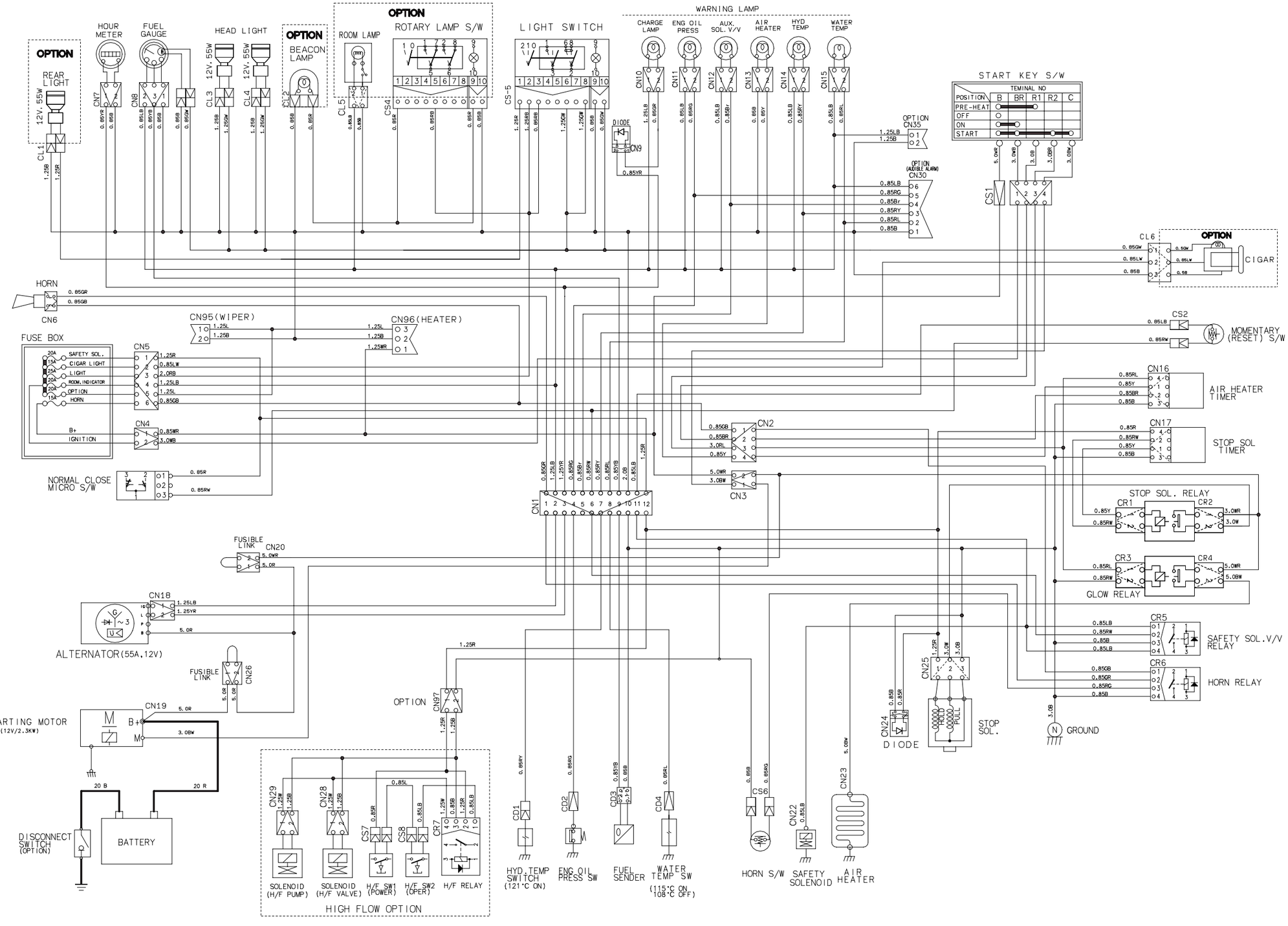
