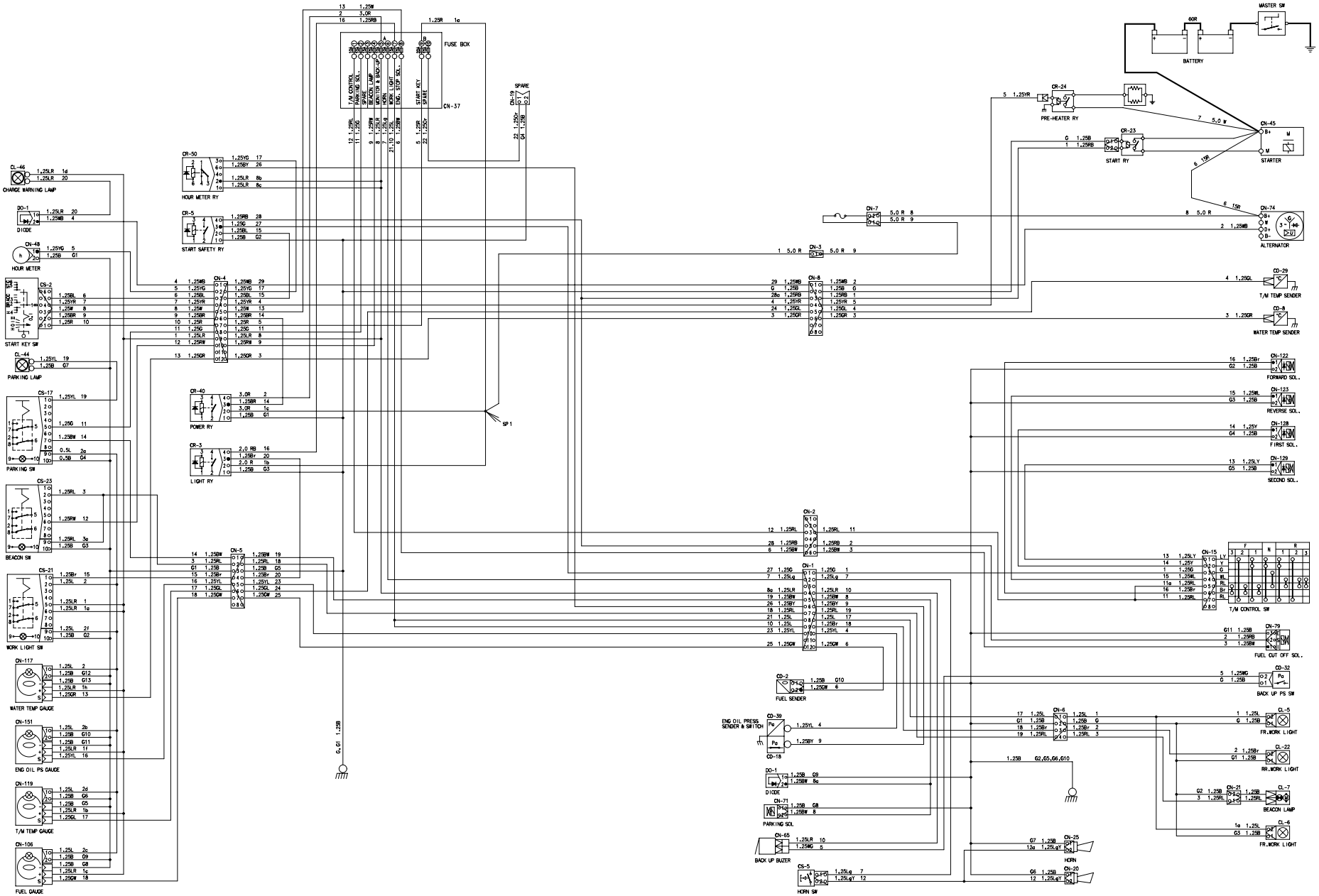
GROUP 2 ELECTRICAL CIRCUIT



1. POWER CIRCUIT

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

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

1) OPERATING FLOW

Battery (+) terminal → Starter(B^+ terminal) → Alternator(B^+ terminal) → I/conn [CN-7(2)→(1)] → I/conn [CN-3(1)] → Fuse box(No.9) → I/conn [CN-4(7)] → Start switch [CS-2(1)]

