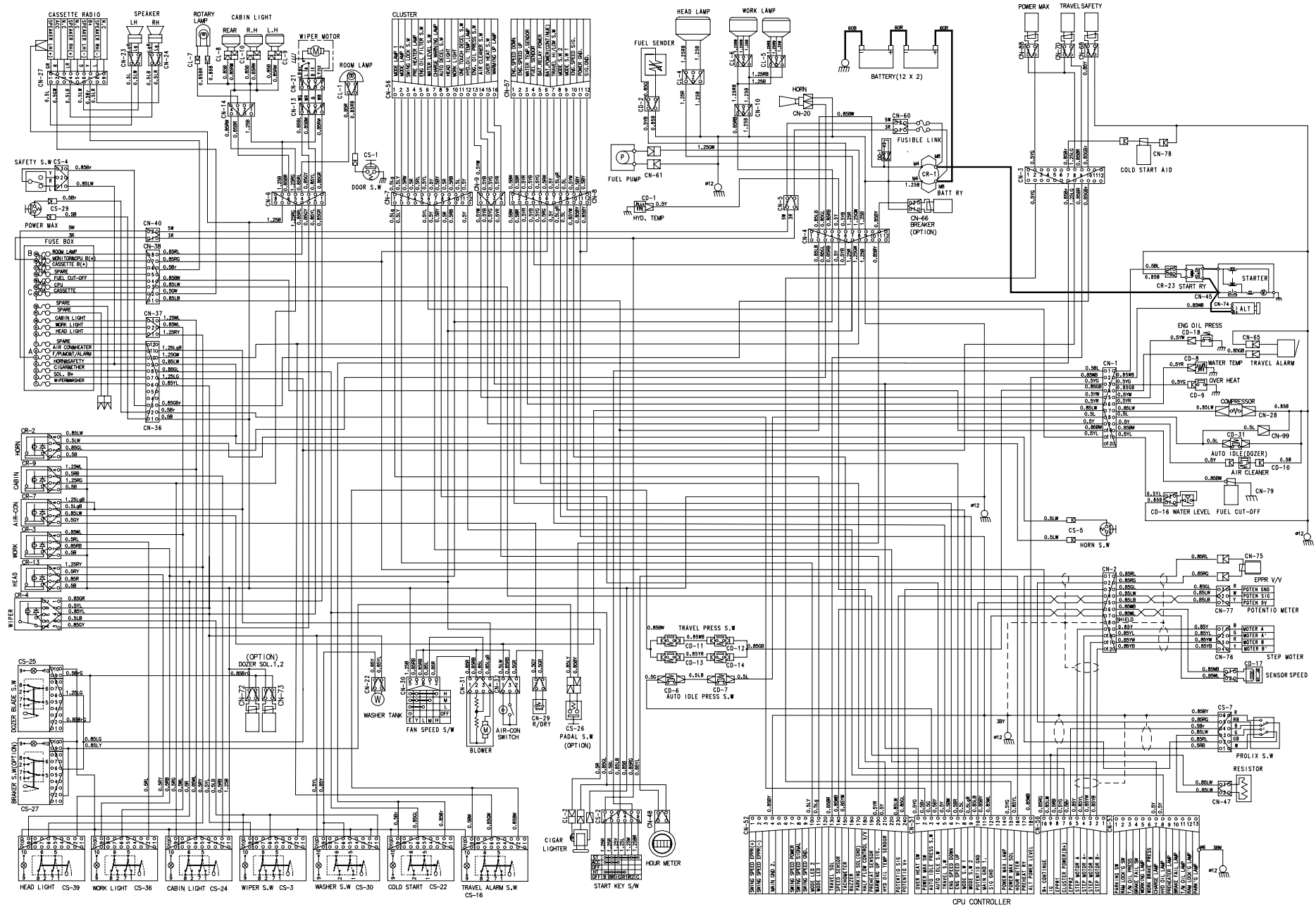


# GROUP 2 ELECTRICAL CIRCUIT



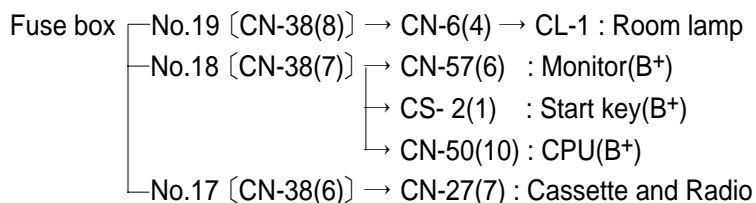
## 1. POWER CIRCUIT

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

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

### 1) FLOW

Battery → Battery relay → Fusible link →

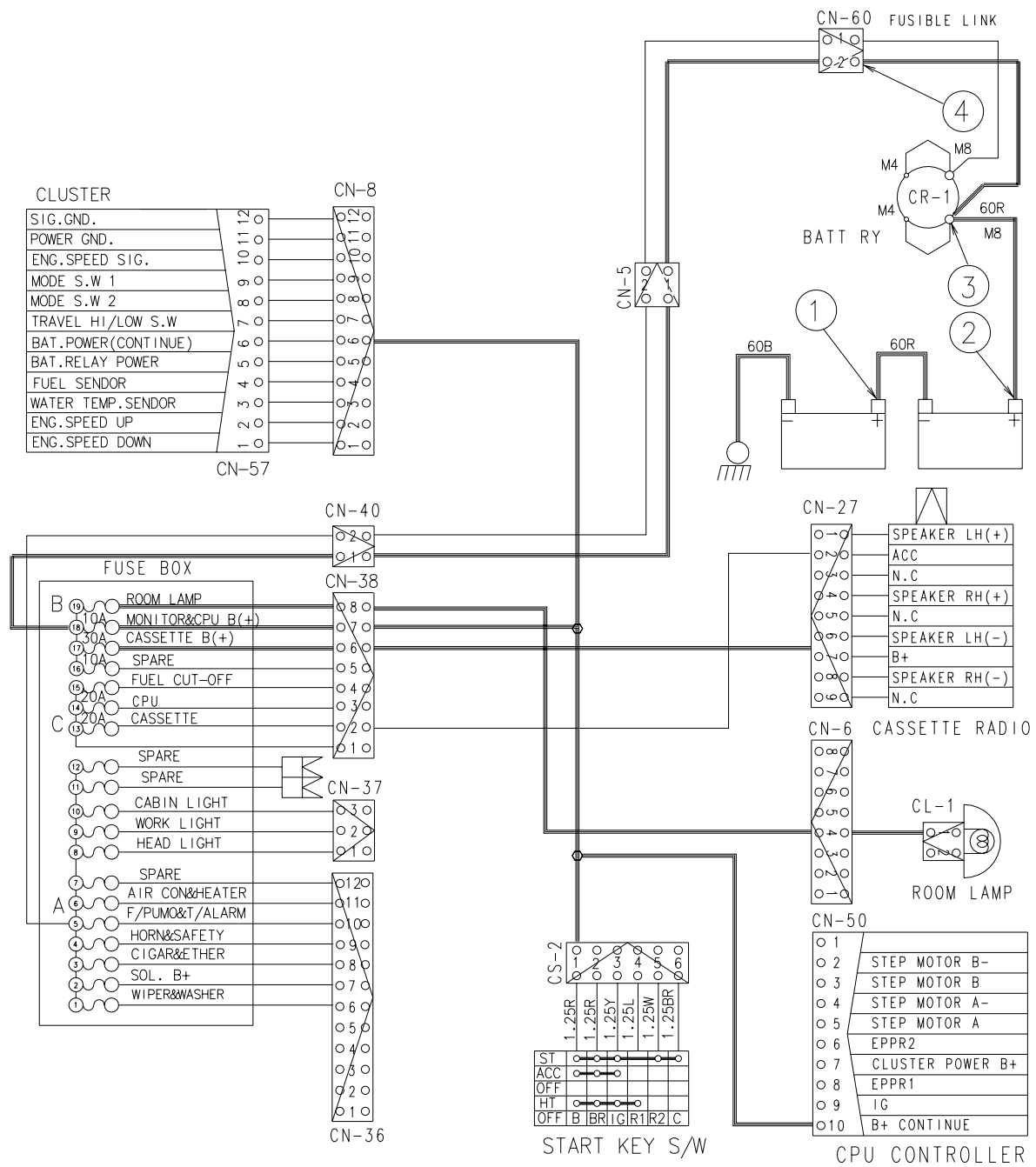


### 2) CHECK POINT

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

※ GND : Ground

# POWER CIRCUIT



## 2. STARTING CIRCUIT

### 1) FLOW

Battery(+) terminal → Battery relay(M8, B+ terminal) → Fusible link [CN-60(1)]

→ I/conn [CN-5(1)] → Start key [CS-2(1)] →

Start key "ON" [CS-2(1),(3)]

- ↳ Battery relay [CN-4(2), M4 terminal]
- ↳ Start key "Start" [CS-2(5)-CN-1(1)] → Start relay [CR-23(1)]
- ↳ Start (terminal B and S connection of start motor)

※ When start key "ON"

