

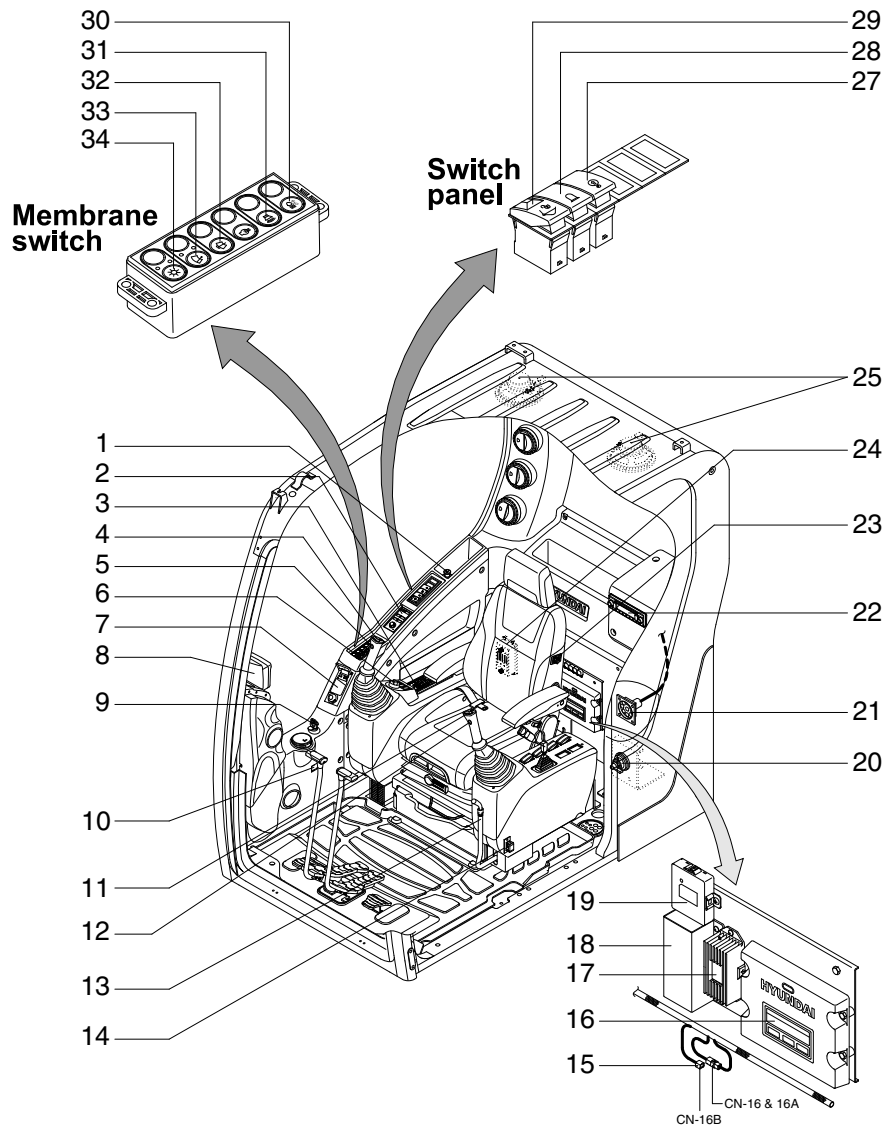
## SECTION 4 ELECTRICAL SYSTEM

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# SECTION 4 ELECTRICAL SYSTEM

## GROUP 1 COMPONENT LOCATION

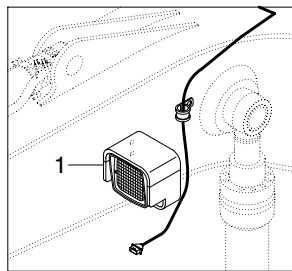
### 1. LOCATION 1



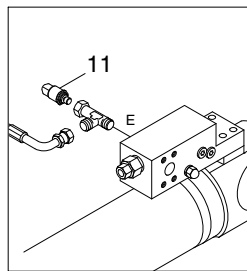
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- |                            |                                 |                        |
|----------------------------|---------------------------------|------------------------|
| 1 Cigar lighter            | 12 Power max switch             | 23 Heated seat switch  |
| 2 Remote controller        | 13 Safety lever                 | 24 Fuse box            |
| 3 Air conditioner switch   | 14 Emergency engine stop switch | 25 Speaker             |
| 4 Horn switch              | 15 Emergency engine connector   | 27 Overload switch     |
| 5 Breaker operation switch | 16 Machine control unit         | 28 Beacon switch       |
| 6 Accel dial switch        | 17 DC-DC converter              | 29 Quick clamp switch  |
| 7 Handsfree                | 18 Remote control unit          | 30 Cab light switch    |
| 8 Cluster                  | 19 Handsfree control unit       | 31 Travel alarm switch |
| 9 Start switch             | 20 Master switch                | 32 Washer switch       |
| 10 Hour meter              | 21 RS232 & J1939 service socket | 33 Wiper switch        |
| 11 One touch decel switch  | 22 Radio & USB player           | 34 Main light switch   |

