



29MB DISK CONSOLE SERVICE MANUAL

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**CHAPTER 1 GENERAL DATA
29MB DISK CONSOLE SERVICE MANUAL**

1. GENERAL DATA

HOW TO USE THIS MANUAL MODEL CONFIGURATIONS CALL MANAGEMENT CHANGE TAG INDEX

29MB DISK CONSOLE

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1.1 HOW TO USE THIS MANUAL

This service manual provides information necessary for maintenance of the 29MB Disk Console.

The 8000 Series Reference Manual provides the complete instructions for use of 8000 Series service manuals.

1.2 MODEL CONFIGURATIONS

Various models of 8000 Series products are available. The 8000 Series Reference Manual provides product codes, model configurations, and catalog number information, as well as related explanations.

1.3 CALL MANAGEMENT

The Call Management procedures are to be performed during every service call. The complete Call Management procedures are provided in the 8000 Series Reference Manual.

1.4 CHANGE TAG INDEX

Refer to the 8000 Series Reference Manual for instructions about use of matrix tags and Tag Letter Classification definitions.

The 29MB Disk Console has one matrix tag. The matrix tag is located on the bottom frame on the left side of the console. Any important modification of the disk drive, or related cables and connectors, must be indicated on the 29MB Disk Console matrix tag.

CHANGE TAG INDEX FOR 29MB DISK CONSOLE		
Tag No.	Description	Serial No. Cut-in
1 N	Tag 1 moves slide-lock hardware from 29MB Signal Cable to Processor connector panel to prevent improper connection at Processor. Related part is the 29MB Signal Cable 152581277.	T25-Initial
2	CANCELLED	
3 R	Tag 3 changes the molded connector hood on 29MB Signal Cable to eliminate interference between cable connector and rear cover. Related part is the 29MB Signal Cable 1525825031.	T25- 131-
225 R	Tag 225 changes the molded connector hood on 29MB Signal Cable to eliminate interference between cable connector and rear cover. Related part is the 29MB Signal Cable 1525825031.	T25- 131-

CHAPTER 2 INSTALLATION/REMOVAL
29MB DISK CONSOLE SERVICE MANUAL

REFER TO 8000 SERIES REFERENCE MANUAL

**CHAPTER 3 REPAIR DATA
29MB DISK CONSOLE SERVICE MANUAL**

3. REPAIR DATA
CONSOLE TOP COVER CONSOLE FAN

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3.1 CONSOLE TOP COVER
REF PL 4.1

REMOVAL

1. SWITCH OFF SYSTEM POWER.
2. REMOVE BOTH CONSOLE SIDE COVERS.
3. REMOVE CONSOLE TOP COVER.
 - a. Remove the six speed nuts securing the Top Cover to frame.
 - b. Remove Top Cover.

REPLACEMENT

1. REPLACE CONSOLE TOP COVER.
 - a. Perform removal procedure in reverse order.

3.2 CONSOLE FAN
REF PL 4.1

REMOVAL

1. SWITCH OFF SYSTEM POWER.
2. REMOVE CONSOLE REAR COVER.
3. REMOVE THE CONSOLE FAN.
 - a. Remove screws securing the Fan Cover to frame.
 - b. Remove the Fan Cover.
 - c. Disconnect harness connector from the Fan.
 - d. Remove the Fan from console.

REPLACEMENT

CAUTION

The Fan must be installed with arrow pointing to rear of console for the correct air flow.

1. REPLACE THE CONSOLE FAN.
 - a. Perform removal procedure in reverse order.

3.3 29MB DISK DRIVE
REF PL 4.2

REMOVAL

NOTE: RX only. References in the following procedures to a call for assistance or report of conditions, should be made to the RX Technical Specialist.

CAUTION

Drive replacement deletes customer files. This requires restoration of files by customer. **BEFORE** replacing drive, contact RES or NSC; then notify customer's System Administrator or Network Coordinator. Customer **MUST** be notified **BEFORE** replacing rigid drive. It is possible that Systems Analyst will know work around procedure, and drive will not require replacing. If customer will not agree to drive replacement, contact Systems Analyst for further instructions. **NEVER REPLACE DISK DRIVE WITHOUT FIRST NOTIFYING CUSTOMER AND SYSTEMS ANALYST.**

- 1 ENSURE THAT THE CORRECT DISK DRIVE REPLACEMENT PROCEDURE IS FOLLOWED.
 - a. Ensure that RES or NSC is informed.
 - b. Customer has approved and understands that disk drive is to be replaced
 - c. Systems Analyst has been informed.
2. SWITCH OFF SYSTEM POWER.

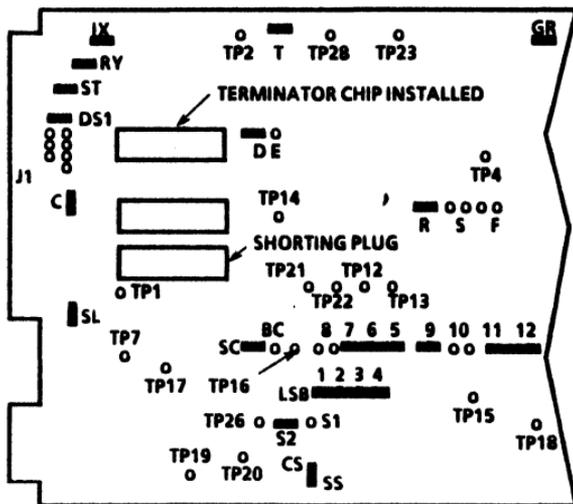
3. REMOVE BOTH SIDE COVERS.
4. INSTALL ACTUATOR LOCK (REPLACEMENT 3.3.1).
5. INSTALL SPINDLE LOCK (REPLACEMENT 3.3.2).
6. REMOVE 29MB DISK DRIVE.
 - a. Disconnect power harness connector from J4 on Disk Drive Motor.
 - b. Disconnect power harness connector from J3 on Actuator PWA.
 - c. Disconnect signal harness connector from J1 on the Control PWA.
 - d. Remove the four bolts securing the Disk Drive to frame.
 - e. Carefully pull Disk Drive from console.
 - f. Remove brackets from Disk Drive.

REPLACEMENT (FIGURES 3-1 TO 3-5, INCLUSIVE)

CAUTION

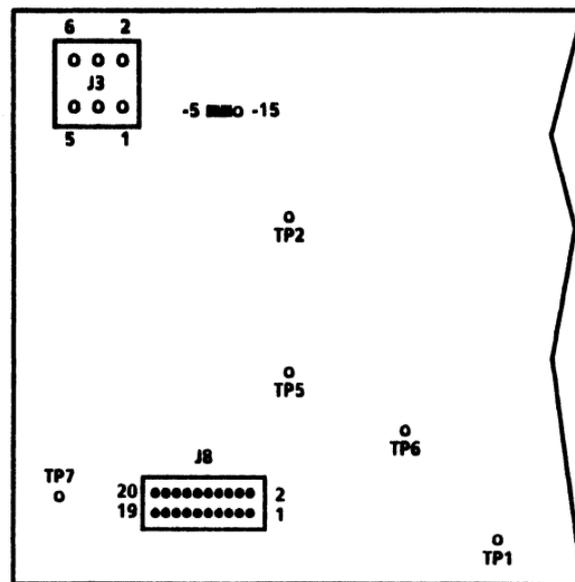
Jumpers on new Disk Drive must be configured to match old Disk Drive jumper location **BEFORE** installation. Several Control PWAs are now in use. Ensure that the correct figure is referred to when verifying the jumper locations.

1. INSTALL JUMPERS ON DISK DRIVE PWAs.
 - a. Refer to Figures 3-1 to 3-5, inclusive, and install jumpers as shown.
 - b. Remove any jumpers not shown in figures.
 - c. Add any jumpers necessary, as shown in figures.



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Figure 3-3 Jumper Locations for 29MB Control PWA
(Version C)

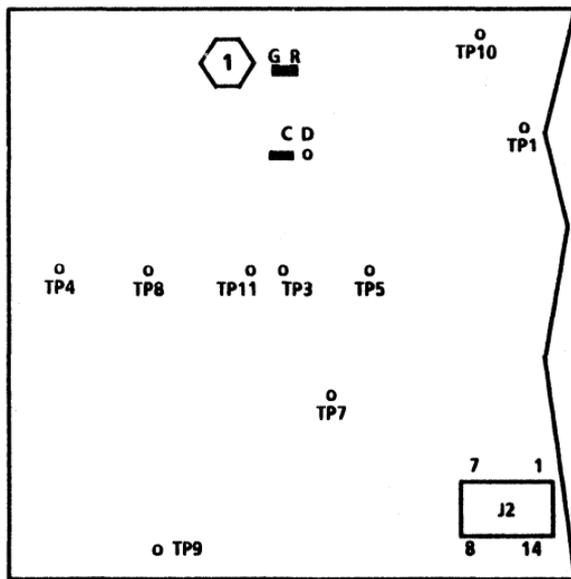


8010-052

Figure 3-4 Jumper Locations for 29MB Actuator PWA

3. REPAIR DATA
29MB DISK DRIVE FIGURE 3-5

29MB DISK CONSOLE
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NOTE 1: GR JUMPER PRESENT ONLY
ON LATER VERSIONS OF VFO PWA.

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2. REPLACE 29MB DISK DRIVE.
 - a. Replace brackets onto new Disk Drive.
 - b. Carefully install Disk Drive inside console.
 - c. Replace the four bolts securing the Disk Drive to frame
 - d. Remove spindle lock screw through the access hole in Drive Belt Cover.
 - e. Connect power harness connector to J4 on Disk Drive Motor.
 - f. Connect power harness connector to J3 on Actuator PWA.
 - g. Connect signal harness connector to J1 on the Control PWA.
3. REMOVE ACTUATOR LOCK (3.3.1).

