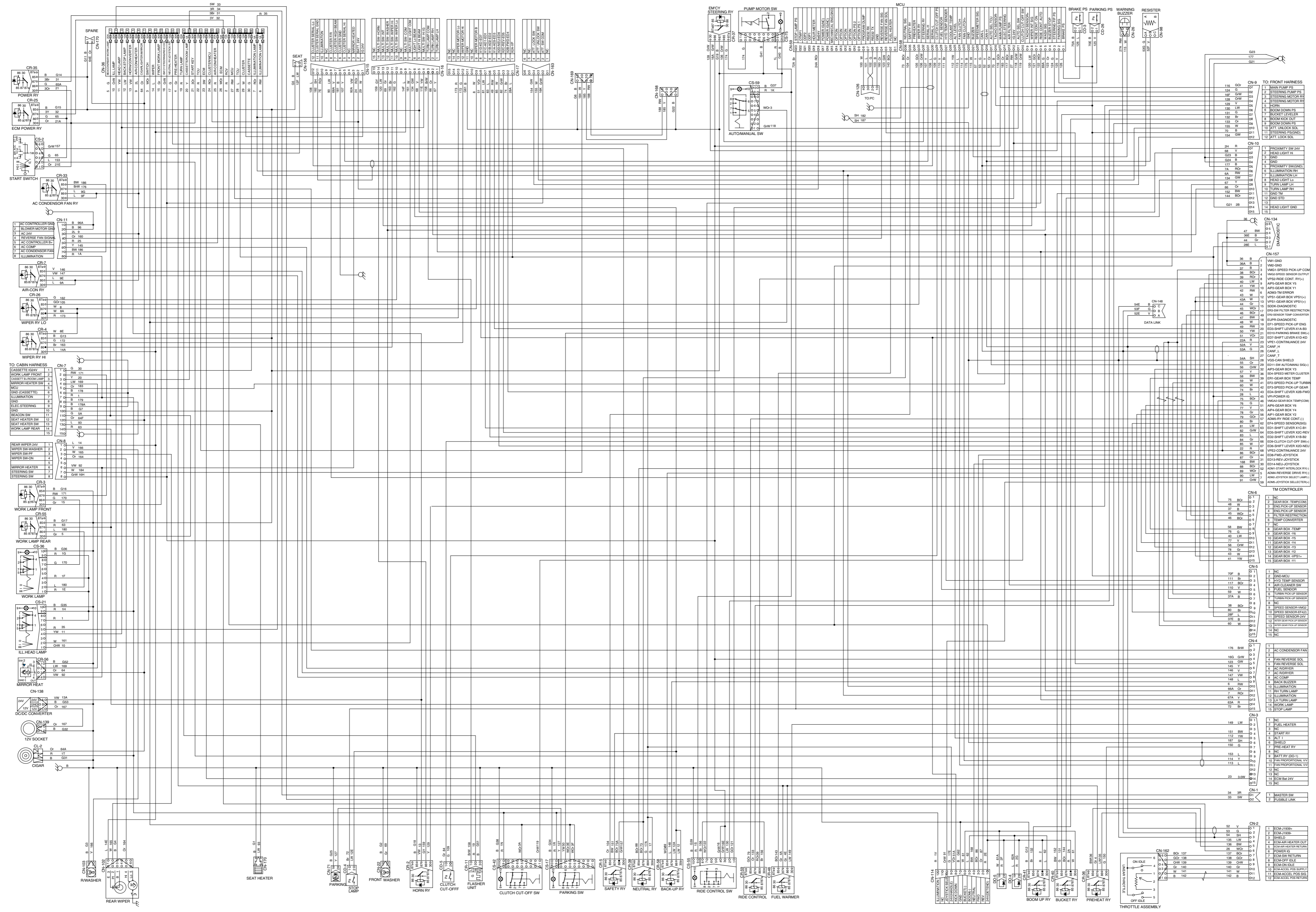


# GROUP 2 ELECTRICAL CIRCUIT

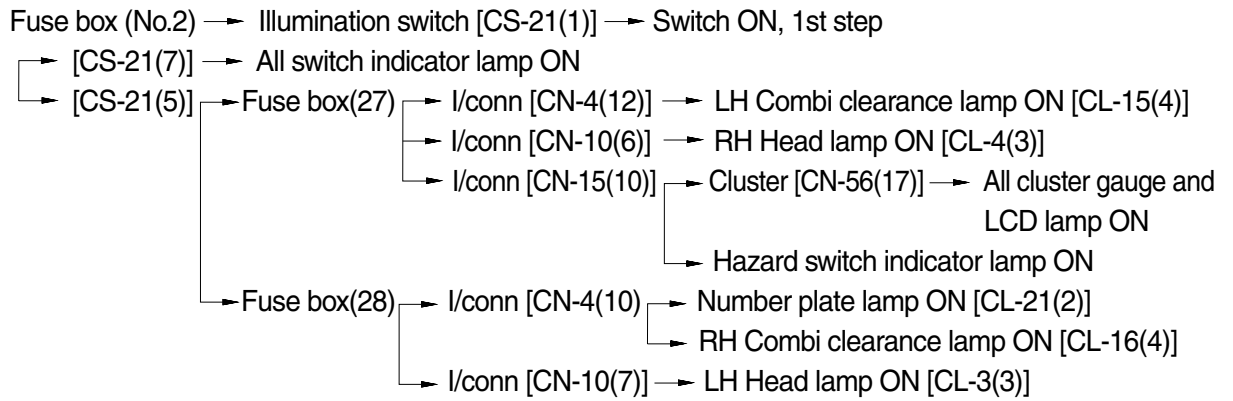






# 1. ILLUMINATION CIRCUIT

## 1) OPERATING FLOW

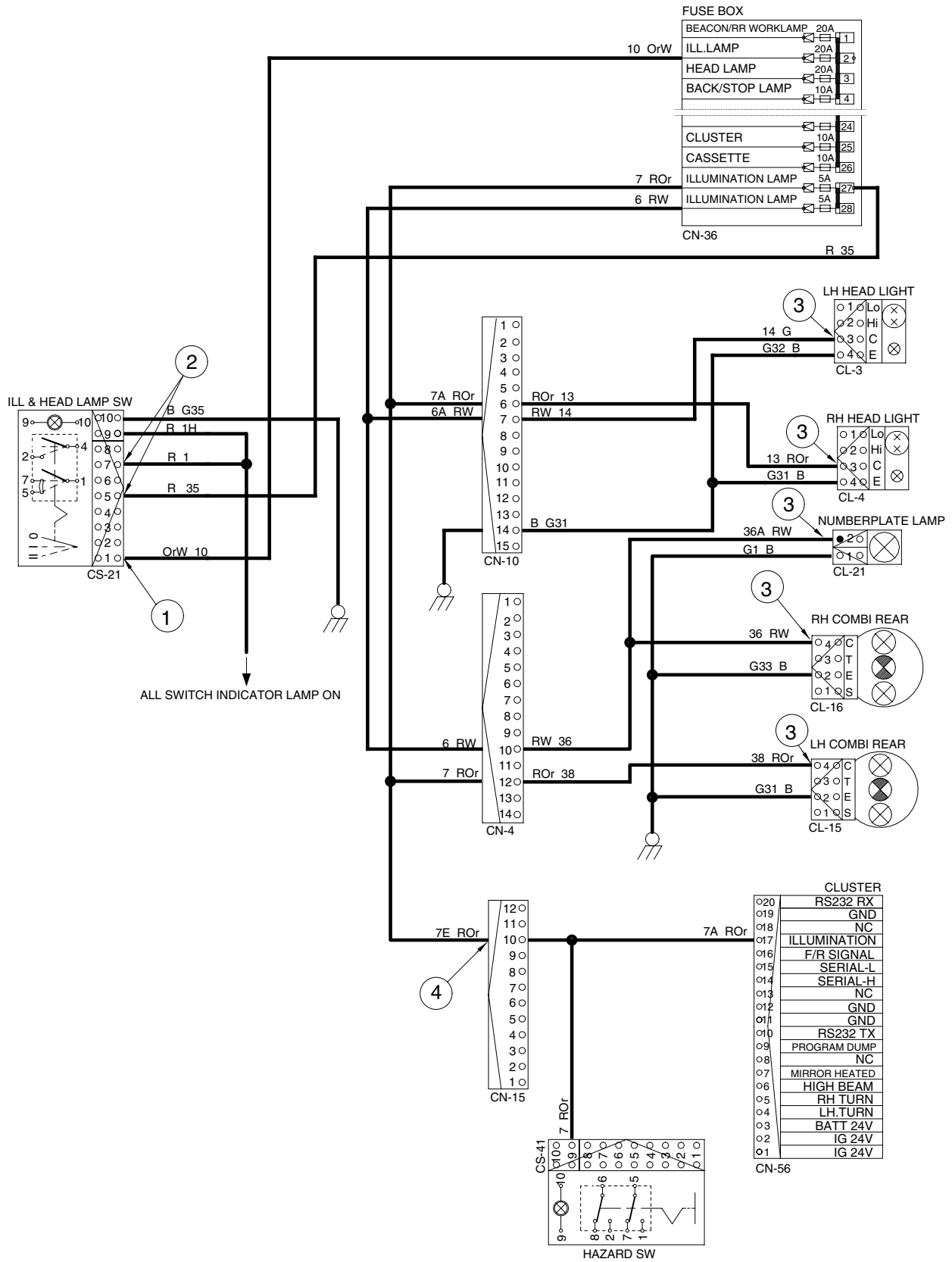


## 2) CHECK POINT

Engine	Key switch	Check point	Voltage
OFF	ON	① - GND (Switch input) ② - GND (Switch output) ③ - GND (To light) ④ - GND (To cluster)	20~25V

