

**GROUP 2 ELECTRICAL CIRCUIT**

**HARNESS FRAME**

NO.	DESTINATION	WIRING
1	AC CONTROLLER (GND)	011
2	BLOWER MOTOR (GND)	011
3	AC	011
4	AC CONTROLLER (B)	011
5	AC CONTROLLER (R)	011
6	AC COMP	77
7	AC CONDENSER FAN	77
8	ILLUMINATION	2A

NO.	DESTINATION	WIRING
1	CASSETTE RADIO SW	79
2	ILLUMINATION	79
3	AC	021
4	GND	021
5	CASSETTE ROOM LAMP (B)	79
6	AC	012
7	CASSETTE (GND)	012
8	BEACON LAMP	89
9	CABIN LIGHT	116
10	NC	116

NO.	DESTINATION	WIRING
1	HORN SW	037
2	HORN SW	13A
3	AC	037
4	INT SW	89
5	ACCEL (GND)	27A
6	ACCEL (GND)	27A
7	ACCEL (GND)	27A
8	SPARE SW	28A

NO.	DESTINATION	WIRING
1	SPARE SW	037
2	BEACON LAMP SW	16
3	BEACON LAMP SW	16
4	SPARKER SW SW	36
5	SPARKER SW	111
6	SPARE SW	037
7	SPARE SW	037
8	START KEY (START SW)	45
9	START KEY (ACC)	84
10	START KEY (ACC)	85
11	START KEY (ACC)	85
12	START KEY (GND)	8

NO.	DESTINATION	WIRING
1	ILLUMINATION	89
2	HEAD LAMP SW	89
3	WIPER DRIVE SW	011
4	WIPER SW	011
5	WIPER SW	011
6	CABIN LIGHT SW	116
7	ILLUMINATION	116
8	HEAD LAMP SW	116
9	WIPER SW	011
10	GND	028
11	WORK LAMP SW	89
12	CABIN LIGHT SW	89
13	NC	116
14	NC	116
15	NC	116

NO.	DESTINATION	WIRING
1	QUICK COUPLING SW SW	3A
2	COVER LAMP SW	10
3	COVER LAMP SW	10
4	COVER LAMP SW	10
5	WIPER MOTOR SW	011
6	GND	011
7	WIPER MOTOR SW	011
8	WIPER MOTOR SW	011
9	WIPER MOTOR SW	011
10	WIPER MOTOR SW	011
11	WIPER MOTOR SW	011
12	WIPER MOTOR SW	011
13	WIPER MOTOR SW	011
14	WIPER MOTOR SW	011
15	WIPER MOTOR SW	011

NO.	DESTINATION	WIRING
1	WASHER SW	90
2	NC	90
3	CLUSTER SW	11
4	WIPER MOTOR CONT	011
5	WIPER MOTOR SW	011
6	WIPER MOTOR SW	011
7	WIPER MOTOR SW	011
8	WIPER MOTOR SW	011
9	WIPER MOTOR SW	011
10	WIPER MOTOR SW	011
11	WIPER MOTOR SW	011
12	WIPER MOTOR SW	011
13	WIPER MOTOR SW	011
14	WIPER MOTOR SW	011
15	WIPER MOTOR SW	011

NO.	DESTINATION	WIRING
1	WASHER SW	90
2	NC	90
3	CLUSTER SW	11
4	WIPER MOTOR CONT	011
5	WIPER MOTOR SW	011
6	WIPER MOTOR SW	011
7	WIPER MOTOR SW	011
8	WIPER MOTOR SW	011
9	WIPER MOTOR SW	011
10	WIPER MOTOR SW	011
11	WIPER MOTOR SW	011
12	WIPER MOTOR SW	011
13	WIPER MOTOR SW	011
14	WIPER MOTOR SW	011
15	WIPER MOTOR SW	011

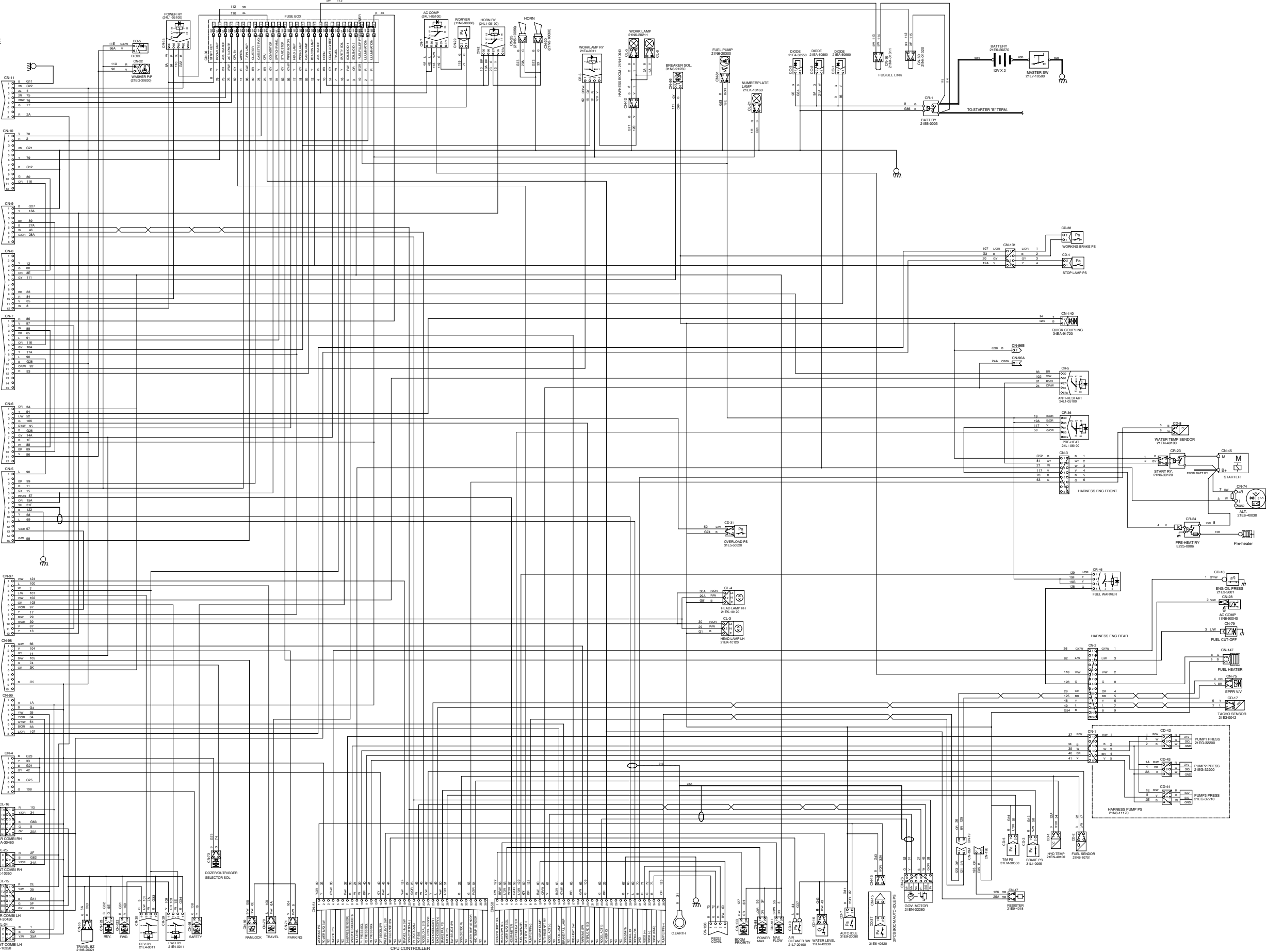
NO.	DESTINATION	WIRING
1	PARKING SW	89
2	PARKING SW	14
3	LAMP SW	14
4	TRAILER LOCK SW	105
5	DO SW	14
6	DO SW	21
7	DO SW	21
8	DO SW	21
9	DO SW	21
10	DO SW	21
11	DO SW	21
12	DO SW	21
13	DO SW	21
14	DO SW	21
15	DO SW	21