NOTE: The 29MB Disk Drives have bad page error maps from the OEM supplier (the Original Equipment Manufacturer of the drive) and Xerox. Refer to Figure 3-6 for a sample of the error map. Refer to Figure 3-7 for a flow chart on preparing the drive for software.

4. CHECK THE AVAILABILITY OF XEROX ERROR MAP.
 - a. Remove map from the right side of drive.
 - b. Locate date on the Xerox error map. If dated 11-30-82 or before, or the map does not exist, proceed to step 12.

Figure 3-5 Jumper Locations for 29MB VFO PWA

OEM ERROR MAP				
SA1004 SCAN ERROR LOG			SERIAL #A36497	
TRK	HD	BYTE COUNT	LENGTH (BITS)	
078	00	01315	14	
144	03	02219	15	
145	03	02220	03	
253	03	03938	01	
254	03	03939	02	
END ERROR LOG				

XEROX ERROR MAP						
XX Megabyte Storage Device						
Serial number: A12102						
Date: 22-Jan-82						
				Bad Page	Manual	Media
Page	Cyl	HD	Sec	Table	Entry	Scan
3908	017	03	16	X		
14420	064	03	00		X	
Number of bad pages: 2						

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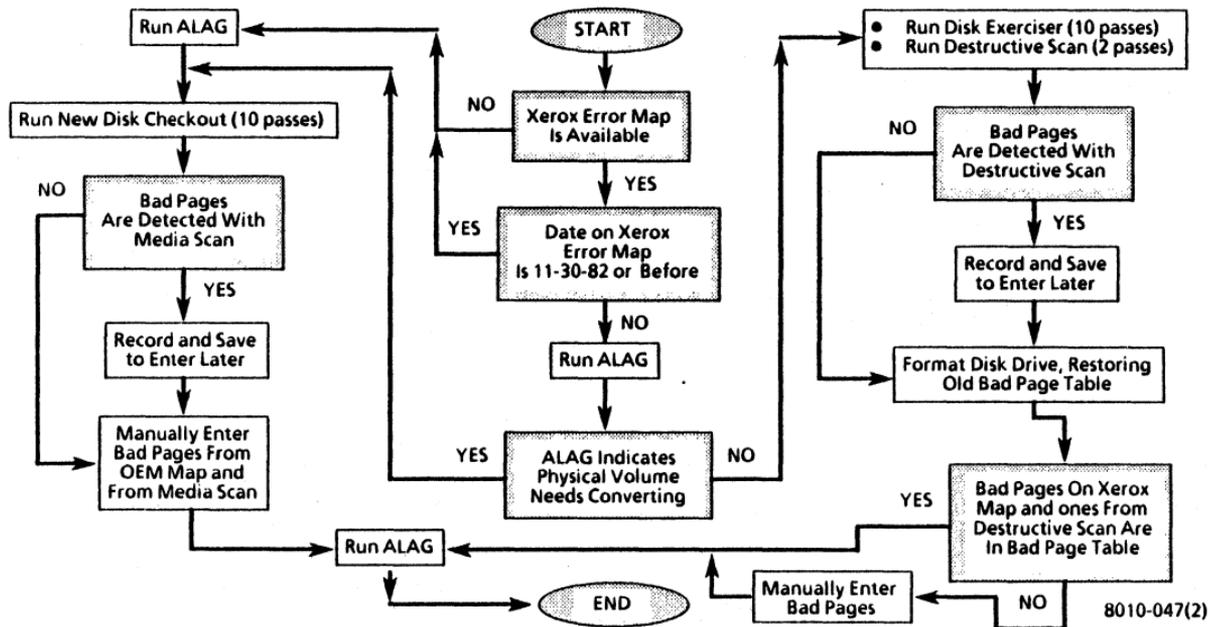
5. RUN ALAG AND VERIFY A SUCCESSFUL COMPLETION.
 - a. If ALAG completes successfully, proceed to step 6.
 - b. If ALAG fails while PV Scavenger is running, proceed to step 6.
 - c. If ALAG does not complete and an MP Code other than 1799 is displayed, see MP Code List.
 - d. If *physical volume needs forward conversion Warnings* is displayed on the screen, proceed to step 13.

CAUTION

The following steps contain instructions that will destroy customer files. **DO NOT** logon with Analyst privileges, or perform these steps, unless service manual procedures instruct you to do so. Performing these exercises on Disk Drives containing any customer files will DESTROY ALL CUSTOMER INFORMATION.

6. LOGON WITH ANALYST PRIVILEGES.
 - a. Refer to 8000 NS Diagnostics Handbook for detailed instructions.
7. RUN DISK EXERCISER FOR 10 PASSES TO DETERMINE THE CONDITION OF THE HARDWARE.
 - a. Refer to the 8000 NS Diagnostics Handbook on how to run Disk Exerciser.
 - b. If an error is detected other than a Header CRC, Label CRC, or Data CRC, perform Level 1 Checkout in the 8000 Processor Service Manual.

Figure 3-6 Sample of OEM and Xerox Error Maps



- c. If no error is detected, or the error is a Header CRC, Label CRC, or Data CRC, continue with step 8.
- 8 RUN DESTRUCTIVE SCAN FOR 2 PASSES, WITH 2 RETRIES.
 - a. Refer to 8000 NS Diagnostics Handbook for detailed instructions.
 - b. If bad pages are detected while Destructive Scan is running, record and save to use later.
- b. If ALAG fails while PV Scavenger is running, continue with step 13.
- c. If ALAG does not complete and an MP Code other than 1799 is displayed, see MP Code List.
- d. If *physical volume needs forward conversion Warnings* is displayed on the screen, proceed to step 13.

CAUTION

When performing the next step, **RESTORE** the Bad Page Table.

- 9 FORMAT DISK DRIVE, RESTORING OLD BAD PAGE TABLE.
 - a. Refer to 8000 NS Diagnostics Handbook for detailed instructions.
- 10 VERIFY BAD PAGE TABLE CONTAINS ALL PAGES ON XEROX ERROR MAP AND PAGES RECORDED DURING DESTRUCTIVE SCAN
 - a. Compare Bad Page Table on the display to Xerox error map, and pages recorded during Destructive Scan.
 - b. If all pages are in the Bad Page Table, proceed to step 16.
- 11. MANUALLY ENTER BAD PAGES NOT IN BAD PAGE TABLE, THEN PROCEED TO STEP 16.
 - a. Refer to 8000 NS Diagnostics Handbook for detailed instructions.
 - b. After entering bad pages, proceed to Step 16.
- 12. RUN ALAG AND VERIFY A SUCCESSFUL COMPLETION.
 - a. If ALAG completes successfully, proceed to step 13.

CAUTION

The following steps contain instructions that will destroy customer files. **DO NOT** logon with Analyst privileges, or perform these steps, unless service manual procedures instruct you to do so. Performing these exercises on Disk Drives containing any customer files will **DESTROY ALL CUSTOMER INFORMATION**.

NOTE: If you cannot logon (system locked up), perform an Alternate Boot 0002, and press the **BREAK** or **STOP** key when Fault Analysis begins.

- 13. LOGON ON WITH ANALYST PRIVILEGES.
 - a. Refer to 8000 NS Diagnostics Handbook for detailed instructions.
- 14. RUN NEW DISK CHECKOUT FOR 10 PASSES TO DETERMINE THE CONDITION OF THE HARDWARE.
 - a. Refer to the 8000 NS Diagnostics Handbook for detailed instructions.

- b. If an error is detected other than a Header CRC, Label CRC, or Data CRC while Destructive Exerciser is running, perform Level 1 Checkout in the 8000 Processor Service Manual.
 - c. If no error is detected while Destructive Exerciser is running, or the error is a Header CRC, Label CRC, or Data CRC, continue with next step.
 - d. When *Do you wish to reconstruct the bad page table at this time (Y/N)*: Y is displayed, press return.
 - e. When *Do you wish to perform a media scan (Y/N)*: is displayed, type y and press return.
 - f. When *Pass count (1-1000)*: 10 is displayed, type 2 and press return.
 - g. When *Retry Count (0-20)*: 2 is displayed, press return.
 - h. If bad pages are detected while media scan is running, record and save to use later.
 - i. If *Do you wish to test the bad pages (Y/N)*: is displayed, type n and press return.
 - j. When *Do you wish to manually enter bad pages (Y/N)*: is displayed, type y and press return.
 - k. If Xerox error map was dated 11-30-82 or before, proceed to step 15.
 - l. Select Page Format and enter bad pages from Xerox error map and bad pages detected during media scan.
 - m. Proceed to step 16.
15. MANUALLY ENTER BAD PAGES FROM OEM MAP AND MEDIA SCAN.
- a. Refer to the 8000 NS Diagnostics Handbook for detailed instructions.

- 16. RUN ALAG AND VERIFY A SUCCESSFUL COMPLETION.
- 17. RETURN ERROR MAPS TO PLASTIC POUCH.
- 18. REPLACE COVERS.
- 19. INFORM SYSTEM ADMINISTRATOR TO PARTITION DISK, INSTALL SYSTEM SOFTWARE, AND RESTORE FILES.

3.3.1 ACTUATOR LOCK
REF PL 4.2

REMOVAL

NOTE: Some 29MB Disk Drives are not equipped with Actuator Locks. Do not perform procedure if drive is without Actuator Lock feature. (See PL 4.2 for Actuator Lock part number.)

- 1. SWITCH OFF SYSTEM POWER
- 2. REMOVE LEFT SIDE COVER.
- 3. REMOVE ACTUATOR LOCK (FIGURE 3-8).
 - a. Disconnect power harness connector from J3 on the Actuator PWA.
 - b. Switch ON system power.

CAUTION

Do not move Damper Assembly until disk speed has been reached (approximately five seconds after AC power is applied). Movement of heads without disk rotation may cause disk or head damage.

