

the digital group

po box 6528 denver, colorado 80206 (303) 777-7133

Floppy Disk Cabinet

298-084-A-6+2

The Digital Group Floppy Disk Cabinet

Introduction

The floppy disk cabinet provides housing for two standard-size floppy disk drives, and a Digital Group floppy power supply providing +5V and +24V DC. Each drive is secured in the cabinet and connections for 110V AC, +5V DC, +24V DC, and the controller interface are made. Hardware is provided for installing the drives and for making all AC connections. DC connections are made to connector J5 as explained in the floppy disk power supply documentation. All parts required for making the DC connections are included with the floppy power supply. A rear panel strain relief is used to secure the 50-conductor cable coming into the floppy cabinet from the Digital Group CPU cabinet. The floppy cabinet also has a rear-mounted fan, and provides a switched and fused AC source for the drives, the power supply, and the fan.

Assembly Procedure

After operating the disk drives with the controller card and floppy disk power supply, the drives and supply can be permanently mounted in the cabinet. The procedure to install the drives requires a minimum of tools: a soldering iron, a crimping and wire-stripping tool for some of the AC wiring; tools like a screwdriver, pliers, and small hand wrenches are needed for cabinet assembly and mounting. The following set of instructions provides a procedure for assembling the cabinet in a straightforward manner. Look over the materials, i.e. the exploded view cabinet illustrations and the photos, to get a sense of how the cabinet is built. If you have any questions regarding assembly procedure, problems you have encountered, or discrepancies in the parts you have received, please call or otherwise contact the Digital Group (customer service department).

Steps

- ☒ Compare the parts you've received with the items on the parts list and with Photo 1. The parts list reflects all the items you should have received with the cabinet. It does not include items such as drives or the floppy disk power supply. Also the mounting hardware for the floppy disk power supply to be installed on the rear panel is provided with the power supply and power supply chassis.
- ☒ Using six 8-32x1/4" RHMS (round head machine screws) install the six rubber feet on the bottom cover of the floppy cabinet. To see more clearly the way in which all hardware is mounted, check the illustrations provided.
- ☐ Locate the cabinet rear panel and mount the fuseholder, power switch, and fan in it. See Photo 2. The fuseholder mounts with a hex nut and fiber or rubber washer. The switch has a bezel nut to mount it on the rear panel. The fan mounts with four 6-32x1" screws, four rubber grommets and four hex nuts. Be sure not to overtighten the fan-mounting hardware to avoid vibration.

- ☒ Install the power or line cord. Begin by stripping off approximately 12" of the cord insulation. Using pliers, install the line cord with the black-bodied strain relief on the rear panel. Orient the cord so that approximately an inch of insulated cord extends inside the rear panel. The 12" length stripped from the line cord provides enough wire to make the AC connections between the fuseholder, switch, and the wire nuts (one each for AC hot and return). See Figures 1 and 2.
- ☐ Make the AC wiring connections as indicated by Figures 1 and 2. Strip and tin the black wire of the line cord and solder it to the rear terminal of the fuseholder.
- ☐ Take a portion of the leftover 12" black wire and connect the remaining lug on the fuseholder to the center position of the power switch. Strip and tin each wire end and solder.
- ☐ Strip, tin, and solder one end of the remaining length of black wire to the outside switch terminal. As shown in the AC schematic diagram, the switch, when depressed, controls 110V AC going to the fan, the floppy DC power supply and the two drive AC connectors supplied with the drives.
- ☐ Strip approximately 1/2" from the other end of the wire attached to the switch terminal. This will be inserted, along with four other wires, into the designated "hot" wiring nut.
- ☐ Prepare the other wires to be connected by the wire nuts. Strip off approximately 1/2" insulation from each wire. **Do not tin or solder!** The wires which are inserted in the wire nuts are as follows.

"HOT" Wire Nut

- 1 black wire from outside switch terminal.
- 1 black wire from floppy power supply — transformer AC input.
- 1 lead from the fan power cord (other lead is RETURN).
- 2 wires, one each from the drive AC connectors. The outside wires of the 3-position block are for AC; the center position is GND.

"RETURN" Wire Nut

- 1 white wire of the power cord.
 - 1 red wire (or other AC input wire) from floppy DC power supply.
 - 1 other lead from the fan power cord.
 - 2 wires, one each from the drive AC connectors' 3-position plug.
- ☐ Crimp a spaded lug on the ends of three wires; one from each drive AC connector (center position wire) and one on the green wire of the power cord. The grounding connections are made with the mounting screws holding the rear panel to each side rail.

