

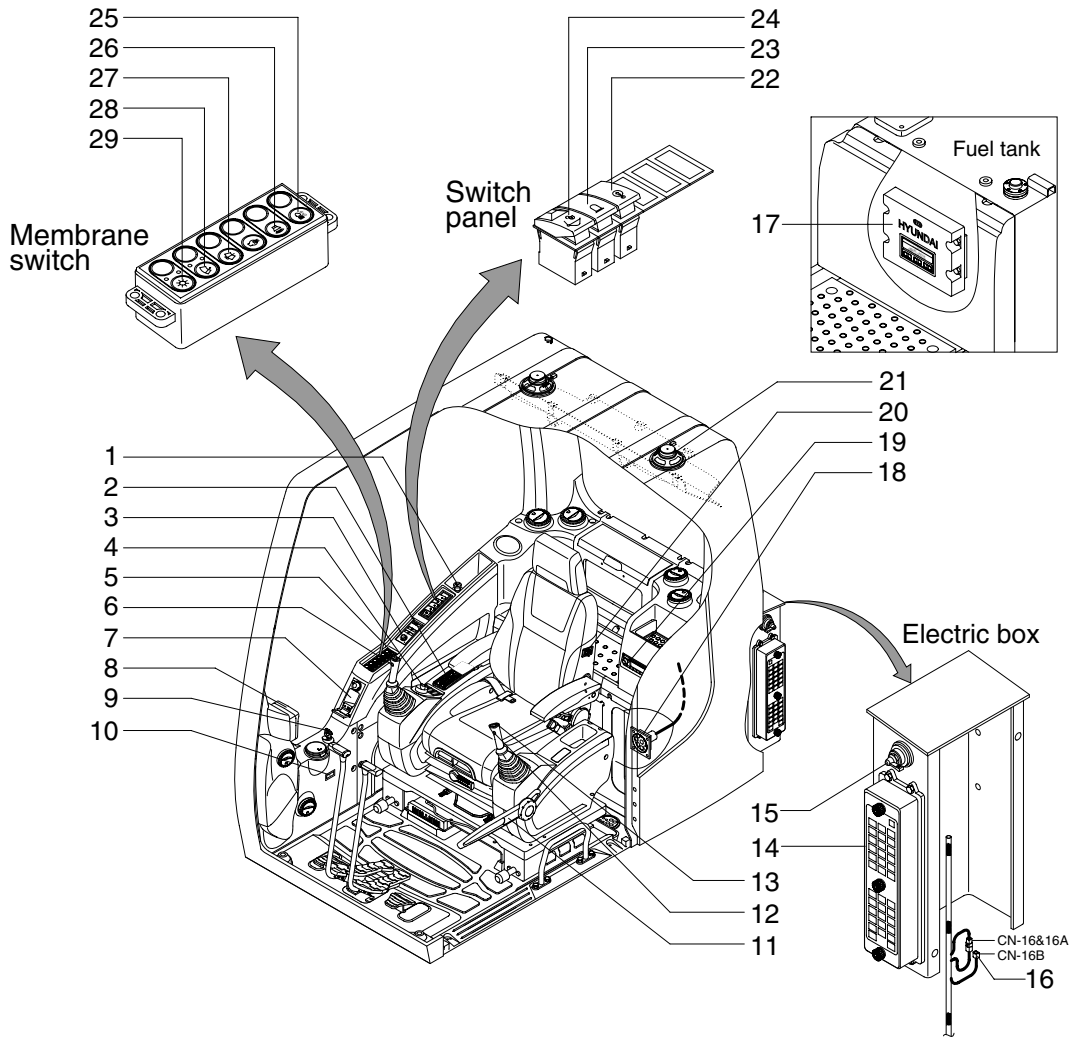
SECTION 4 ELECTRICAL SYSTEM

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SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

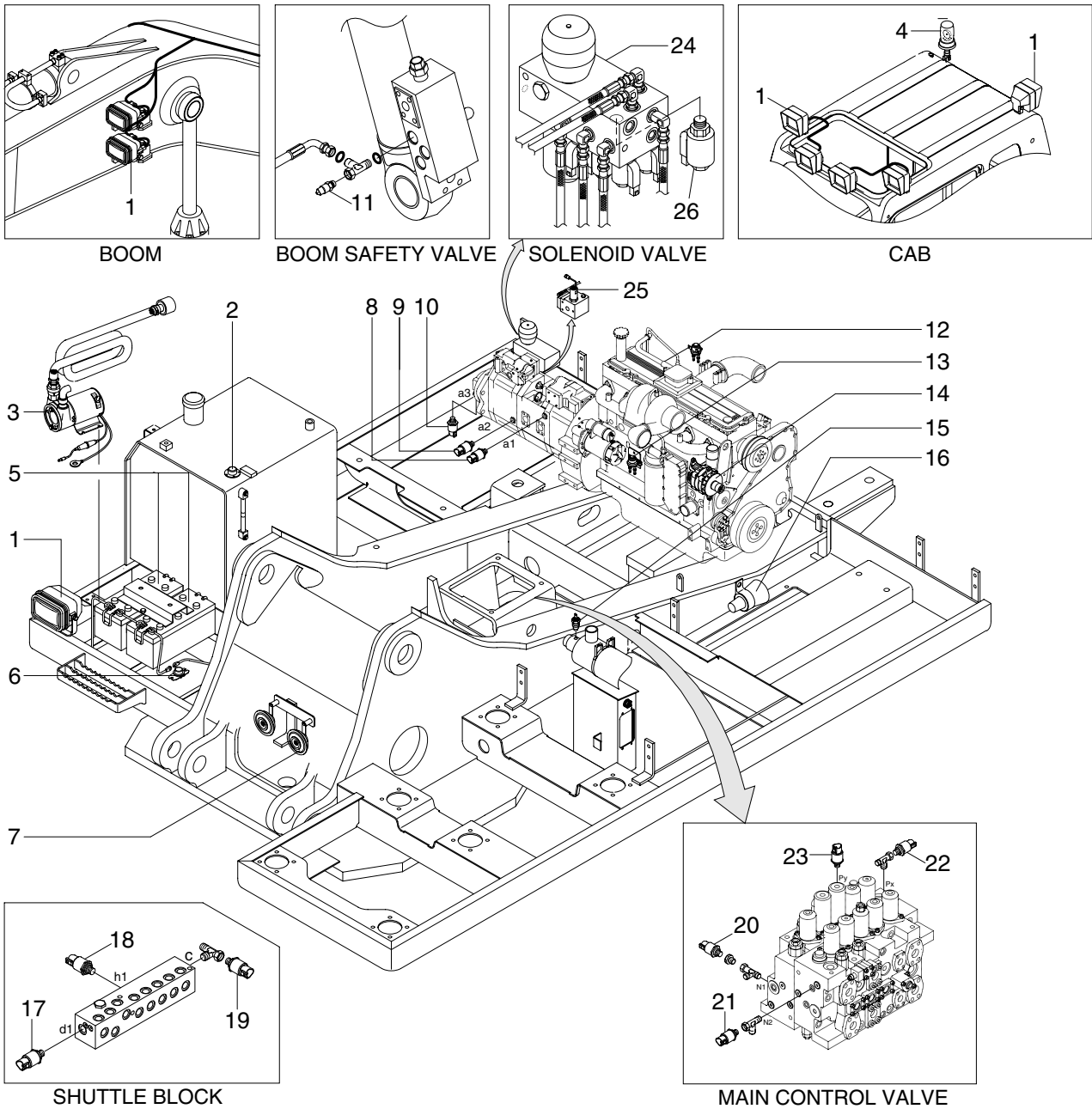
1. LOCATION 1



32094EL01

- | | | |
|--------------------------------|---------------------------------|------------------------|
| 1 Cigar light | 11 Safety lever | 21 Speaker |
| 2 Aircon & heater switch panel | 12 Power max switch | 22 Overload switch |
| 3 Remote controller | 13 One touch decel switch | 23 Beacon switch |
| 4 Accel dial switch | 14 Fuse box | 24 Quick clamp switch |
| 5 Horn switch | 15 Master switch | 25 Cab light switch |
| 6 Breaker operation switch | 16 Emergency engine connector | 26 Travel alarm switch |
| 7 Handsfree | 17 MCU | 27 Washer switch |
| 8 Cluster | 18 RS232 & J1939 service socket | 28 Wiper switch |
| 9 Starting switch | 19 Radio & CD/MP3 player | 29 Main light switch |
| 10 Service meter | 20 Heated seat switch | |