- c. Wait for disk to reach proper speed.

- d. Remove Actuator Lock from motor and damper assembly by pulling it down.
 - e. Place lock on shelf above Disk Drive.
 - f. Switch OFF system power.
 - g. Connect power harness connector to J3 on Actuator PWA.
4. REPLACE LEFT SIDE COVER.

REPLACEMENT (Figure 3-8)

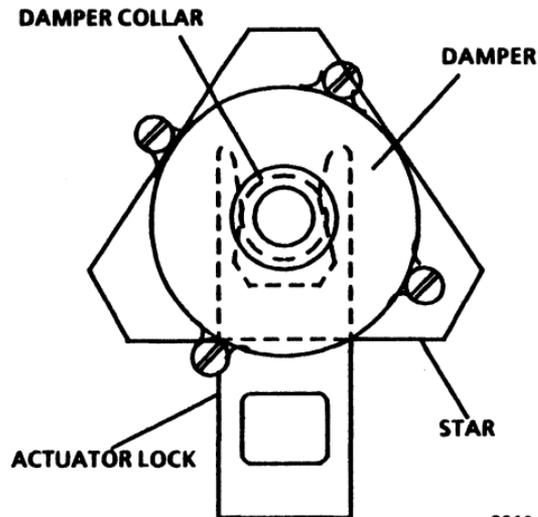
NOTE: Some 29MB Disk Drives are not equipped with Actuator Locks. Do not perform procedure if drive is without Actuator Lock feature. (See PL 4.2 for Actuator Lock part number.)

1. SWITCH OFF SYSTEM POWER.
2. REMOVE BOTH SIDE COVERS.
3. INSTALL ACTUATOR LOCK (FIGURE 3-8).
 - a. Disconnect power harness connector from J3 on Actuator PWA.
 - b. Switch ON system power.

CAUTION

Do not move Damper Assembly until disk speed has been reached (approximately five seconds after AC power is applied). Movement of heads without disk rotation may cause disk or head damage.

- c. Wait for disk to reach proper speed.
- d. Remove damper cover.



8010-055

Figure 3-8 Actuator Lock Installation

3. REPAIR DATA

ACTUATOR LOCK SPINDLE LOCK FIGURE 3-9

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- e. Rotate damper clockwise, and observe that actuator arm moves on disk.
- f. Wait for arm to stop.
- g. Install Actuator Lock between damper and star.
- h. Rotate damper clockwise until lock snaps into position on damper collar.
- i. Replace damper cover
- j. Switch OFF system power.
- k. Connect power harness connector to J3 on Actuator PWA.

4 REPLACE BOTH SIDE COVERS.

3.3.2 SPINDLE LOCK REF PL 4.2

REMOVAL (FIGURE 3-9)

- 1 REMOVE LEFT SIDE COVER.
- 2 REMOVE SPINDLE LOCK.
 - a. Remove spindle lock screw through the access hole in drive Belt Cover.
 - b. Place lock in storage hole, indicated by the label at bottom of frame.
- 3 REPLACE LEFT SIDE COVER.

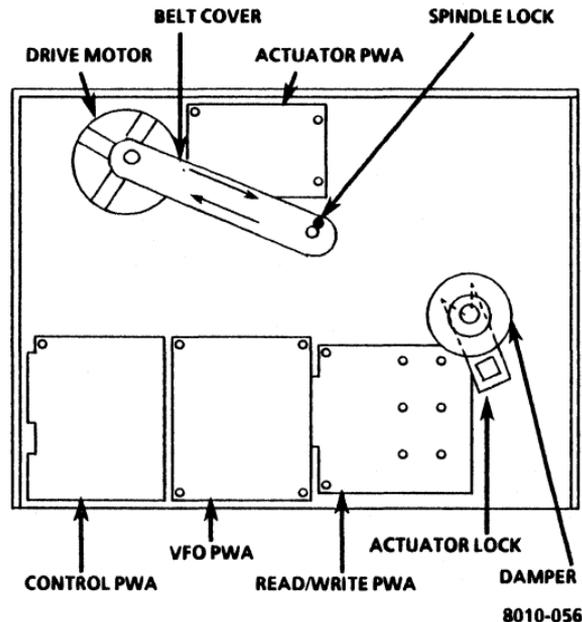


Figure 3-9 29MB Disk Drive Assembly

REPLACEMENT

CAUTION

DO NOT switch ON system power when spindle is locked.

1. SWITCH OFF SYSTEM POWER.
2. REMOVE LEFT SIDE COVER.
3. REMOVE DRIVE BELT COVER.

CAUTION

DO NOT rotate spindle in a counterclockwise direction. Disk and heads may be damaged.

4. INSTALL SPINDLE LOCK.
 - a. Rotate spindle slowly in a clockwise direction only until hole in pulley aligns with hole in casting.
 - b. Remove spindle lock screw from storage hole.
 - c. Insert spindle lock screw and tighten.
5. REPLACE DRIVE BELT COVER.
6. REPLACE LEFT SIDE COVER.

3.4 29MB DRIVE BELT REF PL 4.2

REMOVAL

1. SWITCH OFF SYSTEM POWER.
2. REMOVE LEFT SIDE COVER.
3. REMOVE DRIVE BELT COVER.

CAUTION

DO NOT rotate spindle in counterclockwise direction. Disk or heads may be damaged.

4. REMOVE DRIVE BELT.
 - a. Rotate spindle slowly in a clockwise direction only, and work belt off pulley.

REPLACEMENT

NOTE: Ensure that Drive Belt is installed with part number on outside.

1. REPLACE DRIVE BELT.
 - a. Perform removal procedure in reverse order.
 - b. Run ALAG.

3.5 29MB DRIVE MOTOR REF PL 4.2

REMOVAL (FIGURE 3-9)

1. SWITCH OFF SYSTEM POWER.
2. REMOVE BOTH SIDE COVERS.
3. INSTALL ACTUATOR LOCK
4. DISCONNECT POWER HARNESS CONNECTOR FROM J4 ON DRIVE MOTOR
5. REMOVE DRIVE BELT (3.4).

NOTE: Do not replace Drive Belt Cover.

6. INSTALL SPINDLE LOCK (REPLACEMENT 3.3.2).

3. REPAIR DATA

29MB DRIVE MOTOR

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7. REMOVE CAPACITOR FROM BRACKET.
 - a. Place small screwdriver under top edge of capacitor bracket.
 - b. To remove capacitor, carefully apply pressure with screwdriver, and pull on body of capacitor.
8. REMOVE DRIVE MOTOR.
 - a. Remove Drive Motor connector J4 from bracket.
 - b. Remove the two screws securing the motor relay to casting.

NOTE: Ensure that the insulating washers on both sides of motor mounts, are glued to casting or motor.

- c. Support the motor while removing the four mounting screws.
 - d. Remove Drive Motor assembly from casting.
9. REMOVE PULLEY.
 - a. Loosen the two set screws on Drive Motor pulley.
 - b. Remove pulley from motor shaft.
 - c. Keep pulley for use with new Drive Motor.

REPLACEMENT

1. REPLACE PULLEY
 - a. Align one set screw with flat side of motor shaft, and install pulley onto shaft.
 - b. Place 0.035 inch (0.88) shim between outer edges of pulley and motor.
 - c. Move pulley against shim, and tighten set screws.
 - d. Remove shim.

NOTE: Ensure that the insulating washers are on both sides of motor mounts, and that motor does not touch casting.

2. REPLACE DRIVE MOTOR.
 - a. Ensure that there are insulating washers glued to motor mounts or motor.
 - b. Support the motor while threading the capacitor, relay, and power connector J4 through hole in casting.
 - c. Install the four screws and four insulating washers, but do not tighten.

CAUTION

Do not apply too much torque to screws, or the insulating washers will split.

- d. Attach ohm meter leads to casting and motor.
 - e. Tighten the four screws and observe meter to ensure that motor does not touch casting.
 - f. Remove meter leads from motor and casting.
 - g. Position relay and replace the two screws securing it to the casting.
 - h. Install capacitor into bracket.
 - i. Install Drive Motor connector J4 into bracket.
3. REMOVE SPINDLE LOCK SCREW AND PLACE IN STORAGE.
4. REPLACE DRIVE BELT (3.4).
5. CONNECT POWER HARNESS CONNECTOR TO DRIVE MOTOR CONNECTOR J4.
6. REMOVE ACTUATOR LOCK (3.3.1).

- 7 RUN ALAG.
- 8 REPLACE BOTH SIDE COVERS

3.6 ACTUATOR PWA
REF PL 4.2

REMOVAL (FIGURE 3-9)

- 1 SWITCH OFF SYSTEM POWER.
- 2 REMOVE LEFT SIDE COVER.
- 3 REMOVE DRIVE BELT COVER.

CAUTION

Do not cause any disk movement by moving the drive belt.

- 4 REMOVE ACTUATOR PWA.
 - a. Remove J8 connector from Actuator PWA
 - b. Remove power harness connector from Actuator PWA J3
 - c. Remove the four screws securing PWA to casting.
 - d. Move PWA slightly to left and disconnect P9 and P10 from PWA.
 - e. Remove Actuator PWA.

REPLACEMENT (FIGURE 3-4)

- 1 INSTALL JUMPER ON ACTUATOR PWA.
 - a. Refer to Figure 3-4 and install jumper as shown.
- 2 REPLACE ACTUATOR PWA.
 - a. Perform removal procedure in reverse order.
- 3 SWITCH ON SYSTEM POWER.
- 4 RUN ALAG.

3.7 VFO PWA
REF PL 4.2

REMOVAL (FIGURE 3-9)

1. SWITCH OFF SYSTEM POWER.
2. REMOVE LEFT SIDE COVER.
3. REMOVE VFO PWA.
 - a. Release clips securing corners of PWA, and remove from mounting studs.
 - b. Disconnect P2 and P3 connectors from VFO PWA.

