



INSTRUCTION BULLETIN

No. 340384
Machine: 830-II
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Rev. 02

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.

NOTE: Numbers in parenthesis () are reference numbers for parts listed in Bill of Materials.

Installation instructions for kit number 768578

SYNOPSIS / PROBLEM:

This kit contains the parts needed to install a new Micro Controller in the control panel assembly in the model 830-II sweeper.

This new Micro Controller has several software updates. The processor will now control the low oil pressure shut down. As soon as the machine is shifted into the forward position with the brushes off, the processor will also lift the main brush, side brushes, and conveyor to make sure they are not down. Sweeping speed can now be increased to 2200 RPM before the processor will shut off the sweeping system.

Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: 4mm allen wrench, phillips screwdriver, 7mm wrench, 7mm nut driver, 1/4 in. nut driver, 10mm socket and ratchet, terminal crimper, soldering iron and solder. Set aside all hardware for use in reassembly.

(Estimated time to complete: 3 hours)

PREPARATION:

(Refer to FIG. 1 thru 6)

FOR SAFETY: Before leaving or servicing machine, stop on level surface and set parking brake. Turn off machine and remove key.

1. Disconnect battery cables from machine.



WARNING: Always disconnect battery cables from machine before working on electrical components.

INSTALLATION:

(Refer to FIG. 1 and 4)

NOTE: The hourmeter and odometer will be at zero after the new Micro Controller is installed. Make sure the current numbers are recorded before the control panel assembly is disconnected.

1. Remove the eight screws along the sides and top of the instrument shroud, and pull the instrument case bezel out towards you. Set the screws aside for reassembly. (Refer to FIG. 1)
2. Disconnect the flat ribbon cable from the back of the touch panel.

NOTE: Observe and record the orientation of the red strip on the ribbon cable for proper installation.

3. Remove the two wire connector (1 green, 1 black) from the power supply circuit board. (Refer to FIG. 2)
4. Disconnect the machine wire harness from the control panel assembly. There are two connectors, each held in place with a 1/4" hex head screw.
5. Remove the instrument case bezel to a workbench and place it face down on a smooth padded surface that is free of any debris that may damage the face of the control panel.
6. Remove the control panel fiber optic wire from the power supply circuit board. (Refer to FIG. 2)

NOTE: To remove this wire, first clip the tie strap that holds it to the circuit board. When the wire is reinstalled, the longer end goes to the left (A side) and the shorter end goes to the right (C side). The letters A and C are located on the back side of the circuit board. Secure it with a cable tie (2). To remove the power supply circuit board for access, depress the locking tabs on the three stand-offs; be sure to reinstall with the same orientation.

7. Remove the four M-4 nyloc nuts (two on the left and two on the right) that hold the L brackets on.

NOTE: At this point, the L brackets will be free and the control panel may drop out of the housing. Use caution to avoid damage to the control panel and fiber optic cables.

8. Pull the control panel assembly through the front of the instrument case bezel and place it face down on a smooth padded surface that is free of any debris that may damage the face of the control panel.
9. Attach the static strap (10) to wrist and ground connection.

*NOTE: Wear the wrist strap before unpacking or working on components. It is provided to control static electricity. **Failure to use it properly can result in damage to electronic devices and assemblies.***

10. Disconnect the 20-conductor ribbon cable from the front panel.

NOTE: Observe and record the orientation of the red strip on the ribbon cable for proper reinstallation.

11. Lay the instrument box on its back, exposing the micro controller on the circuit board.
12. Orient the box so the micro controller is on your left.
13. Remove the LED block immediately to the left of the micro controller. This will make room for the chip removal tool. (Refer to FIG. 3)

NOTE: One side of the micro controller has a top edge that is beveled at a 45 ° angle. That beveled edge has a small indentation, or dot, in the center. This indentation represents pin 1 on the micro controller. Record the orientation of this dot before removing the micro controller. (Refer to FIG. 4)

14. Insert the end of the chip removal tool (9) into the corner socket notch of the micro controller. (Refer to FIG. 3)

15. Remove the micro controller by gently prying up on the corners of the chip. **Do not discard the micro controller.**
16. Carefully align the dot on the beveled edge of the new micro controller (1) with the arrow in the chip socket (similar orientation as the chip that was removed).
17. Verify the proper alignment of all the pins on the Micro Controller with the socket contacts.
18. Seat the micro controller firmly into the socket by forcing it down with your thumb.
19. Reinstall the LED block.
20. Reconnect the 20-conductor ribbon cable to the front panel. NOTE ORIENTATION.
21. Reassemble the control panel. Observe the O-ring and instrument box gasket for proper alignment.

