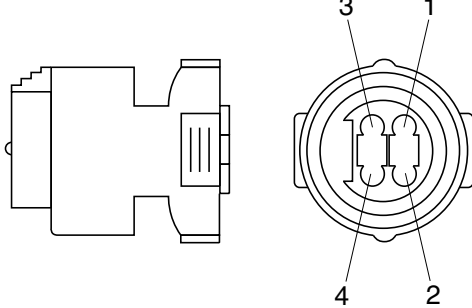
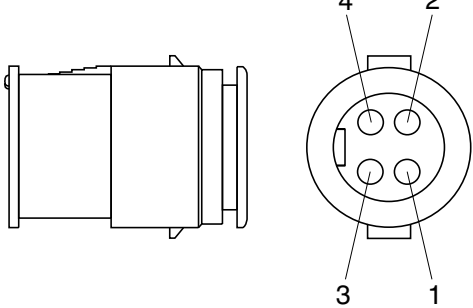
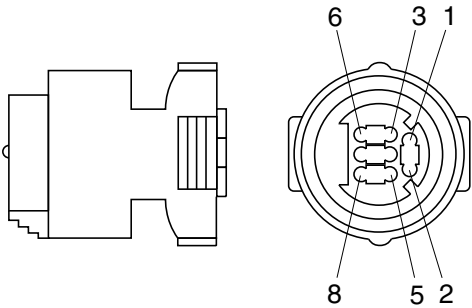
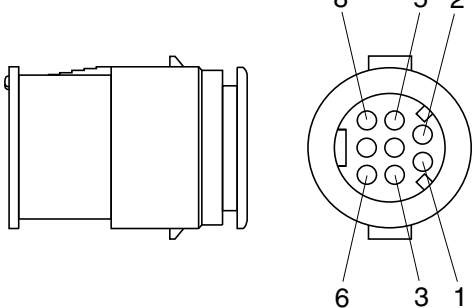
## 2. CONNECTION TABLE FOR CONNECTORS

### 1) PA TYPE CONNECTOR

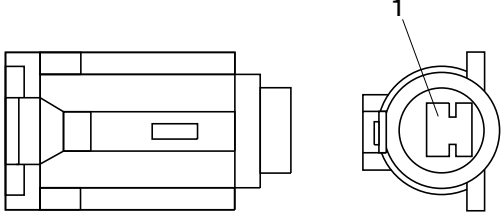
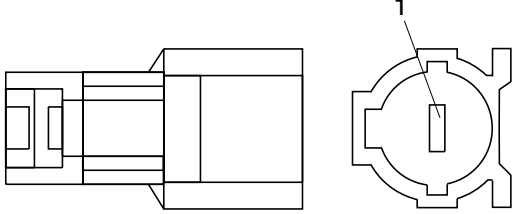
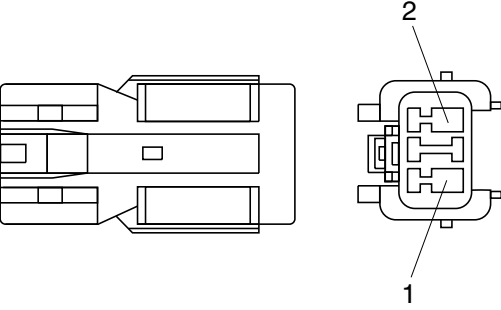
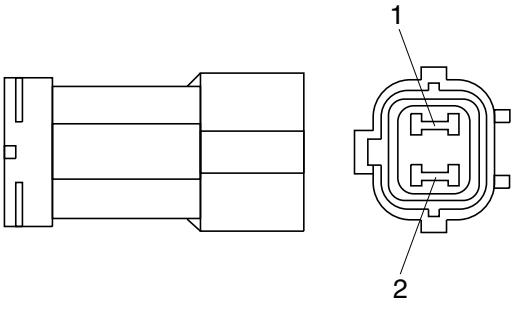
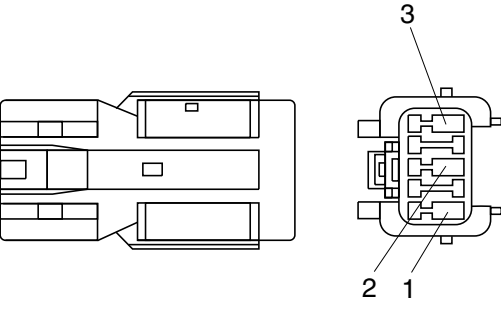
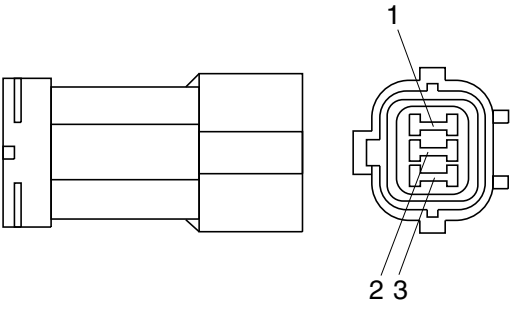
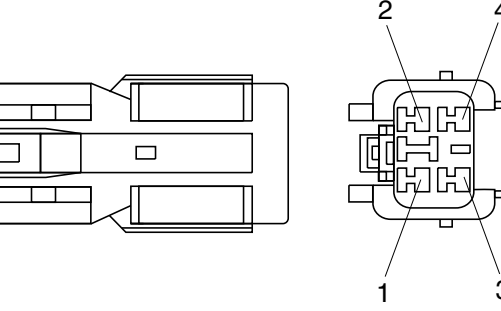
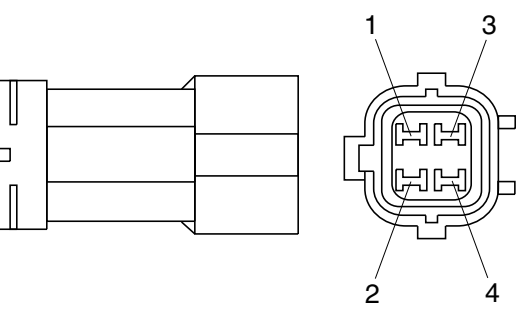
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                    |
|------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 5          |  <p>S811-005002</p>   |  <p>S811-105002</p>    |
| 7          |  <p>S811-007002</p>  |  <p>S811-107002</p>   |
| 9          |  <p>S811-009002</p> |  <p>3S811-109002</p> |
| 11         |  <p>S811-011002</p> |  <p>S811-111002</p>  |

