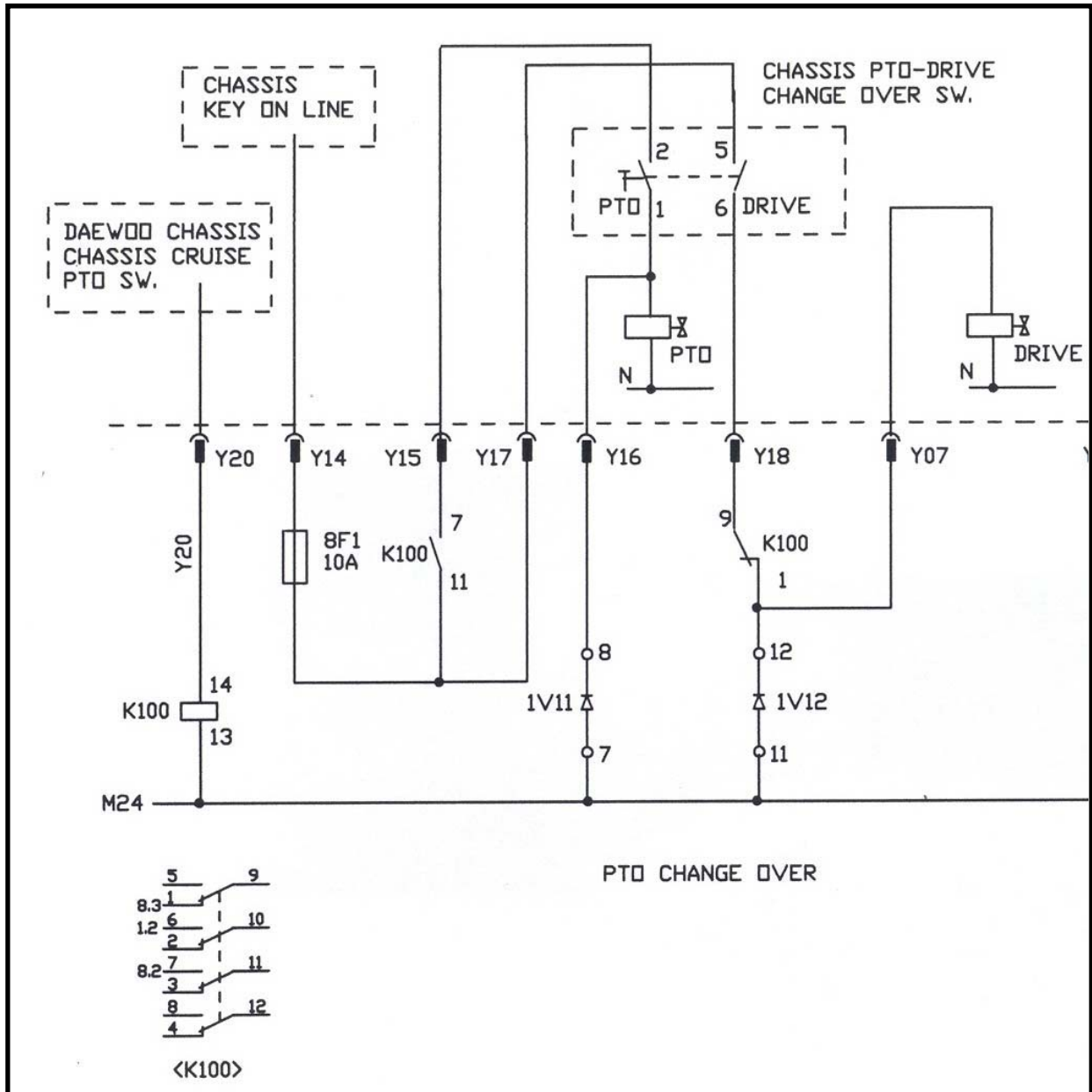


JUNJIN CONCRETE PUMP SERVICE INFORMATION



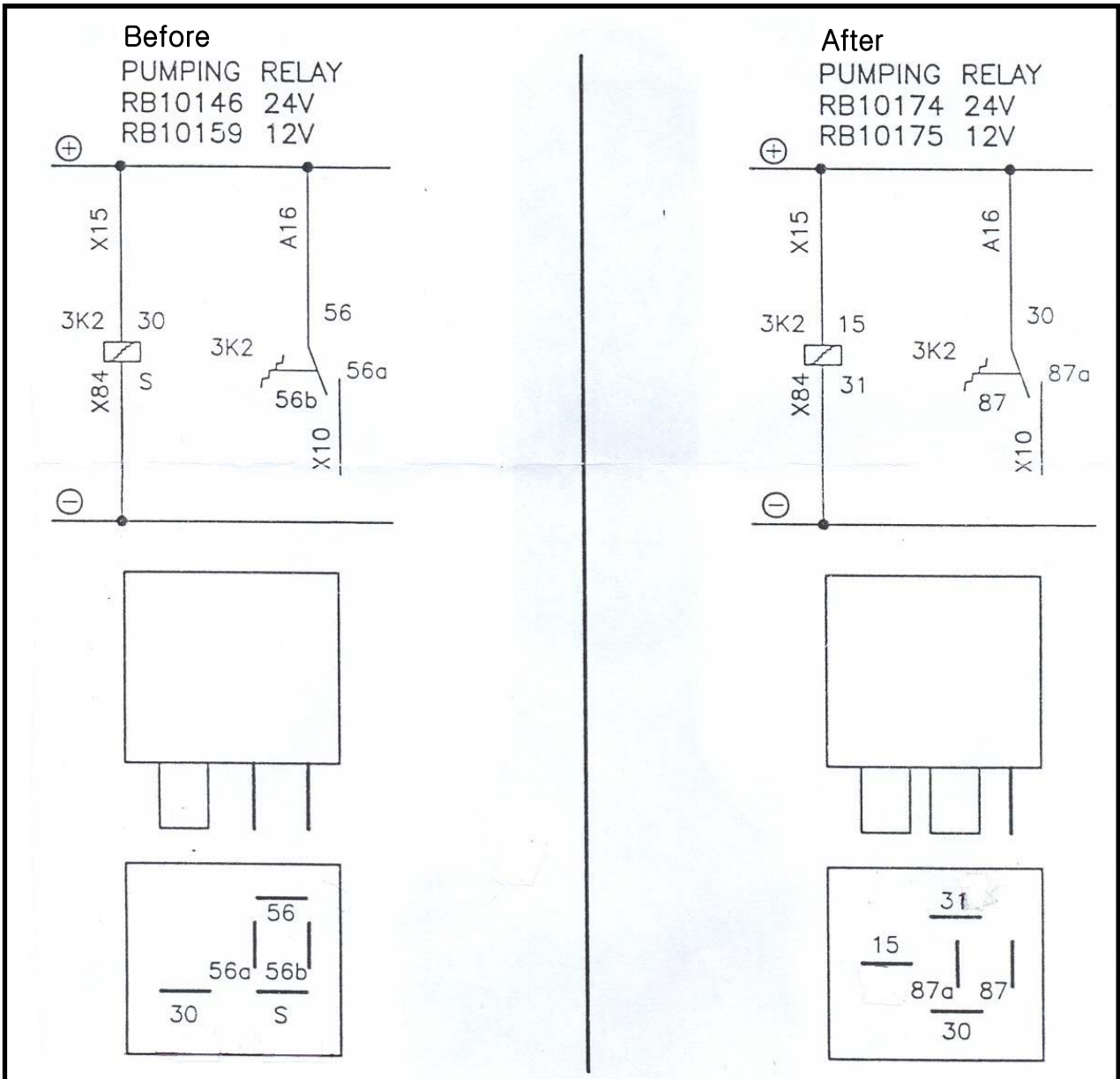
JSI - EN - 05- 4B - 001		Date	Feb 1st, 2005
Total Pages	6	Present Page	1
Written by	IL KYU, AN	Approved by	IN JAE, HWANG
Subject	Main panel design changes		