NOTE: Torque the M-4 nyloc nuts to 45-68 Ncm (4-6 in/lb). Over torquing can pull the studs from the circuitboard.

22. Reinstall the control panel in reverse order of disassembly (steps 1-9).

OIL PRESSURE SWITCH AND WIRE HARNESS CHANGE:

For Model 830-II sweepers with serial numbers 000000 to 3123

(Refer to FIG. 5 and 6)

1. On the engine, disconnect the sealed connector from the oil pressure switch (not the oil pressure sender) and secure or tape to a nearby object (these wires will no longer be used). (Refer to FIG. 5)
2. Remove the oil pressure switch and install a pipe plug (3) with Locktite PST (6) in its place.
3. In the center compartment of the cab, locate the red diode plug labeled D28. Unplug and discard.
4. Unfasten the fuse/relay panel and position it so that the underside is accessible. (Refer to FIG. 6)
5. Locate relay M5 and remove wire 166/PUR from terminal 87.
6. Reconnect the same wire (166/PUR) to terminal 30, at the M5 relay, where wire 3/BRN is also attached. You will need to remove wire 3/BRN, clip the terminals from it and 166/PUR. Crimp both of the wires into a new terminal (5).
7. Remove wire 4/YEL from terminal 87a at relay M5 and insulate with tape.
8. Install jumper wire (4) with terminals, and connect from terminal 86 to terminal 87a, both at relay M5.
9. Reinstall the fuse/relay panel.
10. Reconnect the battery to the machine.
11. Turn on the machine and check for proper operation.
12. If the machine functions properly, discard the old micro processor.

OIL PRESSURE SWITCH:

For Model 830-II sweepers with serial numbers from 3124 to 3708.

(Refer to FIG. 3)

1. On the engine, disconnect the sealed connector from the oil pressure switch (not the oil pressure sender).
2. Cut off the sealed connector close to the plug.
3. Splice together wires 27J/GRY and 4/YEL by stripping 1/4 inch of insulation from each wire. Slide the heat shrink sleeve onto one of the wires, and crimp them together with the connector (7). Solder the connection, and heat shrink the sleeve (8) over the connection to insulate the connection.
4. Reconnect the battery to the machine.
5. Turn on the machine and check for proper operation.
6. If the machine functions properly, discard the old micro processor.

