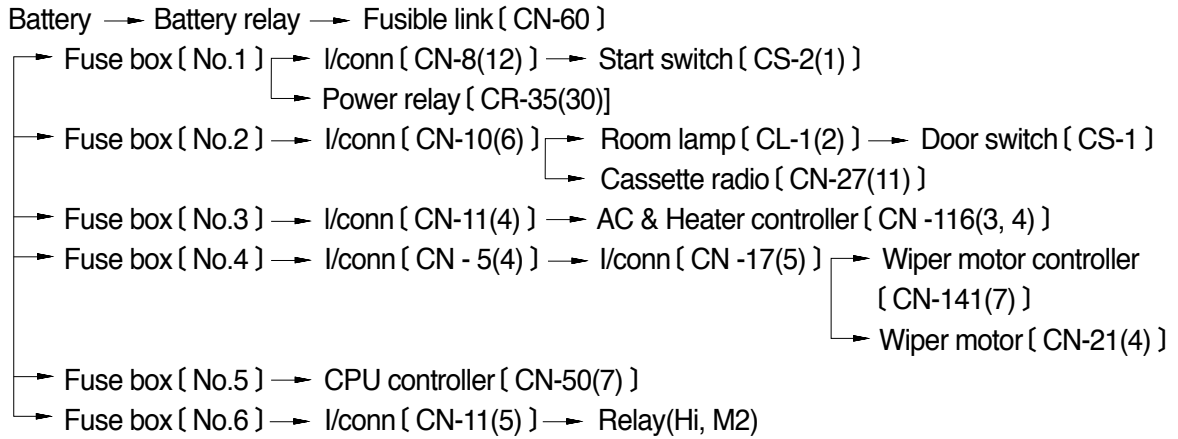


1. POWER CIRCUIT (#1001 and up, TIER II)

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



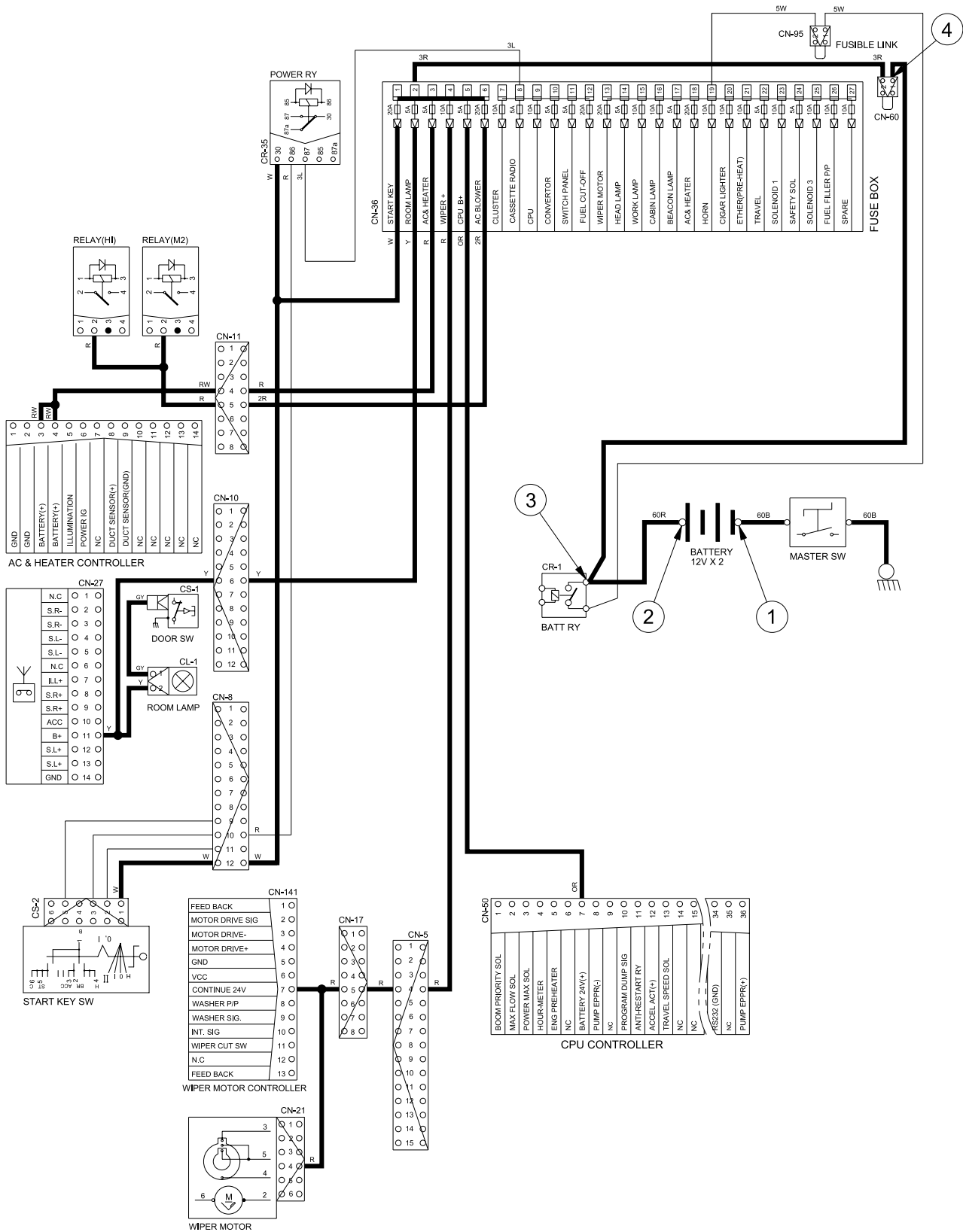
I/conn : Intermediate connector

2) CHECK POINT

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

GND : Ground

POWER CIRCUIT (#1001 and up, TIER II)