■ PTO electric wiring design change BEFORE



※ Main purpose of the design change is for the uniformity of different type of drawings.

■ Pumping relay change



- This design change has been adopted since June, 2003.
- New pumping relay has longer life than before.

■ Wiring to pumping relay

BEFORE



AFTER



X15 wire is connected to 30.

X84 wire is connected to S.

A16 wire is connected to 56.

X10 wire is connected to 56A.

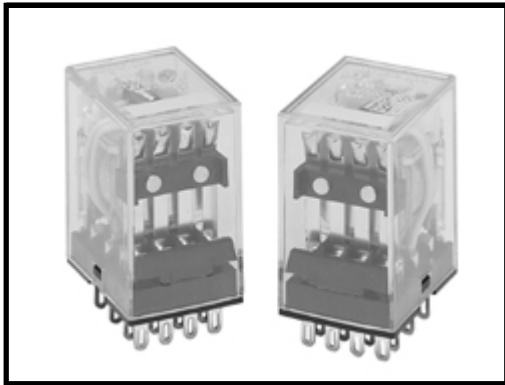
X15 wire is connected to 15.

X84 wire is connected to 31.

A16 wire is connected to 30.

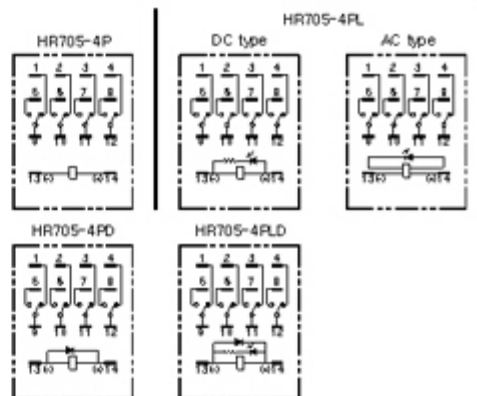
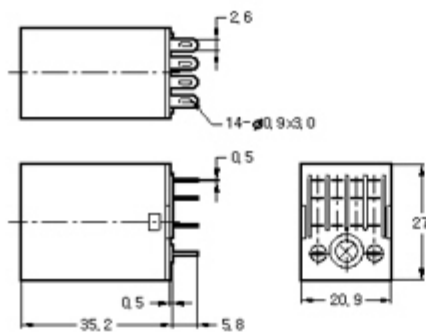
X10 wire is connected to 87A.

■ General relay



HANKOOK relay
Model : HR705-4P

HR705-4P and variations
Base view



PART NUMBER	VOLTAGE (VDC)	COIL RESISTANCE ($\Omega \pm 10\%$)	CURRENT (MA)	MUST OPERATE VOLTAGE (VDC)	MUST RELEASE VOLTAGE (VDC)	MAX VOLTAGE (VDC)	NOMINAL POWER (W, VA)
HR705-□□□□ 12VDC	12	160	75	9.6	1.2	13.2	0.9 APPROX
HR705-□□□□ 24VDC	24	650	36.9	19.2	2.4	26.4	

- HR705-4P relay has a transparent housing so that the mechanic can check the contact with naked-eyes.



HR705-

Contact arrangement

- 1P: 1 Form C
- 2P: 2 Form C
- 3P: 3 Form C
- 4P: 4 Form C

Mounting & Terminal

- None: Socket - plug-in, solder
- P: PC Board - pin
- B: Flange - plug-in, solder

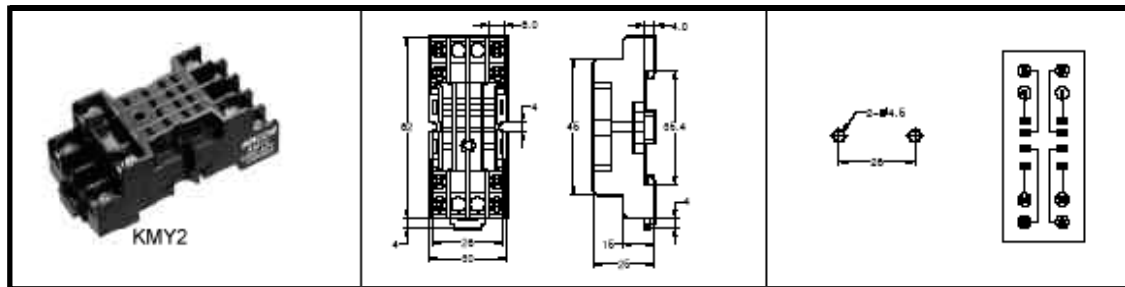
Options

- None: Standard
- L: LED indicator (DC coil: green, AC coil: red)
- T: Test button
- LT: LED indicator + Test button
- D: freewheeling diode
- LD: LED indicator + freewheeling diode