- ❑ Check over all connections. **Do not apply power yet!** The floppy disk power supply should be mounted after the next step to make assembly of the cabinet frame easier.
- ❑ Construct the cabinet frame by attaching the two side rails to the front and rear panel respectively using 8-32x3/8" RHMS. Note the orientation of the side rails (front and back) as shown in the illustrated drawings.
- ❑ Drop the cabinet frame just assembled into the lower cover. The cabinet pieces are manufactured so that removing the cabinet top or bottom covers is easy. Note how the side rails are slotted and how the top and bottom covers are removed. Four 6-32x3/8" screws are used to secure both the top and bottom cover once the drives are installed.
- ❑ Install the floppy power supply on the rear panel with the mounting hardware provided by power supply chassis. The four mounting screws, 8-32x1" RHMS, should be oriented so that the screw heads are against the power supply printed circuit card. Remove the center two 8-32x1" chassis mounting screws so that the chassis lies flat against the rear panel. See Figure 3.
- ❑ As shown by Figure 1, connect the 5 wires into each wire nut and twist the wire nut securely on the wires. It works best to insert wires with twisted ends into the wire nut. Check to see that all wires are secured by the wire nut. Tug on each wire to see that it cannot easily be removed. If one wire does pull out, remove all the wires from the nut and start over.
- ❑ At this point all electrical connections have been made with the exception of physically connecting the drives. Before attempting this, be sure that all wires are properly connected. Compare the rear panel wiring with that of Figure 1. An AC-DC voltmeter can be used to check the 110V AC to each drive AC connector. With the power supply operating measure the DC voltage output connectors for +24V DC and +5DC. Label the voltage pins corresponding to the drive connector J5 so that you do not accidentally connect wrong voltages to the drive. Taking this precaution can save you from destroying a disk drive. Check the fuse on floppy power supply so that a 2A fuse is installed. Do not over-fuse the supply.
- ❑ Attach the front and rear brackets to each drive using 8-32x3/8" RHMS. Refer to the illustrations to see how they are installed. The front brackets allow some flexibility for aligning the drive with the front and dress panels. To set the height of the front bracket, put each drive inside the cabinet up against the front panel. Drop the dress panel into the space in front of the front panel and tighten each bracket on the drive after it is properly adjusted.
- ❑ The eight 8-32x3/8" FHMS (flat head machine screws) installed through the cabinet front panel secure the drive and allow side-to-side alignment of the drive with the front panel. However, before securing the drive, connect the 50-conductor flat cable to each drive and route the cable in such a position to keep any stress off the cable. To do that, connect the end PCB connector to Drive B (right side) and using two 90° folds, connect the other PCB connector to Drive A. Using this method will also make attaching the rear panel strain relief easier, as the cable comes directly up from Drive A. See Photo 3.
- ❑ Install the drives now, using the eight front panel screws and 8-32 hex nuts. Adjust the side-to-side alignment with the dress panel and tighten the hardware.
- ❑ You can now complete the drive installation by installing four 8-32x3/8" RHMS through the lower cover into the rear brackets in each drive. Drop the dress panel in front of the front panel and slide the drives into position so that the diskette ejector button fits in the dress panel slot. Move the cabinet over to an edge of a countertop or table and install the 8-32 screws into the threaded rear brackets.
- ❑ With drive installation completed, install the AC and DC connectors on each drive after verifying their correct positions with the floppy disk documentation and Photo 4. Route the 50-conductor flat cable into the slot provided for the cable leaving the cabinet and secure the cable with the metal strain relief and two 8-32x3/8" RHMS screws.
- ❑ This completes the cabinet installation. Drop in the cabinet top cover and using four 6-32x3/8" RHMS, secure both the top and bottom covers. Whenever you need to access the drives, for cabling or jumper changes, remove the two top screws from the rear panel, slide the top cover back and lift it straight up from the cabinet.
- ❑ Connect the 50-conductor plug to the CPU cabinet backplane connector wired to the floppy disk controller card.
- ❑ If the system is operating correctly, turning on power to the drives will cause the 360 rpm motors to turn and also turn on the fan. With the DC power supplies and controller card operating correctly, turning on power via the rear panel power switch will cause a red light on disk drive A to light. When a diskette is inserted in the drive and the drive cover closed, the disk should initiate a series of disk access operations with the red light alternately on and off. It is necessary that a diskette with a valid operating system be inserted, however, to have the drive make disk accesses correctly. When operating either disk, eject diskettes before shutting down power. This will prevent unusual power-down occurrences from destroying the disk or destroying data.

