

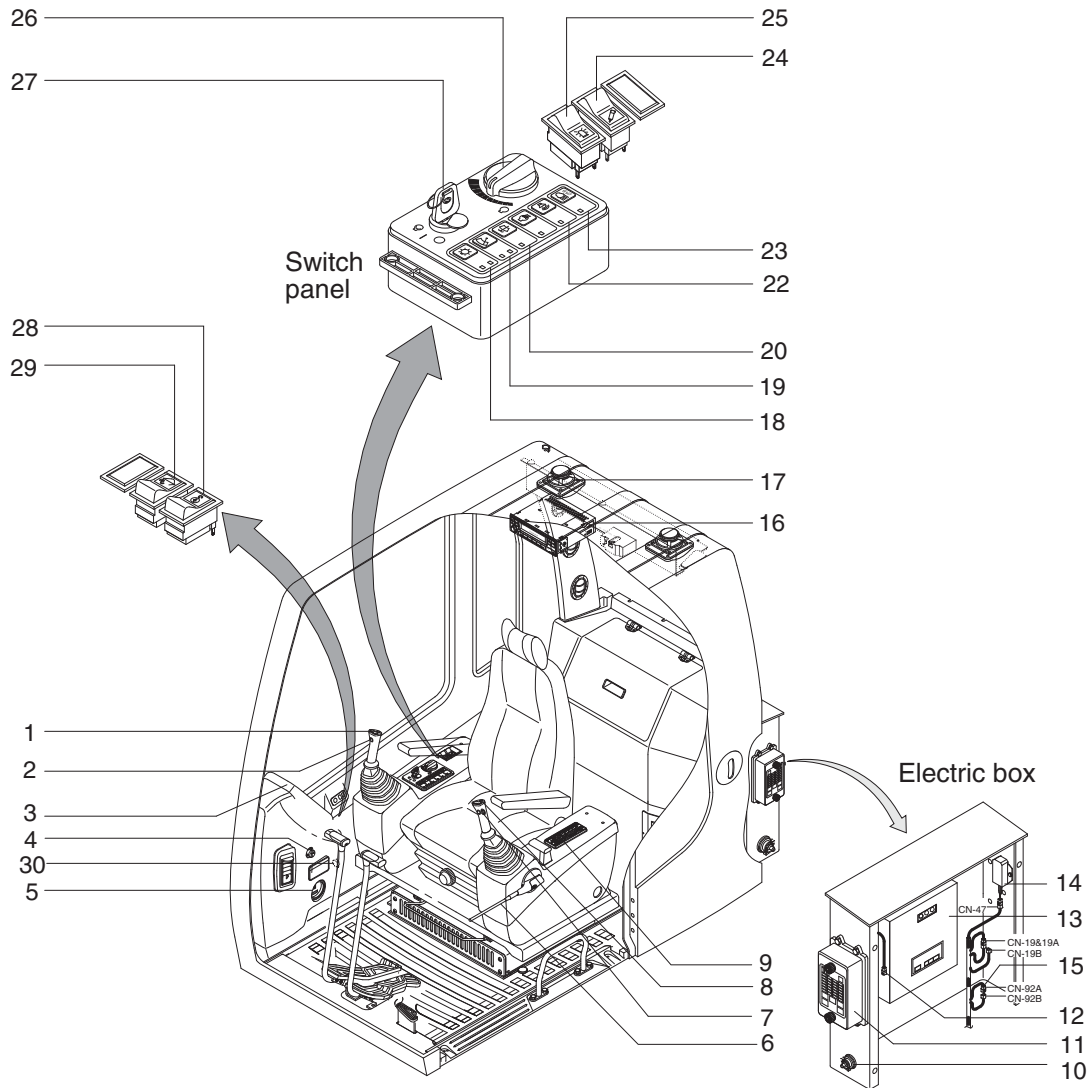
SECTION 4 ELECTRICAL SYSTEM

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SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

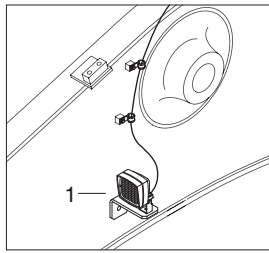
1. LOCATION 1



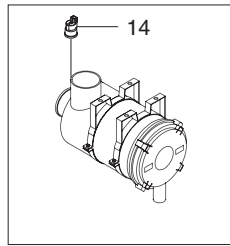
210S4EL01

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|----|--------------------------|----|-------------------------------------|----|--------------------------|
| 1 | Horn switch | 11 | Fuse box | 22 | Travel alarm switch |
| 2 | Breaker operation switch | 12 | RS232 serial connector | 23 | Cab light switch |
| 3 | Cluster | 13 | MCU | 24 | Breaker selection switch |
| 4 | Cigar lighter | 14 | Prolix resistor | 25 | Beacon switch |
| 5 | Hour meter | 15 | Emergency engine starting connector | 26 | Accel dial |
| 6 | Safety lever | 16 | Radio & USB player | 27 | Start switch |
| 7 | Power max switch (null) | 17 | Speaker | 28 | Overload switch |
| 8 | One touch decel switch | 18 | Main light switch | 29 | Quick clamp switch |
| 9 | Air conditioner switch | 19 | Wiper switch | 30 | 12V socket |
| 10 | Master switch | 20 | Washer switch | | |

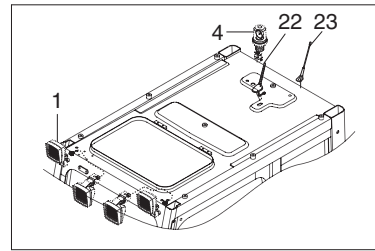
2. LOCATION 2



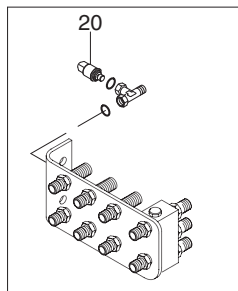
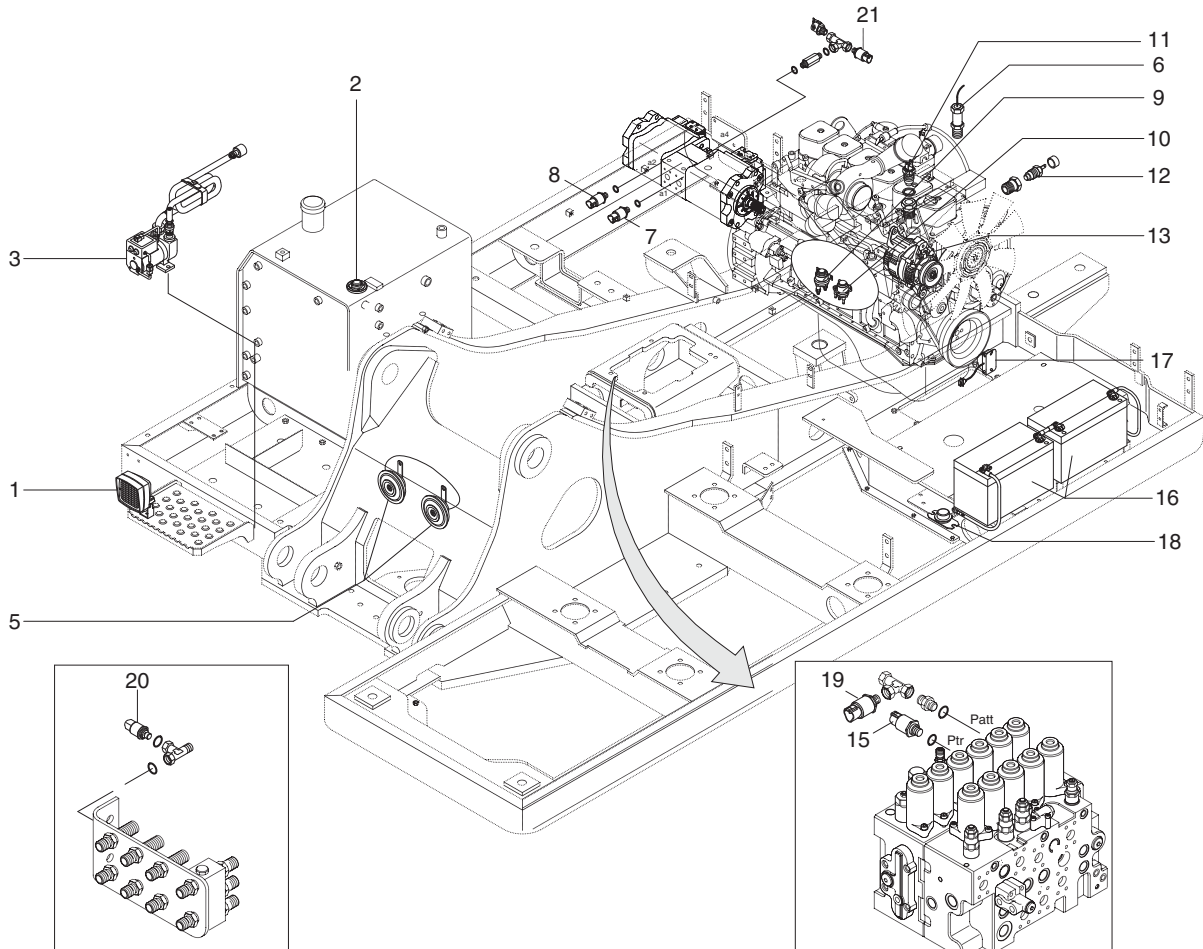
BOOM



