

DR 4500A Circular Chart Recorder Replacement Instruction

Assembly 30757569-501, -502, -503, -504, -505 Replacement of Main PCB

Form: 44-45-33-43

Effective: 5/93

Supersedes: N/A

Introduction

Enclosed with this instruction is a replacement assembly for your DR 4500A Classic or Truline recorder. A replacement assembly with part number 30757569-501 is for use in Classic recorder models (DR 45A1, DR 45A2). Truline recorders use part number 30757569-502 (DR 45AT), 30757569-503 (DR 45AR), 30757569-504 (DR 45AW), or 30757569-505 (DR 45AH). Be sure that the part number for the replacement assembly you received is the correct one for your DR 4500A recorder.

Use the following procedures to replace the existing main PCB. Unless noted otherwise the procedural steps apply for both Classic and Truline recorder models. The following procedures assume that the chart door is opened, the chart plate is swung out, and the power is removed.

WARNING Never access components inside the case with the power applied.

Removing Existing Main PCB

Procedure for Removing Existing Main PCB

Step	Action
1	For Truline , tag and disconnect optical sensor, pen drive, and chart drive cable plugs from connectors J4, J6, and J7 at top of main PCB For Classic , tag and disconnect pen #1 drive, pen #2 drive, and chart drive cable plugs from connectors J5, J6, and J7 at top of main PCB.
2	Disconnect 20-conductor ribbon cable plug from connector J3 near middle of main PCB.
3	Disconnect 34-conductor ribbon cable plug from connector J8 on mother PCB, if applicable.
4	For Truline only, disconnect 2-wire (black) cable plug from connector J8 on main PCB.
5	Disconnect 2-wire (gray) cable plug from connector J2 on optional alarm output/digital input PCB mounted on spacers on main PCB, if applicable.
6	Unplug alarm output and digital input field wiring connections from connectors J4 and J3 on alarm output/digital input PCB, if applicable.

Procedure for Removing Existing Main PCB (Continued)

Step	Action
7	Disconnect main transformer cable plugs from connectors J1, and J14, etc. in lower left corner of main PCB.
8	Disconnect secondary transformer (on mother PCB) cable plug from connector J2 on main PCB, if applicable.
9	Unplug field wiring connections from connectors J10 and J11 at bottom of main PCB, as applicable.
10	Disconnect 2-wire (black) cable plug from connector J1 on #1 input PCB. (Disconnect 2-wire [orange] cable plug from connection J1 on #2 input PCB, if applicable).
11	Tag and unplug input #1 field wiring connection from connector J2 on #1 input PCB. Repeat for input #2, if applicable.
12	Use 1/4-inch nut driver to remove nut securing ground wires to lower left corner of main PCB, and disconnect all chassis ground wires.
13	Remove screws from other three corners of main PCB.
14	Lift main PCB from recorder.

NOTE: If the existing main PCB is not equipped with an alarm output/digital input PCB you skip the next paragraph.

Removing and Installing Alarm Output/Digital Input PCB

Procedure for Removing and Installing Alarm Output/Digital Input PCB

Step	Action
1	Unplug 34-conductor ribbon cable plug from connector J1 on alarm output/digital input PCB.
2	Use small bladed screwdriver to release plastic latch and lift up on each corner, in turn, of alarm output/digital input PCB to remove it from spacers.
3	From back of PCB, use needle-nose pliers to carefully squeeze plastic retainers and remove spacers one at a time from existing main PCB and install them in matching hole locations on new main PCB.
4	Unplug 34-conductor ribbon cable center plug from connector J13 on existing main PCB, and plug it into connector J13 on new main PCB with right end connector facing up.
5	Orient alarm output/digital input PCB so that connector J4 is in upper left corner, and carefully push down each corner, in turn, to seat PCB on all four spacers.
6	Plug connector on right end of 34-conductor cable into connector J1 on alarm output/digital input PCB.

Removing and Installing Input PCBs

Procedure for Removing and Installing Input PCBs

Step	Action
1	Pull input PCB straight out and up to unplug it from existing main PCB.
2	Install new card guides supplied in matching hole locations for input PCB guides on new main PCB.
3	Slide input PCB down between card guides and push down on PCB to seat its J3 connector into connector on new main PCB.
4	Reconnect 2-wire cable plug from transformer to J1 on input PCB.

Check Position of W1/MA Jumper

Be sure that jumper location on W1/MA pin positions above input connections on #1 input card are appropriate for your application; MA is only used for 4-20 mA inputs, all others use W1.