2. LOCATION 2

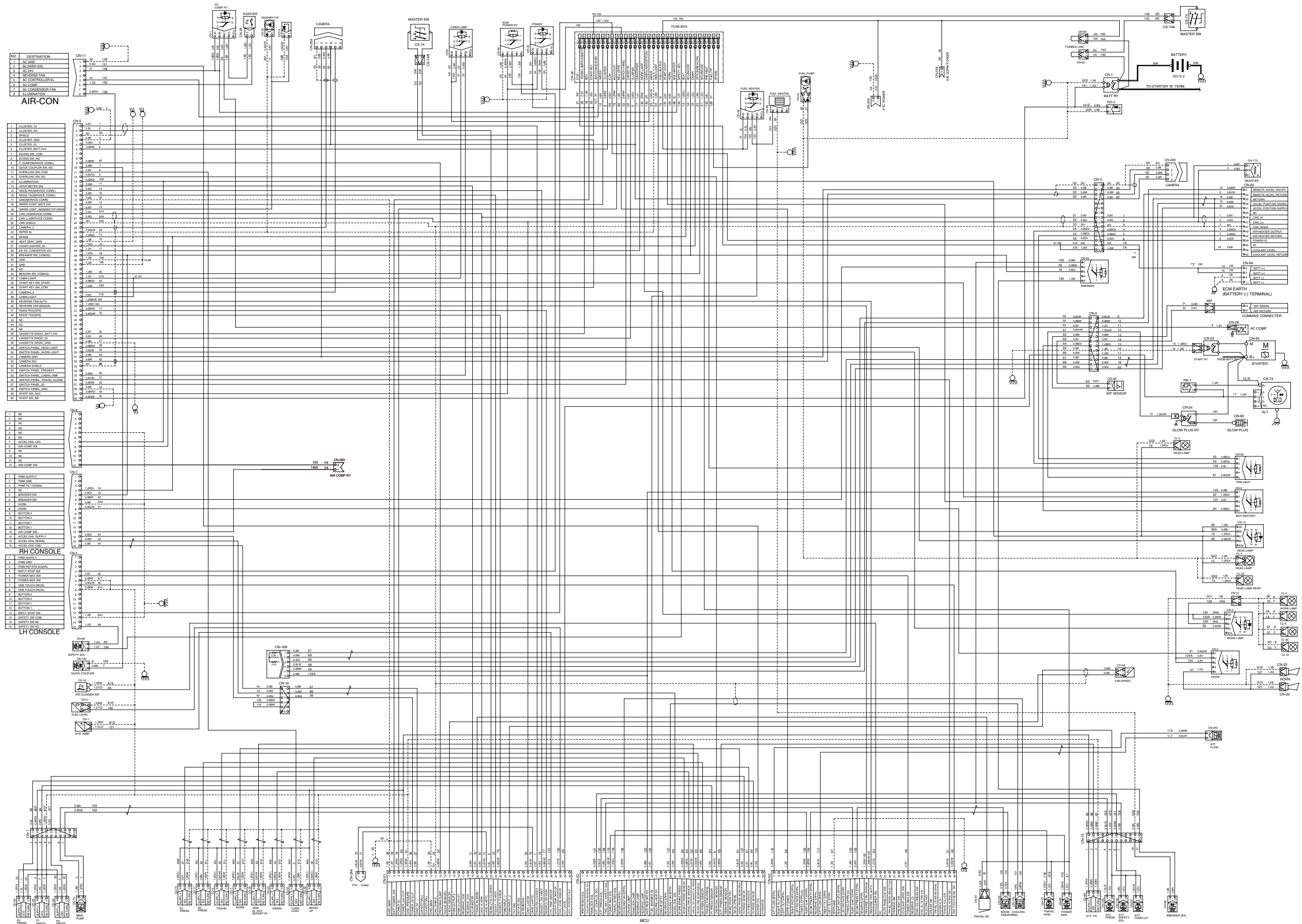


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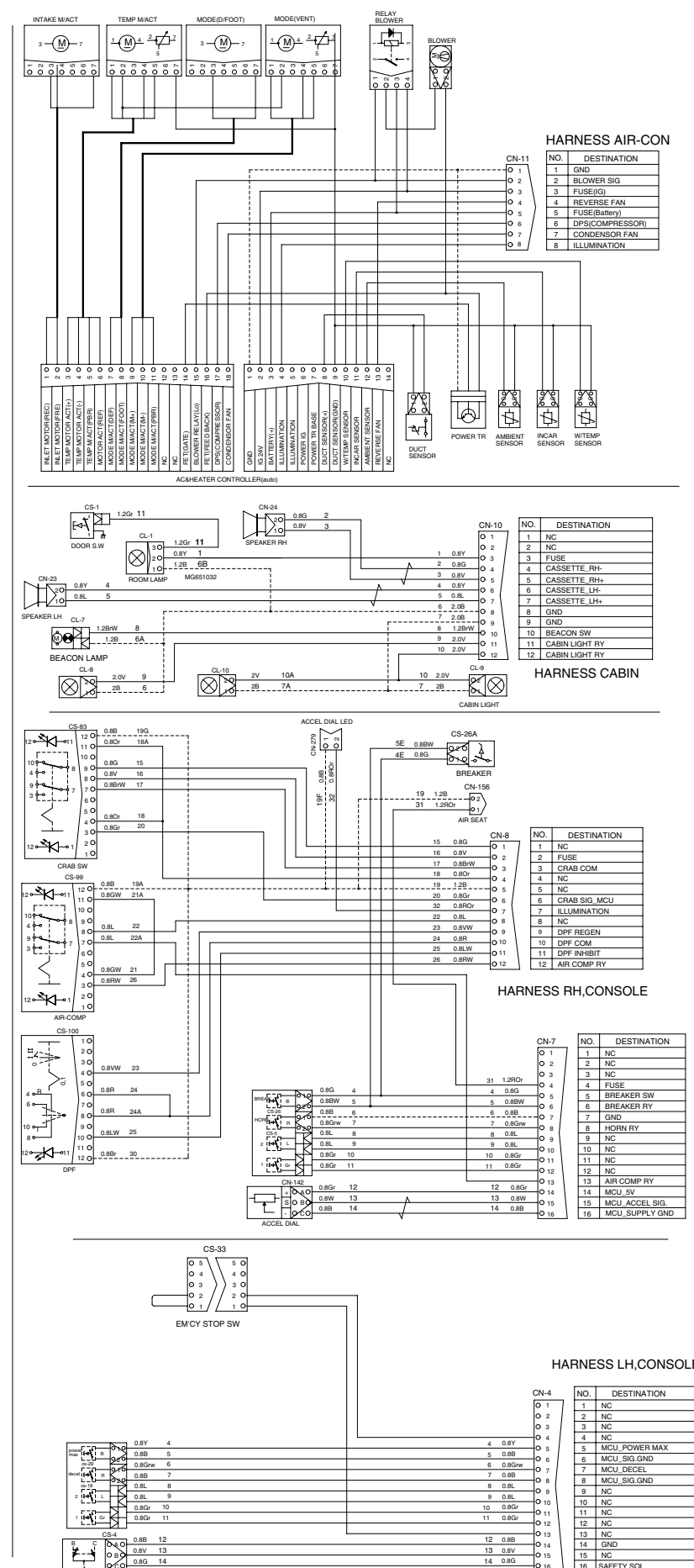
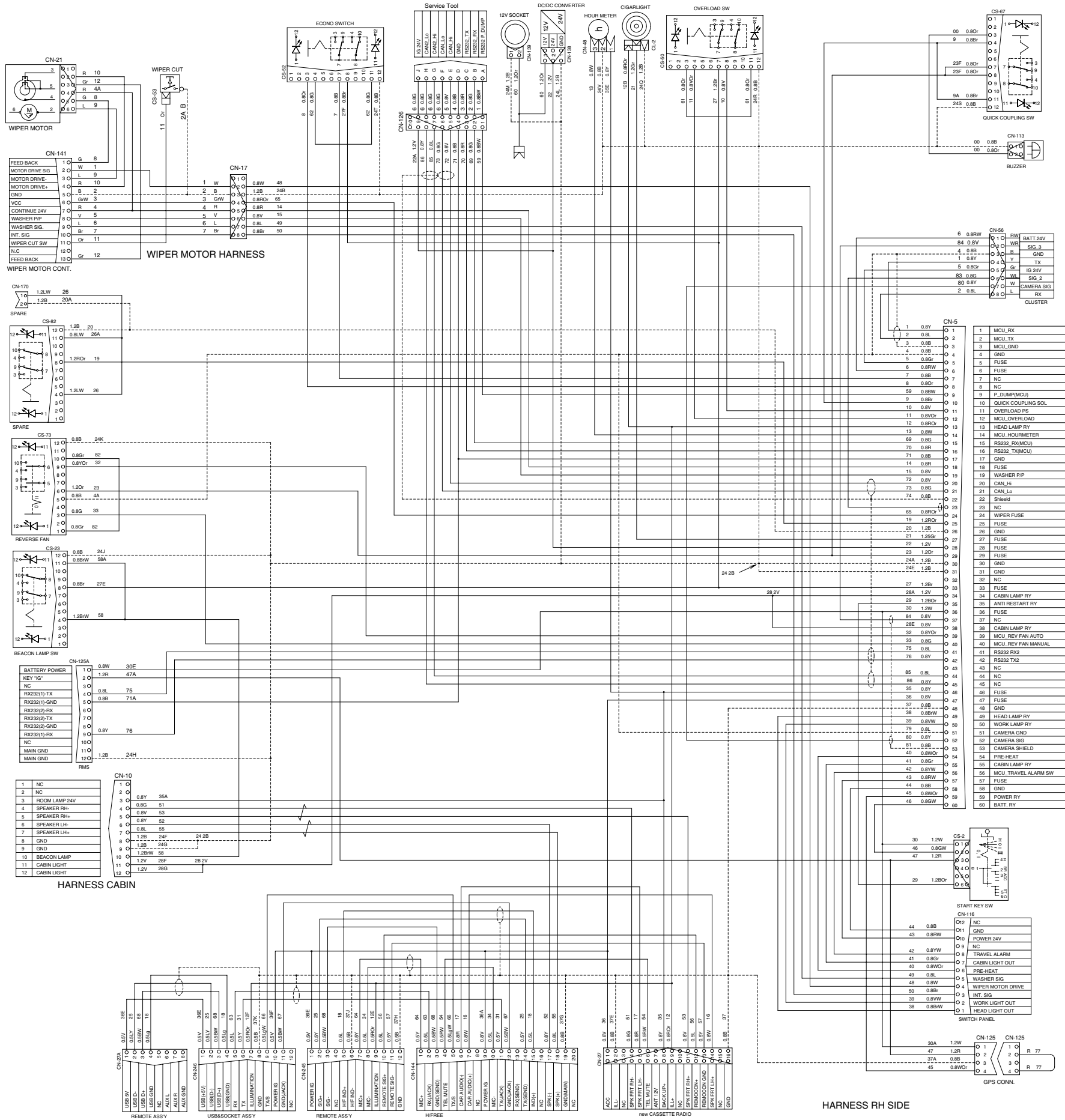
- | | | | | | |
|---|--------------------|----|---------------------------------|----|--------------------------------|
| 1 | Lamp | 10 | P3 pressure sensor | 19 | Swing pressure sensor |
| 2 | Fuel sender | 11 | Overload pressure sensor | 20 | Nega control 1 pressure sensor |
| 3 | Fuel filler pump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

GROUP 2 ELECTRICAL CIRCUIT

ELECTRICAL CIRCUIT (1/2)



ELECTRICAL CIRCUIT (2/2)



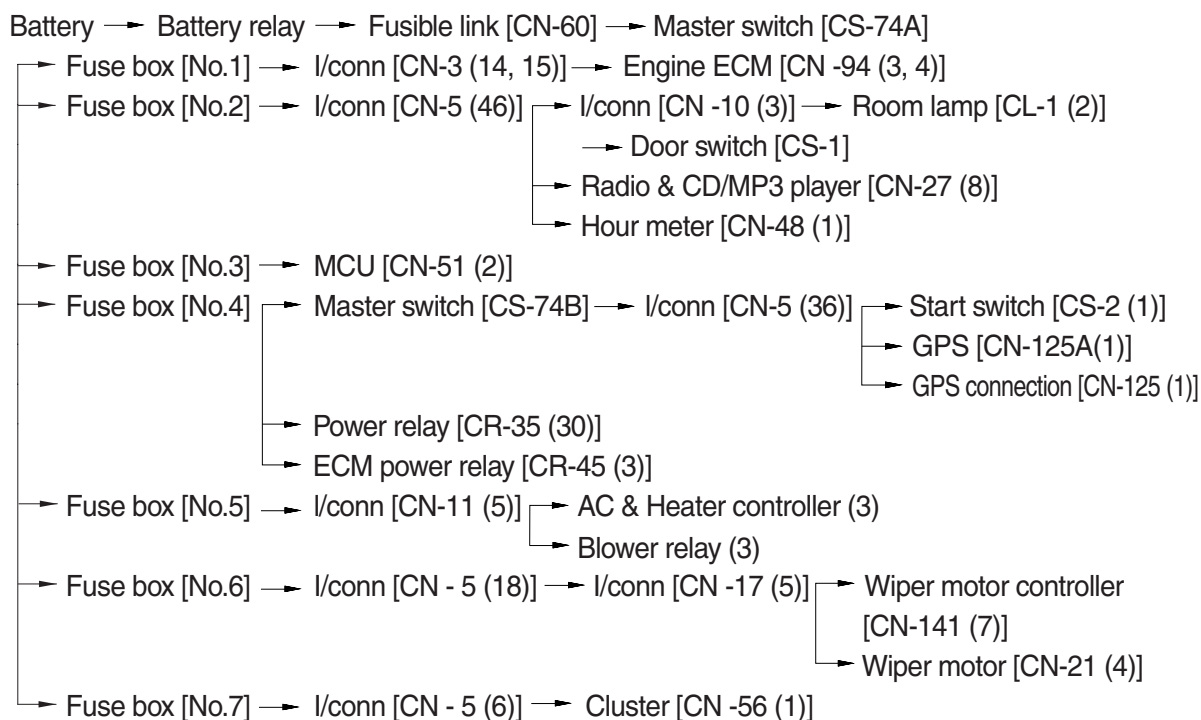
MEMORANDUM

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



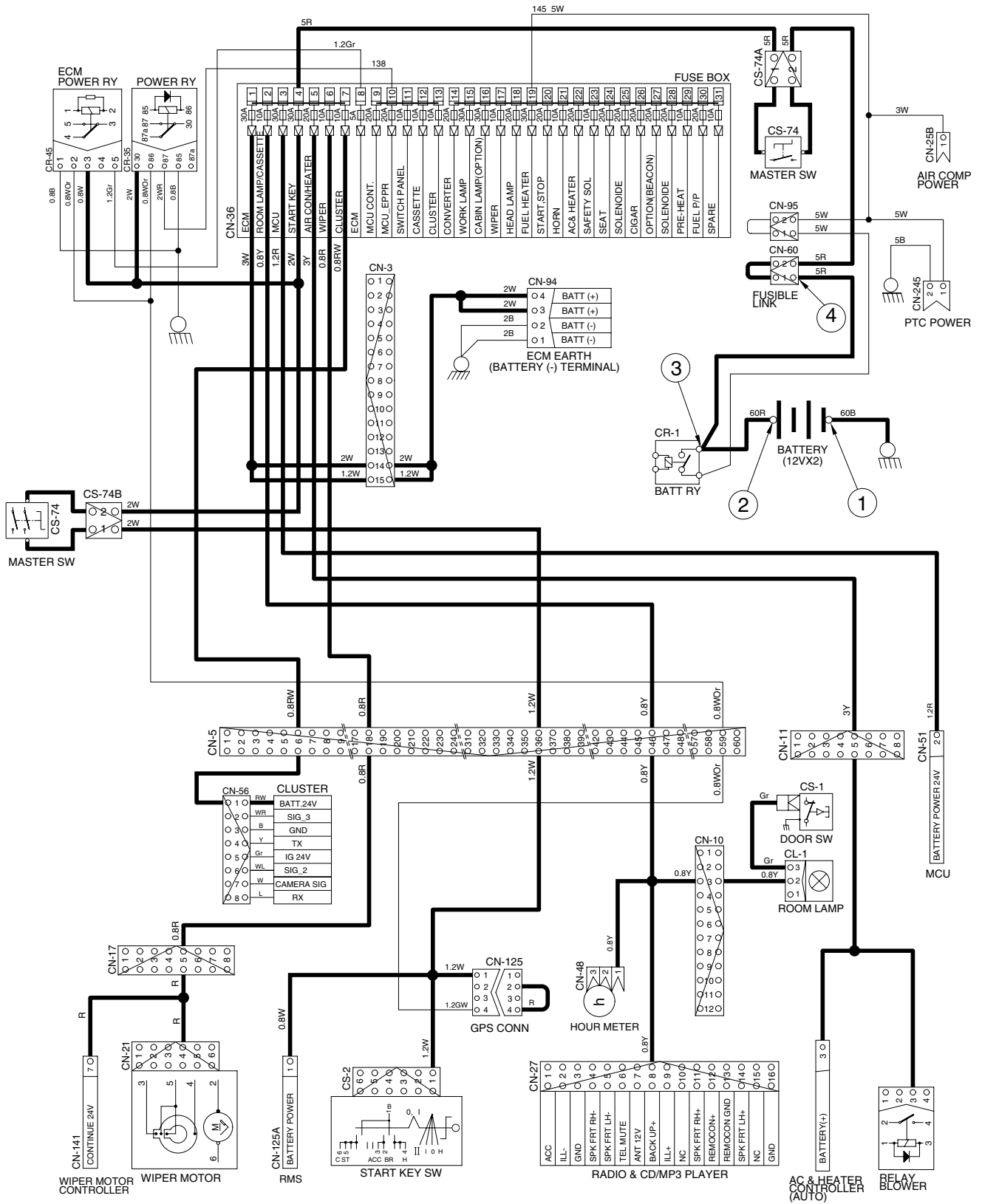
※ I/conn : Intermediate connector

2) CHECK POINT

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

※ GND : Ground

POWER CIRCUIT



38094EL05

2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Battery relay [CR-1] → Fusible link [CN-60] → Master switch [CS-74A]
 → Fuse box [No.4] → 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 conn [CN-125 (2)→(4)] → I/conn [CN-5 (59)]
 → Power relay [CR-35 (86) → (87)] → Fuse box [No.10]
 → ECM power relay [CR-45 (2) → (5)] → Fuse box [No.8]

