VOLUME A02 MACHINE 4381- -0010900 MODEL R03 SYSTEM 0000LBH MODE SCHED SHIP 84/10/30

LOGIC TYPE -0- SYSTEMS DIAGRAMS DOC COUNTER

PAGE NUM	SH	TITLE	PART NUM	EC NUM	FEATURE B/M OR B/MS
BA001			0006169373	A20558	.W. 0002676380
BA005		PR0001	0006169066	A20558	.W. 0002676380
BA010		PR0011	0006169067	A20560	.W. 0002676380
BA015		PR0021	0006169068	A20558	.W. 0002676380
BA020		PR0031	0006169069	A20560	.W. 0002676380
BA025		PR0041	0006169070	A20558	.W. 0002676380
BA030		PR0051	0006169071	A20562	.W. 0002676380
BA035		PR0061	0006169072	A20562	.W. 0002676380
BA040		PR0071	0006169073	A20562	.W. 0002676380
BA045		PR0081	0006169074	A20558	.W. 0002676380
BA050		PR0091	0006169075	A20558	.W. 0002676380
BA055		PR0101	0006169076	A20560	.W. 0002676380
BA060		PR0111	0006169077	A20558	.W. 0002676380
BA065		PR0121	0006169078	A20558	.W. 0002676380
BA070		PR0131	0006169079	A20558	.W. 0002676380
BA075		PR0141	0006169080	A20558	.W. 0002676380
BA080		PR0151	0006169081	A20558	.W. 0002676380
BA085		PR0161	0006169082	A20558	.W. 0002676380
BA090		PR0171	0006169083	A20558	.W. 0002676380
BA095		PR0181	0006169084	A20558	.W. 0002676380
BA100		PR0191	0006169085	A20560	.W. 0002676380
BA105		PR0201	0006169086	A20558	.W. 0002676380
BA110		PR0211	0006169087	A20558	.W. 0002676380
BA115		PR0221	0006169088	A20558	.W. 0002676380
BA120		PR0231	0006169089	A20558	.W. 0002676380
BA125		PR0241	0006169090	A20558	.W. 0002676380
BA130		PR0251	0006169091	A20562	.W. 0002676380
BA135		PR0261	0006169092	A20558	.W. 0002676380
BA140		PR0271	0006169093	A20558	.W. 0002676380
BA145		PR0281	0006169094	A20558	.W. 0002676380
BA150		PR0291	0006169095	A20558	.W. 0002676380
BA155		PR0301	0006169096	A20560	.W. 0002676380
BA160		PR0311	0006169097	A20562	.W. 0002676380
BA165		PR0321	0006169098	A20560	.W. 0002676380
BA170		PR0331	0006169099	A20560	.W. 0002676380
BA175		PR0341	0006169100	A20558	.W. 0002676380
BA180		PR0351	0006169101	A20562	.W. 0002676380
BA185		PR0361	0006169102	A20562	.W. 0002676380
BA190		PR0371	0006169103	A20562	.W. 0002676380
BA195		PR0381	0006169104	A20562	.W. 0002676380
BA200		PR0391	0006169105	A20562	.W. 0002676380
BA205		PR0401	0006169106	A20562	.W. 0002676380
BA210		PR0411	0006169107	A20562	.W. 0002676380
BA215		PR0421	0006169108	A20562	.W. 0002676380
BA220		PR0431	0006169109	A20562	.W. 0002676380
BA225		PR0441	0006169110	A20562	.W. 0002676380
BA230		PR0451	0006169111	A20558	.W. 0002676380
BA235		PR0461	0006169112	A20558	.W. 0002676380
BA240		PR0471	0006169113	A20558	.W. 0002676380
BA245		PR0481	0006169114	A20562	.W. 0002676380
BB005		PR0901	0006169115	A20558	.W. 0002676380

TOTAL PART NUMBERS THIS VOLUME 51

IBM® Maintenance Information

4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI
MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION
SAFETY INDEX TERMS/ ABBREVIATIONS INTRODUCTION START PU REPAIR CHNL REPAIR MSS REPAIR END OF REPAIR	PWR REPAIR (HWS AND MBC) PR 001 THRU PR 999	PWR REPAIR (PROC) PR 1001 THRU PR 13 XX	PWR REPAIR (PROC) PR 1401 THRU PR 18 XX	PWR REPAIR (PROC) PR 1901 THRU PR 5001	SERVICE AIDS	LOCATIONS TOOLS REMOVAL/ REPLACEMENT PREVENTIVE MAINTENANCE DIAGNOSTICS LOGS SYSTEM TEST INSTALLATION SAFETY INSP	CONSOLE FUNCTIONS MESSAGES
VOL A01	VOL A02	VOL A03	VOL A04	VOL A05	VOL A06	VOL A07	VOL A08

4381 Processor Maintenance Information

4381 B/M 2676380	MI Seq BA001	PN 6169373 2 of 2	EC A20558 01 Oct 84				

Basic Power (Hardware Sequence) Repair Procedure

Have you been directed to this repair procedure because you have a basic power problem.

DO NOT REPAIR DEFECTIVE FRUS

Step	Conditions	Instructions	Comments
1	Is PCC CB1 or CB2 tripped?	Go to page PR 011.	
2	Is the 24 Volt indicator off?	Go to page PR 021.	
3	Is the 5 Volt indicator off?	Go to page PR 031.	
4	Is the MBC On indicator off?	Go to page PR 041.	
5	Are you here to fix a convenience outlet problem?	Go to page PR 401 (Convenience Outlet).	
6	Are you here to fix an OCP or service panel indicator failure?	Go to page PR 371 (Lamp Test). Go to page PR 481 (Miscellaneous Indicator Failures).	Go to Lamp Test first.
7	Are you here to fix a hex display indicator failure?	Go to page PR 381 (see note). **Note:** A two digit power code is not an indicator failure.	
8	Are you here to fix an OCP or service panel failure? or Does CE Mode fail to turn on the test indicator on console line twenty-two?	OCP: Go to page PR 391. Service panel: Go to page PR 441. **Note:** MSS or PU power must be on for the test indicator to display.	Any switch or pushbutton failure.
9	Are you here to fix a power off problem?	Go to page PR 421.	Processor fails to power off.
10	Go to **Instructions** column.	1. Record the service panel indicators. 2. Record the service panel hex display. 3. Press Check Reset.	
11	Do you have an A0 or 0A power code displayed?	Go to page PR 151.	PS102 CP tripped.
12	Do you have a 1A, A1, 2A, or A2 power code displayed?	Go to page PR 261.	-5V UV 01A-A2 board.
13	Do you have a 3A, A3, 4A, or A4 power code displayed?	Go to page PR 271.	-12V UV 01A-A2 board.

Step	Conditions	Instructions	
14	Do you have a 5A, A5, 6A, or A6 power code displayed?	Go to page PR 281.	+5V UV 01A-A2 board.
15	Do you have a 7A, A7, 0B, or B0 power code displayed?	Go to page PR 291.	+8.5V UV 01A-A2 board.
16	Do you have a 1B, B1, 2B, or B2 power code displayed?	Go to page PR 301.	+12V UV 01A-A2 board.
17	Do you have a 3B or B3 power code displayed?	Go to page PR 311.	+24V to 01A-A2 board.
18	Do you have a 4B or B4 power code displayed?	Go to page PR 321.	AFS103 Failure.
19	Do you have a 5B or B5 power code displayed?	Go to page PR 331.	AFS104 Failure.
20	Go to **Instructions** column.	Press the operator control panel Lamp Test switch; the following indicators should be on: **Service Panel** Power In Process Power Complete I/O Power Hold MBC On. **OCP** Power In Process Power Complete Basic Check.	
21	Did lamp test fail?	Go to page PR 371 (Lamp Test).	
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on.	
23	Is hex display other than 00000?	Go to page PR 381.	
24	Is hex display 00000?	1. Trip PS102 CP1. 2. Reset PS102 CP1.	
25	Is hex display other than 0A or A0?	Go to page PR 381.	

Step	Conditions	Instructions	
26	Is hex display 0A or A0?	1. Press the Check Reset. 2. Ensure FUNC1 is installed in diskette drive 1. 3. Set the CE Mode switch to CE Mode. 4. Press service panel Power On and enter the time and date when requested. 5. Wait 30 seconds.	
27	Do you have an A0 or 0A power code displayed?	Go to page PR 151.	PS102 CP tripped.
28	Do you have a 1A, A1, 2A, or A2 power code displayed?	Go to page PR 261.	-5V UV 01A-A2 board.
29	Do you have a 3A, A3, 4A, or A4 power code displayed?	Go to page PR 271.	-12V UV 01A-A2 board.
30	Do you have a 5A, A5, 6A, or A6 power code displayed?	Go to page PR 281.	+5V UV 01A-A2 board.
31	Do you have a 7A, A7, 0B, or B0 power code displayed?	Go to page PR 291.	+8.5V UV 01A-A2 board.
32	Do you have a 1B, B1, 2B, or B2 power code displayed?	Go to page PR 301.	+12V UV 01A-A2 board.
33	Do you have a 3B or B3 power code displayed?	Go to page PR 311.	+24V to 01A-A2 board.
34	Do you have a 4B or B4 power code displayed?	Go to page PR 321.	AFS103 failure.
35	Do you have a 5B or B5 power code displayed?	Go to page PR 331.	AFS104 failure.
36	Do you have a two-digit power code that is not listed in the steps 28 through 36?	Go to hex display on page PR 381.	
37	Is the Partial Power Up/Down (QWW) screen displayed?	Go to step 40.	MBC and MSS power is OK.
38	Do you have a five-digit MSS Code of '00000'?	Go to page PR 411 (Power On Failure).	
39	Go to **Instructions** column.	Go to page START 001.	
40	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UC (power-up processor and I/O).	
41	Do you have a 1x Ref Code displayed?	Go to page PR 1001.	
42	Do you have a Ref Code other than 1x?	Go to page START 001.	
43	Is power complete?	Go to Volume 1, page END 001.	Power is OK.
44	Go to **Instructions** column.	Invoke your support structure.	

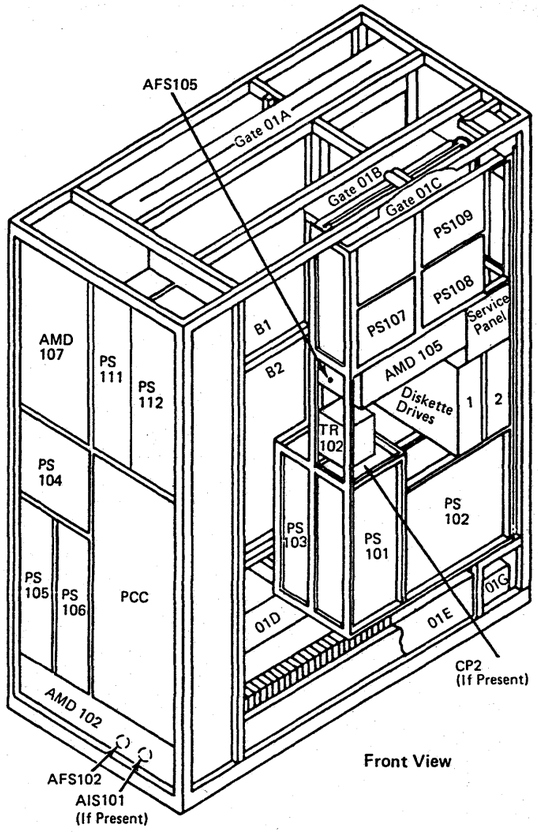
Mainline CB Tripped

You are here because PCC CB1 or CB2 is tripped indicating a short in the ac distribution.

Possible causes:

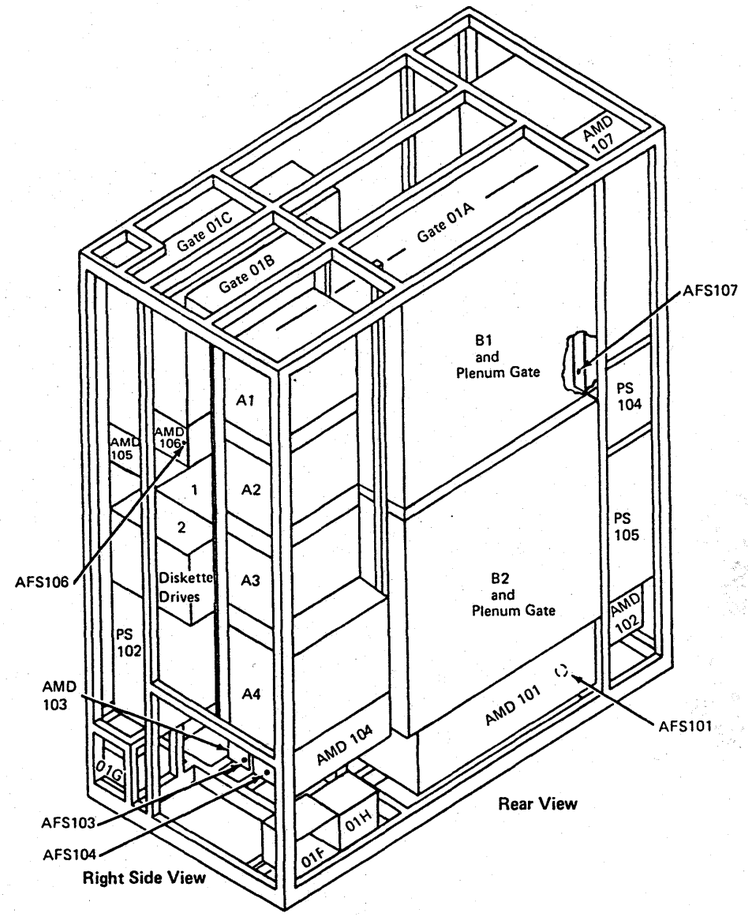
- PS101
- PS102
- PS104
- AMD101 through AMD107
- TR100 through TR103
- PCC CB1
- PCC CB2
- Diskette drive 1 or 2.

Step	Conditions	Instructions
1	Is CB2 tripped?	1. Reset CB2. 2. Ensure CE Mode switch is set to Normal. 3. Press service panel Power On. 4. If power is complete, go to page END 001. 5. If CB2 trips, go to step 51.
2	Is CB1 tripped?	1. Reset CB1. 2. Press service panel Power On. 3. If power is complete, go to page END 001. 4. Set CE Mode switch to CE Mode. 5. Set PCC CB1 and CB2 off. 6. Disconnect cables at PCC J/P02, J/P04, J/P05, J/P06, J/P07, J/P08, J/P10, and J/P11. 7. Set PCC CB1 and CB2 on.
3	Is CB1 tripped?	Short in PCC. 1. Use YA pages to isolate the short to one of the following nets: PCC TB1 to F1 and K01 PCC TB1 to F2 and TR101 PCC TB1 to K02 and K03 PCC CB1 to TB1 PCC CB1. 2. Exchange defective FRU. 3. Go to step 63.
4	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P02. 3. Set PCC CB1 and CB2 on.



Front View

Left Side View



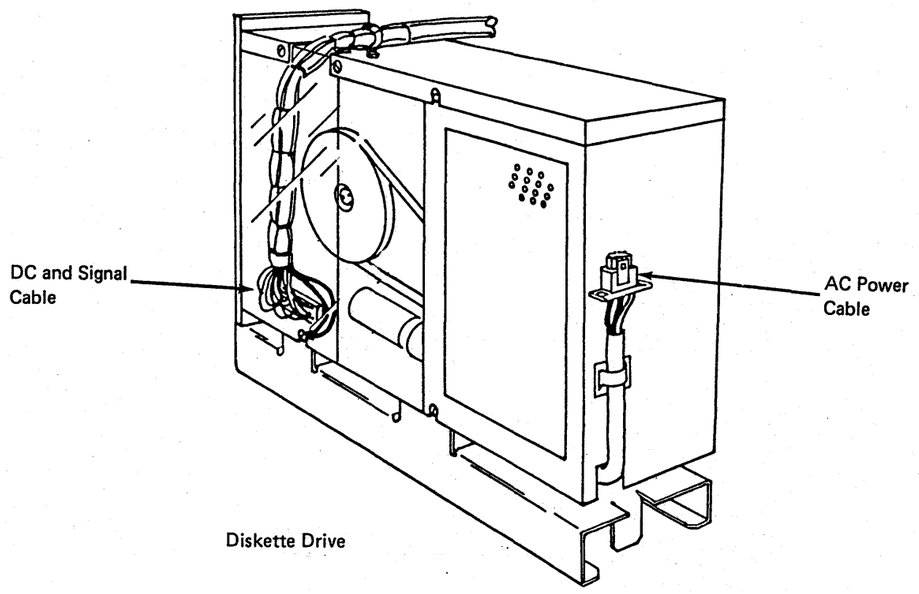
Rear View

Right Side View

Step	Conditions	Instructions
5	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Also suspect shorted cable from PCC J/P02 to PS101 J/P07. 4. Go to step 63.
6	Go to **Instructions** column.	Press service panel Power On.
7	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange shorted cable from PCC K02 to PCC J/P04, J/P05, J/P06, and J/P07. 3. Go to step 63.
8	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P04. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
9	Is CB1 in the On position?	Go to step 13.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS102 J/P02. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
11	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Also suspect short in cable from PCC J/P04 to TR102. 4. Go to step 63.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 63.