CS-2(1), (2), (3) terminal connection → Battery and start cable connection

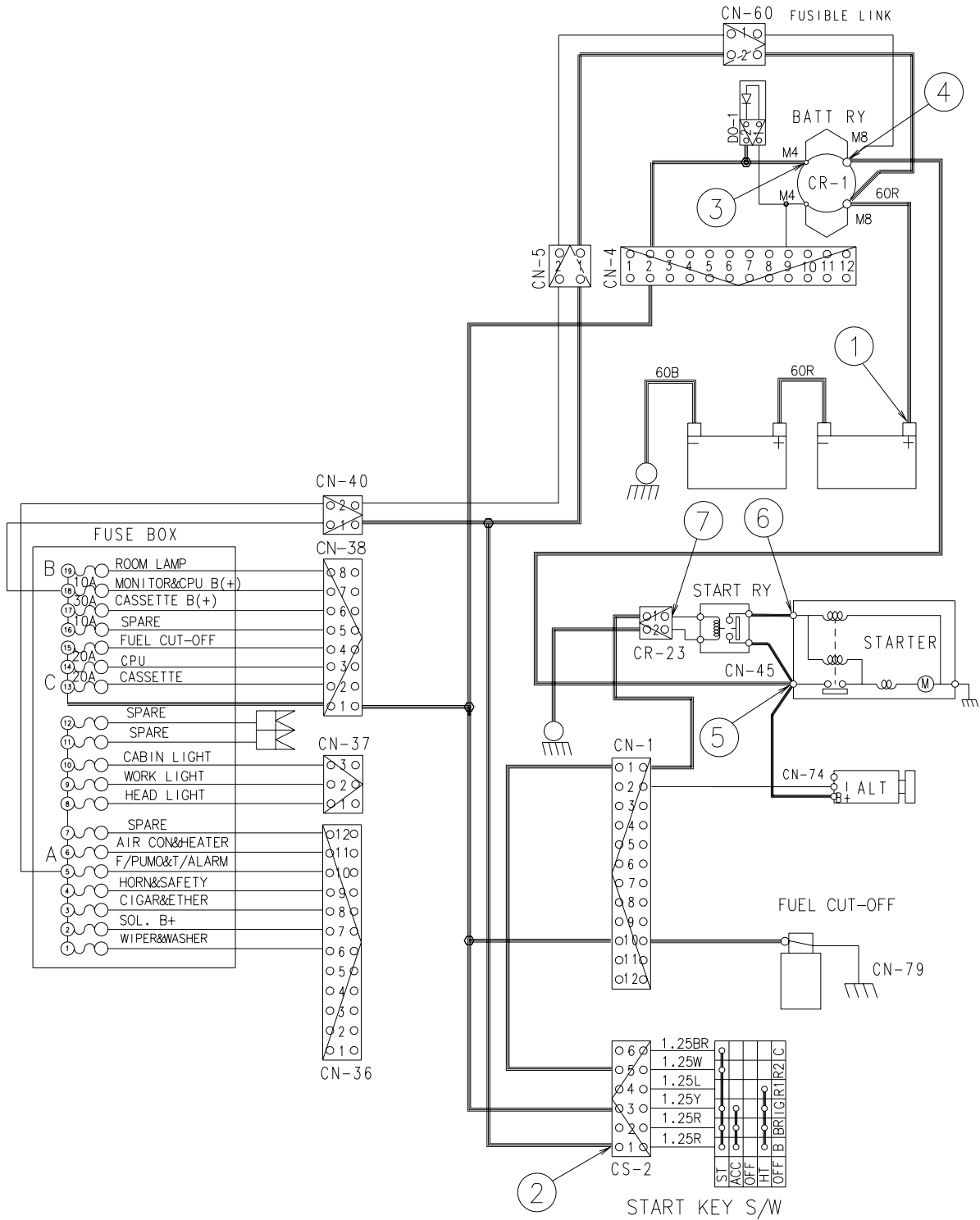
※ I/conn : Intermediate connector

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Operating	Start	① - GND (Battery) ② - GND (Start key) ③ - GND (Battery relay) ④ - GND (Start (B)) ⑤ - GND (Start (C)) ⑥ - GND (Battery relay) ⑦ - GND (Fusible link )	20 ~ 25V

※ GND : Ground

# STARTING CIRCUIT



### 3. CHARGING CIRCUIT

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

In this position, terminal B connects with terminal 1,3 of start key inside the switch.

The engine drives the alternator, which in turn generates current, and charging current flows from terminal B of alternator to the battery.

Current from terminal B of alternator also flows through the fuse box, supplying power to each electrical component and controller.

#### 1) OPERATING FLOW

Battery → Battery relay(M8) → Alternator (B+terminal) →

Alternator(I terminal) → CPU [CN-51(18)] Alternator power level →

CPU controller [CN-53(7)] → I/conn [CN-7(7)] →

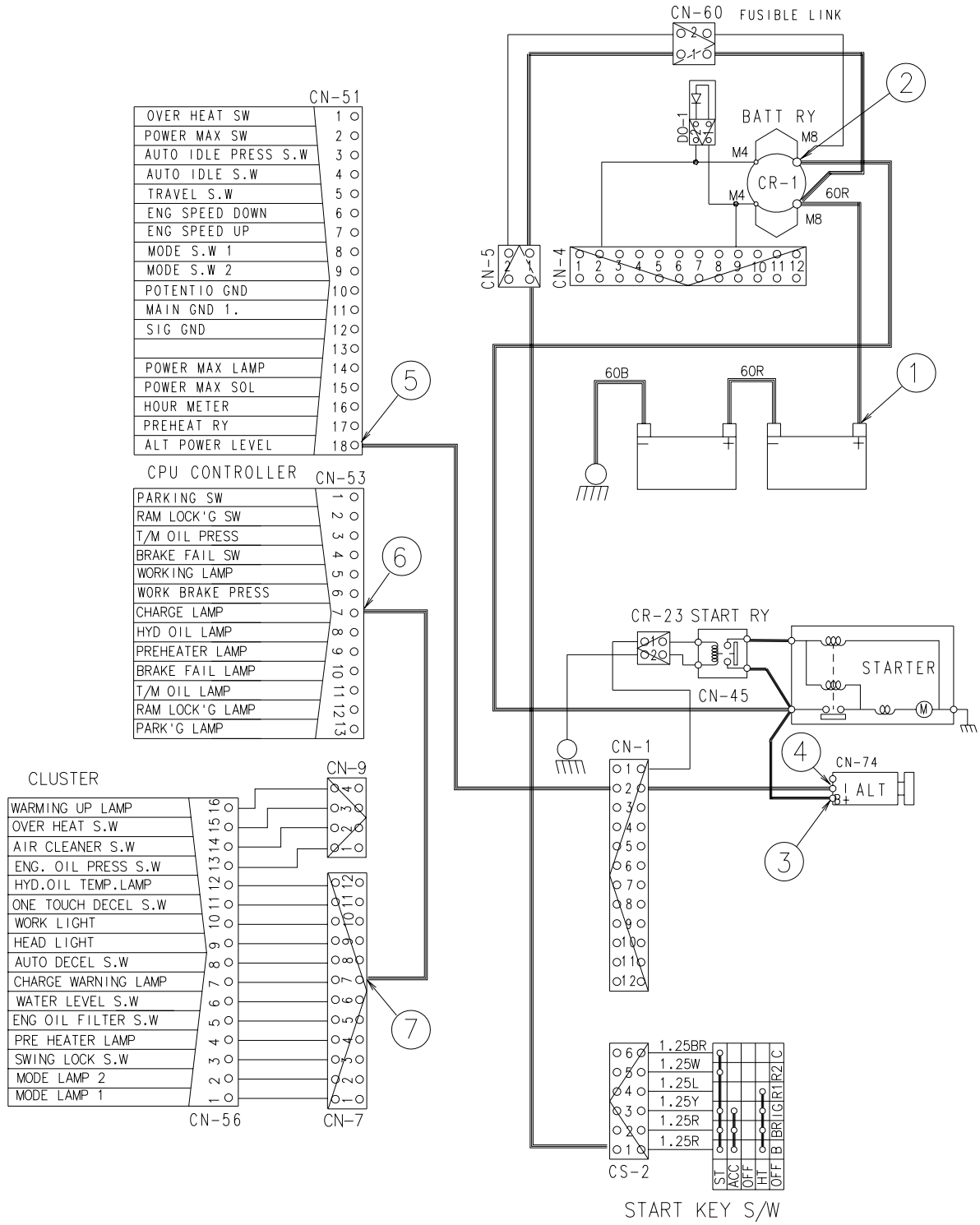
Charge warning lamp of cluster [CN-56(7)]

#### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
ON	ON	① - GND (Battery voltage) ② - GND (Battery relay) ③ - GND (Alt B terminal) ④ - GND (Alt I terminal) ⑤ - GND CPU ⑥ - GND CPU ⑦ - GND Cluster	20 ~ 25V

※ GND : Ground

# CHARGING CIRCUIT



## 4. HEAD LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box : No.8 [CN-37(1)] → Head light switch [CS-39(6)] →

Head light switch "ON" [CS-39(2)]

↳ Head light relay [CR-13(4), (2)] → I/conn [CN-4(7)] → Light ON [CL-4(3)]

↳ Head light relay [CR-13(3), (1)] → Ground

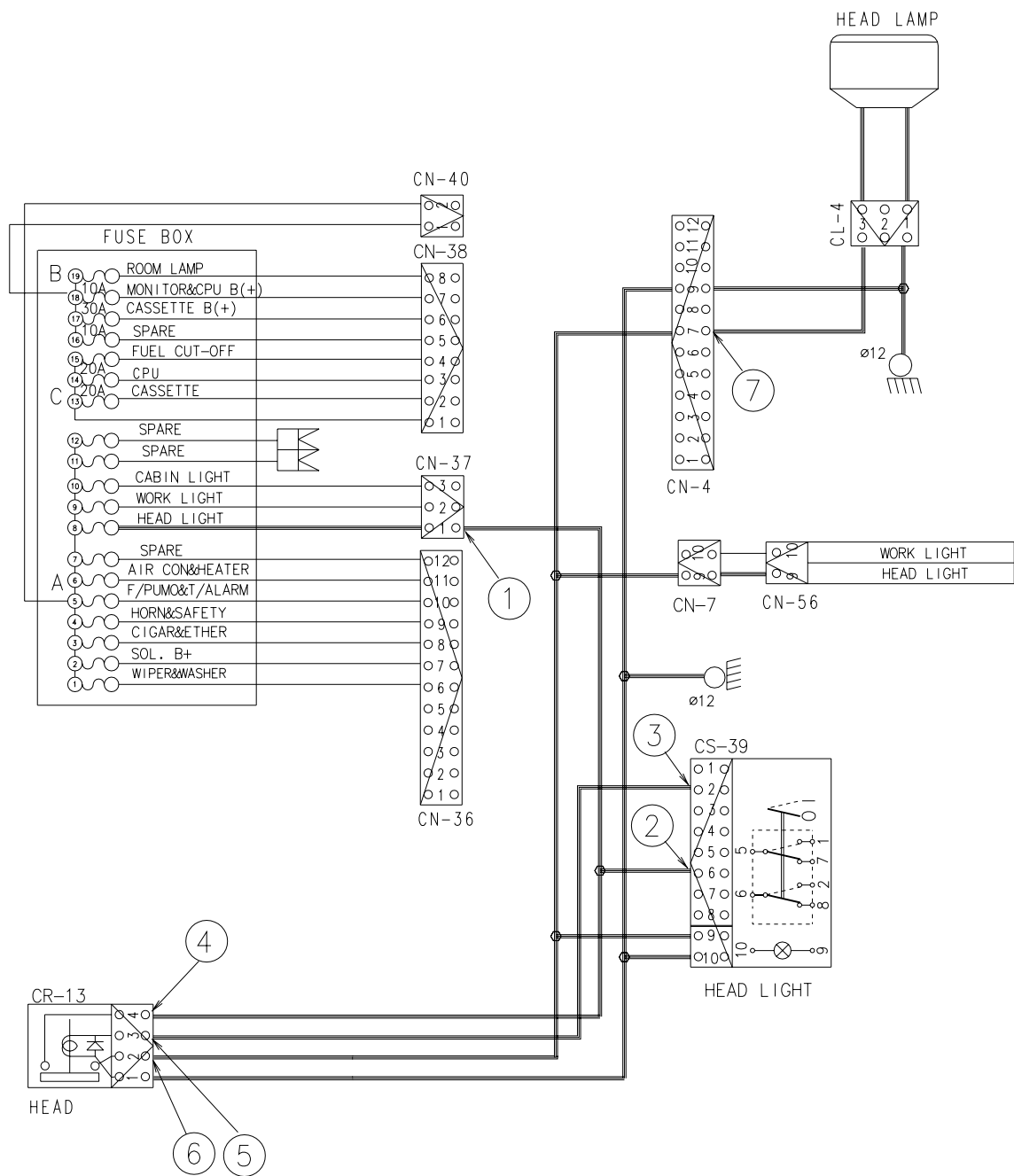
### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
STOP	ON	① - GND (Fuse box) ② - GND (Switch power input) ③ - GND (Switch power output) ④ - GND (Relay input) ⑤ - GND (Relay coil) ⑥ - GND (Relay output) ⑦ - GND (Head light)	20 ~ 25V