→ Fuse box(No.10) → Spare [CN-19(1)]

→ Power relay [CR-40(2)]

→ Light relay [CR-3(2)]

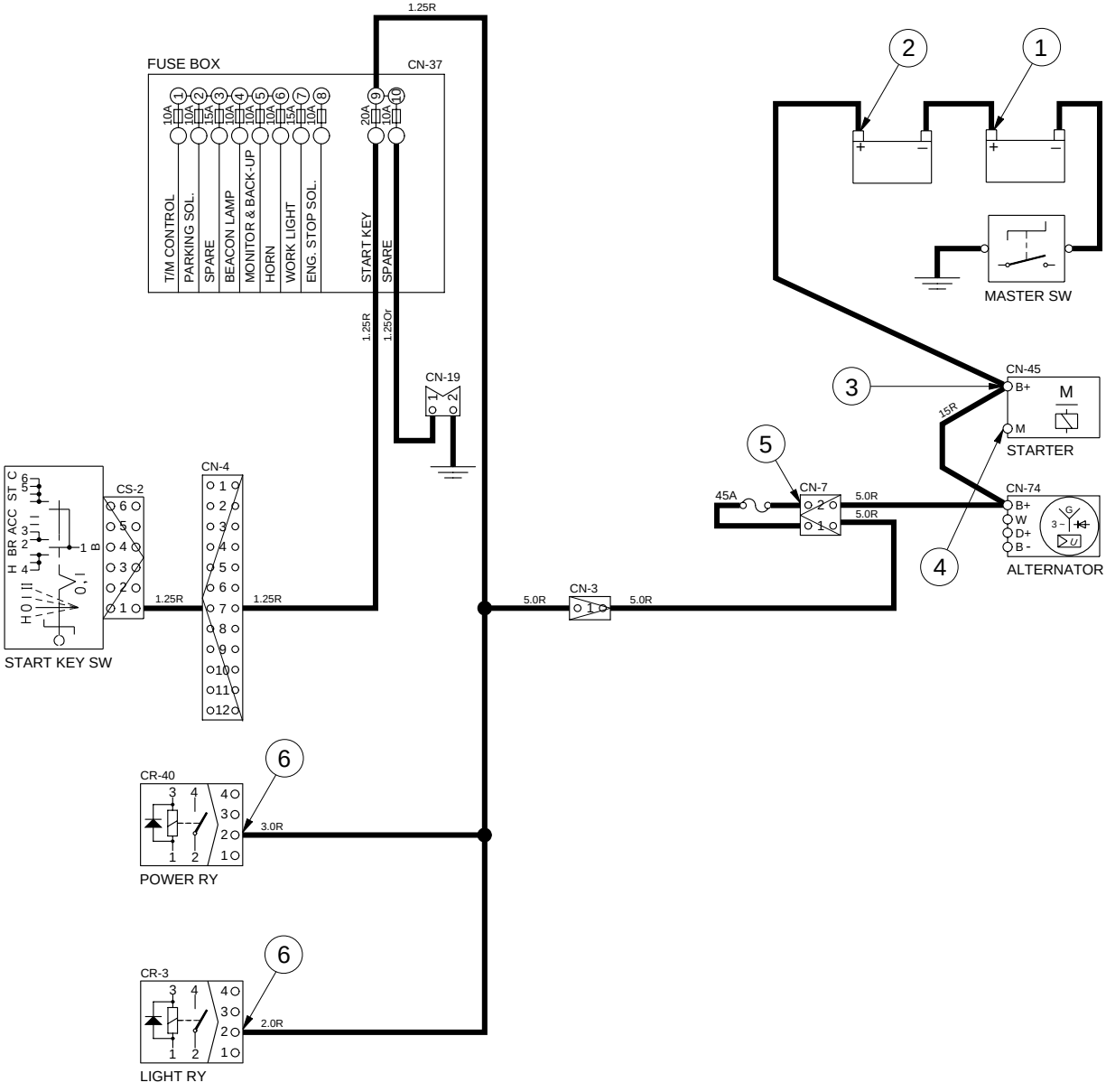
※ I/conn : Intermediate connector

2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	OFF	① - GND (Battery 1)	10~12.5V
		② - GND (Battery 2)	20~25V
		③ - GND (Starter B^+)	20~25V
		④ - GND (Alternator B^+)	20~25V
		⑤ - GND (Fusible link)	20~25V
		⑥ - GND (Relay)	20~25V

