

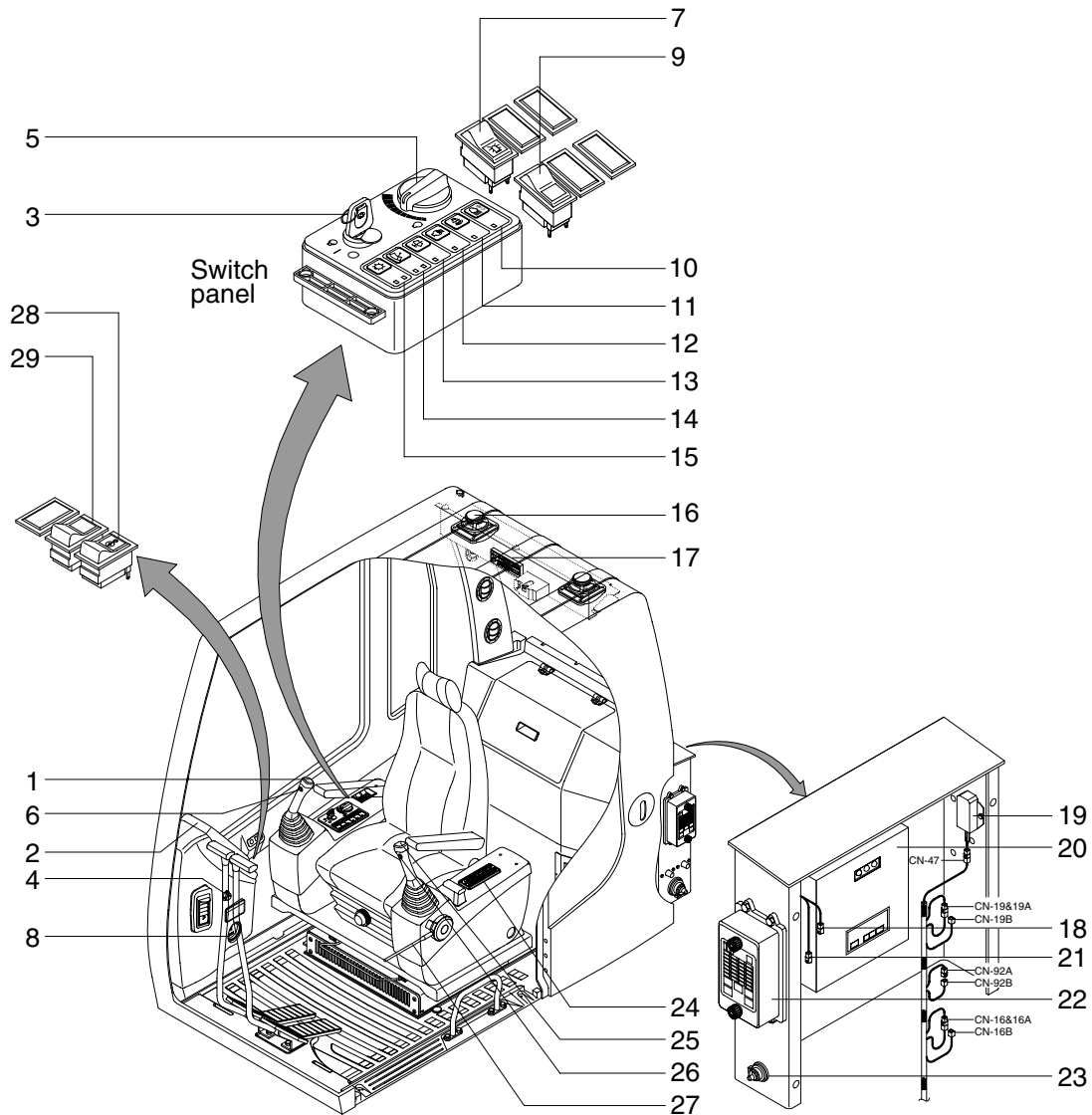
SECTION 4 ELECTRICAL SYSTEM

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SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

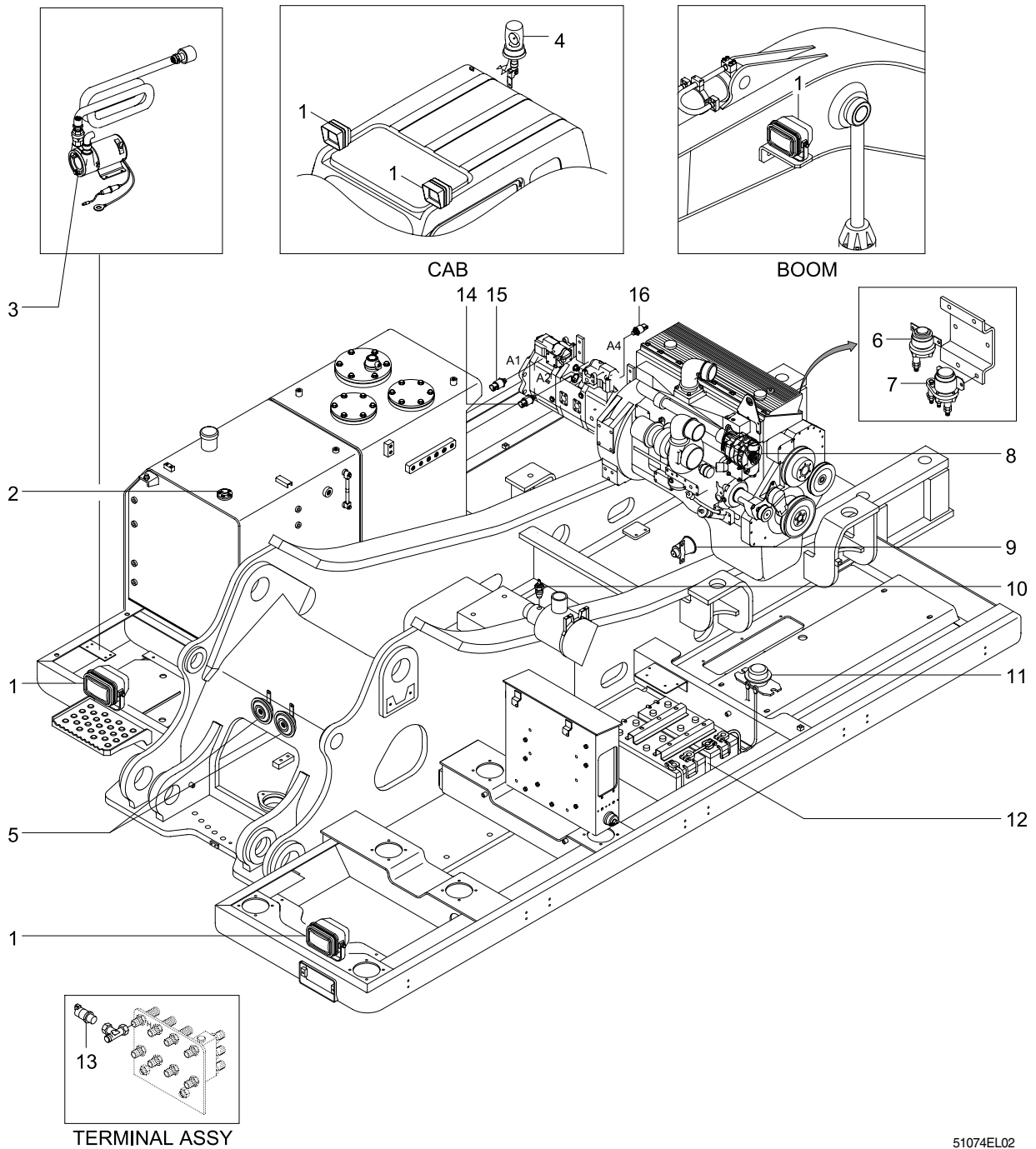
1. LOCATION 1



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|----|--------------------------|----|--------------------------|----|------------------------------|
| 1 | Horn switch | 11 | Travel alarm stop switch | 21 | J1939 serial connector |
| 2 | Cluster | 12 | Preheat switch | 22 | Fuse box |
| 3 | Starting switch | 13 | Washer switch | 23 | Master switch |
| 4 | Cigar lighter | 14 | Wiper switch | 24 | Aircon & heater switch panel |
| 5 | Accel dial | 15 | Main light switch | 25 | One touch decel switch |
| 6 | Breaker switch | 16 | Speaker | 26 | Power max switch |
| 7 | Beacon switch | 17 | Radio and USB palyer | 27 | Safety lever |
| 8 | Service meter | 18 | RS232 serial connector | 28 | Overload switch |
| 9 | Breaker selection switch | 19 | Prolix resistor | 29 | Quick coupling switch |
| 10 | Cab light switch | 20 | MCU | | |

2. LOCATION 2

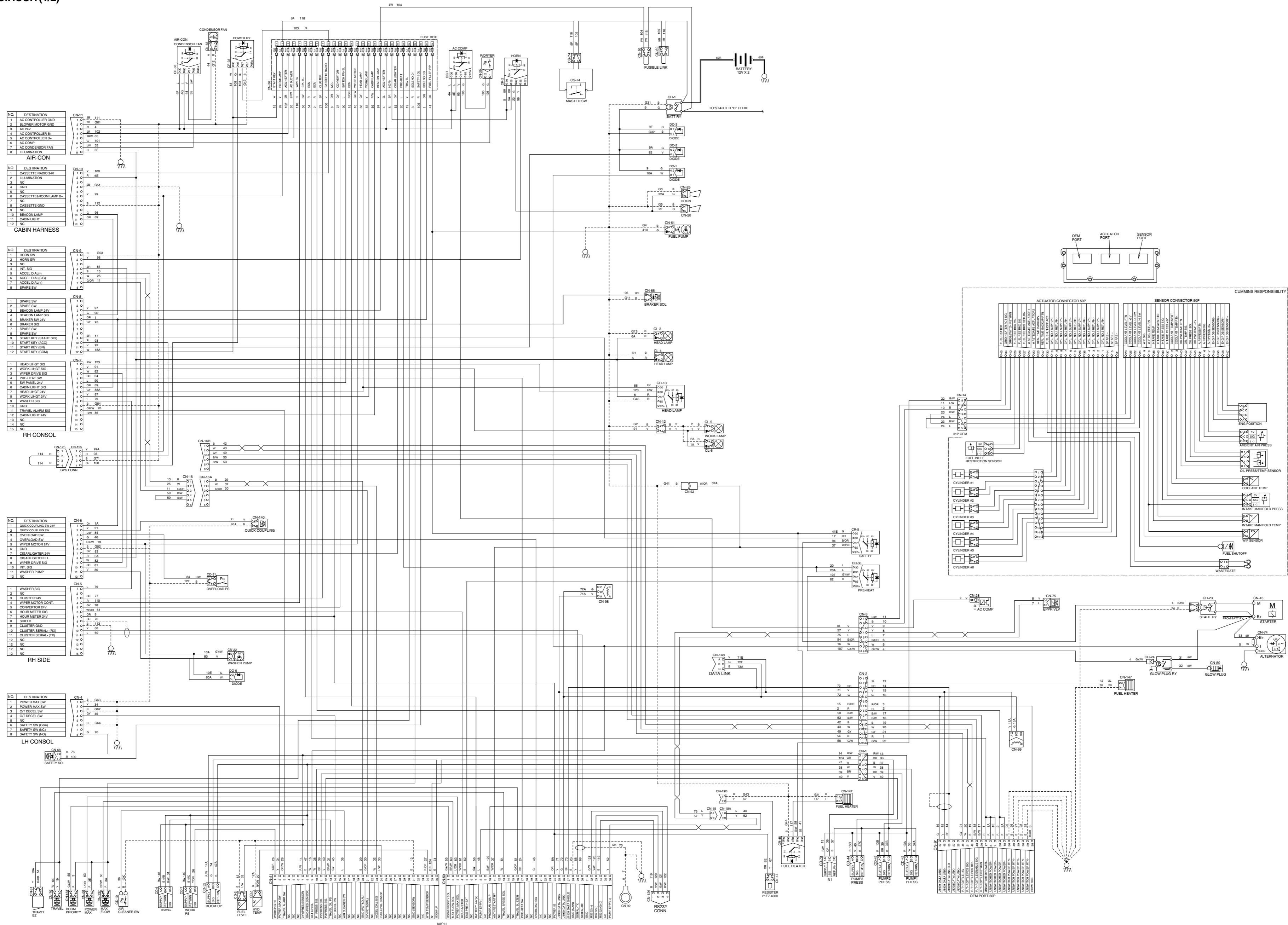


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|---|------------------|----|---------------------|----|-------------------------|
| 1 | Lamp | 7 | Heater valve | 13 | Boom up pressure sensor |
| 2 | Fuel sender | 8 | Alternator | 14 | P1 pressure sensor |
| 3 | Fuel filler pump | 9 | Travel alarm buzzer | 15 | P2 pressure sensor |
| 4 | Beacon lamp | 10 | Air cleaner switch | 16 | EPPR pressure sensor |
| 5 | Horn | 11 | Battery relay | | |
| 6 | Start relay | 12 | Battery | | |