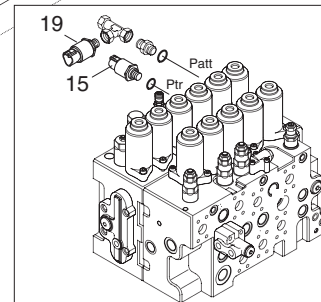
AIR CLEANER



CAB



TERMINAL ASSY



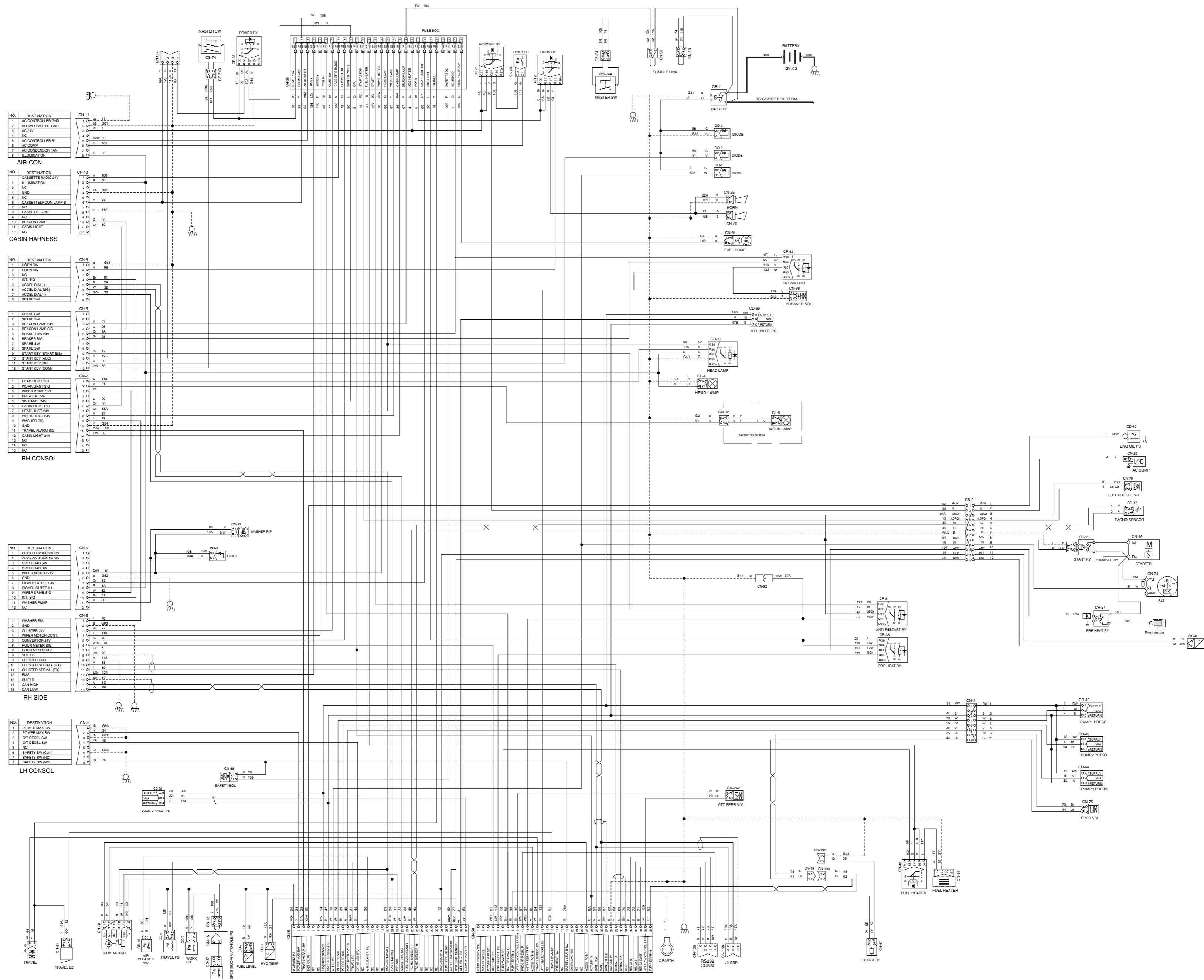
MAIN CONTROL VALVE

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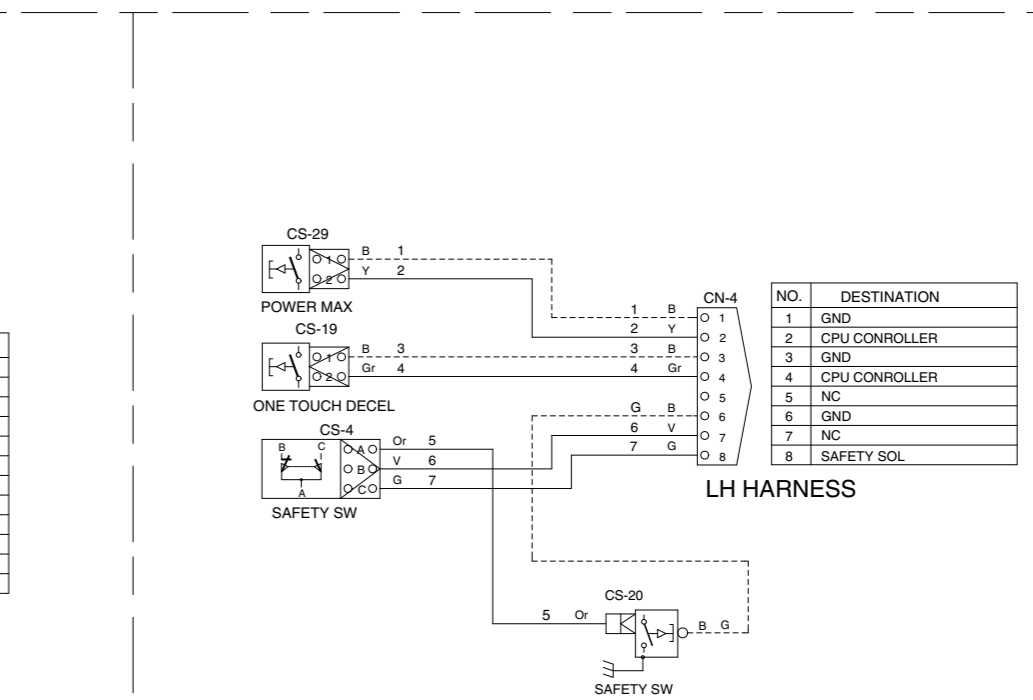
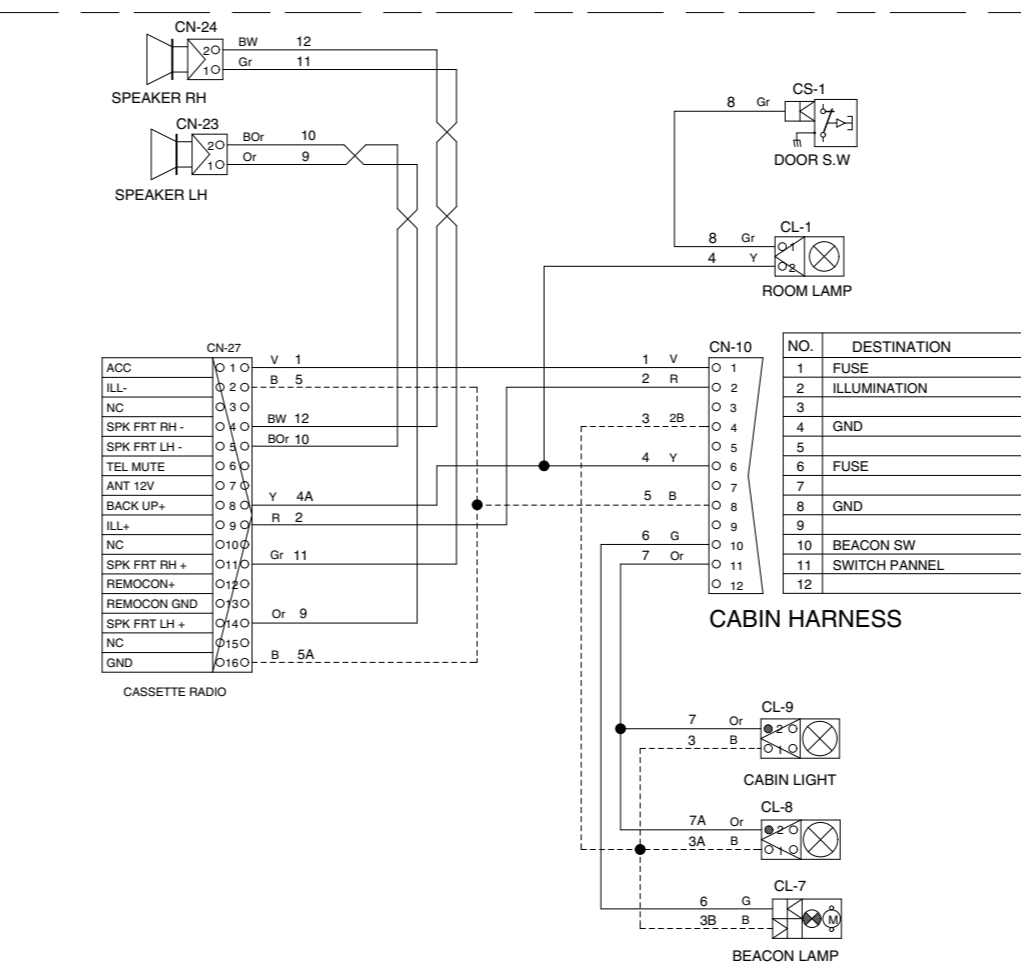
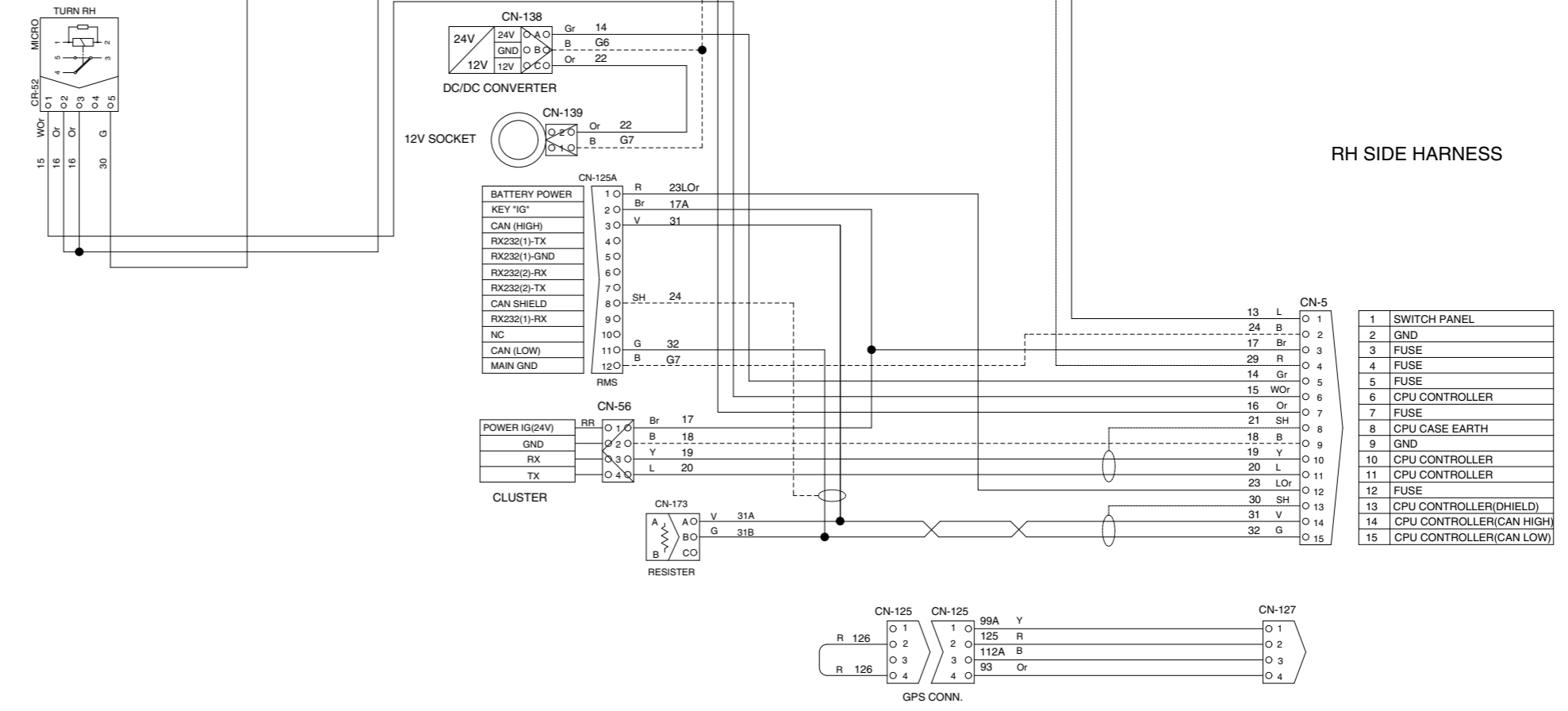
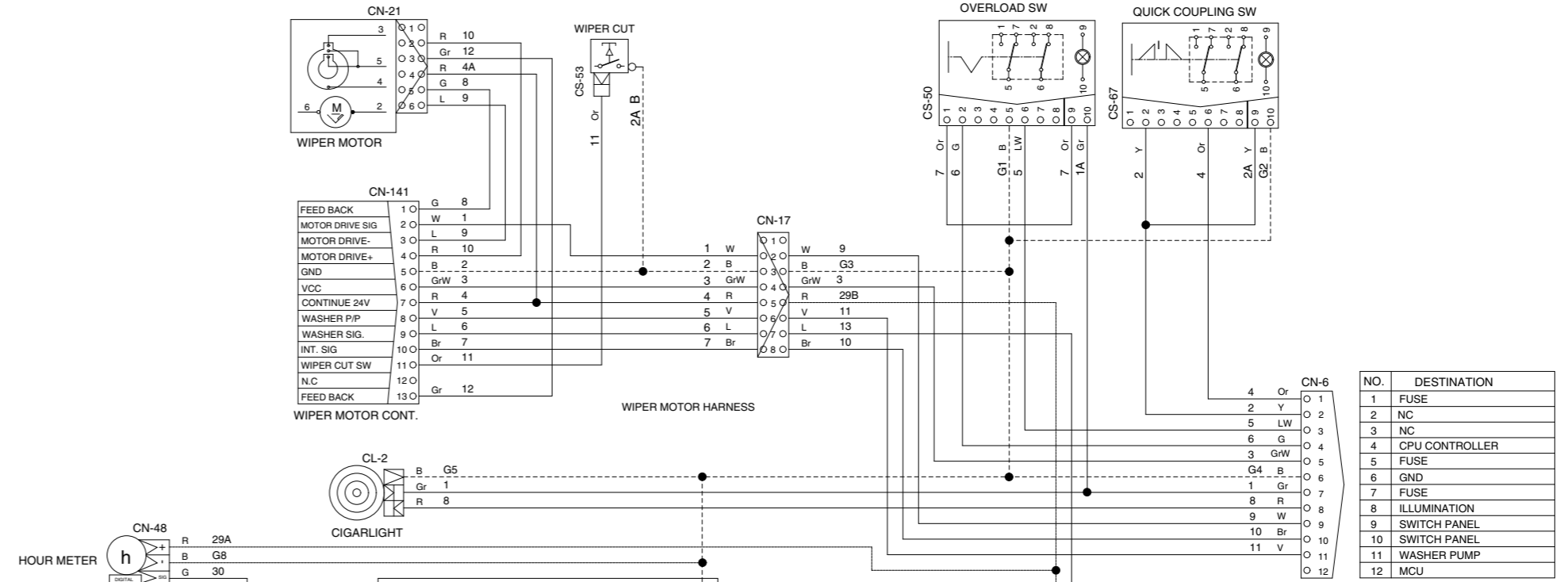
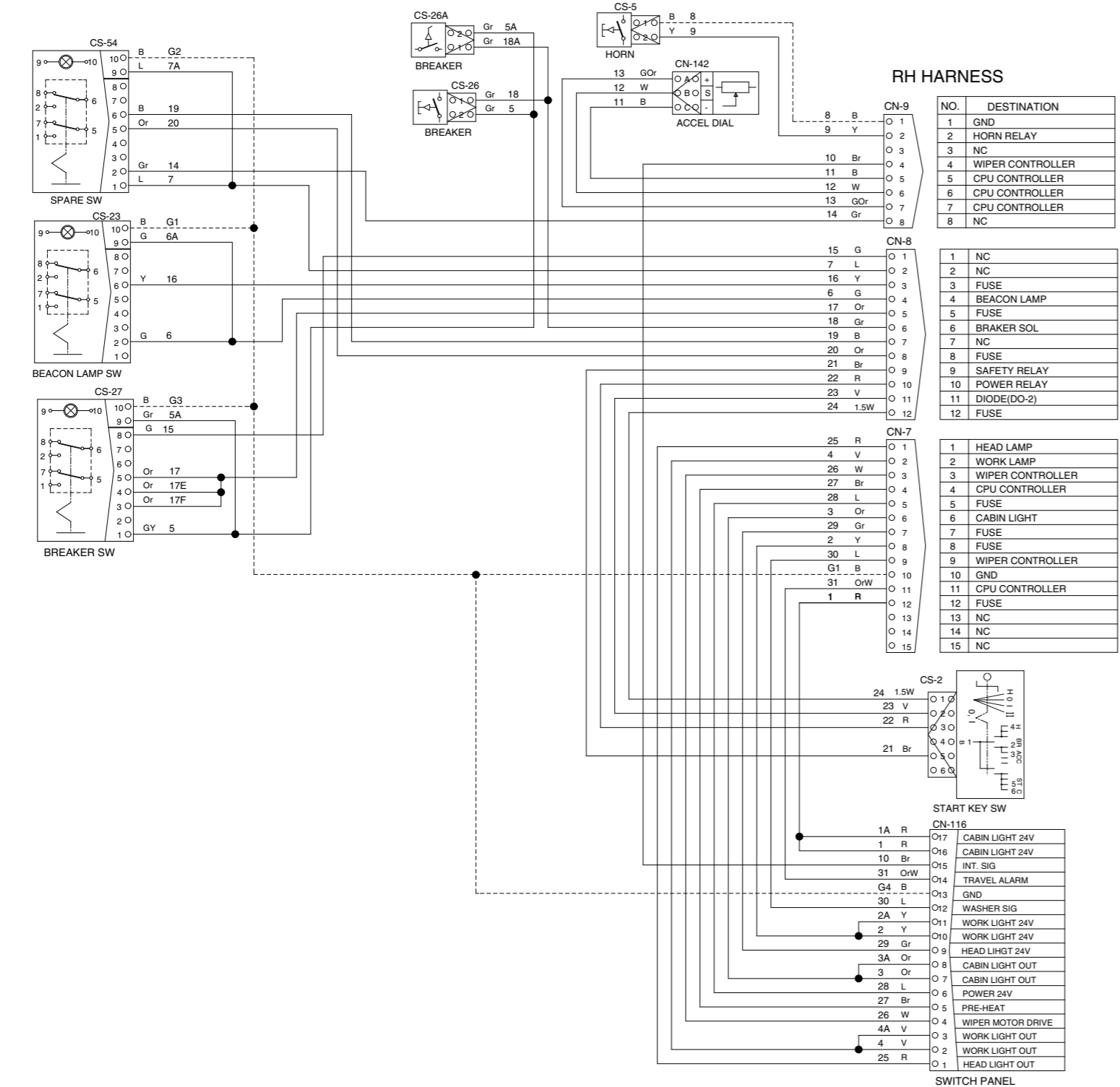
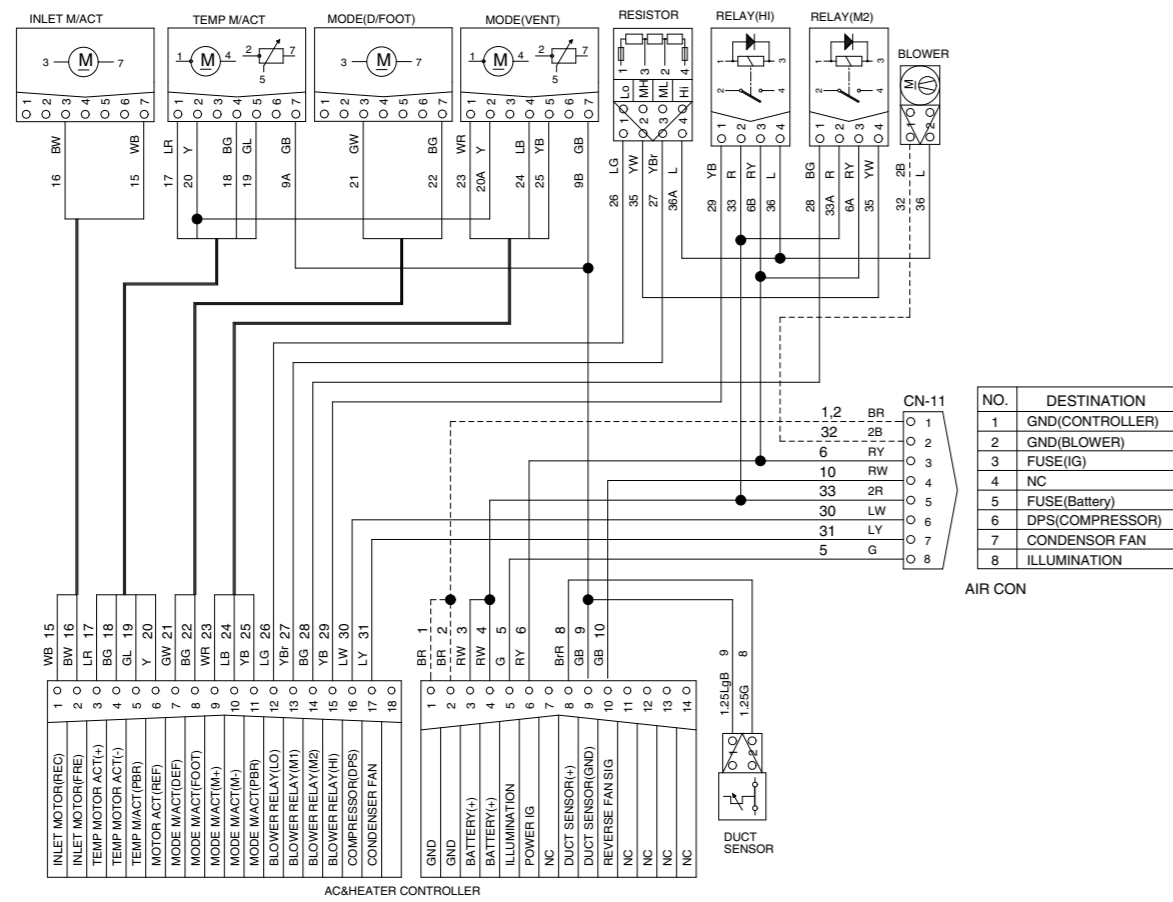
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|----------------------|-------------------------------|------------------------------|
| 1 Lamp | 9 Start relay | 17 Travel alarm buzzer |
| 2 Fuel sender | 10 Heater relay | 18 Battery relay |
| 3 Fuel filler pump | 11 Temp sender | 19 Auto idle pressure sensor |
| 4 Beacon lamp | 12 Engine oil pressure switch | 20 Boom up pressure sensor |
| 5 Horn | 13 Alternator | 21 EPPR pressure switch |
| 6 Speed sensor | 14 Air cleaner switch | 22 Integrated antenna |
| 7 P1 pressure sensor | 15 Travel pressure switch | 23 Satellite antenna |
| 8 P2 pressure sensor | 16 Battery | |

GROUP 2 ELECTRICAL CIRCUIT

ELECTRICAL CIRCUIT (1/2)



ELECTRICAL CIRCUIT (2/2)