※ GND : Ground

POWER CIRCUIT



2. STARTING CIRCUIT

1) OPERATING FLOW

Battery(+) terminal → Starter (B^+ terminal) → Alternator (B^+ terminal) → I/conn [CN-7(2)→(1)] → I/conn [CN-3(1)] → Fuse box (No.9) → I/conn [CN-4(7)] → Start switch [CS-2(1)]

※ The transmission control lever is neutral position. It is necessary condition before the starting.
The transmission controller has an output signal which is activated whenever the transmission control lever is in the neutral position.
This signal can be used to control a relay and prevent engine from starting whenever the control lever is not in the neutral position.

(1) When start key switch is in ON position

- Start switch ON [CS-2(2)] → I/conn [CN-4(6)] → Power relay [CR-40(3)] → Power relay operating(All power is supplied with the electric component)
- Start switch ON [CS-2(3)] → I/conn [CN-4(5)] → Fuse box (No.8) → I/conn [CN-2(6)] → Fuel cut off solenoid[CN-79(1)]

(2) When start key switch is in START position

Start switch START [CS-2(5)] → I/conn [CN-4(3)] → Start safety relay [CR-5(2)→(4)] → I/conn [CN-8(3)] → Start relay [CR-23(2)] → Starter (Terminal B^+ and M connector of start motor)

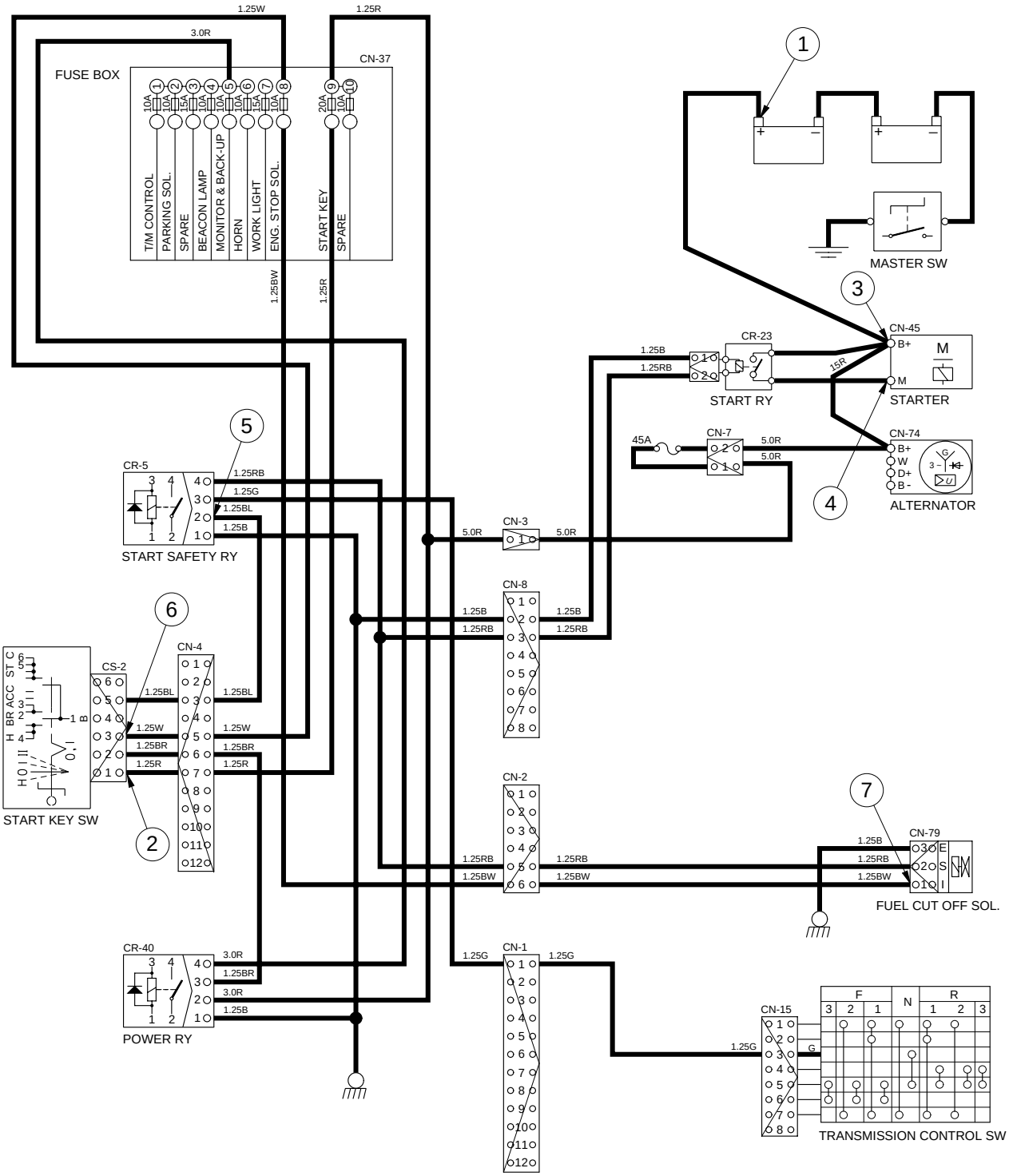
※ The transmission control lever is neutral position. It is necessary condition before the starting.
The transmission controller has an output signal which is activated whenever the transmission control lever is in the neutral position. This signal can be used to control a relay and prevent engine from starting whenever the control lever is not in the neutral position.