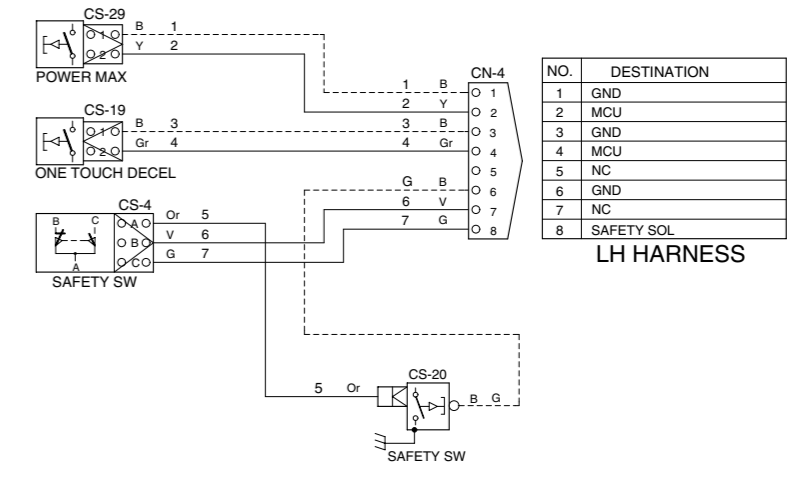
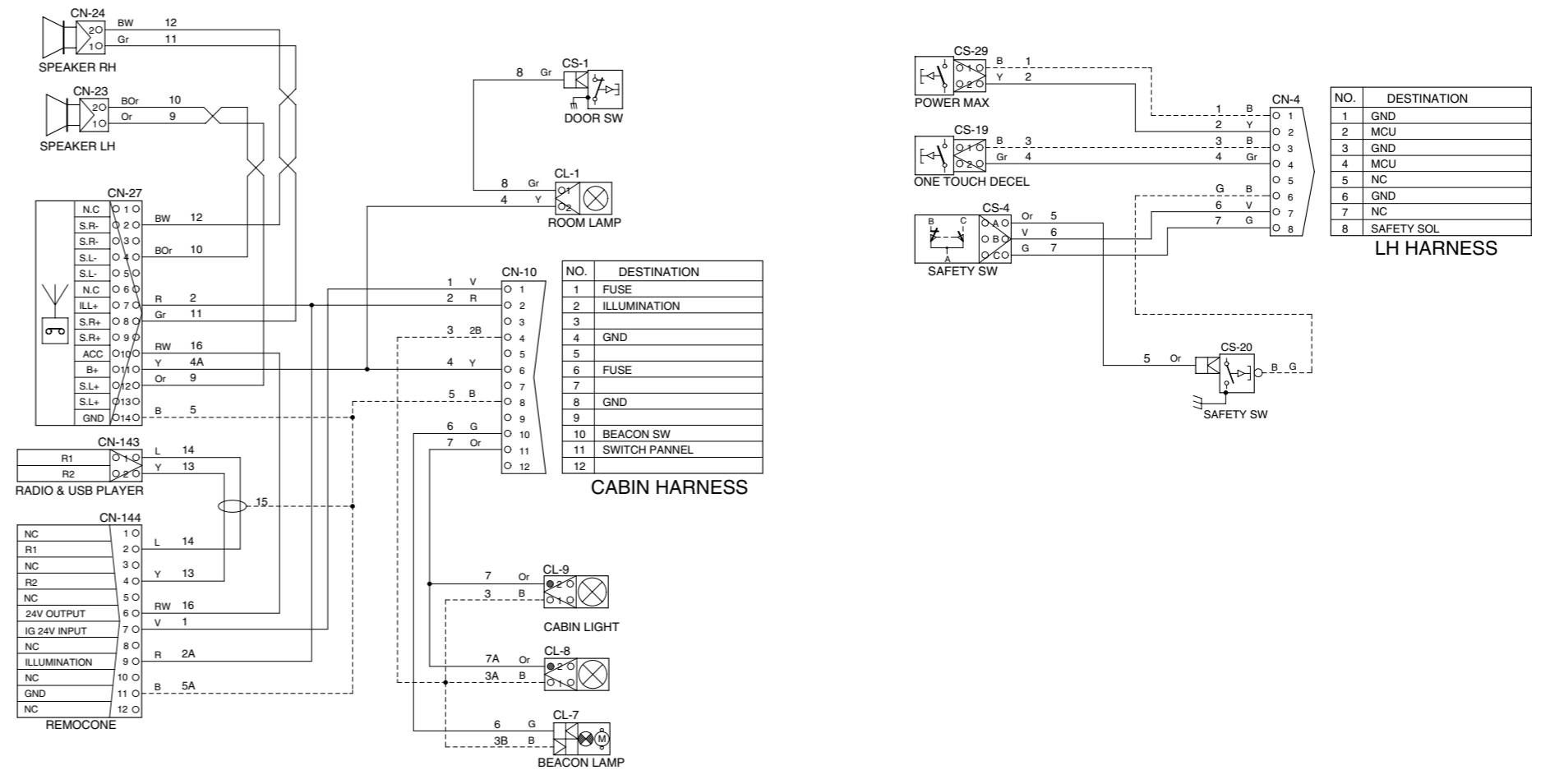
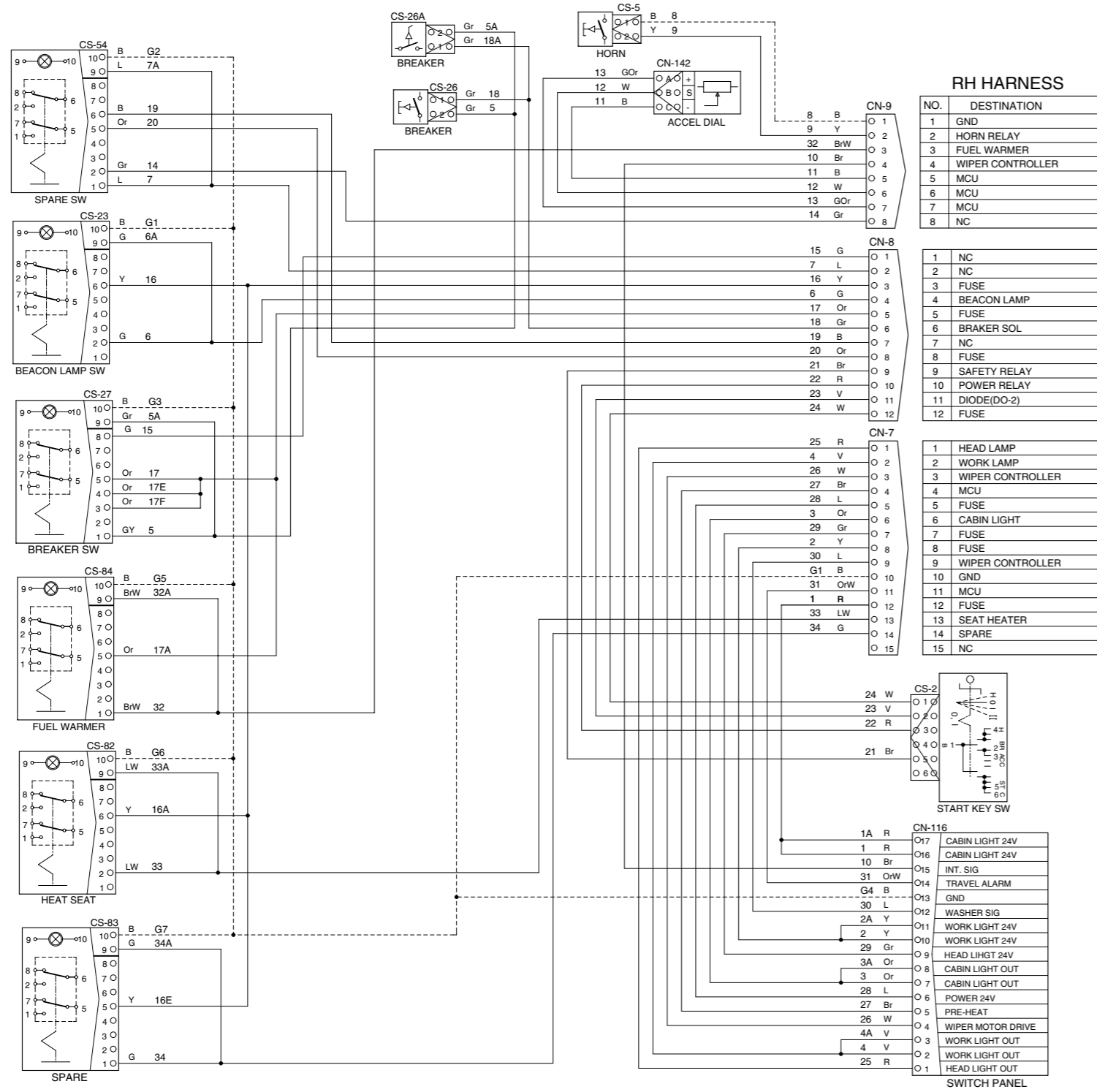
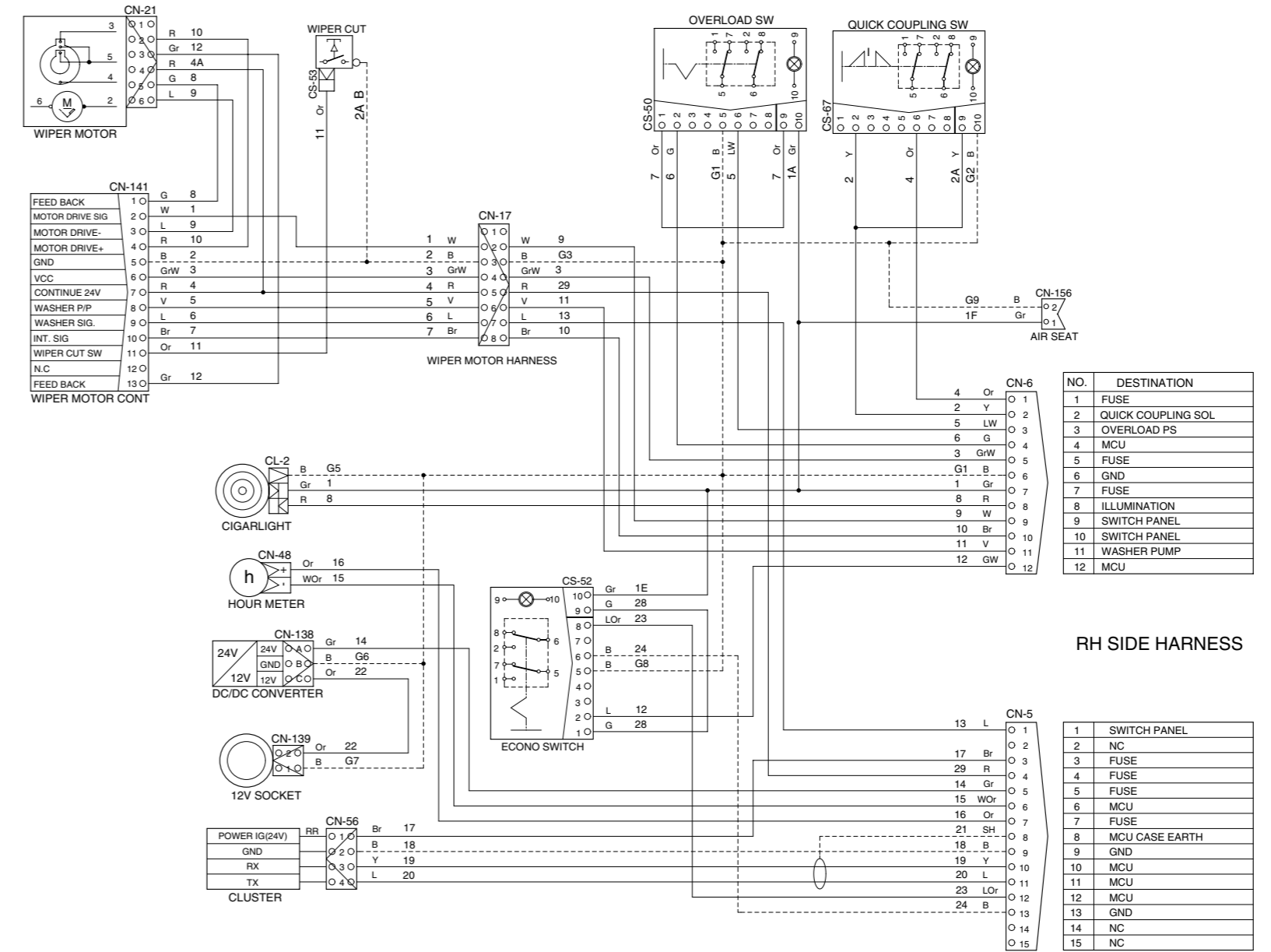
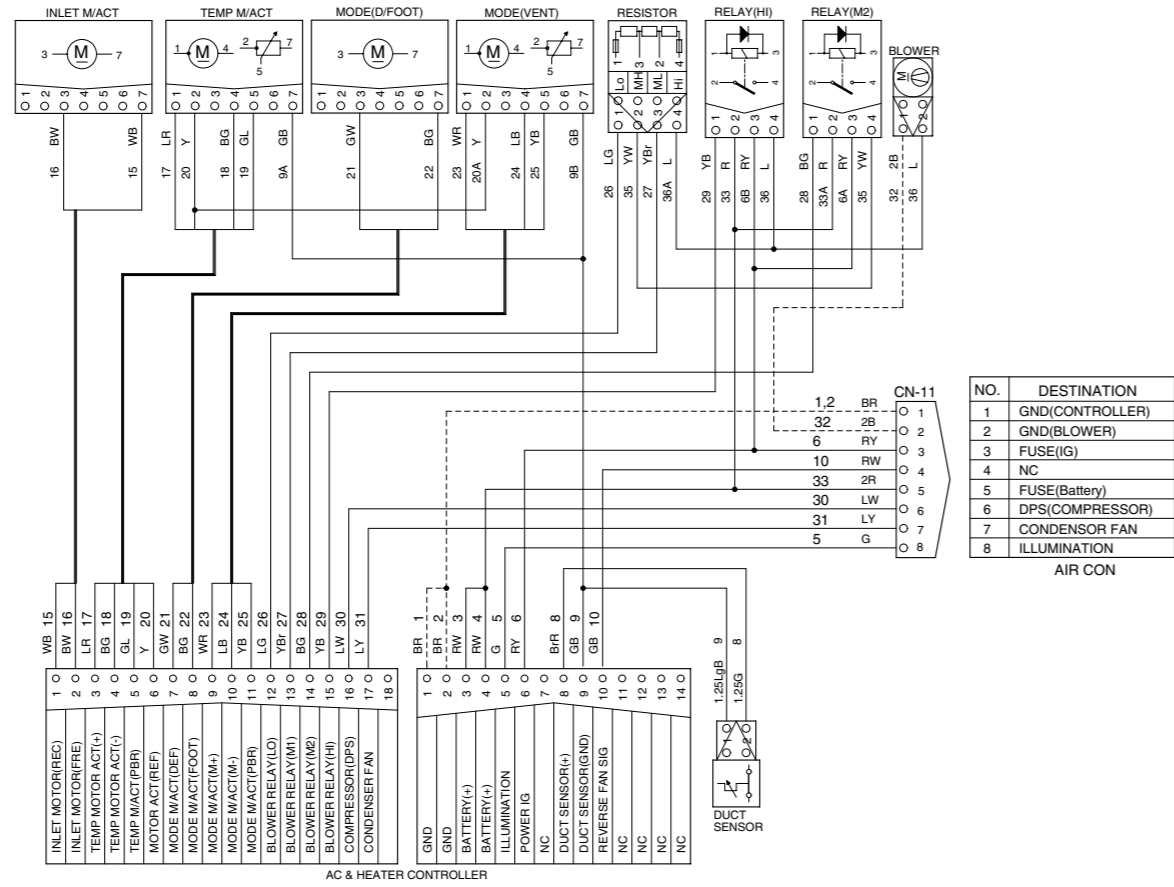
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GROUP 2 ELECTRICAL CIRCUIT

· ELECTRICAL CIRCUIT(1/2)



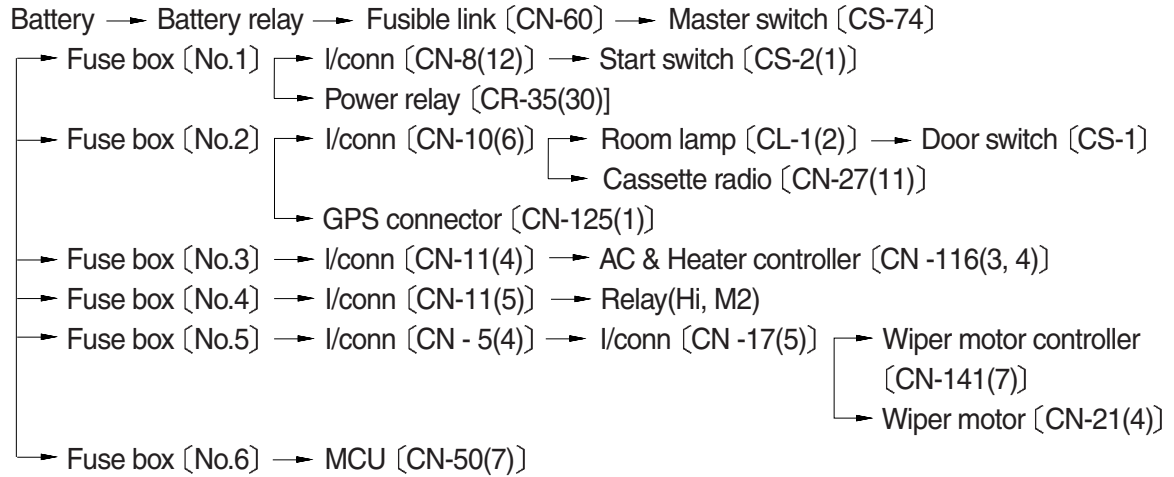
· ELECTRICAL CIRCUIT(2/2)



