

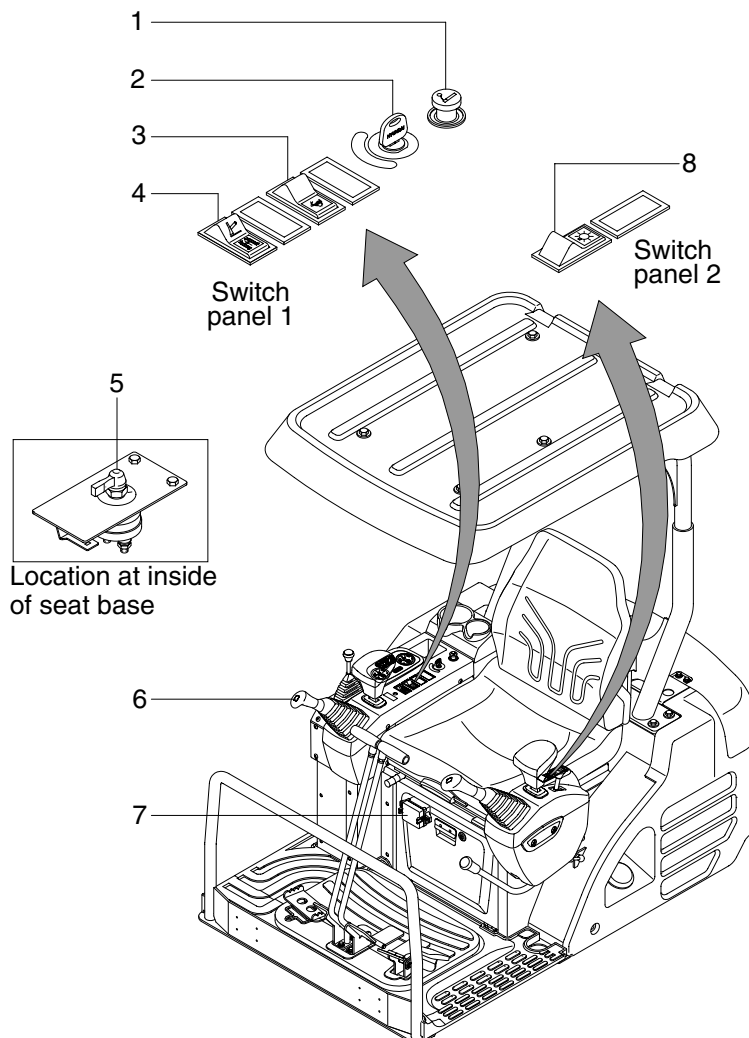
SECTION 4 ELECTRICAL SYSTEM

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SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

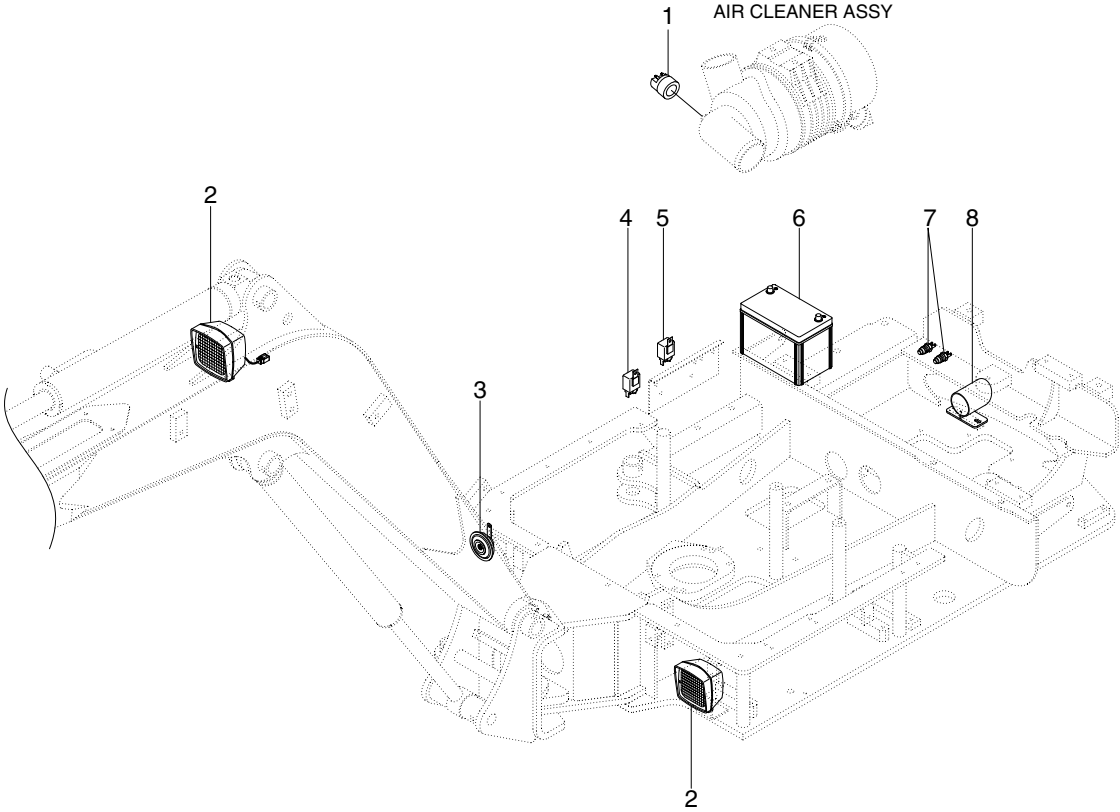
1. LOCATION 1



1694EL02

- | | | | | | |
|---|-----------------------------|---|--------------------------|---|-------------------|
| 1 | Cigar light | 4 | Extension crawler switch | 7 | Fuse box |
| 2 | Start switch | 5 | Master switch | 8 | Main light switch |
| 3 | Travel speed control switch | 6 | Horn switch | | |

2. LOCATION 2



1694EL01

- | | | | | | |
|---|-----------------------------|---|-------------|---|--------------------------|
| 1 | Air cleaner pressure switch | 4 | Relay | 7 | Water temperature sender |
| 2 | Work lamp | 5 | Power relay | 8 | Travel alarm buzzer |
| 3 | Horn | 6 | Battery | | |

GROUP 2 MONITORING SYSTEM

1. OUTLINE

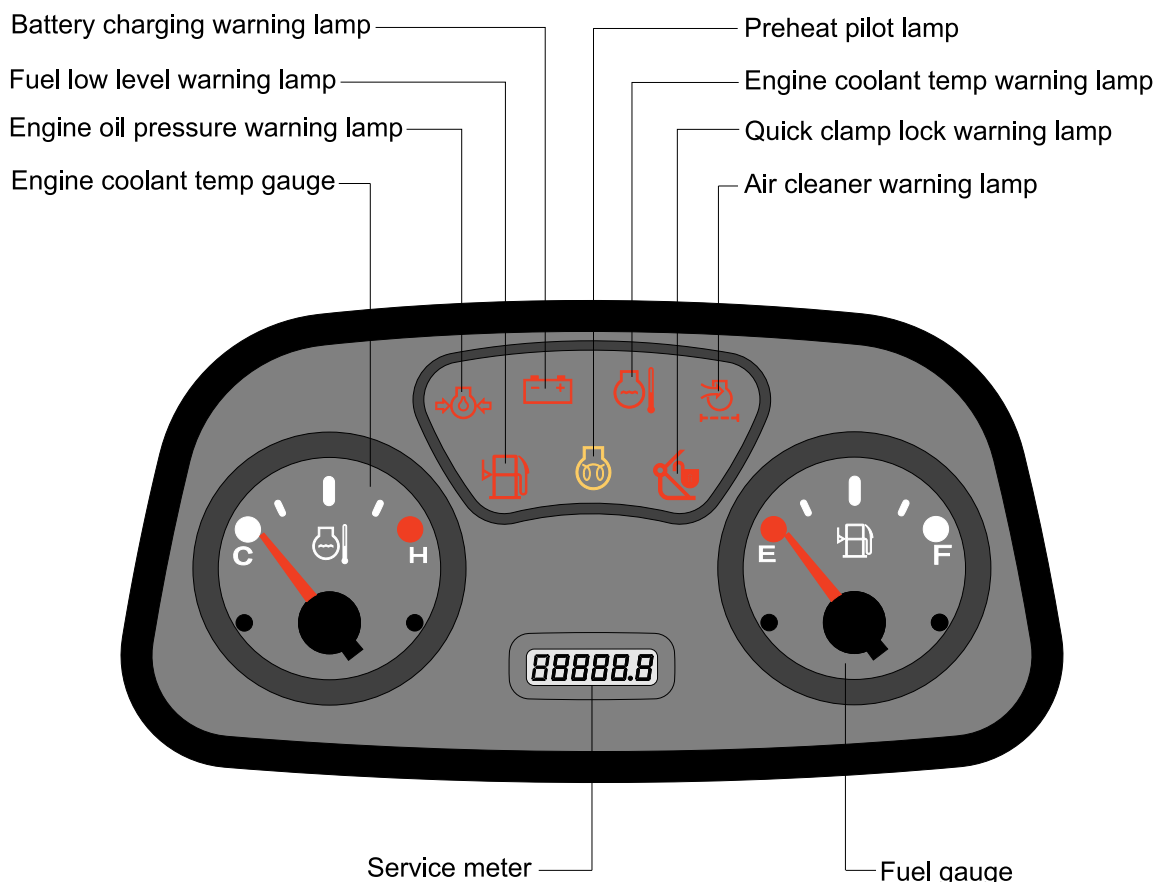
Monitoring system consists of the monitor part and switch part.

The monitor part gives warnings when any abnormality occurs in the machine and informs the condition of the machine.

Various select switches are built into the monitor panel, which act as the control portion of the machine control system.

2. CLUSTER (MACHINE SERIAL NO.: ~#1210)

1) MONITOR PANEL



R35Z73CD01

2) CLUSTER CHECK PROCEDURE

(1) Start key : ON

- ① Check monitor initial 6 seconds
 - a. All lamps light up.
- ② Check monitor after 2 seconds : Indicate machine condition
 - a. Tachometer : 0 rpm
 - b. Fuel gauge : Pointed at appropriate level
 - c. Engine coolant temperature gauge : Pointed at appropriate level
 - d. Warning lamp

※ **During start key ON the engine oil pressure lamp and battery charging lamp go on, but it is not abnormal.**

(2) Start of engine

- ① Check machine condition
 - a. Tachometer pointed at present rpm
 - b. Gauge and warning lamp : Indicate at present condition.

※ When normal condition : All warning lamp OFF
- ② When abnormal condition
 - a. The lamp lights up.
 - b. The lamp light up until normal condition.

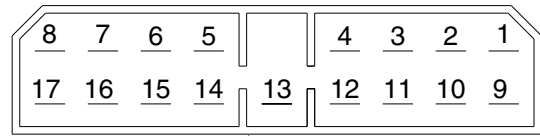
3) CLUSTER CONNECTOR

(1)CONNECTOR

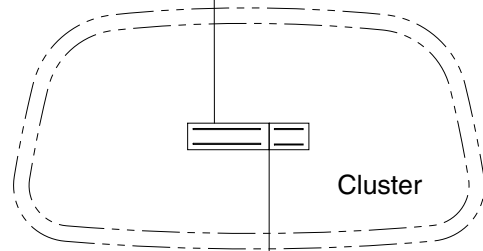
CN-56

POWER IG 12V	1	○
LAMP, ENG OIL PRESSURE	2	○
LAMP, CHARGE	3	○
LAMP, WATER TEMP	4	○
LAMP, AIR-CLEANER	5	○
LAMP, FUEL EMPTY	6	○
LAMP, AIR-HEATER	7	○
LAMP, QUICK CLAMP	8	○
LAMP, ILLUMINATION	9	○
GAUGE, WATER TEMP	10	○
GAUGE, FUEL LEVEL	11	○
RETURN, AIR-HEATER	12	○
BUZZER(+)	13	○
NC	14	○
EARTH	15	○
NC	16	○
NC	17	○
HOURMETER(B +)	1	○
HOURMETER(SIG +)	2	○
HOURMETER(-)	3	○

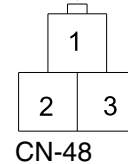
CN-48



CN-56

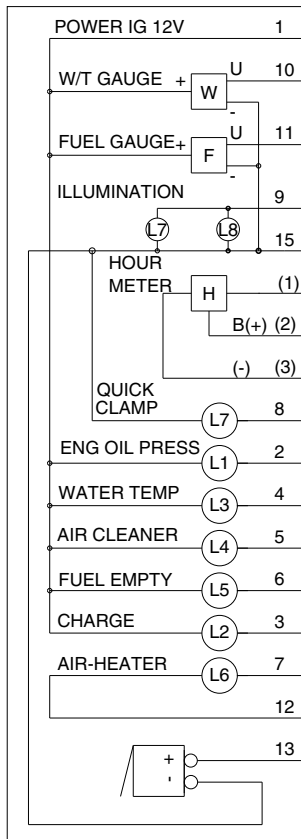


Cluster



CN-48

(2) CLUSTER DETAIL



R35Z74EL23

4) CLUSTER FUNCTION

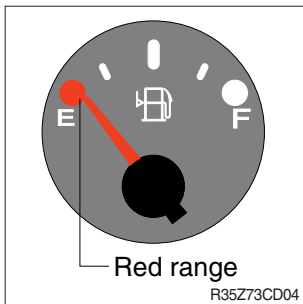
1) GAUGES AND DISPLAYS



(1) Service meter



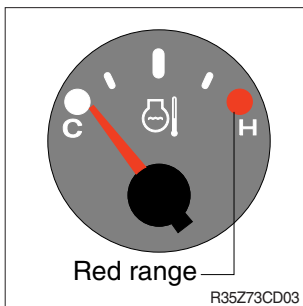
- ① This meter shows the total operation hours of the machine.
- ② Always ensure the operating condition of the meter during the machine operation.
Inspect and service the machine based on hours as indicated in chapter 6, maintenance.


