

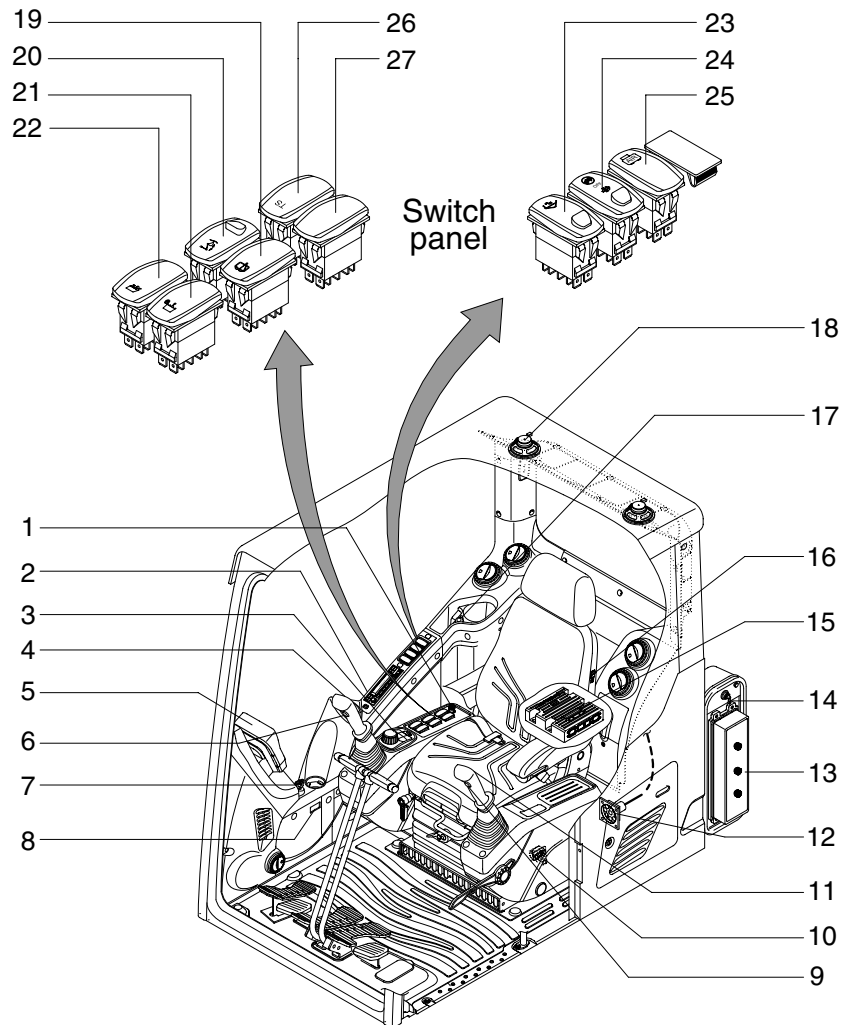
## SECTION 4 ELECTRICAL SYSTEM

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# SECTION 4 ELECTRICAL SYSTEM

## GROUP 1 COMPONENT LOCATION

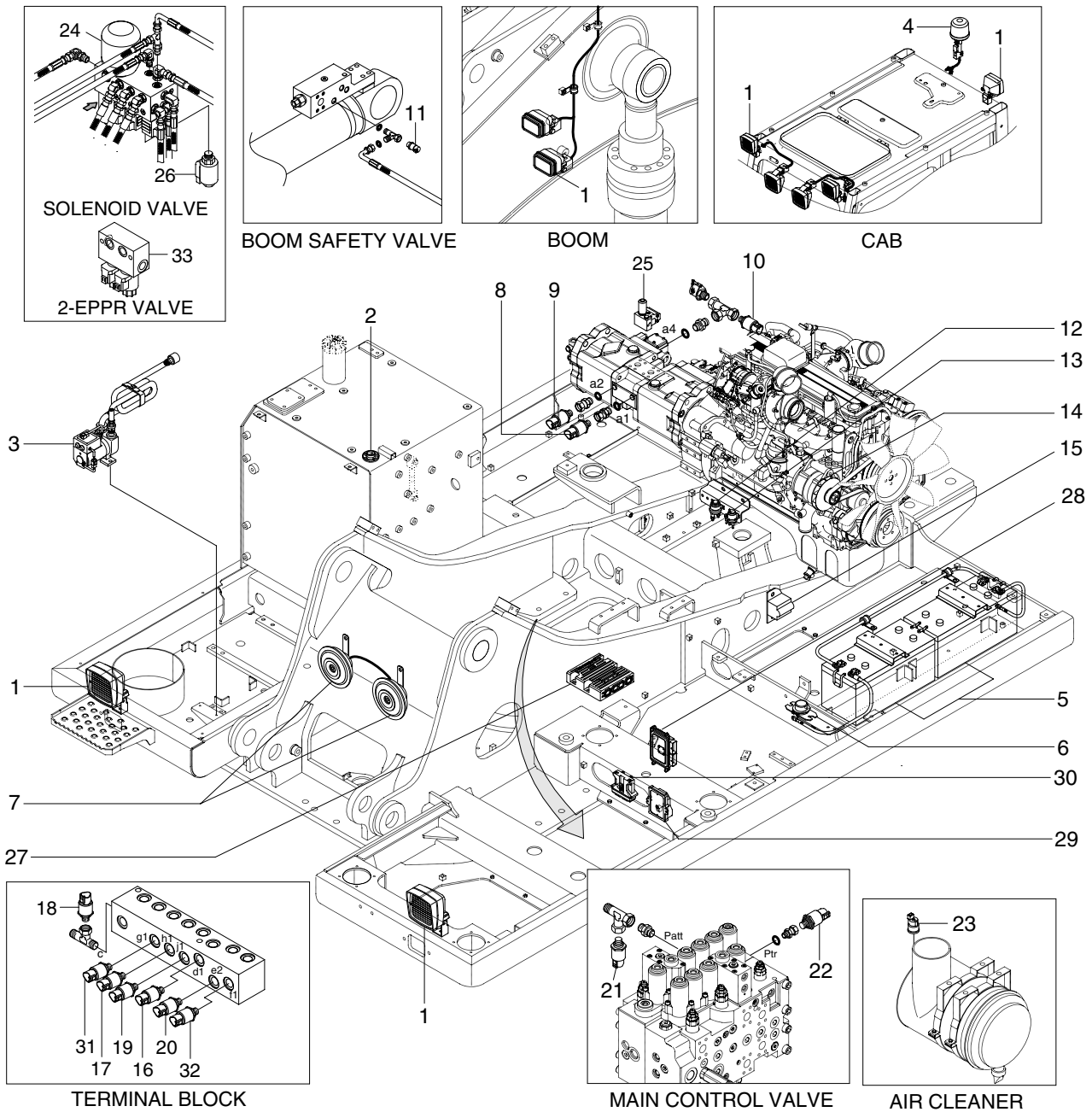
### 1. LOCATION 1



300A4EL01

- |                            |                                 |                                |
|----------------------------|---------------------------------|--------------------------------|
| 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 Swing lock/fine switch      |
| 4 Horn switch              | 13 Fuse & relay box             | 22 Travel straight switch      |
| 5 Cluster                  | 14 Master switch                | 23 Air compressor switch       |
| 6 Breaker operation switch | 15 Machine control unit         | 24 Quick clamp switch          |
| 7 Starting switch          | 16 Seat heater switch           | 25 SCR system cleaning switch  |
| 8 Service meter            | 17 Service socket               |                                |
| 9 Power max switch         | 18 Speaker                      |                                |

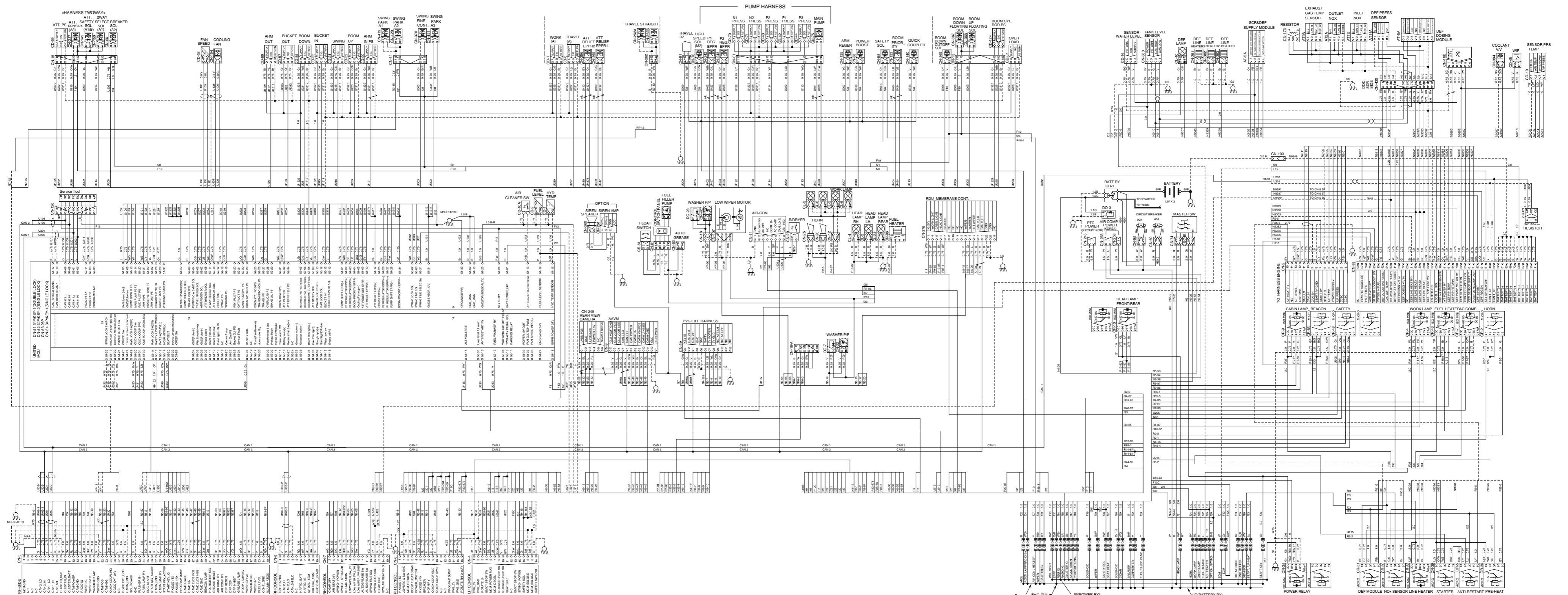
## 2. LOCATION 2

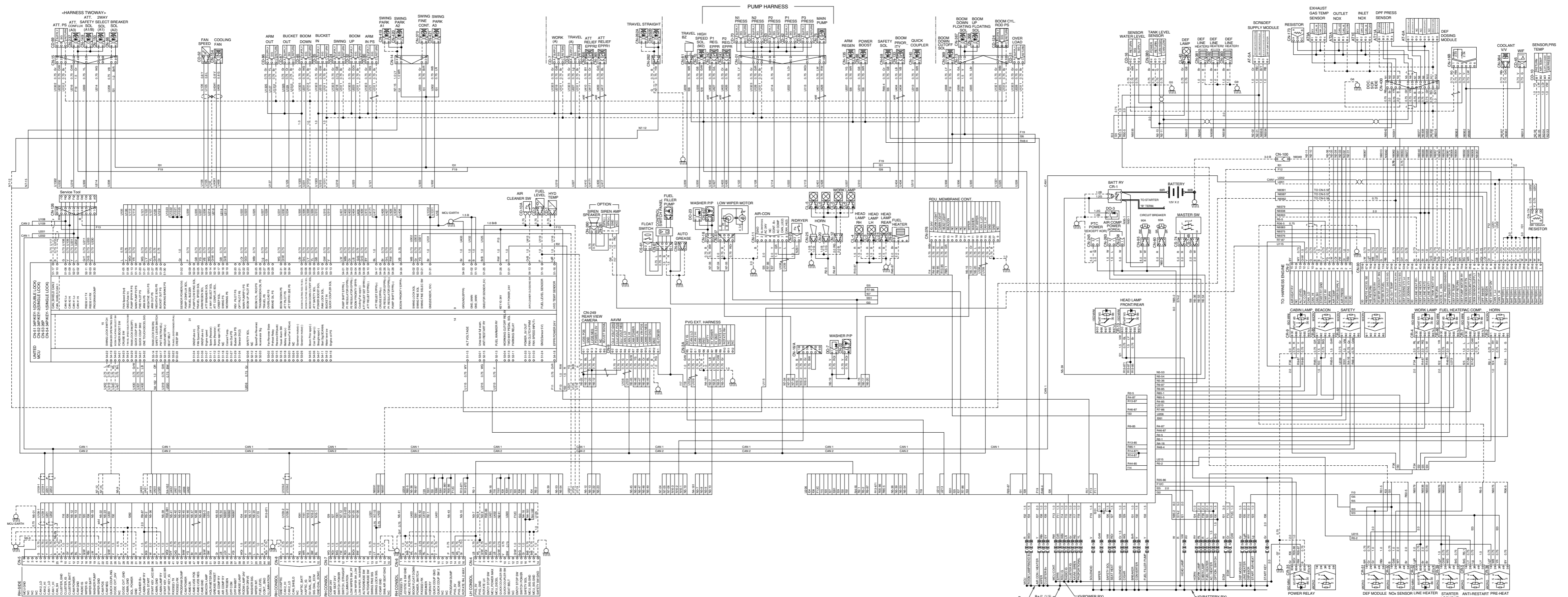


330A4EL02

- |                             |                                  |                               |
|-----------------------------|----------------------------------|-------------------------------|
| 1 Lamp                      | 12 Start relay                   | 23 Air cleaner sensor         |
| 2 Fuel sender               | 13 Heater relay                  | 24 Solenoid valve             |
| 3 Fuel filler pump          | 14 Alternator                    | 25 Pump EPPR valve            |
| 4 Beacon lamp               | 15 Travel alarm buzzer           | 26 Boom priority EPPR valve   |
| 5 Battery                   | 16 Arm/Bucket in pressure sensor | 27 MCU assy                   |
| 6 Battery relay             | 17 Boom up pressure sensor       | 28 AAVM controller            |
| 7 Horn                      | 18 Swing pressure sensor         | 29 DRU assy                   |
| 8 P1 pressure sensor        | 19 Boom down pressure sensor     | 30 PVG32 controller           |
| 9 P2 pressure sensor        | 20 Arm in/swing pressure sensor  | 31 Bucket out pressure sensor |
| 10 EPPR pressure sensor     | 21 Attach pressure sensor        | 32 Bucket in pressure sensor  |
| 11 Overload pressure sensor | 22 Travel pressure sensor        | 33 2-EPPR valve               |



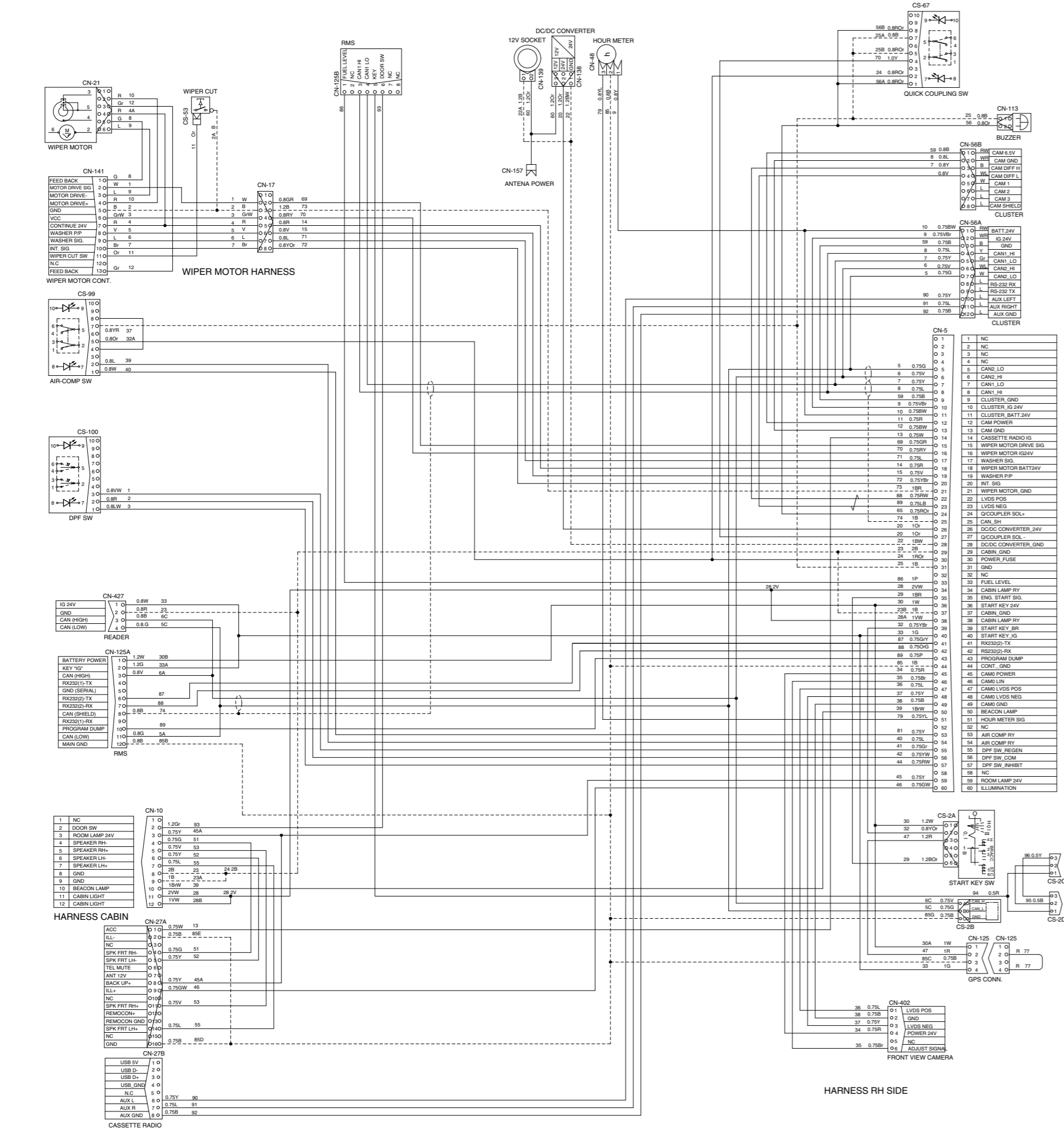




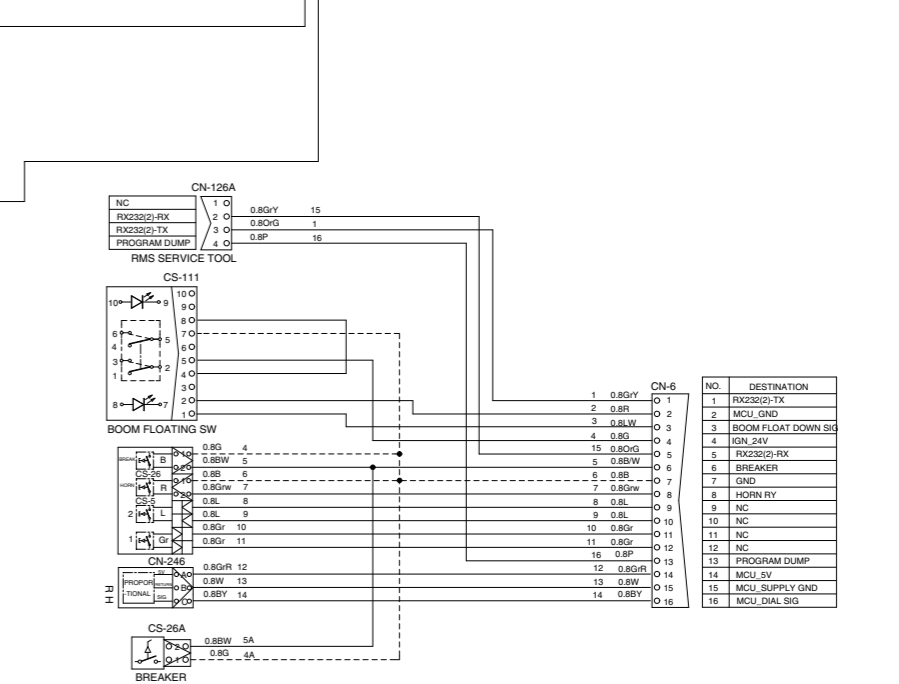
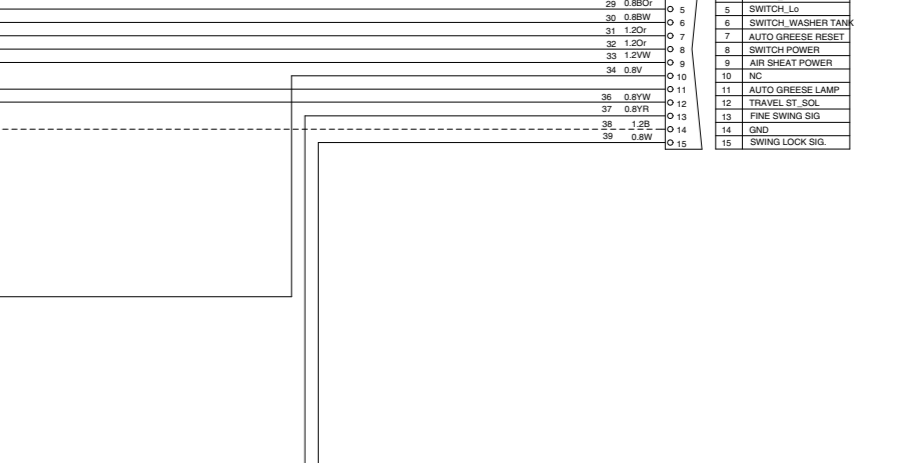
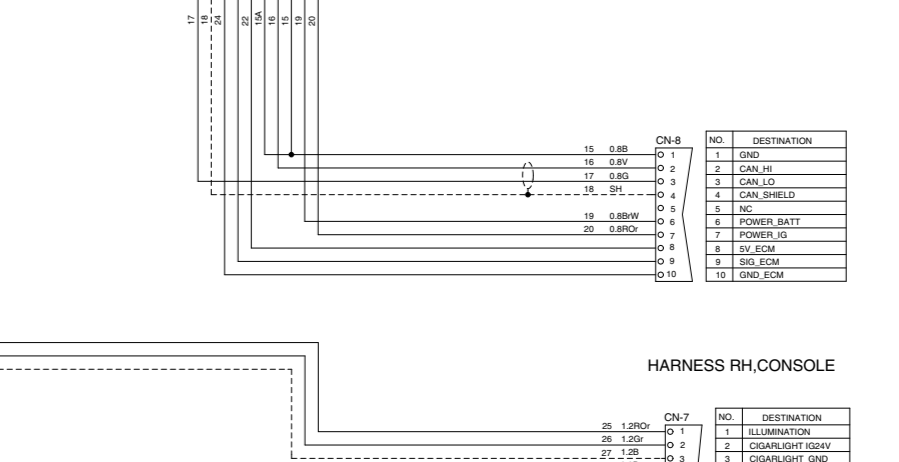
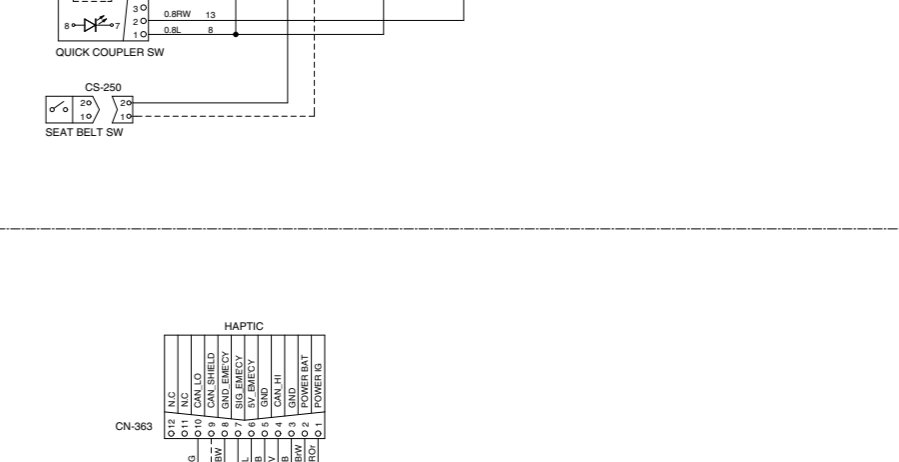
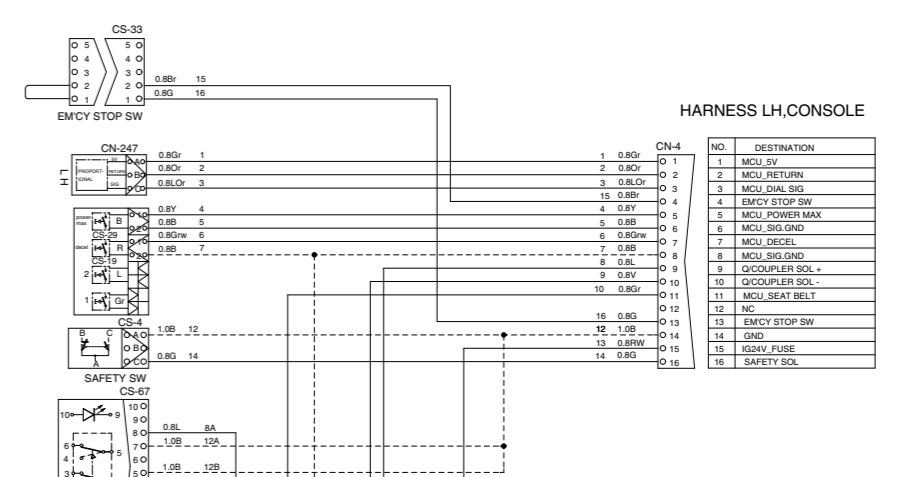
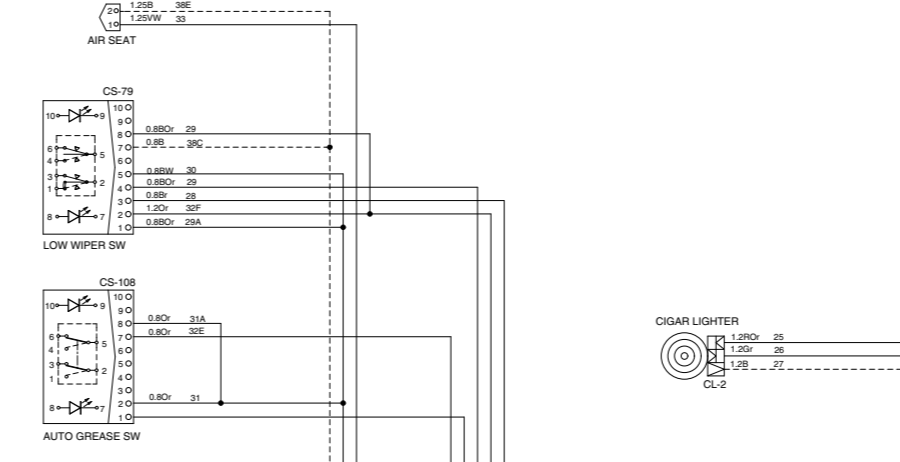
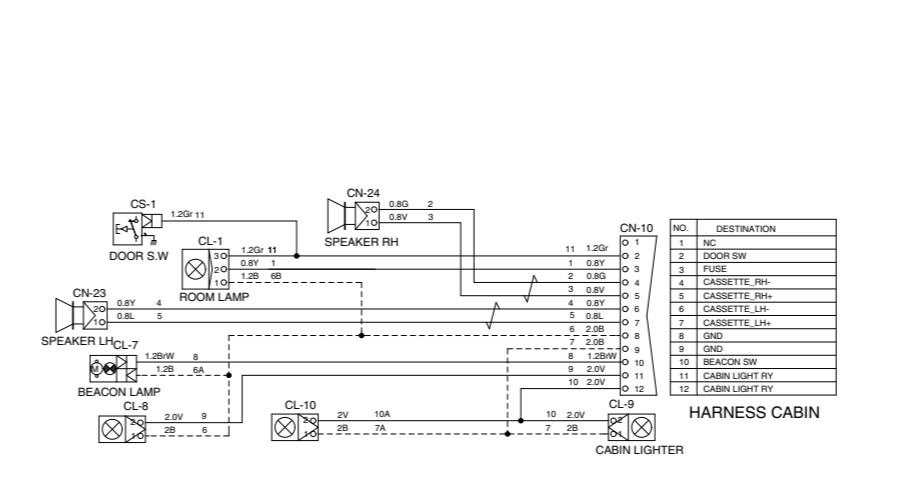
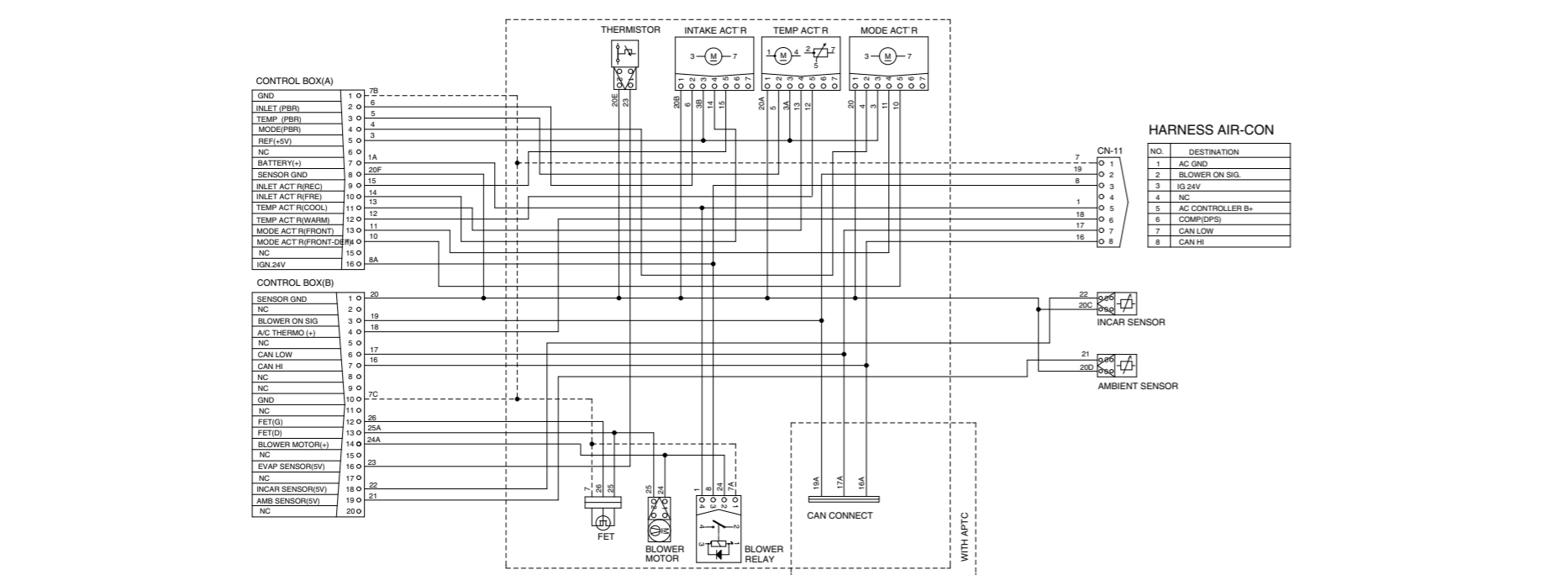


