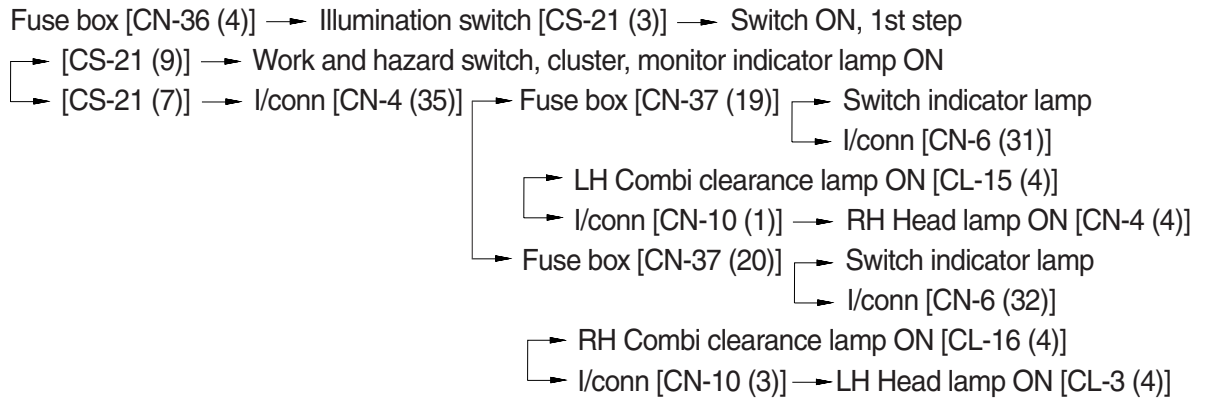




1. ILLUMINATION CIRCUIT

1) OPERATING FLOW

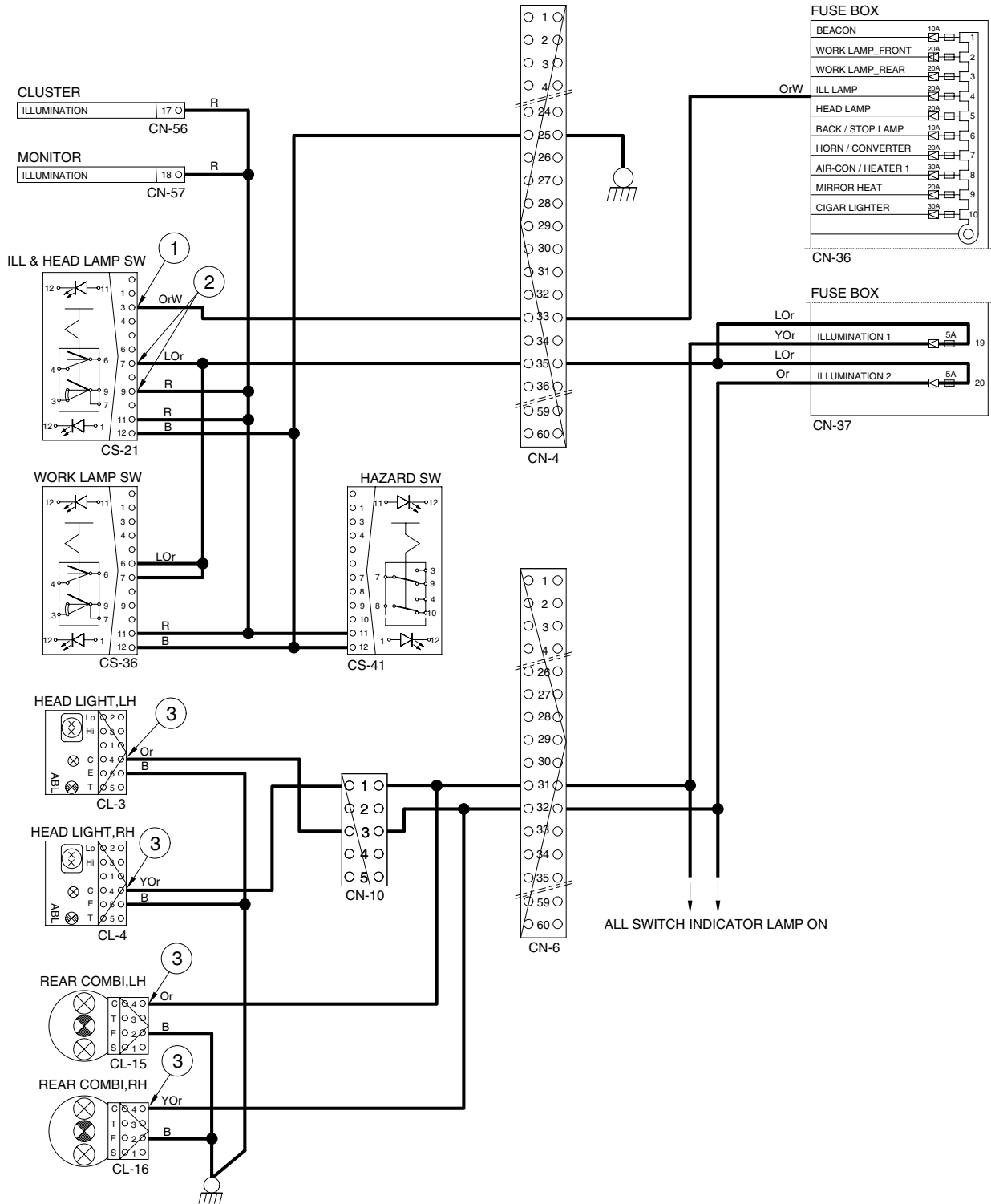


2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (switch input) ② - GND (switch output) ③ - GND (to light)	20~25V