(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 105°C (221°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.

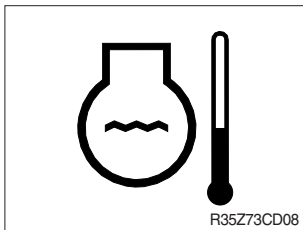
2) WARNING AND PILOT LAMPS

(1) Fuel low level warning lamp



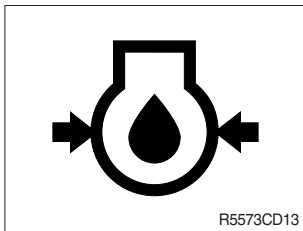
- ① This lamp blinks when the level of fuel is below 2.0 l (0.5 U.S. gal).
- ② Fill the fuel immediately when the lamp blinks.

(2) Engine coolant temperature warning lamp



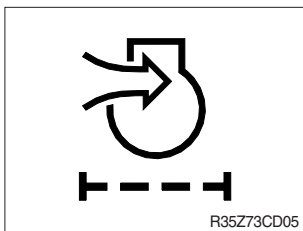
- ① This lamp blinks when the temperature of coolant is over the normal temperature 110°C (230°F) .
- ② Check the cooling system when the lamp blinks.

(3) Engine oil pressure warning lamp



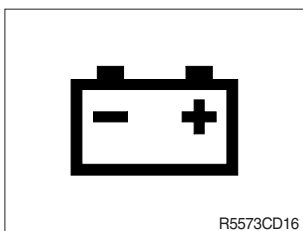
- ① This lamp blinks after starting the engine because of the low oil pressure.
- ② If the lamp blinks during engine operation, shut OFF engine immediately. Check oil level.

(4) Air cleaner warning lamp



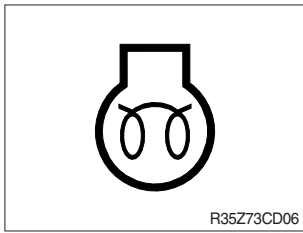
- ① This lamp blinks when the filter of air cleaner is clogged.
- ② Check the filter and clean or replace it.

(5) Battery charging warning lamp



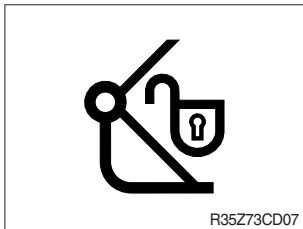
- ① This lamp blinks when the starting switch is ON, it is turned OFF after starting the engine.
- ② Check the battery charging circuit when this lamp blinks during engine operation.

(6) Preheat pilot lamp



- ① When the start switch turn to HEAT position, pilot lamp comes ON.
- ② Refer to "4-2) STARTING ENGINE" of operator's manual for details.

(7) Quick clamp warning lamp



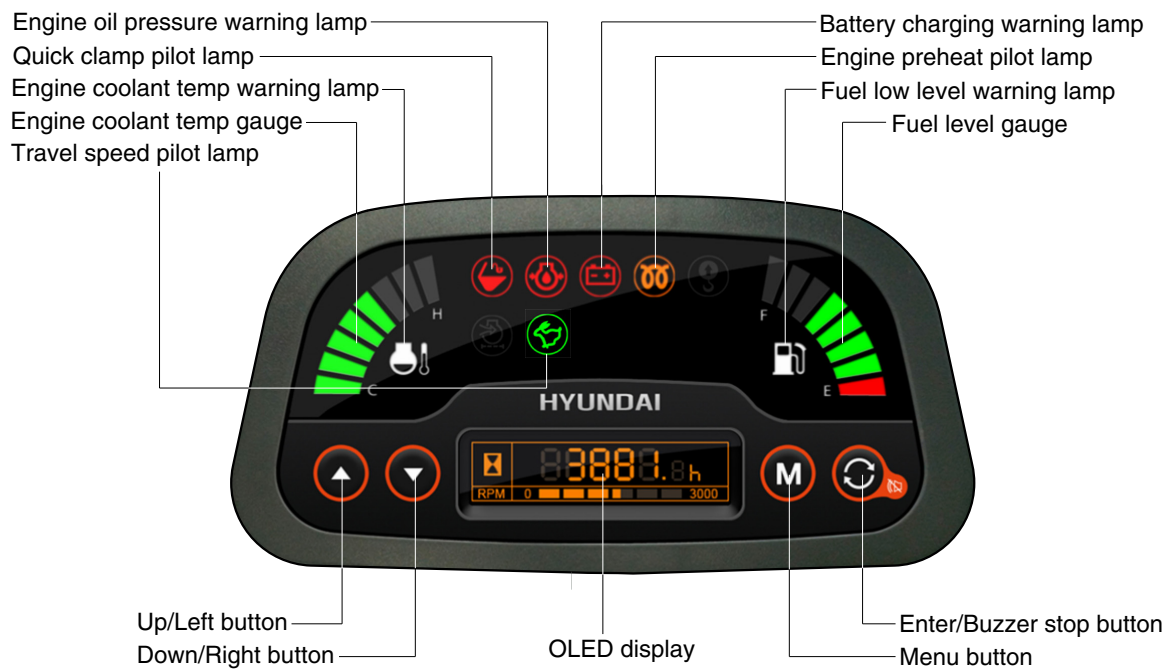
- ① When the quick clamp switch turned ON, this lamp turn ON and the buzzer sounds.
- ② This lamp turned OFF and the buzzer stop when the quick clamp switch turned OFF.

CLUSTER (MACHINE SERIAL NO.: #1211~)

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.

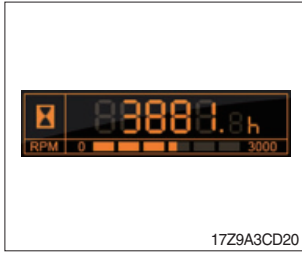
- ※ The cluster installed on this machine does not entirely guarantee the condition of the machine. Daily inspection should be performed according to chapter 6, Maintenance.
- ※ When the cluster provides a warning, immediately check the problem and perform the required action.



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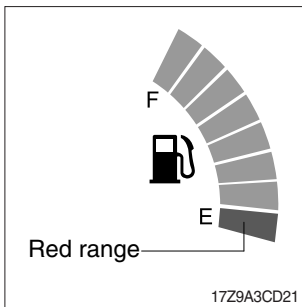
1) GAUGES AND DISPLAYS



(1) Service meter



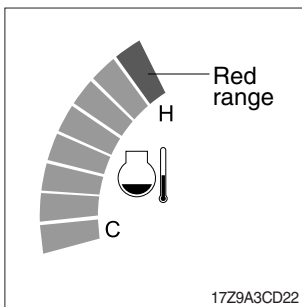
- ① This meter shows the total operation hours of the machine.
- ② Always ensure the operating condition of the meter during the machine operation.
Inspect and service the machine based on hours as indicated in chapter 6, maintenance.


(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.**

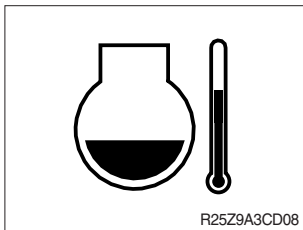
2) WARNING AND PILOT LAMPS

(1) Fuel low level warning lamp



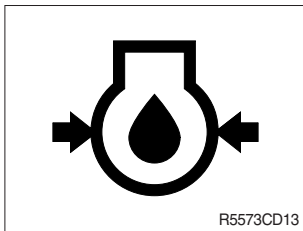
- ① This lamp blinks and buzzer sounds when the level of fuel is low.
- ② Fill the fuel immediately when the lamp blinks.

(2) Engine coolant temperature warning lamp



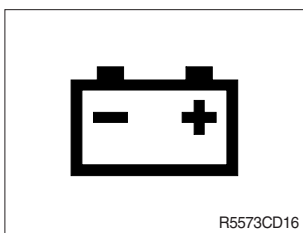
- ① This lamp blinks and buzzer sounds when the temperature of coolant is over the normal temperature 115°C (239°F) .
- ② Check the cooling system when the lamp blinks.

(3) Engine oil pressure warning lamp



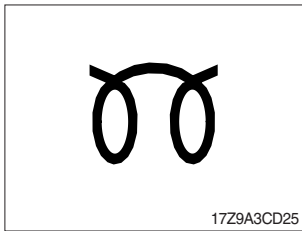
- ① This lamp blinks and buzzer sounds after starting the engine because of the low oil pressure.
- ② If the lamp blinks during engine operation, shut OFF engine immediately. Check oil level.

(4) Battery charging warning lamp



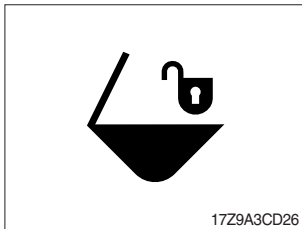
- ① This lamp blinks and buzzer sounds when the starting switch is ON, it is turned OFF after starting the engine.
- ② Check the battery charging circuit when this lamp blinks during engine operation.

(5) Engine preheat pilot lamp



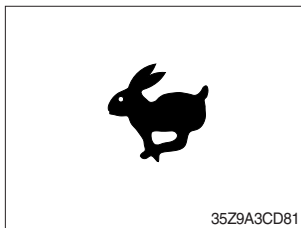
- ① When the start switch turn to HEAT position, pilot lamp comes ON.
- ② Refer to "4-2) STARTING ENGINE" of operator's manual for details.

(6) Quick clamp lock pilot lamp



- 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.

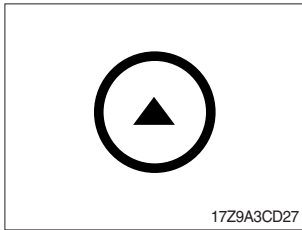
(7) Travel speed pilot lamp



- ① When this lamp turned ON, the machine travel high speed.
- ② Refer to the travel speed control switch in page 3-9 of operator's manual for details.

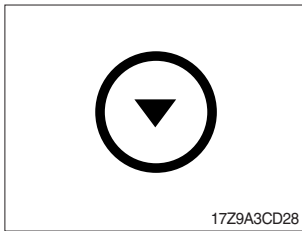
3) BUTTONS

(1) Up/left button



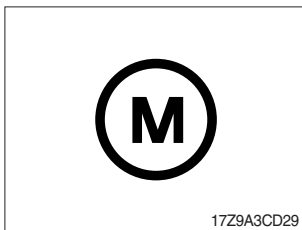
- ① Move in menu (up, left)
- ② Increase input value.

(2) Down/right button



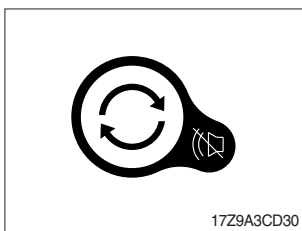
- ① Move in menu (down, right)
- ② Decrease input value.

(3) Menu button



- ① Current display to next display.

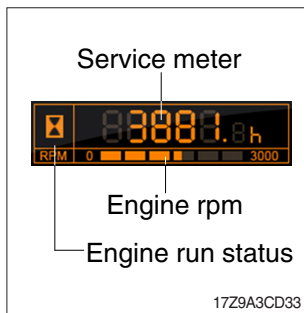
(4) Enter and buzzer stop button



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

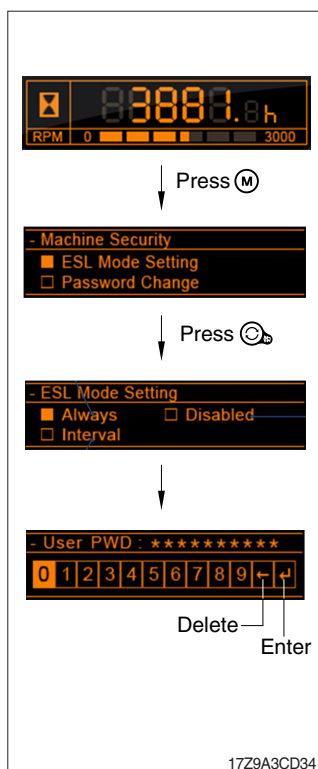
4) OLED display

(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.