1. POWER CIRCUIT

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

1) OPERATING FLOW



※ I/conn : Intermediate connector

2) CHECK POINT

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

※ GND : Ground

2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Battery relay〔CR-1〕 → Fusible link 〔CN-60〕 → Master switch 〔CS-74〕
 → Fuse box 〔No.1〕 → I/conn 〔CN-8(12)〕 → Start switch 〔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.10〕

(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(6)〕 → Start relay 〔CR-23(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

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-3(7)] → MCU alternator level [CN-51(9)] → Cluster charging warning lamp(Via serial interface)

(2) Charging flow

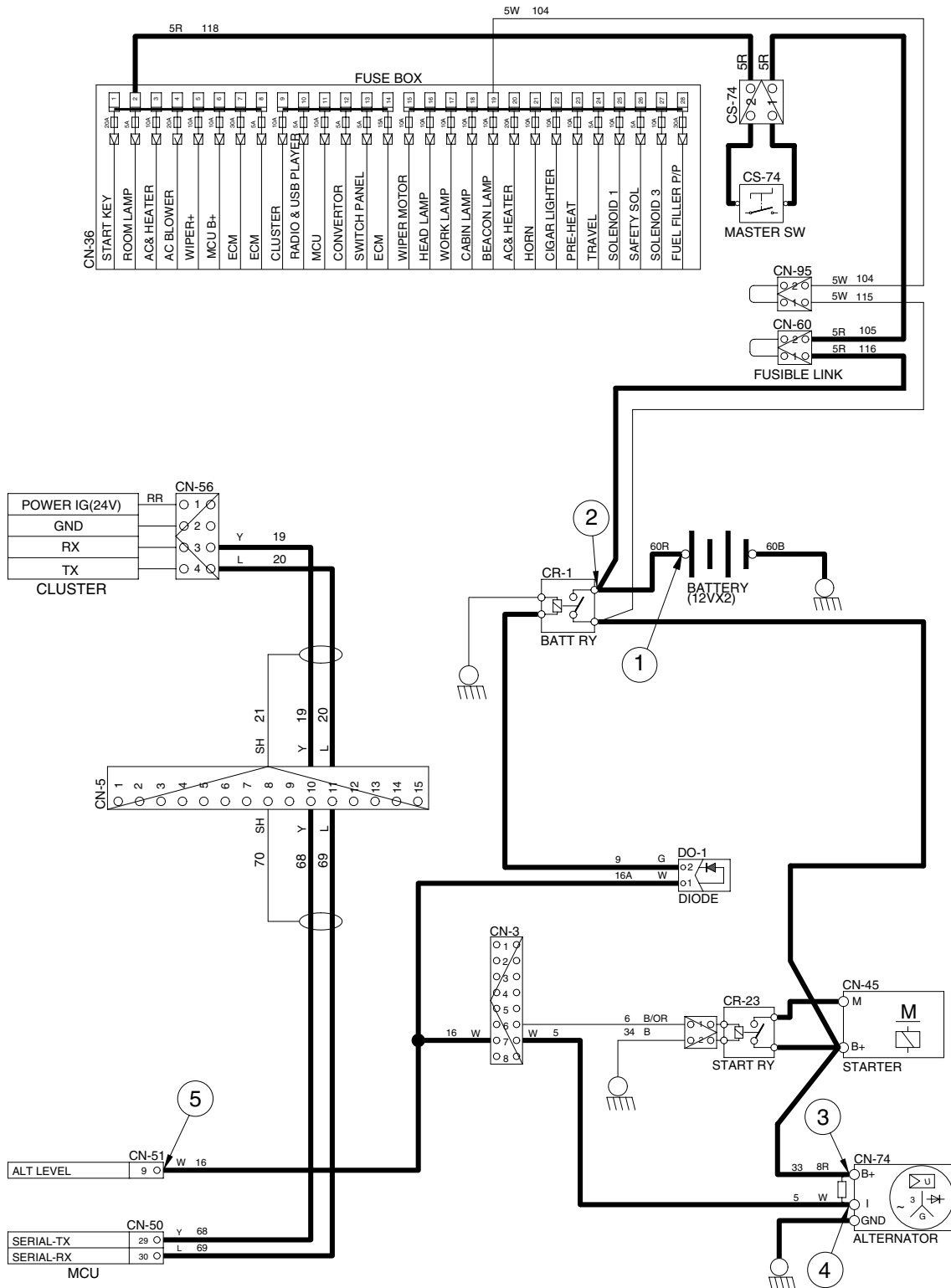
Alternator "B+" terminal → Battery relay(M8) → Battery(+) terminal
 → Fuse box → Fusible link [CN-60] → Master switch [CS-74]

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)	20~30V

※ GND : Ground

CHARGING CIRCUIT



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4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.16) → I/conn [CN-7(7)] → Switch panel [CN-116(9)]

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 light & relay [CR-13(86) → (87)]

→ Head light ON [CL-3(2), CL-4(2)]

→ I/conn [CN-10(2)]

→ Radio and USB player illumination ON [CN-27(7)]

→ Remote controller illumination ON [CN-144(9)]

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

→ I/conn [CN-6(8)] → Cigarlight [CL-2]

(2) Work light switch ON

Work light switch ON [CN-116(2,3)] → I/conn [CN-7(2)] → I/conn [CN-12(1)]

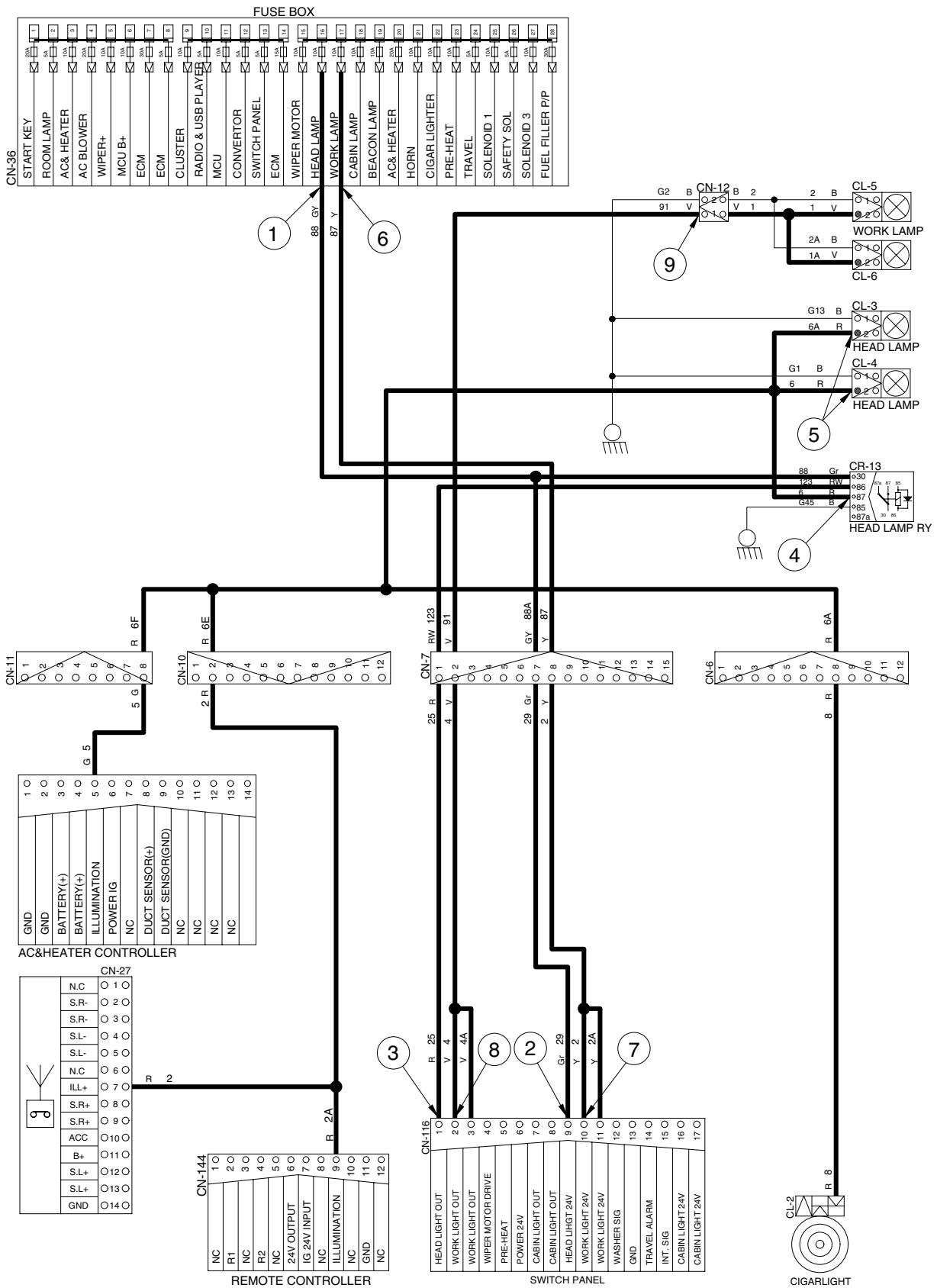
→ Work light ON [CL-5(2), CL-6(2)]

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 [CN-23(6)]

Fuse box (No.18) → 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

6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.13) → 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)

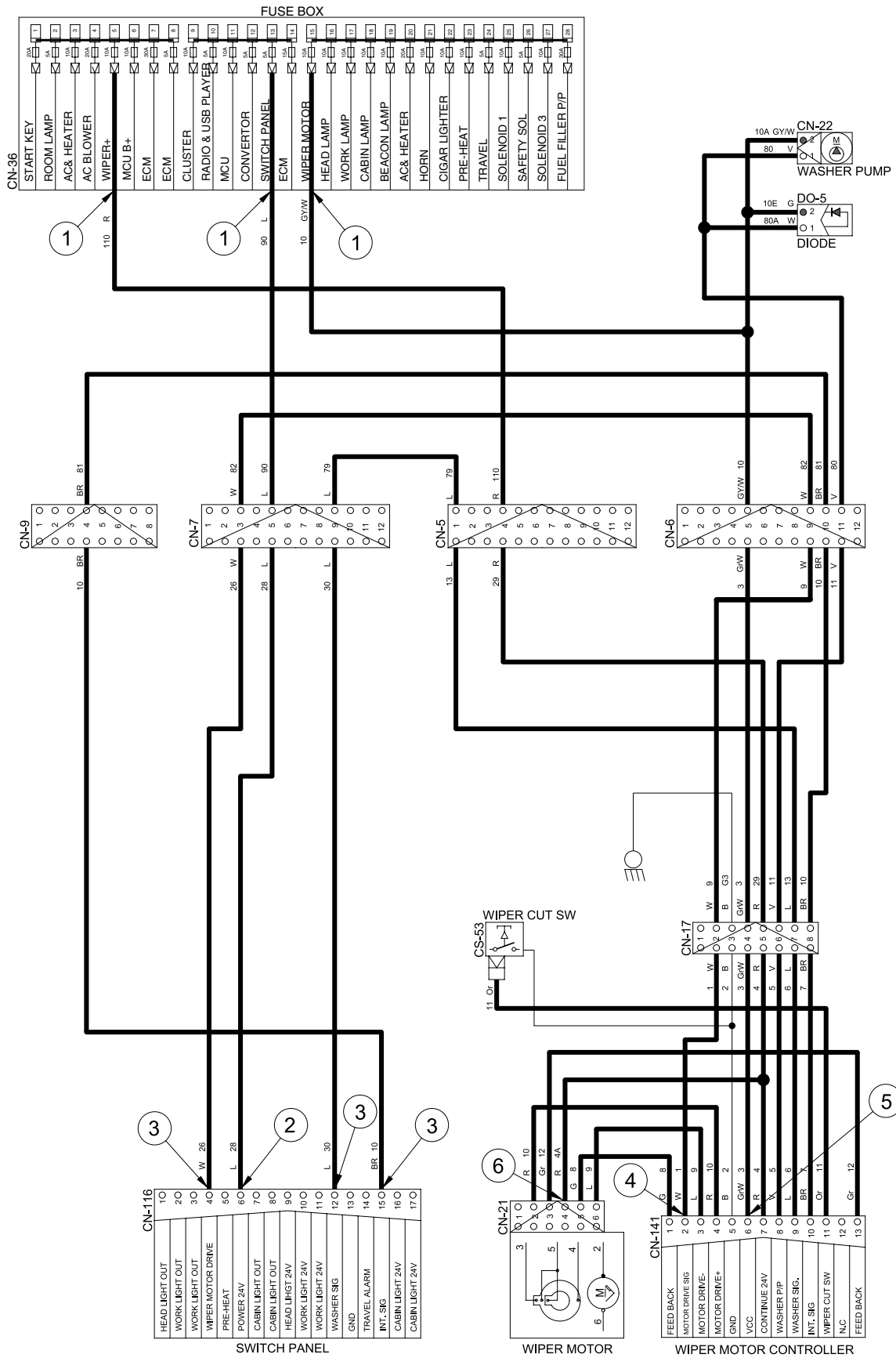
Switch OFF [CN-116(4)] → Wiper motor parking position by wiper motor controller

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)	24V
		⑥ - GND(Wiper motor)	