Step	Conditions	Instructions
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P05. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
14	Is CB1 in the On position?	Go to step 20.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD103 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
16	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD103. 3. Go to step 63.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD104 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
18	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD104. 3. Go to step 63.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P05 to AMD103 and AMD104. 3. Go to step 63.
20	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P06. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
21	Is CB1 in the On position?	Go to step 25.
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect ac cable at diskette drive 1. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
23	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P06 to diskette drive 1. 3. Go to step 63.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange diskette drive 1. 3. Go to step 63.

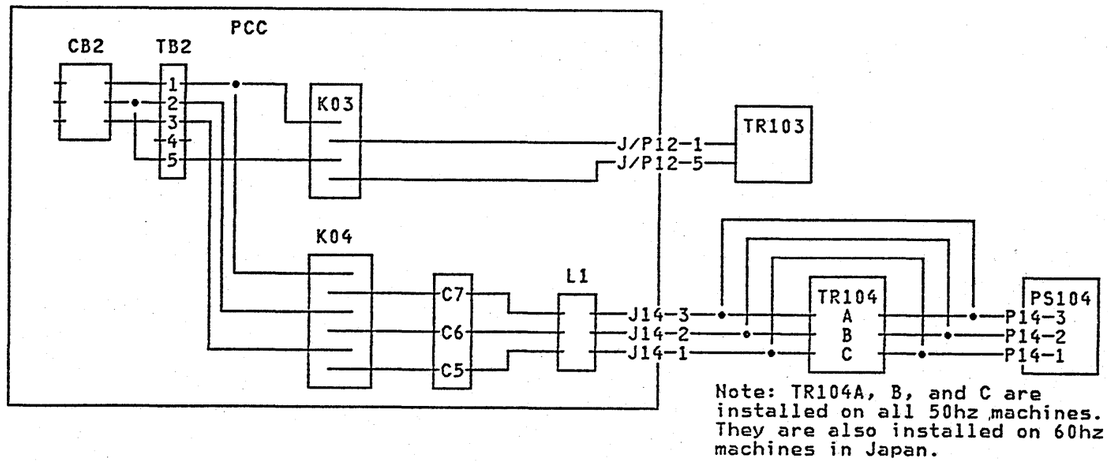
Step	Conditions	Instructions
25	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P07. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
26	Is CB1 in the On position?	Go to step 30.
27	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect ac cable at diskette drive 2. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
28	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P07 to diskette drive 2. 3. Go to step 63.
29	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange diskette drive 2. 3. Go to step 63.
30	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Nornal. 2. Set CE Mode switch to Normal. 3. Press service panel Power On.
31	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC K03 to PCC J/P08, J/P10, and J/P11. 3. Go to step 63.
32	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P08. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
33	Is CB1 in the On position?	Go to step 39.
34	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD102 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.



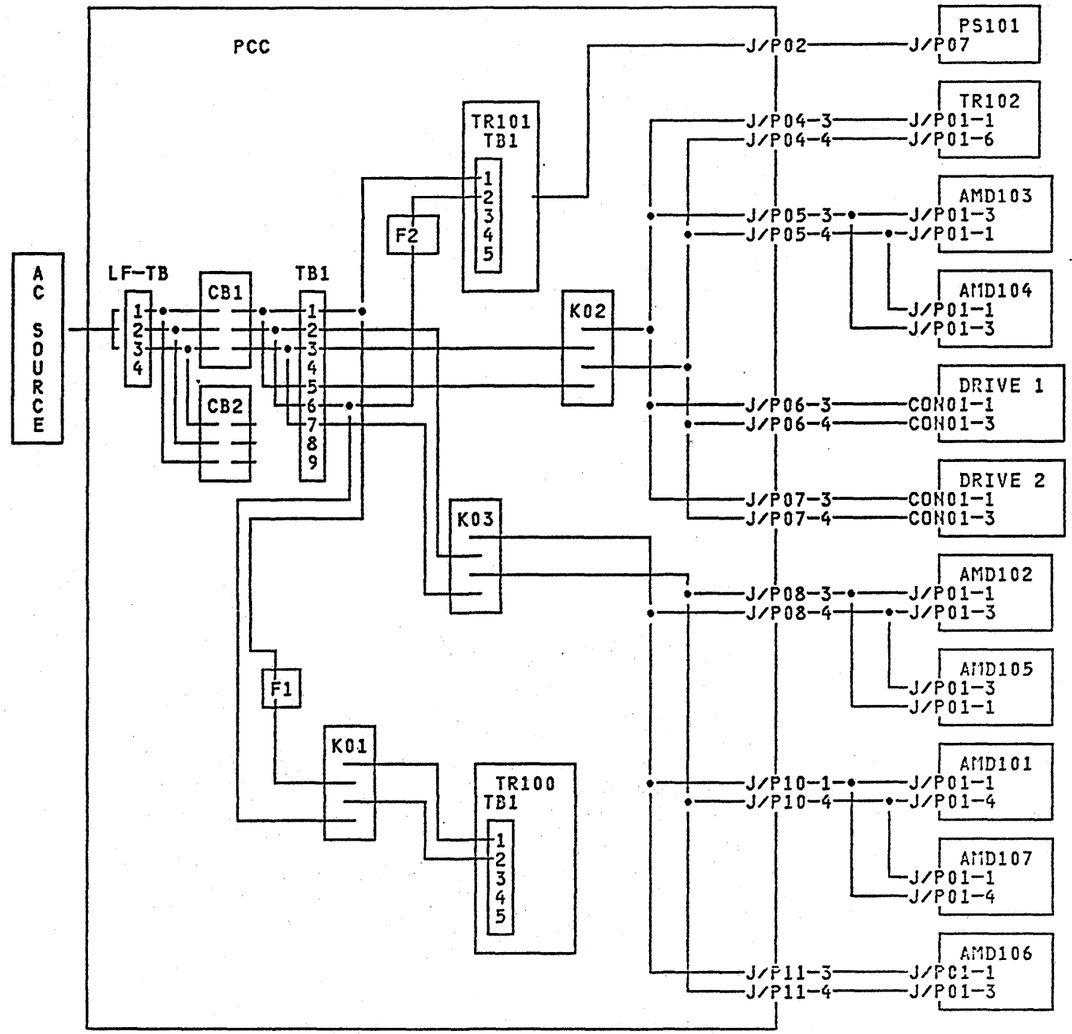
Step	Conditions	Instructions
35	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD102. 3. Go to step 63.
36	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD105 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
37	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD105. 3. Go to step 63.
38	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P08 to AMD102 and AMD105. 3. Go to step 63.
39	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P10. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
40	Is CB1 in the On position?	Go to step 46.
41	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD101 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
42	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD101. 3. Go to step 63.
43	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD107 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
44	Is CB1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD107. 3. Go to step 63.
45	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P10 to AMD101 and AMD107. 3. Go to step 63.
46	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P11. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
47	Is CB1 in the On position?	Go to step 63.
48	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AMD106 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
49	Is CB1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P11 to AMD106 J/P01. 3. Go to step 63.
50	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AMD106. 3. Go to step 63.
51	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PCC J/P12 and J/P14. 3. Set PCC CB1 and CB2 on.
52	Is CB2 tripped?	Short in the PCC. 1. Set PCC CB1 and CB2 off. 2. Use YA pages to isolate short to one of the following nets: PCC CB2 to PCC TB2 PCC TB2 to PCC K03 PCC TB2 to PCC K04 PCC CB2. 3. Exchange defective FRU. 4. Go to step 63.
53	Go to **Instructions** column.	Press service panel Power On.
54	Is CB2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC K03 to PCC J/P12. 3. Go to step 63.
55	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PCC J/P12. 3. Disconnect cable at TR103 J/P01. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
56	Is CB2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P12 to TR103 J/P01. 3. Go to step 63.

PR 014

Step	Conditions	Instructions
57	Is CB2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange TR103. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR103. 3. Go to step 63.
58	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Select Diagnostic Power Up (QWD) screen. 3. Select option B (stop after K04 picked).
59	Is CB2 tripped?	Short in the PCC. 1. Set PCC CB1 and CB2 off. 2. Use YA pages to isolate to one of the following nets: PCC K04 to C5, C6, and C7 PCC J/P14 to inductor L1 PCC C5, C6, and C7 to inductor L1. 3. Exchange defective FRU. 4. Go to step 63.
60	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Reconnect cable at PCC J/P14. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option B (stop after K04 picked).
61	Is CB2 tripped and TR104A, B, and C are installed?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange shorted TR104A, B, or C. **Note:** Check for shorted or pinched wires before exchanging transformer. 4. Go to step 63.
62	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.



Step	Conditions	Instructions
63	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101, PS102 AMD101, AMD102 AMD103, AMD104 AMD105, AMD106, AMD107 Diskette drive 1 Diskette drive 2 PS103, TR103 TR104A, B, C PS104. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



PR 016

+24 Volt Indicator

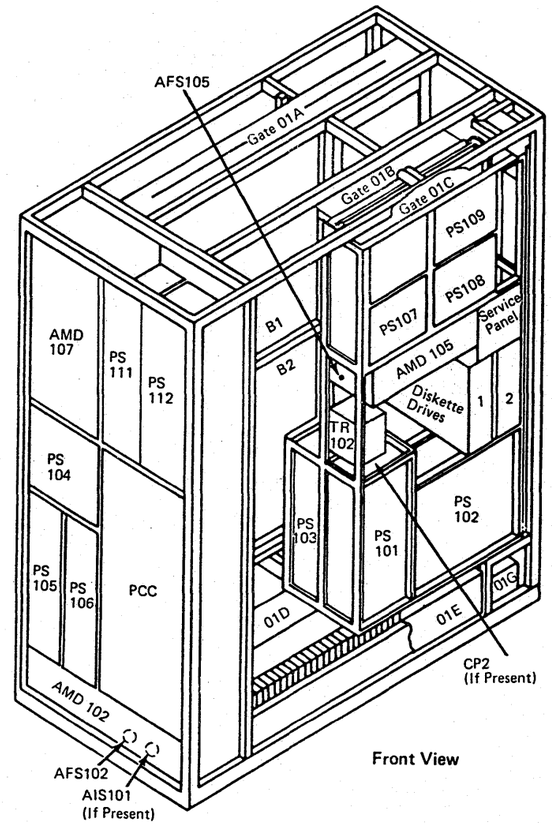
The service panel +24 Volt indicator not on indicates +24 Vdc missing or out of tolerance at 01A-A1 board.

Possible causes:

- PS101
- Open in +24 Vdc distribution
- PCC F2
- PCC TR101
- Service panel.

Some PS101 outputs are active when PCC CB1 and CB2 and Unit Emergency Only switch are on and customer line voltage is present at PCC.

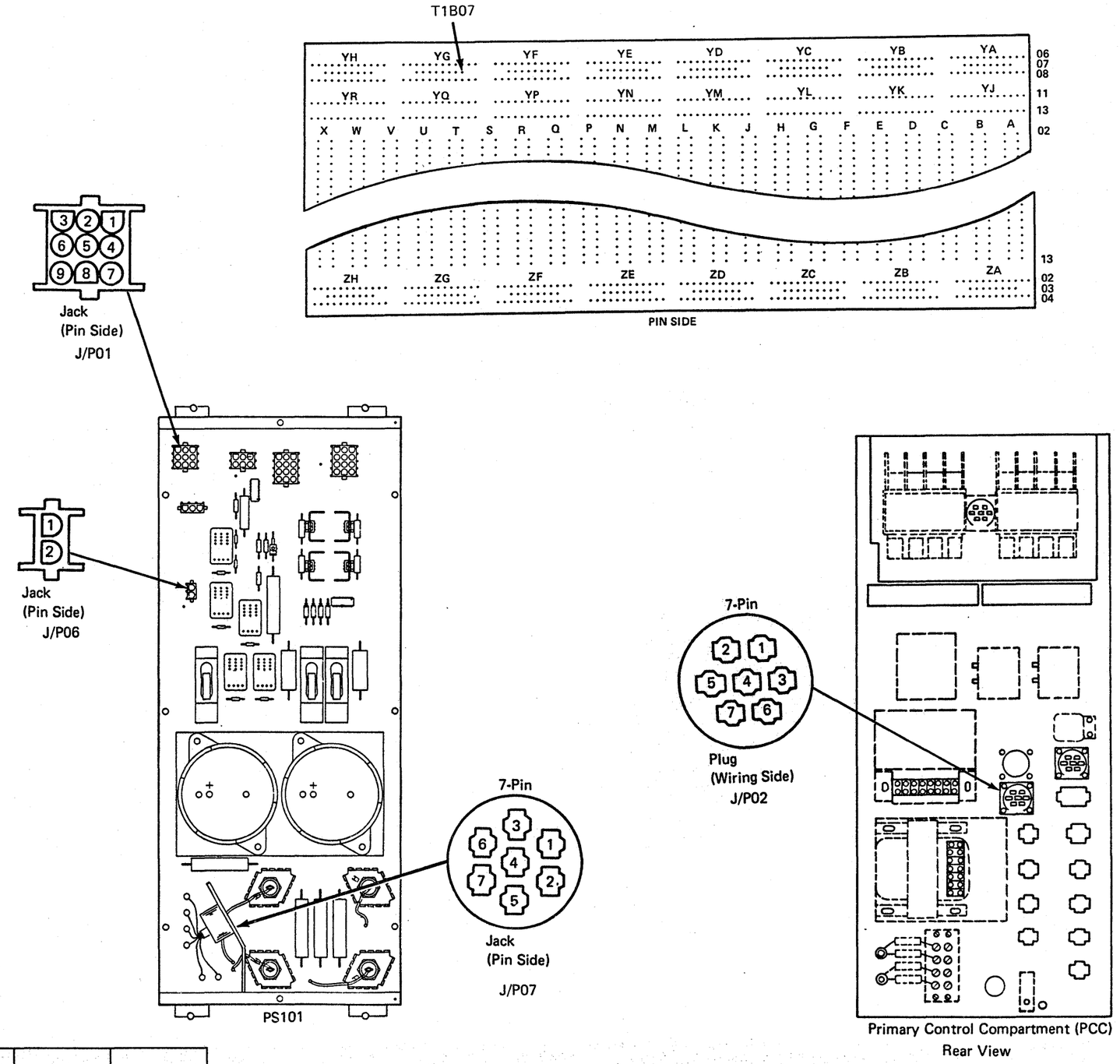
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Ensure the Unit Emergency Only switch is in the Power Enable position. 3. Check for open PCC F2. 4. Reset any tripped PS101 CP.
2	Is PCC F2 good?	1. Set PCC CB1 and CB2 on. 2. Go to step 4.
3	Is PCC F2 open?	1. Exchange F2. 2. Set PCC CB1 and CB2 on.
4	Is the 24 Volt indicator on?	Go to step 32.
5	Is PS101 CP1 tripped?	Go to page PR 051.
6	Is PS101 CP2 tripped?	Go to page PR 051.
7	Is PS101 CP3 tripped?	Go to page PR 141.
8	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X4D12.
9	Is voltage greater than 22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check for open cable from 01A-A1X4D12 and D13 to service panel connector A1D12 and D13 before exchanging service panel. 3. Go to step 32.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1T1B07.



