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Driveshaft replacement for Ioline 600 series apparel plotters

**M-600
M-28
600Ae
28Ae
600Aex**

General Disassembly Procedures

The following procedures describe the basic disassembly of the plotter to gain access to the carriage, logic, power, and drive components. Please pay close attention to the Warning and Caution notes.

Removing the End Covers

1. Turn off the plotter and unplug the serial and power cables.
2. If the take-up shaft is loaded on the support blocks remove them and set them aside.
3. Remove the two black phillips head screws, and the two silver phillips head screws on the bottom of the cover, then remove the right cover. *See figure 1.*
4. Remove the two black phillips head screws, and the two silver phillips head screws on the bottom that hold the left cover on the machine then remove the left cover. *See figure 1.*

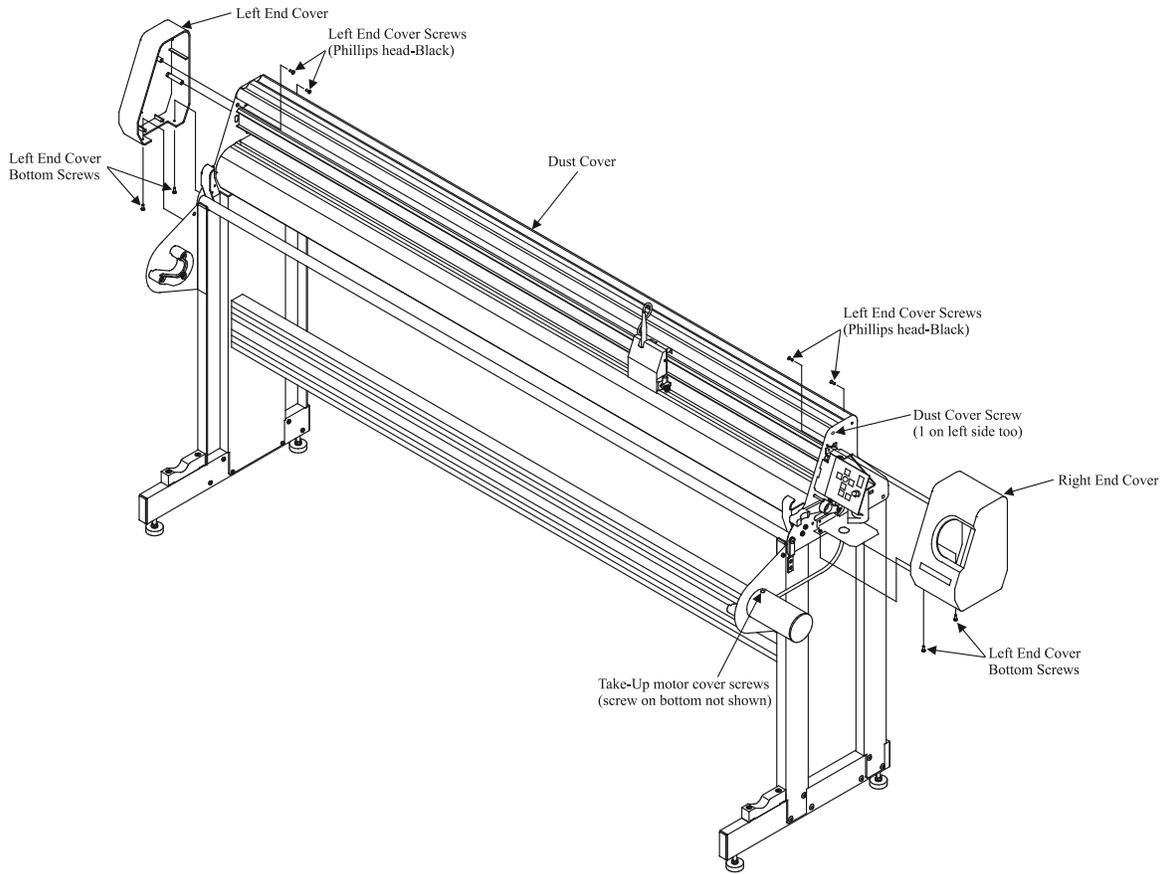


Figure 1. Removing the End Covers

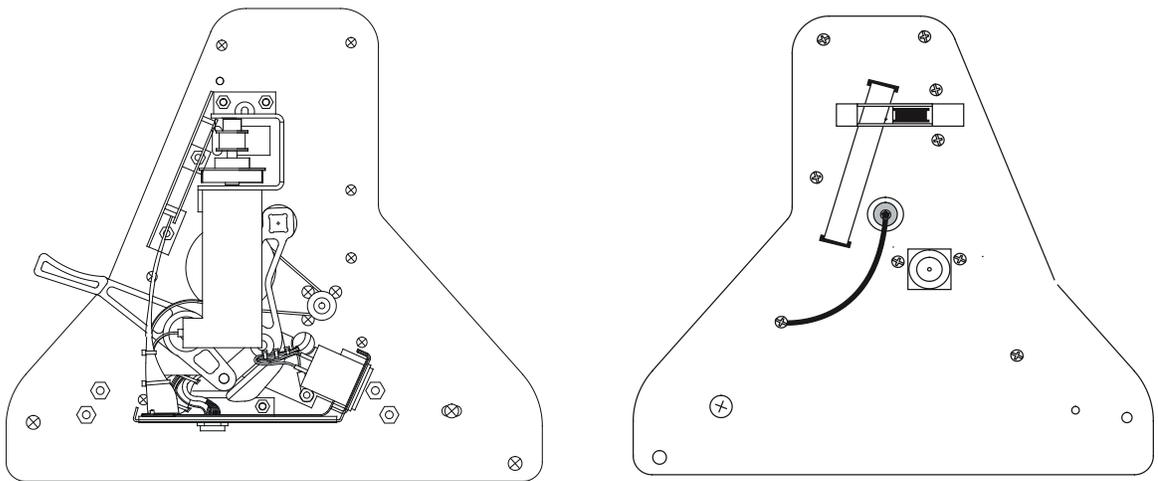


Figure 2. Right and left End With Cover Removed.

Removing the Bottom Cover for Internal Access

WARNING

- **The Summit Plotter is very heavy and could cause an injury if it falls. Make sure that another person assists with moving the plotter to and from the stand and that it is held while not connected to the stand.**
- **When the bottom cover of the Plotter is removed and the power is on there is an electric shock hazard. These diagnostic procedures should only be performed by qualified technical personnel or individuals that are aware of safe practices with 110 VAC and 220 VAC devices.**



Do not lift the machine by its top dust cover or traverse assembly. Use the bottom surfaces of the end plates for lifting and moving the plotter.

Tools Required:

- Phillips head screw driver.
- 5/32" allen wrench (supplied).
- Two people capable of lifting 100 pounds each.
- Grounding strap (optional).

Perform the Following Disassembly:

1. Remove the two allen or Phillips head screws (5/32" allen wrench) holding the rear of the plotter on the stand. See Fig. 3
2. Lift the plotter forward, rotating it from the back until it rests on the front resting screws. See Fig. 4
3. Remove the six phillips screws that retain the bottom cover (including the ones in the center of the covers). See Fig. 5
4. Open the bottom cover a few centimeters and carefully unplug the fans from the logic board. Do not touch any of the logic components.
5. Remove the bottom cover.