Coil voltage

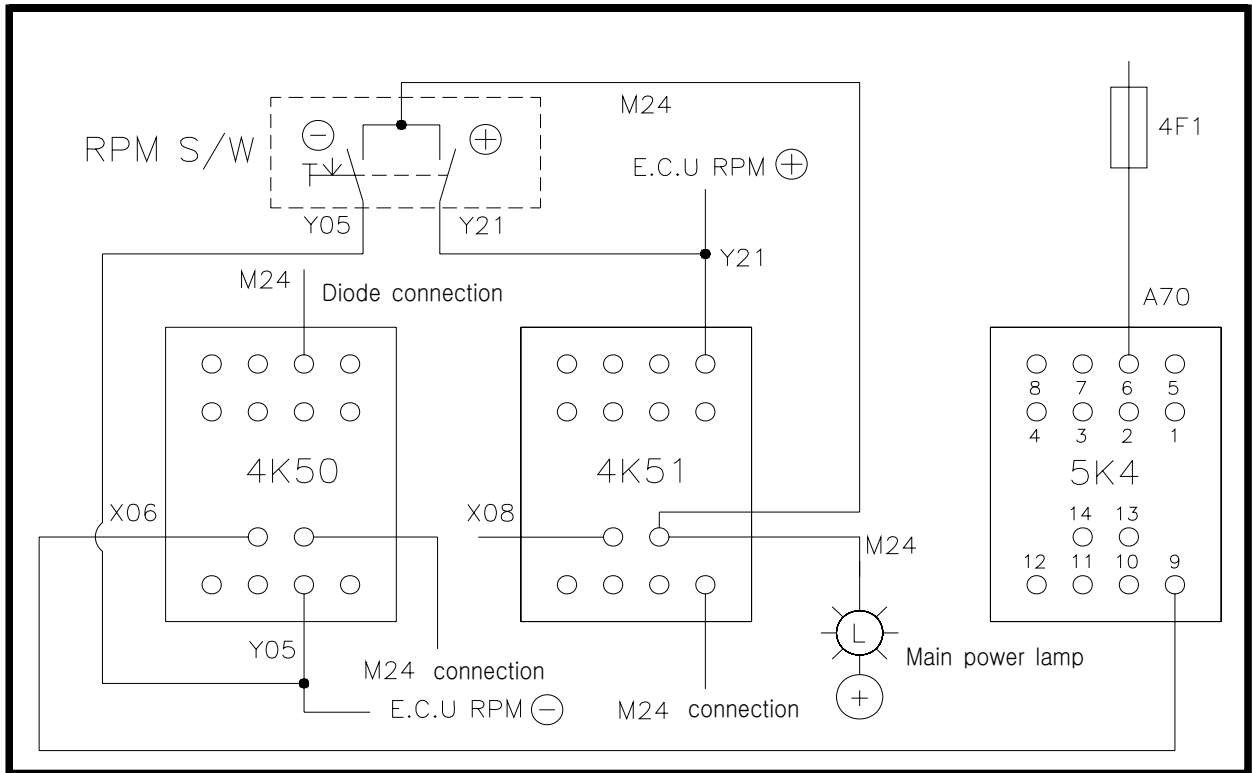
6VDC	6VAC	100/110VAC
12VDC	12VAC	110/120VAC
24VDC	24VAC	200/220VAC
48VDC	50VAC	220/240VAC
100/110VDC		

HR705 SOCKETS



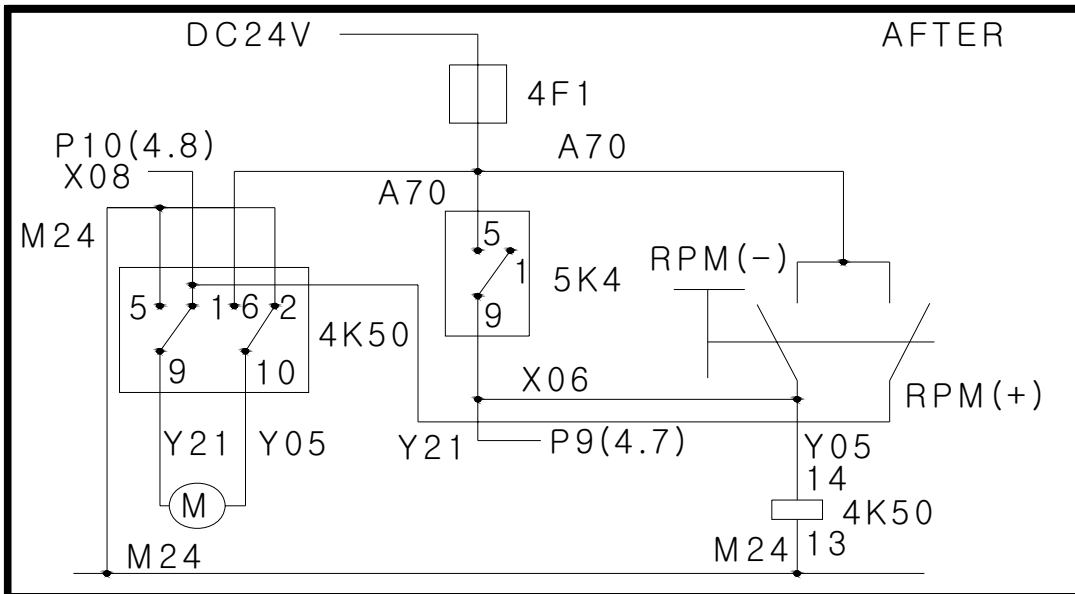
- K104 and K105 relay are located on the HR705 sockets and the other are on PCB board.