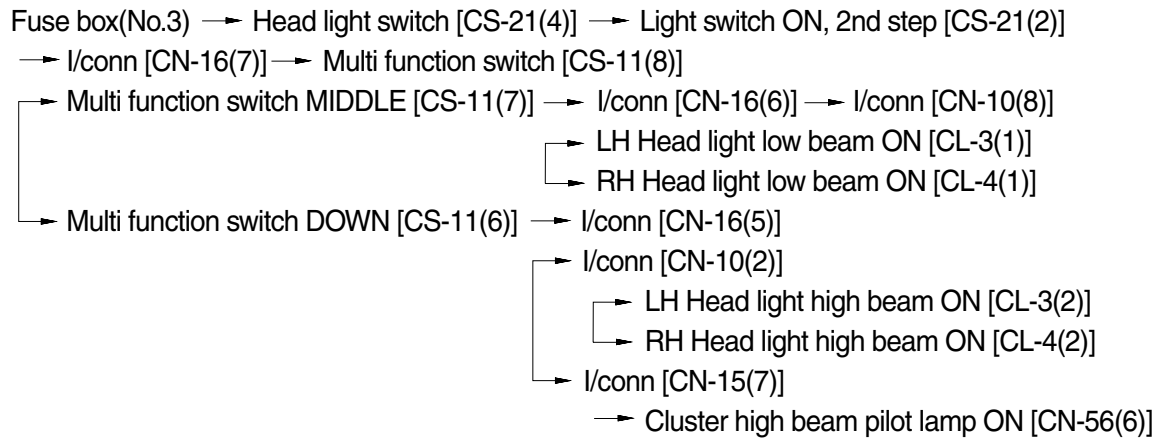
※ GND : Ground

# 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



### 3. WORK LIGHT SWITCH

#### 1) OPERATING FLOW

※ Illumination switch : ON position

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

ILL & head lamp switch [CS-21(7)] → Work lamp switch indicate lamp ON  
 → Work lamp switch [CS-36(1)→(7)] →  
 Front work lamp relay[CR-3(30)→(87)] → I/conn [CN-7(2)]  
 → RH Front work lamp ON [CL-5(2)]  
 → LH Front work lamp ON [CL-6(2)]

##### (2) Work lamp switch (2nd step)

Work lamp switch [CS-36(4)→(2)] → Rear work lamp relay [CR-55(30)→(87)] →  
 I/conn [CN-4(14)] → LH Rear work lamp ON [CL-22(2)]  
 → RH Rear work lamp ON [CN-23(2)]