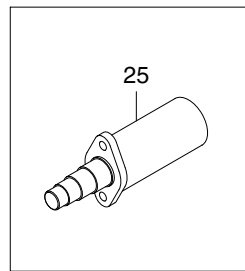
## 2. LOCATION 2



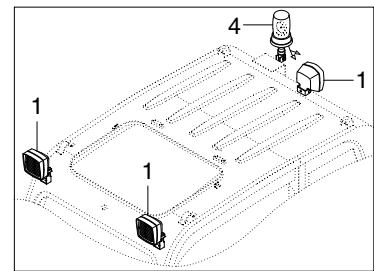
BOOM



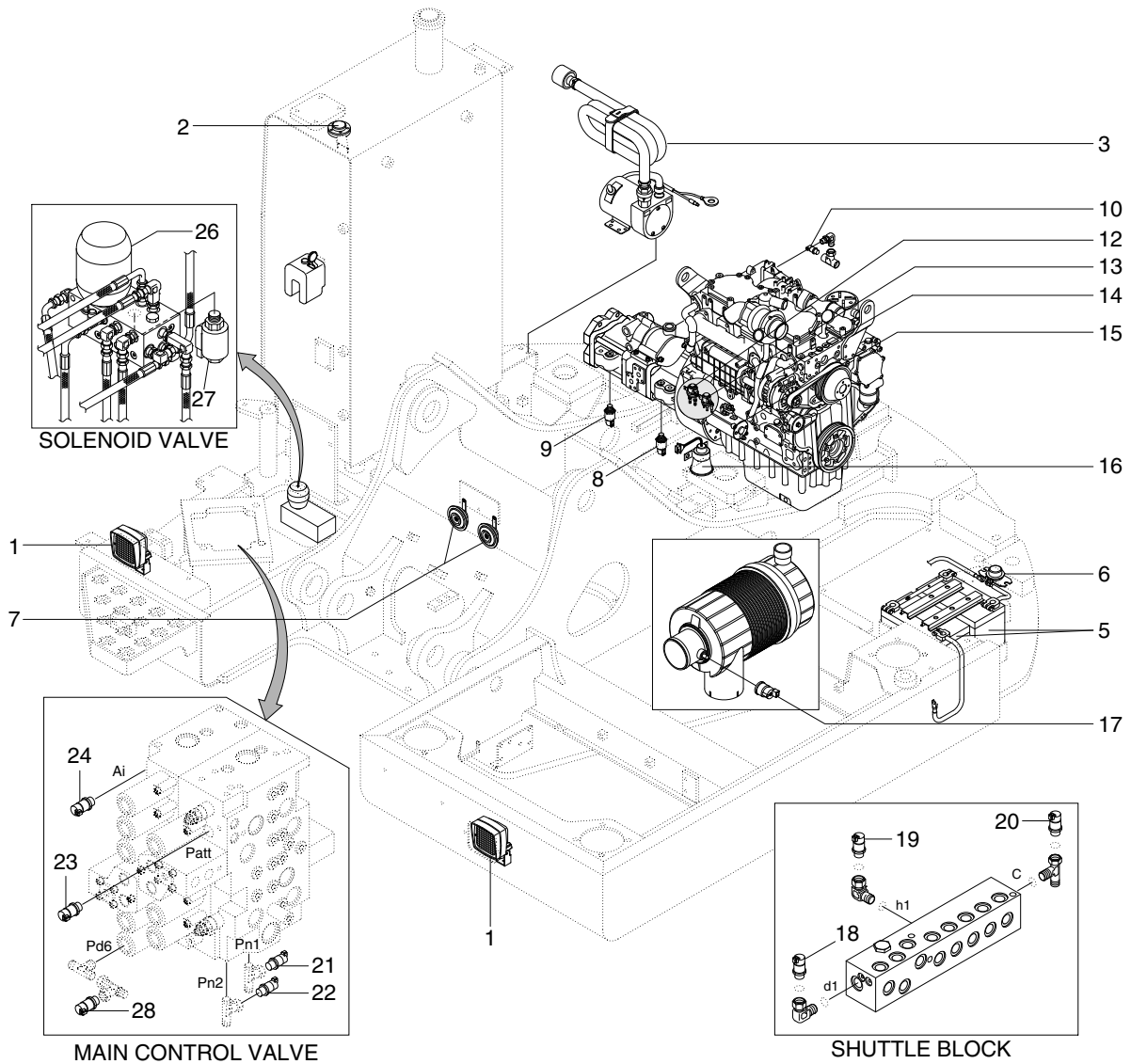
BOOM SAFETY VALVE



PUMP EPPR VALVE



CAB



SOLENOID VALVE

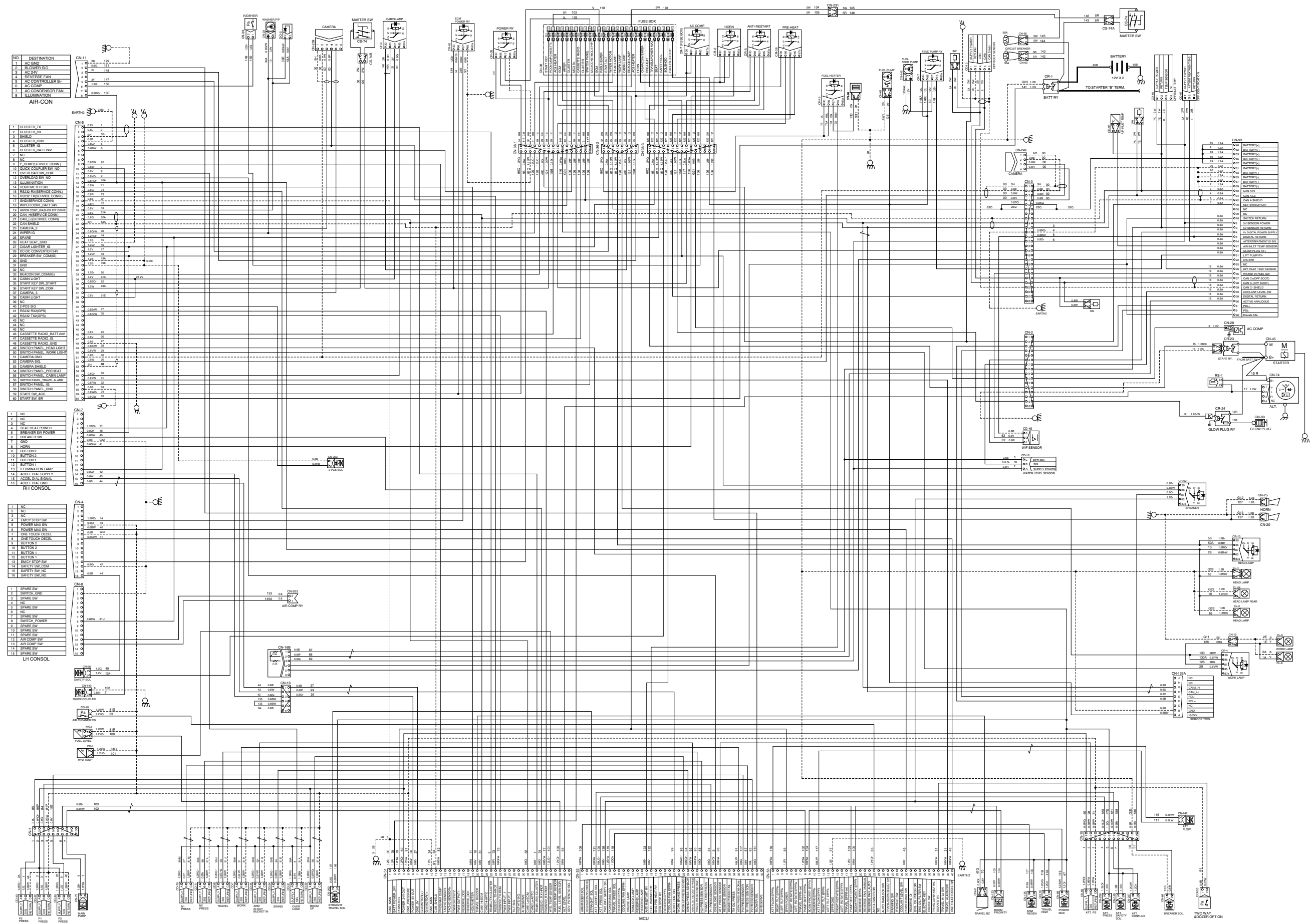
MAIN CONTROL VALVE

SHUTTLE BLOCK

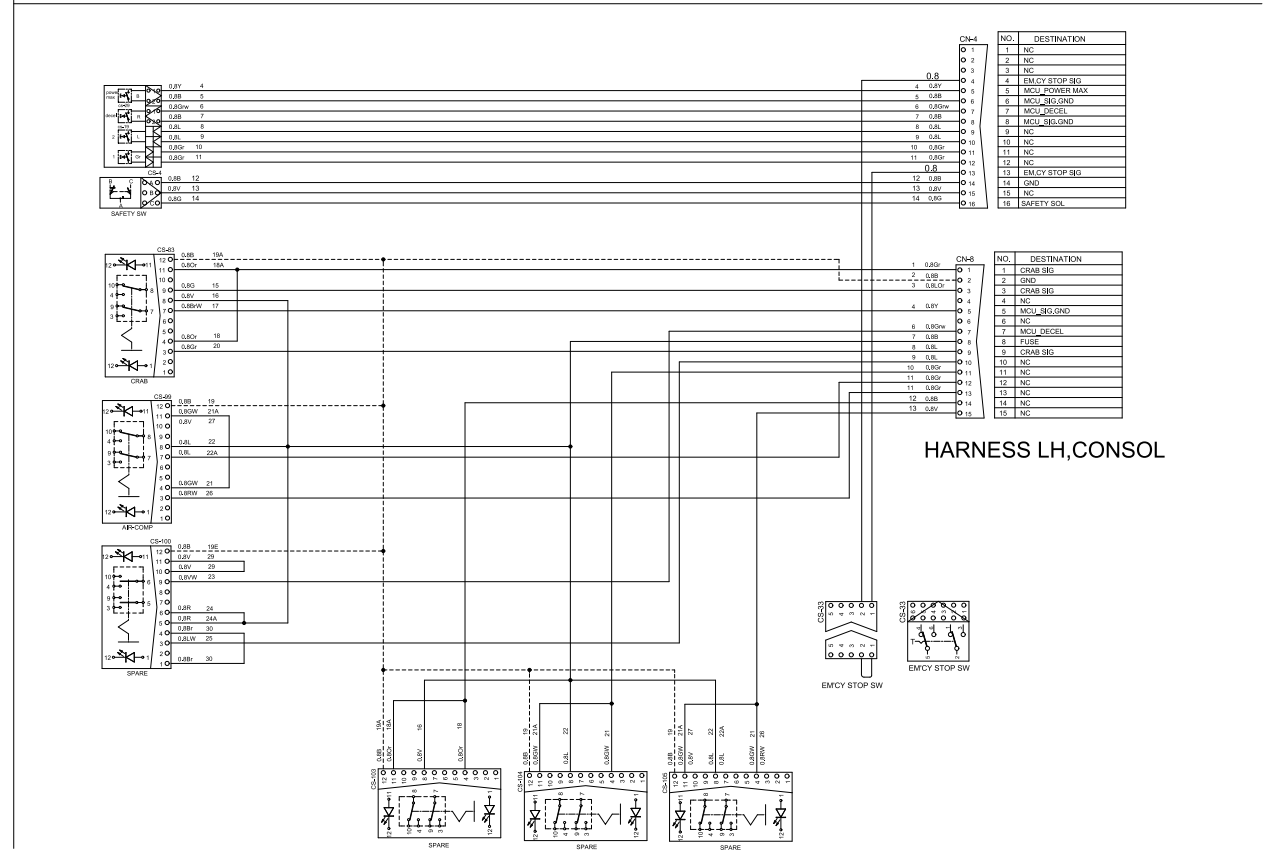
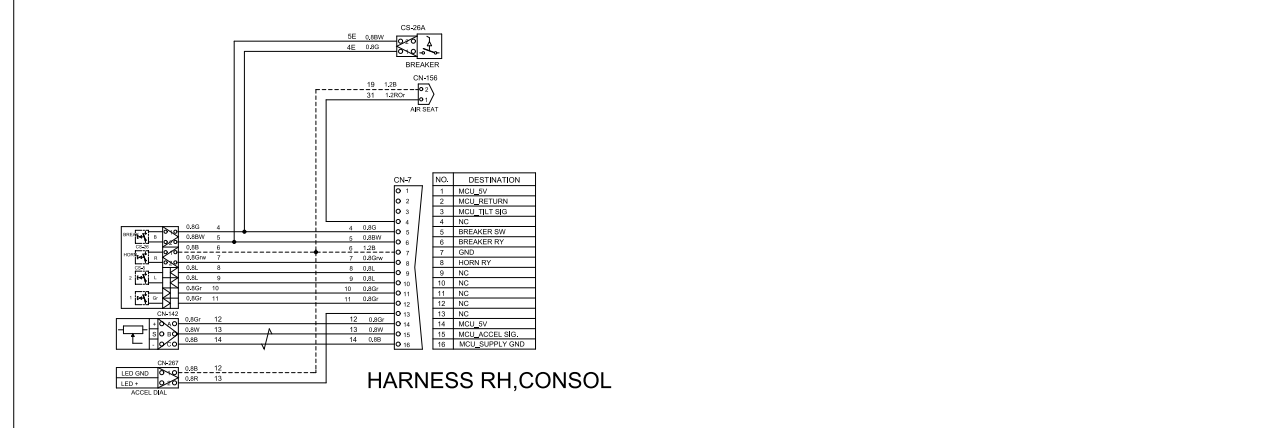
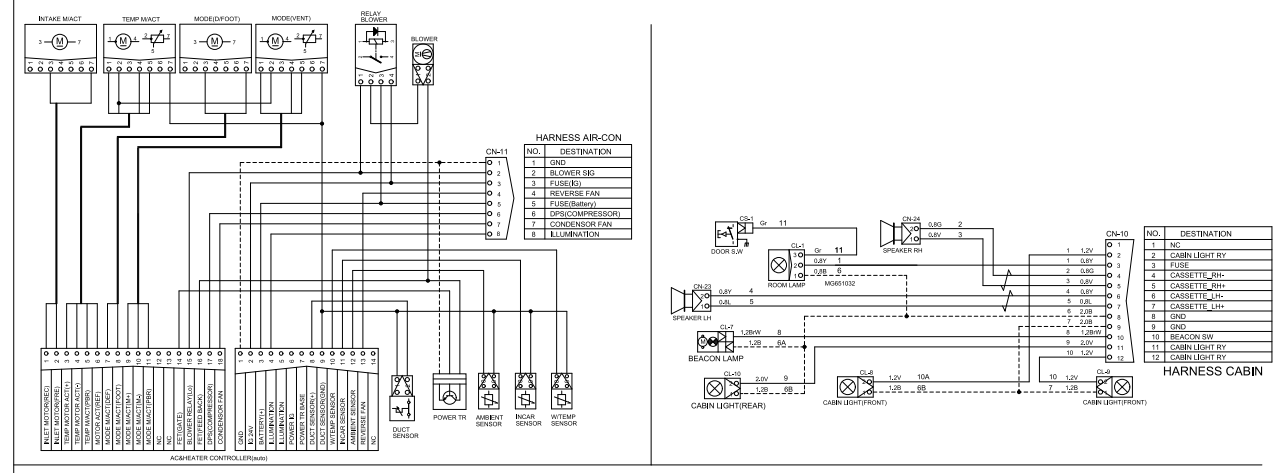
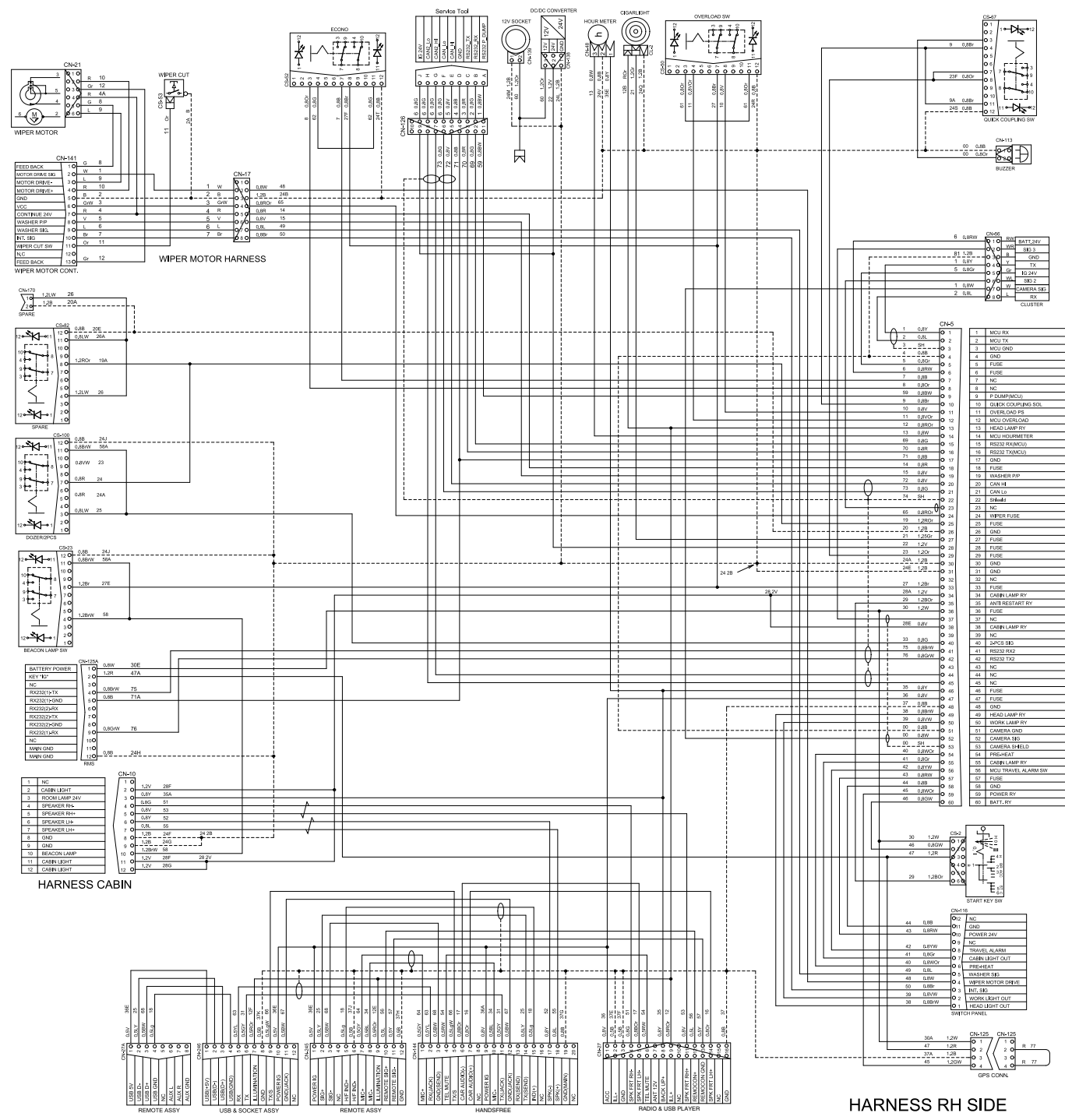
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- |                       |                                  |                               |
|-----------------------|----------------------------------|-------------------------------|
| 1 Lamp                | 11 Overload pressure sensor      | 21 Negative 1 pressure sensor |
| 2 Fuel sender         | 12 Start relay                   | 22 Negative 2 pressure sensor |
| 3 Fuel filler pump    | 13 Heater relay                  | 23 Attach pressure sensor     |
| 4 Beacon lamp         | 14 Alternator                    | 24 Travel pressure sensor     |
| 5 Battery             | 15 Start motor                   | 25 Pump EPPR valve            |
| 6 Battery relay       | 16 Travel alarm buzzer           | 26 Solenoid valve             |
| 7 Horn                | 17 Air cleaner switch            | 27 Boom priority EPPR valve   |
| 8 P1 pressure sensor  | 18 Arm/Bucket in pressure sensor | 28 Dozer pressure switch      |
| 9 P2 pressure sensor  | 19 Boom up pressure sensor       |                               |
| 10 P3 pressure sensor | 20 Swing pressure sensor         |                               |

GROUP 2 ELECTRICAL CIRCUIT(1/2)



ELECTRICAL CIRCUIT(2/2)



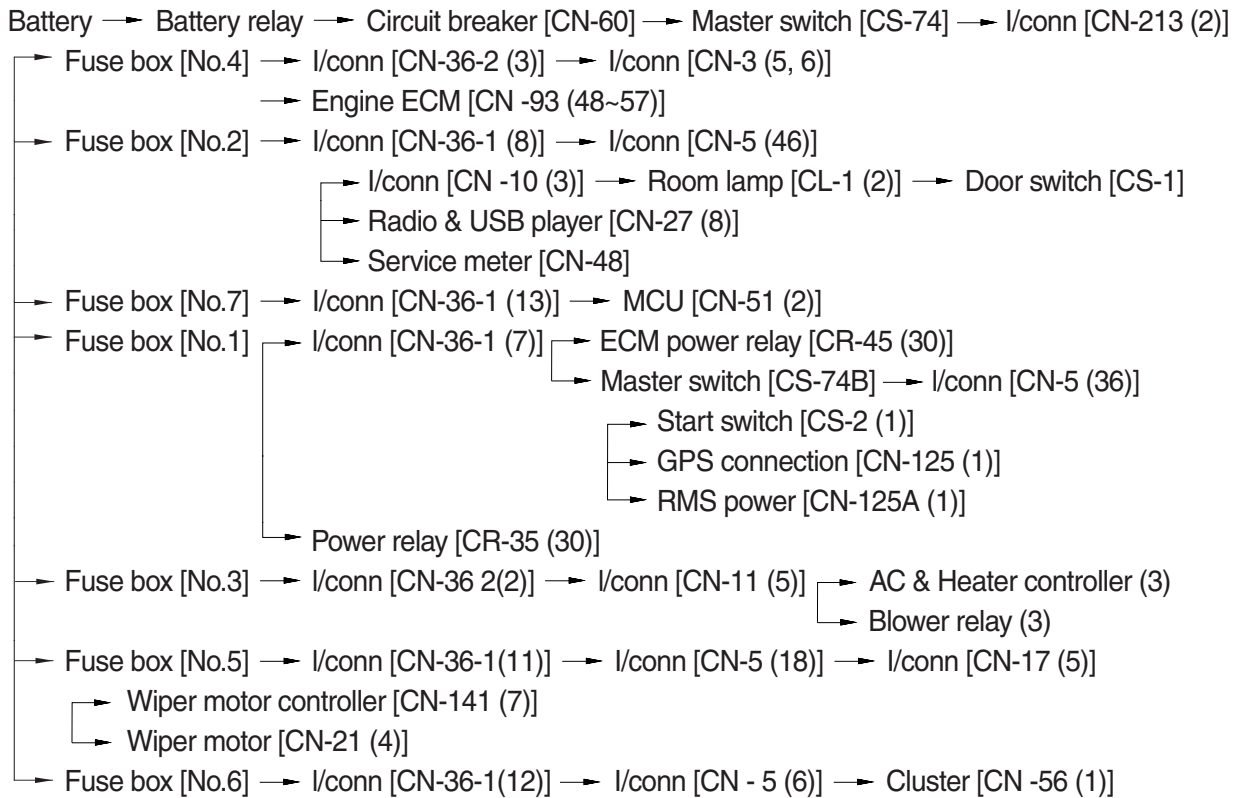
MEMORANDUM

HYUNDAI HEAVY INDUSTRIES CO., LTD  
CONSTRUCTION EQUIPMENT DIV.

## 1. POWER CIRCUIT

The negative terminal of battery is grounded to the machine chassis through master switch.  
When the start switch is in the OFF position, the current flows from the positive battery terminal as shown below.

### 1) OPERATING FLOW



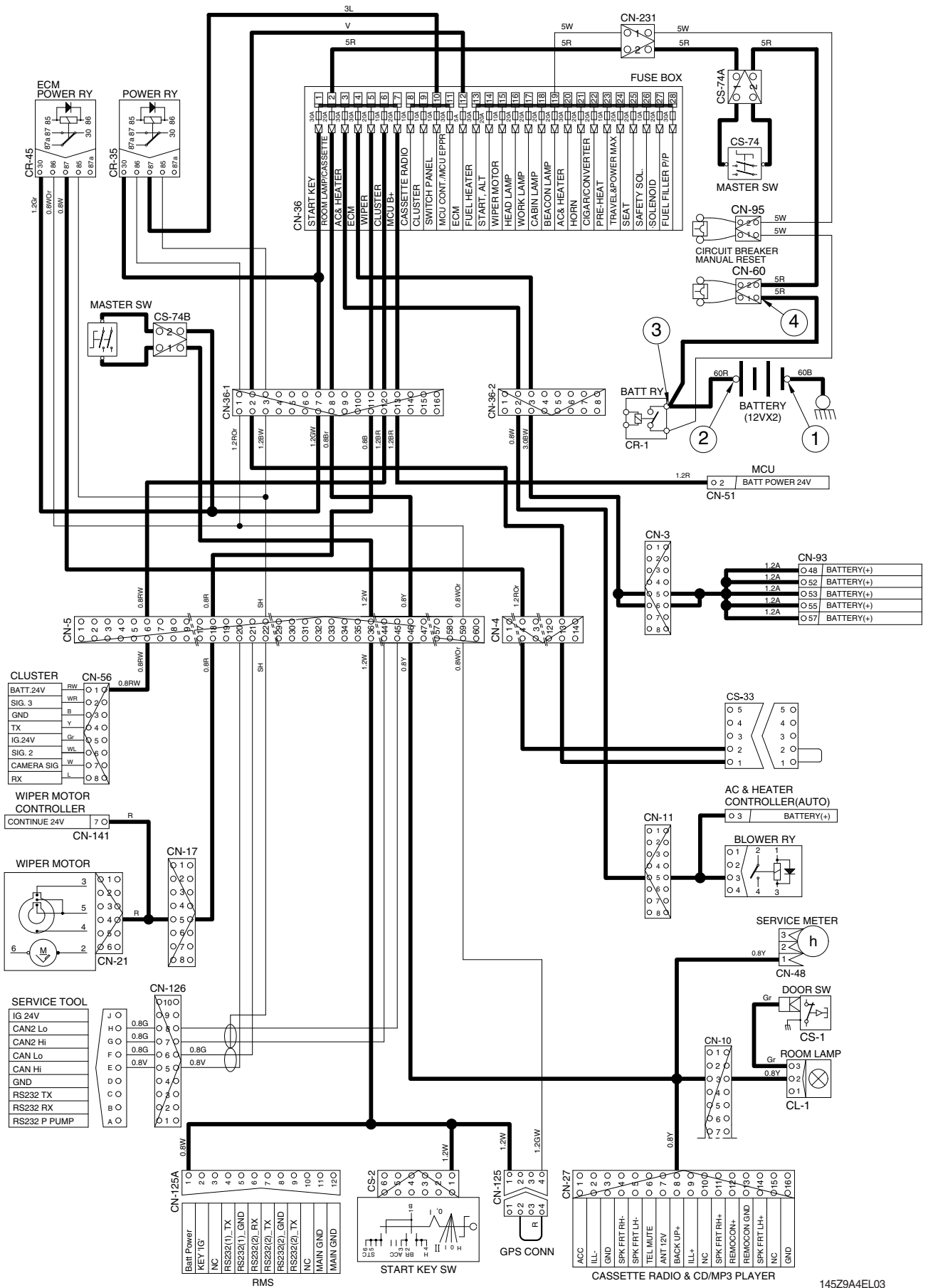
※ I/conn : Intermediate connector

### 2) CHECK POINT

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

※ GND : Ground

# POWER CIRCUIT



14529A4EL03



## 2. STARTING CIRCUIT

### 1) OPERATING FLOW

Battery(+) terminal → Battery relay [CR-1] → Circuit breaker [CN-60] → Master switch [CS-74]  
 → I/conn [CN-231 (2)] → Fuse box [No.1] → I/conn [CN-36-1 (7)] → Master switch [CS-74B]  
 → I/conn [CN-5(36)] → Start switch [CS-2(1)]

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

→ Start switch ON [CS-2 (2)] → I/conn [CN-5 (60)] → Battery relay [CR-1]  
 → Battery relay operating (all power is supplied with the electric component)  
 → Start switch ON [CS-2 (3)] → GPS connector [CN-125 (2) →(4)] → I/conn [CN-5 (59)]  
 → I/conn [CN-36-1 (1)] → Power relay [CR-35 (86) → (87)] → Fuse box [No.10]  
 → ECM power relay [CR-45 (86) → (87)] → I/conn [CN-4 (4)] → Emergency engine stop switch  
 [CS-33 (2) → (1)] → I/conn [CN-4 (13)] → I/conn [CN-36-1 (2)] → Fuse box [No.12]