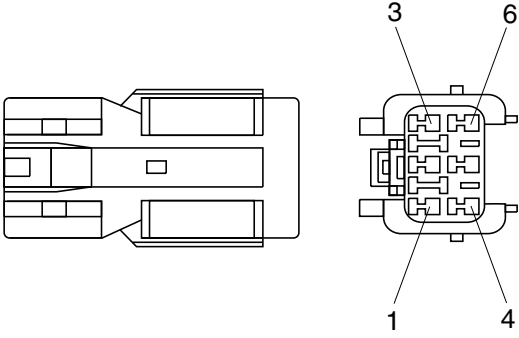
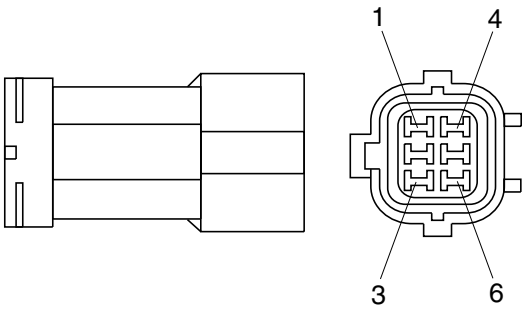
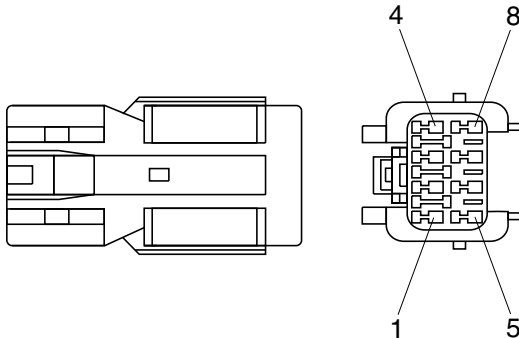
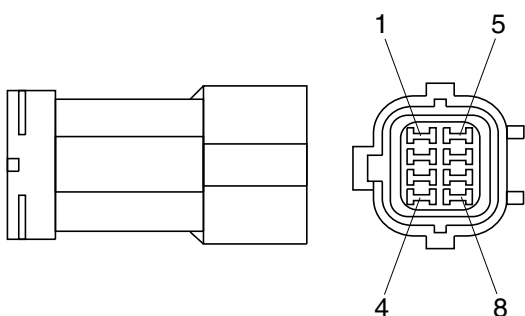
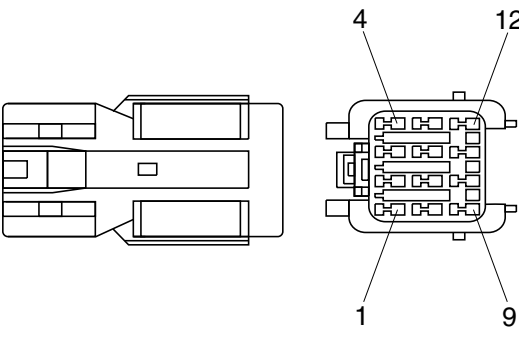
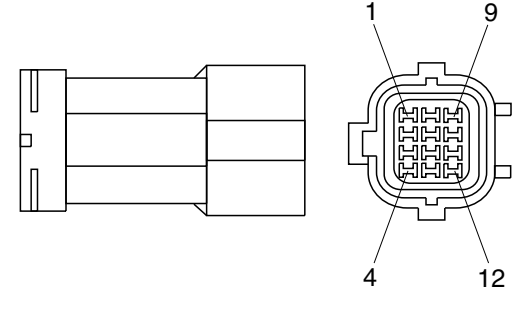
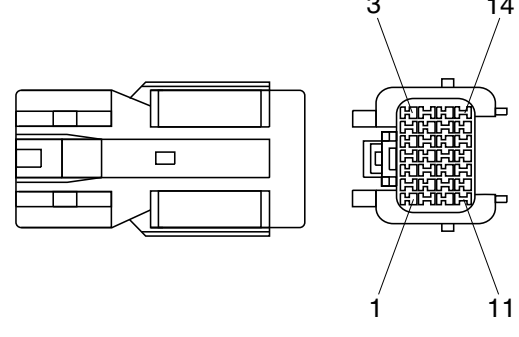
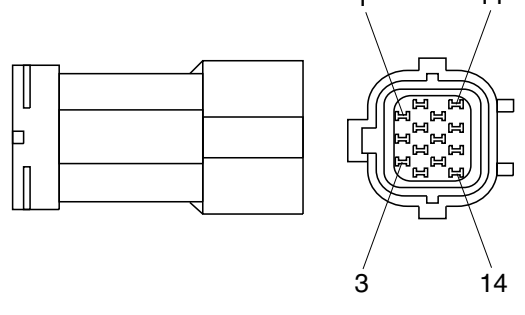
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 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> |