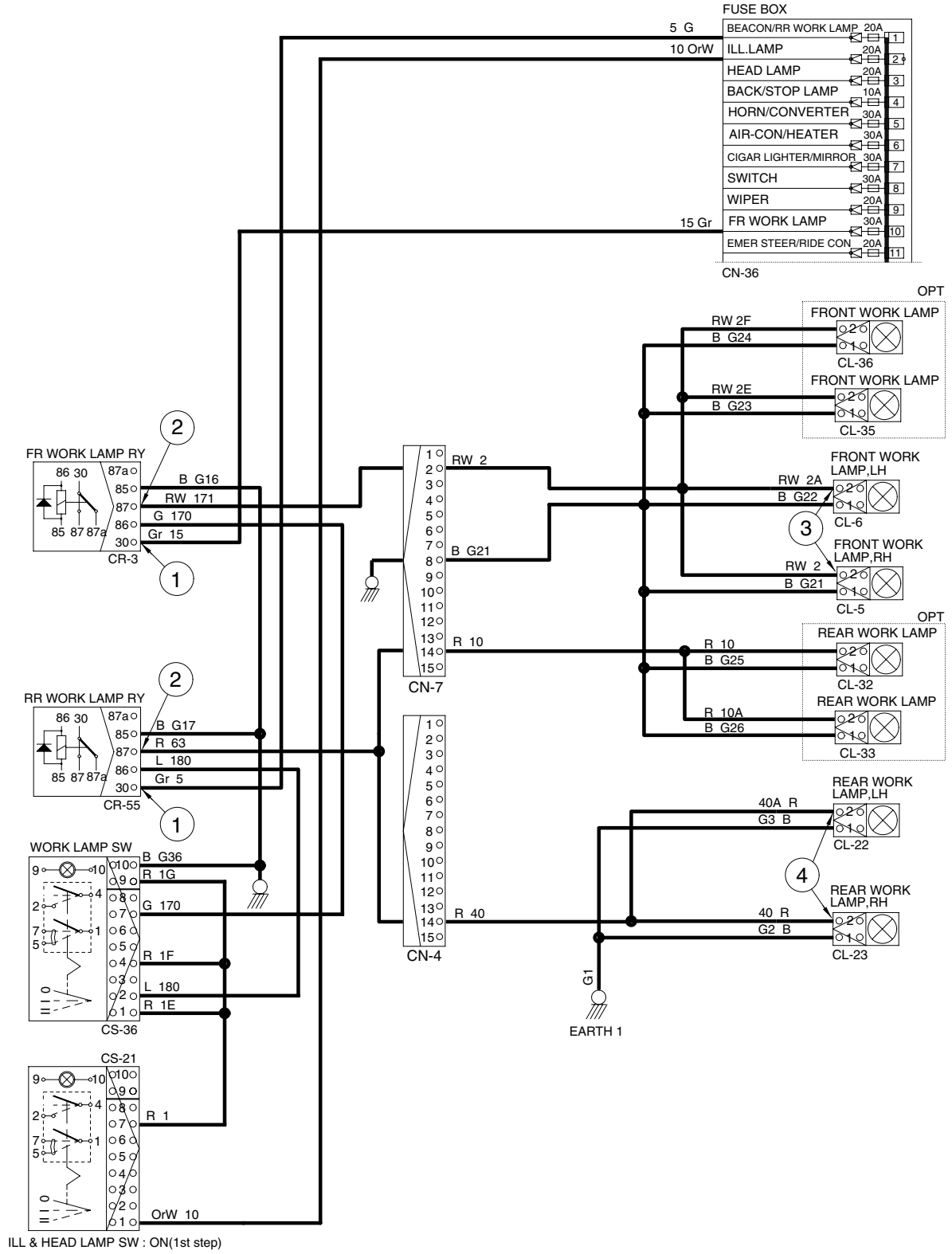
#### 2) CHECK POINT

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

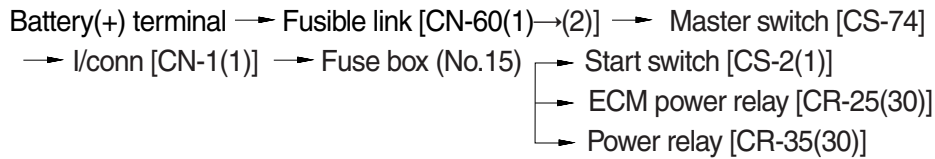


# WORK LIGHT SWITCH



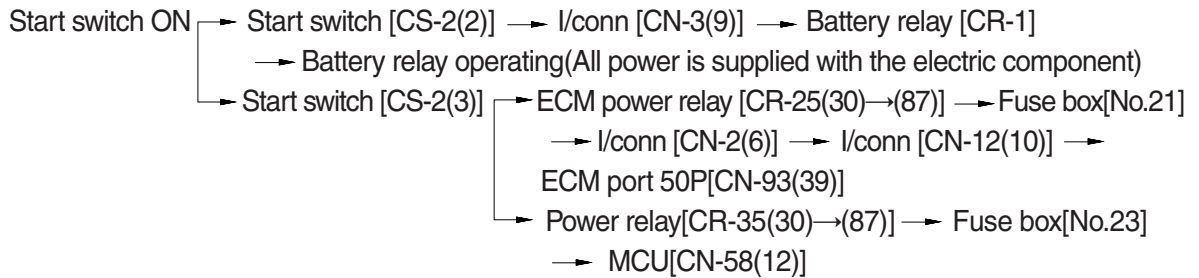
## 4. STARTING CIRCUIT

### 1) OPERATING FLOW

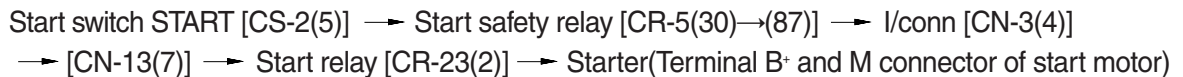


※ The gear selector lever is neutral position. It is necessary condition before the starting.  
 The gear selector has an output signal which is activated whenever the shift lever is in the neutral position. This signal can be used to control a