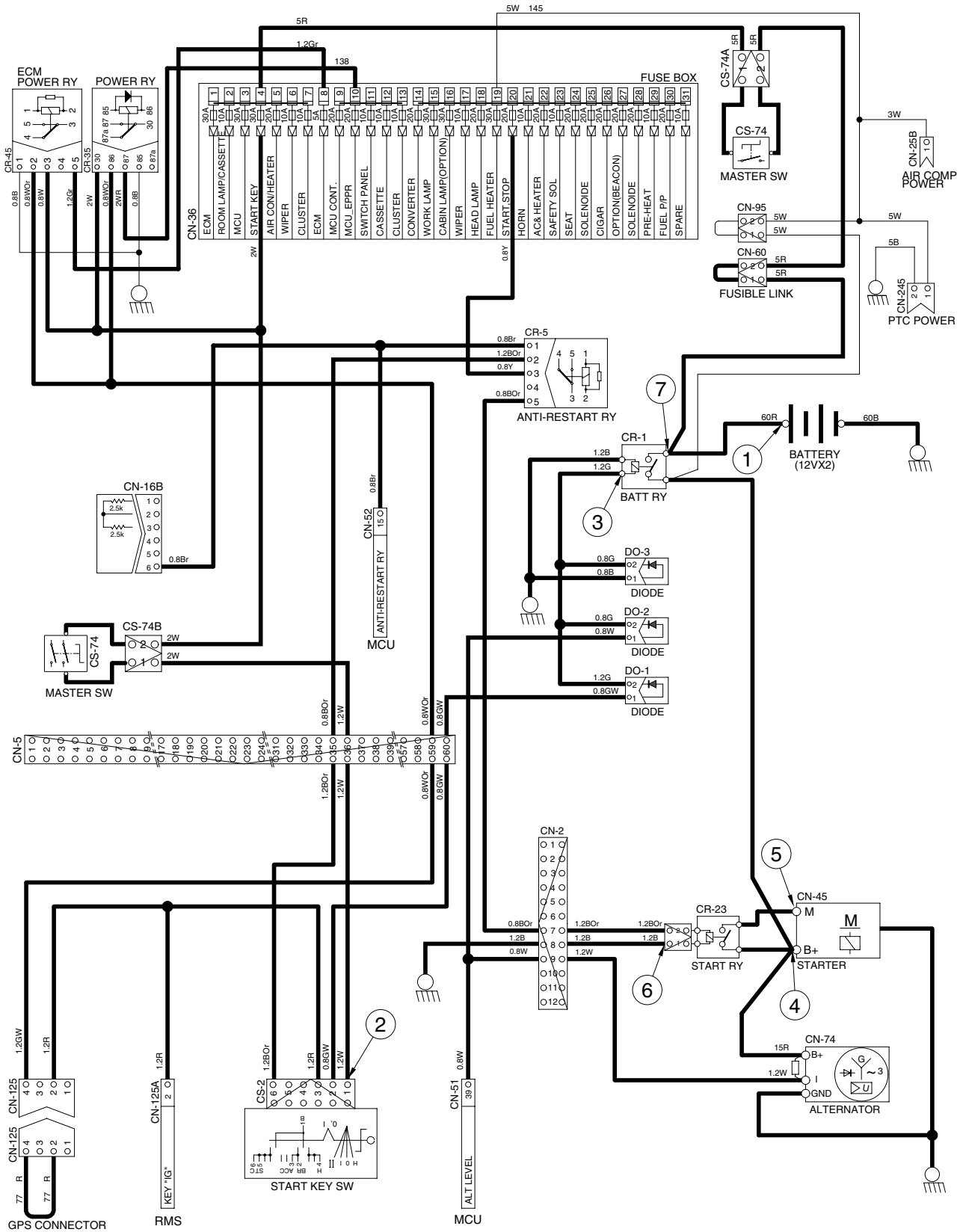
(2) When start key switch is in START position

Start switch START [CS-2 (6)] → I/conn [CN-5 (35)] → Anti-restart relay [CR-5 (2) → (5)]
 → I/conn [CN-2 (7)] → 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 ⁺) ⑤ - GND (starter M) ⑥ - GND (start relay) ⑦ - GND (battery relay M8)	20~25V

STARTING CIRCUIT



38094EL06

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 → I/conn [CN-2 (9)] → MCU alternator level [CN-51 (39)]
 → Cluster charging warning lamp(Via serial interface)

(2) Charging flow

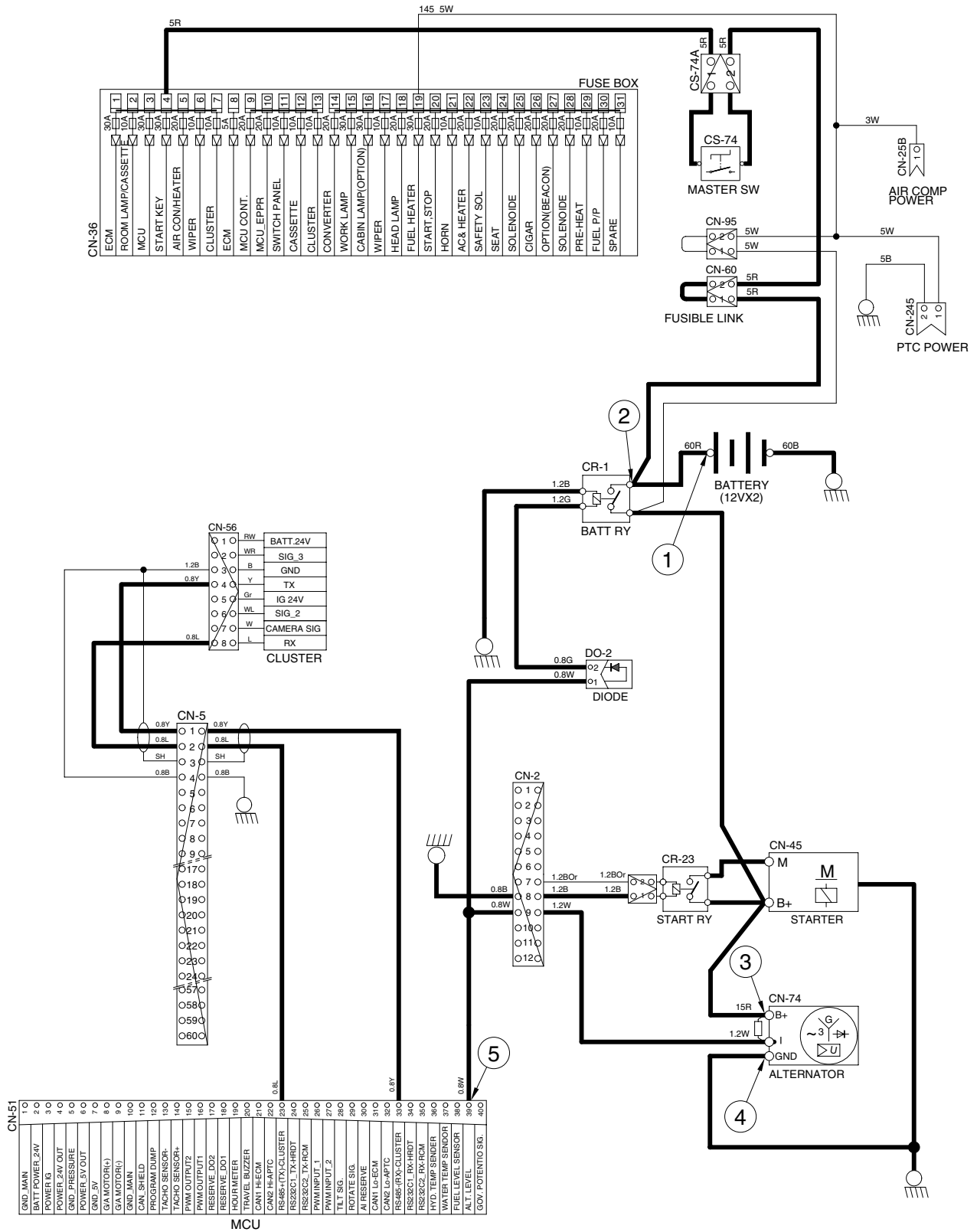
Alternator "B+" terminal → Battery relay(M8) → Battery(+) terminal
 → Fusible link [CN-60] → Master switch [CS-74A]
 → Fuse box

2) CHECK POINT

Engine	Start switch	Check point	Voltage
Run	ON	① - GND (battery voltage) ② - GND (battery relay) ③ - GND (alternator B ⁺ terminal) ④ - GND (alternator I terminal) ⑤ - GND (MCU)	20~25V

※ GND : Ground

CHARGING CIRCUIT



38094EL07

4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.15) → Work light relay [CR-4 (30,86)]

Fuse box (No.18) → Head light relay [CR-13 (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)]

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

→ I/conn [CN-11 (8)] → AC & Heater controller illumination ON [4]

→ I/conn [CN-5 (13)] → Remote controller illumination ON [CN-245 (9)]

→ Cigar light [CL-2]

→ USB & Socket illumination ON [CN-246 (7)]

→ Radio & CD/MP3 player illumination ON [CN-27 (9)]

(2) Work light switch ON

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

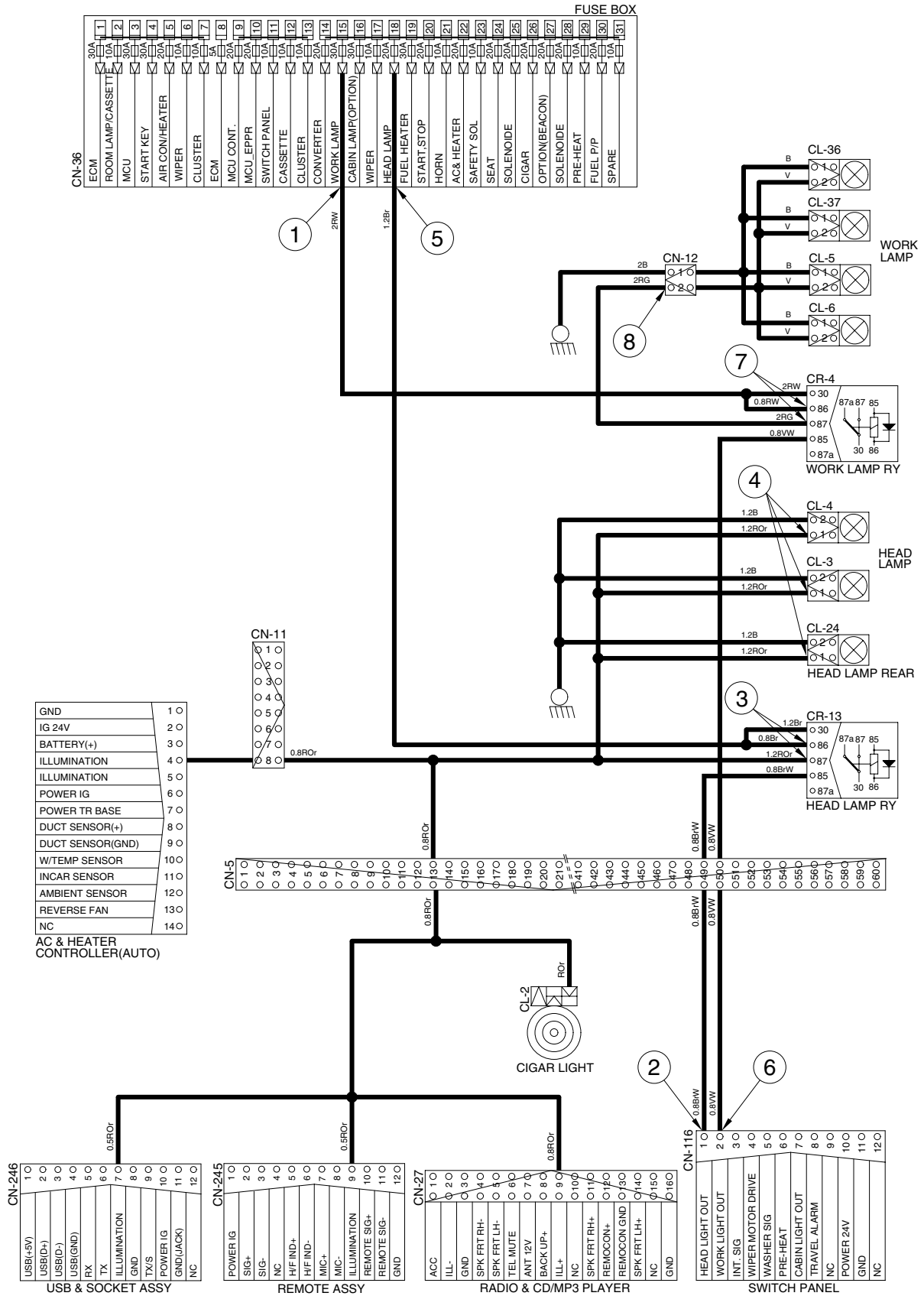
→ I/conn [CN-12 (2)] → Work light ON [CL-5 (2), CL-6 (2), CL-36 (2), CL-37 (2)]

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



5. BEACON LAMP AND CAB LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.27) → I/conn [CN-5 (33)] → Beacon lamp switch [CN-23 (8)]