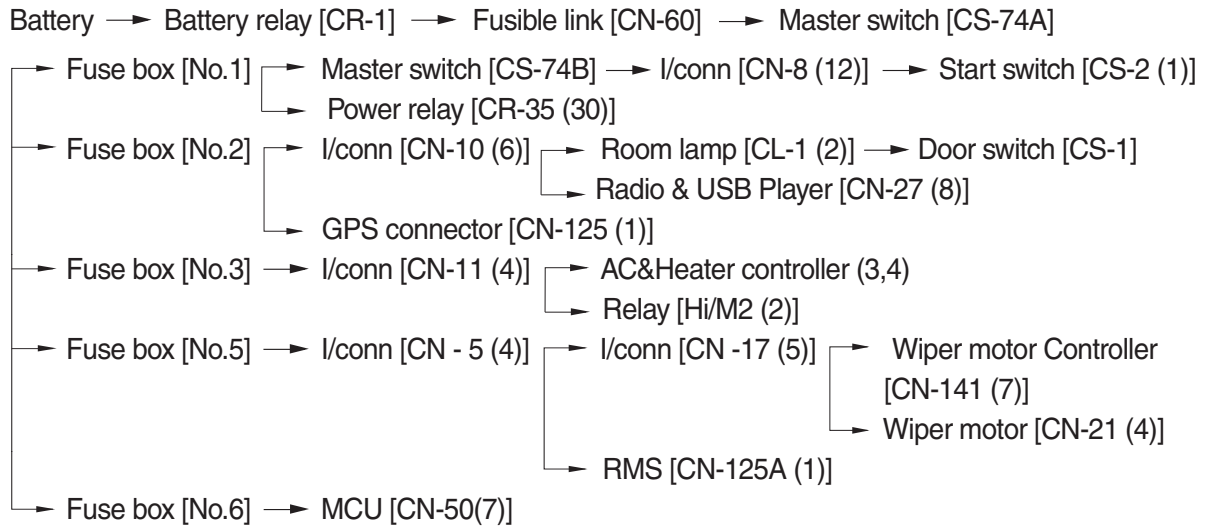


1. POWER CIRCUIT

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

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

1) OPERATING FLOW



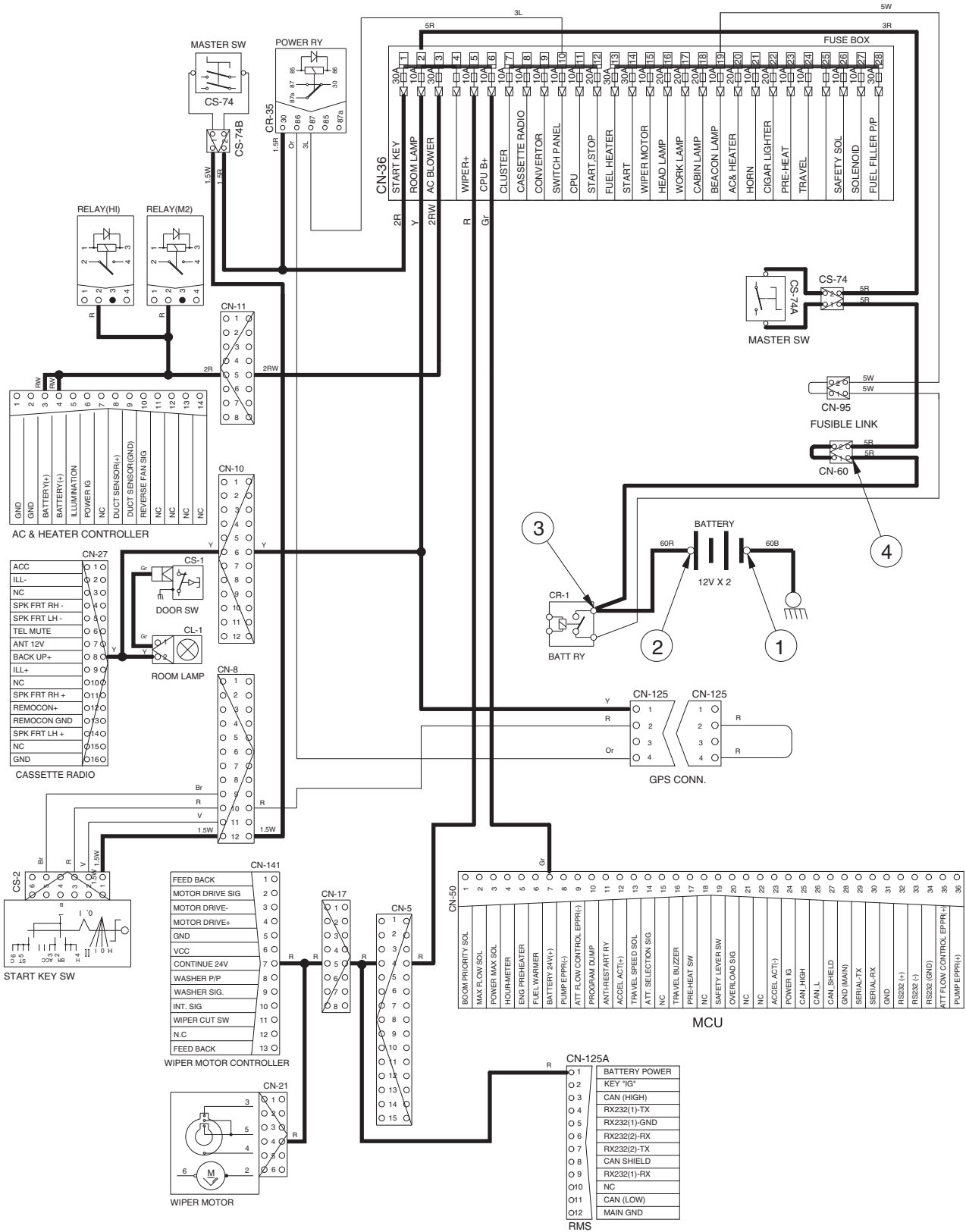
※ I/conn : Intermediate connector

2) CHECK POINT

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

※ GND : Ground

POWER CIRCUIT



2. STARTING CIRCUIT

1) OPERATING FLOW

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

(1) When start key switch is in ON position

→ Start switch ON [CS-2 (2)] → I/conn [CN-8 (11)] → Battery relay [CR-1]
 → Battery relay operating (All power is supplied with the electric component)
 → Start switch ON [CS-2 (3)] → I/conn [CN-8 (10)] → GPS connector [CN-125 (2) → (4)]
 → Power relay [CR-35 (86) → (87)] → Fuse box [No.12]
 → I/conn [CN-2 (4)] → Fuel cut-off [CN-79 (2)]

(2) When start key switch is in START position

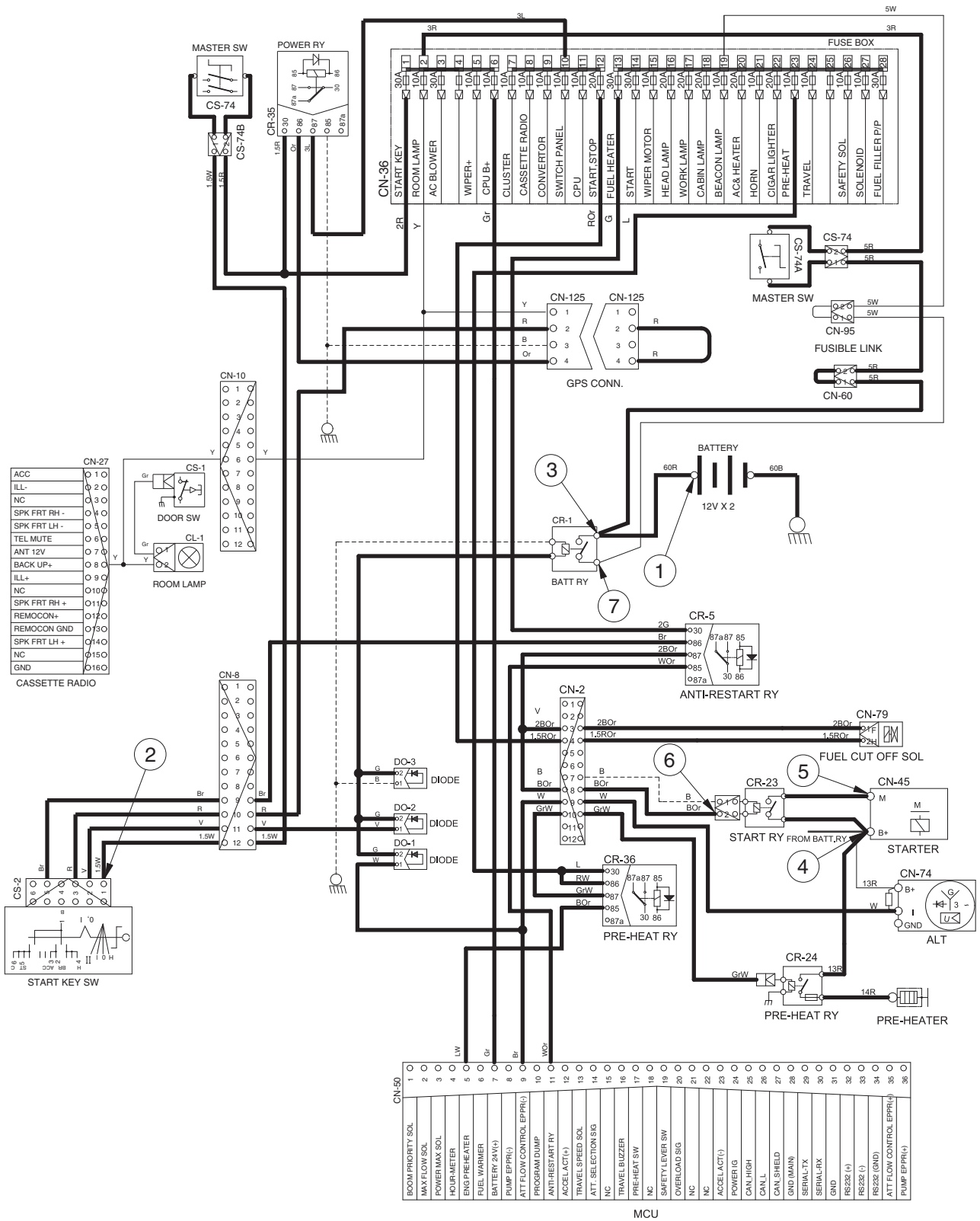
Start switch START [CS-2 (5)] → I/conn [CN-8 (9)] → Safety relay [CR-5 (86) → (87)]
 → I/conn [CN-3 (8)] → Start relay [CR-23 (2)] → Start motor operating
 → I/conn [CN-2 (3)] → Fuel cut off [CN-79 (1)]

2) CHECK POINT

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

※ GND : Ground

STARTING CIRCUIT



3. CHARGING CIRCUIT

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

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

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

1) OPERATING FLOW

(1) Warning flow

Alternator [CN-74 (I)] → I/conn [CN-2 (9)] → CPU alternator level [CN-51 (9)]
Cluster charging warning lamp (Via interface)

(2) Charging flow

Alternator "B+" terminal → Start motor [B+] → Battery relay

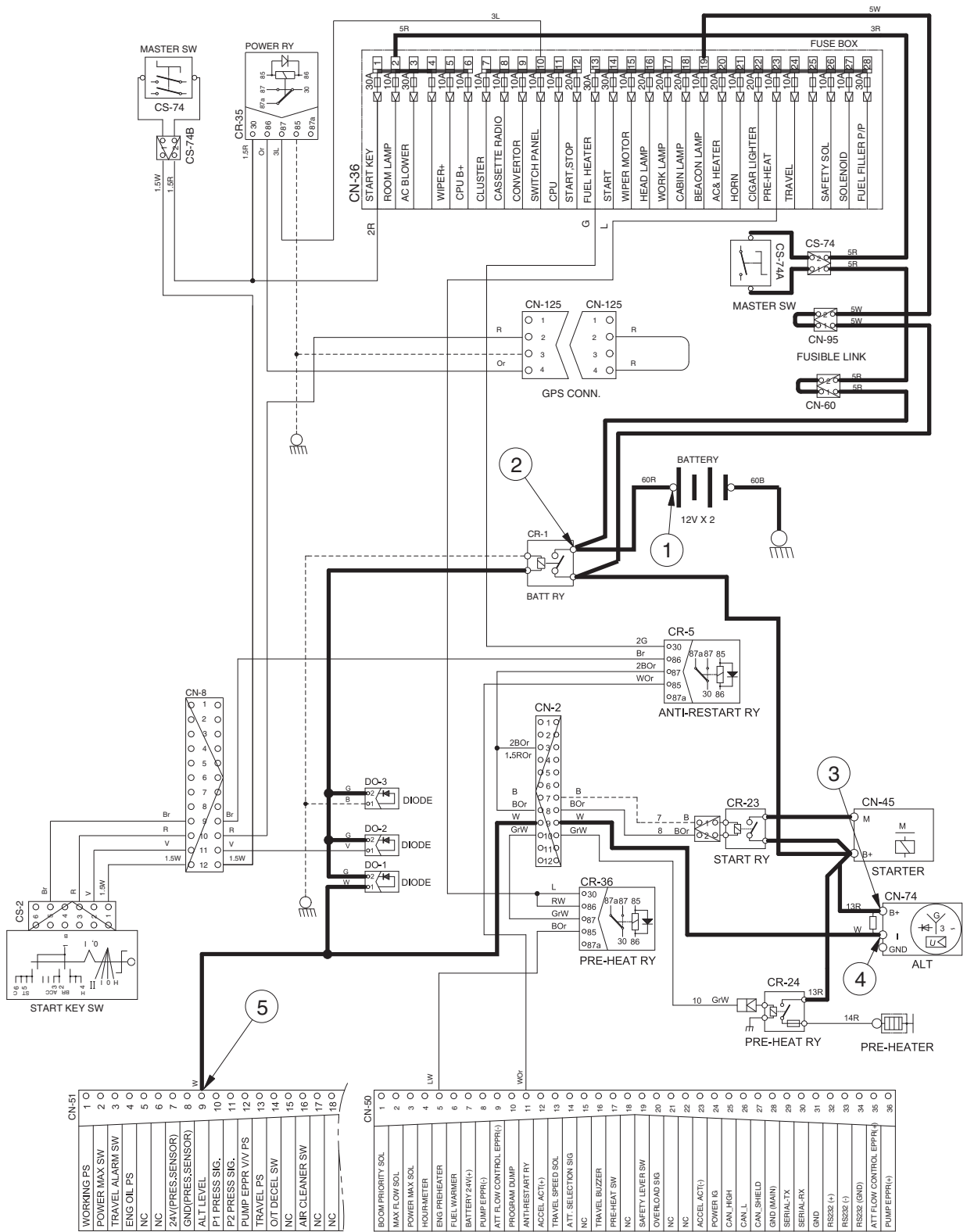
→ Battery(+) terminal
→ Fusible link [CN-60] → Master switch [CN-74A] → Fuse box [No.1~6]
→ Fusible link [CN-95] → Fuse box [No.13~28]

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 (CPU)	20~30V

※ GND : Ground

CHARGING CIRCUIT



4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

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

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

(1) Head light switch ON

Head light switch ON [CN-116 (1)] → I/conn [CN-7 (1)] → Head lamp relay [CR-13 (30) → (87)]

→ Head light ON [CL-4 (2)] → Head lamp ON
 → I/conn [CN-10 (2)] → Radio & USB player ON [CN-27 (9)]
 → I/conn [CN-11 (8)] → AC & Heater controller illumination ON
 → I/conn [CN-6 (8)] → Cigar lighter [CL-2]

(2) Work light switch ON

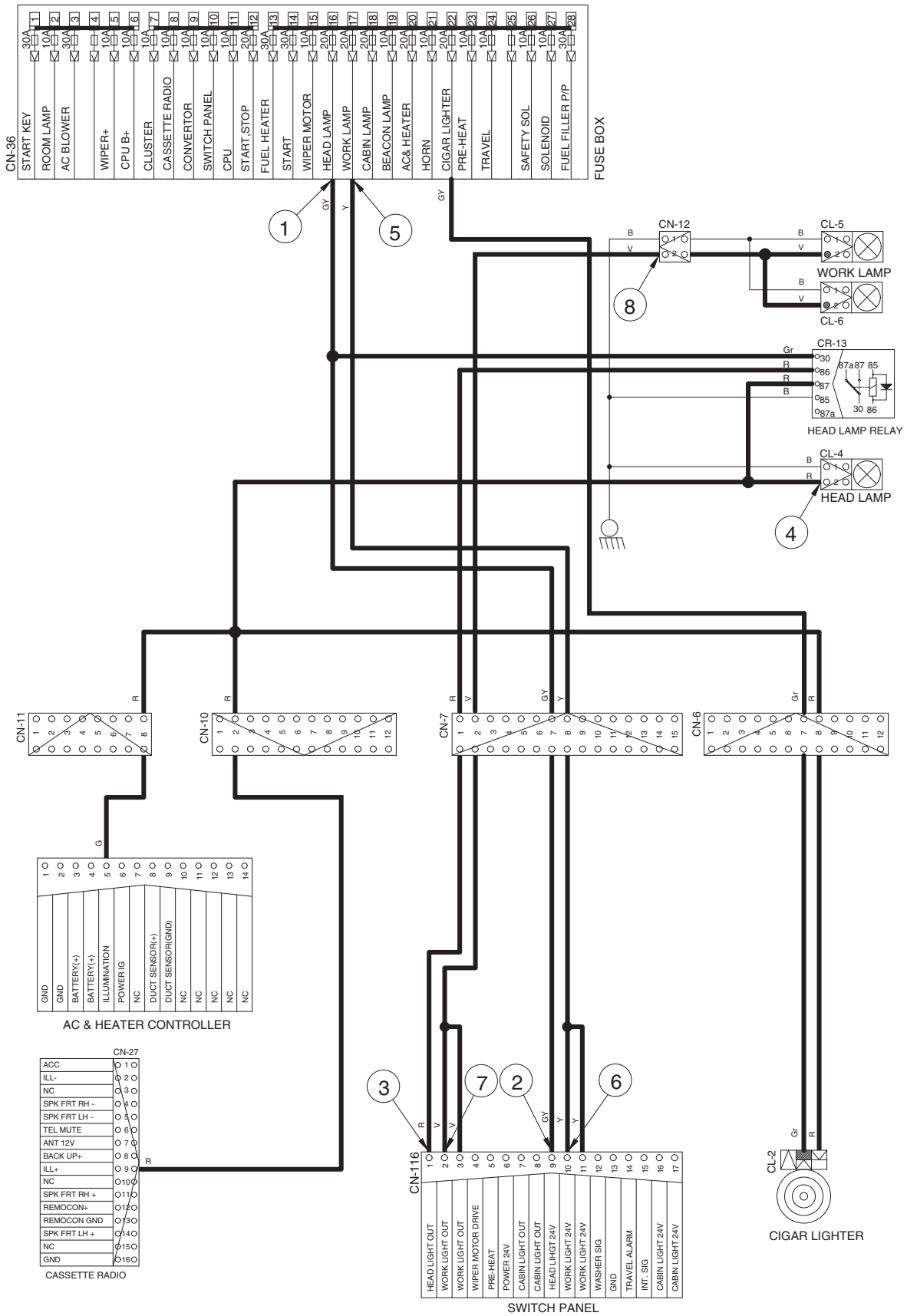
Work light switch ON [CN-116 (2,3)] → I/conn [CN-7 (2)] → I/conn [CN-12 (2)]
 → Work light ON [CL-5 (2), CL-6 (2)]