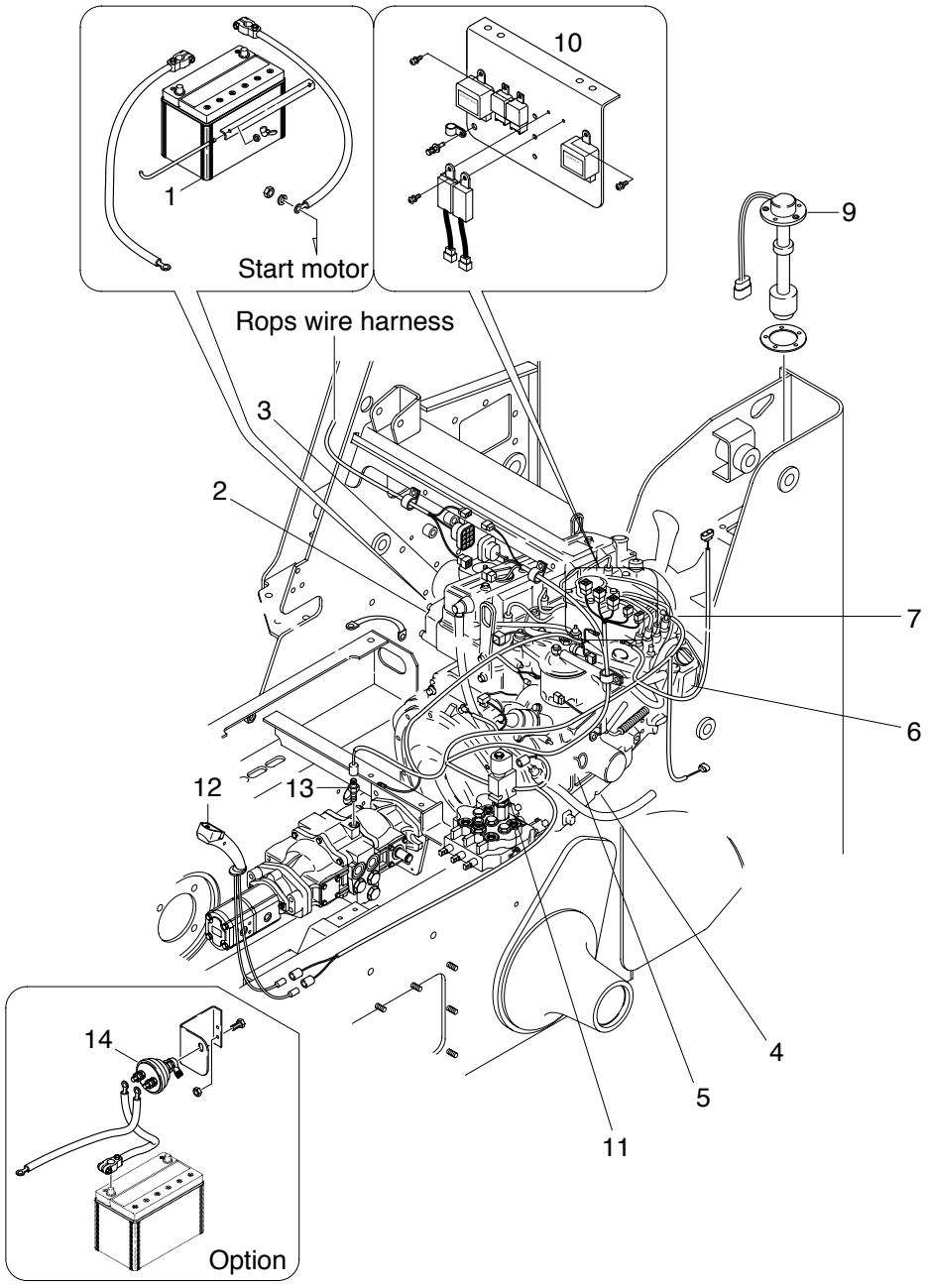
GROUP 2 WIRING DIAGRAM