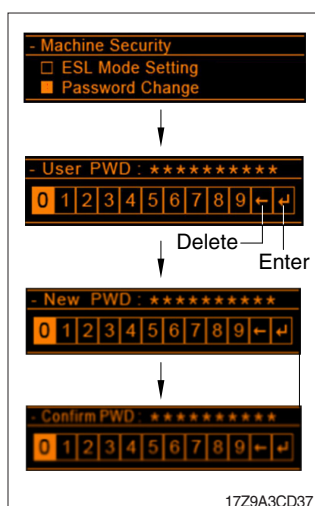
· Interval time

- 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.

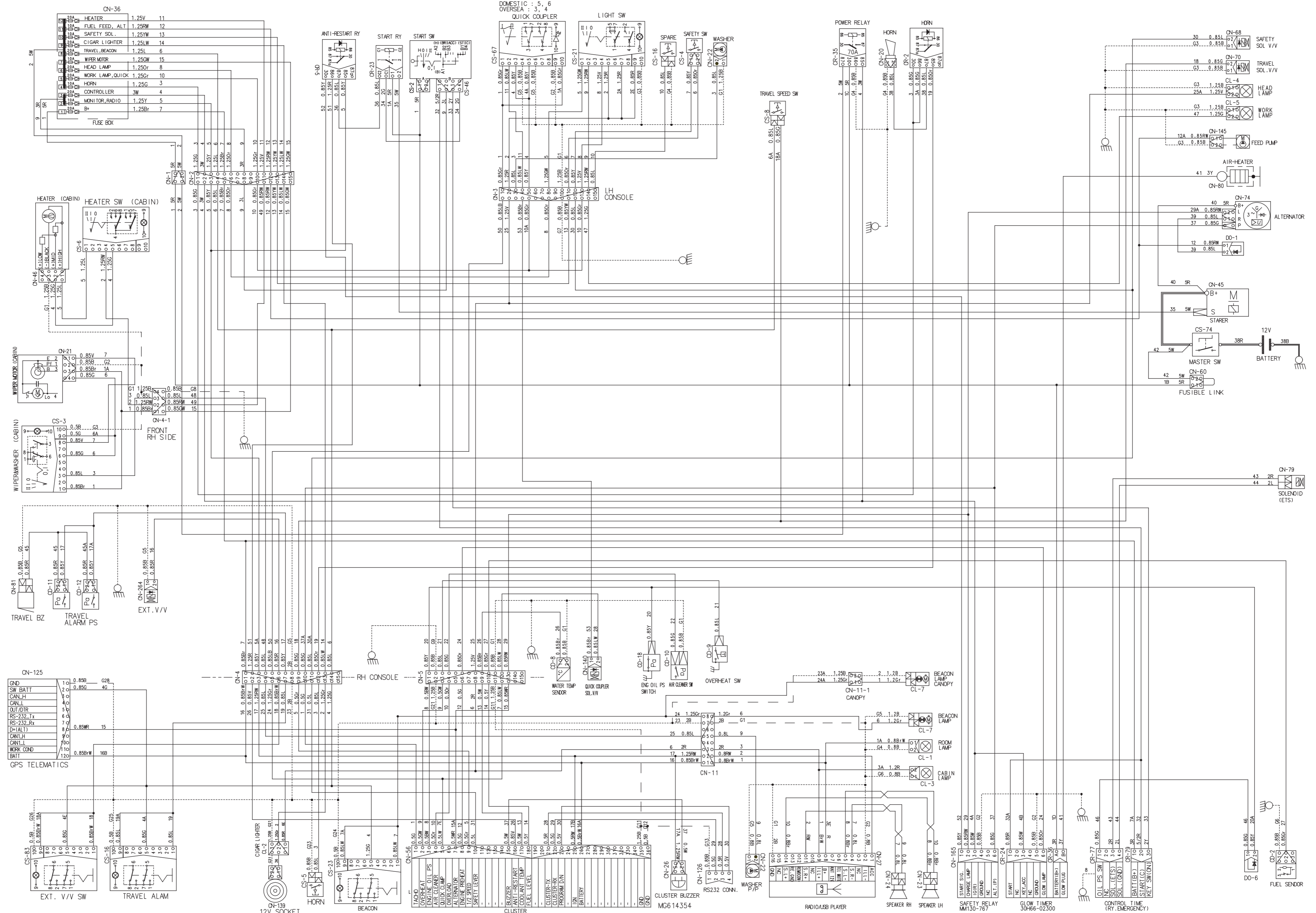
※ **Default password : 00000**

② Password change

- Input 5 to 10 digits and press Enter.