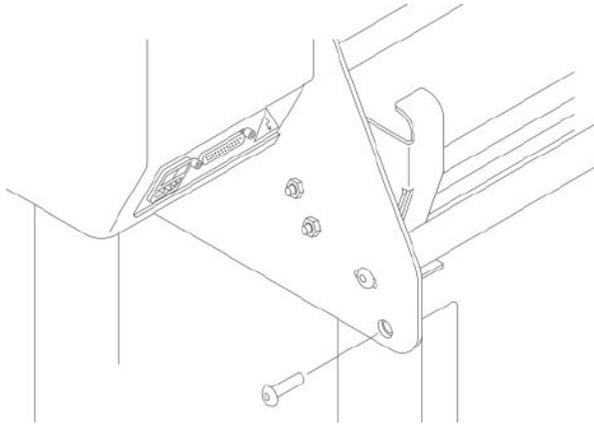


Fig. 3

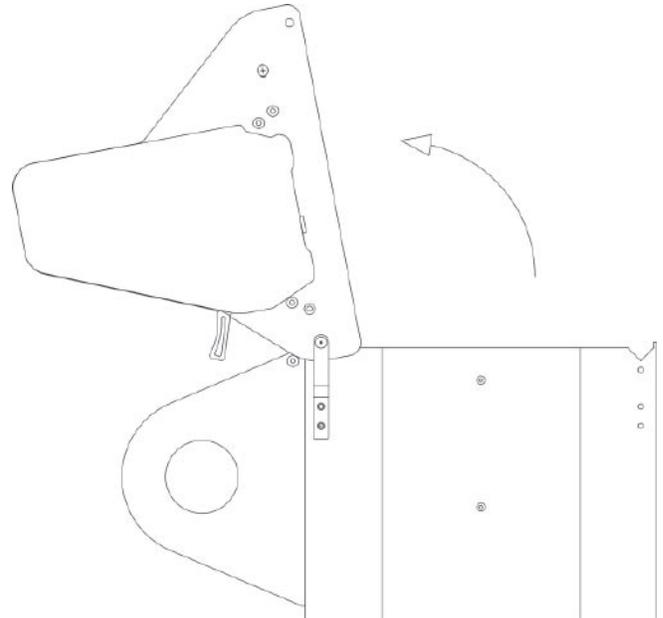


Fig. 4

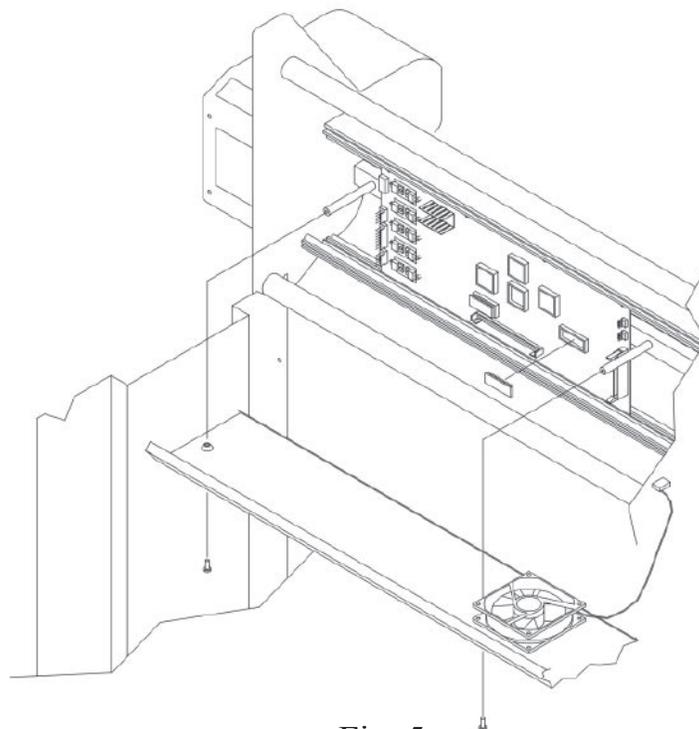


Fig. 5

Grit Shaft Assembly Replacement



Electrostatic discharge preventative measures must be adhered to during all assembly replacement procedures.

1. Shut off the plotter and remove the power and serial cables.
2. Remove the right (4 screws) and left (4 screws) end covers and dust cover (1 screw on each side). See Removing the End Covers and Dust Cover above.
3. Loosen the allen screw on the belt tensioner until the screw is not exposed. Do not remove the screw.
4. With a pair of needle nosed pliers grasp one of the metal "T"-connectors on the end of the Y-Axis belt and pull it out and toward the center of the carriage until it pops free. Remove the other end of the belt from the carriage.
5. Pull the Y Axis belt through the holes in the right end plate. The belt may have to be threaded through the pulleys in the Y Axis transmission.
6. Perform the procedures in Removing the Bottom Cover for Internal Access above.
7. Discharge any static electricity that has accumulated and remove all of the plugs and connections on the logic board and power supplies. Use the Interconnect Diagram in the Appendix section as a location guide.
8. Remove the logic board (four screws) and power supplies (2 screws in the removable metal pan) by loosening the phillips head screws and pulling the units out of the track in the platen.
9. Rotate the plotter so that it is in normal operating position. Carefully cut the cable ties that surround the wire bundle that contains the Y Axis encoder wire. Feed the wire and plug through the access hole. The plug may need to be bent flat to accomplish this.
10. Disconnect the motor power cables (Red and black) from the base of the motor.
11. Loosen and remove the four 11/32" nuts that hold the Y Axis transmission onto the end plate. Remove the Y Axis transmission and set it aside.



12. Remove the chartwheel lever assembly as described above in X-Axis Transmission Assembly Replacement.