LOCATION 2



1	Battery	6	Air heater(Preheating)	11	Safety solenoid valve
2	Starter	7	Water temperature switch	12	Horn switch
3	Alternator	9	Fuel sender	13	Hydraulic oil temperature switch
4	Engine oil pressure switch	10	Relay board	14	Disconnector switch(Option)
5	Engine stop solenoid				

1. POWER CIRCUIT

The negative terminal of the 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

Battery → Fusible link〔CN-26, 20〕→ I/conn〔CN-3(2)〕

- I/conn〔CS-1〕→ Start switch B
- I/conn〔CN-4(1)〕→ Fuse box(No.1) → I/conn〔CN-5(6)〕
  - Horn〔CN-6(2,1)〕→ I/conn〔CN-1(1)〕→ Horn relay〔CR-6(2)〕
  - I/conn〔CN-2(1)〕→ Horn relay〔CR-6(1)〕

※I/conn : Intermediate connector

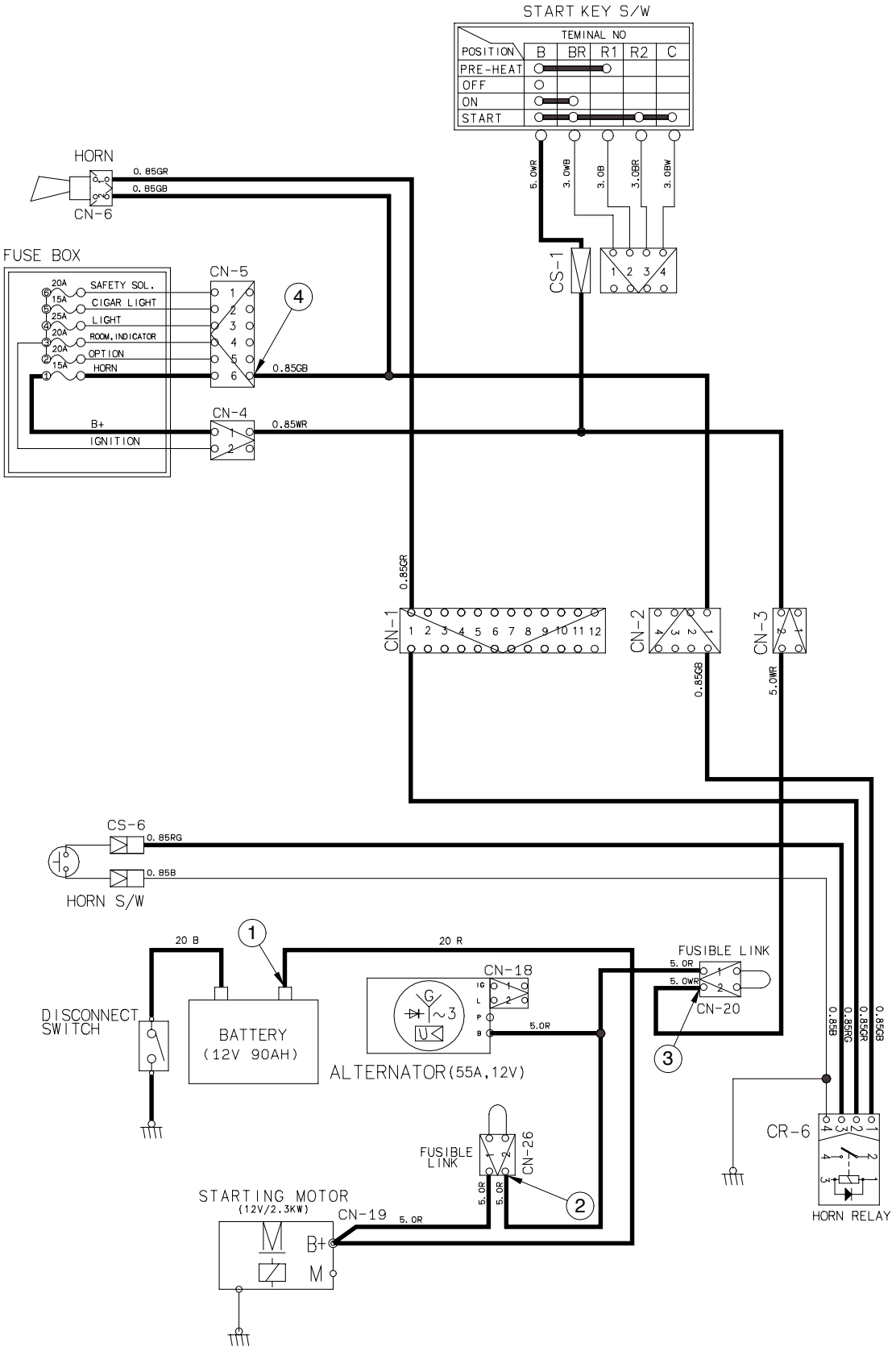
2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
OFF	OFF	ON	① - GND(Battery) ② - GND(Fusible link) ③ - GND(Fusible link) ④ - GND(Fuse No.1)	DC 10~13V

※ GND : Ground

※ The disconnect switch is assembled as an option.