※ GND : Ground



# HEAD LIGHT CIRCUIT



## 5. WORK LIGHT CIRCUIT

### 1) OPERATING FLOW

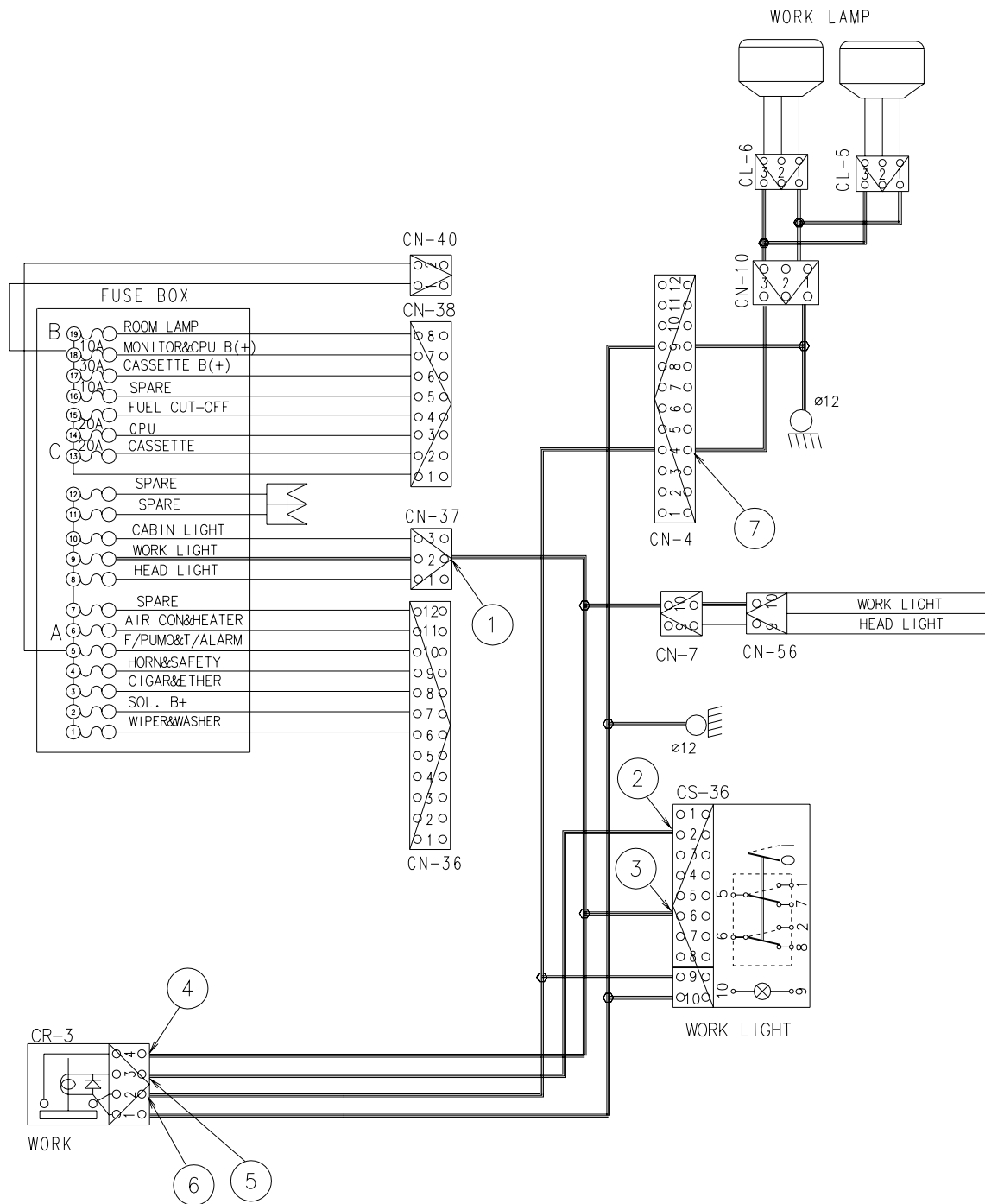
Fuse box : No.9 [CN-37(2)] → Work light switch [CS-36(6)] →  
 Work light switch "ON" [CS-36(2)]  
 → Work light relay [CR-3(4),(2)] → I/conn [CN-4(4)] → I/conn [CN-10(3)]  
 → I/conn [CN-10(3)] → Work light ON [CL-6(3)]  
 → Work light ON [CL-5(3)]  
 → Work light relay [CR-3(3),(1)] → Ground

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
STOP	ON	① - GND (Fuse box) ② - GND (Switch power input) ③ - GND (Switch power output) ④ - GND (Relay input) ⑤ - GND (Relay coil) ⑥ - GND (Relay output) ⑦ - GND (Work light)	20 ~ 25V

※ GND : Ground

# WORK LIGHT CIRCUIT



## 6. CAB LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box : No.10 [CN-37(3)] → Cabin light switch [CS-24(6)] →

Cabin light switch "ON" [CS-24(2)]

→ Cabin light switch [CR-9(4),(2)] → I/conn [CN-6(5)] → I/conn [CN-14(4)]

→ Cabin light "ON" [CL- 8(female), rear]

→ Cabin light "ON" [CL- 9(female), RH]

→ Cabin light "ON" [CL-10(female), LH]