GROUP 3 ELECTRICAL CIRCUIT



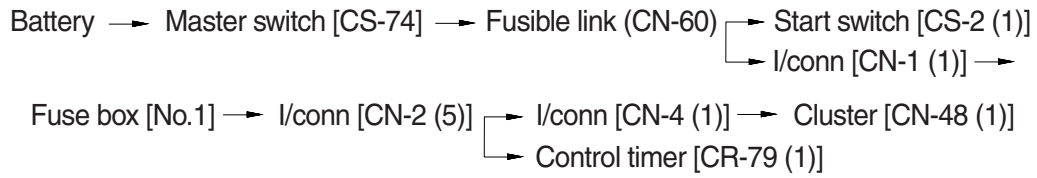
MEMORANDUM

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



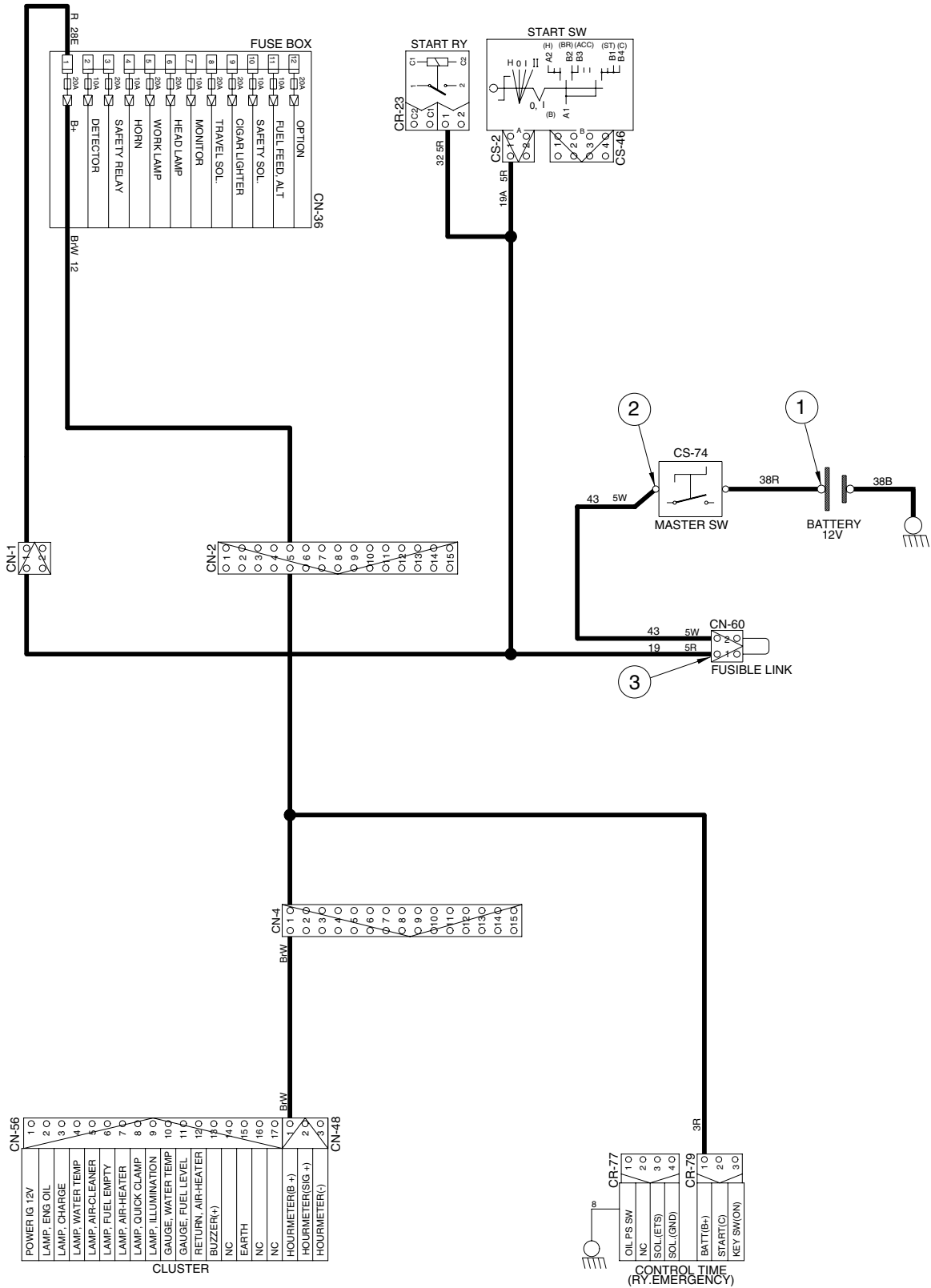
※ I/conn : Intermediate connector

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

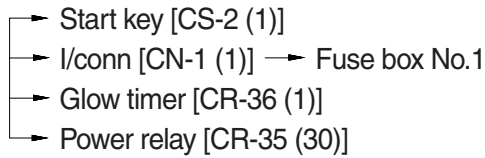


1694EL04

2. STARTING CIRCUIT

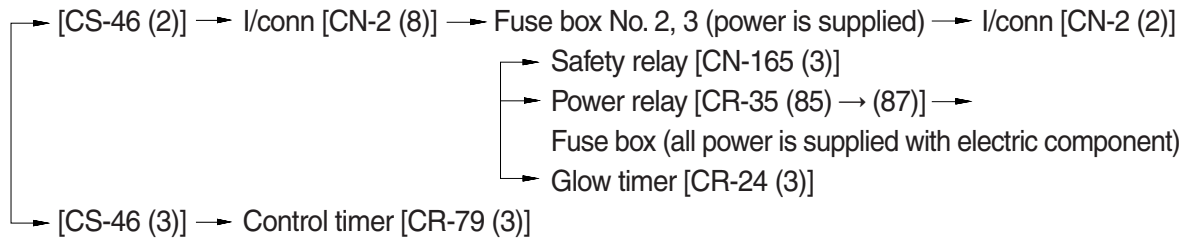
1) OPERATING FLOW

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



※ Start switch : ON

Start switch ON



※ Start switch : START

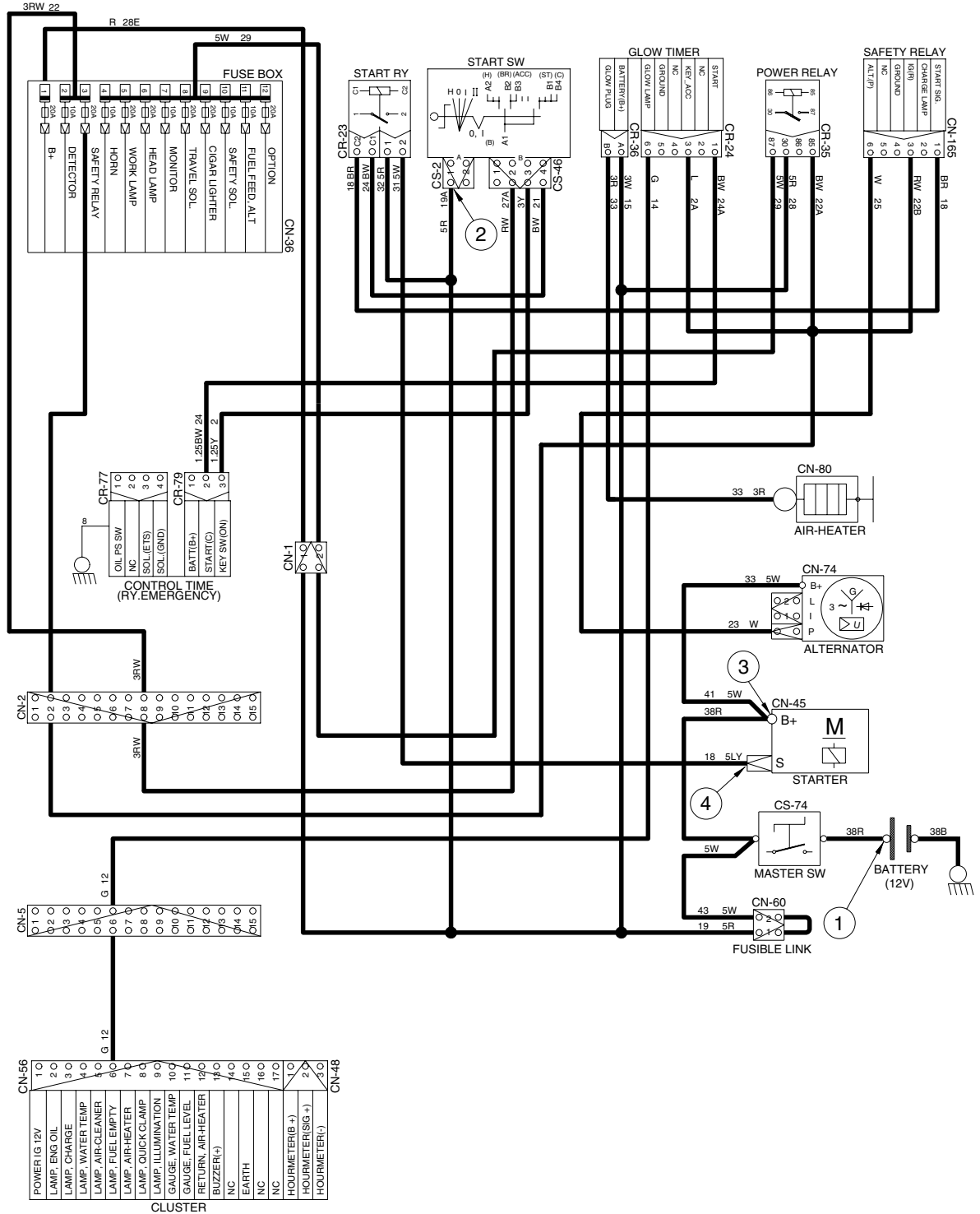
Start switch START [CS-46 (4)] → Start relay [CR-23 (C1) → (2)] → Starter [CN-45 (S)] → Start motor operating

2) CHECK POINT

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

※ GND : Ground

STARTING CIRCUIT



1694EL05

3. CHARGING CIRCUIT

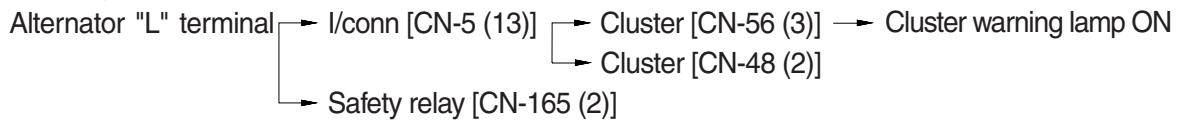
When the starter is activated and the engine is started, the operator releases the key switch to the ON position.

Charging current generated by operating alternator flows into the battery.

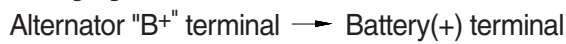
The current also flows from alternator to each electrical component and controller through the fuse box.

1) OPERATING FLOW

(1) Warning flow



(2) Charging flow

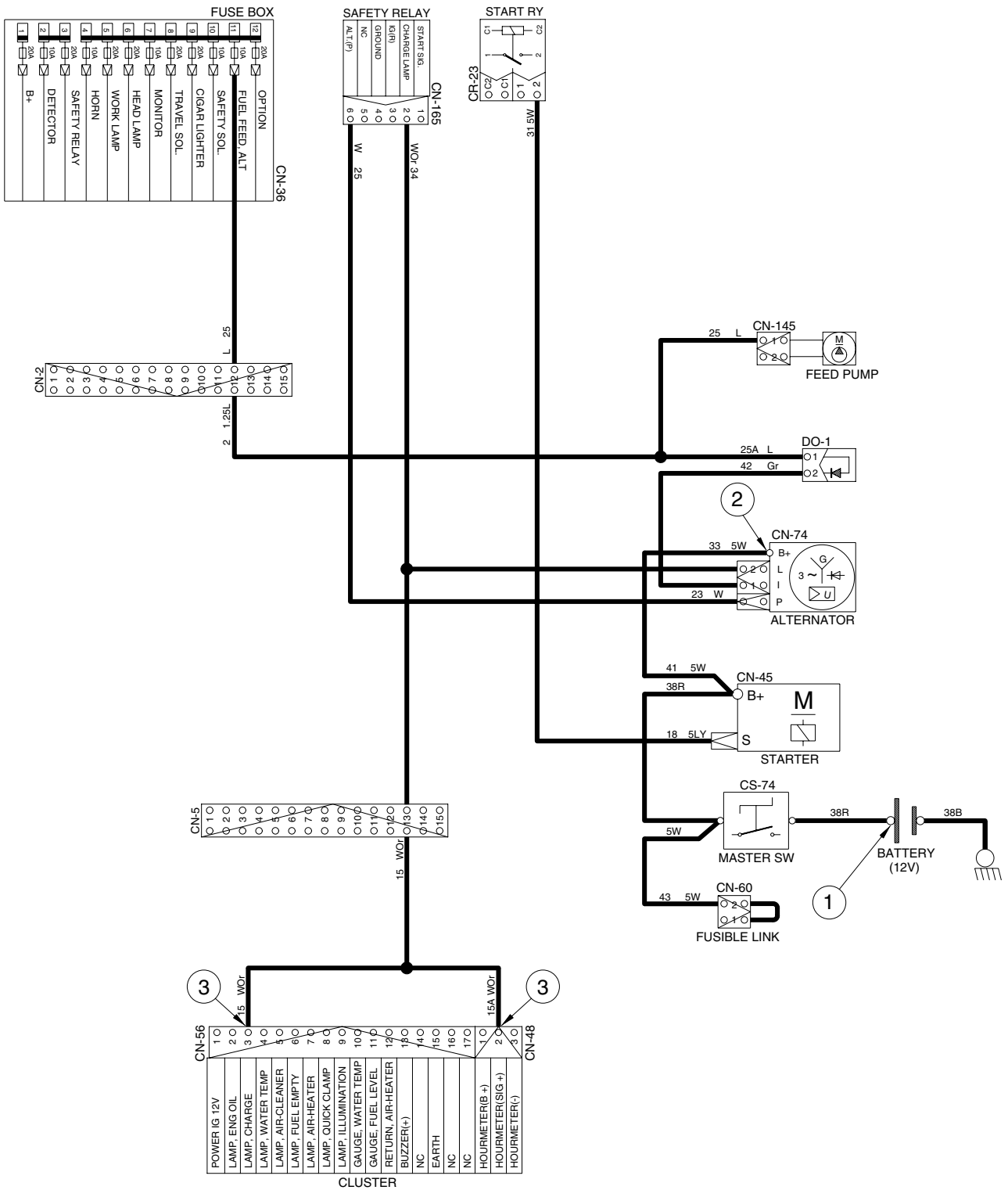


2) CHECK POINT

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

※ GND : Ground

CHARGING CIRCUIT



1694EL06

4. HEAD AND WORK LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.6) → I/conn [CN-2 (6)] → I/conn [CN-3 (8)] → Light switch [CS-21 (1)]

Fuse box (No.5) → I/conn [CN-2 (10)] → I/conn [CN-3 (13)] → 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-5 (8)]
 - Cluster illumination ON [CN-56 (9)]
 - Cigar light illumination ON [CL-2]
- Head light ON [CL-4(1)]

(2) Main light switch ON : 2nd step

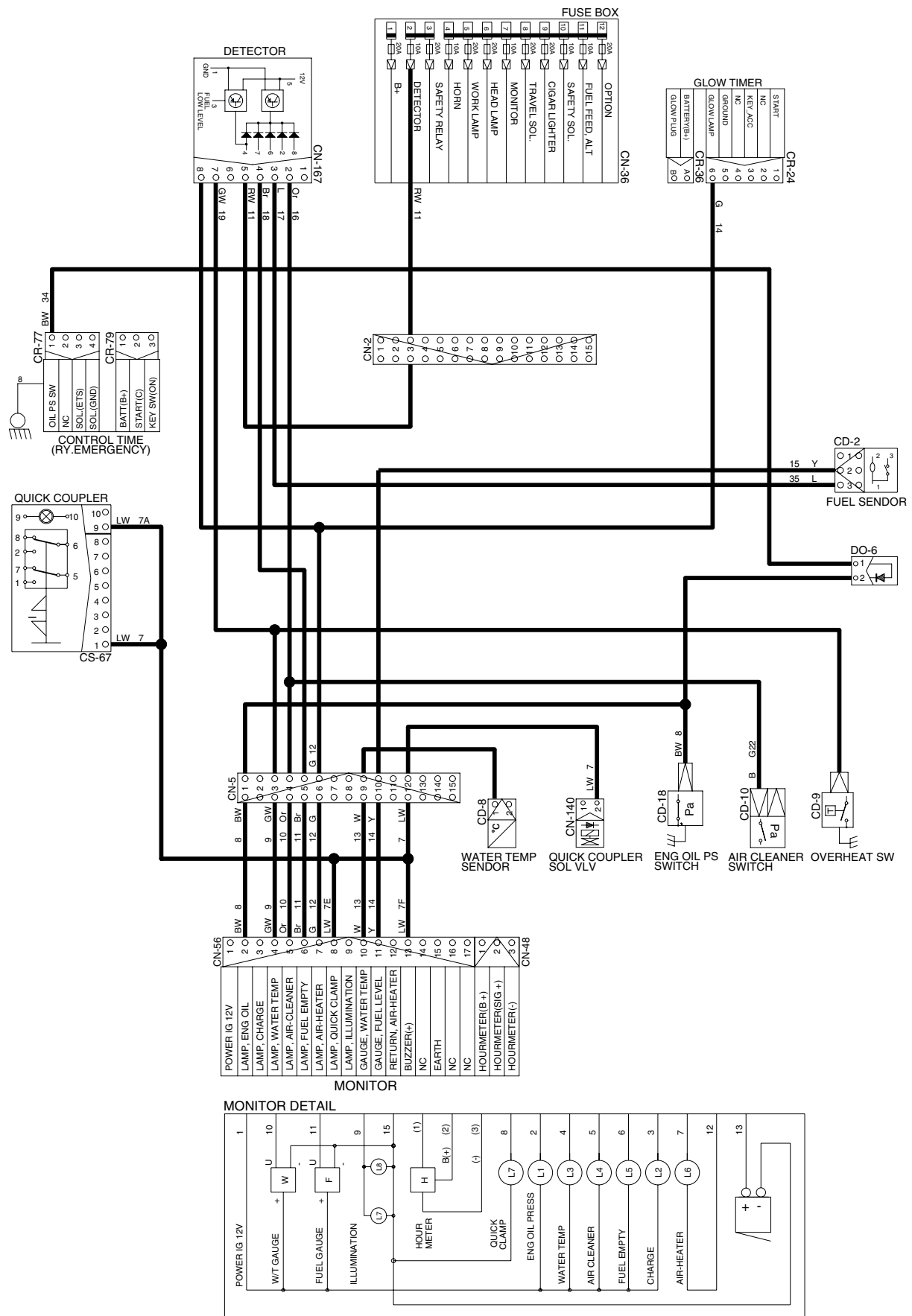
Work light switch ON [CS-21 (2)] → I/conn [CN-3 (14)] → Work light ON [CL-5 (2)]

