SYNCHRONOUS "DATASPEED*" 40/4

SINGLE DISPLAY STATION ARRANGEMENTS

DISASSEMBLY/REASSEMBLY AND PARTS
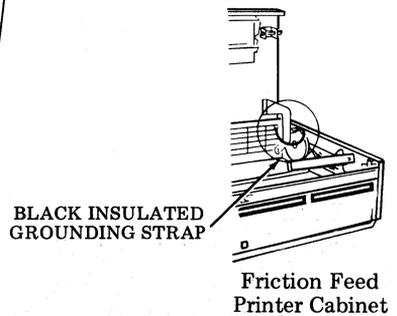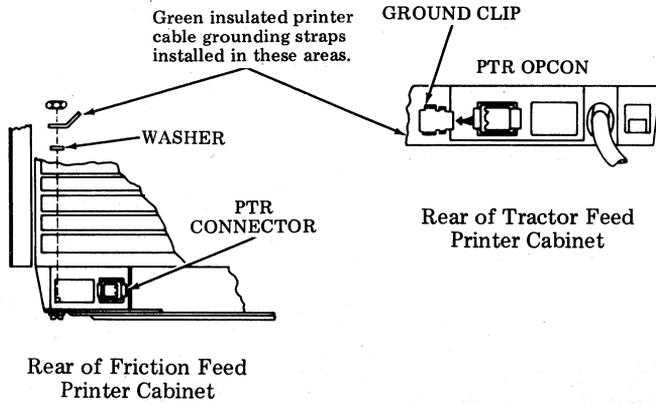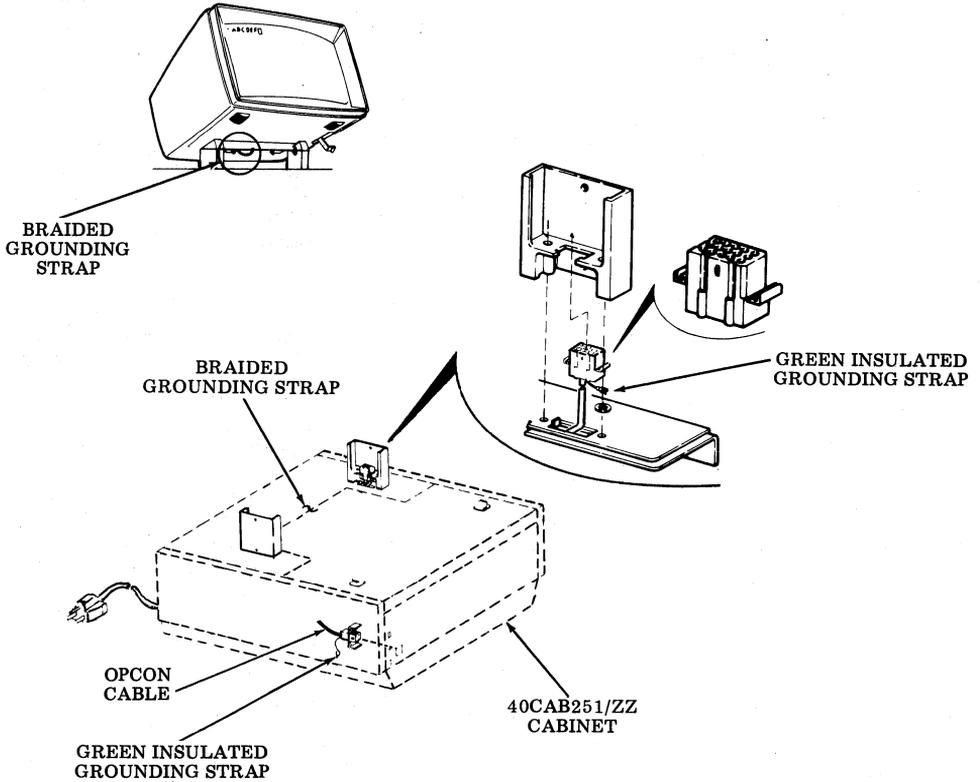
1. GENERAL

1.01 This section contains all necessary information on the removal and replacement of various components of DATASPEED 40/4 Single Display Station Arrangements. This section also includes locations of test switches and indicators used in trouble analysis and testing of the station.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Abbreviations used in this section are defined in Section 582-200-101.

1.04 To disassemble or reassemble parts (or units) of this section, the following tools (or equivalents) are required:

Screwdriver, 1/8 inch blade
Screwdriver, 1/4 inch blade
Socket wrench, 1/4 inch
Socket wrench, 5/16 inch
Open-end wrench, 1/4 inch
Open-end wrench, 1/2 inch
Static ground strap, 346392 (required only if circuit cards are handled)
Terminal extractor, 402840

Note: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

*Registered Trademark of AT&TCo.

1.05　Grounding Strap Locations

Note:　Remove strapping only when necessary.

BRAIDED
GROUNDING
STRAP

GREEN INSULATED
GROUNDING STRAP

BRAIDED
GROUNDING STRAP

OPCON
CABLE

GREEN INSULATED
GROUNDING STRAP

40CAB251/ZZ
CABINET

Green insulated printer
cable grounding straps
installed in these areas.

GROUND CLIP

PTR OPCON

WASHER

PTR
CONNECTOR

Rear of Tractor Feed
Printer Cabinet

BLACK INSULATED
GROUNDING STRAP

Rear of Friction Feed
Printer Cabinet

Friction Feed
Printer Cabinet

2.   DISASSEMBLY/REASSEMBLY

Caution: Remove all power from the set before performing any component replacement or conversions. This does not apply to cover removal for access to test switches, or to power on adjustments of the monitor.

MONITOR

2.01   To remove the monitor:

① Removal of entire monitor unit from set: Grasp monitor by sides near supports and simply lift up. Electrical cable connectors are part of support assembly.

② Removal of monitor housing: Tilt monitor back and disengage latch. Slide housing back partially. Position monitor to its normal position making sure it locks in that position. Remove housing completely.