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

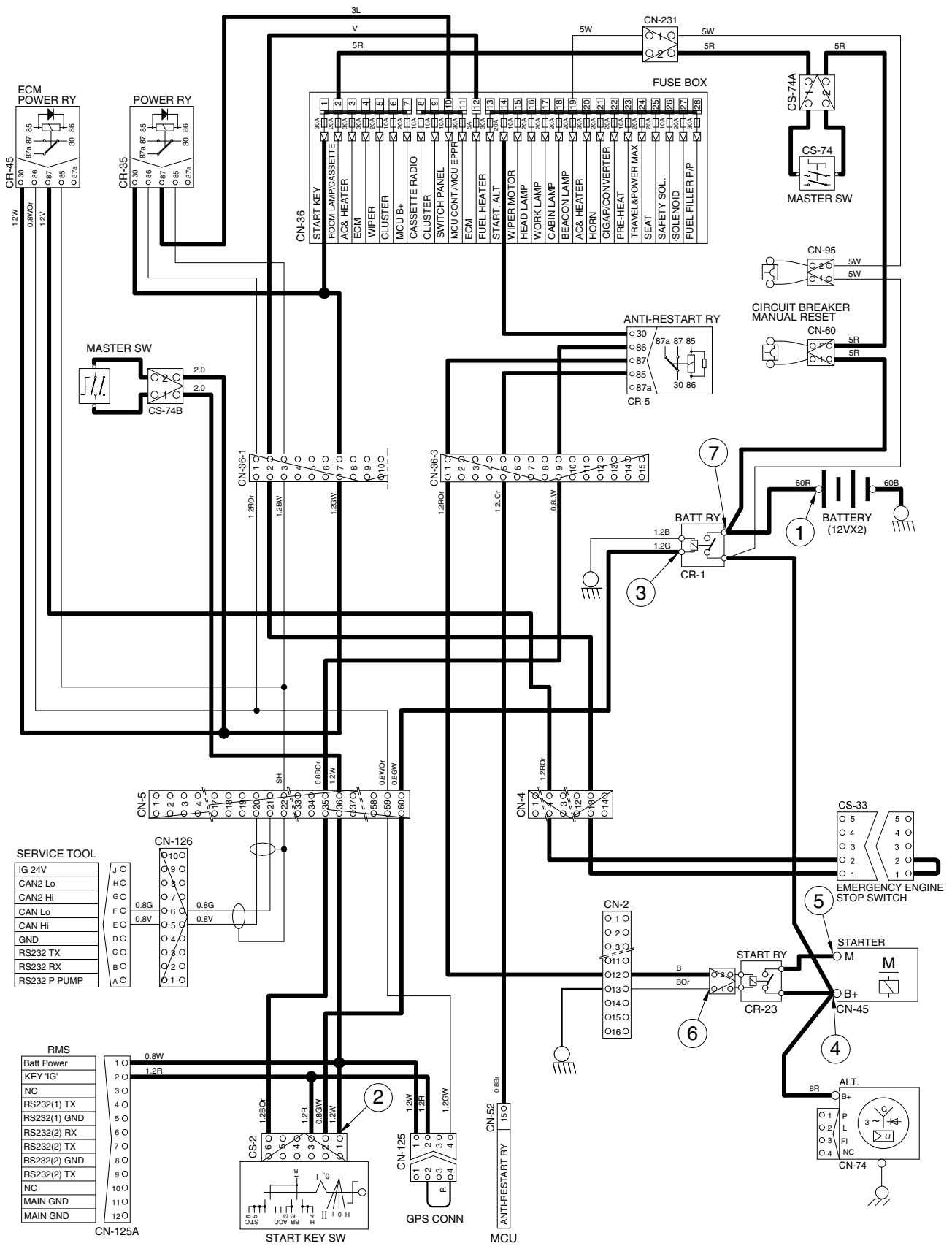
Start switch START [CS-2 (6)] → I/conn [CN-5 (35)] → I/conn [CN-36-3 (9)] → Anti-restart relay  
 [CR-5 (86) → (87)] → I/conn [CN-36-3 (1)] → I/conn [CN-2 (12)] → Start relay [CR-23]

### 2) CHECK POINT

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

※ GND : Ground

# STARTING CIRCUIT



145Z9A4EL04

### 3. CHARGING CIRCUIT

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

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

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

#### 1) OPERATING FLOW

##### (1) Warning flow

Alternator "I" terminal [CN-74 (2)] → I/conn [CN-2 (14)] → MCU alternator voltage level [CN-51 (39)]  
Cluster charging warning lamp (Via serial interface)

##### (2) Charging flow

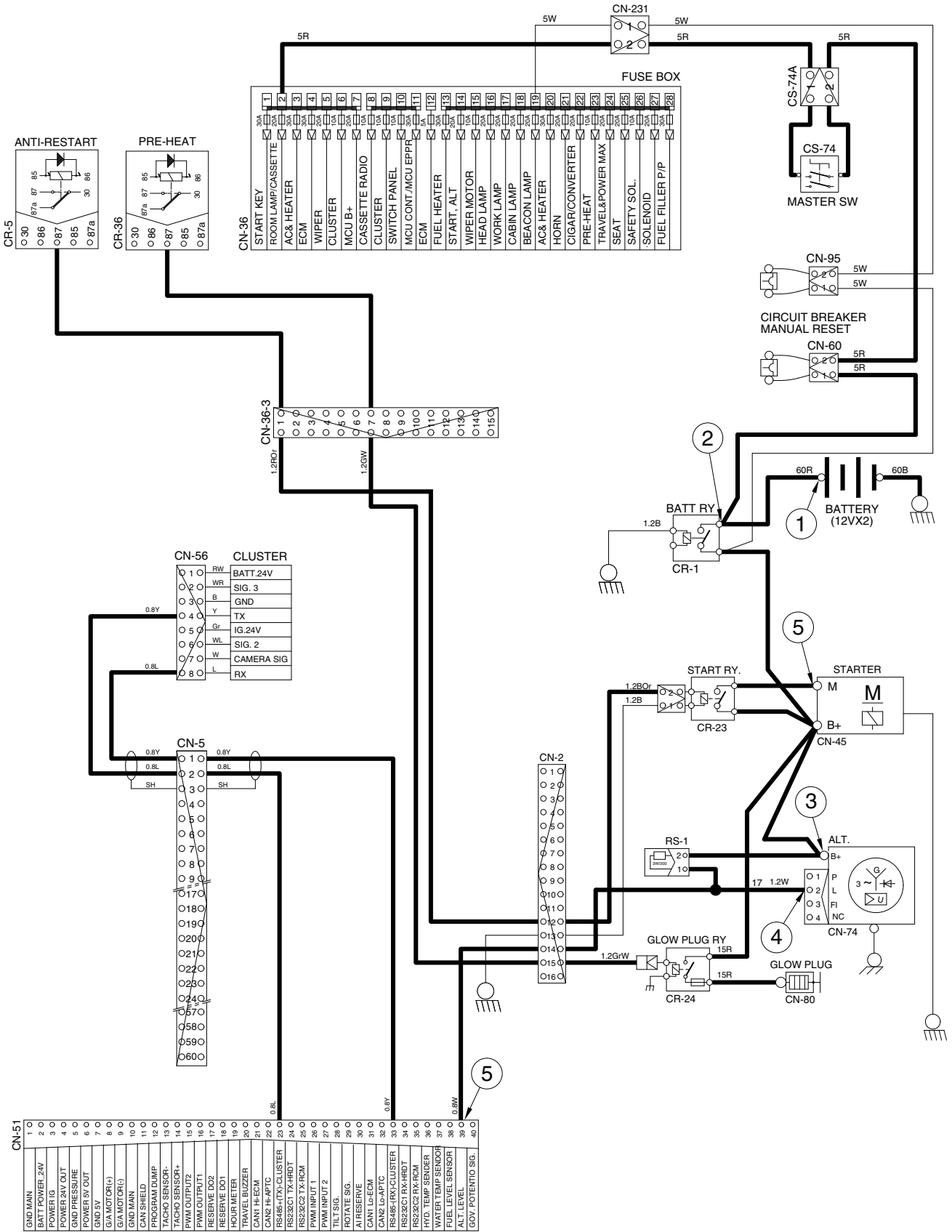
Alternator "B+" terminal → Battery relay(M8) → Battery(+) terminal  
→ Circuit breaker [CN-60] → Master switch [CS-74]  
→ I/conn [CN-231 (2)] → Fuse box

#### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
Run	ON	① - GND (battery voltage) ② - GND (battery relay) ③ - GND (alternator B <sup>+</sup> terminal) ④ - GND (alternator I terminal) ⑤ - GND (MCU)	20~30V

※ GND : Ground

# CHARGING CIRCUIT



## 4. HEAD AND WORK LIGHT CIRCUIT

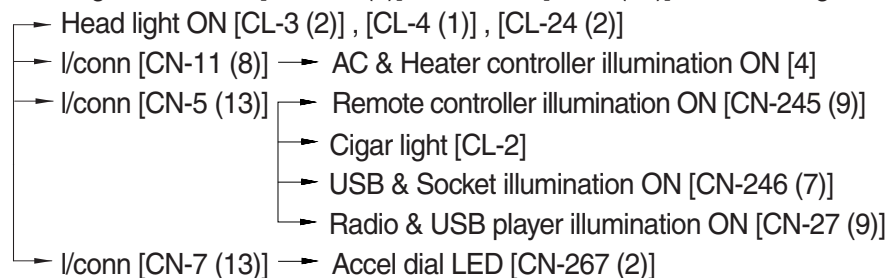
### 1) OPERATING FLOW

Fuse box (No.16) → I/conn [CN-36-2 (4)] → Head light relay [CR-13 (30,86)]

Fuse box (No.17) → I/conn [CN-36-2 (5)] → Work light relay [CR-4 (30,86)]

#### (1) Head light switch ON

Head light switch ON [CN-116 (1)] → I/conn [CN-5 (49)] → Head light relay [CR-13 (85) → (87)]



#### (2) Work light switch ON

Work light switch ON [CN-116 (2)] → I/conn [CN-5 (50)] → Work light relay [CR-4 (85) → (87)]

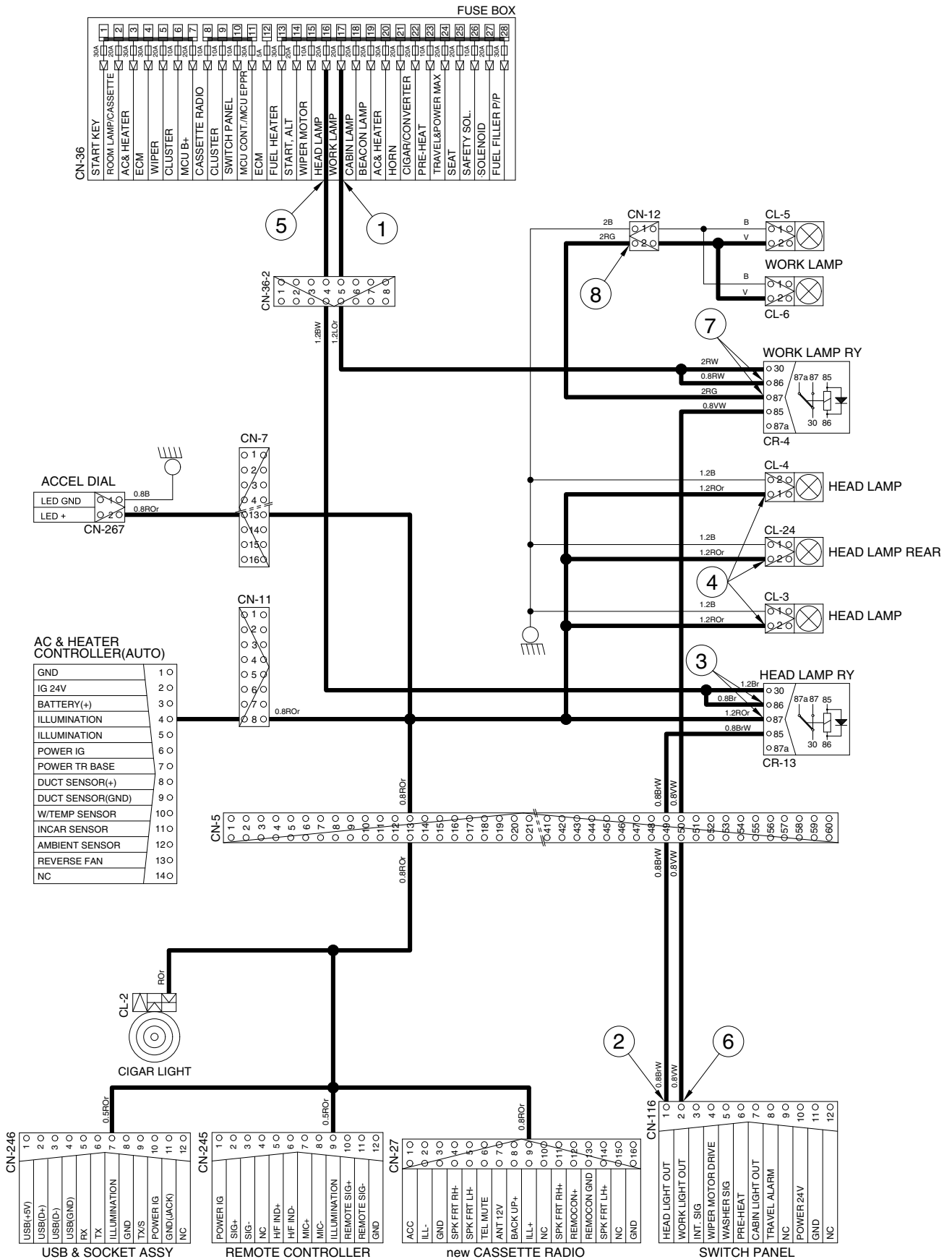
→ I/conn [CN-12 (2)] → Work light ON [CL-5 (2), CL-6 (2)]

### 2) CHECK POINT

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

※ GND : Ground

# HEAD AND WORK LIGHT CIRCUIT



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## 5. BEACON LAMP AND CAB LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.19) → I/conn [CN-36-1 (5)] → I/conn [CN-5 (33)] → Beacon lamp switch [CN-23 (8)]

Fuse box (No.18) → I/conn [CN-36-2 (6)] → Cab light relay [CR-9 (30, 86)]

#### (1) Beacon lamp switch ON

Beacon lamp switch ON [CS-23 (4)] → Switch indicator lamp ON [CS-23 (11)]  
 → I/conn [CN-10 (10)] → Beacon lamp ON [CL-7]

#### (2) Cab light switch ON

Cab light switch ON [CN-116 (7)] → I/conn [CN-5 (55)] → Cabin lamp relay [CR-9 (85) → (87)]

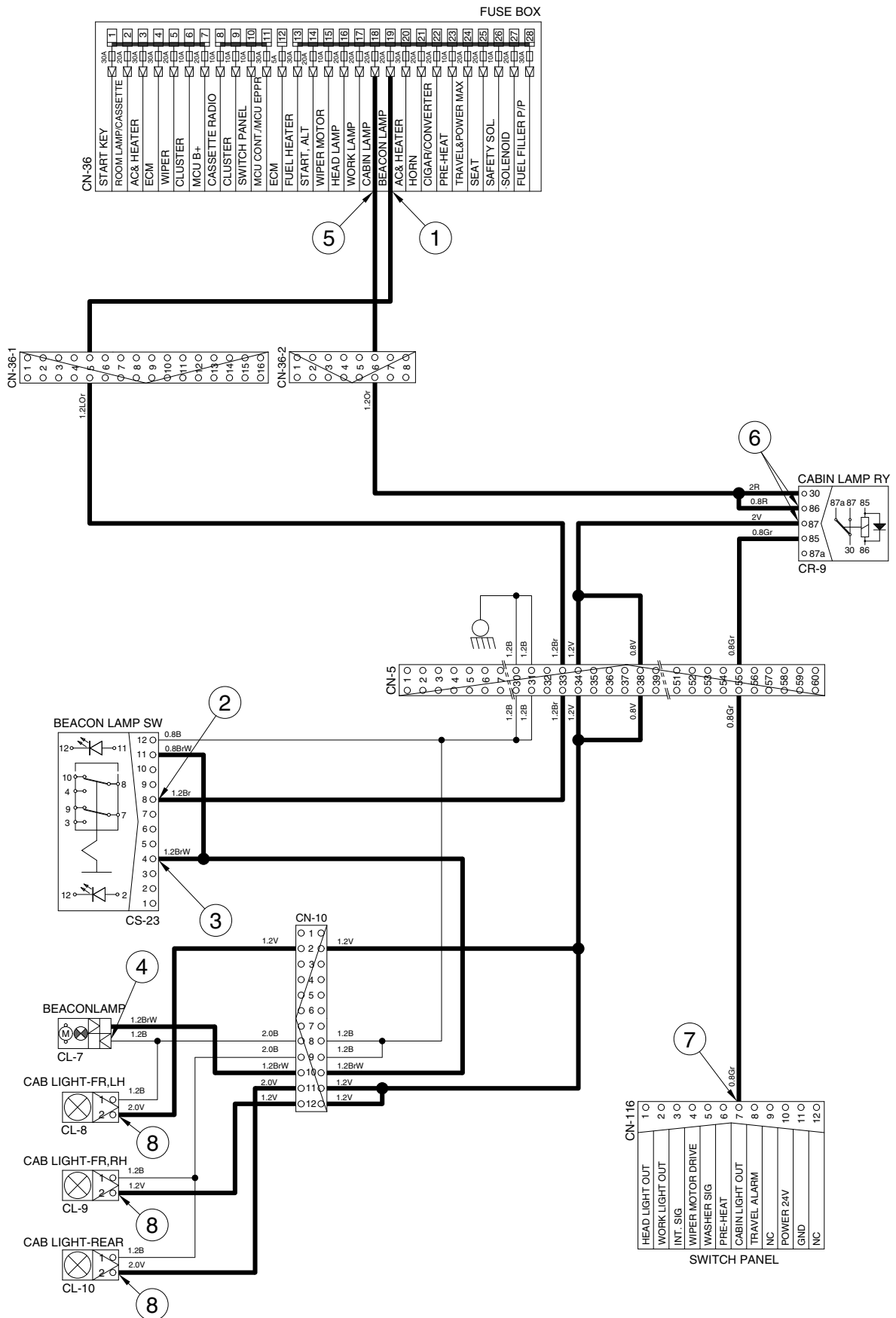
→ I/conn [CN-5 (34, 38)] → I/conn [CN-10 (2)] → Front cab light ON [CL-8 (2)]  
 → I/conn [CN-10 (12)] → Front cab light ON [CL-9 (2)]  
 → I/conn [CN-10 (11)] → Rear cab light ON [CL-10 (2)]