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

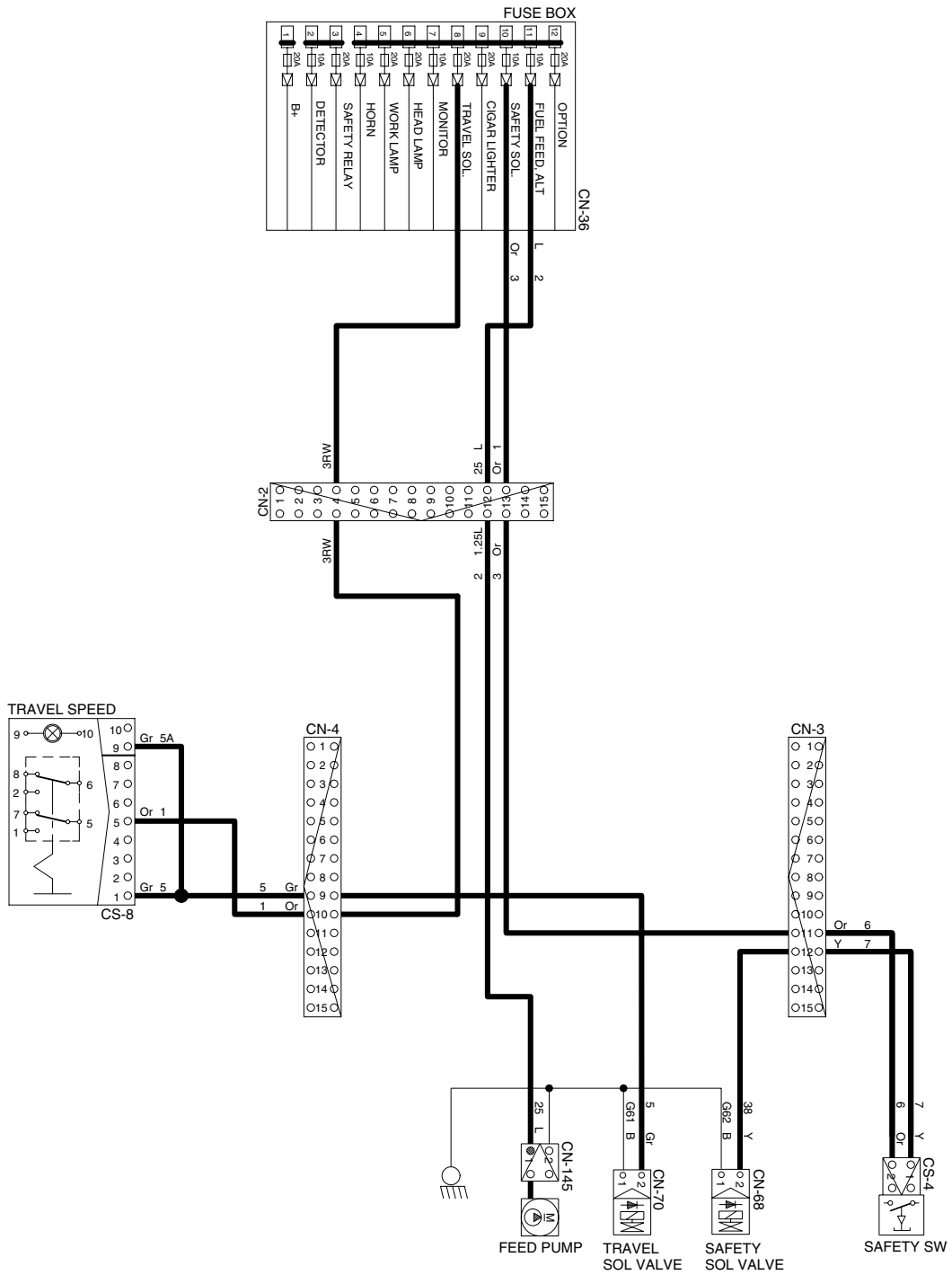
※ GND : Ground

MONITORING CIRCUIT



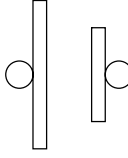
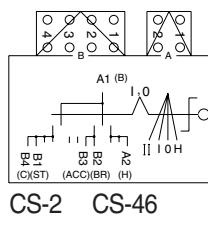
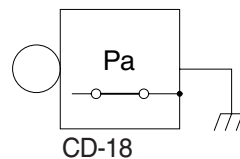
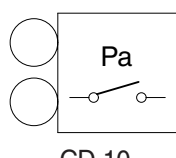
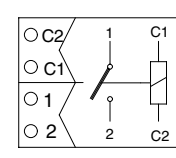
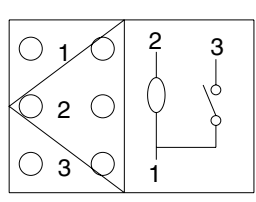
1694EL08

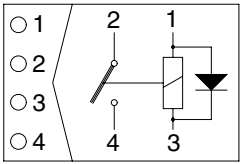
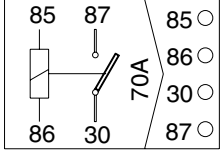
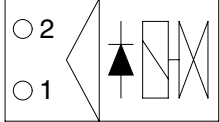
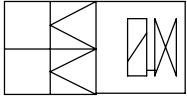
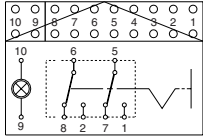
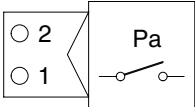
ELECTRIC CIRCUIT FOR HYDRAULIC

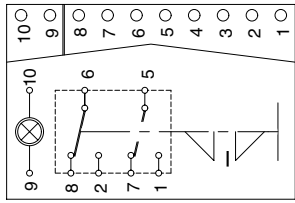
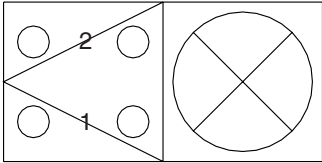
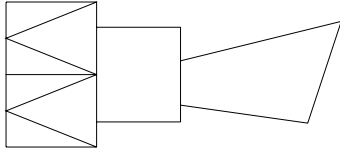
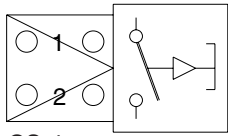
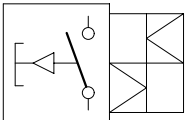
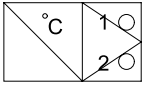


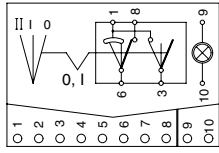
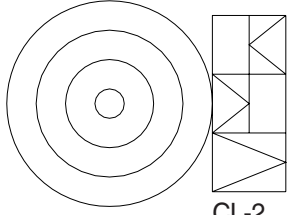
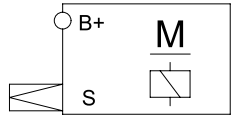
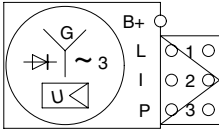
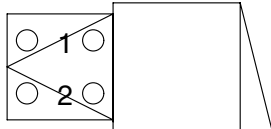
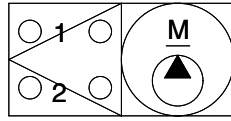
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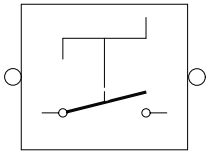
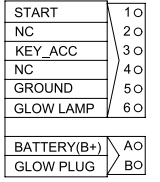
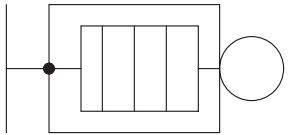
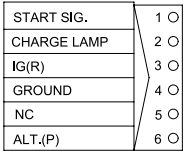
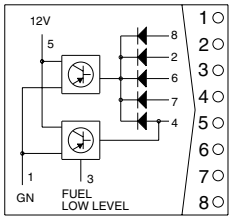
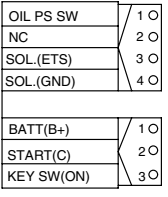
GROUP 4 ELECTRICAL COMPONENT SPECIFICATION

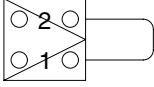
Part name	Symbol	Specification	Check
Battery		12V × 58Ah (5h rating)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Start key		12V	※ Check contact OFF : ∞ Ω (for each terminal) ON : 0 Ω (for terminal 1-3 and 1-2) START : 0 Ω (for terminal 1-5)
Pressure switch (for engine oil)		0.5 kgf/cm ² (N.C TYPE)	※ Check resistance Normal : 0 Ω (CLOSE)
Air cleaner pressure switch		Pressure: 635 mmH ₂ O (N.O TYPE)	※ Check contact Normal : ∞ Ω
Relay		12V 60A	※ Rated coil current 1.2±0.3A
Fuel sender		-	※ Check resistance Full : 30 Ω Low : 100 Ω Empty warning : 200 Ω

Part name	Symbol	Specification	Check
Relay	 <p>CR-2</p>	12V 20A	※ Check resistance Normal : About 200 Ω (for terminal 1-3) : 0 Ω (for terminal 2-4)
Relay	 <p>CR-35</p>	12V 70A	※ Rated coil current 1.2±0.3 A
Solenoid valve	 <p>CN-70 CN-68 CN-140 CN-258</p>	12V 1A	※ Check resistance Normal : 15~25 Ω (for terminal 1-2)
Solenoid valve (engine stop)	 <p>CN-79</p>	12V	※ Coil resistance : 1.8 Ω
Switch (locking type)	 <p>CS-8 CS-16 CS-23 CS-83</p>	12V 16A	※ Check contact Normal OFF - ∞ Ω (for terminal 1-5,2-6) - 0 Ω (for terminal 5-7,6-8)
Pressure switch	 <p>CD-11 CD-12</p>	10bar (N.C type)	※ Check contact Normal : 0.1 Ω

Part name	Symbol	Specification	Check
Quick clamp switch	 <p>CS-67</p>	12V 16A	※ Check contact Normal OFF - $\infty \Omega$ (For terminal 1-5,2-6) - 0Ω (For terminal 5-7,6-8)
Lamp	 <p>CL-4 CL-5</p>	12V 55W (H3 TYPE)	※ Check disconnection Normal : 1.2Ω
Horn	 <p>CN-20</p>	12V 6A	132 ± 5 dB
Safety switch	 <p>CS-4</p>	Micro 12V 15A	※ Check contact Normal : 0Ω Operating : $\infty \Omega$
Horn switch	 <p>CS-5 CS-16</p>	12V 10A	※ Check contact Normal : 0Ω
Water temp sender	 <p>CD-8</p>	-	※ Check contact 50°C : $0.748\sim 0.904 \Omega$ 67°C : $0.538\sim 0.650 \Omega$ 102°C : $0.185\sim 0.167 \Omega$ 110°C : $0.143\sim 0.130 \Omega$ 135°C : $0.076\sim 0.100 \Omega$

Part name	Symbol	Specification	Check
Light switch	 <p>CS-21</p>	12V 16A	※ Check contact Normal : $\infty \Omega$
Cigar lighter	 <p>CL-2</p>	12V 10A 1.4W	※ Check coil resistance Normal : About 1M Ω ※ Check contact Normal : $\infty \Omega$ Operating time : 5~15sec
Starter	 <p>CN-45</p>	12V	※ Check contact Normal : 0.1 Ω
Alternator	 <p>CN-74</p>	12V 40A	※ Check contact Normal : 0 Ω (For terminal B ⁺ -1) Normal : 10 ~ 12.5V
Travel alarm	 <p>CN-81</p>	12V	-
Fuel feed pump	 <p>CN-145</p>	12V	-

Part name	Symbol	Specification	Check
Master switch	 <p>CS-74</p>	12V 1000A	-
Glow timer	 <p>CR-24, CR-36</p>	12V	-
Air-heater	 <p>CN-80</p>	12V 42A 500W	-
Safety relay	 <p>CN-165</p>	12V 1400rpm/ Alternator	※ Contact capacity : Rush : 100A Steady-State : 50A (30sec)
Detector	 <p>CN-167</p>	12V	-
Control time relay	 <p>CR-77 CR-79</p>	12V	-

Part name	Symbol	Specification	Check
Fusible link	 <p data-bbox="517 421 596 450">CN-60</p>	27A	<p data-bbox="1007 353 1257 383">※ Check coil resistance</p> <p data-bbox="1007 389 1257 418">Normal : 3.26m Ω /m</p>