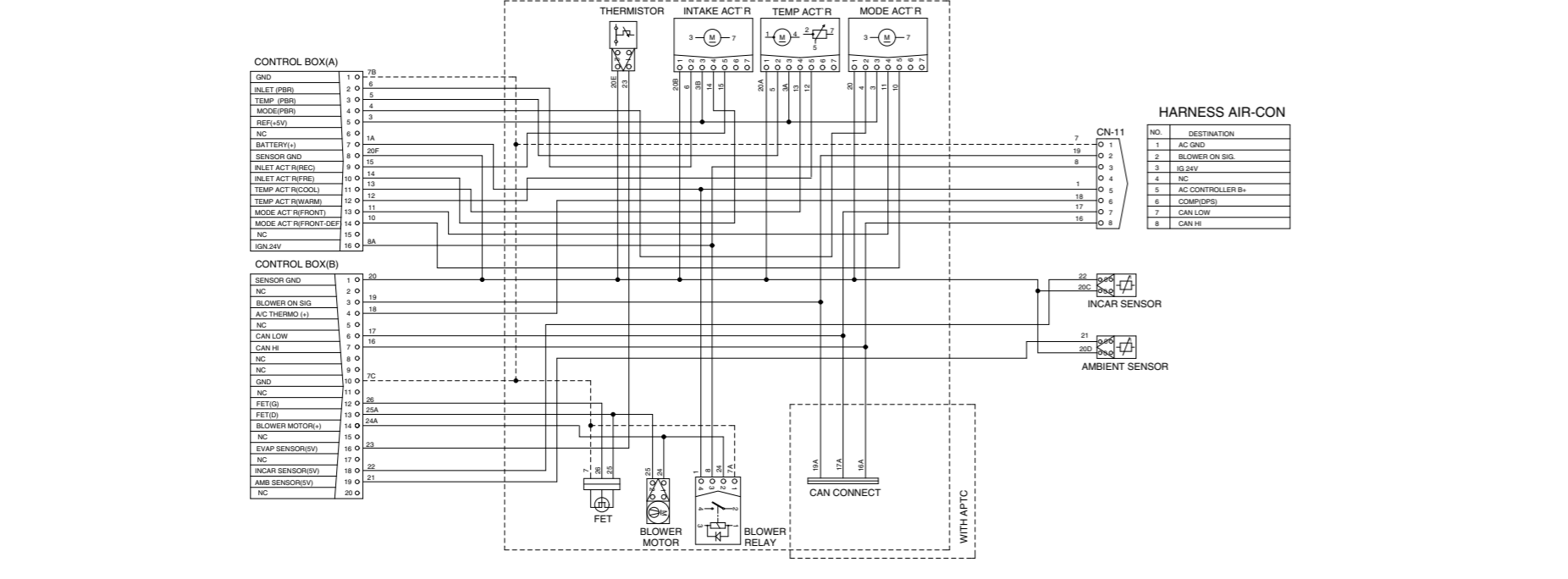
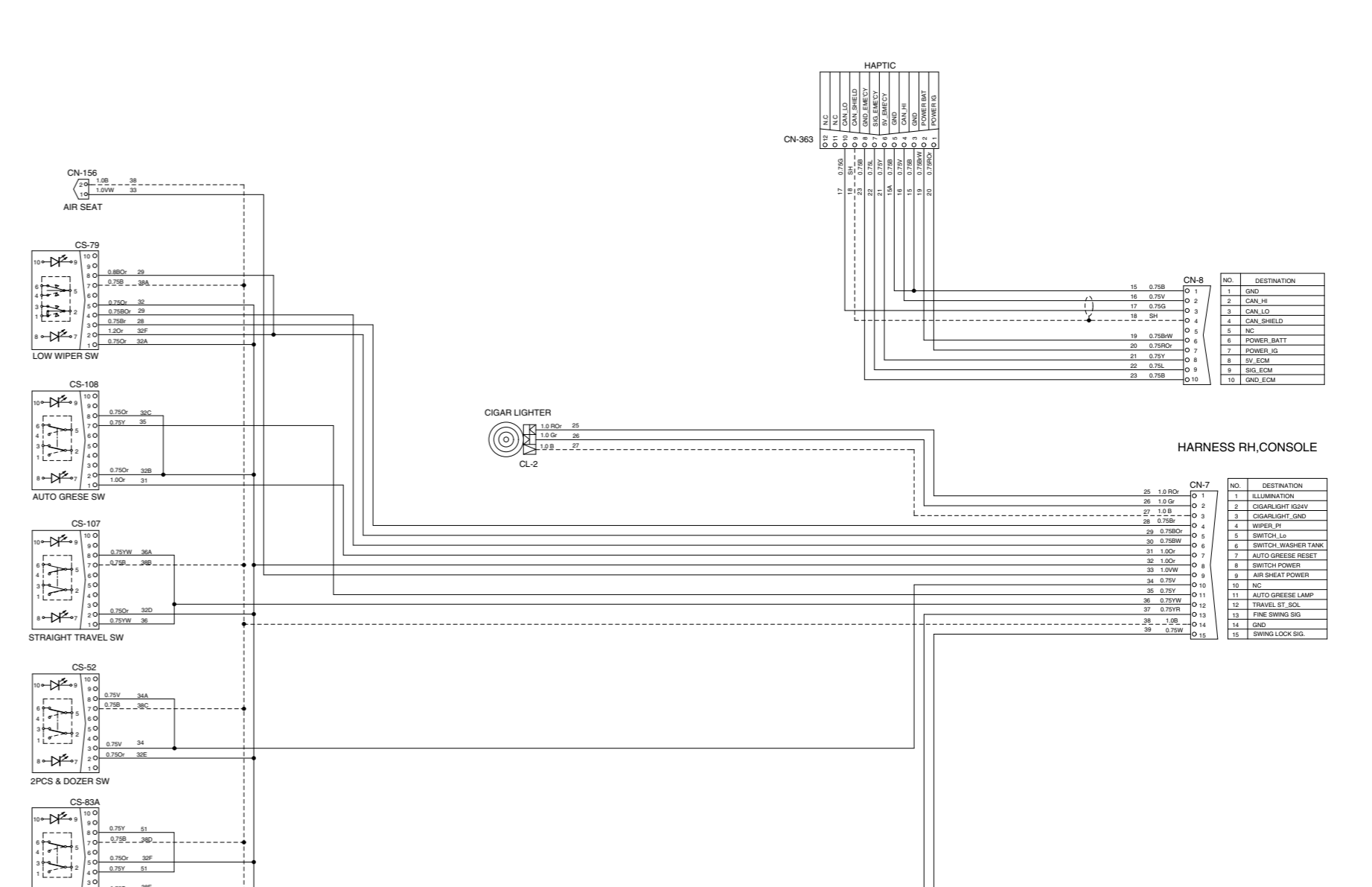
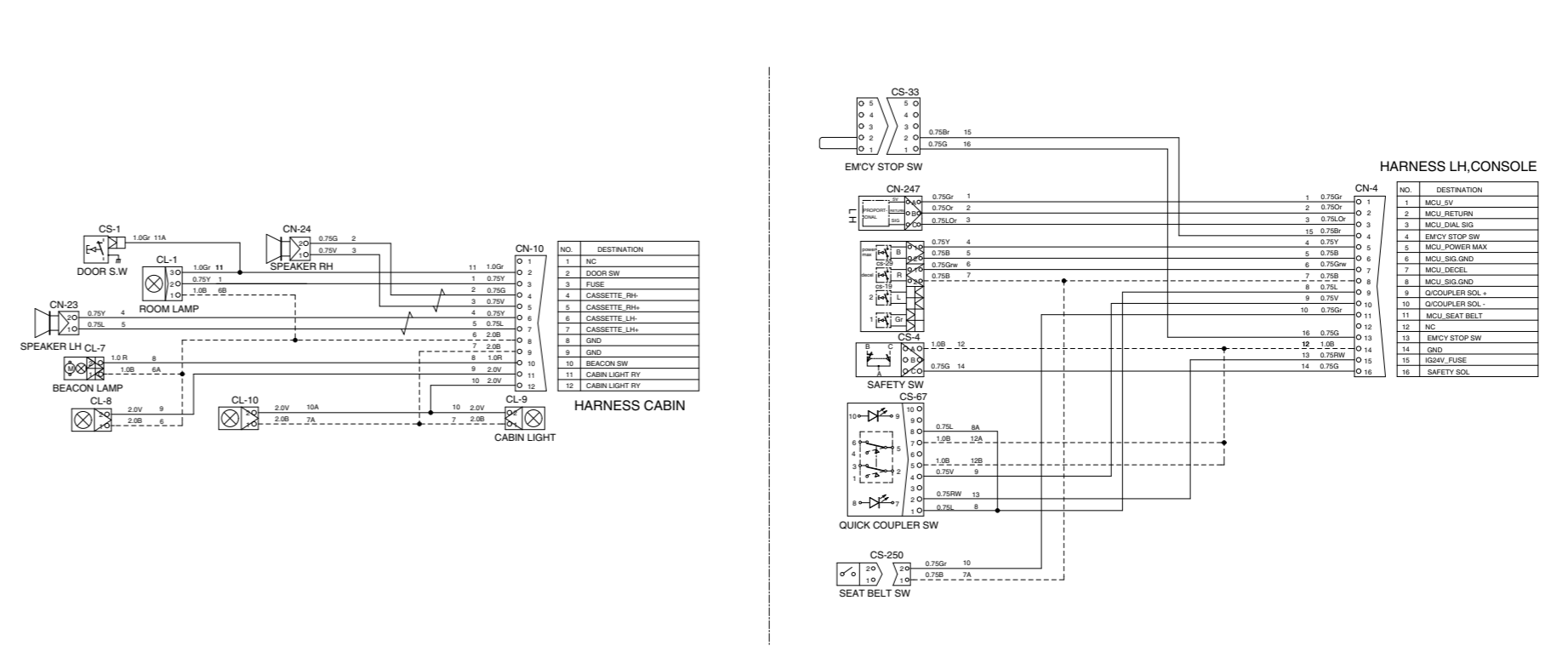
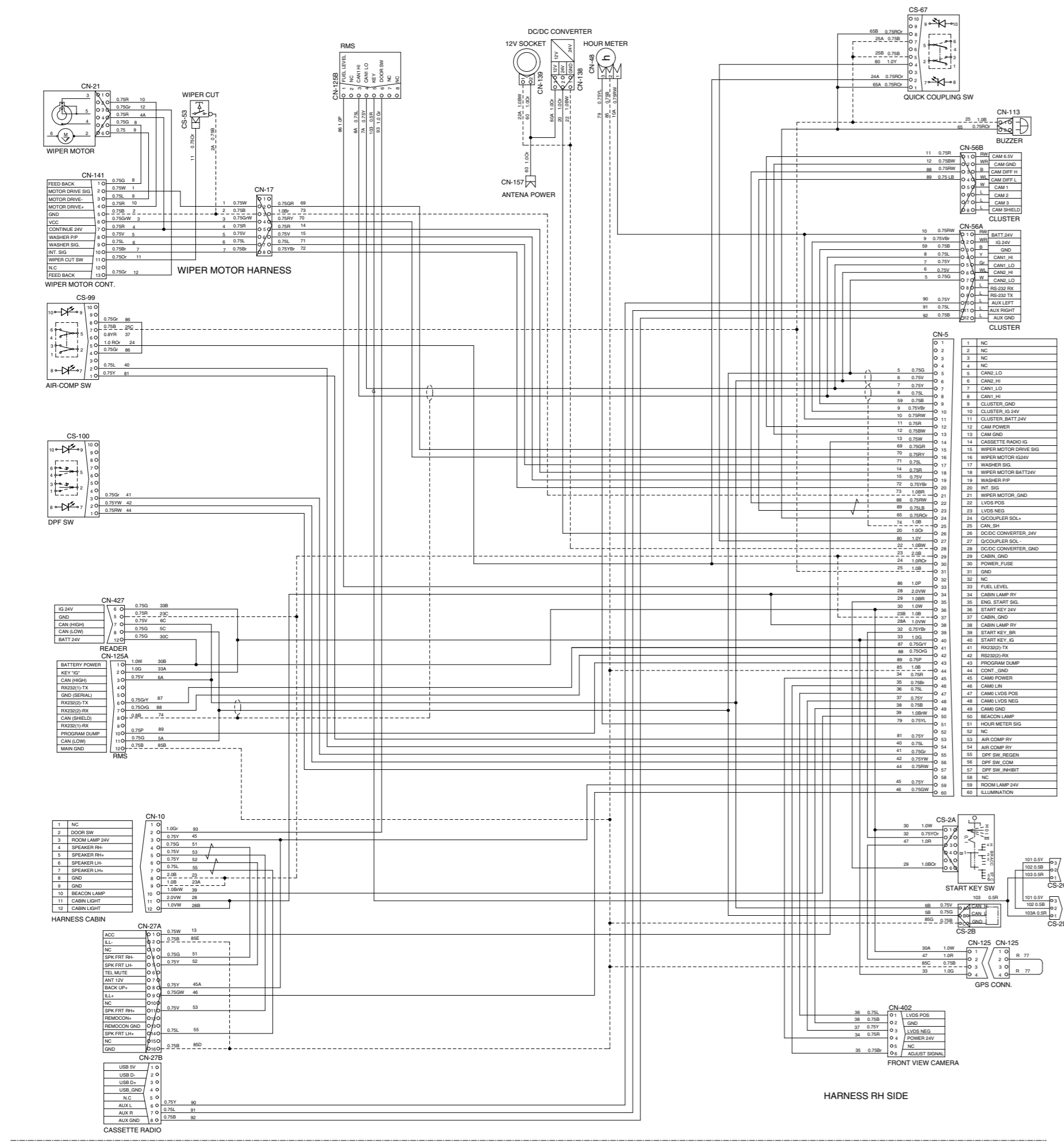


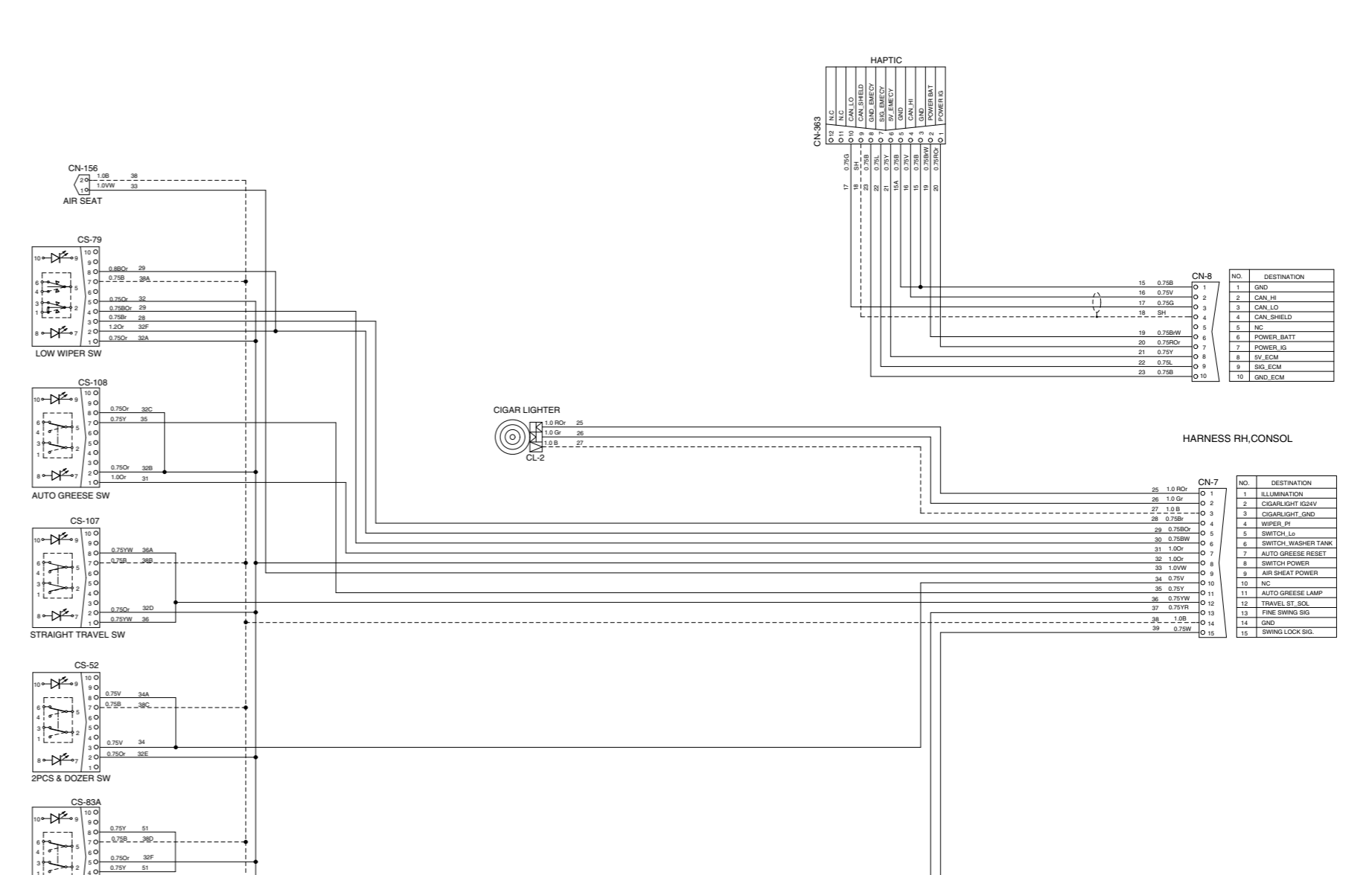
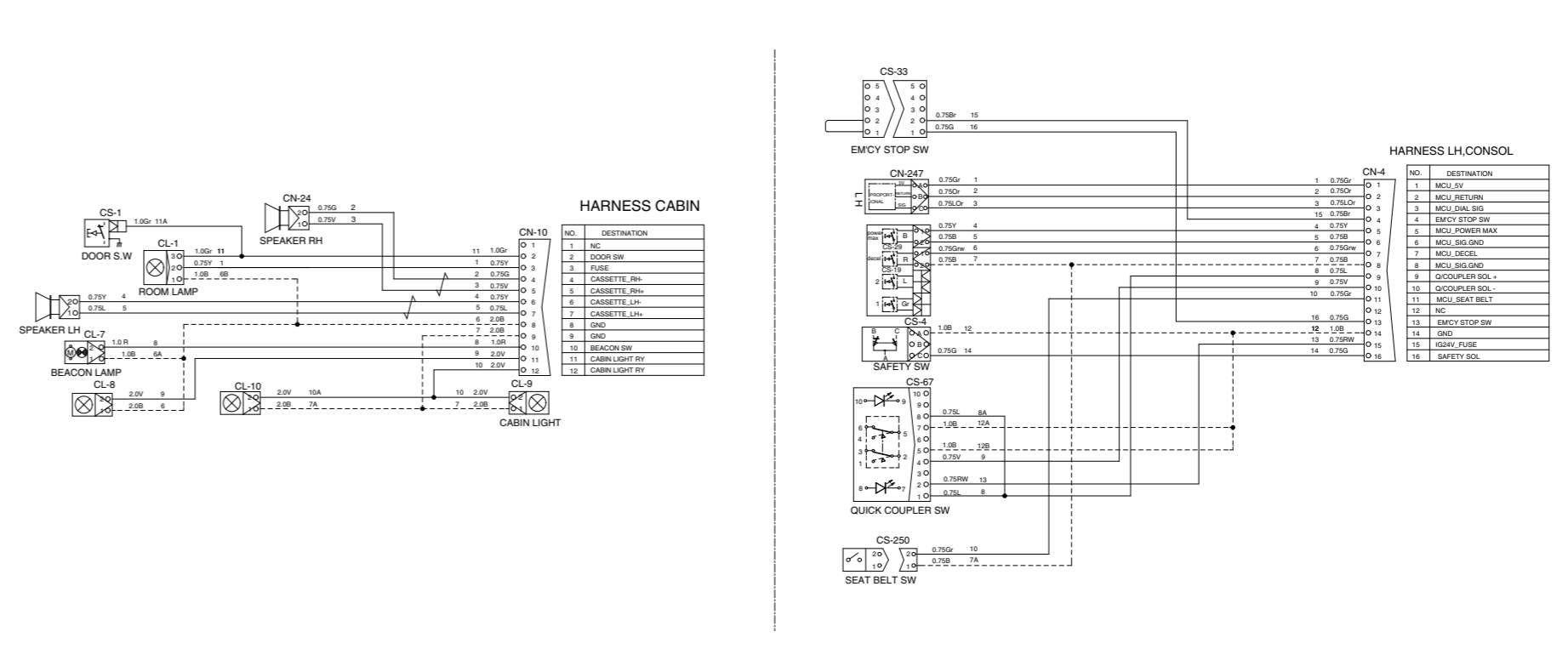
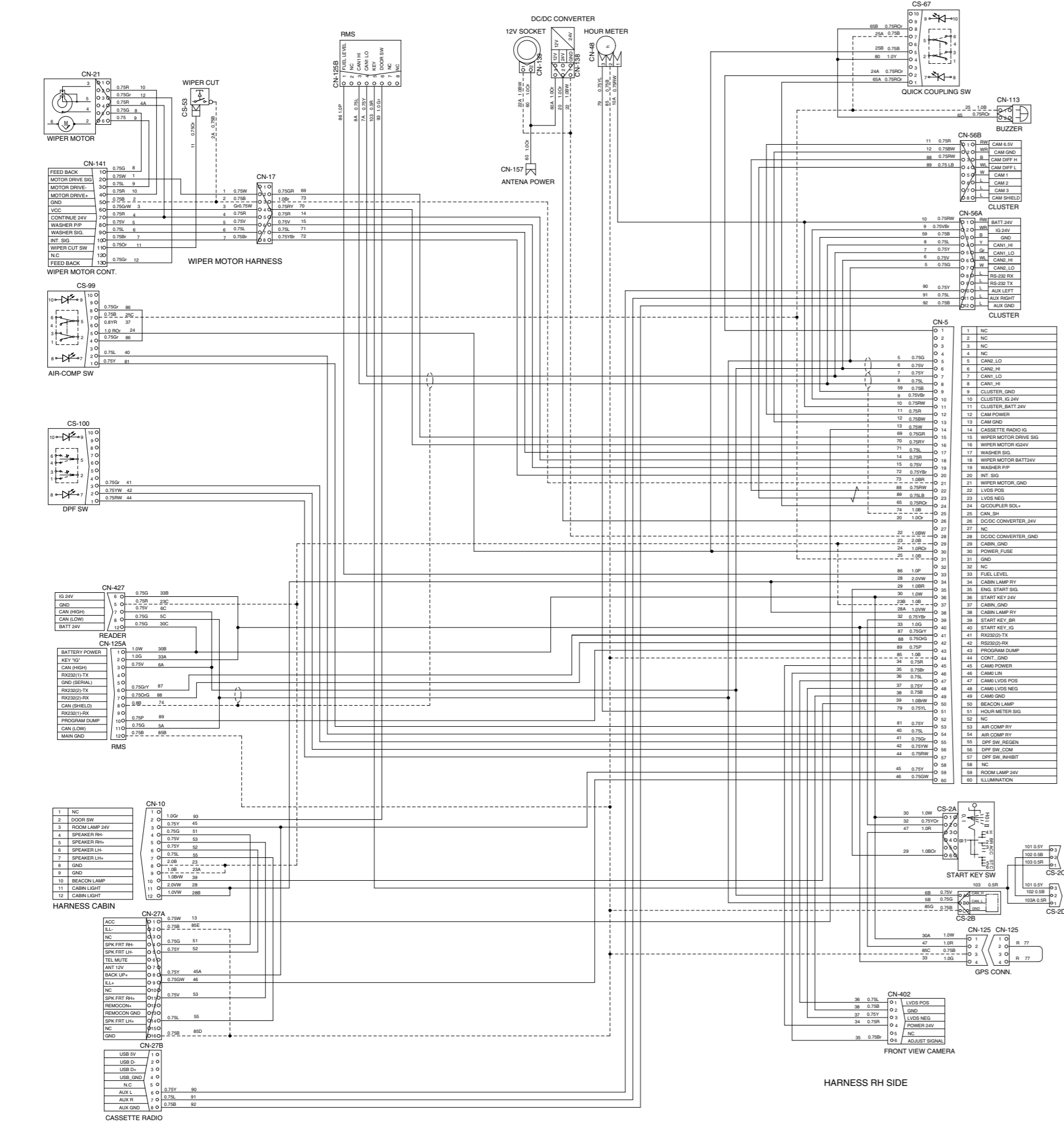




HARNESS RH SIDE

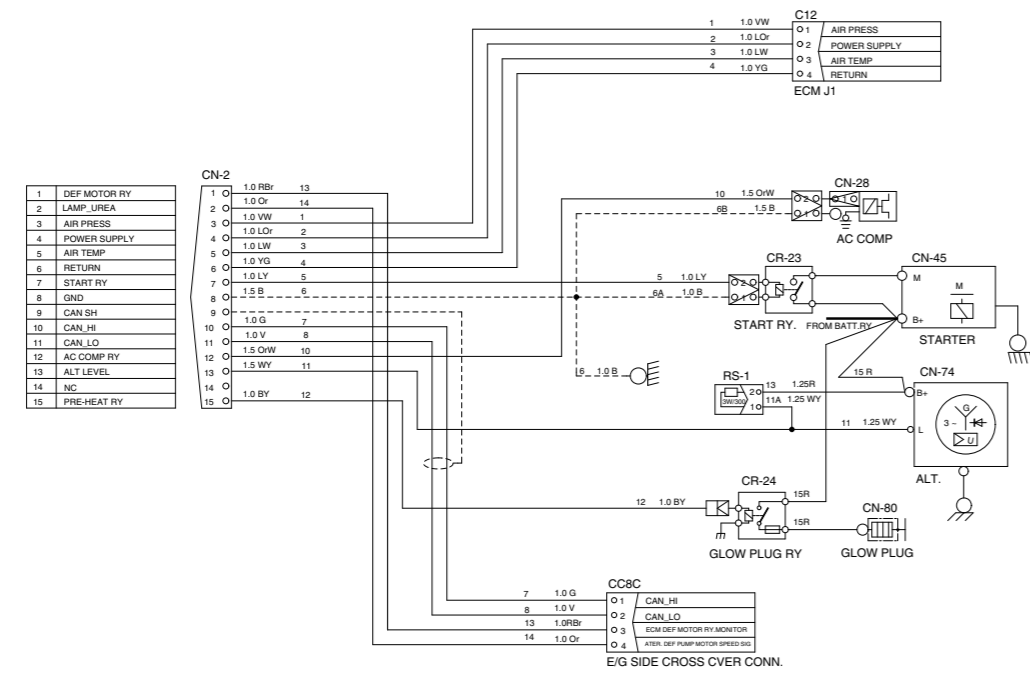




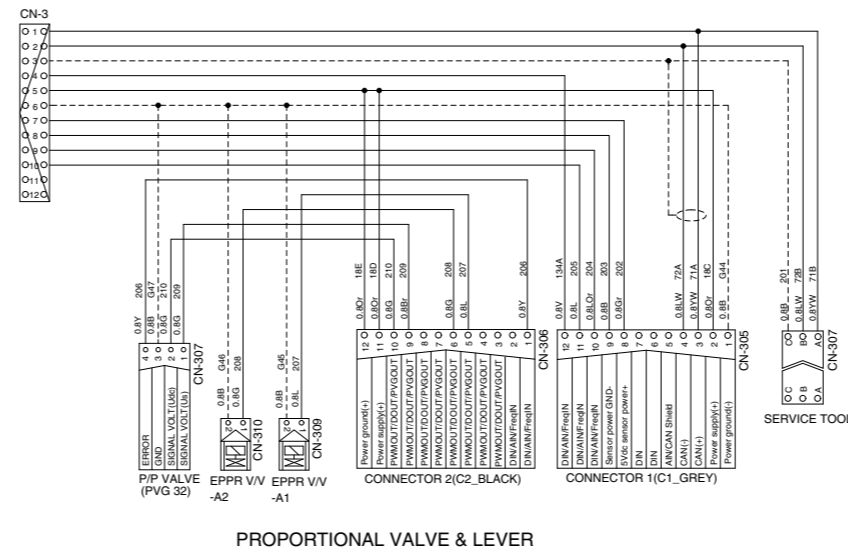


ELECTRICAL CIRCUIT (3/3)