WEAR SAFETY GLASSES

TILT RELEASE (When Housing is Removed)

LATCH RELEASE
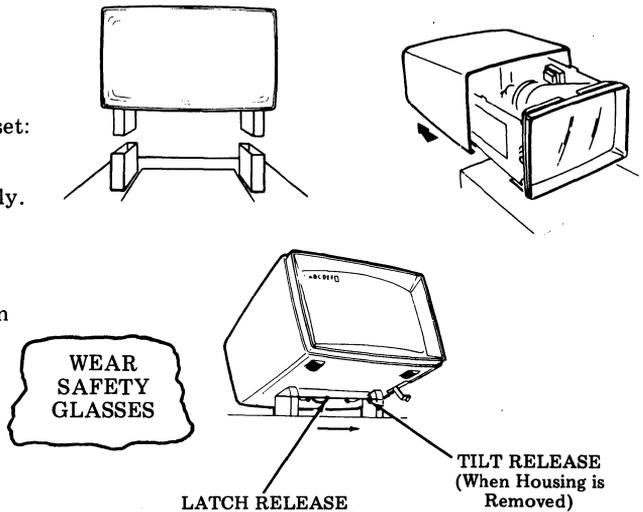
2.02   To replace the monitor, reverse the removal procedures of 2.01. For further disassembly of the monitor, refer to Section 582-213-701 or FIMP 579-505-350 (Part 7).

OPCON

2.03   To remove the opcon:

① Place thumb on inward tab of opcon (both sides).

② Press downward into unlatched position (each side).

③ Remove opcon by pulling straight away from the cabinet.

40K104/DAA, 40K104/DAB, OR 40K105/CAA OPCON

LATCHLEVER

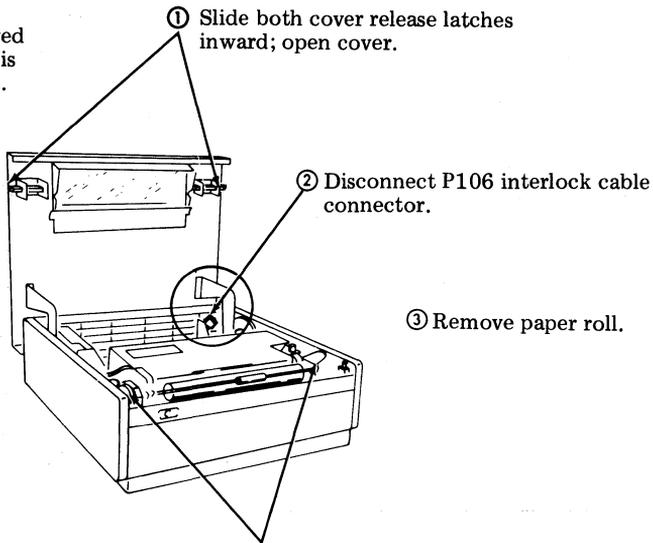ALIGN LOCATING PINS (Each Side)
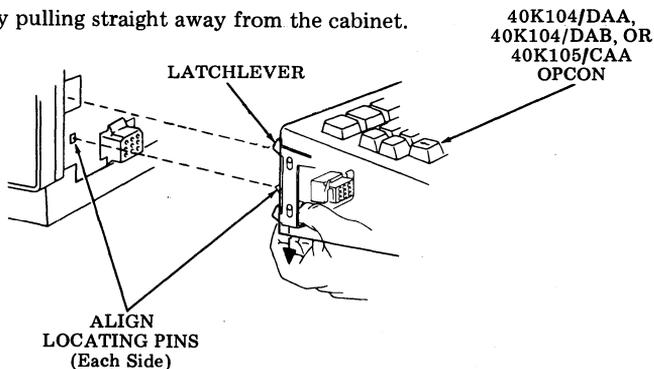
2.04   To replace the opcon, reverse the removal procedures of 2.03. When replacing opcon, make sure locating pins are fully engaged before pushing latchlevers upward into locked position. For further disassembly of opcon, refer to Section 582-211-700 or FIMP 579-505-350 (Part 7).
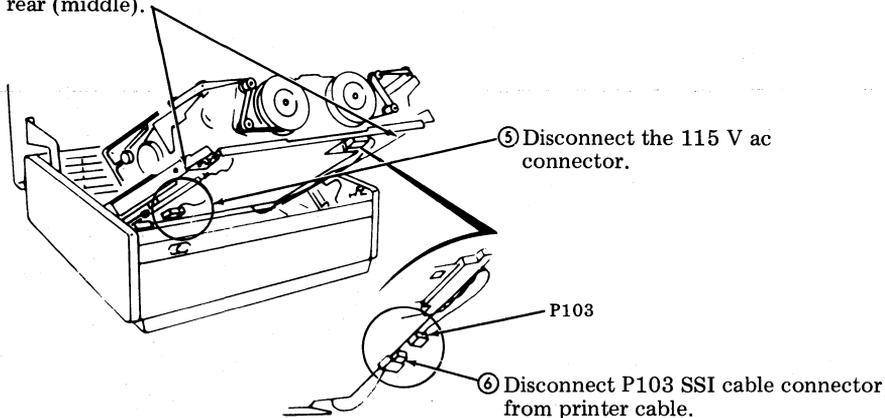
PRINTERS

A.   Friction Feed Printer

2.05   To remove the entire printer assembly:

Note: The circuit card can be removed after Step 4 of disassembly. If printer is not being removed omit Steps 2 and 3.

① Slide both cover release latches inward; open cover.

② Disconnect P106 interlock cable connector.

③ Remove paper roll.

④ Release printer and raise to the tilt position by depressing the left and right release levers and lifting printer.
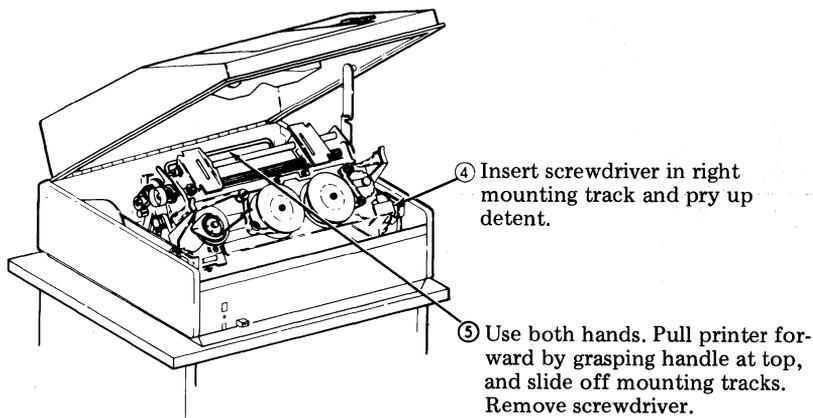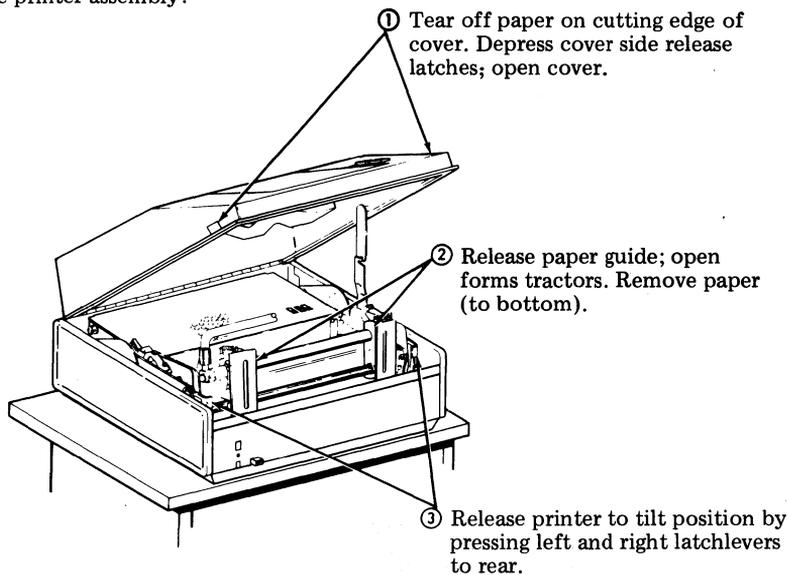
⑦ Use both hands. Release (push in) the printer slide detents and pull the printer out by grasping it by the frame (front bottom) then also by the rear (middle).