Digital Group Floppy Cabinet Parts List

Description	Qty	Part #
Front panel	1	219-003
Rear panel	1	219-004
Side rail	2	219-002
Bottom cover	1	219-001
Top cover	1	219-000
Dress panel	1	219-009
Fan	1	190-004
Rubber grommets	4	221-005
Fan guard	1	221-006
Front drive support brackets	4	219-007
Rear drive support brackets	4	219-008
50 conductor strain relief	1	221-011
Rubber feet	6	221-000
Fuseholder	1	190-006
Fuseholder washer	1	228-456
Fuseholder nut	1	228-255
Fuse — 3A	1	123-001
Fan switch and nut	1	100-002
Power cord	1	088-002
Power cord strain relief	1	230-000
Fan power cord	1	110-034
Spaded lugs (14-16 gauge)	3	221-003
Wire nuts	2	221-012
8-32x1/4 RHMS	6	228-002
8-32x3/8 RHMS	22	228-003
8-32x3/8 FHMS	8	228-008
6-32x1" RHMS	4	228-000
6-32x3/8RHMS	4	228-001
8-32 hex nut	8	228-251
6-32 hex nut	4	228-250

FLOPPY DISK CABINET — REAR PANEL AC WIRING

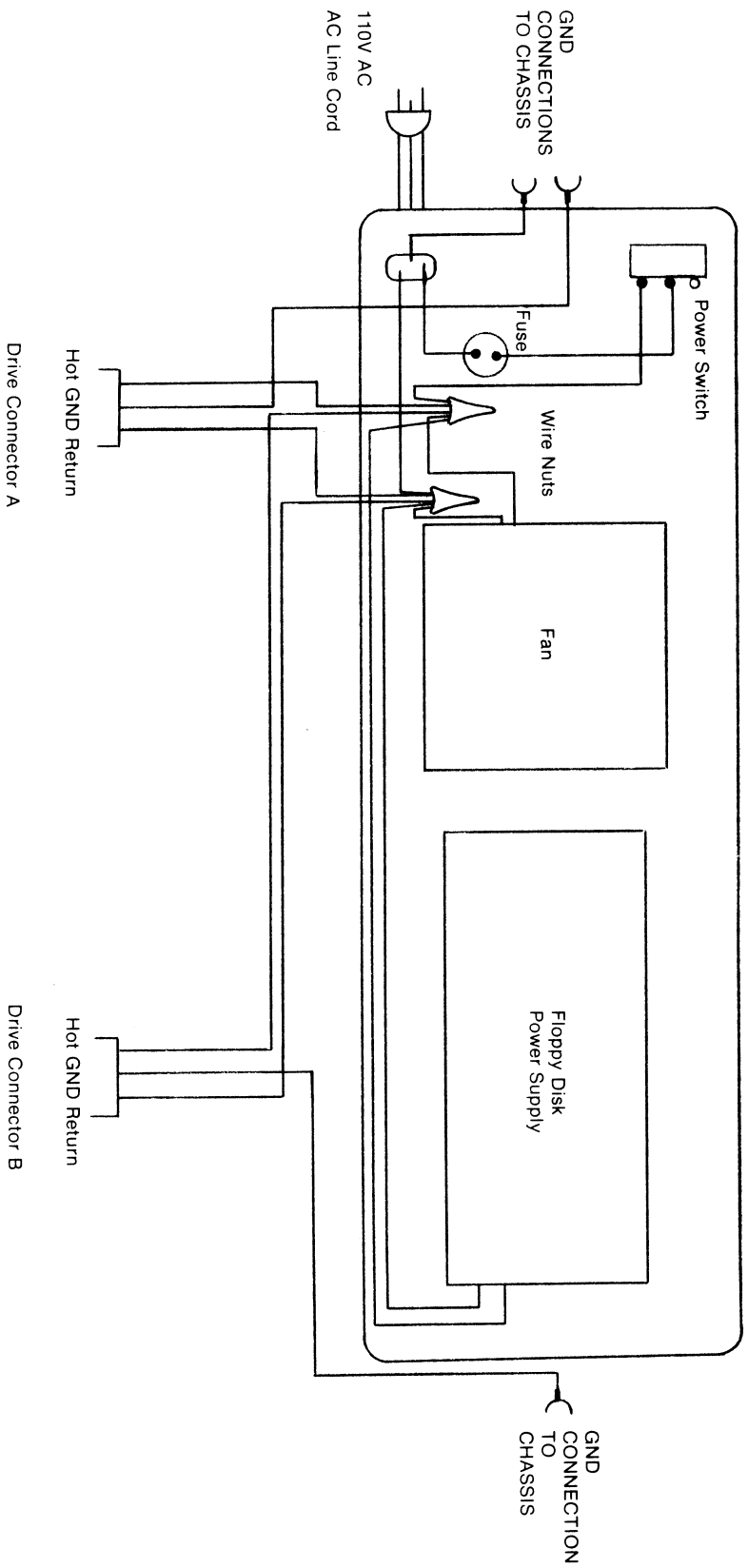


FIGURE 1 — Cabinet AC Wiring Diagram

FIGURE 2 — Cabinet Schematic Diagram

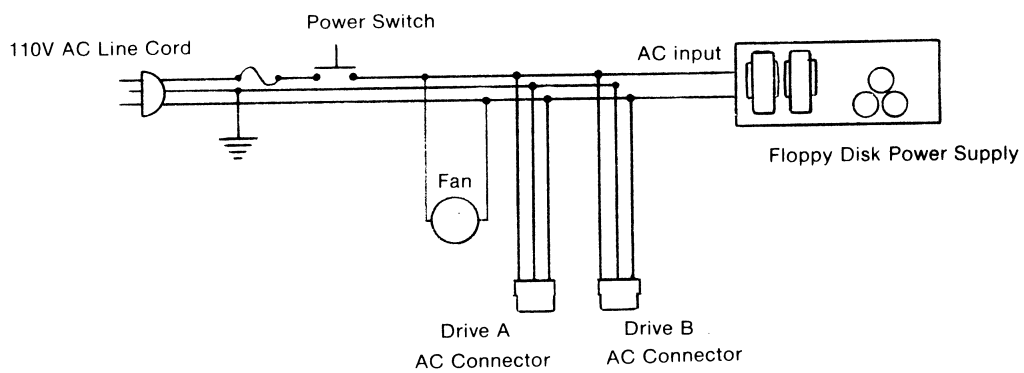
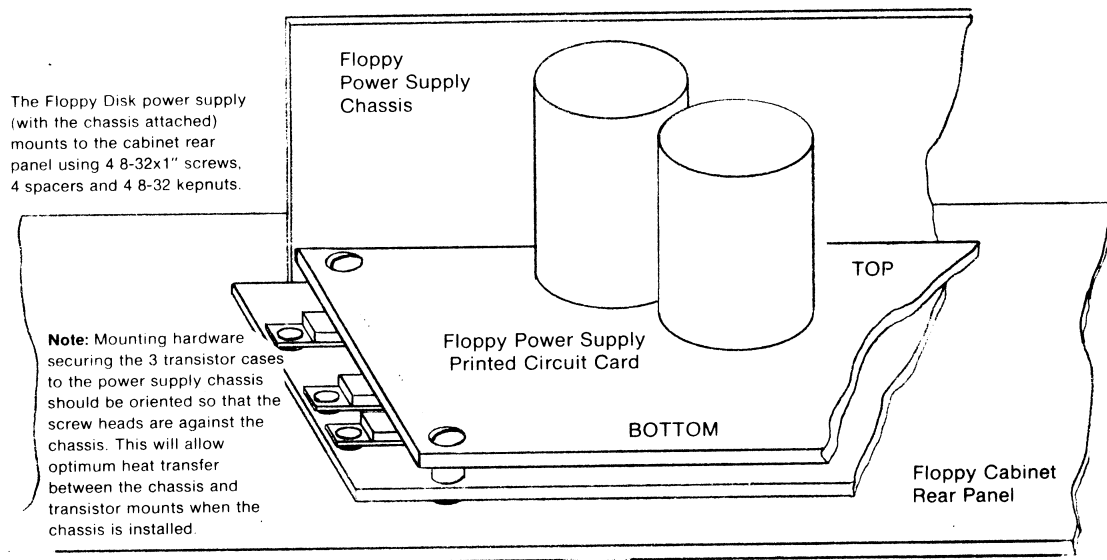
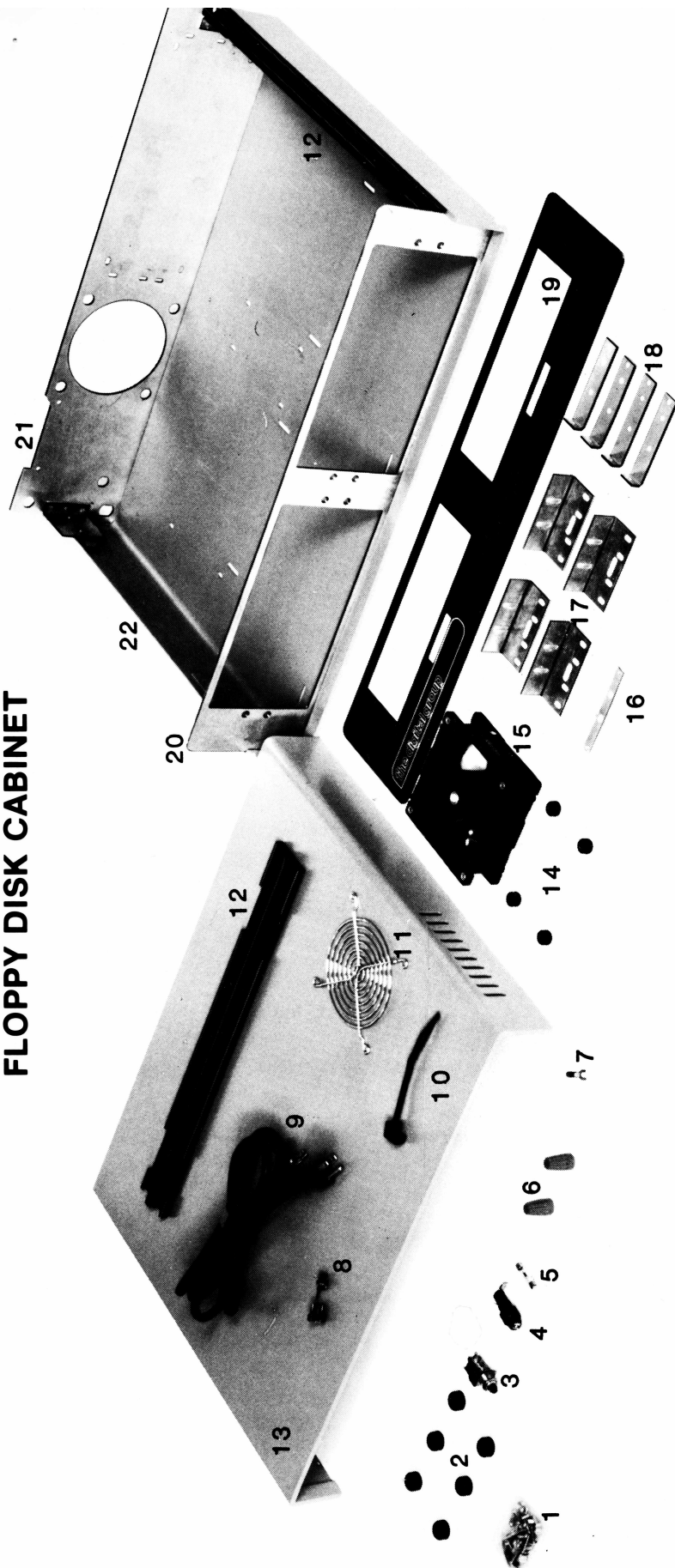