REPLACEMENT (FIGURE 3-5)

1. INSTALL JUMPERS ON VFO PWA.
 - a. Refer to Figure 3-5 and install jumpers as shown.
2. REPLACE VFO PWA.
 - a. Perform removal procedure in reverse order.
3. SWITCH ON SYSTEM POWER.
4. RUN ALAG.

3.8 CONTROL PWA
REF PL 4.2

REMOVAL (FIGURE 3-9)

1. REMOVE VFO PWA (3.7).
2. REMOVE CONTROL PWA.
 - a. Remove signal harness connector from J1 on Control PWA.
 - b. Disconnect harness from J7 on Control PWA.

3. REPAIR DATA

CONTROL PWA READ/WRITE PWA

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- c. Remove the four screws securing the PWA to casting.
- d. Move PWA to left, and disconnect from Read/Write PWA.
- e. If Control PWA is being replaced, remove the two ribbon cables from PWA.

- a. Remove the two screws on left side of Read/Write PWA.
- b. Remove the six screws from center of Read/Write PWA.

REPLACEMENT (FIGURES 3-1, 3-2, 3-3)

CAUTION

Jumpers on new Control PWA must be configured to match old Control PWA jumper locations BEFORE installation. Several Control PWAs are now in use. Ensure that the correct figure is referred to when verifying the jumper locations.

- a. Refer to figures 3-1, 3-2, and 3-3 and install jumpers as shown.
 - b. Remove any jumpers not shown in figures.
 - c. Add any jumpers necessary, as shown in figures.
- 2 REPLACE CONTROL PWA
 - a. Perform removal procedure in reverse order.
 - 3 SWITCH ON SYSTEM POWER.
 - 4 RUN ALAG.

3.9	READ/WRITE PWA REF PL 4.2
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REMOVAL (FIGURE 3-9)

- 1 REMOVE CONTROL PWA (3.8).
- 2 REMOVE DAMPER ASSEMBLY COVER.
- 3 REMOVE READ/WRITE PWA.

CAUTION
Do not pull head cables through seal. This will reduce slack inside the Disk Drive and prevent arms from moving properly.

- c. Carefully pull Read/Write PWA away from casting enough to reach behind PWA and disconnect cables.
 - d. Disconnect cables from component side of Read/Write PWA.
7. If rubber gasket adheres to Read/Write PWA, remove and replace around hole in casting.

REPLACEMENT (FIGURE 3-10)

NOTE: Cables are sequentially marked. P20 is at bottom, and P28 is at top.

1. REPLACE READ/WRITE PWA.
 - a. Ensure that rubber gasket is properly attached around hole in casting.
 - b. Carefully connect head cables on new PWA (Figure 3-10).
 - c. Push PWA against casting, ensuring that the wires are not caught between PWA and casting.
 - e. Replace the eight screws securing the Read/Write PWA to casting.

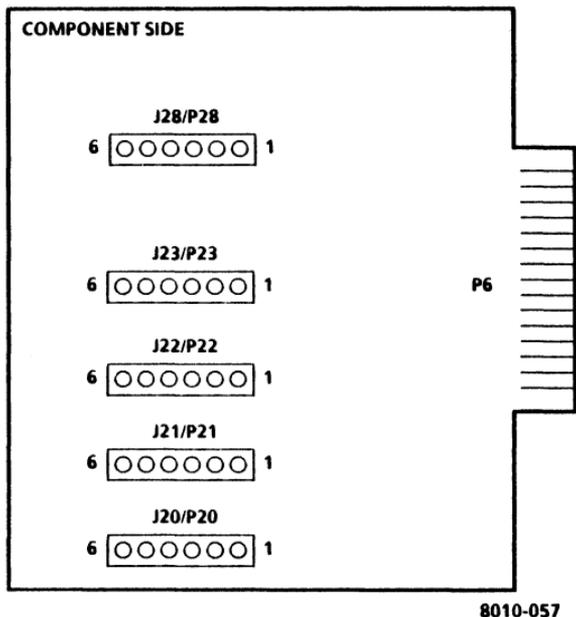


Figure 3-10 Read/Write PWA

2. REPLACE CONTROL PWA (3.8).
3. REPLACE VFO PWA (3.7).
4. SWITCH ON SYSTEM POWER
5. RUN ALAG.
6. REPLACE LEFT SIDE COVER.

3.10 DAMPER ASSEMBLY
REF PL 4.2

REMOVAL

1. SWITCH OFF SYSTEM POWER.
2. REMOVE BOTH SIDE COVERS.
3. REMOVE DAMPER ASSEMBLY.
 - a. Disconnect power harness connector J3 from Actuator PWA.
 - b. Switch ON system power.

CAUTION

DO NOT move Damper Assembly until disk speed has been reached (approximately five seconds after AC power is applied). Movement of the heads without disk rotation may cause disk or head damage.

- c. Remove damper cover
- d. Rotate damper counterclockwise until actuator arm is located against the outer stop.
- e. Loosen set screw securing the damper and collar to actuator motor shaft.
- f. Remove damper assembly from shaft.

REPLACEMENT

CAUTION

AC power must be applied while installing Damper Assembly.

1. REPLACE DAMPER ASSEMBLY.
 - a. Ensure that harness connector J3 is disconnected.
 - b. Switch ON system power.
 - c. Install Damper Assembly onto actuator motor shaft.

NOTE: Ensure that damper and collar are NOT in contact with actuator motor housing.

- d. Tighten set screw securing the damper to actuator motor shaft.
 - e. Replace damper cover.
 - f. Switch OFF system power
 - g. Connect power harness connector to J3 on Actuator PWA.
2. SWITCH ON SYSTEM POWER
3. RUN ALAG.
4. REPLACE BOTH SIDE COVERS

**CHAPTER 4 PARTS IDENTIFICATION
29MB DISK CONSOLE SERVICE MANUAL**



USO/XC ONLY

4. PARTS IDENTIFICATION
29MB CONSOLE MECHANICAL PARTS

USO/XC ONLY

29MB DISK CONSOLE
600P84228

PL 4.1 29MB CONSOLE MECHANICAL PARTS

ITEM	PART NO.	DESCRIPTION
1	2P81938	Cover, Top
2	NSC: 2P82011	Plate, Fan Cover
3	127P1275	Fan, Console
4	2581969	Cover, Rear (includes item 13)
5	NSC: 30P83957	Bracket, Drive Mounting
6	2581967	Cover, Side (includes item 13)
7	26P80475	Stud, Castor Locking
8	17P80207	Castor, Rear
9	3P1454	Clip, Quarter Turn Receptacle
10	17P80199	Castor, Front
11	2581968	Cover, Front (includes 12, 13)
12	NSC: 91P81325	Label, Logo
13	601S920	Kit, Quarter Turn Hardware
14	--	Stud, Quarter Turn (P/O item 13)
15	--	Spring, Ejector (P/O item 13)
16	--	Washer, Nylon (P/O item 13)
17	--	Retainer, Split Ring (P/O item 13)
18	NSC: 2P82021	Bezel, Front Cover
19	NSC: 29P80410	Nut, Speed

A	112W39710	Sems Screw (8-32 x 7/16)
B	112W75810	Sems Screw (1/4-20 x 1/2)
C	201W21802	Nut (1/4-20)
D	256W11402	Washer (1/4)
E	--	Screw (RX only)
F	--	Screw (RX only)

NSC: Call the Network Support Center to obtain parts.