2) CHECK POINT

Engine	Key switch	Check point	Voltage
RUN	START	① - GND (Battery) ② - GND (Start key) ③ - GND (Starter B^+) ④ - GND (Starter M) ⑤ - GND (Start safety relay)	20~25V

※ 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.

1) OPERATING FLOW

(1) Warning flow

Altermator [CN-75(D^+)] → I/conn [CN-8(1)] → I/conn [CN-4(1)] → Diode [DO-1(2→1)]→ → Cluster charging warming lamp ON [CL-46, Below 24V]

(2) Charging flow

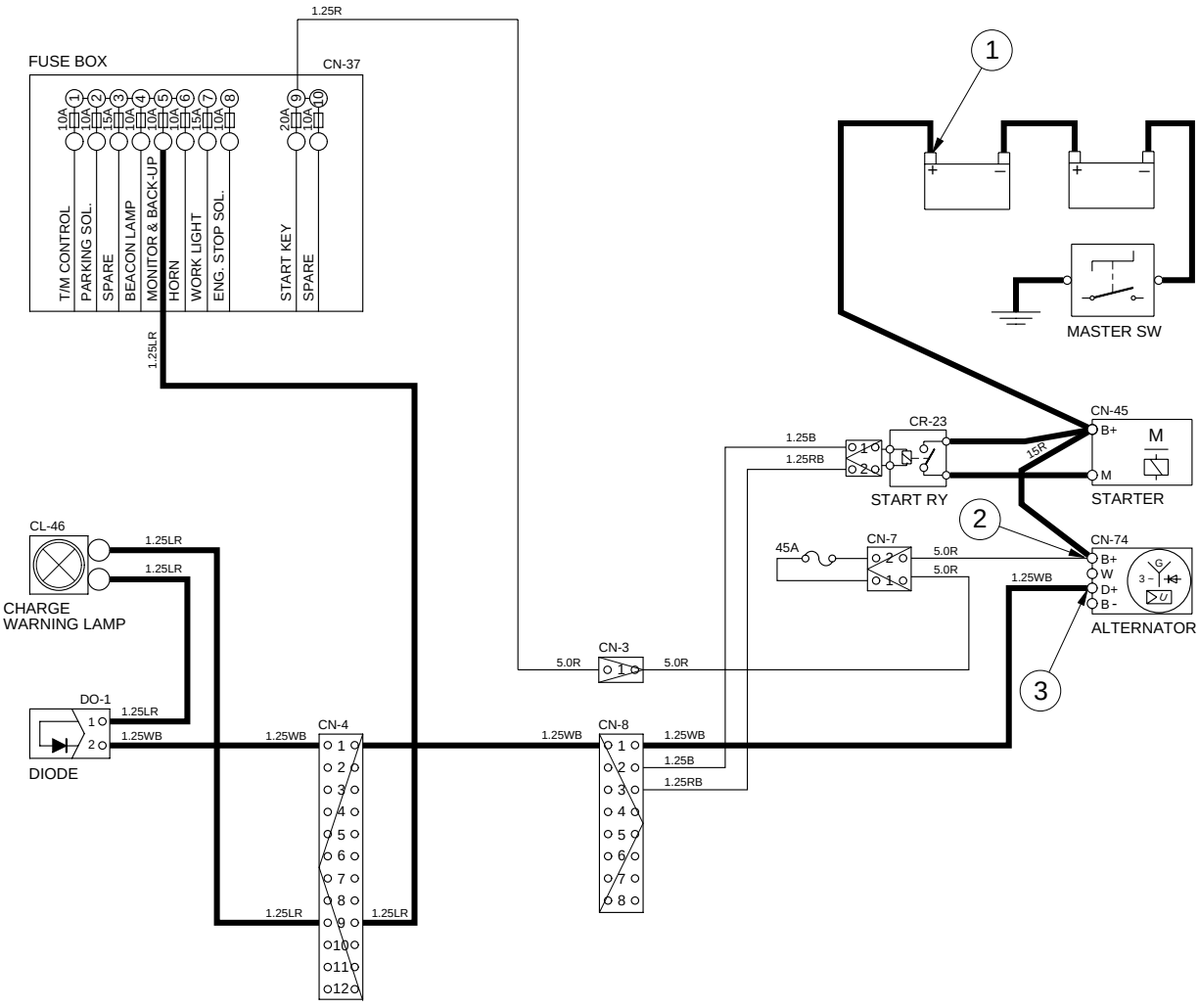
Alternator B^+ terminal → Starter(B^+ terminal) → Battery(+) terminal → Charging