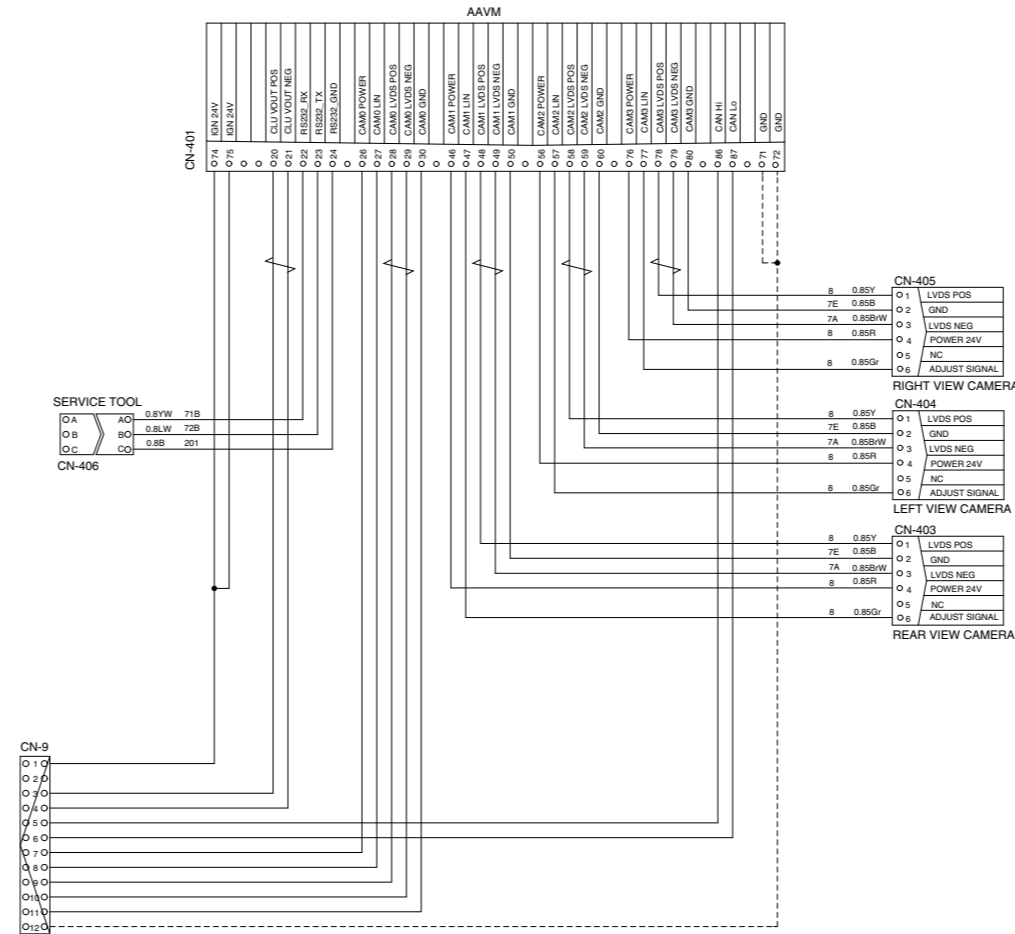
- MACHINE SERIAL NO. : -#0003

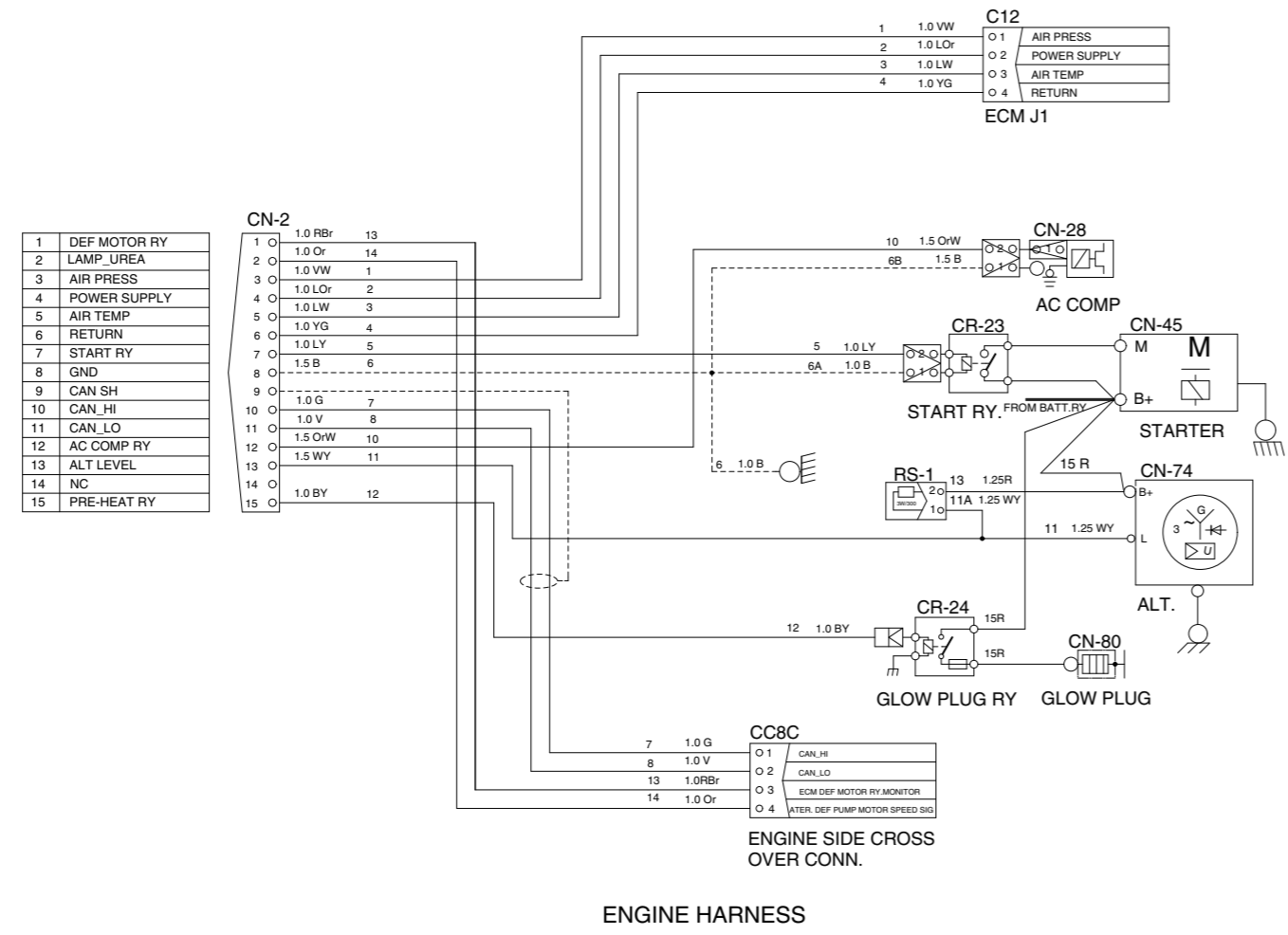


E/G HARNESS

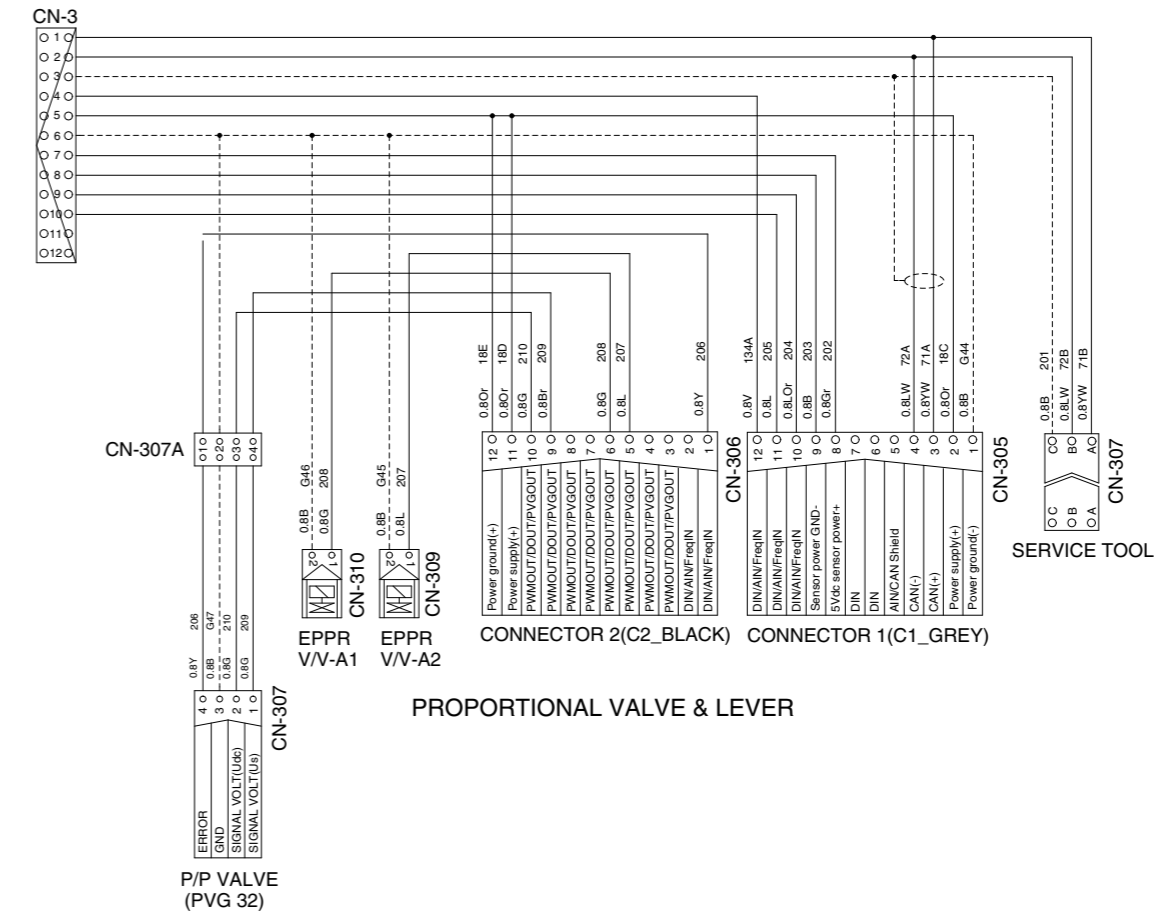


PROPORTIONAL VALVE & LEVER

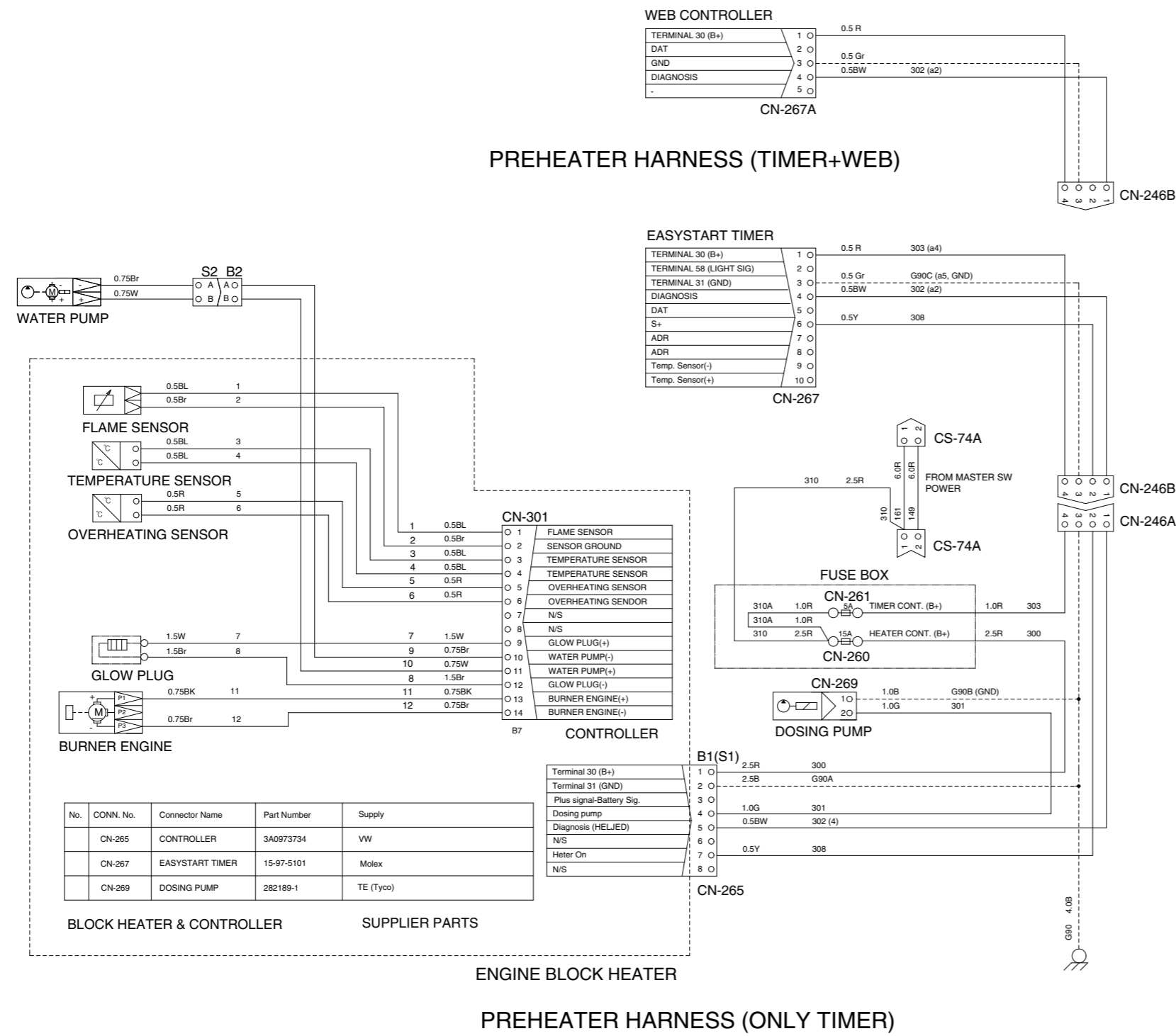




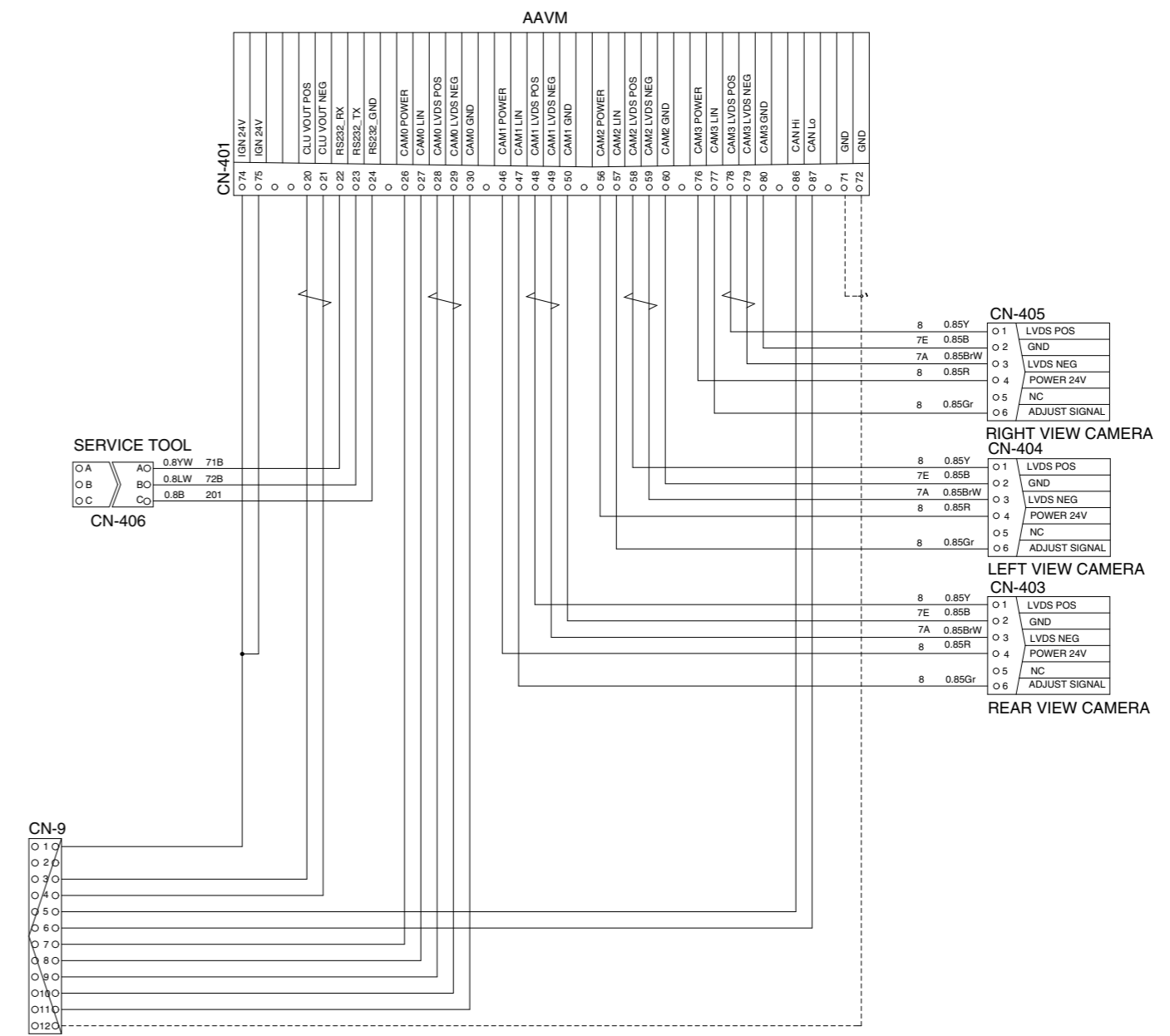
ENGINE HARNESS



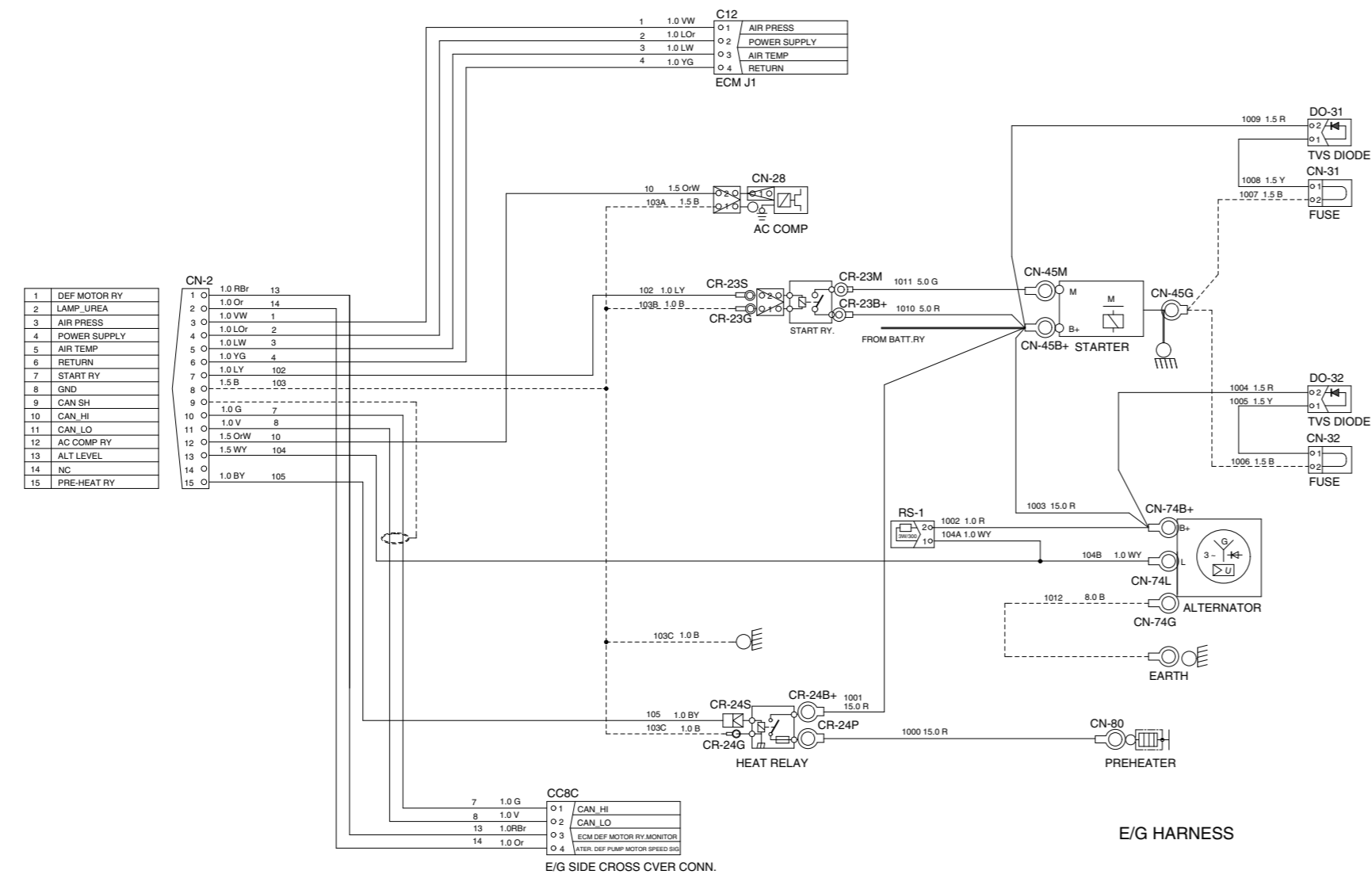
PROPORTIONAL VALVE & LEVER



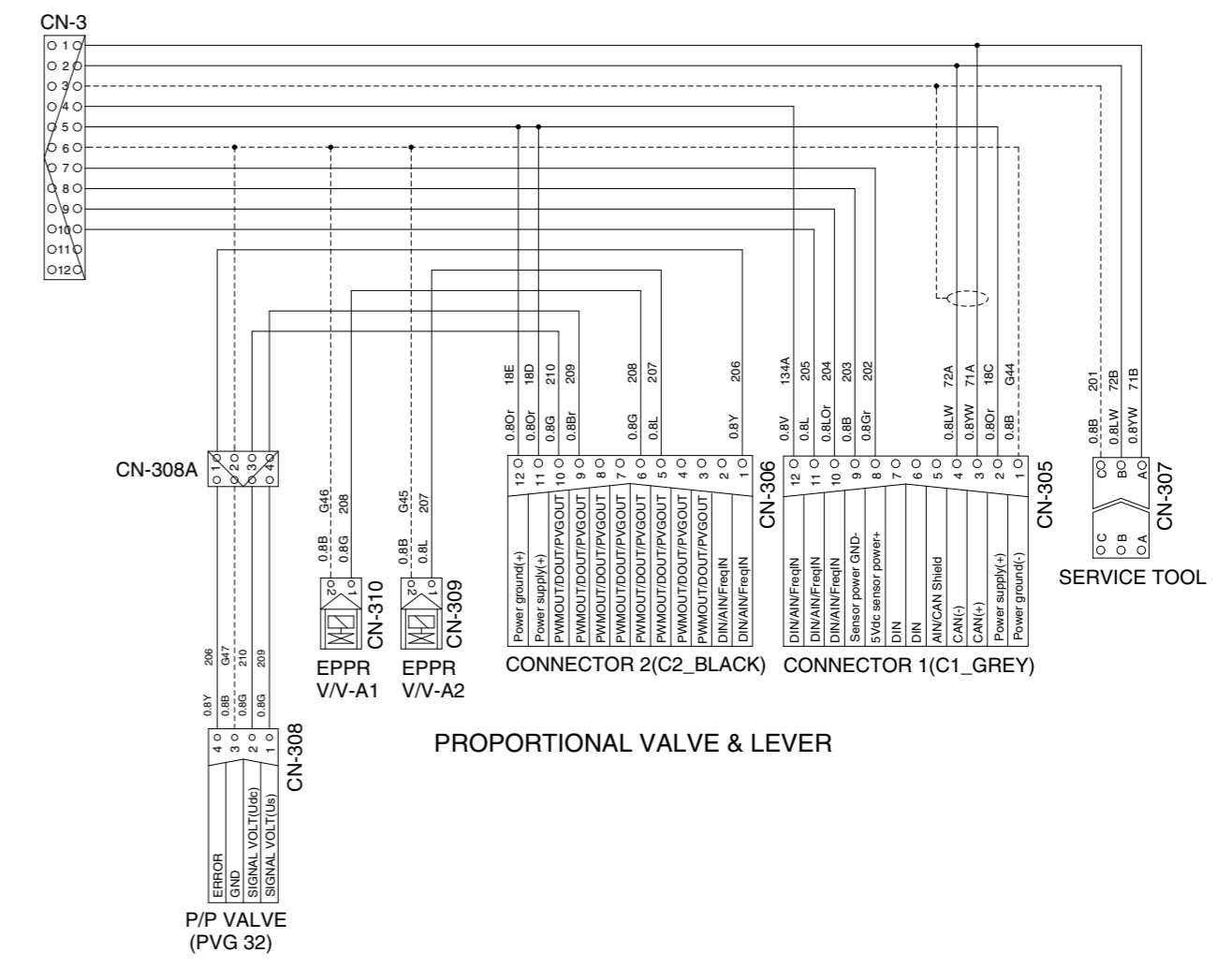
PREHEATER HARNESS (ONLY TIMER)



- MACHINE SERIAL NO. : #0099-#0132

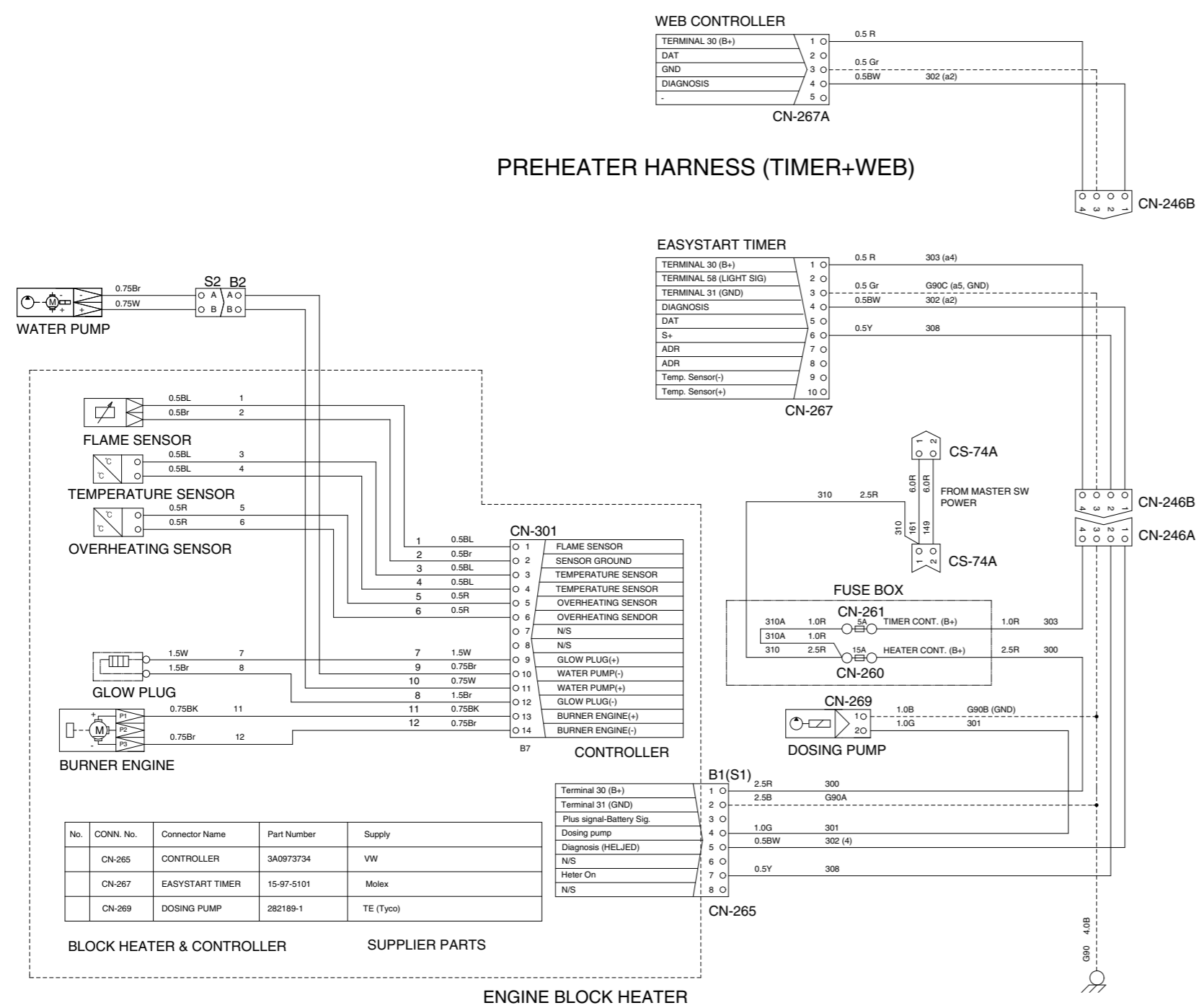


E/G SIDE CROSS COVER CONN.