### 2) CHECK POINT

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

※ GND : Ground

# BEACON LAMP AND CAB LIGHT CIRCUIT



145Z9A4EL07



## 6. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

#### (1) Key switch ON

Fuse box (No.10) → I/conn [CN-36-1 (16)] → I/conn [CN-5 (57)] → Switch panel [CN-116 (10)]

Fuse box (No.5) → I/conn [CN-36-1 (11)] → I/conn [CN-5 (18)] → I/conn [CN-17 (5)]

└─ Wiper motor controller [CN-141(7)]

└─ Wiper motor [CN-21(4)]

Fuse box (No.15) → I/conn [CN-36-1 (4)] → I/conn [CN-5 (24)] → I/conn [CN-17 (4)] →  
 └─ Wiper motor controller [CN-141 (6)]  
 └─ Washer pump [CN-22 (2)]

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

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

#### (3) Wiper switch ON : 2nd step (continual)

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

#### (4) Washer switch ON

Washer switch ON [CN-116 (5)] → I/conn [CN-17 (7)] → Wiper motor controller [CN-141 (9) → (8)]  
 → I/conn [CN-17 (6)] → I/conn [CN-5 (19)] → Washer pump [CN-22 (1)] → Washer operating

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

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

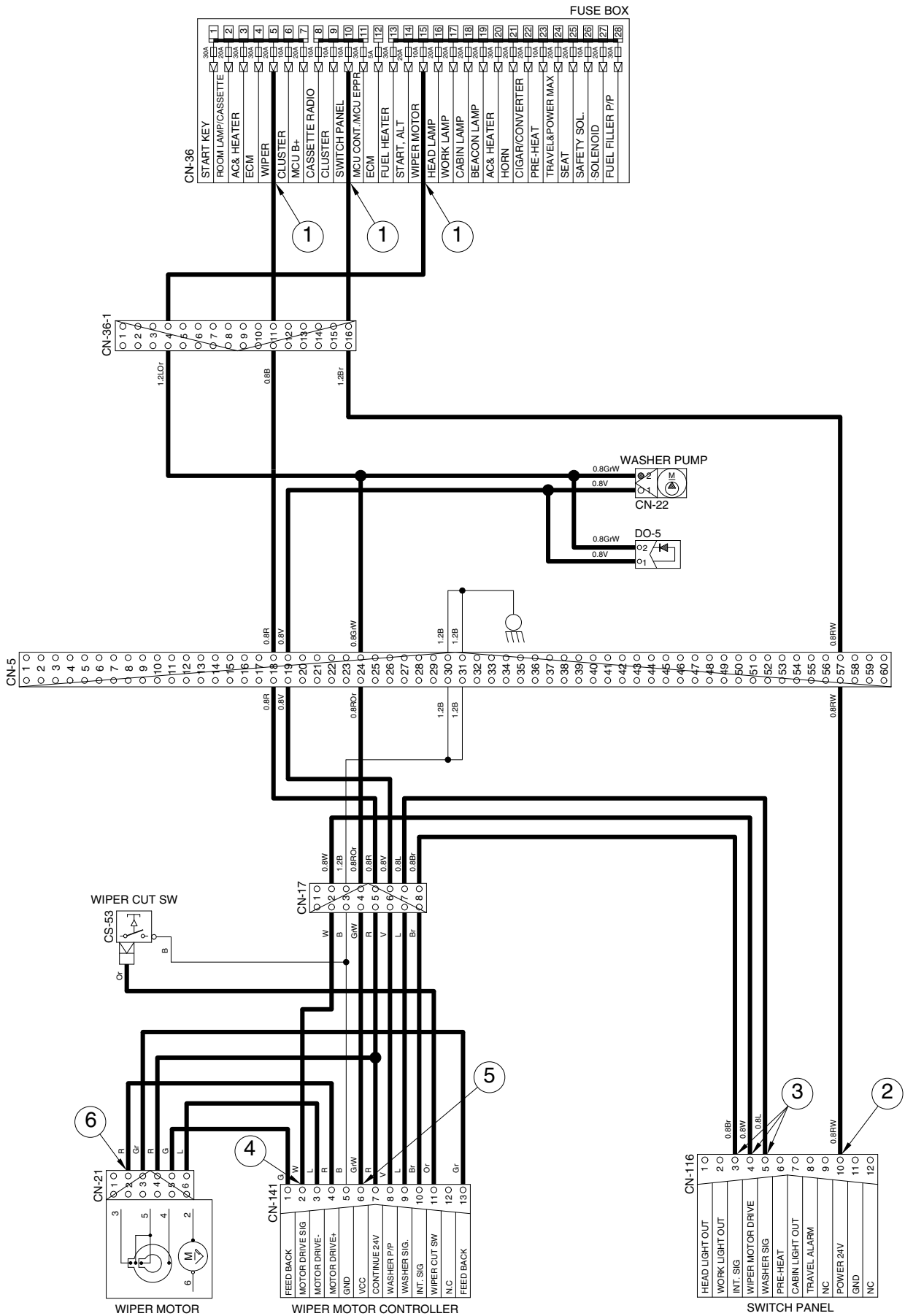
Switch OFF [CN-116 (4)] → Wiper motor parking position by wiper motor controller

### 2) CHECK POINT

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

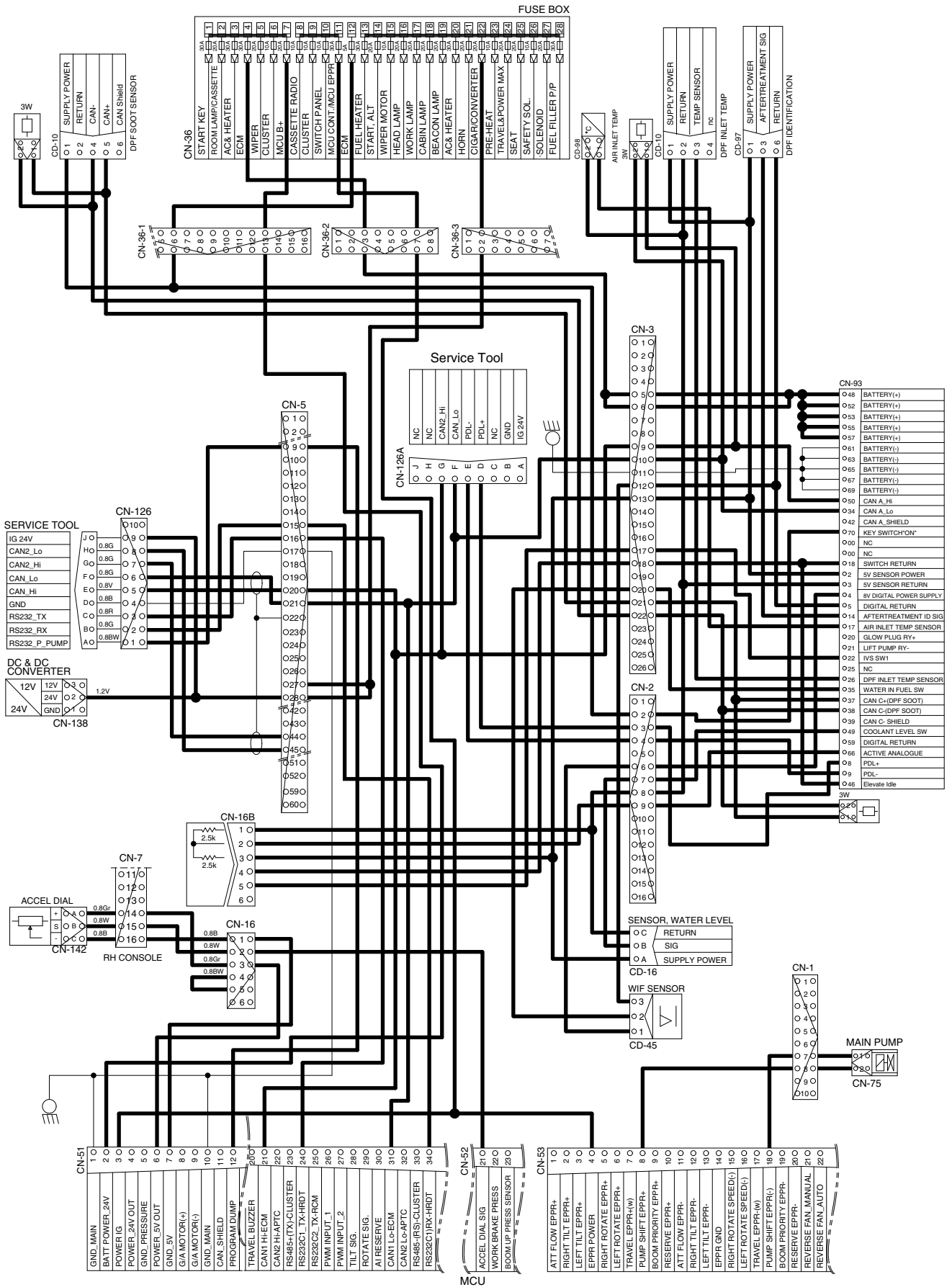
※ GND : Ground

# WIPER AND WASHER CIRCUIT



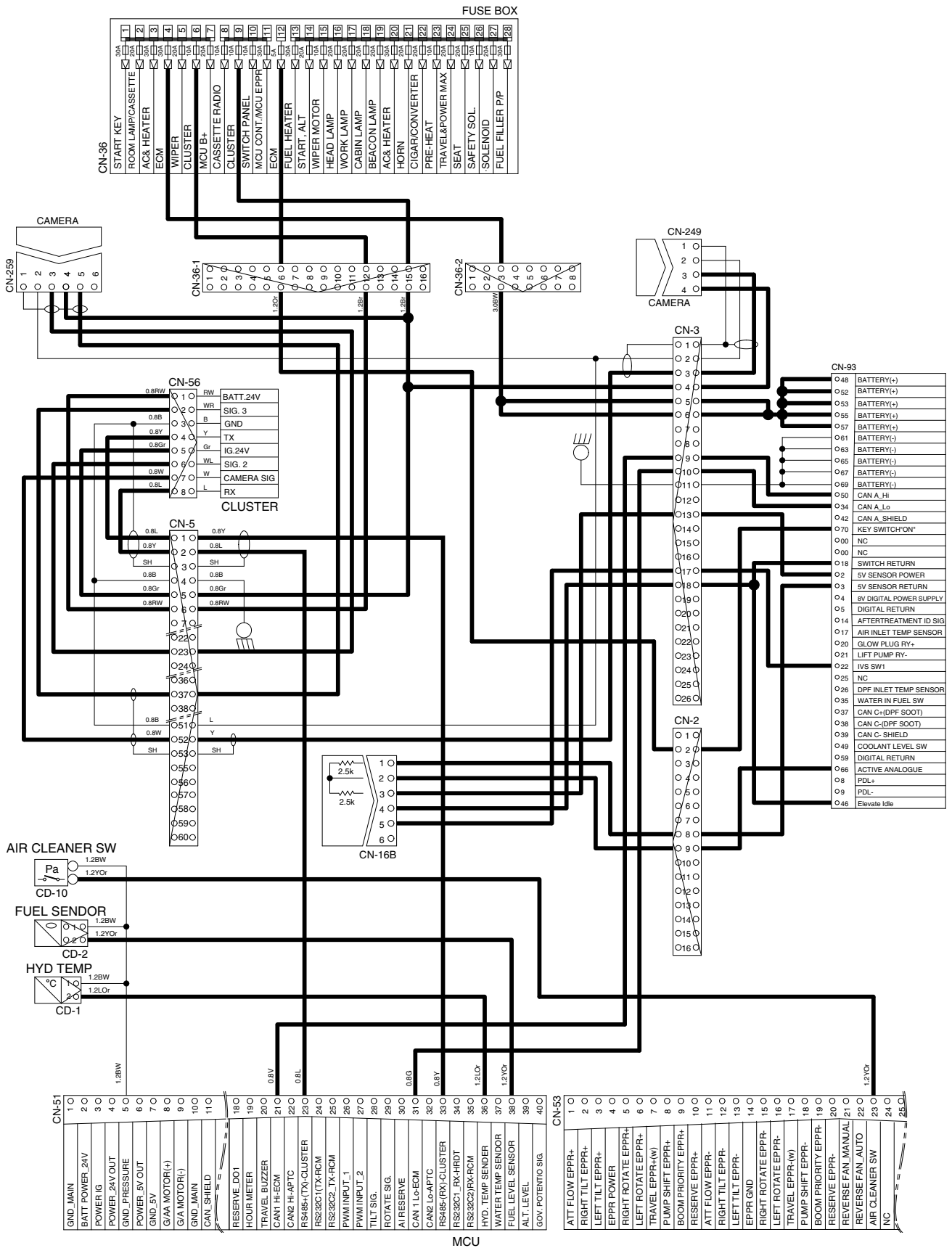
14529A4EL08

# CONTROLLER CIRCUIT

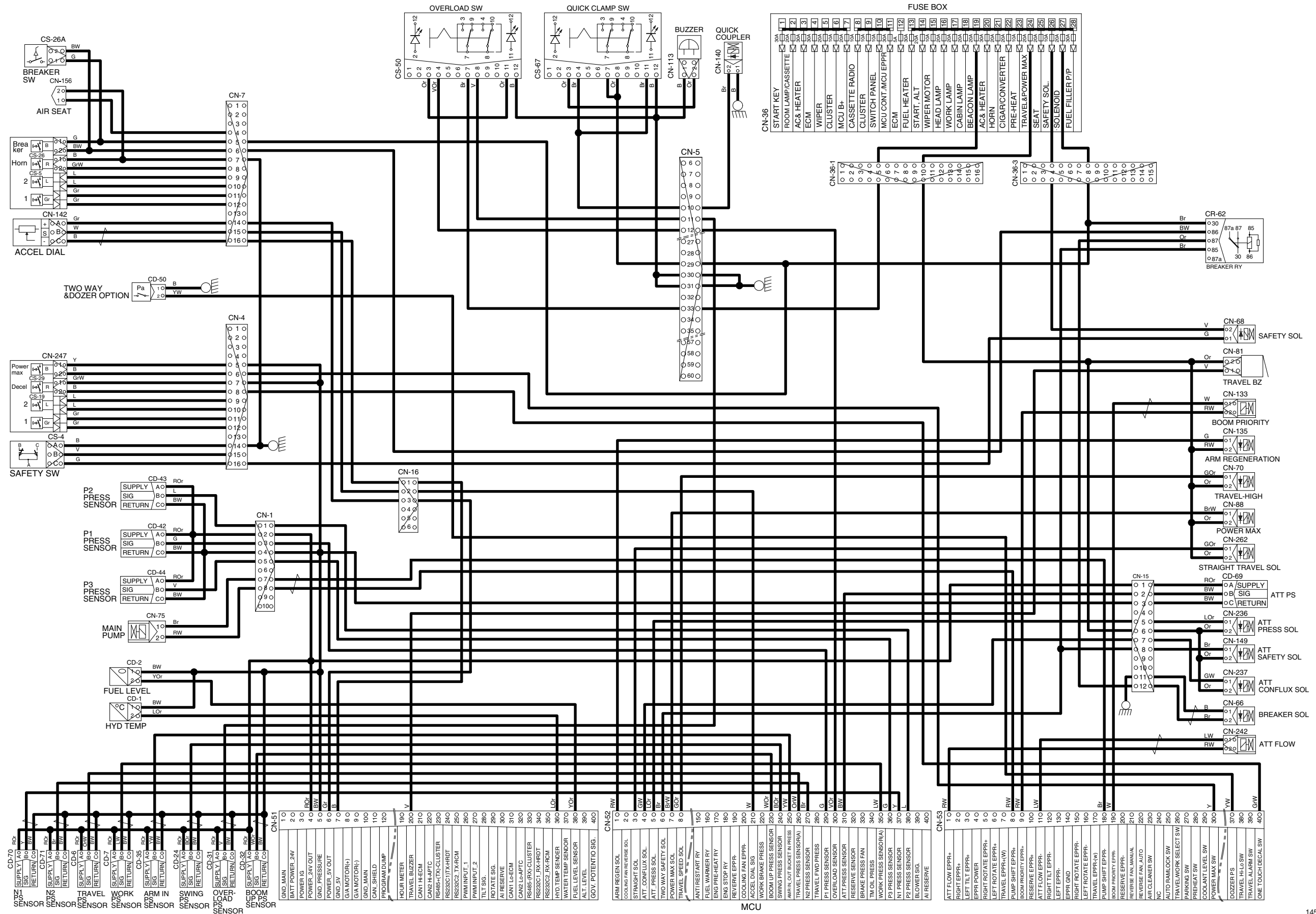


14529A4EL09

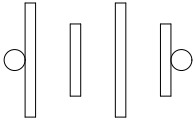
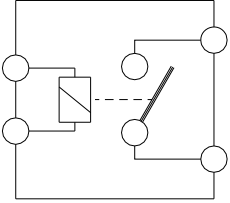
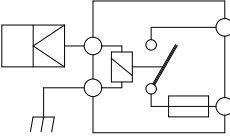
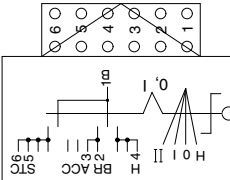
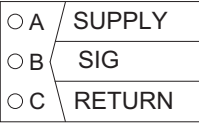
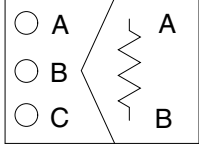
# MONITORING CIRCUIT