Front View

Left Side View

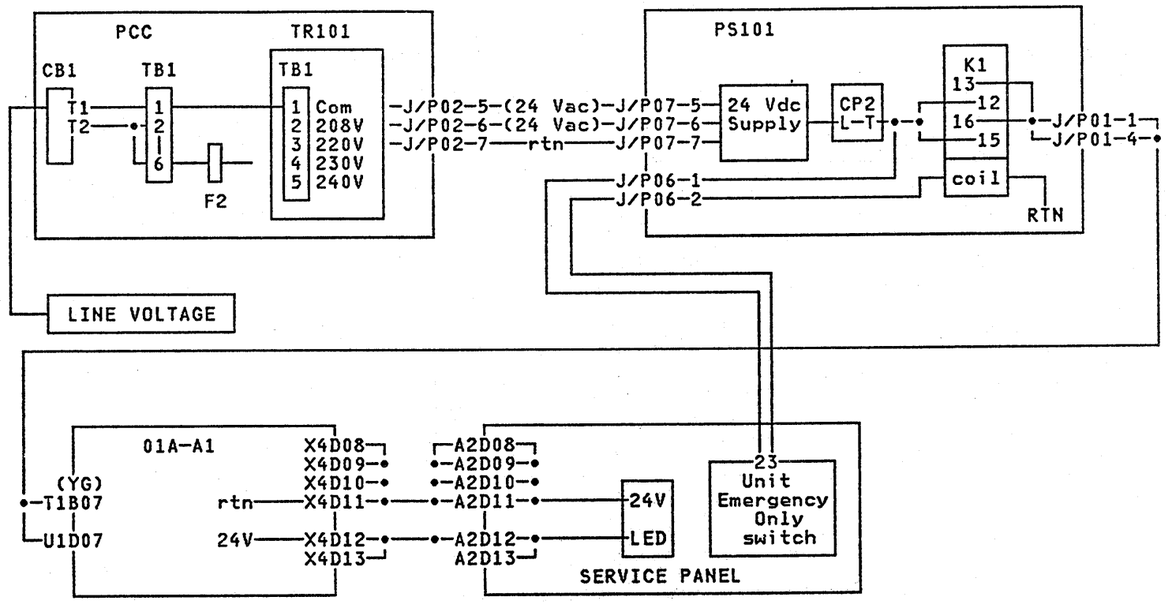
Step	Conditions	Instructions
11	Is voltage greater than 22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P01-1 or + lead at PS101 J/P01-4.
13	Is voltage greater than 22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS101 J/P01 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 32.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P06-1.
15	Is voltage less than +22 Vdc?	Go to step 23.
16	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P06-2.
17	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 32.
18	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at Unit Emergency Only switch pin 3.



Step	Conditions	Instructions
19	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P06 to Unit Emergency Only switch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 32.
20	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at Unit Emergency Only switch pin 2.
21	Is voltage less than 22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange Unit Emergency Only switch. 3. Go to step 32.
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P06 to Unit Emergency Only switch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 32.
23	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS101 J/P07. 3. Set PCC CB1 and CB2 on. 4. Measure for +24 **Vac** at the following points: PS101 P07-5 to 7 PS101 P07-6 to 7 (cable end).
24	Is voltage greater than 22 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 32.
25	Is voltage less than 22 **Vac** at either point?	Measure for 24 **Vac** at the following points: PCC J/P02-5 to 7 PCC J/P02-6 to 7.

Step	Conditions	Instructions
26	Is voltage greater than 22 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P02 to PS101 J/P07. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 32.
27	Is voltage less than 22 **Vac** at either point?	Measure for line voltage at the following points: - lead at PCC CB1 T1 + lead at PCC CB1 T2. **Note:** For line voltage value, see label on PCC box.
28	Is line voltage missing?	1. Isolate to one of the following: Customer supplied power Defective line cord Defective PCC CB1. 2. Exchange defective FRU. 3. Go to step 32.
29	Is line voltage present?	Measure for line voltage at the following points: PCC TR101 TB1-1 to 2 (208) PCC TR101 TB1-1 to 3 (220) PCC TR101 TB1-1 to 4 (230) PCC TR101 TB1-1 to 5 (240). **Note:** For line voltage value, see label on PCC box.
30	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange PCC TR101. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR101. 3. Go to step 32.
31	Is line voltage missing?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PCC TB1 and PCC TR101 TB1. **Note:** Check wiring at PCC TB1 and PCC TR101 TB1 before exchanging cable. 3. Go to step 32.

Step	Conditions	Instructions
32	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 01A-A1 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



+5 Volt Indicator

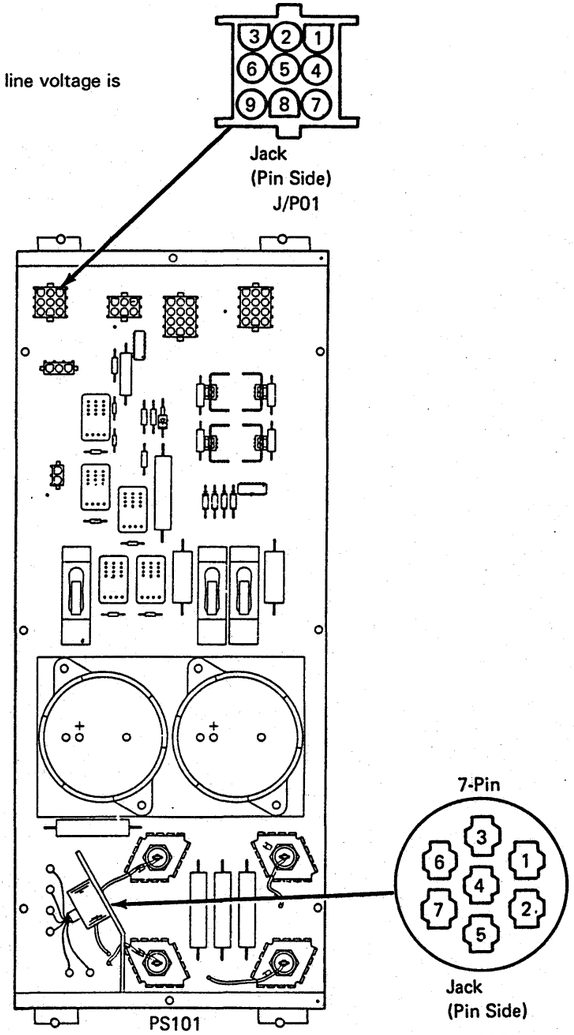
The service panel +5 Volt indicator not on indicates +5 Vdc missing or out of tolerance at 01A-A1 board.

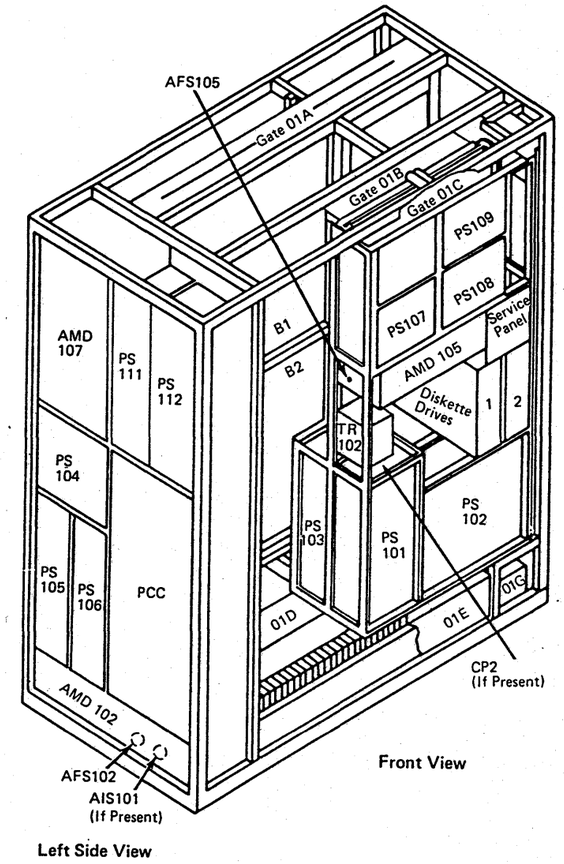
Possible causes:

- PS101
- Open in +5 Vdc distribution
- Service panel.

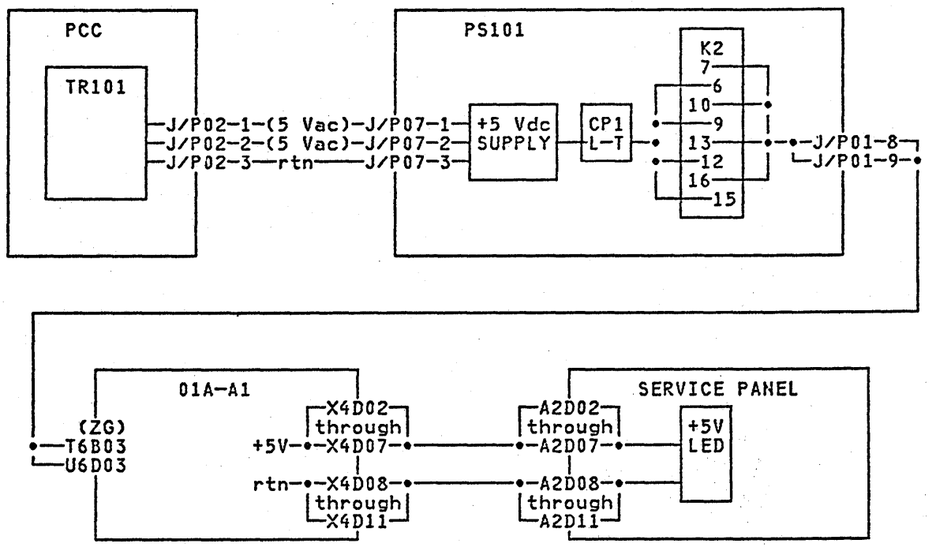
Some PS101 outputs are active when PCC CB1 and CB2 and Unit Emergency Only switch are on and customer line voltage is present at PCC.

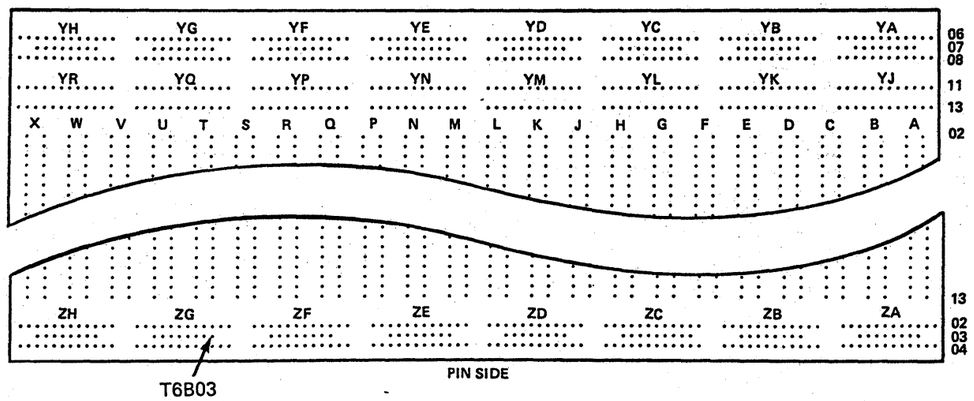
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset any tripped PS101 CP. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
2	Is power complete?	Go to page END 001.
3	Is PS101 CP1 or CP2 tripped?	Go to page PR 051.
4	Is PS101 CP3 tripped?	Go to page PR 141.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X4D02.
6	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check for open cable from 01A-A1X4D02 through D07 to service panel connector A2D02 through D07 before exchanging service panel. 3. Go to step 16.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1T6B03.
8	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P01-8 + lead at PS101 J/P01-9.

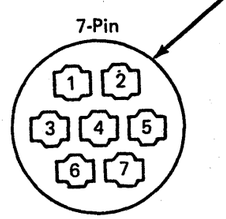


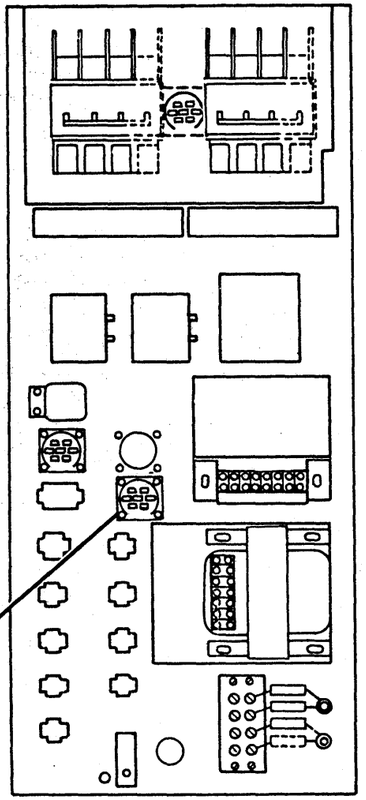


Step	Conditions	Instructions
10	Is voltage greater than +4.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS101 J/P01 to 01A-A1ZG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 16.
11	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS101 J/P07. 3. Set PCC CB1 and CB2 on. Measure for 5 **Vac** at the following points: PS101 P07-1 to 3 PS101 P07-2 to 3 (cable end).
12	Is voltage greater than +4.5 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 16.
13	Go to **Instructions** column.	Measure for 5 **Vac** at the following points: PCC J/P02-1 to 3 PCC J/P02-2 to 3.
14	Is voltage greater than +4.5 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS101 J/P07 to PCC J/P02. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PCC TR101. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR101. 3. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 01A-A1 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.








Primary Control Compartment (PCC)

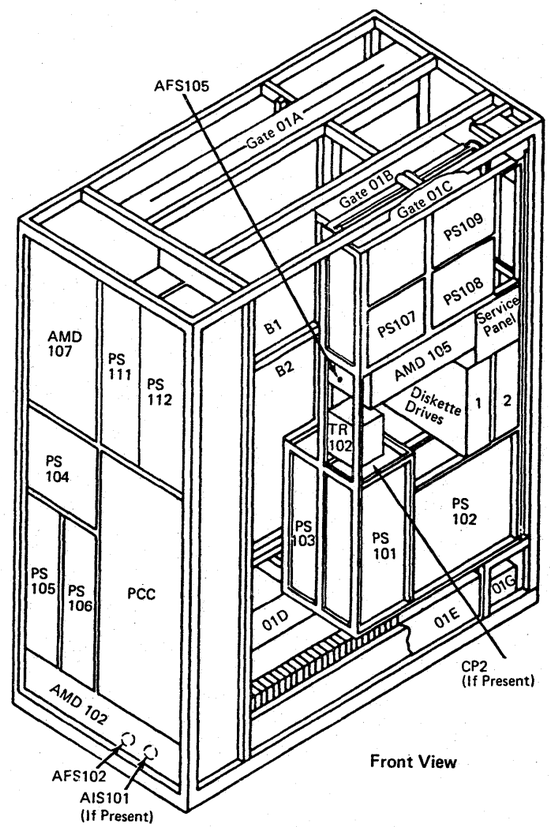
MBC ON Indicator

The service panel MBC On indicator not on, indicates a failure of the MBC card at 01A-A1V2.

Possible causes:

- 01A-A1V2 card
- Service panel.

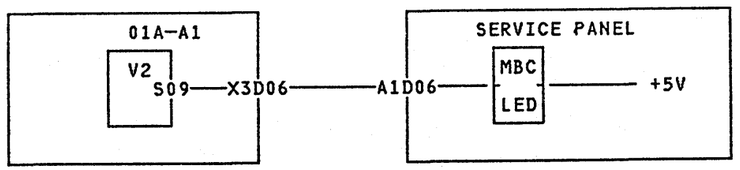
Step	Conditions	Instructions
1	Go to **Instructions** column.	Press Lamp Test on service panel.
2	Is the MBC On indicator off?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 12.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B03 + lead at 01A-A1V2B04 + lead at 01A-A1V2B11.
4	Is voltage less than +22 Vdc at any point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 12.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D03 + lead at 01A-A1V2J03 + lead at 01A-A1V2P03 + lead at 01A-A1V2U03.
6	Is voltage less than +4.5 Vdc at any point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2S09.