POWER CIRCUIT



2. STARTING CIRCUIT

1) OPERATING FLOW

Battery (+) terminal → Starter (B^+ terminal) → Fusible link〔CN-26, 20〕
- → I/conn〔CN-3(2)〕→ Start switch〔CS-1(B)〕
- → Engine stop solenoid relay〔CR-2(1)〕

※Start switch : ON

Start switch ON〔CS-1(1)〕
- → Stop solenoid relay ON〔CR-2(2)〕→ Stop solenoid〔CN-25(2)〕 → GND
- → I/conn〔CN-4(2)〕→ Fuse box (No.6) → I/conn〔CN-5(1)〕 → I/conn〔CN-1(12)〕
  - → I/conn〔CN-17(4,2)〕→ I/conn〔CR-1(2)〕
  - → I/conn〔CR-1(1)〕
  - → Stop solenoid timer〔CN-17(1,3)〕→ GND
  - → Engine stop solenoid〔CN-25(1,3)〕→ GND

※Start switch : START

Start switch START〔CS-1(4)〕→ I/conn〔CN-3(1)〕→ Starter〔CN-19(M)〕→ GND

2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Operating	START	ON	① - GND(Battery) ② - GND(Fusible link) ③ - GND(Fusible link) ④ - GND(Start switch) ⑤ - GND(Fuse No.6) ⑥ - GND(Timer) ⑦ - GND(Relay)	DC 10~14.5V

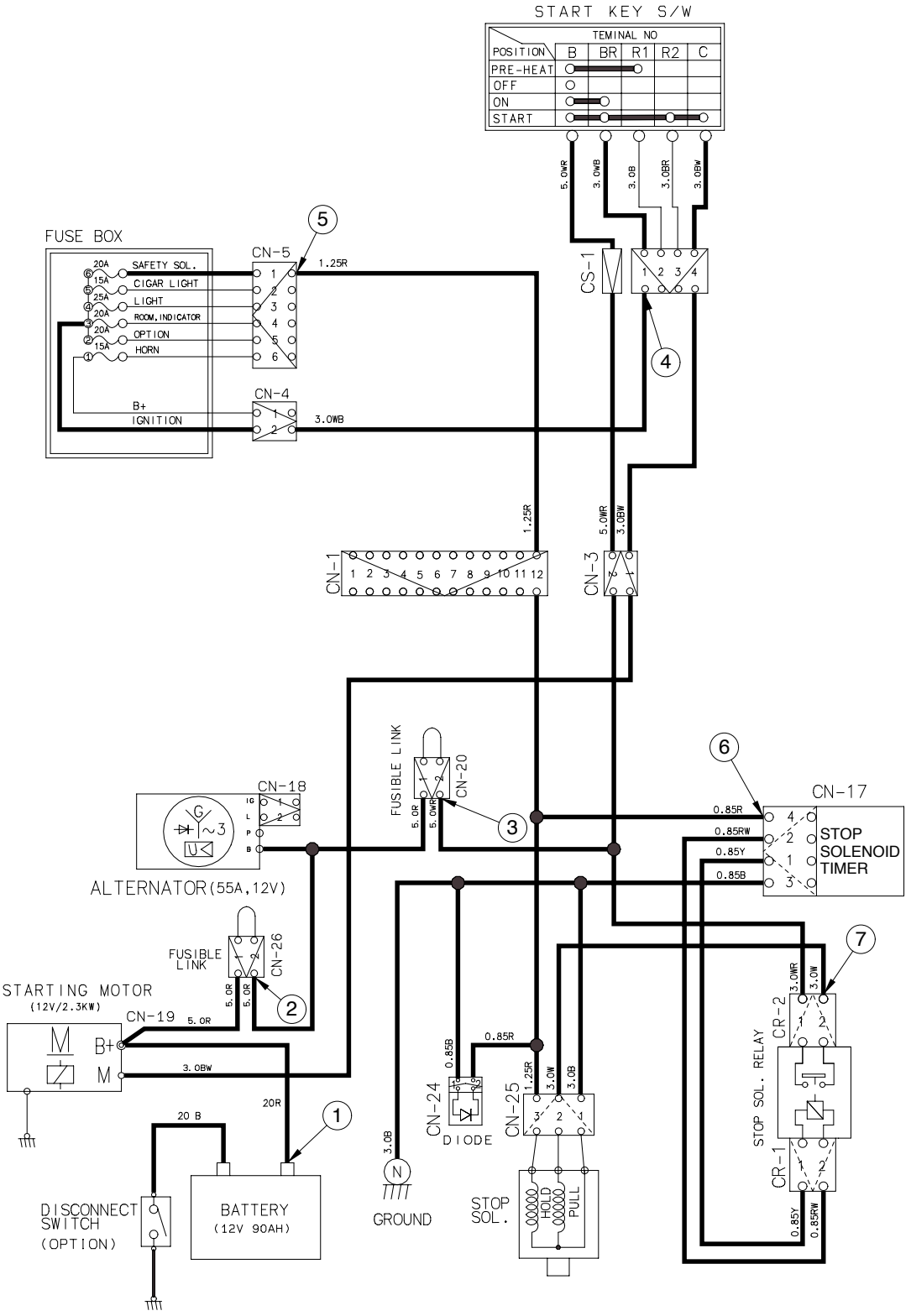
※ GND : Ground

※ The disconnect switch is assembled as an option.