relay and prevent engine from starting whenever the shift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

#### (1) When start key switch is in ON position



#### (2) When start key switch is in START position



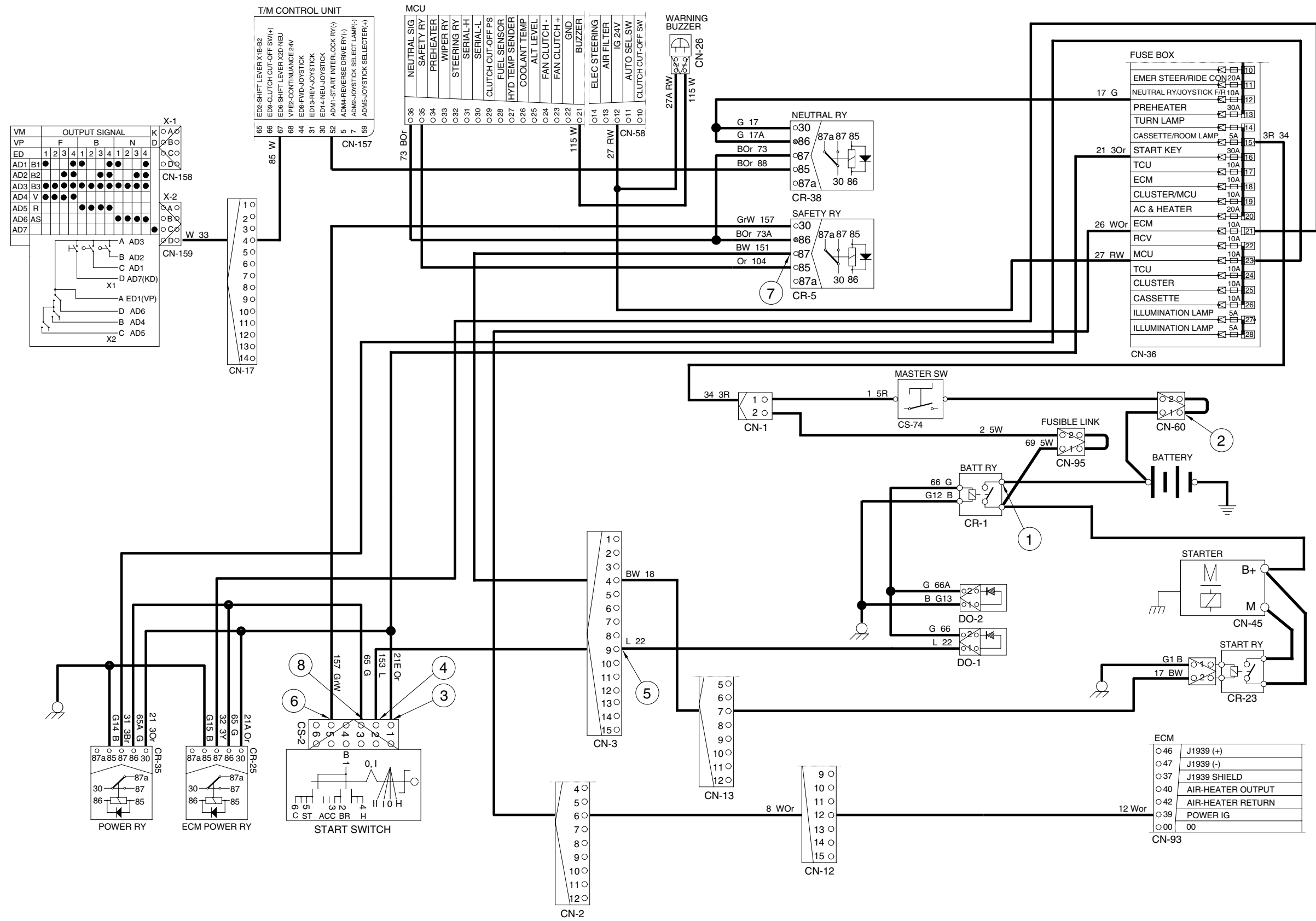
### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (Battery B <sup>+</sup> ) ② - GND (Fusible link) ③ - GND (Start key B terminal) ④ - GND (Start key BR terminal) ⑤ - GND (I/conn CN-3(9)) ⑥ - GND (Start key ST terminal) ⑦ - GND (Start safety relay output) ⑧ - GND (Start key ACC terminal)	20~25V