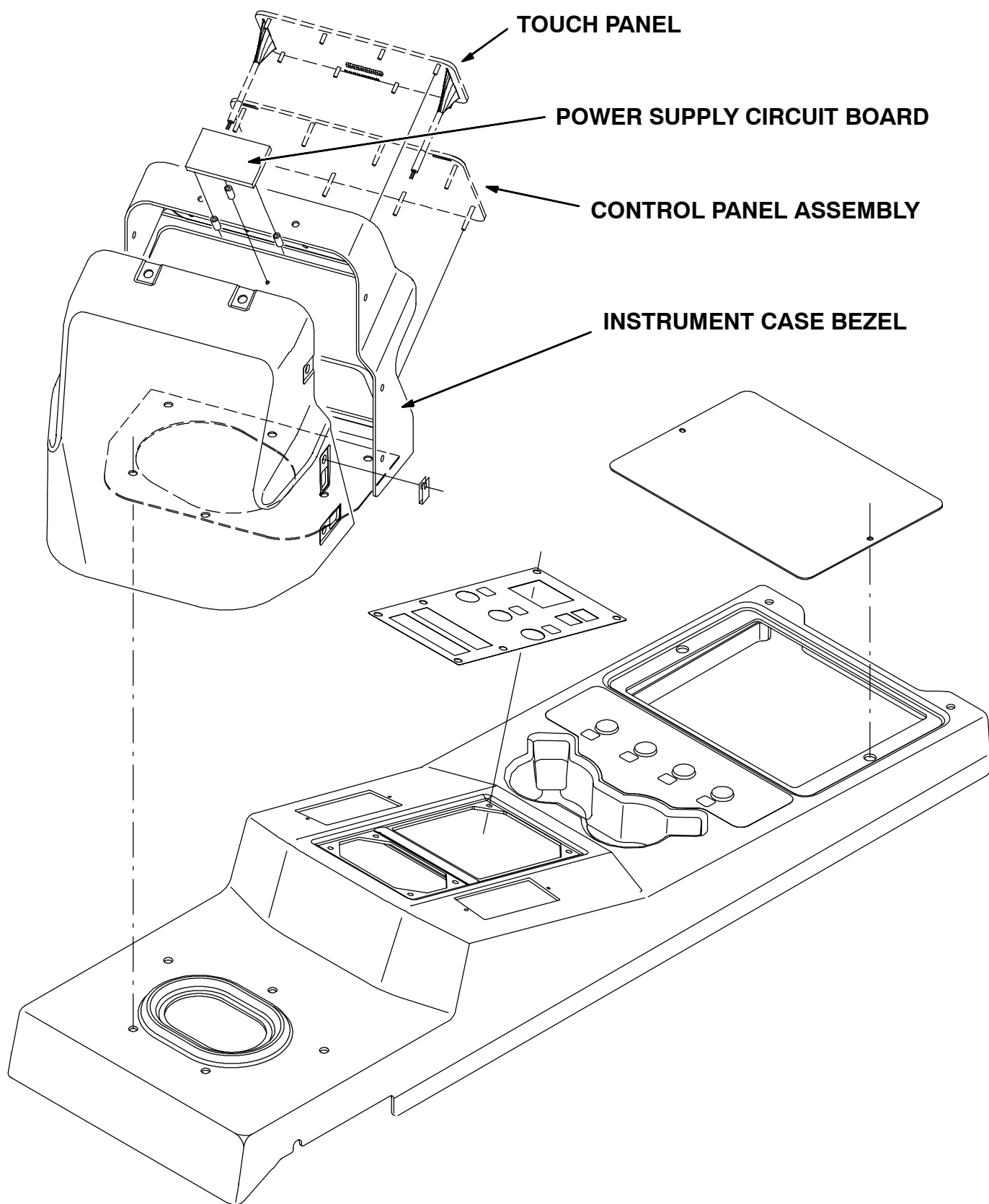


FIG. 1 - CAB CONSOLE

**CONTROL PANEL FIBER OPTIC
LONGER WIRE ON THE LEFT SIDE**