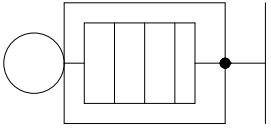
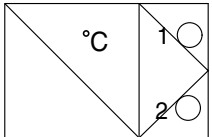
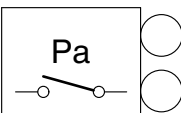
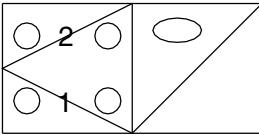
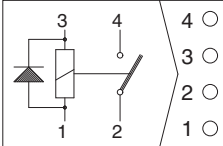
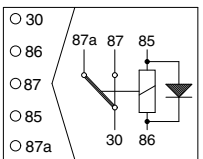


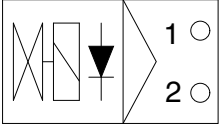
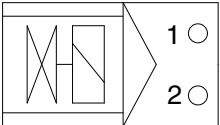
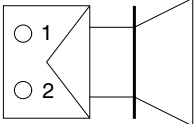
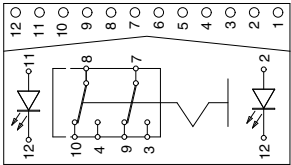
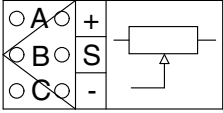
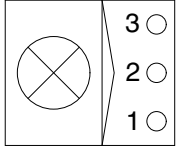
# ELECTRIC CIRCUIT FOR HYDRAULIC



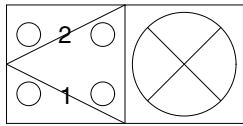
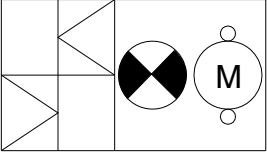
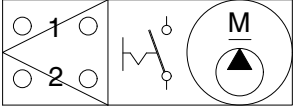
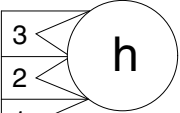
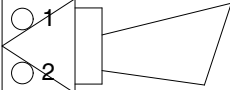
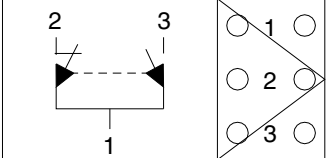
## GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

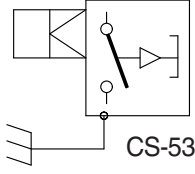
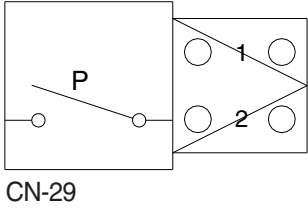
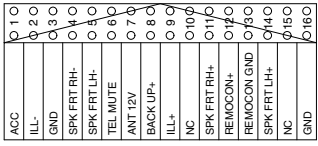
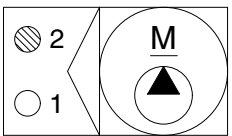
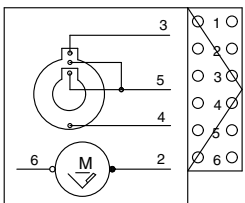
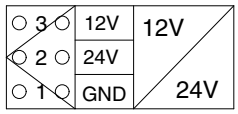
Part name	Symbol	Specifications	Check
Battery		12V × 80Ah (2EA)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Battery relay	 <p style="text-align: center;">CR-1</p>	Rated load : 24V 100A (continuity) 1000A (30seconds)	※ Check coil resistance(M4 to M4) Normal : About 50 Ω ※ Check contact Normal : ∞ Ω
Glow plug relay	 <p style="text-align: center;">CR-24</p>	24V 200A	※ Check contact Normal : 0.942 Ω (For terminal 1-GND)
Start key	 <p style="text-align: center;">CS-2</p>	B-BR : 24V 1A B-ACC : 24V 10A B-ST : 24V 40A	※ Check contact OFF : ∞ Ω (for each terminal) ON : 0 Ω (for terminal 1-3 and 1-2) START : 0 Ω (for terminal 1-5)
Pressure sensor	 <p style="text-align: center;">                     CD-6 CD-7 CD-16 CD-24                      CD-31 CD-32 CD-35 CD-42                      CD-43 CD-44 CD-69 CD-70                 </p>	8~30V	※ Check contact Normal : 0.1 Ω
Resistor	 <p style="text-align: center;">CN-173</p>	4W	※ Check resistance A-B : 120 Ω

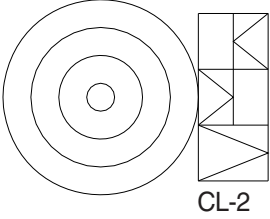
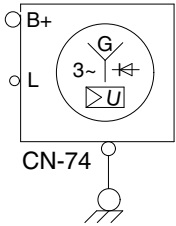
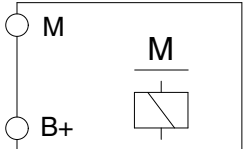
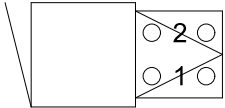
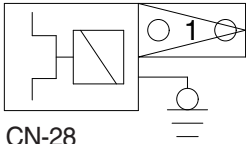
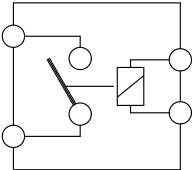
Part name	Symbol	Specifications	Check
Glow plug	 CN-80	24V 200A	※ Check resistance 0.25~0.12 Ω
Temperature sensor (hydraulic)	 CD-1	-	※ Check resistance 50°C : 804 Ω 80°C : 310 Ω 100°C : 180 Ω
Air cleaner pressure switch	 CD-10	(N.O TYPE)	※ Check contact High level : ∞ Ω Low level : 0 Ω
Fuel sender	 CD-2	-	※ Check resistance Full : 50 Ω    6/12 : 350 Ω 11/12 : 100 Ω    5/12 : 400 Ω 10/12 : 150 Ω    4/12 : 450 Ω 9/12 : 200 Ω    3/12 : 500 Ω 8/12 : 250 Ω    2/12 : 550 Ω 7/12 : 300 Ω    1/12 : 600 Ω Empty warning : 700 Ω
Relay (air con blower)		24V 20A	※ Check resistance Normal : About 200 Ω (for terminal 1-3) 0 Ω (for terminal 2-4)
Relay	 CR-2 CR-4 CR-5 CR-7 CR-9 CR-13 CR-35 CR-36 CR-45 CR-46 CR-62	24V 16A	※ Check resistance Normal : About 160 Ω (for terminal 85-86) 0 Ω (for terminal 30-87a) ∞ Ω (for terminal 30-87)

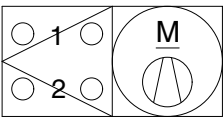
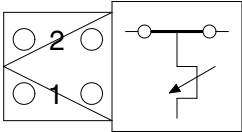
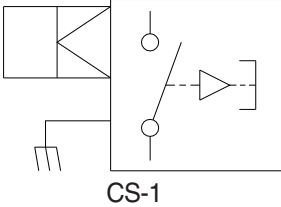
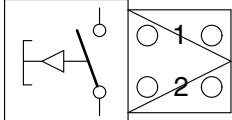
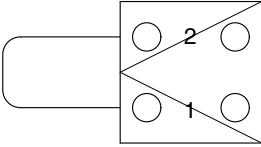
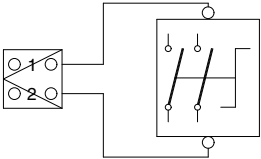
Part name	Symbol	Specifications	Check
Solenoid valve	 <p>CN-66 CN-68 CN-70 CN-88 CN-135 CN-140 CN-149 CN-236 CN-237 CN-262 CN-263</p>	24V 1A	<p>※ Check resistance Normal : 15~25 Ω (for terminal 1-2)</p>
EPPR valve	 <p>CN-75 CN-133 CN-242</p>	700mA	<p>※ Check resistance Normal : 15~25 Ω (for terminal 1-2)</p>
Speaker	 <p>CN-23(LH) CN-24(RH)</p>	20W	<p>※ Check resistance Normal : A few Ω</p>
Switch (locking type)	 <p>CS-23 CS-50 CS-52 CS-67 CS-82 CS-83 CS-99 CS-100 CS-103 CS-104 CS-105</p>	24V 8A	<p>※ Check contact Normal ON : 0 Ω (for terminal 3-7, 4-8) ∞ Ω (for terminal 7-9, 8-10) OFF : ∞ Ω (for terminal 3-7, 4-8) 0 Ω (for terminal 7-9, 8-10)</p>
Accel dial	 <p>CN-142</p>	-	<p>※ Check resist Normal : About 5k Ω (for terminal A-C)</p> <p>※ Check voltage Normal : About 5V (for terminal A-C) : 2~4.5V (for terminal C-B)</p>
Room lamp	 <p>CL-1</p>	24V 10W	<p>※ Check disconnection Normal : 1.0 Ω ON : 0 Ω (For terminal 1-2) ∞ Ω (For terminal 1-3) OFF : ∞ Ω (For terminal 1-2) 0 Ω (For terminal 1-3)</p>

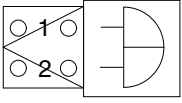
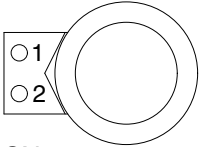
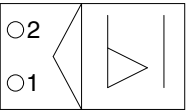


Part name	Symbol	Specifications	Check
Head lamp, Work lamp, Cab lamp	 <p>CL-3 CL-4 CL-5 CL-6 CL-8 CL-9 CL-10 CL-24</p>	24V 65W (H3 Type)	※ Check disconnection Normal : 1.2 Ω
Beacon lamp	 <p>CL-7</p>	21V 70W (H1 Type)	※ Check disconnection Normal : A few Ω
Fuel filler pump	 <p>CN-61</p>	24V 10A 35 l /min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

Part name	Symbol	Specifications	Check
Wiper cut switch	 <p>CS-53</p>	24V (N.O TYPE)	※ Check contact Normal : 0 Ω (one pin to ground)
Receiver dryer	 <p>CN-29</p>	24V 2.5A	※ Check contact Normal : ∞ Ω
Radio & USB player	 <p>CN-27</p>	24V 2A	※ Check voltage 20~25V (for terminal 1-3, 3-8)
Washer pump	 <p>CN-22</p>	24V 3.8A	※ Check contact Normal : 10.7 Ω (for terminal 1-2)
Wiper motor	 <p>CN-21</p>	24V 2A	※ Check disconnection Normal : 7 Ω (for terminal 2-6)
DC/DC Converter	 <p>CN-138</p>	12V 3A	24V (1-2) 12V (1-3)

Part name	Symbol	Specifications	Check
Cigar lighter	 <p>CL-2</p>	24V 5A 1.4W	※ Check coil resistance Normal : About 1M Ω ※ Check contact Normal : ∞ Ω Operating time : 5~15sec
Alternator	 <p>CN-74</p>	24V 55A	※ Check contact Normal : 0 Ω (for terminal B <sup>+</sup> -I) Normal : 24~27.5V
Starter	 <p>CN-45</p>	Denso 24V 4.5kW	※ Check contact Normal : 0.1 Ω
Travel alarm	 <p>CN-81</p>	24V 0.5A	※ Check contact Normal : 5.2 Ω
Aircon compressor	 <p>CN-28</p>	24V 79W	※ Check contact Normal : 13.4 Ω
Start relay	 <p>CR-23</p>	24V 300A	※ Check contact Normal : 0.94 Ω (for terminal 1-2)

Part name	Symbol	Specifications	Check
Blower motor		24V 9.5A	※ Check resistance Normal : 2.5 Ω (for terminal 1-2)
Duct sensor (switch)		1°C OFF 4°C ON	※ Check resistance Normal : 0 Ω (for terminal 1-2), the atmosphere temp : Over 4°C
Door switch	 CS-1	24V 2W	※ Check resistance Normal : About 5M Ω
Switch (power max, one touch decal, horn, breaker)	 CS-5 CS-19 CS-26 CS-29	24V 6A	※ Check resistance Normal : ∞ Ω
Circuit breaker	 CN-60 CN-95	60A	※ Check disconnection normal : 0 Ω (connect ring terminal and check resist between terminal 1 and 2)
Master switch	 CS-74A CS-74B	6-36V	※ Check disconnection Normal : 0.1 Ω

Part name	Symbol	Specifications	Check
Quick clamp buzzer	 <p data-bbox="496 427 592 454">CN-113</p>	24V 200mA 107±4dB	-
Socket	 <p data-bbox="507 701 603 728">CN-139</p>	12V 10A	-
WIF sensor	 <p data-bbox="496 936 571 963">CD-45</p>	-	※ Check contact Normal : 68.8 ~ 4.94 Ω

## GROUP 4 CONNECTORS

### 1. CONNECTOR DESTINATION

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	12	I/conn (Frame harness-Pump PS harness)	S816-012002	S816-112002
CN-2	AMP	16	I/conn (Frame harness-Engine harness)	S816-016002	S816-116002
CN-3	AMP	26	I/conn (Frame harness-Engine harness)	1897009-2	1897013-2
CN-4	AMP	16	I/conn (Console harness LH-Frame harness)	368047-1	368050-1
CN-5	DEUTSCH	60	I/conn (Side harness RH-Frame harness)	DRB16-60SAE-L018	DRB14-60PAE-L018
CN-7	AMP	16	I/conn (Console harness RH-Frame harness)	368047-1	368050-1
CN-8	AMP	12	I/conn (Console harness RH-Frame harness)	S816-012002	S816-112002
CN-10	DEUTSCH	12	I/conn (Cab harness-Side harness RH)	DT06-12S-EP06	DT04-12P-BE02
CN-11	DEUTSCH	8	I/conn (Frame harness-Aircon harness)	DT06-8S-EP06	-
CN-12	DEUTSCH	2	I/conn (Frame harness-Boom wire harness)	DT06-2S-EP06	DT04-2P-E005
CN-15	AMP	12	I/conn (Frame harness-Two way harness)	S816-012002	S816-112002
CN-16	AMP	6	Emergency engine start & speed control	S816-006002	S816-106002
CN-17	DEUTSCH	8	I/conn (Wiper harness)	DT06-8S-EP06	DT04-8P
CN-20	MOLEX	2	Horn	36812-0211	-
CN-21	AMP	6	Wiper motor	925276-0	-
CN-22	KET	2	Washer pump	MG640605	-
CN-23	KET	2	Speaker-LH	MG610070	-
CN-24	KET	2	Speaker-RH	MG610070	-
CN-25	MOLEX	2	Horn	36812-0211	-
CN-27	KUM	16	Radio & USB player	PK145-16017	-
CN-28	KUM	1	Aircon compressor	NMWP01F-B	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	-	-	Fuse box	21Q7-10910	-
CN-36-1	AMP	16	I/conn (Fuse box-Frame harness)	368047-1	368050-1
CN-36-2	AMP	8	I/conn (Fuse box-Frame harness)	MG610051	-
CN-36-3	AMP	26	I/conn (Fuse box-Frame harness)	1897009-2	-
CN-45	RING-TERM	-	Starter motor B <sup>+</sup>	S820-308000	-
CN-48	KET	1	Service meter	2-520193-2	-
CN-51	DEUTSCH	40	MCU	DRC26-40SA	-
CN-52	DEUTSCH	40	MCU	DRC26-40SB	-
CN-53	DEUTSCH	40	MCU	DRC26-40SC	-
CN-56	AMP	8	Cluster	-	S816-108002
CN-60	YAZAKI	2	Circuit breaker	-	7122-4125-50
CN-61	DEUTSCH	2	Fuel filler pump	DT06-2S-EP06	-

