

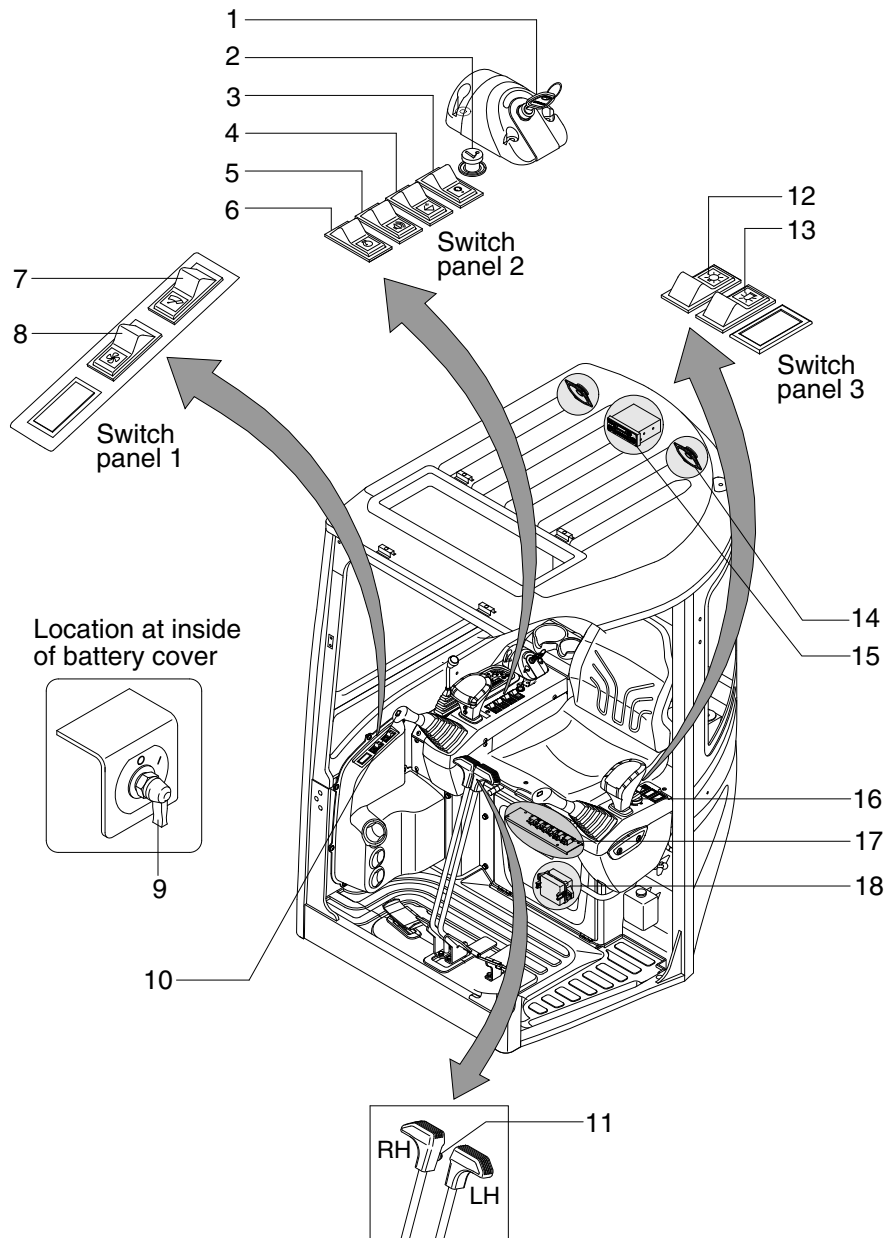
## SECTION 4 ELECTRICAL SYSTEM

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# SECTION 4 ELECTRICAL SYSTEM

## GROUP 1 COMPONENT LOCATION

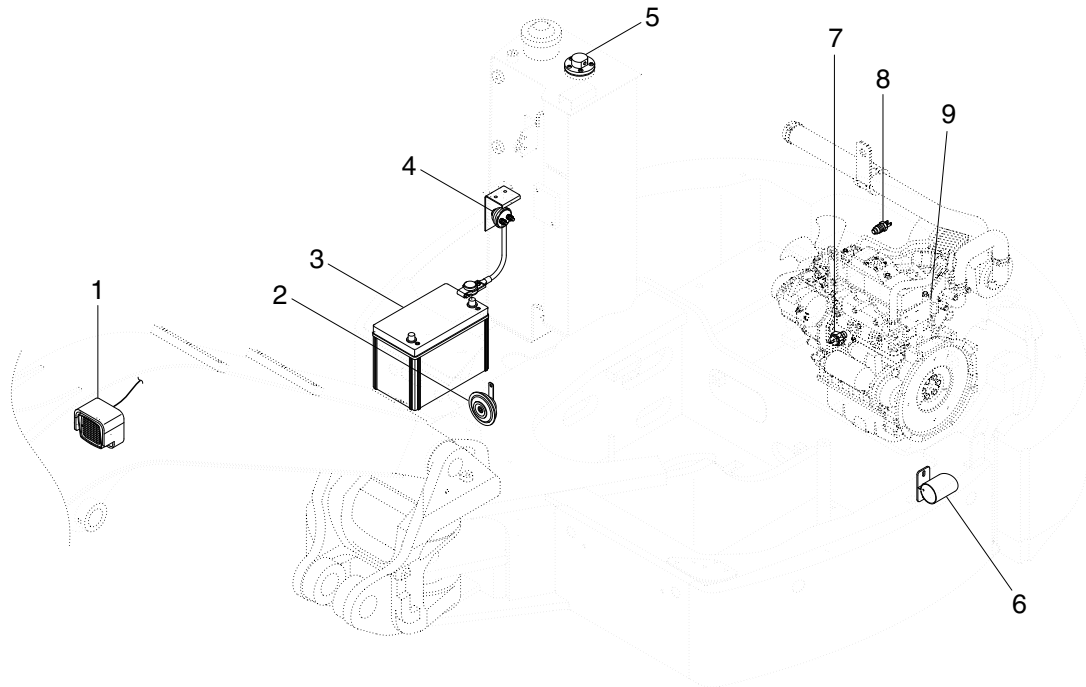
### 1. LOCATION 1



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- |                       |                                |                       |
|-----------------------|--------------------------------|-----------------------|
| 1 Start switch        | 7 Washer/wiper switch          | 13 Beacon switch      |
| 2 Cigar lighter       | 8 Heater switch                | 14 Speaker            |
| 3 Overload switch     | 9 Master switch                | 15 Radio & USB player |
| 4 Quick clamp switch  | 10 Horn switch                 | 16 Accel dial switch  |
| 5 Travel alarm switch | 11 Travel speed control switch | 17 Relay board assy   |
| 6 Auto idle switch    | 12 Main light switch           | 18 Fuse box           |

## 2. LOCATION 2



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1 Work lamp  
2 Horn  
3 Battery

4 Master switch  
5 Fuel sender  
6 Travel alarm buzzer

7 Engine oil pressure switch  
8 Air cleaner pressure switch  
9 Water temperature sender

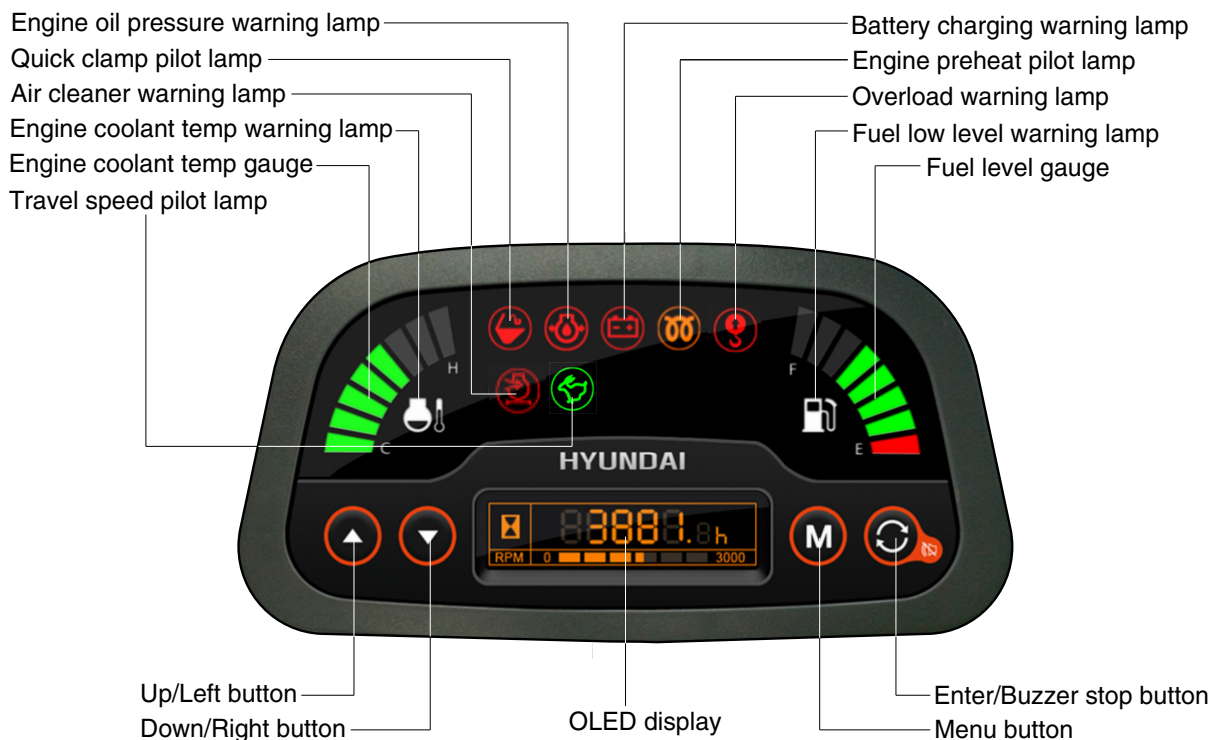
## GROUP 2 MONITORING SYSTEM

The cluster consists of gauges and lamps as shown below, to warn the operator in case of abnormal machine operation or conditions for the appropriate operation and inspection.

- Gauges : Indicate operating status of the machine.
- Warning lamp : Indicate abnormality of the machine (red).
- Pilot lamp : Indicate operating status of the machine.

※ The cluster installed on this machine does not entirely guarantee the condition of the machine. Daily inspection should be performed according to chapter 6, Maintenance.

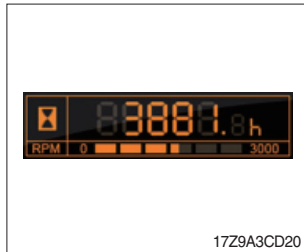
※ When the cluster provides a warning, immediately check the problem and perform the required action.



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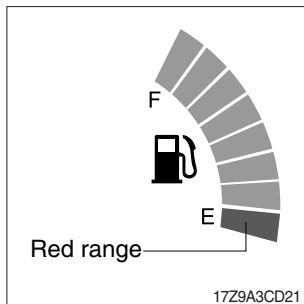
## 1) GAUGES AND DISPLAYS



### (1) Service meter



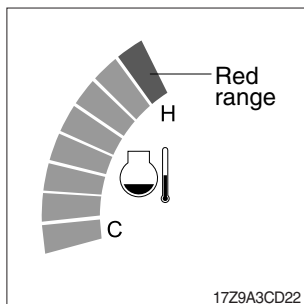
- ① This meter shows the total operation hours of the machine.
- ② Always ensure the operating condition of the meter during the machine operation.


### (2) Fuel gauge



- ① This gauge indicates the amount of fuel in the fuel tank.
  - ② Fill the fuel when the red range or warning lamp  ON.
- ※ **If the gauge illuminates the red range or warning lamp  ON even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.**

### (3) Engine coolant temperature gauge



- ① This indicates the temperature of coolant.
    - Red range : Above 115°C (239°F)
  - ② When the red range pointed or warning lamp  ON, engine do not abruptly stop but run it at medium speed to allow it to cool gradually, then stop it.  
Check the radiator and engine.
- ※ **If the engine is stopped without cooled down running, the temperature of engine parts will rise suddenly, this could cause severe engine trouble.**

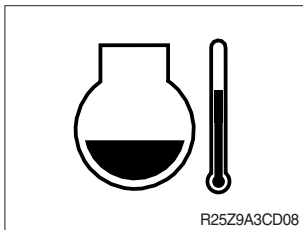
## 2) WARNING AND PILOT LAMPS

### (1) Fuel low level warning lamp



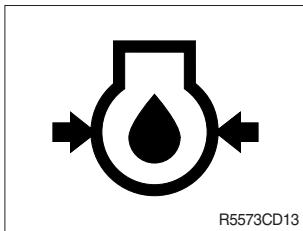
- ① This lamp ON and buzzer sounds when the level of fuel is below 8.5 l (2.2 U.S. gal).
- ② Fill the fuel immediately when the lamp ON.

### (2) Engine coolant temperature warning lamp



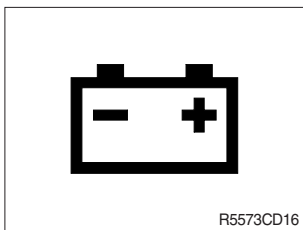
- ① This lamp ON and buzzer sounds when the temperature of coolant is over the normal temperature 115°C (239°F) .
- ② Check the cooling system when the lamp ON.

### (3) Engine oil pressure warning lamp



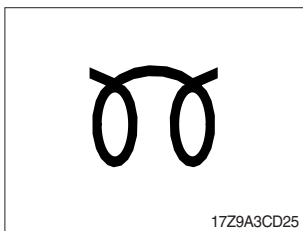
- ① This lamp ON and buzzer sounds after starting the engine because of the low oil pressure.
- ② If the lamp ON during engine operation, shut OFF engine immediately. Check oil level.

### (4) Battery charging warning lamp



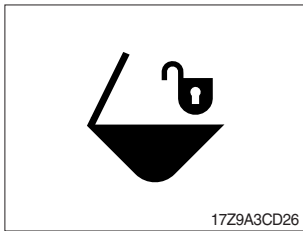
- ① This lamp ON and buzzer sounds when the starting switch is ON, it is turned OFF after starting the engine.
- ② Check the battery charging circuit when this lamp blinks during engine operation.