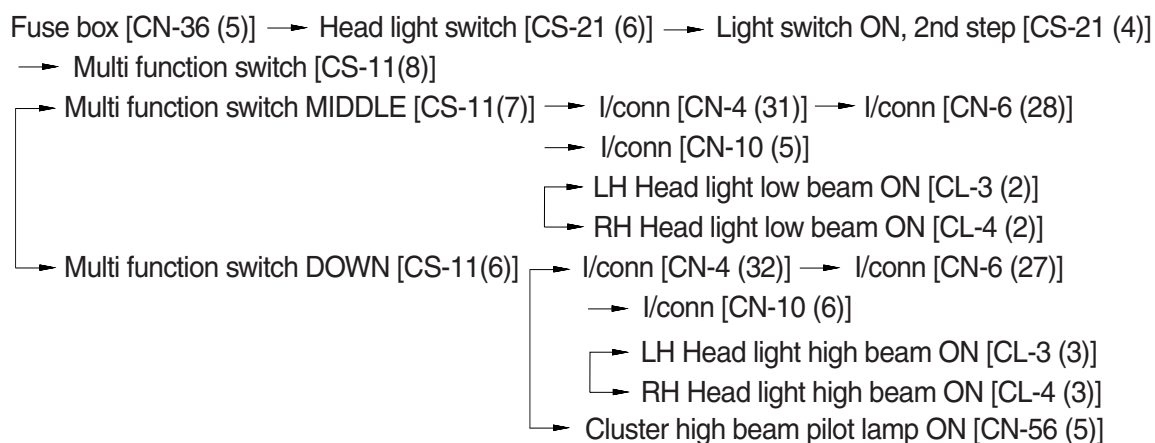
※ GND : Ground

ILLUMINATION CIRCUIT



2. HEAD LIGHT CIRCUIT

1) OPERATING FLOW

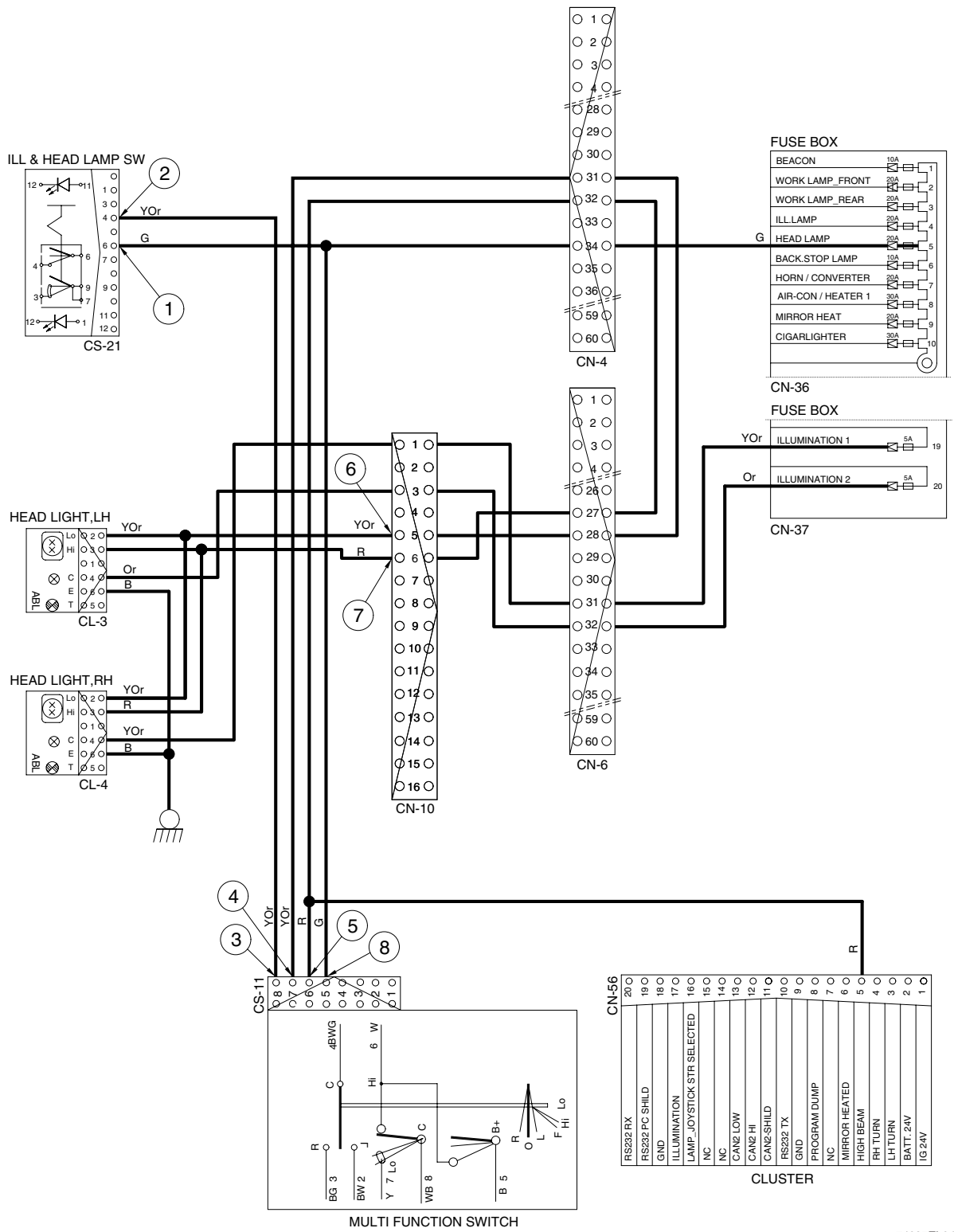


2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (switch input) ② - GND (switch output) ③ - GND (multi function input) ④ - GND (multi function output) ⑤ - GND (multi function output) ⑥ - GND (low beam) ⑦ - GND (high beam) ⑧ - GND (passing B ⁺)	20~25V

※ GND : Ground

HEAD LIGHT CIRCUIT



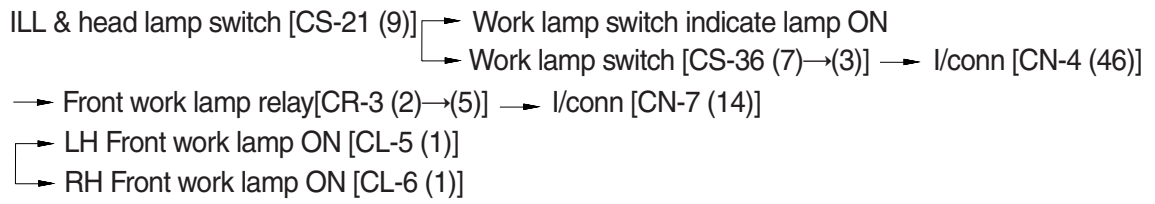
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3. WORK LIGHT SWITCH

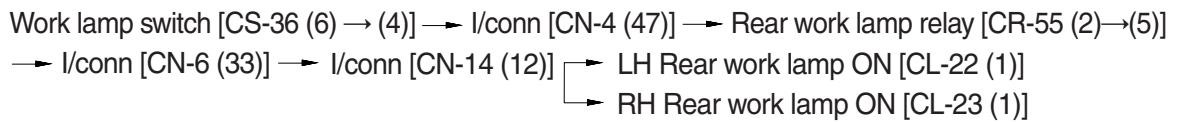
1) OPERATING FLOW

※ Illumination switch : ON position (1st step)

(1) Work lamp switch ON (1st step)



(2) Work lamp switch (2nd step)