⑤ Disconnect the 115 V ac connector.

P103

⑥ Disconnect P103 SSI cable connector from printer cable.

2.06   To replace the printer, reverse the removal procedures of 2.05. For further disassembly of printer and printer cabinet, refer to Section 582-210-702 or FIMP 579-505-350 (Part 7).

B.   Tractor Feed Printer (80 or 132 Column)

2.07   To remove the entire printer assembly:

① Tear off paper on cutting edge of cover. Depress cover side release latches; open cover.

② Release paper guide; open forms tractors. Remove paper (to bottom).

③ Release printer to tilt position by pressing left and right latchlevers to rear.

④ Insert screwdriver in right mounting track and pry up detent.

⑤ Use both hands. Pull printer forward by grasping handle at top, and slide off mounting tracks. Remove screwdriver.

2.08   To replace the printer, reverse the removal procedures of 2.07. For further disassembly, refer to Section 582-210-702 or FIMP 579-505-350 (Part 7) for printers and Section 582-212-700 for cabinets.

PEDESTALS AND CABINETS

2.09   Refer to Section 582-212-700 or FIMP 579-505-350 for assembly or disassembly of a pedestal or cabinet.

40PSU101 POWER SUPPLY

2.10   To remove 40PSU101 power supply, follow Steps 1 through 8 (also see Warning following Step 8).

① Release lid latches and open lid.

② Insert fingers as shown and lift then pull module forward.

   Note 1:   Do not attempt to lift at opcon (if present).
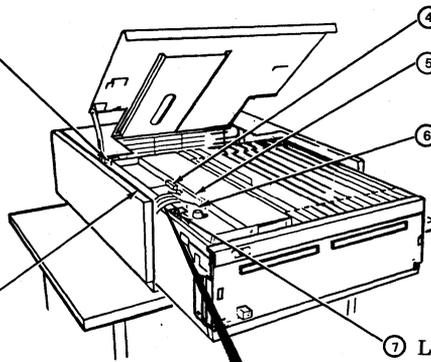
③ Move module forward until blocked by latch.
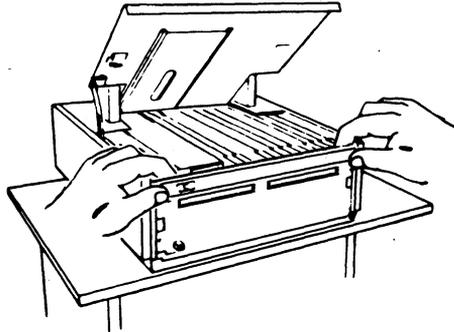
(Monitor and opcon not shown.)

⑧ Use handle to lift out power supply.

   Warning: Do not attempt to force power supply up. Late design power supplies are secured with hardware from the bottom. (See Note 2.)

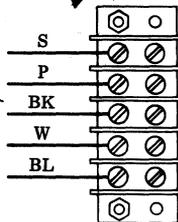⑨ Replace power supply making sure to seat on locating pins.

④ Disconnect ac power cord.

⑤ Remove screws that secure insulator; remove insulator.

⑥ Loosen five screws from terminal strip; remove cable terminals from terminal strip.

⑦ Loosen bracket screw sufficient to raise and turn retainer bracket away from handle.

⑩ Slip on cable terminals and tighten screws.

⑪ Replace insulator. Plug in ac power cord. Reposition retainer bracket; tighten bracket screw. Move module to rear. Lower and latch lid.

S	
P	
BK	
W	
BL	

*Note 2:*   If the Warning applies, complete removal of power supply by:
- Removing 406046 monitor cable, but only from retainer and back panel (2.16),
- Removing 406036 or 406066 cable, but only from data set or data auxiliary set — as applies (2.20).
- Removing 406039 printer cable, but only from printer (2.22).
- Removing logic package from cabinet (Steps 1, 2, and 3 of 2.24).
- Turning logic package so that it rests on the left side, removing power supply mounting hardware from bottom of logic package. Remove power supply.

2.11   To replace 40PSU101 power supply, follow Steps 9 through 11.

CONTROLLER

• Perform Steps 1 and 2 of 2.10.

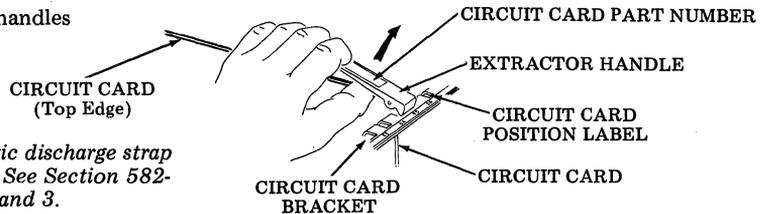Move module forward until blocked by latch to provide sufficient clearance for card removal.

② Lift handle(s) carefully.

③ Remove controller circuit card (see 2.12 and 2.13).
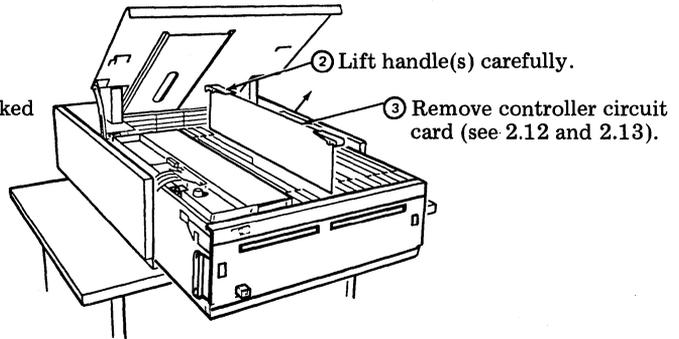
A.   Circuit Cards

Note: The required circuit cards and their locations are given in Section 582-200-205.