■ RPM electric wiring modification (RB986 ⇨ RB928)



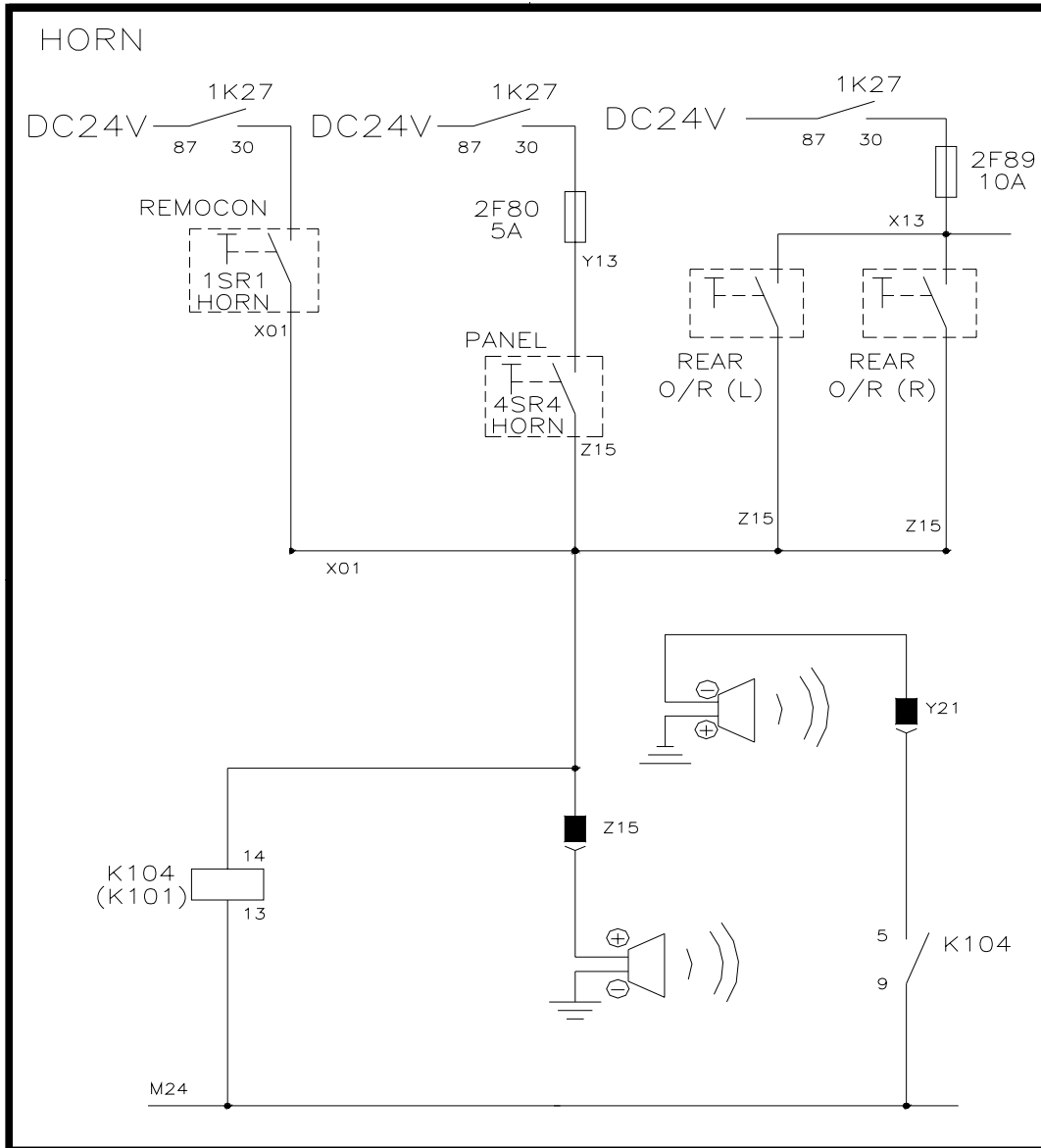
- ① Remove the M24 wire connected to #2 and #5 of 4K51 relay.
- ② Remove the A70 wire connected to #6 of 4K50 relay and RPM s/w. Connect a wire from 4F1 fuse to #6 of 5K4, then number it as A70.
- ③ Connect X08 of 4K50 relay to #14 of 4K51 relay.
- ④ Connect M24 from RPM s/w to #13 of 4K51 relay and connect this M24 from #13 of 4K51 to main power lamp.
- ⑤ Connect Y21 from #9 of 4K50 relay to #5 of 4K51 relay. Using another wire, connect #5 of 4K51 relay to RPM s/w ⊕, then number it as Y21.
- ⑥ Cut the Y05 connected to #1 of 4K50 relay, then connect it to #10 of 4K50. Connect Y05 of RPM s/w ⊖ to #10 of 4K50 relay.
- ⑦ Connect X06 to #14 of 4K50 relay. Connect #9 of 5K4 relay to #14 of 4K50 relay.
- ⑧ Using another wire, connect a diode to #6 of 4K50 relay.

■ RPM electric wiring modification (RB928 ⇨ RB986)



- ① Remove the M24 wire from RPM s/w, then connect A70 wire from 4F1 fuse to RPM s/w. Remove M24 wire connected to 4K51 relay and connect one of M24 wire to #13 of 4K51 relay.
- ② Connect ⊕ to # 5 of 5K4relay and X06 wire should be connected to #9. (RPM decreases automatically when E-stop engaged)
- ③ Connect X08 wire form #14 of 4K51 relay to #1.
- ④ Y21 wire connected to #5 of 4K51 relay goes to Y connector. The other Y21 goes to RPM s/w ⊕. Y21 connected to Y connector should be connected to #5 of 4K50. The other Y21 connected to RPM s/w ⊕ should be connected to #1 of 4K50 relay.
- ⑤ Using 2 of wire, connect diodes to #5 and #2 of 4K50 relay.
- ⑥ 2 of Y05 goes to #10 of 4K50 relay. One is connected to Y connector and the other to RPM s/w. Cut Y05 from RPM s/w, then connect it to #14 of 4K50 relay.
- ⑦ ACCEL ACTUATOR(Brown = Y21. Blue = Y05)

■ Horn electric wiring



2 kinds of wiring can be chosen depending on chassis. Z15 wire in the terminal box has to be connected to the horn.

- ① Supplying ⊕ signal to the horn directly
- ② Supplying ⊕ signal to the horn through the K104

■ System feature

When the main power is supplied to both solenoid valve(#1, #2) by the pumping relay(3K2), main cylinder starts to pump the concrete. It can be performed electrically or manually.