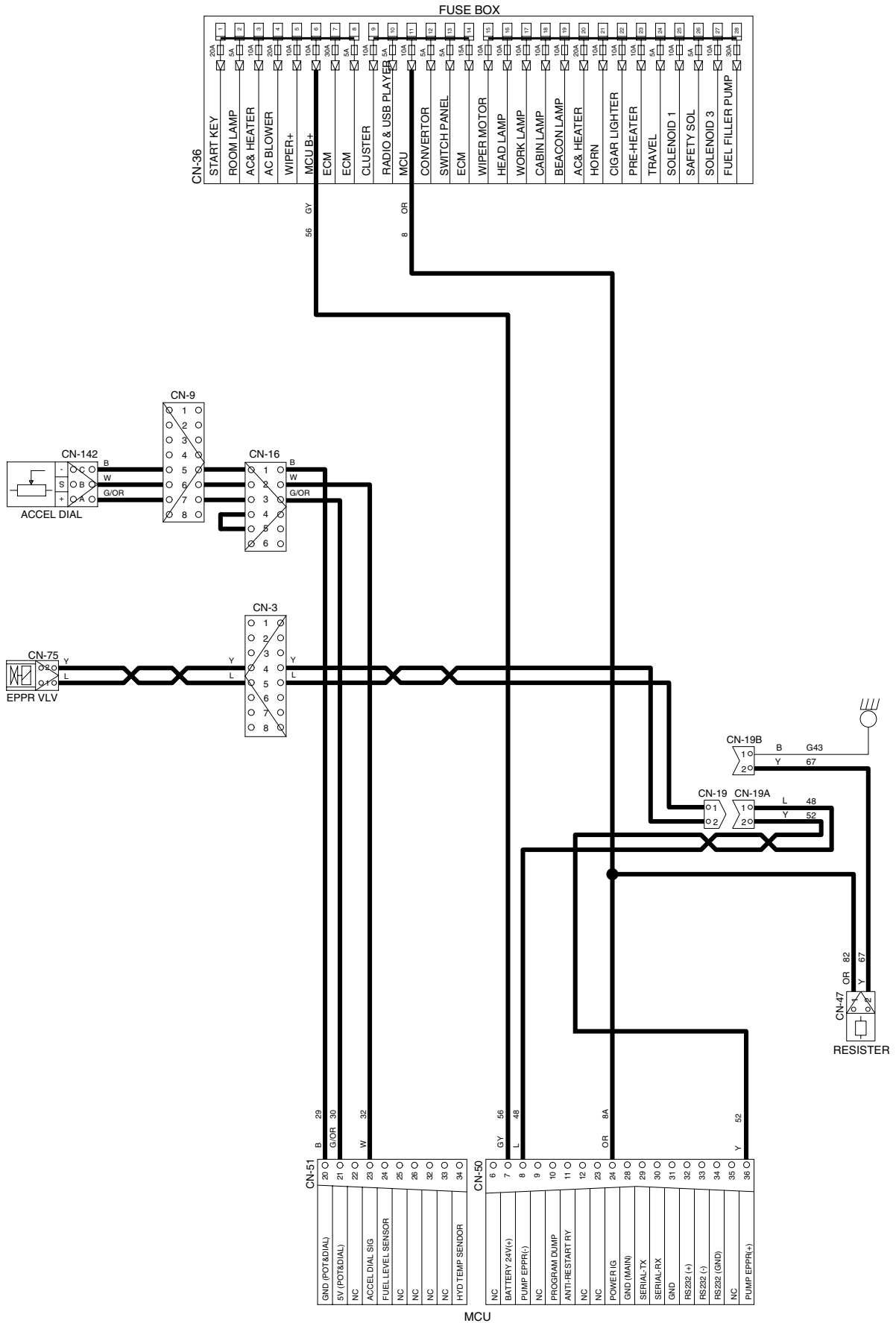
※ GND : Ground

WIPER AND WASHER CIRCUIT

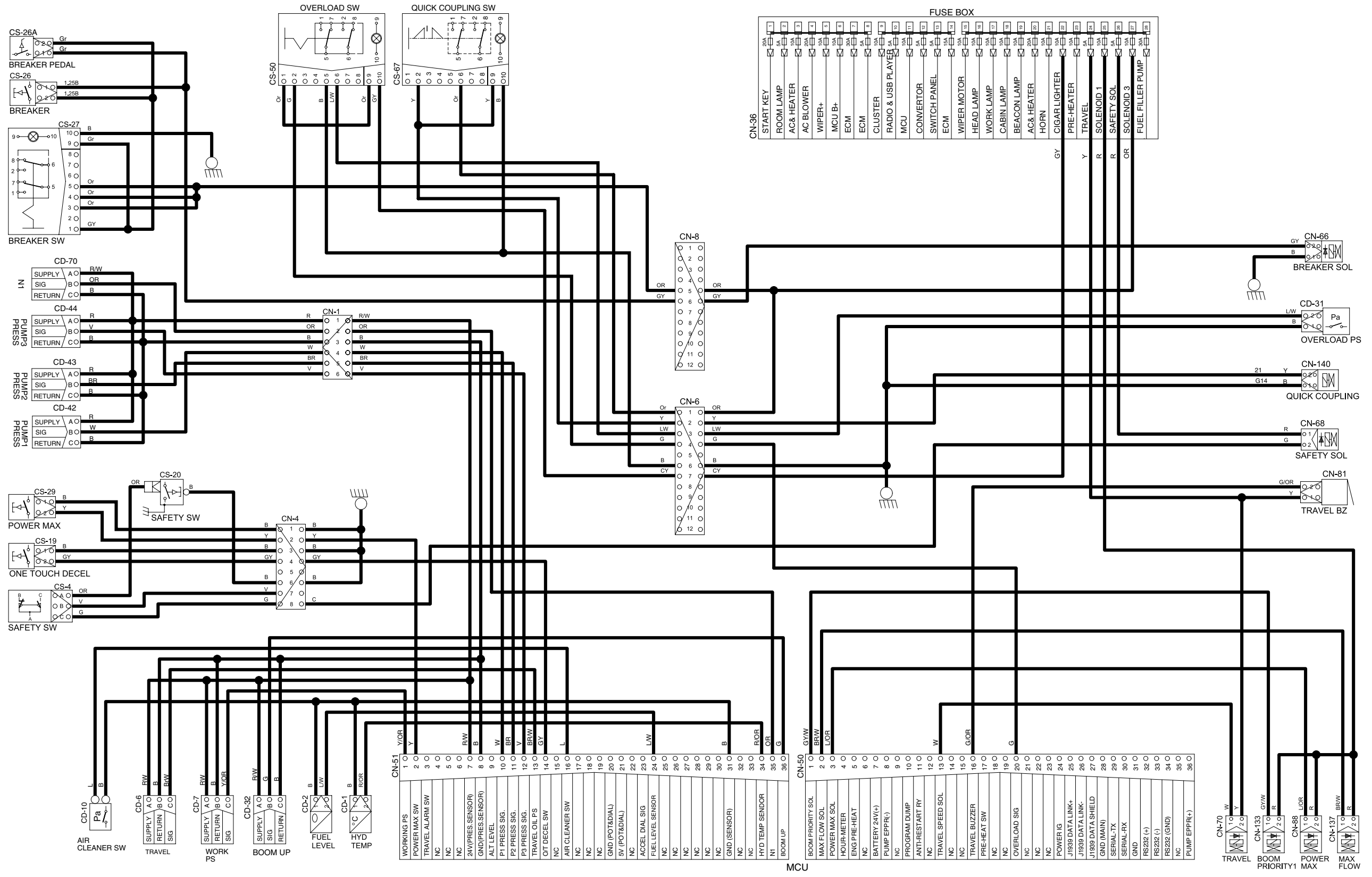


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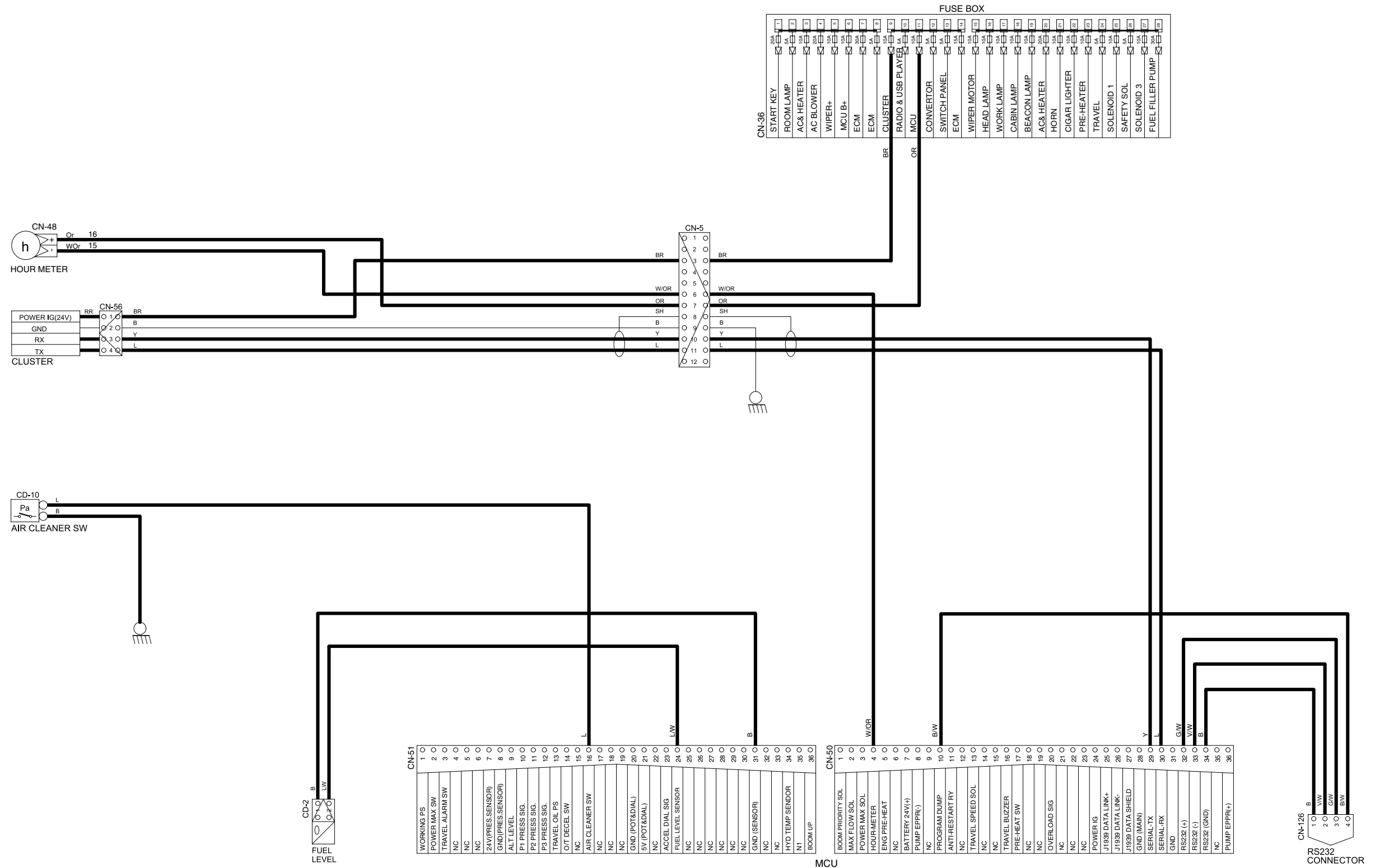
CONTROLLER CIRCUIT



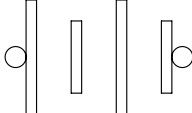
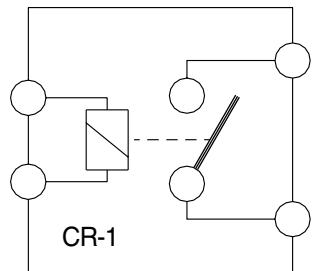
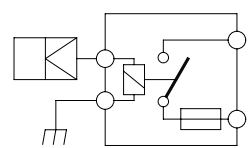
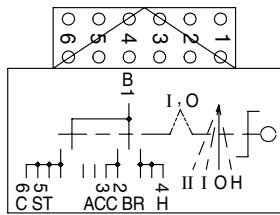
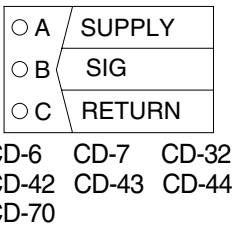
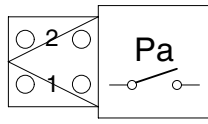
ELECTRIC CIRCUIT FOR HYDRAULIC

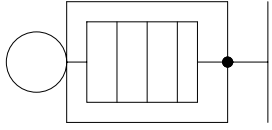
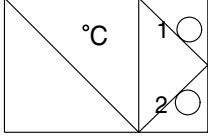
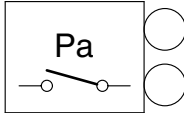
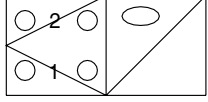
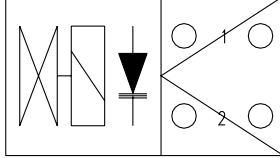
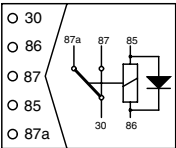


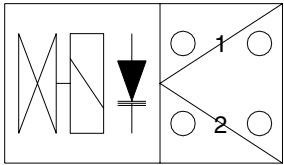
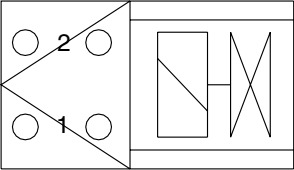
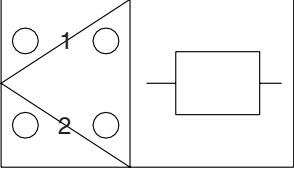
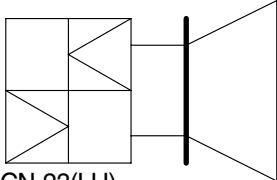
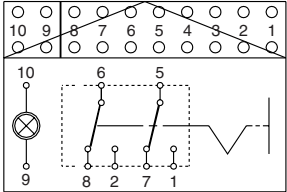
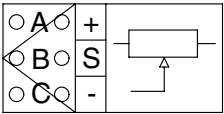
MONITORING CIRCUIT

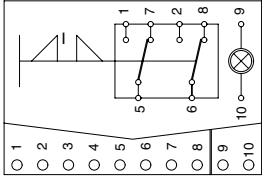
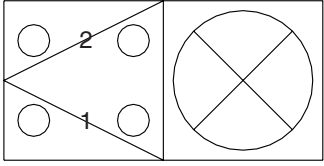
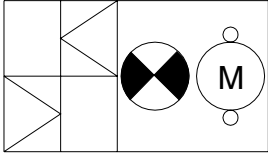
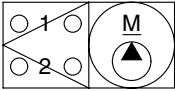
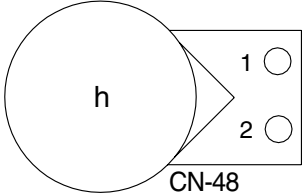
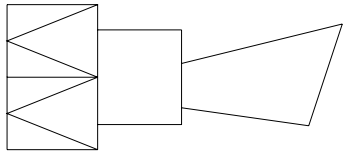


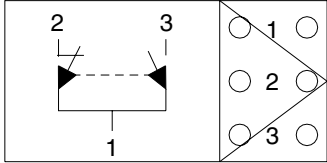
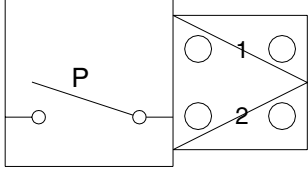
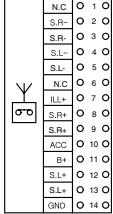
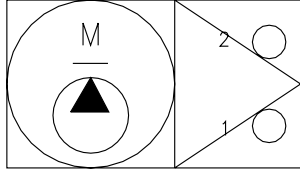
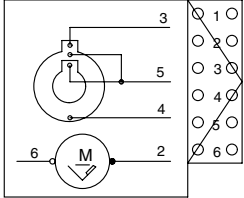
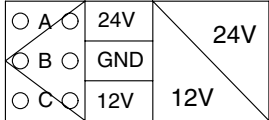
GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