13. Loosen but DO NOT remove the phillips head screws securing the X Axis motor. Push the motor assembly toward the grit shaft pulley until the belt is loose. Remove the belt.
14. Now rotate the machine back to the forward position to gain access to the bottom.
15. Loosen the allen screws securing the grit shaft.
16. Slide the old grit shaft out in the direction of the keypad.
17. Install new bearing clips on new grit shaft bearings.
18. Gently slide in new grit shaft. When the grit shaft is inserted far enough the grit shaft pulley will be 1/8" from the end plate and will rotate freely. Some minor squeezing may be necessary to feed the bearing clips into the platen. Using a torque driver with a 5/32" hex bit tighten the screws securing the grit shaft to 6 in lbs.
19. Place the X axis belt on the grit shaft pulley then loop the belt over the motor pulley. Pull the motor pulley away from the grit shaft pulley until the belt is tight but not strained then tighten the phillips screws that hold motor onto the end plate.
20. Replace the power supplies and logic board using the chassis assembly diagrams in the Appendix as a guide. Connect all of the plugs. Use the Interconnect Diagram in the Appendix section to properly make all of the connections.
21. Plug the power cord into the plotter and into a wall outlet. Move the grit shaft back and forth with the keypad keys while watching the X Axis belt. If there is excessive noise or if the belt is loose the phillips head screws that retain the motor can be loosened and the motor can be adjusted slightly to achieve proper belt tension.
22. Attach the Y-Axis transmission and install the belt as outlined above in Y-Axis Transmission Assembly Replacement.
23. Cable tie the wire bundles together to ensure that they do not interfere with moving parts and end cover replacement.
24. Attach the chartwheel lever and make sure that the chartwheels are oriented properly with respect the lever position and that the set screw in the lever body is tightened.
25. Reconnect the serial cable and perform test plots. Reassemble the machine in the reverse order that it was disassembled. See General Disassembly Procedures above.