FIGURE 3 — Power Supply Chassis Mounting



THE DIGITAL GROUP FLOPPY DISK CABINET



PARTS IDENTIFICATION

1. Small Parts Bag
2. Rubber Feet
3. Power Switch
4. Fuse-Holder
5. 3A Fuse
6. Wire Nuts
7. Spaded Lug
8. Power Cord Strain Relief

PHOTO 1

9. Power Cord
10. Fan Power Cord
11. Fan Guard
12. Side Rails
13. Top Cover
14. Fan Mounting Grommets
15. 4" x 4" Fan
16. Floppy Cable Strain Relief
17. Disk Drive-front mounting brackets
18. Disk Drive-rear mounting brackets
19. Dress Panel
20. Front Panel
21. Rear Panel
22. Lower Cover

PHOTO 2

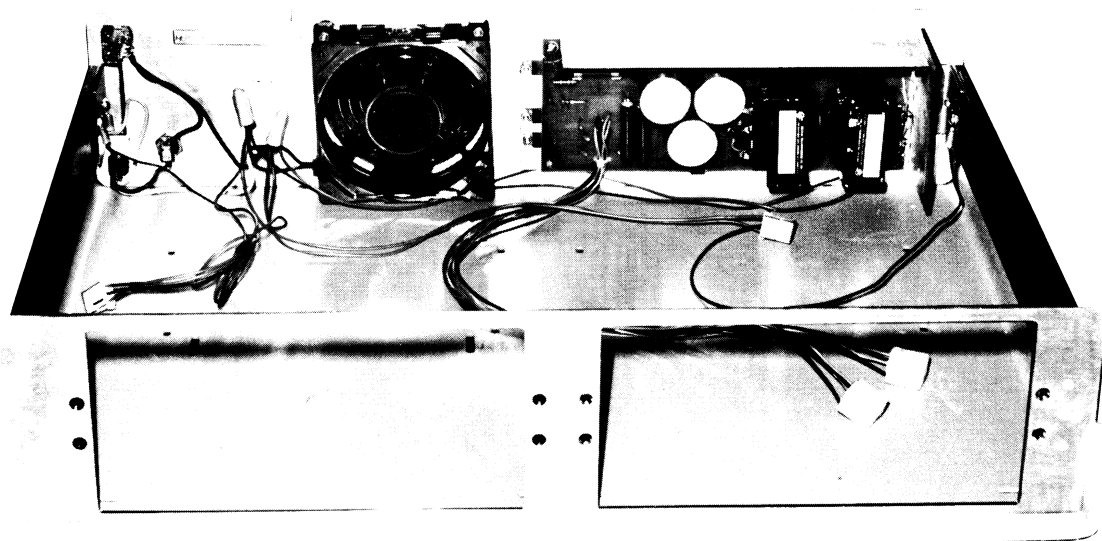


PHOTO 3

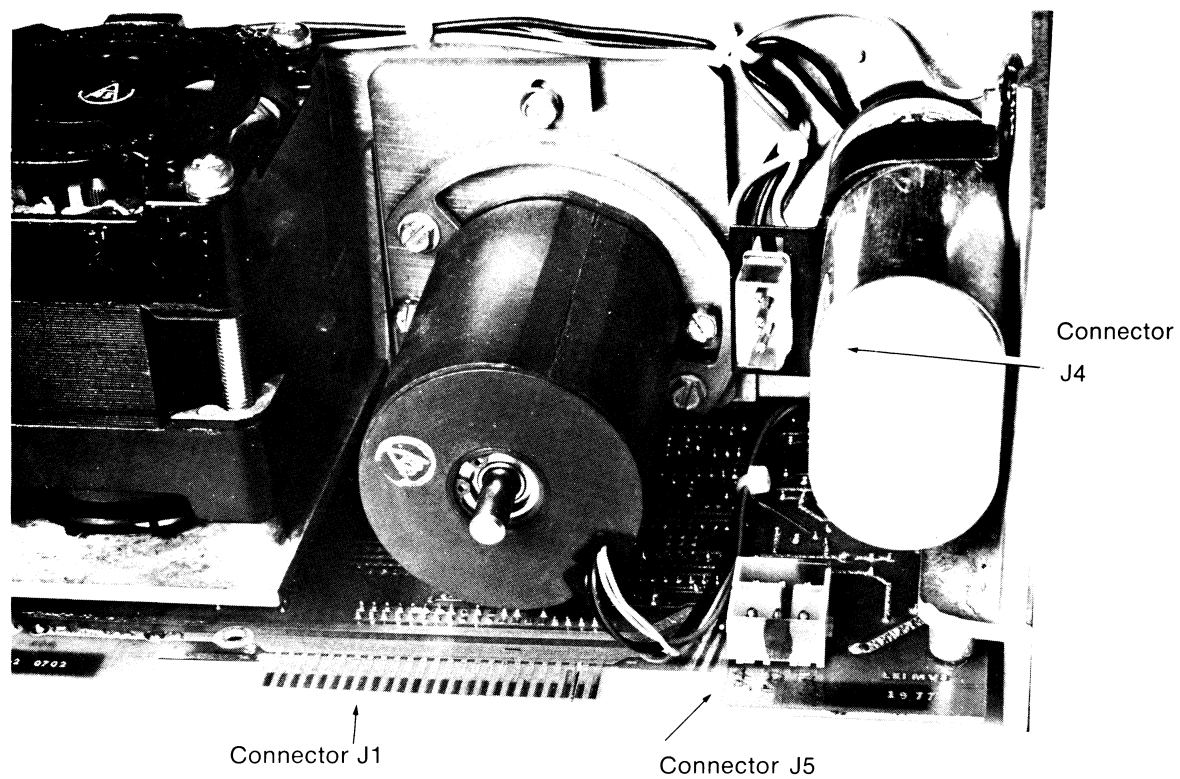


PHOTO 4

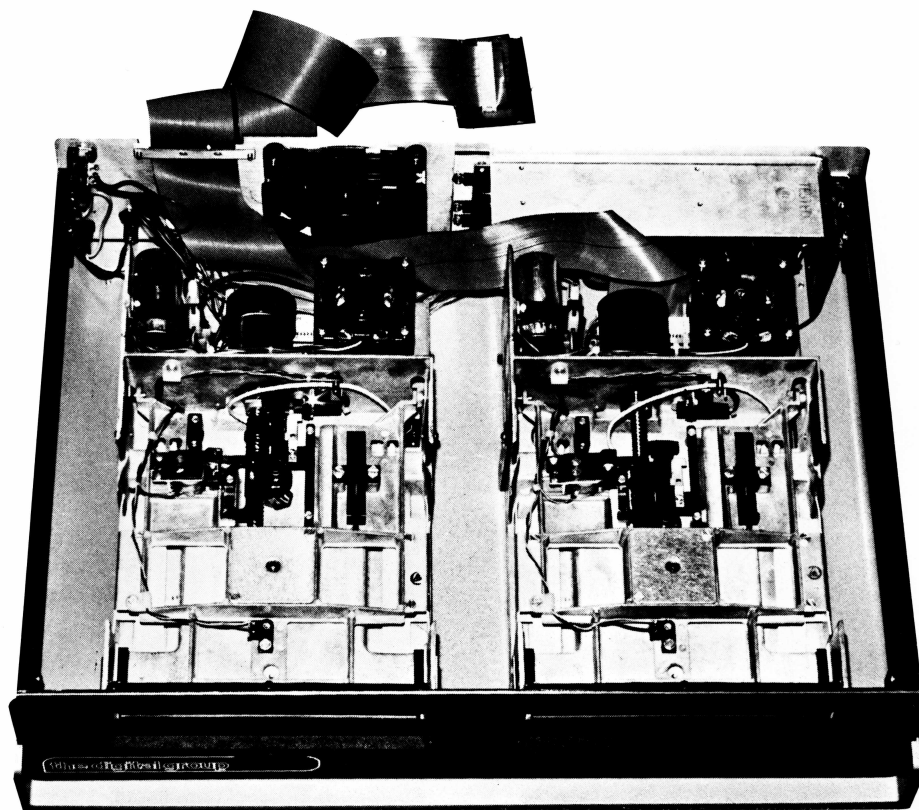
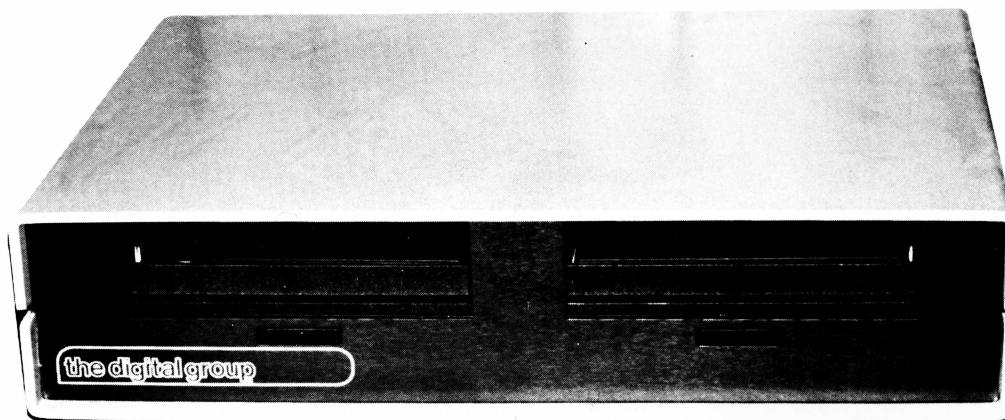
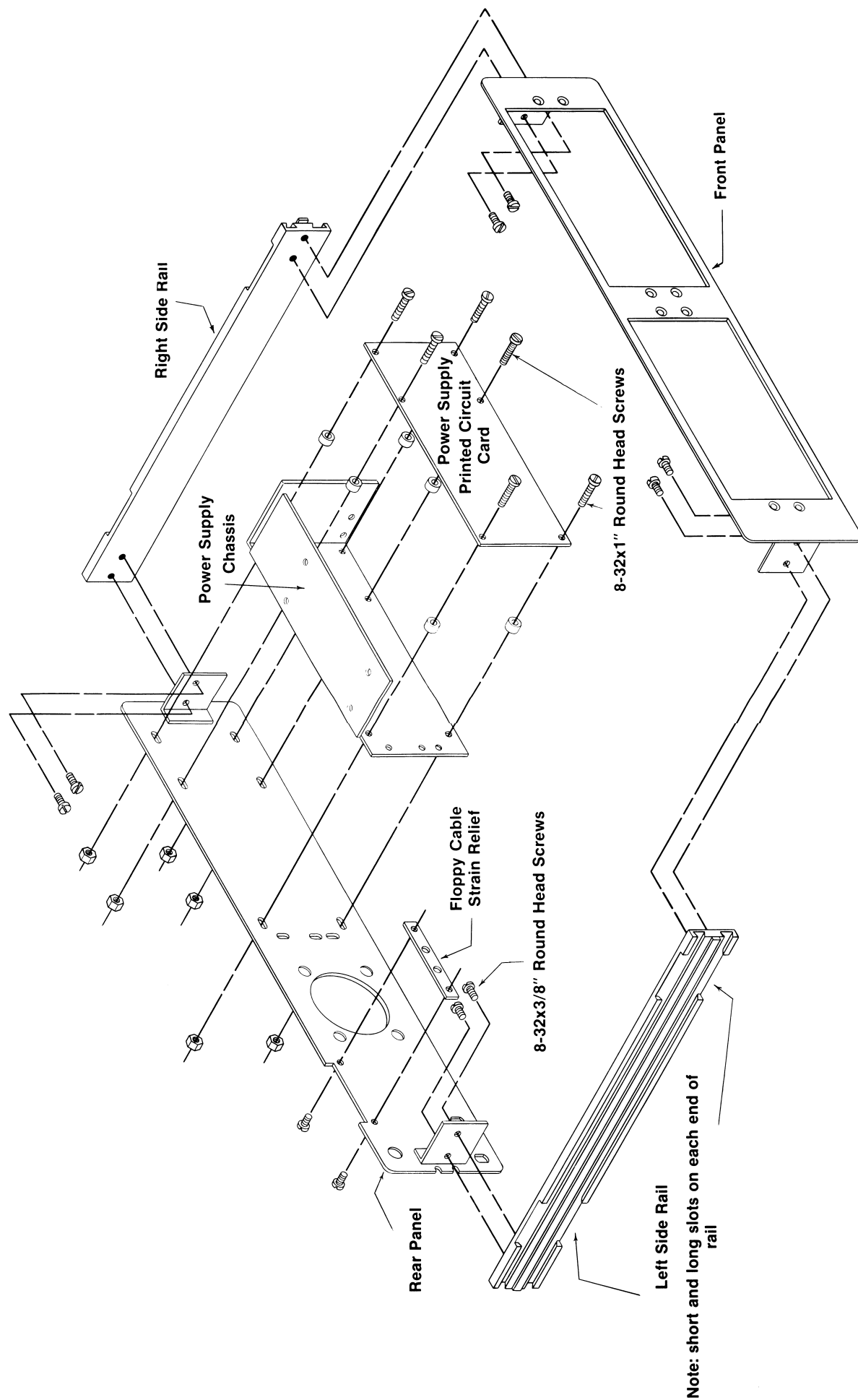