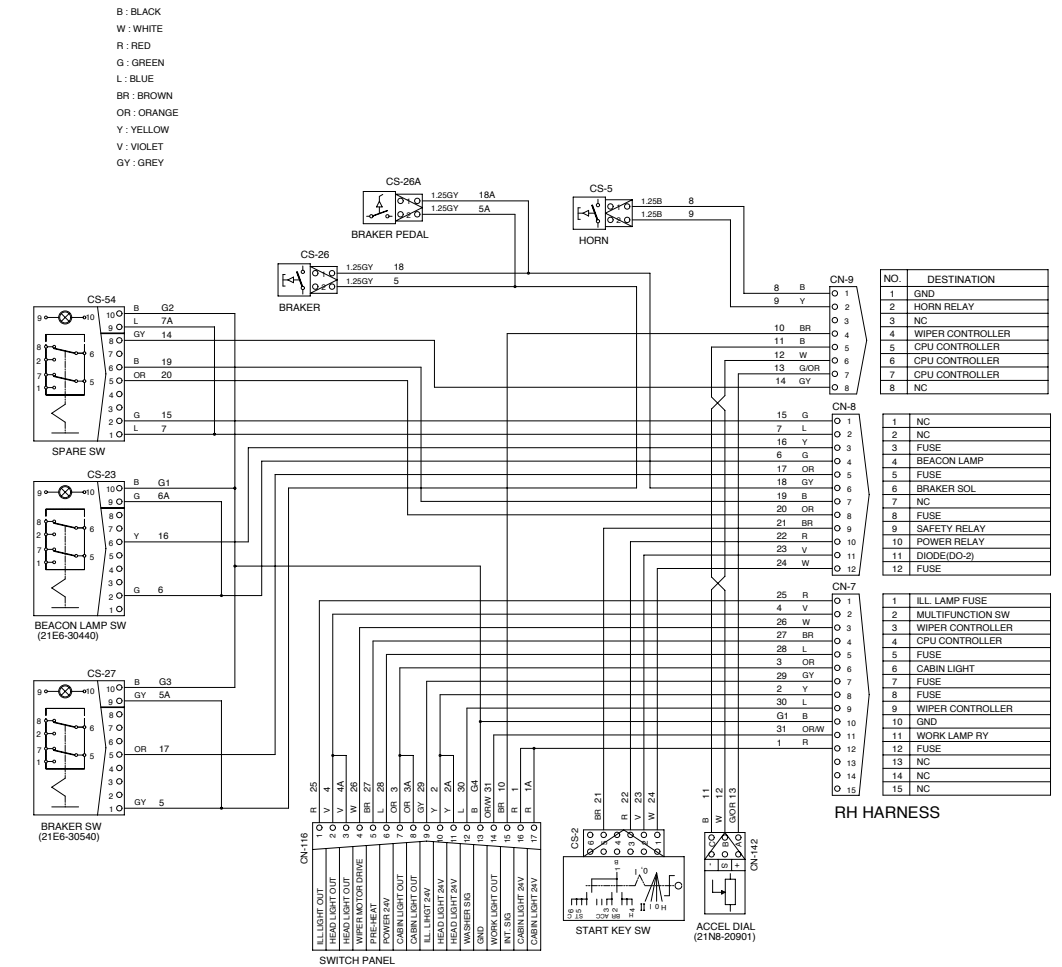
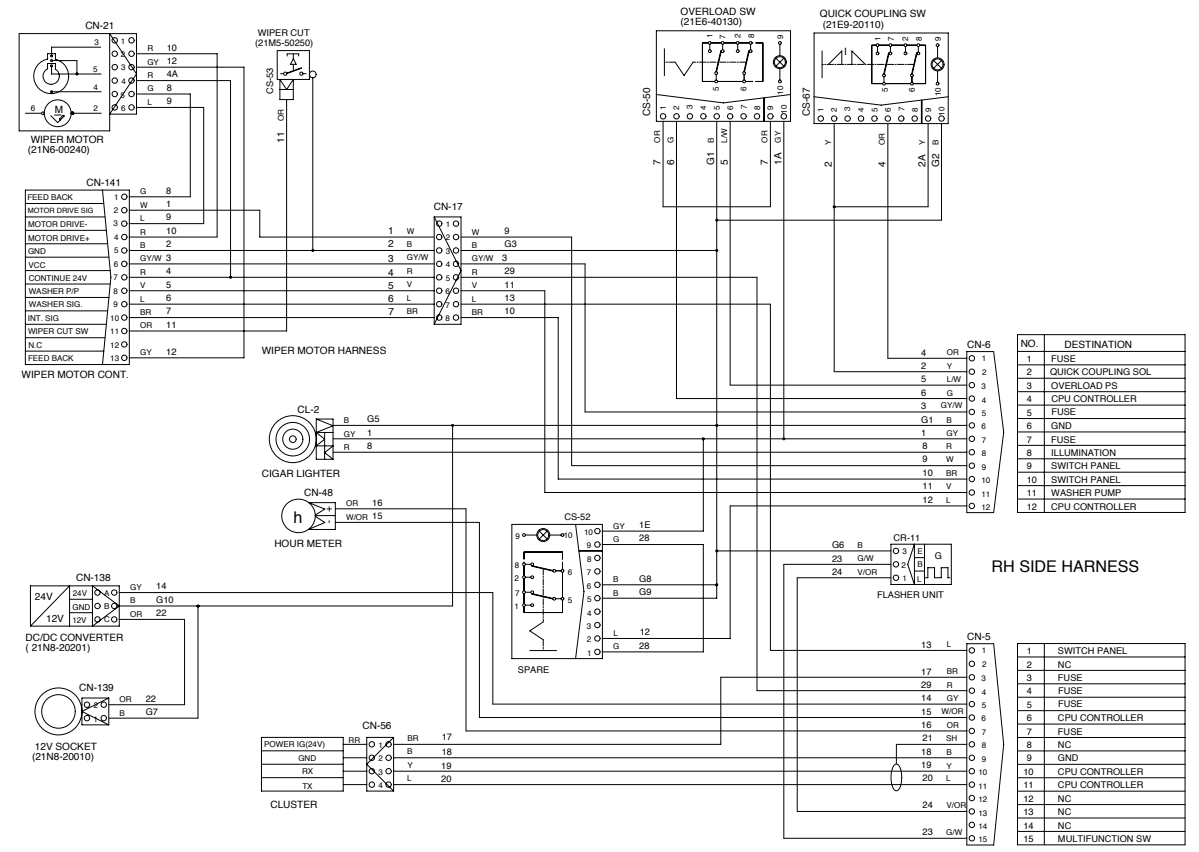
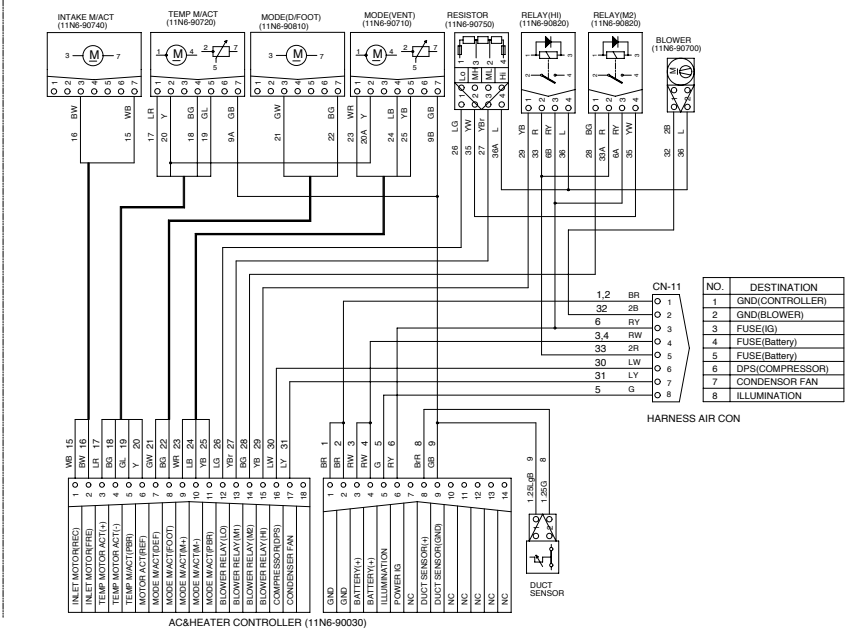
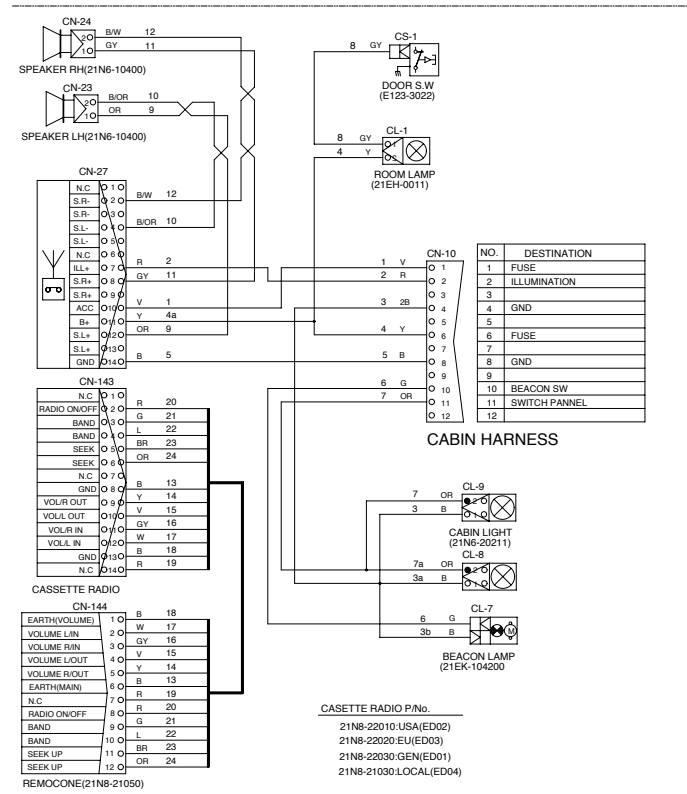
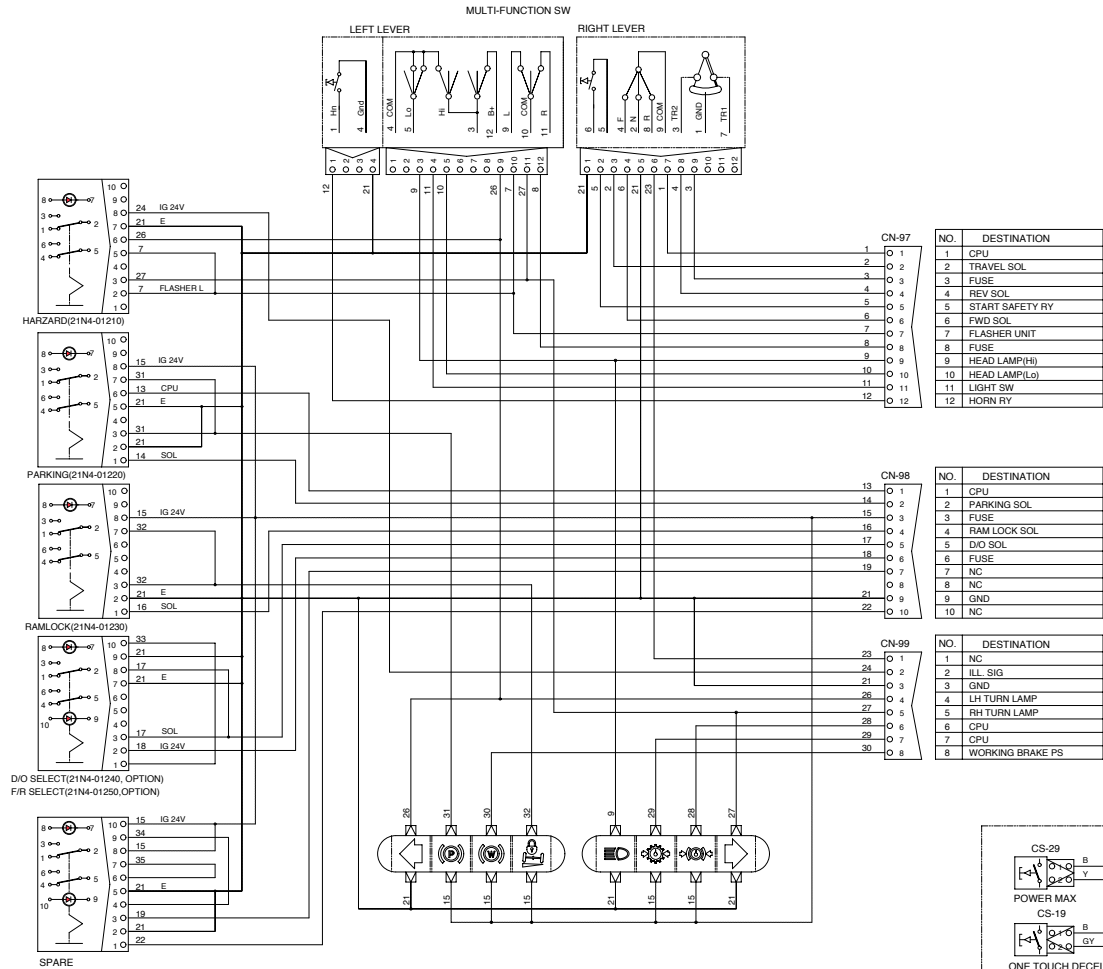
NO.	DESTINATION	WIRING
1	MAX SW	1A
2	HAZARD SW	04
3	MAX SW	36
4	MAX SW	36
5	MAX SW	36
6	TRAILER FALL LAMP	84
7	TRAILER FALL LAMP	84
8	TRAILER FALL LAMP	84
9	TRAILER FALL LAMP	84
10	TRAILER FALL LAMP	84
11	TRAILER FALL LAMP	84
12	TRAILER FALL LAMP	84
13	TRAILER FALL LAMP	84
14	TRAILER FALL LAMP	84
15	TRAILER FALL LAMP	84