2.12   To remove a controller circuit card (see 2.13 for 410261 circuit card removal):

Lift up on extractor handles and lift straight up.

CIRCUIT CARD (Top Edge)

CIRCUIT CARD PART NUMBER

EXTRACTOR HANDLE

CIRCUIT CARD POSITION LABEL

CIRCUIT CARD

CIRCUIT CARD BRACKET

Warning: Wear 346392 static discharge strap when removing circuit cards. See Section 582-200-205, 1.04 Warnings 1, 2 and 3.

2.13   To remove 410261 circuit card:

① Remove 410251 circuit card; observe black plastic retainer near top edge of card.

② Collapse tab of retainer and lift the 410261 circuit card.

③ Work the top edge over the tab, then even up the rear edge; remove 410261 circuit card.

2.14   To replace a controller circuit card (see 2.15 for 410261 circuit card replacement):

① Check that card is proper for location (see Note above).

Check that pins on card are straight (not bent) by sighting down the two rows of pins.

Warning: Attempting to insert a card with bent pins into the back panel may result in damaging the back panel or the card.

③ Place card in slot, then depress gently but firmly until card is fully seated.

2.15   To replace 410261 circuit card:

Remove 410251 circuit card (if not already removed).

② Check that mating pins on 410261 circuit card are straight.

③ Place 410261 circuit card (component side up) over 410251 circuit card (component side up); mount the 410261 circuit card. The tab of the black plastic retainer near the top edge of 410251 circuit card will secure the 410261 circuit card.

B.   Cables

406046 Monitor Cable

2.16   To remove 406046 monitor cable:

• Remove monitor (2.01).

① Use flat blade of screwdriver against connector front ear and use screwdriver shank against right support guide to hold ear in. With your other hand push down on front of connector to drop ear below mounting slot. Hold rear ear in and push down on connector.

② Remove two screws and lockwashers from right support guide (retain nut when 406065 screw is removed).

③ Push connector down through hole in cover. Notice that connector keying notches face rear of unit and that star washer is positioned under connector ground terminal on the front.
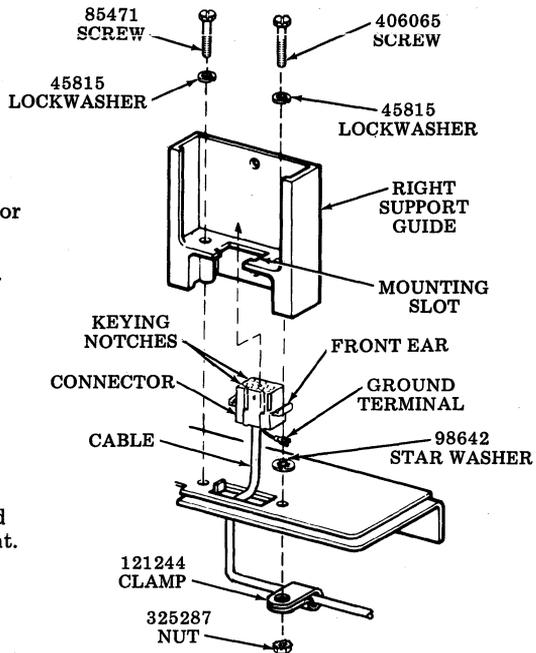
④ Perform Steps 1, 2 and 3 of 2.10.
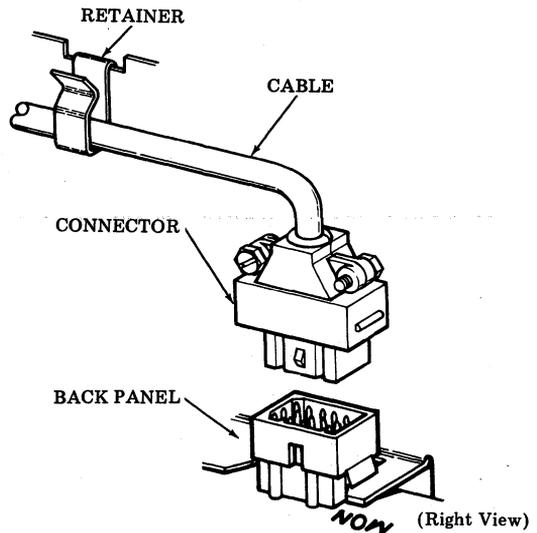
⑤ Remove cable from retainer by opening retainer and lifting cable out. Disconnect connector from back panel by pulling up while rocking connector back and forth.

2.17   To install 406046 monitor cable, reverse the removal procedures of 2.16. At right support guide end, route cable to just below mounting slot. Install right support guide on cover (insure that the ground terminal and starwasher are in place). Push one ear into mounting slot, rock connector back and forth to engage other ear (keying notches to rear).
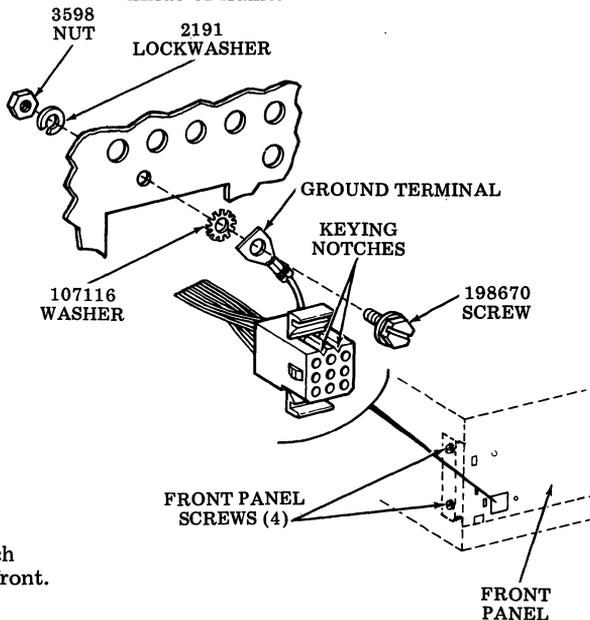
406048 Opcon Cable

2.18   To remove 406048 opcon cable:

• Remove opcon (2.03).
• Remove 40PSU101 power supply (2.10).