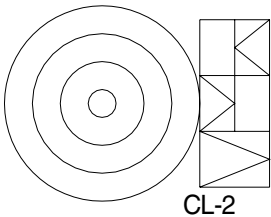
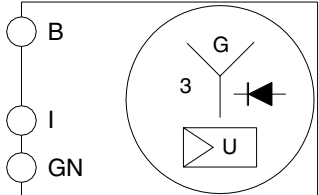
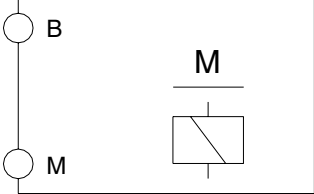
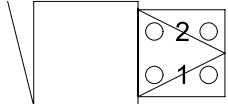
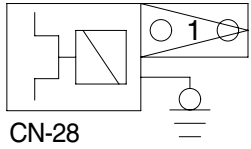
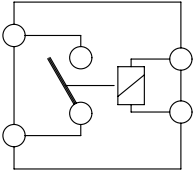
Part name	Symbol	Specifications	Check
Battery		12V × 160Ah (2EA)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Battery relay		Rated load : 24V 100A(continuity) 1000A(30seconds)	※ Check coil resistance(M4 to M4) Normal : About 50 Ω ※ Check contact Normal : ∞ Ω
Glow plug relay		24V 200A	※ Check contact Normal : 0.942 (For terminal 1-GND)
Start key		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 (Travel, working, boom up, pump)		8~30V	※ Check contact Normal : 0.1 Ω
Pressure switch (For overload)		3~6kgf/cm ² (N.O TYPE)	※ Check contact Normal : ∞ Ω

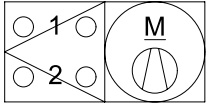
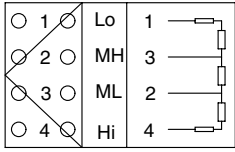
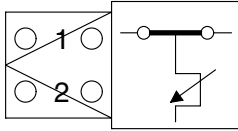
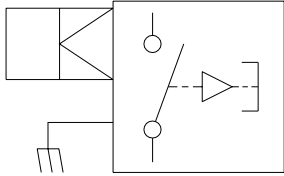
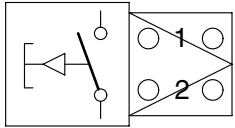
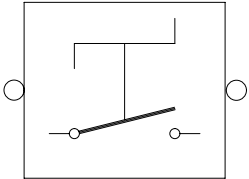
Part name	Symbol	Specifications	Check
Glow plug	 CN-80	24V 200A	※ Check resistance 0.25 ~ 0.12 Ω
Temperature sensor (Hydraulic)	 CD-1	-	※ Check resistance 50°C : 804 Ω 80°C : 310 Ω 100°C : 180 Ω
Air cleaner pressure switch	 CD-10	-	※ Check contact High level : ∞ Ω Low level : 0 Ω
Fuel sender	 CD-2	-	※ 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
Quick clamp solenoid	 CN-140	24V 6A	※ Check contact Normal : 28.9MΩ (For terminal 1-2)
Relay	 CR-2 CR-5 CR-7 CR-13 CR-33 CR-35 CR-36 CR-46	24V 16A	※ Check resistance Normal : About 160 Ω (For terminal 85-86) 0 Ω (For terminal 30-87a) ∞ Ω (For terminal 30-87)

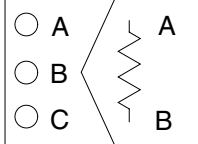
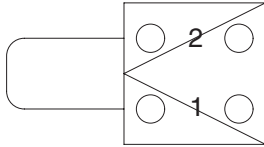
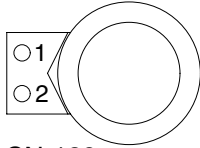
Part name	Symbol	Specifications	Check
Solenoid valve	 <p>CN-66 CN-68 CN-70 CN-88 CN-133 CN-137</p>	24V 1A	※ Check resistance Normal : 15~25 Ω (For terminal 1-2)
EPPR valve	 <p>CN-75</p>	700mA	※ Check resistance Normal : 15~25 Ω (For terminal 1-2)
Resistor	 <p>CN-47</p>	45 Ω 20W±5%	※ Check resistance Normal : 45 Ω
Speaker	 <p>CN-23(LH) CN-24(RH)</p>	20W	※ Check disconnection Normal : A few Ω
Switch (Locking type)	 <p>CS-23 CS-27 CS-50 CS-52 CS-54 CS-82 CS-83 CS-84</p>	24V 8A	※ Check contact Normal ON : 0 Ω (For terminal 1-5, 2-6) ∞ Ω (For terminal 5-7, 6-8) OFF : ∞ Ω (For terminal 1-5, 2-6) 0 Ω (For terminal 5-7, 6-8)
Accel dial	 <p>CN-142</p>	-	※ Check resist Normal : About 5k Ω (For terminal A-C) Normal : About 5V (For terminal A-C) : 2~4.5V (For terminal C-B)

Part name	Symbol	Specifications	Check
Switch	 <p>CS-67</p>	24V 8A	※ Check disconnection Normal : 1.0 Ω ON : 0 Ω (For terminal 1-5, 2-6) ∞ Ω (For terminal 5-7, 6-8) OFF : ∞ Ω (For terminal 1-5, 6-8) 0 Ω (For terminal 5-7, 6-8)
Head lamp, Work lamp, Room lamp, Cab lamp	 <p>CL-1 CL-3 CL-4 CL-5 CL-6 CL-8 CL-9</p>	24V 70W (H3 Type) 24V 10W (Room lamp)	※ Check disconnection Normal : A few Ω
Beacon lamp	 <p>CL-7</p>	21V 70A (H1 type)	※ Check disconnection Normal : A few Ω
Fuel filler pump	 <p>CN-61</p>	24V 10A 35 l /min	※ Check resistance Normal : 1.0 Ω
Hour meter	 <p>CN-48</p>	16~32V	※ Check operation Supply power(24V) to terminal No.2 and connect terminal No.1 and ground
Horn	 <p>CN-20 CN-25</p>	DC22~28V 2A	※ Check operation Supply power(24V) to each terminal and connect ground.

Part name	Symbol	Specifications	Check
Safety switch 1	 <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)
Receiver dryer	 <p>CN-29</p>	24V 2.5A	※ Check contact Normal : ∞ Ω
Radio & USB player	 <p>CN-27</p>	24V 2A	※ Check voltage 20~25V (For terminal 10-14, 11-14)
Washer pump	 <p>CN-22</p>	24V 3.8A	※ Check contact Normal : 10.7 Ω (For terminal 1-2)
Wiper motor	 <p>CN-21</p>	24V 2A	※ Check disconnection Normal : 7 Ω (For terminal 2-6)
DC/DC Converter	 <p>CN-138</p>	12V 3A	24V(A-B) 12V (B-C)

Part name	Symbol	Specifications	Check
Cigar lighter	 <p>CL-2</p>	24V 5A 1.4W	※ Check coil resistance Normal : About 1MΩ ※ Check contact Normal : ∞Ω Operating time : 5~15sec
Alternator	 <p>CN-74</p>	24V 55A	※ Check contact Normal : 0Ω (For terminal B ⁺ -I) Normal : 24~27.5V
Starter	 <p>CN-45</p>	Delco Remy 28MT 24V	※ Check contact Normal : 0.1Ω
Travel alarm	 <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
Start relay	 <p>CR-23</p>	24V 300A	※ Check contact Normal : 0.94Ω (For terminal 1-2)

Part name	Symbol	Specifications	Check
Blower motor		24V 9.5A	※ Check resistance Normal : 2.5 Ω (For terminal 1-2)
Aircon resistor		-	※ Check resistance Normal : 1.12 Ω (For terminal 4-2) 2.07 Ω (For terminal 2-3) 3.17 Ω (For terminal 3-1)
Duct sensor		1°C OFF 4°C ON	※ Check resistance Normal : 0 Ω (For terminal 1-2), the atmosphere temp : Over 4°C
Switch (Door, wiper cut, safety sw 2)	 CS-1 CS-20 CS-53	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
Master switch	 CS-74	Continuous : 180AMPS Rush : 1000AMPS	※ Check disconnection Normal : About 0 Ω

Part name	Symbol	Specifications	Check
Resistor	 <p>CN-98 CN-99</p>	4W	※ Check resistance A-B : 120 Ω
Fusible link	 <p>CN-60 CN95</p>	60A	※ Check disconnection Normal : 0 Ω (Connect ring terminal and check resist between terminal 1 and 2)
Socket	 <p>CN-139</p>	12V 10A	-

GROUP 4 CONNECTORS

1. CONNECTOR DESTINATION

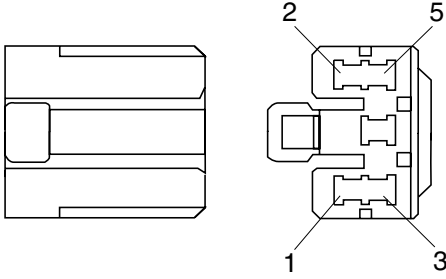
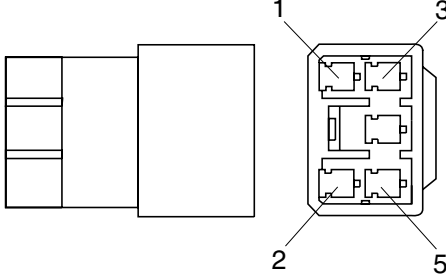
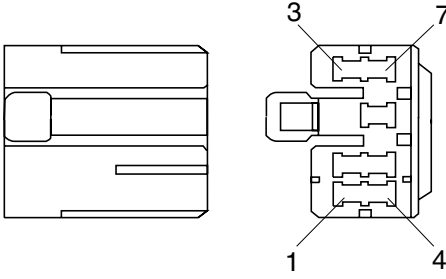
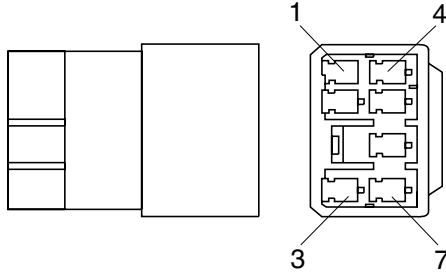
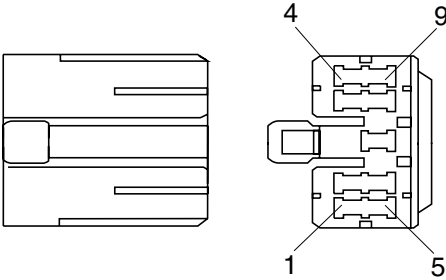
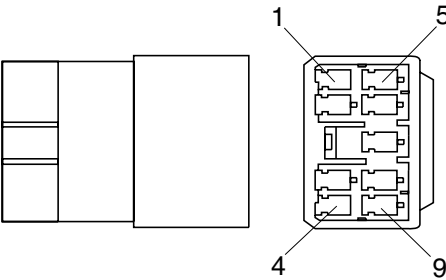
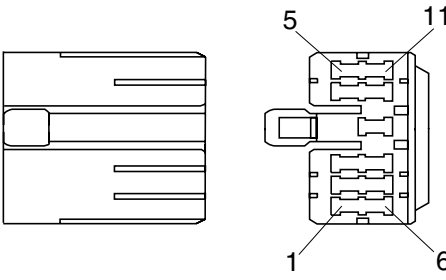
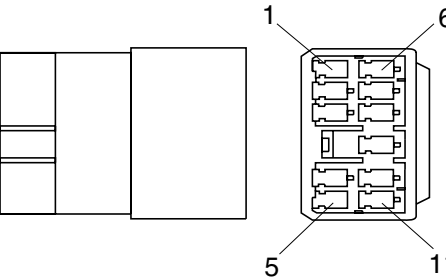
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	6	l/conn(Engine harness-Frame harness)	S816-006002	S816-106002
CN-2	AMP	15	l/conn(Engine harness-Frame harness)	2-85262-1	368301-1
CN-3	AMP	8	l/conn(Engine harness-Frame harness)	S816-008002	S816-108002
CN-4	AMP	8	l/conn(Frame harness-Console harness LH)	S816-008002	S816-108002
CN-5	AMP	15	l/conn(Frame harness-Side harness RH)	2-85262-1	368301-1
CN-6	AMP	12	l/conn(Frame harness-Side harness RH)	S816-012002	S816-112002
CN-7	AMP	15	l/conn(Frame harness-Console harness RH)	2-85262-1	368301-1
CN-8	AMP	12	l/conn(Frame harness-Console harness RH)	S816-012002	S816-112002
CN-9	AMP	8	l/conn(Frame harness-Console harness RH)	S816-008002	S816-108002
CN-10	DEUTSCH	12	l/conn(Frame harness-Cab harness)	DT06S-12S	DT04-12P
CN-11	DEUTSCH	8	l/conn(Frame harness-Aircon harness)	DT06-8S	-
CN-12	DEUTSCH	2	l/conn(Frame harness-Boom wire harness)	DT06-2S-EP06	DT04-2P
CN-14	DEUTSCH	31	l/conn(Engine harness-Engine)	HD36-24-31SE	-
CN-16	AMP	6	Emergency engine speed control	S816-006002	S816-106002
CN-17	DEUTSCH	8	l/conn(Side harness RH-Wiper harness)	DT06-8S-EP06	DT04-8P
CN-19	AMP	2	Emergency MCU connector	S816-002002	-
CN-20	MOLEX	2	Horn	35825-0211	-
CN-21	AMP	6	Wiper motor	925276-0	-
CN-22	KET	2	Washer tank	MG640605	-
CN-23	KET	2	Speaker-LH	MG610070	-
CN-24	KET	2	Speaker-RH	MG610070	-
CN-25	MOLEX	2	Horn	35825-0211	-
CN-27	AMP	14	Radio & USB player	173852	-
CN-28	MWP	1	Aircon compressor	NMWP01F-B	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	-	-	Fuse box	21N8-20041	-
CN-45	RING-TERM	-	Starter	S820-108000	-
CN-47	FASTEN	2	Resistor	S810-002202	-
CN-47A	FASTEN	2	Resistor	-	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	21N4-01320	7122-4125-50
CN-61	DEUTSCH	2	Fuel filler pump	DT06-2S-EP06	-