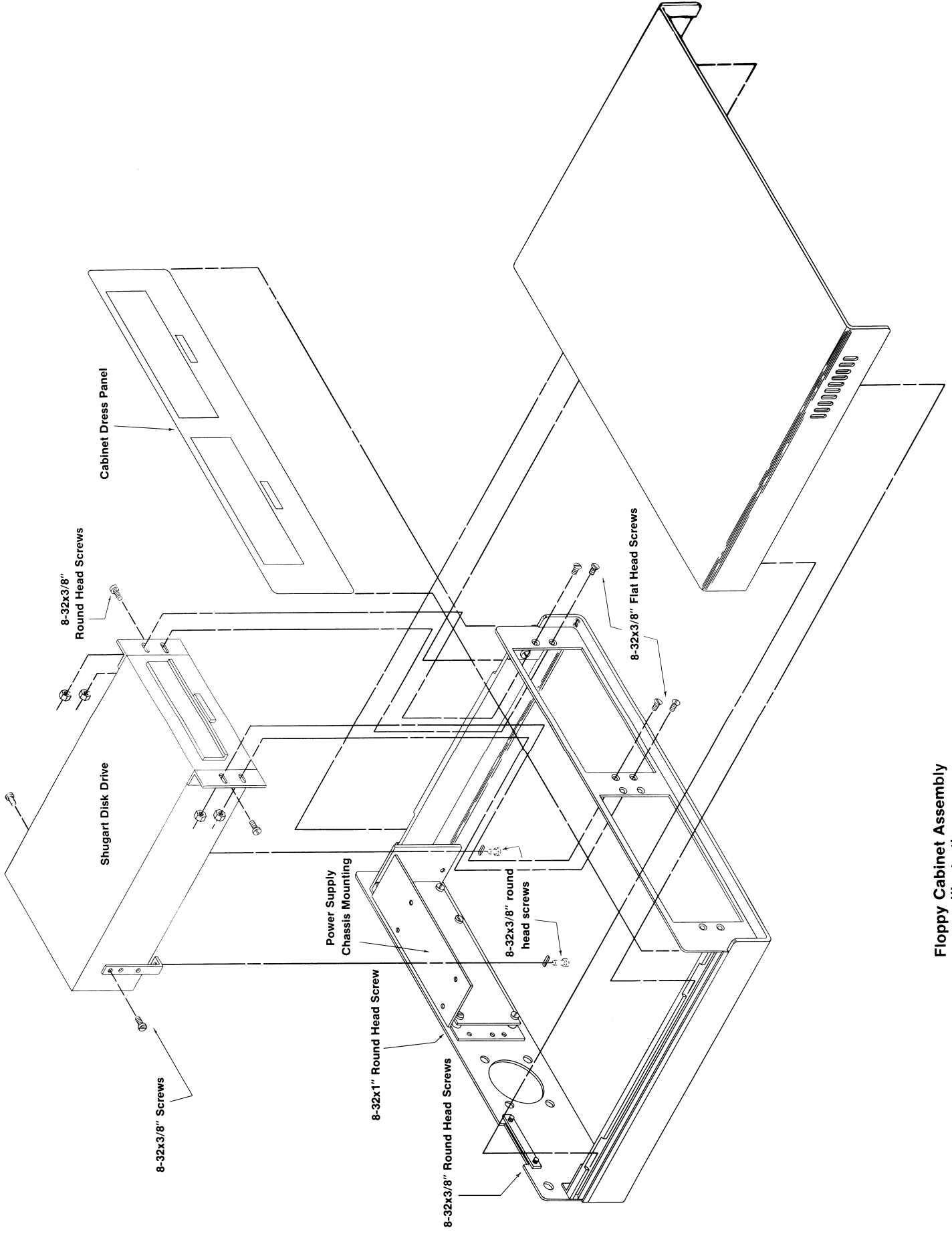
PHOTO 5

Completed
Floppy
Cabinet





**Floppy Disk Cabinet Assembly
— Exploded View Illustration**



Floppy Cabinet Assembly
Illustration