## 2) J TYPE CONNECTOR

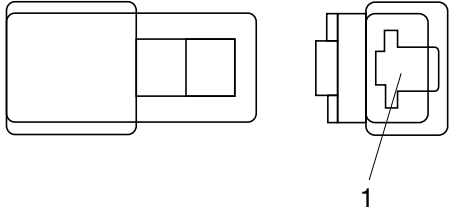
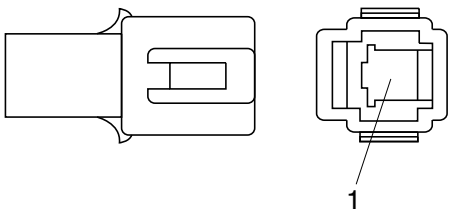
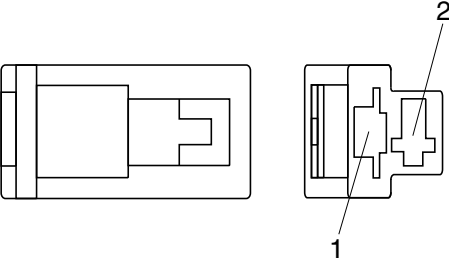
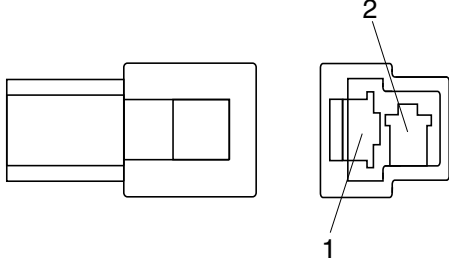
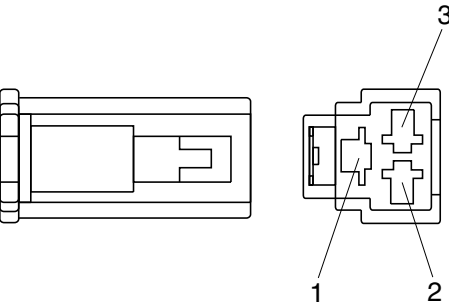
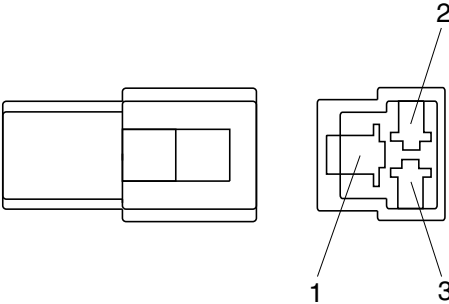
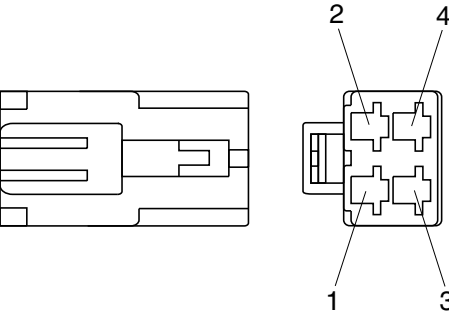
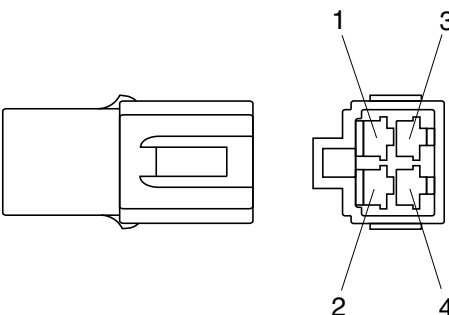
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 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> |