(Disconnect connector from back panel.
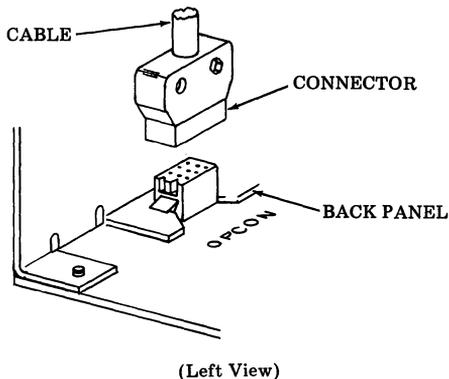
② While holding one connector ear down, ease connector from the mounting slot toward inside of frame.


(Left View)

③ Remove four front panel screws (two on each side). Remove front panel and cable to the front.

④ Remove ground terminal screw and washer from front panel and a lockwasher and nut from inside the front panel.

2.19   To install 406048 opcon cable, reverse removal procedures of 2.18.

406036 EIA Cable or 406066 Private Line Interface Cable

2.20   To remove 406036 or 406066 cable:

198670   CABLE   Move 406053 plate to the right.*   198670
SCREW   SCREW
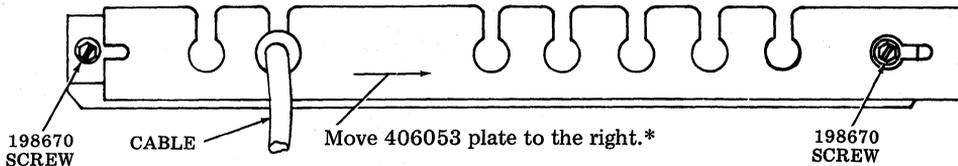
(Rear View of Controller)

*Directions are given as
from rear of station.

At the rear of controller, loosen two plate mounting
screws (do not remove). Move plate to the right (as
shown in illustration).

② Loosen nut and lockwasher that retains cable. Slide
cable up from slot in plate.

CABLE

6970
NUT

108450
LOCKWASHER

REAR
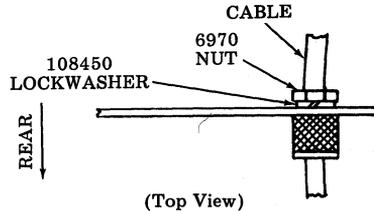
(Top View)

③ Release lid latches
and raise lid. Dis-
connect connector
from back panel
by pulling up while
rocking connector
back and forth.

CABLE

CONNECTOR

BACK PANEL
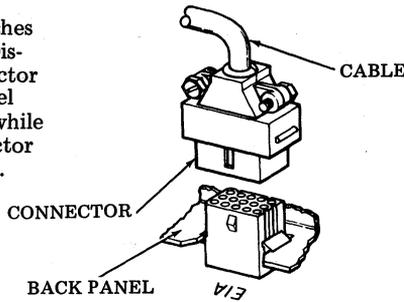
(Right View)

406036 only: At data set end, loosen two connector mounting screws. Disconnect connector.
406066 only: At 829 DAS end, loosen one connector mounting screw. Disconnect connector.


PART OF DATA SET

MOUNTING
SCREW (2)

CONNECTOR

PART OF 829 DAS

MOUNTING
SCREW
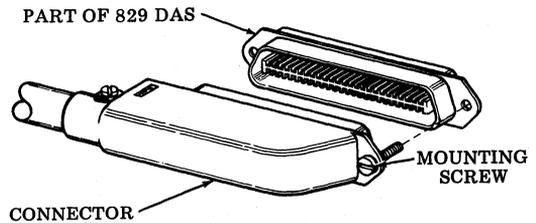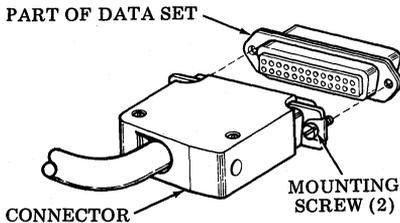
CONNECTOR

2.21   To install 406036 or 406066 cable, reverse removal procedures of 2.20.

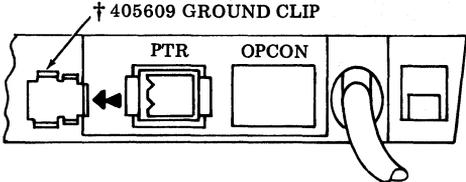406039 Printer Cable

2.22   To remove 406039 printer cable:

① Disconnect connector from rear of printer cabinet.

Remove ground lead from cabinet ground terminal (friction feed) or cabinet ground clip (tractor feed).

† Hardware supplied with 406039 printer cable. Do not remove hardware when removing ground lead.
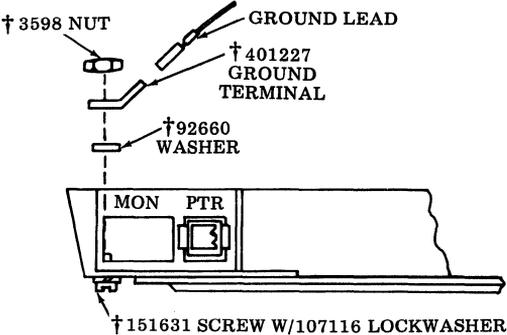
(Rear View of Friction Feed Printer Cabinet)

(Rear View of Tractor Feed Printer Cabinet)

③ At rear of controller, loosen two plate mounting screws (do not remove). Move plate to the right (as shown in illustration).

Move 406053 plate to the right. ‡

‡ Directions are given as from rear of station.
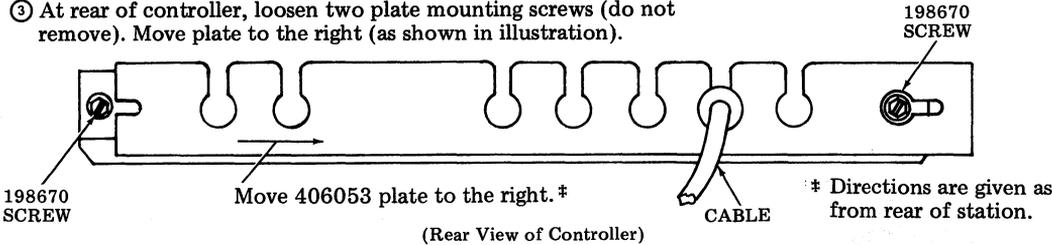
(Rear View of Controller)

④ Loosen nut and lockwasher that retains cable. Slide cable up from its slot in the plate.
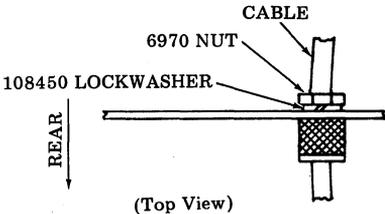
⑤ Release lid latches and raise lid. Disconnect connector from back panel by pulling up while rocking connector back and forth.