2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND (fuse box) ② - GND (switch power input) ③ - GND (switch power output) ④ - GND (head light)	20~25V
STOP	ON	⑤ - GND (fuse box) ⑥ - GND (switch power input) ⑦ - GND (switch power output) 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.19) → I/conn [CN-8 (3)] → Beacon lamp switch [CS-23 (6)]

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

(1) Beacon lamp switch ON

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

(2) Cab light switch ON

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

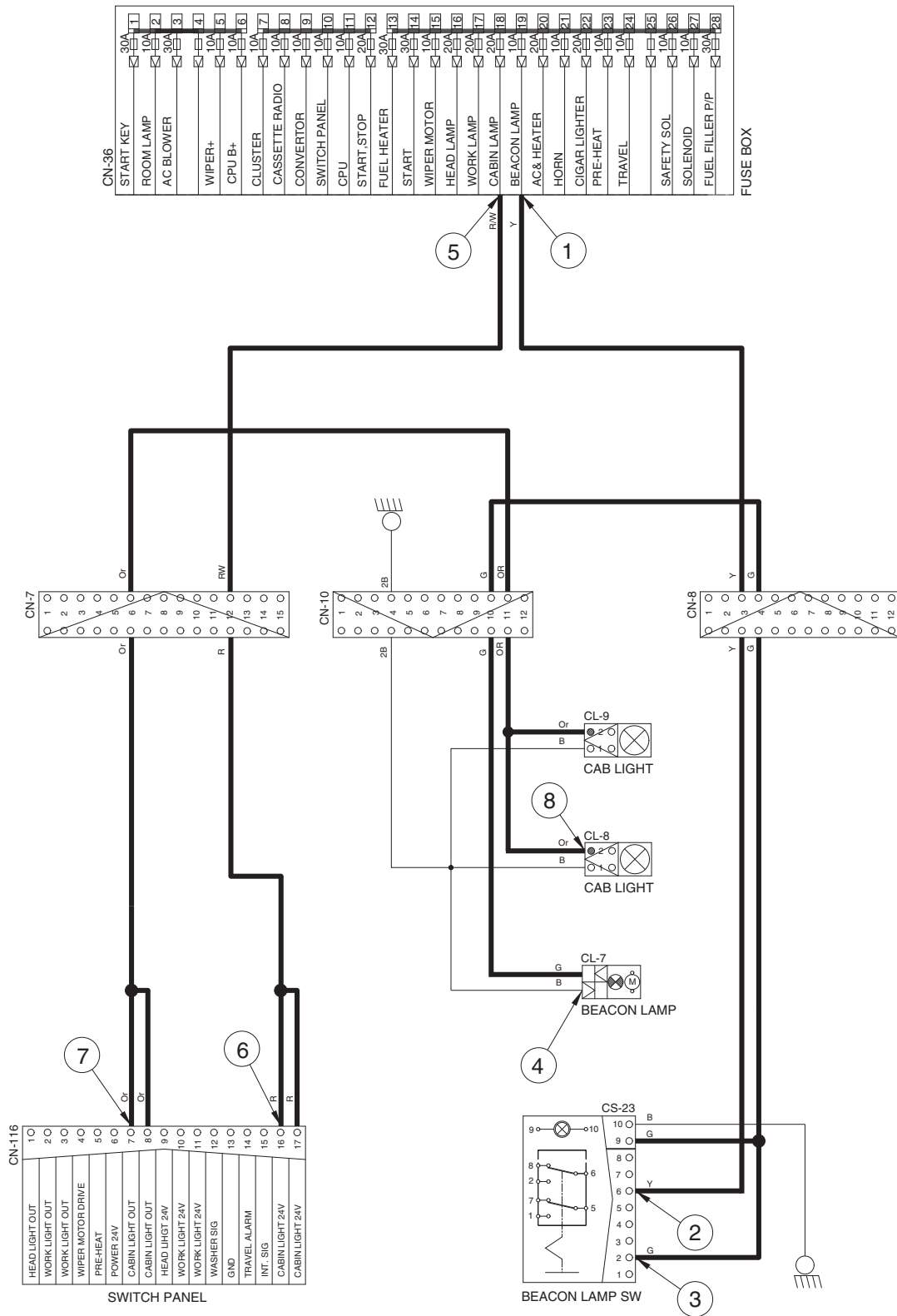
→ Cab light ON [CL-8 (2), CL-9 (2)]

2) CHECK POINT

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

※ GND : Ground

BEACON LAMP AND CAB LIGHT CIRCUIT



6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.12) → I/conn [CN-7 (5)] → Switch panel [CN-116 (6)]

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

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

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

Wiper switch ON [CN-116 (15)] → I/conn [CN-9 (4)] → I/conn [CN-6 (10)] → I/conn [CN-17 (8)]

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

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

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

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

(4) Washer switch ON

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

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

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

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

(5) Auto parking (when switch OFF)

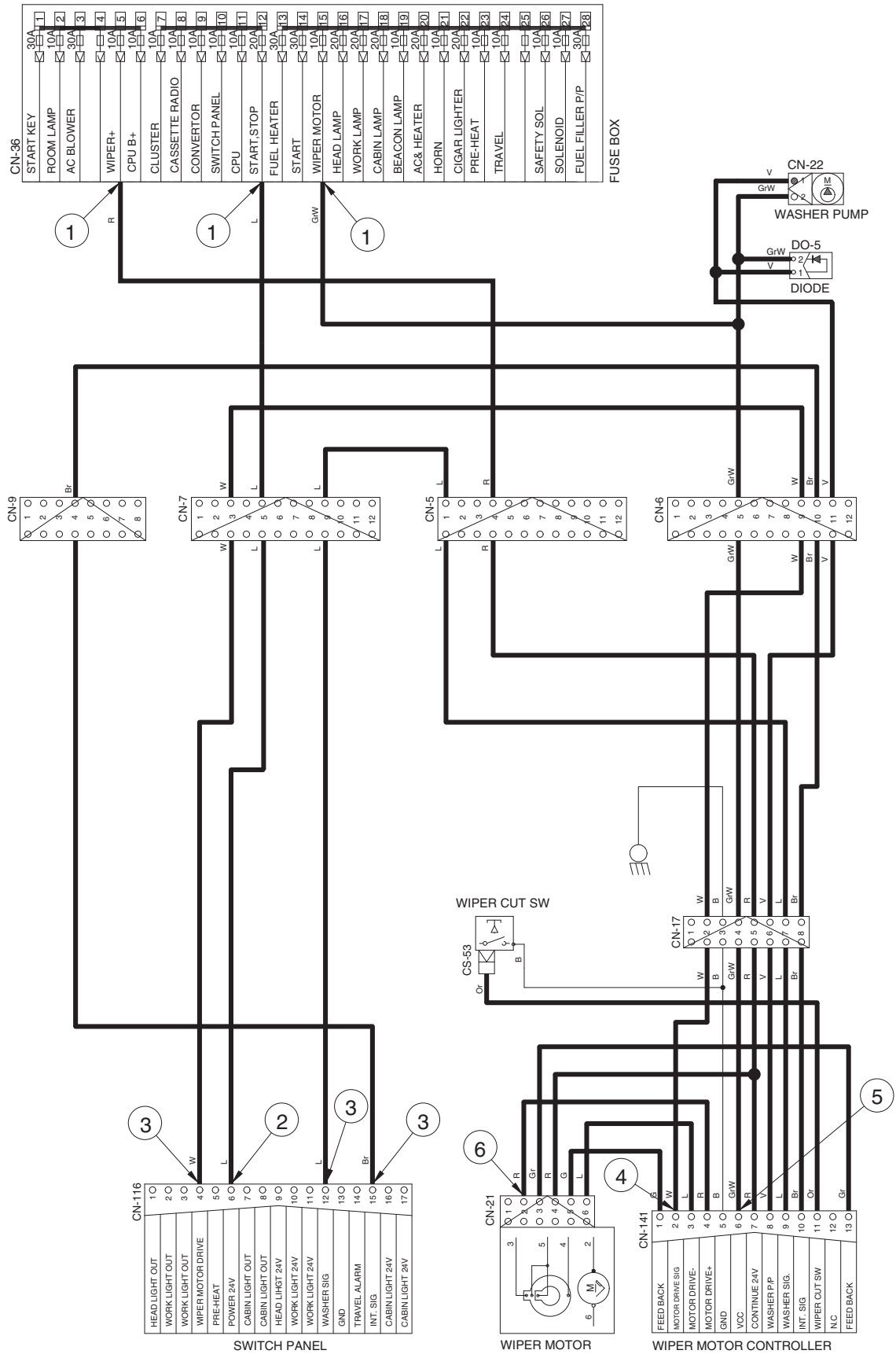
Switch OFF [CN-116 (4)] → Wiper motor parking position by wiper motor controller

2) CHECK POINT

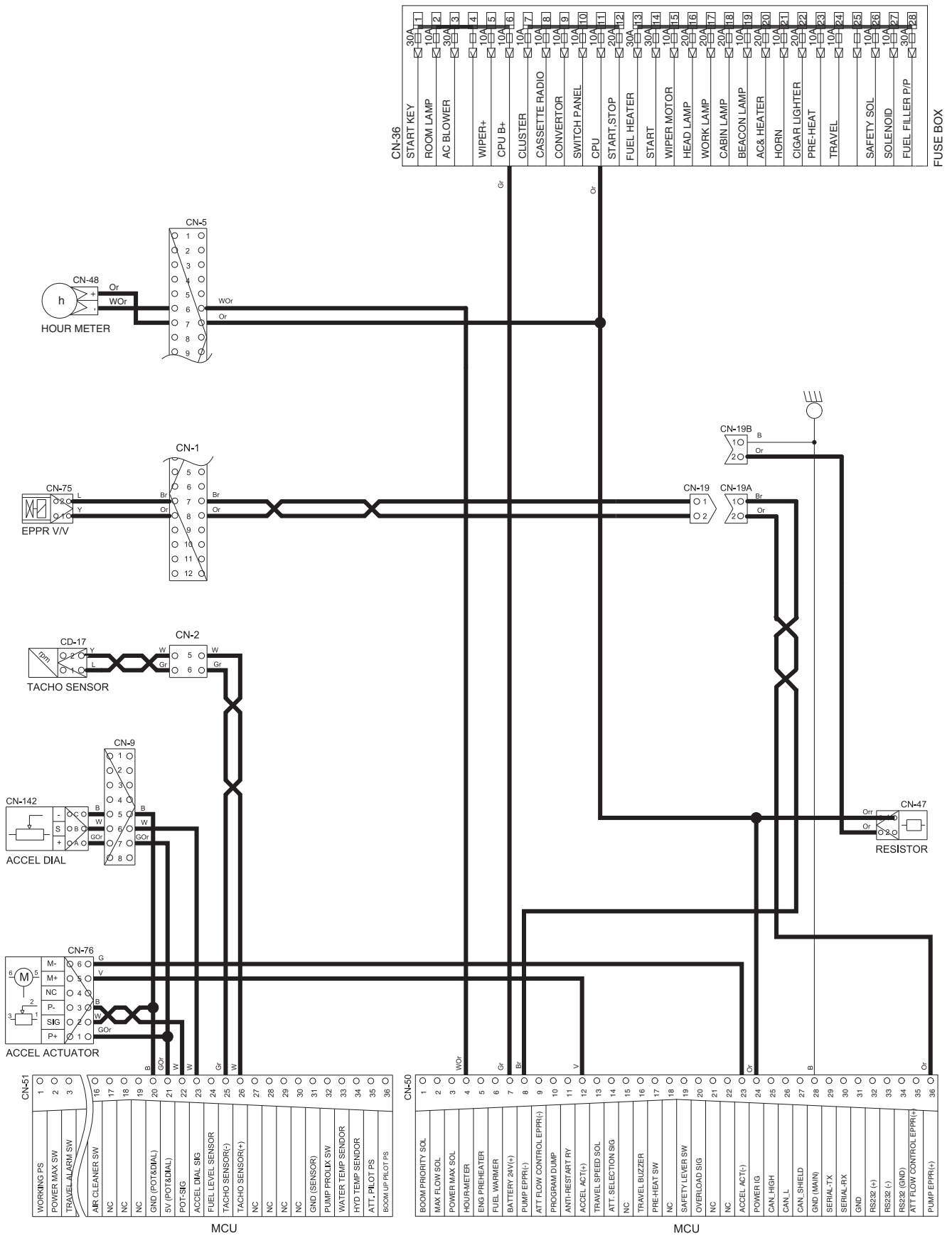
Engine	Start switch	Check point	Voltage
STOP	ON	① - GND (fuse box)	24V
		② - GND (switch power input)	
		③ - GND (switch power output)	0 ~ 5V
		④ - GND (wiper Power input)	
		⑤ - GND (wiper power output)	0 or 24V
		⑥ - GND (wiper motor)	