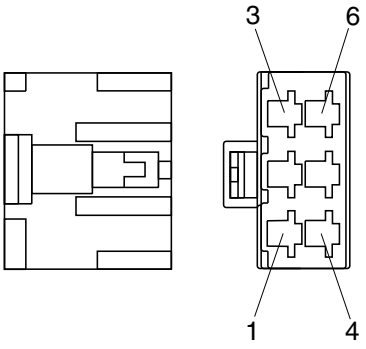
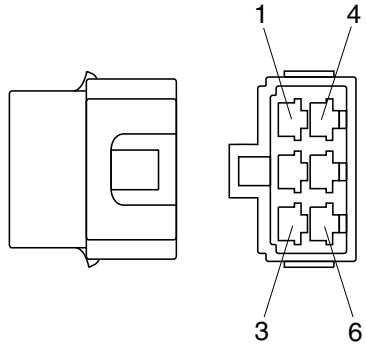
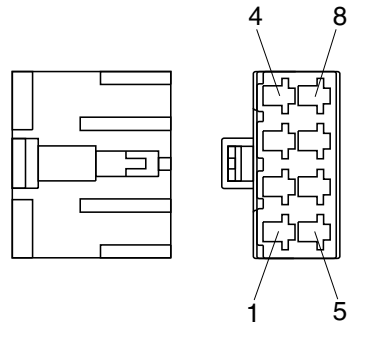
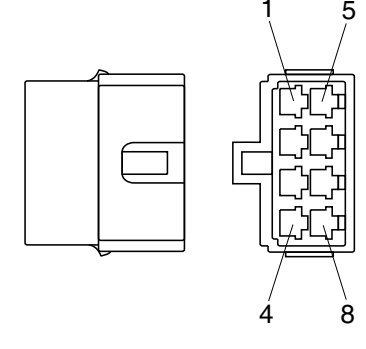
### 3) SWP TYPE CONNECTOR

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

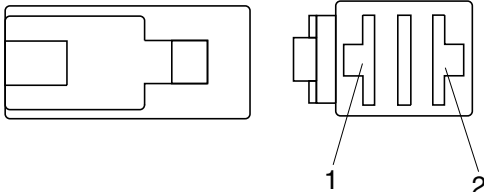
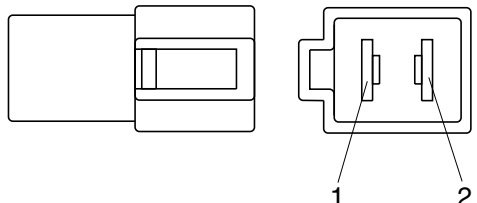
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 6          |  <p>S814-006000</p>   |  <p>S814-106000</p>   |
| 8          |  <p>S814-008000</p>  |  <p>S814-108000</p>  |
| 12         |  <p>S814-012000</p> |  <p>S814-112000</p> |
| 14         |  <p>S814-014000</p> |  <p>S814-114000</p> |

#### 4) CN TYPE CONNECTOR

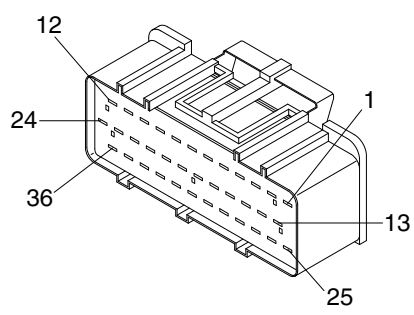
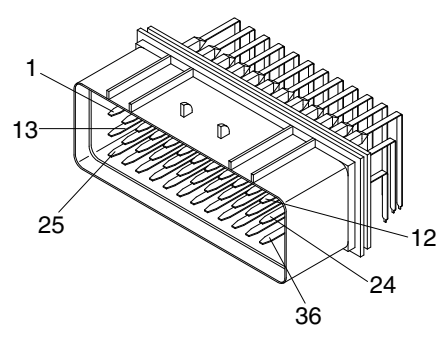
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 1          |  <p>S810-001202</p>   |  <p>S810-101202</p>   |
| 2          |  <p>S810-002202</p>  |  <p>S810-102202</p>  |
| 3          |  <p>S810-003202</p> |  <p>S810-103202</p> |
| 4          |  <p>S810-004202</p> |  <p>S810-104202</p> |

| No. of pin | Receptacle connector (female)                                                                         | Plug connector (male)                                                                                  |
|------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 6          |  <p>S810-006202</p>  |  <p>S810-106202</p>  |
| 8          |  <p>S810-008202</p> |  <p>S810-108202</p> |