Fuse box (No.16) → 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)] → 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) ② - GND (switch power input) ③ - GND (switch power output) ④ - GND (beacon lamp) ⑤ - GND (fuse box) ⑥ - GND (cabin light relay) ⑦ - GND (switch power output) ⑧ - GND (cab light)	20~25V

※ GND : Ground

6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.11) → I/conn [CN-5 (57)] → Switch panel [CN-116 (10)]

Fuse box (No.6) → I/conn [CN-5 (18)] → I/conn [CN-17 (5)] → Wiper motor controller [CN-141(7)]
 → Wiper motor [CN-21(4)]

Fuse box (No.17) → 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)

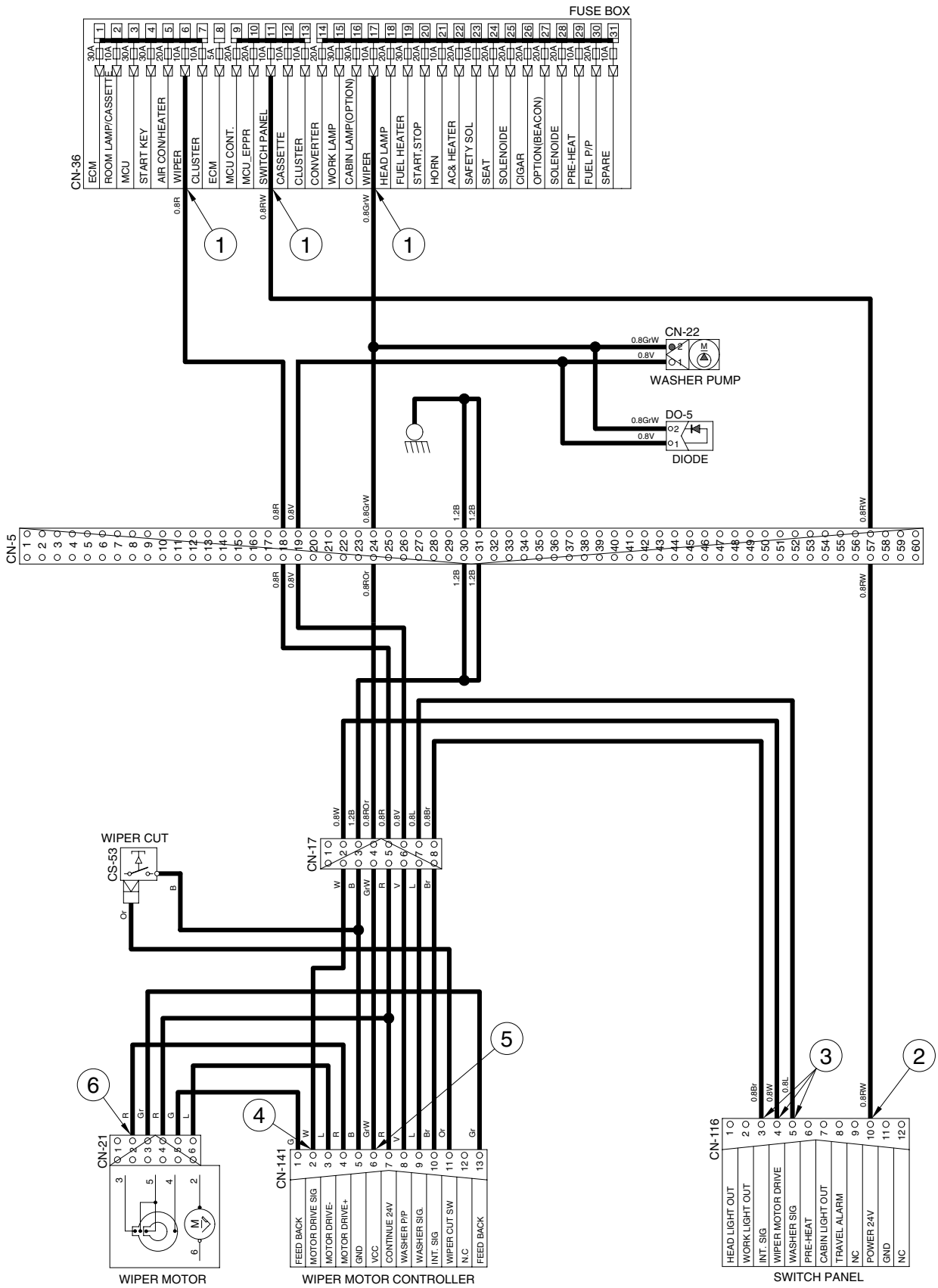
Switch OFF [CN-116 (4)] → Wiper motor parking position by wiper motor controller

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

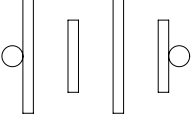
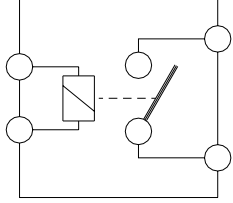
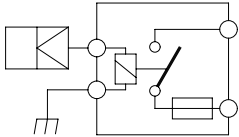
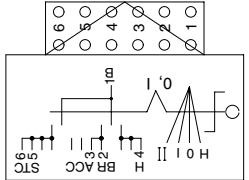
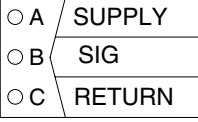
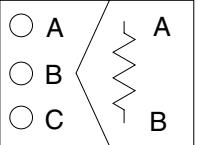
※ GND : Ground

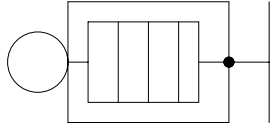
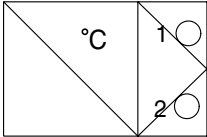
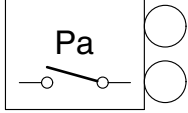
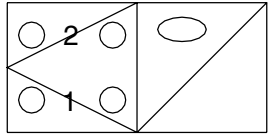
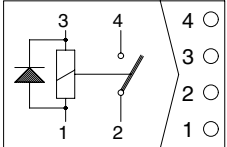
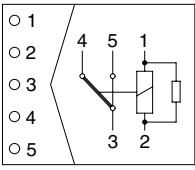
WIPER AND WASHER CIRCUIT

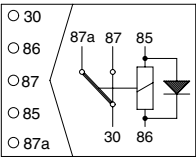
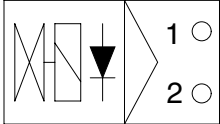

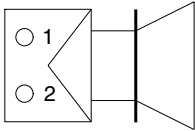
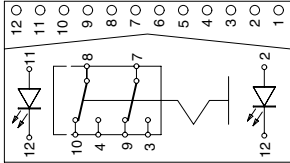
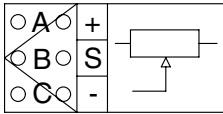


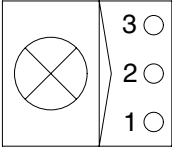
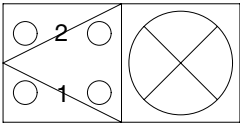
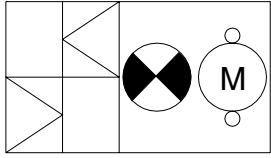
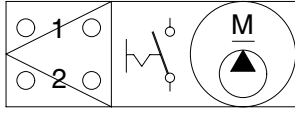
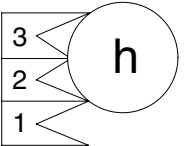
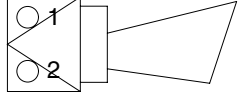
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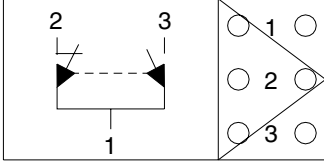
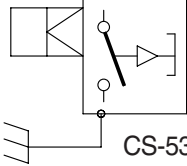
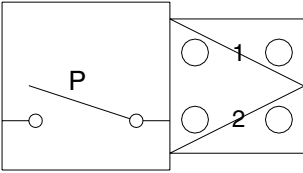
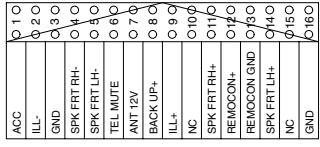
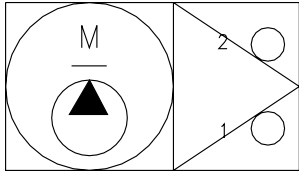
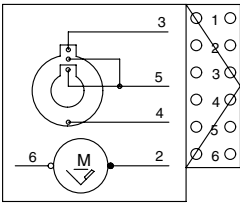
GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

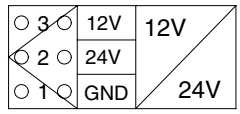
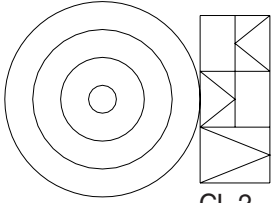
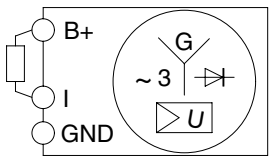
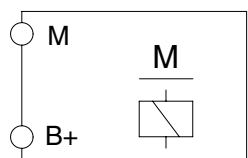
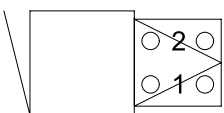
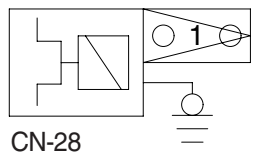
Part name	Symbol	Specifications	Check
Battery		12V × 100Ah (2EA)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Battery relay	 <p style="text-align: center;">CR-1</p>	Rated load : 24V 100A (continuity) 1000A (30seconds)	※ Check coil resistance(M4 to 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-24 CD-31 CD-32 CD-35 CD-42 CD-43 CD-44 CD-69 CD-70 CD-71 </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

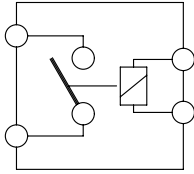
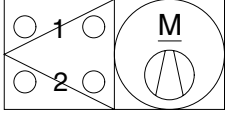
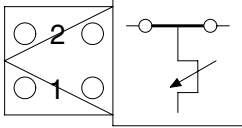
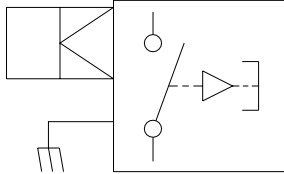
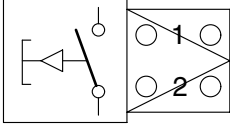
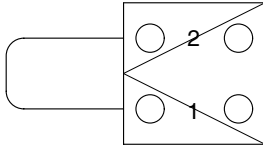
Part name	Symbol	Specifications	Check
Glow plug	 CN-80	24V 200A	※ Check resistance 0.25~0.12 Ω
Temperature sensor (hydraulic)	 CD-1	-	※ Check resistance 50°C : 804 Ω 80°C : 310 Ω 100°C : 180 Ω
Air cleaner pressure switch	 CD-10	(N.O TYPE)	※ Check contact High level : ∞ Ω Low level : 0 Ω
Fuel sender	 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-5 CR-36 CR-45 CR-62	24V 16A	※ Check resistance Normal : About 160 Ω (for terminal 1-2) 0 Ω (for terminal 3-4) ∞ Ω (for terminal 3-5)

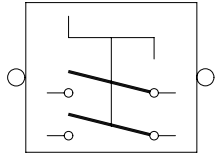
Part name	Symbol	Specifications	Check
Relay	 <p>CR-4 CR-7 CR-9 CR-13 CR-35 CR-46</p>	24V 16A	※ Check resistance Normal : About 160 Ω (for terminal 85-86) 0 Ω (for terminal 30-87a) ∞ Ω (for terminal 30-87)
Solenoid valve	 <p>CN-66 CN-68 CN-70 CN-88 CN-140 CN-149 CN-155 CN-236 CN-237</p>	24V 1A	※ Check resistance Normal : 15~25 Ω (for terminal 1-2)
EPPR valve	 <p>CN-75 CN-133 CN-154 CN-238 CN-239 CN-240 CN-241 CN-242</p>	700mA	※ Check resistance Normal : 15~25 Ω (for terminal 1-2)
Speaker	 <p>CN-23(LH) CN-24(RH)</p>	20W	※ Check resistance Normal : A few Ω
Switch (locking type)	 <p>CS-23 CS-50 CS-52 CS-67 CS-73 CS-82 CS-83 CS-99 CS-100</p>	24V 8A	※ 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)
Accel dial	 <p>CN-142</p>	-	※ Check resist Normal : About 5k Ω (for terminal A-C) ※ Check voltage Normal : About 5V (for terminal A-C) : 2~4.5V (for terminal C-B)

Part name	Symbol	Specifications	Check
Room lamp	 CL-1	24V 10W	※ 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)
Head lamp, Work lamp, Cab lamp	 CL-3 CL-4 CL-5 CL-6 CL-8 CL-9 CL-10 CL-24 CL-36 CL-37	24V 65W (H3 Type)	※ Check disconnection Normal : 1.2 Ω
Beacon lamp	 CL-7	21V 70W (H1 Type)	※ Check disconnection Normal : A few Ω
Fuel filler pump	 CN-61	24V 10A 35 l /min	※ Check resistance Normal : 1.0 Ω
Hour meter	 CN-48	16~32V	※ Check operation Supply power(24V) to terminal No.2 and connect terminal No.1 and ground
Horn	 CN-20 CN-25	DC22~28V 2A	※ Check operation Supply power(24V) to each terminal and connect ground.