※ GND : Ground

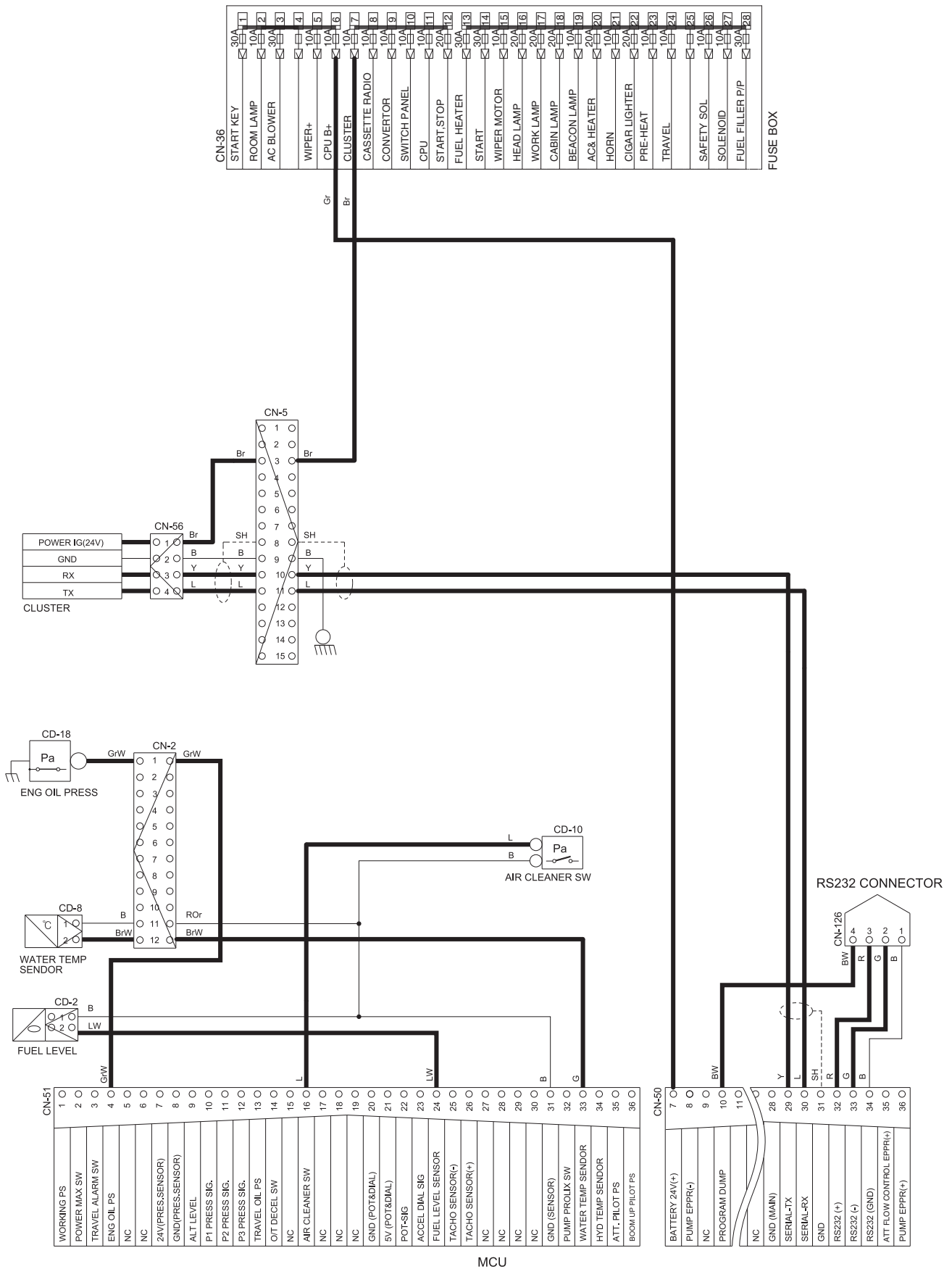
WIPER AND WASHER CIRCUIT



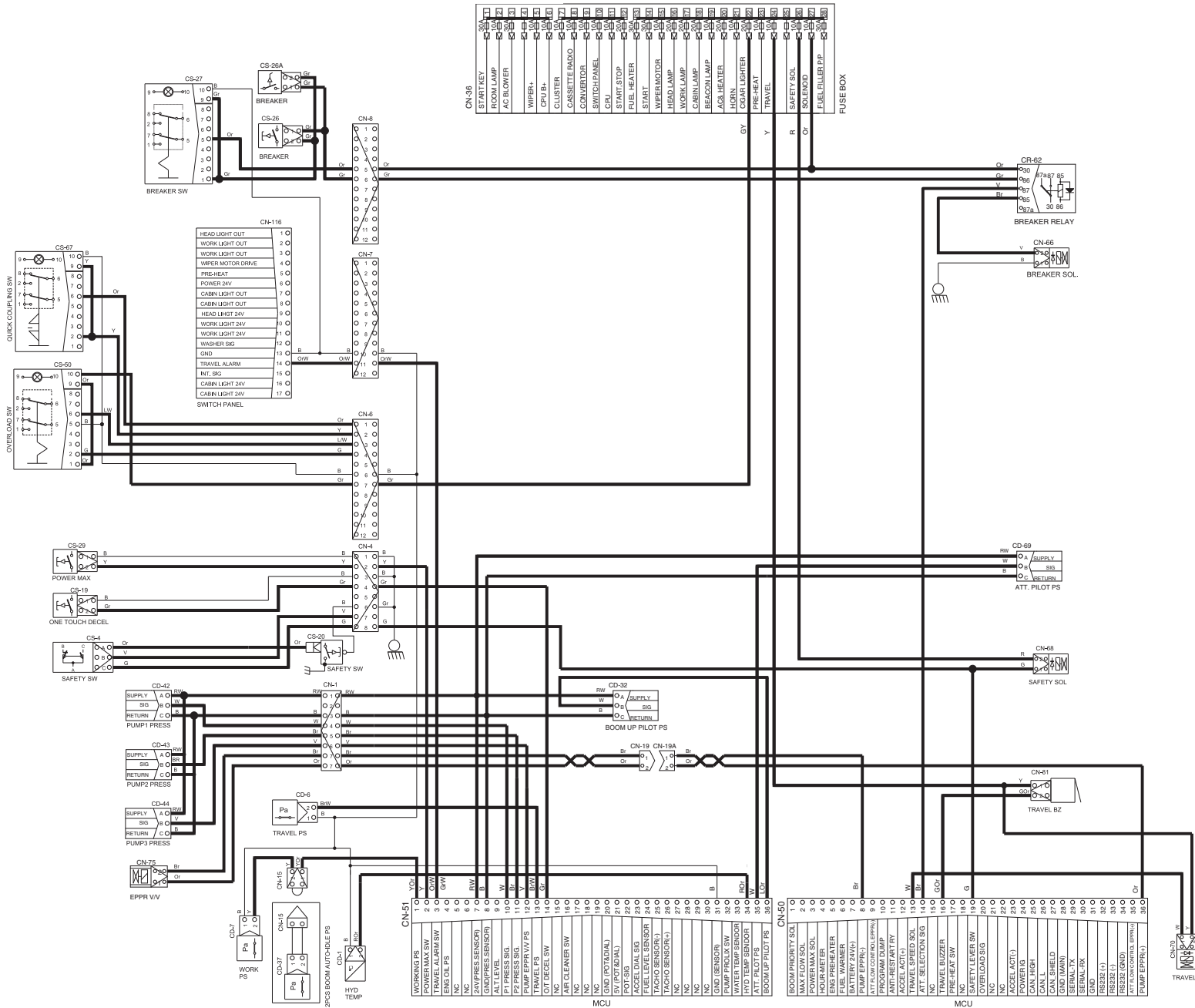
CONTROLLER CIRCUIT



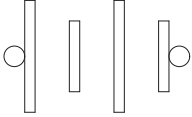
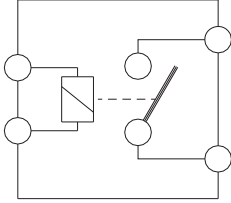
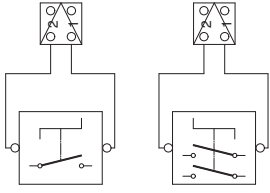
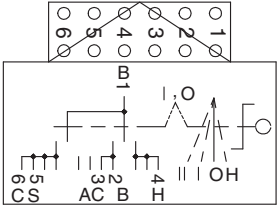
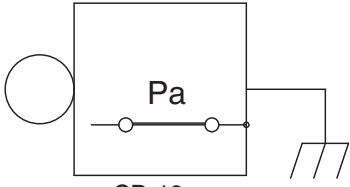
MONITORING CIRCUIT

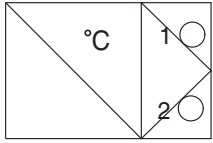
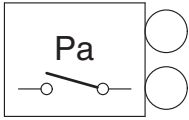
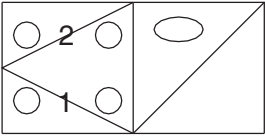
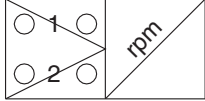
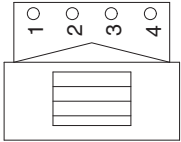
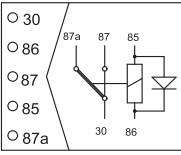


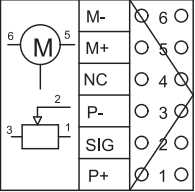
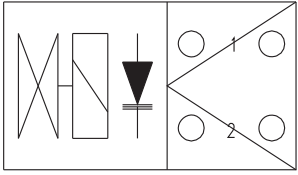
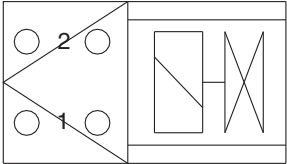
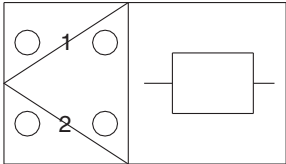
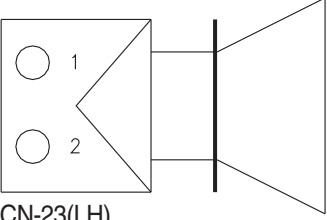
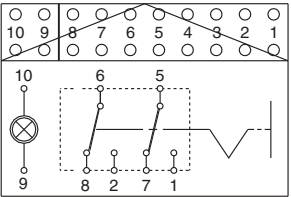
ELECTRICAL CIRCUIT FOR HYDRAULIC

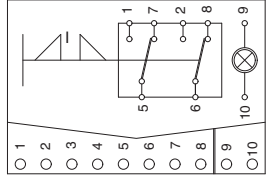
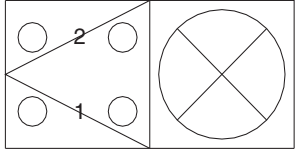
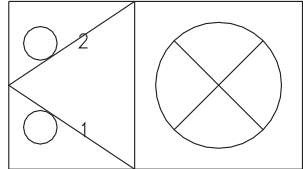
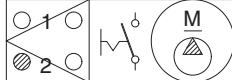
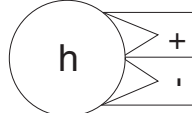
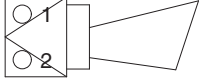


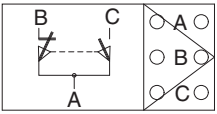
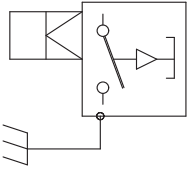
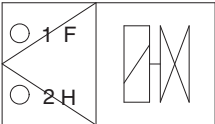
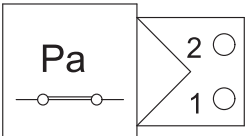
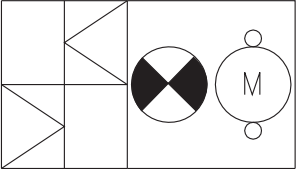
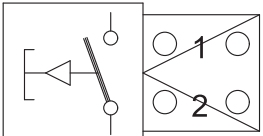
GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

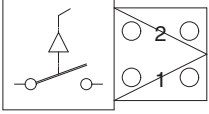
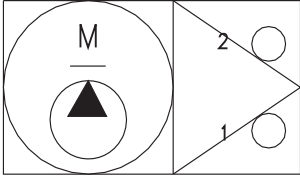
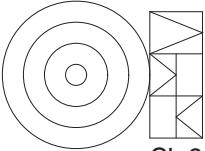
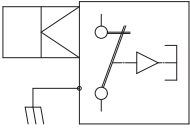
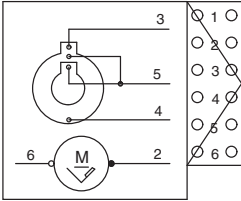
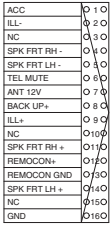
Part name	Symbol	Specification	Check
Battery		12V × 100Ah (2EA)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Battery relay	 <p style="text-align: center;">CR-1</p>	Rated load : 24V 100A(continuity) 1000A(30seconds)	※ Check coil resistance (M4 to M4) Normal : About 50Ω ※ Check contact Normal : ∞Ω
Master switch	 <p style="text-align: center;">CS-74A CS-74B</p>	6~36V	※ Check disconnection Normal : 0.1Ω
Start switch	 <p style="text-align: center;">CS</p>	B-BR : 24V 1A B-ACC : 24V 10A B-ST : 24V 40A	※ Check contact OFF : ∞Ω (For each terminal) ON : 0Ω (For terminal 1-3 and 1-2) START : 0Ω (For terminal 1-5)
Pressure switch (For engine oil)	 <p style="text-align: center;">CD-18</p>	0.5kgf/cm ² (N.C TYPE)	※ Check resistance Normal : 0Ω (CLOSE)

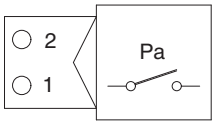
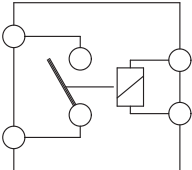
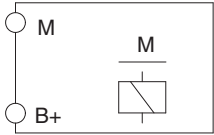
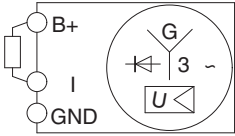
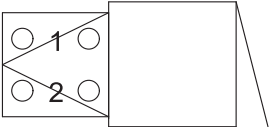
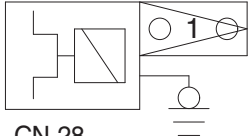
Part name	Symbol	Specification	Check
Temperature sensor (hydraulic, water)	 CD-1 CD-8	-	※ Check resistance 50 °C : 804Ω 80 °C : 310Ω 100 °C : 180Ω
Air cleaner pressure switch	 CD-10	Pressure: 635mmH ₂ O (N.O TYPE)	※ Check contact Normal : ∞ Ω
Fuel sender	 CD-2	-	※ Check resistance Full : 50Ω 6/12 : 350Ω 11/12 : 100Ω 5/12 : 400Ω 10/12 : 150Ω 4/12 : 450Ω 9/12 : 200Ω 3/12 : 500Ω 8/12 : 250Ω 2/12 : 550Ω 7/12 : 300Ω 1/12 : 600Ω Empty warning : 700Ω
Tacho sensor	 CD-17	-	※ Check resistance Normal : 300Ω (For terminal 1,2)
Fuel heater	 CN-96	-	-
Relay	 CR-2 CR-13 CR-46 CR-5 CR-35 CR-62 CR-7 CR-36	24V 16A	※ Check resistance Normal : About 160Ω (For terminal 85-86) : 0Ω (For terminal 30-87a) : ∞ Ω (For terminal 30-87)

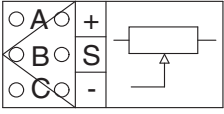
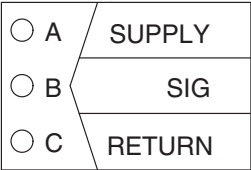
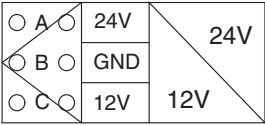
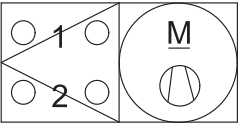
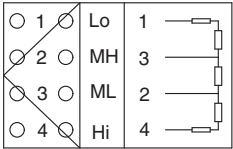
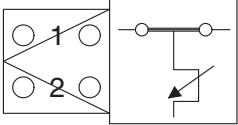
Part name	Symbol	Specification	Check
Accel actuator	 <p>CN-76</p>	-	※ Check resistance Normal : 1-2Ω (For terminal 5-6) 0.8-1.2kΩ (For terminal 1-3)
Solenoid valve	 <p>CN-66 CN-68 CN-70</p>	24V 1A	※ Check resistance Normal : 15~25Ω (For terminal 1-2)
EPPR valve	 <p>CN-75 CN-242</p>	700mA	※ Check resistance Normal : 18~25Ω (For terminal 1-2)
Resistor	 <p>CN-47</p>	50Ω 20W ± 5%	※ Check resistance Normal : 50Ω
Speaker	 <p>CN-23(LH) CN-24(RH)</p>	4Ω 20W	※ Check resistance Normal : 4Ω
Switch (Locking type)	 <p>CS-23 CS-27 CS-50 CS-52 CS-54</p>	24V 8A	※ Check contact Normal ON - 0Ω (For terminal 1-5,2-6) - ∞Ω (For terminal 5-7,6-8) OFF - ∞Ω (For terminal 1-5,2-6) - 0Ω (For terminal 5-7,6-8)

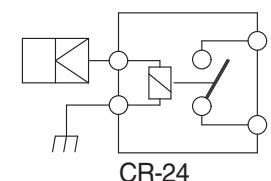
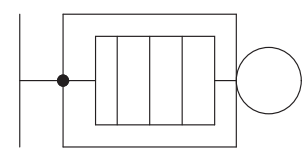
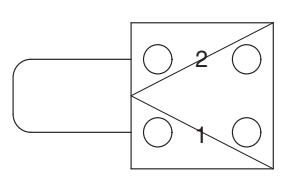
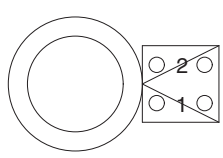
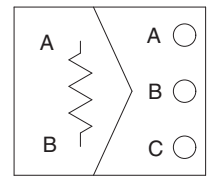
Part name	Symbol	Specification	Check
Switch (Quick clamp)	 <p>CS-67</p>	24V 8A	※ Check contact Normal ON - 0Ω (For terminal 1-5,2-6) - ∞Ω (For terminal 5-7,6-8) OFF - ∞Ω (For terminal 1-5,2-6) - 0Ω (For terminal 5-7,6-8)
Head lamp, Work lamp, Cab lamp	 <p>CL-4 CL-5 CL-8 CL-9</p>	24V 70W (H3 TYPE)	※ Check disconnection Normal : 1.2Ω
Room lamp	 <p>CL-1</p>	24V 10W	※ Check disconnection Normal : A few Ω
Fuel filler pump	 <p>CN-61</p>	24V 10A 35 ℓ /min	※ Check resistance Normal : 1.0Ω
Hour meter	 <p>CN-48</p>	16V ~ 32V	※ Check operation · Supply power(24V) to terminal No. 2 and connect terminal No. 1 and ground.
Horn	 <p>CN-20 CN-25</p>	DC 22.0 ~ 28.0V 2A	※ Check operation · Supply power(24V) to each terminal and connect ground.

Part name	Symbol	Specification	Check
Safety switch	 <p>CS-4</p>	24V 15A (N.C TYPE)	※ Check contact Normal : 0Ω (For terminal 1-2) : ∞Ω (For terminal 1-3) Operating : ∞Ω (For terminal 1-2) : 0Ω (For terminal 1-3)
Safety switch Wiper cut sw	 <p>CS-20 CS-53</p>	24V (N.O TYPE)	※ Check contact Normal : ∞Ω (one pin to ground)
Fuel cut-off Solenoid	 <p>CN-79</p>	24V	※ Check resistance Normal : 15~25Ω
Pressure switch (Travel, Work, 2pcs boom auto idle)	 <p>CD-6 CD-7 CD-37</p>	10bar (N.C type)	※ Check contact Normal : 0.1Ω
Beacon lamp	 <p>CL-7</p>	24V 70W	※ Check disconnection Normal : 1.1Ω
Switch (Power max, One touch decel, Breaker, Horn)	 <p>CS-5 CS-19 CS-26 CS-29</p>	24V 6A	※ Check contact Normal : ∞Ω

Part name	Symbol	Specification	Check
Switch (Breaker)	 <p>CS-26A</p>	24V 6A	※ Check contact Normal : $\infty \Omega$
Washer tank	 <p>CN-22</p>	24V 3.8A	※ Check contact Normal : 10.7Ω (For terminal 1-2)
Cigar lighter	 <p>CL-2</p>	24V 5A 1.4W	※ Check coil resistance Normal : About $1M \Omega$ ※ Check contact Normal : $\infty \Omega$ Operating time : 5~15sec
Door switch	 <p>CS-1</p>	24V 2W	※ Check resistance Normal : About $5M \Omega$
Wiper motor	 <p>CN-21</p>	24V 2A	※ Check contact Normal : 7Ω (For terminal 2-6)
Radio and USB player	 <p>CN-27</p>	24V 2A	※ Check voltage 20 ~ 25V (For terminal 10-14,11-14)

Part name	Symbol	Specification	Check
Receiver dryer	 <p>CN-29</p>	24V 2.5A	※ Check contact Normal : 0Ω
Start relay	 <p>CR-23</p>	24V 300A	※ Check contact Normal : 0.94Ω (For terminal 1-2)
Starter	 <p>CN-45</p>	Lucas 24V	※ Check contact Normal : 0.1Ω
Alternator	 <p>CN-74</p>	Lucas 24V 75A	※ Check contact Normal : 0Ω (For terminal B ⁺ -I) Normal : 24 ~ 27.5V
Travel alarm buzzer	 <p>CN-81</p>	24V 0.5A	※ Check contact Normal : 5.2Ω
Aircon compressor	 <p>CN-28</p>	24V 79W	※ Check contact Normal : 13.4Ω