**GREEN/BLACK
CONNECTOR**

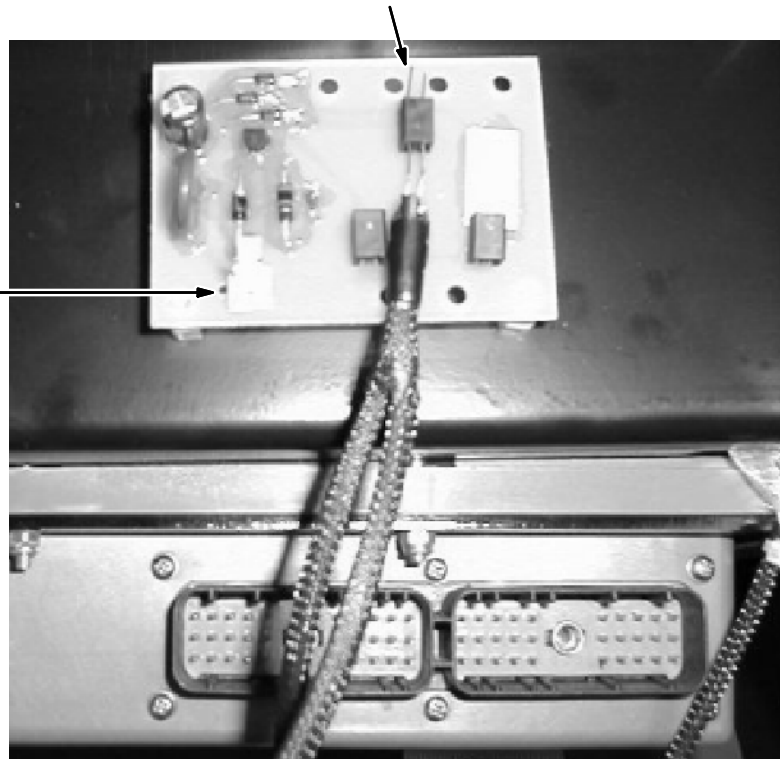


FIG. 2 - POWER SUPPLY CIRCUIT BOARD

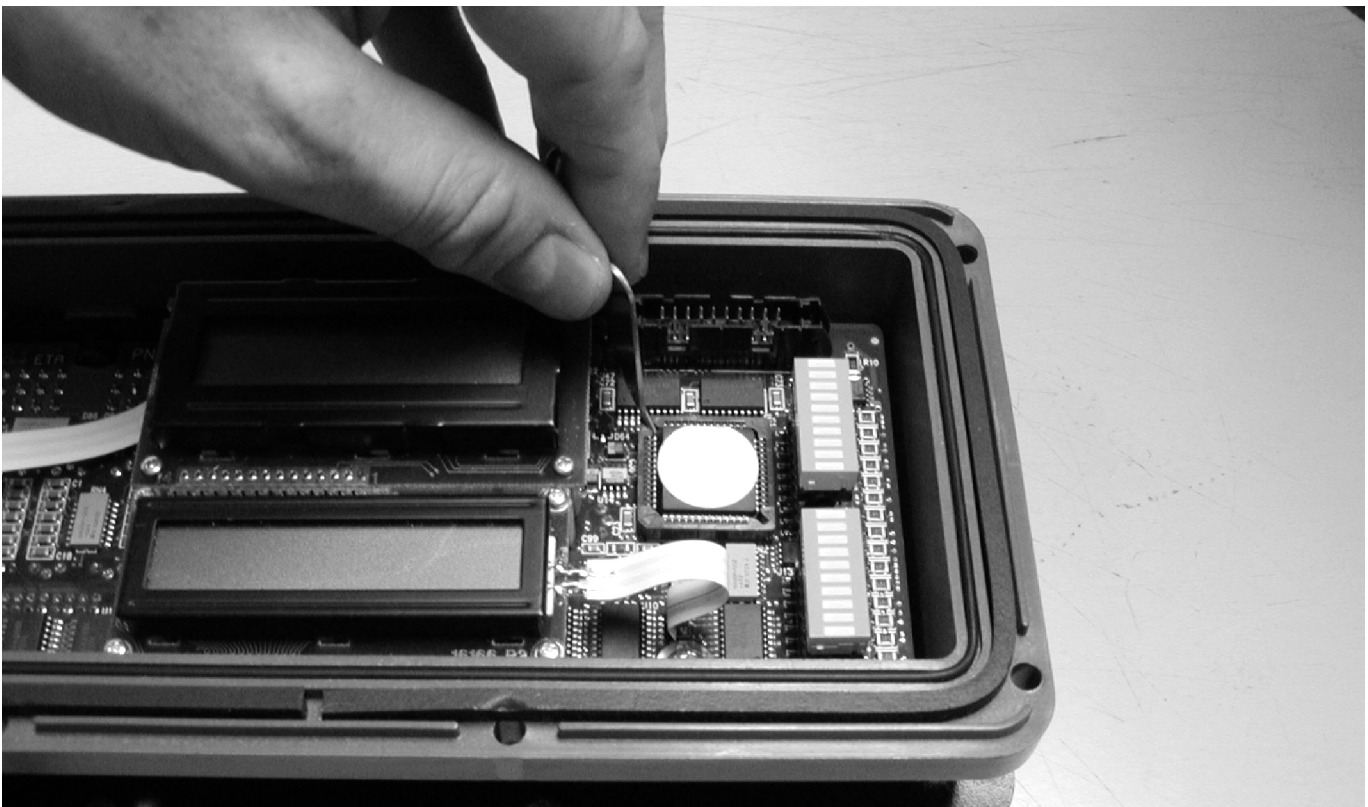