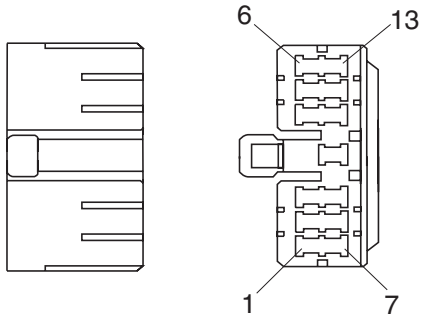
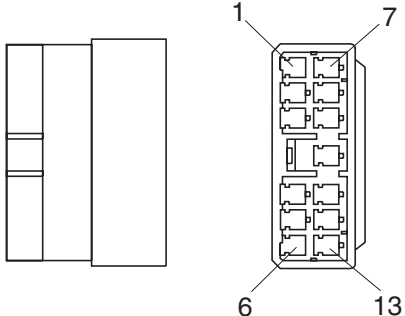
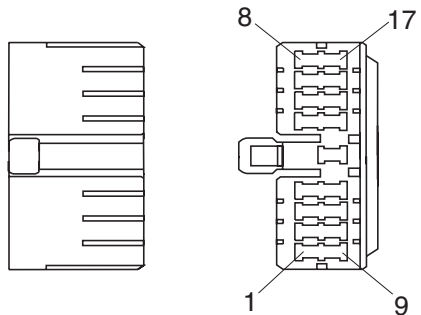
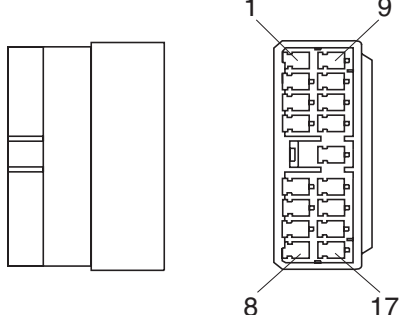
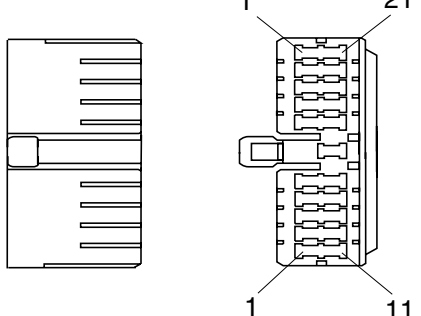
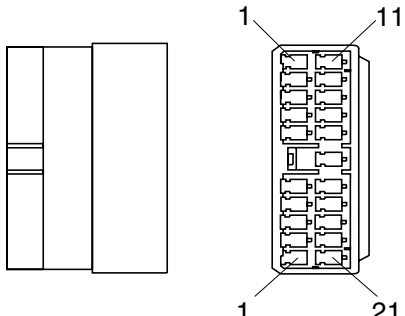
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-66	DEUTSCH	2	Breaker solenoid	DT06-2S-EP06	DT04-2P-E005
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-EP06	-
CN-70	DEUTSCH	2	Travel solenoid	DT06-2S-EP06	-
CN-74	AMP	4	Alternator "I" term	12186568	-
CN-75	AMP	2	EPPR valve	S816-002002	-
CN-80	RING-TERM	-	Glow	S820-306000	-
CN-81	DEUTSCH	2	Travel buzzer	DT06-2S-EP06	-
CN-83	WWP	2	AC condensor fan	PB625-02027	-
CN-88	DEUTSCH	2	Power max solenoid	DT06-2S-EP06	-
CN-91	DEUTSCH	50	ECM	DRC26-50S-01	-
CN-92	SWP	1	Emergency engine starting connector	S814-001100	S814-101100
CN-95	KET	2	Fusible link	21N4-01311	S813-130200
CN-98	DEUTSCH	3	Registor	DT06-3S-EP06	-
CN-116	PA	17	Switch panel	S811-017002	-
CN-125	AMP	4	GPS	S816-004002	S816-104002
CN-126	DEUTSCH	4	RS 232 connector	DT06-4S-EP06	DT04-4P-E005
CN-133	DEUTSCH	2	Max flow solenoid	DT06-2S-EP06	-
CN-137	DEUTSCH	2	Boom prioity solenoid	DT06-2S-EP06	-
CN-138	DEUTSCH	3	DC/DC converter	DT06-3S-P012	-
CN-139	DEUTSCH	2	12V socket	-	DT04-2P-E004
CN-140	DEUTSCH	2	Quick clamp	DT06-2S-EP06	DT04-2P-E005
CN-141	AMP	13	Wiper motor controller	172498-1	-
CN-142	DEUTSCH	3	Accel dial	DT06-3S-EP012	-
CN-143	AMP	12	Radio & USB player(With remocon)	S816-002002	-
CN-144	AMP	12	Remocon-radio & USB player	174045-2	-
CN-147	PACKARD	2	Fuel heater	1530-0027	1530-0002
CN-148	DEUTSCH	3	Data link	DT06-3S-EP06	DT04-3P-E004
· Relay					
CR-1	RING-TERM	-	Battery relay	-	S820-208002
CR-13	KET	5	Head lamp relay	MG 640927	-
CR-23	KET	2	Start relay	S814-002001	S814-102001
CR-24	RING-TERM	-	Preheater relay	S820-306000	-
CR-33	KET	5	AC condensor fan	MG 640927	-
CR-46	KET	5	Fuel heater relay	MG 640927	-
· Switch					
CS-1	SHUR	1	Door switch	S822-014004	-
CS-2	SWP	6	Start key switch	S814-006000	-
CS-4	DEUTSCH	3	Safety switch 1	DT06-3S-P012	-
CS-5	DEUTSCH	1	Horn switch	-	DT04-2P-E004

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CS-19	DEUTSCH	2	One touch decel	DT06-2S	DT04-2P-E004
CS-20	AMP	1	Safety switch 2	S822-014002	-
CS-23	SWF	10	Beacon lamp switch	SWF 593757	-
CS-26	DEUTSCH	1	Breaker switch	DT06-2S-P012	-
CS-27	SWF	10	Breaker switch	SWF 593757	-
CS-29	DEUTSCH	2	Power max switch	DT06-2S-P012	-
CS-50	SWF	10	Overload switch	SWF 593757	-
CS-52	SWF	10	Econo switch	SWF 593757	-
CS-53	SHUR	1	Wiper cut switch	S822-014002	-
CS-54	SWF	10	Econo switch	SWF 593757	-
CS-67	SWF	10	Quick clamp switch	SWF 593757	-
CS-74	AMP	2	Master switch	S813-030201	-
CS-82	SWF		Seat heater switch	SWF 593757	
CS-83	SWF		Spear switch	SWF 593757	-
CS-84	SWF		Fuel warmer switch	SWF 593757	-
· Light					
CL-1	KET	2	Room lamp	MG 610392	-
CL-2	AMP	1	Cigar light	S822-014002	-
CL-3	AMP	2	Head lamp	S814-002000	-
CL-4	AMP	2	Head lamp	S814-002000	-
CL-5	DEUTSCH	2	Work lamp-LH	-	DT04-2P
CL-6	DEUTSCH	2	Work lamp-RH	-	DT04-2P
CL-7	SHUR	1	Beacon lamp	S822-014004	S822-114004
CL-8	DEUTSCH	2	Cab light-LH	DT04-2S	DT04-2P-E005
CL-9	DEUTSCH	2	Cab light-RH	DT04-2S	DT04-2P-E005
· 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	DT06-2S-EP06	-
CD-7	DEUTSCH	3	Working pressure switch	DT06-2S-EP06	-
CD-10	RING-TERM	-	Air cleaner switch	S820-104002	-
CD-31	DEUTSCH	2	Overload pressure switch	DT06-2S-EP06	DT04-2P-E005
CD-32	DEUTSCH	3	Boom up pressure switch	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-70	DEUTSCH	3	N1 pressure switch	DT06-3S-EP06	-

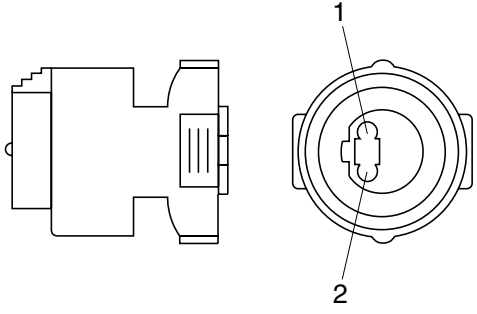
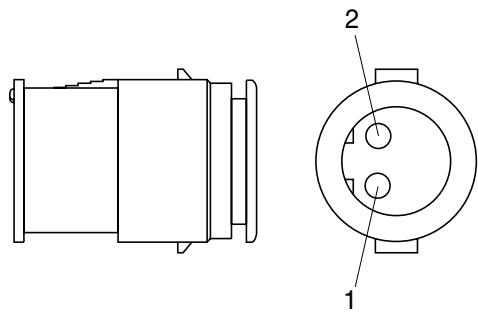
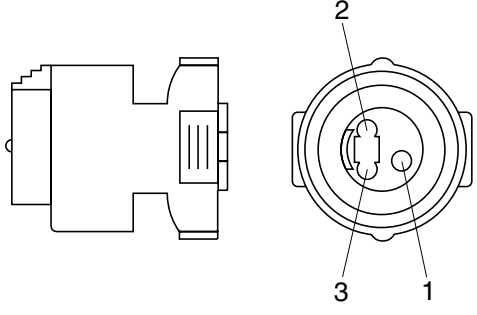
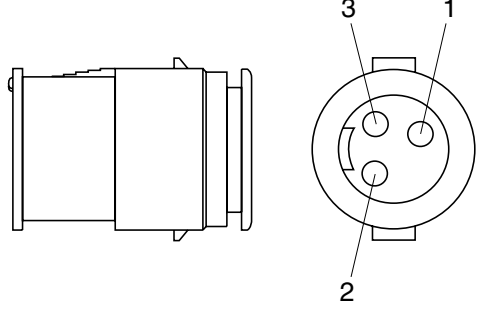
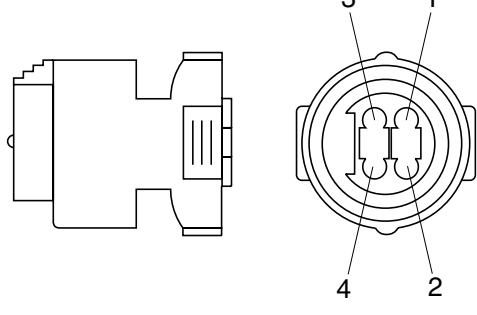
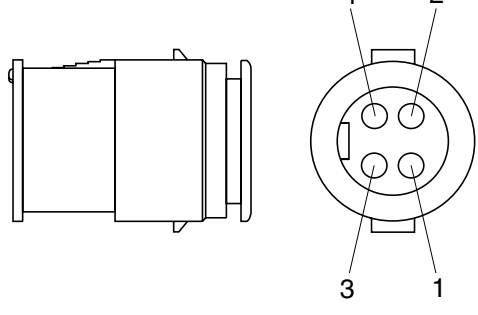
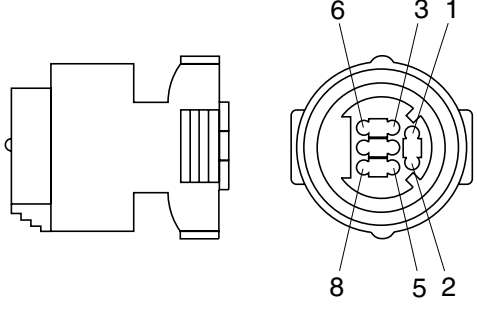
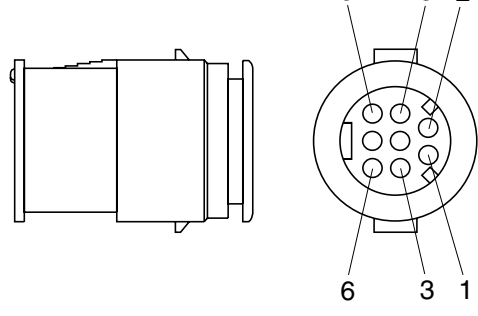
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

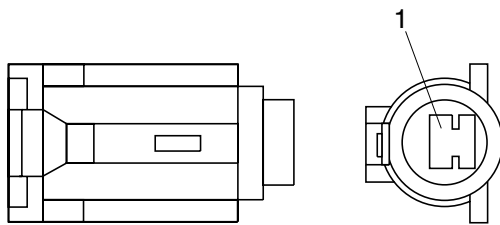
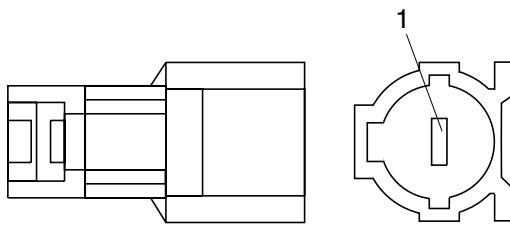
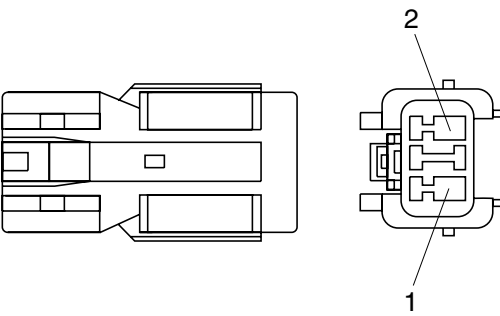
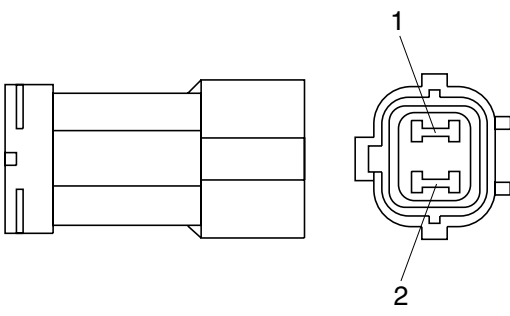
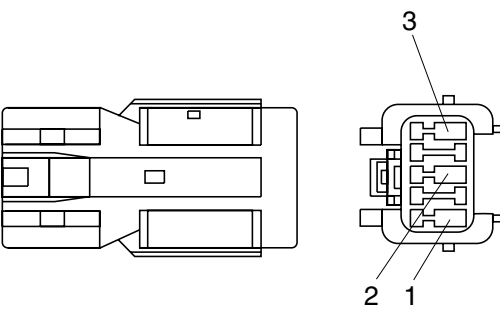
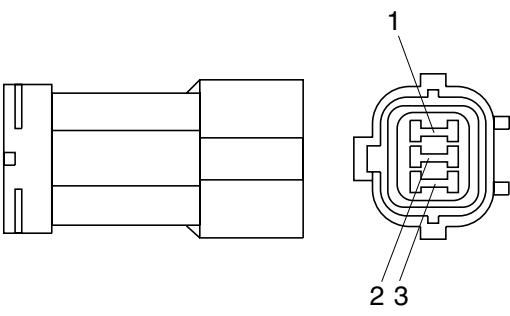
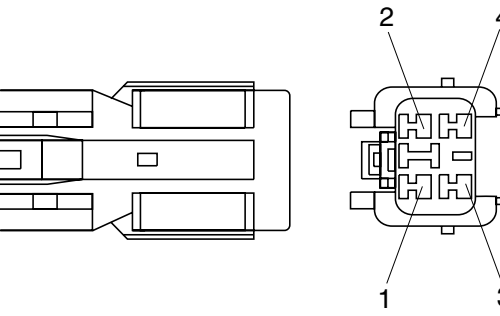
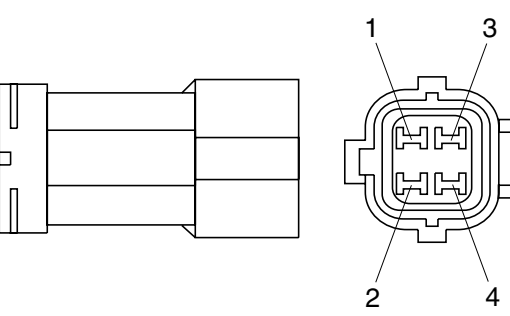
No. of pin	Receptacle connector(Female)	Plug connector(Male)
5	 <p data-bbox="689 734 837 766">S811-005002</p>	 <p data-bbox="1241 734 1390 766">S811-105002</p>
7	 <p data-bbox="689 1137 837 1169">S811-007002</p>	 <p data-bbox="1241 1137 1390 1169">S811-107002</p>
9	 <p data-bbox="689 1547 837 1579">S811-009002</p>	 <p data-bbox="1228 1547 1377 1579">3S811-109002</p>
11	 <p data-bbox="689 1957 837 1989">S811-011002</p>	 <p data-bbox="1241 1957 1390 1989">S811-111002</p>