Front View

Left Side View

Step	Conditions	Instructions
8	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** A TCC could be defective. Ensure TCCs are seated and the TCC arrow is pointing up. 3. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3D06.
10	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 12.
11	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check for open cable 01A-A1X3D06 to service panel A1D06 before exchanging service panel. 3. Go to step 12.
12	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel PS101. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



PS101 CP Tripped

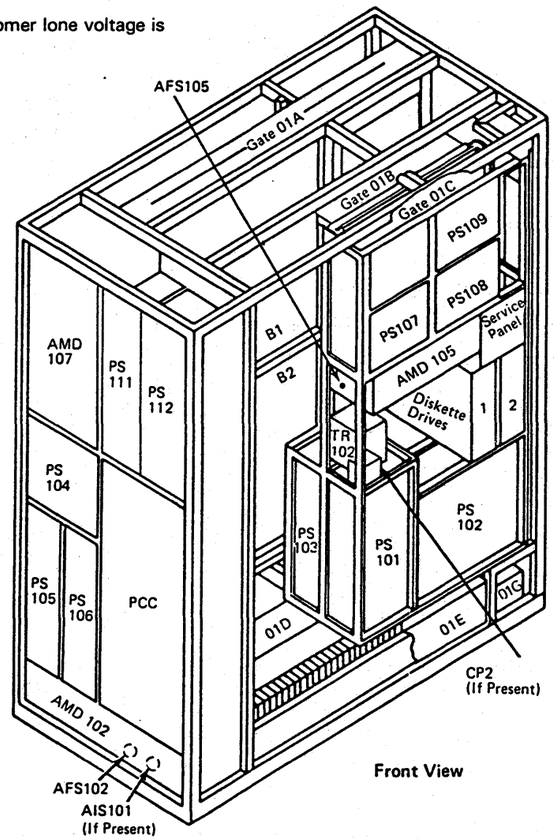
You are here to isolate the cause of a tripped CP on PS101.

Possible causes:

- PS101
- Short in +5 Vdc distribution
- Short in +24 Vdc distribution
- PCC relays K01 through K04
- Diskette drive 1 or 2
- Service panel.

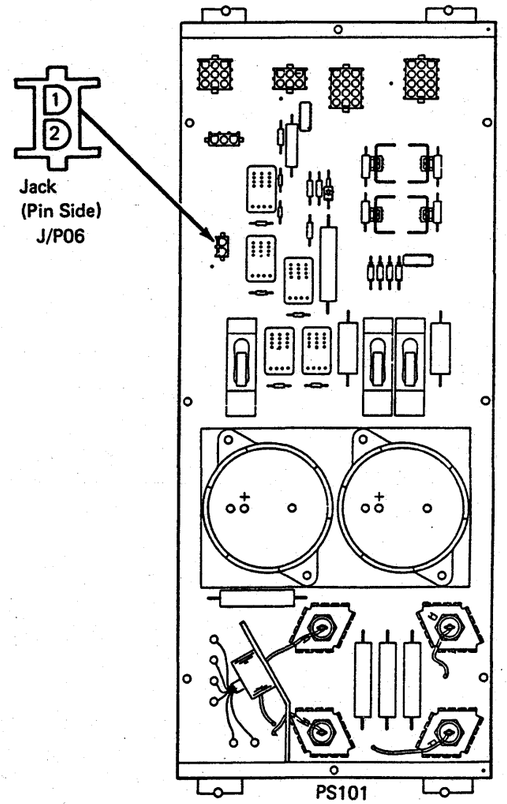
Some PS101 outputs are active when PCC CB1 and CB2 and Unit Emergency Only switch are on and customer lone voltage is present at the PCC.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cables at PS101 J/P01 through J/P05. 3. Record and reset tripped CP. 4. Set PCC CB1 and CB2 on.
2	Is CP1 or CP3 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 21.
3	Is CP2 in the On position?	Go to step 7.
4	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS101 J/P06. 3. Check resistance from P06-1 to frame ground.
5	Is PS101 P06-1 shorted to ground?	1. Check Unit Emergency Only switch. 2. Exchange cable from PS101 J/P06 to Unit Emergency Only switch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 21.
6	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 21.



Left Side View

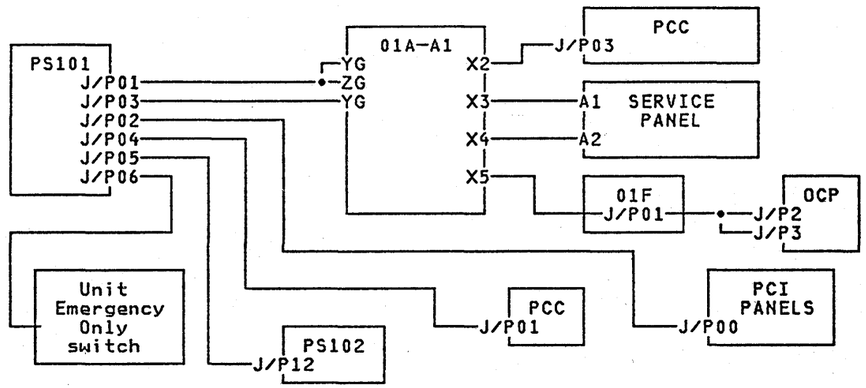
Front View



PS101

4381-3 B/M 2676380	MI Seq BA030	PN 6169071 1 of 2	EC A20558 01 Oct 84	EC A20562 30 Aug 85		

Step	Conditions	Instructions
7	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS101 J/P01. 3. Ensure CE Mode switch is set to Normal. 4. Set PCC CB1 and CB2 on. 5. Operate each of the OCP and service panel switches. 6. Ignore any power codes that may appear at this time.
8	Is CP1 tripped?	Go to page PR 061.
9	Is CP2 tripped?	Go to page PR 071.
10	Go to **Instructions** column.	1. Set CB1 and CB2 off. 2. Reconnect cable at PS101 J/P03. 3. Set CB1 and CB2 on.
11	Is CP2 tripped?	Go to page PR 111.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS101 J/P04. 3. Set PCC CB1 and CB2 on. 4. Set CE Mode switch to CE Mode. 5. Press service panel Power On.
13	Is CP2 tripped?	Go to page PR 121.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS101 J/P05. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
15	Is CP2 tripped?	Go to page PR 131.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS101 J/P02. 3. Set PCC CB1 and CB2 on.
17	Is CP2 tripped?	Go to page PR 101.
18	Go to **Instructions** column.	1. Press service panel Power On. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UI (power-up I/O only).
19	Is CP2 tripped?	Go to page PR 101.
20	Is Ref Code 17A4330E displayed?	Go to page PR 101.
21	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 01A-A1 board OCP (Display and Keyboard). Service panel. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



PS101 CP1 Tripped

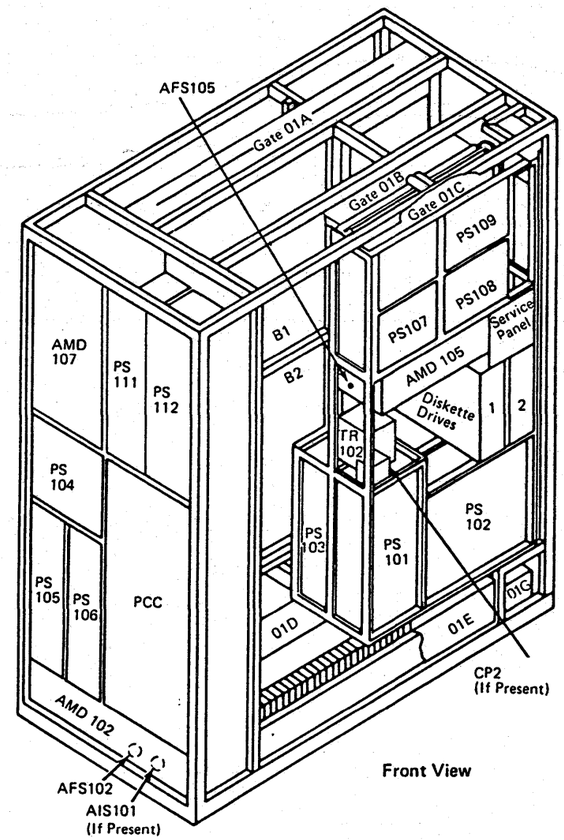
PS101 CP1 tripped indicates a short in the +5 Vdc distribution to the 01A-A1 board and service panel.

Possible causes:

- Short in +5 Vdc distribution
- PS101
- Service panel.

Some PS101 outputs are active when PCC CB1 and CB2 and Unit Emergency switch are on and customer line voltage is present at the PCC.

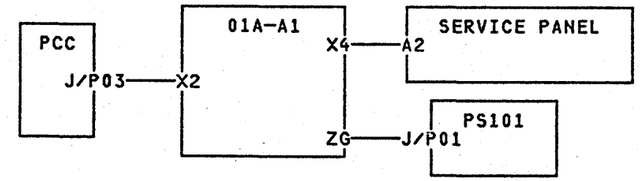
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset CP1. 3. Disconnect cable at 01A-A1ZG. 4. Set PCC CB1 and CB2 on.
2	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P01 to 01A-A1ZG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 17.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1ZG. 3. Remove all cards from 01A-A1 board. 4. Set PCC CB1 and CB2 on.
4	Is CP1 tripped?	Go to step 8.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reinstall one card that was removed in step 3. 3. Set PCC CB1 and CB2 on.
6	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Remove the card just reinstalled and continue reinstalling the remaining cards using steps 5, 6, and 7 until all cards are reinstalled. • If only one card is failing; exchange the card. • If more than one card is failing, you have a load problem: Invoke your support structure. Exchange PS101. 3. Go to step 17.
7	Go to **Instructions** column.	1. Repeat steps 5, 6, and 7 until all cards are reinstalled, then go to step 17.

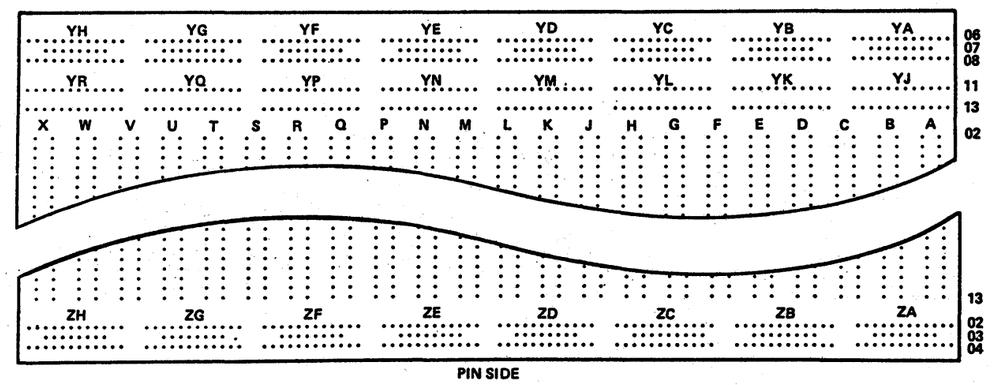


Front View

Left Side View

Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset CP1. 3. Disconnect cables at 01A-A1X2 and X4. 4. Set PCC CB1 and CB2 on.
9	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 17.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X2. 3. Set PCC CB1 and CB2 on.
11	Is CP1 in the On position?	Go to step 14.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PCC J/P03. 3. Reset CP1. 4. Set PCC CB1 and CB2 on.
13	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X2 to PCC J/P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 17.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X4. 3. Disconnect cable at service panel connector A2. 4. Set PCC CB1 and CB2 on.
15	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X4 to service panel connector A2. 3. Go to step 17.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 17.
17	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 01A-A1 board Service panel. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





PS101 CP2 Tripped (P01)

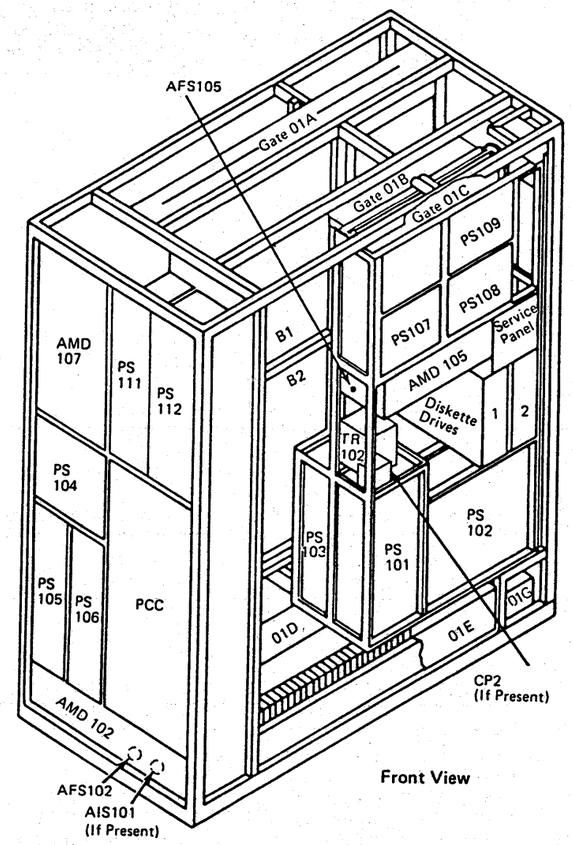
You are here because PS101 CP2 trips when the +24 Vdc distribution cable is connected to PS101 J01.

Possible causes:

- AFS103 or AF104
- PS102 CP tripped sense loop
- Service panel
- OCP (Display and Keyboard)
- PCC interlock.

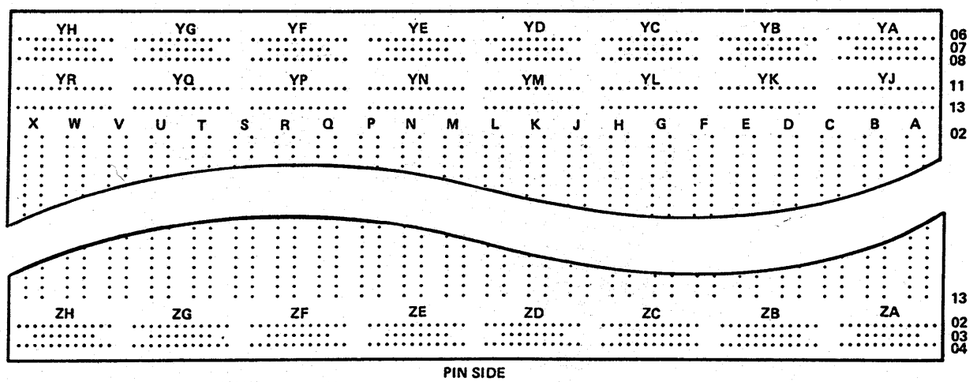
Some PS101 outputs are active when PCC CB1, CB2 and Unit Emergency Only switch are on and customer line voltage is present at PCC.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A1YG (pin side). 3. Reset PS101 CP2. 4. Set PCC CB1 and CB2 on.
2	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P01 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 62.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1YG (pin side). 3. Disconnect cable at 01A-A1X2, X3, X4, and X5. 4. Set PCC CB1 and CB2 on.
4	Is CP2 in the On position?	Go to step 12.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove all cards from 01A-A1. 3. Disconnect cable from 01A-A1YH (card side). 4. Reset CP2. 5. Set PCC CB1 and CB2 on.
6	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 62.
7	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1YH (card side). 3. Set PCC CB1 and CB2 on.
8	Is CP2 tripped?	Go to page PR 081.



Front View

Left Side View



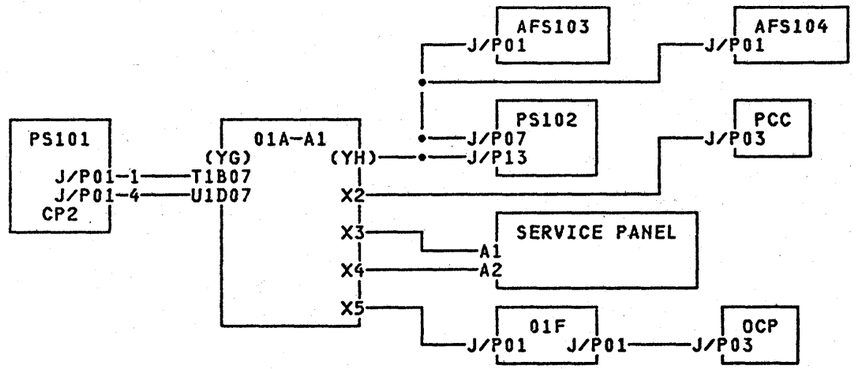
PIN SIDE

Step	Conditions	Instructions
9	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reinstall one card removed from 01A-A1 board. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
10	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Remove the card just reinstalled, and continue reinstalling the remaining cards using steps 9, 10, and 11. • If only one card is failing; exchange the card. • If more than one card is failing, you have a load problem: Invoke your support structure. Exchange PS101. 3. Go to step 62.
11	Go to **Instructions** column.	1. Repeat steps 9, 10, and 11 until all cards are reinstalled. 2. Go to step 62.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X2. 3. Set PCC CB1 and CB2 on.
13	Is CP2 tripped?	Go to page PR 091.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X3. 3. Set PCC CB1 and CB2 on. 4. Set I/O Power Hold switch to I/O Power Hold. 5. Set I/O Power Hold switch to Normal.
15	Is CP2 in the On position?	Go to step 25.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at service panel connector A1. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
17	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange shorted cable from 01A-A1X3 to service panel connector A1. 3. Go to step 62.