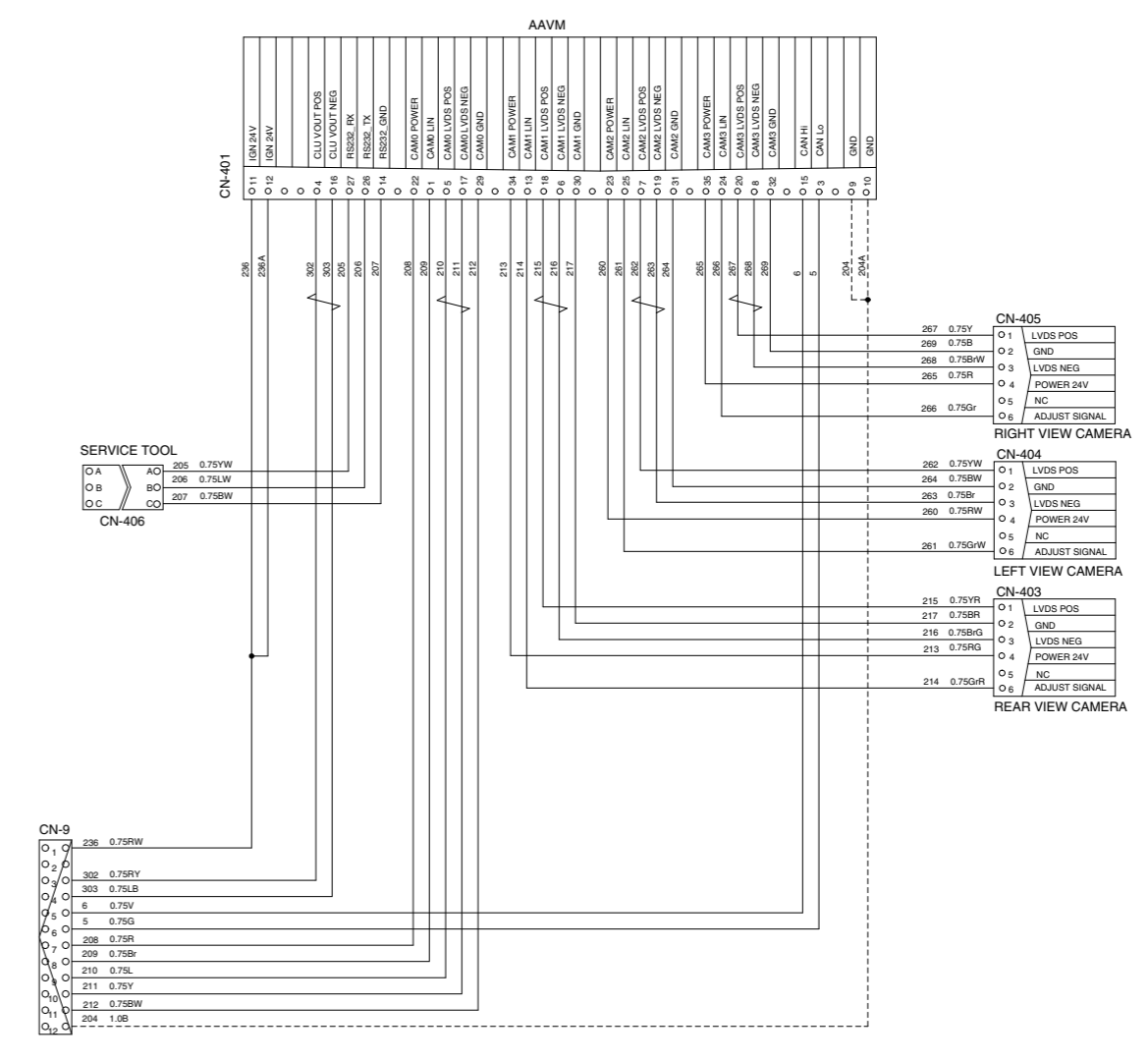


PROPORTIONAL VALVE & LEVER

P/P VALVE (PVG 32)

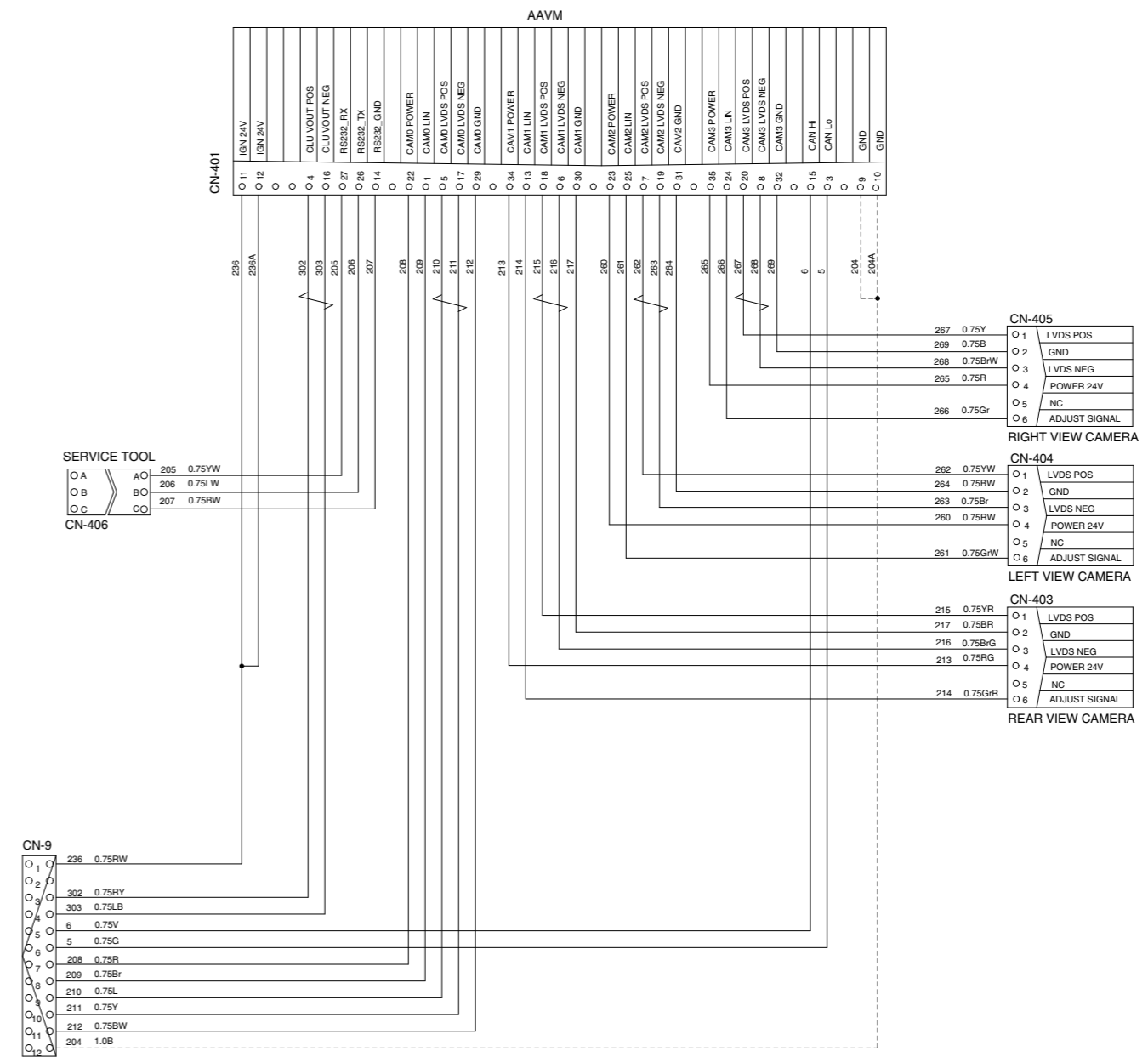
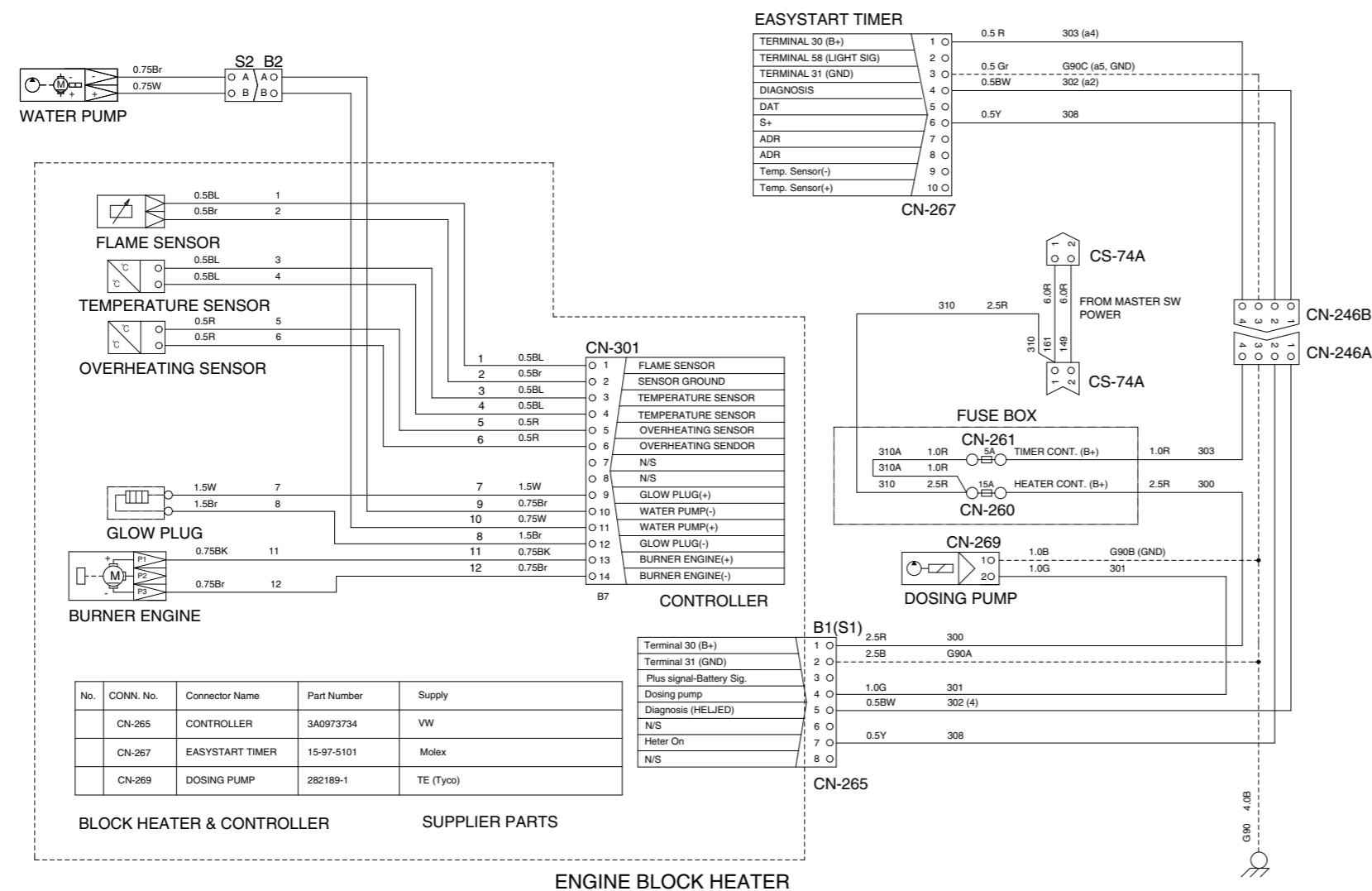
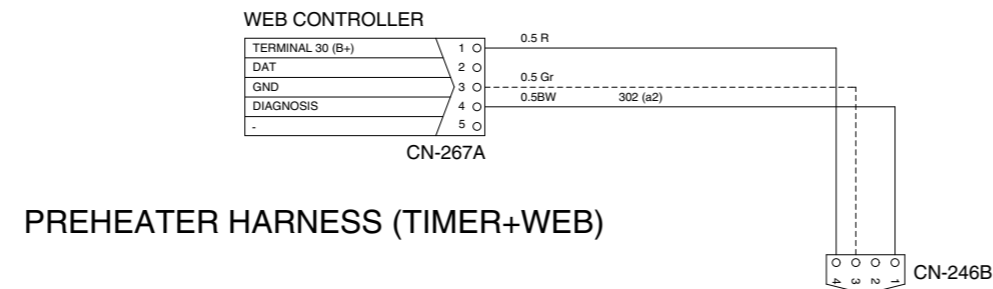
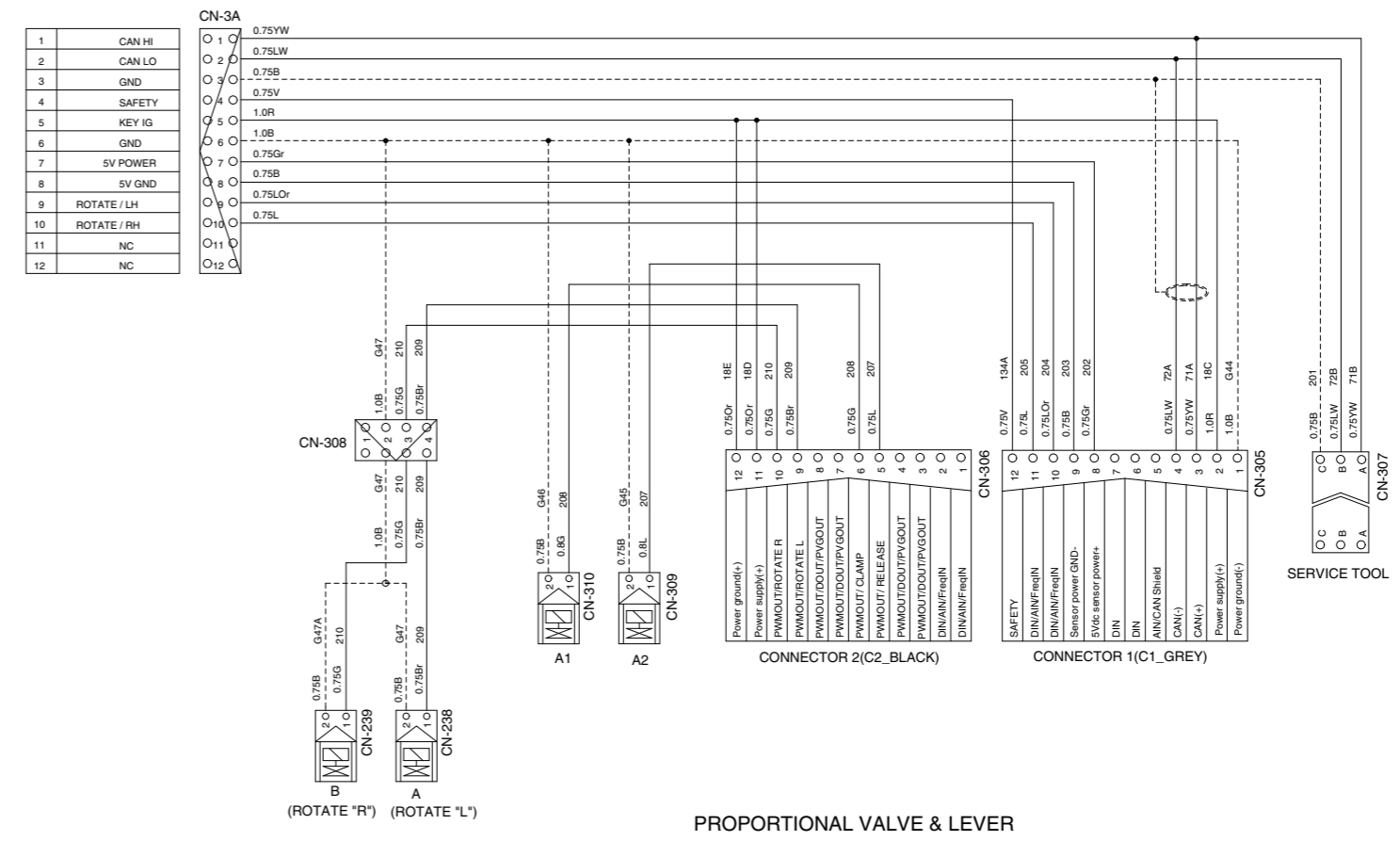
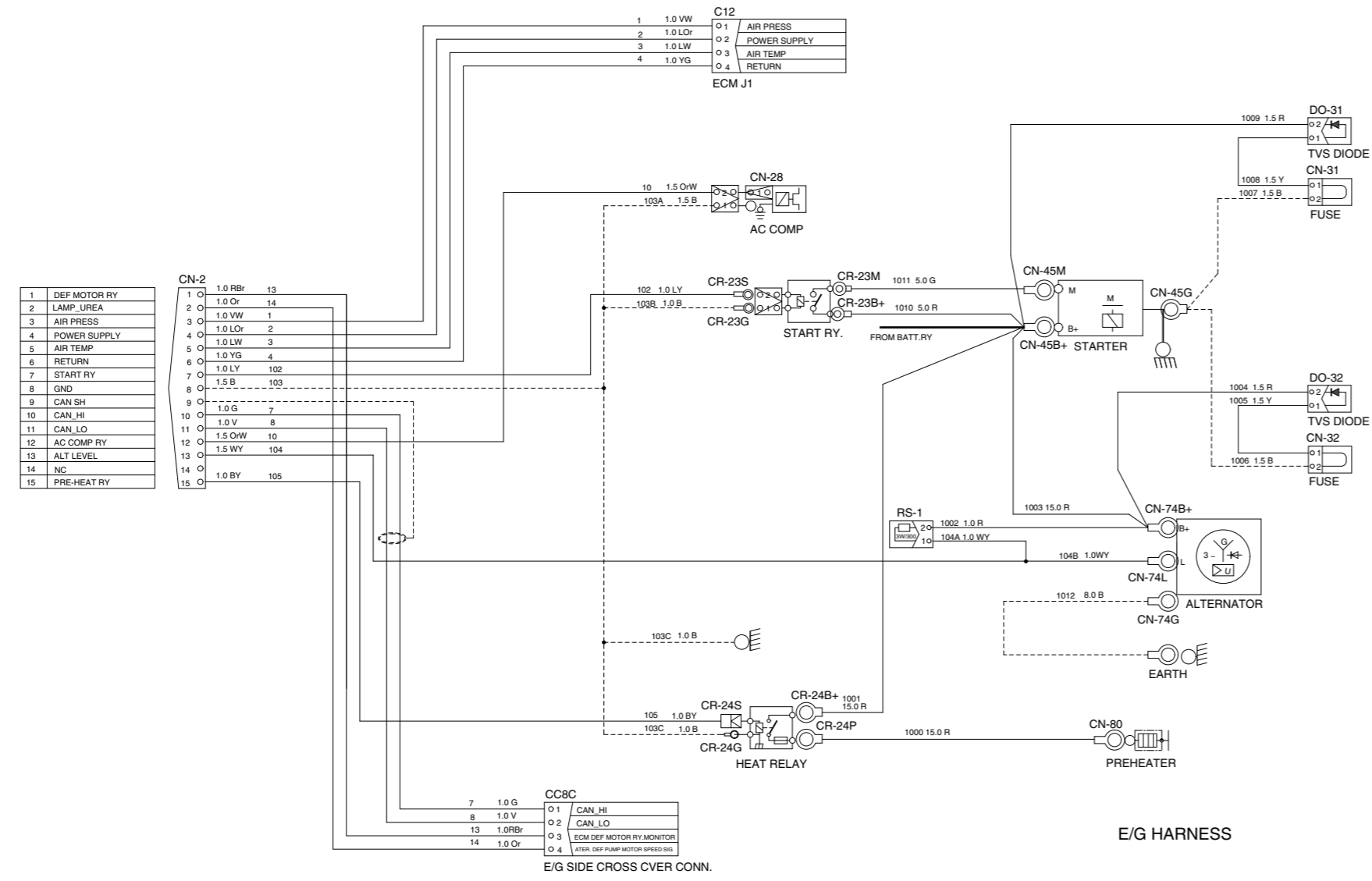


ENGINE BLOCK HEATER PREHEATER HARNESS (ONLY TIMER)



RIGHT VIEW CAMERA, LEFT VIEW CAMERA, REAR VIEW CAMERA

- MACHINE SERIAL NO. : #0133-



**MEMORANDUM**

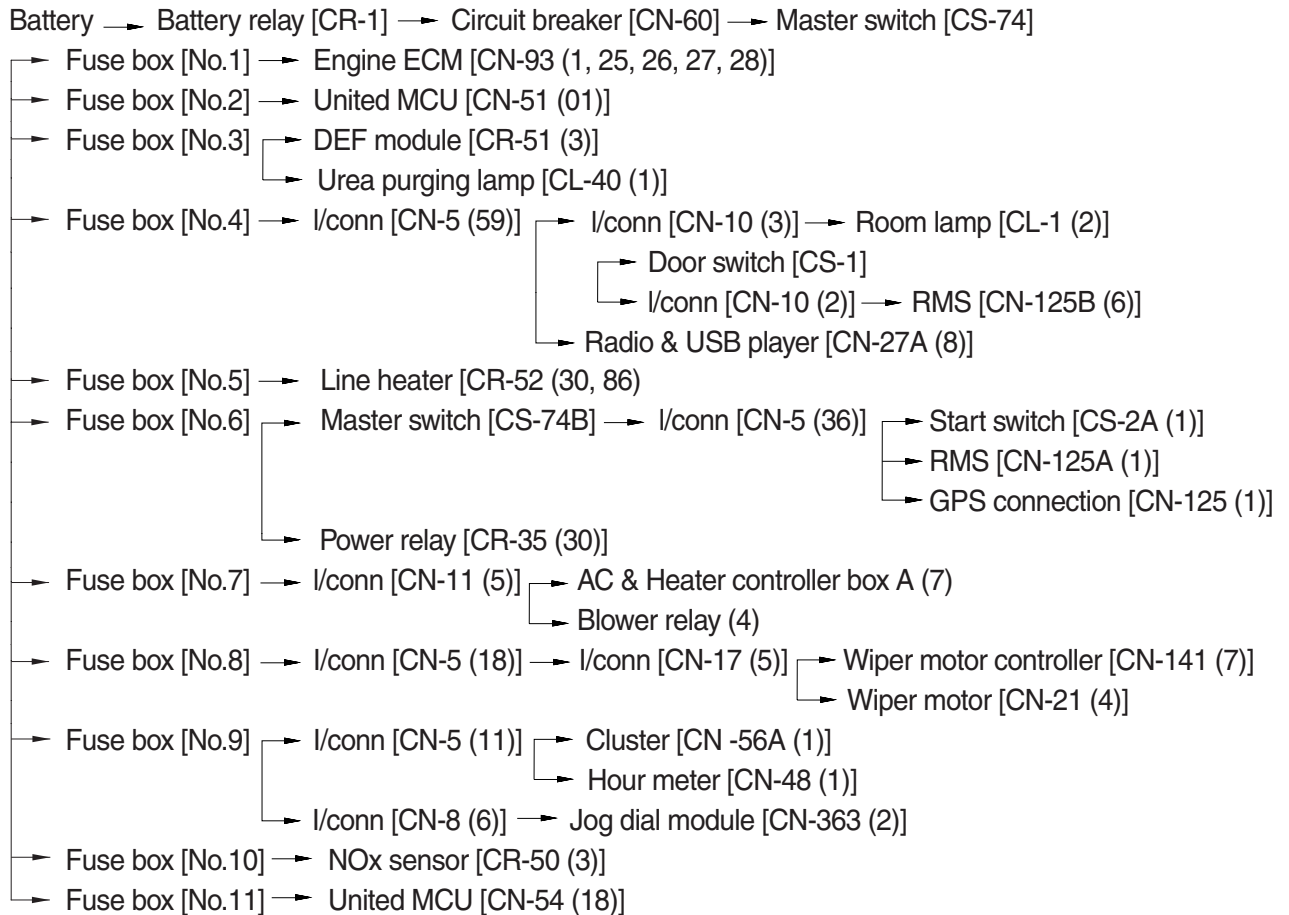


## 1. POWER CIRCUIT

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

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

### 1) OPERATING FLOW



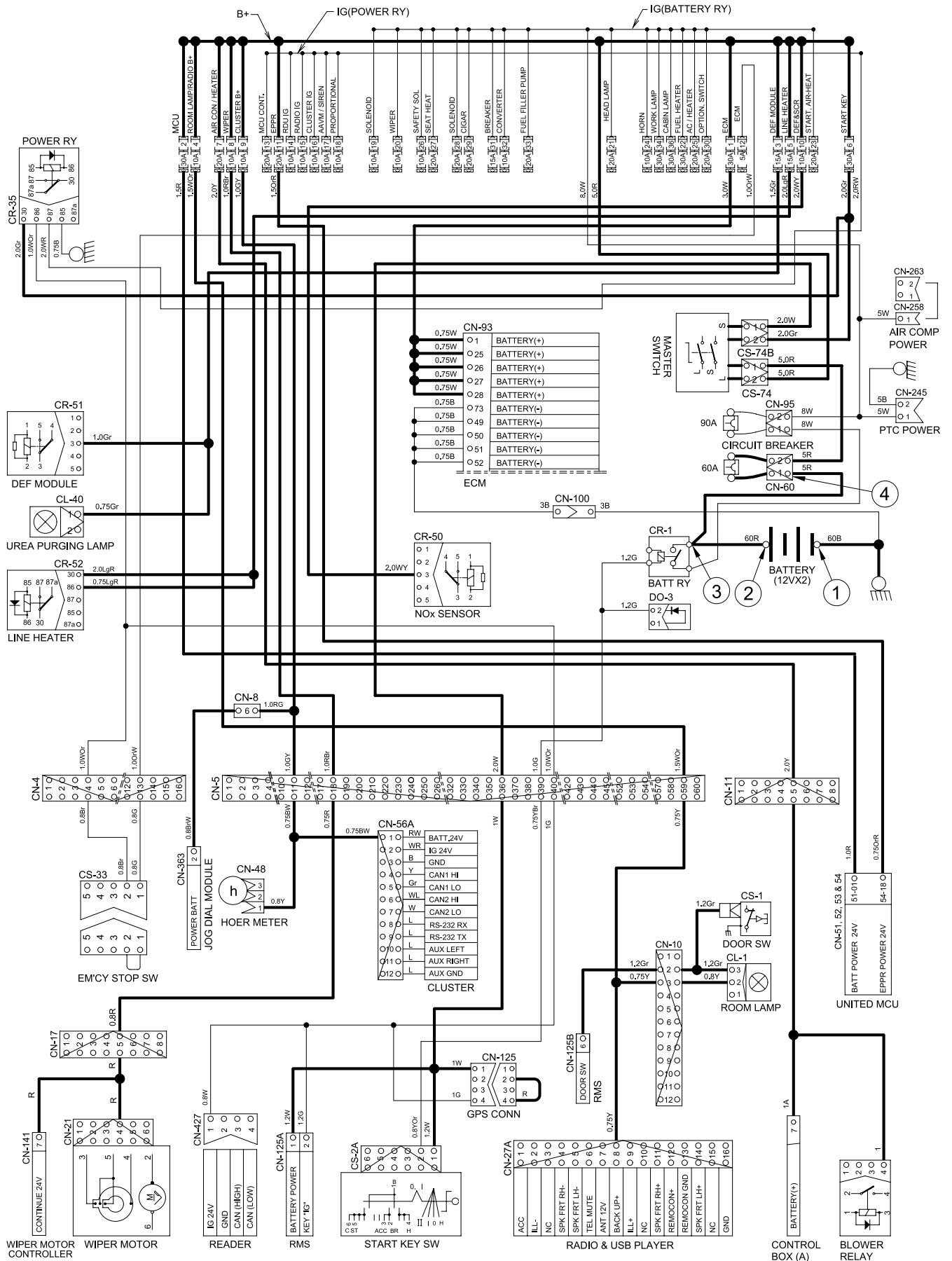
※ I/conn : Intermediate connector

### 2) CHECK POINT

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

※ GND : Ground

# POWER CIRCUIT



300A4EL05

## 2. STARTING CIRCUIT

### 1) OPERATING FLOW

Battery (+) terminal → Battery relay [CR-1] → Circuit breaker [CN-60] → Master switch [CS-74]  
 → Fuse box [No.6] → Master switch [CS-74B] → I/conn [CN-5 (36)] → Start switch [CS-2A (1)]  
 → Power relay [CR-35 (30)]

#### (1) When start key switch is in ON position

Start switch ON [CS-2A (2)] → I/conn [CN-5 (39)]  
 → Battery relay [CR-1] → Battery relay operating (all power is supplied with the electric component)  
 Start switch ON [CS-2A (3)] → GPS conn [CN-125 (2) → (4)]  
 → I/conn [CN-5 (40)] → Power relay [CR-35 (86) → (87)]  
 → Fuse box [IG (power relay)]  
 → I/conn [CN-4 (4)]  
 → Emergency engine stop sw [CS-33 (2) → (1)]  
 → I/conn [CN-4 (13)] → Fuse box [No. 12]  
 → Engine ECM [CN-93 (5)]  
 Reader [CN-427 (1)]  
 RMS [CN-125A (2)]

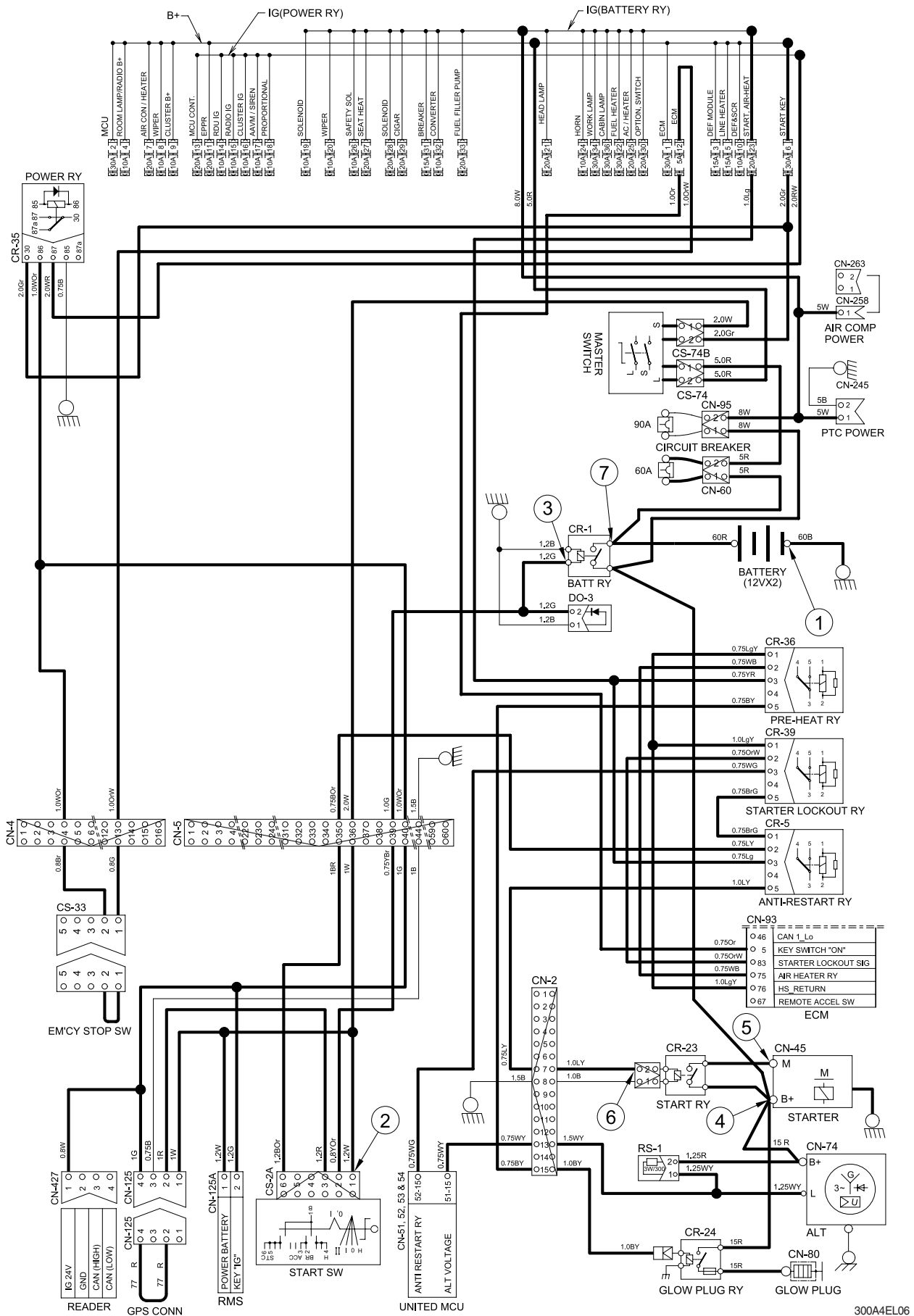
#### (2) When start key switch is in START position

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 operating

### 2) CHECK POINT

| Engine    | Start switch | Check point  | Voltage |
|-----------|--------------|--|---------|
| OPERATING | START        | ① - GND (battery)<br>② - GND (start switch)<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 start switch to the ON position.