2. STARTING CIRCUIT (#1001 and up, TIER II)

1) OPERATING FLOW

Battery(+) terminal → Battery relay[CR-1] → Reset button [CS-61] → Fuse box [No.1]
 → I/conn [CN-8(12)] → Start switch [CS-2(1)]

(1) When start key switch is in ON position

→ Start switch ON [CS-2(2)] → I/conn [CN-8(11)] → Battery relay [CR-1]
 → Battery relay operating (All power is supplied with the electric component)
 → Start switch ON [CS-2(3)] → I/conn [CN-8(10)] → Power relay [CR-35(86) (87)]
 → Fuse box [No.12] → I/conn [CN-2(5)] → Fuel cut-off [CN-79(1)]

(2) When start key switch is in START position

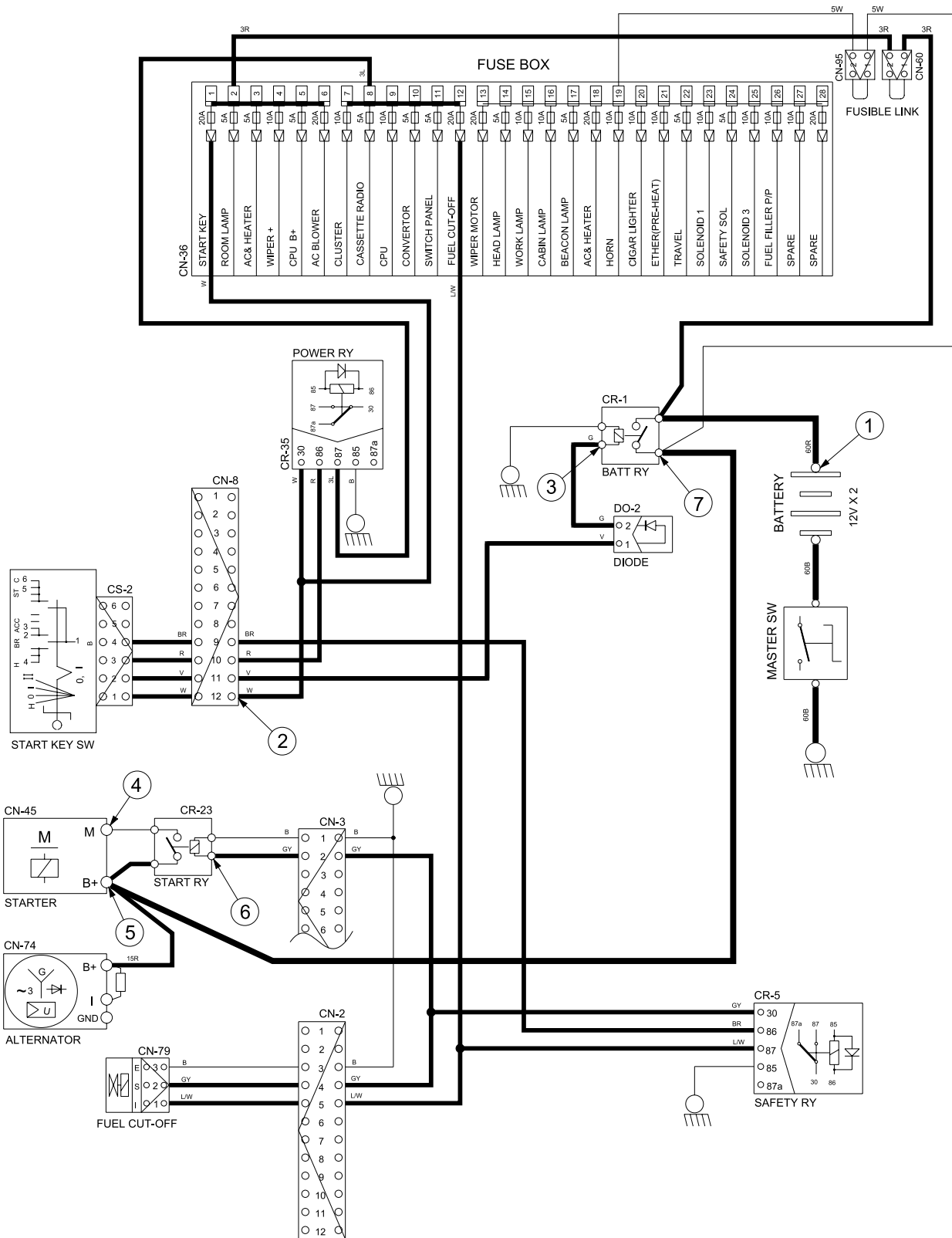
Start switch START [CS-2(5)] → I/conn [CN-8(9)] → Safety relay [CR-5(86) (30)]
 → I/conn [CN-3(2)] → Start relay [CR-23]
 → I/conn [CN-2(4)] → Fuel cut off [CN-79(2)]

2) CHECK POINT

Engine	Start switch	Check point	Voltage
OPERATING	START	- GND(Battery) - GND(Start key) - GND(Battery relay M4) - GND(Starter B ⁺) - GND(Starter M) - GND(Start relay) - GND(Battery relay M8)	20~25V