GROUP 5 CONNECTORS

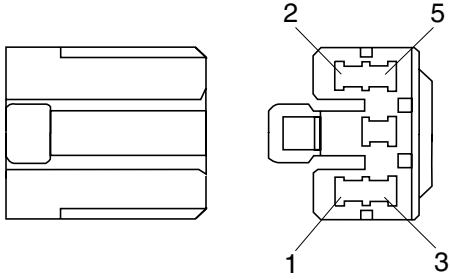
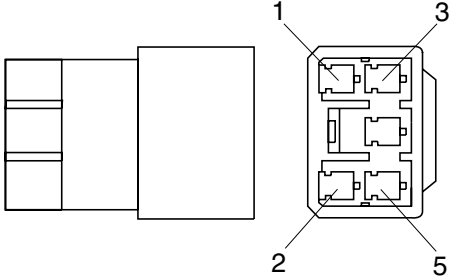
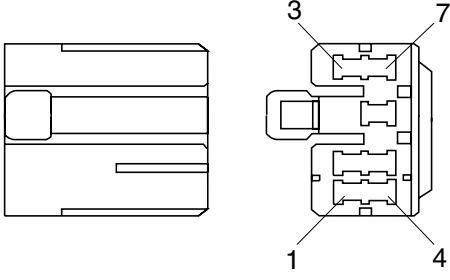
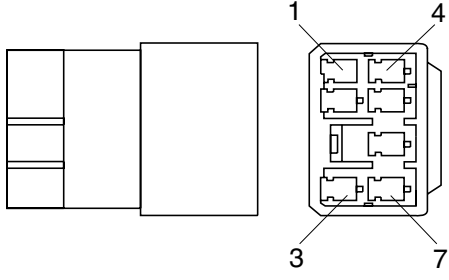
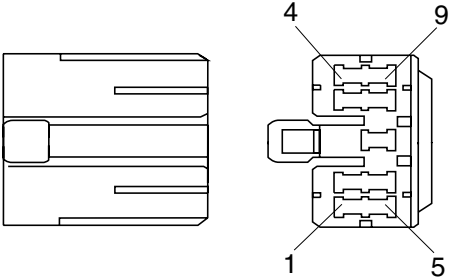
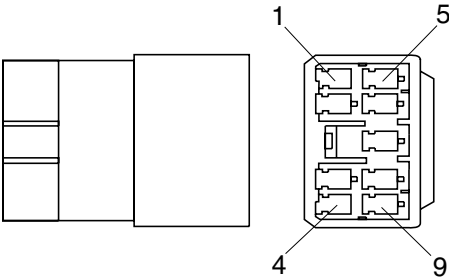
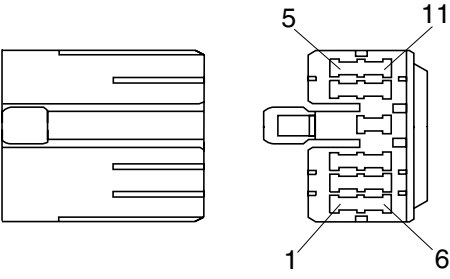
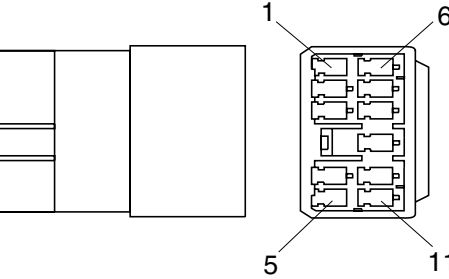
1. CONNECTOR DESTINATION

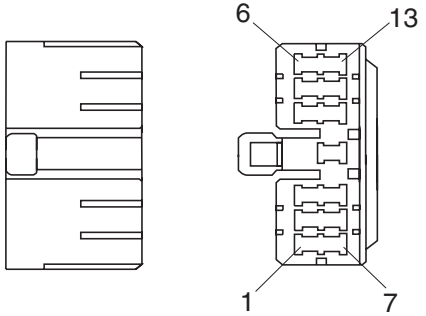
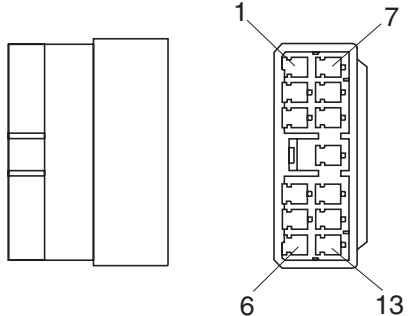
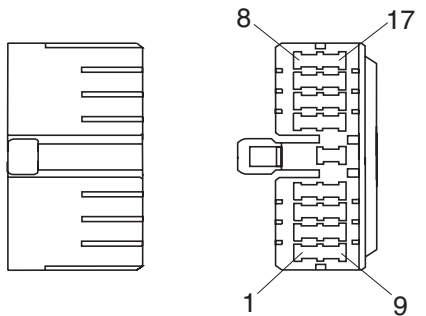
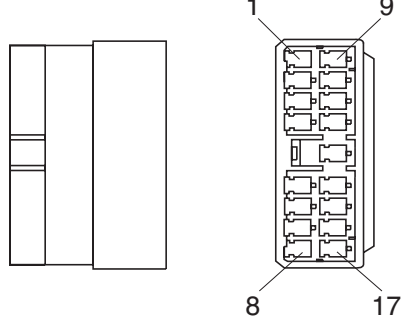
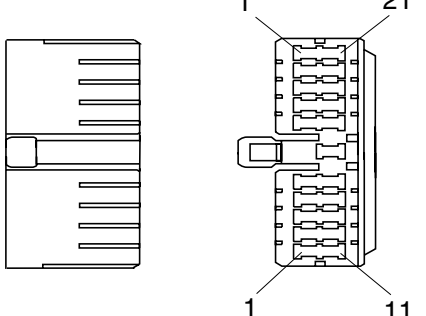
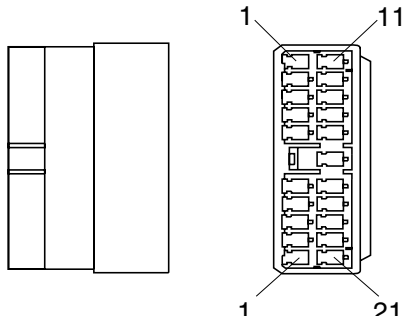
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	2	I/conn (RH console harness-main harness)	S813-030200	S813-130200
CN-2	AMP	15	I/conn (Main harness-RH console harness)	2-85262-1	368301-1
CN-3	AMP	15	I/conn (Main harness-LH console harness)	2-85262-1	368301-1
CN-4	AMP	4	I/conn (FR RH side harness-main harness)	S810-004202	S810-104202
CN-5	AMP	2	I/conn (Relay harness-main harness)	S813-030201	S813-130201
CN-20	DEUTSCH	2	Horn	DT06-2S-P012	-
CN-36	-	-	Fuse box body	F12890010	-
CN-45	RING TERM	1	Starter	ST710258-2	-
	KET	1	Starter	MG630063	-
CN-48	AMP	3	Hour meter	S810-003202	
CN-56	AMP	17	Cluster	172500-1	-
CN-60	AMP	2	Fusible link	-	S831-130200
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-P012	-
CN-70	DEUTSCH	2	Travel HI-LO solenoid	DT06-2S-P012	-
CN-74	AMP	2	Alternator	174298-1	-
	-	1		7123-2115	-
	RING TERM	1		S820-305002	-
CN-79	-	1	Fuel cut-off solenoid	S822-014000	-
CN-80	RING TERM	1	Pre heater	GP110021	-
CN-81	SWP	1	Travel buzzer	S822-014000	S822-114000
CN-140	DEUTSCH	2	Quick clamp	DT06-2S-EP06	DT04-2P-E005
CN-145	AMP	2	Fuel feed pump	174298-1	-
CN-165	KET	6	Safety relay	MG610049	-
CN-167	KET	8	Detector	S810-008202	-
CN-258	-	1	Extension valve	DT06-2S-P012	-
LAMP					
CL-2	AMP	3	Cigar light	S810-003202	-
CL-4	DEUTSCH	2	Head lamp	DT06-2S-P012	DT04-2P-E004
CL-5	DEUTSCH	2	Work lamp	DT06-2S-P012	DT04-2P-E004
RELAY					
CR-2	AMP	4	Horn relay	S810-004202	-
CR-23	KET	2	Start relay	MG610043	-
	YAZAKI			S810-001302	
CR-24	SUMITOMO	6	Safety relay	6195-0021	-
CR-35	KET	4	Power relay	MG612017-5	-

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CR-36	SUMITOMO	2	Safety relay	6195-0060	-
CR-77	KET	4	Control timer	MG620046	-
CR-79	KET	3	Control timer	MG620044	-
SENSOR					
CD-2	AMP	3	Fuel sender	S816-003002	S816-102002
CD-8	AMP	2	Water temp sender	85202-1	-
CD-9	-	1	Water temp switch	7123-2115	-
CD-10	-	1	Air cleaner	S823-025212	-
CD-11	KET	2	Travel pressure switch	MG640795	-
CD-12	KET	2	Travel pressure switch	MG640795	-
CD-18	-	1	Engine oil pressure	7123-2115	-
DO-1	-	2	Diode	S816-002002	21EA-50570
DO-6	-	2	Diode	S816-002002	21EA-50550
SWITCH					
CS-2	-	2	Start key switch	S813-030201	-
CS-4	AMP	3	Safety switch	-	S814-102001
CS-5	-	1	Horn switch	S822-014002	-
	-	1		-	S822-114002
CS-8	-	10	Travel speed switch	250-10PRG	-
CS-16	-	10	Travel alarm switch	250-10PRG	-
CS-21	-	10	Light switch	250-10PRG	-
CS-23	SWF	10	Spare	593757	-
CS-46	KET	4	Start switch	MG651926	-
CS-67	SWF	10	Quick clamp switch	593757	-
CS-74	RING TERM	1	Battery (+)	ST710287-2	-
CS-83	-	10	Extension valve switch	250-10PRG	-

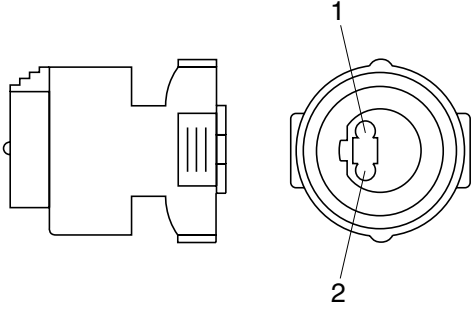
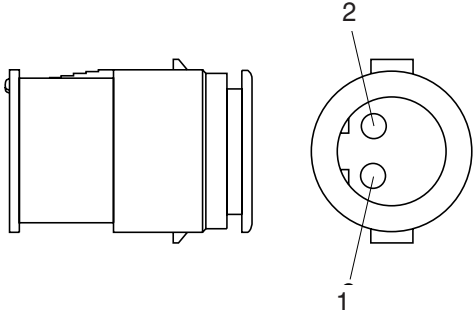
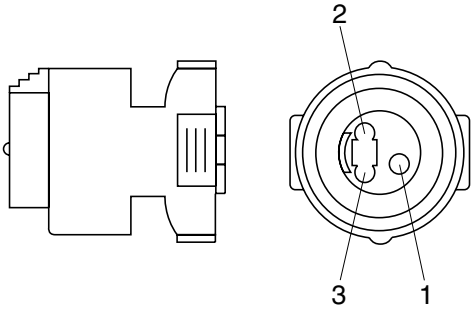
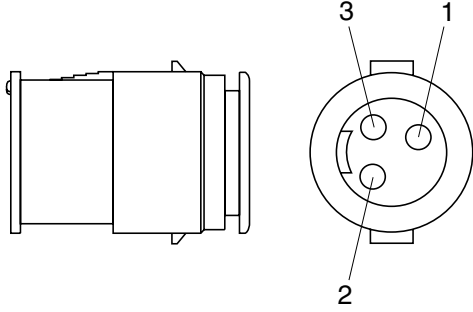
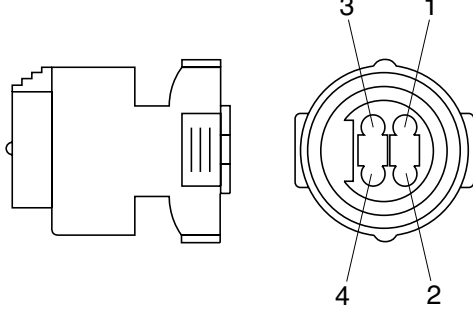
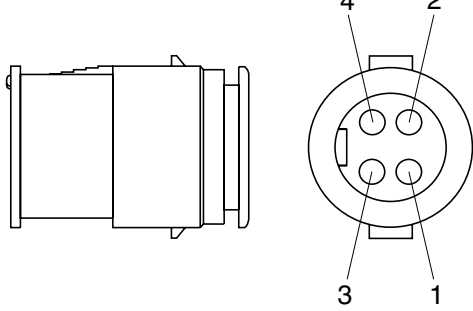
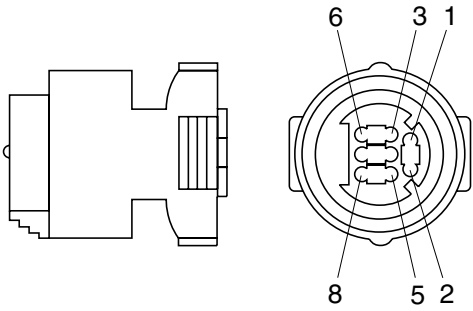
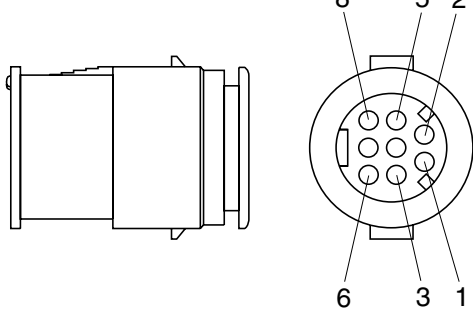
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