Part name	Symbol	Specification	Check
Accel dial	 CN-142	-	※ Check resistance Normal : About 5k Ω (For terminal A-C) ※ Check valtage Normal : About 5V (For terminal A-C) : 2 ~ 4.5V (For terminal C-B)
Pressure sensor	 CD-32 CD-43 CD-69 CD-42 CD-44	8~30 V	※ Check contact Normal : 0.1 Ω
DC/DC Converter	 CN-138	12V 3A	24V(A-B) 12V(B-C)
Blower motor		24V 9.5A	※ Check resistance 2.5 Ω (For terminal 1-2)
Aircon resistor		-	※ Check resistance 1.12 Ω (For terminal 4-2) 2.07 Ω (For terminal 2-3) 3.17 Ω (For terminal 3-1)
Duct sensor (Switch)		1 $^{\circ}$ C OFF 4 $^{\circ}$ C ON	※ Check resistance : 0 Ω (For terminal 1-2, the atmosphere temp : over 4 $^{\circ}$ C)

Part name	Symbol	Specification	Check
Preheater relay	 <p style="text-align: center;">CR-24</p>	24V 200A	※ Check contact Normal : 0.94 Ω (For terminal 1-GND)
Preheater		24V 200A	※ check resistance : 0.25 ~ 0.12 Ω
Fusible link	 <p style="text-align: center;">CN-60 CN-65</p>	60A	※ Check disconnection Normal : 0 Ω (Connect ring terminal and check resist between terminal 1 and 2)
Socket	 <p style="text-align: center;">CN-139</p>	-	-
Resistor	 <p style="text-align: center;">CN-173</p>	-	-

GROUP 4 CONNECTORS

1. CONNECTOR DESTINATION

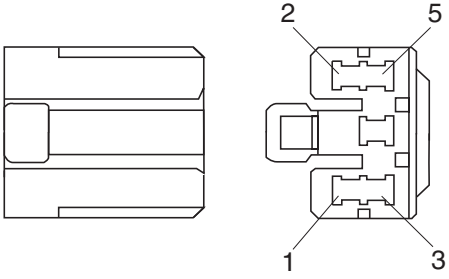
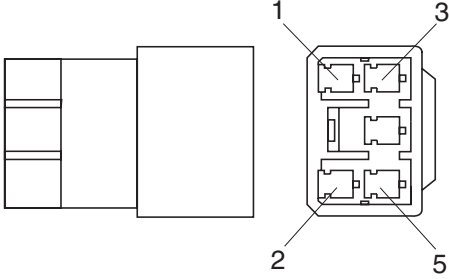
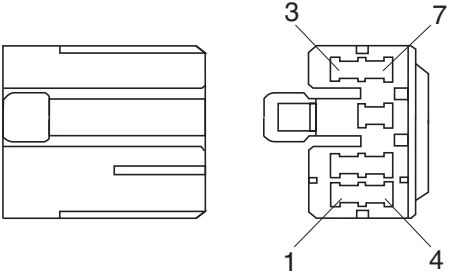
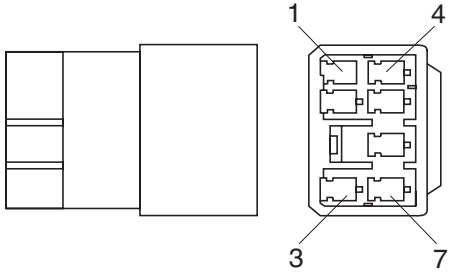
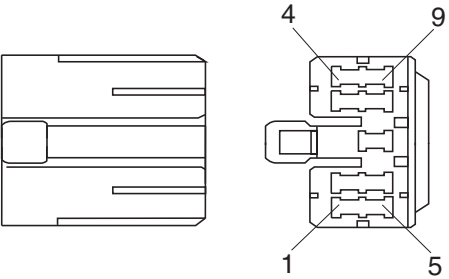
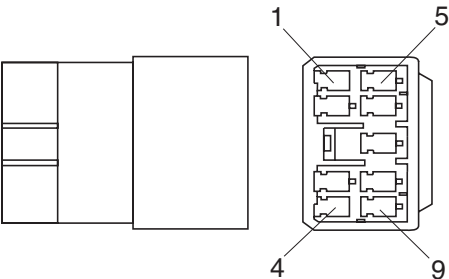
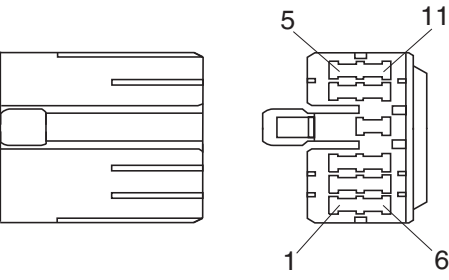
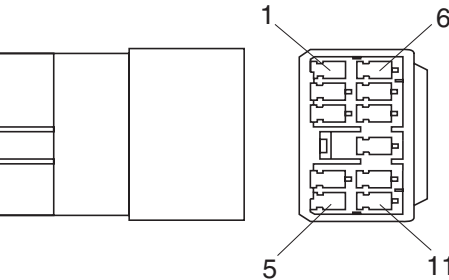
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	8	I/conn (Engine rear harness-Frame harness)	S816-008002	S816-108002
CN-2	AMP	12	I/conn (Engine rear harness-Frame harness)	S816-012002	S816-112002
CN-3	DEUTSCH	8	I/conn (Engine harness)	DT06-8S	DT04-8P
CN-4	DEUTSCH	8	I/conn (Cabin LH wire harness-Frame harness)	S816-008002	S816-108002
CN-5	AMP	15	I/conn (Frame harness-RH side harness)	2-85262-1	368301-1
CN-6	AMP	12	I/conn (Frame harness-RH side harness)	S816-012002	S816-112002
CN-7	AMP	15	I/conn (Frame harness-Cabin RH wire harness)	2-85262-1	368301-1
CN-8	AMP	12	I/conn (Frame harness-Cabin RH wire harness)	S816-012002	S816-112002
CN-9	AMP	8	I/conn (Frame harness-Cabin RH wire harness)	S816-008002	S816-108002
CN-10	DEUTSCH	12	I/conn (Frame harness-Cabin harness)	DT06-12S	DT06-12P
CN-11	DEUTSCH	8	Aircon harness	DT06-8S	DT04-9P-E004
CN-12	DEUTSCH	2	Work lamp harness	DT06-2S-P012	DT04-2P-E005
CN-15	DEUTSCH	2	2pcs auto idle pressure	S814-002100	21N5-30100
CN-17	DEUTSCH	8	Wiper harness	DT06-8S	DT04-8P
CN-19	-	2	Prolix resistor	-	S816-102002
CN-19A	AMP	2	Prolix resistor	S816-002002	-
CN-19B	AMP	2	Prolix resistor	S816-002002	S816-102002
CN-20	MOLEX	2	Horn	36825-0211	-
CN-21	AMP	6	Wiper motor	925276-0	-
CN-21A	AMP	6	Wiper motor	S816-006002	-
CN-22	KET	2	Washer tank	MG640605	-
CN-23	KET	2	LH speaker	MG610070	-
CN-24	KET	2	RH speaker	MG610070	-
CN-25	MOLEX	2	Horn	36825-0211	-
CN-27	-	16	Radio & USB player	PK145-16017	PK141-16017
CN-28	MWP	1	Air-con compressor	MWP-01F-B	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	-	-	Fuse box	21N8-20041	-
CN-45	RING TERM	-	Start motor B ⁺	ST710246-2	-
CN-47	AMP	2	Resistor	S810-002202	S810-102202
CN-48	-	1	Hour meter	GP890469	-
CN-50	AMP	36	MCU	3441111-1	-
CN-51	AMP	36	MCU	3441111-1	-
CN-56	DEUTSCH	4	Cluster	-	DT04-4P-E004
CN-60	YAZAKI	2	Fusible link	7123-412S-50	7122-412S-50
CN-61	DEUTSCH	2	Fuel filler pump	DT06-2S-P012	-
CN-66	DEUTSCH	2	Breaker solenoid	DT06-2S-P012	DT04-2P-E004
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-P012	-

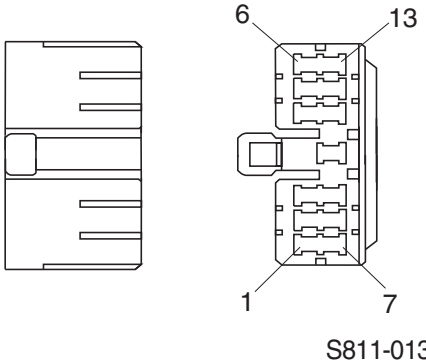
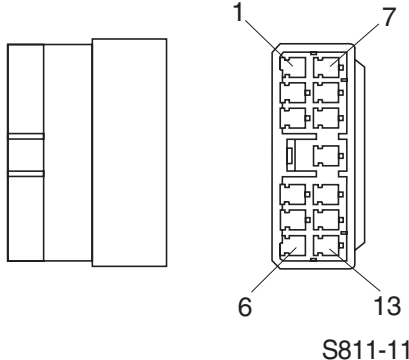
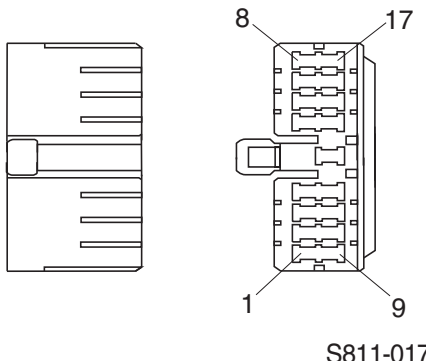
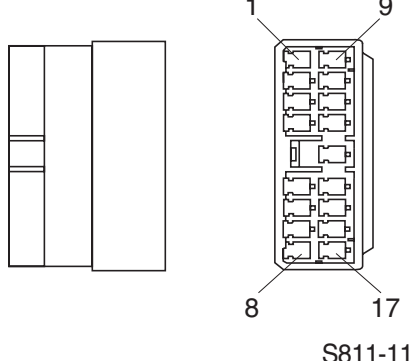
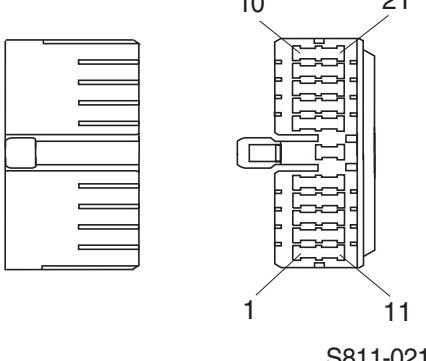
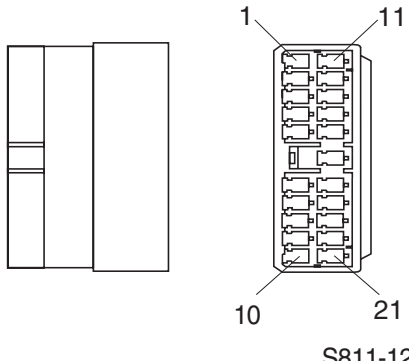
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-70	DEUTSCH	2	Travel speed solenoid	DT06-2S-P012	-
CN-74	RING-TERM	1	Alternator	S820-408000	-
	-		Alternator	174198-2	-
CN-75	Econoseal J	2	EPPR valve	S816-002002	-
CN-76	DEUTSCH	6	DC motor	DT06-6S	-
CN-78	DEUTSCH	6	Accel actuator	DT06-6S-EP06	-
CN-79	-	3	Fuel cut-off	174198-2	-
CN-81	DEUTSCH	2	Travel alarm buzzer	DT06-2S-P012	DT04-2P-E004
CN-92	AMP	1	Safety	S814-001100	S814-101100
CN-95	KET	2	Fusible link	S813-030201	S813-130200
CN-116	PA	17	Switch panel	S811-017002	-
CN-125	-	4	GPS connector	S816-004002	S816-104002
CN-125A	DEUTSCH	12	RMS	DT06-12S-EP06	DT04-12P
CN-126	DEUTSCH	4	RS232 connector	DT06-4S-P012	DT04-4P-E004
CN-138	DEUTSCH	3	DC/DC converter	DT06-3S-P012	-
CN-139	DEUTSCH	2	12V Socket	DT06-2S	DT04-2P-E004
CN-141	AMP	13	Wiper motor controller	172498-1	-
CN-142	DEUTSCH	3	Accel dial	DT06-3S	-
CN-147	-	2	Fuel heater	15300027	-
CN-148	DEUTSCH	3	J1939 connector	DT06-3S-P012	-
CN-173	DEUTSCH	3	Resistor	DT06-3S-P012	DT04-3P-EP10
CN-242	DEUTSCH	2	Attachment EPPR	DT06-2S-P012	DT04-2P-E004
RELAY					
CR-1	RING TERM	1	Battery relay	ST710289-2	-
				ST710285-2	
CR-2	-	5	Horn relay	-	-
CR-5	-	5	Safety relay	-	-
CR-7	-	5	Ac comp relay	-	-
CR-13	-	5	Head lamp relay	SJA003526-001	2411-05100
CR-23	KET	2	Start relay	MG610320	S814-102001
CR-24	-	1	Pre-heater relay	S822-014000	-
CR-35	-	5	Power relay	-	-
CR-36	-	5	Pre-heat relay	-	-
CR-46	-	5	Fuel heater relay	SJA003526-001	2411-05100
CR-62	-	5	Breaker relay	SJA003526-001	2411-05100
SWITCH					
CS-1	SHUR	1	Door switch	S822-014004	-
CS-2	-	6	Start key switch	S814-006000	S814-106000
CS-4	DEUTSCH	3	Safety switch	DT06-3S-P012	DT04-3P
CS-5	DEUTSCH	2	Horn switch	DT06-2S	DT04-2P-E004
CS-19	DEUTSCH	2	One touch decel	DT06-2S	DT04-2P-E004

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CS-20	AMP	1	Safety switch	S822-014002	-
CS-23	SWF	10	Beacon lamp switch	SWF593757	-
CS-26	DEUTSCH	2	Breaker switch	DT06-2S-P012	DT04-2P
CS-26A	-	2	Breaker switch	S816-002002	S816-102002
CS-27	SWF	10	Breaker switch	SWF593757	-
CS-29	DEUTSCH	2	Power max switch	DT06-2S-P012	DT04-2P
CS-50	SWF	10	Overload switch	SWF593757	-
CS-52	SWF	10	Econo switch	SWF593757	-
CS-53	SHUR	1	Wiper cut switch	S822-014002	-
CS-54	SWF	10	Spare switch	SWF593757	-
CS-67	SWF	10	Quick clamp switch	SWF593757	-
CS-74A	KET	2	Master switch	MG620558	S813-130201
CS-74B	DEUTSCH	2	Master switch	DT06-2S-P012	DT04-2P-E005
CS-83	SWF	10	Beacon lamp switch	SWF 593757	-
LAMP					
CL-1	KET	2	Cabin room lamp	MG610392	-
CL-2	AMP	1	Cigar light	S822-014002	S822-114002
				S816-012002	-
CL-4	DEUTSCH	2	Head lamp	DT06-2S	DT04-2P-E004
CL-5	DEUTSCH	2	Work lamp	DT06-2S-EP06	DT04-2P
CL-7	SHUR	1	Beacon lamp	S822-014004	S822-114004
CL-8	DEUTSCH	2	Cabin light-LH	DT06-2S	DT04-2P-E005
CL-9	DEUTSCH	2	Cabin light-RH	DT06-2S	DT04-2P-E005
SENDER					
CD-1	AMP	2	Hydraulic oil temp sender	85202-1	-
CD-2	DEUTSCH	2	Fuel sender	DT06-2S-P012	-
CD-6	KET	2	Travel pressure switch	MG640795	-
CD-7	KET	2	Working pressure switch	MG640795	-
CD-8	AMP	2	Water temp sender	85202-1	-
CD-10	RING TERM	1	Air cleaner switch	ST710289-2	-
CD-17	PACKARD	2	Tacho sensor	-	S818-120221
CD-18	AMP	1	Engine oil pressure switch	174196-1	-
CD-32	DEUTSCH	3	Boom up pressure switch	DT06-3S-P012	-
CD-42	DEUTSCH	3	Pump pressure sensor 1	DT06-3S-EP06	-
CD-43	DEUTSCH	3	Pump pressure sensor 2	DT06-3S-EP06	-
CD-44	DEUTSCH	3	Pump pressure sensor 3	DT06-3S-EP06	-
CD-69	DEUTSCH	3	Attachment pilot pressure switch	DT06-3S-P012	DT04-3P-E004
DIODE					
DO-1	AMP	2	Diode	S816-002002	21EA-50550
DO-2	AMP	2	Diode	S816-002002	21EA-50550
DO-3	AMP	2	Diode	S816-002002	21EA-50550
DO-5	AMP	2	Diode	S816-002002	21EA-50550