GND : Ground

STARTING CIRCUIT (#1001 and up, TIER II)



3. CHARGING CIRCUIT (#1001 and up, TIER II)

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 "I" terminal → I/conn [CN-3(3)] → CPU alternator level [CN-51(9)]
Cluster charging warning lamp(Via serial interface)

(2) Charging flow

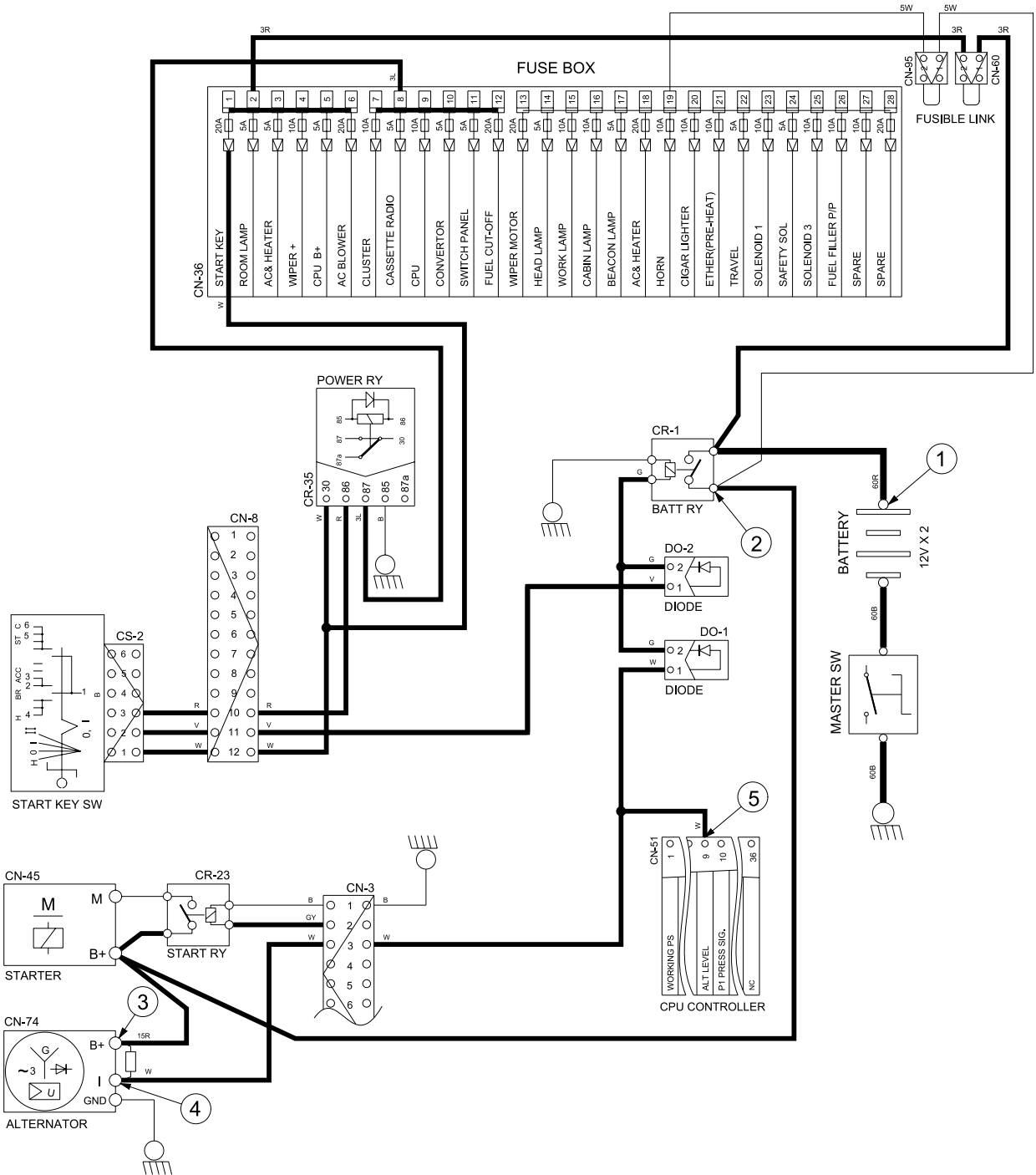
Alternator "B+" terminal → Battery relay(M8) → Battery(+) terminal
Reset button [CN-60] → Fuse box

2) CHECK POINT

Engine	Start switch	Check point	Voltage
Run	ON	<ul style="list-style-type: none"> - GND(Battery voltage) - GND(Battery relay) - GND(Alternator B⁺ terminal) - GND(Alternator I terminal) - GND(CPU) 	20~30V

GND : Ground

CHARGING CIRCUIT (#1001 and up, TIER II)



4. HEAD AND WORK LIGHT CIRCUIT (#1001 and up, TIER II)

1) OPERATING FLOW

Fuse box (No.14) → I/conn [CN-7(7)] → Switch panel [CN-116(9)]

Fuse box (No.15) → I/conn [CN-7(8)] → Switch panel [CN-116(10,11)]

(1) Head light switch ON

Head light switch ON [CN-116(1)] → I/conn [CN-7(1)]

- Head light ON [CL-4(2)] : Head lamp ON
- I/conn [CN-10(2)] → Cassette radio illumination ON [CN-27(7)]
- I/conn [CN-11(8)] → AC & Heater controller illumination ON
- I/conn [CN-6(8)] → Cigar light [CL-2]