Removal and Replacement 3.1, 3.2

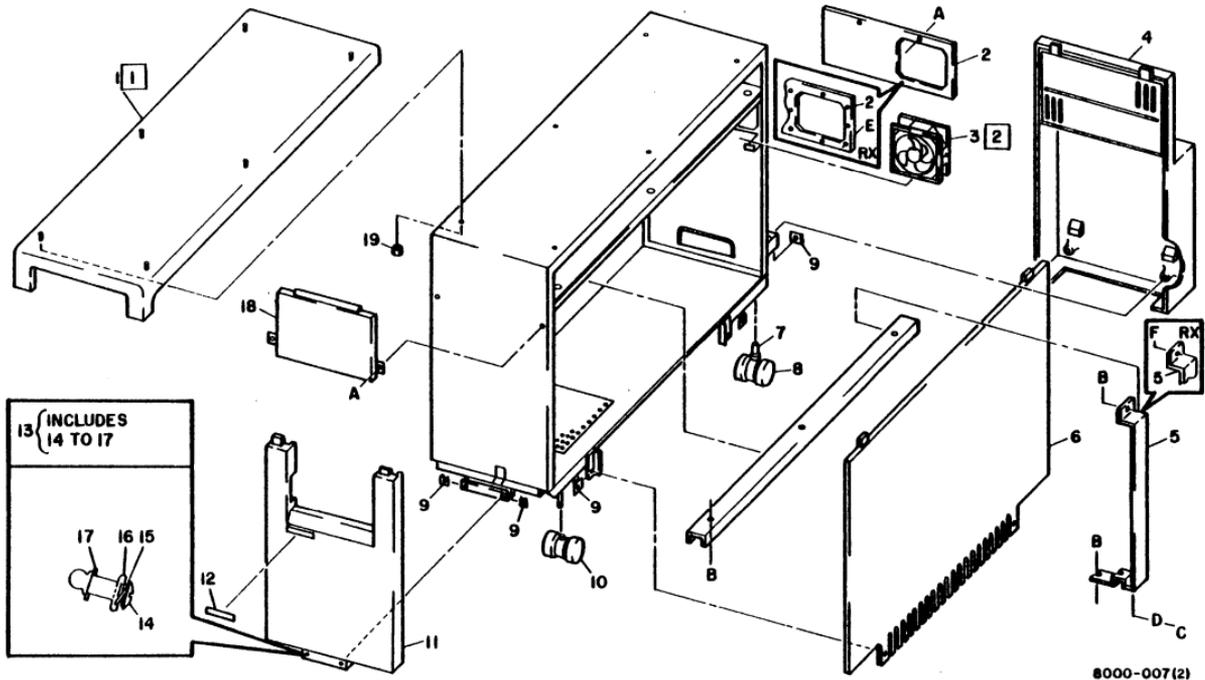


Figure 4-1 29MB Console Mechanical Parts

4. PARTS IDENTIFICATION
DISK DRIVE ASSEMBLY

USO/XC ONLY

29MB DISK CONSOLE
600P84228

PL 4.2 DISK DRIVE ASSEMBLY

ITEM	PART NO.	DESCRIPTION		
1	99P80929	Motor, 60Hz Drive	A	201W21802 Hex Nut (1/4-20)
2	82P80897	Drive Assembly, 29MB Disk	B	256W11402 Lockwasher (1/4)
3	99P80921	PWA, Actuator	C	256W10902 Lockwasher (No. 8)
4	99P81093	Harness, C-A	D	113W23002 Screw (8-32 x 5/8)
5	99P87543	Lock, Actuator (Note 1)	E	112W39610 Screw (8-32 x 3/8)
6	99P81095	Damper Assembly	F	113W22402 Screw (8-32 x 1/4)
7	99P87509	PWA, Read/Write	G	113W17208 Spindle Lock Screw (4-40 x 3/4)
8	99P87511	PWA, VFO	H	259W10502 Spindle Lock Lockwasher (No. 4)
9	99P81094	Harness, C-V	J	113W16602 Screw (4-40 x 3/8)
10	- -	Terminator (RX only)		
11	99P87510	PWA, Control		
12	NSC: 99P80924	Cover, Belt		
13	99P80925	Belt, 60Hz Drive		
14	NSC: 99P80927	Pulley, Belt		
15	99P81226	Kit, Belt Retainer		

NSC: Call the Network Support Center to obtain parts.

NOTE 1: Actuator lock may not be provided on all disk drives.



Removal and Replacement 3.1 to 3.10, inclusive.

4. PARTS IDENTIFICATION
29MB CONSOLE HARNESES

USO/XC ONLY

29MB DISK CONSOLE
600P84228

PL 4.3 29MB CONSOLE HARNESES

ITEM	PART NO.	DESCRIPTION		
1	152S25031	Cable W21, 29MB Signal (TAGS 3, 225)	A	112W36710 Screw (8-32 x 7/16)
	152S25030	Cable W21, 19MB Signal (alt.)	B	258W10902 Lockwasher (No. 8)
2	NSC: 19P20514	Clamp, Cable	C	-- Screw (RX only)
3	NSC: 19P20515	Clamp, Cable	D	-- Screw (RX only)
4	--	Block, Cable Tie (P/O item 1)		
5	152S25440	Cable W20, 29MB Power	NSC:	Call the Network Support Center to obtain parts.
6	--	Cover, Rear Cable (RX only)		
7	--	Clamp, Cable (RX only)		

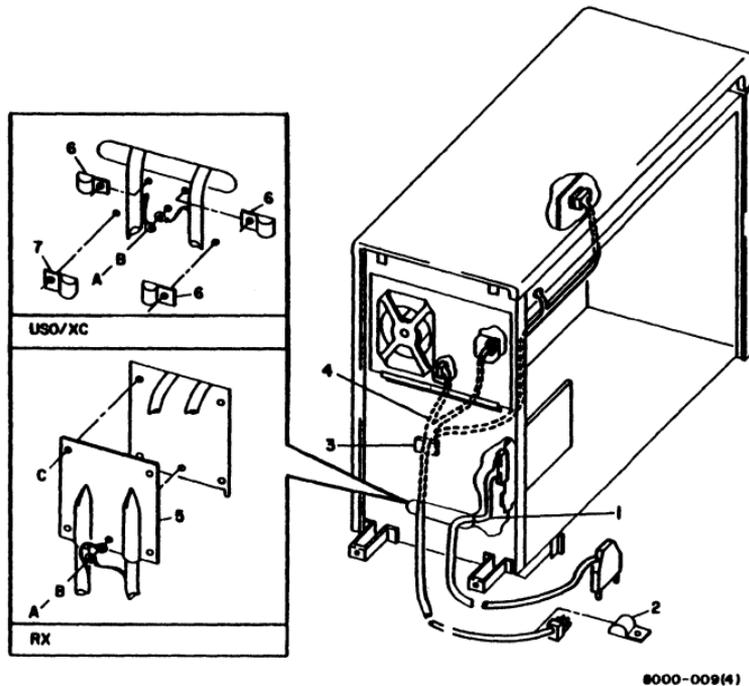


Figure 4-3 29MB Console Harnesses

**CHAPTER 5 PRINT/DISPLAY QUALITY
29MB DISK CONSOLE SERVICE MANUAL**

REFER TO APPROPRIATE SERVICE MANUAL

**CHAPTER 6 TROUBLESHOOTING
29MB DISK CONSOLE SERVICE MANUAL**



INTRODUCTION

Service Strategy

The steps required for isolation of faults in the 8000 Network System, are provided in the sequence below. These steps are described in detail in the 8000 Processor Service Manual. Instructions for using diagnostics are provided in the 8000 Network Systems Diagnostics Handbook.

- 1 Perform Level 01 Troubleshooting, using the Level 01 Troubleshooting Flowchart.
- 2 Perform the Level 1 Checkout procedure.
- 3 Perform any Level 2 Check Chart procedures indicated by Level 1 Checkout.
- 4 USO only. If necessary, ask for assistance from the Region Engineering Specialist (RES) or the Network Support Center (NSC).
- 5 RX only. If necessary, ask for assistance from the Technical Specialist.

Information obtained during fault isolation (in the 8000 Processor Service Manual) may refer you to this manual or other manuals.

Use the appropriate amount of time (determined by the local Branch Manager) to troubleshoot a problem. Then, if a correction cannot be made, ask for assistance.

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
6.01	29MB DISK FAULTS				
1.	Lower the VFO PWA. The following voltages, at the Control PWA, are within tolerance:	Control PWA J6 (Figure 6-1)			
a.	5.2V	Pin J	Step 1b	Step 2	
b.	-5.2V	Pin E	Step 1c	Step 2	
CAUTION					
When checking the 24V at Pin 22, switch OFF power, and connect E-Z hook meter lead to Pin 22 lead on the Control PWA (Figure 6-1). Switch ON power.					
c.	24V	Pin 22	Step 1d	Step 2	
d.	12V	Pin B	Check Chart 6.02	Step 2	

<u>VOLTAGE TOLERANCES</u>		
<u>Voltage</u>	<u>Xerox 600T860</u>	<u>Digital Meter</u>
5.2V	4.8 to 5.6	5.02 to 5.38
-5.2V	-4.8 to -5.6	-5.02 to -5.38
-12V	-11.0 to -13.0	-11.4 to -12.6
12V	11.0 to 13.0	11.4 to 12.6
24V	22.0 to 26.0	22.8 to 25.2

6. TROUBLESHOOTING
FIGURE 6-1

29MB DISK CONSOLE
600P84228

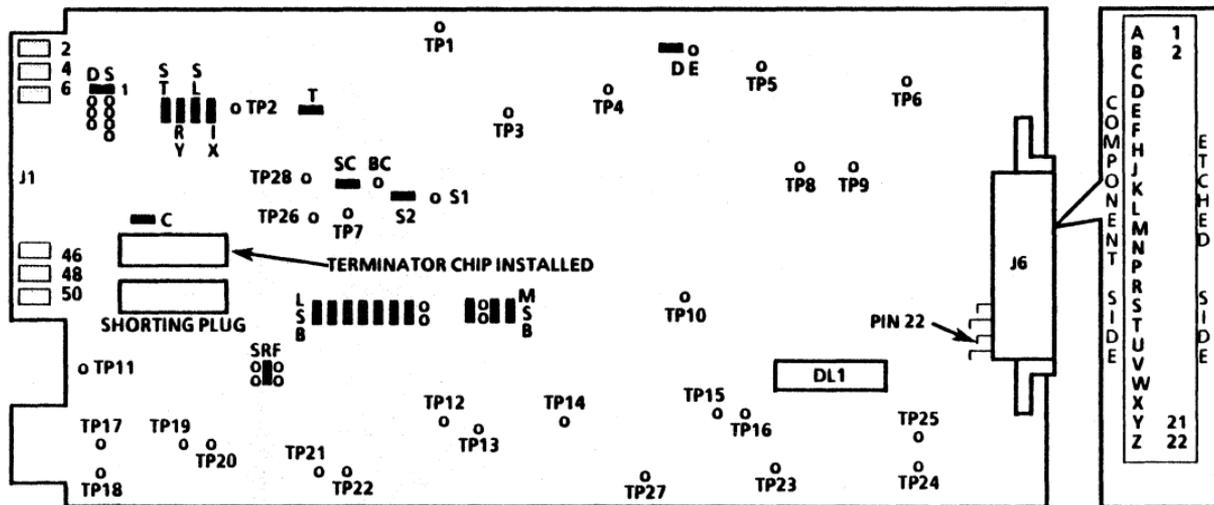


Figure 6-1 Control PWA (Version A)