### (5) Engine preheat pilot lamp



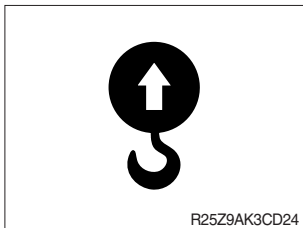
- ① When the start switch turn to HEAT position, pilot lamp comes ON.

**(6) Quick clamp pilot lamp (option)**



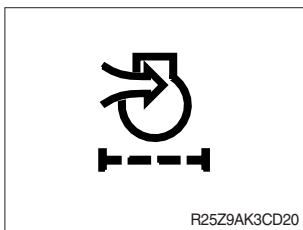
- ① When the quick clamp switch turned ON, this lamp turn ON and the buzzer sounds.
- ② This lamp turned OFF and the buzzer stop when the quick clamp switch turned OFF.

**(7) Overload warning lamp (option)**



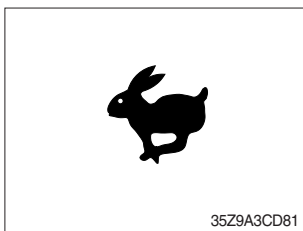
- ① When the machine is overload, this lamp blinks during the overload switch is ON.
- ② Reduce the machine load.

**(8) Air cleaner warning lamp**



- ① This lamp ON when the filter of air cleaner is clogged.
- ② When the air cleaner warning lamp is ON, clean the primary element.

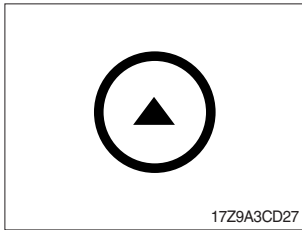
**(9) Travel speed pilot lamp**



- ① When this lamp turned ON, the machine travel high speed.
- ② Refer to the travel speed control switch in operator's manual for details.

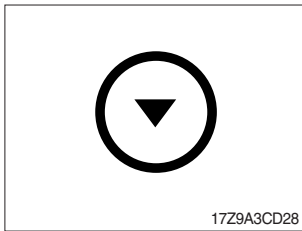
### 3) BUTTONS

#### (1) Up/left button



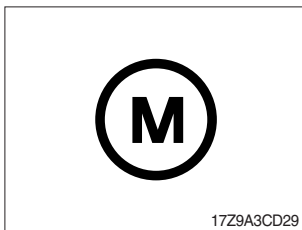
- ① Move in menu (up, left)
- ② Increase input value.

#### (2) Down/right button



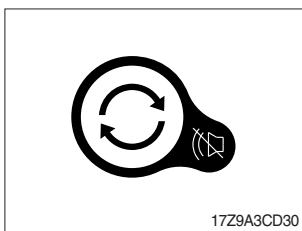
- ① Move in menu (down, right)
- ② Decrease input value.

#### (3) Menu button



- ① Current display to next display.

#### (4) Enter and buzzer stop button

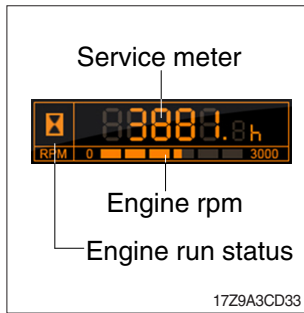


- ① Select menu (enter).
- ② Stop buzzer sound when sound is ON.



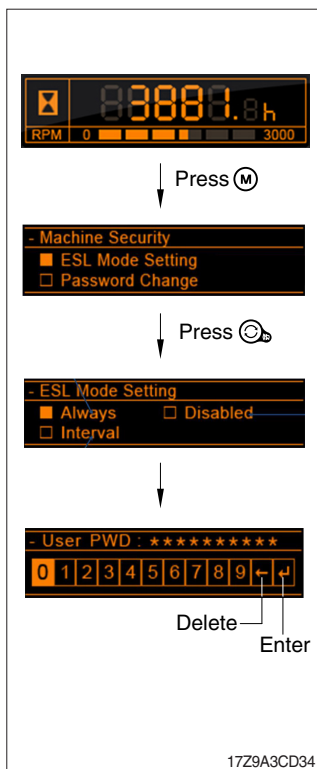
#### 4) OLED display

##### (1) Main display



- ① **Service meter** : This meter shows the total operation hours of the machine.
- ※ **Always ensure the operating condition of the service meter during the machine operation.**
- ② **Engine rpm** : This displays the engine speed.
- ③ **Engine run status** : This displays the engine run status.

##### (2) Machine security



##### ① ESL (Engine Starting Limit) mode setting

- ESL mode is designed to be a theft deterrent or will prevent the unauthorized operation of the machine.
- If the ESL mode was selected Always, the password will be required when the start switch is turned ON.
- Disable : Not used ESL function.

Always: The password is required whenever the operator start engine.

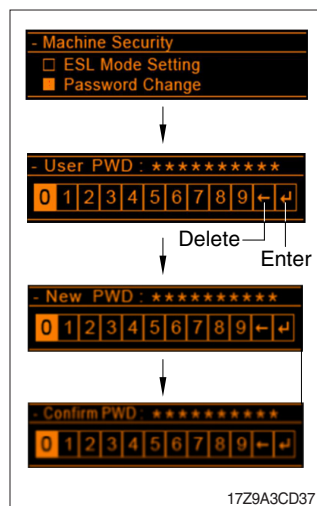
Interval : The password is required when the operator start engine first. But the operator can restart the engine within the interval time without inputting the password.

The interval time can be set maximum 2 days.

##### · Interval time

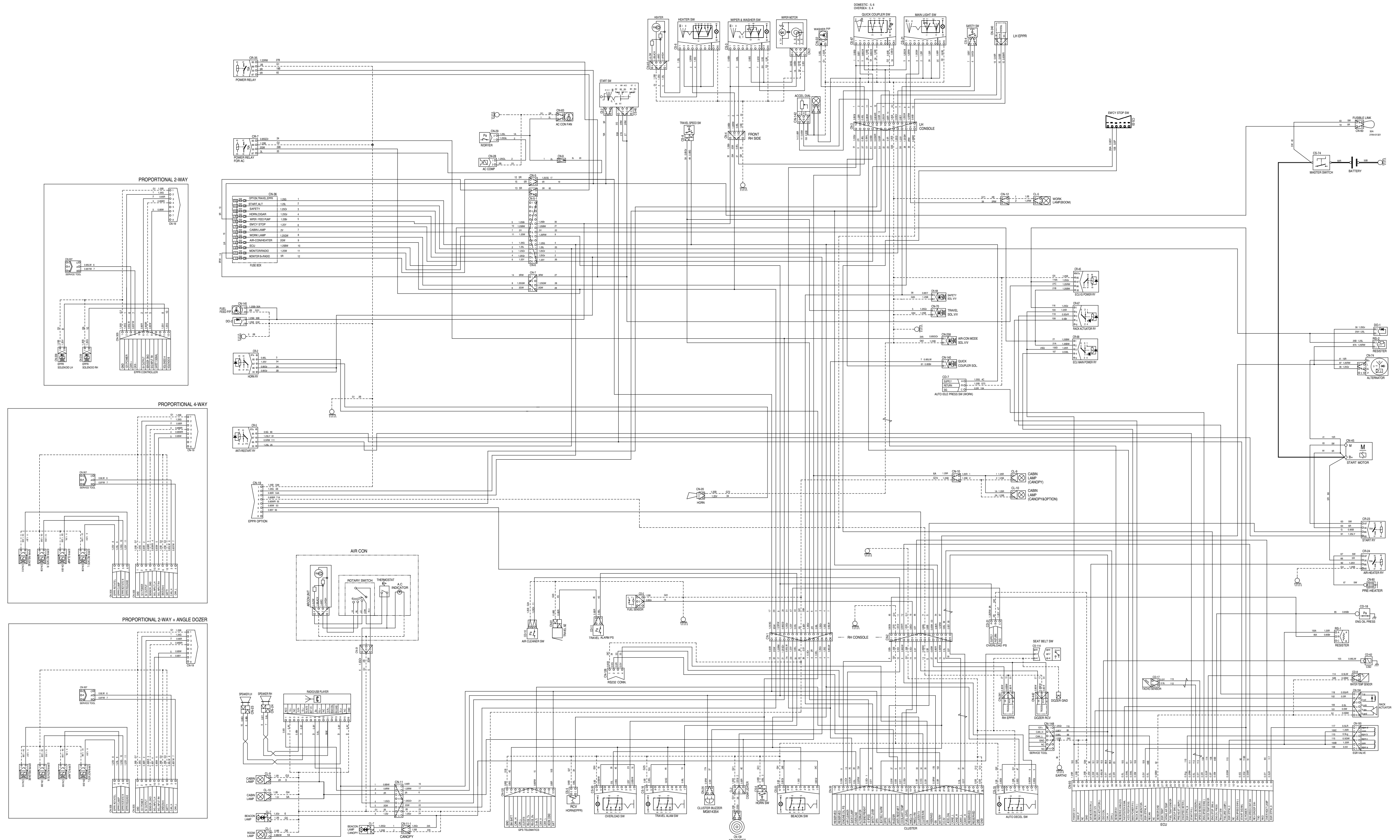
- If set interval time to 5 minutes, ESL system is activated after 5 minutes. Therefore, the password does not need to restart engine within 5 minutes.

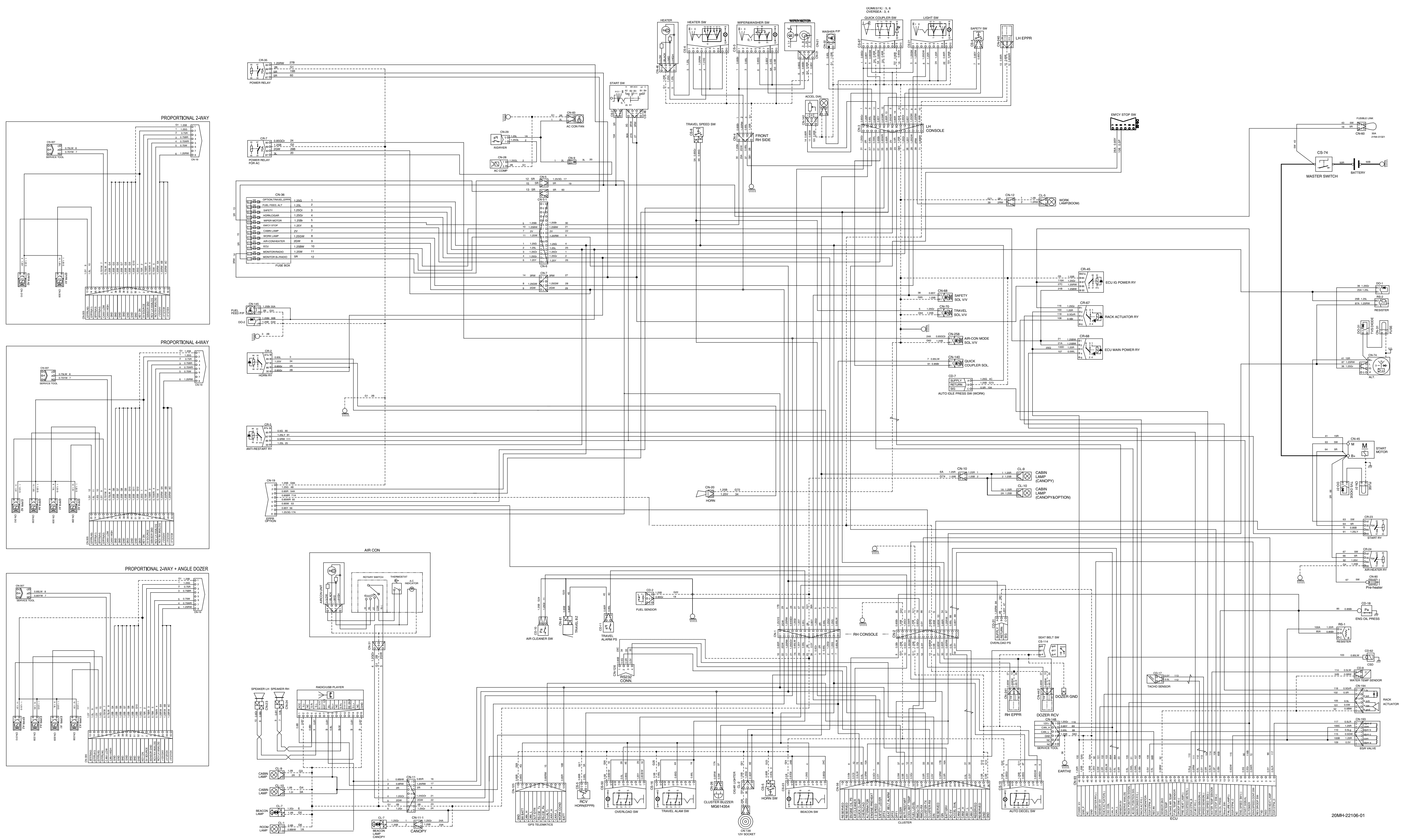
※ **Default password : 00000**



##### ② Password change

- Input 5 to 10 digits and press Enter.