NO.	DESTINATION	WIRING
1	POWER MAX SW	039
2	POWER MAX SW	39
3	CUT OFF SW	039
4	CUT OFF SW	39
5	SAFETY SW (GND)	039
6	SAFETY SW (GND)	39
7	SAFETY SW (GND)	39
8	SAFETY SW (GND)	39

NO.	DESTINATION	WIRING
1	REAR COMB L4	01
2	REAR COMB L4	01
3	REAR COMB L4	01
4	REAR COMB L4	01
5	REAR COMB L4	01
6	REAR COMB L4	01
7	REAR COMB L4	01
8	REAR COMB L4	01
9	REAR COMB L4	01
10	REAR COMB L4	01
11	REAR COMB L4	01
12	REAR COMB L4	01
13	REAR COMB L4	01
14	REAR COMB L4	01
15	REAR COMB L4	01

NO.	DESTINATION	WIRING
1	FRONT COMB RH	01
2	FRONT COMB RH	01
3	FRONT COMB RH	01
4	FRONT COMB RH	01
5	FRONT COMB RH	01
6	FRONT COMB RH	01
7	FRONT COMB RH	01
8	FRONT COMB RH	01
9	FRONT COMB RH	01
10	FRONT COMB RH	01
11	FRONT COMB RH	01
12	FRONT COMB RH	01
13	FRONT COMB RH	01
14	FRONT COMB RH	01
15	FRONT COMB RH	01