(2) Work light switch ON

Work light switch ON [CN-116(2,3)] → I/conn [CN-7(2)] → I/conn [CN-12(1)]

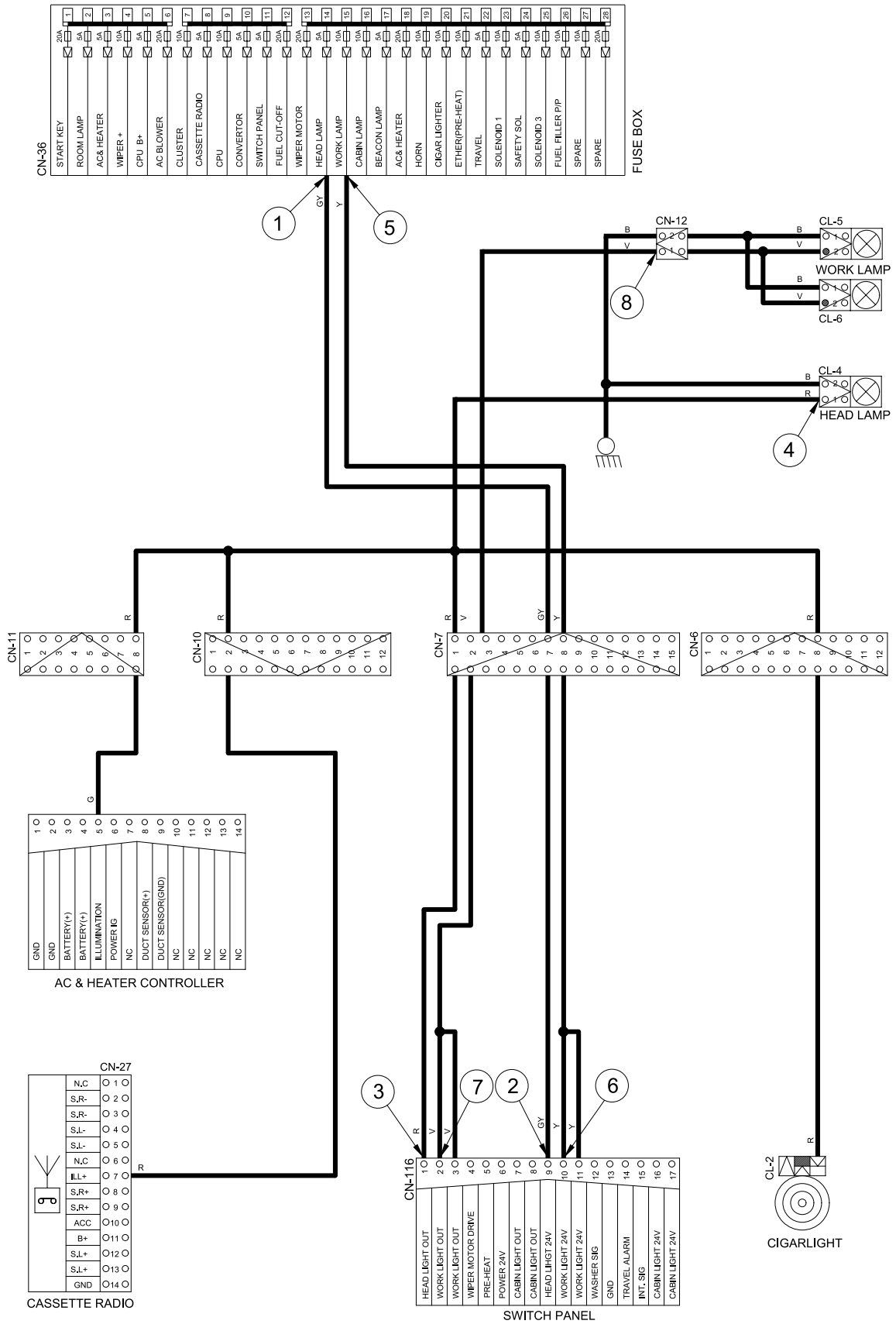
→ Work light ON [CL-5(2), CL-6(2)]

2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	<ul style="list-style-type: none"> - GND(Fuse box) - GND(Switch power input) - GND(Switch power output) - GND(Head light) 	20~25V
STOP	ON	<ul style="list-style-type: none"> - GND(Fuse box) - GND(Switch power input) - GND(Switch power output) - GND(Work light) 	20~25V

GND : Ground

HEAD AND WORK LIGHT CIRCUIT (#1001 and up, TIER II)



5. BEACON LAMP AND CAB LIGHT CIRCUIT (#1001 and up, TIER II)

1) OPERATING FLOW

Fuse box (No.17) → I/conn [CN-8(3)] → Beacon lamp switch [CN-23(6)]

Fuse box (No.16) → I/conn [CN-7(12)] → Switch panel [CN-116(16, 17)]

(1) Beacon lamp switch ON

Beacon lamp switch ON [CS-23(2)] → Switch Indicator lamp ON [CS-23(9)]
 → I/conn [CN-8(4)] → I/conn [CN-10(10)]
 → Beacon lamp ON [CL-7]