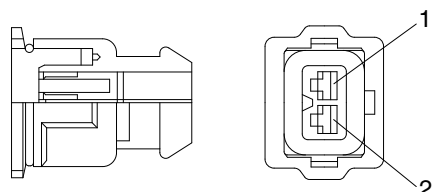
### 5) 375 FASTEN TYPE CONNECTOR

| No. of pin | Receptacle connector (female)                                                                        | Plug connector (male)                                                                                 |
|------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 2          |  <p>S810-002402</p> |  <p>S810-102402</p> |

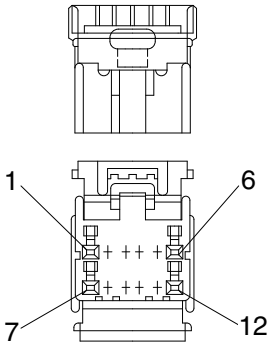
### 6) AMP ECONOSEAL CONNECTOR

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

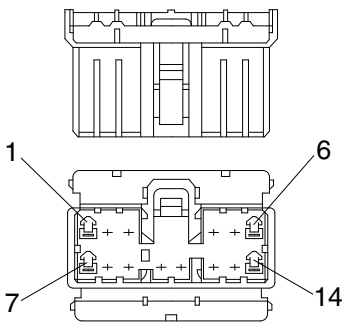
### 7) AMP TIMER CONNECTOR

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

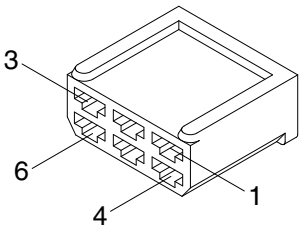
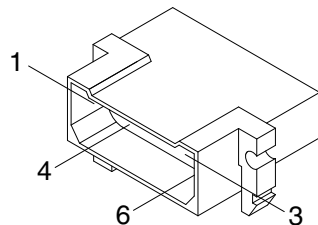
### 8) AMP 040 MULTILOCK CONNECTOR

| No. of pin | Receptacle connector (female)                                                     | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------|-----------------------|
| 12         |  |                       |

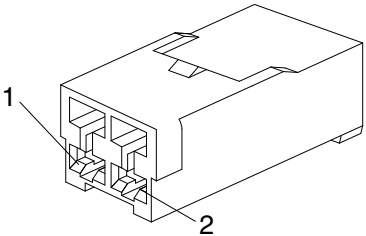
### 9) AMP 070 MULTILOCK CONNECTOR

| No. of pin | Receptacle connector (female)                                                      | Plug connector (male) |
|------------|------------------------------------------------------------------------------------|-----------------------|
| 14         |  |                       |

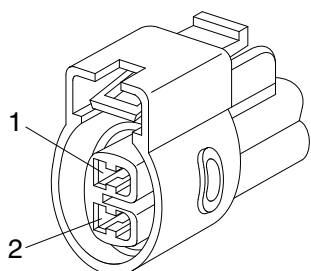
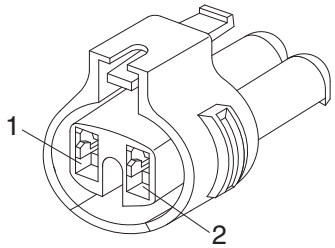
### 10) AMP FASTIN - FASTON CONNECTOR

| No. of pin | Receptacle connector (female)                                                       | Plug connector (male)                                                                |
|------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 6          |  |  |
|            | 925276-0                                                                            | 480003-9                                                                             |

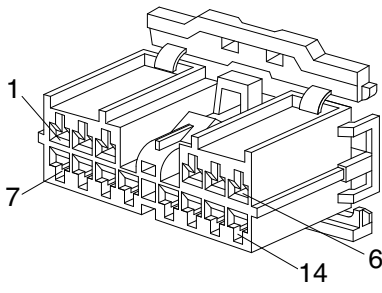
### 11) KET 090 CONNECTOR

| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male) |
|------------|---------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>MG610070</p> |                       |

### 12) KET 090 WP CONNECTORS

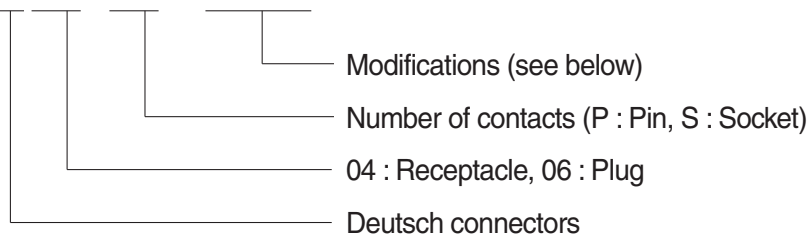
| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>MG640605</p>  |                       |
| 2          |  <p>MG640795</p> |                       |

### 13) KET SDL CONNECTOR

| No. of pin | Receptacle connector (female)                                                                     | Plug connector (male) |
|------------|---------------------------------------------------------------------------------------------------|-----------------------|
| 14         |  <p>MG610406</p> |                       |