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-66	DEUTSCH	2	Breaker solenoid	DT06-2S-EP06	-
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-EP06	-
CN-70	DEUTSCH	2	Travel high solenoid	DT06-2S-EP06	-
CN-74	RING-TERM	-	Alternator "I" terminal	-	S820-105000
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	DEUTSCH	64	Engine ECM	776469-1	-
CN-95	AMP	2	Fusible link	-	S813-130201
CN-96	AMP	4	Fuel warmer	15300027	-
CN-116	AMP	12	Switch panel	176116	-
CN-125	Econoseal J	4	GPS connector	S816-004002	S816-104002
CN-126	AMP	10	Service tool	S816-010002	S816-110002
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	DT04-3P-EP10
CN-142	DEUTSCH	3	Accel dial	DT06-3S-EP06	-
CN-144	KET	20	Handsfree	MG610240	-
CN-149	DEUTSCH	2	Attach safety solenoid	DT06-2S-EP06	-
CN-156	DEUTSCH	2	Air seat	DT04-2P-E005	DT06-2S-EP06
CN-157	AMP	1	Antena power	S822-014002	-
CN-170	AMP	2	Heated seat	S816-002002	S816-102002
CN-173	AMP	2	Resistor	S816-002002	-
CN-231	DEUTSCH	2	I/conn (Master switch-Fuse box)	S813-030201	
CN-236	DEUTSCH	2	Attach pressure solenoid	DT06-2S-EP06	-
CN-237	DEUTSCH	2	Attach conflus solenoid	DT06-2S-EP06	-
CN-242	DEUTSCH	2	Attach flow solenoid	DT06-2S-EP06	DT04-2P-E005
CN-245	AMP	12	Remote controller assy	368542-1	-
CN-246	AMP	12	USB & Socket assy	174045-2	-
CN-247	DEUTSCH	8	Proportional	DT06-08SA-EP06	DT04-8P
CN-249	DEUTSCH	4	Rear view camera	DT06-4S-EP06	DT04-4P-E005
CN-259	AMP	6	Camera	S816-006002	-
CN-262	DEUTSCH	2	Straight travel solenoid	DT06-2S-EP06	-
CN-263	DEUTSCH	2	2 pcs boom solenoid	DT06-2S-EP06	-
CN-267	AMP	2	Accel dial LED	S816-002002	S816-102002

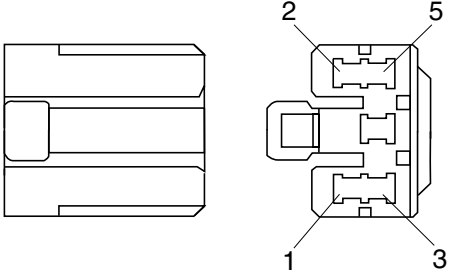
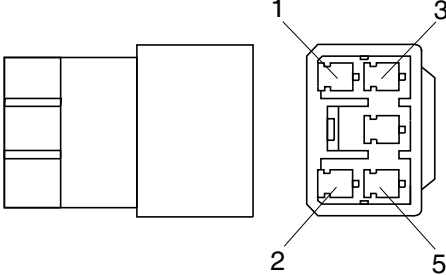
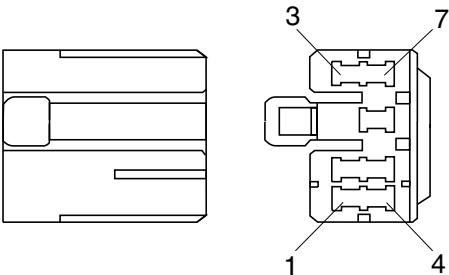
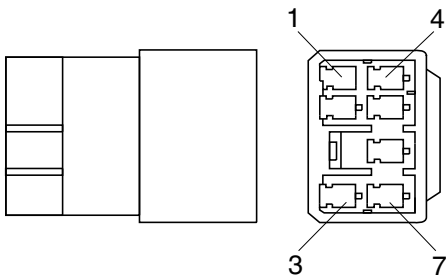
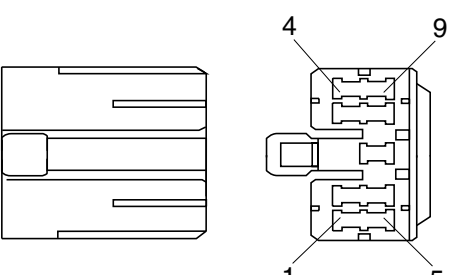
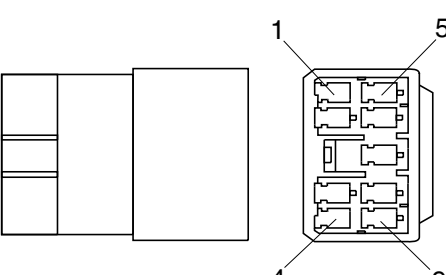
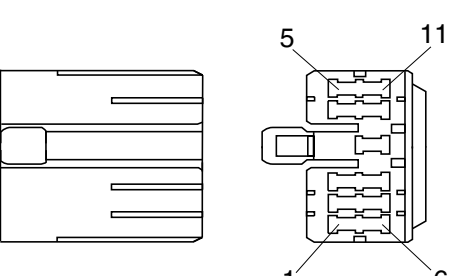
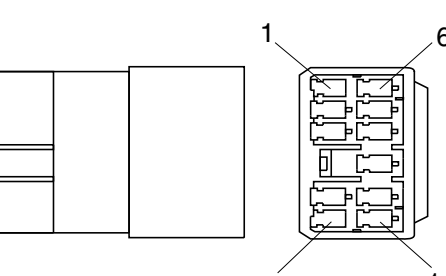
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
· Relay					
CR-1	RING-TERM	-	Battery relay	ST710285-2	-
CR-2	-	5	Horn relay	-	-
CR-4	-	5	Work lamp relay	BJA003526-001	-
CR-5	-	5	Anti restart relay	-	-
CR-7	-	5	Aircon compressor relay	BJA003526-001	-
CR-9	-	5	Cabin lamp relay	BJA003526-001	-
CR-13	-	5	Head lamp relay	BJA003526-001	-
CR-23	RING TERM	-	Start relay	S814-002001	S814-102001
CR-24	RING TERM	-	Preheat relay	S822-014000	-
CR-35	-	5	Power relay	-	-
CR-36	-	5	Preheat relay	-	-
CR-45	AMP	5	ECM power relay	BJA003526-001	24L1-05100
CR-46	-	5	Fuel warmer relay	BJA003526-001	-
CR-62	-	5	Breaker relay	BJA003526-001	-
· Switch					
CS-1	SHUR	1	Door switch	S822-014002	S822-114002
CS-2	WP	6	Start key switch	S816-006100	-
CS-4	DEUTSCH	3	Safety switch	DT06-3S-EP06	-
CS-5	DEUTSCH	2	Horn switch	-	DT04-2P-E005
CS-19	DEUTSCH	2	One touch decel switch	-	DT04-2P-E005
CS-23	SWF	12	Beacon lamp switch	SWF589790	-
CS-26	DEUTSCH	2	Breaker switch	DT06-2S-EP06	-
CS-26A	AMP	2	Breaker pedal switch	S816-002002	S816-102002
CS-33	AMP	6	Emergency engine stop switch	S816-006002	S816-106002
CS-29	DEUTSCH	2	Power max switch	DT06-2S-EP06	-
CS-50	SWF	12	Overload switch	SWF589790	-
CS-52	SWF	12	Econo switch	SWF589790	-
CS-53	AMP	1	Wiper cut switch	S822-014002	-
CS-67	SWF	12	Quick clamp switch	SWF 589790	-
CS-74	AMP	2	Master switch	S813-030201	-
CS-82	SWF	12	Heated seat switch	SWF 589790	-
CS-83	SWF	12	Spare switch	SWF589790	-
CS-99	SWF	12	Air compressor switch	SWF 589790	-
CS-100	SWF	12	Spare switch	SWF 589790	-
CS-103	SWF	12	Spare switch	SWF 589790	-
CS-104	SWF	12	Spare switch	SWF 589790	-
CS-105	SWF	12	Spare switch	SWF 589790	-

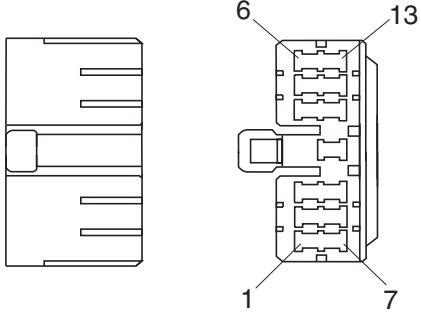
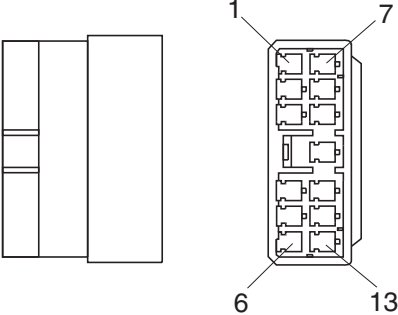
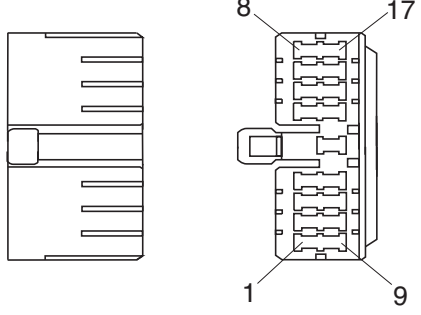
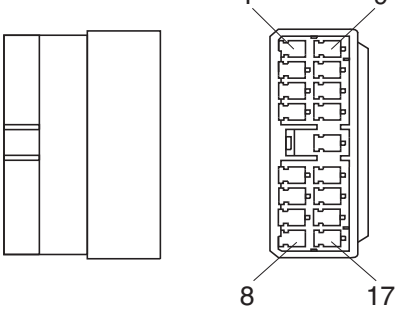
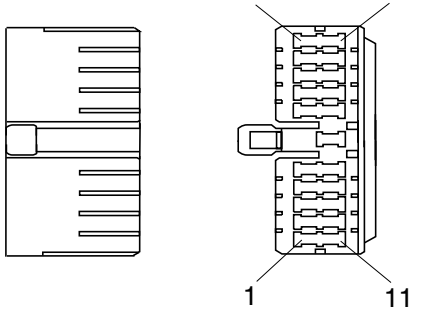
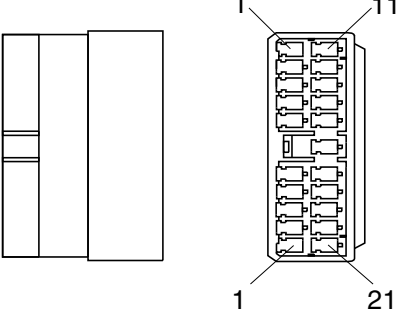


Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
· Light					
CL-1	KET	3	Room lamp	MG651032	-
CL-2	AMP	1	Cigar light	S822-014002	S822-114002
CL-3	DEUTSCH	2	Head lamp-LH	DT06-2S-EP06	DT04-2P-E005
CL-4	DEUTSCH	2	Head lamp-RH	DT06-2S-EP06	DT04-2P-E005
CL-5	DEUTSCH	2	Work 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	Front cab light-LH	DT06-2S-EP06	DT04-2P
CL-9	DEUTSCH	2	Front cab light-RH	DT06-2S-EP06	DT04-2P
CL-10	DEUTSCH	2	Rear cab light-LH	DT06-2S-EP06	DT04-2P
· Sensor, sendor					
CD-1	AMP	2	Hydraulic oil temp sender	85202-1	-
CD-2	DEUTSCH	2	Fuel level sender	DT06-2S-EP06	-
CD-6	DEUTSCH	3	Travel pressure sensor	DT06-3S-EP06	-
CD-7	DEUTSCH	3	Working pressure sensor	DT06-3S-EP06	-
CD-10	AMP	2	Air cleaner switch	85202-1	-
CD-16	DELPHI	3	Water lever	12110293	-
CD-24	DEUTSCH	3	Swing sensor	DT06-3S-EP06	-
CD-31	DEUTSCH	3	Overload sensor	DT06-3S-EP06	-
CD-32	DEUTSCH	3	Boom up sensor	DT06-3S-EP06	-
CD-35	DEUTSCH	3	Arm & bucket in 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	3	WIF sensor	776429-3	-
CD-50	KET	2	Dozer pressure switch	640795	-
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	-

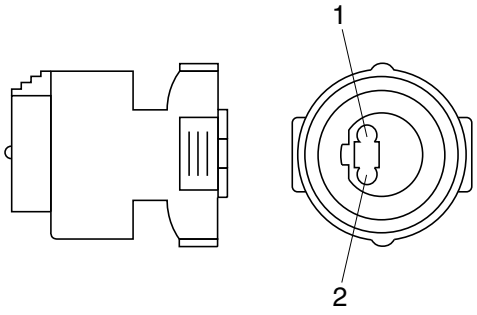
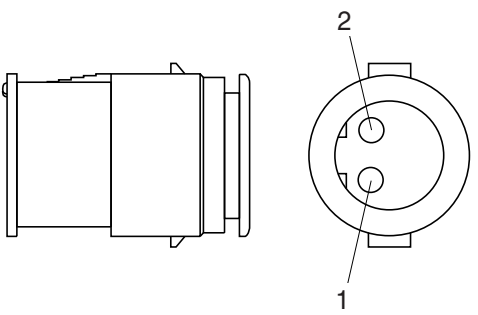
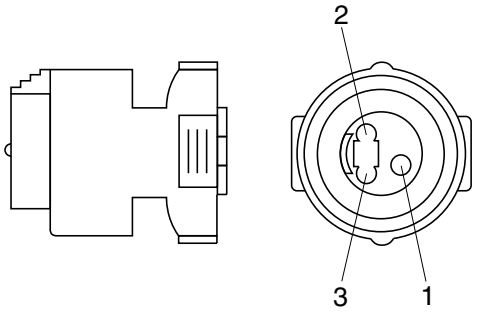
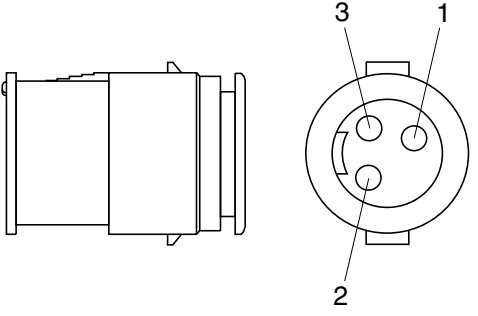
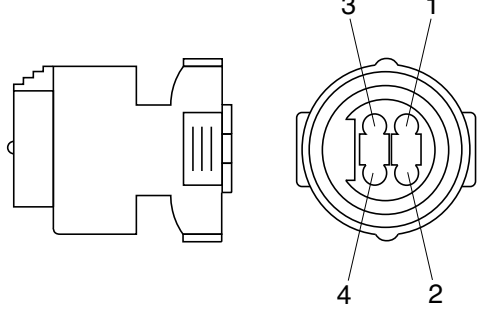
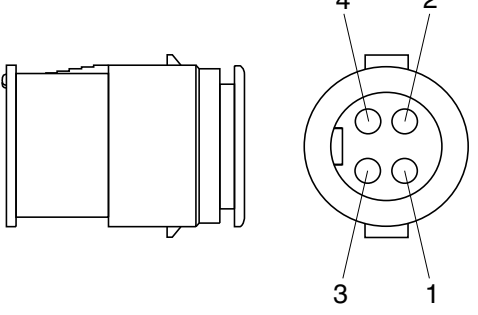
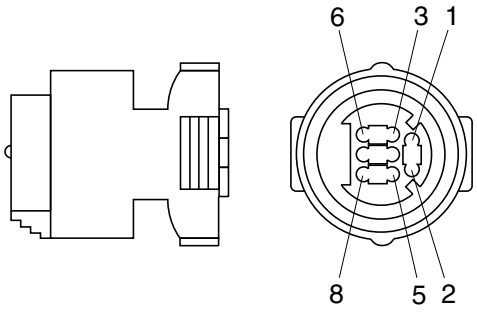
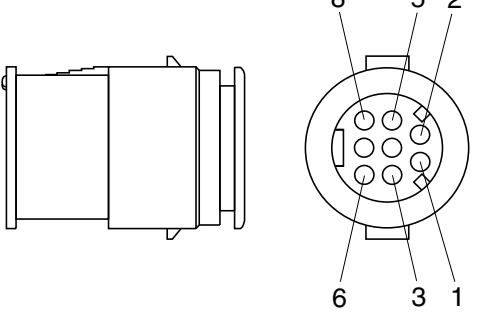
## 2. CONNECTION TABLE FOR CONNECTORS