(Top View)

(Left View)

2.23   To install 406039 printer cable, reverse removal procedures of 2.22.

C. Back Panel

2.24   To remove 410276 (early design) or 410277 (late design) back panel:
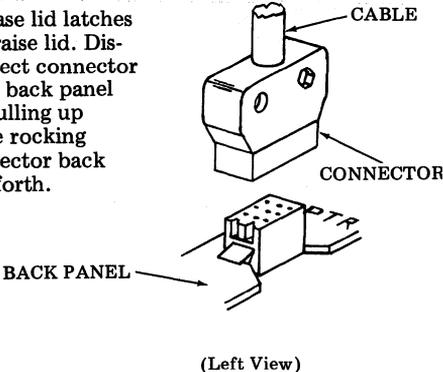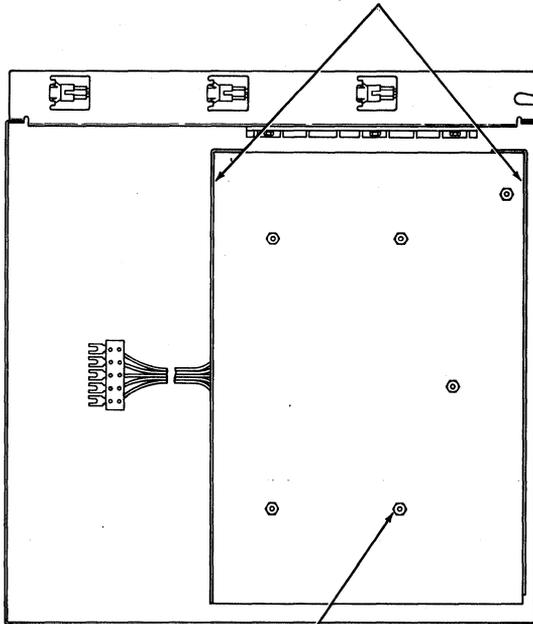
- Remove 40PSU101 power supply (2.10).
- Remove controller circuit cards (2.12 and 2.13).
- Remove 406046 monitor cable from controller (Step 5 of 2.16).
- Remove opcon (2.03) and disconnect 406048 opcon cable from controller.
- Remove 406036 EIA cable or 406066 private line interface cable from controller — as applies (Steps 1 and 3 of 2.20).
- Remove 406039 printer cable from controller — if present (Steps 3 and 5 of 2.22).

⑤ Lift back panel from module by support brackets.

② Insert screwdriver under latch and lift (right side of logic package).

Note 1:   Monitor can remain in place.

FRONT

(Top View of Module)

④ Remove six 405958 mounting nuts from back panel.

③ Slide logic package forward and out of cabinet.
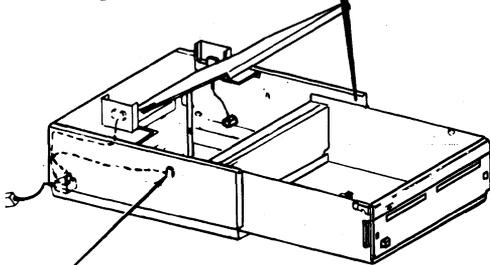
① Disconnect 3-pin connector of 405047 ac input cable from 408017 fan/power supply cable (see illustration on Page 13).

Note 2:   The insulator should not touch any spacers.

PART OF BACK PANEL

405958 NUT W/LOCKWASHER

406059 INSULATOR

MODULE FLOOR

406056 SPACER
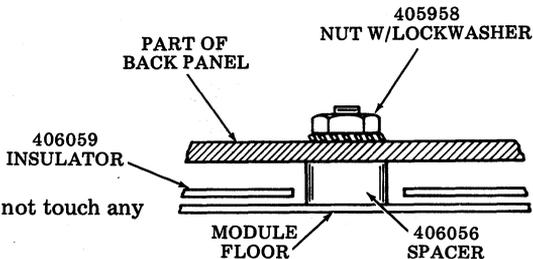
.25   To install back panel, reverse removal procedures of 2.24.

D.   Ventilation Assembly

408017 Fan/Power Supply Cable

2.26   To remove 408017 fan/power supply cable:

• Remove 40PSU101 power supply (2.10).
• Remove controller circuit cards (2.12 and 2.13).
• Remove 406046 monitor cable from controller (Step 5 of 2.16).
• Remove opcon (2.03).
• Remove 406036 EIA cable or 406066 private line interface cable from controller — as applies (Steps 1 and 3 of 2.20).
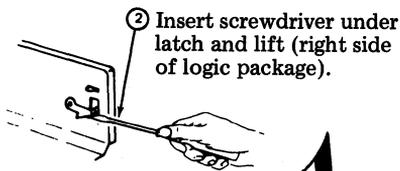• Remove 406039 printer cable from controller — if present (Steps 3 and 5 of 2.22).
• Perform Steps 1, 2, and 3 of 2.24.

405051
CABLE
WIRES
WHITE
GREEN
BLACK

Wires 4, 5 and 6
are part of
405047 cable.

198670
MOUNTING
SCREW (4)

① Disconnect each connector to a fan; pull connector out while rocking it back and forth.
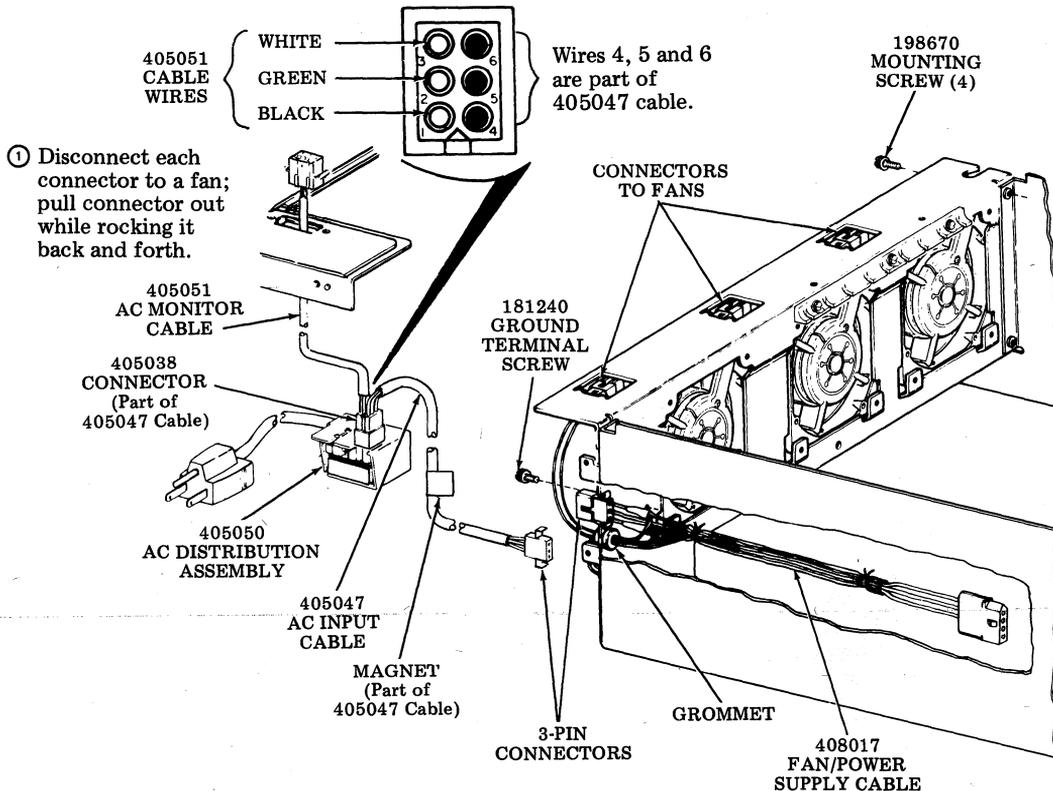
CONNECTORS
TO FANS