FIG. 3 - Pry Chip Up With Chip Removal Tool

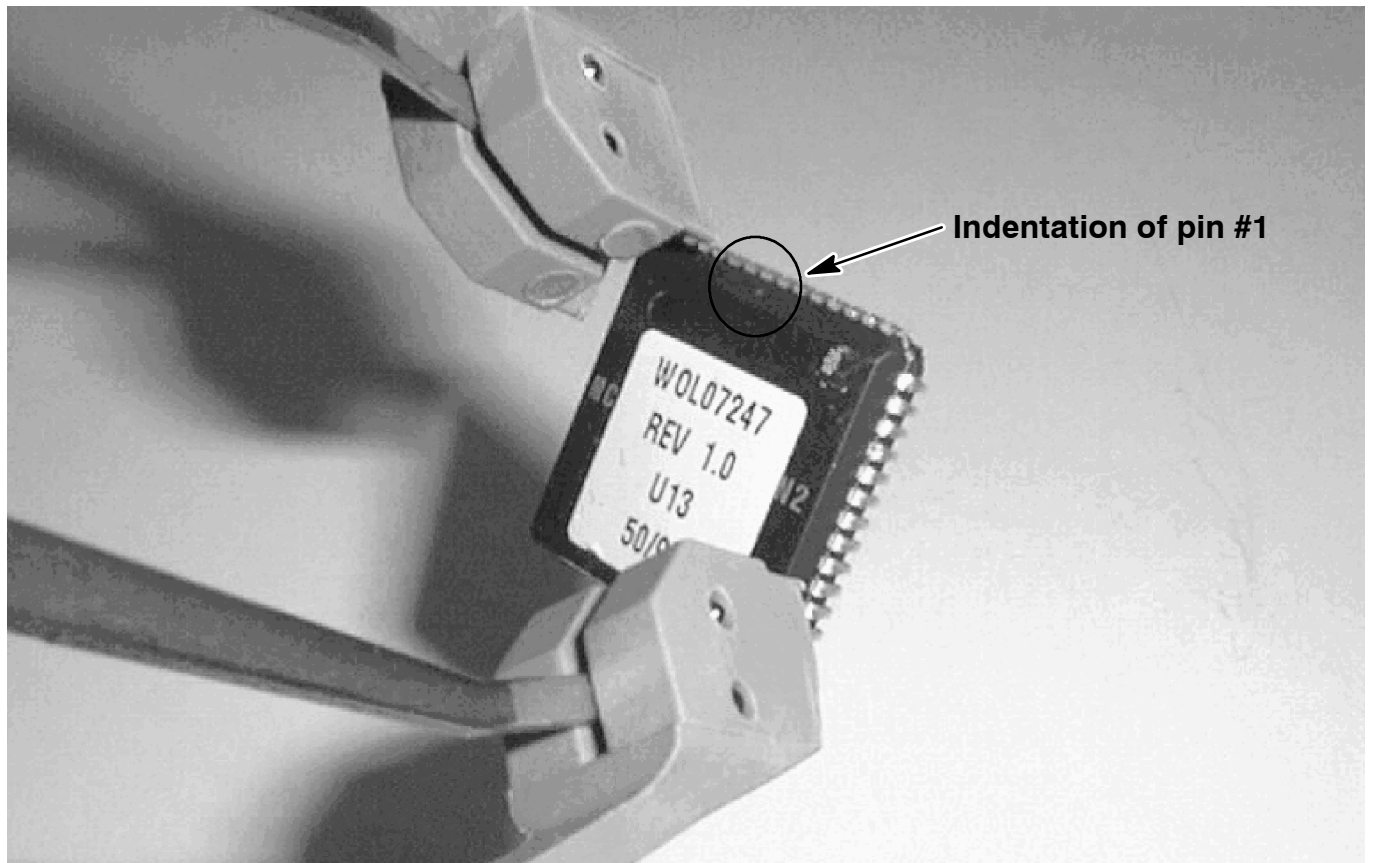


FIG. 4 - Shaved 45° Edge and Pin #1 Indentation