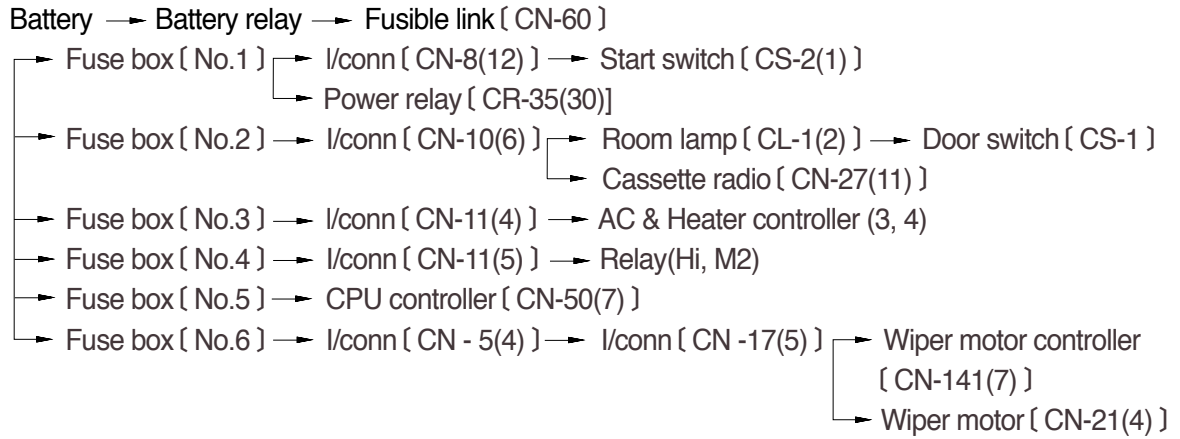




## 1. POWER CIRCUIT

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

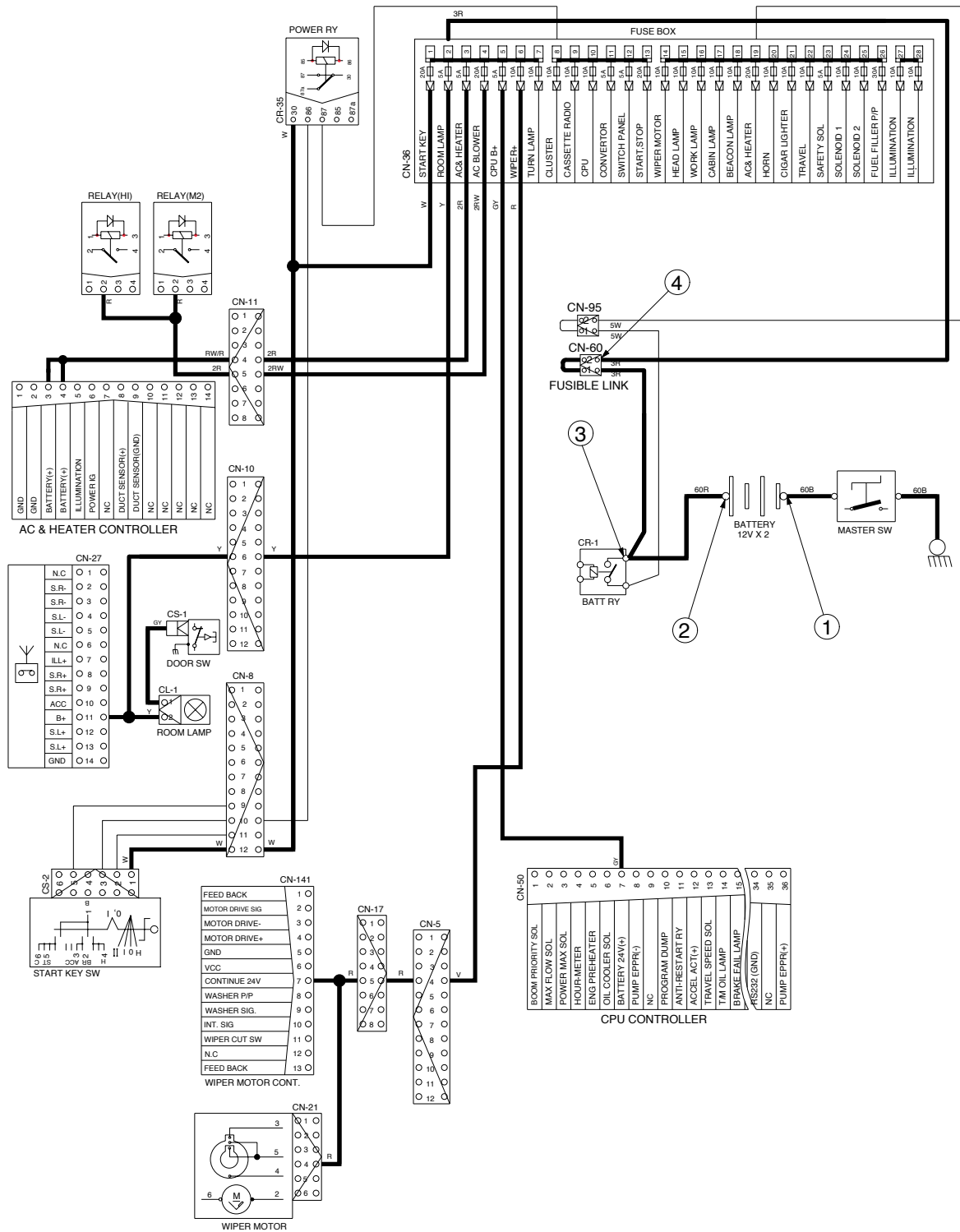


### 2) CHECK POINT

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



14W74EL05

## 2. STARTING CIRCUIT

### 1) OPERATING FLOW

Battery(+) terminal → Battery relay[ CR-1 ] → Fusible link [ CN-60 ] → 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.10 ]

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

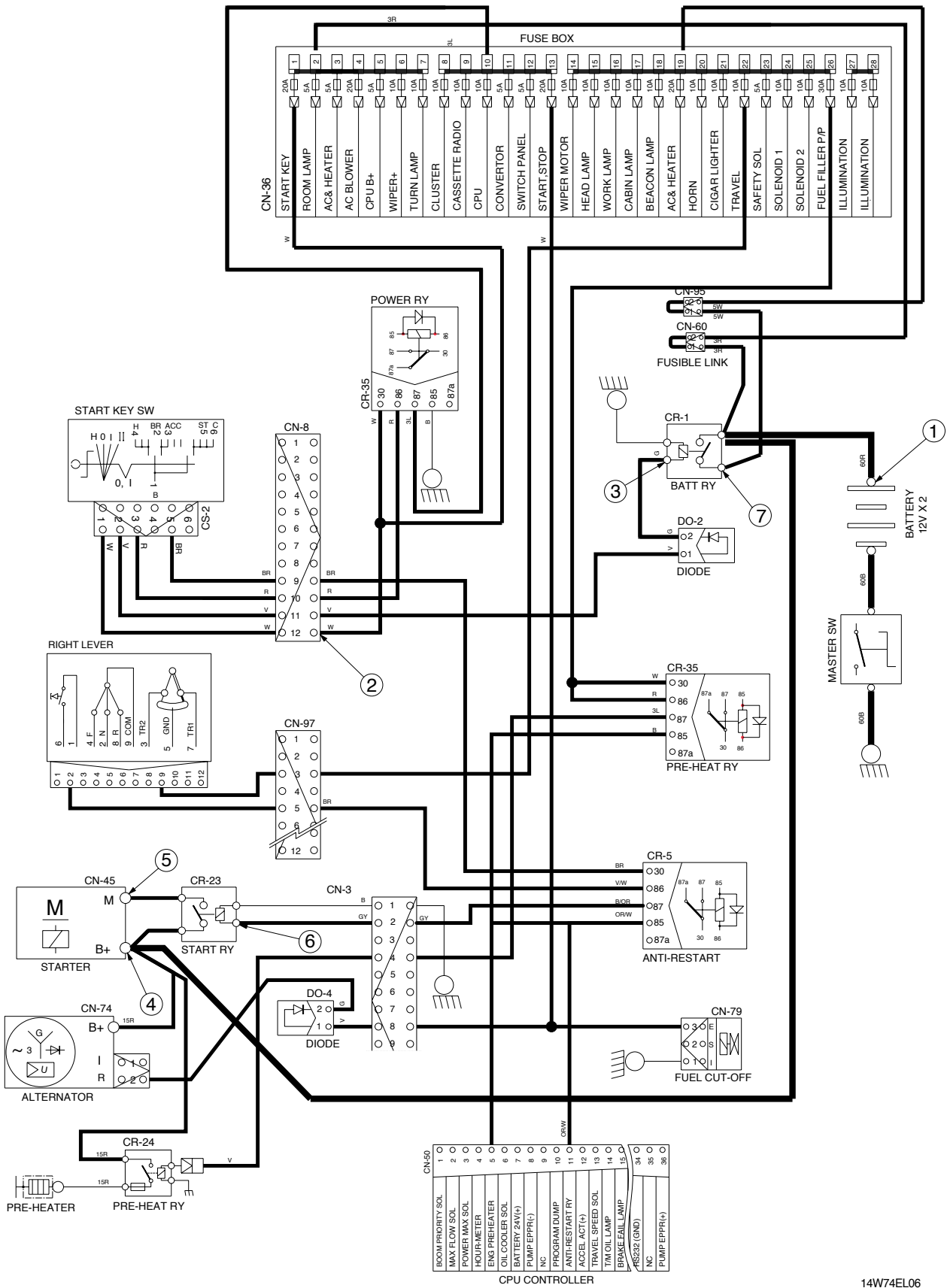
Start switch START [ CS-2(5) ] → I/conn [ CN-8(9) ] → Anti restart relay [ CR-5(30) (87) ]  
 → I/conn [ CN-3(2) ] → Start relay[ CN-23 ]

### 2) CHECK POINT

Engine	Start switch	Check point	Voltage
OPERATING	START	- GND(Battery) - GND(Start key) - GND(Battery relay M4) - GND(Starter B <sup>+</sup> ) - GND(Starter M) - GND(Start relay) - GND(Battery relay M8)	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 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-2(13) ] → CPU alternator level [ CN-51(9) ]  
Cluster charging warning lamp (Via serial interface)