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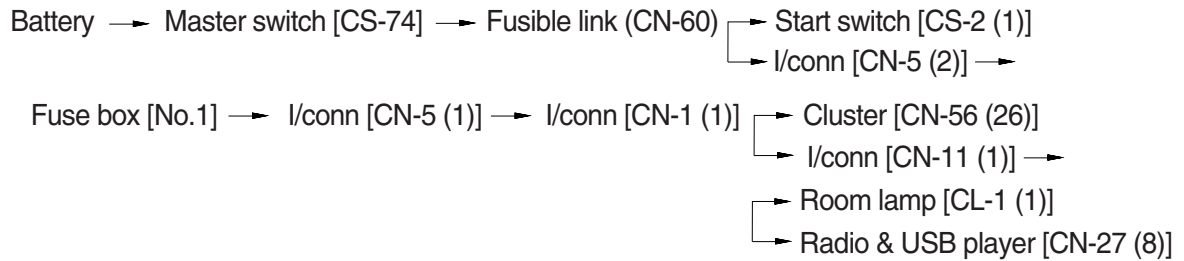


## 1. POWER CIRCUIT

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



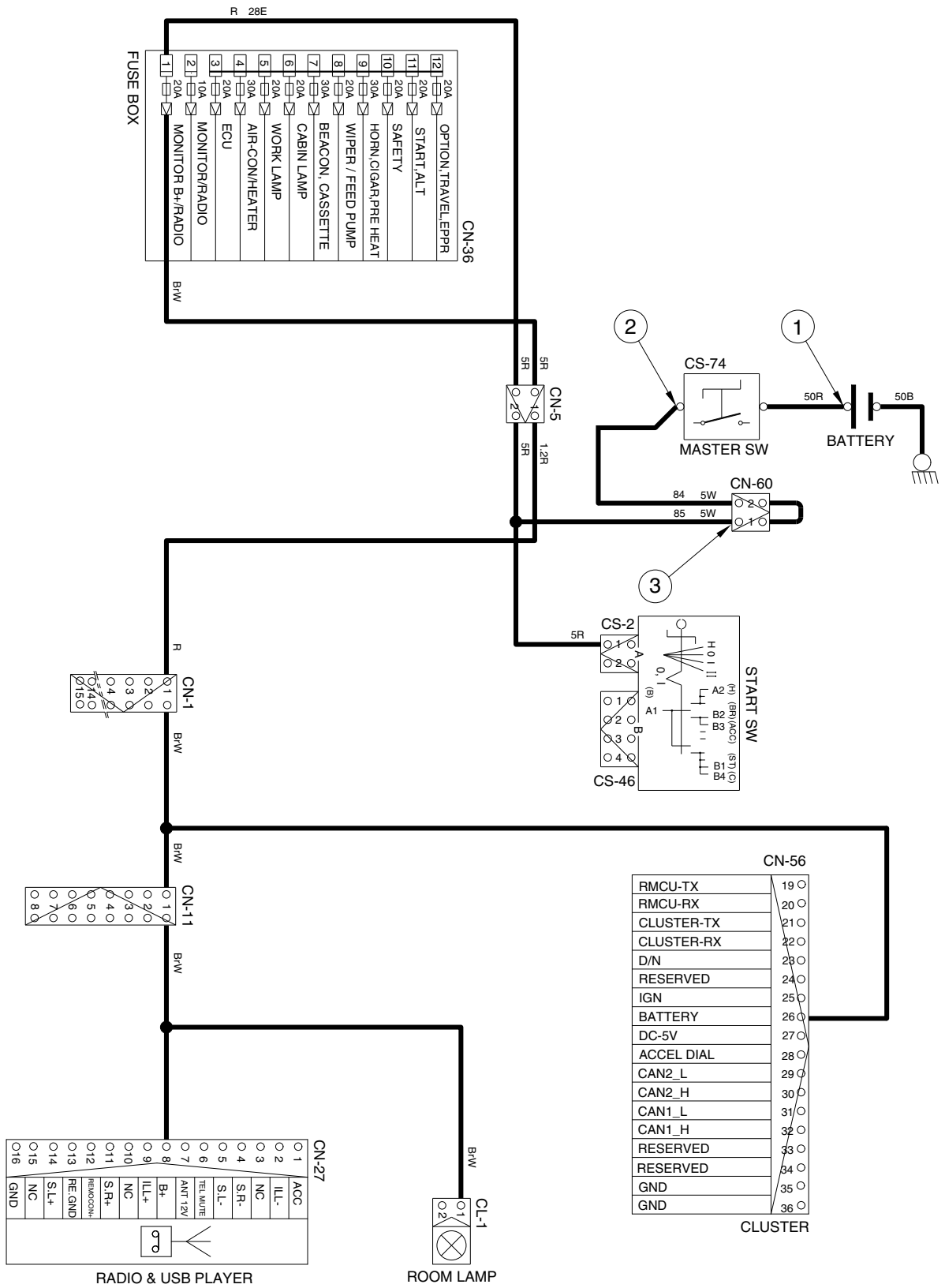
※ I/conn : Intermediate connector

### 2) CHECK POINT

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

※ GND : Ground

# POWER CIRCUIT

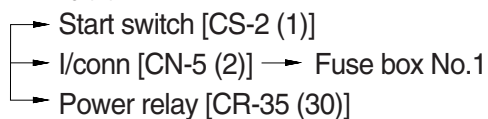


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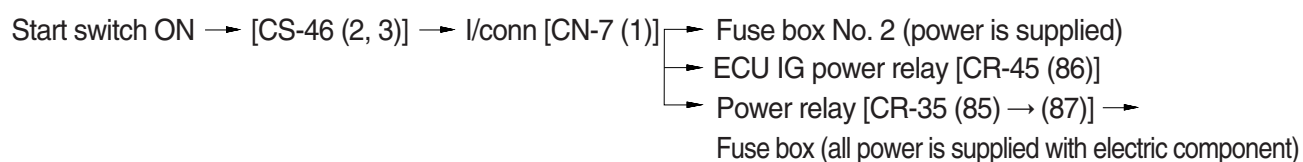
## 2. STARTING CIRCUIT

### 1) OPERATING FLOW

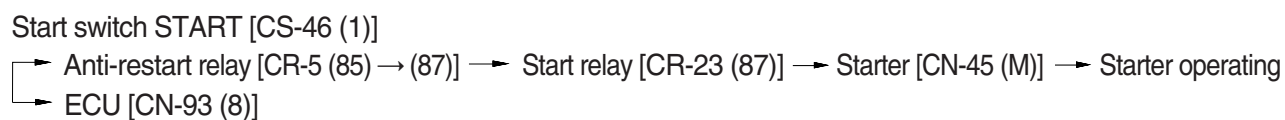
Battery(+) terminal → Master switch [CS-74] → Fusible link [CN-60]



#### ※ Start switch : ON



#### ※ Start switch : START



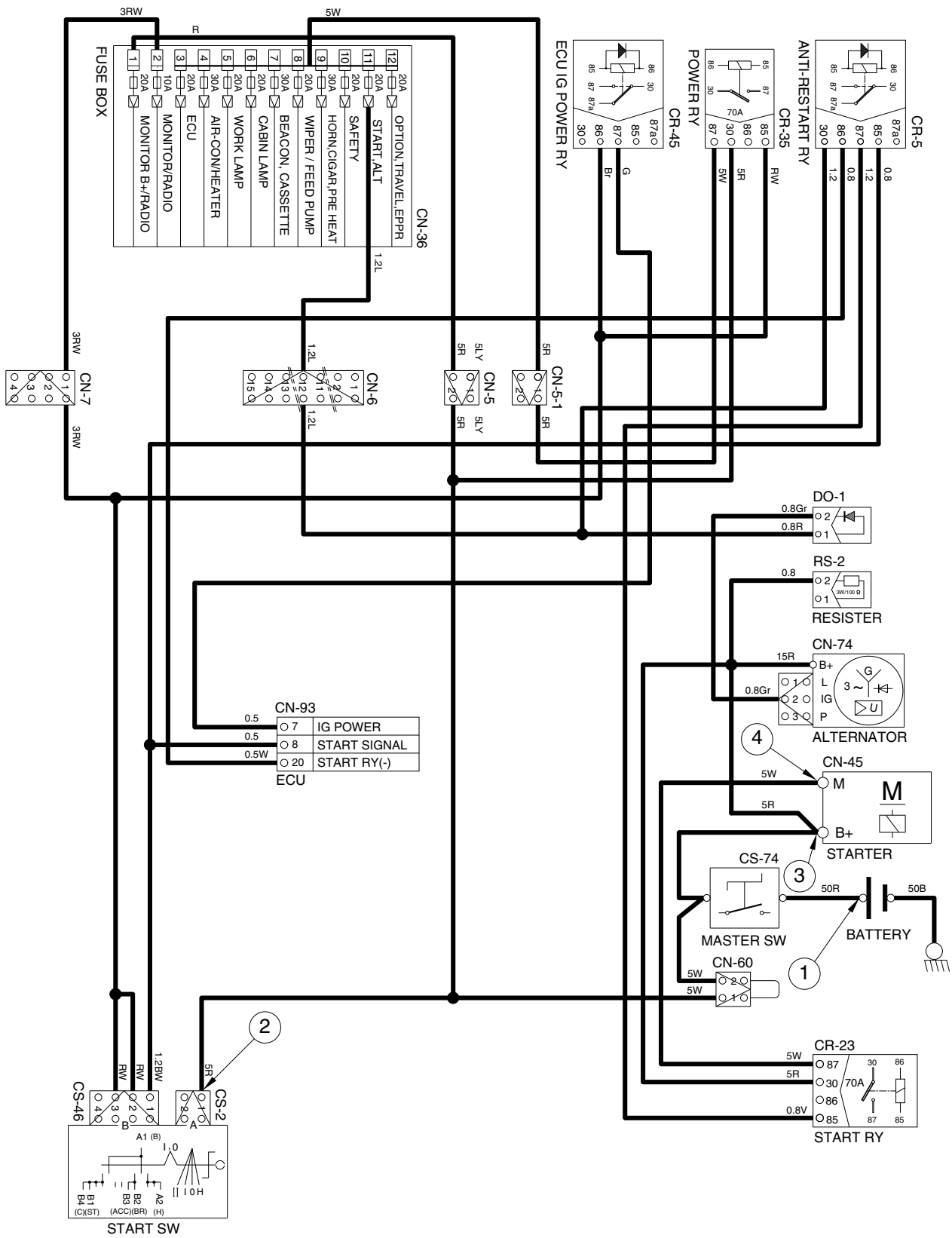
### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
Operating	Start	① - GND (Battery) ② - GND (Start key) ③ - GND (Starter B <sup>+</sup> ) ④ - GND (Starter M)	10~12.5 V

※ GND : Ground



# STARTING CIRCUIT





### 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.

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

#### 1) OPERATING FLOW

##### (1) Warning flow

Alternator "L" terminal → I/conn [CN-2 (13)] → Cluster [CN-56 (7)] → Cluster warning lamp ON

##### (2) Charging flow

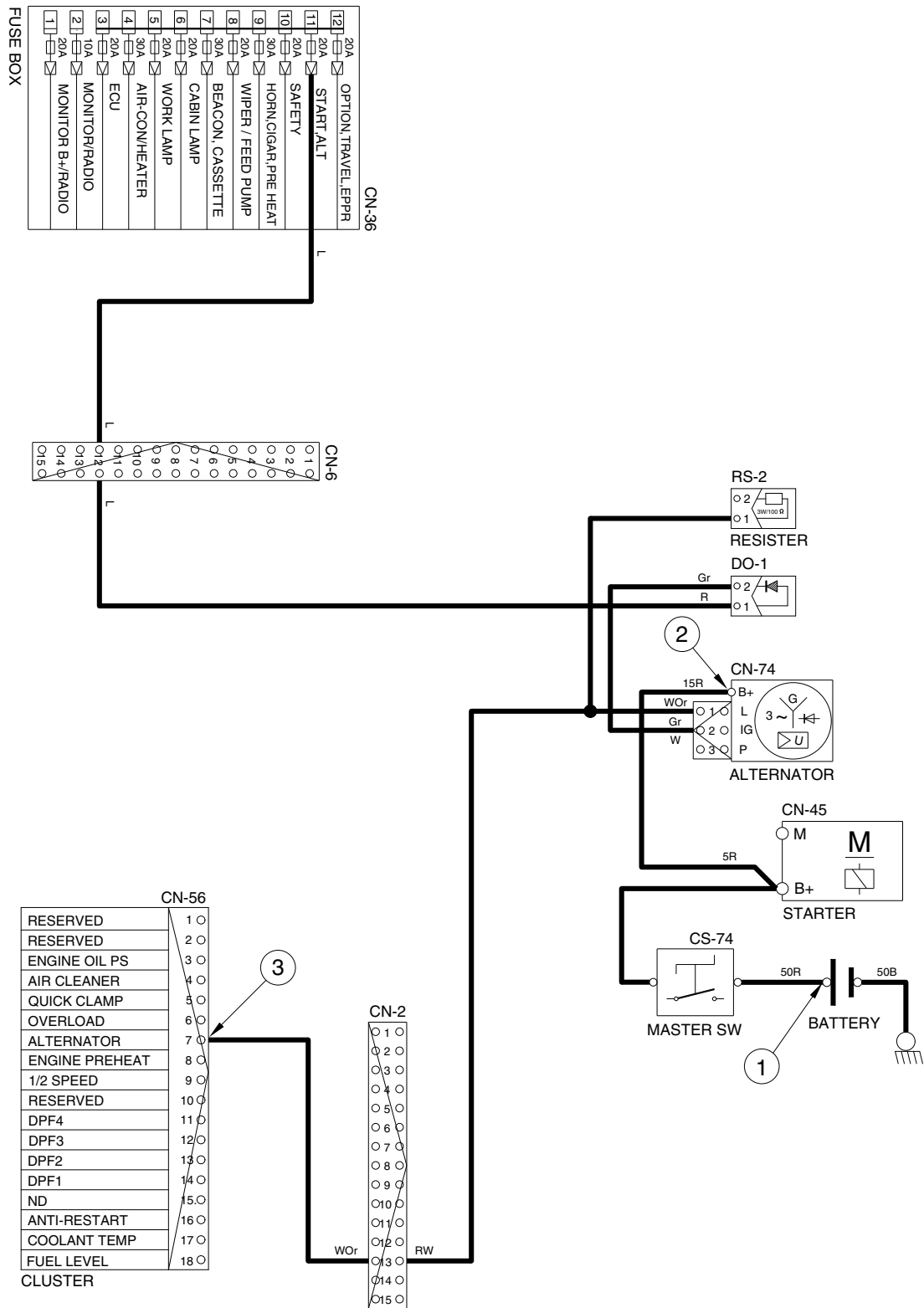
Alternator "B+" terminal → Battery(+) terminal

#### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
ON	ON	① - GND (Battery voltage) ② - GND (Alternator B <sup>+</sup> terminal) ③ - GND (Cluster)	10~12.5 V

※ GND : Ground

# CHARGING CIRCUIT



## 4. HEAD AND WORK LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.6) → Main light switch [CS-21 (1)]

Fuse box (No.5) → Main light switch [CS-21 (4)]

#### (1) Main light switch ON : 1st step

Cabin light switch ON [CS-21 (5, 7)] → I/conn [CN-3 (2)] → I/conn [CN-1 (11)]