※ GND : Ground

※ ECM : Electronic control module

# STARTING CIRCUIT



## 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-3(5)] → MCU [CN-58(25)]  
 → Cluster charge warning lamp ON

#### (2) Charging flow

Alternator → Starter [CN-45(B<sup>+</sup>)] → Battery relay [CR-1]  
 → Battery(+) terminal → Charging  
 → Fusible link [CN-95(1)→(2)] → I/conn [CN-1(2)] → Fuse box

### 2) CHECK POINT

Engine	Key switch	Check point	Voltage
Running	ON	① - GND (Battery) ② - GND (Battery relay) ③ - GND (ALT B <sup>+</sup> ) ④ - GND (ALT 2) ⑤ - GND (MCU) ⑥ - GND (Fuse box)	20~28V

※ GND : Ground

# CHARGING CIRCUIT

## FUSE BOX

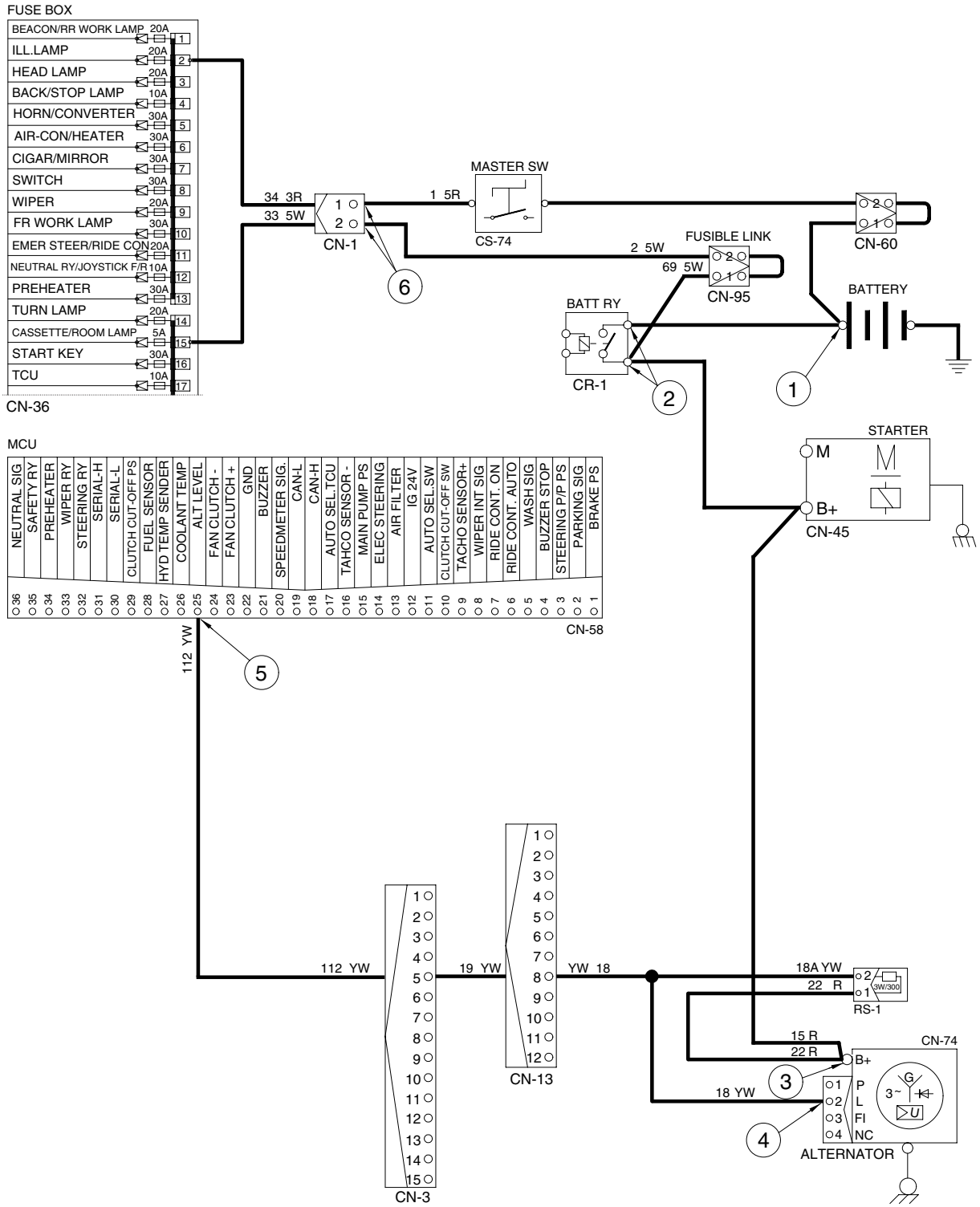
BEACON/RR WORK LAMP	20A	1
ILL. LAMP	20A	2
HEAD LAMP	20A	3
BACK/STOP LAMP	10A	4
HORN/CONVERTER	30A	5
AIR-CON/HEATER	30A	6
CIGAR/MIRROR	30A	7
SWITCH	30A	8
WIPER	30A	9
FR WORK LAMP	30A	10
EMER STEER/RIDE CON	20A	11
NEUTRAL RY/JOYSTICK	10A	12
PREHEATER	30A	13
TURN LAMP	20A	14
CASSETTE/ROOM LAMP	5A	15
START KEY	30A	16
TCU	10A	17