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

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

#### 1) OPERATING FLOW

##### (1) Warning flow

Alternator "L" terminal → I/conn [CN-2 (13)] → United MCU alternator voltage [CN-51 (15)]  
 → Cluster charging warning lamp (Via CAN interface)

##### (2) Charging flow

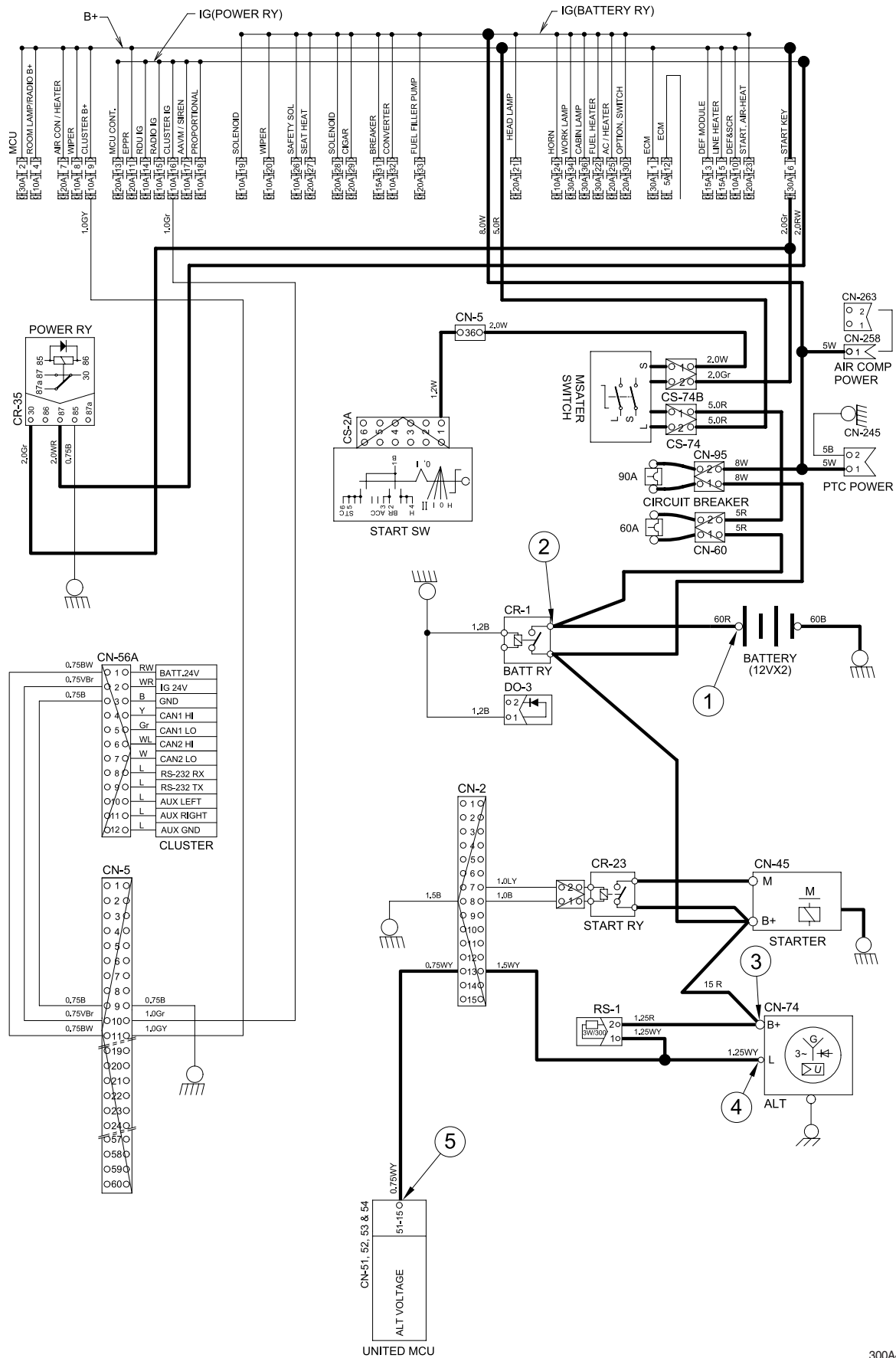
Alternator "B+" terminal → Starter [CN-45 (B+)] → Battery relay (CR-1)  
 → Battery (+) terminal  
 → Circuit breaker [CN-60] → Master switch [CS-74] → Fuse box [B+]  
 → Circuit breaker [CN-95] → Fuse box [IG, battery] → Power relay [CR-35 (30)→(87)]  
 → Fuse box [IG, power]

#### 2) CHECK POINT

| Engine    | Start switch | Check point   | Voltage |
|-----------|--------------|---|---------|
| OPERATING | 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 (United MCU) | 20~25V  |

※ GND : Ground

# CHARGING CIRCUIT



300A4EL07

## 4. HEAD AND WORK LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.21) → Head light relay [CR-13 (30, 86)]

Fuse box (No.34) → Work light relay [CR-4 (30, 86)]

Fuse box (No.14) → RDU membrane controller [CR-376 (1)]

#### (1) Head light switch ON

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

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

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

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

#### (2) Work light switch ON

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

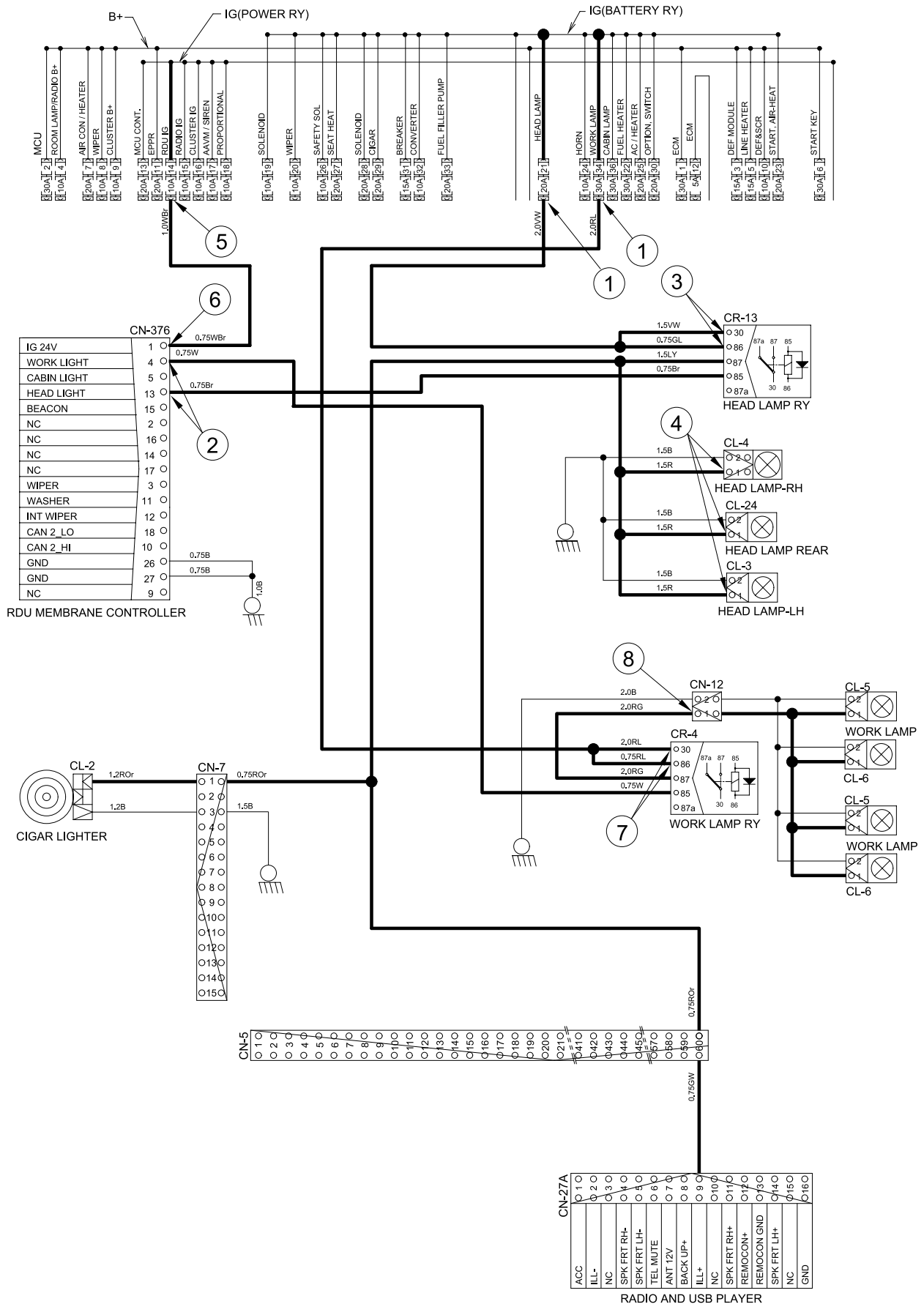
→ I/conn [CN-12 (1)] → Work light ON [CL-5 (1), CL-6 (1)]

### 2) CHECK POINT

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

※ GND : Ground

# HEAD AND WORK LIGHT CIRCUIT



300A4EL08



## 5. BEACON LAMP AND CAB LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.30) → Beacon lamp relay [CR-85 (2, 3)]

Fuse box (No.36) → Cab light relay [CR-9 (30, 86)]

Fuse box (No.14) → RDU membrane controller [CN-376 (1)]

#### (1) Beacon lamp switch ON

Beacon lamp switch ON [CN-376 (15)] → Beacon lamp relay [CR-85 (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)]

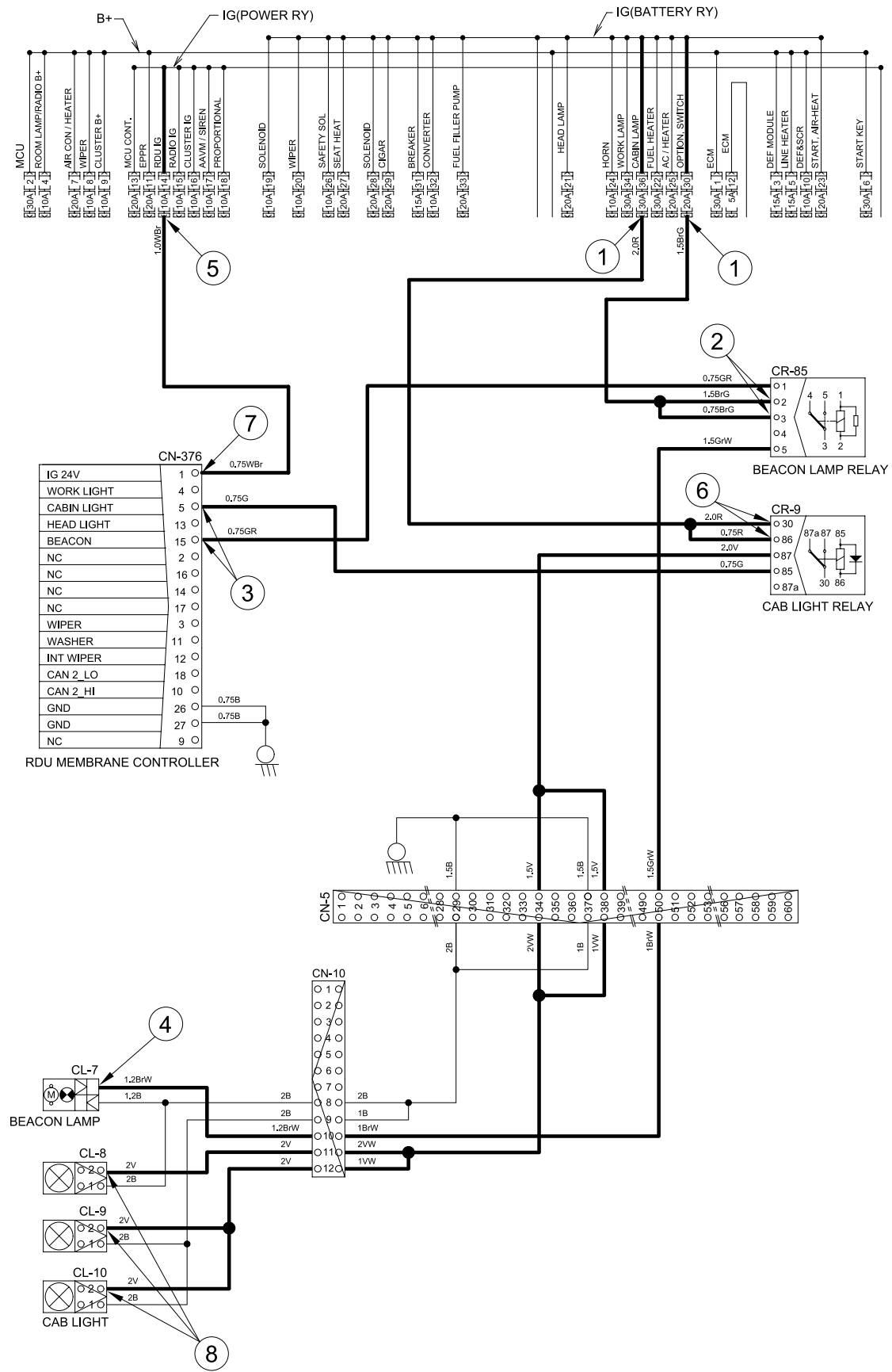
→ I/conn [CN-10 (12)] → Cab light ON [CL-9 (2), CL-10 (2)]

### 2) CHECK POINT

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

※ GND : Ground

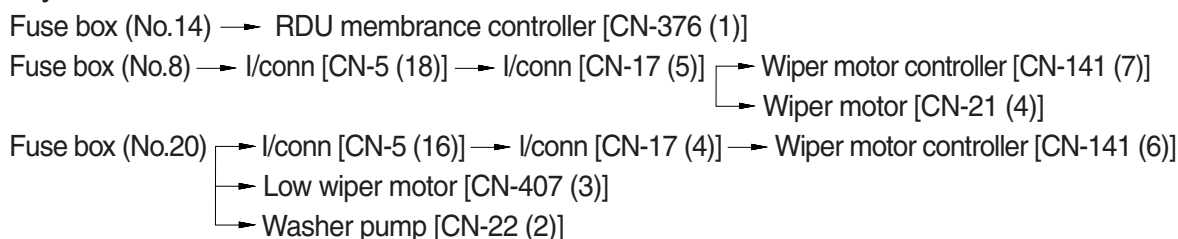
# BEACON LAMP AND CAB LIGHT CIRCUIT



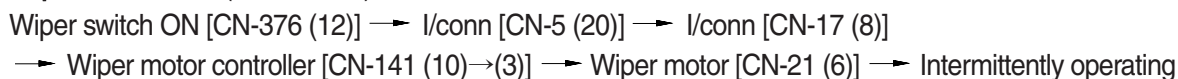
## 6. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

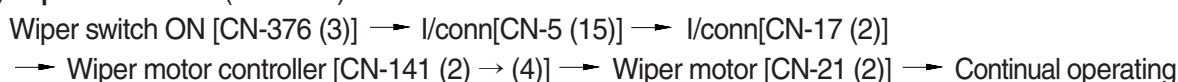
#### (1) Key switch ON



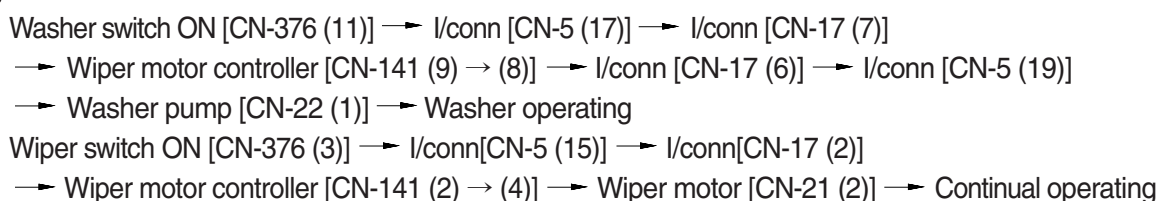
#### (2) Wiper switch ON (Intermittent)



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



#### (4) Washer switch ON

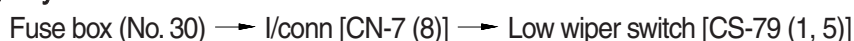


#### (5) Auto parking (when switch OFF)

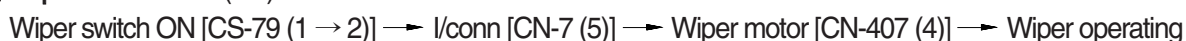


### 2) OPERATING FLOW (LOW WIPER)

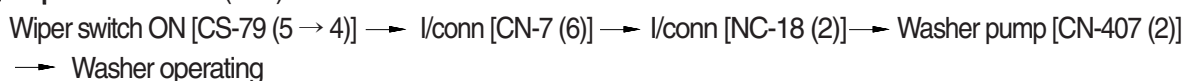
#### (1) Key switch ON



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



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

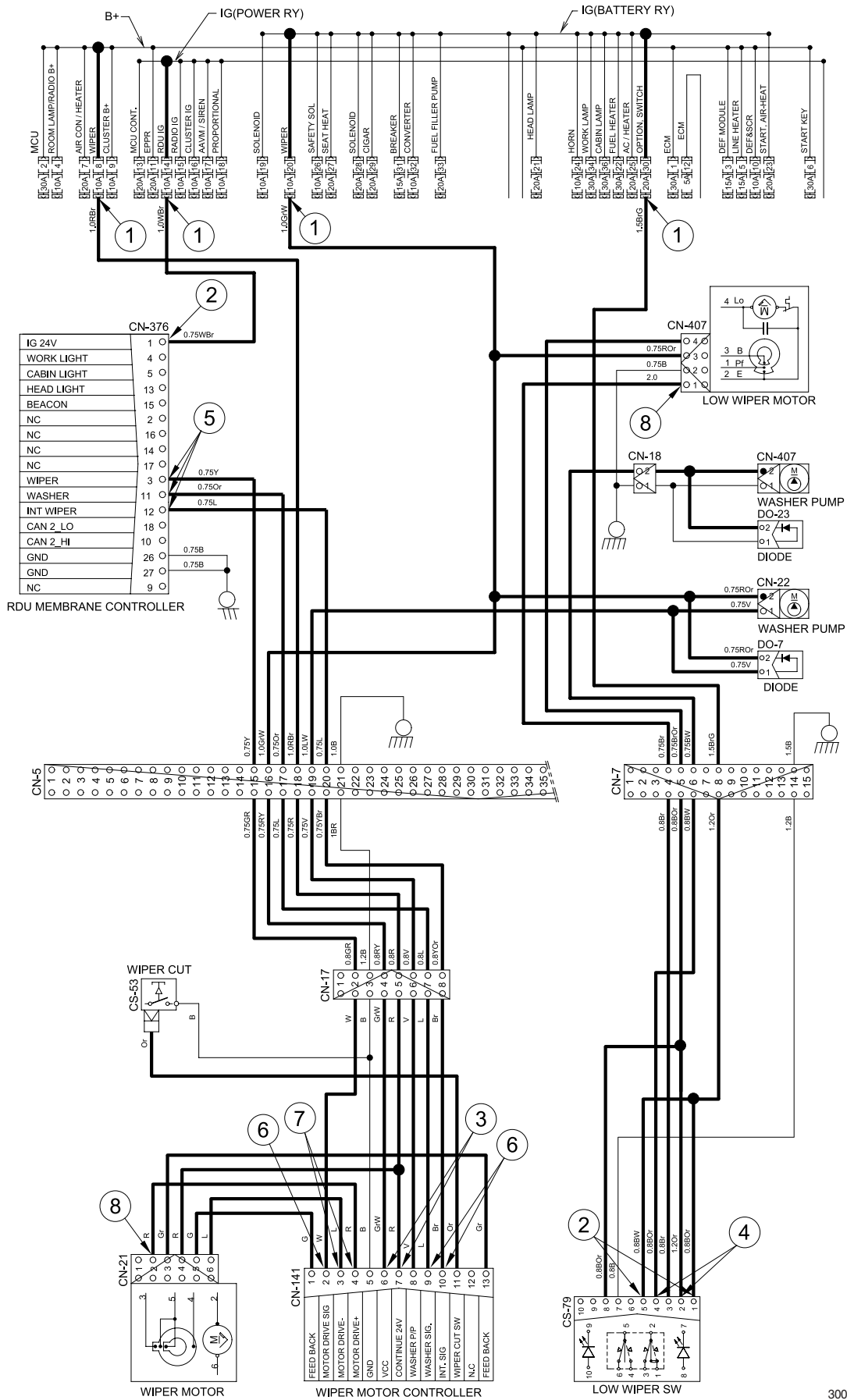


### 3) CHECK POINT

| 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 switch power input) |          |
|        |              | ⑦ - GND (wiper power output)       |          |
|        |              | ⑧ - GND (wiper motor)              |          |
|        |              |                                    | 0 or 24V |

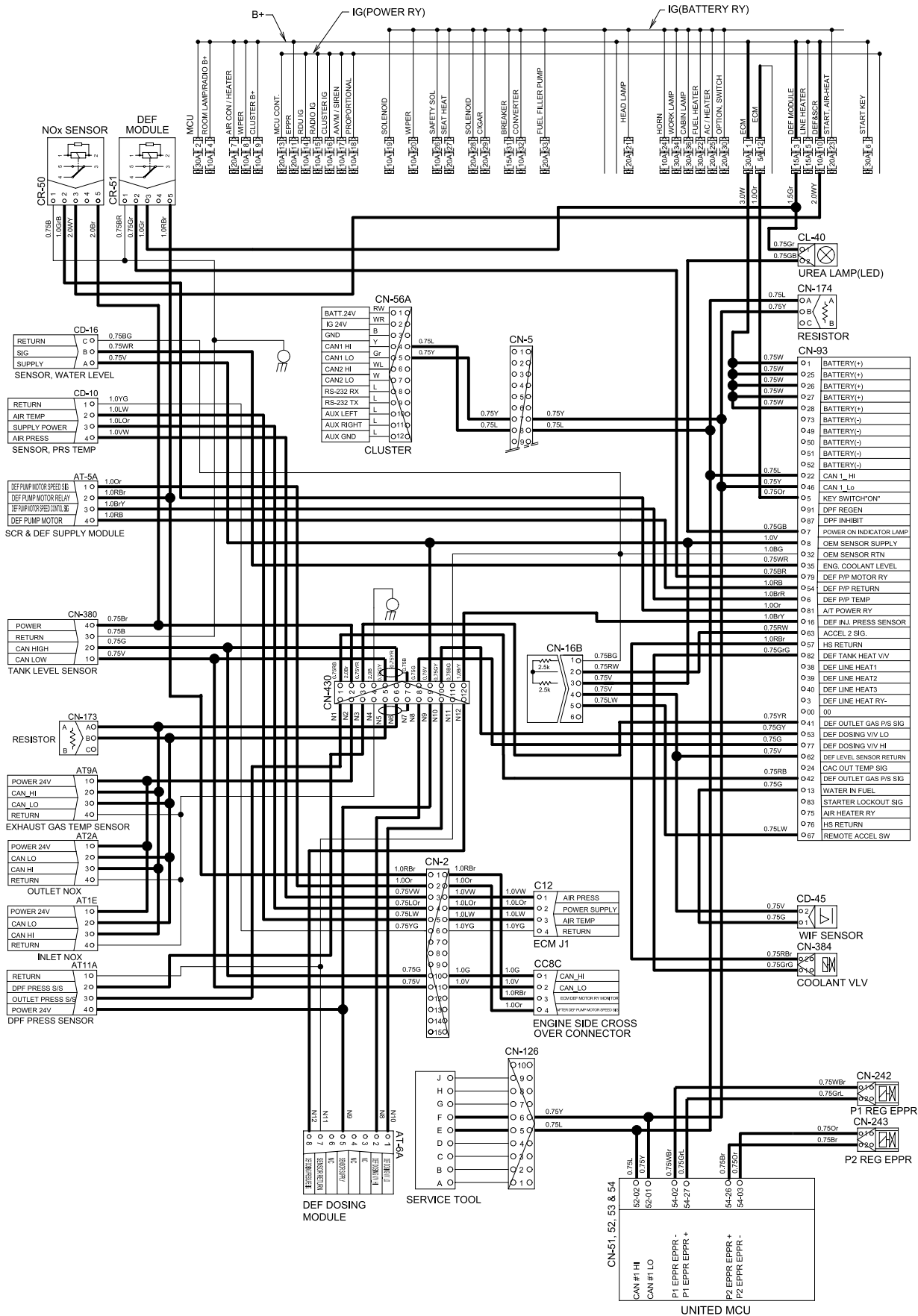
※ GND : Ground

# WIPER AND WASHER CIRCUIT

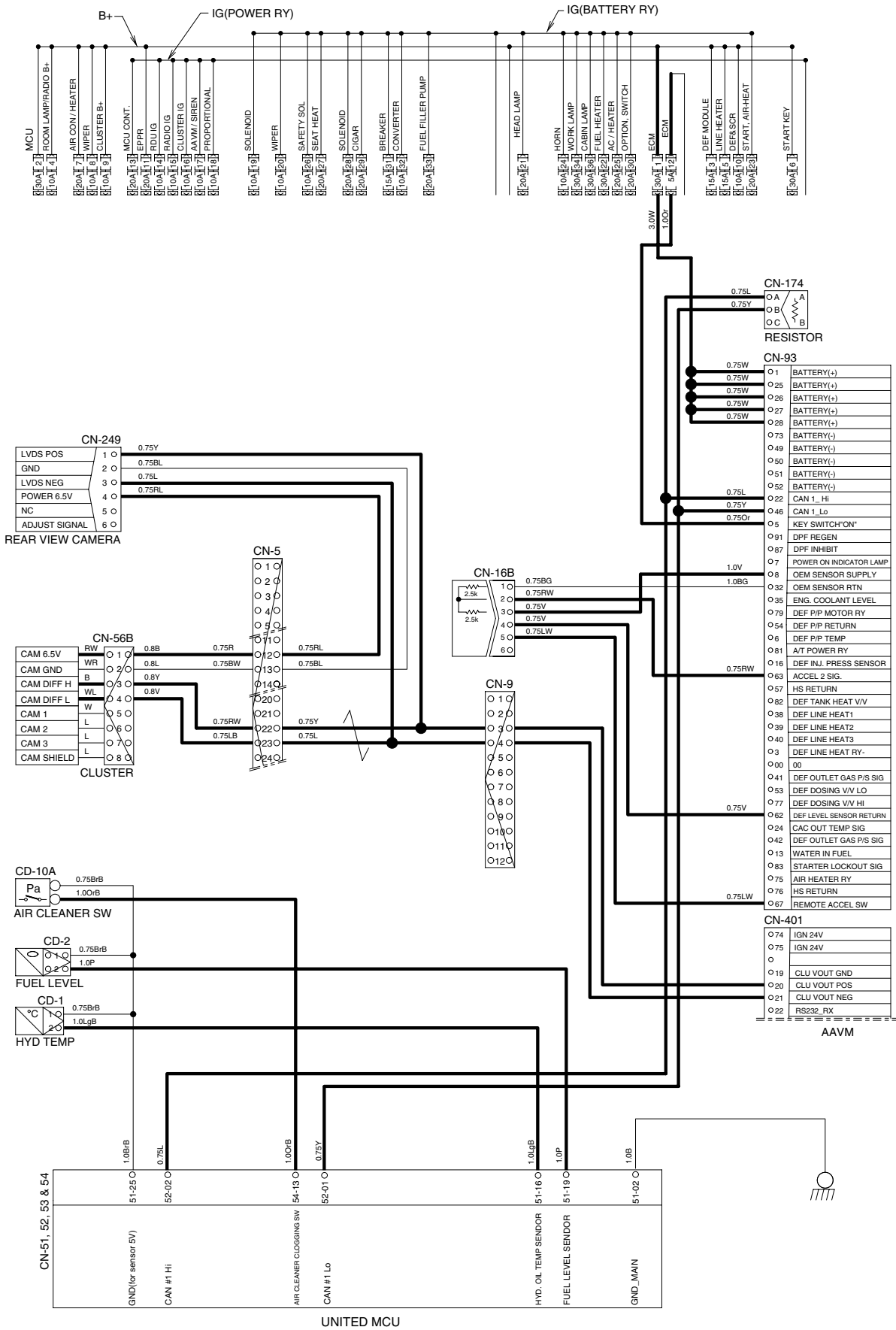


300A4EL10

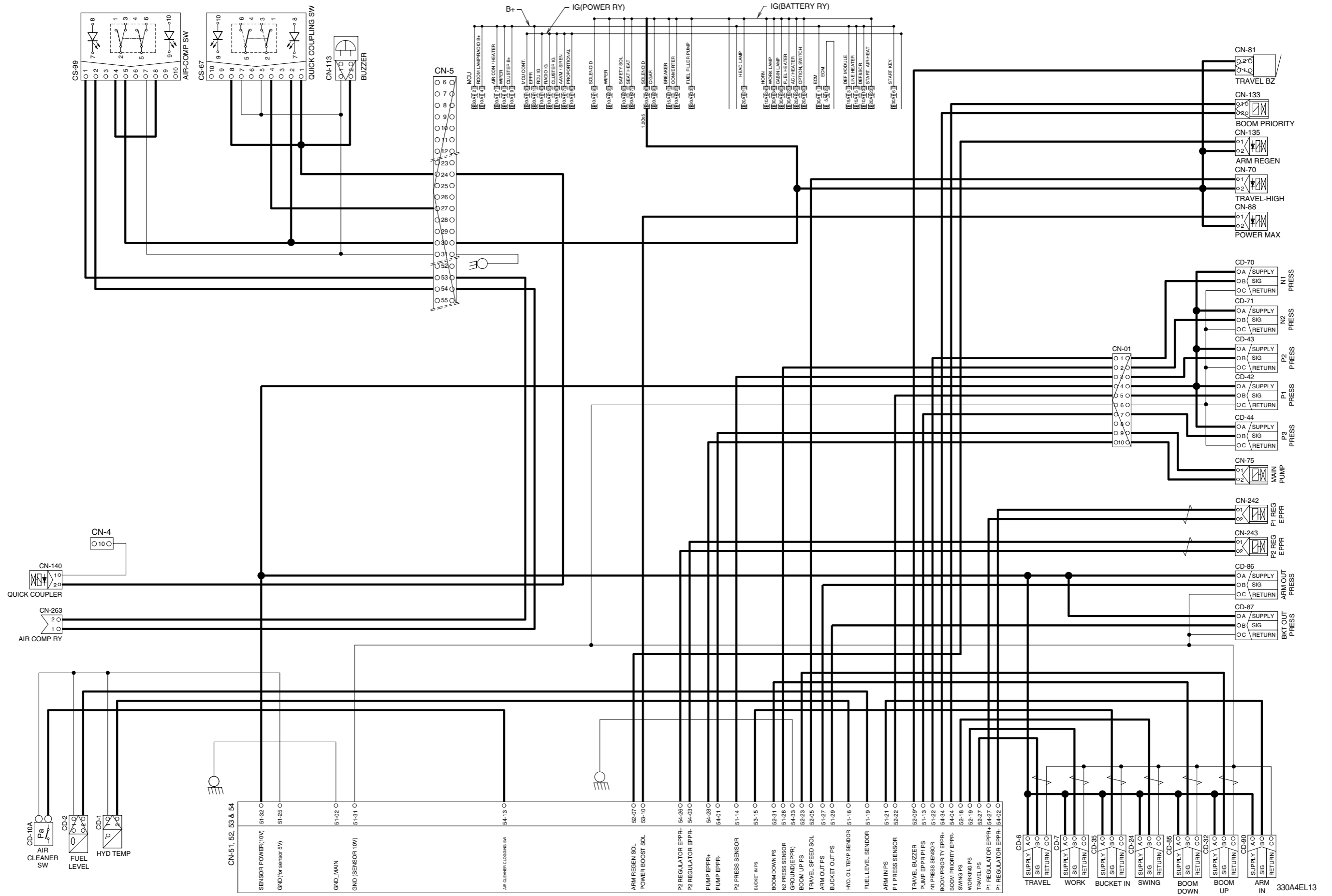
# CONTROLLER CIRCUIT



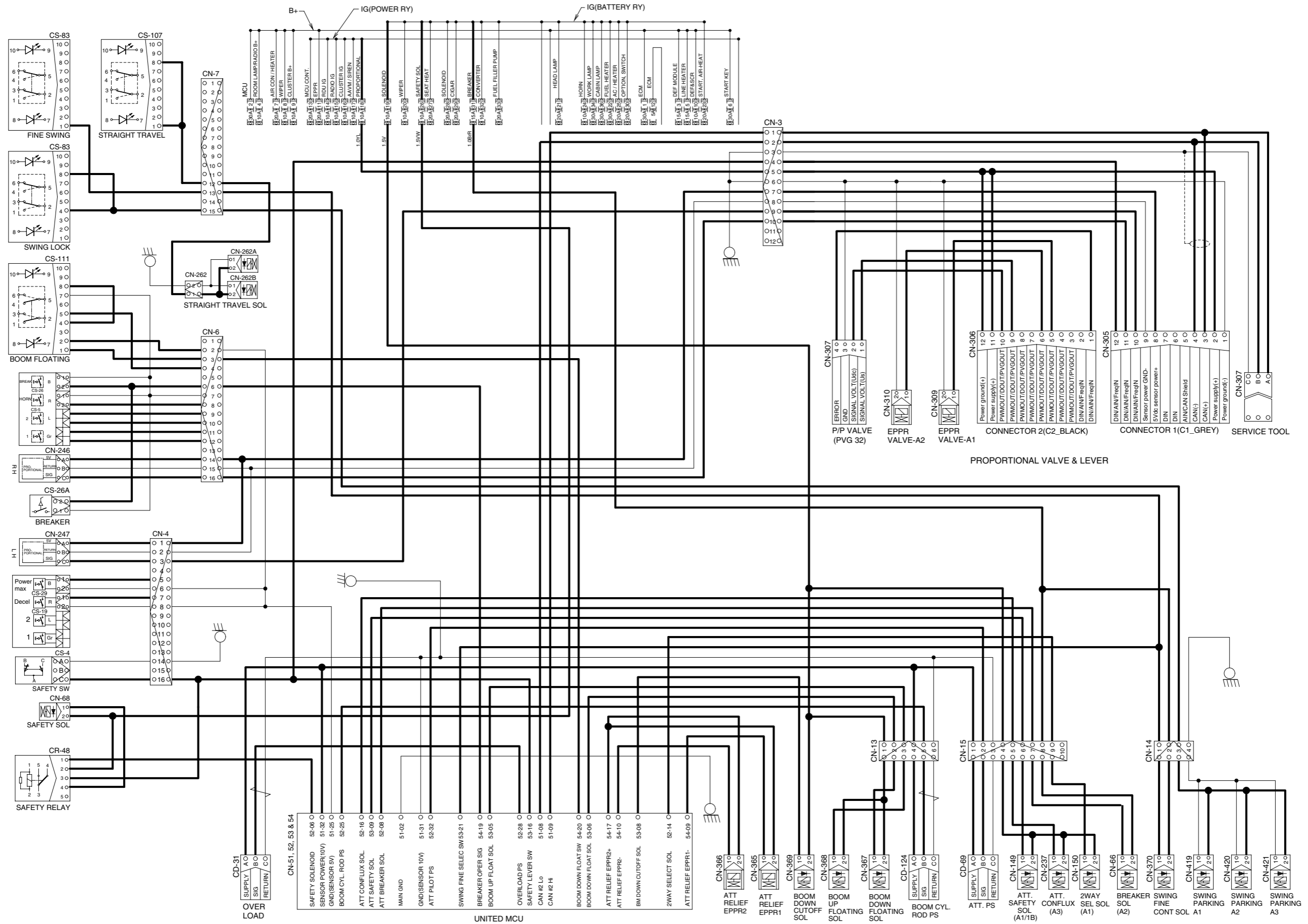
# MONITORING CIRCUIT



# ELECTRIC CIRCUIT FOR HYDRAULIC (1/2)

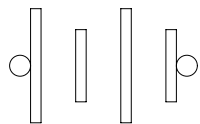
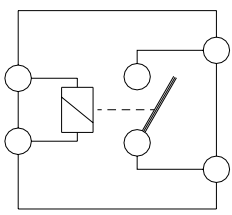
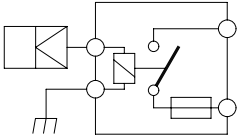
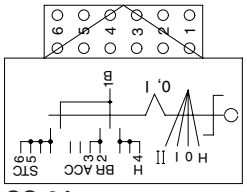
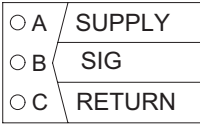
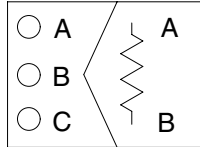