## 14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★☆☆



### ※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

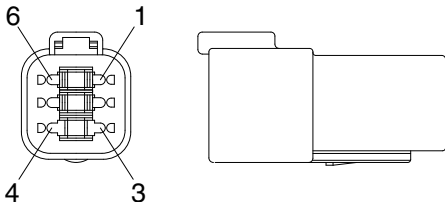
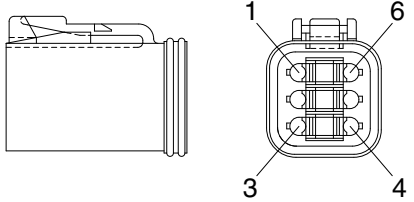
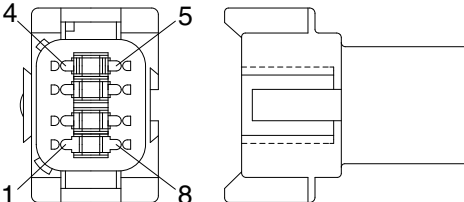
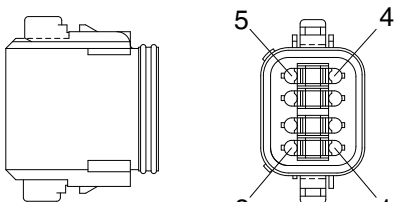
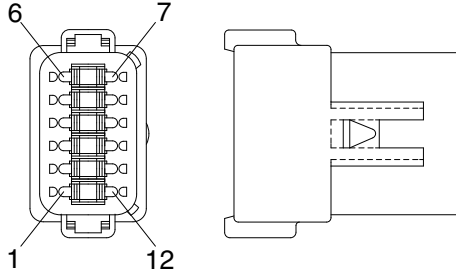
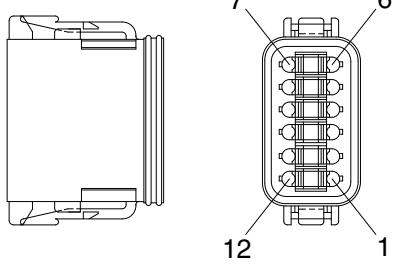
E005 : Combination - E004 & E003

EP04 : End cap

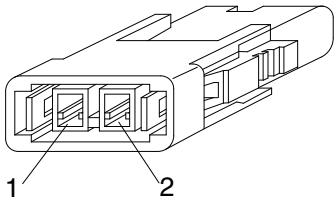
EP06 : Combination P012 & EP04

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

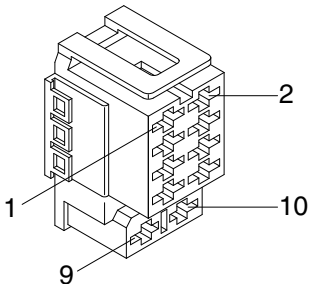
| No. of pin | Receptacle connector (female) | Plug connector (male) |
|------------|-------------------------------|-----------------------|
| 2          | <p>DT06-2S</p>                | <p>DT04-2P</p>        |
| 3          | <p>DT06-3S</p>                | <p>DT04-3P</p>        |
| 4          | <p>DT06-4S</p>                | <p>DT04-4P</p>        |

| 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> |

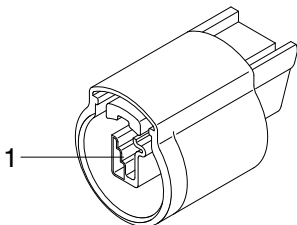
### 15) MOLEX 2CKTS CONNECTOR

| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 2          |  <p>35215-0200</p> |                       |

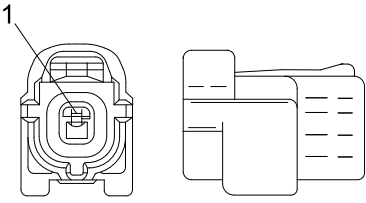
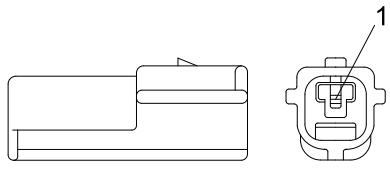
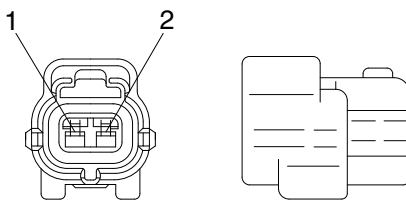
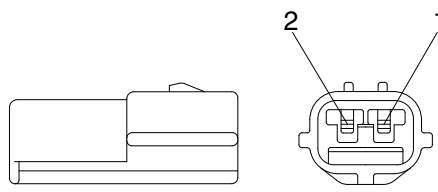
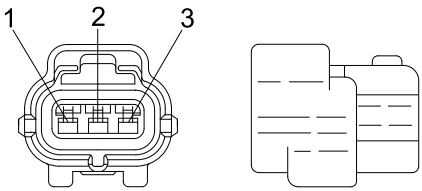
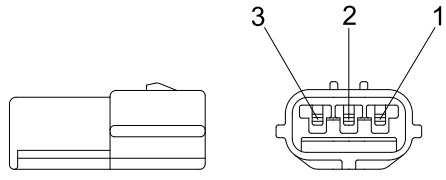
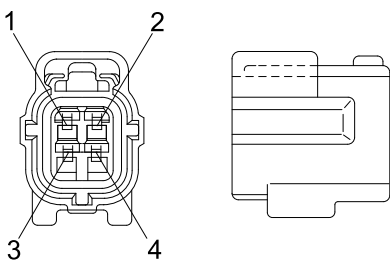
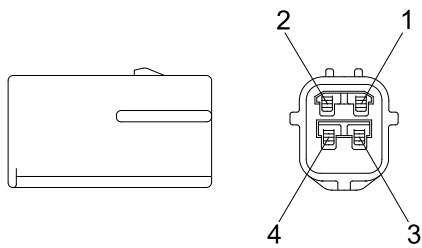
### 16) ITT SWF CONNECTOR