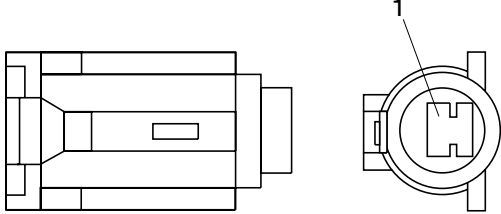
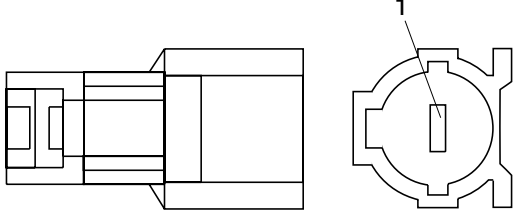
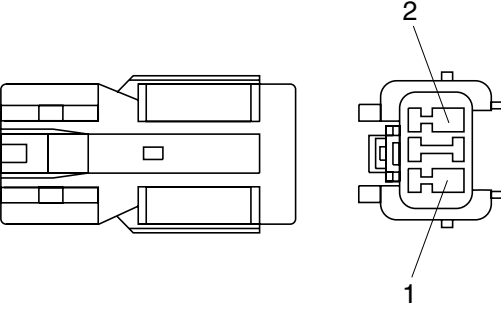
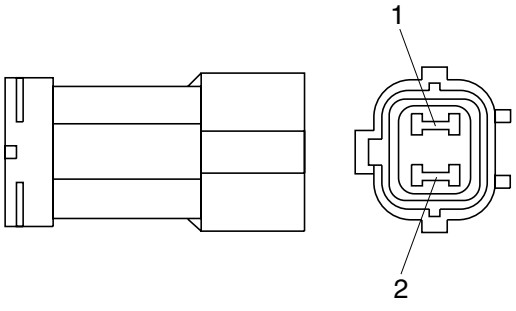
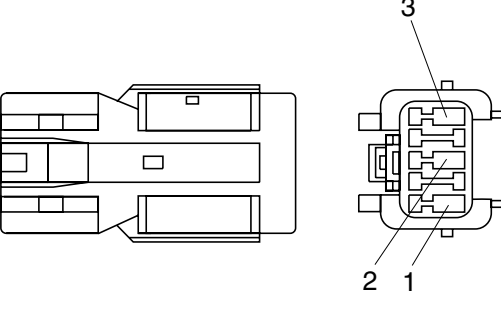
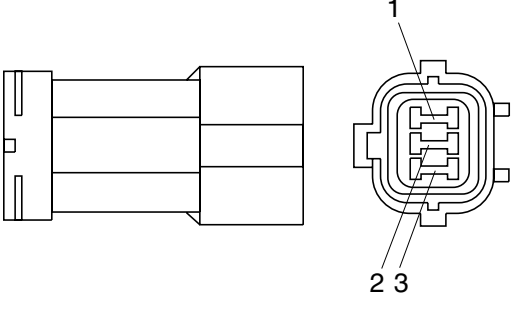
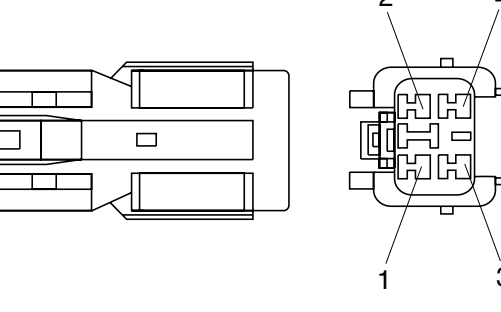
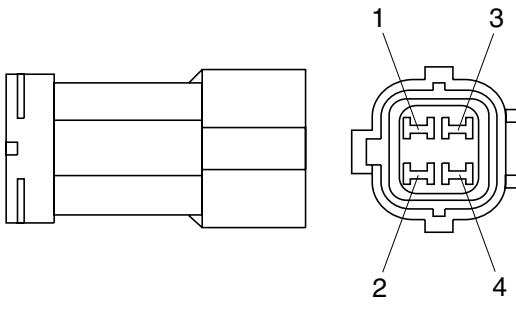
No. of pin	Receptacle connector (female)	Plug connector (male)
5	 <p style="text-align: center;">S811-005002</p>	 <p style="text-align: center;">S811-105002</p>
7	 <p style="text-align: center;">S811-007002</p>	 <p style="text-align: center;">S811-107002</p>
9	 <p style="text-align: center;">S811-009002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

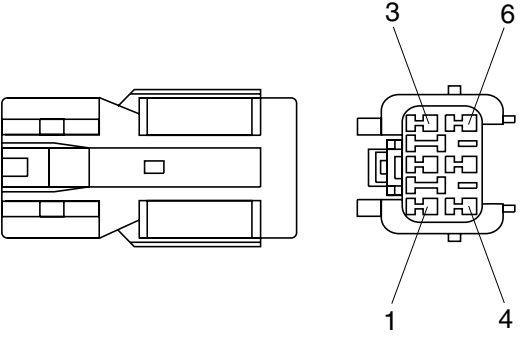
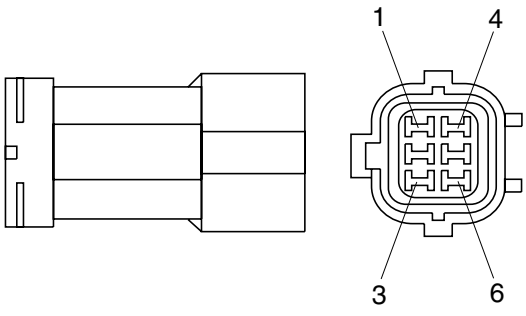
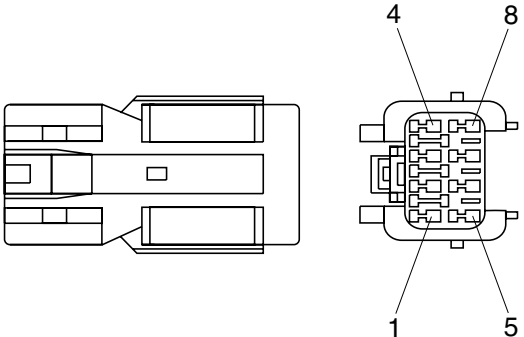
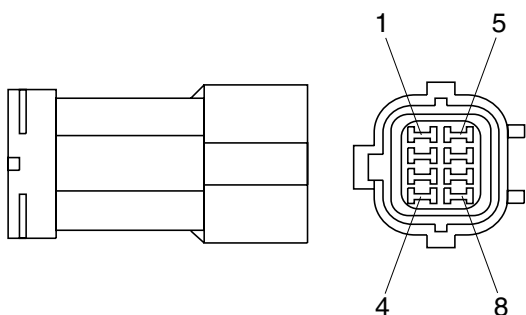
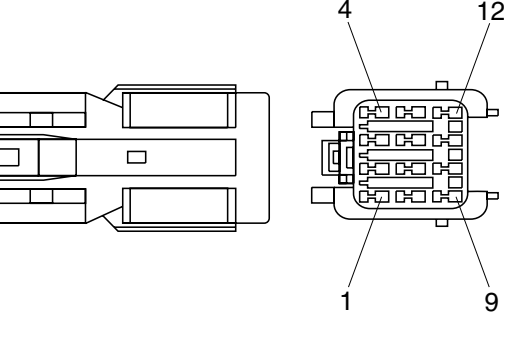
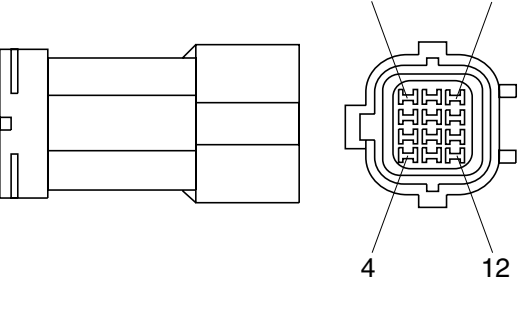
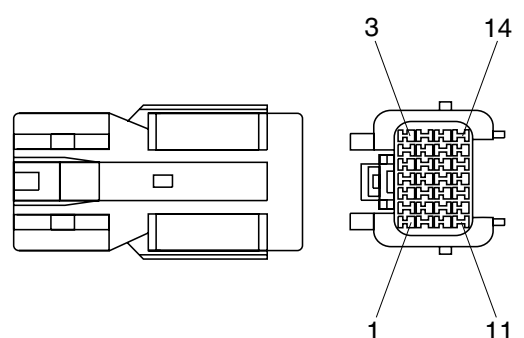
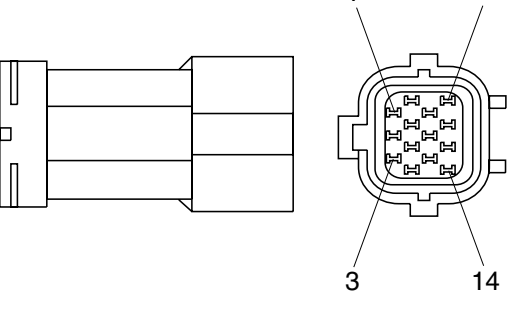
No. of pin	Receptacle connector (female)	Plug connector (male)
13	 <p style="text-align: center;">S811-013002</p>	 <p style="text-align: center;">S811-113002</p>
17	 <p style="text-align: center;">S811-017002</p>	 <p style="text-align: center;">S811-117002</p>
21	 <p style="text-align: center;">S811-021002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

2) J TYPE CONNECTOR

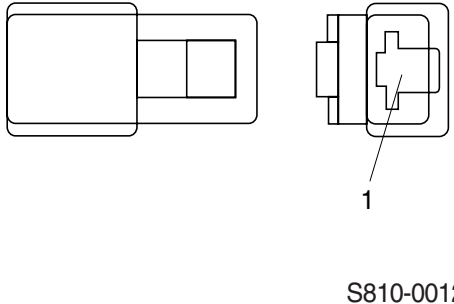
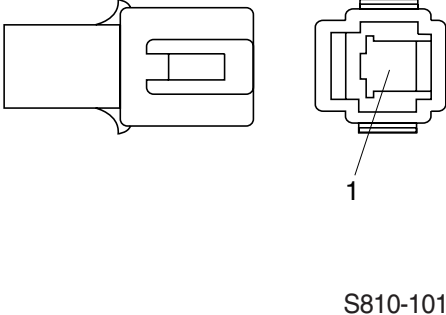
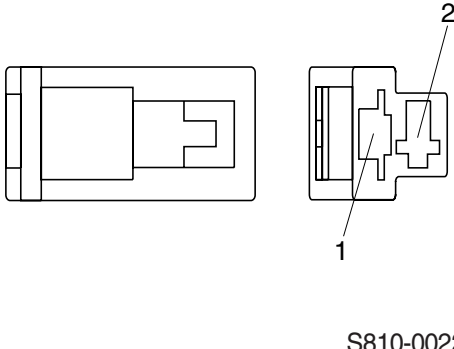
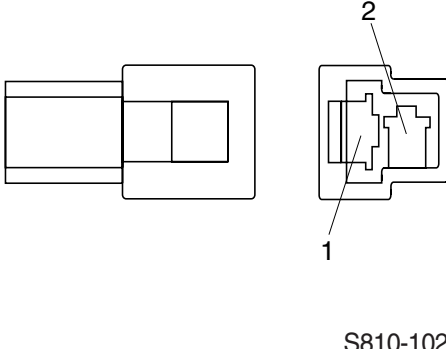
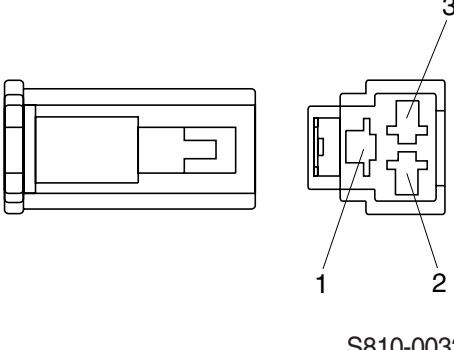
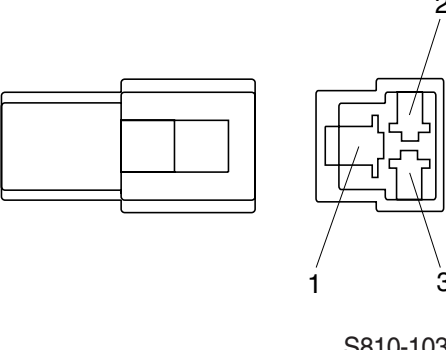
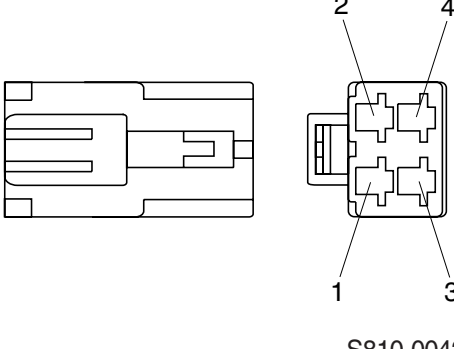
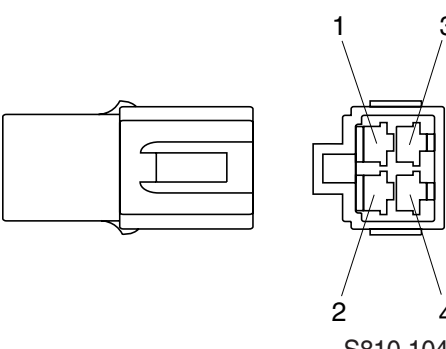
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: center;">S816-002001</p>	 <p style="text-align: center;">S816-102001</p>
3	 <p style="text-align: center;">S816-003001</p>	 <p style="text-align: center;">S816-103001</p>
4	 <p style="text-align: center;">S816-004001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