※ Do not operate the starter longer than 30 seconds.

⚠ Do not disconnect or short any lead wire while the starter is operating.

STARTING CIRCUIT



3. CHARGING CIRCUIT

When the starter is activated and the engine is started, the operator releases the start switch to the ON position. Charging current generated by the operating alternator flows into the battery through the fusible link CN-26.

The current also flows from the alternator to each electrical component through the fusible link CN-20 and the fuse box.

1) OPERATING FLOW

(1) Warning indicator flow

Alternator L terminal〔CN-18(2)〕→ I/conn〔CN-1(3)〕→ Hour meter〔CN-7〕→ GND
I/conn〔CN-1(3)〕→ Diode〔CN-9(2)〕

Fuse box〔CN-5(4)〕→ Charging lamp〔CN-10(1,2)〕→ Diode〔CN-9(1)〕

(2) Charging flow

Alternator B → Fusible link〔CN-20(1,2)〕→ I/conn〔CN-3(2)〕→ I/conn〔CS-1(B)〕
→ I/conn〔CS-1(1)〕→ Fuse box〔CN-4(2)〕
→ Fusible link〔CN-26(1,2)〕→ Battery (+) terminal

2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Operating	ON	ON	① - GND(Battery) ② - GND(Fusible link) ③ - GND(Alternator B ternimal) ④ - GND(Alternator IG termianl) ⑤ - GND(Charge lamp)	DC 10~14.5V

※ GND : Ground

※ The disconnect switch is assembled as an option.

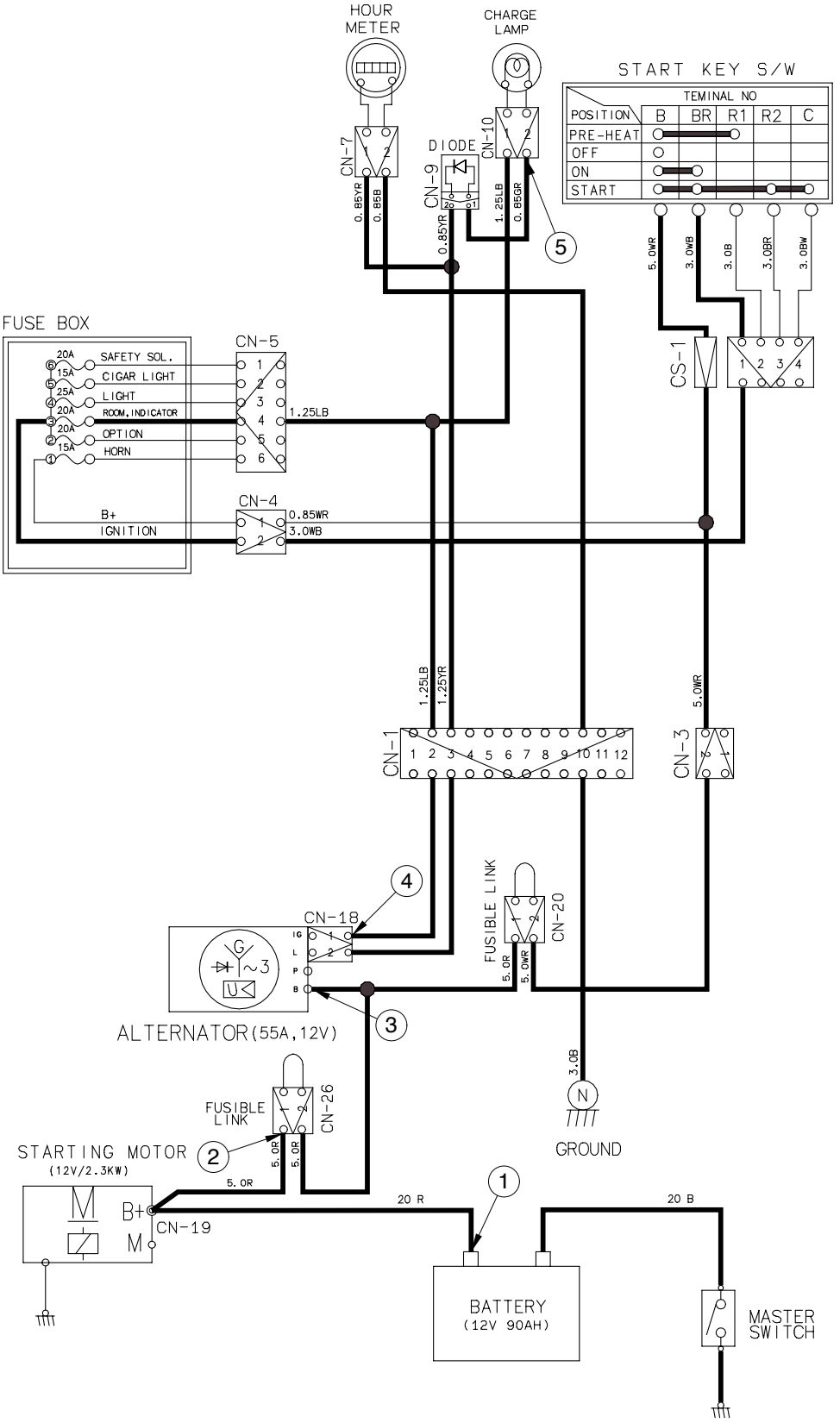
※ When using an arc welder, always disconnect the ground lead from the battery to prevent alternator or battery damage.