CN-36

## MCU

NEUTRAL SIG	036
SAFETY RY	035
PREHEATER	034
WIPER RY	033
STEERING RY	032
SERIAL-H	031
SERIAL-L	030
CLUTCH CUT-OFF PS	029
FUEL SENSOR	028
HYD TEMP SENDER	027
COOLANT TEMP	026
ALT LEVEL	025
FAN CLUTCH -	024
FAN CLUTCH +	023
GND	022
BUZZER	021
SPEEDMETER SIG.	020
CAN-L	019
CAN-H	018
AUTO SEL.TCU	017
TAHCO SENSOR -	016
MAIN PUMP PS	015
ELEC STEERING	014
AIR FILTER	013
IG 24V	012
AUTO SEL.SW	011
CLUTCH CUT-OFF SW	010
TACHO SENSOR+	009
WIPER INT SIG	008
RIDE CONT. ON	007
RIDE CONT. AUTO	006
WASH SIG	005
BUZZER STOP	004
STEERING P/P PS	003
PARKING SIG.	002
BRAKE PS	001

CN-58



## 6. ELECTRIC PARKING, DECLUTCH CIRCUIT

### 1) OPERATING FLOW

#### (1) Parking OFF

Fuse box (No.8) → Parking switch OFF [CS-17(6)→(8)] → Parking solenoid ON (Activated)  
 → Parking brake released (By hydraulic pressure)

#### (2) Parking ON

Fuse box (No.8) → Parking switch ON

- Parking solenoid [CN-71] OFF  
 → Parking brake applied [By spring force]
- [CS-17(5)→(7)] → T/M control unit [CN-157(21)]  
 → T/M declutch

#### (3) Declutch ON

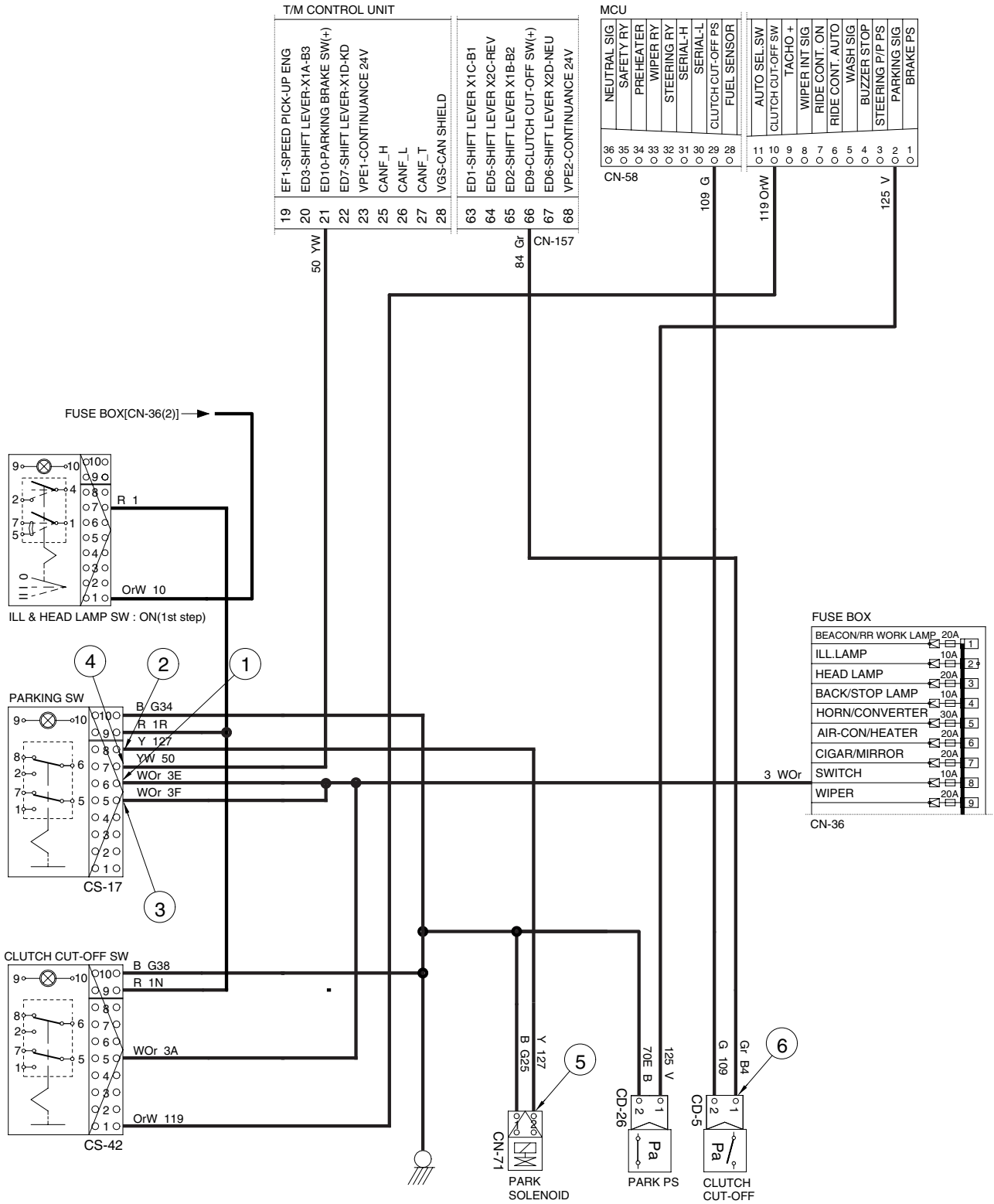
Fuse box (No.8) → Clutch cut-off switch ON → Clutch cut-off switch [CS-42(5)→(1)]  
 → MCU [CN-58(10)→(29)] → Service brake applied → Service brake pressure switch  
 ON [CD-5] → T/M control unit [CN-157(66)] → Declutch