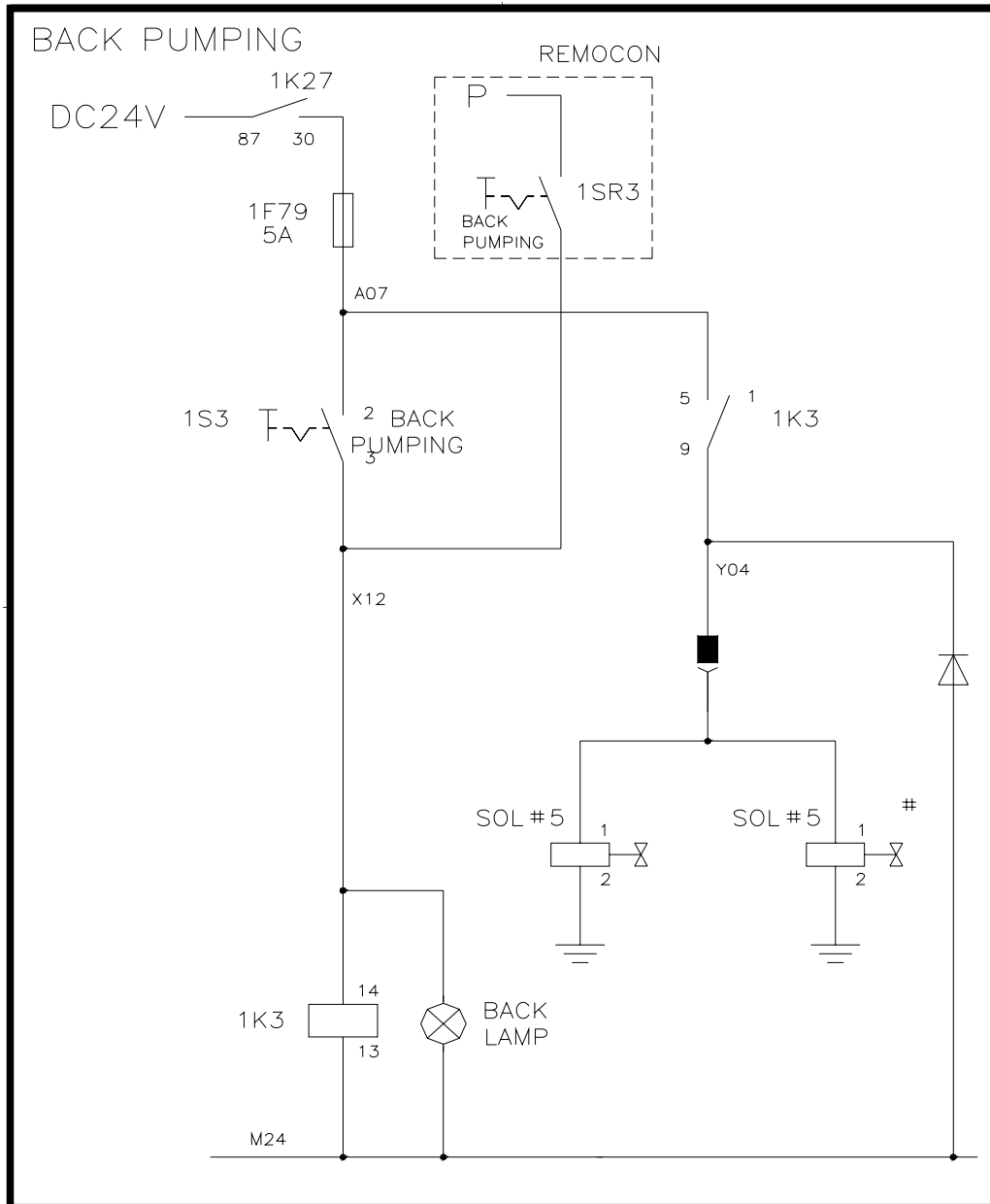
■ Concerned relays

K102(pumping stop relay) and 5K4(E-stop relay) should be off.(deactivation)
Pumping lamp and hour meter are engaged at the same time during pumping work.

■ Part number reference

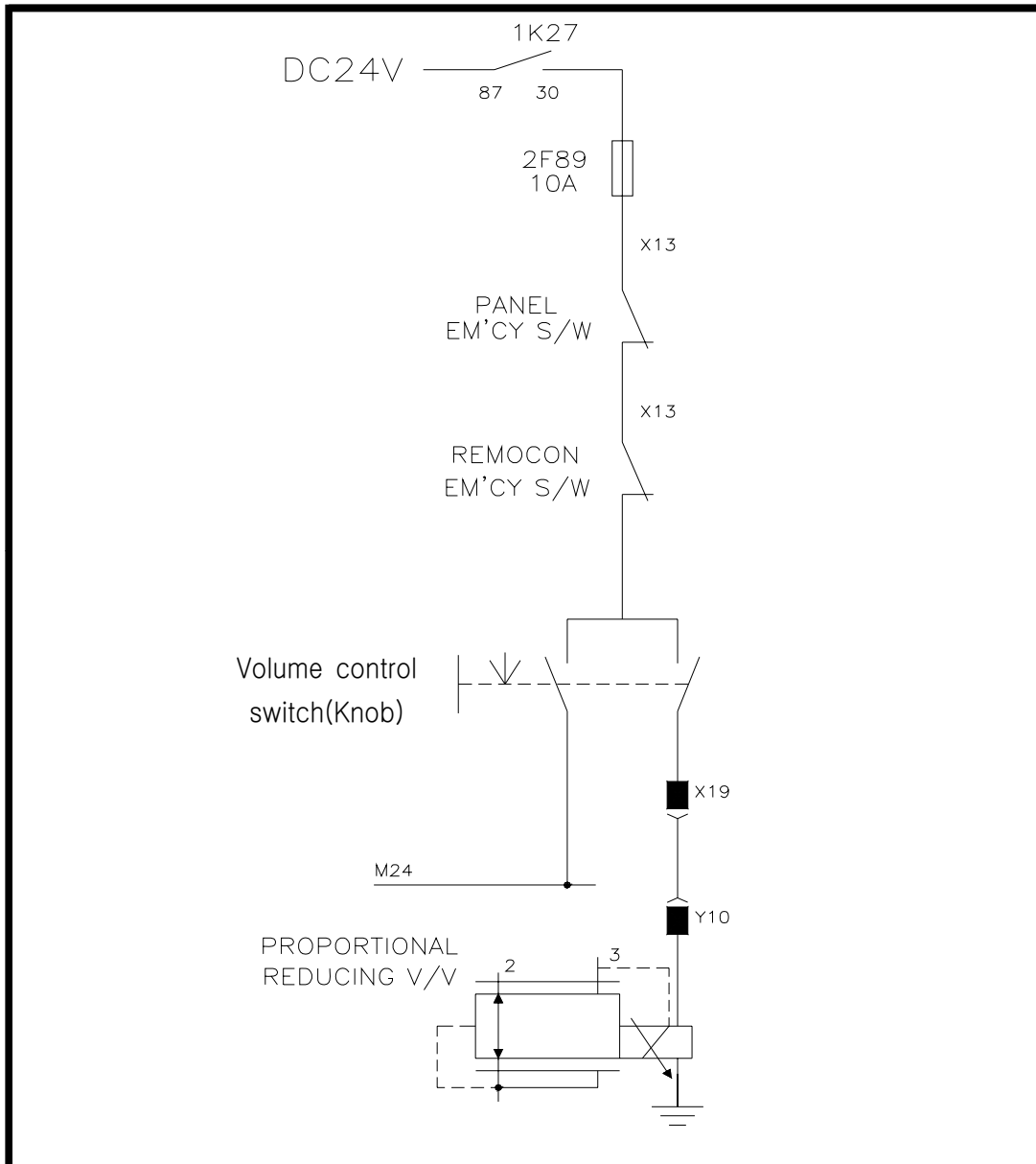
- 1K27 main power relay : RB1014(24V), RB10158(12V)
- 3K2 pumping relay : RB10146(24V), RB10159(12V)
- General relay : RB08601(24V), RB08602(12V)
- Solenoid valve #1 : RB6717(24V), RB08025(12V)
- Solenoid valve #2 : RB07936(24V), RB07925(12V)
- lamp on panel : RB08623
- Flip switch on panel : RB10161
- Toggle switch on panel : RB10162