Part name	Symbol	Specifications	Check
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)
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 & CD/MP3 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)

Part name	Symbol	Specifications	Check
DC/DC Converter	 <p>CN-138</p>	12V 3A	24V (1-2) 12V (1-3)
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>	Delco Remy 24V 55A	※ Check contact Normal : 0 Ω (for terminal B ⁺ -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

Part name	Symbol	Specifications	Check
Start relay	 CR-23	24V 300A	※ Check contact Normal : 0.94 Ω (for terminal 1-2)
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 decel, horn, breaker)	 CS-5 CS-19 CS-26 CS-29	24V 6A	※ Check resistance Normal : ∞ Ω
Fusible link	 CN-60 CN-95	60A	※ Check disconnection Normal : 0 Ω (connect ring terminal and check resist between terminal 1 and 2)

Part name	Symbol	Specifications	Check
Master switch	 <p data-bbox="491 454 568 483">CS-74</p>	6-36V	※ Check disconnection Normal : 0.1 Ω

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)	S816-010002	S816-110002
CN-2	AMP	12	l/conn (Frame harness-Engine harness)	S816-012002	S816-112002
CN-3	AMP	15	l/conn (Frame harness-Engine harness)	2-85262-1	368301-1
CN-4	AMP	16	l/conn (Console harness LH-Frame harness)	S816-012002	S816-116002
CN-5	DEUTSCH	60	l/conn (Side harness RH-Frame harness)	DRB16-60SAE-L018	DRB12-60PAE-L018
CN-7	AMP	16	l/conn (Console harness RH-Frame harness)	368047-1	S816-116002
CN-8	AMP	12	l/conn (Console harness RH-Frame harness)	S816-012002	S816-112002
CN-10	DEUTSCH	12	l/conn (Cab harness-Side harness RH)	DT06-12S-EP06	DT04-12P-BE02
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-E004
CN-14	AMP	8	l/conn (Frame harness-Bucket EPPR)	S816-008002	S816-108002
CN-15	AMP	12	l/conn (Frame harness-Breaker solenoid)	S816-012002	S816-112002
CN-16	AMP	6	Emergency engine start & speed control	S816-006002	S816-106002
CN-17	DEUTSCH	8	l/conn (Wiper harness-Side harness RH)	DT06-8S-EP06	DT04-8P
CN-20	MOLEX	2	Horn	36825-0211	-
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	36825-0211	-
CN-27	KUM	16	Radio & CD/MP3 player	PK145-16017	-
CN-28	KUM	1	Aircon compressor	NMWP01F-B	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	AMP	12	Fuse & relay box	S816-012002	-
CN-45	RING-TERM	-	Starter motor B+	S820-308000	-
CN-48	AMP	1	Hour meter	2-520193-2	-
CN-51	DEUTSCH	40	MCU	DRC26-40SA	-
CN-52	DEUTSCH	40	MCU	DRC26-40SB	-
CN-53	DEUTSCH	40	MCU	DRC26-40SC	-
CN-56	DEUTSCH	6	Cluster	-	DT04-6P-E005
CN-60	YAZAKI	2	Fusible link	21N4-01320	7122-4125-50
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	-

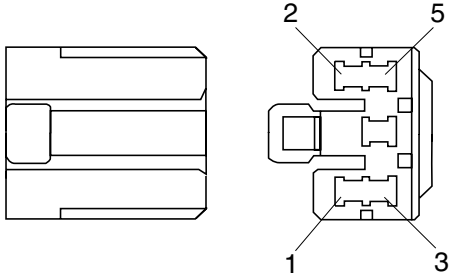
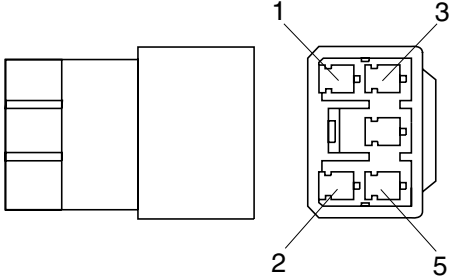
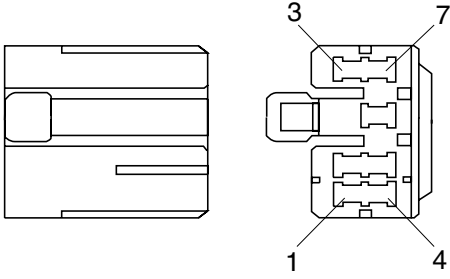
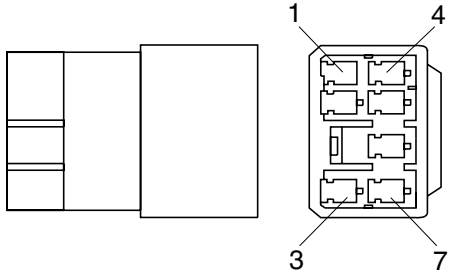
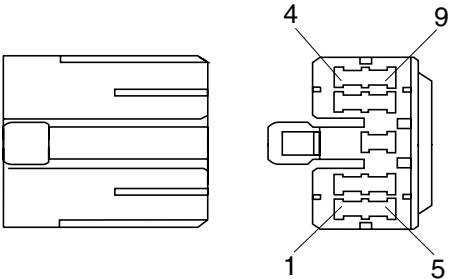
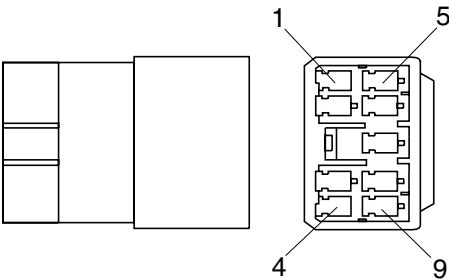
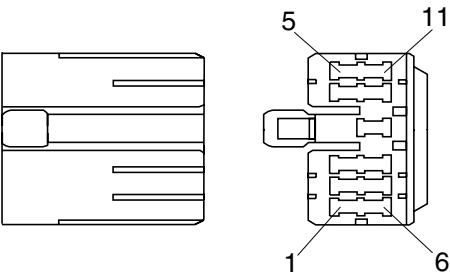
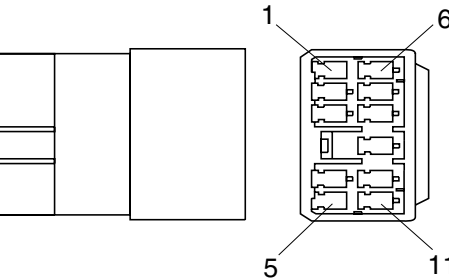
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-74	RING-TERM	2	Alternator "I" terminal	S820-105000	-
CN-75	AMP	2	Pump EPPR	S816-002002	-
CN-80	RING-TERM	-	Glow plug	S820-306000	-
CN-81	DEUTSCH	2	Travel buzzer solenoid	DT06-2S-EP06	-
CN-88	DEUTSCH	2	Power max solenoid	DT06-2S-EP06	-
CN-93	DEUTSCH	50	ECM	DRC26-50S-04	-
CN-94	DEUTSCH	4	ECM earth	DTP06-4S-EP06	-
CN-95	KET	2	Fusible link	21N4-01311	S813-130201
CN-96	AMP	4	Fuel warmer	2-967325-3	-
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-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-144	KET	20	Handsfree	MG610240	-
CN-147	AMP	4	Fuel-heater	2-967325-3	-
CN-149	DEUTSCH	2	Attach safety solenoid	DT06-2S-EP06	-
CN-154	DEUTSCH	2	Cooling fan	DT06-2S-EP06	
CN-155	AMP	2	Reverse solenoid	85202-1	
CN-156	DEUTSCH	2	Air seat	DT06-2S-EP06	DT04-2P-E005
CN-170	AMP	2	Heated seat	174352-2	174354-2
CN-173	DEUTSCH	3	Resistor	DT06-3S-EP06	DT04-3P-EP10
CN-236	DEUTSCH	2	Attach pressure solenoid	DT06-2S-EP06	-
CN-237	DEUTSCH	2	Attach conflux solenoid	DT06-2S-EP06	-
CN-242	DEUTSCH	2	Attach flow solenoid	DT06-2S-EP06	DT04-2P-E005
CN-244	MTA	2	CAN 2	-	01.00705
CN-245	AMP	12	Remocon	368542-1	-
CN-246	KET	12	USB & Socket assy	MG610240	-
CN-247	DEUTSCH	8	PWM convert	DT06-08SA-EP06	DT04-8P
CN-249	DEUTSCH	4	Rear view camera	DT06-4S-EP06	DT04-4P-E005
CN-255	AMP	2	PTC Power	S813-030201	-
CN-256	AMP	8	Proportional	-	S816-108002
CN-258	KET	1	Air compressor power	MG640944-5	MG650943-5
CN-259	DEUTSCH	2	Camera	DT06-2S-EP06	DT04-2P-E005

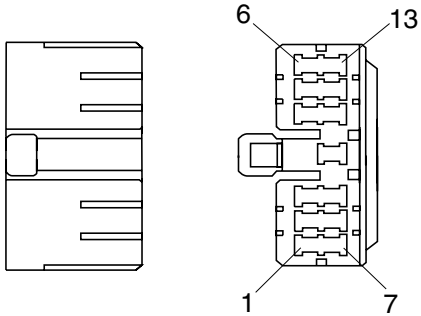
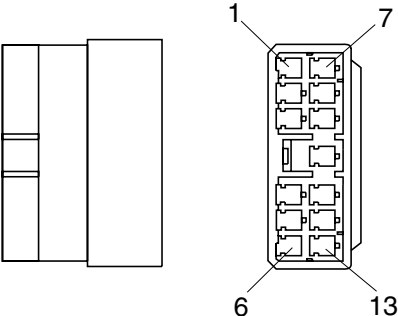
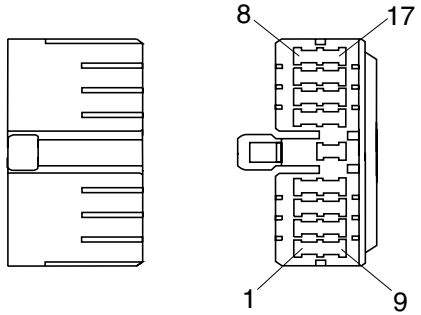
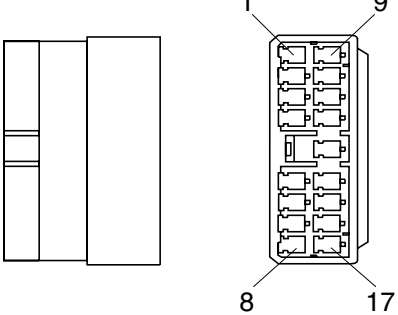
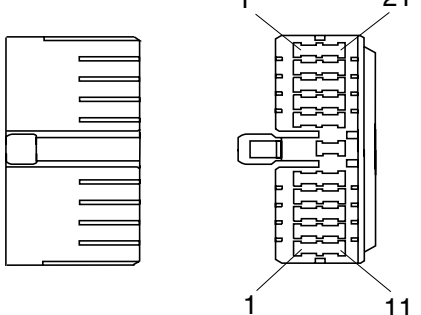
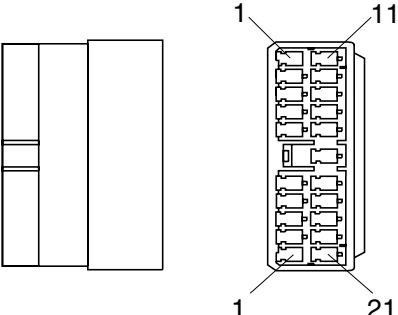
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
· Relay					
CR-1	RING-TERM	-	Battery relay	ST710285-2	-
CR-2	-	5	Horn relay	-	-
CR-4	-	5	Working lamp relay	-	-
CR-5	-	5	Anti restart relay	-	-
CR-7	-	5	Aircon compressor relay	-	-
CR-9	-	5	Head lamp relay	-	-
CR-13	-	5	Cabin 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-45	-	5	ECM power relay	-	-
CR-46	-	5	Fuel warmer relay	-	-
CR-62	-	5	Breaker relay	-	-
· Switch					
CS-1	SHUR	1	Door switch	S822-014002	S822-114002
CS-2	DEUTSCH	6	Start key switch	DT06-12S	-
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-20	AMP	1	Safety switch	S822-014002	-
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-27	SWF	10	Breaker switch	SWF 593757	-
CS-29	DEUTSCH	2	Power max switch	DT06-2S-EP06	-
CS-50	SWF	12	Overload switch	SWF589790	-
CS-52	SWF	10	Econo switch	SWF 593757	-
CS-53	AMP	1	Wiper cut switch	S822-014002	-
CS-67	SWF	12	Quick clamp switch	SWF 589790	-
CS-73	SWF	12	Reverse fan switch	SWF 589790	-
CS-74	AMP	2	Master switch	S813-030201	-
CS-82	SWF	12	Spare switch	SWF 589790	-
CS-83	SWF	12	Spare switch	SWF 589790	-
CS-99	SWF	12	Spare switch	SWF 589790	-
CS-100	SWF	12	Spare switch	SWF 589790	-
CS-142	DEUTSCH	3	Accel dial switch	DT06-3S-EP06	-