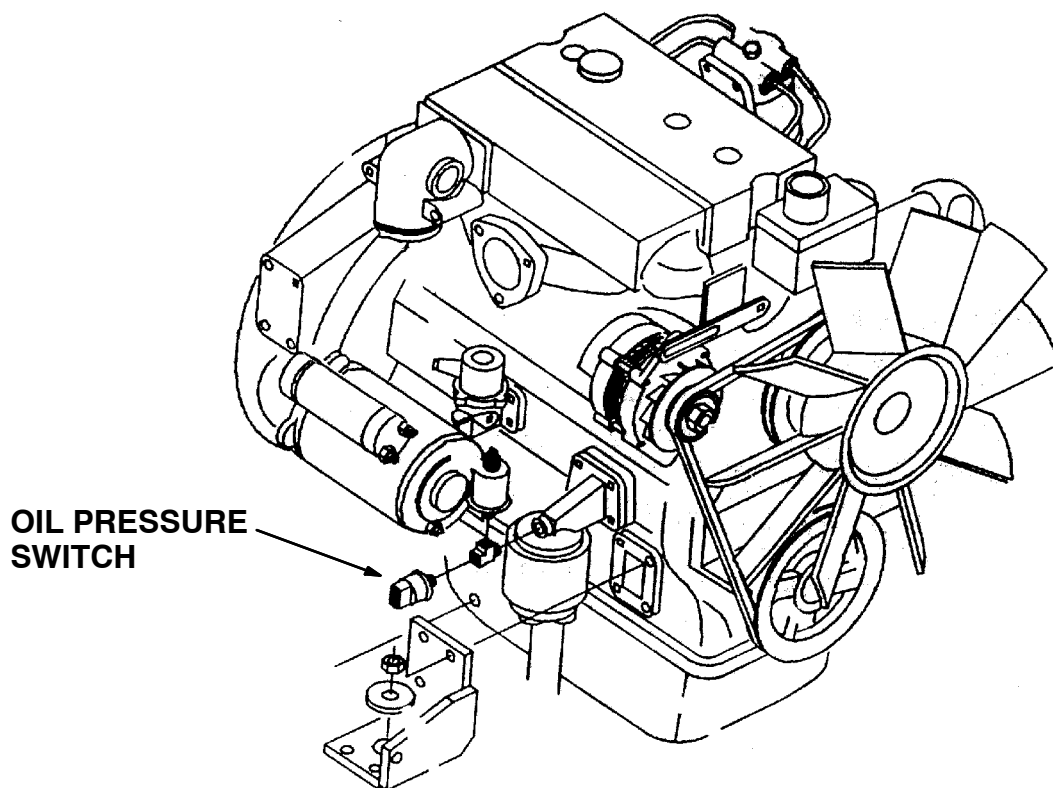
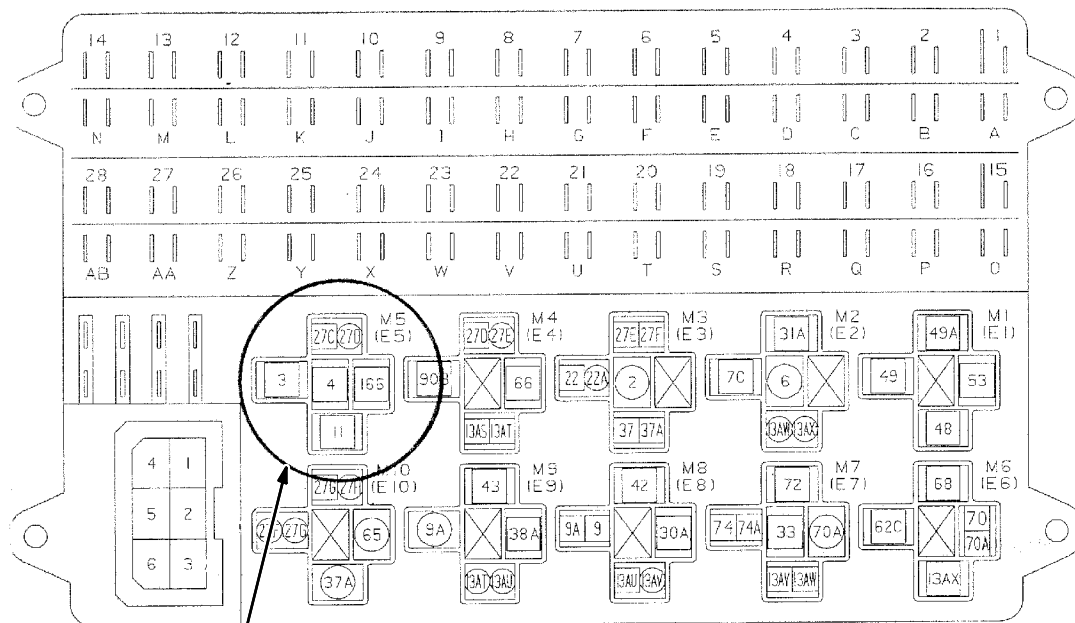
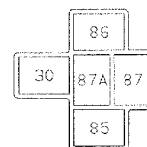