8010-014

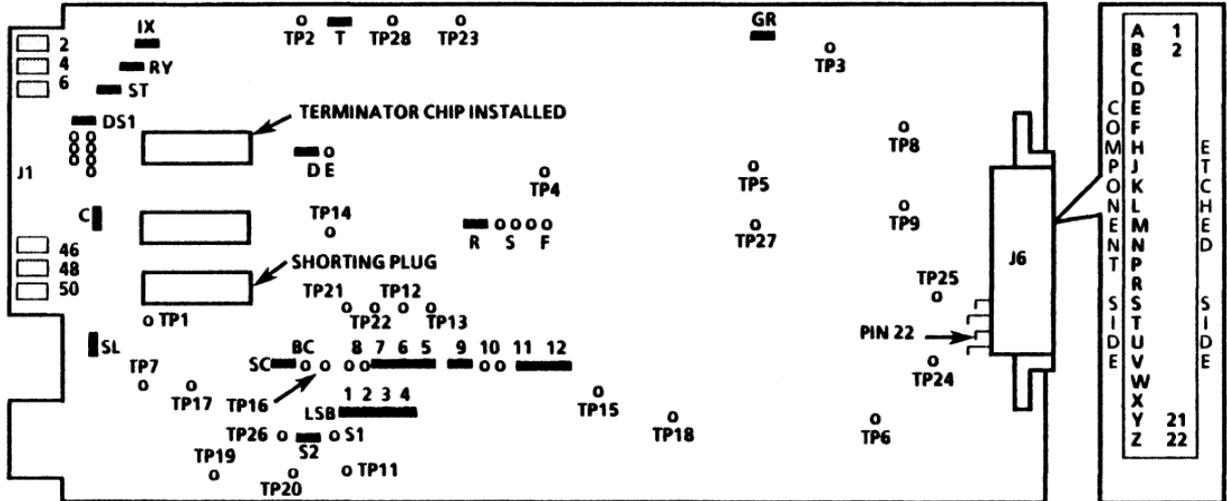


Figure 6-2 Control PWA (Version B)

8010-015

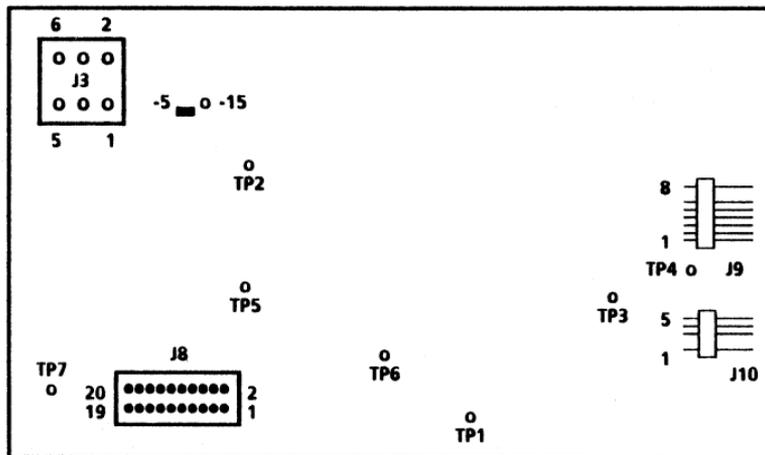


Figure 6-3 Actuator PWA

8010-016

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
2.	Disconnect C-A (ribbon) Harness connector J8 from Actuator PWA. <u>All</u> of the following voltages are within tolerance:	Actuator PWA J8 (Figure 6-3)	Replace C-A Harness. If problem still exists, replace Control PWA.	Step 3	
	a. 5.2V	Pin 8			
	b. 5.2V	Pin 10			
	c. 5.2V	Pin 12			
	d. 5.2V	Pin 14			
	e. -5.2V	Pin 16			
	f. 24V	Pin 19			
	g. 24V	Pin 20			
	h. 12V	Pin 18			
3	<u>All</u> of the following voltages are within tolerance:	Actuator PWA J3 (Figure 6-3)	Replace Actuator PWA	Replace 29MB Power Cable	Power
	a. 5.2V	Pin 5			
	b. -5.2V	Pin 4			
	c. 24V	Pin 1			

VOLTAGE TOLERANCES		
Voltage	Xerox 600T860	Digital Meter
5.2V	4.8 to 5.6	5.02 to 5.38
-5.2V	-4.8 to -5.6	-5.02 to -5.38
-12V	-11.0 to -13.0	-11.4 to -12.6
12V	11.0 to 13.0	11.4 to 12.6
24V	22.0 to 26.0	22.8 to 25.2

6. TROUBLESHOOTING
CHECK CHARTS 6.02

29MB DISK CONSOLE
600P84228

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
------	-----------	------------	---------	------------	-----------

6.02 DISK MP FAULT CODE

CAUTION

Performing the following steps with P43 connected to the HSIO PWA will write over, and therefore destroy, customer files.

NOTE: When P43 is disconnected from the HSIO PWA, the system cannot determine if there is a 29MB, 42MB, or 10MB Disk Drive installed. Since the 10MB Data Wrap Around test does not require the Disk Drive to be connected this is the test you should select.

- | | | | |
|--|--------|---|------------------|
| <p>1. Disconnect P43 <u>only</u> from HSIO PWA. Run ALAG. Upon the completion of Test 0316, press STOP key on 8010 Workstation or BREAK key on Server Terminal. When the MP reaches 0399, type a d. When MP reaches 0799, type an s then 31, then press return. Test ran successfully (MP = 0799).</p> | Visual | Step 2 | Replace HSIO PWA |
| <p>2. Connect P43 to HSIO PWA. Locate the original MP Code from the list below, and access the specified Check Chart.</p> | Visual | | |
| <p>a. 1611 to 1618, inclusive
 b. 1631 to 1636, inclusive
 c. 1641 to 1643, inclusive
 d. 1671 or 1672
 e. 1713
 f. 1741, 1742, or 1791
 g. None of the above</p> | | <p>Check Chart 6.02.1
 Check Chart 6.04
 Check Chart 6.05
 Check Chart 6.03
 Check Chart 6.06
 Check Chart 6.07
 See MP Code List in Processor Service Manual</p> | |

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
6.02.1 DISK NOT READY					
1	Drive Motor is running.	Visual	Step 2	Check Chart 6.02.2	
2	Disk is spinning.	Visual	Step 3	Check Chart 6.02.4	
NOTE: Use Logic Probe 600T1580 for all measurements.					
3	Verify that DS jumper is in the correct location at DS1, then logon using xerox and cixcos for name and password. Enter the Isolation Tools . Select Drive Select - Dynamic - Frequency: 1000 . Logic Probe indicates pulses.	Control PWA DS Jumper (Figure 6-1 or 6-2)	Step 4	Check Chart 6.02.3	
NOTE: Test selected in Step 3 should still be running while performing Step 4.					
4	Measure the Control PWA jumper RY. Probe indicates pulses.	Control PWA RY Jumper (Figure 6-1 or 6-2)	Step 5	Check Chart 6.02.5	
5	Measure HSIO PWA. Probe indicates pulses.	HSIO PWA J43-22	Replace HSIO PWA	Step 6	
6	Disconnect P1 from Processor Connector Panel J2 and J1 from the Control PWA. 29MB Signal Cable has continuity.	29MB Signal Cable J1-F to P1-12	Step 7	Replace Cable	29MB Signal Cable

6. TROUBLESHOOTING
CHECK CHARTS 6.02.1, 6.02.2, 6.02.3

29MB DISK CONSOLE
600P84228

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
7	Disconnect J43 from HSIO PWA. 29MB Interface Harness has continuity.	29MB Interface Harness J2-12 to J43-22	Replace in order: Control PWA HSIO PWA	INDICATION	Replace 29MB Interface Harness
6.02.2 NO MOTOR DRIVE					
1.	Voltage at Drive Motor is as follows: <u>USO</u> . 103 to 127 VAC <u>RX</u> . 193 to 264 VAC	Drive Motor J4-1 to 3	Replace Drive Motor	INDICATION	Check the 29MB Power Cable; replace bad cable
6.02.3 NO DRIVE SELECT					
1	Press STOP on 8010 Workstation or BREAK on Server Terminal. Select Drive Select - Dynamic - Frequency 1000. Measure HSIO PWA with Logic Probe 600T1580. Probe indicates pulses.	HSIO PWA J43-26	Step 2	INDICATION	Replace HSIO PWA
2	Disconnect P1 from Processor Connector Panel J2 and J1 from the Control PWA. 29MB Signal Cable has continuity.	29MB Signal Cable J1-J to P1-16	Step 3	INDICATION	Replace 29MB Signal Cable
3.	Disconnect J43 from HSIO PWA. 29MB Interface Harness has continuity.	29MB Interface Harness J2-16 to J43-26	Replace in order: Control PWA HSIO PWA	INDICATION	Check 29MB Interface Harness connector for loose pins; replace bad harness

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION INCORRECT
6.02.4 MECHANICAL ISOLATION				
1.	Verify that Spindle Lock Screw and Actuator Lock are removed.	Visual	Step 2	Remove Lock Screw and Actuator Lock (Procedures 3.3.1 and 3.3.2)
2.	Verify that pulley is correctly installed.	Visual	Step 3	Tighten or replace pulley
3.	Verify that Drive Belt is correctly installed.	Visual	Replace in order: Control PWA HSIO PWA	Install Drive Belt

6.02.5 LOGIC NOT READY

NOTE: Lower the VFO PWA to access the Control PWA. Place two sheets of paper under VFO PWA to prevent an electrical short from PWA to disk console frame.