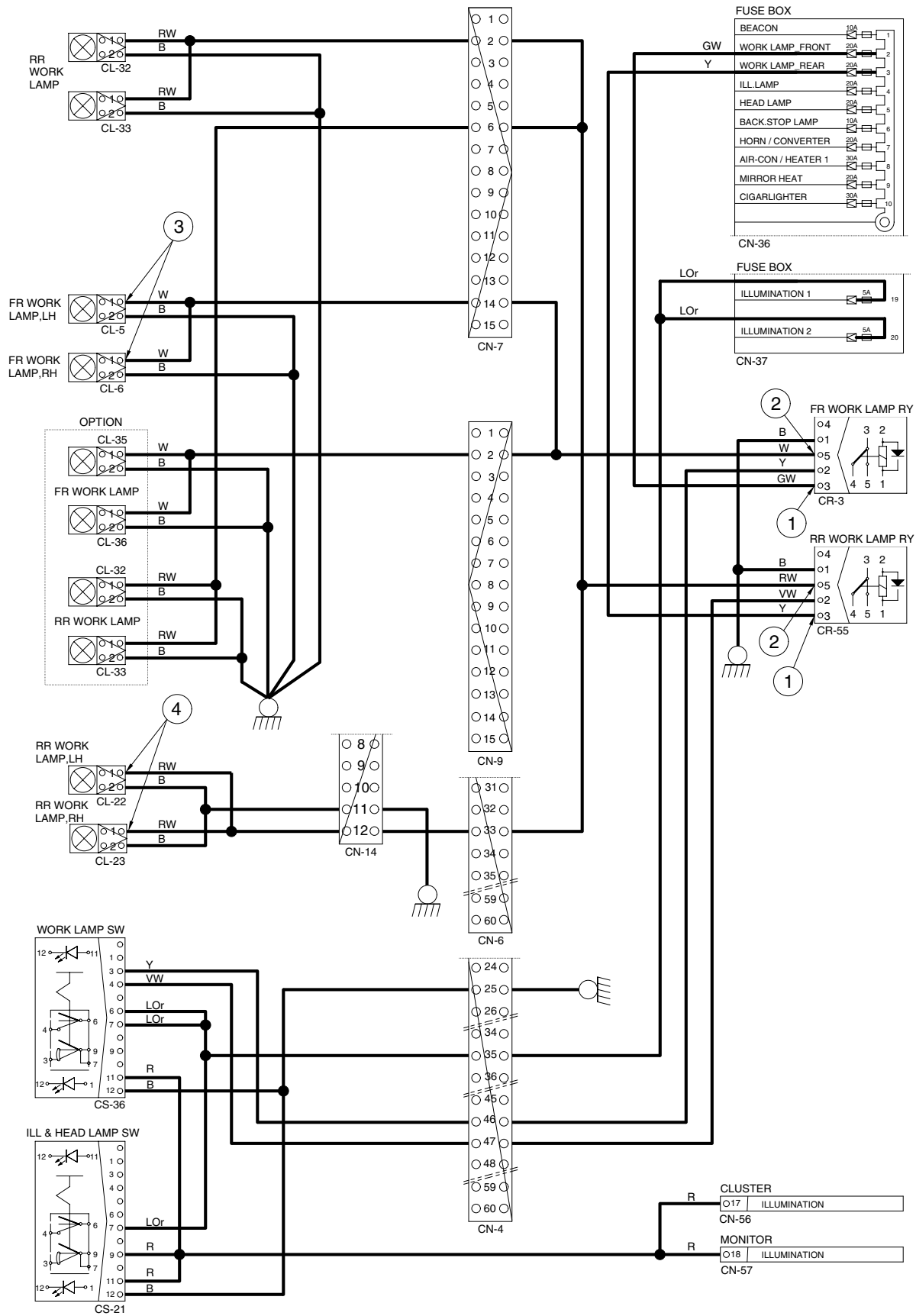


2) CHECK POINT

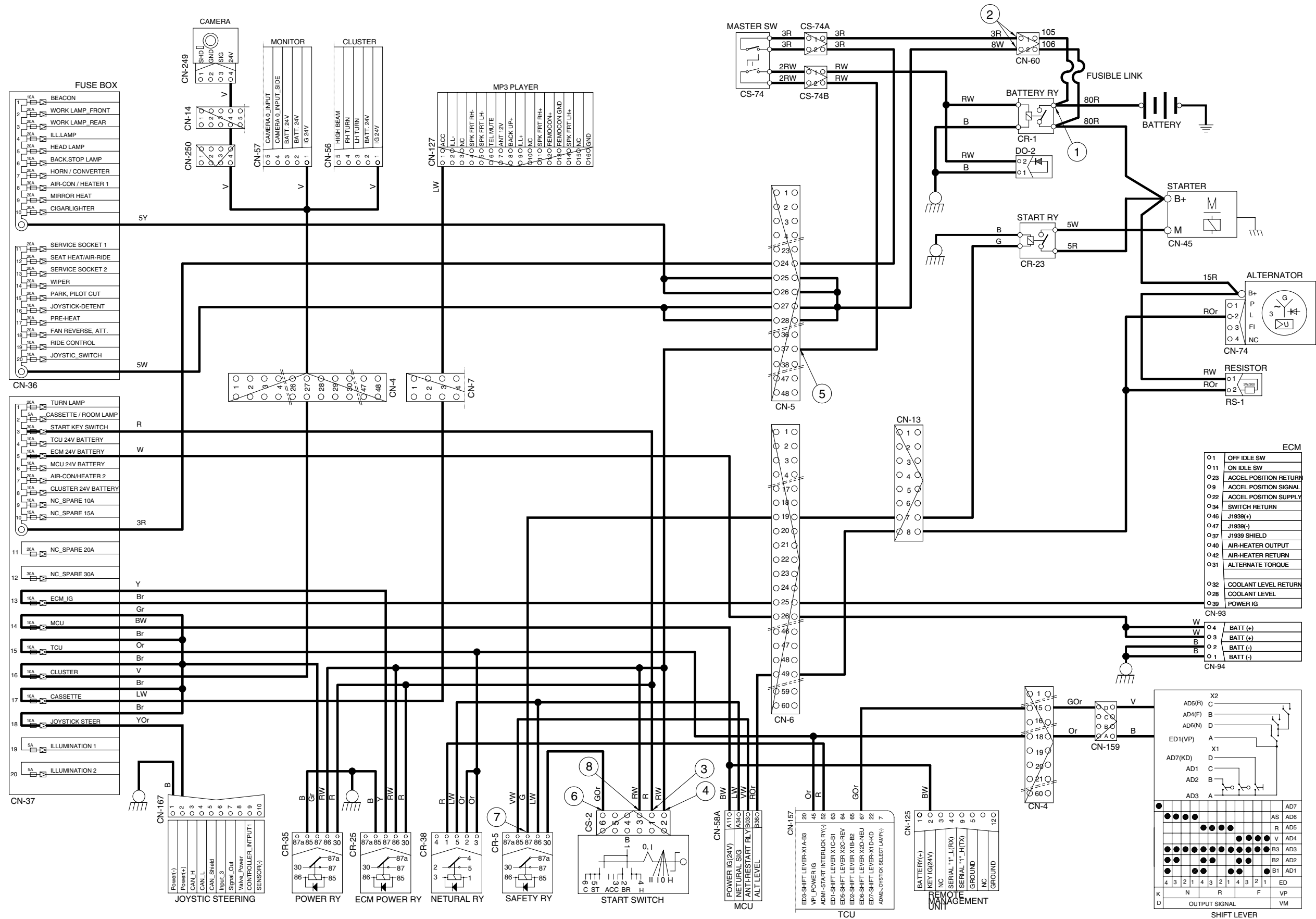
Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (work lamp power input) ② - GND (work lamp power output) ③ - GND (front work lamp) ④ - GND (rear work lamp)	20~25V