→ I/conn [CN-11 (3)] → Cabin Lamp (Head Lamp) ON [CL-9, 10 (2)]

#### (2) Main light switch ON : 2nd step

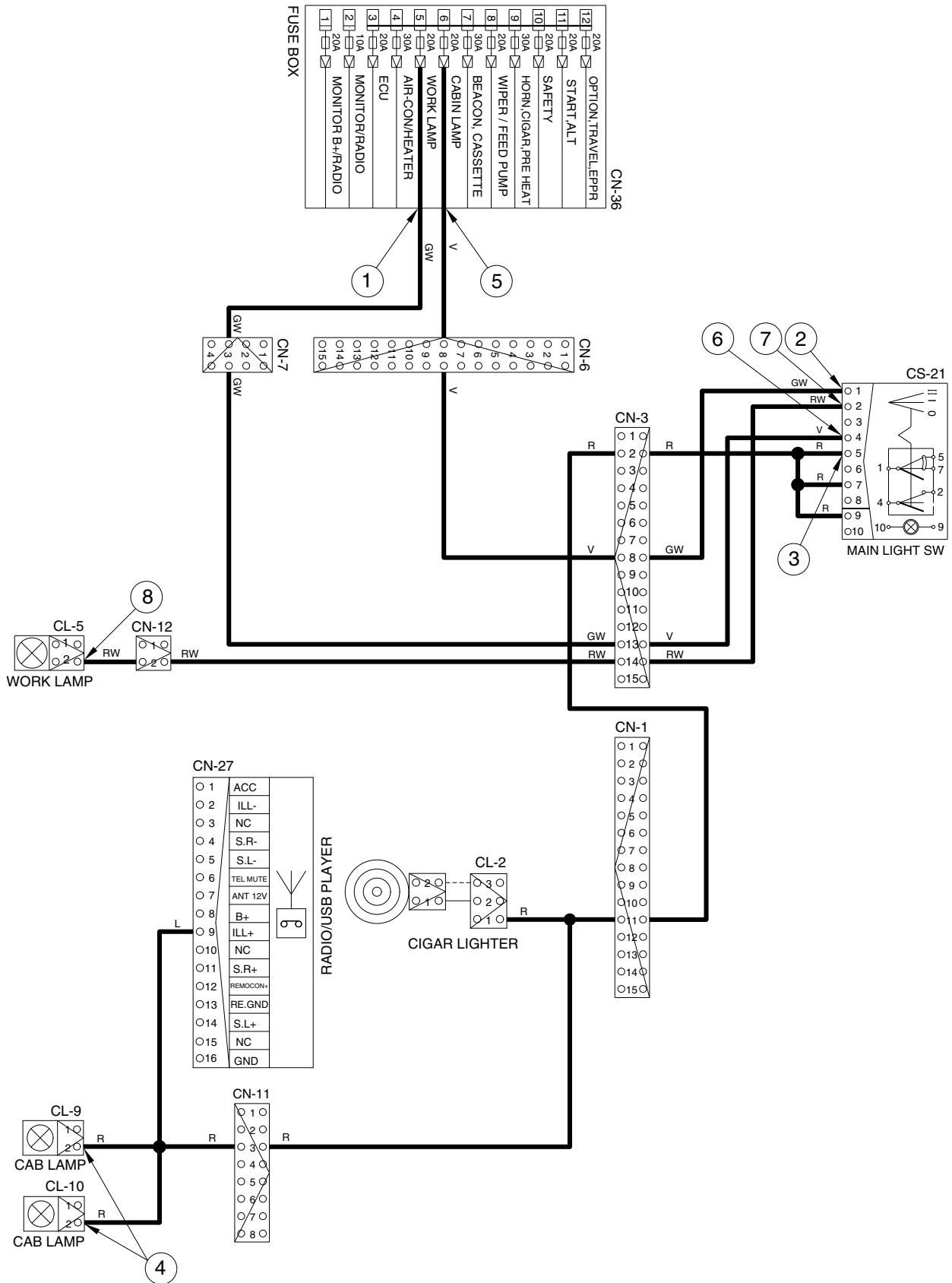
Work light switch ON [CS-21 (2)] → I/conn [CN-3 (14)] → I/conn [CN-12 (2)] → Work light ON [CL-5 (2)]

### 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) ⑤ - GND (Fuse box) ⑥ - GND (Switch power input) ⑦ - GND (Switch power output) ⑧ - GND (Work light)	10~12.5 V

※ GND : Ground

# HEAD AND WORK LAMP CIRCUIT



## 5. BEACON LAMP CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.7) → I/conn [CN-6 (15)] → I/conn [CN-3 (5)] → Beacon lamp switch [CS-23 (5)]

#### (1) Beacon lamp switch ON

Beacon lamp switch ON [CS-23 (1)]

→ Switch Indicator lamp ON [CS-23 (9)]

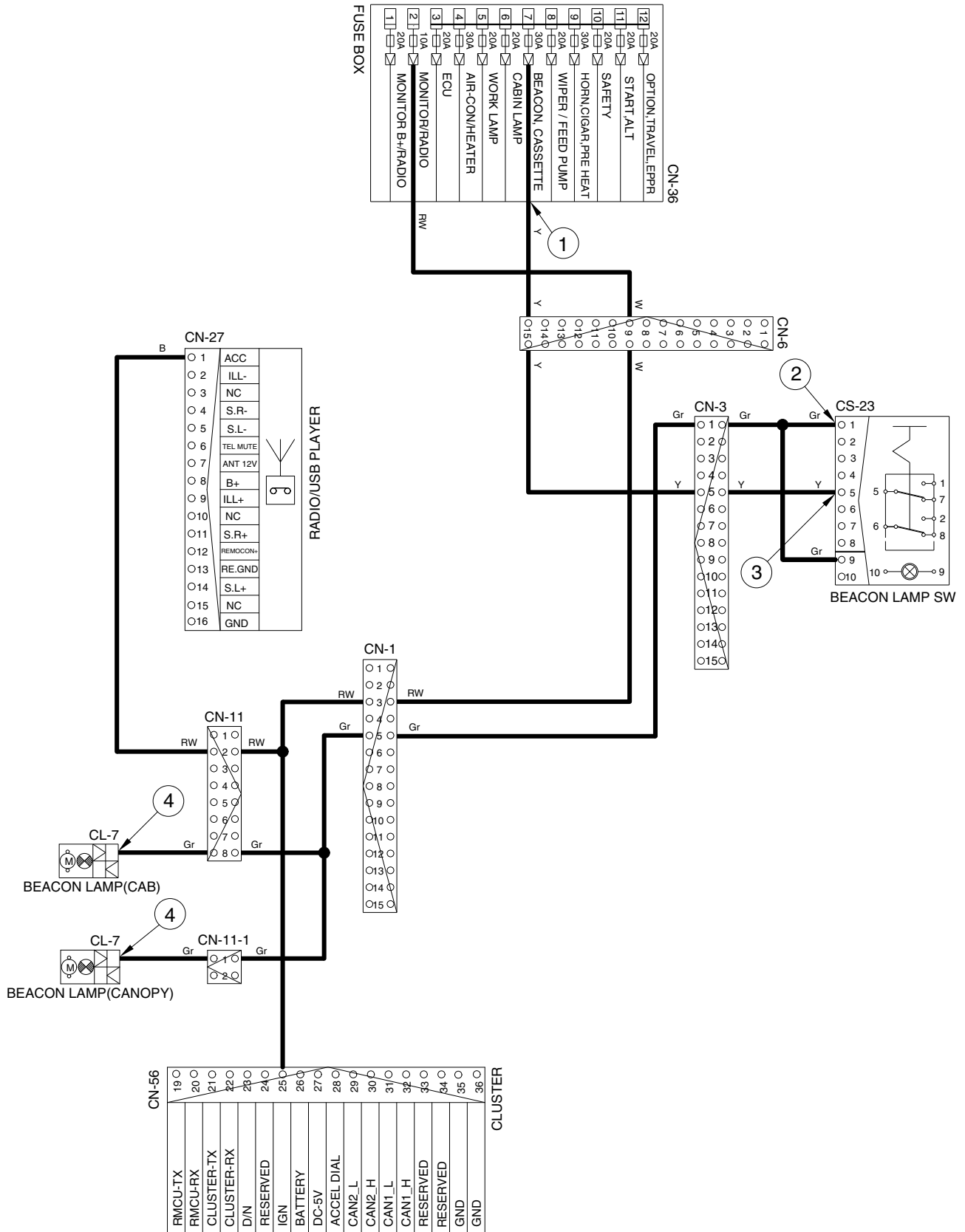
→ I/conn [CN-3 (1)] → I/conn [CN-1 (5)] → I/conn [CN-11 (8)] → Beacon lamp ON [CL-7]

### 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)	10~12.5 V

※ GND : Ground

# BEACON LAMP CIRCUIT



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## 6. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

#### (1) Key switch ON

Fuse box (No.8) → I/conn [CN-6 (6)] → I/conn [CN-4 (1)]

└─ Wiper and washer switch [CS-3 (1)]

└─ Wiper motor [CN-21 (3)]

#### (2) Wipe switch ON : 1st step (low speed)

Wiper switch ON [CS-3 (6)] └─ Wiper motor operating [CN-21 (4)]

└─ Wiper & washer switch lamp ON [CS-3 (9)]

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

Wiper switch ON [CS-3 (6)] → Wiper motor operating [CN-21 (4)]

Wiper switch ON [CS-3 (3)] → I/conn [CN-4 (3)] → I/conn [CN-3 (3)]

→ Washer pump operating [CN-22 (2)]

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

Switch OFF → Wiper motor [CN-21 (1)] → Wiper switch [CS-3 (8) → (6)]

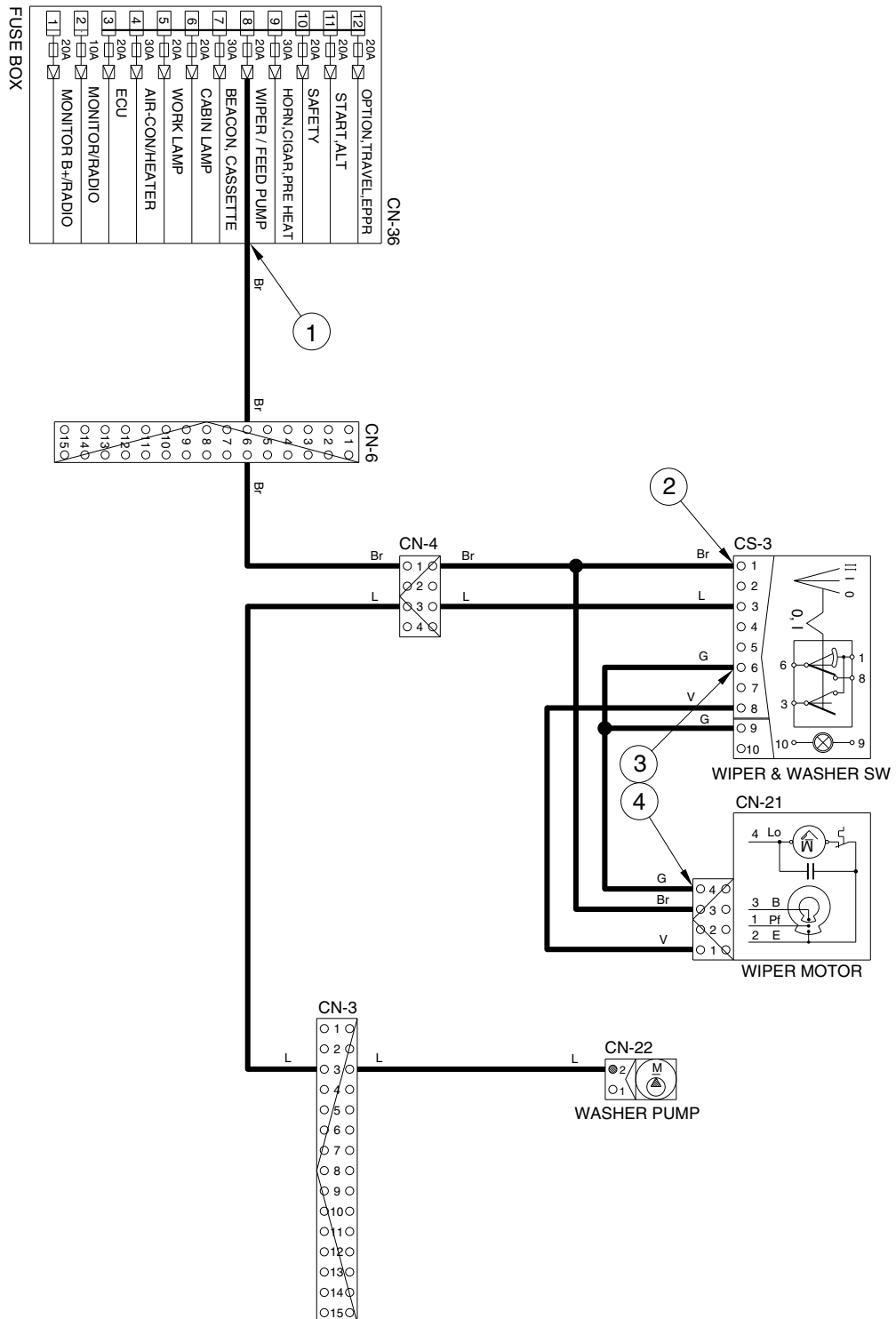
→ Wiper motor [CN-21 (4)] → Wiper motor parking position by wiper motor controller