■ Reverse pumping electric wiring



When the 1K3 reverse pumping relay is activated by the switch, main power is supplied to both solenoid valve(reverse pumping).

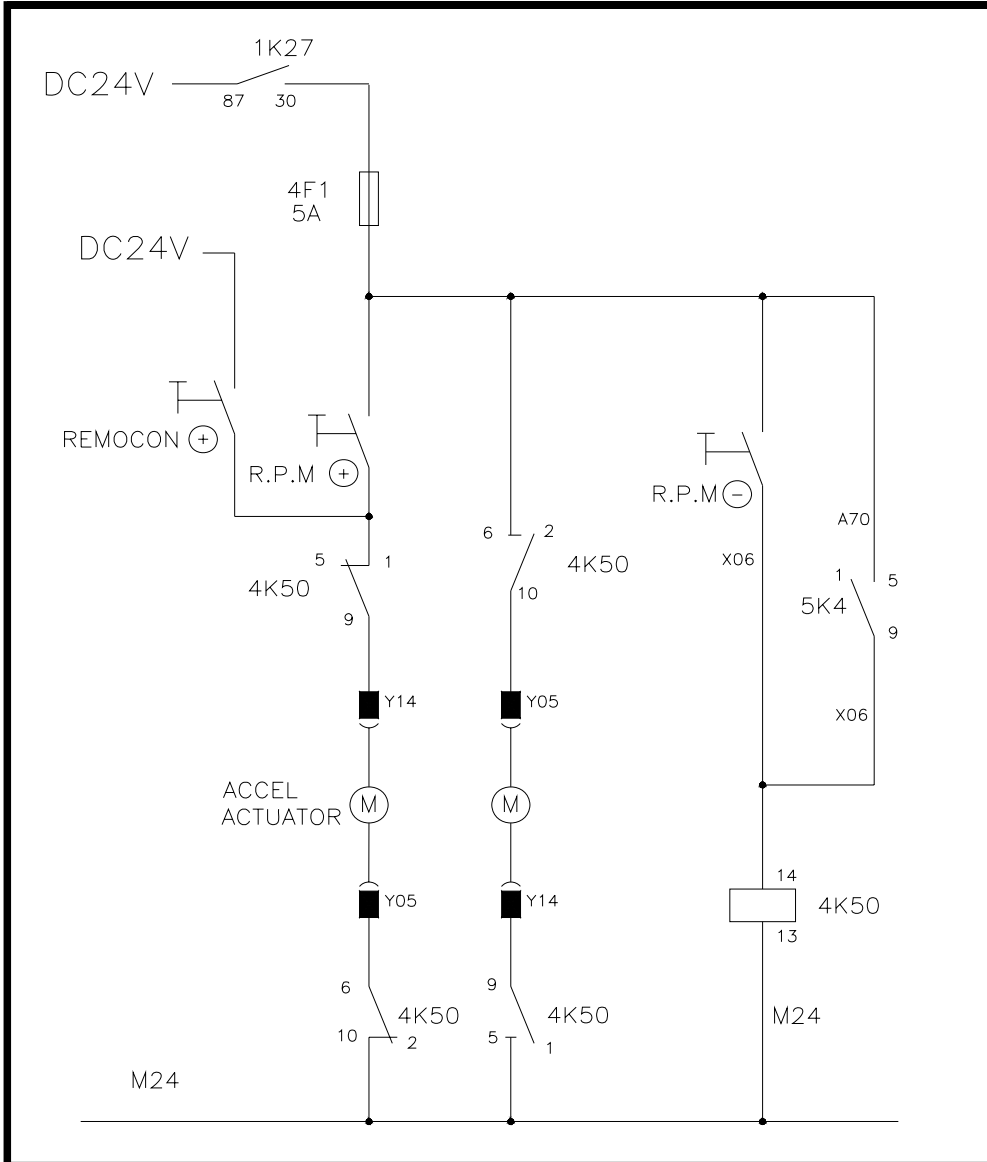
■ Output volume control electric wiring



The volume control switch(knob) is a kind of variable resistance and it controls the amperage. (24V = 0 ~ 0.8A, 12V = 0 ~ 2A)