※ GND : Ground

WORK LIGHT SWITCH



STARTING CIRCUIT



ECM

01	OFF IDLE SW
011	ON IDLE SW
023	ACCEL POSITION RETURN
09	ACCEL POSITION SIGNAL
022	ACCEL POSITION SUPPLY
034	SWITCH RETURN
046	J1939(+)
047	J1939(-)
037	J1939 SHIELD
040	AIR-HEATER OUTPUT
042	AIR-HEATER RETURN
031	ALTERNATE TORQUE
032	COOLANT LEVEL RETURN
028	COOLANT LEVEL
039	POWER IG

CN-93

04	BATT (+)
03	BATT (+)
02	BATT (-)
01	BATT (-)

CN-94

01	OFF IDLE SW
011	ON IDLE SW
023	ACCEL POSITION RETURN
09	ACCEL POSITION SIGNAL
022	ACCEL POSITION SUPPLY
034	SWITCH RETURN
046	J1939(+)
047	J1939(-)
037	J1939 SHIELD
040	AIR-HEATER OUTPUT
042	AIR-HEATER RETURN
031	ALTERNATE TORQUE
032	COOLANT LEVEL RETURN
028	COOLANT LEVEL
039	POWER IG

5. 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 through the battery relay (CR-1).

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

1) OPERATING FLOW

(1) Warning flow

Alternator [CN-74 (2)] → I/conn [CN-13 (8)] → I/conn [CN-6 (49)] → MCU [CN-58A (B36)]
 → Cluster charge warning lamp ON

(2) Charging flow

Alternator → Starter [CN-45 (B⁺)] → Battery relay [CR-1]
 → Battery(+) terminal → Charging
 → Fusible link [CN-60 (1)] → Master switch [CS-74 (1)→(2)] → I/conn [CN-5 (24)]
 → Fuse box [CN-37]
 → Fusible link [CN-60 (2)] → I/conn [CN-5 (25~28)] → Fuse box [CN-36]

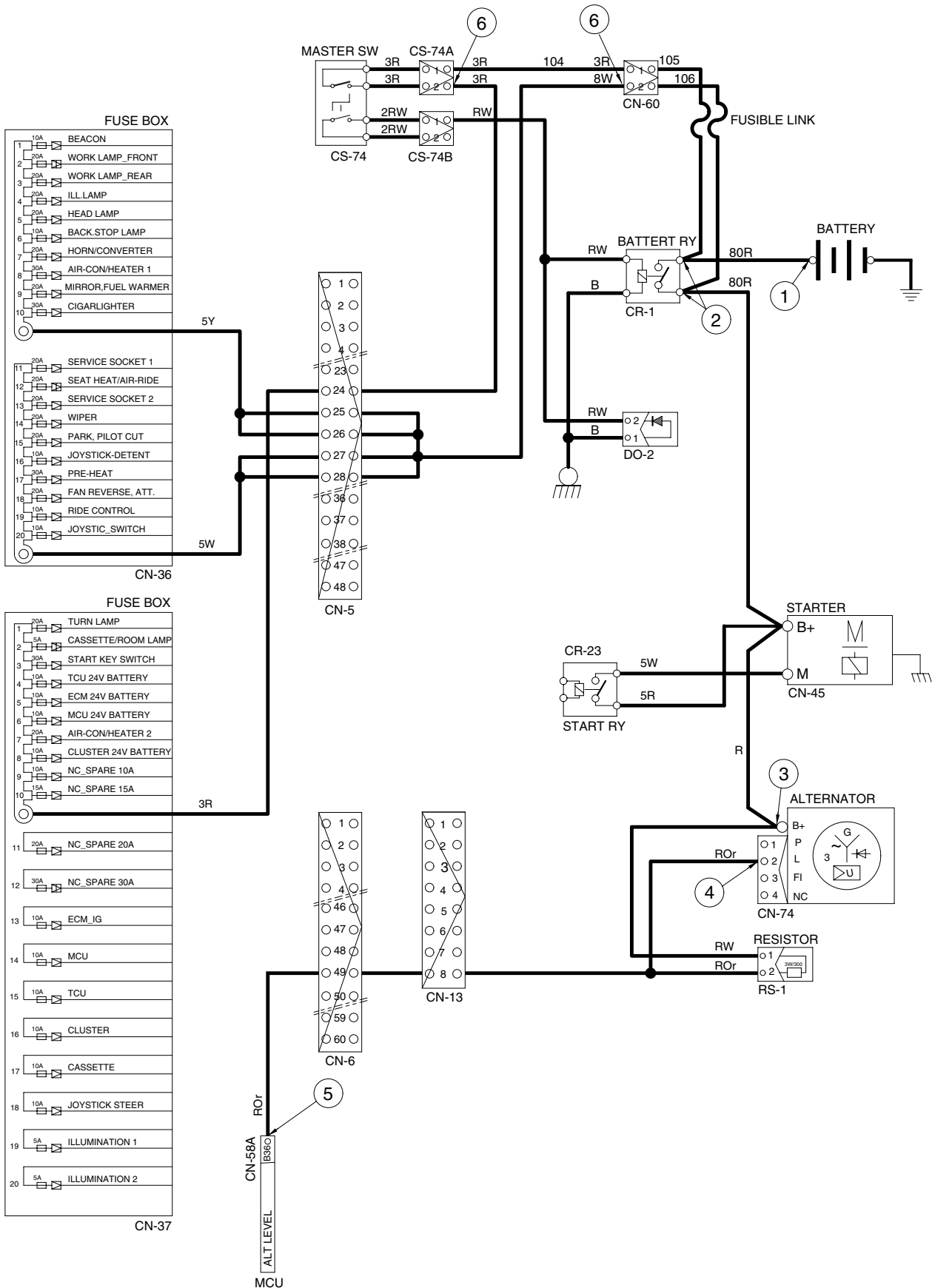
2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (battery) ② - GND (battery relay) ③ - GND (alternator B ⁺) ④ - GND (alternator 2) ⑤ - GND (MCU) ⑥ - GND (fuse box)	20~28V