Figure 1 Summary of Actions to Prepare New Main PCB for Installation



Installing New Main PCB

Procedure for Installing New PCB

Step	Action
1	Orient replacement assembly so its component side faces you with notch on right-hand side.
2	Install replacement assembly in case by sliding hole in lower left corner of PCB over stud and secure with 3 screws in holes at top and lower right corners of PCB.
3	Reverse Steps 1-12 under the Procedure for Removing Main PCB to make wiring connections to new main PCB. Refer to Figure 2 (Truline) or Figure 3 (Classic) for general wiring reference.

Connecting Power

WARNING

Be sure that the line voltage is OFF before connecting power wires to recorder.

CAUTION

To avoid damaging the recorder, be sure that you install the power wires in the correct screw clamps. Input line voltage will be present on instrument ground plane if safety ground is not attached.

Procedure for Connecting Power

Step	Action
1	Refer to Figure 2 for power connections.
2	Insert green wire (G) in first screw clamp from right, white wire (L2) in second screw clamp from right, and black wire (L1) in third screw clamp from right. Tighten screws to secure wires.
3	<ul style="list-style-type: none"> For 120 Vac, make sure fuse block is installed in location F2. For 240 Vac, make sure fuse block is installed in location F1.
4	Dress wires for as little slack as possible. This keeps noise signal on these wires from bypassing built-in suppression. Also, don't bundle any low level signal wires with the power wires.
5	Re-insert previously wired power plug into J10
6	Close chart plate and door . Apply power. Refer to Configuration section in DR 4500A Product Manual to reconfigure recorder functions.

CAUTION

You must recalibrate input(s) and applicable output(s) to restore any field calibration accuracy, or the factory calibration accuracy will apply. Refer to the Calibration section in the DR 4500A Product Manual for field calibration procedures.