### 1) PA TYPE CONNECTOR

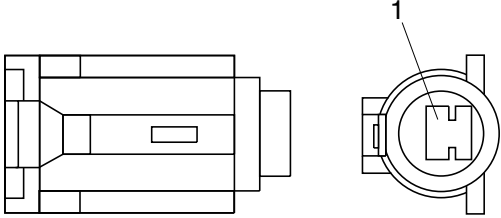
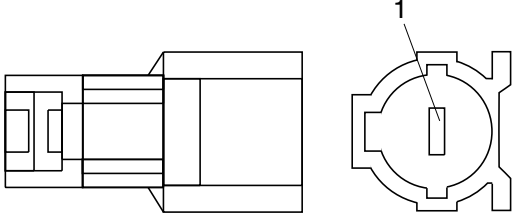
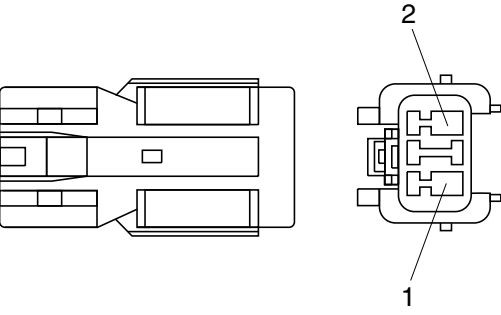
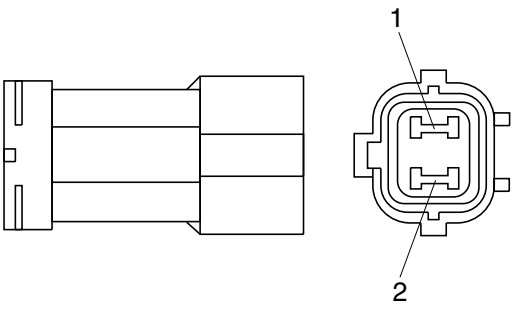
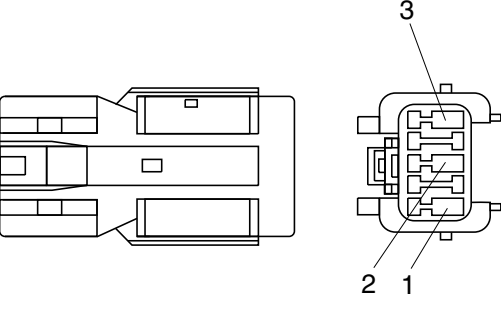
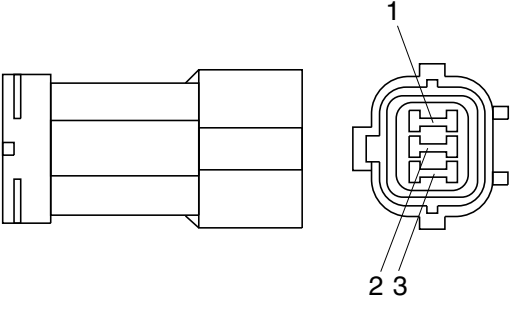
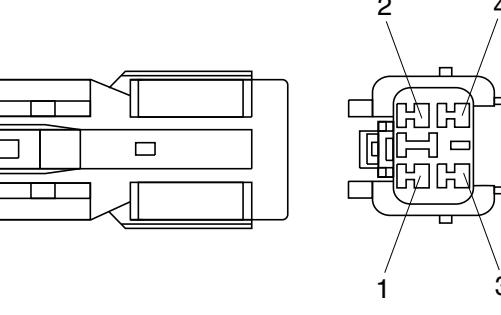
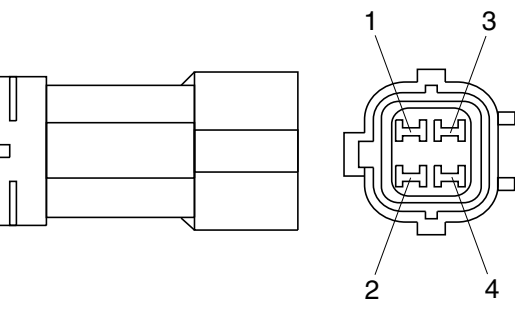
No. of pin	Receptacle connector (female)	Plug connector (male)
5	 <p style="text-align: center;">S811-005002</p>	 <p style="text-align: center;">S811-105002</p>
7	 <p style="text-align: center;">S811-007002</p>	 <p style="text-align: center;">S811-107002</p>
9	 <p style="text-align: center;">S811-009002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

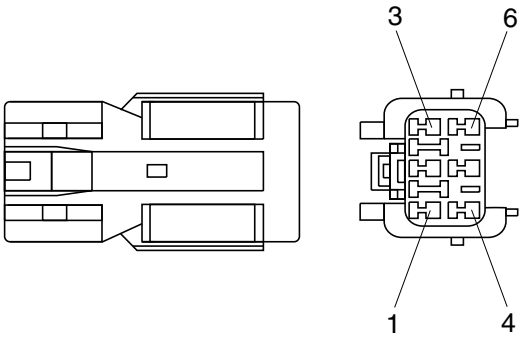
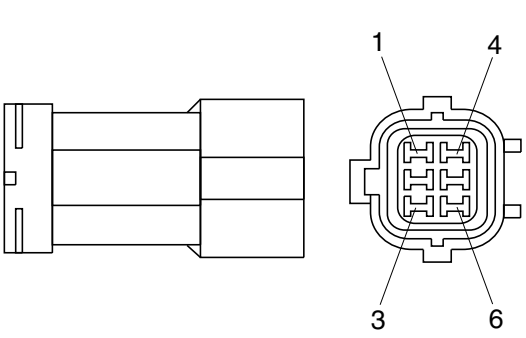
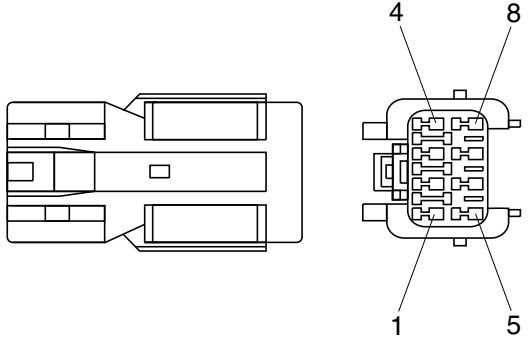
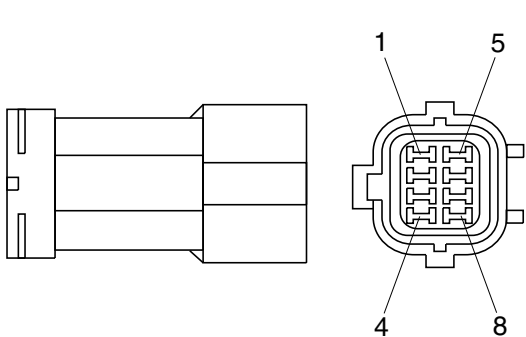
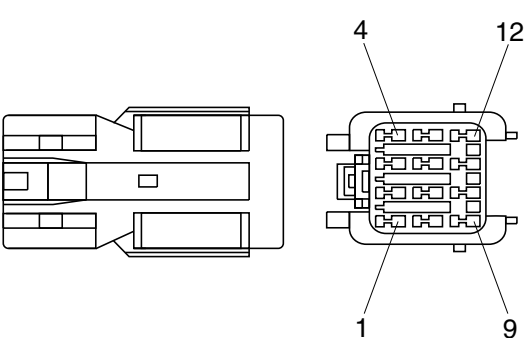
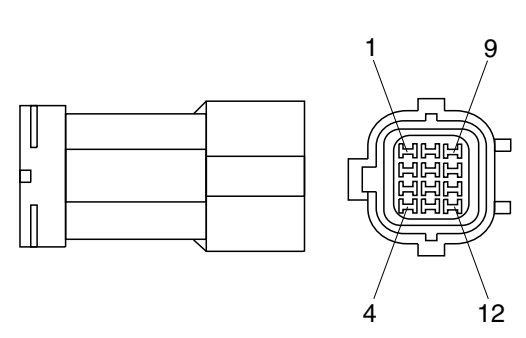
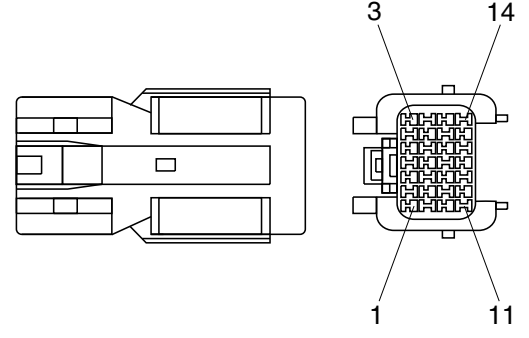
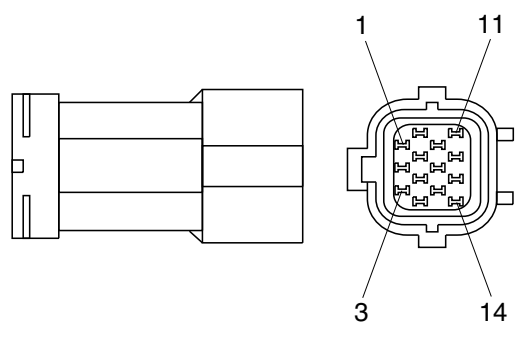
No. of pin	Receptacle connector (female)	Plug connector (male)
13	 <p data-bbox="689 638 837 672">S811-013002</p>	 <p data-bbox="1248 638 1396 672">S811-113002</p>
17	 <p data-bbox="689 1050 837 1084">S811-017002</p>	 <p data-bbox="1248 1050 1396 1084">S811-117002</p>
21	 <p data-bbox="689 1453 837 1487">S811-021002</p>	 <p data-bbox="1248 1453 1396 1487">S811-121002</p>

## 2) J TYPE CONNECTOR

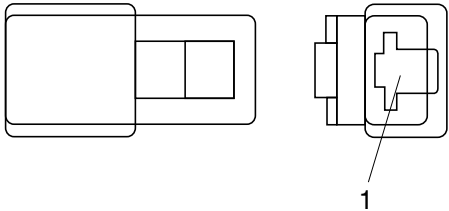
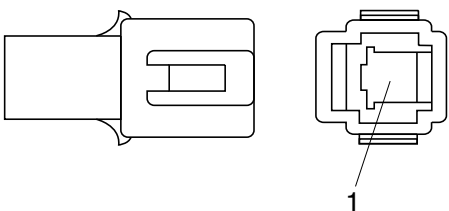
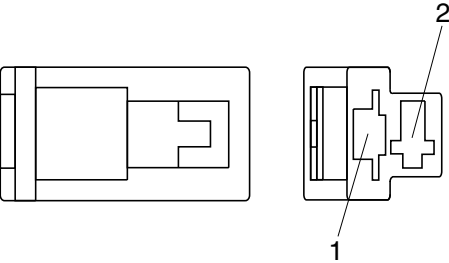
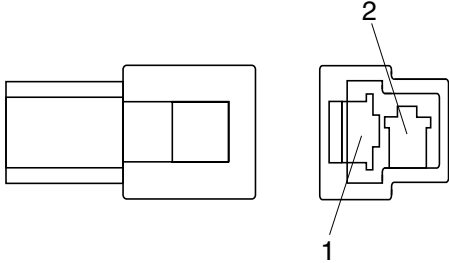
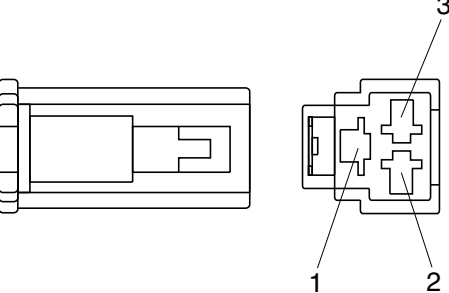
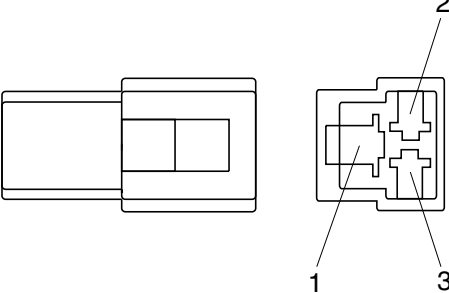
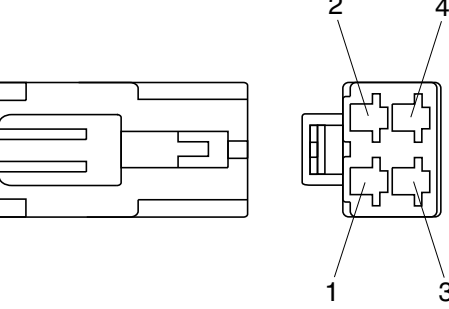
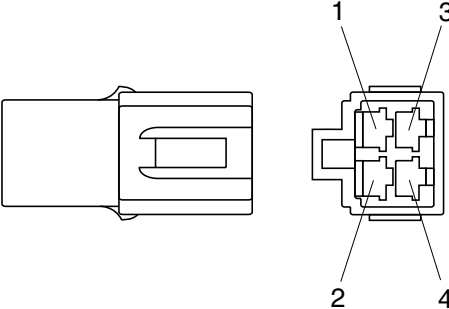
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: center;">S816-002001</p>	 <p style="text-align: center;">S816-102001</p>
3	 <p style="text-align: center;">S816-003001</p>	 <p style="text-align: center;">S816-103001</p>
4	 <p style="text-align: center;">S816-004001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

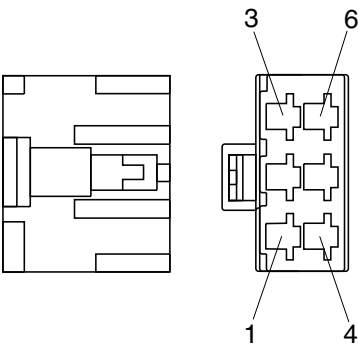
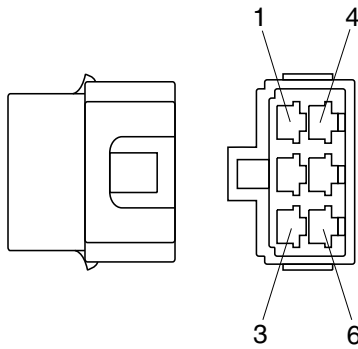
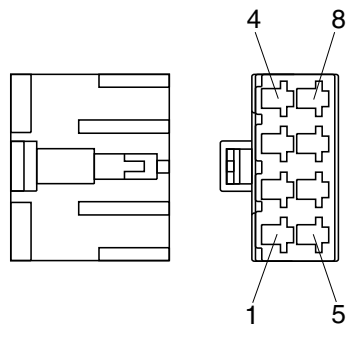
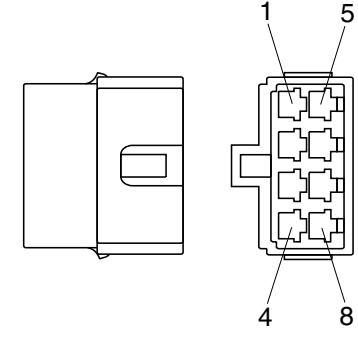
### 3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="687 685 836 712">S814-001000</p>	 <p data-bbox="1241 685 1390 712">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 1901 836 1928">S814-004000</p>	 <p data-bbox="1241 1901 1390 1928">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 1048 837 1081">S814-008000</p>	 <p data-bbox="1236 1048 1388 1081">S814-108000</p>
12	 <p data-bbox="686 1458 837 1491">S814-012000</p>	 <p data-bbox="1236 1458 1388 1491">S814-112000</p>
14	 <p data-bbox="686 1868 837 1901">S814-014000</p>	 <p data-bbox="1236 1868 1388 1901">S814-114000</p>

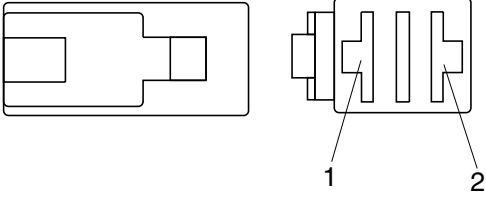
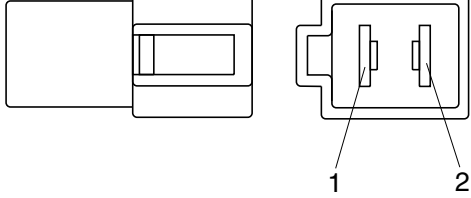
#### 4) CN TYPE CONNECTOR

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>

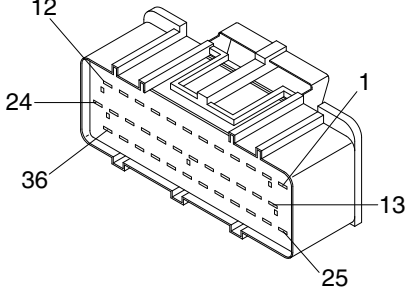
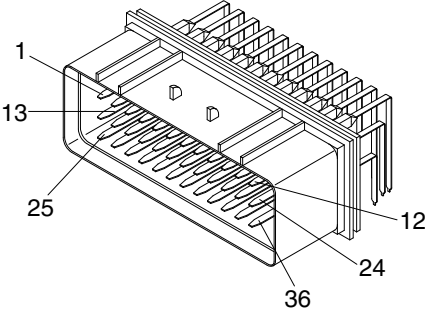
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p style="text-align: center;">S810-006202</p>	 <p style="text-align: center;">S810-106202</p>
8	 <p style="text-align: center;">S810-008202</p>	 <p style="text-align: center;">S810-108202</p>