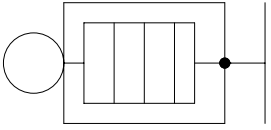
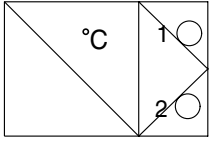
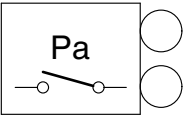
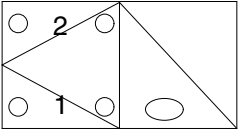
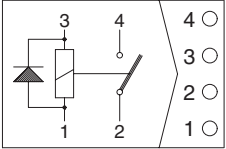
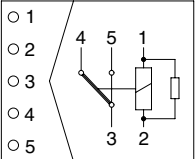
# ELECTRIC CIRCUIT FOR HYDRAULIC (2/2)

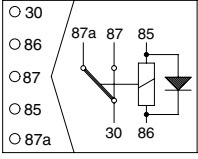
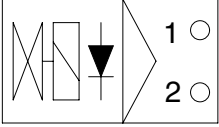
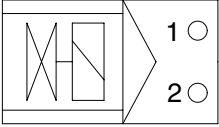
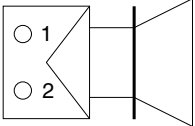
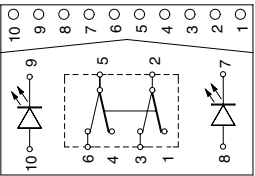
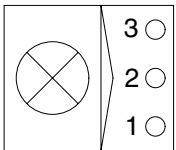


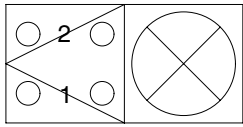
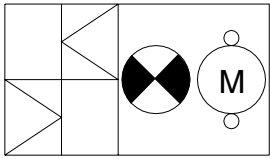
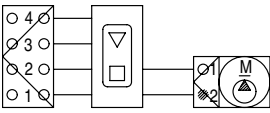
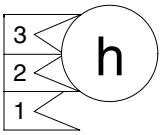
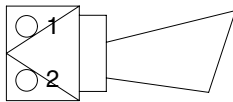
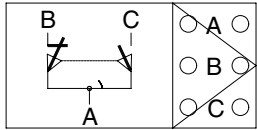


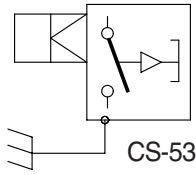
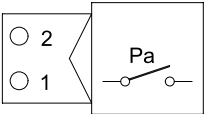
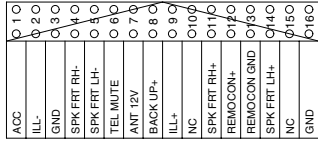
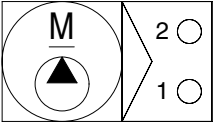
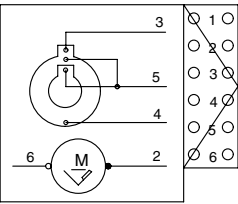
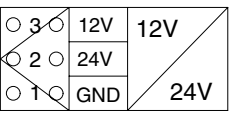
## GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

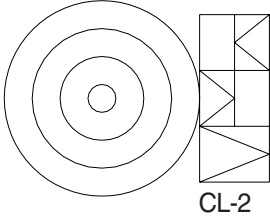
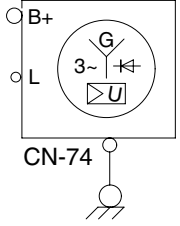
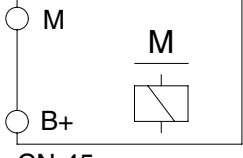
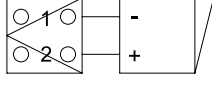
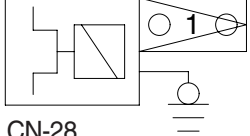
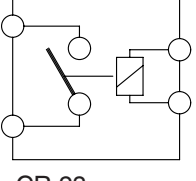
| Part name       | Symbol  | Specifications  | Check  |
|-----------------|---|---|--|
| Battery         |    | 12V × 160Ah<br>(2EA)  | ※ Check specific gravity<br>1.280 over : Over charged<br>1.280 ~ 1.250 : Normal<br>1.250 below : Recharging            |
| Battery relay   |  <p style="text-align: center;">CR-1</p>   | Rated load :<br>24V<br>100A (continuity)<br>1000A (30seconds) | ※ Check coil resistance(M4 to M4)<br>Normal : About 50Ω<br>※ Check contact<br>Normal : ∞Ω                              |
| Glow plug relay |  <p style="text-align: center;">CR-24</p>   | 24V 200A  | ※ Check contact<br>Normal : 0.942Ω<br>(for terminal 1-GND)   |
| Start key       |  <p style="text-align: center;">CS-2A</p>  | B-BR : 24V 1A<br>B-ACC : 24V 10A<br>B-ST : 24V 40A            | ※ Check contact<br>OFF : ∞Ω (for each terminal)<br>ON : 0Ω (for terminal 1-3 and 1-2)<br>START : 0Ω (for terminal 1-6) |
| Pressure sensor |  <p style="text-align: center;">                     ○ A SUPPLY<br/>                     ○ B SIG<br/>                     ○ C RETURN                 </p> <p>                     CD-6 CD-7 CD-16 CD-24 CD-31<br/>                     CD-32 CD-35 CD-42 CD-43 CD-44<br/>                     CD-69 CD-70 CD-71 CD-85 CD-86<br/>                     CD-87 CD-90 CD-124                 </p> | 8~30V   | ※ Check contact<br>Normal : 0.1Ω   |
| Resistor        |  <p style="text-align: center;">                     ○ A<br/>                     ○ B<br/>                     ○ C                 </p> <p style="text-align: center;">                     A<br/>                     B                 </p> <p style="text-align: center;">CN-173 CN-174</p>   | 3W  | ※ Check resistance<br>A-B : 120Ω   |

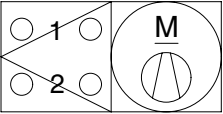
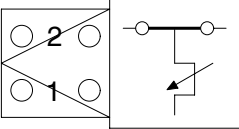
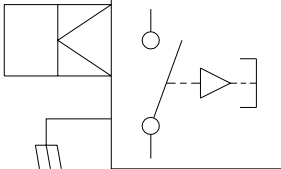
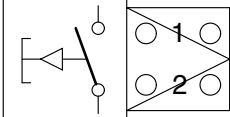
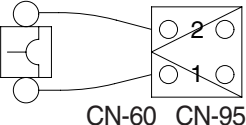
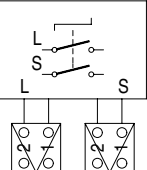
| Part name                      | Symbol  | Specifications | Check  |
|--------------------------------|---|----------------|--|
| Glow plug                      | <br>CN-80  | 24V 200A       | ※ Check resistance<br>0.25~0.12Ω   |
| Temperature sensor (hydraulic) | <br>CD-1   | -              | ※ Check resistance<br>50°C : 804Ω<br>80°C : 310Ω<br>100°C : 180Ω   |
| Air cleaner pressure switch    | <br>CD-10A  | (N.O TYPE)     | ※ Check contact<br>High level : ∞Ω<br>Low level : 0Ω   |
| Fuel sender                    | <br>CD-2   | -              | ※ Check resistance<br>Full : 50Ω      6/12 : 350Ω<br>11/12 : 100Ω    5/12 : 400Ω<br>10/12 : 150Ω    4/12 : 450Ω<br>9/12 : 200Ω     3/12 : 500Ω<br>8/12 : 250Ω     2/12 : 550Ω<br>7/12 : 300Ω     1/12 : 600Ω<br>Empty warning : 700Ω |
| Relay (air con blower)         |    | 24V 20A        | ※ Check resistance<br>Normal : About 200Ω<br>(for terminal 1-3)<br>0Ω<br>(for terminal 2-4)  |
| Relay                          | <br>CR-2 CR-5 CR-36 CR-39<br>CR-48 CR-50 CR-51 CR-85 | 24V 16A        | ※ Check resistance<br>Normal : About 160Ω<br>(for terminal 1-2)<br>0Ω (for terminal 3-4)<br>∞Ω (for terminal 3-5)  |

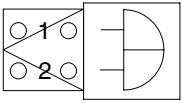
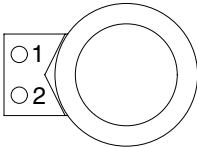
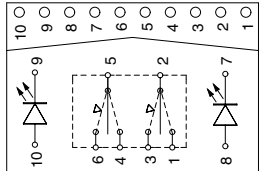
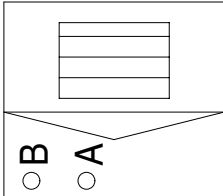
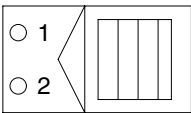
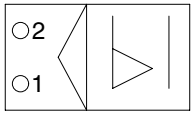
| Part name                | Symbol   | Specifications | Check  |
|--------------------------|--|----------------|--|
| Relay                    |  <p>CR-4 CR-7 CR-9 CR-13<br/>CR-35 CR-46 CR-52</p>  | 24V 16A        | ※ Check resistance<br>Normal : About 160 Ω<br>(for terminal 85-86)<br>0 Ω (for terminal 30-87a)<br>∞ Ω (for terminal 30-87)                                      |
| Solenoid valve           |  <p>CN-66 CN-68 CN-70 CN-88<br/>CN-135 CN-140 CN-149 CN-150<br/>CN-237 CN-262A CN-262B<br/>CN-367 CN-368 CN-369 CN-370<br/>CN-419 CN-420 CN-421</p> | 24V 1A         | ※ Check resistance<br>Normal : 15~25 Ω<br>(for terminal 1-2)   |
| EPPR valve               |  <p>CN-75 CN-133 CN-242<br/>CN-154 CN-243 CN-309<br/>CN-310 CN-365 CN-366</p>   | 700mA          | ※ Check resistance<br>Normal : 15~25 Ω<br>(for terminal 1-2)   |
| Speaker                  |  <p>CN-23(LH) CN-260<br/>CN-24(RH)</p>  | 20W            | ※ Check resistance<br>Normal : A few Ω   |
| Switch<br>(locking type) |  <p>CS-52 CS-67 CS-73 CS-83<br/>CS-99 CS-107 CS-108 CS-111</p>  | 24V 1.5A       | ※ Check contact<br>Normal<br>ON : ∞ Ω (for terminal 2-3, 5-6)<br>0 Ω (for terminal 2-1, 5-4)<br>OFF : 0 Ω (for terminal 2-3, 5-6)<br>∞ Ω (for terminal 2-1, 5-4) |
| Room lamp                |  <p>CL-1</p>  | 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)       |

| Part name                            | Symbol   | Specifications        | Check  |
|--------------------------------------|--|-----------------------|--|
| Head lamp,<br>Work lamp,<br>Cab lamp |  <p>CL-3 CL-4 CL-5 CL-6<br/>CL-8 CL-9 CL-10 CL-24</p> | 24V 65W<br>(H3 Type)  | ※ Check disconnection<br>Normal : 1.2Ω   |
| Beacon lamp                          |  <p>CL-7</p>  | 21V 70W<br>(H1 Type)  | ※ Check disconnection<br>Normal : A few Ω  |
| Fuel filler pump                     |  <p>CN-61</p>  | 24V 10A<br>35 l /min  | ※ Check resistance<br>Normal : 1.0Ω  |
| Hour meter                           |  <p>CN-48</p>                                       | 16~32V                | ※ Check operation<br>Supply power(24V) to terminal<br>No.1 and connect terminal No.2<br>and ground                                       |
| Horn                                 |  <p>CN-20 CN-25</p>                                 | DC22~28V<br>2A        | ※ Check operation<br>Supply power(24V) to each<br>terminal and connect ground.   |
| Safety switch                        |  <p>CS-4</p>  | 24V 15A<br>(N.C TYPE) | ※ Check contact<br>Normal : 0Ω (for terminal A-B)<br>∞Ω (for terminal A-C)<br>Operating : ∞Ω (for terminal A-B)<br>0Ω (for terminal A-C) |

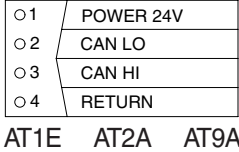
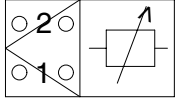
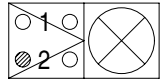
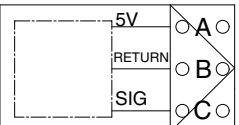
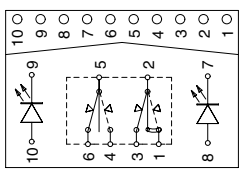
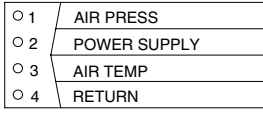
| Part name          | Symbol  | Specifications    | Check   |
|--------------------|---|-------------------|---|
| Wiper cut switch   |  <p>CS-53</p>          | 24V<br>(N.O TYPE) | ※ Check contact<br>Normal : 0Ω (one pin to ground)                  |
| Receiver dryer     |  <p>CN-29</p>          | 24V 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 : 10.7Ω (for terminal 1-2)                |
| Wiper motor        |  <p>CN-21</p>        | 24V 2A            | ※ Check disconnection<br>Normal : 7Ω (for terminal 2-6)             |
| DC/DC Converter    |  <p>CN-138</p>       | 12V 3A            | ※ Check voltage<br>24V (for terminal 1-2)<br>12V (for terminal 1-3) |

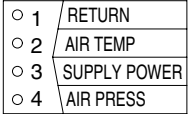
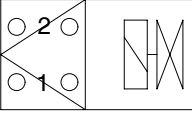
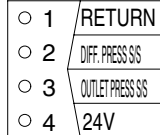
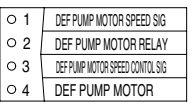
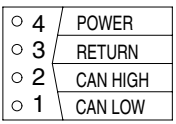
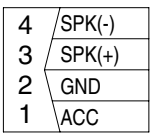
| Part name         | Symbol   | Specifications     | Check   |
|-------------------|--|--------------------|---|
| Cigar lighter     |  <p>CL-2</p>    | 24V 5A 1.4W        | ※ Check coil resistance<br>Normal : About 1MΩ<br>※ Check contact<br>Normal : ∞Ω<br>Operating time : 5~15sec |
| Alternator        |  <p>CN-74</p>   | Denso<br>24V 95A   | ※ Check contact<br>Normal : 0Ω (for terminal B <sup>+</sup> -L)<br>Normal : 24~27.5V                        |
| Starter           |  <p>CN-45</p>  | Denso<br>24V 7.8kW | ※ Check contact<br>Normal : 0.1Ω  |
| Travel alarm      |  <p>CN-81</p> | 24V 0.5A           | ※ Check contact<br>Normal : 5.2Ω  |
| Aircon compressor |  <p>CN-28</p> | 24V 79W            | ※ Check contact<br>Normal : 13.4Ω   |
| Start relay       |  <p>CR-23</p> | 24V 300A           | ※ Check contact<br>Normal : 0.94Ω (for terminal 1-2)  |

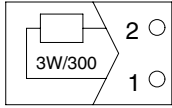
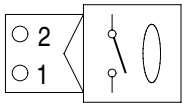
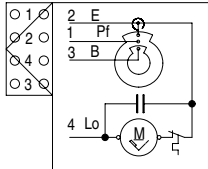
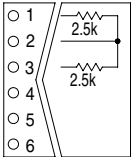
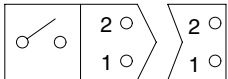
| Part name  | Symbol  | Specifications             | Check  |
|--|---|----------------------------|--|
| Blower motor                                       |    | 24V 9.5A                   | ※ Check resistance<br>Normal : 2.5Ω (for terminal 1-2)   |
| Thermistor (switch)                                |    | 1°C OFF<br>4°C ON          | ※ Check resistance<br>Normal : 0Ω (for terminal 1-2),<br>the atmosphere temp :<br>Over 4°C                   |
| Door switch  |  <p style="text-align: center;">CS-1</p>                        | 24V 2W                     | ※ Check resistance<br>Normal : About 5MΩ   |
| Switch (power max, one touch decel, horn, breaker) |  <p style="text-align: center;">CS-5 CS-19<br/>CS-26 CS-29</p> | 24V 6A                     | ※ Check resistance<br>Normal : ∞Ω  |
| Circuit breaker                                    |  <p style="text-align: center;">CN-60 CN-95</p>                | 60A (CN-60)<br>90A (CN-95) | ※ Check disconnection<br>Normal : 0Ω<br>(connect ring terminal and check<br>resist between terminal 1 and 2) |
| Master switch                                      |  <p style="text-align: center;">CS-74, CS-74B</p>              | 6-36V                      | ※ Check disconnection<br>Normal : 0.1Ω   |

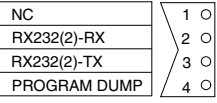
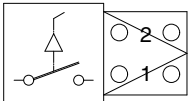
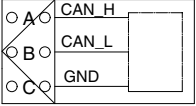
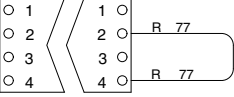
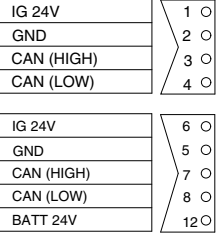
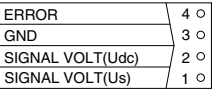
| Part name               | Symbol  | Specifications       | Check   |
|-------------------------|---|----------------------|---|
| Quick clamp buzzer      |  <p data-bbox="496 443 587 472">CN-113</p>                   | 24V 200mA<br>107±4dB |   |
| Socket                  |  <p data-bbox="507 745 598 775">CN-139</p>                   | 12V 10A              |   |
| Switch                  |  <p data-bbox="459 1043 550 1072">CS-100</p>                | 24V 8A               | <p data-bbox="997 898 1182 927">※ Check contact</p> <p data-bbox="1029 936 1114 965">Normal</p> <p data-bbox="1029 974 1369 1003">ON : 0Ω (for terminal 2-1, 2-3)</p> <p data-bbox="1029 1012 1369 1041">OFF : ∞Ω (for terminal 2-1, 2-3)</p> |
| Fuel heater             |  <p data-bbox="550 1346 625 1375">CN-96</p>                | -                    |   |
| DEF/AdBlue® line heater |  <p data-bbox="448 1597 740 1626">CN-381 CN-382 CN-383</p> | -                    |   |
| WIF sensor              |  <p data-bbox="491 1877 566 1906">CD-45</p>                | -                    |   |

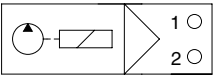
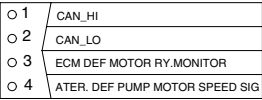
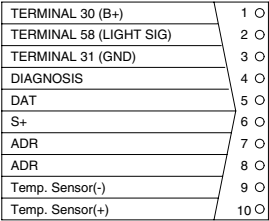
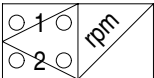


| Part name                              | Symbol   | Specifications | Check  |
|--|--|----------------|--|
| DEF/AdBlue® sensor                     |   | -              |  |
| Temperature sensor (A/C)               |   | -              |  |
| DEF/AdBlue® fill up warning lamp (LED) |  <p data-bbox="494 1008 566 1041">CL-40</p>           | -              |  |
| Proportional valve sensor              |  <p data-bbox="486 1310 694 1344">CN-246 CN-247</p> | -              |  |
| Switch                                 |  <p data-bbox="486 1624 566 1657">CS-79</p>         | 24V 8A         | <p>※ Check disconnection</p> <p>Normal</p> <p>ON</p> <p>1st step : 0Ω (for terminal 1-2)</p> <p>2nd step : 0Ω (for terminal 1-2, 4-5)</p> <p>OFF</p> <p>0Ω (for terminal 2-3, 5-6)</p> |
| Sensor                                 |  <p data-bbox="486 1881 542 1915">C12</p>           | -              |  |

| Part name                 | Symbol  | Specifications | Check |
|---------------------------|---|----------------|-------|
| Pressure temp sensor      |  <p>CD-10</p>    | -              |       |
| Coolant valve             |  <p>CN-384</p>   | -              |       |
| DPF pressure sensor       |  <p>AT11A</p>   | -              |       |
| SCR and DEF supply module |  <p>AT-5A</p>  | -              |       |
| Tank level sensor         |  <p>CN-380</p> | -              |       |
| Siren AMP                 |  <p>CN-261</p> | -              |       |

| Part name                        | Symbol  | Specifications | Check                               |     |     |     |          |     |            |     |    |     |               |   |  |
|----------------------------------|---|----------------|-------------------------------------|-----|-----|-----|----------|-----|------------|-----|----|-----|---------------|---|--|
| Resistor                         |  <p>RS-1</p>   | 3W             | ※ Check resistance<br>Normal : 300Ω |     |     |     |          |     |            |     |    |     |               |   |  |
| Float switch                     |  <p>CS-61</p>  | -              |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| Low wiper motor                  |  <p>CN-407</p>  | -              |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| Camera<br>(front, rear,<br>side) | <table border="1" data-bbox="491 1173 651 1305"> <tr><td>○ 1</td><td>LVDS POS</td></tr> <tr><td>○ 2</td><td>GND</td></tr> <tr><td>○ 3</td><td>LVDS NEG</td></tr> <tr><td>○ 4</td><td>POWER 6.5V</td></tr> <tr><td>○ 5</td><td>NC</td></tr> <tr><td>○ 6</td><td>ADJUST SIGNAL</td></tr> </table> <p>CN-249 CN-402 CN-403<br/>CN-404 CN-405</p> | ○ 1            | LVDS POS                            | ○ 2 | GND | ○ 3 | LVDS NEG | ○ 4 | POWER 6.5V | ○ 5 | NC | ○ 6 | ADJUST SIGNAL | - |  |
| ○ 1                              | LVDS POS  |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| ○ 2                              | GND   |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| ○ 3                              | LVDS NEG  |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| ○ 4                              | POWER 6.5V  |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| ○ 5                              | NC  |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| ○ 6                              | ADJUST SIGNAL   |                |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| Resistor                         |  <p>CN-16B</p>   | -              |                                     |     |     |     |          |     |            |     |    |     |               |   |  |
| Seat belt sw                     |  <p>CS-250</p>   | -              |                                     |     |     |     |          |     |            |     |    |     |               |   |  |

| Part name          | Symbol  | Specifications | Check |
|--------------------|---|----------------|-------|
| RMS service tool   |  <p>CS-126A</p>  | -              |       |
| Breaker switch     |  <p>CS-26A</p>   | -              |       |
| Start button       |  <p>CS-2B</p>   | -              |       |
| GPS connector      |  <p>CN-125</p> | -              |       |
| Reader             |  <p>CN-427</p> | -              |       |
| Proportional valve |  <p>CN-307</p> | -              |       |

| Part name                        | Symbol   | Specifications | Check |
|----------------------------------|--|----------------|-------|
| Dosing pump                      |  <p data-bbox="475 432 561 459">CN-269</p>    | -              |       |
| Engine side cross over connector |  <p data-bbox="464 723 534 750">CC8C</p>      | -              |       |
| Easystart timer                  |  <p data-bbox="451 1068 537 1095">CN-267</p> | -              |       |
| Fan speed                        |  <p data-bbox="501 1274 576 1301">CD-52</p> | -              |       |