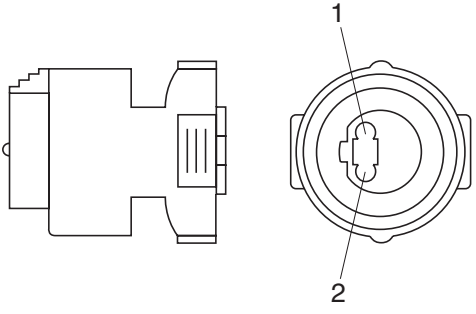
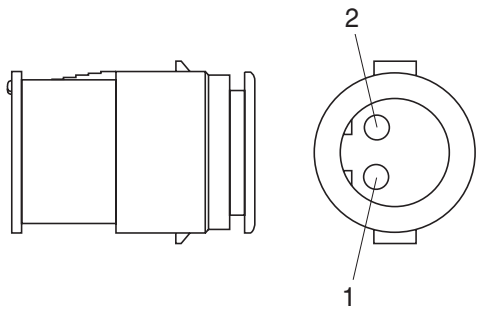
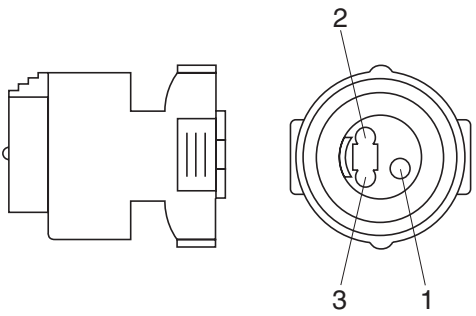
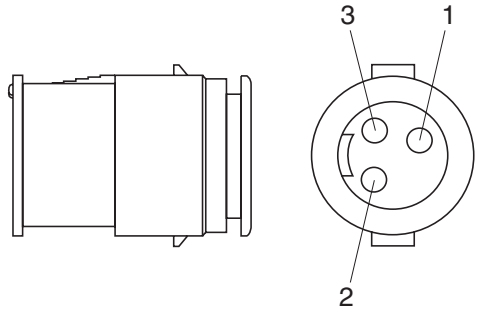
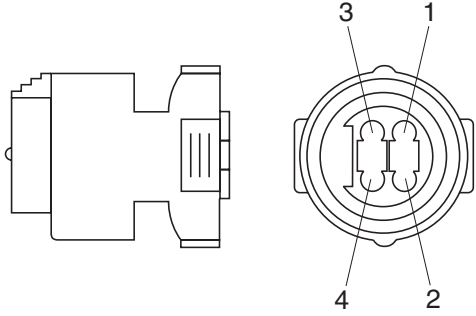
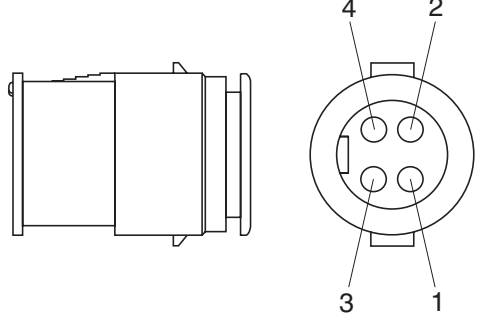
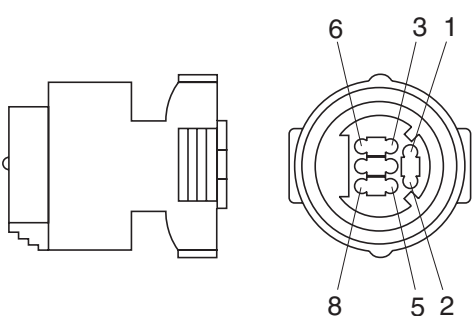
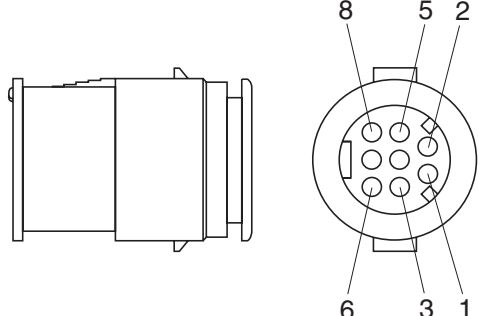
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

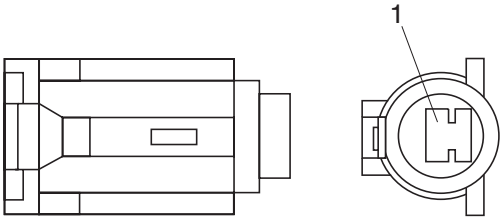
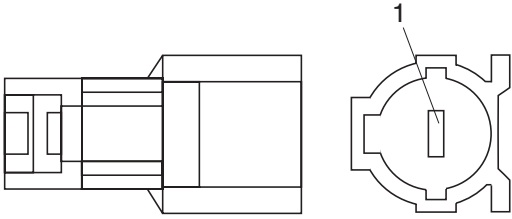
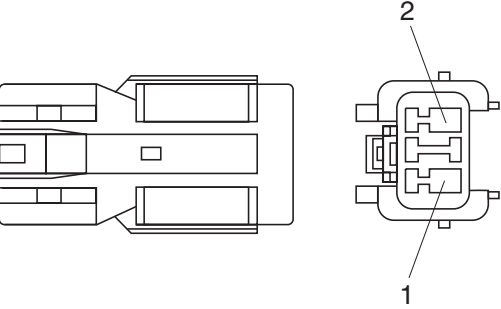
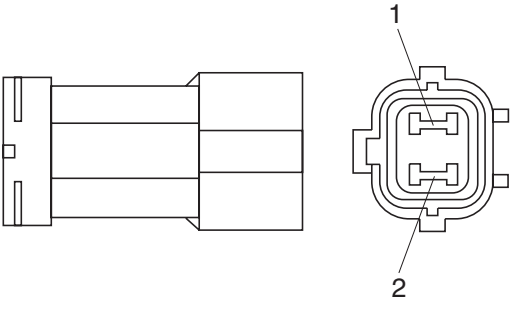
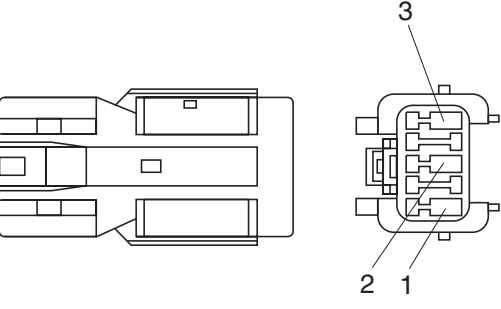
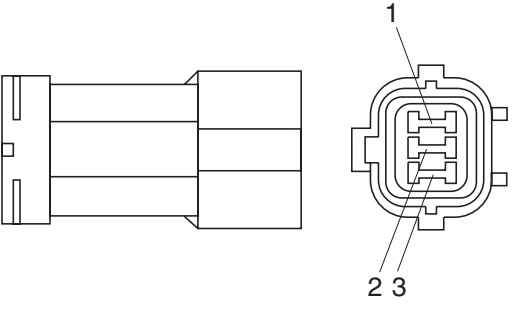
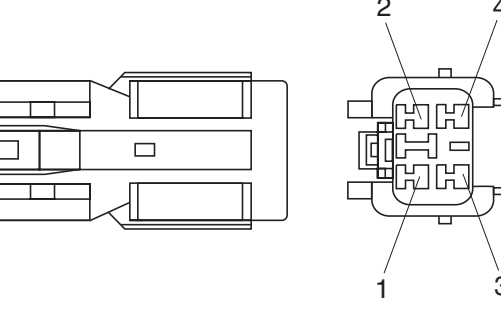
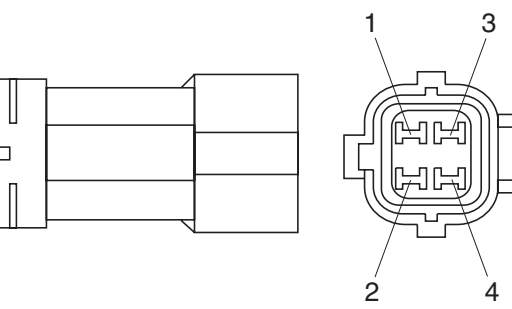
No. of pin	Receptacle connector(Female)	Plug connector(Male)
5	 <p style="text-align: center;">S811-005002</p>	 <p style="text-align: center;">S811-105002</p>
7	 <p style="text-align: center;">S811-007002</p>	 <p style="text-align: center;">S811-107002</p>
9	 <p style="text-align: center;">S811-009002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

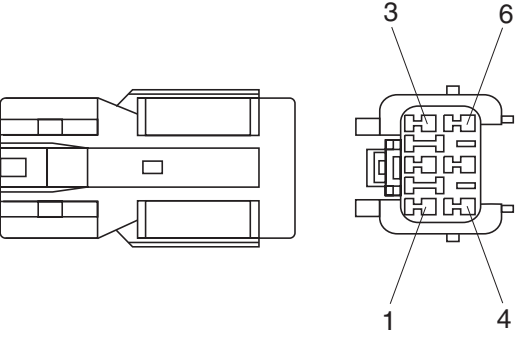
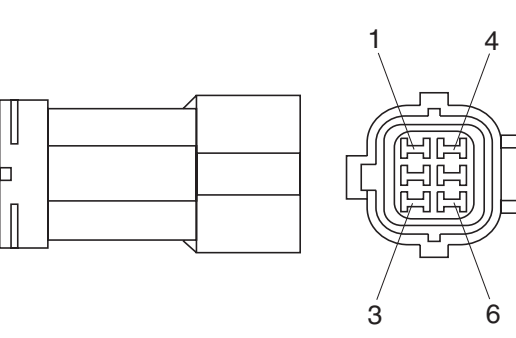
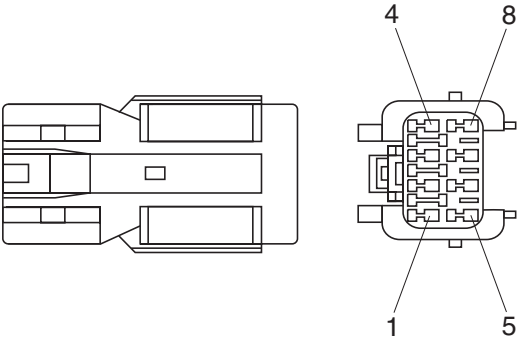
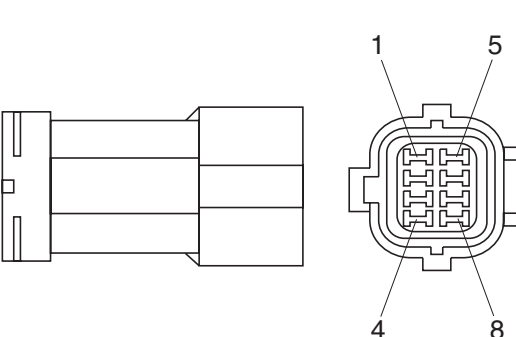
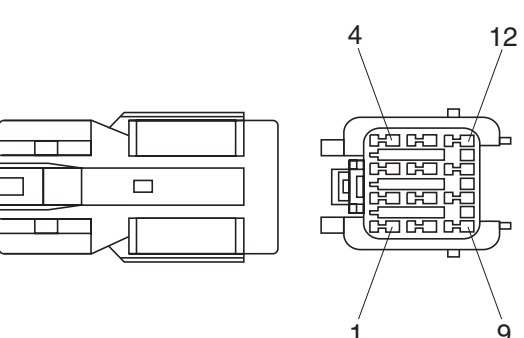
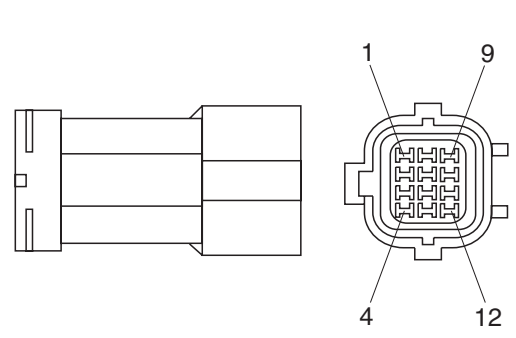
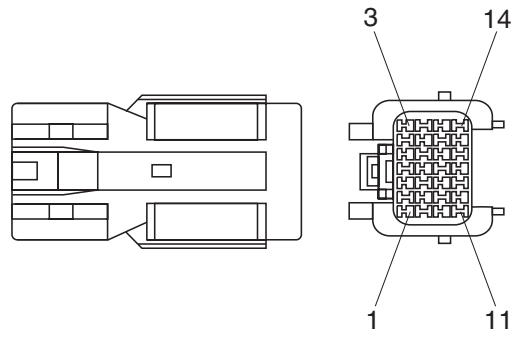
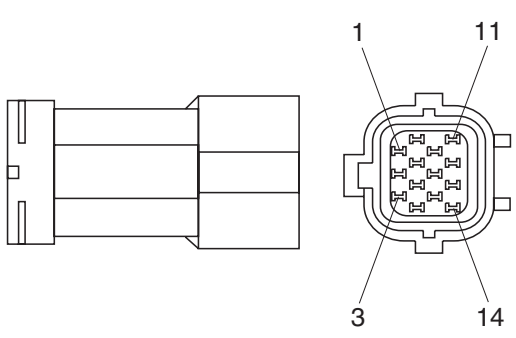
No. of pin	Receptacle connector(Female)	Plug connector(Male)
13	 <p style="text-align: center;">S811-013002</p>	 <p style="text-align: center;">S811-113002</p>
17	 <p style="text-align: center;">S811-017002</p>	 <p style="text-align: center;">S811-117002</p>
21	 <p style="text-align: center;">S811-021002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

2) J TYPE CONNECTOR

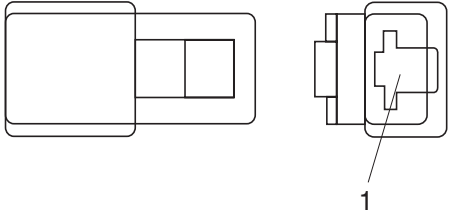
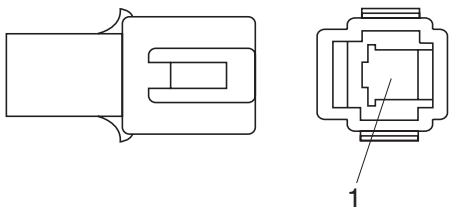
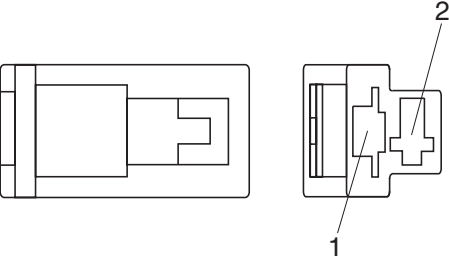
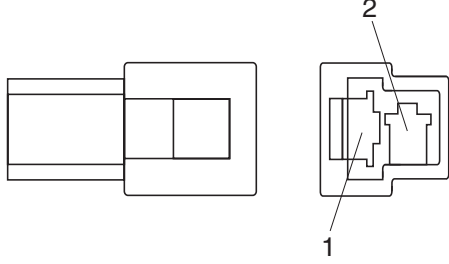
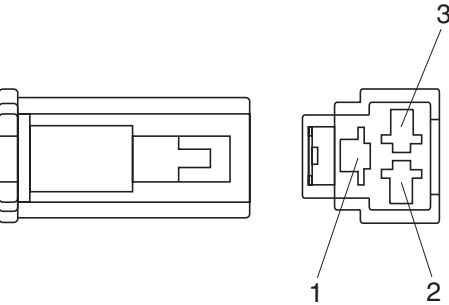
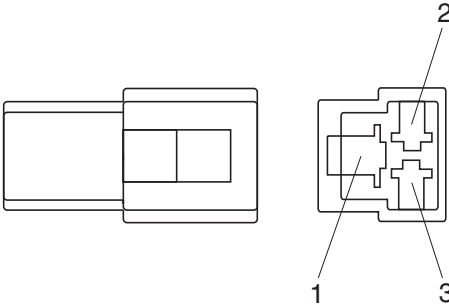
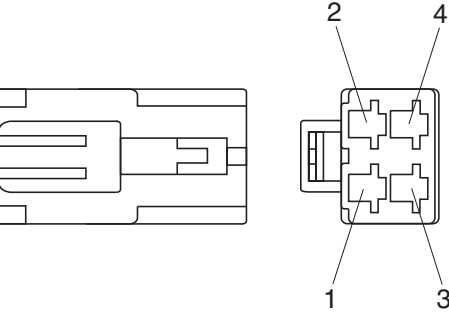
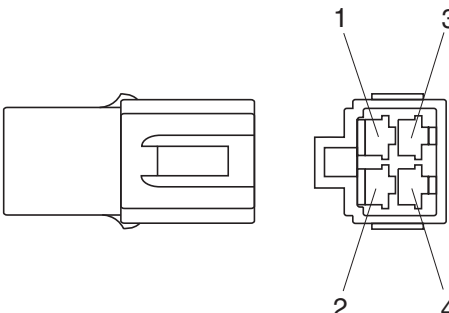
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p style="text-align: center;">S816-002001</p>	 <p style="text-align: center;">S816-102001</p>
3	 <p style="text-align: center;">S816-003001</p>	 <p style="text-align: center;">S816-103001</p>
4	 <p style="text-align: center;">S816-004001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

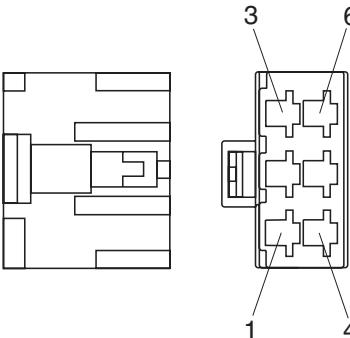
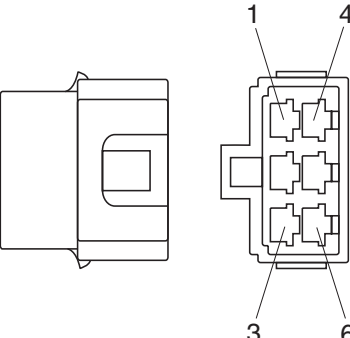
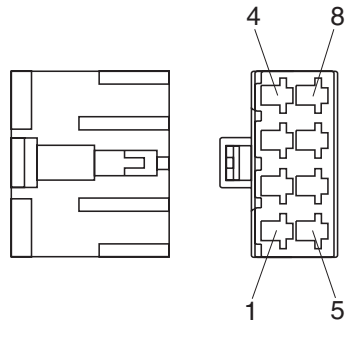
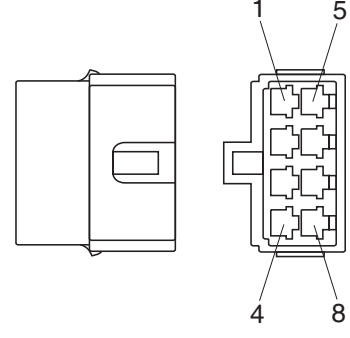
3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p data-bbox="687 680 836 707">S814-001000</p>	 <p data-bbox="1241 680 1390 707">S814-101000</p>
2	 <p data-bbox="687 1084 836 1111">S814-002000</p>	 <p data-bbox="1241 1084 1390 1111">S814-102000</p>
3	 <p data-bbox="687 1491 836 1518">S814-003000</p>	 <p data-bbox="1241 1491 1390 1518">S814-103000</p>
4	 <p data-bbox="687 1895 836 1921">S814-004000</p>	 <p data-bbox="1241 1895 1390 1921">S814-104000</p>