※ GND : Ground

※ MCU : Machine control unit

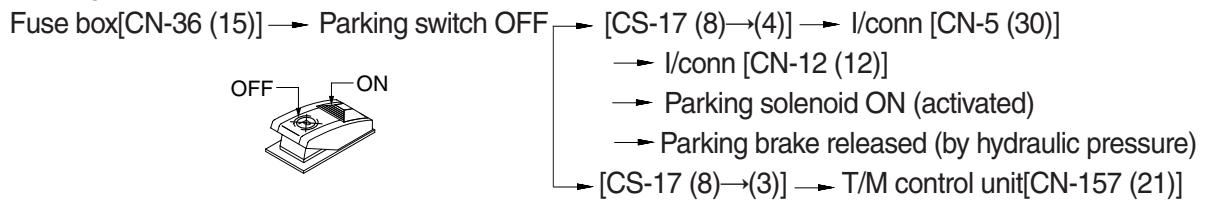
CHARGING CIRCUIT



6. ELECTRIC PARKING, PILOT CUT OFF CIRCUIT

1) OPERATING FLOW

(1) Parking OFF



(2) Parking ON

Fuse box [CN-36 (15)] → Parking switch ON → Parking solenoid [CN-71] OFF
 → Parking brake applied [By spring force]

(3) Pilot cut off ON

Fuse box [CN-36 (15)] → Pilot cut off switch ON → Pilot cut off switch [CS-4 (8)→(4)]
 → I/conn [CN-5 (29)] → Pilot cut off solenoid ON [CN-68] (activate) → Pilot cut off released

(4) Pilot cut off OFF

Fuse box [CN-36 (15)] → Pilot cut off solenoid [CN-68] OFF
 → Pilot cut off applied

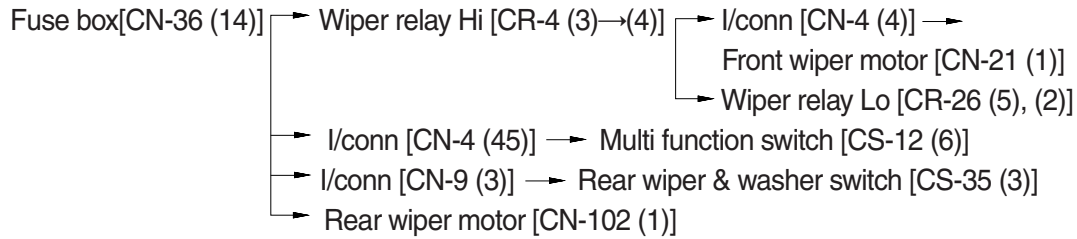
2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (parking switch input) ② - GND (parking switch output) ③ - GND (pilot cut off switch input) ④ - GND (pilot cut off switch output) ⑤ - GND (parking solenoid) ⑥ - GND (pilot cut off solenoid)	20~25V