##### (2) Charging flow

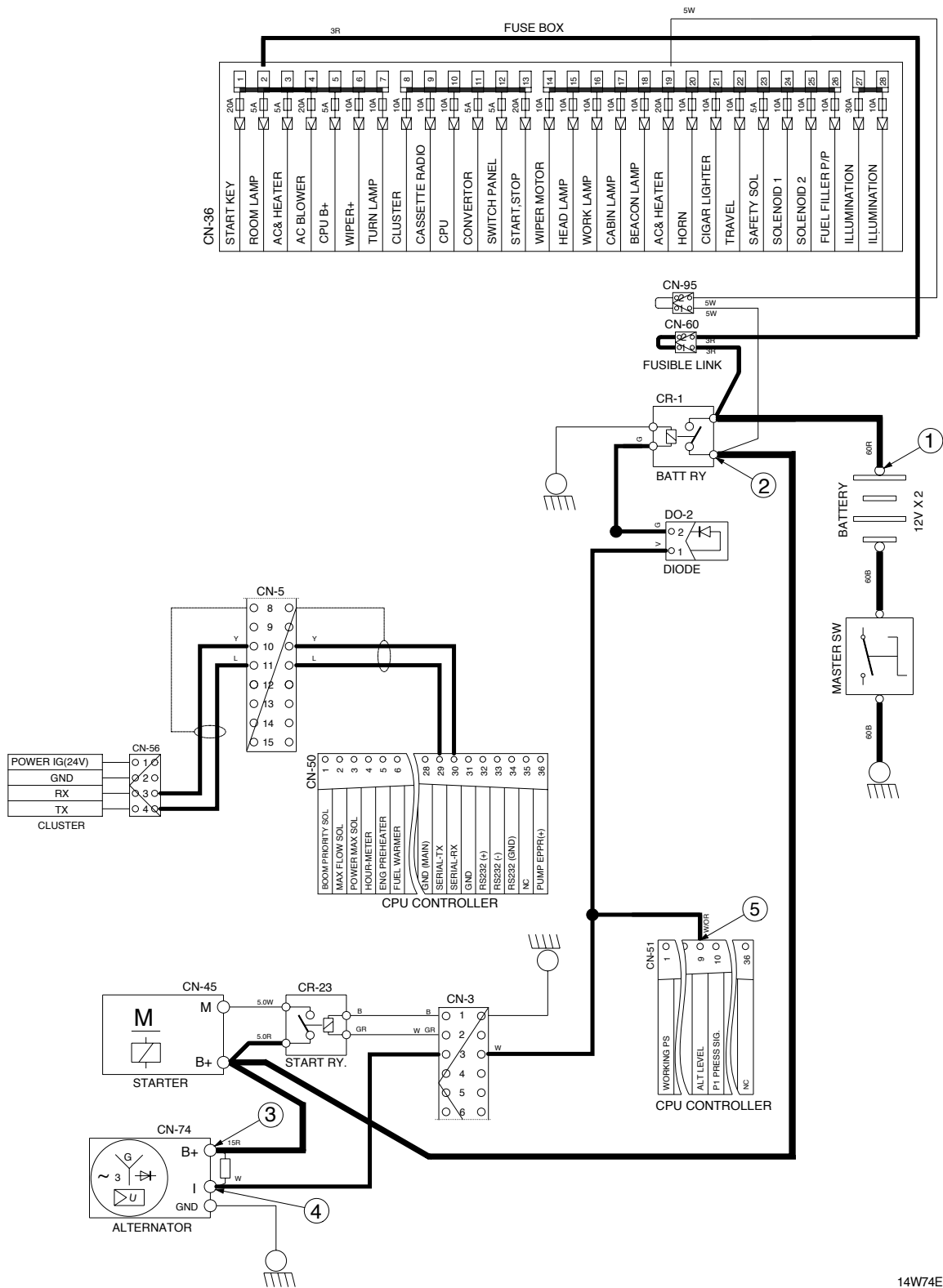
Alternator "B+" terminal → Battery relay (M8) → Battery (+) terminal  
→ Fusible link [ CN-60 ] → Fuse box

#### 2) CHECK POINT

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

GND : Ground

# CHARGING CIRCUIT



14W74EL07

## 4. HEAD AND WORK LIGHT CIRCUIT

### 1) OPERATING FLOW

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

Fuse box (No.16) → I/conn [ CN-7(7) ] → Switch panel [ CN-116(9) ]

#### (1) Main light switch ON : 1st step

Head light switch ON [ CN-116(2,3) ] → I/conn [ CN-7(2) ] → I/conn [ CN-97(11) ] →

Mutifunction sw left lever(3) → (5) → [ CN-97(10) ] → Head light ON [ CL-3(1), CL-4(1) ]  
: Head lamp ON

#### (2) Main light switch ON : 2nd step

Work light switch ON [ CN-116(14) ] → I/conn [ CN-7(11) ] → I/conn [ CN-3(1), (4) ] →

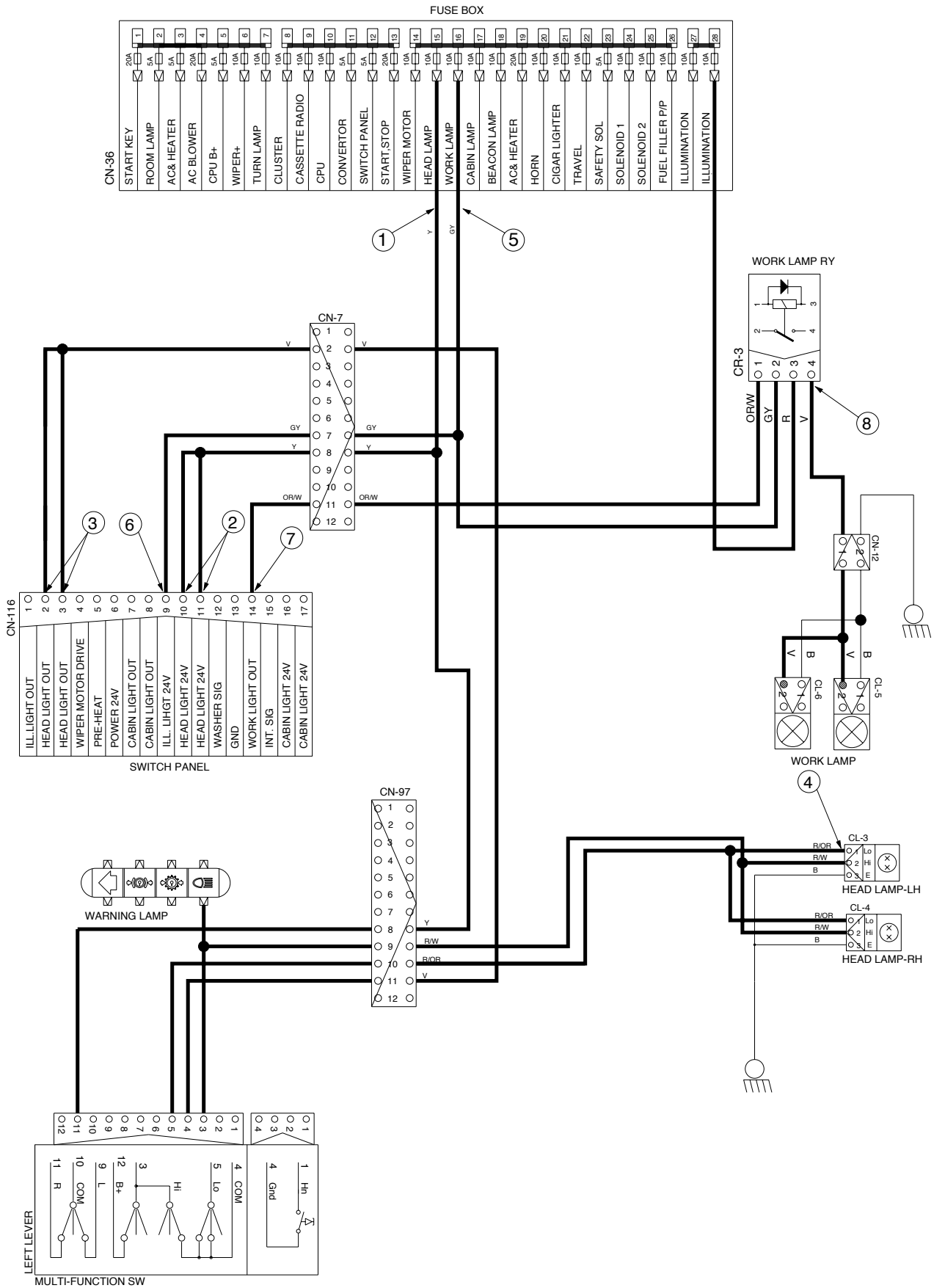
I/conn [ CN-12(1) ] → Work light ON [ CL-5(2), CL-6(2) ]