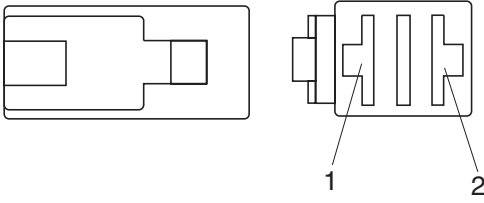
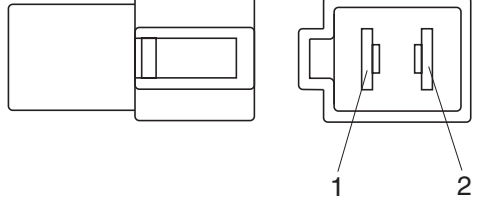
No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p data-bbox="686 638 837 672">S814-006000</p>	 <p data-bbox="1244 638 1396 672">S814-106000</p>
8	 <p data-bbox="686 1041 837 1075">S814-008000</p>	 <p data-bbox="1244 1041 1396 1075">S814-108000</p>
12	 <p data-bbox="686 1449 837 1482">S814-012000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

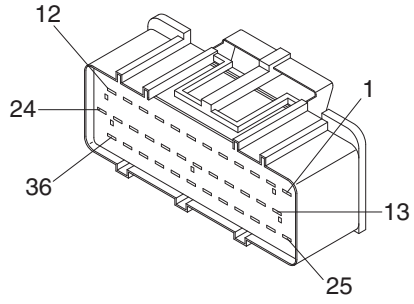
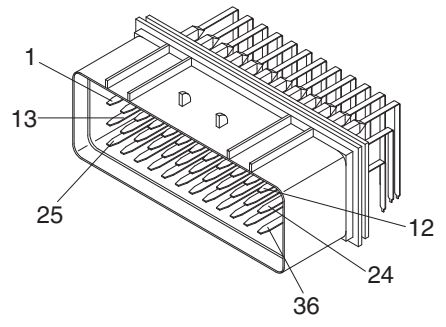
No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p style="text-align: center;">S810-001202</p>	 <p style="text-align: center;">S810-101202</p>
2	 <p style="text-align: center;">S810-002202</p>	 <p style="text-align: center;">S810-102202</p>
3	 <p style="text-align: center;">S810-003202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

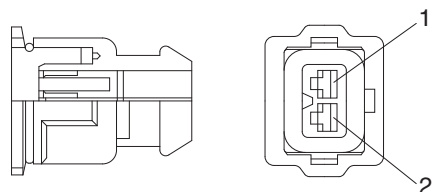
5) 375 FASTEN TYPE CONNECTOR

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

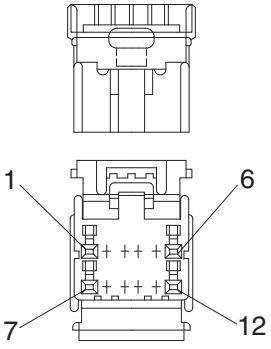
6) AMP ECONOSEAL CONNECTOR

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>

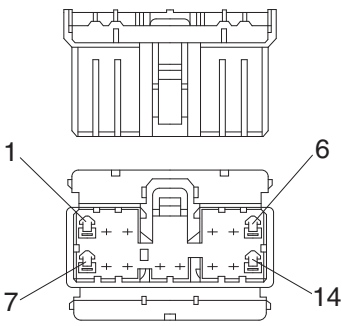
7) AMP TIMER CONNECTOR

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

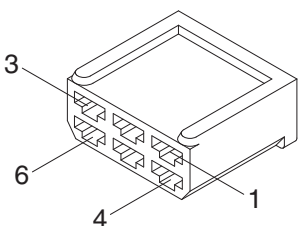
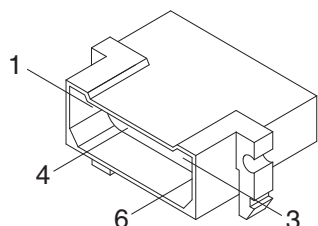
8) AMP 040 MULTILOCK CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
12		

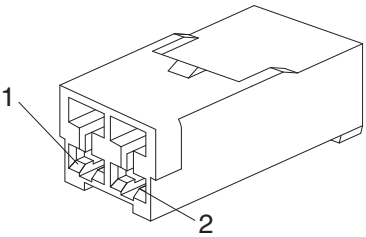
9) AMP 070 MULTILOCK CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
14		

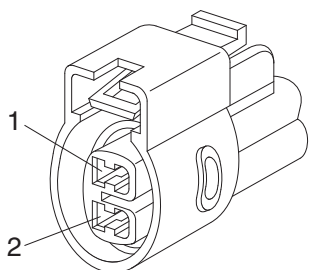
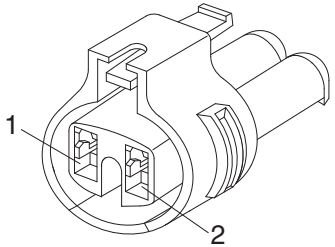
10) AMP FASTIN - FASTON CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
6		

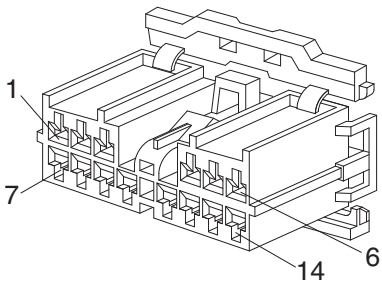
11)KET 090 CONNECTOR

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

12)KET 090 WP CONNECTORS

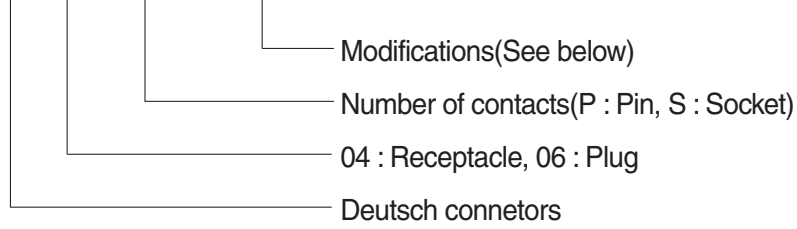
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p style="text-align: right;">MG640605</p>	
2	 <p style="text-align: right;">MG640795</p>	

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

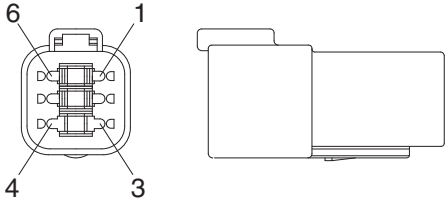
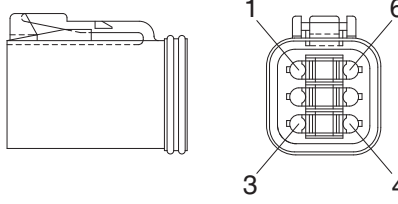
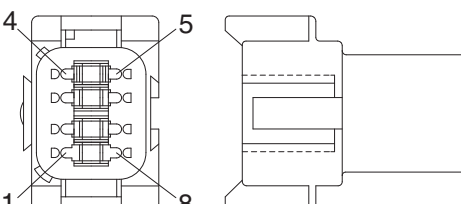
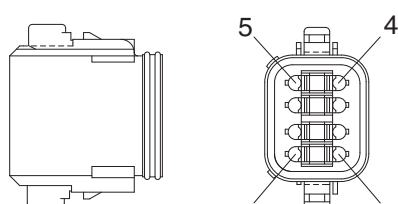
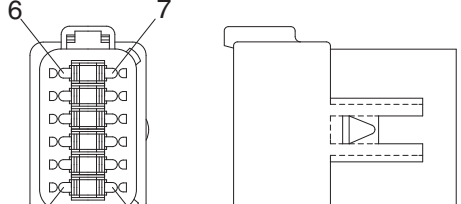
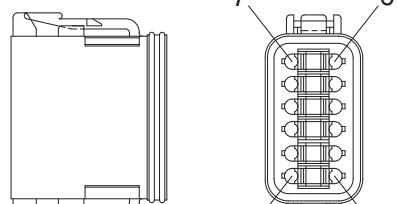
E005 : Combination - E004 & E003

EP04 : End cap

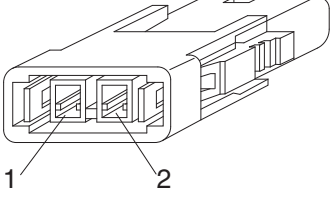
EP06 : Combination P012 & EP04

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

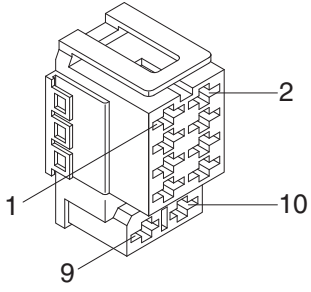
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	<p>DT06-2S</p>	<p>DT04-2P</p>
3	<p>DT06-3S</p>	<p>DT04-3P</p>
4	<p>DT06-4S</p>	<p>DT04-4P</p>

No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p style="text-align: 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>

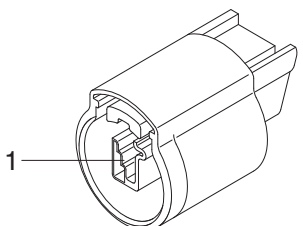
15) MOLEX 2CKTS CONNECTOR

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

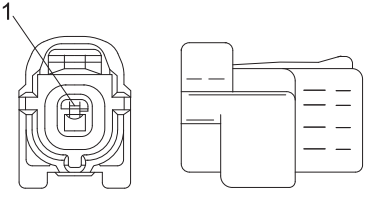
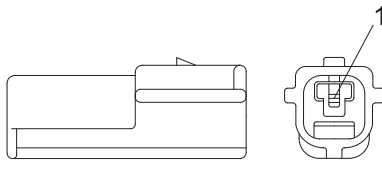
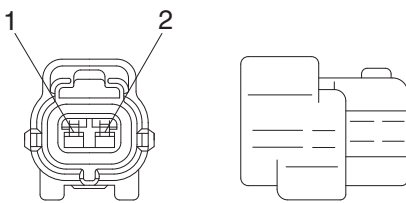
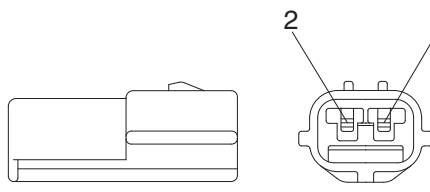
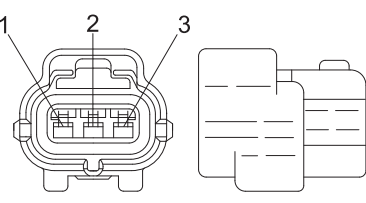
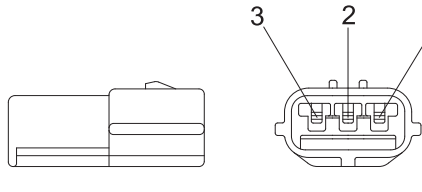
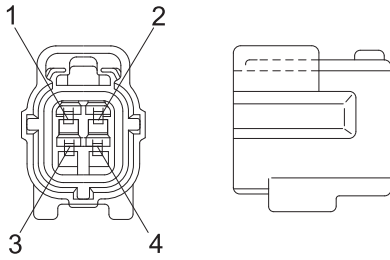
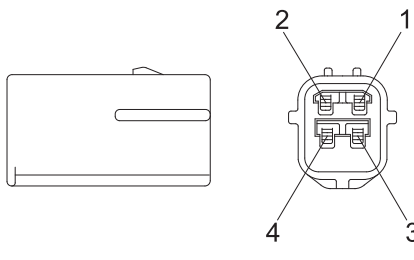
16) ITT SWF CONNECTOR

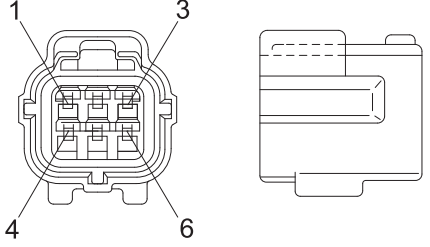
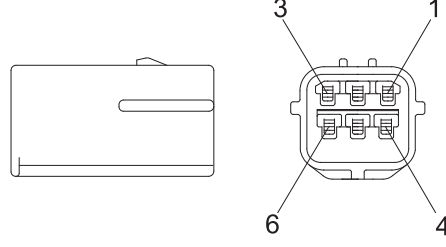
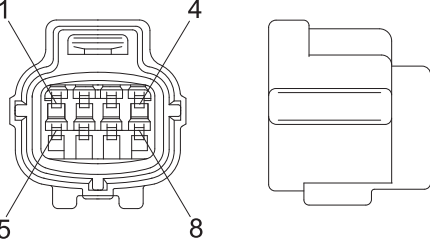
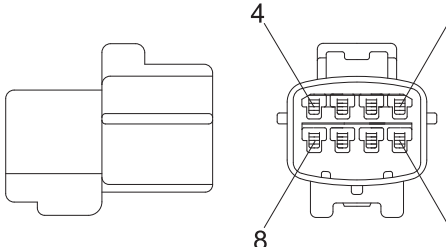
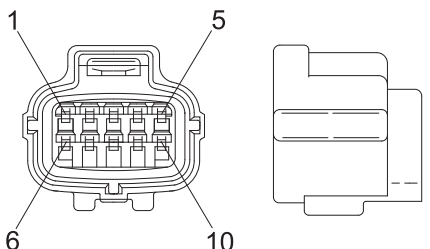
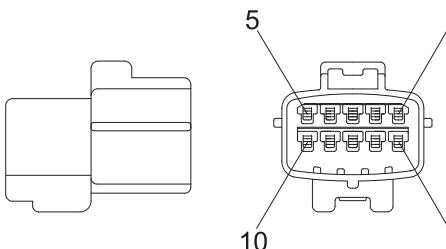
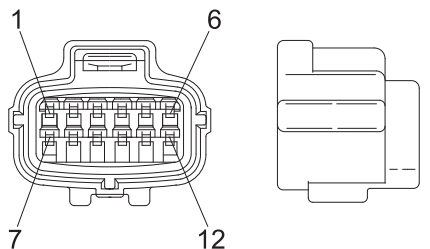
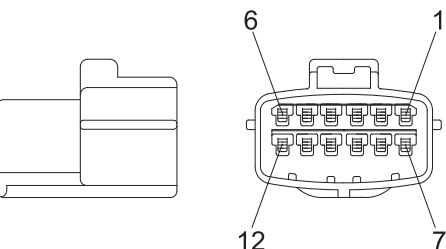
No. of pin	Receptacle connector(Female)	Plug connector(Male)
10	 <p data-bbox="694 1288 837 1310">SWF593757</p>	

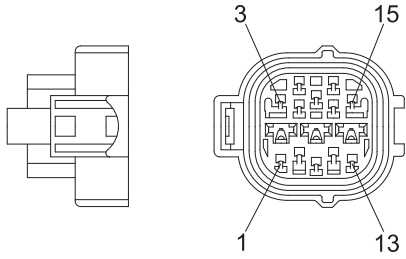
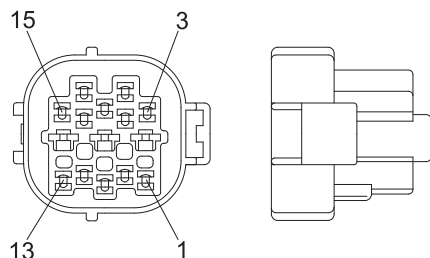
17) MWP NMWP CONNECTOR

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

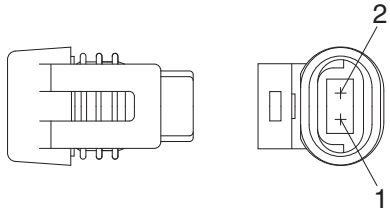
18) ECONOSEAL J TYPE CONNECTORS

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>

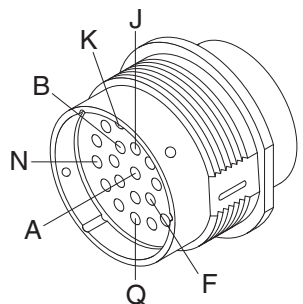
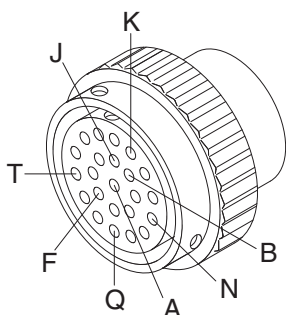
No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p style="text-align: center;">S816-006002</p>	 <p style="text-align: center;">S816-106002</p>
8	 <p style="text-align: center;">S816-008002</p>	 <p style="text-align: center;">S816-108002</p>
10	 <p style="text-align: center;">S816-010002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

19) METRI-PACK TYPE CONNECTOR

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

20) DEUTSCH HD30 CONNECTOR

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