Step	Conditions	Instructions
18	Go to **Instructions** column.	Short in service panel or I/O Power Hold sense line to 01A-A1U2. 1. Set PCC CB1 and CB2 off. 2. Measure resistance to ground at the following point: 01A-A1X3B10. 3. Leave meter connected.
19	Is resistance greater than 500 ohms?	1. Exchange service panel. 2. Go to step 62.
20	Go to **Instructions** column.	1. Remove 01A-A1U2 card. 2. Check meter reading.
21	Is resistance greater than 500 ohms?	1. Exchange 01A-A1U2 card. 2. Go to step 62.
22	Go to **Instructions** column.	1. Disconnect cable at 01A-A1X3. 2. Check meter reading.
23	Is resistance greater than 500 ohms?	1. Exchange cable from 01A-A1X3 to service panel connector A1. 2. Go to step 62.
24	Go to **Instructions** column.	1. Exchange 01A-A1 board. 2. Go to step 62.
25	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X4. 3. Set CE Mode switch to CE Mode. 4. Set PCC CB1 and CB2 on.
26	Is CP2 in the On position?	Go to step 30.
27	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at service panel connector A2. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
28	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 62.
29	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X4 to service panel connector A2. 3. Reset CP2. 4. Go to step 62.

Step	Conditions	Instructions
30	Go to **Instructions** column.	1. Press Logic Reset. 2. Set CE Mode switch to Normal.
31	Is CP2 in the On position?	Go to step 48.
32	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at service panel connector A1 (connectors A2 and B2 remain plugged). 3. Reset CP2. 4. Set PCC CB1 and CB2 on. 5. Press Logic Reset.
33	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Reset CP2. 4. Go to step 62.
34	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Measure resistance to ground at the following point: 01A-A1V2B05. 3. Leave meter connected.
35	Is resistance greater than 500 ohms?	Go to step 41.
36	Go to **Instructions** column.	1. Remove 01A-A1V2 card. 2. Check meter reading.
37	Is resistance greater than 500 ohms?	1. Exchange 01A-A1V2 card. 2. Go to step 62.
38	Go to **Instructions** column.	1. Remove cable 01A-A1X3. 2. Check meter reading.
39	Is resistance greater than 500 ohms?	1. Exchange cable from 01A-A1X3 to service panel connector A1. 2. Go to step 62.
40	Go to **Instructions** column.	1. Exchange 01A-A1 board. 2. Go to step 62.
41	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check resistance to ground at the following point: 01A-A1U2D05. 3. Leave meter connected.
42	Is resistance greater than 500 ohms?	Go to step 47.
43	Go to **Instructions** column.	1. Remove 01A-A1U2 card. 2. Check meter reading.
44	Is resistance greater than 500 ohms?	1. Exchange 01A-A1U2 card. 2. Go to step 62.
45	Go to **Instructions** column.	1. Remove cable 01A-A1X3. 2. Check meter reading.
46	Is resistance greater than 500 ohms?	1. Exchange cable from 01A-A1X3 to service panel connector A1. 2. Go to step 62.
47	Go to **Instructions** column.	1. Exchange 01A-A1 board. 2. Go to step 62.
48	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X5. 3. Disconnect cable at 01A-A1X3. 4. Set PCC CB1 and CB2 on. 5. Operate all OCP switches.
49	Is CP2 in the On position?	Go to step 60.
50	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at OCP J/P3. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
51	Is CP2 in the On position?	Go to step 53.
52	Go to **Instructions** column.	1. Isolate short and exchange cable from OCP J/P3 to 01F J/P01 or 01F J/P01 to 01A-A1X5. 2. Go to step 62.
53	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Measure resistance to ground at the following points (record values): 01A-A1X5D10 01A-A1X5D11 01A-A1X5D12 01A-A1X5B03 01A-A1X5B02 01A-A1X5D13 01A-A1X5D09.

Step	Conditions	Instructions
54	Is resistance greater than 100 ohms at all points?	1. Exchange OCP (Display and Keyboard). **Note:** Check for open cable, bent pins, and cable connector for pushed in pins and seating before exchanging OCP. 2. Go to step 62.
55	Go to **Instructions** column.	1. Disconnect cable at 01A-A1X5. 2. Repeat step 53.
56	Is resistance greater than 100 ohms at all points?	1. Isolate short and exchange cable from 01A-A2 X5 to 01F J/P01 or 01F J/P01 to OCP J/P03. 2. Go to step 62.
57	Go to **Instructions** column.	1. Remove 01A-A1V2 and U2 cards. 2. Repeat step 53.
58	Is resistance less than 100 ohms at any point?	1. Exchange 01A-A1 board. 2. Go to step 62.
59	Is resistance greater than 100 ohms at any point?	1. Isolate short and exchange 01A-A1V2 card or 01A-A1U2 card. 2. Go to step 62.
60	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1X3. 3. Repeat step 53.
61	Is resistance less than 100 ohms at any point?	1. Exchange service panel. 2. Also suspect cable from 01A-A1X3 to service panel connector A1. 3. Go to step 62.
62	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101, PS102 01A-A1 board Service panel 01F J/P, OCP (Display and Keyboard) AFS103, AFS104. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



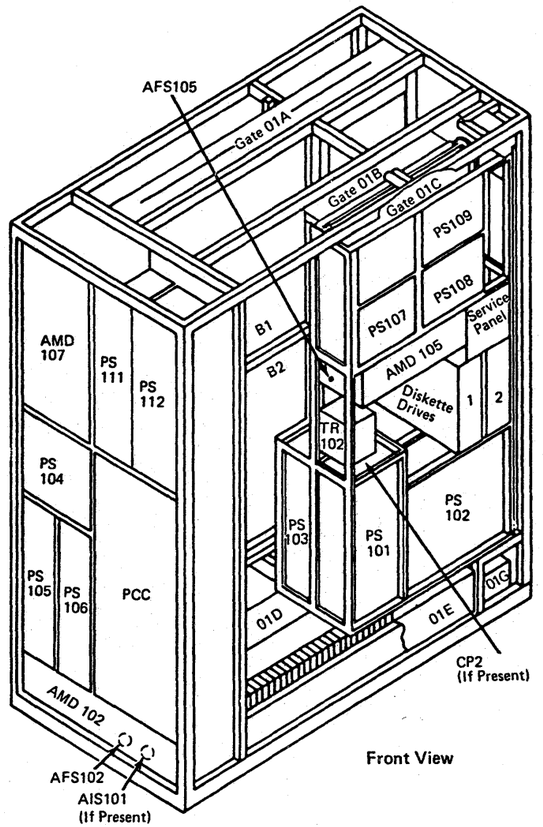
PS101 CP2 Tripped (AFS)

You are here because of a short in the +24 Vdc distribution from 01A-A1YH to PS102 or AFS103 and AFS104.

Possible causes:

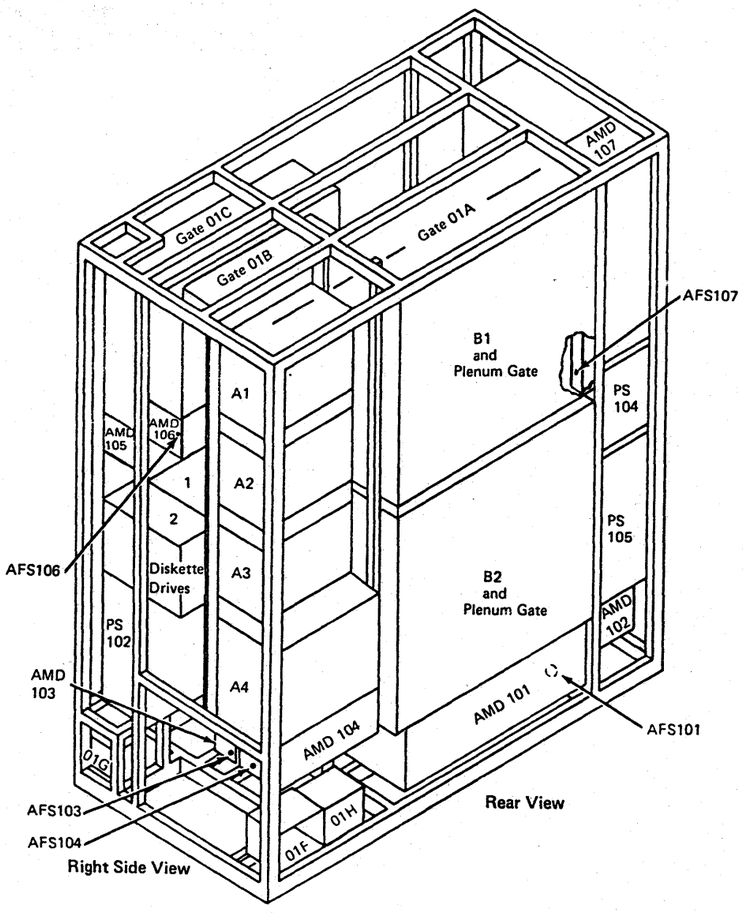
- AFS103
- AFS104
- PS102.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cables at AFS103 J/P01, AFS104 J/P01, and PS102 J/P13 and J/P07. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
2	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YH to AFS103, AFS104, and PS102. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 29.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J/P07. 3. Set PCC CB1 and CB2 on.
4	Is CP2 in the On position?	Go to step 16.
5	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A2D2 card. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
6	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2D2 card. 3. Go to step 29.
7	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A2B5. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
8	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 29.
9	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A1ZC. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.



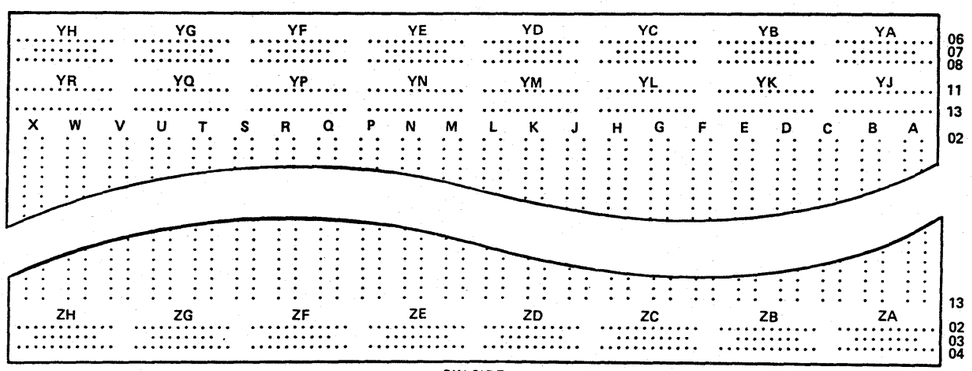
Left Side View

Front View



Rear View

Right Side View

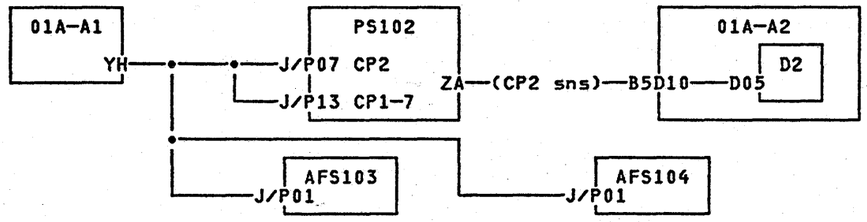


PIN SIDE

4381 B/M 2676380	MI Seq BA045	PN 6169074 1 of 3	EC A20558 01 Oct 84				

Step	Conditions	Instructions
10	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1ZC to 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 29.
11	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS102 J/P07. 3. Measure resistance to ground at the following point: 01A-A1X1E08. 4. Leave meter connected.
12	Is an open indicated?	1. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 2. Go to step 29.
13	Is a short indicated?	1. Disconnect 01A-A1YH. 2. Set service panel Power Off switch to Power Off and then back to Normal. 3. Check meter reading.
14	Is an open indicated?	1. Exchange cable from 01A-A1YH to PS102 J/P07. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 29.
15	Is a short indicated?	1. Exchange 01A-A1 board. 2. Go to step 29.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J/P13. 3. Set PCC CB1 and CB2 on.
17	Is CP2 in the On position?	Go to step 25.
18	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A1V2 card. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
19	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 29.

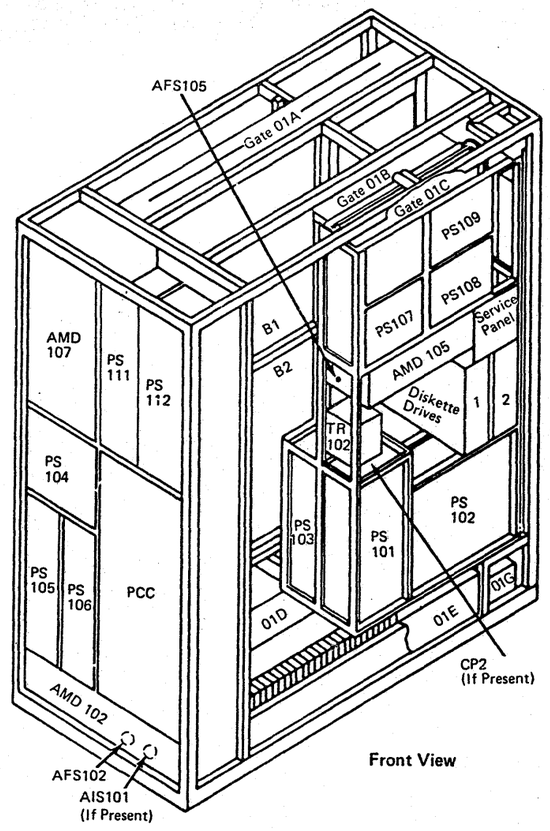
Step	Conditions	Instructions
20	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS101 J/P13. 3. Measure resistance to ground at the following point: 01A-A1V2B02. 4. Leave meter connected.
21	Is an open indicated?	1. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 2. Go to step 29.
22	Is a short indicated?	1. Disconnect 01A-A1YH. 2. Check meter reading.
23	Is a short indicated?	1. Exchange 01A-A1 board. 2. Go to step 29.
24	Is an open indicated?	1. Exchange cable from PS102 J/P13 to 01A-A1YH. 2. Go to step 29.
25	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at AFS103 J/P01. 3. Set PCC CB1 and CB2 on.
26	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange AFS103. 3. Go to step 29.
27	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at AFS104 J/P01. 3. Set PCC CB1 and CB2 on.
28	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange AFS104. 3. Go to step 29.
29	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board PS102 AFS103 AFS104. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



PS101 CP2 Tripped (PCC Interlock)

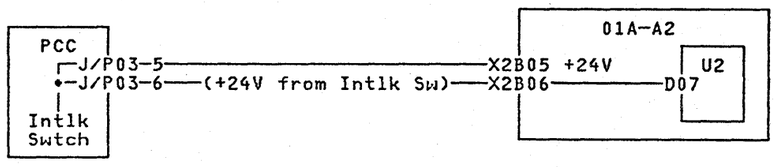
You are here because of a short in the PCC Interlock switch sense circuit.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A1U2 card. 3. Reset CP2. 4. Set PCC CB1 and CB2 on.
2	Is CP2 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 8.
3	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Disconnect PCC P03. 3. Measure resistance to ground at the following point: 01A-A1U2D07. 4. Leave meter connected.
4	Is an open indicated?	1. Exchange cable from PCC J/P03 to PCC Interlock switch. 2. Also suspect PCC Interlock switch. 3. Go to step 8.
5	Is a short indicated?	Disconnect cable at 01A-A1X2.
6	Is an open indicated?	1. Exchange cable from PCC J/P03 to 01A-A1X2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 8.
7	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 8.
8	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



Front View

Left Side View



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PS101 CP2 Tripped (P02)

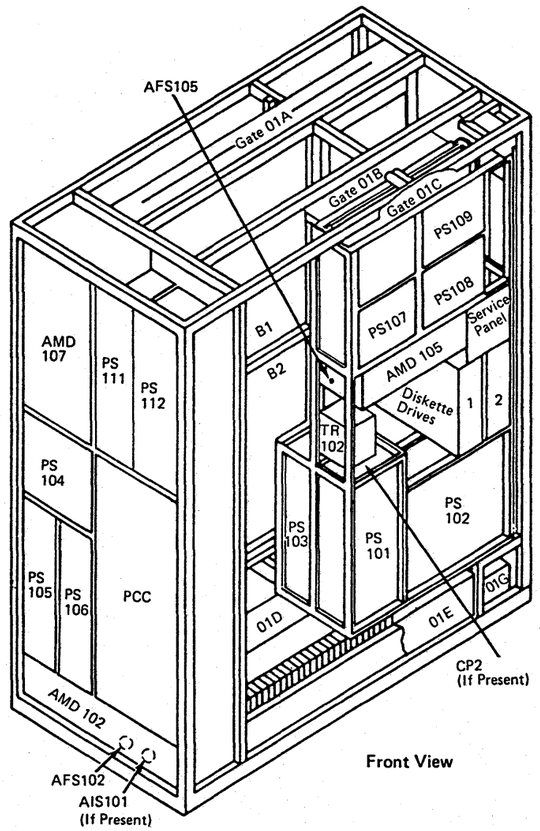
You are here because CP2 trips when the +24 Vdc distribution cable is connected to PS101 J02 or when the I/O is powered on.