405051
AC MONITOR
CABLE

181240
GROUND
TERMINAL
SCREW

405038
CONNECTOR
(Part of
405047 Cable)

405050
AC DISTRIBUTION
ASSEMBLY

405047
AC INPUT
CABLE

MAGNET
(Part of
405047 Cable)

3-PIN
CONNECTORS

GROMMET

408017
FAN/POWER
SUPPLY CABLE

② Remove ground terminal screw. Remove ring terminals of cable from screw.

③ Perform Steps 1 and 2 of 2.28.

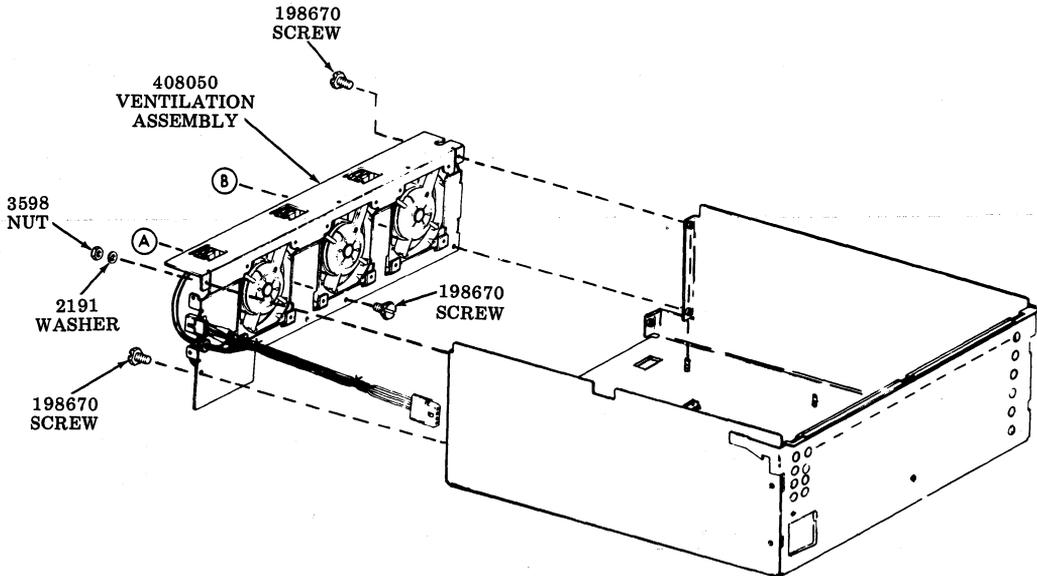④ Slide grommet and 3-pin connector of 408017 fan/power supply cable off ventilation assembly.

2.27   To install 408017 fan/power supply cable, reverse removal procedures of 2.26.

408050 Ventilation Assembly

2.28   To remove 408050 ventilation assembly:

- Remove 40PSU101 power supply (2.10).
- Remove controller circuit cards (2.12 and 2.13).
- Remove 406046 monitor cable from controller (Step 5 of 2.16).
- Remove opcon (2.03).
- Remove 406036 EIA cable or 406066 private line interface cable from controller — as applies (Steps 1 and 3 of 2.20).
- Remove 406039 printer cable from controller — if present (Steps 3 and 5 of 2.22).
- Perform Steps 1, 2, and 3 of 2.24.

① Remove two screws that secure 406052 plate. Remove plate.

② Remove two remaining screws, 3598 nut, and 2191 lockwasher. Remove ventilation assembly.
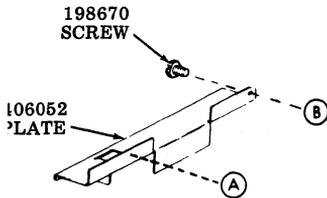
29   To install ventilation assembly, reverse removal procedures of 2.28.

408015 Fan

2.30   To remove a 408015 fan:
- Remove 40PSU101 power supply (2.10).
- Remove controller circuit cards (2.12 and 2.13).
- Remove 406046 monitor cable from controller (Step 5 of 2.16).
- Remove opcon (2.03).
- Remove 406036 EIA cable or 406066 private line interface cable from controller — as applies (Steps 1 and 3 of 2.20).
- Remove 406039 printer cable from controller — if present (Steps 3 and 5 of 2.22).
- Perform Steps 1, 2, and 3 of 2.24.

① Remove four screws and washers that secure fan.

Disconnect fan connector from 408017 fan/power supply cable connector. Remove fan.
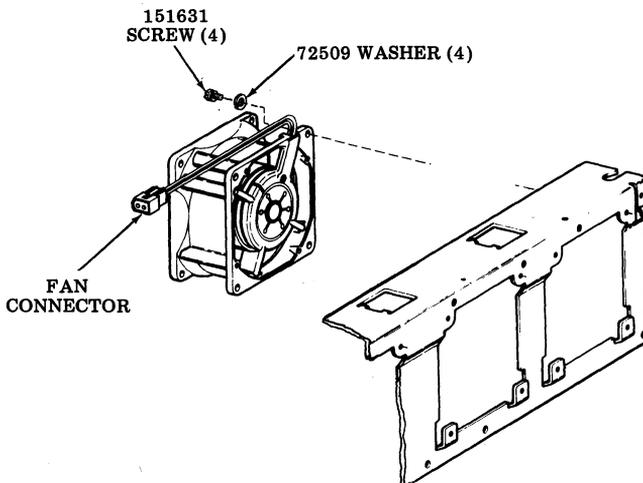
2.31   To install a 408015 fan, reverse removal procedures of 2.30.