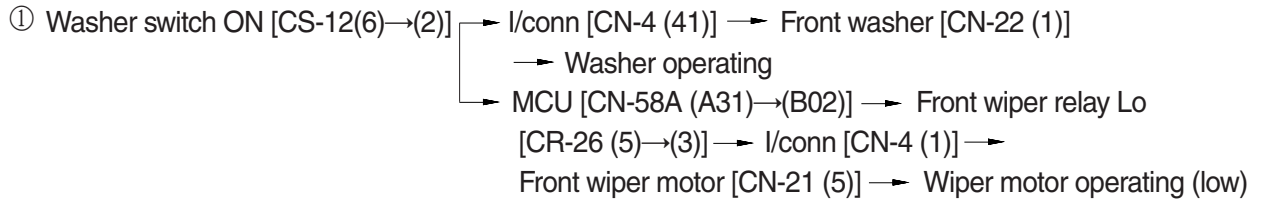
※ GND : Ground

7. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

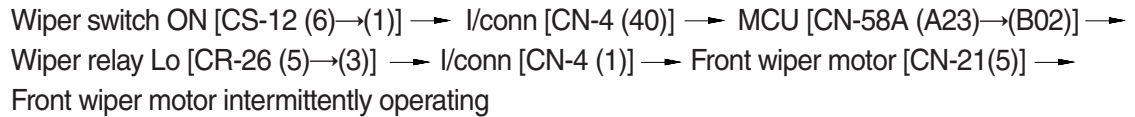


(1) Front washer switch ON

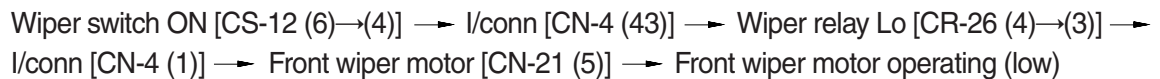


(2) Front wiper switch ON

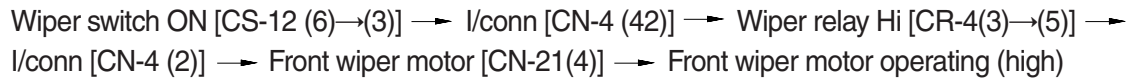
① INT position



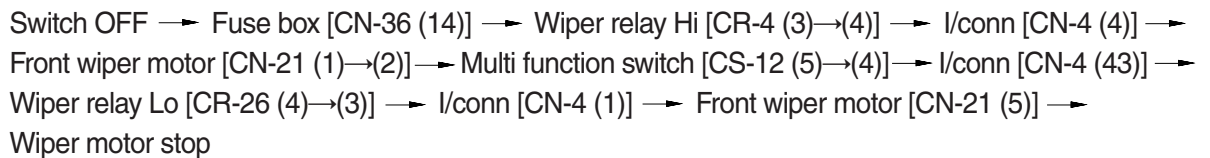
② Lo position



③ Hi position

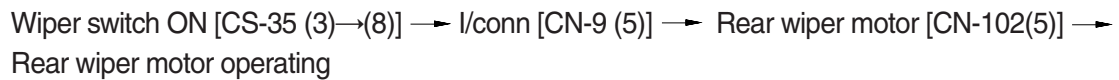


(3) Auto-parking (when switch OFF)

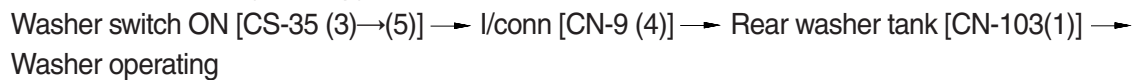


(4) Rear wiper and washer switch

① Wiper switch ON (1st step)



② Washer switch ON (2nd step)