Possible causes:

- PCI card
- PCI cable
- Control unit.

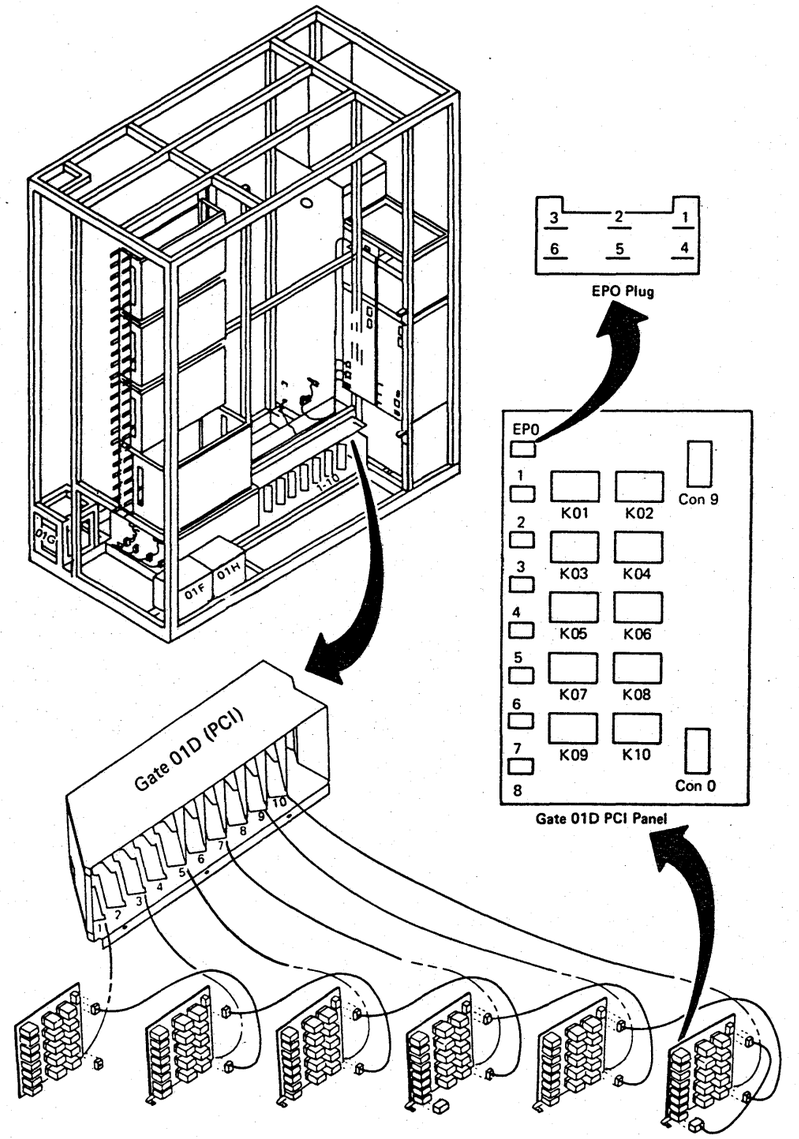
Some PS101 outputs are active when PCC CB1, CB2 and Unit Emergency Only switch are on and customer line voltage is present at PCC.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set CE Mode switch to CE Mode. 3. Set I/O Power Hold switch to Normal. 4. Disconnect PCI dummy plug. 5. Disconnect cable at PCI card No. 1 J/P00. 6. Reset CP2. 7. Set PCC CB1 and CB2 on. 8. Press service panel Power On. 9. Select Partial Power Up/Down (QWW) screen. 10. Select UI (power-up I/O only).
2	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P02 to PCI card No. 1 J/P00. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Reset CP2. 4. Go to step 12.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP2. 4. Reconnect cable at PCI card No. 1 J/P00. 5. Disconnect cable at PCI card No. 2 J/P00. 6. Set PCC CB1 and CB2 on. 7. Press service panel Power On. 8. Select Partial Power Up/Down (QWW) screen. 9. Select UI (power-up I/O only).



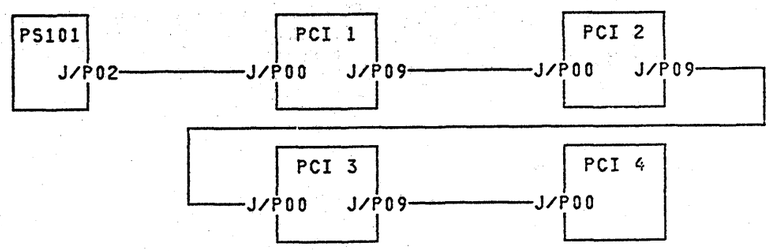
Front View

Left Side View



Step	Conditions	Instructions
4	Is CP2 tripped?	Isolate short to the following: PCI card No. 1 PCI cables 1 through 8 Control unit Cable from PCI panel No. 1 J/P09 to PCI panel No. 2 J/P00. Go to step 12.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP2. 4. Reconnect cable at PCI card No. 2 J/P00. 5. Disconnect cable at PCI card No. 3 J/P00. 6. Set PCC CB1 and CB2 on. 7. Press service panel Power On. 8. Select Partial Power Up/Down (QWW) screen. 9. Select UI (power-up I/O only).
6	Is CP2 tripped?	Isolate short to the following: PCI card No. 2 PCI cables 1 through 8 Control unit Cable from PCI panel No. 2 J/P09 to PCI panel No. 3 J/P00. Go to step 12.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP2. 4. Reconnect cable at PCI card No. 3 J/P00. 5. Disconnect cable at PCI card No. 4 J/P00. 6. Set PCC CB1 and CB2 on. 7. Press service panel Power On. 8. Select Partial Power Up/Down (QWW) screen. 9. Select UI (power-up I/O only).
8	Is CP2 tripped?	Isolate short to the following: PCI card No. 3 PCI cables 1 through 8 Control unit Cable from PCI panel No. 3 J/P09 to PCI panel No. 4 J/P00. Go to step 12.

Step	Conditions	Instructions
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP2. 4. Reconnect cable at PCI card No. 4 J/P00. 5. Disconnect cable at the next PCI panel J/P00 or reconnect PCI dummy plug. 6. Set PCC CB1 and CB2 on. 7. Press service panel Power On. 8. Select Partial Power Up/Down (QWW) screen. 9. Select UI (power-up I/O only).
10	Is CP2 tripped?	Isolate short to the following: PCI card No. 4 PCI cables 1 through 8 Control unit Cable from PCI panel No. 4 J/P09 to next PCI panel J/P00 or dummy plug. Go to step 12.
11	Go to **Instructions** column.	1. Repeat steps 9 and 10 if any additional PCI panels are installed. 2. Go to step 12.
12	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 PCI panels. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



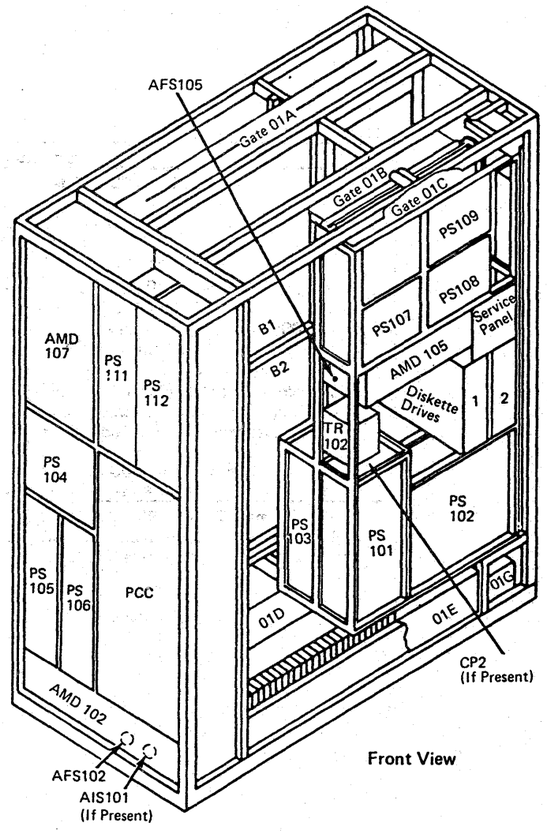
PS101 CP2 Tripped (P03)

You are here because PS101 CP2 trips when the +24 Vdc distribution cable is connected to PS101 J/P03.

Possible causes:

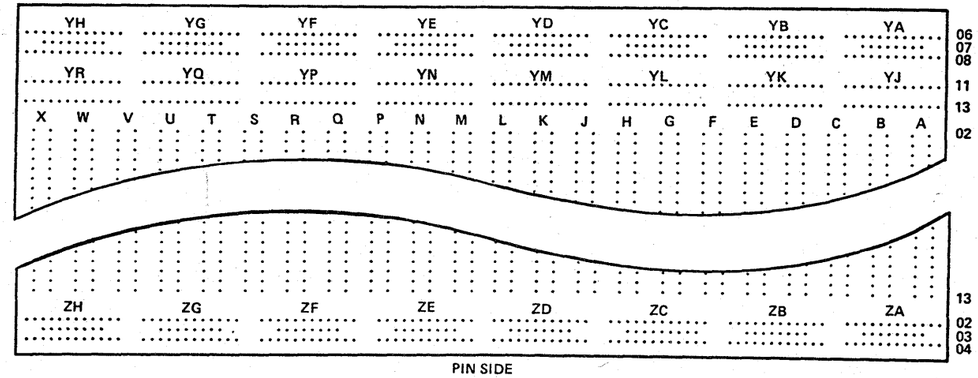
- PS101
- PS101 cable P03.

Step	Instructions	Conditions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset CP2. 3. Disconnect cable at 01A-A1YG (card side). 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
2	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P03 to 01A-A1YG (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.
3	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 01A-A1 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



Front View

Left Side View



PIN SIDE

0 0 0

PS101 CP2 Tripped (P04)

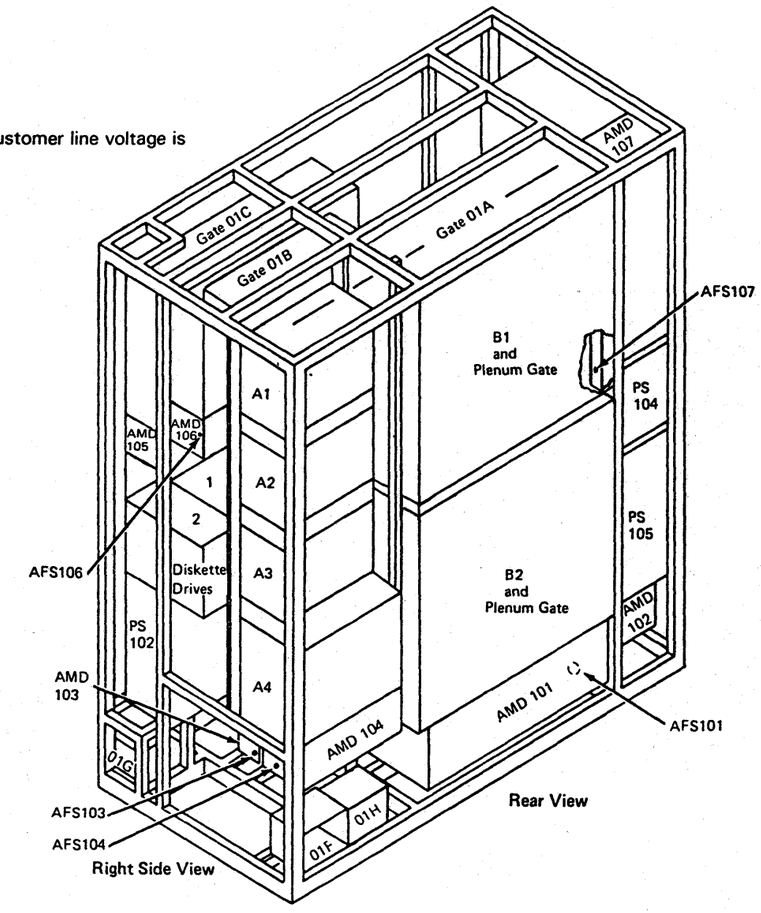
You are here because PS101 CP2 trips when the +24 Vdc distribution cable is connected at PS101 J04.

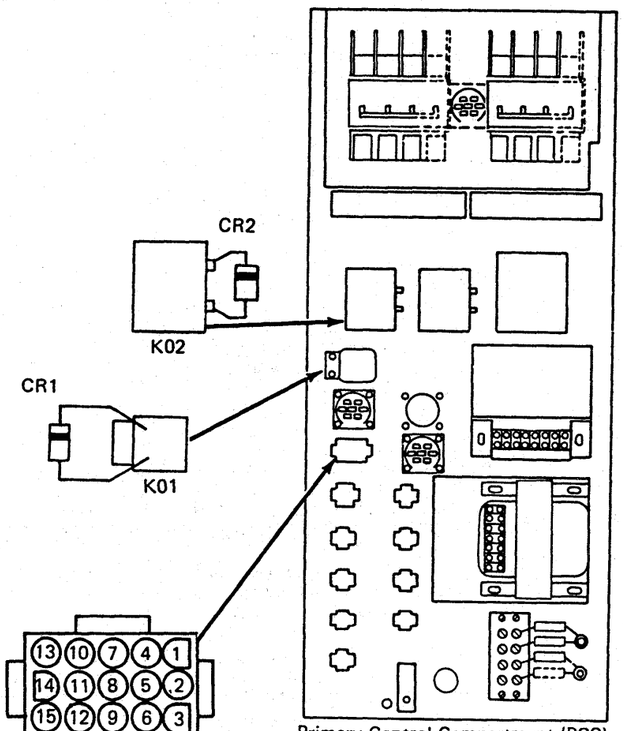
Possible causes:

- PCC K01 or CR1
- PCC K02 or CR2.

Some PS101 outputs are active when PCC CB1, CB2 and Unit Emergency Only switch are on and customer line voltage is present at PCC.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect cable at PCC J/P01. 4. Measure resistance at the following points: - lead at PCC J01-4 + lead at PCC J01-2 (on PCC box).
2	Is resistance greater than 400 ohms?	Go to step 6.
3	Go to **Instructions** column.	1. Disconnect diode PCC CR1. 2. Measure resistance at the following points: - lead at PCC J01-4 + lead at PCC J01-2 (on PCC box).
4	Is resistance greater than 400 ohms?	1. Exchange cable from PCC K01 to PCC J/P01. 2. Go to step 19.
5	Go to **Instructions** column.	1. Exchange PCC K01. 2. Go to step 19.
6	Go to **Instructions** column.	Measure resistance at the following points: - lead at frame ground + lead at PCC J01-4 (on PCC box).
7	Is a short indicated?	1. Exchange cable from PCC J/P01 to PCC K01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.