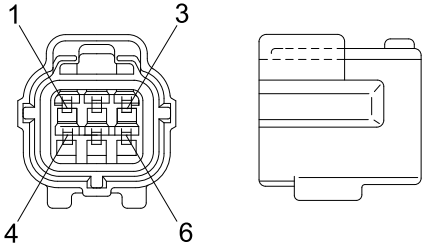
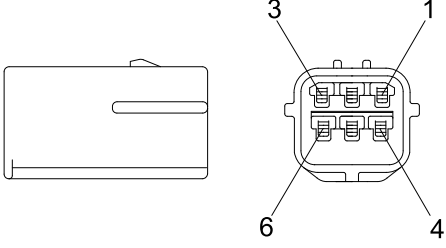
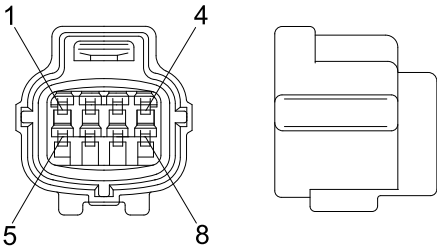
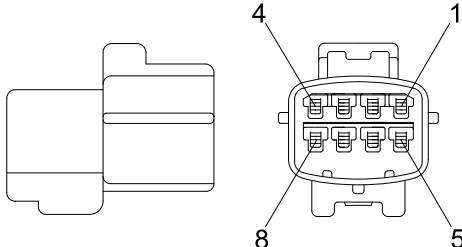
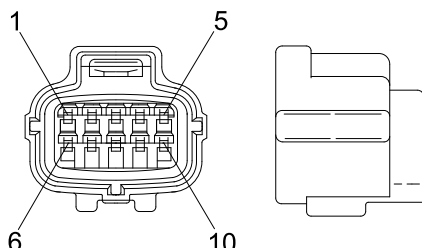
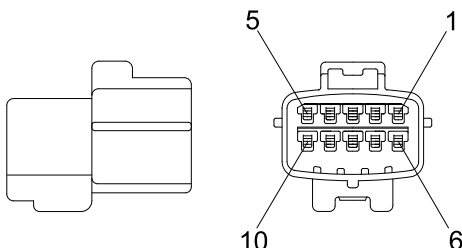
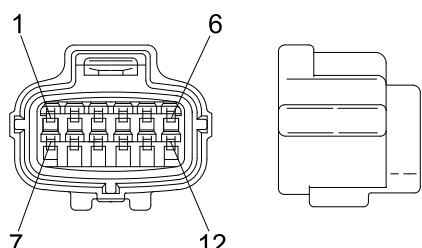
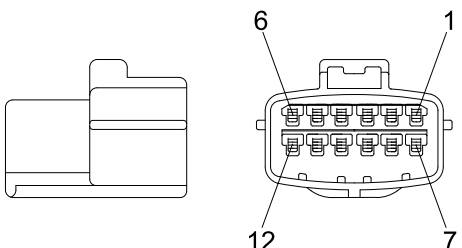
| No. of pin | Receptacle connector (female)                                                                       | Plug connector (male) |
|------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| 10         |  <p>SWF593757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

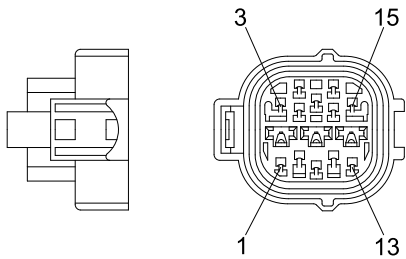
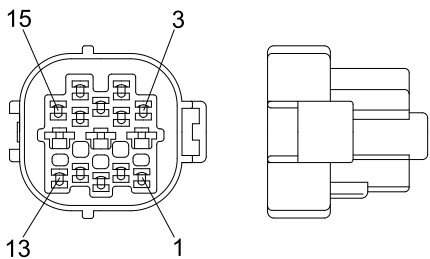
### 17) MWP NMWP CONNECTOR