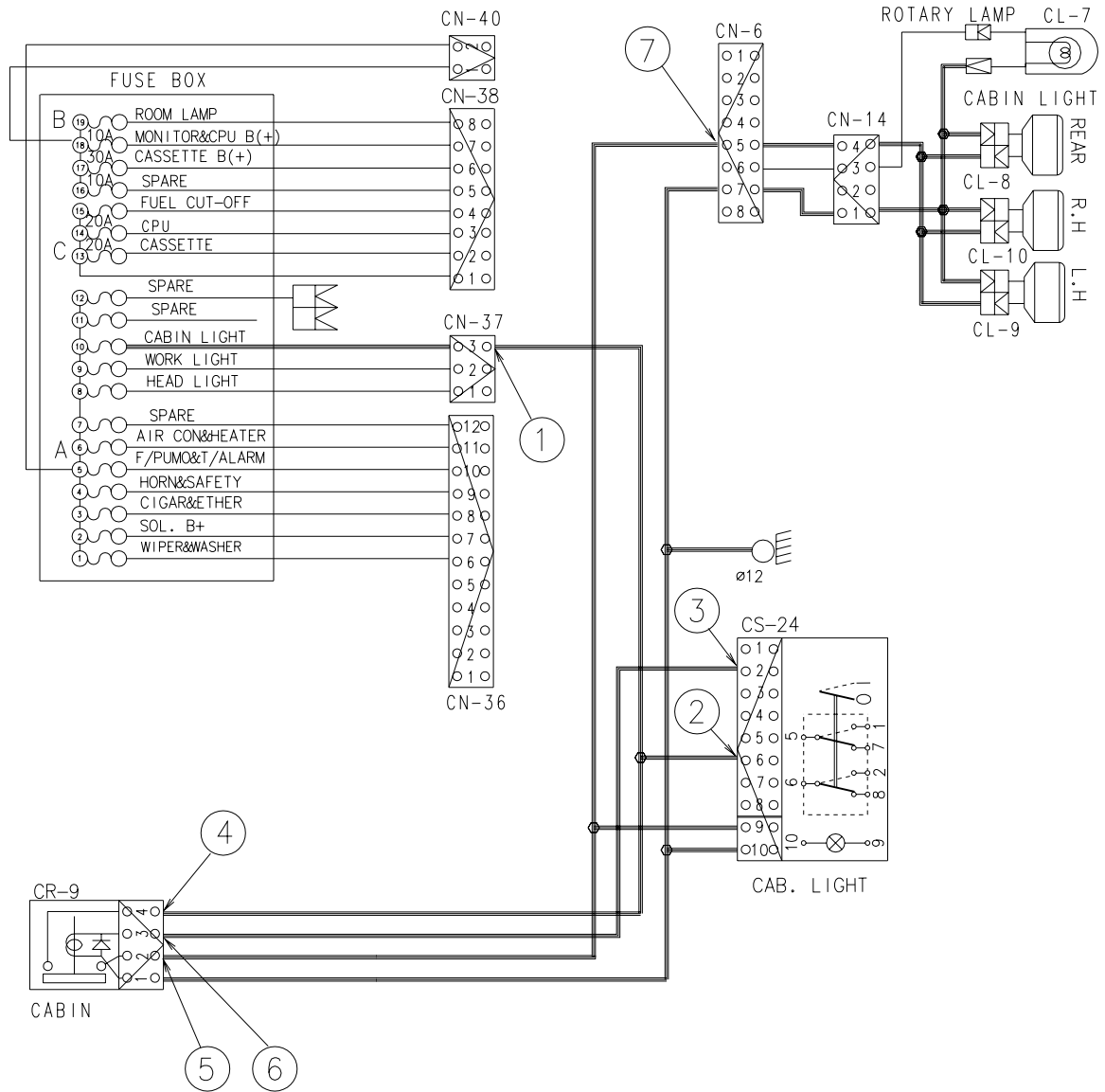
→ Cabin work light relay [CR-9(1),(3)] → Ground

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
STOP	ON	① - GND (Fuse box) ② - GND (Switch power input) ③ - GND (Switch power output) ④ - GND (Relay input) ⑤ - GND (Relay coil) ⑥ - GND (Relay output) ⑦ - GND (Work light)	20 ~ 25V

※ GND : Ground

# CAB LIGHT CIRCUIT



## 7. WIPER MOTOR CIRCUIT

### 1) OPERATING FLOW

#### (1) Wiper motor

Fuse box : No.1 [CN-36(6)] → Wiper motor switch [CS-3(6)]

↳ Wiper motor relay [CR-4(4),(1)] → I/conn [CN-13(1)] → Wiper motor operating [CN-21(1)]

↳ Wiper motor relay [CR-4(2),(6)] → Ground

#### (2) Auto-parking(When switch "OFF")

Wiper motor [CN-21(1)] → Switch "OFF" → Fuse box : No. 1 [CN-36(16)] →

I/conn [CN-6(2)] → I/conn [CN-13(3)] → Wiper motor [CN-2(3),(4)]