## GROUP 4 CONNECTORS

### 1. CONNECTOR DESTINATION

| Connector number | Type      | No. of pin | Destination   | Connector part No. |                  |
|------------------|-----------|------------|---|--------------------|------------------|
|                  |           |            |   | Female             | Male             |
| CN-1             | AMP       | 10         | l/conn (Frame harness-Pump PS harness)              | 174655-2           | 174657-2         |
| CN-2             | AMP       | 15         | l/conn (Frame harness-Engine harness)               | 2-85262-1          | 368301-1         |
| CN-3A            | AMP       | 12         | l/conn (Frame harness-Pro vlv harness)              | 174661-2           | 368537-1         |
| CN-4             | AMP       | 16         | l/conn (Console harness LH-Frame harness)           | 368047-1           | 368050-1         |
| CN-5             | DEUTSCH   | 60         | l/conn (Side harness RH-Frame harness)              | DRB16-60SAE-L018   | DRB12-60PAE-L018 |
| CN-6             | AMP       | 16         | l/conn (Console harness RH-Frame harness)           | 368047-1           | 368050-1         |
| CN-7             | AMP       | 15         | l/conn (Console harness RH-Frame harness)           | 2-85262-1          | 368301-1         |
| CN-8             | AMP       | 10         | l/conn (Console harness RH-Frame harness)           | S816-010002        | 174657-2         |
| CN-9             | DEUTSCH   | 12         | l/conn (Frame harness-AAVM harness)                 | DT06-12SA-P021     | DT04-12PA-P021   |
| CN-10            | DEUTSCH   | 12         | l/conn (Cab harness-Side harness RH)                | DT06-12S-EP06      | DT04-12PA-P021   |
| CN-11            | DEUTSCH   | 8          | l/conn (Frame harness-Aircon harness)               | DT06-8S-EP06       | -                |
| CN-12            | DEUTSCH   | 2          | l/conn (Frame harness-Boom wire harness)            | DT06-2S-EP06       | DT04-2P-E005     |
| CN-13            | AMP       | 6          | Boom floating                                       | 174262-2           | 174264-2         |
| CN-14            | AMP       | 4          | l/conn (Frame harness-Swing parking & fine control) | 174257-2           | 174259-2         |
| CN-15            | AMP       | 10         | l/conn (Frame harness-Breaker sol)                  | 174655-2           | 174657-2         |
| CN-16            | TYCO      | 6          | Emergency engine start & speed control              | S816-006002        | S816-106002      |
| CN-16B           | -         | 6          | Resistor  | S816-006002        | 21NB-10710       |
| CN-17            | AMP       | 8          | l/conn (Side harness RH-Wiper harness)              | S816-008002        | S816-108002      |
| CN-18            | TYCO      | 2          | l/conn (Washer pump-Frame harness)                  | 174352-2           | 174354-2         |
| CN-20            | DEUTSCH   | 2          | Horn  | DT06-2S-EP06       | -                |
| CN-21            | AMP       | 6          | Wiper motor   | S810-006202        | -                |
| CN-22            | KET       | 2          | Washer pump   | MG640605           | -                |
| CN-23            | KET       | 2          | Speaker-LH  | MG610070           | -                |
| CN-24            | KET       | 2          | Speaker-RH  | MG610070           | -                |
| CN-25            | DEUTSCH   | 2          | Horn  | DT06-2S-EP06       | -                |
| CN-27A           | KUM       | 16         | Radio & USB player                                  | PK145-16017        | -                |
| CN-27B           | AMP       | 8          | Radio & USB player                                  | -                  | 174984-2         |
| CN-28            | KET       | 2          | Aircon compressor                                   | MG610320           | -                |
| 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            | TE        | 34         | United MCU  | 2-1437285-3        | 3-6437285-0      |
| CN-52            | TE        | 34         | United MCU  | 4-1437290-1        | 6473427-1        |
| CN-53            | TE        | 26         | United MCU  | 1473416-1          | 6473427-1        |

| Connector number | Type        | No. of pin | Destination               | Connector part No. |                |
|------------------|-------------|------------|---------------------------|--------------------|----------------|
|                  |             |            |                           | Female             | Male           |
| CN-54            | TE          | 34         | United MCU                | 4-1437290-0        | 6437288-1      |
| 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       | -              |
| 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 "I" terminal   | S820-105000        | -              |
| CN-74            | RING-TERM   | 1          | Alternator "B+" terminal  | S820-108000        | -              |
| CN-75            | AMP         | 2          | Pump EPPR                 | 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      | 96         | ECM                       | 13964577           | -              |
| CN-95            | YAZAKI      | 2          | Circuit breaker           | -                  | 7222-4220-30   |
| CN-96            | AMP         | 4          | Fuel heater               | 2-967325-3         | 2-967402-1     |
| CN-100           | KET         | 1          | ECM ground                | MG640944-5         | -              |
| CN-113           | KET         | 2          | Buzzer                    | MG651205-5         | -              |
| CN-125           | Econoseal J | 4          | RMS connector             | S816-004002        | S816-104002    |
| CN-125A          | DEUTSCH     | 12         | RMS                       | DT06-12S-P021      | DT04-12PA-P021 |
| CN-125B          | DEUTSCH     | 8          | RMS                       | DT06-8S            | DT04-8P        |
| CN-126           | AMP         | 10         | Service tool              | 174655-2           | -              |
| CN-126A          | DEUTSCH     | 4          | RMS Service tool          | DT06-4S            | DT04-4P        |
| 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-149           | DEUTSCH     | 2          | Attach safety solenoid    | DT06-2S-EP06       | -              |
| CN-150           | DEUTSCH     | 2          | 2 way select solenoid     | DT06-2S-EP06       | -              |
| CN-154           | DEUTSCH     | 2          | Cooling fan               | DT06-2S-EP06       | -              |
| CN-156           | DEUTSCH     | 2          | Air seat                  | DT06-2S            | DT04-2P        |
| CN-157           | AMP         | 1          | Antena power              | S822-014002        | -              |
| CN-173           | DEUTSCH     | 3          | Resistor                  | DT06-3S-EP06       | DT04-3P-EP10   |
| CN-174           | DEUTSCH     | 3          | Resistor                  | DT06-3S-EP06       | DT04-3P-EP10   |
| CN-237           | DEUTSCH     | 2          | Attach confluent solenoid | DT06-2S-EP06       | -              |
| CN-242           | DEUTSCH     | 2          | P1 regulator EPPR (A1)    | DT06-2S-EP06       | -              |

| Connector number | Type    | No. of pin | Destination   | Connector part No. |              |
|------------------|---------|------------|---|--------------------|--------------|
|                  |         |            |   | Female             | Male         |
| CN-243           | DEUTSCH | 2          | P2 regulator EPPR (A2)                                    | DT06-2S-EP06       | -            |
| CN-245           | KET     | 2          | PTC power   | MG620558           | -            |
| CN-246           | DEUTSCH | 3          | Proportional valve-RH                                     | DT06-3S            | DT04-3P      |
| CN-246A/B        | DEUTSCH | 4          | l/conn (Engine block heater harness -Timer harness)       | DT06-4S-EP06       | DT04-4P-EP06 |
| CN-247           | DEUTSCH | 3          | Proportional valve-LH                                     | DT06-3S            | DT04-3P      |
| CN-249           | DEUTSCH | 6          | Rear view camera  | DT06-6S-EP06       | DT04-6P-E005 |
| CN-258           | KET     | 1          | Air compressor power                                      | MG640944-5         | MG650943-5   |
| CN-260           | AMP     | 2          | Siren lamp  | 174352-2           | 174354-2     |
| CN-260           | MTA     | 2          | Engine block heater fuse box                              | 03 01305           | -            |
| CN-261           | MTA     | 2          | Engine block heater fuse box                              | 03 01315           | -            |
| CN-261           | -       | 4          | Siren AMP   | -                  | -            |
| CN-262           | DEUTSCH | 2          | l/conn (Straight travel solenoid harness - Frame harness) | DT06-2S-EP06       | DT04-2P-E005 |
| CN-262A          | DEUTSCH | 2          | Travel solenoid 1   | DT06-2S-EP06       | -            |
| CN-262B          | DEUTSCH | 2          | Travel solenoid 2   | DT06-2S-EP06       | -            |
| CN-263           | DEUTSCH | 2          | Air compressor relay                                      | DT06-2S-EP06       | DT04-2P-E005 |
| CN-265           | VW      | 8          | Engine block heater controller                            | 3A0973734          | -            |
| CN-267           | MOLEX   | 10         | Easy start timer  | 15-97-5101         | -            |
| CN-269           | TE      | 2          | Dosing pump   | 282189-1           | -            |
| 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-E005       | DT06-3P-EP06 |
| CN-308           | AMP     | 4          | Proportional-PVG32  | 2-967056-1         | -            |
| CN-309           | DEUTSCH | 2          | Proportional-EPPR valve 1                                 | DT06-2S-EP06       | -            |
| CN-310           | DEUTSCH | 2          | Proportional-EPPR valve 2                                 | DT06-2S-EP06       | -            |
| CN-363           | AMP     | 12         | Jog dial module   | 174045-2           | -            |
| CN-365           | DEUTSCH | 2          | Attach relief EPPR valve1                                 | DT06-2S-EP06       | DT04-2P-E005 |
| CN-366           | DEUTSCH | 2          | Attach relief EPPR valve2                                 | DT06-2S-EP06       | DT04-2P-E005 |
| CN-367           | DEUTSCH | 2          | Boom down floating solenoid                               | DT06-2S-EP06       | DT04-2P-E005 |
| CN-368           | DEUTSCH | 2          | Boom up floating solenoid                                 | DT06-2S-EP06       | DT04-2P-E005 |
| CN-369           | DEUTSCH | 2          | Boom down cut off solenoid                                | DT06-2S-EP06       | DT04-2P-E005 |
| CN-370           | DEUTSCH | 2          | Swing fine control solenoid                               | DT06-2S-EP06       | DT04-2P-E005 |
| CN-376           | TYCO    | 23         | Membrane controller                                       | 7706087-2          | -            |
| CN-380           | DEUTSCH | 4          | DEF/AdBlue® tank level sensor                             | DT06-4S-EP06       | -            |
| CN-381           | DEUTSCH | 2          | DEF line heater 1   | DT06-2S-EP06       | -            |
| CN-382           | DEUTSCH | 2          | DEF line heater 2   | DT06-2S-EP06       | -            |
| CN-383           | DEUTSCH | 2          | DEF line heater 3   | DT06-2S-EP06       | -            |
| CN-384           | TYCO    | 2          | Coolant valve   | -                  | 1-967325-3   |
| CN-401           | FCI     | 90         | AAVM controller   | -                  | -            |
| CN-402           | DEUTSCH | 6          | Front view camera   | DT06-6S-P021       | DT04-6P-EP14 |



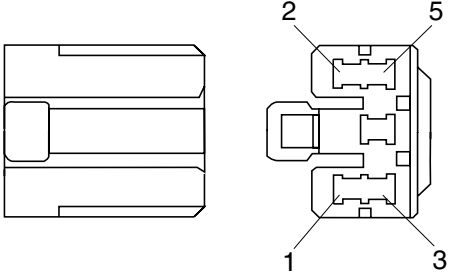
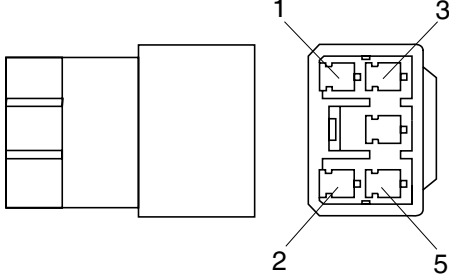
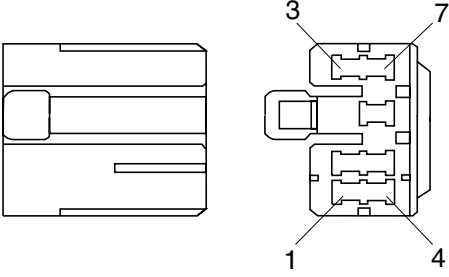
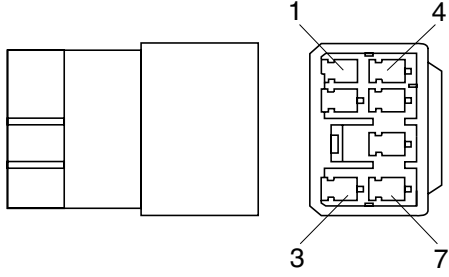
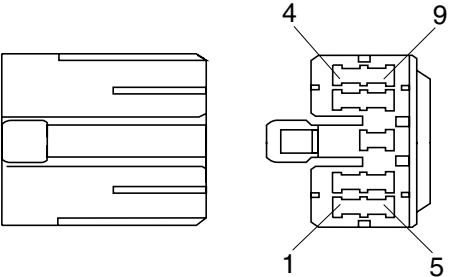
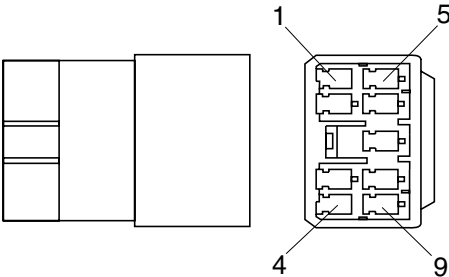
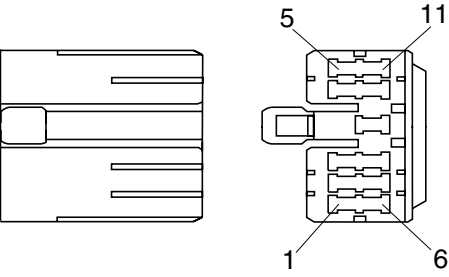
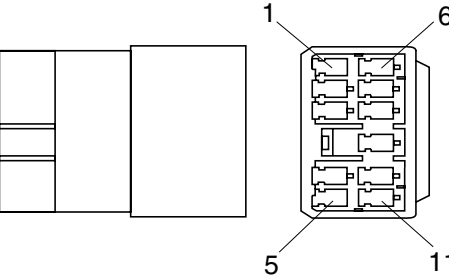
| Connector number | Type      | No. of pin | Destination                                   | Connector part No. |              |
|------------------|-----------|------------|---|--------------------|--------------|
|                  |           |            |   | Female             | Male         |
| 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          | Service tool                                  | DT06-3S-EP06       | DT04-3P-E005 |
| CN-407           | DEUTSCH   | 4          | Low wiper motor                               | DT06-4S-EP06       | DT04-4P-E005 |
| CN-408           | KET       | 4          | Washer tank                                   | 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    |
|                  |           | 12         |   | 5557-12R           | 5559-12P     |
| CN-430           | TYCO/AMP  | 12         | l/conn (Aftertreatment harness-Frame harness) | 174661-2           | S816-112002  |
| AT1E             | TYCO      | 4          | Inlet Nox sensor                              | 2-1418390-1        | -            |
| AT2A             | TYCO      | 4          | Outlet Nox sensor                             | 1-1418390-1        | -            |
| AT-5A            | TYCO      | 4          | SCR supply module                             | 2-1418390-1        | -            |
| AT-6A            | TYCO      | 8          | DEF/AdBlue® dosing module                     | 1-141-8479-1       | -            |
| AT9A             | TYCO      | 4          | SCR temp sensor                               | 4-1418390-1        | -            |
| AT11A            | FRAMATOME | 4          | Diff perssure sensor                          | F715600            | -            |
| CC8C             | DEUTSCH   | 4          | Engine side cross over connector              | DT06-4S-EP06       | -            |
| C-12             | FCI       | 4          | Air cleaner (ECM J1)                          | -                  | 54200419     |
| · 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-13            | -         | 5          | Head lamp relay                               | -                  | -            |
| CR-23            | KET       | 2          | Start relay                                   | S814-002001        | S814-102001  |
| CR-24            | RING TERM | 1          | Preheat relay                                 | S822-014000        | -            |
| CR-35            | -         | 5          | Power relay                                   | -                  | -            |
| CR-36            | -         | 5          | Preheat relay                                 | -                  | -            |
| CR-39            | -         | 5          | Starter lock out relay                        | -                  | -            |
| CR-46            | -         | 5          | Fuel warmer relay                             | -                  | -            |
| CR-48            | -         | 5          | Safety relay                                  | -                  | -            |
| CR-50            | -         | 5          | NOx sensor relay                              | -                  | -            |
| CR-51            | -         | 5          | DEF/AdBlue® module relay                      | -                  | -            |
| CR-52            | -         | 5          | Line heater relay                             | -                  | -            |
| CR-85            | -         | 5          | Beacon lamp relay                             | -                  | -            |

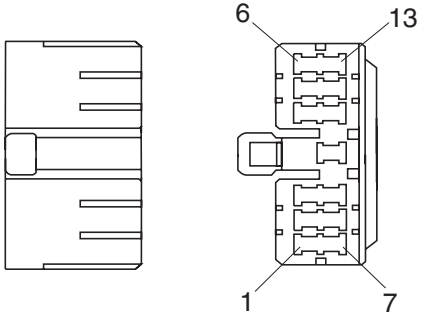
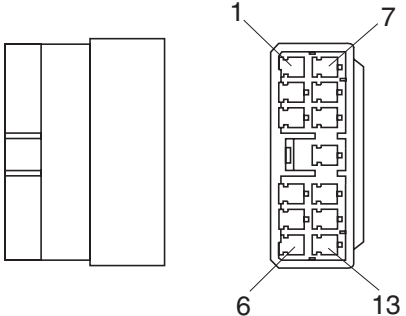
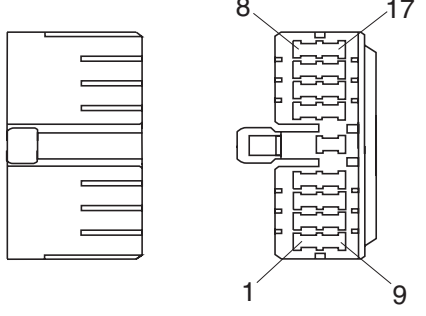
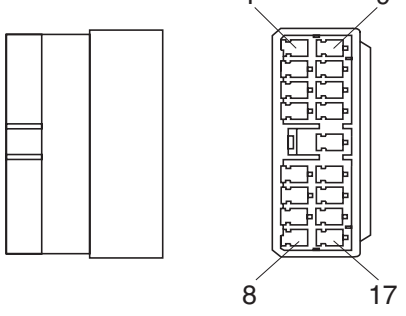
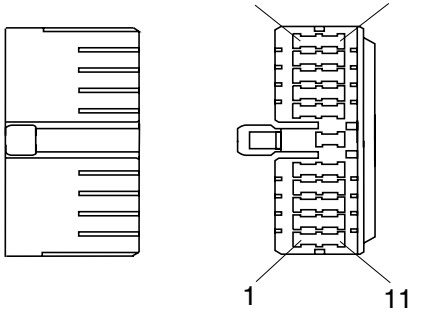
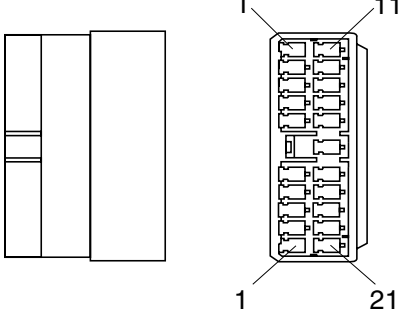
| Connector number | Type    | No. of pin | Destination                  | Connector part No. |              |
|------------------|---------|------------|------------------------------|--------------------|--------------|
|                  |         |            |                              | Female             | Male         |
| · Switch         |         |            |                              |                    |              |
| CS-1             | SHUR    | 1          | Door switch                  | S822-014002        | S822-114002  |
| CS-2A            | WP      | 6          | Start switch                 | S814-006100        | -            |
| CS-2B            | DEUTSCH | 3          | Start button                 | 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-EP06       | -            |
| CS-33            | AMP     | 5          | Emergency engine stop switch | S815-005002        | S815-105002  |
| CS-52            | CARLING | 10         | 2 Piece switch               | VC2-01             | -            |
| CS-53            | AMP     | 1          | Wiper cut switch             | S822-014002        | -            |
| CS-61            | AMP     | 2          | Floating switch              | 174352-2           | -            |
| CS-67            | CARLING | 10         | Quick clamp switch           | VC2-01             | -            |
| CS-73            | CARLING | 10         | Swing lock switch            | VC2-01             | -            |
| CS-73A           | CARLING | 10         | Swing fine switch            | VC2-01             | -            |
| CS-74            | DEUTSCH | 2          | Master switch                | DT06-2S-EP06       | -            |
| CS-74B           | DEUTSCH | 2          | Master switch                | DT06-2S-EP06       | -            |
| CS-79            | CARLING | 10         | Lower wiper switch           | VC2-01             | -            |
| CS-83            | CARLING | 10         | Swing lock switch            | VC2-01             | -            |
| 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             | -            |
| CS-250           | DEUTSCH | 2          | Seat switch                  | DT06-2S            | -            |
| · 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       | DT04-2P      |
| CL-4             | DEUTSCH | 2          | Head lamp-RH                 | DT06-2S-EP06       | DT04-2P      |
| CL-5             | DEUTSCH | 2          | Work lamp-LH                 | DT06-2S-EP06       | DT04-2P      |
| CL-6             | DEUTSCH | 2          | Work lamp-RH                 | DT06-2S-EP06       | DT04-2P      |
| 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          | Pressure & temp sensor       | DT06-2S-EP06       | DT04-2P      |
| CL-24            | DEUTSCH | 2          | Head lamp-rear               | DT06-2S-EP06       | DT04-2P-E005 |

| Connector number | Type     | No. of pin | Destination                        | Connector part No. |              |
|------------------|----------|------------|------------------------------------|--------------------|--------------|
|                  |          |            |                                    | Female             | Male         |
| 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       | DT04-2P      |
| · Sensor, sendor |          |            |                                    |                    |              |
| 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          | Pressure & temperature sensor      | 6098-0144          | -            |
| CD-10A           | AMP      | 2          | Air cleaner switch                 | 85202-1            | -            |
| CD-16            | AMP      | 3          | Water level sensor                 | 1211 0293          | -            |
| 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          | Bucket in pressure 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            | AMP      | 2          | WIF sensor                         | DT06-2S-EP06       | -            |
| CD-52            | AMP      | 2          | Fan speed                          | 174352-2           | -            |
| 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 pressure sensor          | DT06-3S-EP06       | -            |
| CD-86            | DEUTSCH  | 3          | Arm out pressure sensor            | DT06-3S-EP06       | -            |
| CD-87            | DEUTSCH  | 3          | Bucket out pressure sensor         | DT06-3S-EP06       | -            |
| CD-90            | DEUTSCH  | 3          | Arm in pressure sensor             | DT06-3S-EP06       | -            |
| CD-124           | DEUTSCH  | 3          | Boom cylinder rod pressure snensor | DT06-3S-EP06       | -            |

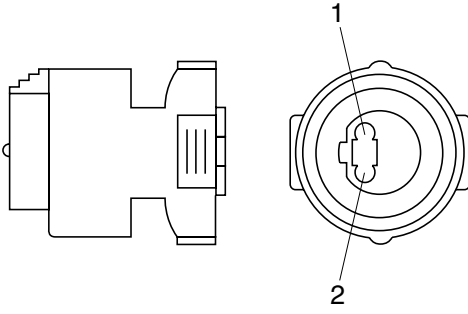
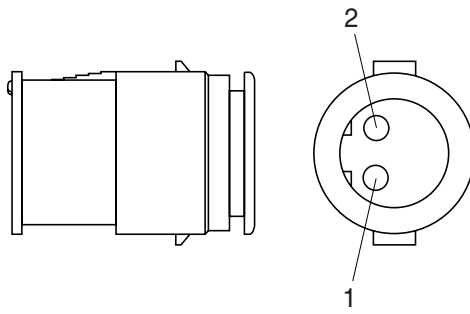
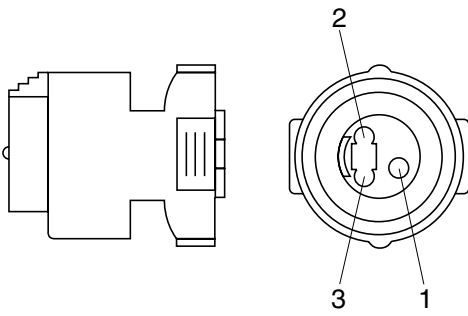
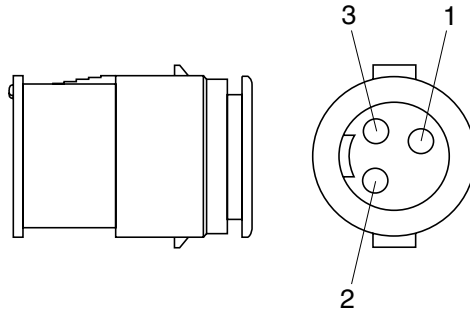
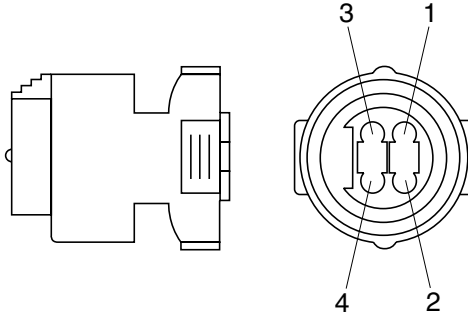
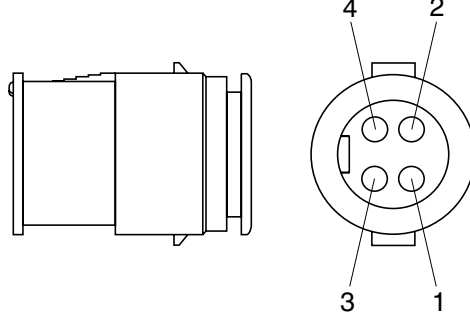
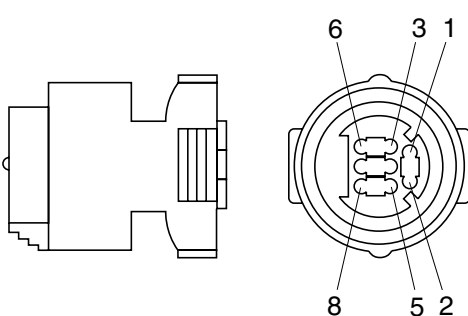
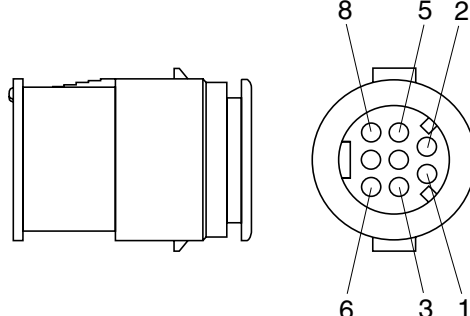
## 2. CONNECTION TABLE FOR CONNECTORS

### 1) PA TYPE CONNECTOR

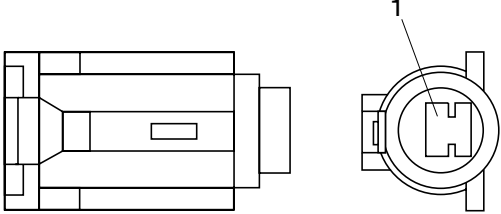
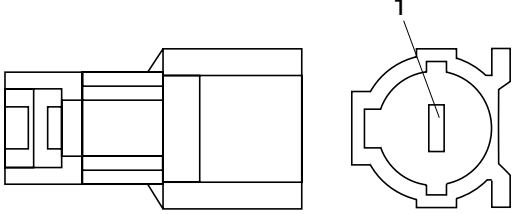
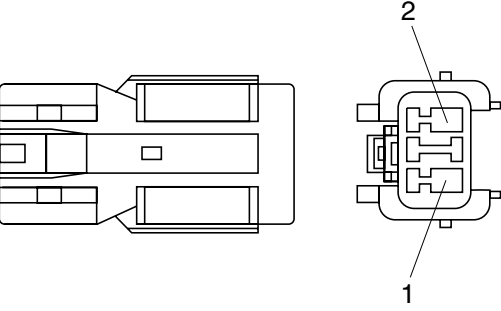
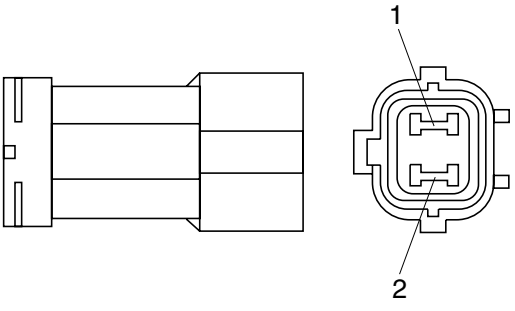
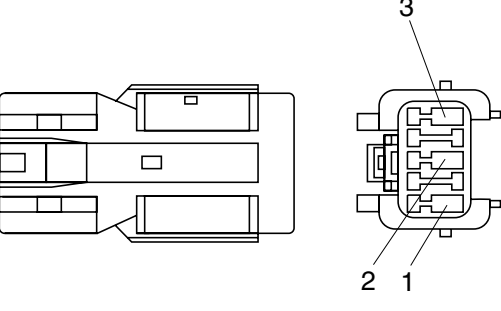
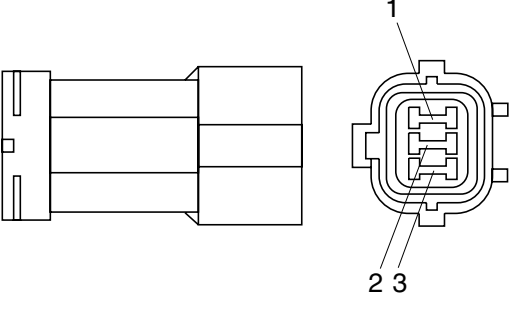
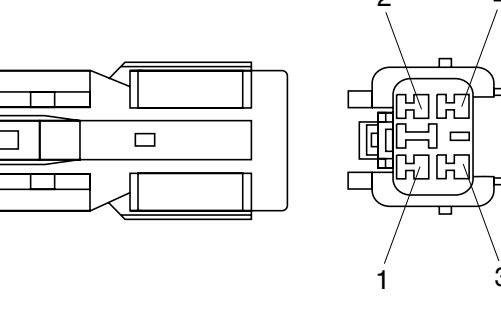
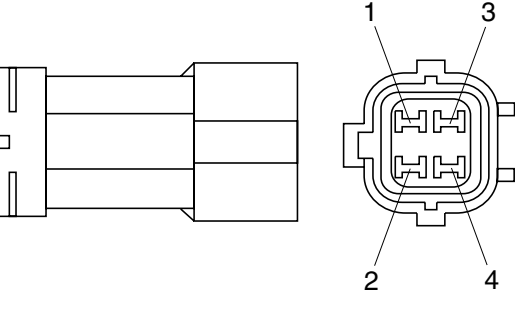
| No. of pin | Receptacle connector (female)  | Plug connector (male)  |
|------------|--|--|
| 5          |  <p style="text-align: center;">S811-005002</p>   |  <p style="text-align: center;">S811-105002</p>    |
| 7          |  <p style="text-align: center;">S811-007002</p>  |  <p style="text-align: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

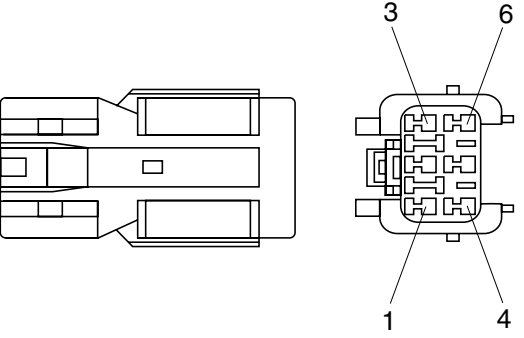
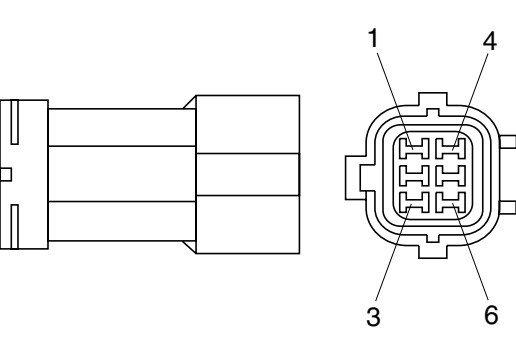
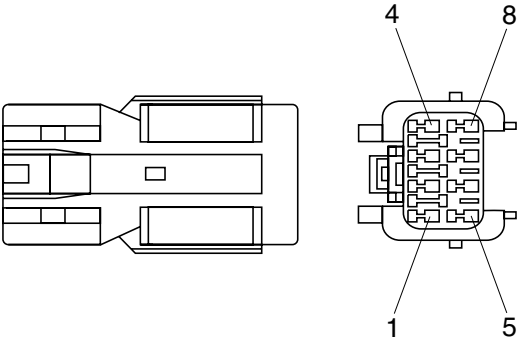
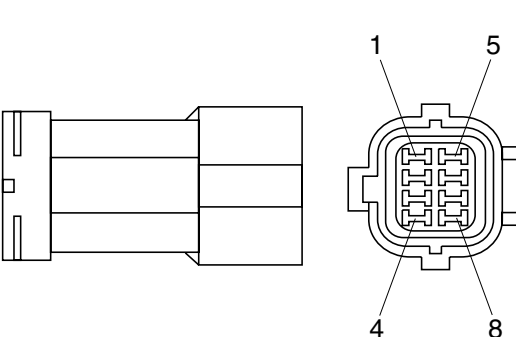
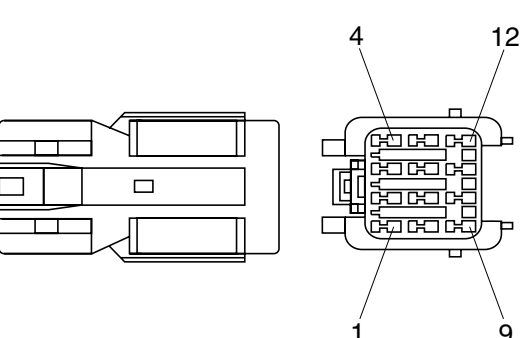
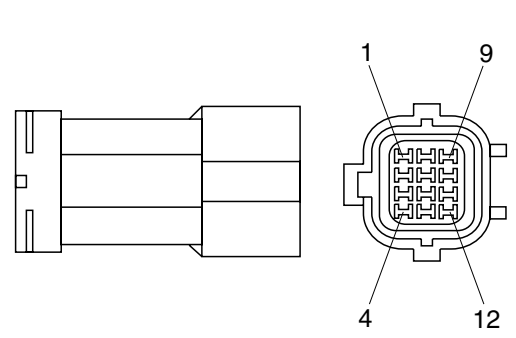
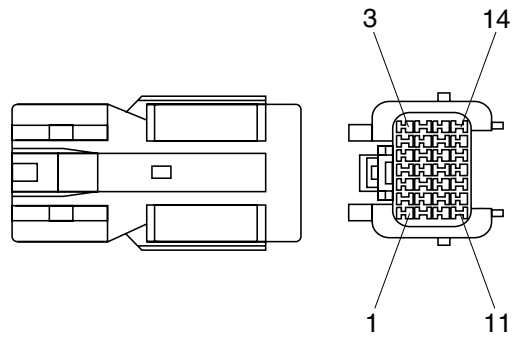
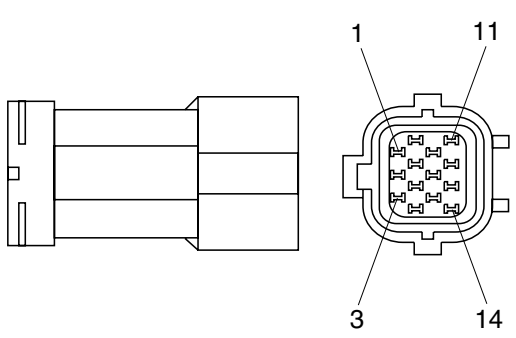
| No. of pin | Receptacle connector (female)  | Plug connector (male)   |
|------------|--|---|
| 13         |  <p data-bbox="686 638 837 672">S811-013002</p>     |  <p data-bbox="1244 638 1396 672">S811-113002</p>     |
| 17         |  <p data-bbox="686 1041 837 1075">S811-017002</p>  |  <p data-bbox="1244 1041 1396 1075">S811-117002</p>  |
| 21         |  <p data-bbox="686 1444 837 1480">S811-021002</p> |  <p data-bbox="1244 1444 1396 1480">S811-121002</p> |