### 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 (Wiper motor)	10~12.5 V

※ GND : Ground

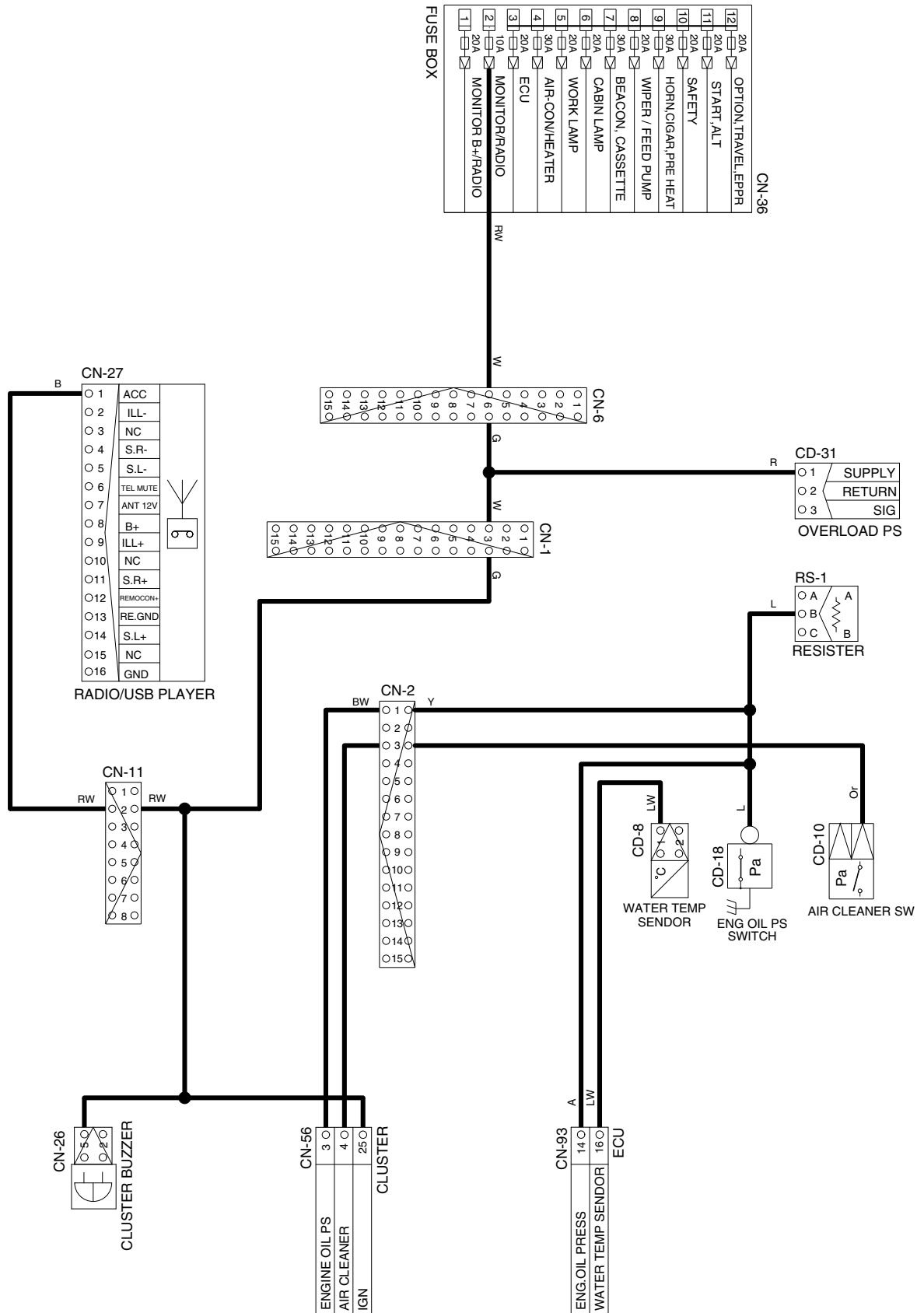
# WIPER AND WASHER CIRCUIT



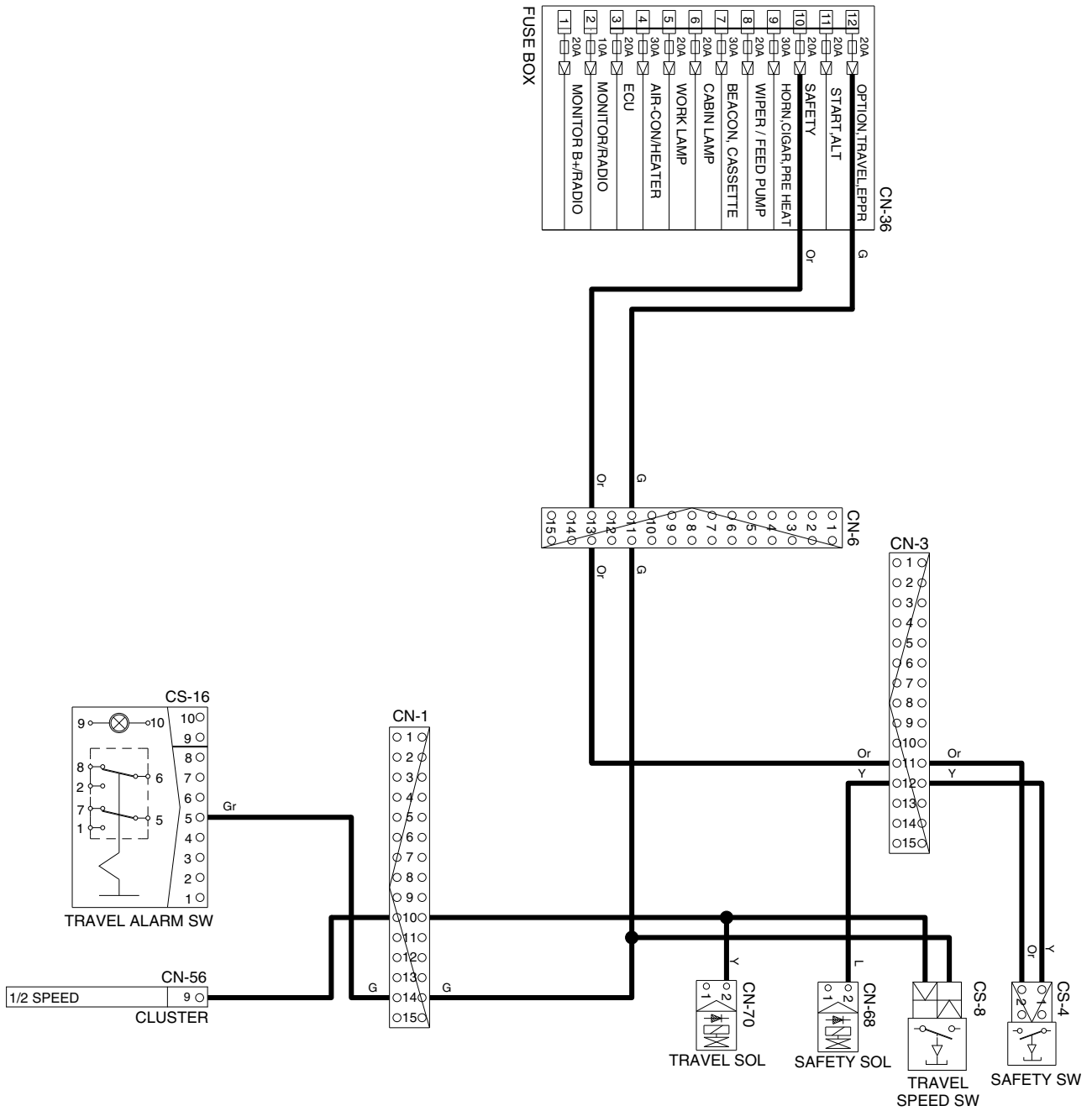
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# MONITORING CIRCUIT

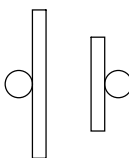
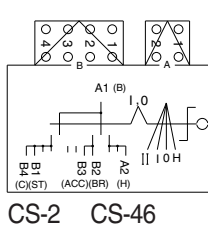
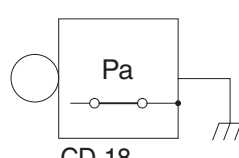
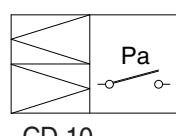


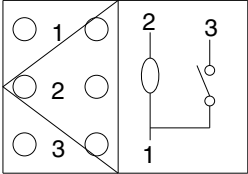
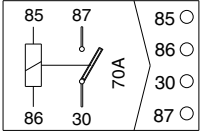
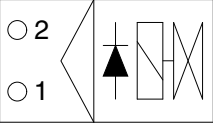
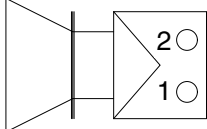
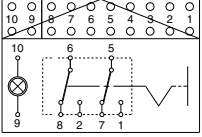
# ELECTRIC CIRCUIT FOR HYDRAULIC

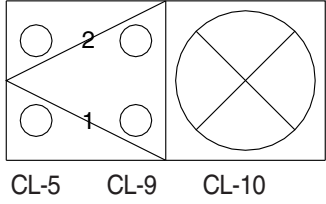
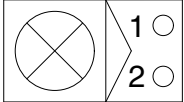
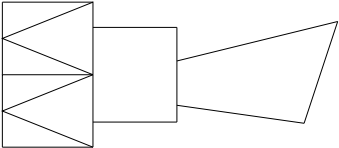
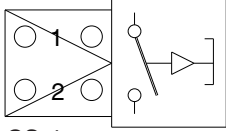
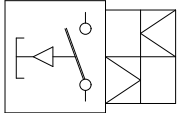
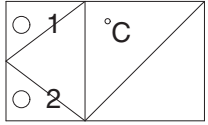


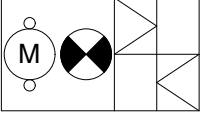
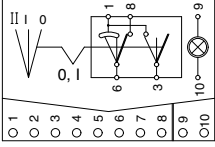
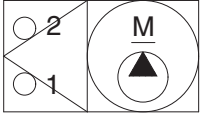
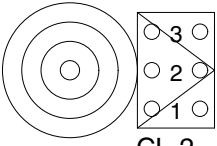
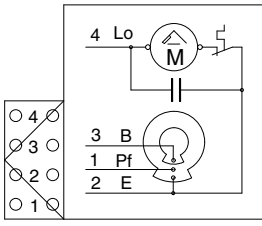
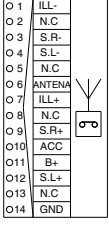
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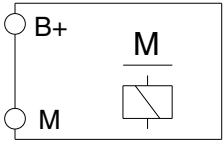
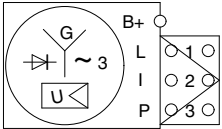
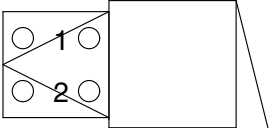
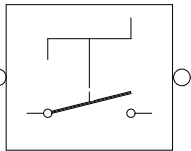
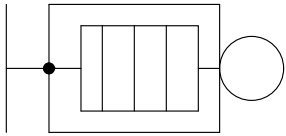
## GROUP 4 ELECTRICAL COMPONENT SPECIFICATION

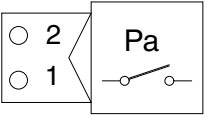
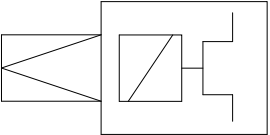
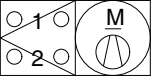
Part name	Symbol	Specification	Check
Battery		12V × 70Ah (20h rating)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Start key		12V	※ Check contact OFF : ∞ Ω (for each terminal) ON : 0 Ω (for terminal 1-3 and 1-2) START : 0 Ω (for terminal 1-5)
Pressure switch (for engine oil)		0.5 kgf/cm <sup>2</sup> (N.C TYPE)	※ Check resistance Normal : 0 Ω (CLOSE)
Air cleaner pressure switch		Pressure: 635 mmH <sub>2</sub> O (N.O TYPE)	※ Check contact Normal : ∞ Ω

Part name	Symbol	Specification	Check
Fuel sender	 <p>CD-2</p>	-	※ Check resistance Full : 30 Ω Low : 100 Ω Empty warning : 200 Ω
Relay (power, starter, air-heater, aircon power)	 <p>CN-7 CR-23 CR-24 CR-35</p>	12V 70A	※ Rated coil current 1.2±0.3 A
Solenoid valve	 <p>CN-68 CR-70 CR-140 CR-258</p>	12V 1A	※ Check resistance Normal : 15~25 Ω (for terminal 1-2)
Speaker	 <p>CN-23 (LH) CR-24 (RH)</p>	4 Ω 20W	※ Check resistance Normal : 4 Ω
Switch (Locking type)	 <p>CS-16 CS-19 CS-23 CS-50</p>	12V 16A	※ Check contact Normal OFF - ∞ Ω (for terminal 1-5,2-6) - 0 Ω (for terminal 5-7,6-8)

Part name	Symbol	Specification	Check
Lamp	 <p>CL-5 CL-9 CL-10</p>	12V 55W (H3 TYPE)	※ Check disconnection Normal : 1.2 Ω
Room lamp	 <p>CL-1</p>	12V 10W	※ Check disconnection Normal : A few Ω
Horn	 <p>CN-20</p>	12V 6A	132±5 dB
Safety switch	 <p>CS-4</p>	Micro 12V 15A	※ Check contact Normal : 0 Ω Operating : ∞ Ω
Horn switch	 <p>CS-5</p>	12V 10A	※ Check contact Normal : 0 Ω
Water temp sender	 <p>CD-8</p>	-	※ Check contact 50°C : 0.748~0.904 Ω 67°C : 0.538~0.650 Ω 102°C : 0.185~0.167 Ω 110°C : 0.143~0.130 Ω 135°C : 0.076~0.100 Ω

Part name	Symbol	Specification	Check
Beacon lamp	 CL-7	12V (strobe type)	※ Check disconnection Normal : A few Ω
Wiper & washer switch	 CS-3	12V 16A	※ Check contact Normal : ∞ Ω
Washer pump	 CN-22	12V 3.8A	※ Check contact Normal : 3 Ω (for terminal 1-2)
Cigar lighter	 CL-2	12V 10A 1.4W	※ Check coil resistance Normal : About 1M Ω ※ Check contact Normal : ∞ Ω Operating time : 5~15sec
Wiper motor	 CN-21	12V 3A	※ Check contact Normal : 6 Ω (for terminal 2-6)
Radio & USB player	 CN-27	12V 3A	※ Check voltage 10 ~ 12.5V (for terminal 10-14,11-14)

Part name	Symbol	Specification	Check
Starter	 <p>CN-45</p>	12V 2.3kW	※ Check contact Normal : 0.1 Ω
Alternator	 <p>CN-74</p>	12V 55A	※ Check contact Normal : 0 Ω (For terminal B <sup>+</sup> -1) Normal : 10 ~ 12.5V
Travel alarm	 <p>CN-81</p>	12V	-
Master switch	 <p>CN-74</p>	12V 1000A	-
Air-heater	 <p>CN-80</p>	12V 42A 500W	-