(2) Cab light switch ON

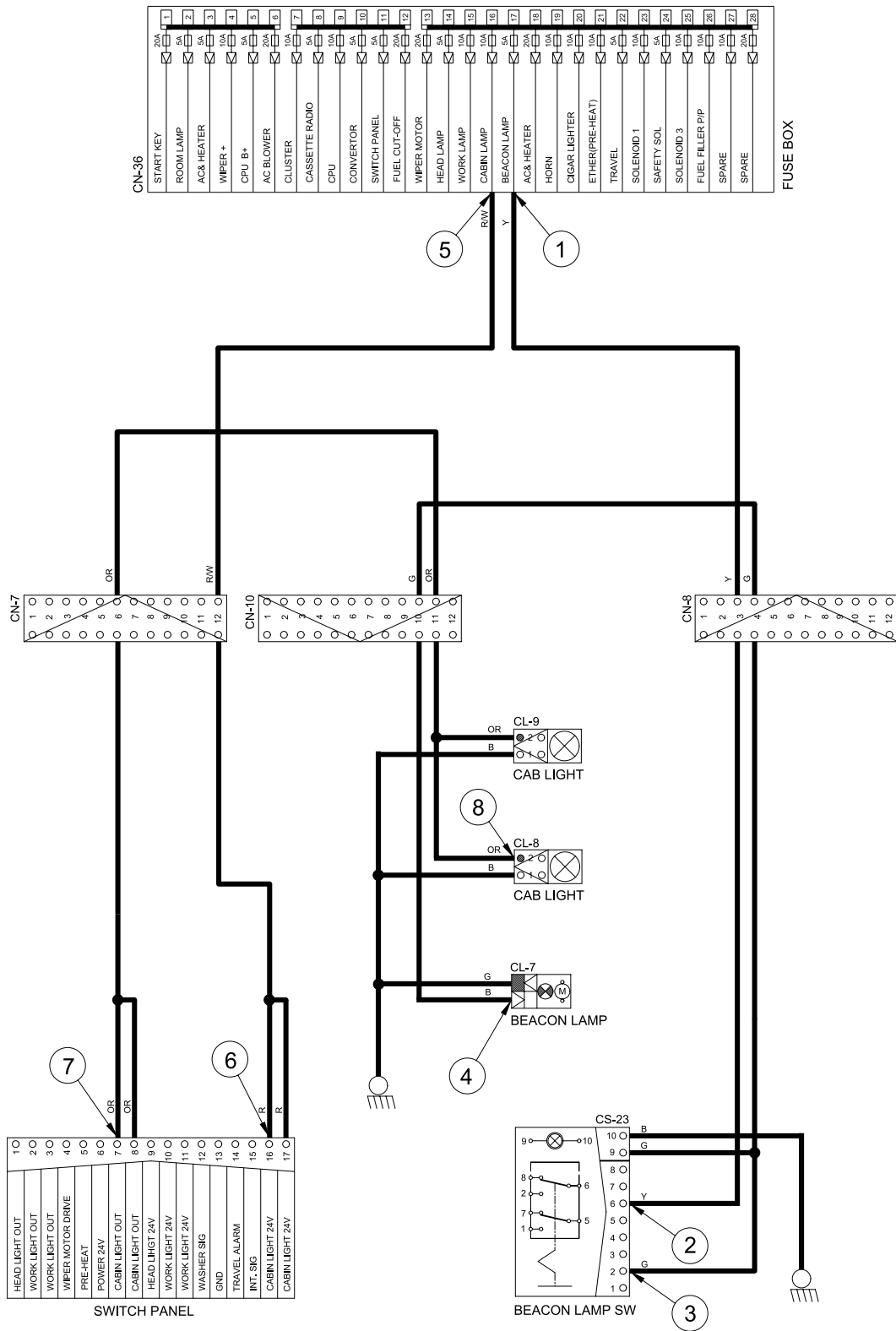
Cab light switch ON [CN-116(7, 8)] → I/conn [CN-7(6)] → I/conn [CN-10(11)]
 → Cab light ON [CL-8(2), CL-9(2)]