※ Attach the welding ground clamp as close to the weld area as possible to prevent welding current from damaging the bearings of the alternator.

※ Do not disconnect the battery when the engine is running. The voltage surge can damage the diode and resistors in the electrical system.

※ Do not disconnect an electric wire before the engine is stopped and the switch are OFF.

CHARGING CIRCUIT



4. LAMP CIRCUIT

1) OPERATING FLOW

Fuse box (No.4) → Lamp switch〔CS-5(2,3)〕

※When the lamp switch is moved to the first position, the switch is turned ON.

Lamp switch ON〔CS-5(6,8)〕 → Lamp switch pilot lamp〔CS-5(10)〕 → GND
→ Work lamp RH〔CL-4〕 → GND
→ Work lamp LH〔CL-3〕 → GND
→ Fuel gauge lamp〔CN-8〕 → GND
→ Cigar light〔CL-6〕 → GND

※When the lamp switch is moved to the second position, the first and the second are turned ON.

Lamp switch ON First〔CS-5(6,8)〕 → Same as the above
Second〔CS-5(1)〕 → Rear lamp〔CL-1〕 → GND

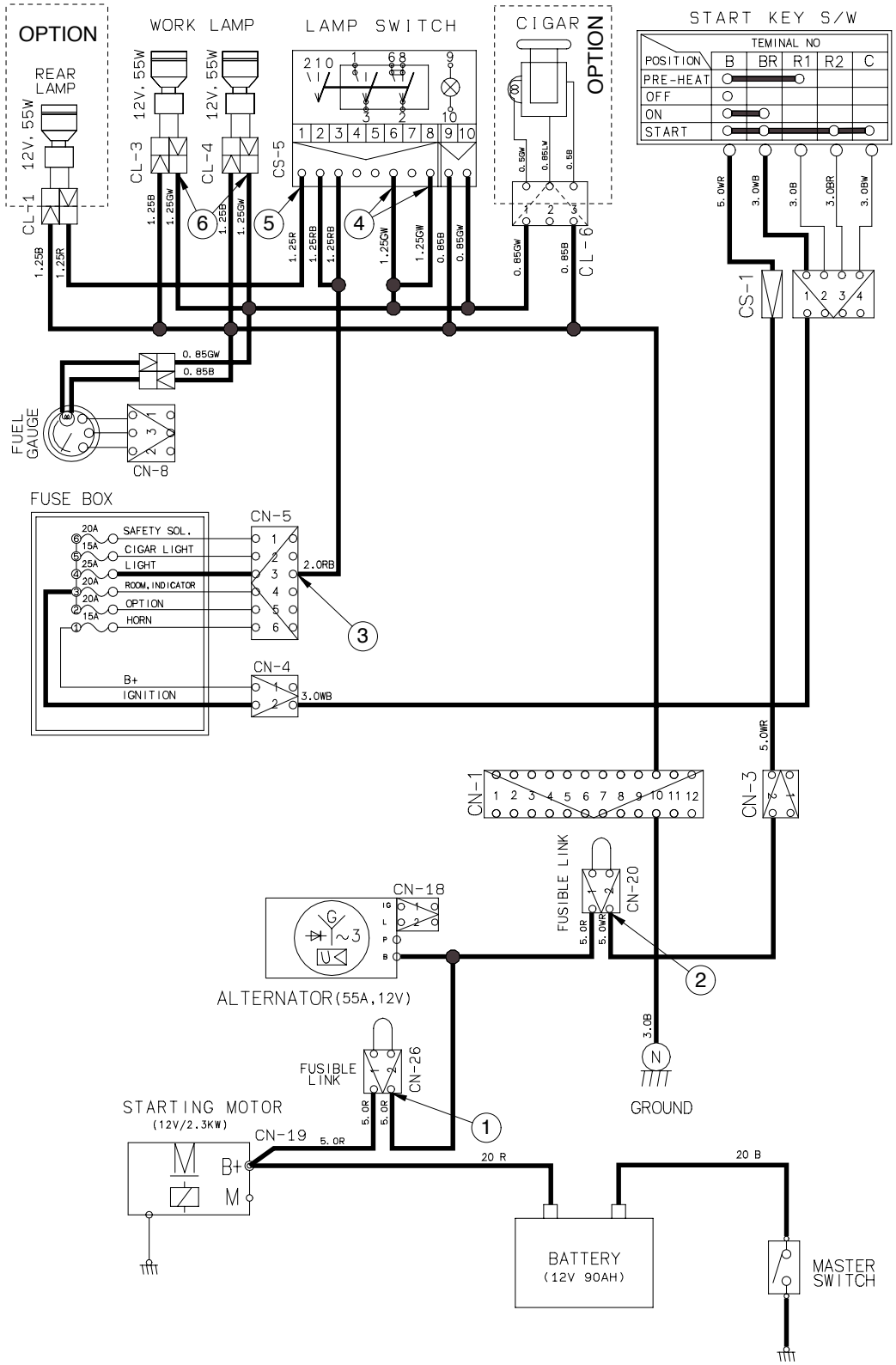
2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Stop	ON	ON	① - GND(Fusible link) ② - GND(Fusible link) ③ - GND(Fuse No.4) ④ - GND(Switch first position) ⑤ - GND(Switch second position) ⑥ - GND(Work lamp)	DC 10~13V

※ GND : Ground

※ The disconnect switch is assembled as an option.

LAMP CIRCUIT



5. PREHEATING CIRCUIT

When the start switch is set to the preheating position, the timer starts counting the specified time and the indicator is lit. After 15 seconds, the timer turns off the indicator to indicate that preheating is completed.

1) OPERATING FLOW

Start switch〔CS-1(2)〕 → I/conn〔CN-2(3)〕 → Timer〔CN-16(4,1)〕 → I/conn〔CN-2(4)〕 → Heat indicator〔CN-13(2)〕 → GND

I/conn〔CN-2(3)〕 → Air heater relay〔CR-3(1,2)〕 → GND

Battery (+) terminal → Fusible link〔CN-26, 20〕 → Heater relay〔CR-4(1,2)〕 → Air heater〔CN-23〕 → GND