Part name	Symbol	Specification	Check
Receiver dryer	 <p data-bbox="478 452 550 481">CN-29</p>	12V	※ Check contact Normal : 0 Ω
Compressor	 <p data-bbox="478 739 550 768">CN-28</p>	12V 38W	-
Air con fan motor	 <p data-bbox="478 996 550 1025">CN-83</p>	12V 8.5A	-



## GROUP 5 CONNECTORS

### 1. CONNECTOR DESTINATION

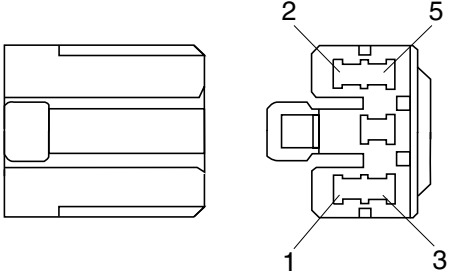
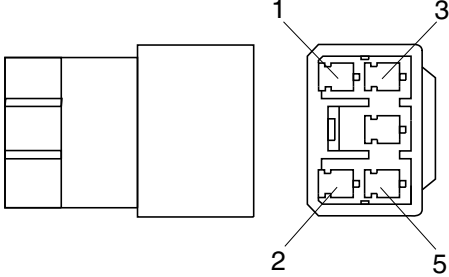
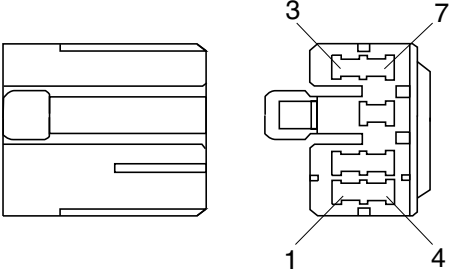
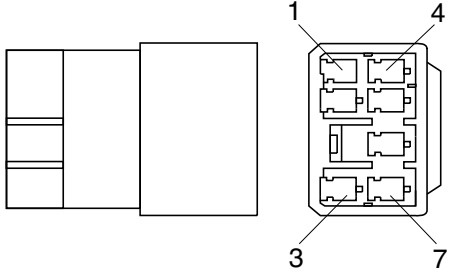
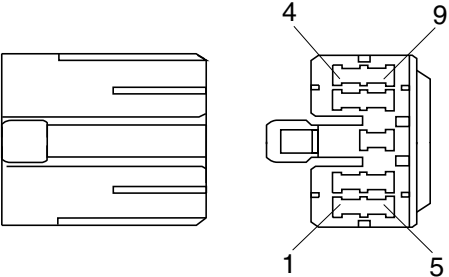
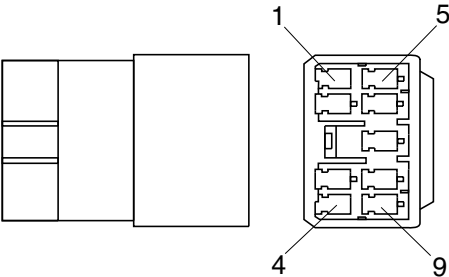
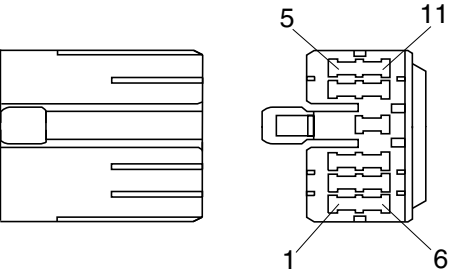
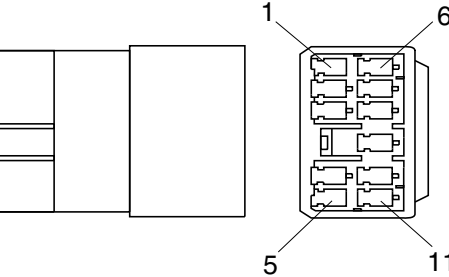
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	15	I/conn (RH console harness-main harness)	2-85262-1	368301-1
CN-2	AMP	15	I/conn (Main harness-RH console harness)	2-85262-1	368301-1
CN-3	AMP	15	I/conn (Main harness-LH console harness)	2-85262-1	368301-1
CN-4	AMP	4	I/conn (Main harness-heater/wiper harness)	S810-004202	S810-104202
CN-5	KET	2	I/conn (Relay harness-main harness)	S813-030201	S813-130201
CN-6	AMP	15	I/conn (Relay harness-main harness)	2-85262-1	368301-1
CN-7	AMP	4	I/conn (Relay harness-main harness)	S810-004202	S810-104202
CN-8	AMP	4	I/conn (LH EPPR harness-LH console harness)	S810-004202	S810-104202
CN-9	AMP	1	I/conn (Main harness-aircon harness)	S810-001202	S810-101202
CN-10	AMP	2	I/conn (Main harness-cab lamp harness)	S816-002002	S816-102002
CN-11	AMP	8	I/conn (RH console harness-cab harness)	S816-008202	S816-108202
CN-11-1	AMP	2	I/conn (RH console harness-canopy harness)	S816-002002	S816-102002
CN-12	AMP	2	Work lamp (boom)	DT06-2S-P012	-
CN-20	DEUTSCH	2	Horn	35825-0211	-
CN-21	AMP	4	Wiper motor	180900-0	-
CN-22	KET	2	Washer tank	MG640605	-
CN-23	KET	1	Speaker - LH	S822-014002	S822-114002
CN-24	KET	1	Speaker - RH	S822-014002	S822-114002
CN-27	-	16	Radio & USB player	173852-1	-
CN-28	AMP	2	Air-con compressor	S810-001203	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	-	-	Fuse box body	F12890010	-
CN-45	RING TERM	1	Starter	S820-408000	-
	RING TERM	1	Starter	ST710246-2	-
CN-46	AMP	4	Heater	180900-0	-
CN-56	AMP	36	Cluster	175977-2	-
CN-60	AMP	2	Fusible link	-	S813-130200
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-P012	-
CN-70	DEUTSCH	2	Travel HI-LO solenoid	DT06-2S-P012	-
CN-74	SUMITOMO	3	Alternator	6189-0443	-
CN-80	RING TERM	1	Pre heater	S810-001302	-
CN-81	SWP	1	Travel buzzer	S822-014000	S822-114000
CN-83	KET	2	Air-con condenser fan	-	MG610164
CN-93	FCI	48	ECU	PP1000443	-
CN-113	AMP	2	Buzzer	S810-002201	-

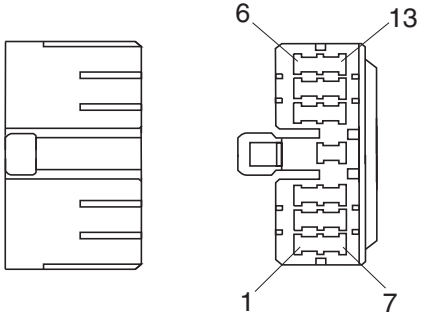
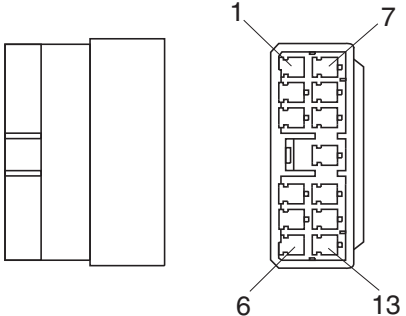
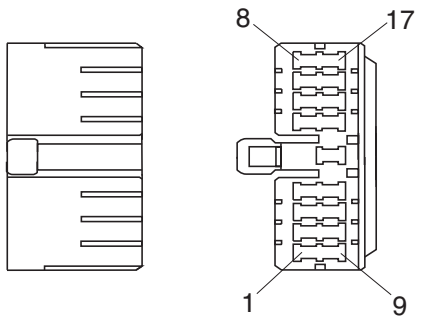
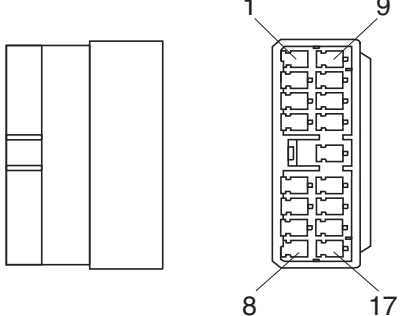
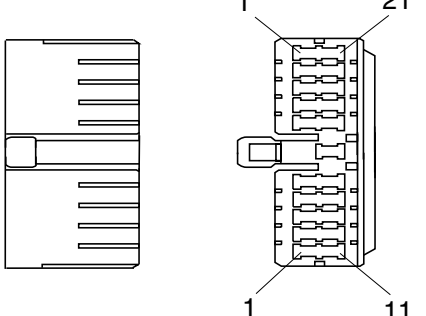
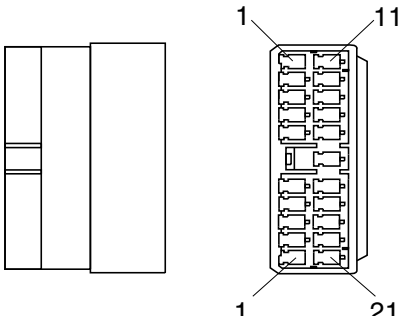
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-140	DEUTSCH	2	Quick clamp	DT06-2S-P012	DT04-2P-E004
CN-142	DEUTSCH	3	Accel dial	DT06-3P	-
CN-145	YAZAKI	2	Fuel feed pump	7123-6423-30	-
CN-241	DEUTSCH	3	RH EPPR	DT06-3S	-
CN-258	DEUTSCH	2	Aircon mode solenoid valve	DT06-2S-P012	DT04-2P-E005
CN-305	DEUTSCH	12	EPPR controller	DTM06-12SA	-
CN-307	DEUTSCH	3	Service tool	DT06-3S-EP06	-
LAMP					
CL-1	KET	2	Room lamp	MG610070	-
CL-2	AMP	3	Cigar lighter	S810-003202	-
CL-5	DEUTSCH	2	Work lamp	-	DT06-2S-E006
CL-7	KET	1	Beacon lamp	S822-014002	S822-114002
CL-9	DEUTSCH	2	Cabin lamp (canopy lamp)	DT06-2S-P012	DT04-2P-E004
CL-10	DEUTSCH	2	Cabin lamp (canopy lamp)	DT06-2S-P012	DT04-2P-E004
RELAY					
CR-2	AMP	4	Horn relay	S810-004002	-
CR-7	KET	4	Aircon power relay	MG612017-5	-
CR-23	KET	4	Start relay	MG612017-5	-
CR-24	KET	4	Preheater relay	MG612017-5	-
CR-35	KET	4	Power relay	MG612017-5	-
CR-45	KET	4	ECU IG power	MG612017-5	-
CR-62	KET	4	Air heater timer relay	MG612017-5	-
CR-66	AMP	6	ECU main power	S810-006002	-
SENSOR					
CD-2	AMP	3	Fuel sender	S816-003002	S816-102002
CD-8	AMP	2	Water temp sender	1-178390-2	-
CD-10	TYCO	2	Air cleaner switch	85202-1	-
CD-11	KET	2	Travel pressure switch	MG640795	-
CD-12	KET	2	Travel pressure switch	MG640795	-
CD-17	SUMITOMO	2	Tacho sensor	6189-0552	-
CD-18	AMP	1	Engine oil pressure	17809-2	-
CD-31	DEUTSCH	3	Overload pressure switch	DT06-3S-EP06	-
DO-1	-	2	Diode	S816-002002	21EA-50570
DO-2	-	2	Diode	S816-002002	21EA-50570

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
SWITCH					
CS-2	KET	2	Start key switch	MG610557	-
CS-3	SWF	10	Wiper & washer switch	593757	-
CS-4	AMP	2	Safety switch	-	S814-102001
CS-5	-	1	Horn switch	S822-014002	-
	-	1		-	S822-114002
CS-6	SWF	10	Heater switch	593757	-
CS-8	SWF	10	Travel speed switch	593757	-
CS-16	SWF	10	Travel alarm switch	593757	-
CS-21	SWF	10	Main light switch	593757	-
CS-23	SWF	10	Beacon lamp switch	593757	-
CS-46	KET	4	Start switch	MG651926	-
CS-50	SWF	10	Overload switch	593757	-
CS-67	SWF	10	Quick clamp switch	593757	-
CS-74	RING TERM	1	Master switch	ST710287-2	-
CS-100	SWF	10	DPF switch	593757	-