2) CHECK POINT

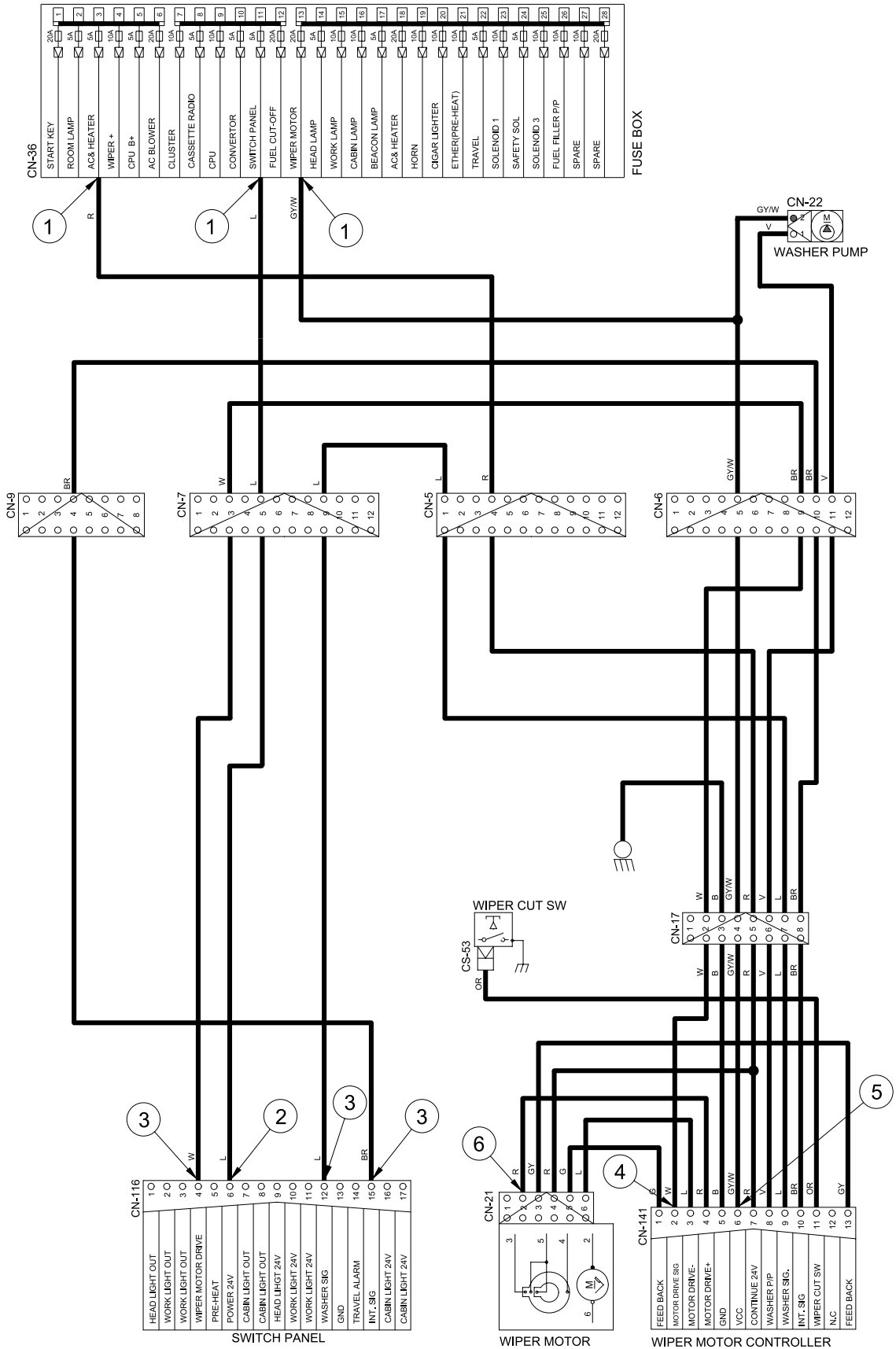
Engine	Start switch	Check point	Voltage
STOP	ON	- GND(Fuse box) - GND(Switch power input) - GND(Switch power output) - GND(Beacon lamp)	20~25V
STOP	ON	- GND(Fuse box) - GND(Switch power input) - GND(Switch power output) - GND(Cab light)	20~25V

GND : Ground

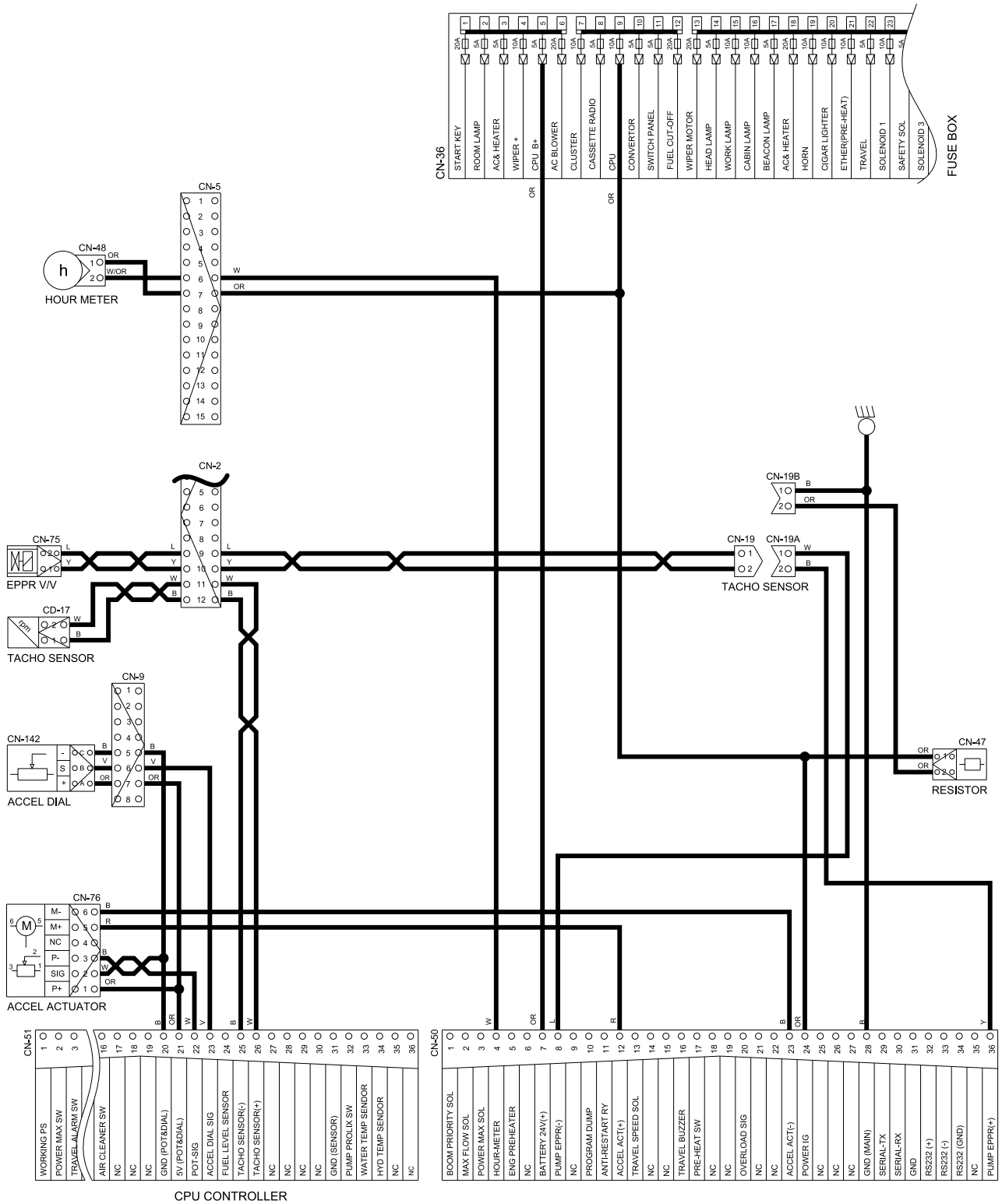
BEACON LAMP AND CAB LIGHT CIRCUIT (#1001 and up, TIER II)