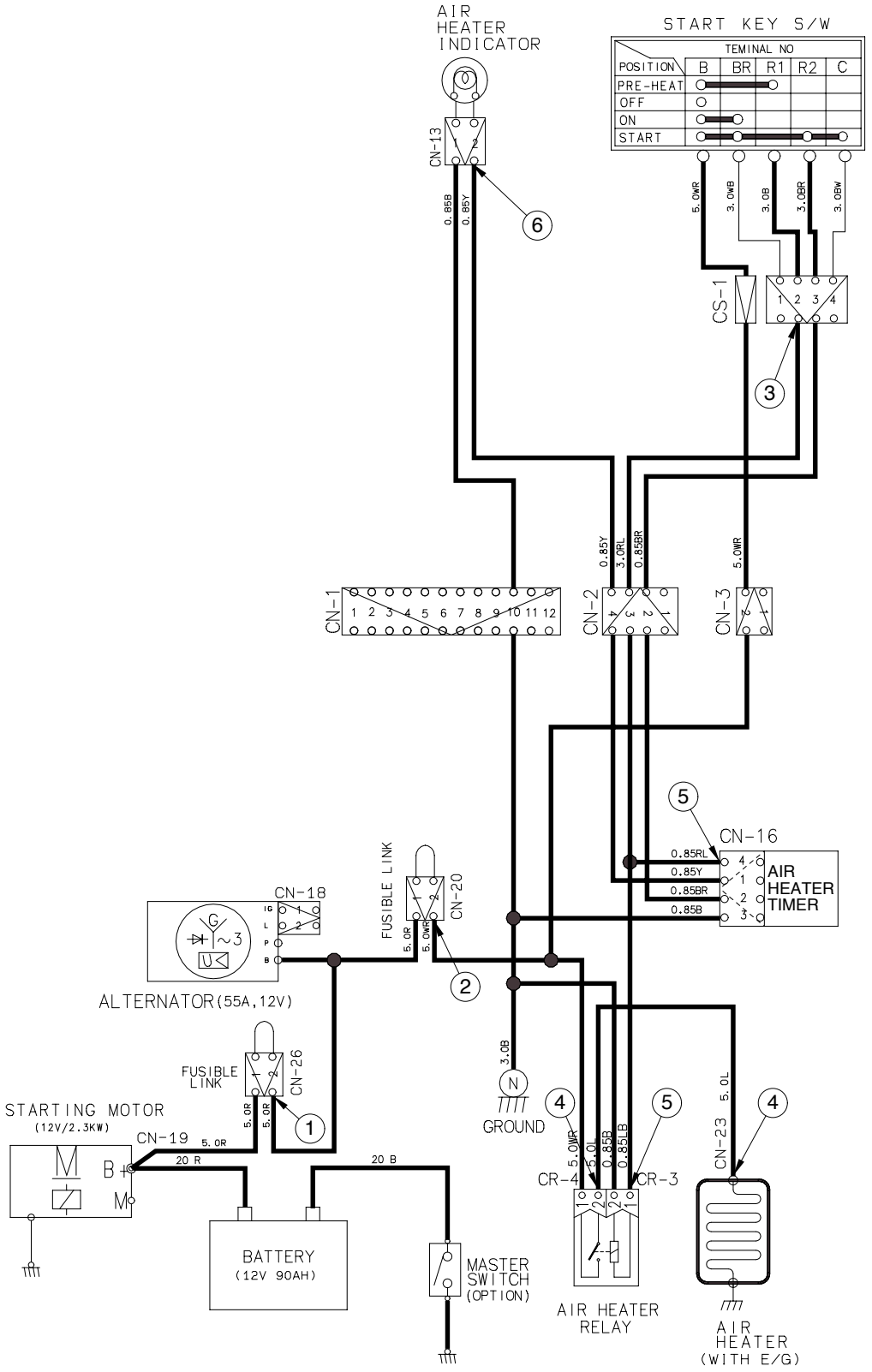
2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Stop	Pre-heat ON	ON	① - GND(Fusible link) ② - GND(Fusible link) ③ - GND(Start switch) ④ - GND(Air heaters, air heater relay) ⑤ - GND(Timer, air heater relay) ⑥ - GND(Indicator)	DC 10~13V

※ GND : Ground

※ The disconnect switch is assembled as an option.

PREHEATING CIRCUIT



6. SAFETY CIRCUIT

After an operator brings the seat bar down and starts the engine, the operator must momentarily press the reset switch to get the lift function unlocked.

They hydraulic system of the loader arm will remain active until the seat bar is raised or the start switch is turned OFF.

1) OPERATING FLOW

Fuse box(No.6) → I/conn〔CN-5(1)〕→ Micro switch〔CS-3〕

※ When the seat bar is down, the micro switch CS-3 is turned ON.

The micro switch ON〔CS-3〕 → Reset switch〔CS-2〕

→ I/conn〔CN-1(6)〕→ Safety solenoid relay〔CR-5(2)〕

※ When the reset switch is turned ON.

Reset switch ON〔CS-2〕→ I/conn〔CN-1(11)〕→ Safety solenoid relay〔CR-5(1,3)〕→ GND

※ Once the safety solenoid relay is operated, the relay is energized continuously till the seat bar is raised or the start switch is turned OFF.

Safety solenoid relay〔CR-5(2,4)〕 → Solenoid valve〔CN-22〕→ GND

→ Safety solenoid relay〔CR-5(1,3)〕→ GND

2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Operating	ON	ON	① - GND(Fusible link) ② - GND(Fusible link) ③ - GND(Fuse No.6) ④ - GND(Micro switch) ⑤ - GND(Solenoid relay) ⑥ - GND(Solenoid valve)	DC 10~14.5V

※ GND : Ground

※ The disconnect switch is assembled as an option.

SAFETY CIRCUIT