## 2) J TYPE CONNECTOR

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

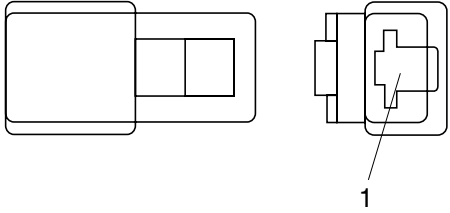
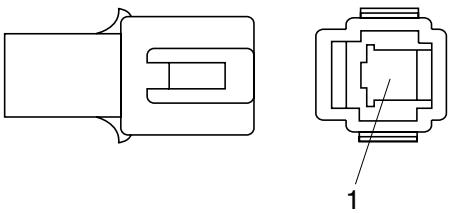
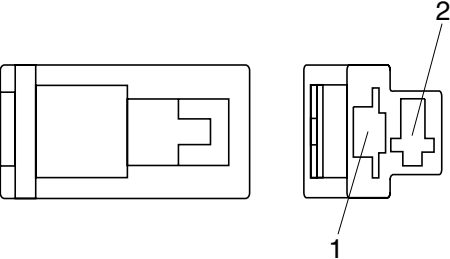
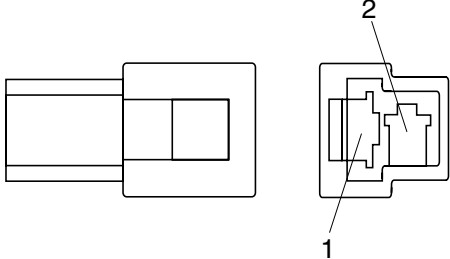
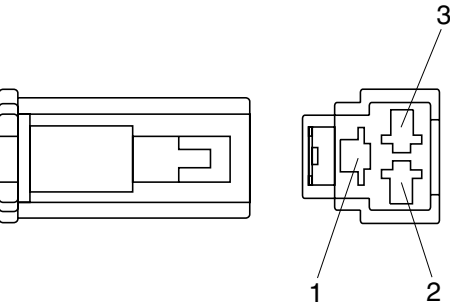
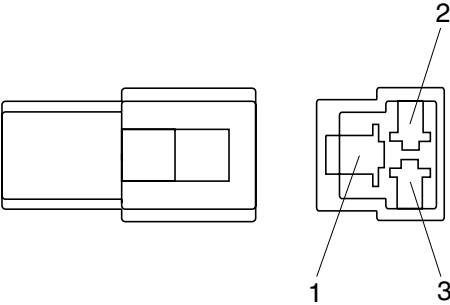
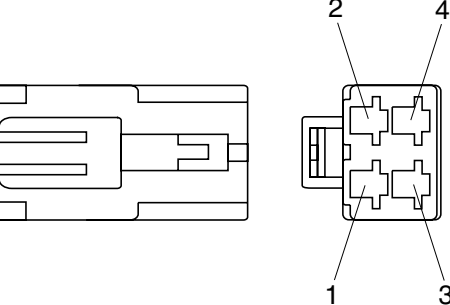
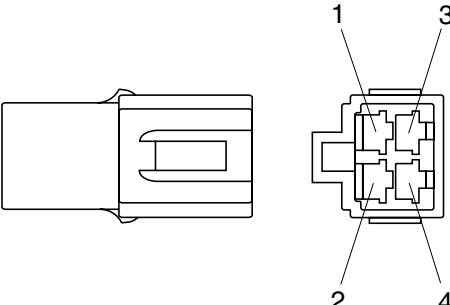
### 3) SWP TYPE CONNECTOR

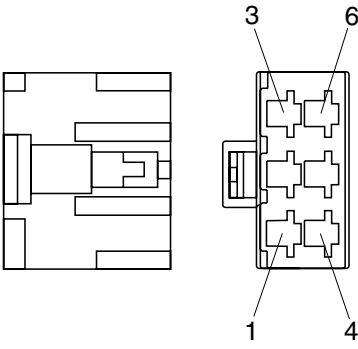
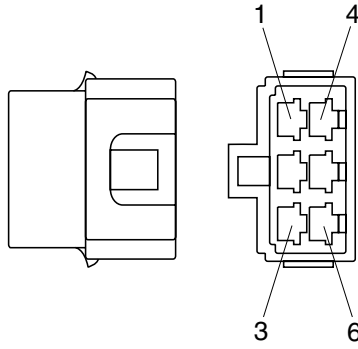
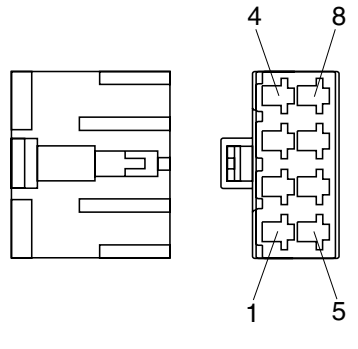
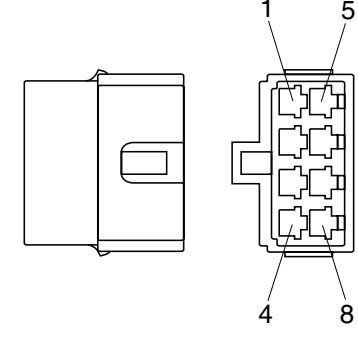
| No. of pin | Receptacle connector (female)  | Plug connector (male)   |
|------------|--|---|
| 1          |  <p data-bbox="687 680 836 707">S814-001000</p>     |  <p data-bbox="1241 680 1390 707">S814-101000</p>     |
| 2          |  <p data-bbox="687 1088 836 1115">S814-002000</p>  |  <p data-bbox="1241 1088 1390 1115">S814-102000</p>  |
| 3          |  <p data-bbox="687 1498 836 1525">S814-003000</p> |  <p data-bbox="1241 1498 1390 1525">S814-103000</p> |
| 4          |  <p data-bbox="687 1908 836 1935">S814-004000</p> |  <p data-bbox="1241 1908 1390 1935">S814-104000</p> |

| No. of pin | Receptacle connector (female)  | Plug connector (male)   |
|------------|--|---|
| 6          |  <p data-bbox="686 638 837 672">S814-006000</p>     |  <p data-bbox="1236 638 1388 672">S814-106000</p>     |
| 8          |  <p data-bbox="686 1041 837 1075">S814-008000</p>  |  <p data-bbox="1236 1041 1388 1075">S814-108000</p>  |
| 12         |  <p data-bbox="686 1449 837 1482">S814-012000</p> |  <p data-bbox="1236 1449 1388 1482">S814-112000</p> |
| 14         |  <p data-bbox="686 1856 837 1890">S814-014000</p> |  <p data-bbox="1236 1856 1388 1890">S814-114000</p> |

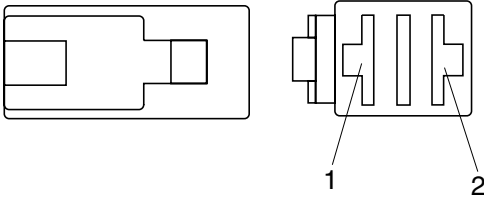
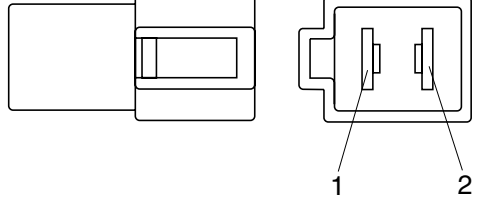


#### 4) CN TYPE CONNECTOR

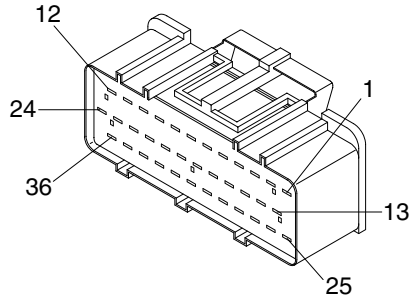
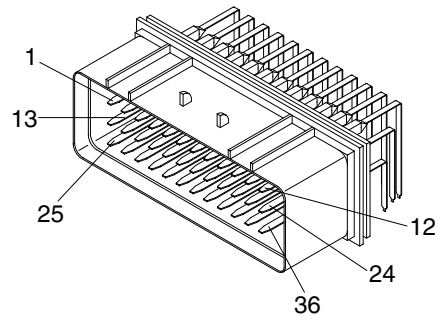
| No. of pin | Receptacle connector (female)  | Plug connector (male)   |
|------------|--|---|
| 1          |  <p style="text-align: center;">S810-001202</p>   |  <p style="text-align: center;">S810-101202</p>   |
| 2          |  <p style="text-align: center;">S810-002202</p>  |  <p style="text-align: center;">S810-102202</p>  |
| 3          |  <p style="text-align: center;">S810-003202</p> |  <p style="text-align: center;">S810-103202</p> |
| 4          |  <p style="text-align: center;">S810-004202</p> |  <p style="text-align: center;">S810-104202</p> |

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

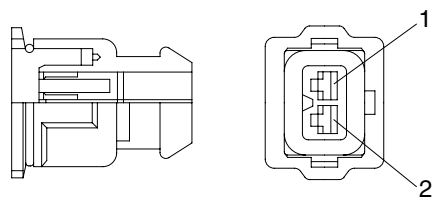
### 5) 375 FASTEN TYPE CONNECTOR

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

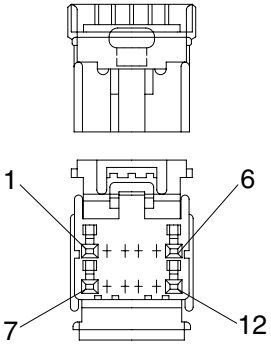
### 6) AMP ECONOSEAL CONNECTOR

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

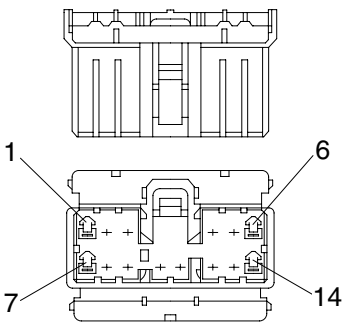
### 7) AMP TIMER CONNECTOR

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

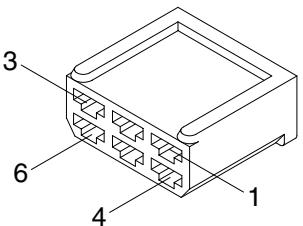
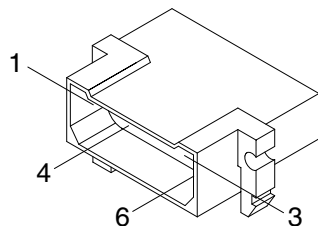
### 8) AMP 040 MULTILOCK CONNECTOR

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

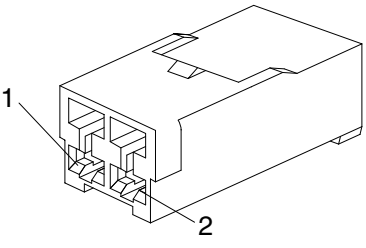
### 9) AMP 070 MULTILOCK CONNECTOR

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

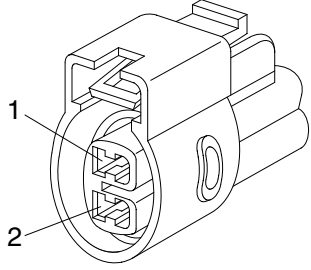
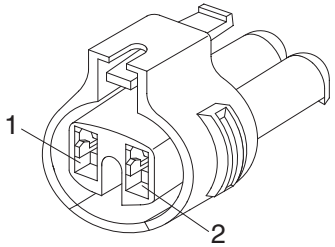
### 10) AMP FASTIN - FASTON CONNECTOR

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

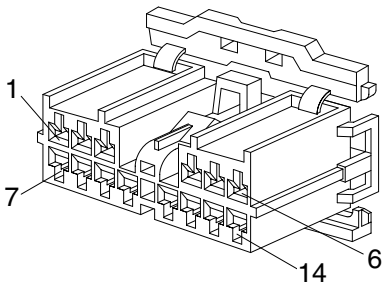
### 11) KET 090 CONNECTOR

| No. of pin | Receptacle connector (female)   | Plug connector (male) |
|------------|---|-----------------------|
| 2          |  <p data-bbox="710 683 837 705">MG610070</p> |                       |

### 12) KET 090 WP CONNECTORS

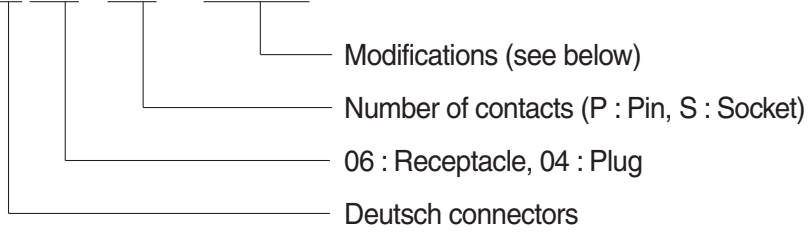
| No. of pin | Receptacle connector (female)   | Plug connector (male) |
|------------|---|-----------------------|
| 2          |  <p data-bbox="710 1288 837 1310">MG640605</p>  |                       |
| 2          |  <p data-bbox="710 1691 837 1713">MG640795</p> |                       |

### 13) KET SDL CONNECTOR

| No. of pin | Receptacle connector (female)   | Plug connector (male) |
|------------|---|-----------------------|
| 14         |  <p data-bbox="710 683 837 705">MG610406</p> |                       |

# 14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★☆☆



※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

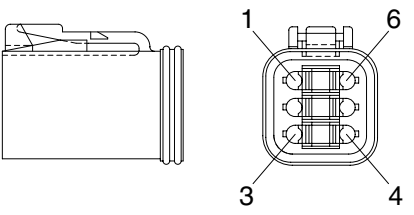
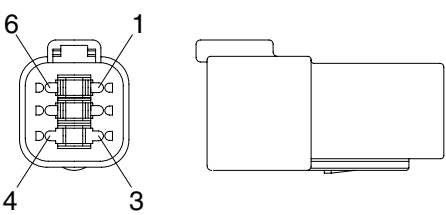
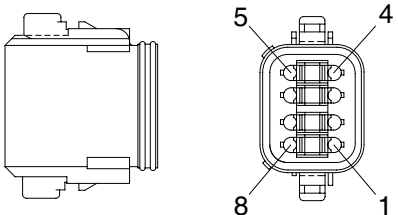
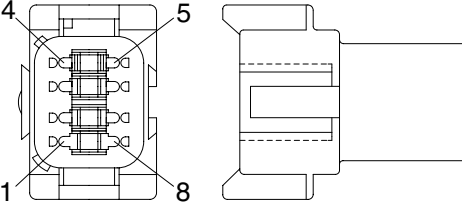
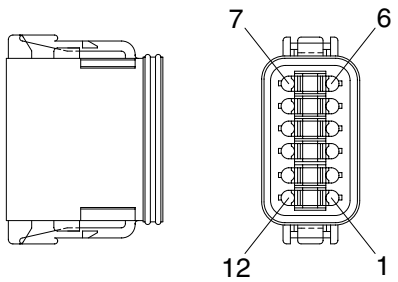
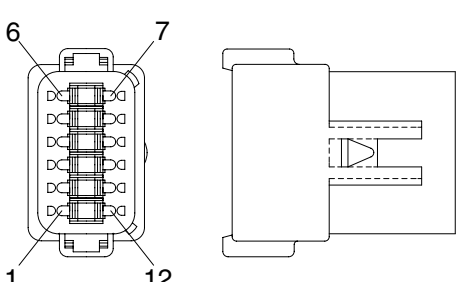
E005 : Combination - E004 & E003

EP04 : End cap

EP06 : Combination P012 & EP04

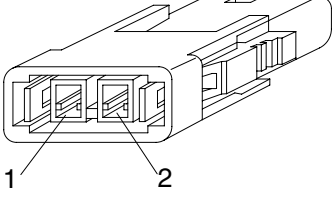
P012 : Front seal enhancement - connectors color to black for 2, 3, 4 & 6pin

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

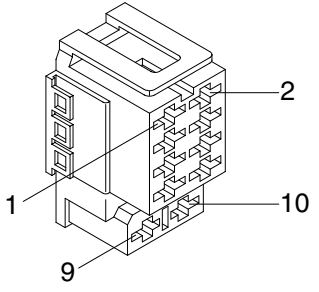
| No. of pin | Receptacle connector (female)   | Plug connector (male)  |
|------------|---|--|
| 6          |  <p style="text-align: center;">DT06-6S</p>    |  <p style="text-align: center;">DT04-6P</p>    |
| 8          |  <p style="text-align: center;">DT06-8S</p>    |  <p style="text-align: center;">DT04-8P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



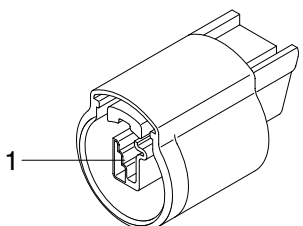
### 15) MOLEX 2CKTS CONNECTOR

| No. of pin | Receptacle connector (female)   | Plug connector (male) |
|------------|---|-----------------------|
| 2          |  <p data-bbox="702 683 837 705">35215-0200</p> |                       |

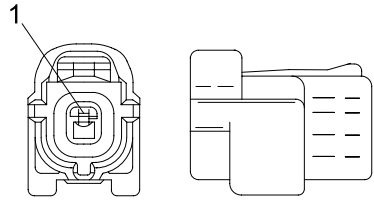
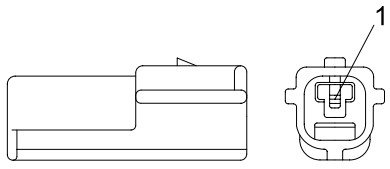
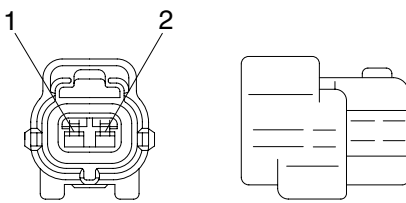
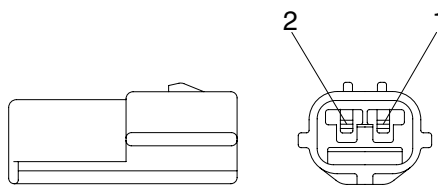
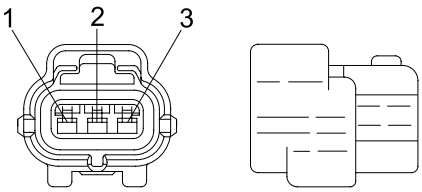
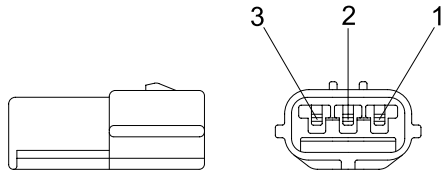
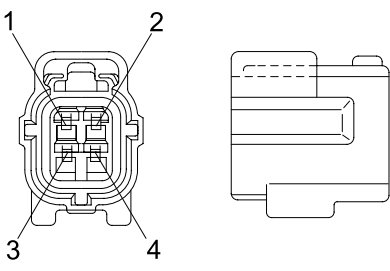
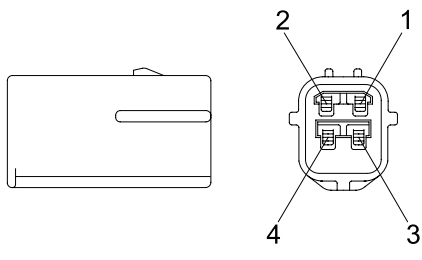
### 16) ITT SWF CONNECTOR

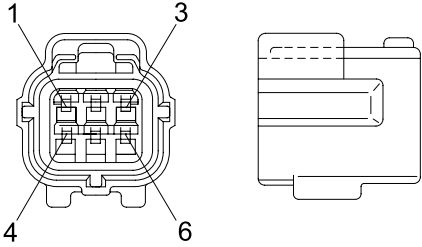
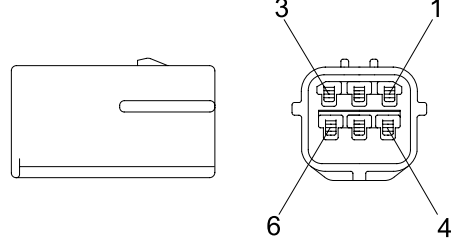
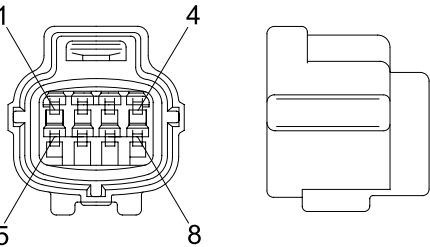
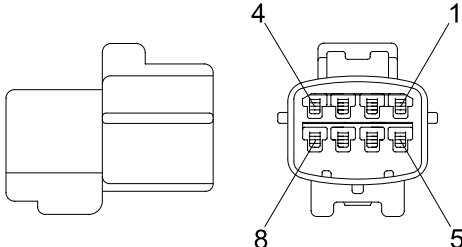
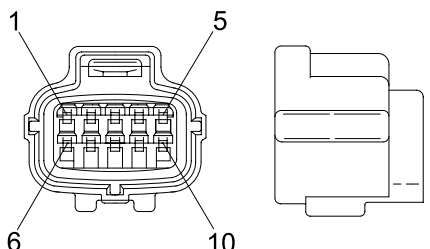
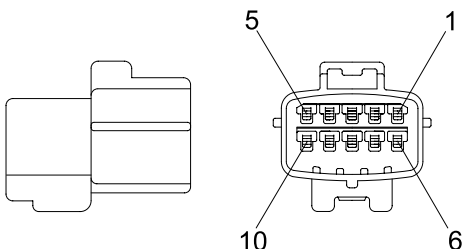
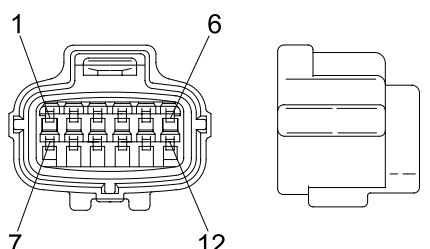
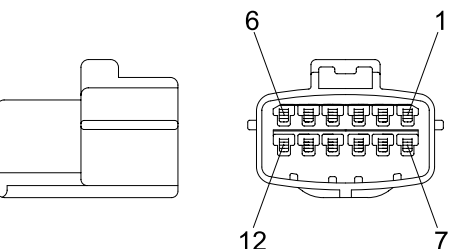
| No. of pin | Receptacle connector (female)   | Plug connector (male) |
|------------|---|-----------------------|
| 10         |  <p data-bbox="694 1288 837 1310">SWF593757</p> |                       |

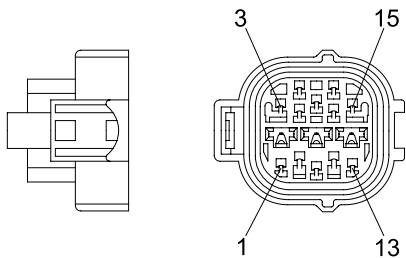
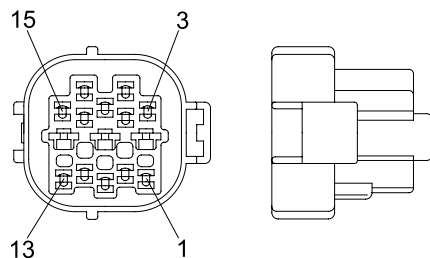
### 17) MWP NMWP CONNECTOR

| No. of pin | Receptacle connector (female)  | Plug connector (male) |
|------------|--|-----------------------|
| 1          |  <p data-bbox="686 1892 837 1915">NMWP01F-B</p> |                       |

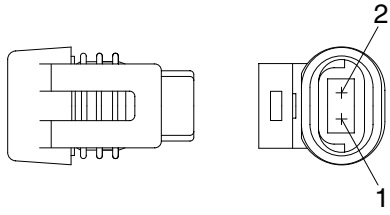
### 18) ECONOSEAL J TYPE CONNECTORS

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

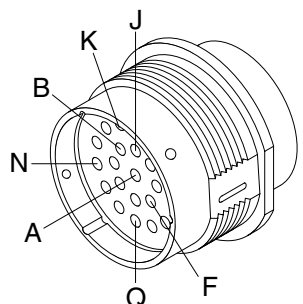
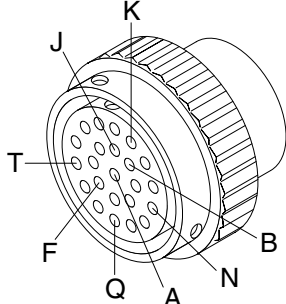
| No. of pin | Receptacle connector (female)  | Plug connector (male)   |
|------------|--|---|
| 6          |  <p data-bbox="686 638 837 672">S816-006002</p>     |  <p data-bbox="1236 638 1388 672">S816-106002</p>     |
| 8          |  <p data-bbox="686 1041 837 1075">S816-008002</p>   |  <p data-bbox="1236 1041 1388 1075">S816-108002</p>   |
| 10         |  <p data-bbox="686 1444 837 1478">S816-010002</p> |  <p data-bbox="1236 1444 1388 1478">S816-110002</p> |
| 12         |  <p data-bbox="686 1848 837 1881">S816-012002</p> |  <p data-bbox="1236 1848 1388 1881">S816-112002</p> |

| No. of pin | Receptacle connector (female)   | Plug connector (male)   |
|------------|---|---|
| 15         |  <p style="text-align: center;">368301-1</p> |  <p style="text-align: center;">2-85262-1</p> |

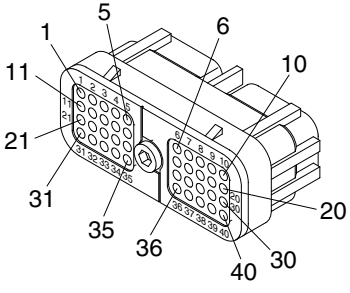
### 19) METRI-PACK TYPE CONNECTOR

| No. of pin | Receptacle connector (female)  | Plug connector (male) |
|------------|--|-----------------------|
| 2          |  <p style="text-align: center;">12040753</p> |                       |

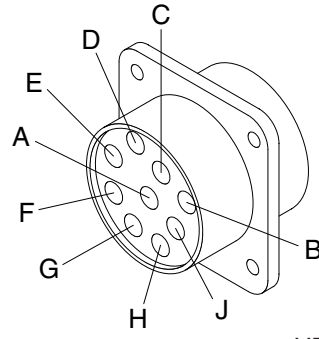
### 20) DEUTSCH HD30 CONNECTOR

| No. of pin | Receptacle connector (female)   | Plug connector (male)  |
|------------|---|--|
| 23         |  <p style="text-align: center;">HD36-24-23SN</p> |  <p style="text-align: center;">HD34-24-23PN</p> |

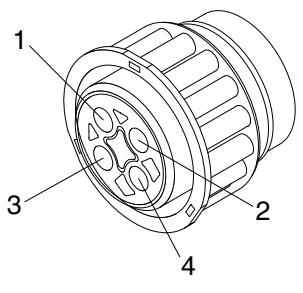
### 21) DEUTSCH MCU CONNECTOR

| No. of pin | Receptacle connector (Female)  | Plug connector (Male) |
|------------|--|-----------------------|
| 40         |  <p style="text-align: right;">DRC26-40SA/B</p> |                       |

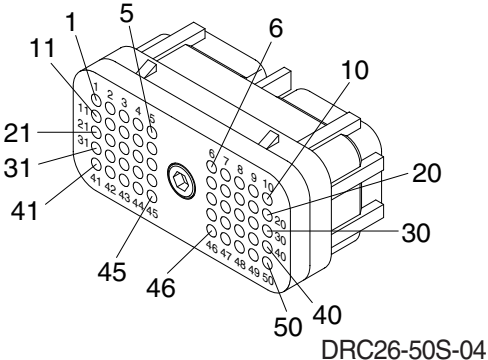
### 22) DEUTSCH SERVICE TOOL CONNECTOR

| No. of pin | Receptacle connector (Female)   | Plug connector (Male) |
|------------|---|-----------------------|
| 9          |  <p style="text-align: right;">HD10-9-96P</p> |                       |

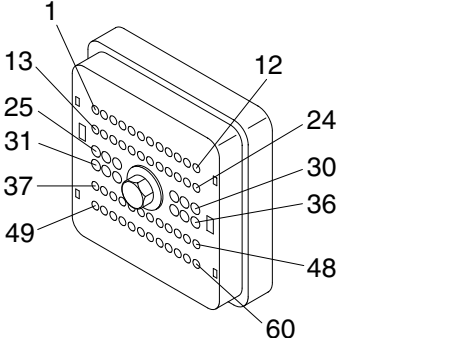
### 23) AMP FUEL WARMER CONNECTOR

| No. of pin | Receptacle connector (Female)  | Plug connector (Male) |
|------------|--|-----------------------|
| 4          |  <p style="text-align: right;">2-967325-3</p> |                       |

### 24) DEUTSCH ENGINE ECM CONNECTOR

| No. of pin | Receptacle connector (Female)  | Plug connector (Male) |
|------------|--|-----------------------|
| 50         |  <p style="text-align: right;">DRC26-50S-04</p> |                       |

### 25) DEUTSCH INTERMEDIATE CONNECTOR

| No. of pin | Receptacle connector (Female)   | Plug connector (Male) |
|------------|---|-----------------------|
| 60         |  <p style="text-align: right;">DRB16-60SAE-L018</p> |                       |