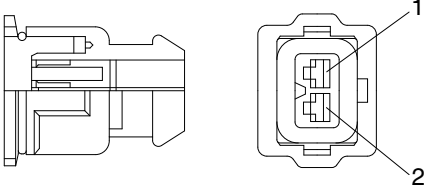
### 5) 375 FASTEN TYPE CONNECTOR

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>

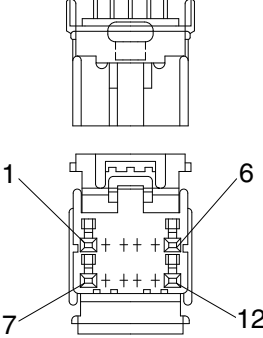
### 6) AMP ECONOSEAL CONNECTOR

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>

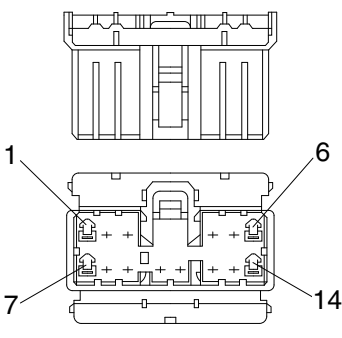
### 7) AMP TIMER CONNECTOR

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

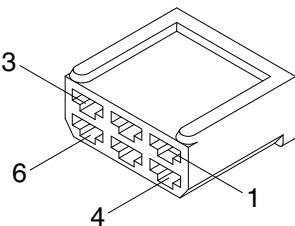
### 8) AMP 040 MULTILOCK CONNECTOR

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

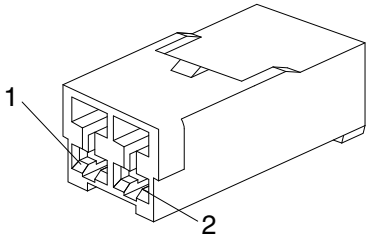
### 9) AMP 070 MULTILOCK CONNECTOR

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

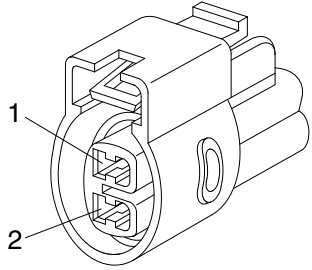
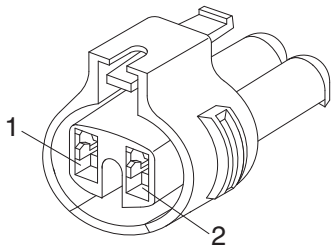
### 10) AMP FASTIN - FASTON CONNECTOR

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

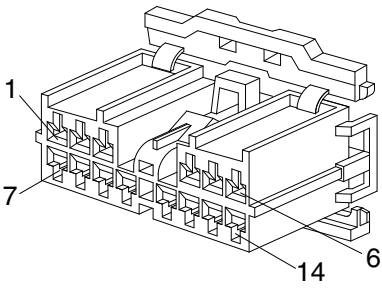
### 11) KET 090 CONNECTOR

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

### 12) KET 090 WP CONNECTORS

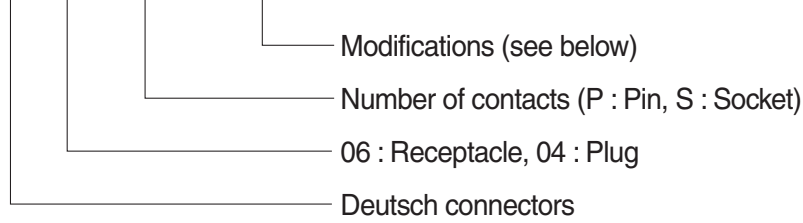
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: right;">MG640605</p>	
2	 <p style="text-align: right;">MG640795</p>	

### 13) KET SDL CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
14	 <p style="text-align: center;">MG610406</p>	

## 14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★☆☆



### ※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

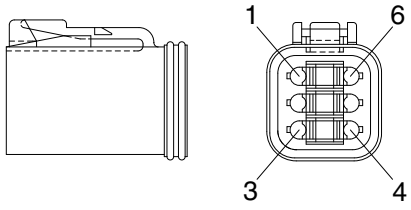
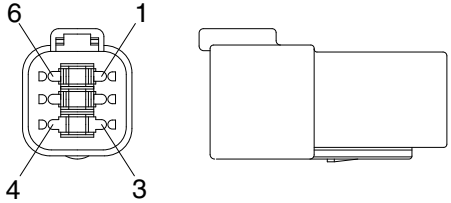
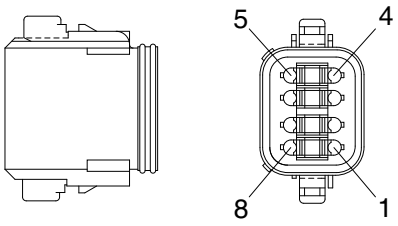
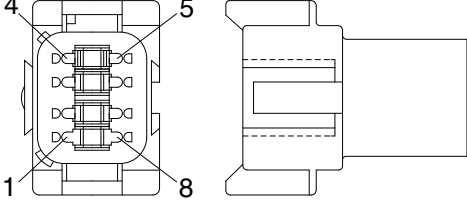
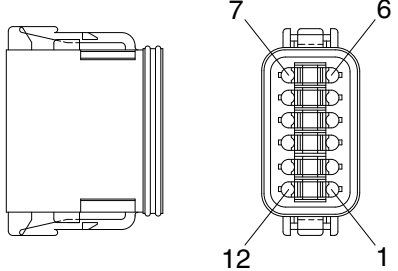
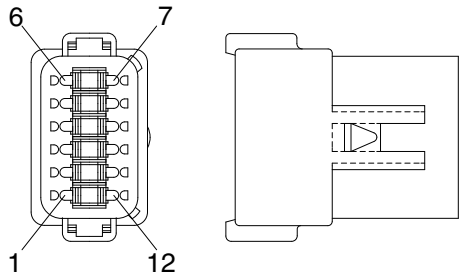
E005 : Combination - E004 & E003

EP04 : End cap

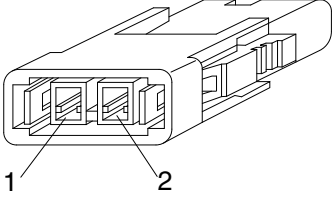
EP06 : Combination P012 & EP04

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

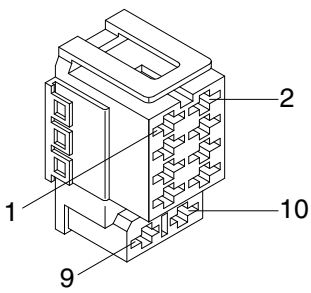
No. of pin	Receptacle connector (female)	Plug connector (male)
2	<p>DT06-2S</p>	<p>DT04-2P</p>
3	<p>DT06-3S</p>	<p>DT04-3P</p>
4	<p>DT06-4S</p>	<p>DT04-4P</p>

No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p 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>

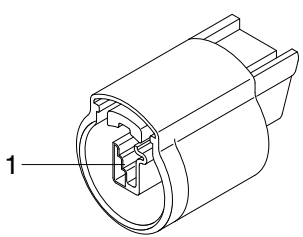
### 15) MOLEX 2CKTS CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p data-bbox="702 683 837 712">35215-0200</p>	

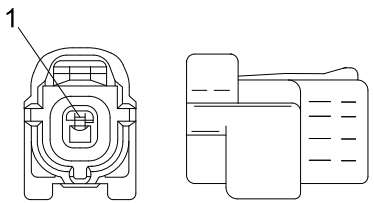
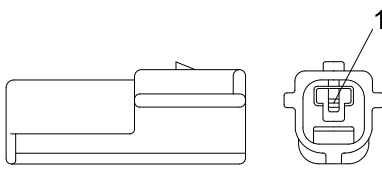
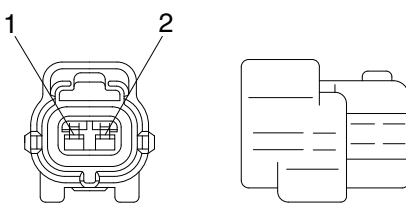
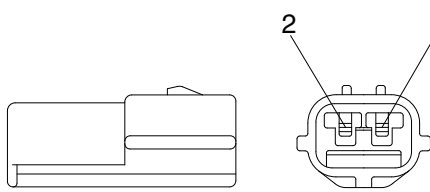
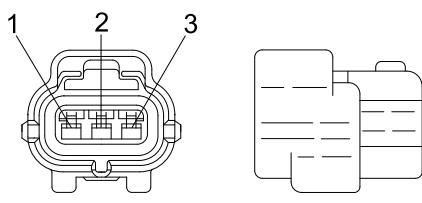
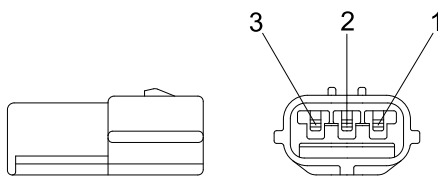
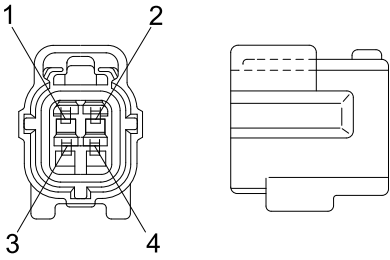
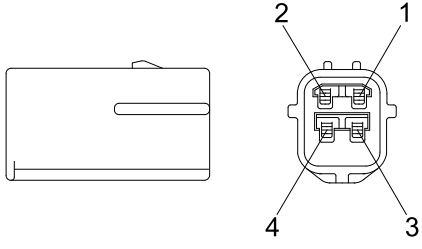
### 16) ITT SWF CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
10	 <p data-bbox="694 1288 837 1317">SWF593757</p>	

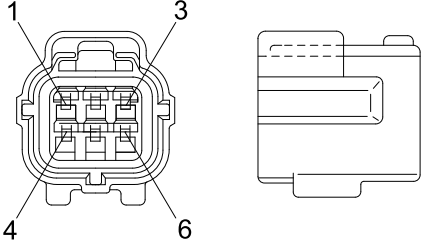
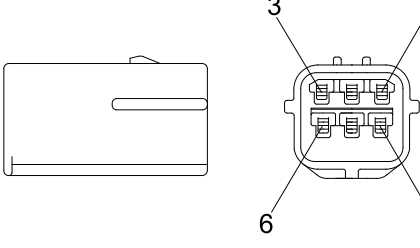
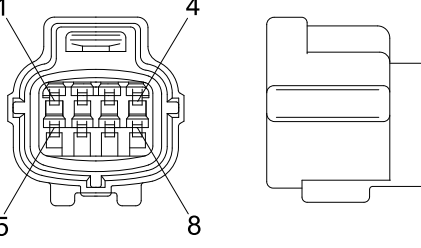
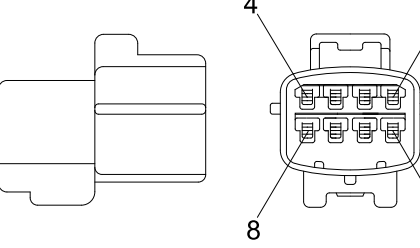
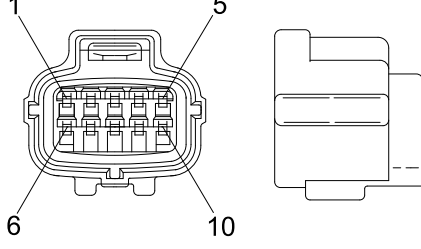
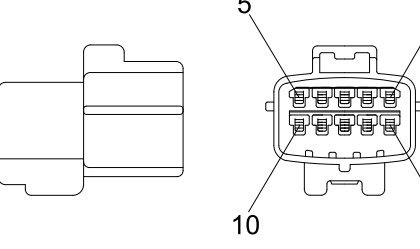
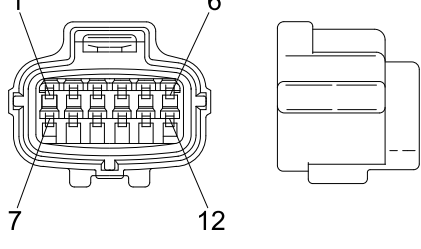
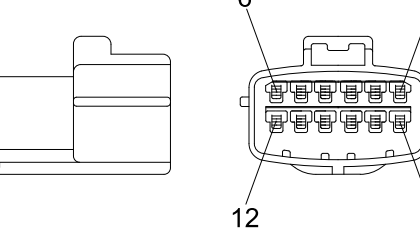
### 17) MWP NMWP CONNECTOR

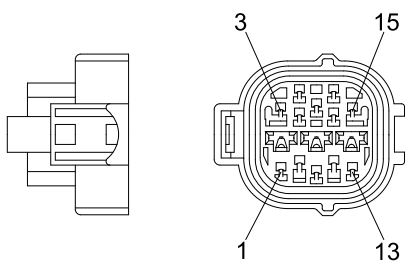
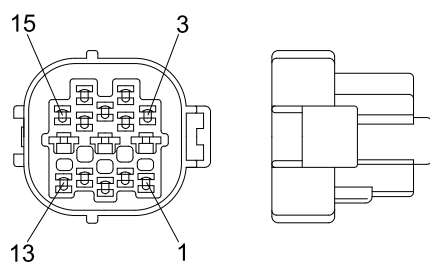
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="686 1892 837 1921">NMWP01F-B</p>	

### 18) ECONOSEAL J TYPE CONNECTORS

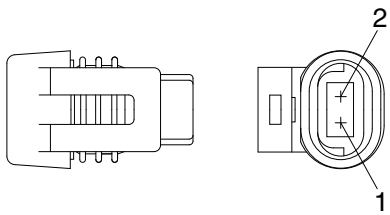
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p style="text-align: right;">S816-001002</p>	 <p style="text-align: left;">S816-101002</p>
2	 <p style="text-align: right;">S816-002002</p>	 <p style="text-align: left;">S816-102002</p>
3	 <p style="text-align: right;">S816-003002</p>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



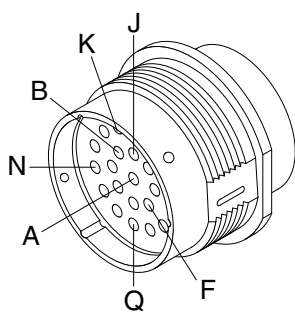
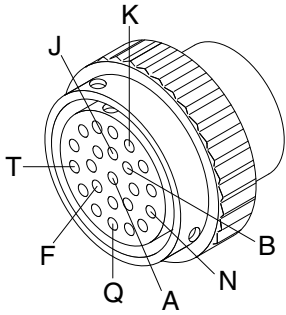
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p style="text-align: center;">S816-006002</p>	 <p style="text-align: center;">S816-106002</p>
8	 <p style="text-align: center;">S816-008002</p>	 <p style="text-align: center;">S816-108002</p>
10	 <p style="text-align: center;">S816-010002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

No. of pin	Receptacle connector (female)	Plug connector (male)
15	 <p data-bbox="726 638 837 672">368301-1</p>	 <p data-bbox="1268 638 1380 672">2-85262-1</p>

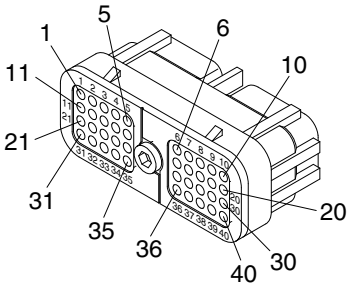
### 19) METRI-PACK TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p data-bbox="726 1243 837 1276">12040753</p>	

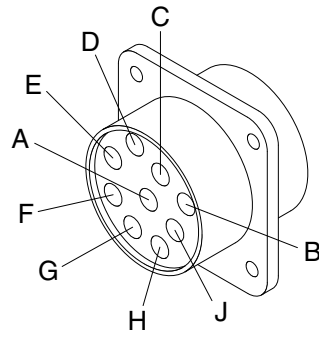
### 20) DEUTSCH HD30 CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
23	 <p data-bbox="662 1848 837 1881">HD36-24-23SN</p>	 <p data-bbox="1220 1848 1396 1881">HD34-24-23PN</p>

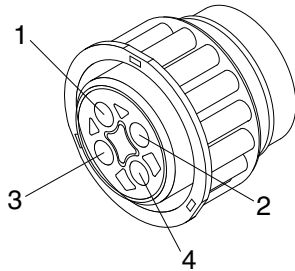
### 21) DEUTSCH MCU CONNECTOR

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

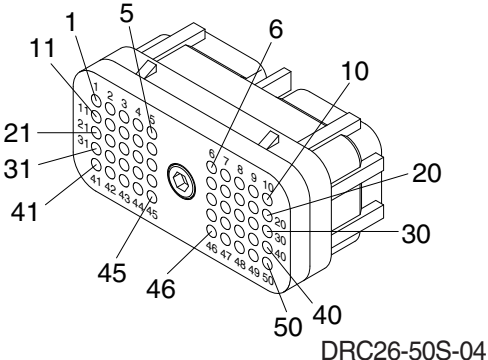
### 22) DEUTSCH SERVICE TOOL CONNECTOR

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

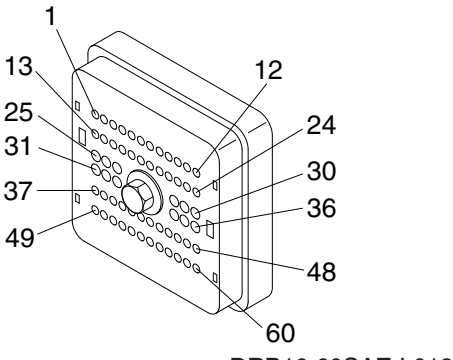
### 23) AMP FUEL WARMER CONNECTOR

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>	