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

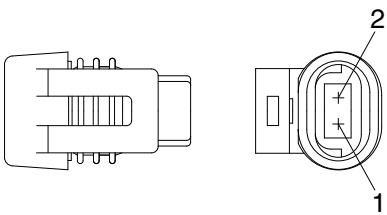
## 18) ECONOSEAL J TYPE CONNECTORS

| 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> |

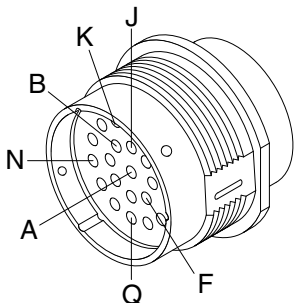
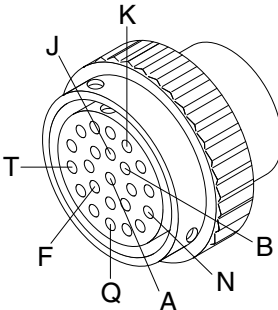
| No. of pin | Receptacle connector (female)                                                                          | Plug connector (male)                                                                                   |
|------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 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> |

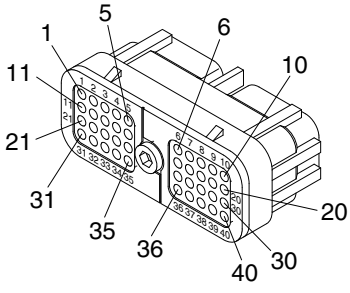
### 19) METRI-PACK TYPE CONNECTOR

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

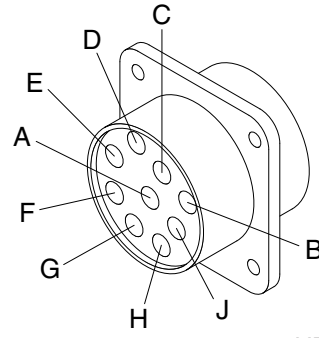
### 20) DEUTSCH HD30 CONNECTOR

| No. of pin | Receptacle connector (female)                                                                           | Plug connector (male)                                                                                    |
|------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 23         |  <p>HD36-24-23SN</p> |  <p>HD34-24-23PN</p> |

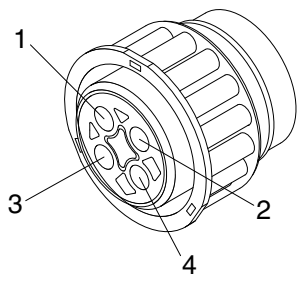
## 21) DEUTSCH MCU CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                         | Plug connector (Male) |
|------------|-------------------------------------------------------------------------------------------------------|-----------------------|
| 40         |  <p>DRC26-40SA/B</p> |                       |

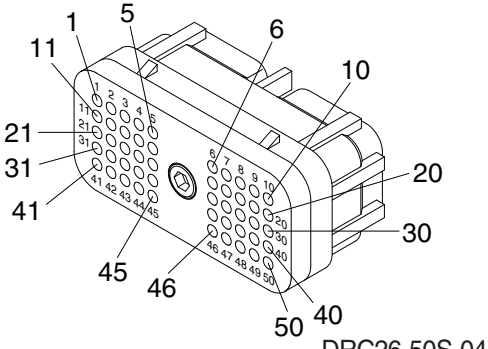
## 22) DEUTSCH SERVICE TOOL CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                        | Plug connector (Male) |
|------------|------------------------------------------------------------------------------------------------------|-----------------------|
| 9          |  <p>HD10-9-96P</p> |                       |

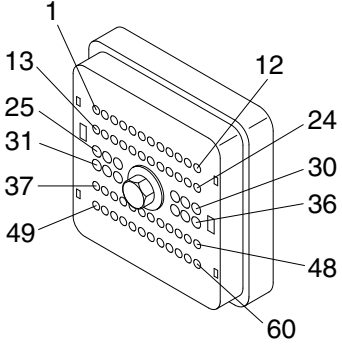
## 23) AMP FUEL WARMER CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                         | Plug connector (Male) |
|------------|-------------------------------------------------------------------------------------------------------|-----------------------|
| 4          |  <p>2-967325-3</p> |                       |

## 24) DEUTSCH ENGINE ECM CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                         | Plug connector (Male) |
|------------|-------------------------------------------------------------------------------------------------------|-----------------------|
| 50         |  <p>DRC26-50S-04</p> |                       |

## 25) DEUTSCH INTERMEDIATE CONNECTOR

| No. of pin | Receptacle connector (Female)                                                                              | Plug connector (Male) |
|------------|------------------------------------------------------------------------------------------------------------|-----------------------|
| 60         |  <p>DRB16-60SAE-L018</p> |                       |