FIG. 5 - ENGINE



RELAY M5

DETAIL AP-AP — CONTINUED FROM
SHEET 1 OF 13
FUSE/RELAY
MODULE WIRING
VIEWED FROM
THE REAR



RELAY DIAGRAM
IS FOR
REFERENCE ONLY

FUSE CONNECTOR WIRING			
NUMERIC TERMINAL		ALPHA TERMINAL	
1	○ 1A — BRIDGE, CONNECTOR	A	○ 66
2	— BRIDGE, CONNECTOR	B	□ 80
3	— BRIDGE, CONNECTOR	C	□ 44 & ○ 44A
4	— BRIDGE, CONNECTOR	D	□ 55B
5	— BRIDGE, CONNECTOR	E	□ 54B
6	— BRIDGE, CONNECTOR	F	○ 70
7	— BRIDGE, CONNECTOR	G	□ 79
8	□ 90D	H	□ 34A & ○ 34B
9	— BRIDGE, CONNECTOR	I	□ 36
10	— BRIDGE, CONNECTOR	J	○ 49 & ○ 49A
11	□ 1D	K	□ 35B
12	— BRIDGE, CONNECTOR	L	X N/U
13	— BRIDGE, CONNECTOR	M	X N/U
14	— BRIDGE, CONNECTOR	N	X N/U
15	□ 28A	O	○ 9 & □ 9B
16	□ 90	P	□ 91 & ○ 91A
17	— BRIDGE, CONNECTOR	Q	□ 92 & ○ 92A
18	— BRIDGE, CONNECTOR	R	□ 95
19	— BRIDGE, CONNECTOR	S	□ 93G & ○ 93H
20	X N/U	T	X N/U
21	X N/U	U	X N/U
22	X N/U	V	X N/U
23	X N/U	W	X N/U
24	□ 90C	X	○ 103
25	□ 28B	Y	□ 18A
26	— BRIDGE, CONNECTOR	Z	□ 5
27	— BRIDGE, CONNECTOR	AA	□ 27B & ○ 27C
28	□ 90A	AB	○ 33

FIG. 6 - FUSE/RELAY WIRING

Bill of Materials for Control Panel Assembly Kit 768573

Ref.	TENNANT Part No.	Description	Qty.
1	768615	Micro controller, 830-II	1
2	763115	Tie, Cable 6.0 lg	1
3	41279	Fitting, brass, plug	1
4	768824	Wire assy., jumper	1
5	768823	Terminal, QDC	1
6	04415	Sealant, PST (6 ml)	1
7	28693	Connector	1
8	45084	Sleeve	1
9	369823	Tool, removal, PLCC	1
10	27964	Strap, static	1

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