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	-
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	Cab lamp-LH	DT06-2S-EP06	DT04-2P
CL-9	DEUTSCH	2	Cab lamp-RH	DT06-2S-EP06	DT04-2P
CL-10	DEUTSCH	2	Cab lamp-RH	DT06-2S-EP06	DT04-2P
CL-24	DEUTSCH	2	Rear work lamp	DT06-2S-EP06	DT04-2P-E005
CL-36	DEUTSCH	2	Work lamp-LH	DT06-2S-EP06	DT04-2P
CL-37	DEUTSCH	2	Work lamp-RH	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	RING TERM	-	Air cleaner switch	ST730135-2	S820-104002
CD-24	DEUTSCH	3	Swing sensor	DT06-3S-EP06	-
CD-31	DEUTSCH	3	Overload sensor	DT06-3S-EP06	DT04-3P-E005
CD-32	DEUTSCH	3	Boom up sensor	DT06-3S-EP06	-
CD-35	DEUTSCH	3	Arm & 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	DEUTSCH	2	WIF sensor	DT06-2S-EP06	-
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	-

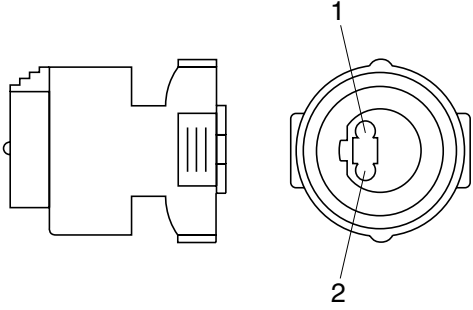
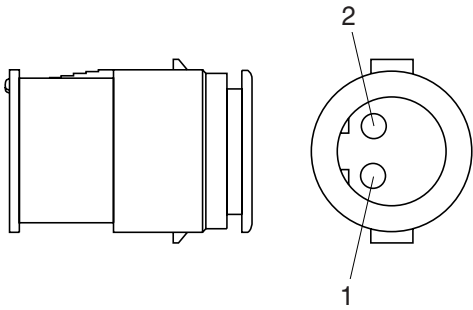
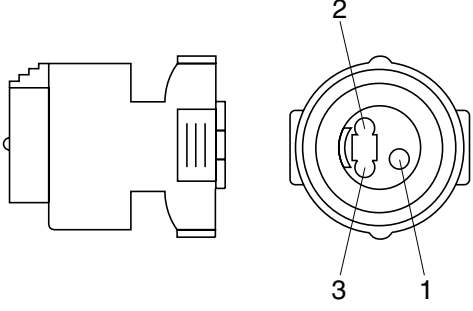
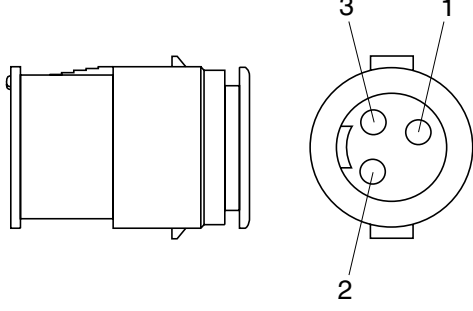
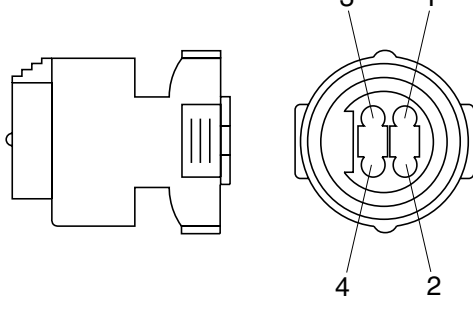
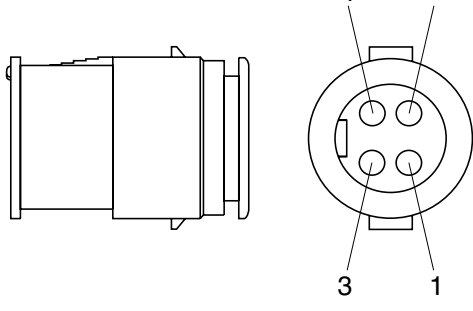
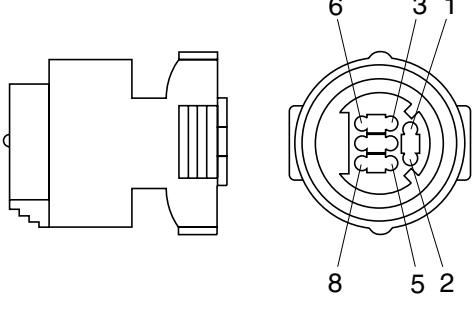
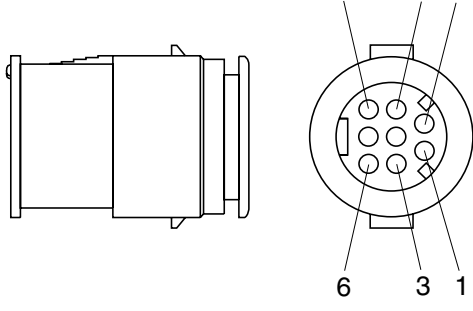
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

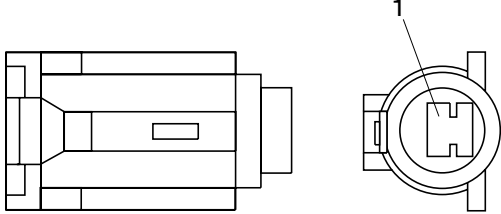
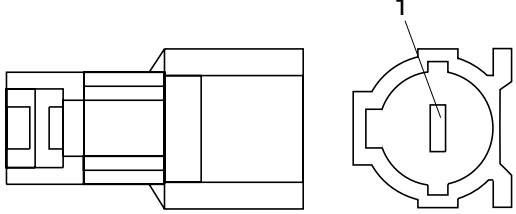
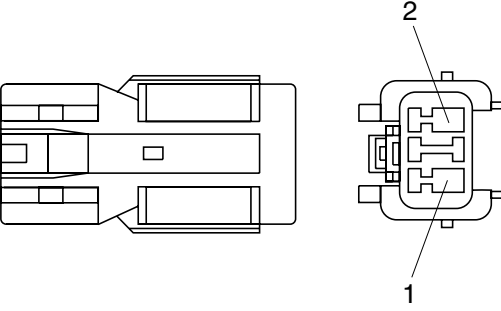
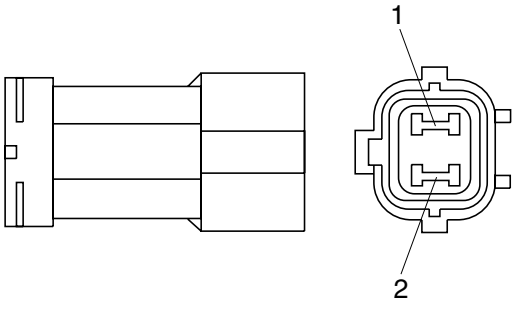
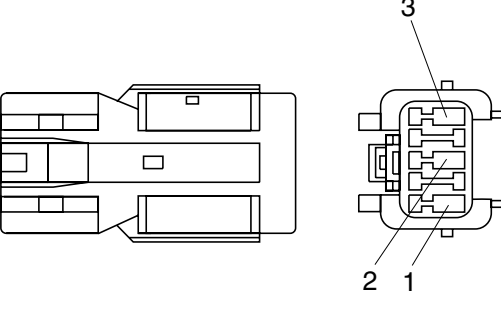
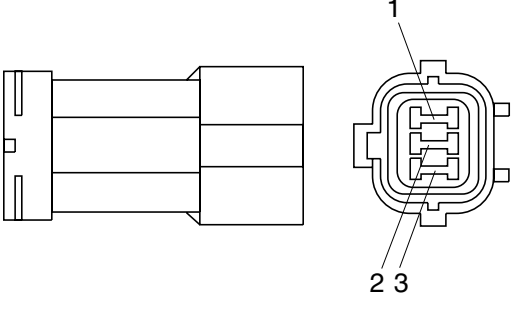
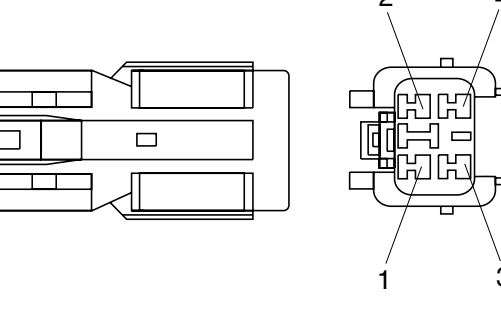
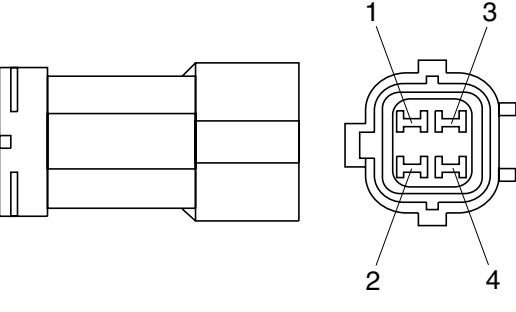
No. of pin	Receptacle connector (female)	Plug connector (male)
5	 <p style="text-align: center;">S811-005002</p>	 <p style="text-align: center;">S811-105002</p>
7	 <p style="text-align: center;">S811-007002</p>	 <p style="text-align: center;">S811-107002</p>
9	 <p style="text-align: center;">S811-009002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

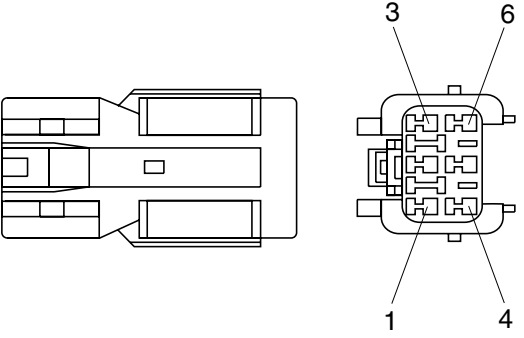
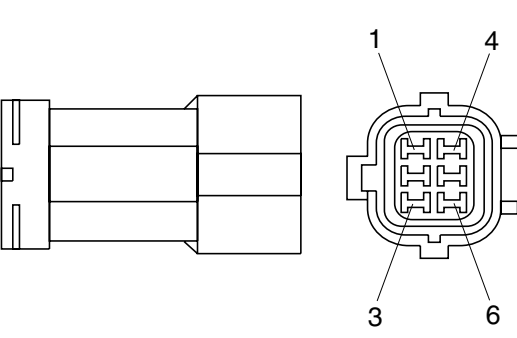
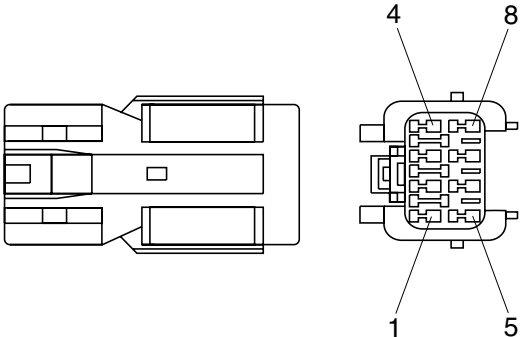
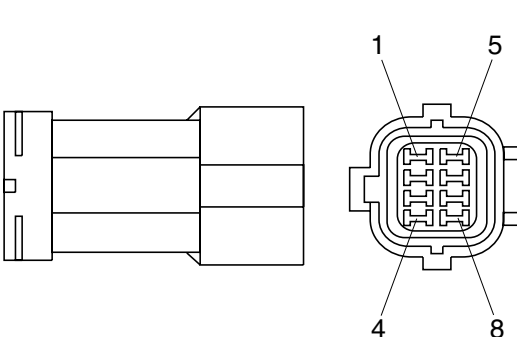
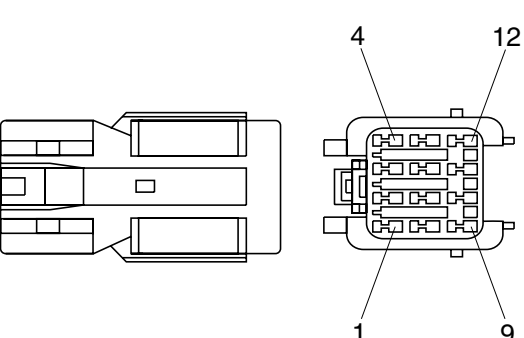
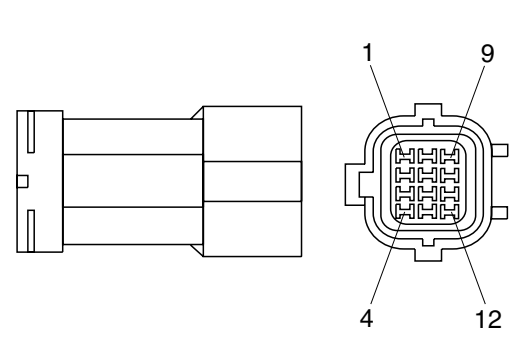
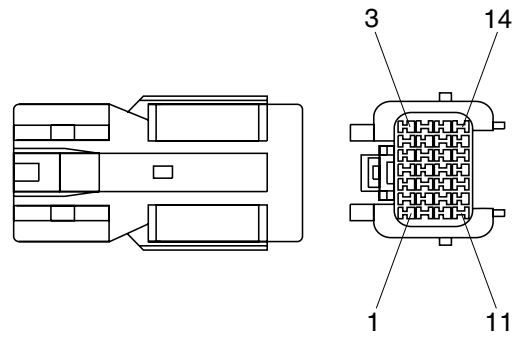
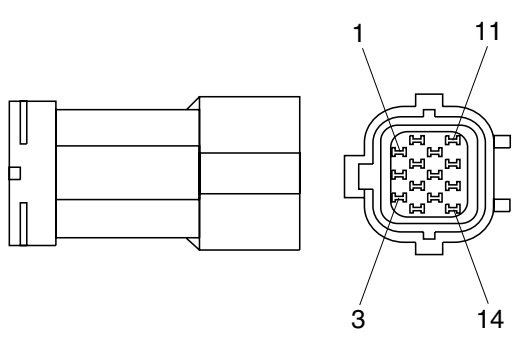
No. of pin	Receptacle connector (female)	Plug connector (male)
13	 <p data-bbox="689 631 837 667">S811-013002</p>	 <p data-bbox="1248 631 1396 667">S811-113002</p>
17	 <p data-bbox="689 1039 837 1075">S811-017002</p>	 <p data-bbox="1248 1039 1396 1075">S811-117002</p>
21	 <p data-bbox="689 1447 837 1482">S811-021002</p>	 <p data-bbox="1248 1447 1396 1482">S811-121002</p>