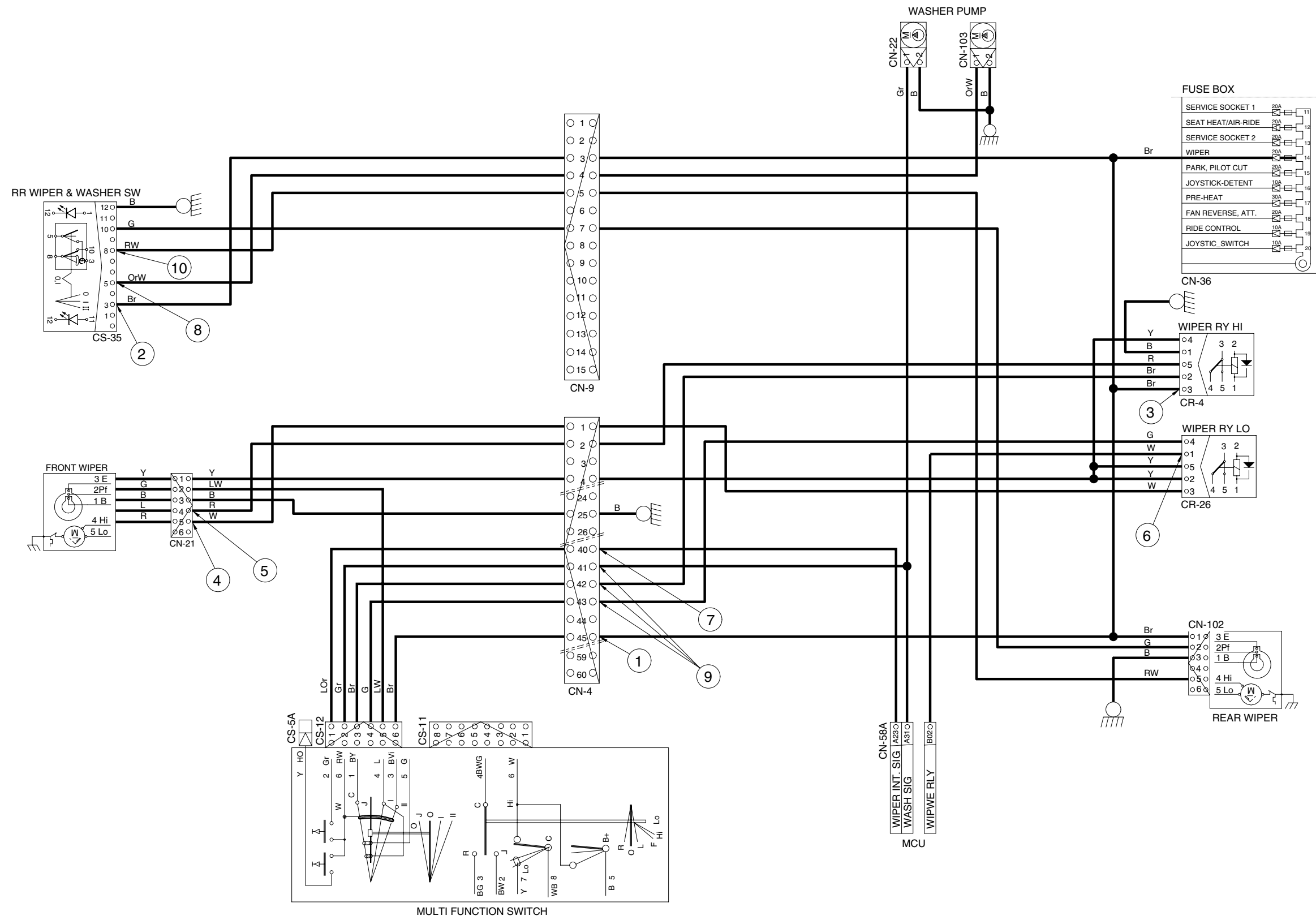


2) CHECK POINT

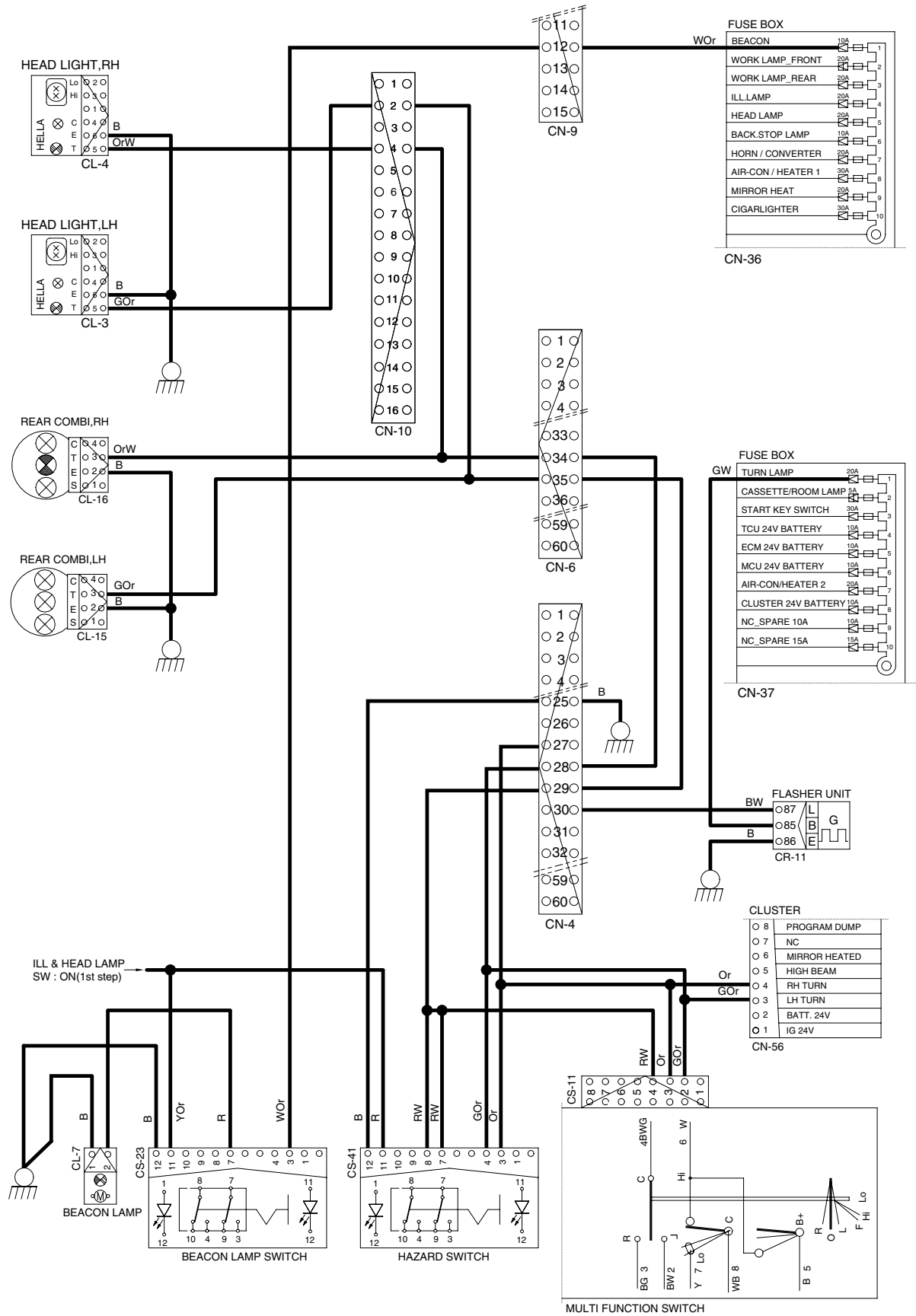
Condition	Check point	
Engine : Stop	① - GND (front wiper switch power input)	⑥ - GND (wiper relay power input)
	② - GND (rear wiper switch power input)	⑦ - GND (front washer power output)
Key switch : ON	③ - GND (wiper relay power input)	⑧ - GND (rear washer power output)
	④ - GND (front wiper motor Lo power input)	⑨ - GND (front wiper motor power output)
Voltage : 20~25V	⑤ - GND (front wiper motor High power input)	⑩ - GND (rear wiper motor power output)

※ GND : Ground

WIPER AND WASHER CIRCUIT



HAZARD, TURN AND ROTARY CIRCUIT



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