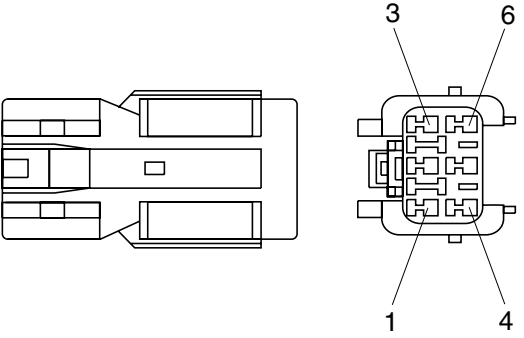
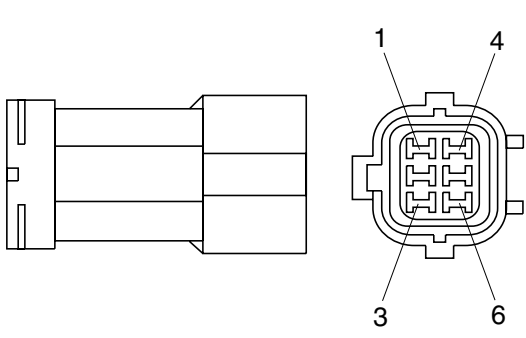
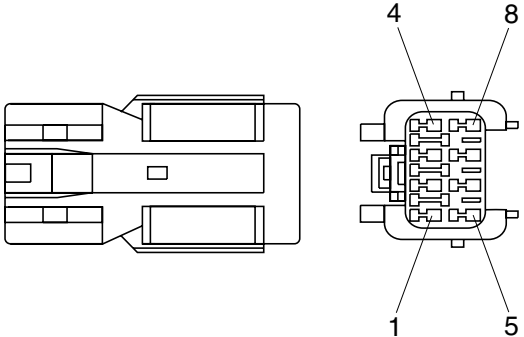
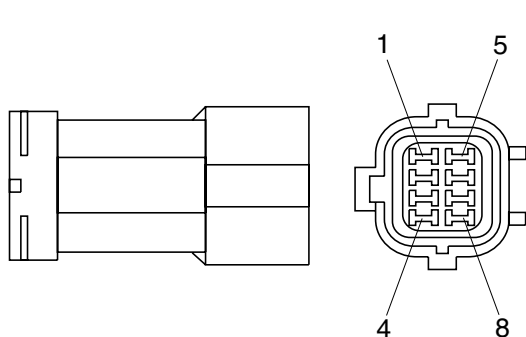
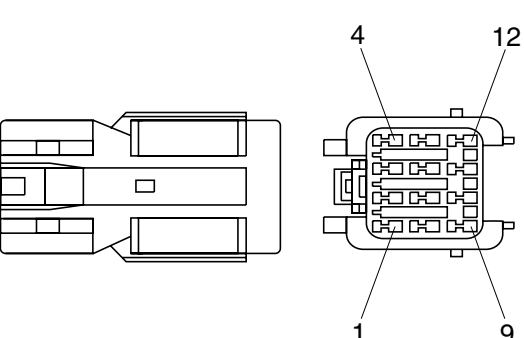
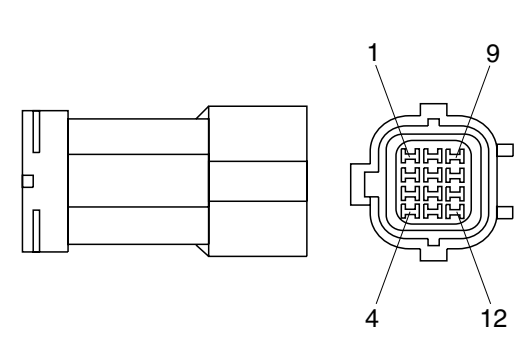
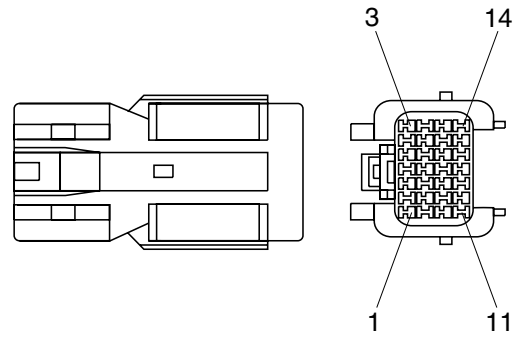
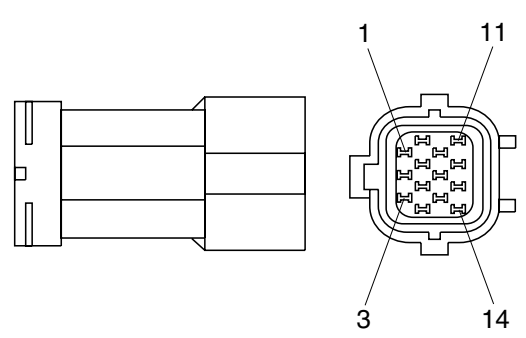
No. of pin	Receptacle connector(Female)	Plug connector(Male)
13	 <p style="text-align: center;">S811-013002</p>	 <p style="text-align: center;">S811-113002</p>
17	 <p style="text-align: center;">S811-017002</p>	 <p style="text-align: center;">S811-117002</p>
21	 <p style="text-align: center;">S811-021002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

2) AMP J TYPE CONNECTOR

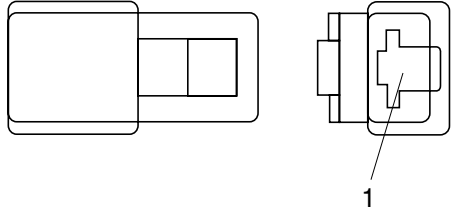
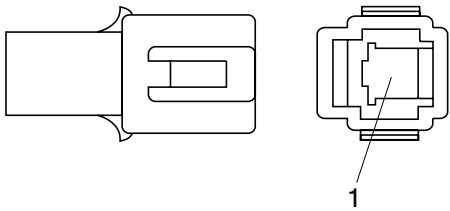
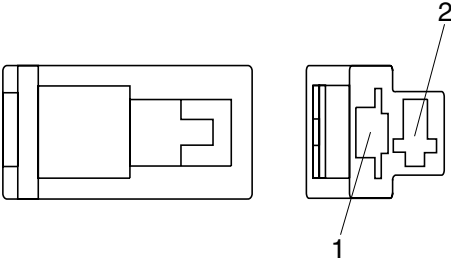
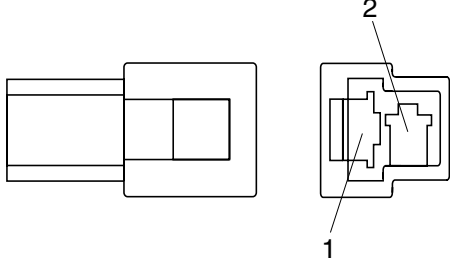
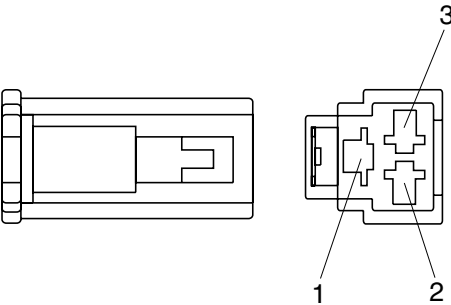
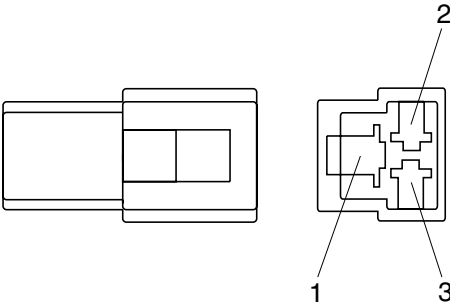
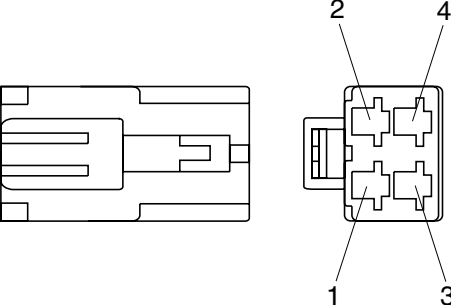
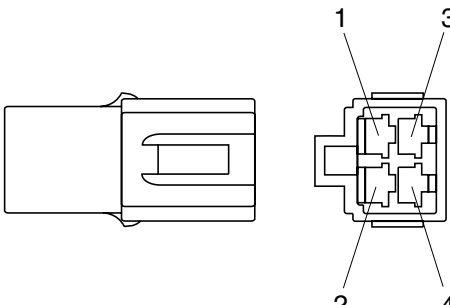
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p style="text-align: center;">S816-002001</p>	 <p style="text-align: center;">S816-102001</p>
3	 <p style="text-align: center;">S816-003001</p>	 <p style="text-align: center;">S816-103001</p>
4	 <p style="text-align: center;">S816-004001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

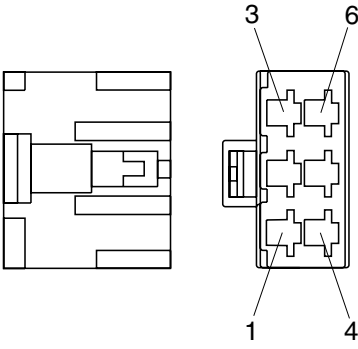
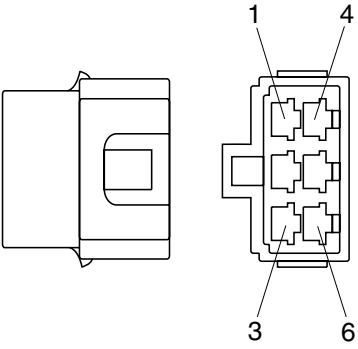
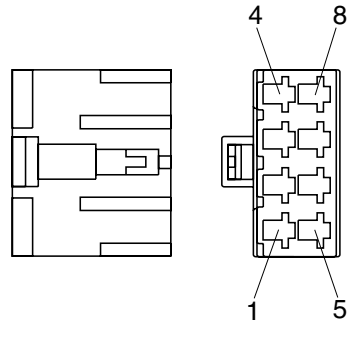
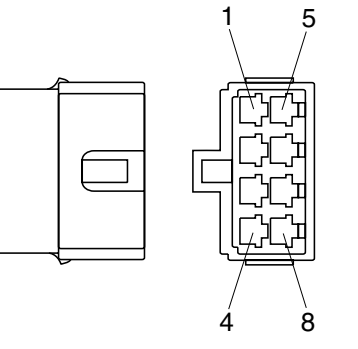
3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p data-bbox="686 672 837 705">S814-001000</p>	 <p data-bbox="1244 672 1396 705">S814-101000</p>
2	 <p data-bbox="686 1075 837 1108">S814-002000</p>	 <p data-bbox="1244 1075 1396 1108">S814-102000</p>
3	 <p data-bbox="686 1478 837 1512">S814-003000</p>	 <p data-bbox="1244 1478 1396 1512">S814-103000</p>
4	 <p data-bbox="686 1881 837 1915">S814-004000</p>	 <p data-bbox="1244 1881 1396 1915">S814-104000</p>

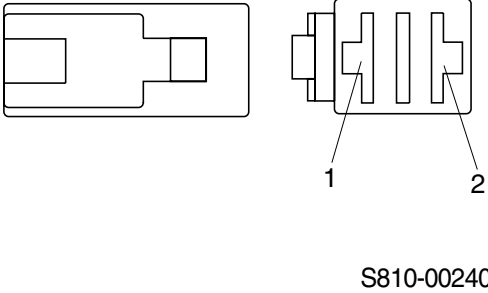
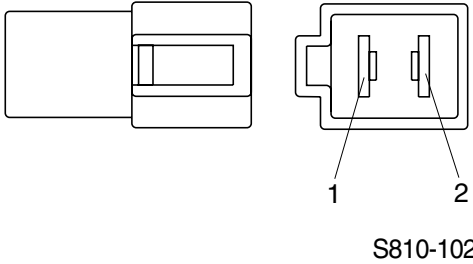
No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p data-bbox="686 627 837 660">S814-006000</p>	 <p data-bbox="1236 627 1388 660">S814-106000</p>
8	 <p data-bbox="686 1030 837 1064">S814-008000</p>	 <p data-bbox="1236 1030 1388 1064">S814-108000</p>
12	 <p data-bbox="686 1438 837 1471">S814-012000</p>	 <p data-bbox="1236 1438 1388 1471">S814-112000</p>
14	 <p data-bbox="686 1845 837 1879">S814-014000</p>	 <p data-bbox="1236 1845 1388 1879">S814-114000</p>

4) CN TYPE CONNECTOR

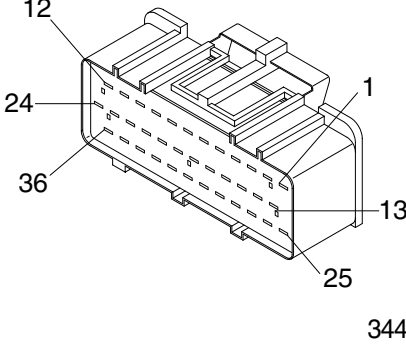
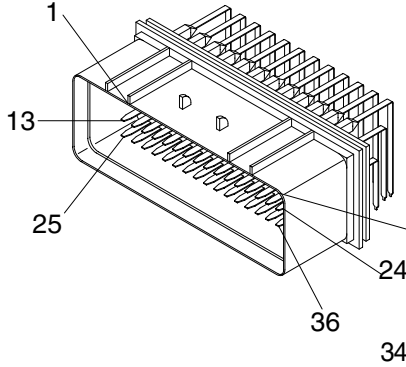
No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p style="text-align: center;">S810-001202</p>	 <p style="text-align: center;">S810-101202</p>
2	 <p style="text-align: center;">S810-002202</p>	 <p style="text-align: center;">S810-102202</p>
3	 <p style="text-align: center;">S810-003202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

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

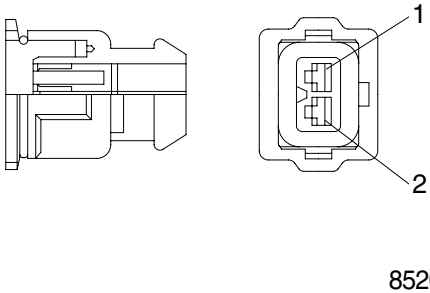
5) 375 FASTEN TYPE CONNECTOR

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

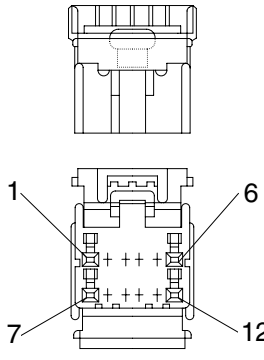
6) AMP ECONOSEAL CONNECTOR

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

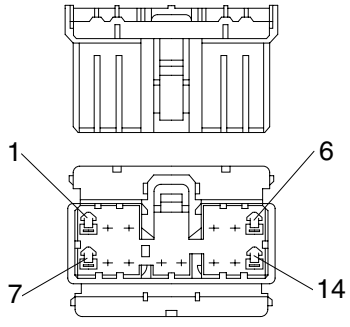
7) AMP TIMER CONNECTOR

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

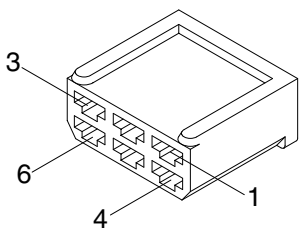
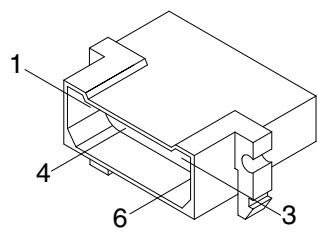
8) AMP 040 MULTILOCK CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
12	 <p>174045-2</p>	