Figure 2 Connecting Power

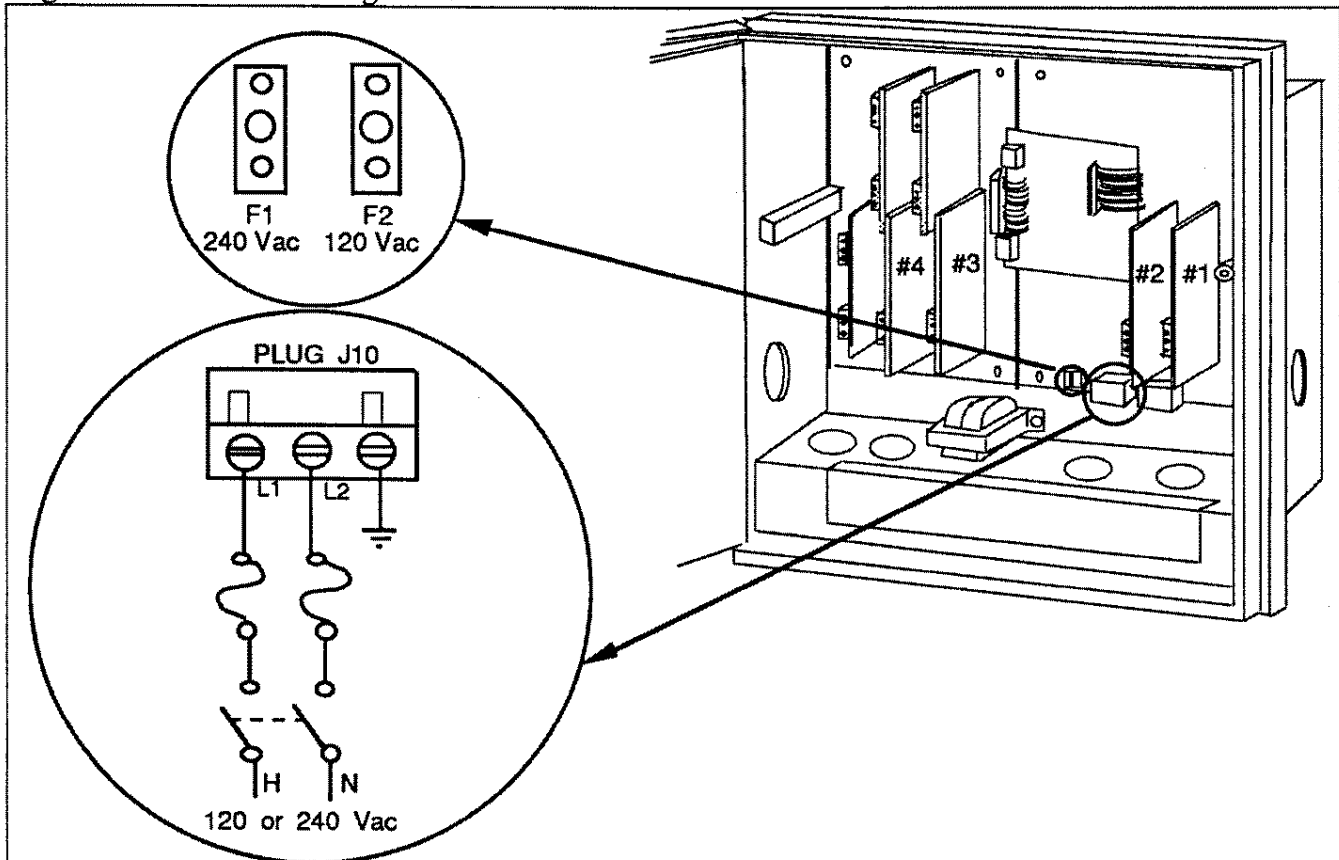


Figure 3 Classic Recorder - Internal Cabling Data

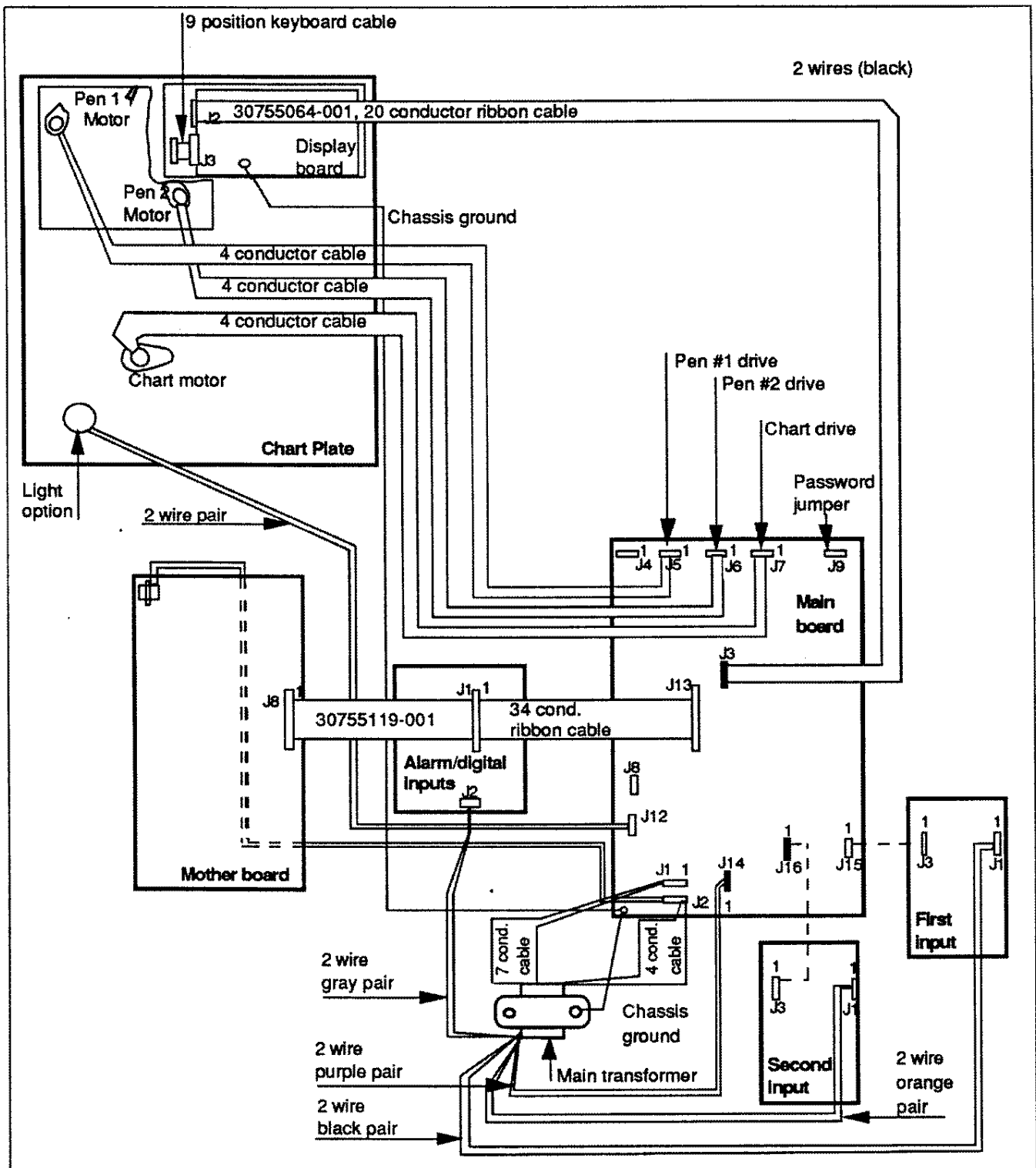