Caution ① : Solenoid valve(⊖) is connected to the ground.(terminal box, connector, chassis)

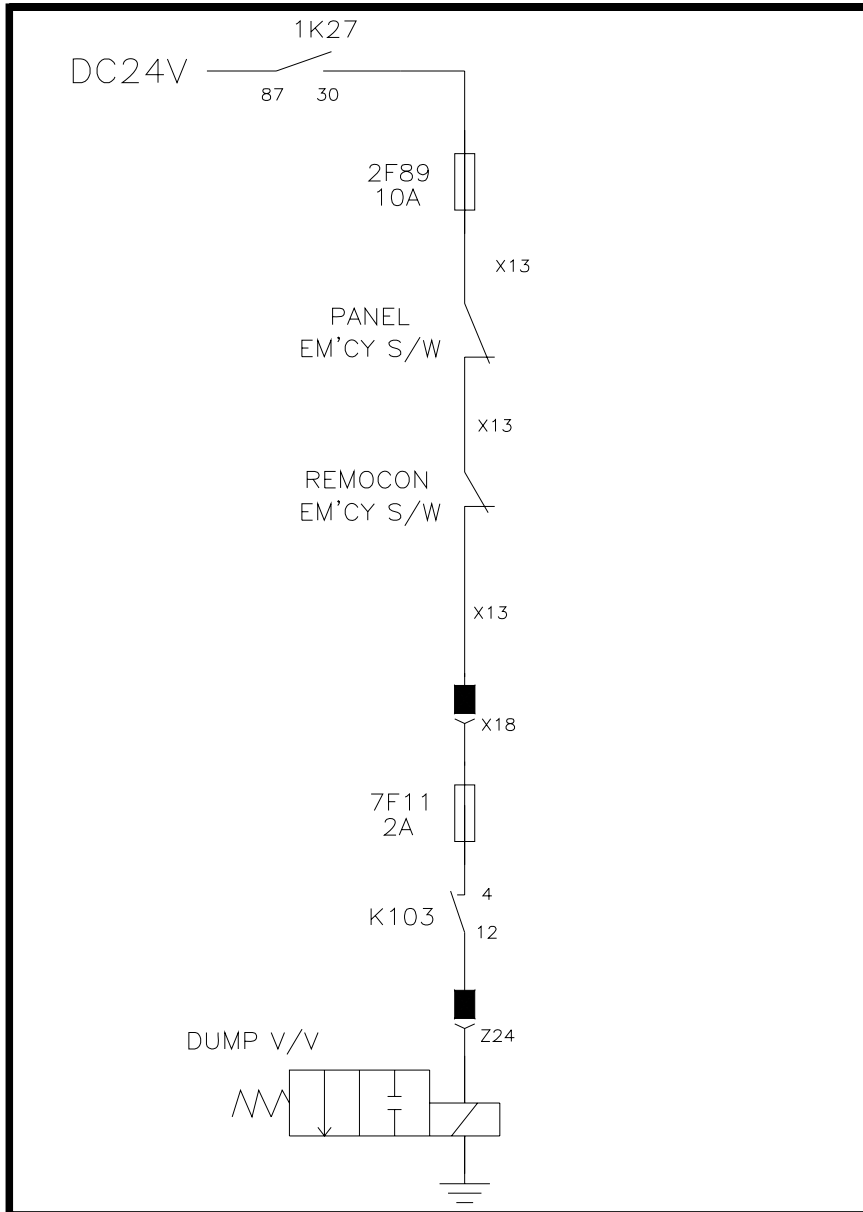
■ RPM electric wiring(Governor control : RB986, RB886)



Accelerator actuator is used for RPM control.(Governor type)

This system is simpler than ECU control, 4K50(RPM ⊖ relay) controls both increasing RPM and decreasing RPM.

■ Dump valve electric wiring



After engaging P.T.O, main power is supplied to the solenoid valve(dump valve) through X13 wire. Finally the accumulator pressure is charged at 190Bar. For this every E-stop switch should be off and K103 relay should be on.

※ Dump valve including manual device : RB99600C (24V), RB99670C (12V)

■ System feature

The oil cooler works to lower the temperature when the system temperature reaches about 55° C. Too high system temperature has bad effects on the seals and valves.

■ Oil cooler

After engaging P.T.O, main power is supplied to the solenoid valve through a fuse. When the 55° sensor reaches at certain temperature or the operator switches the switch on main panel, main power is not supplied to the solenoid valve by the activation of 5K40 relay. Then the oil cooler starts to work.

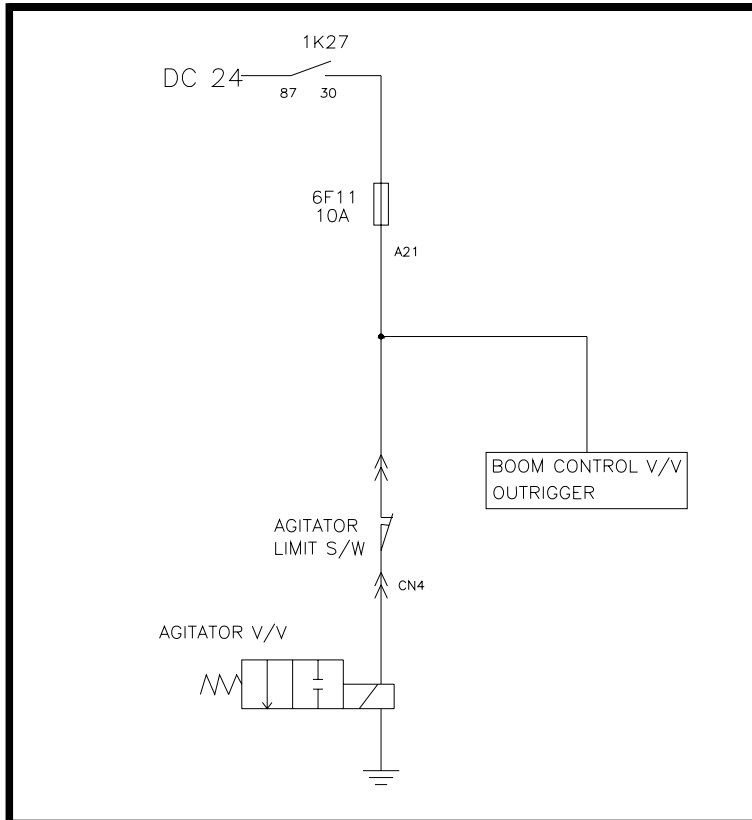
■ Possible failure causes

- Fuse failure (5F94)
- Wiring failure or bad connection to the solenoid valve
- Solenoid valve coil failure
- 55° or 90° sensor failure
- Relay failure(5K40)

■ Part number reference

- 55° sensor : RB06109(TB48, TM65)
- Solenoid valve for oil cooler : RB82802C(24V), RB82807C(12V)

■ Safety valve electric system



■ System feature

When the operator opens the hopper screen, the agitator motor stops turning for safety by the limit switch.