### 2) CHECK POINT

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

GND : Ground

# HEAD AND WORK LIGHT CIRCUIT



14W74EL08

## 5. BEACON LAMP AND CAB LIGHT CIRCUIT

### 1) OPERATING FLOW

Fuse box (No.18) → I/conn [ CN-8(3) ] → Beacon lamp switch [ CN-23(6) ]

Fuse box (No.17) → 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

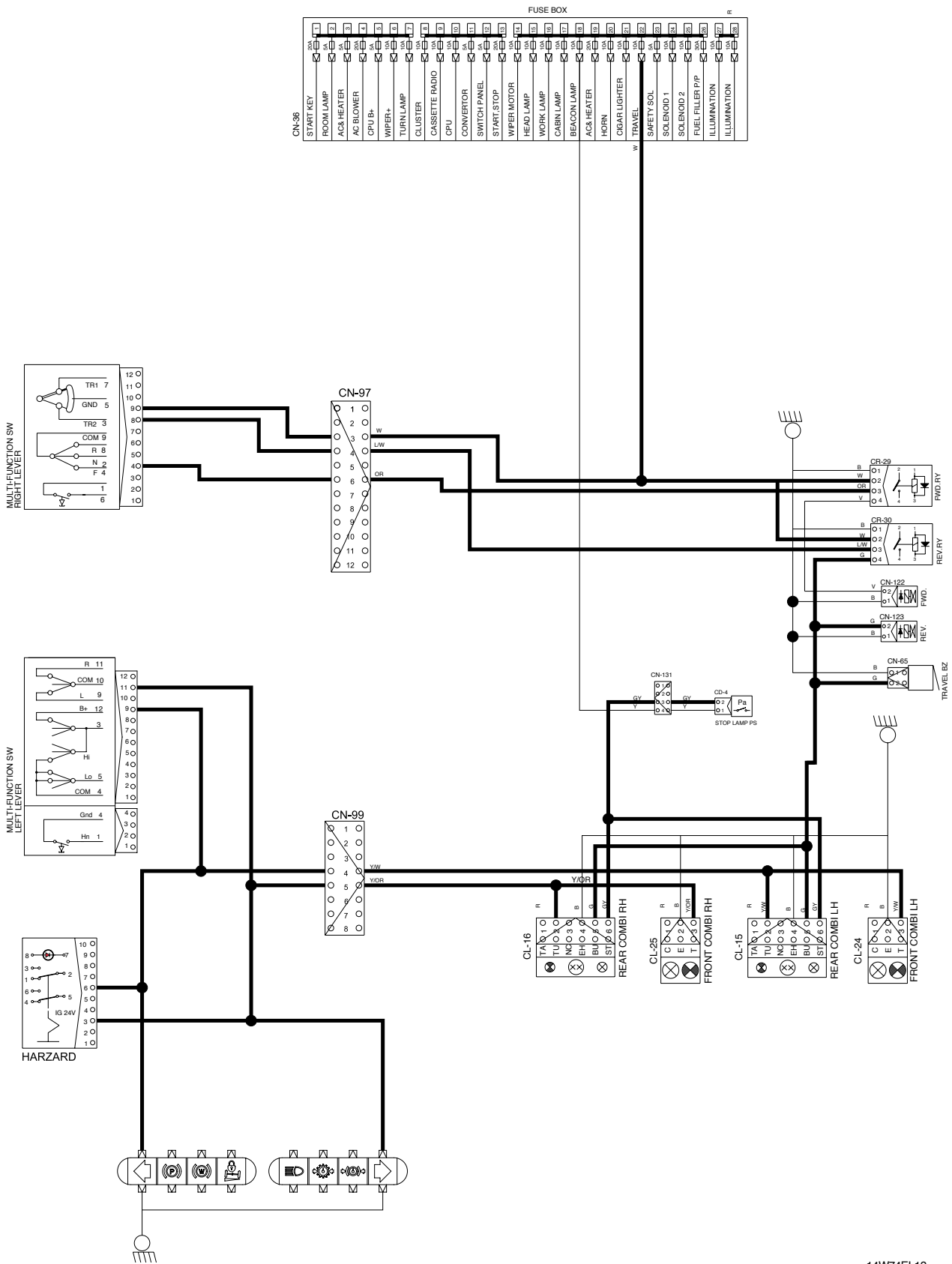






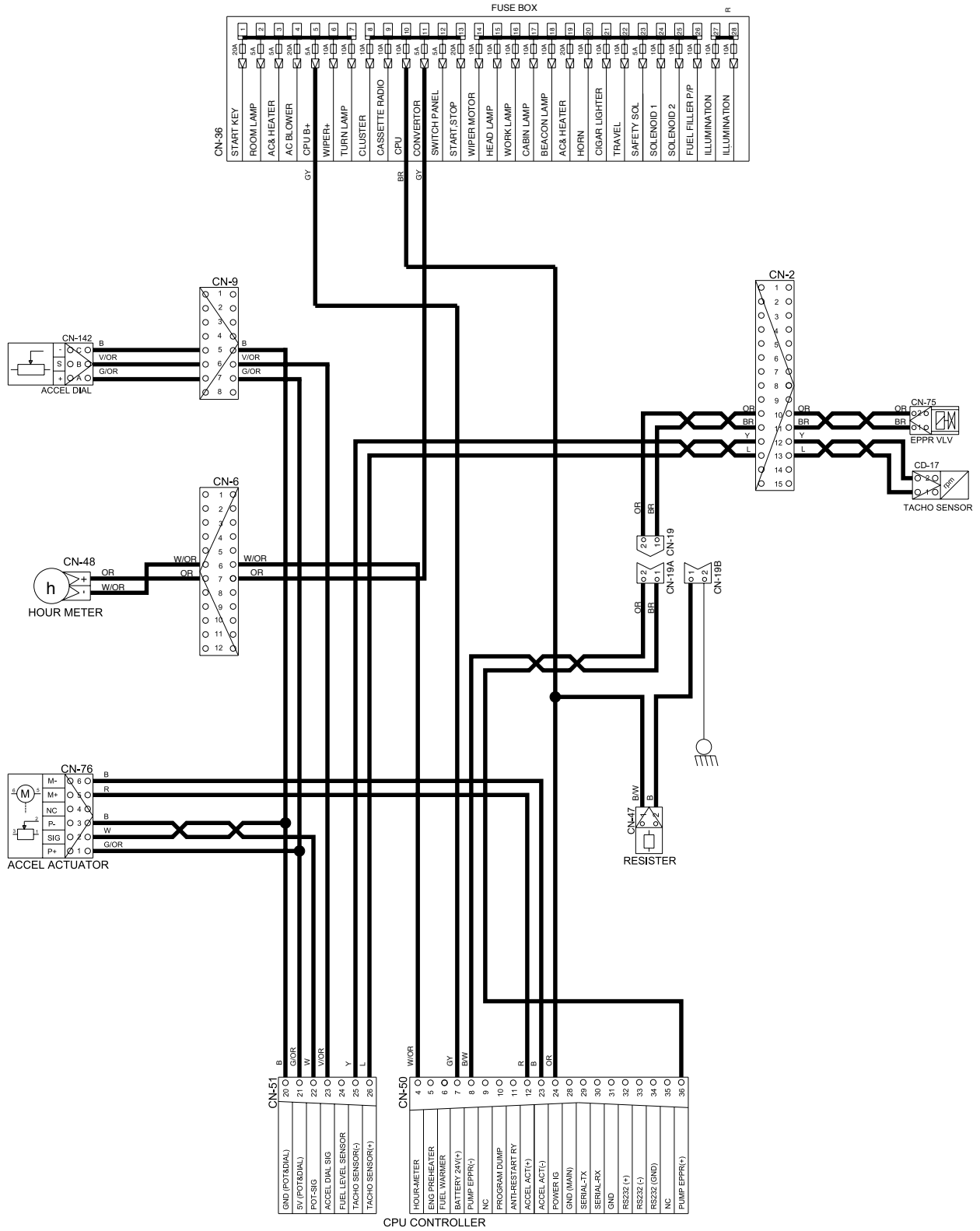


# COMBINATION LAMP CIRCUIT



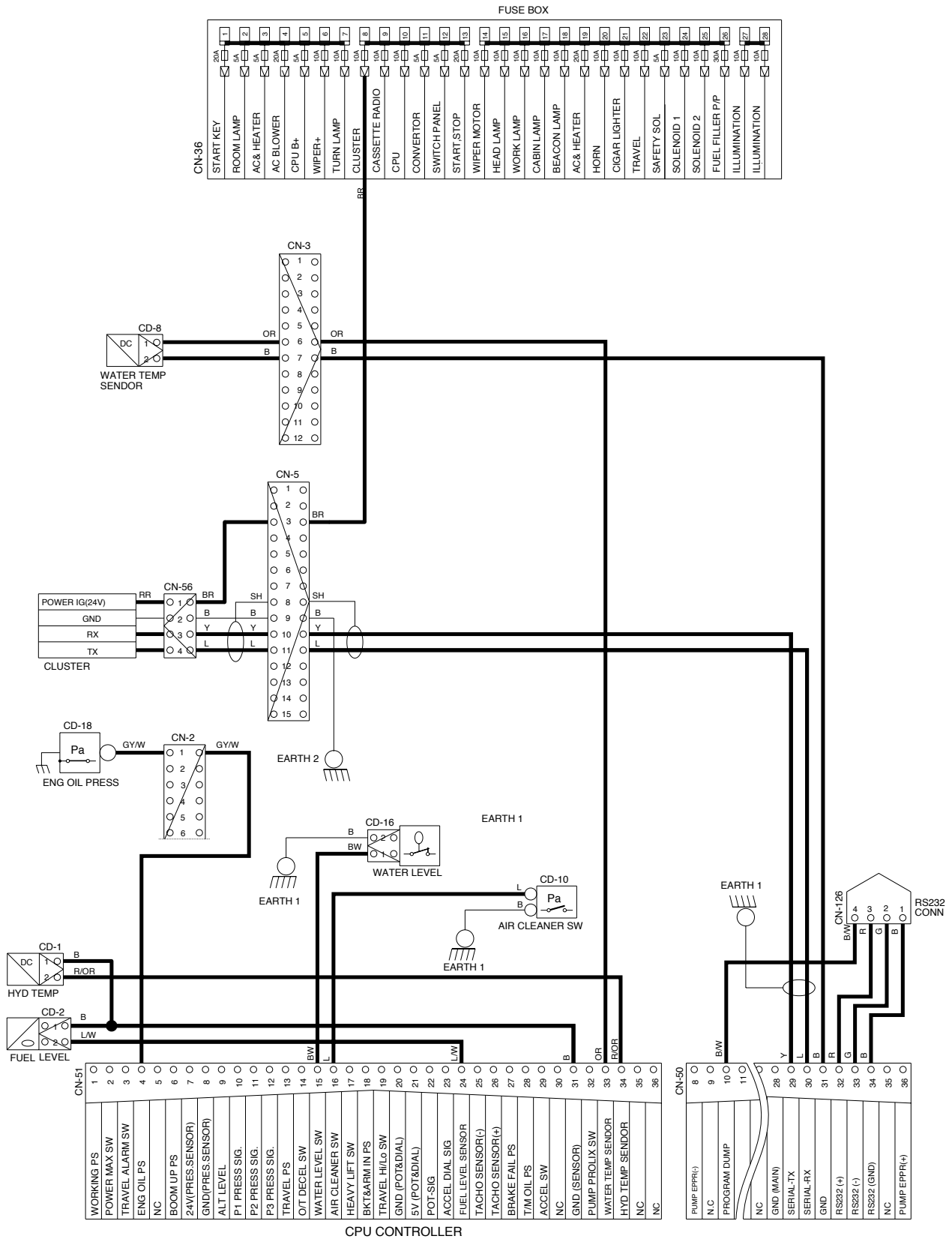
14W74EL12

# CONTROLLER CIRCUIT



14W74EL13

# MONTORING CIRCUIT



14W74EL14

# ELECTRIC CIRCUIT FOR HYDRAULIC