2) CHECK POINT

Engine	Start switch	Check point	Voltage
RUN	ON	① - GND (Battery) ② - GND (Alternator B^+ terminal) ③ - GND (Alternator D^+ terminal)	20~30V

※ GND : Ground

CHARGING CIRCUIT



4. ENGINE STOP CIRCUIT

1) OPERATING FLOW

Start key OFF [CS-2(3)] → I/conn [CN-4(5)] → Fuse box (No.8) → I/conn [CN-2(6)] → Engine stop solenoid OFF [CN-79(1)]

2) CHECK POINT

Engine	Key switch	Check point	Voltage
STOP	OFF	⑥ - GND (Start key IG terminal) ⑦ - GND (Engine stop solenoid)	0V

※ GND : Ground

3) WIRING DIAGRAM - See page 5-7, STARTING CIRCUIT.

5. WORK LIGHT CIRCUIT

1) OPERATING FLOW

Battery(B^+) → Alternator(B^+) → I/conn [CN-7(2)→(1)] → I/conn [CN-3(1)] → Light relay [CR-3(2)]
Fuse box (No.5) → I/conn [CN-4(9)] → Work light switch [CS-21(5),(6)]

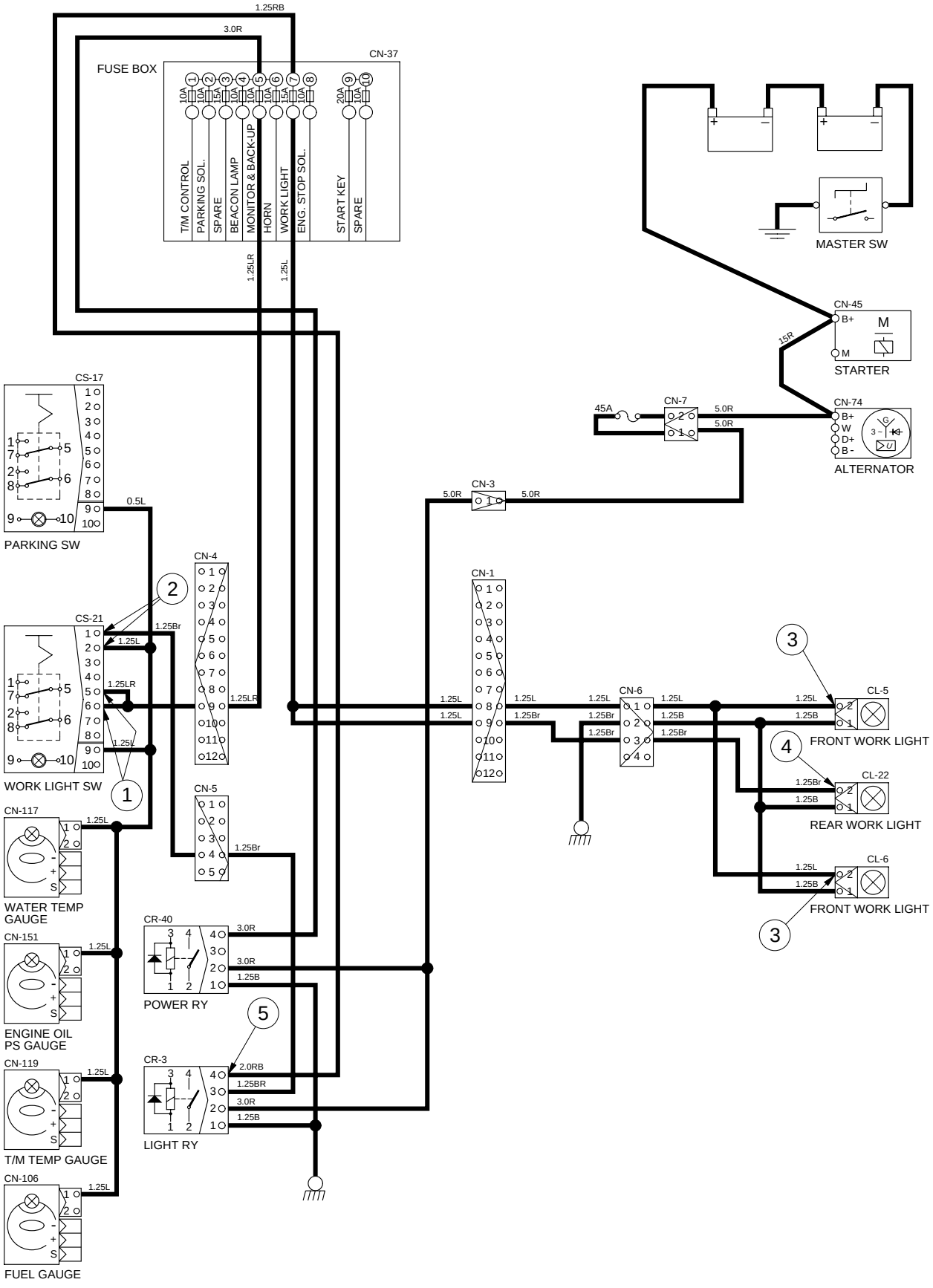
- Work light switch ON [CS-21(1)]
  - Light relay [CR-3(2)→(4)] → Fuse box (No.7) → I/conn [CN-1(9)] → I/conn [CN-6(1)] → Rear work lamp ON [CL-22(2)]
  - I/conn [CN-1(8)] → I/conn [CN-6(1)] → Front work lamp ON [CL-5(2), CL-6(2)]
- Work light switch ON [CS-21(2)]
  - Work light switch indicator lamp ON
  - Parking switch indicator lamp ON
  - Gauge illumination lamp ON

2) CHECK POINT

Engine	Key switch	Check point	Voltage
STOP	ON	① - GND (Switch input) ② - GND (Switch output) ③ - GND (Front work light) ④ - GND (Rear work light) ⑤ - GND (Light relay output)	20~25V

※ GND : Ground

WORK LIGHT CIRCUIT



6. BEACON LAMP CIRCUIT

1) OPERATING FLOW

Fuse box(No.4) → I/conn [CN-4(10)] → Beacon lamp switch [CS-23(6)]