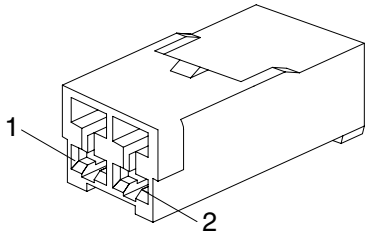
9) AMP 070 MULTILOCK CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
14	 <p>173852</p>	

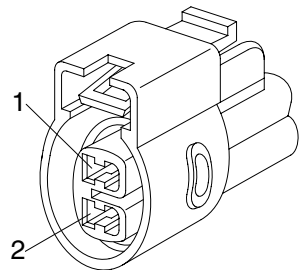
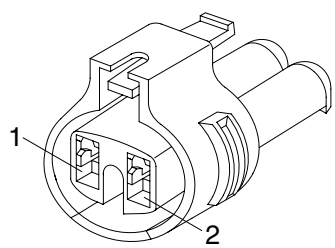
10) AMP FASTIN - FASTON CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p>925276-0</p>	 <p>480003-9</p>

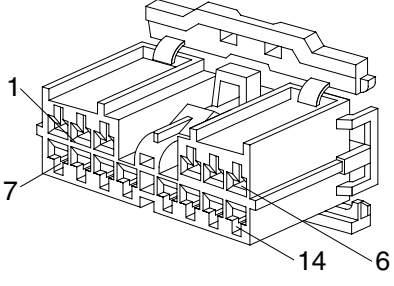
11)KET 090 CONNECTOR

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

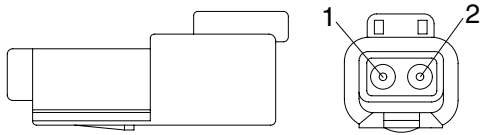
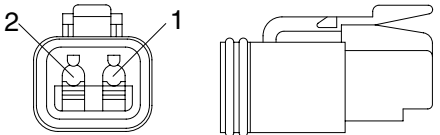
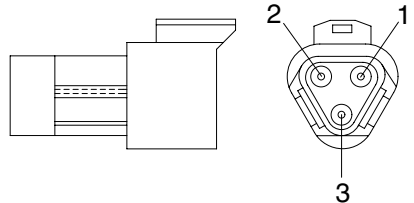
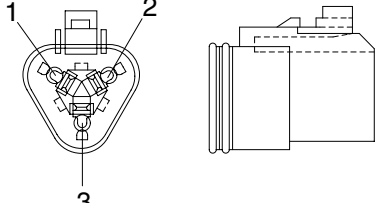
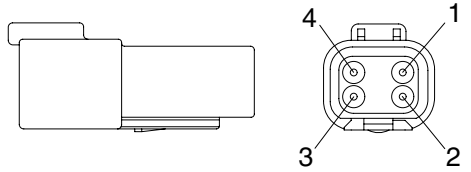
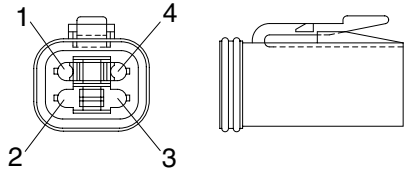
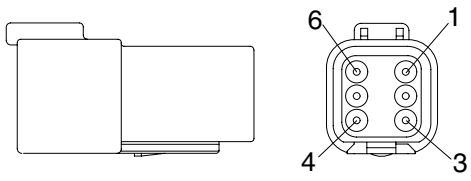
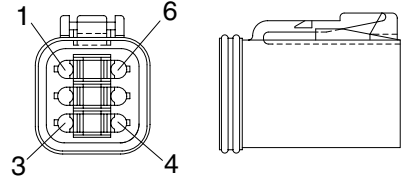
12)KET 090 WP CONNECTORS

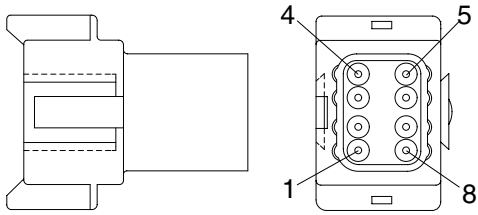
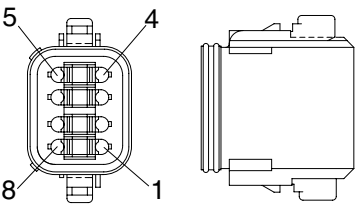
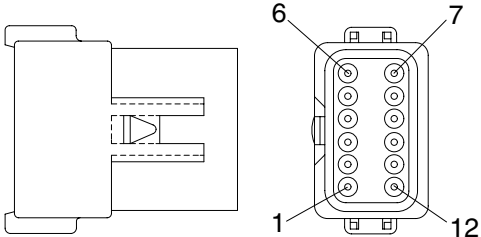
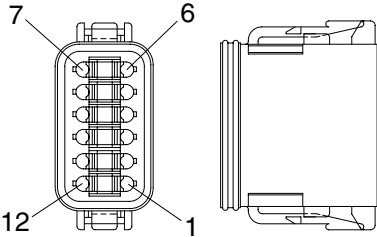
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p style="text-align: right;">MG640605</p>	
2	 <p style="text-align: right;">MG640795</p>	

13)KET SDL CONNECTOR

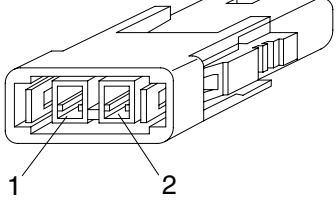
No. of pin	Receptacle connector(Female)	Plug connector(Male)
14	 <p data-bbox="715 676 837 705">MG610406</p>	

14) DEUTSCH DT CONNECTORS

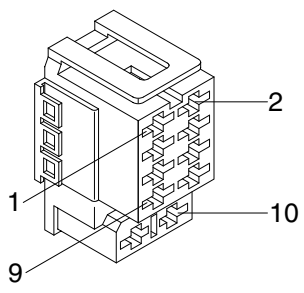
No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p style="text-align: center;">DT06-2S</p>	 <p style="text-align: center;">DT04-2P</p>
3	 <p style="text-align: center;">DT06-3S</p>	 <p style="text-align: center;">DT04-3P</p>
4	 <p style="text-align: center;">DT06-4S</p>	 <p style="text-align: center;">DT04-4P</p>
6	 <p style="text-align: center;">DT06-6S</p>	 <p style="text-align: center;">DT04-6P</p>

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

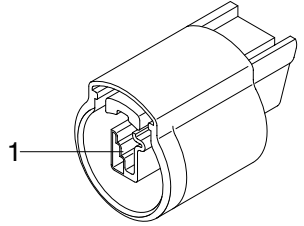
15) MOLEX 2CKTS CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p data-bbox="705 676 837 705">35215-0200</p>	

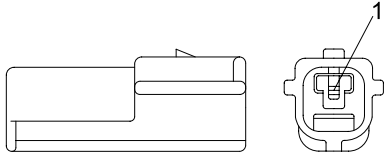
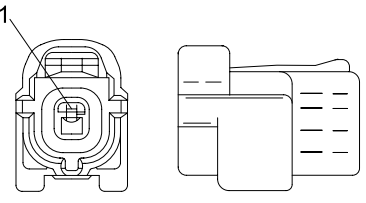
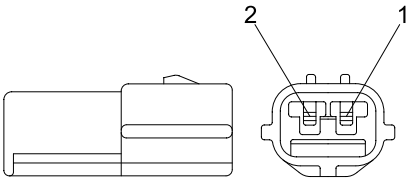
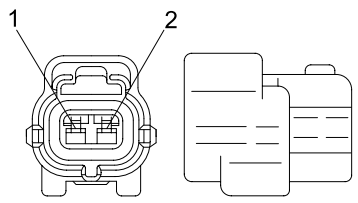
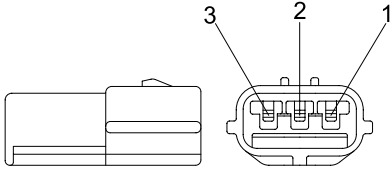
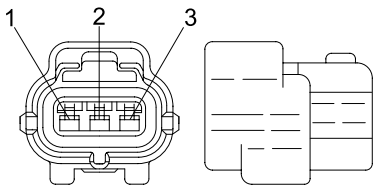
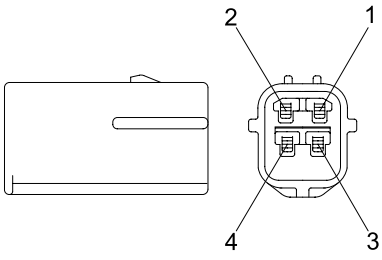
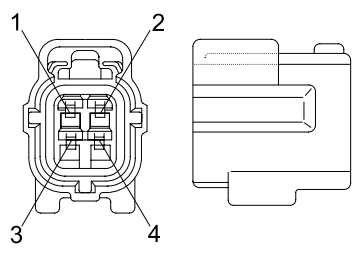
16)ITT SWF CONNECTOR

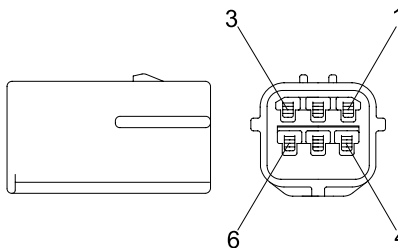
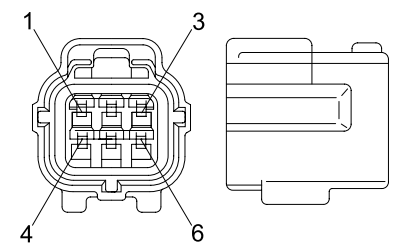
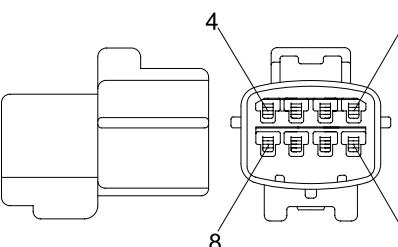
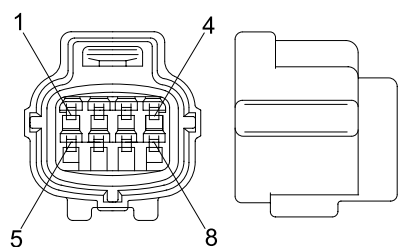
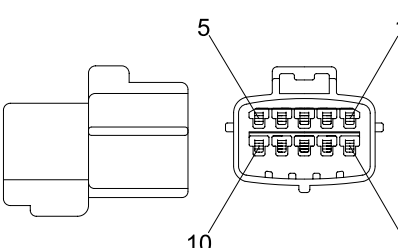
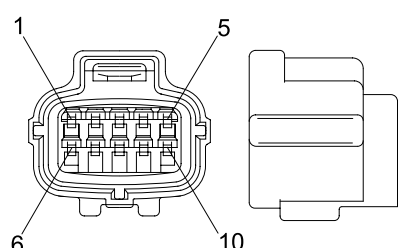
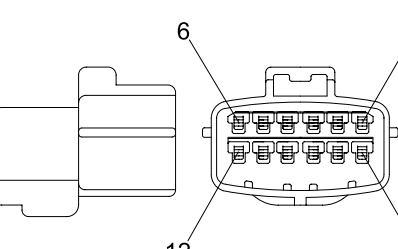
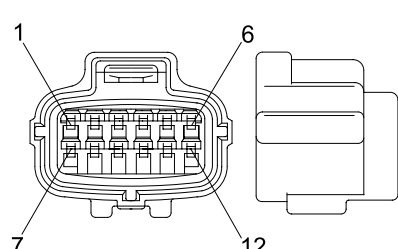
No. of pin	Receptacle connector(Female)	Plug connector(Male)
10	 <p data-bbox="699 1261 837 1290">SWF593757</p>	

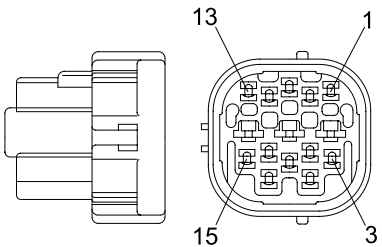
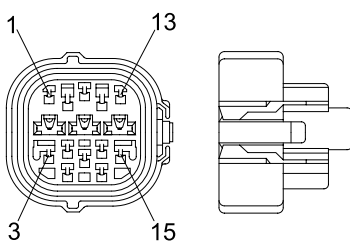
17)MWP NMWP CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p data-bbox="689 1848 837 1877">NMWP01F-B</p>	

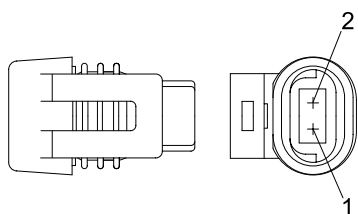
18)AMP ECONOSEAL J TYPE CONNECTORS

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

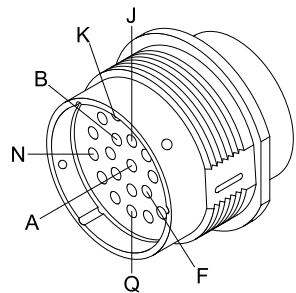
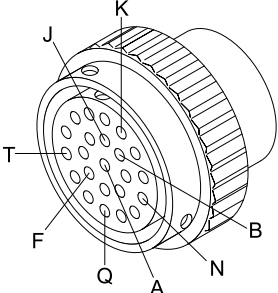
No. of pin	Receptacle connector(Female)	Plug connector(Male)
6	 <p data-bbox="686 627 829 660">S816-006002</p>	 <p data-bbox="1244 627 1388 660">S816-106002</p>
8	 <p data-bbox="686 1030 829 1064">S816-008002</p>	 <p data-bbox="1244 1030 1388 1064">S816-108002</p>
10	 <p data-bbox="686 1433 829 1467">S816-010002</p>	 <p data-bbox="1244 1433 1388 1467">S816-110002</p>
12	 <p data-bbox="686 1836 829 1870">S816-012002</p>	 <p data-bbox="1244 1836 1388 1870">S816-112002</p>

No. of pin	Receptacle connector(Female)	Plug connector(Male)
15	 <p data-bbox="730 631 836 658">368301-1</p>	 <p data-bbox="1278 631 1383 658">2-85262-1</p>

19) METRI-PACK TYPE CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p data-bbox="726 1232 837 1258">12040753</p>	

20) DEUTSCH HD30 CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
23	 <p data-bbox="667 1836 837 1863">HD36-24-23SN</p>	 <p data-bbox="1220 1836 1391 1863">HD34-24-23PN</p>