2) J TYPE CONNECTOR

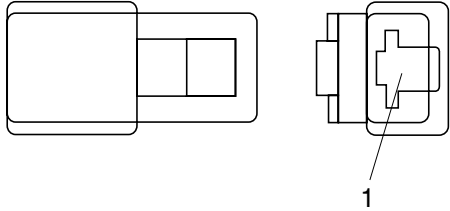
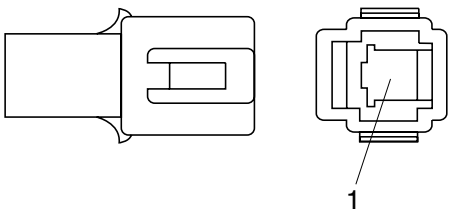
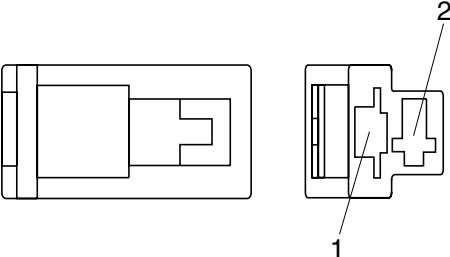
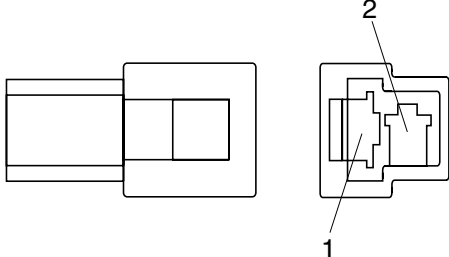
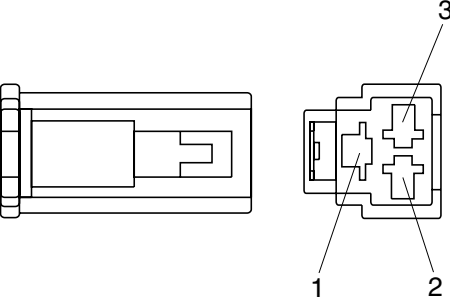
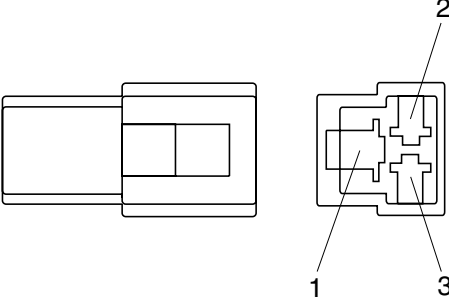
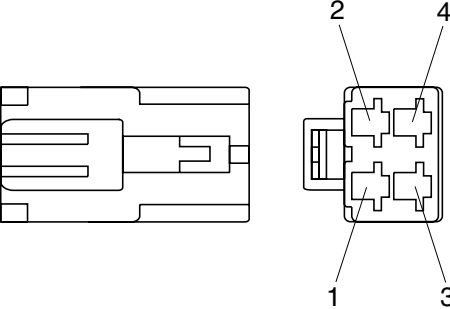
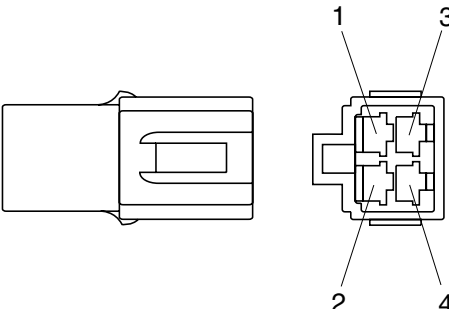
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: center;">S816-002001</p>	 <p style="text-align: center;">S816-102001</p>
3	 <p style="text-align: center;">S816-003001</p>	 <p style="text-align: center;">S816-103001</p>
4	 <p style="text-align: center;">S816-004001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

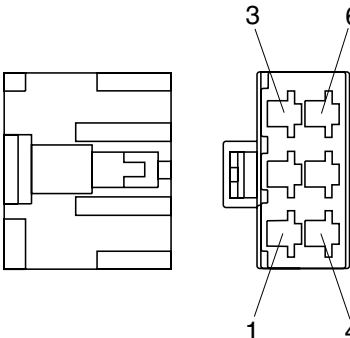
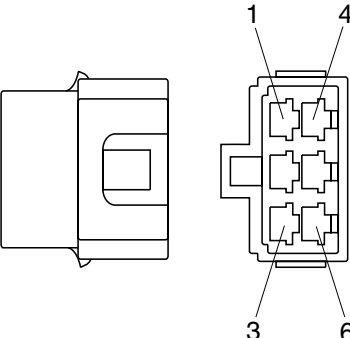
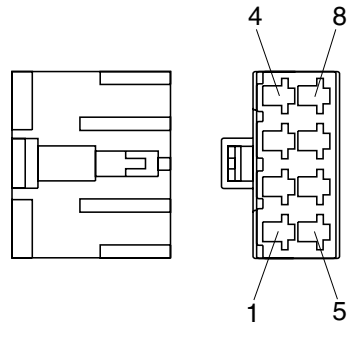
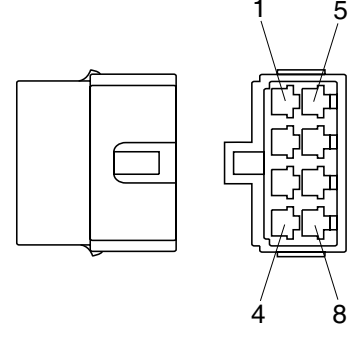
3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="687 680 836 712">S814-001000</p>	 <p data-bbox="1241 680 1390 712">S814-101000</p>
2	 <p data-bbox="687 1088 836 1120">S814-002000</p>	 <p data-bbox="1241 1088 1390 1120">S814-102000</p>
3	 <p data-bbox="687 1498 836 1529">S814-003000</p>	 <p data-bbox="1241 1498 1390 1529">S814-103000</p>
4	 <p data-bbox="687 1908 836 1939">S814-004000</p>	 <p data-bbox="1241 1908 1390 1939">S814-104000</p>

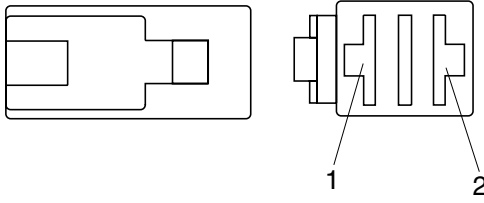
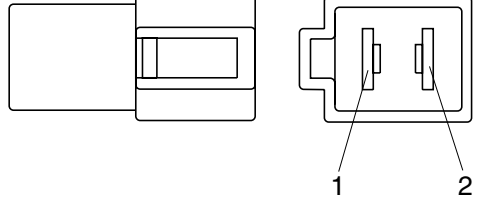
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p data-bbox="686 638 837 672">S814-006000</p>	 <p data-bbox="1244 638 1396 672">S814-106000</p>
8	 <p data-bbox="686 1041 837 1075">S814-008000</p>	 <p data-bbox="1244 1041 1396 1075">S814-108000</p>
12	 <p data-bbox="686 1449 837 1482">S814-012000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

4) CN TYPE CONNECTOR

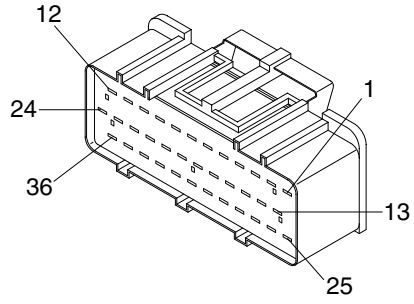
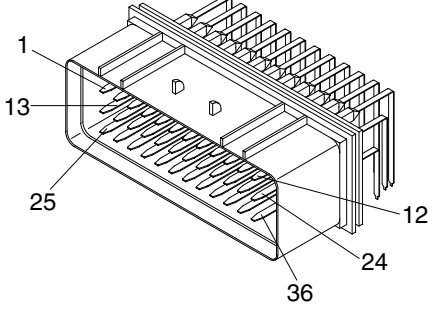
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p style="text-align: center;">S810-001202</p>	 <p style="text-align: center;">S810-101202</p>
2	 <p style="text-align: center;">S810-002202</p>	 <p style="text-align: center;">S810-102202</p>
3	 <p style="text-align: center;">S810-003202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

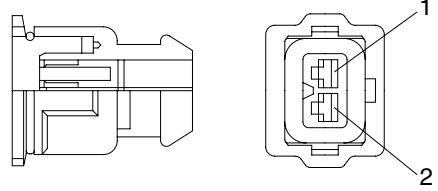
5) 375 FASTEN TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p data-bbox="686 683 837 705">S810-002402</p>	 <p data-bbox="1244 683 1396 705">S810-102402</p>

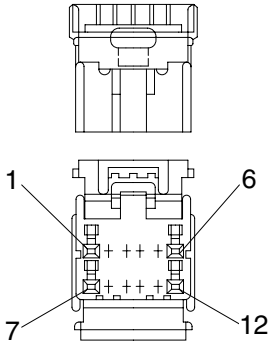
6) AMP ECONOSEAL CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
36	 <p data-bbox="726 1288 837 1310">344111-1</p>	 <p data-bbox="1284 1288 1396 1310">344108-1</p>

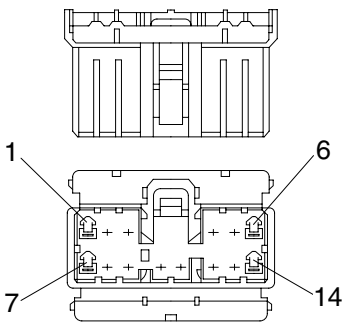
7) AMP TIMER CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p data-bbox="742 1892 837 1915">85202-1</p>	

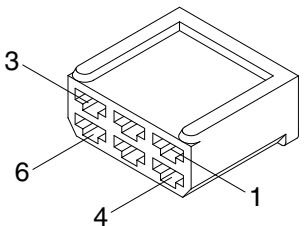
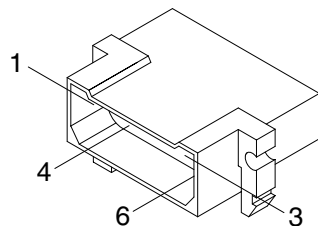
8) AMP 040 MULTILOCK CONNECTOR

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

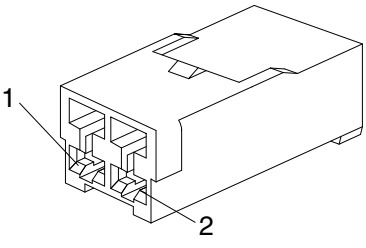
9) AMP 070 MULTILOCK CONNECTOR

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

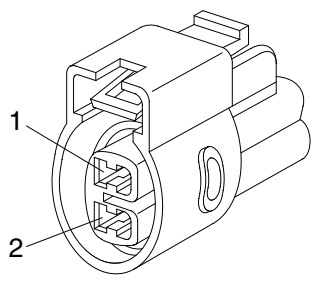
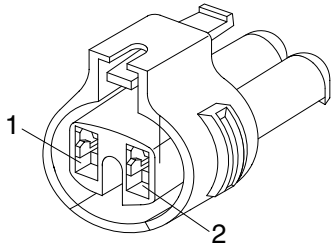
10) AMP FASTIN - FASTON CONNECTOR

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

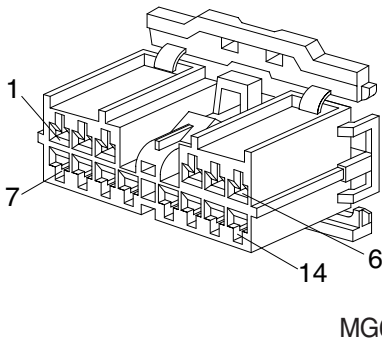
11) KET 090 CONNECTOR

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

12) KET 090 WP CONNECTORS

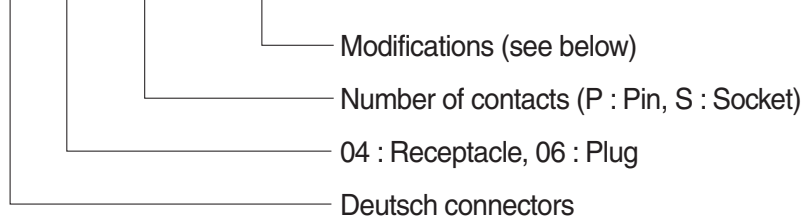
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: right;">MG640605</p>	
2	 <p style="text-align: right;">MG640795</p>	