※ **When Lamp switch ON**

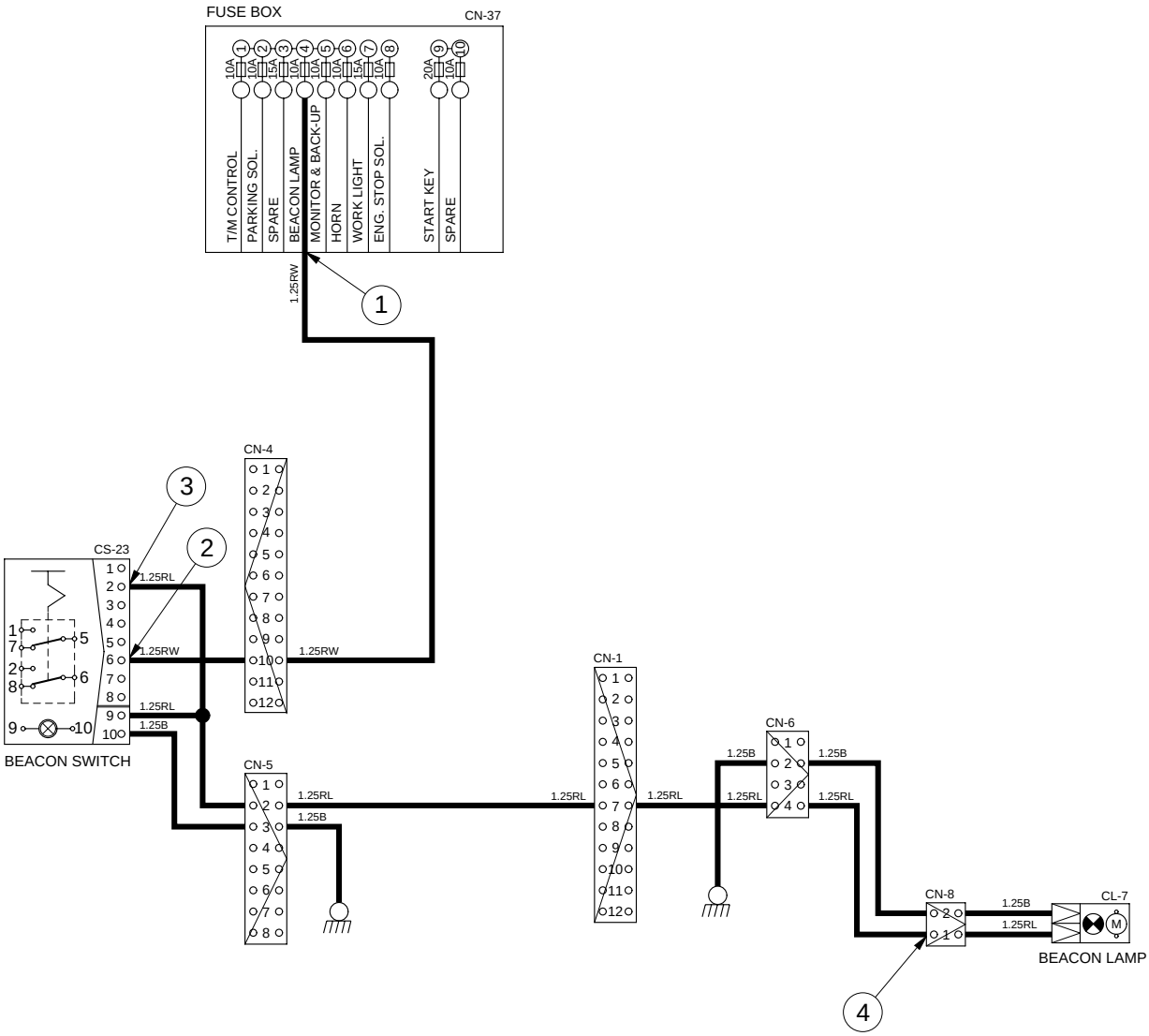
Beacon lamp switch ON [CS-23(2)] → Switch indicator lamp ON [CS-23(9)]
→ I/conn [CN-5(2)] → I/conn [CN-1(7)]
→ I/conn [CN-6(4)] → I/conn [CN-8(1)]
→ Beacon lamp ON [CL-7]

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)	20~25V

※ GND : Ground

BEACON LAMP CIRCUIT



7. ELECTRIC PARKING CIRCUIT

1) OPERATING FLOW

(1) Parking OFF

Fuse box (No.2) → I/conn [CN-4(8)] → Parking switch OFF [CS-17(5)→(7)]
→ I/conn [CN-5(1)] → I/conn [CN-1(5)] → Parking solenoid ON(Activated)
→ Parking brake released(By hydraulic pressure)