WIPER AND WASHER CIRCUIT (#1001 and up, TIER II)

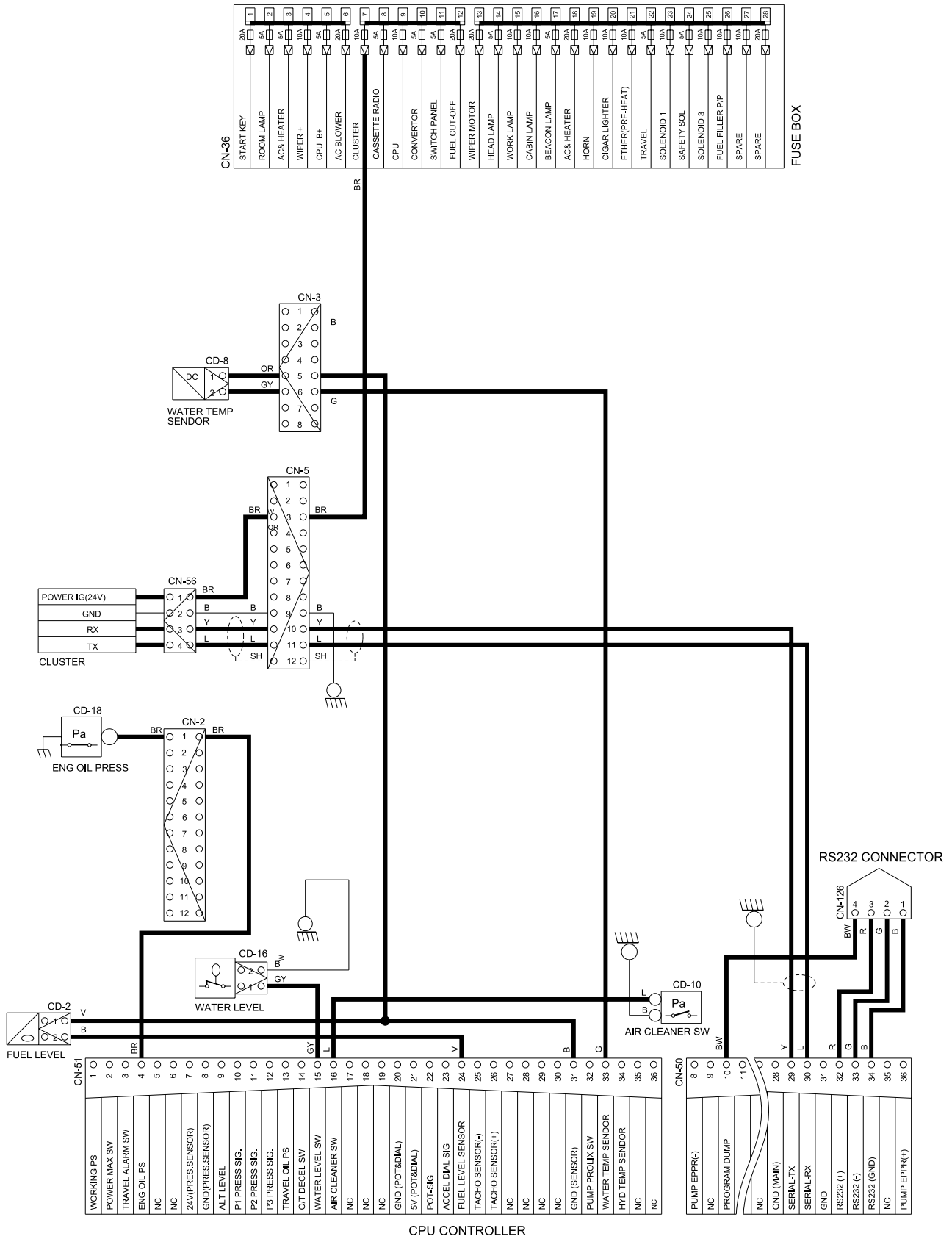


CONTROLLER CIRCUIT (#1001 and up, TIER II)