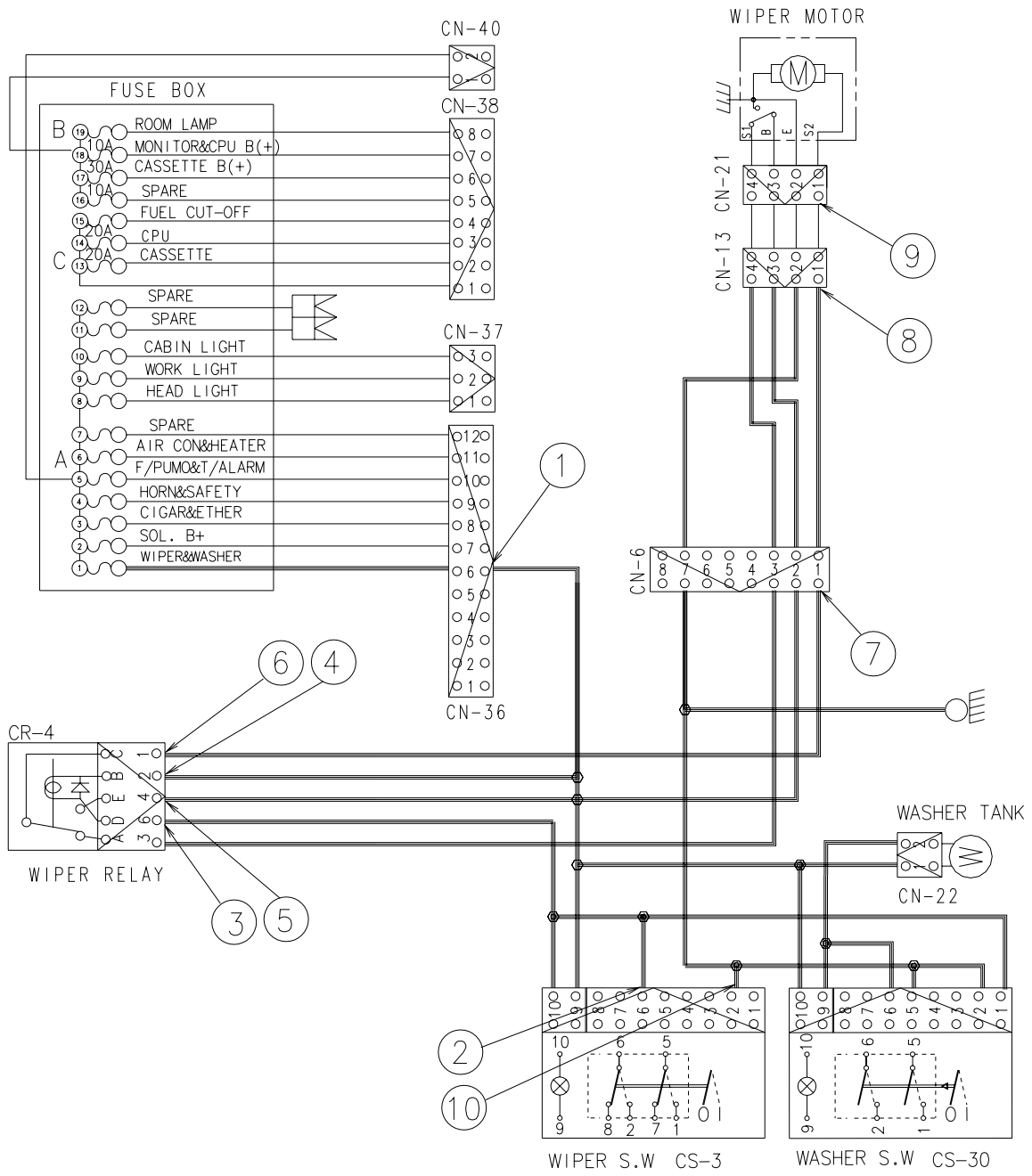
→ Wiper motor STOP

### 2) CHECK POINT

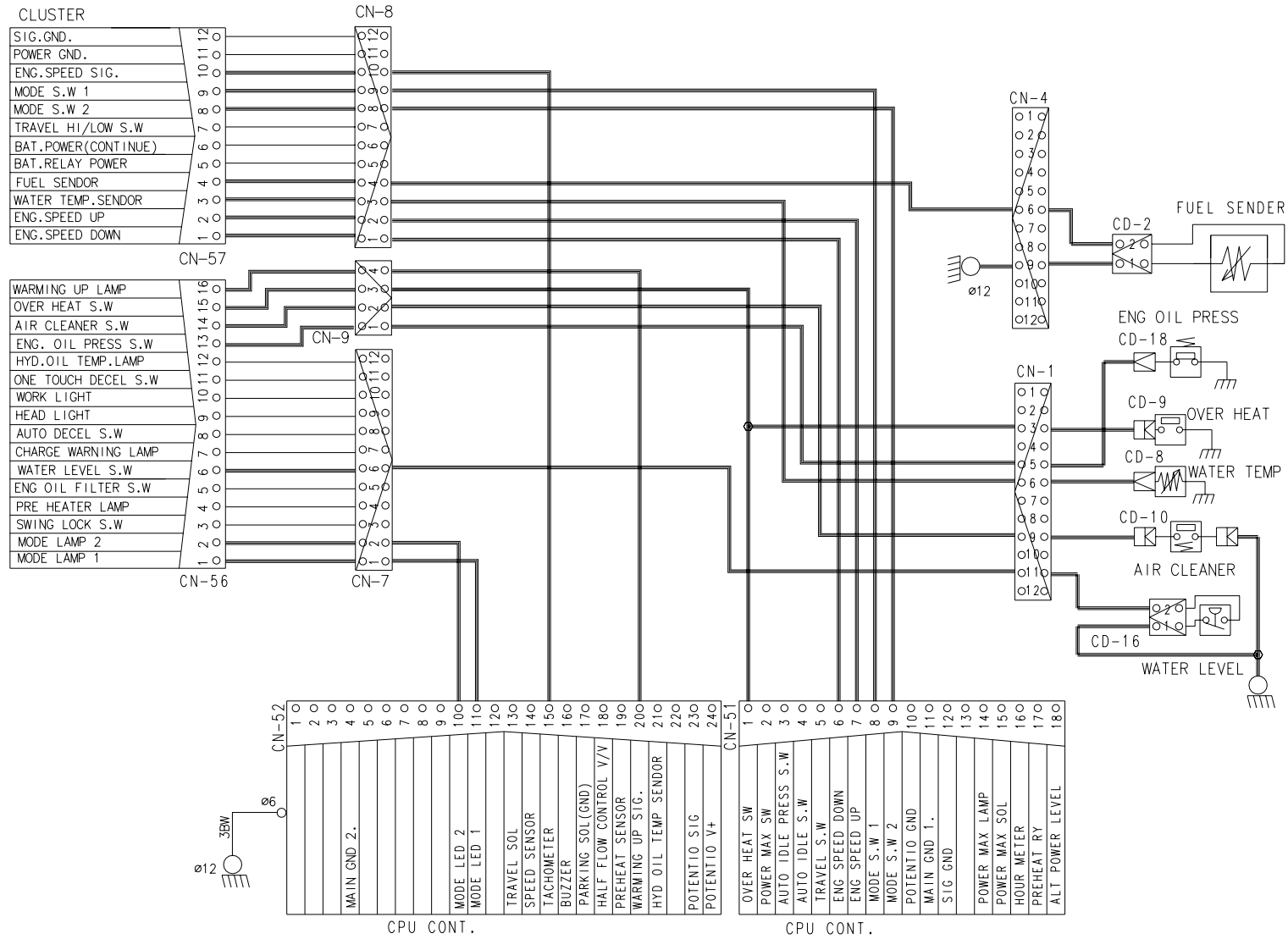
Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (Fuse box) ② - GND (Switch input) ③ - GND (Relay) ④ - GND (Relay coil) ⑤ - GND (Relay) ⑥ - GND (Relay coil) ⑦ - GND (Wiper power input) ⑧ - GND (Wiper power input) ⑨ - GND (Wiper motor) ⑩ - GND (Switch output)	20 ~ 25V