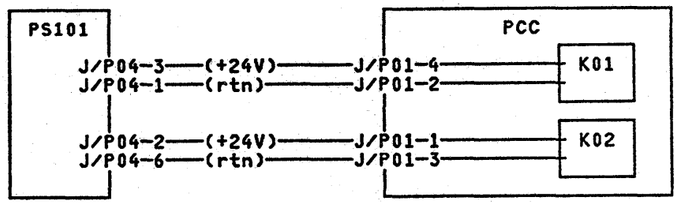




4381 B/M 2676380	MI Seq BA065	PN 6169078 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Reconnect PCC P01. 2. Measure resistance at the following points: - lead at frame ground + lead at PCC J/P01-1.
9	Is a short indicated?	1. Exchange cable from PCC J/P01 to PS101 J/P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.
10	Go to **Instructions** column.	1. Disconnect cable at PCC J/P01. 2. Measure resistance at the following points: - lead at PCC J01-1 + lead at PCC J01-3 (on PCC box).
11	Is resistance greater than 100 ohms?	Go to step 15.
12	Go to **Instructions** column.	1. Disconnect diode PCC CR2. 2. Measure resistance at the following points: - lead at PCC J01-1 + lead at PCC J01-3 (on PCC box).
13	Is resistance greater than 100 ohms?	1. Exchange cable from PCC K02 to PCC J/P01. 2. Go to step 19.
14	Go to **Instructions** column.	1. Exchange PCC K02. 2. Go to step 19.
15	Go to **Instructions** column.	Measure resistance at the following points: - lead at frame ground + lead at PCC J01-3 (on PCC box).
16	Is a short indicated?	1. Exchange cable from PCC J/P01 to PCC K02. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.

Step	Conditions	Instructions
17	Go to **Instructions** column.	1. Reconnect PCC P01. 2. Measure resistance at the following points: - lead at frame ground + lead at PCC J/P01-3.
18	Is a short indicated?	1. Exchange cable from PCC J/P01 to PS101 J/P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.
19	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC PS101. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



PS101 CP2 Tripped (P05)

You are here because PS101 CP2 trips when the +24 Vdc distribution cable is connected to PS101 J05.

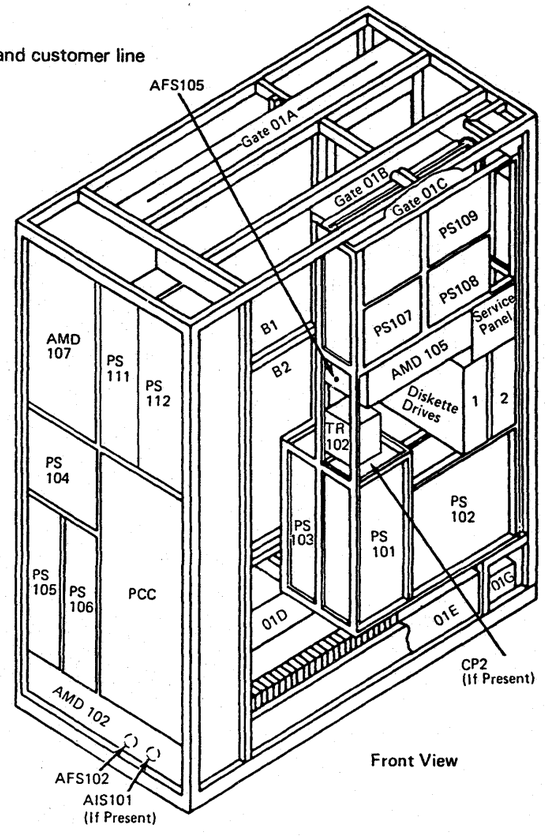
Possible causes:

- AFS 101, 102, 105, 106, 107
- Diskette drive 1 or 2
- 01A-A1 board
- 01A-A2 board
- 01A-B1 microswitch
- 01A-B2 microswitch
- PS102
- 01A-A1V2 card.

Some PS101 outputs are active when PCC CB1, CB2 and Unit Emergency Only switch are in the On position and customer line voltage is present at PCC.

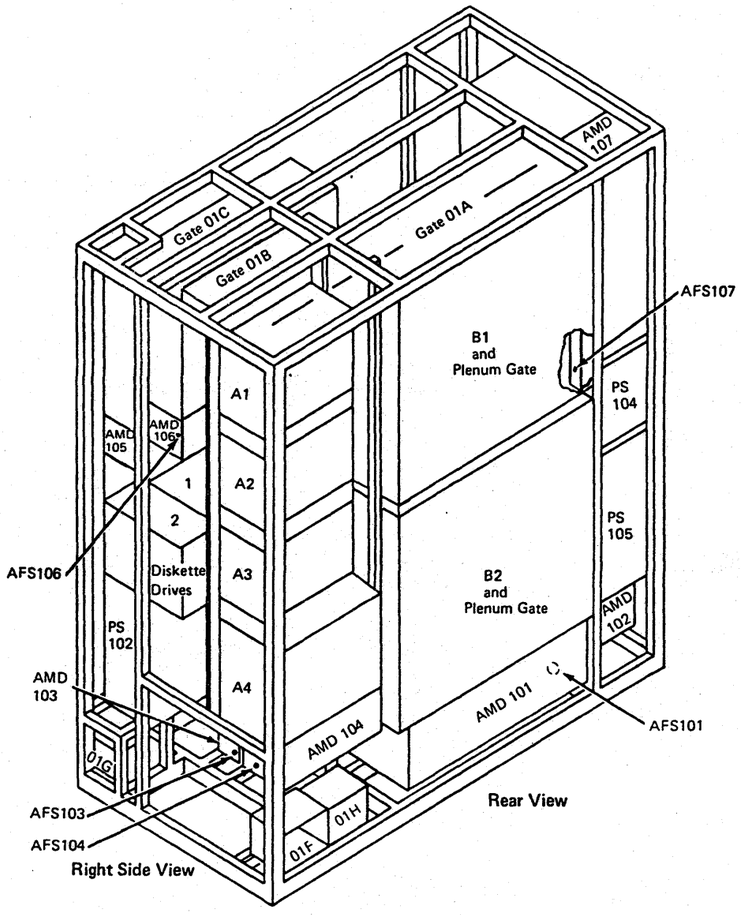
Ignore any power codes that may appear while using this repair procedure.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset CP2. 3. Disconnect cable at PS102 J/P12. 4. Press Check Reset. 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On.
2	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange shorted cable from PS101 J/P05 to PS102 J/P12. 3. Go to step 54.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J12. 3. Disconnect cables at PS102 J/P10, J/P11, and J/P14. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
4	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 54.



Left Side View

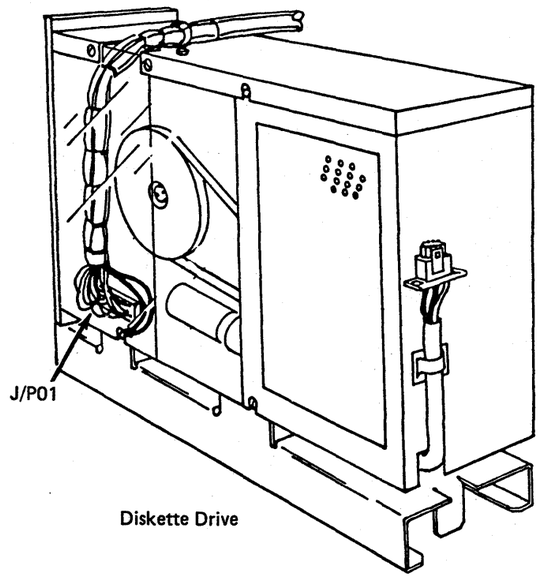
Front View



Rear View

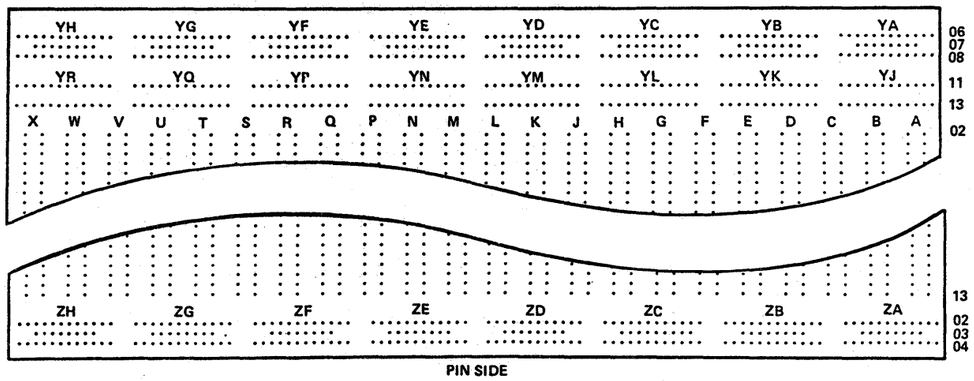
Right Side View

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J10. 3. Press Check Reset. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
6	Is CP2 tripped?	1. Short in diskette drive 1. 2. Go to step 10.
7	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J11. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
8	Is CP2 in the On position?	Go to step 13.
9	Go to **Instructions** column.	1. Short in diskette drive 2. 2. Go to step 10.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at failing diskette drive connector J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
11	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange shorted cable from PS102 to failing diskette drive. 3. Go to step 54.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange failing diskette drive. 3. Go to step 54.
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS102 J/P14. 3. Disconnect cable at 01A-A2YA and 01A-A1ZF. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
14	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P14 to 01A-A2YA. 3. Go to step 54.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2YA. 3. Disconnect cables at 01A-A2A2, A3, A4, A5, B2, B3, and B4. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.



Diskette Drive

Step	Conditions	Instructions
16	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 54.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A2. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
18	Is CP2 in the On position?	Go to step 22.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AFS102 J/P01. 3. Reset CP2. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
20	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A2 to AFS102 and 01A-B2 microswitch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 54.
21	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AFS102. 3. Go to step 54.
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A3. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
23	Is CP2 in the On position?	Go to step 27.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS103 J/P02. 3. Reset CP2. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.

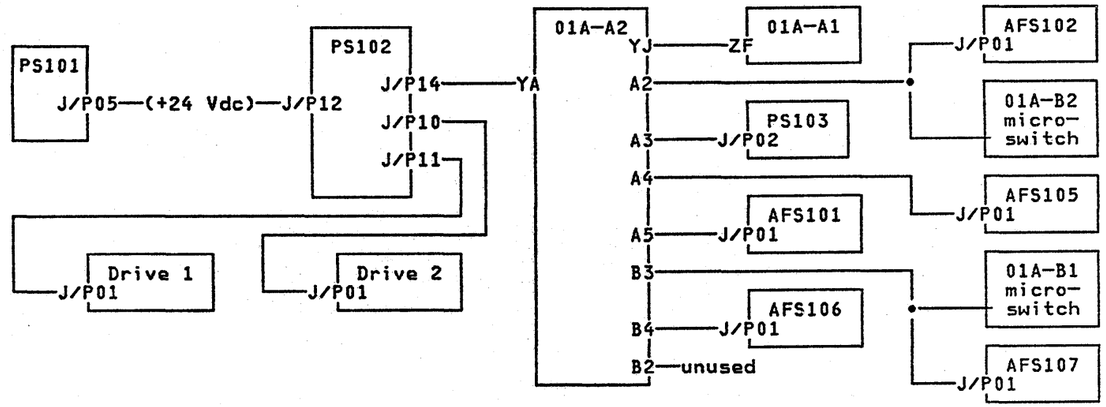


PIN SIDE

Step	Conditions	Instructions
25	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A3 to PS103 J/P02. 3. Go to step 54.
26	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 54.
27	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A4. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
28	Is CP2 in the On position?	Go to step 32.
29	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AFS105 J/P01. 3. Set on PCC CB1 and CB2 on. 4. Press service panel Power On.
30	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A4 to AFS105. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 54.
31	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AFS105. 3. Go to step 54.
32	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A5. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
33	Is CP2 in the On position?	Go to step 37.
34	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AFS101 J/P01. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
35	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A5 to AFS101. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 54.
36	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AFS101. 3. Go to step 54.
37	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2B2. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
38	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange spare cable at 01A-A2B2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 54.
39	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2B3. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
40	Is CP2 in the On position?	Go to step 44.
41	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AFS107 J/P01. 3. Reset CP2. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
42	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2B3 to AFS107 and 01A-B1 microswitch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 54.

Step	Conditions	Instructions
43	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AFS107. 3. Go to step 54.
44	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2B4. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
45	Is CP2 in the On position?	Go to step 49.
46	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at AFS106 J/P01. 3. Set on PCC CB1 and CB2 on. 4. Press service panel Power On.
47	Is CP2 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2B4 to AFS106. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 54.
48	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange AFS106. 3. Go to step 54.
49	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1ZF. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
50	Is CP2 in the On position?	Go to step 54.
51	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A1V2 card. 3. Measure resistance at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D13.
52	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 54.
53	Is an open indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 54.

Step	Conditions	Instructions
54	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101, PS102, PS103 01A-A1 board 01A-A2 board AFS101, AFS102, AFS105 AFS106, AFS107 01A-B1 microswitch 01A-B2 microswitch Diskette drive 1 Diskette drive 2. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On. 6. Go to page PR 901.



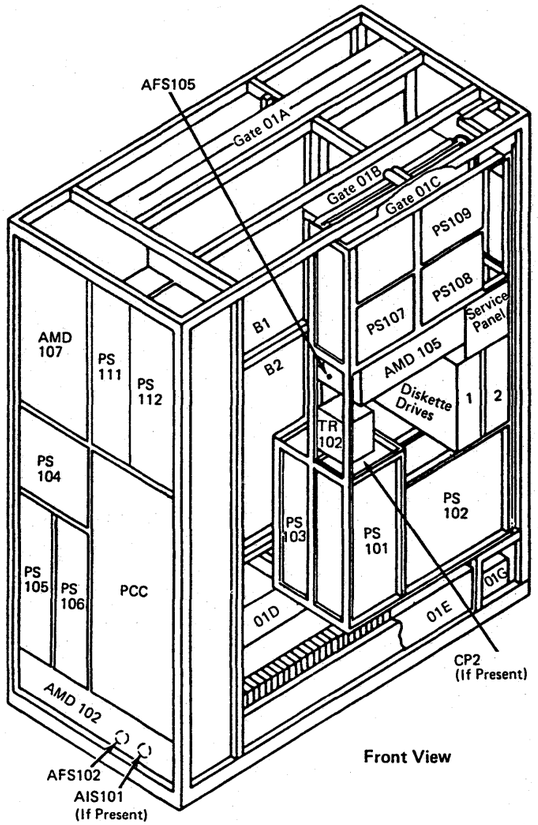
PS101 CP3 Tripped

PS101 CP3 tripped indicates a short in the 24 Vdc distribution from PS101 to the PCC contactors K03 or K04.