13) KET SDL CONNECTOR

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

14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★☆☆



※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

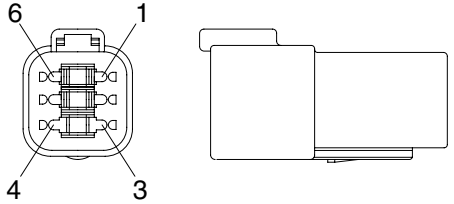
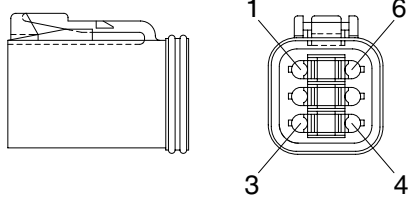
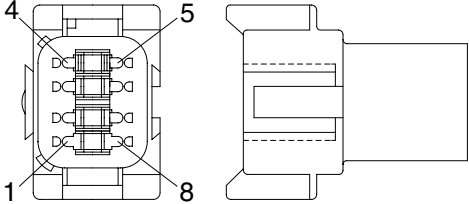
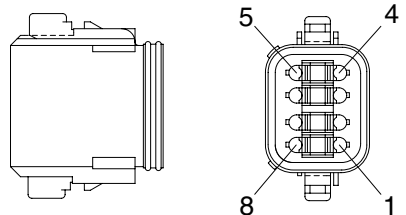
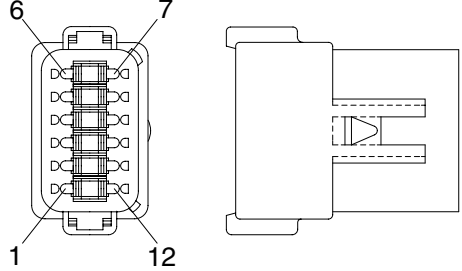
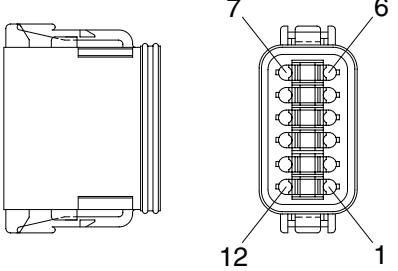
E005 : Combination - E004 & E003

EP04 : End cap

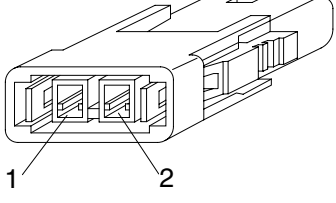
EP06 : Combination P012 & EP04

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

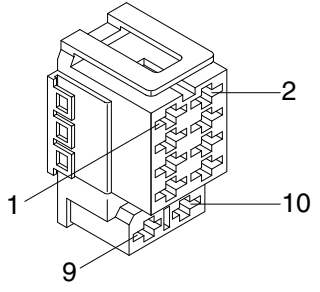
No. of pin	Receptacle connector (female)	Plug connector (male)
2	<p style="text-align: center;">DT06-2S</p>	<p style="text-align: center;">DT04-2P</p>
3	<p style="text-align: center;">DT06-3S</p>	<p style="text-align: center;">DT04-3P</p>
4	<p style="text-align: center;">DT06-4S</p>	<p style="text-align: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

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

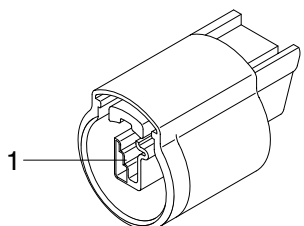
15) MOLEX 2CKTS CONNECTOR

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

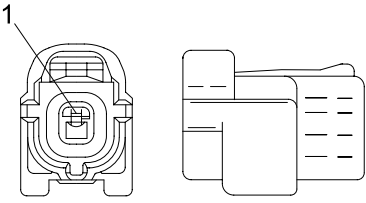
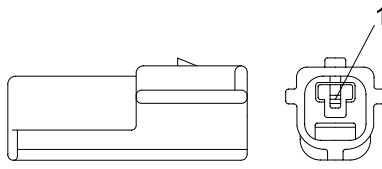
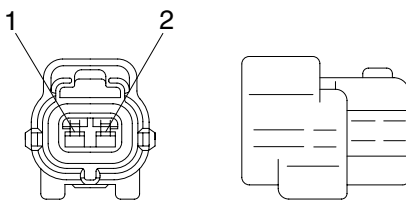
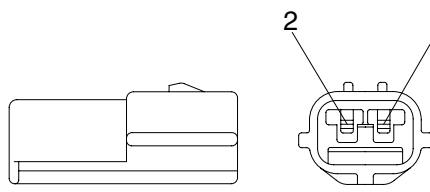
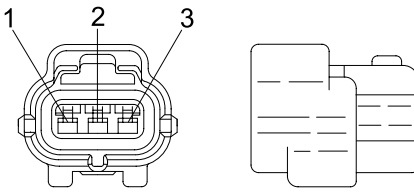
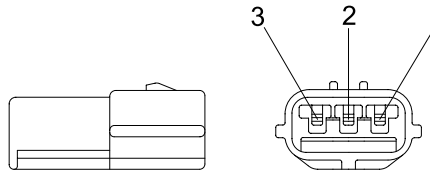
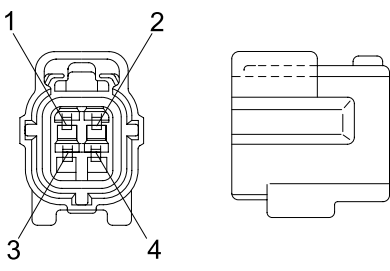
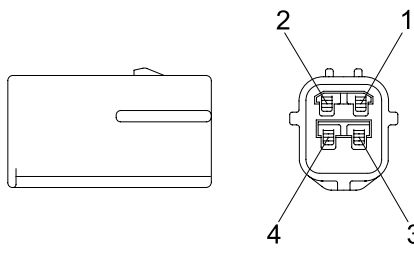
16) ITT SWF CONNECTOR

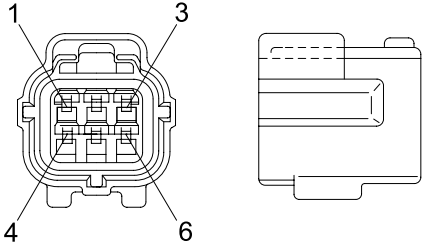
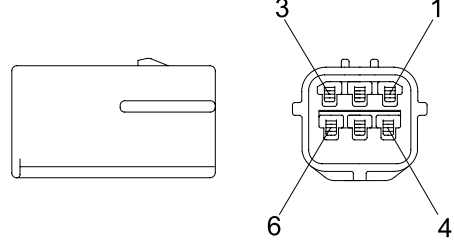
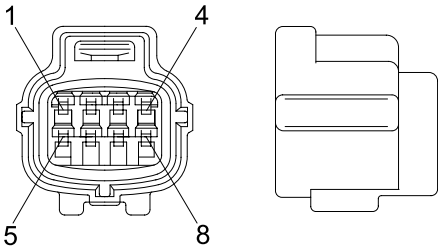
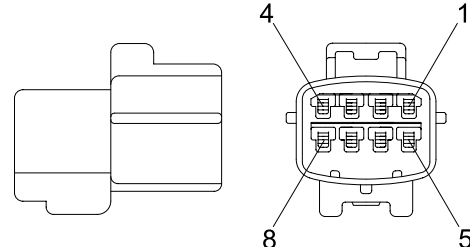
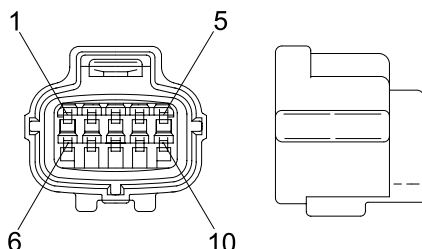
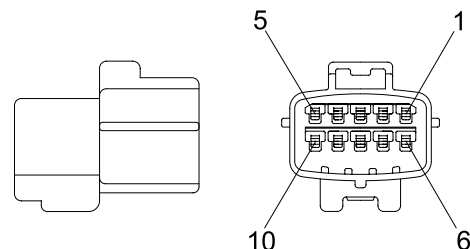
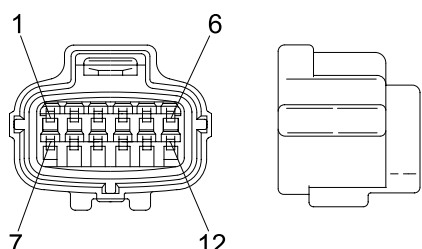
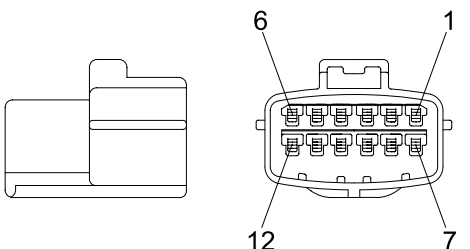
No. of pin	Receptacle connector (female)	Plug connector (male)
10	 <p data-bbox="694 1288 837 1310">SWF593757</p>	

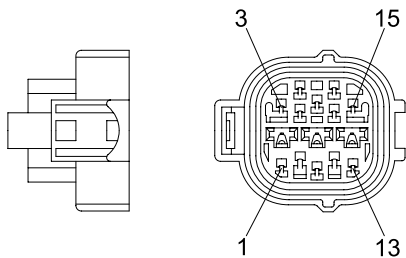
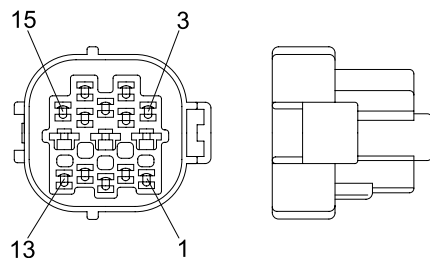
17) MWP NMWP CONNECTOR

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

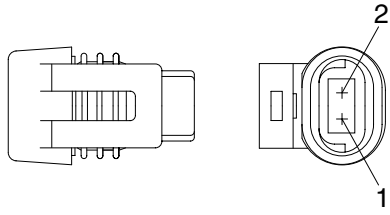
18) ECONOSEAL J TYPE CONNECTORS

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

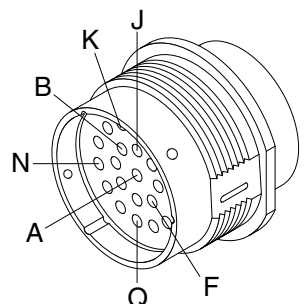
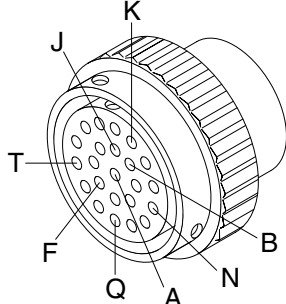
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p style="text-align: center;">S816-006002</p>	 <p style="text-align: center;">S816-106002</p>
8	 <p style="text-align: center;">S816-008002</p>	 <p style="text-align: center;">S816-108002</p>
10	 <p style="text-align: center;">S816-010002</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 style="text-align: right;">368301-1</p>	 <p style="text-align: right;">2-85262-1</p>

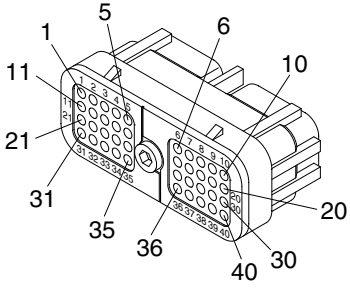
19) METRI-PACK TYPE CONNECTOR

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

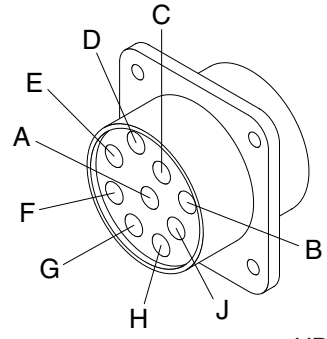
20) DEUTSCH HD30 CONNECTOR

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

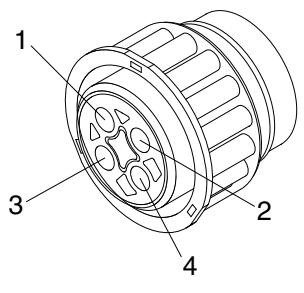
21) DEUTSCH MCU CONNECTOR

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

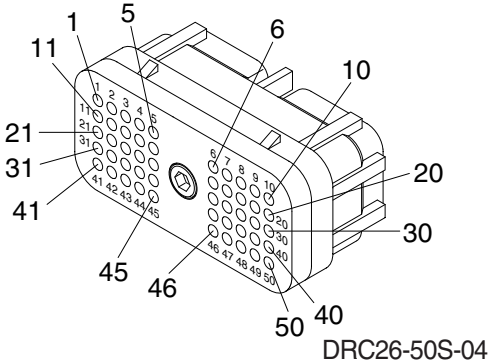
22) DEUTSCH SERVICE TOOL CONNECTOR

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

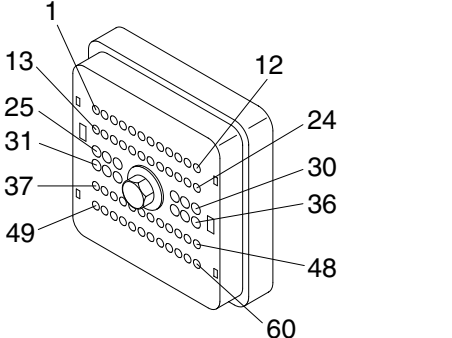
23) AMP FUEL WARMER CONNECTOR

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>	