1.	Measure the Control PWA with Logic Probe 600T1580. Probe shows a high indication.	Control PWA TP 8 (Figure 6-1 or 6-2)	Replace in order: R/W PWA Control PWA If problem still exists, call for assistance.	Replace Control PWA
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6. TROUBLESHOOTING
CHECK CHARTS 6.03, 60.3.1

29MB DISK CONSOLE
600P84228

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
6.03 LOGIC FAULT					
1	Measure the Control PWA with Logic Probe 600T1580. Probe shows a high indication.	Control PWA TP 21 (Figure 6-1 or 6-2)	Check Chart 6.03.1	Replace in order: R/W PWA Control PWA If problem still exists, call for assistance.	
6.03.1 CONTROL FAULT					
1	Run Fault Analysis. After an MP Code is displayed, Logic Probe 600T1580 shows a low indication.	Control PWA TP 22 (Figure 6-1 or 6-2)	Step 2	Replace in order: R/W PWA Control PWA If problem still exists, call for assistance.	
2	Measure the Control PWA with Logic Probe, 600T1580. Probe shows a high indication.	Control PWA TP 12 (Figure 6-1 or 6-2)	Step 3	Check Chart 6.02.1	
3	Measure the Control PWA with Logic Probe, 600T1580. Probe shows a low indication.	Control PWA TP 13 (Figure 6-1 or 6-2)	Step 4	Replace in order: R/W PWA Control PWA If problem still exists, call for assistance.	

STEP	PROCEDURE	TEST POINT	INDICATION	
			CORRECT	INCORRECT
4.	Measure the Control PWA with Logic Probe 600T1580. Probe shows a low indication.	Control PWA J1-30 (Figure 6-1 or 6-2)	Replace HSIO PWA	Step 5
5.	Disconnect P1 from Processor Connector Panel J2 and J1 from the Control PWA. 29MB Signal Cable has continuity.	29MB Signal Cable P1-34 to J1-U	Step 6	Replace 29MB Signal Cable
6.	Disconnect J43 from HSIO PWA. 29MB Interface Harness has continuity.	29MB Interface Harness J2-34 to J43-44	Replace Control PWA	Check 29MB Interface Harness connector for loose pins; replace bad harness

6.04	TRACK SEEK INCOMPLETE
-------------	------------------------------

- | | | | | |
|---|--|---|--------|---|
| 1. | Enter the Isolation Tools. Select Step Pulses - Frequency 1000 - Inward . Measure SC Jumper on the Control PWA with Logic Probe 600T1580. Probe shows pulsing indication. | Control PWA SC Jumper (Figure 6-1 or 6-2) | Step 2 | Replace in order:
Actuator PWA
C-A Harness
Control PWA
HSIO PWA |
| NOTE: Test selected in Step 1 should still be running while performing Step 2. | | | | |
| 2. | Measure C Jumper on the Control PWA with Logic Probe 600T1580. Probe shows pulsing indication. | Control PWA C Jumper (Figure 6-1 or 6-2) | Step 3 | Replace Actuator PWA |

6. TROUBLESHOOTING
CHECK CHARTS 6.04, 6.05

29MB DISK CONSOLE
600P84228

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
NOTE: Test selected in Step 1 should still be running while performing Step 3.					
3	Measure HSIO PWA with Logic Probe 600T1580. Probe shows pulsing indication.	HSIO PWA J43-8	Replace HSIO PWA	Replace 29MB Signal Cable	
6.05 RESTORE ERRORS					
1	Enter the Isolation Tools Select Step Pulses - Frequency 1000 - Outward. When test stops, Logic Probe 600T1580 shows a high indication (heads at track 00).	Actuator PWA J10-1 (Figure 6-3)	Step 2	Check Chart 6.6	
2	Measure Actuator PWA with Logic Probe 600T1580. Probe shows a high indication.	Actuator PWA TP3 (Figure 6-3)	Replace in order: Control PWA Actuator PWA HSIO PWA If problem still exists, call for assistance.	Replace Actuator PWA. If problem still exists, call for assistance.	

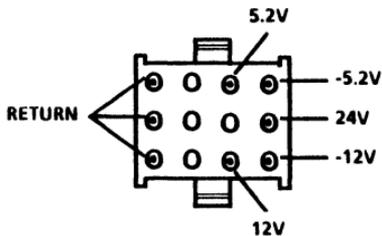
STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION INCORRECT
6.06 SEEK ERRORS				
1.	Enter the Isolation Tools. Select Step Pulses - Frequency 1000 - Inward. Measure Actuator PWA with Logic Probe 600T1580. Probe shows a high indication, pulsing low.	Actuator PWA TP5 (Figure 6-3)	Step 2	Step 4
2.	Verify that heads are moving. (Repeat Step 1, selecting Outward, if necessary.)	Visual	Step 3	Replace Actuator PWA. If problem still exists, call for assistance.
3.	Original MP code was 1713.	Visual	Replace in order: Control PWA Actuator PWA HSIO PWA C-A Harness 29MB Signal Cable Damper Assembly If problem still exists, call for assistance.	Replace in order: Actuator PWA Damper Assembly If problem still exists, call for assistance.
4.	Measure the Control PWA with Logic Probe 600T1580. Probe shows pulsing indication.	Control PWA J1-26 (Figure 6-1 or 6-2)	Replace in order: Control PWA C-A Harness Actuator PWA	Step 5

6. TROUBLESHOOTING
CHECK CHARTS 6.06, 6.07, 6.08, 6.09

29MB DISK CONSOLE
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STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
5.	Measure HSIO PWA with Logic Probe 600T1580. Probe shows pulsing indication.	HSIO PWA J43-36 (Harness connected)	Replace 29MB Cable	Signal	Replace in order: HSIO PWA 29MB Signal Cable
6.07 WRITE ERRORS					
1	Run Fault Analysis. When 1740 is on the MP, measure Write Data Pattern on Control PWA with Logic Probe 600T1580. Probe shows data flow (High lamp lit steady, and Low lamp pulsates).	Control PWA TP17 (Figure 6-1 or 6-2)	Replace in order: R/W PWA VFO PWA HSIO PWA		Replace in order: Control PWA HSIO PWA 29MB Signal Cable
6.08 COOLING FAN					
1	Voltage at Fan is as follows: <u>USO</u> 103 to 127 VAC <u>RX</u> 193 to 264 VAC	Fan Connector P2-1 to 2	Replace Fan		Replace 29MB Power Cable
6.09 RIGID DISC DRIVE LOADING					
1	Connect J1 to rear of Processor and disconnect J3 from Actuator PWA. Voltage in question is within tolerance.	Test Connector to RTN	Step 2		Replace 29MB Power Cable.

STEP	PROCEDURE	TEST POINT	CORRECT	INDICATION	INCORRECT
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8010-009

Figure 6-4 Test Connector

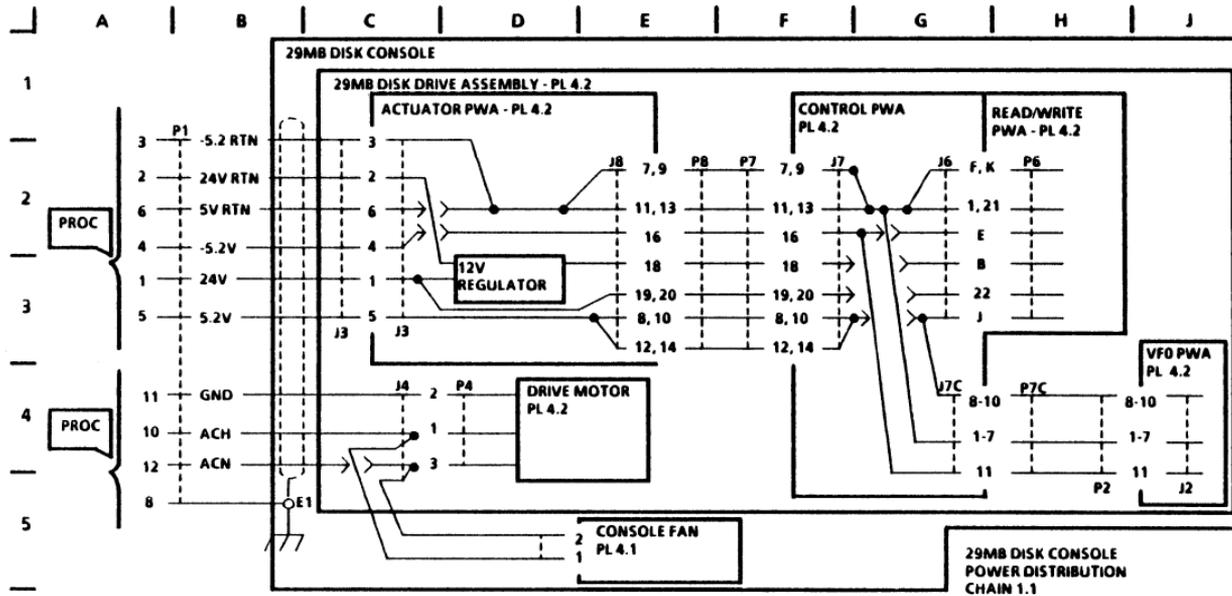
- | | | | | | |
|----|--|-----------------------|--------|--|----------------------|
| 2. | Connect J3 to Actuator PWA. Disconnect J8 from Actuator PWA. Voltage in question is within tolerance. | Test Connector to RTN | Step 3 | | Replace Actuator PWA |
| 3. | Connect J8 to Actuator PWA. Disconnect J7 from the Control PWA. Voltage in question is within tolerance. | Test Connector to RTN | Step 4 | | Replace C-A Harness |

6. TROUBLESHOOTING
CHECK CHART 6.09

29MB DISK CONSOLE
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STEP	PROCEDURE	TEST POINT	INDICATION	
			CORRECT	INCORRECT
4.	Connect J7 to the Control PWA. Disconnect right hand C-V (ribbon) Harness from bottom of the Control PWA and J6 from the Control PWA. Voltage in question is within tolerance.	Test Connector to RTN	Step 5	Replace Control PWA
5	Connect C-V (ribbon) Harness to the Control PWA. Disconnect J2 from VFO PWA. Voltage in question is within tolerance.	Test Connector to RTN	Step 6	Replace C-V Harness
6	Connect J2 to VFO PWA. Voltage in question is within tolerance.	Test Connector to RTN	Step 7	Replace VFO PWA
7	Connect J6 to the Control PWA. Voltage in question is within tolerance.	Test Connector to RTN	Return to Level 1	Replace R/W PWA

<u>VOLTAGE TOLERANCES</u>		
<u>Voltage</u>	<u>Xerox 600T860</u>	<u>Digital Meter</u>
5.2V	4.8 to 5.6	5.02 to 5.38
-5.2V	-4.8 to -5.6	-5.02 to -5.38
-12V	-11.0 to -13.0	-11.4 to -12.6
12V	11.0 to 13.0	11.4 to 12.6
24V	22.0 to 26.0	22.8 to 25.2



8010-048

Figure 6-5 Chain 1.1 29MB Disk Console Power Distribution

**CHAPTER 7 PLUG/JACK LIST
29MB DISK CONSOLE SERVICE MANUAL**

7. PLUG/JACK LIST

INTRODUCTION HARNESS IDENTIFICATION PLUG/JACK LOCATIONS WIRING DATA CONNECTOR IDENTIFICATION

29MB DISK CONSOLE
600P84228

7.1 INTRODUCTION

Harnesses for the 29MB Disk Console are each identified with an alphanumeric code (W00). These harness codes are defined in Section 7.2. The codes are used on plug/jack location diagrams.