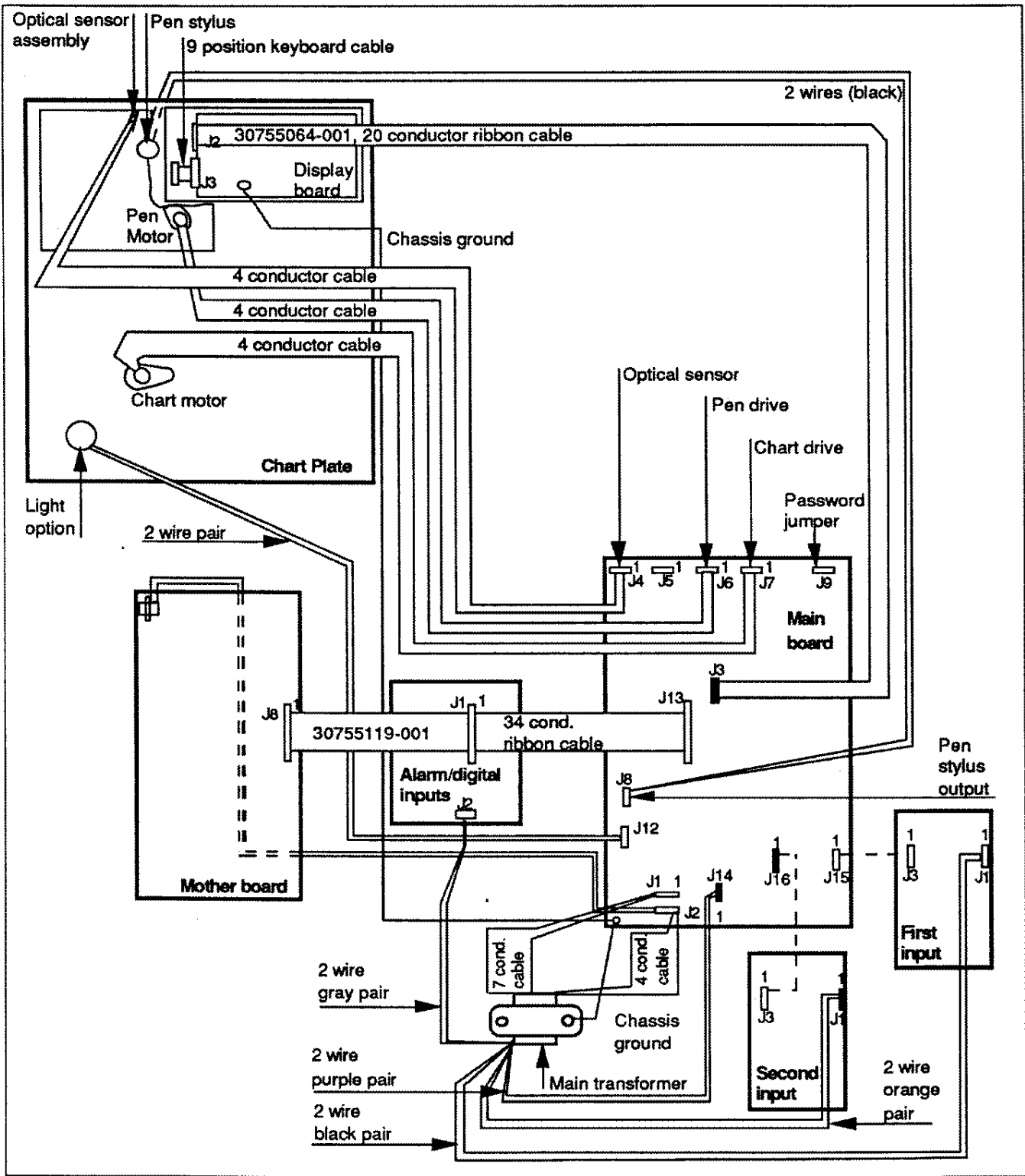


Figure 4 Truline Recorder - Internal Cabling Data



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