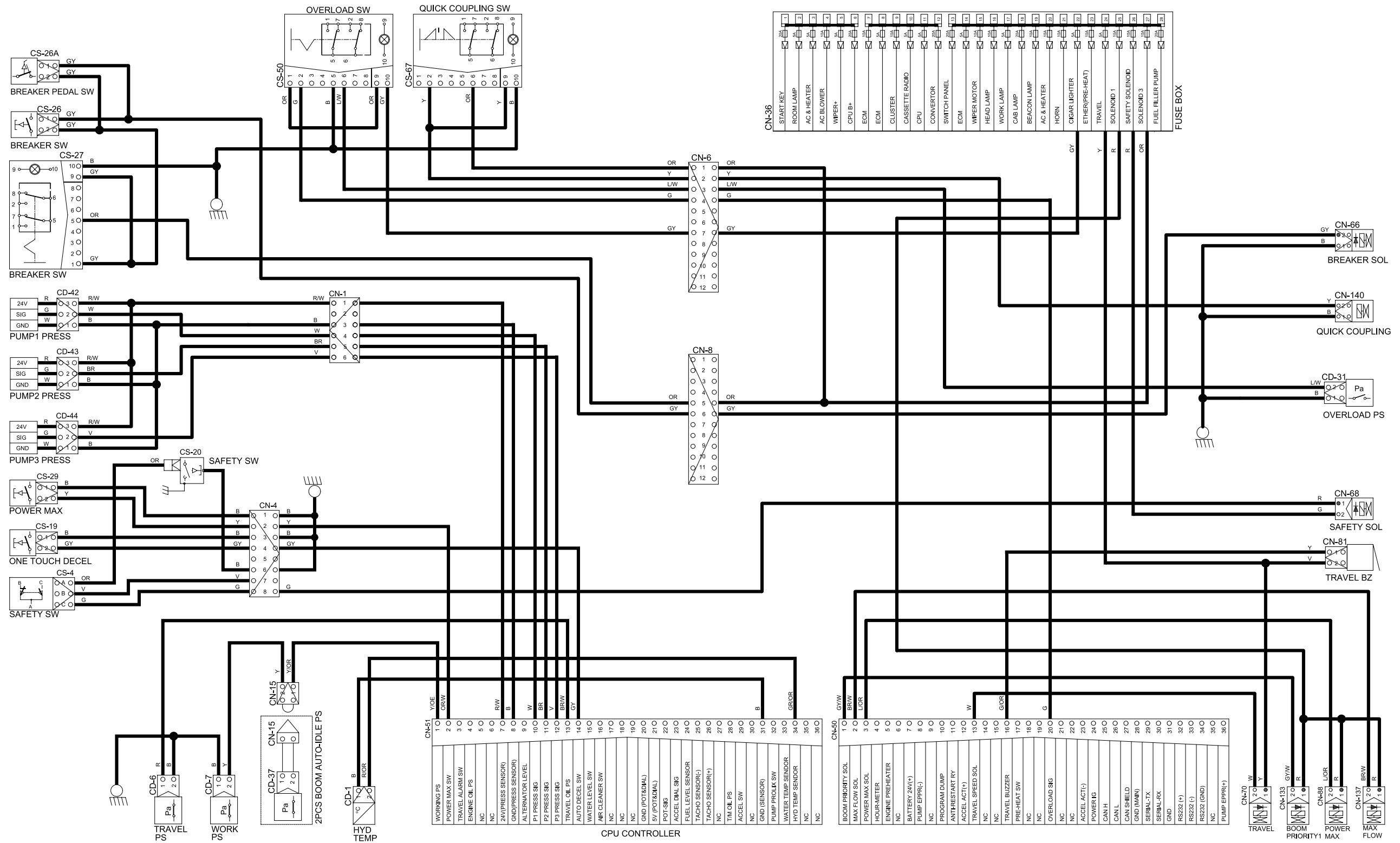


21074EL57

MONITORING CIRCUIT (#1001 and up, TIER II)



ELECTRIC CIRCUIT FOR HYDRAULIC(#1001 and up, TIER II)



7. CONNECTOR DESTINATION

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	Econoseal J	6	l/conn(Pump ps harness-Frame harness)	S816-006002	S816-106002
CN-2	Econoseal J	12	l/conn(Engine harness 2-Frame harness)	2-85262-1	368301-1
CN-3	Econoseal J	8	l/conn(Engine harness 1-Frame harness)	S816-008002	S816-108002
CN-4	Econoseal J	8	l/conn(Console harness LH-Frame harness)	S816-008002	S816-108002
CN-5	Econoseal J	15	l/conn(Side harness RH-Frame harness)	2-85262-1	368301-1
CN-6	Econoseal J	12	l/conn(Side harness RH-Frame harness)	S816-012002	S816-112002
CN-7	Econoseal J	15	l/conn(Console harness RH-Frame harness)	2-85262-1	368301-1
CN-8	Econoseal J	12	l/conn(Console harness RH-Frame harness)	S816-012002	S816-112002
CN-9	Econoseal J	8	l/conn(Console harness RH-Frame harness)	S816-008002	S816-108002
CN-10	DEUTSCH	12	l/conn(Cab harness-Frame harness)	DT06-12S	DT04-12P
CN-11	DEUTSCH	8	l/conn(Air-con harness-Frame harness)	DT06-8S	DT04-8P
CN-17	DEUTSCH	8	l/conn (Side harness RH-Wiper motor harness)	DT06-8S	DT04-8P
CN-92	SWP	1	Emergency engine starting connector	S814-001001	S814-101001
CN-95	KET	2	Fusible link	S813-030201	S813-130200
· Switch					
CS-26A	Econoseal J	2	Breaker pedal	S816-002002	S816-102002