(2) Parking ON

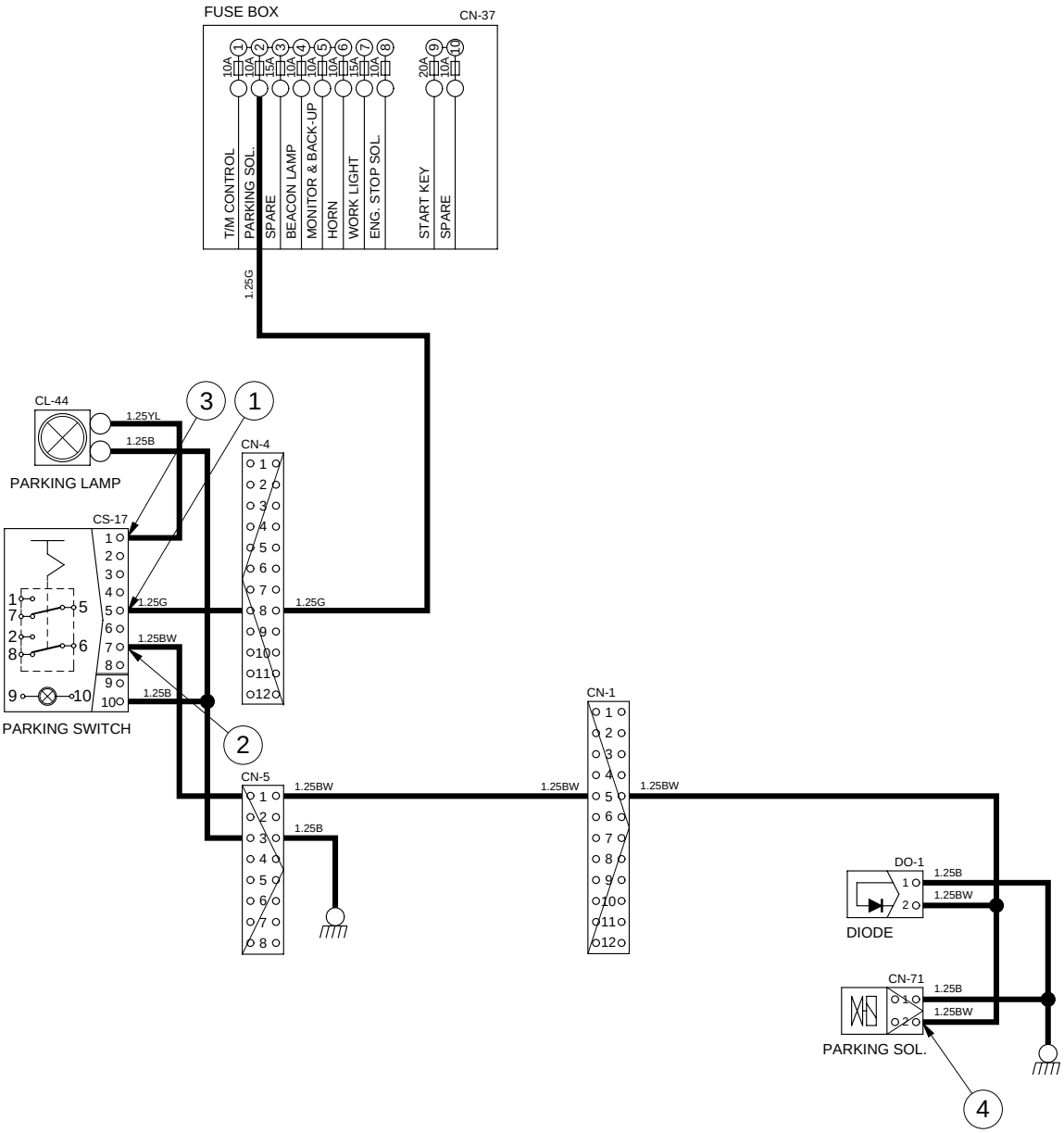
Fuse box (No.2) → Parking switch ON → Parking solenoid [CN-71] OFF
→ Parking brake applied [By spring force]
→ [CS-17(5)→(1)] → Parking brake warning lamp ON

2) CHECK POINT

Engine	Key switch	Check point	Voltage
RUN	ON	① - GND (Clutch cut-off press switch) ② - GND (Declutch input signal) ③ - GND (Parking switch output) ④ - GND (Parking solenoid)	20~25V

※ GND : Ground

ELECTRIC PARKING CIRCUIT



MONOTORING CIRCUIT