In Section 7.3, a plug/jack location diagram (Figure 7-1) is provided to show actual locations of plugs and jacks. Each plug/jack is identified by harness code and plug/jack name.

Section 7.4 provides illustrations of the wiring data for each harness. The wiring data illustrations (Figures 7-2 and 7-3) use letter codes, within a hexagonal symbol, which identify related connector diagrams.

Pin location diagrams for various types of connectors are provided in Section 7.5. The diagrams (Figures 7-4 to 7-8, inclusive) show pin side view of the connectors.

7.2 HARNESS IDENTIFICATION

W20 29MB Power Cable
W21 29MB Signal Cable

7.3 PLUG/JACK LOCATIONS

Refer to Figure 7-1 for illustration of plug/jack locations and identification.

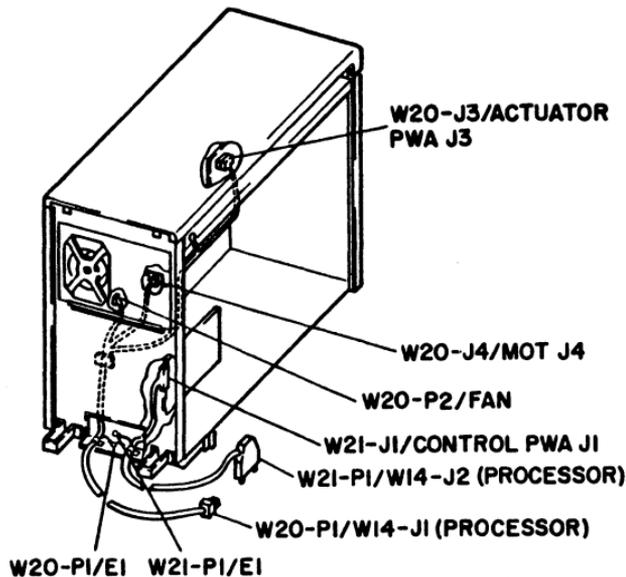
7.4 WIRING DATA

Refer to Figures 7-2 and 7-3 for illustrations of the wiring data for each harness.

7.5 CONNECTOR IDENTIFICATION

Refer to Figures 7-4 to 7-8, inclusive, for pin location diagrams for various types of connectors used on harnesses. The diagrams show pin side view of connectors.

29MB DISK CONSOLE
600P84228



8000-085(1)

Figure 7-1 29MB Disk Console Plug/Jack Locations

7. PLUG/JACK LIST PLUG/JACK LOCATIONS WIRING DATA - W20

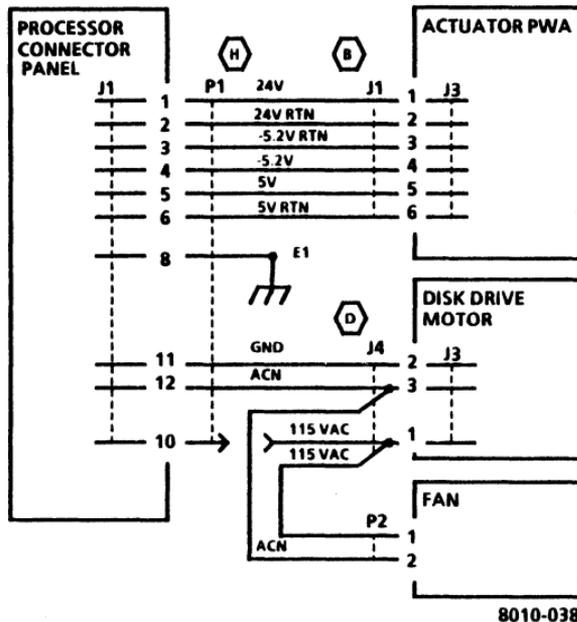


Figure 7-2 29MB Power Cable - W20

7. PLUG/JACK LIST
WIRING DATA - W21

29MB DISK CONSOLE
600P84228

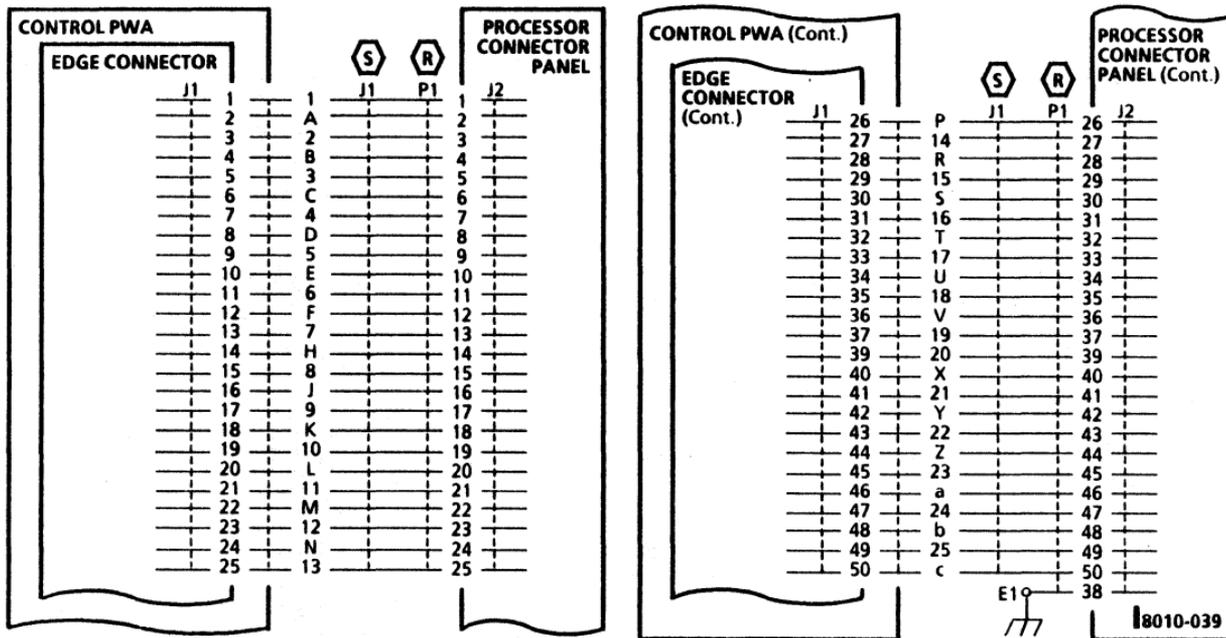
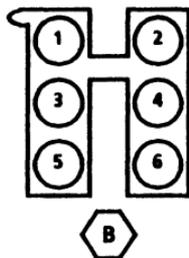
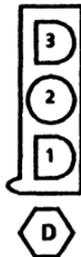


Figure 7-3 29MB Signal Cable - W21



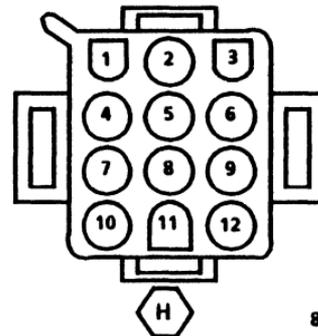
8010-040

Figure 7-4 Connector Type B



8010-041

Figure 7-5 Connector Type D

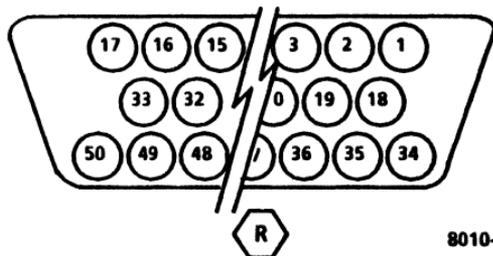


8010-042

Figure 7-6 Connector Type H

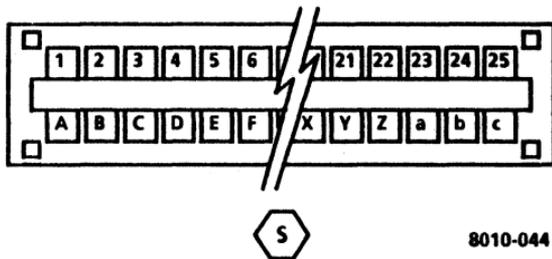
7. PLUG/JACK LIST
CONNECTOR IDENTIFICATION TYPES R, S

29MB DISK CONSOLE
600P84228



8010-043

Figure 7-7 Connector Type R



8010-044

Figure 7-8 Connector Type S

**CHAPTER 8 PRINCIPLES OF OPERATION
29MB DISK CONSOLE SERVICE MANUAL**

REFER TO 8000 SERIES REFERENCE MANUAL





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