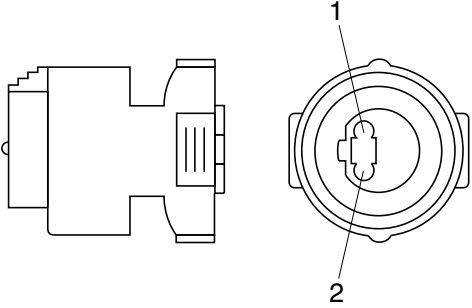
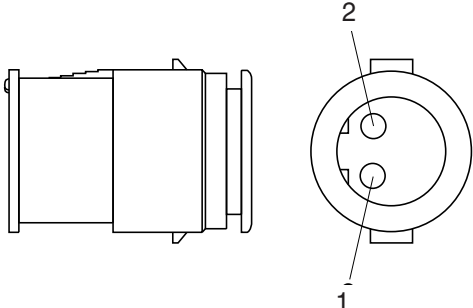
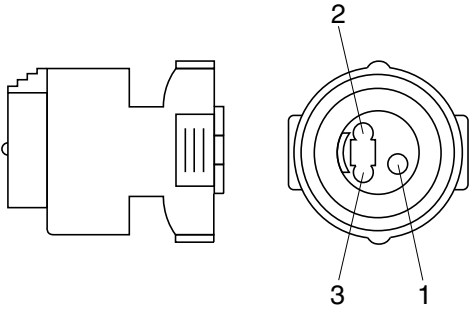
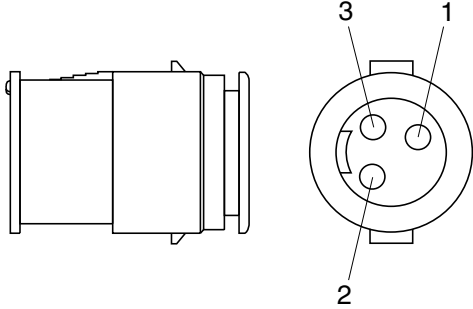
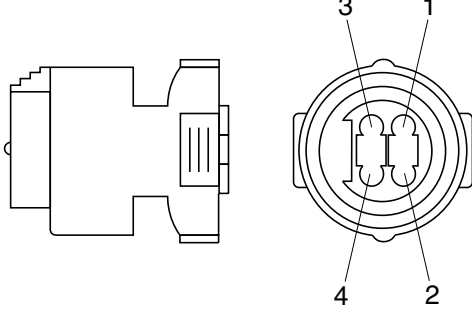
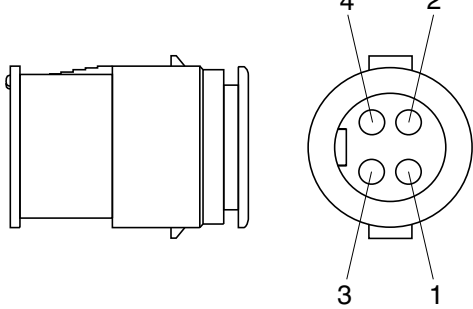
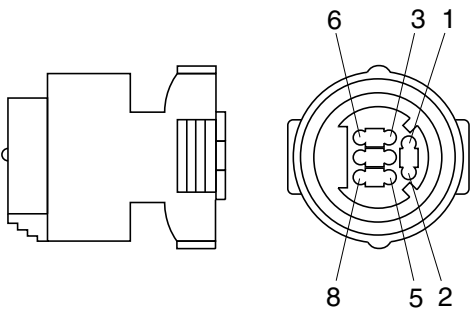
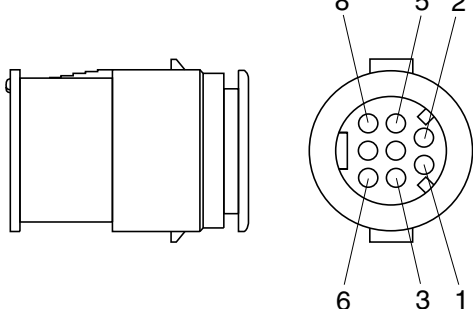
## 2. CONNECTION TABLE FOR CONNECTORS

### 1) PA TYPE CONNECTOR

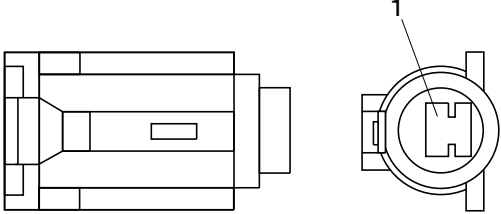
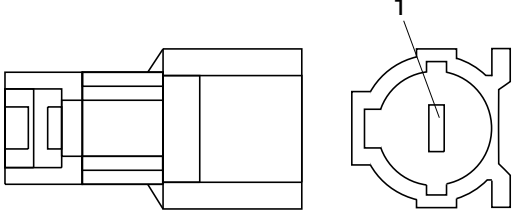
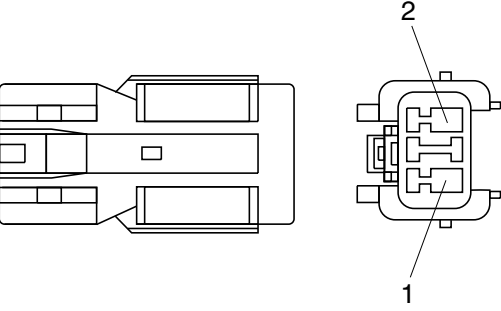
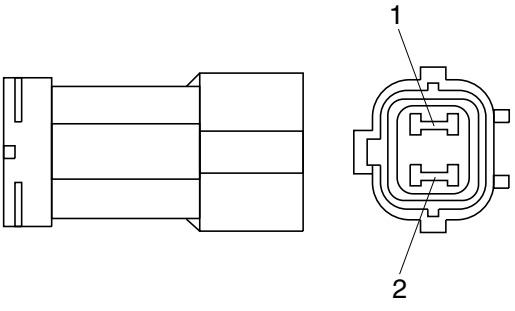
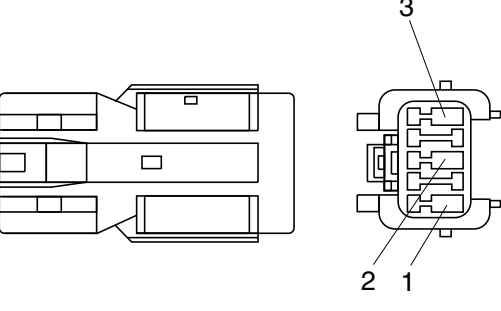
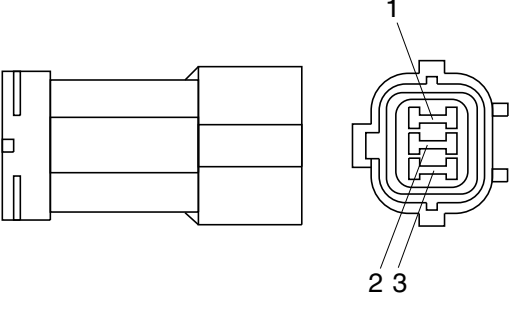
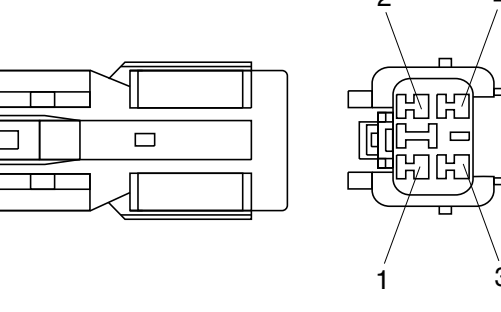
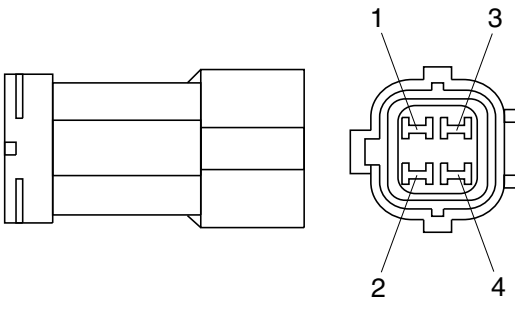
No. of pin	Receptacle connector (female)	Plug connector (male)
5	 <p style="text-align: center;">S811-005002</p>	 <p style="text-align: center;">S811-105002</p>
7	 <p style="text-align: center;">S811-007002</p>	 <p style="text-align: center;">S811-107002</p>
9	 <p style="text-align: center;">S811-009002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

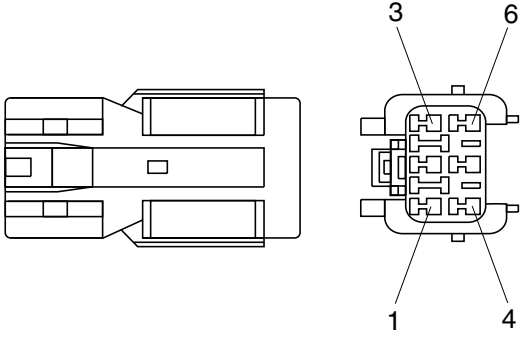
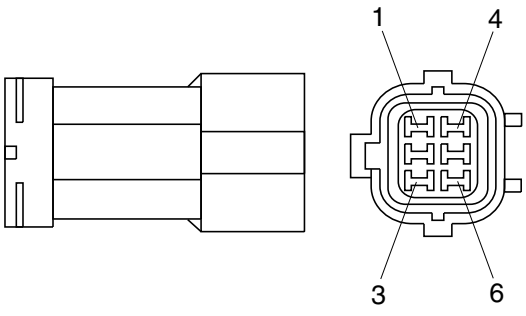
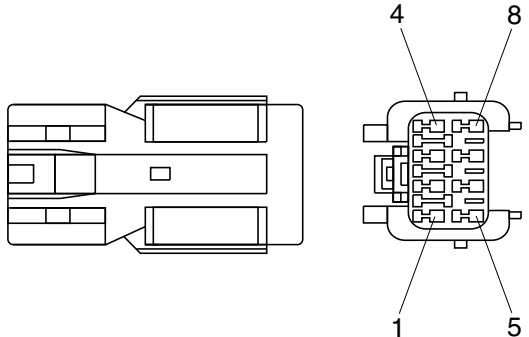
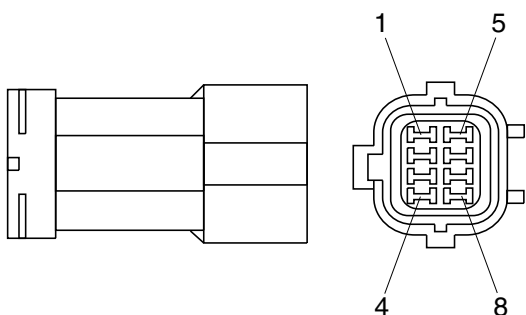
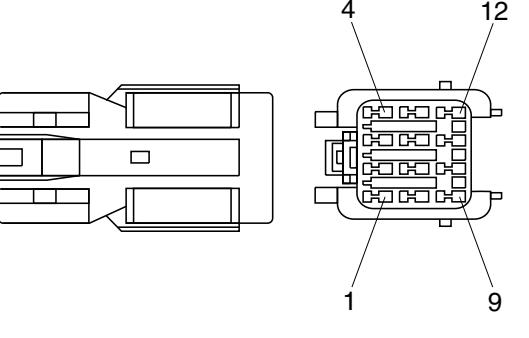
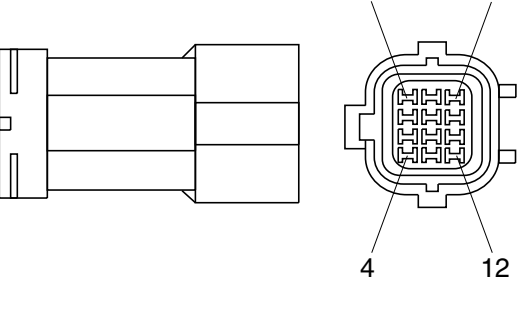
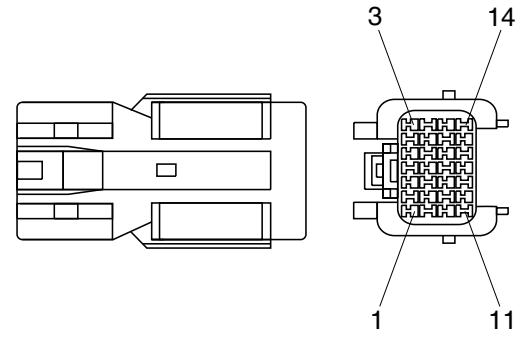
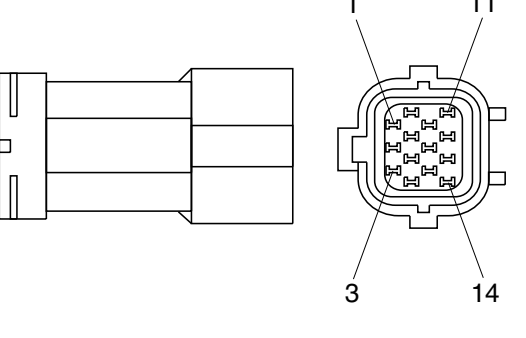
No. of pin	Receptacle connector (female)	Plug connector (male)
13	 <p style="text-align: center;">S811-013002</p>	 <p style="text-align: center;">S811-113002</p>
17	 <p style="text-align: center;">S811-017002</p>	 <p style="text-align: center;">S811-117002</p>
21	 <p style="text-align: center;">S811-021002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

## 2) J TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p data-bbox="687 680 836 707">S816-002001</p>	 <p data-bbox="1240 680 1388 707">S816-102001</p>
3	 <p data-bbox="687 1086 836 1113">S816-003001</p>	 <p data-bbox="1240 1086 1388 1113">S816-103001</p>
4	 <p data-bbox="687 1491 836 1518">S816-004001</p>	 <p data-bbox="1240 1491 1388 1518">S816-104001</p>
8	 <p data-bbox="687 1897 836 1924">S816-008001</p>	 <p data-bbox="1240 1897 1388 1924">S816-108001</p>

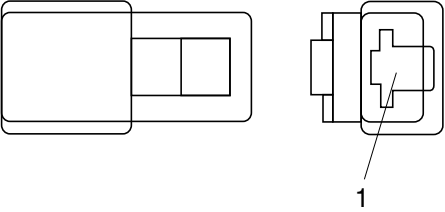
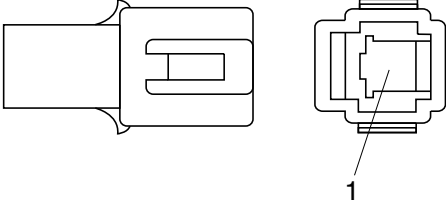
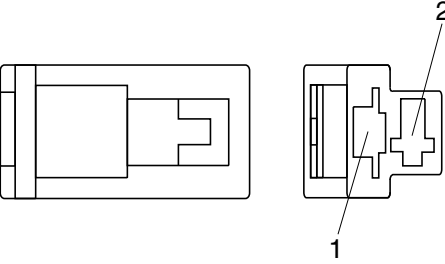
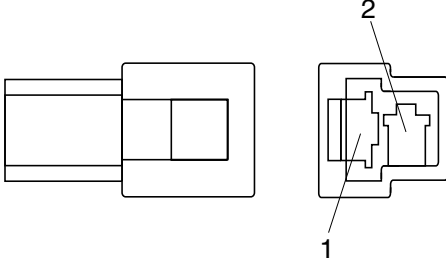
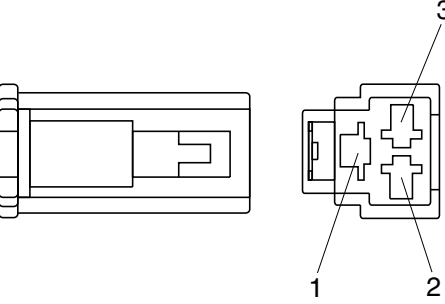
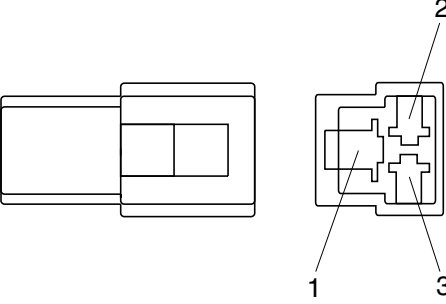
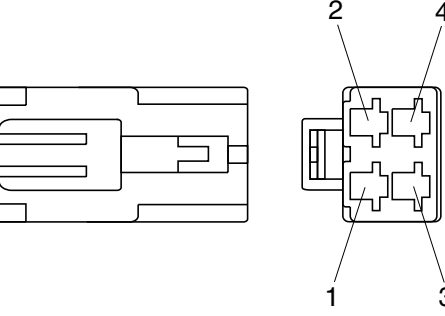
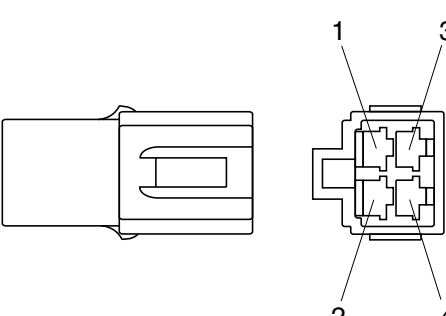
### 3) SWP TYPE CONNECTOR