3.   PARTS

3.01   For parts information on interconnect cables of the DATASPEED 40/4, refer to Section 582-20(405.

3.02   Parts information for individual components (printer, monitor, etc) are not illustrated in this sec tion. Refer to appropriate BSP section.

3.03   Field replaceable components of controllers are listed in the index which follows the parts illustra tion, see 3.04.

① 410276 OR 410277
(410276 Shown)

③ 405958

③ 406059

401688

198670
406053
C

198670
406052
D
G

401710
F

152634
401980 E
151659

151631
72509
198670
① 408015
① 408022

406056 —

③ 406064

③ 406060

406051
154335

406054
198670
406042

406055

3598
G
2191

181240
A

198670
A

408017

7002
2191
C
198670
E

F

2191

3598

408038

B

B
② TERMINAL

107116

198670

198670

④ 156653
④ 151723

198670 312918
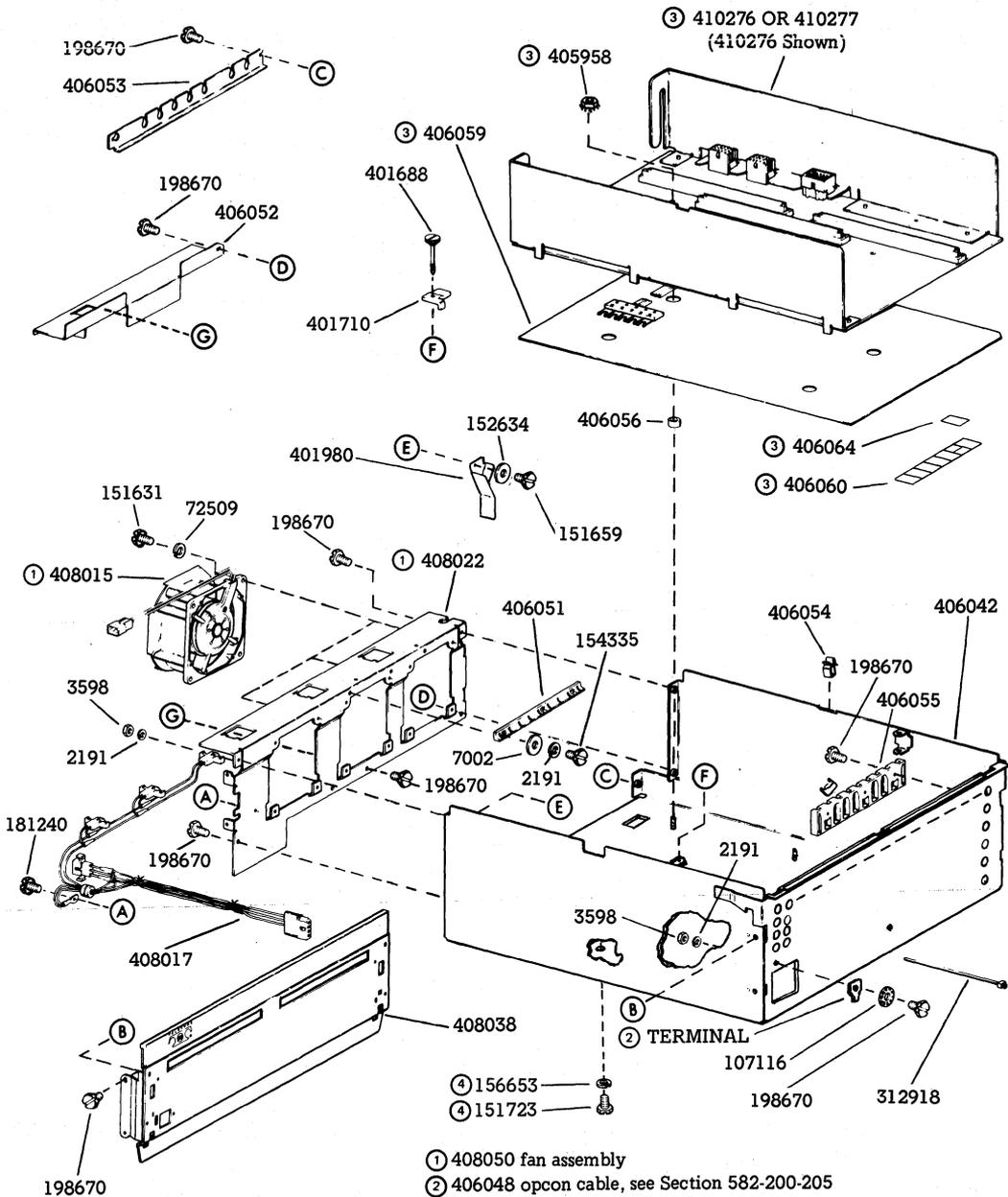
① 408050 fan assembly
② 406048 opcon cable, see Section 582-200-205
③ 410276 (early design) or 410277 (late design) back panel assembly
④ Present only on 406042 logic module (late design); used only for
    40PSU101 power supply (late design)

40C304 Controller

INDEX OF REPLACEABLE PARTS

3.04   The index below contains field replaceable parts. The index shows the section or page number of this section on which access is provided.

Note: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

APPLICATION	PART NO.	DESCRIPTION	SECTION OR PAGE NO.
Monitor	40MN101/AA 341578	Monitor Fuse, 1.4 Amp	3 582-200-751
Opcon	40K104/DAA 40K104/DAB 40K105/CAA	Opcon (ASCII, Typewriter Style) Opcon (EBCDIC, Typewriter Style) Opcon (EBCDIC, Data Entry Style)	3 3 3
Printer	40P101/ZZ 40P151/ZZ 40P201/ZZ 143306	Printer, Friction Feed Printer, Tractor Feed — 80 Column Printer, Tractor Feed — 132 Column Fuse, 1 Amp SL-BL MDL-1	4 5 5 582-200-751
Controller	40C304/AA/001 40PSU101 129920 408015 408050 410276 (Early Design) 410277 (Late Design) Various Numbers Various Numbers	Controller (SDC) Power Supply Fuse, 5 Amp SL-BL (for 40PSU101) Fan Ventilation Assembly Back Panel Back Panel Circuit Cards Cabinets and Pedestals	7 6 582-200-751 15 14 12 12 7 (Locations Given in 582-200-205) 582-212-700
Cable	406036 406039 406046 406048 406066 408017	EIA Cable Printer Cable Monitor Cable Opcon Cable Private Line Interface Cable Fan/Power Supply Cable	10 11 8 9 10 13