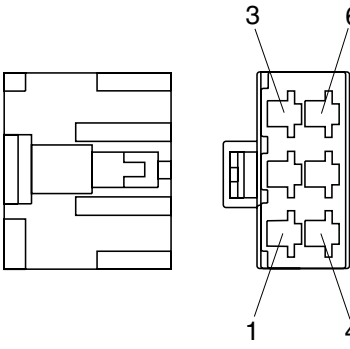
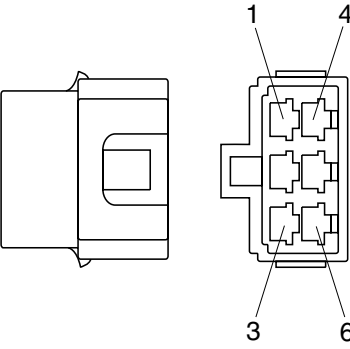
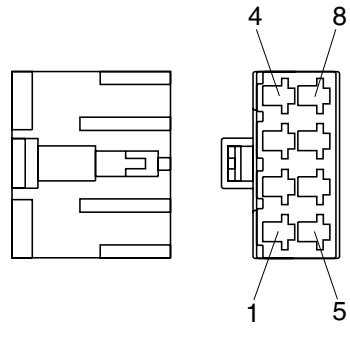
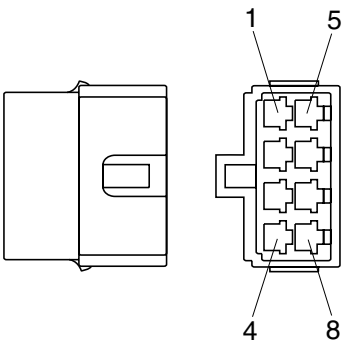
3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p data-bbox="687 680 836 707">S814-001000</p>	 <p data-bbox="1241 680 1390 707">S814-101000</p>
2	 <p data-bbox="687 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>

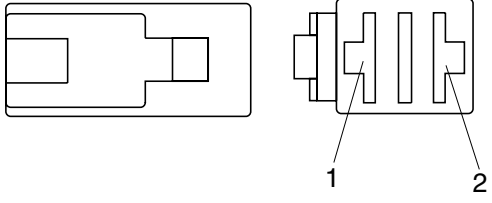
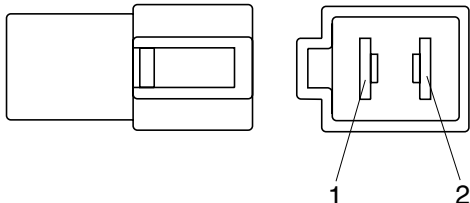
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 <p data-bbox="686 638 837 672">S814-006000</p>	 <p data-bbox="1244 638 1396 672">S814-106000</p>
8	 <p data-bbox="686 1041 837 1075">S814-008000</p>	 <p data-bbox="1244 1041 1396 1075">S814-108000</p>
12	 <p data-bbox="686 1444 837 1478">S814-012000</p>	 <p data-bbox="1244 1444 1396 1478">S814-112000</p>
14	 <p data-bbox="686 1848 837 1881">S814-014000</p>	 <p data-bbox="1244 1848 1396 1881">S814-114000</p>

4) CN TYPE CONNECTOR

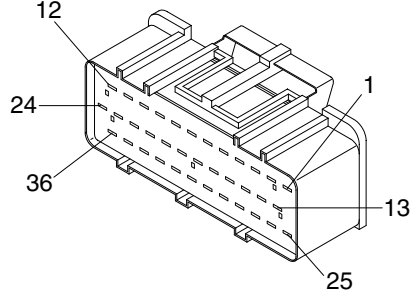
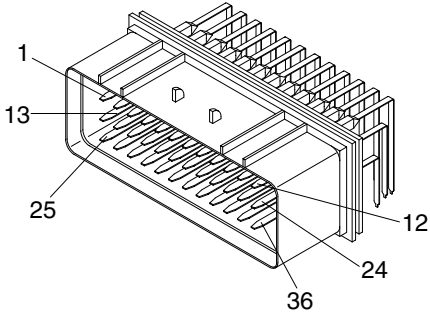
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 <p style="text-align: center;">S810-001202</p>	 <p style="text-align: center;">S810-101202</p>
2	 <p style="text-align: center;">S810-002202</p>	 <p style="text-align: center;">S810-102202</p>
3	 <p style="text-align: center;">S810-003202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

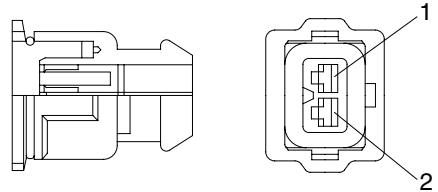
5) 375 FASTEN TYPE CONNECTOR

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>

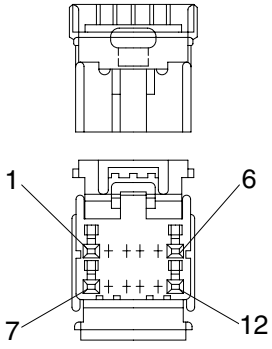
6) AMP ECONOSEAL CONNECTOR

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>

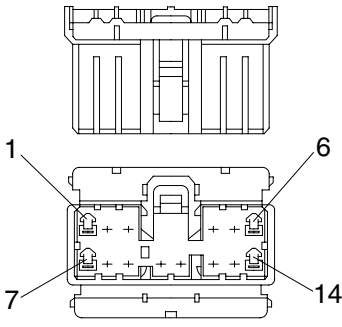
7) AMP TIMER CONNECTOR

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

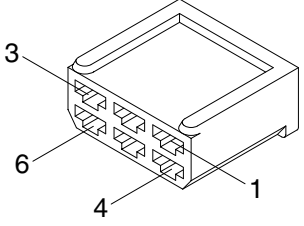
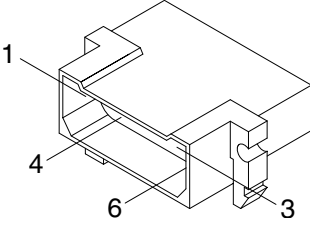
8) AMP 040 MULTILOCK CONNECTOR

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

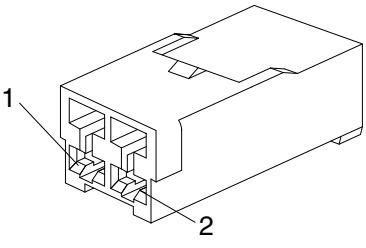
9) AMP 070 MULTILOCK CONNECTOR

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

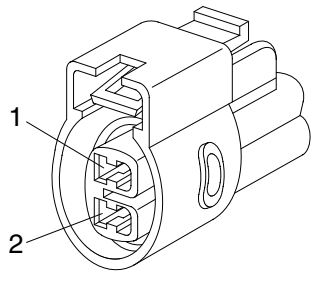
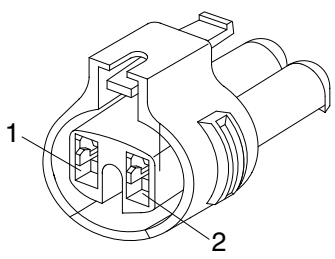
10) AMP FASTIN - FASTON CONNECTOR

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

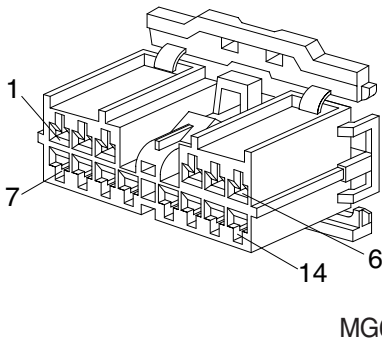
11) KET 090 CONNECTOR

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

12) KET 090 WP CONNECTORS

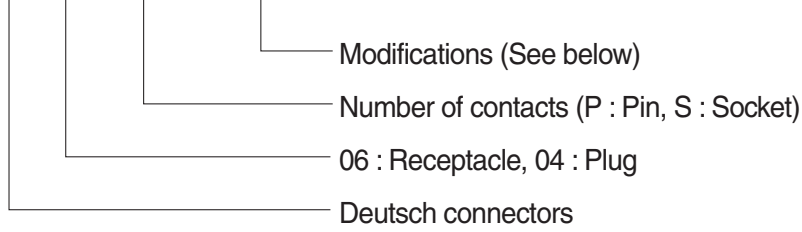
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 <p style="text-align: right;">MG640605</p>	
2	 <p style="text-align: right;">MG640795</p>	

13) KET SDL CONNECTOR

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

14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★★★★



※ Modification

E003 : Standard end cap - gray

E004 : Color of connector to be black

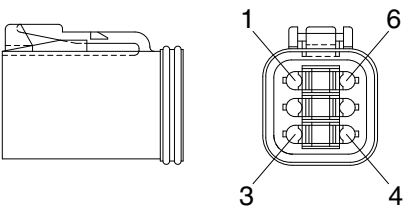
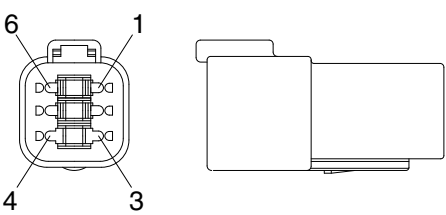
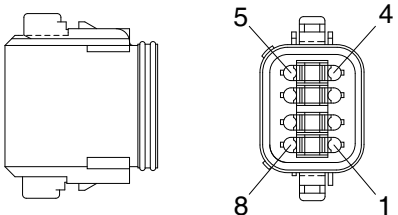
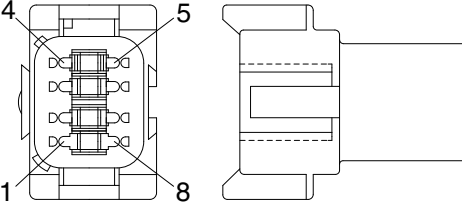
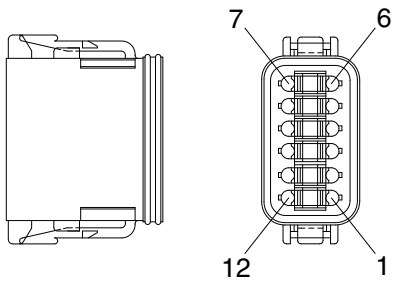
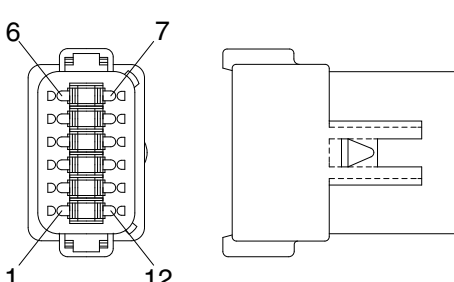
E005 : Combination - E004 & E003

EP04 : End cap

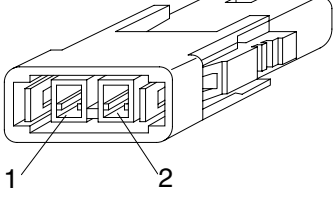
EP06 : Combination P012 & EP04

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

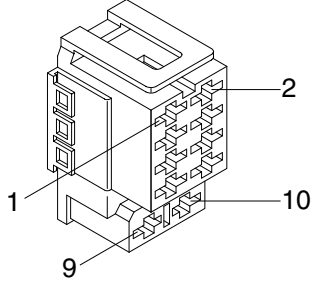
No. of pin	Receptacle connector (female)	Plug connector (male)
2	<p>DT06-2S</p>	<p>DT04-2P</p>
3	<p>DT06-3S</p>	<p>DT04-3P</p>
4	<p>DT06-4S</p>	<p>DT04-4P</p>

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

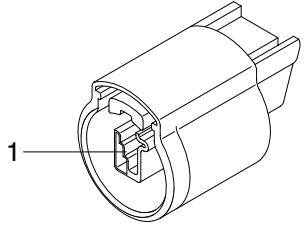
15) MOLEX 2CKTS CONNECTOR

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