※ GND : Ground

# WIPER MOTOR CIRCUIT

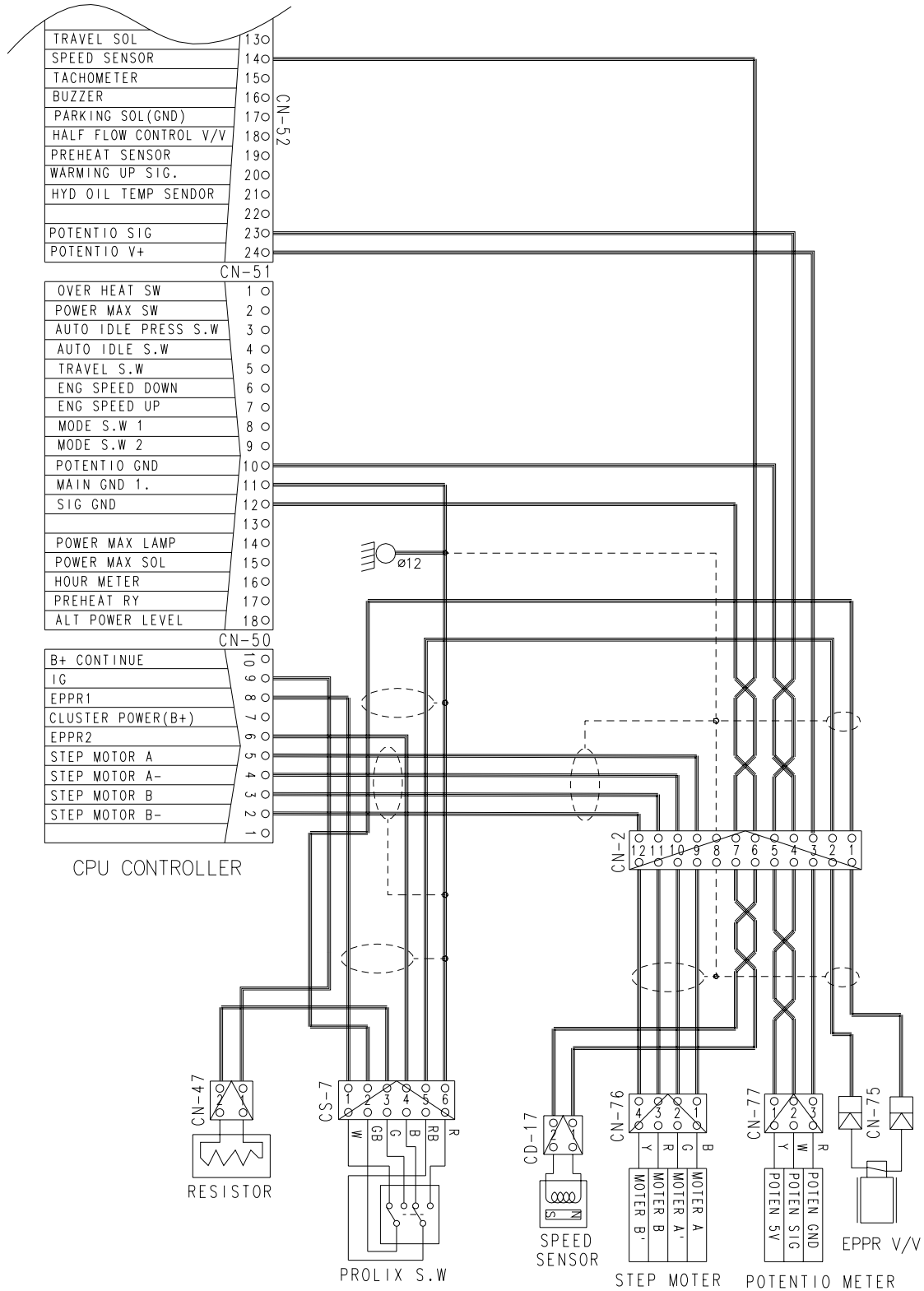


# MONITORING CIRCUIT





# CONTROLLER CIRCUIT



# ELECTRICAL CIRCUIT FOR HYDRAULIC