■ Safety valve(solenoid valve)

Hyd. oil is supplied to the agitator motor through this solenoid valve. It changes the direction and drains the hyd. oil to the tank PTO when the agitator limit switch is deactivated.

■ Part number reference

- Safety valve : RB999(24V), RB9997(12V), RB99999(manual device)
- Safety valve including manual device : RB99900C(24V), RB99970C(12V)

■ System feature

6 of E-stop switch are located on the machine for emergency situation. When any of these switches are engaged, every function stops as the RPM decreases.

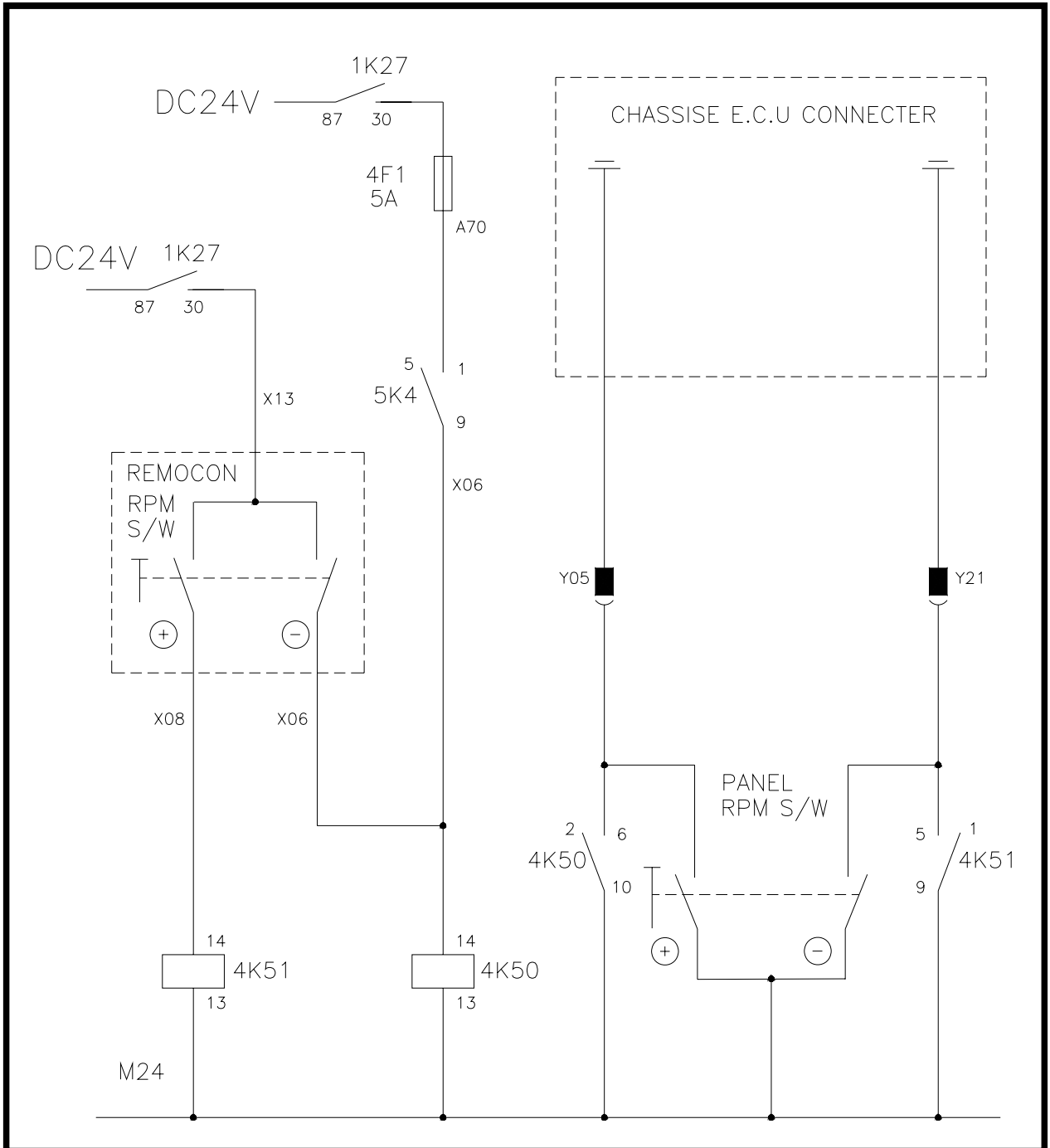
■ Possible failure causes

- Fuse failure(2F89)
- 90° sensor failure
- Bad contact of E-stop switch
- Relay failure(5K4 : E-stop relay)
- Relay failure(K103 : E-stop relay)

■ Part number reference

- 90° sensor : RB23301
- E-stop switch : RB62005
- E-stop switch with horn switch : RB822
- E-stop switch on the main panel : RB16104

■ RPM electric wiring(ECU control)



■ System feature

RPM control can be performed by the remote controller or the switch on the main panel manually.

■ RPM control

After the PTO is engaged, \oplus signal from the battery waits for the relay activation. Relay(4K51 : RPM \oplus , 4K50 : RPM \ominus) activation by the switch from remote controller or main panel enable the proper RPM control.

※ E-stop relay(5K4) activation decreases the RPM automatically.

■ Possible failure causes

- Contact failure of the switches(Radio remote transmitter, main panel)
- Relay failure of 4K50, 4K51

■ Part number reference

- General relay(24V) : RB08601
- General relay(12V) : RB08602
- RPM flip switch : RB10161