### 2) CHECK POINT

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

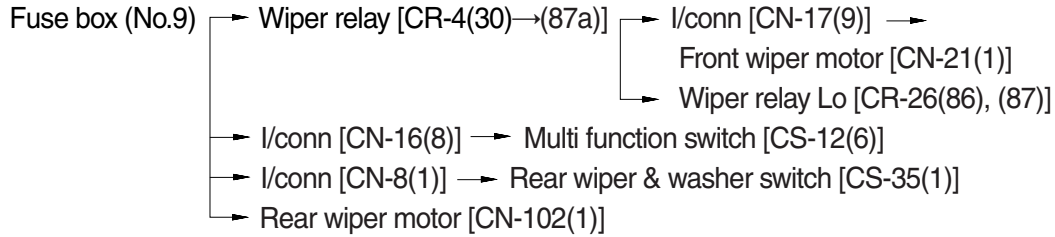
※ GND : Ground

# ELECTRIC PARKING, DECLUTCH CIRCUIT

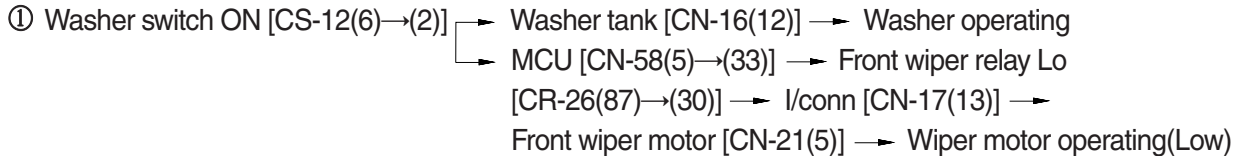


## 7. WIPER AND WASHER CIRCUIT

### 1) OPERATING FLOW

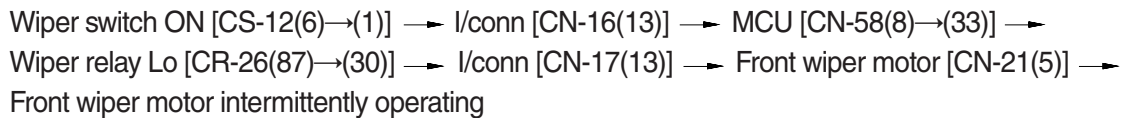


#### (1) Front washer switch ON

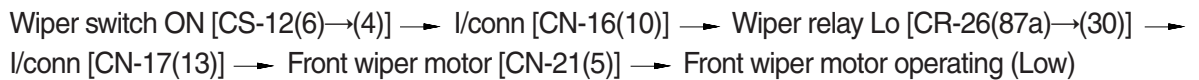


#### (2) Front wiper switch ON

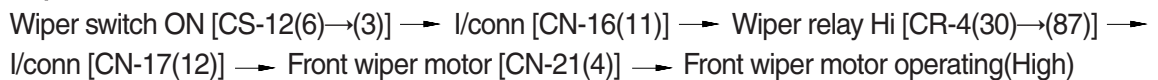
##### ① INT position



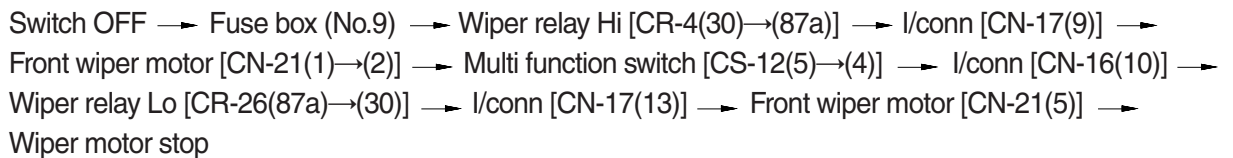
##### ② Lo position



##### ③ Hi position

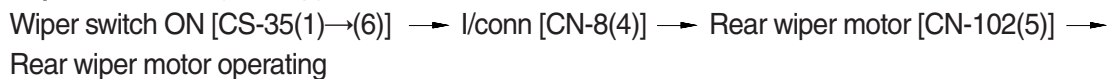


#### (3) Auto-parking(When switch OFF)

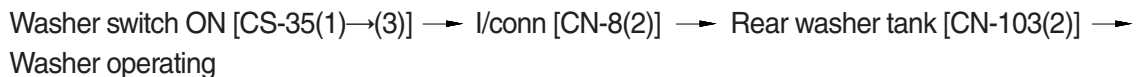


#### (4) Rear wiper and washer switch

##### ① Wiper switch ON(1st step)



##### ② Washer switch ON(2nd step)



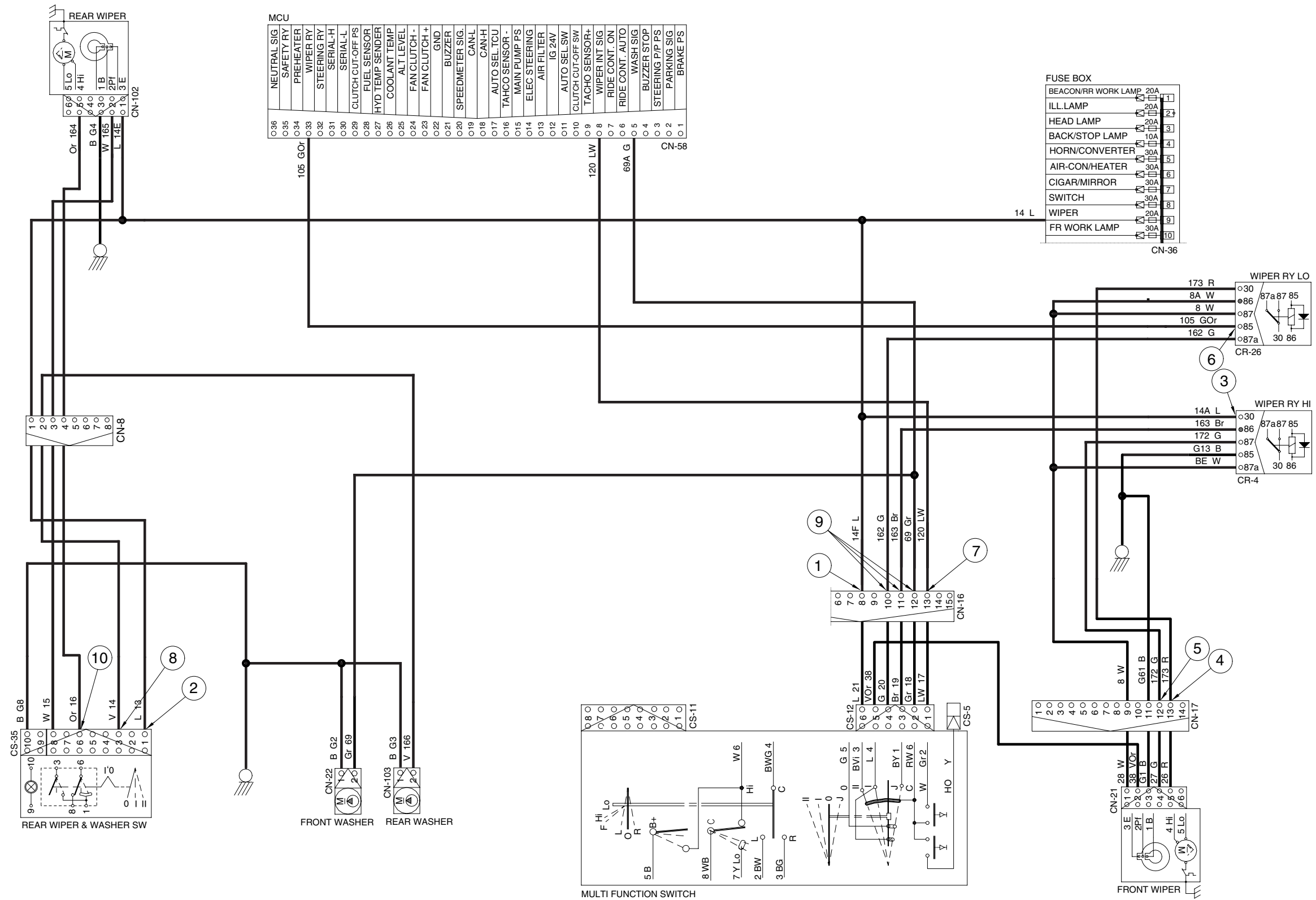
### 2) CHECK POINT

Condition	Check point	
Engine : Stop Key switch : ON Voltage : 20~25V	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)
	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)
	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