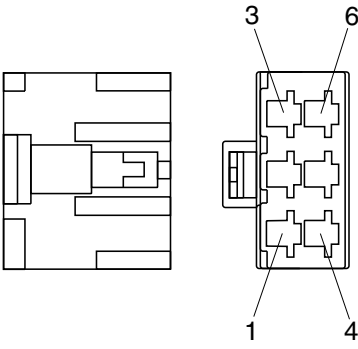
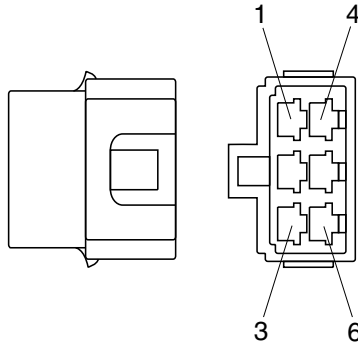
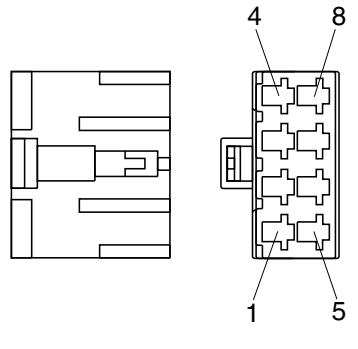
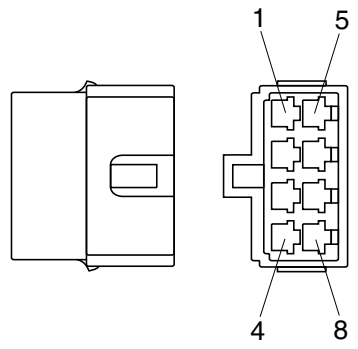
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="687 680 836 707">S814-001000</p>	 <p data-bbox="1241 680 1390 707">S814-101000</p>
2	 <p data-bbox="687 1088 836 1115">S814-002000</p>	 <p data-bbox="1241 1088 1390 1115">S814-102000</p>
3	 <p data-bbox="687 1498 836 1525">S814-003000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

No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p data-bbox="686 638 837 672">S814-006000</p>	 <p data-bbox="1236 638 1388 672">S814-106000</p>
8	 <p data-bbox="686 1041 837 1075">S814-008000</p>	 <p data-bbox="1236 1041 1388 1075">S814-108000</p>
12	 <p data-bbox="686 1444 837 1478">S814-012000</p>	 <p data-bbox="1236 1444 1388 1478">S814-112000</p>
14	 <p data-bbox="686 1859 837 1892">S814-014000</p>	 <p data-bbox="1236 1859 1388 1892">S814-114000</p>

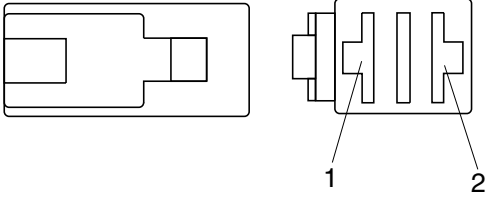
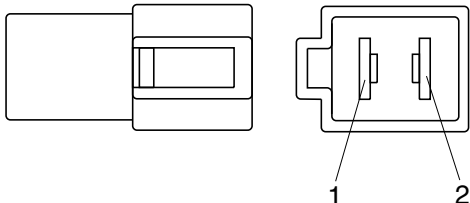


#### 4) CN TYPE CONNECTOR

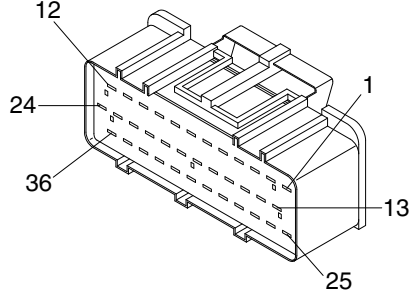
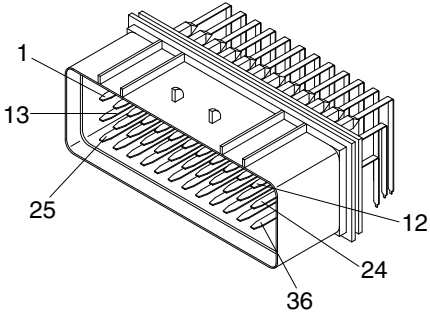
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="687 680 836 712">S810-001202</p>	 <p data-bbox="1241 680 1390 712">S810-101202</p>
2	 <p data-bbox="687 1088 836 1120">S810-002202</p>	 <p data-bbox="1241 1088 1390 1120">S810-102202</p>
3	 <p data-bbox="687 1496 836 1527">S810-003202</p>	 <p data-bbox="1241 1496 1390 1527">S810-103202</p>
4	 <p data-bbox="687 1899 836 1930">S810-004202</p>	 <p data-bbox="1241 1899 1390 1930">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>

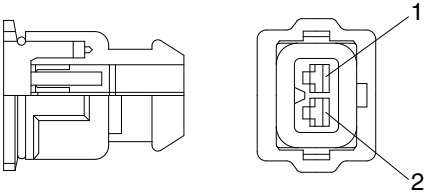
### 5) 375 FASTEN TYPE CONNECTOR

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>

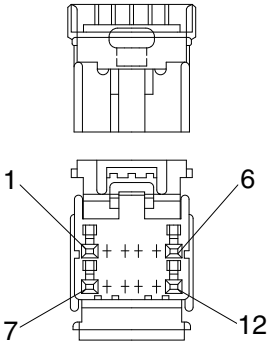
### 6) AMP ECONOSEAL CONNECTOR

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>

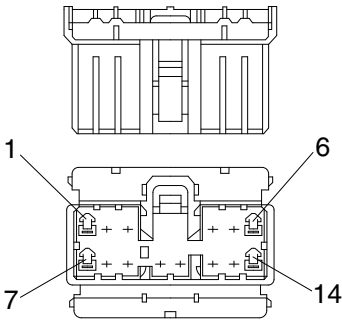
### 7) AMP TIMER CONNECTOR

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

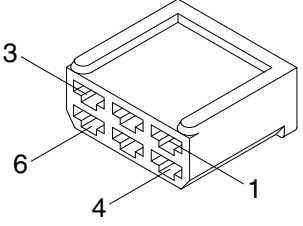
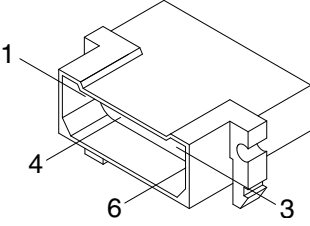
### 8) AMP 040 MULTILOCK CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
12		

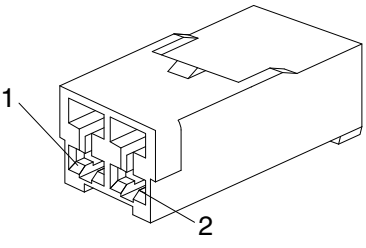
### 9) AMP 070 MULTILOCK CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
14		

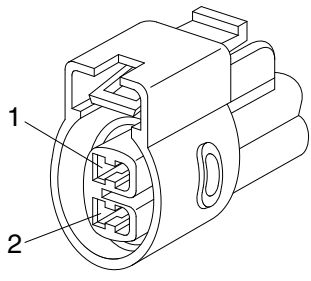
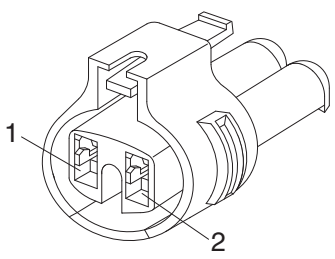
### 10) AMP FASTIN - FASTON CONNECTOR

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

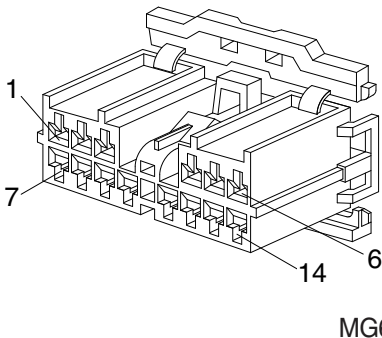
**11) KET 090 CONNECTOR**

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

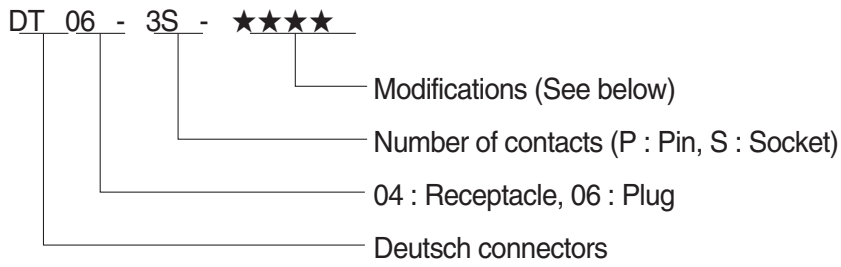
**12) KET 090 WP CONNECTORS**

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: right;">MG610406</p>	

## 14) DEUTSCH DT CONNECTORS



※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

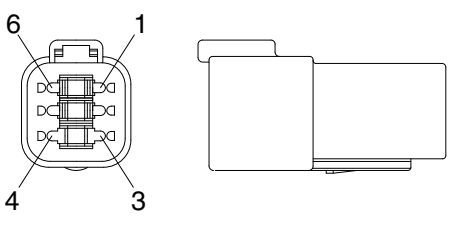
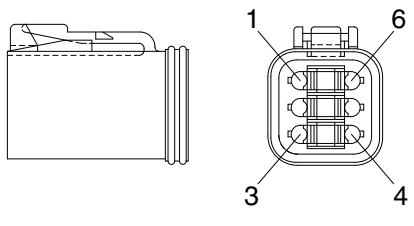
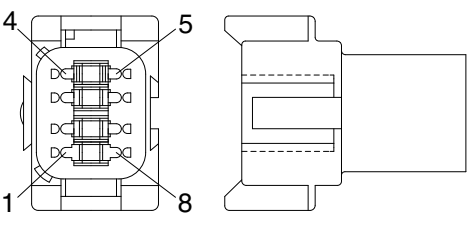
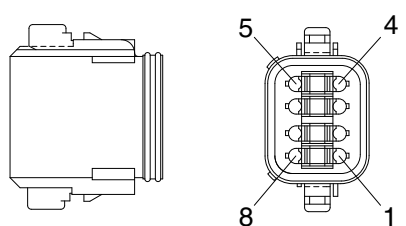
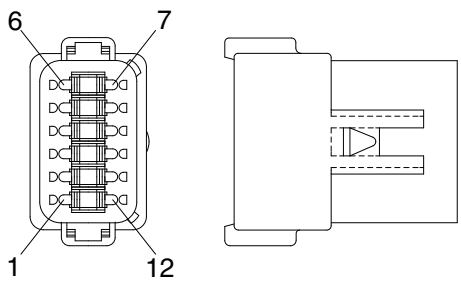
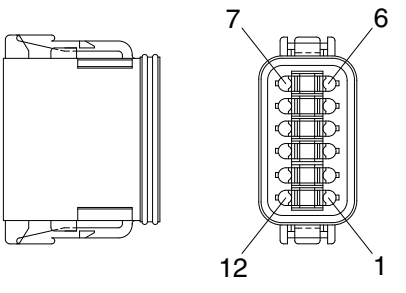
E005 : Combination - E004 & E003

EP04 : End cap

EP06 : Combination P012 & EP04

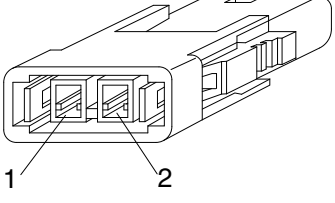
P012 : Front seal enhancement - connectors color to black for 2, 3, 4 & 6pin

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

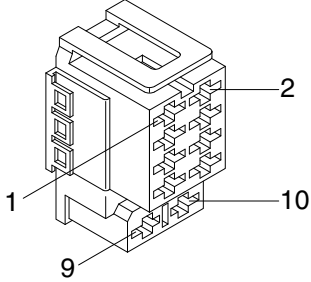
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p style="text-align: right;">DT06-6S</p>	 <p style="text-align: right;">DT04-6P</p>
8	 <p style="text-align: right;">DT06-8S</p>	 <p style="text-align: right;">DT04-8P</p>
12	 <p style="text-align: right;">DT06-12S</p>	 <p style="text-align: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



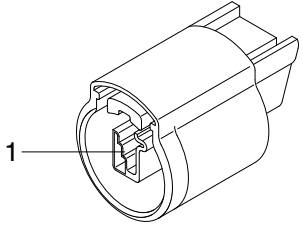
**15) MOLEX 2CKTS CONNECTOR**

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 1265 837 1288">SWF593757</p>	

**17) MWP NMWP CONNECTOR**

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="686 1859 837 1881">NMWP01F-B</p>	