Possible causes:

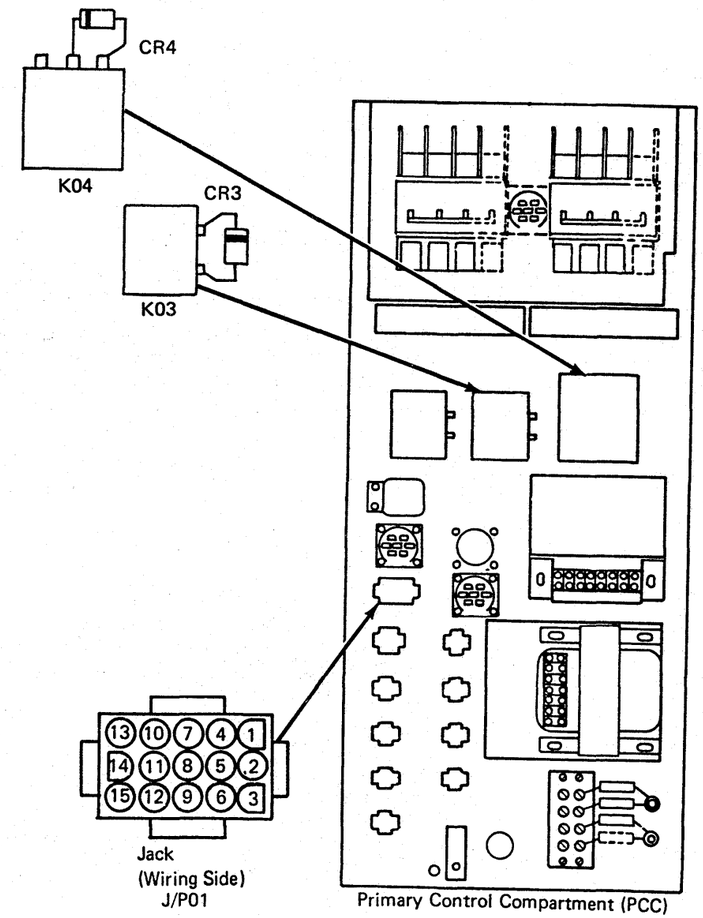
- PCC K03 contactor
- PCC K04 contactor
- PCC CR3 diode
- PCC CR4 diode
- PS101.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect cable at PCC J/P01. 4. Measure resistance at the following points: - lead at PCC J01-12 + lead at PCC J01-5 (on PCC box).
2	Is resistance greater than 100 ohms?	Go to step 6.
3	Go to **Instructions** column.	1. Disconnect diode PCC CR3 (across PCC K03 coil). 2. Measure resistance at the following points: - lead at PCC J01-12 + lead at PCC J01-5 (on PCC box).
4	Is resistance greater than 100 ohms?	1. Exchange cable from PCC K03 to PCC J/P01. 2. Go to step 19.
5	Go to **Instructions** column.	1. Exchange PCC K03. 2. Go to step 19.
6	Go to **Instructions** column.	Measure resistance at the following points: - lead at frame ground + lead at PCC J01-5 (on PCC box).
7	Is a short indicated?	1. Exchange cable from PCC J/P01 to PCC K03. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.



Front View

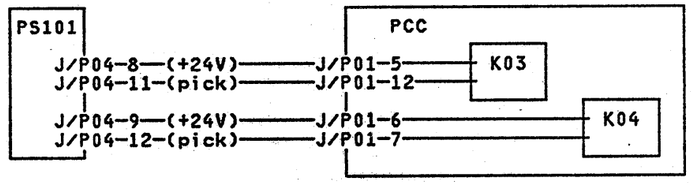
Left Side View



Jack
(Wiring Side)
J/P01

Primary Control Compartment (PCC)

Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Reconnect PCC P01. 2. Measure resistance at the following points: - lead at frame ground + lead at PCC J/P01-5.
9	Is a short indicated?	1. Exchange cable from PCC J/P01 to PS101 J/P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.
10	Go to **Instructions** column.	1. Disconnect cable at PCC J/P01. 2. Measure resistance at the following points: - lead at PCC J01-7 + lead at PCC J01-6 (on PCC box).
11	Is resistance greater than 5 ohms?	Go to step 15.
12	Go to **Instructions** column.	1. Disconnect diode PCC CR4 (across PCC K04 coil). 2. Measure resistance of the following points: - lead at PCC J01-7 + lead at PCC J01-6 (on PCC box).
13	Is resistance greater than 5 ohms?	1. Exchange cable from PCC K04 to PCC J/P01. 2. Go to step 19.
14	Go to **Instructions** column.	1. Exchange PCC K04. 2. Go to step 19.
15	Go to **Instructions** column.	Measure resistance at the following points: - lead at frame ground + lead at PCC J01-6 (on PCC box).
16	Is a short indicated?	1. Exchange cable from PCC J/P01 to PCC K04. 2. Go to step 19.
17	Go to **Instructions** column.	1. Reconnect PCC P01. 2. Measure resistance at the following points: - lead at frame ground + lead at PCC P01-6 (on PCC box).
18	Is a short indicated?	1. Exchange cable from PCC J/P01 to PS101 J/P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 19.
19	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



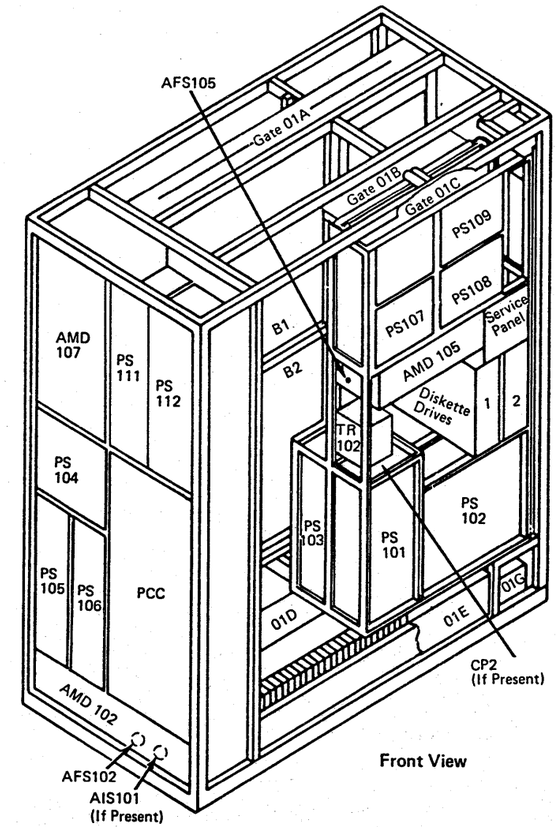
Power Codes 0A, A0

Power code indicates a tripped CP in PS102.

Possible causes:

- PS102
- Short in PS102 DC distribution
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Record and reset any tripped CP. 3. Set PCC CB1 and CB2 on.
2	Is any CP tripped now?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.
3	Is a power code of 0A or A0?	Go to page PR 231.
4	Go to **Instructions** column.	1. Press Check Reset. 2. Press service panel Power On. 3. Check PS102 for any tripped CP.
5	Is CP1 tripped?	Go to page PR 161.
6	Is CP2 tripped?	Go to page PR 171.
7	Is CP3 tripped?	Go to page PR 181.
8	Is CP4 tripped?	Go to page PR 191.
9	Is CP5 tripped?	Go to page PR 201.
10	Is CP6 tripped?	Go to page PR 211.
11	Is CP7 tripped?	Go to page PR 221.
12	Are all CPs in the On position and is the power code 0A or A0 displayed?	Go to page PR 231.
13	Go to **Instructions** column.	Go to page PR 901.



Front View

Left Side View

4381 B/M 2676380	MI Seq BA080	PN 6169081 1 of 1	EC A20558 01 Oct 84				

0 0 0

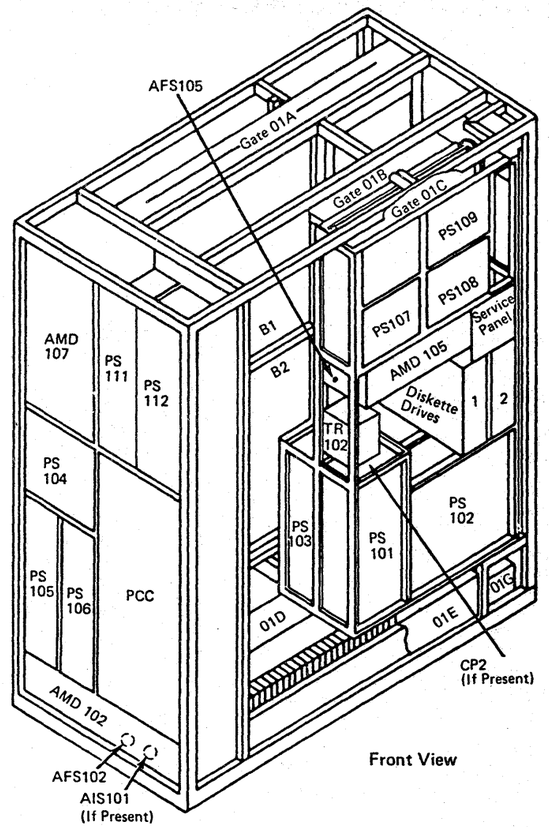
PS102 CP1 Tripped

PS102 CP1 tripped indicates a short in the +5 Vdc distribution to the 01A-A2 board.

Possible causes:

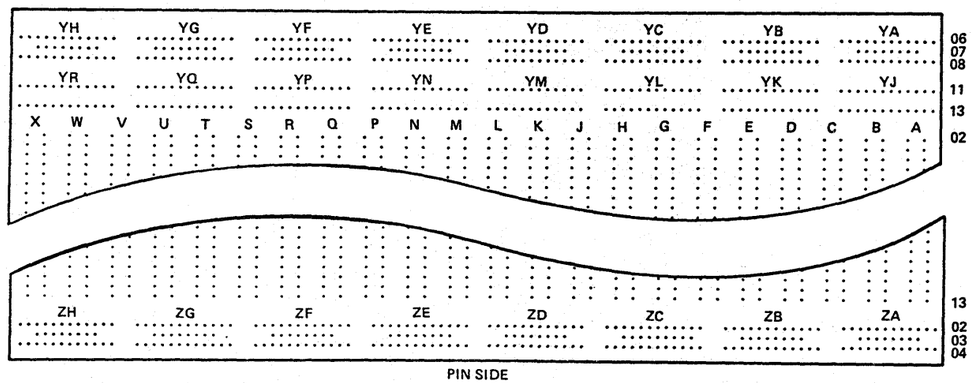
- PS102
- PS105 through PS112
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cables at PS102 J/P05, J/P06, J/P08, and J/P09. 3. Reset CP1. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
2	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cables at PS102 J05, J06, J08, and J09. 3. Disconnect cables at 01A-A2YD, YE, ZG, and ZH (pin side). 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
4	Is CP1 in the On position?	Go to step 9.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cables at PS102 J/P05 and J/P06. 3. Reset CP1. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.



Front View

Left Side View



PIN SIDE

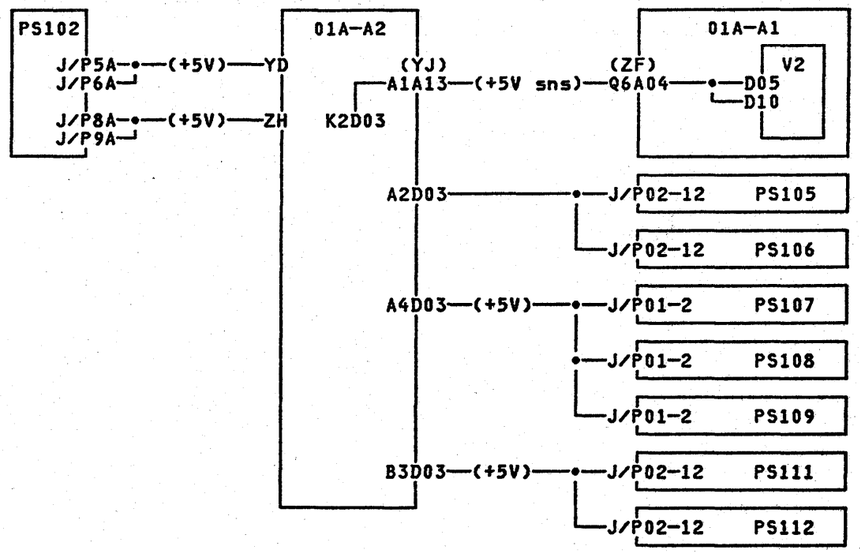
Step	Conditions	Instructions
6	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P08 and J/P09 to 01A-A2ZG and ZH (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
7	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cables at PS102 J05 and J06. 3. Disconnect cables at PS102 J/P08 and J/P09. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
8	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P05 and J/P06 to 01A-A2YD and YE (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
9	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cables at 01A-A2YD, YE, ZG, and ZH (pin side). 3. Disconnect cables at 01A-A1ZF, 01A-A2A2, A3, A4, A5, B2, B3, and B5 (card side). 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
10	Is CP1 tripped?	1. Short in 01A-A2 board or cards. 2. Reset CP1. 3. Go to page PR 251.
11	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1ZF (card side). 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.

Step	Conditions	Instructions
12	Is CP1 tripped?	1. Short in 01A-A1 board or cards. 2. Go to page PR 241.
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A5. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
14	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable at 01A-A2A5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A4. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
16	Is CP1 in the On position?	Go to step 24.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS107 J/P01. 3. Reset CP1. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
18	Is CP1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS107 J01. 3. Disconnect cable at PS108 J/P01. 4. Reset CP1. 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On.
20	Is CP1 in the On position?	1. Set PCC CB1 and CB2 off. 2. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.

Step	Conditions	Instructions
21	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at PS108 J/P01. 3. Disconnect cable at PS109 J/P01. 4. Reset CP1. 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On.
22	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A4 to PS107, PS108, and PS109. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Also suspect PS102 CP1. 4. Go to step 44.
23	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS109. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A3. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
25	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable at 01A-A2A3. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
26	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2A2. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
27	Is CP1 in the On position?	Go to step 33.
28	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS105 J/P02. 3. Reset CP1. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
29	Is CP1 in the On position?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set PCC CB1 and CB2 off. 2. Exchange PS105. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
30	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS106 J/P02. 3. Reset CP1. 4. Set PCC CB1 and CB1 on. 5. Press service panel Power On.

Step	Conditions	Instructions
31	Is CP1 in the On position?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set PCC CB1 and CB2 off. 2. Exchange PS106. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
32	Go to **Instructions** column.	1. Exchange cable from 01A-A2A2 to PS105 and PS106. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 44.
33	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2B2. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
34	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable at 01A-A2B2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
35	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A2B3. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
36	Is CP1 in the On position?	Go to step 42.
37	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS111 J/P02. 3. Reset CP1. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
38	Is CP1 in the On position?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set PCC CB1 and CB2 off. 2. Exchange PS111. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
39	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS112 J/P02. 3. Reset CP1. 4. Set PCC CB1 and CB1 on. 5. Press service panel Power On.
40	Is CP1 in the On position?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set PCC CB1 and CB2 off. 2. Exchange PS112. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 44.
41	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2B3 to PS111 and PS112. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 44.
42	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect 01A-A2B5. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.

Step	Conditions	Instructions
43	Is CP1 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable at 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.
44	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A2 board 01A-A1 board PS102, PS105 PS106, PS107 PS108, PS109 PS111, PS112. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.

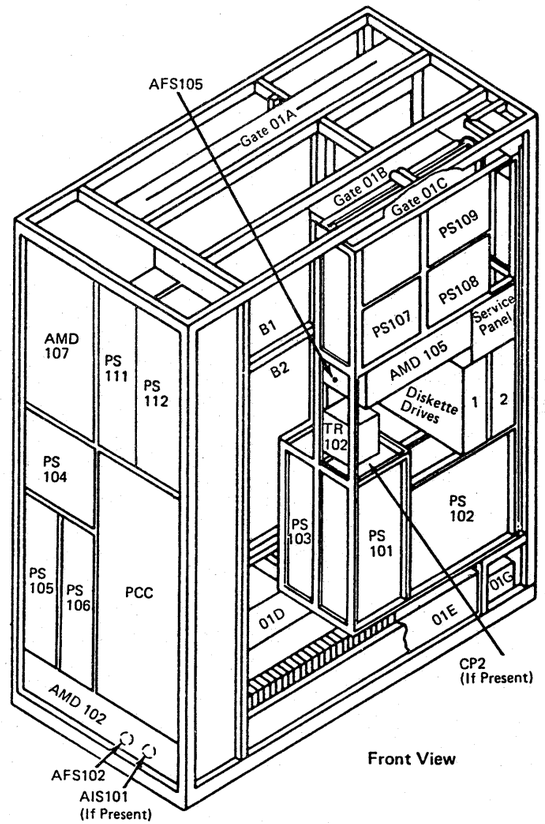


PS102 CP2 Tripped

PS102 CP2 tripped indicates a short in the +5 Vdc distribution to the 01A-A1 and 01A-A3 boards or sense line.

PS102 CP2 tripped is sensed by a 1xxxxxxx Ref Code.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset PS102 CP2. 3. Set PCC CB1 and CB2 on. 4. Press Power On switch on OCP. 5. Allow time for I/O to sequence on.
2	Is power complete?	Go to page PR 451.
3	Is CP2 tripped?	1. Do not reset CP2. 2. Press OCP Power On. 3. Allow time for I/O to sequence up.
4	Is there an eight-digit Ref Code displayed?	Go to page PR 1001.
5	Go to **Instructions** column.	Go to page PR 001.



Front View

Left Side View

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0 0 0

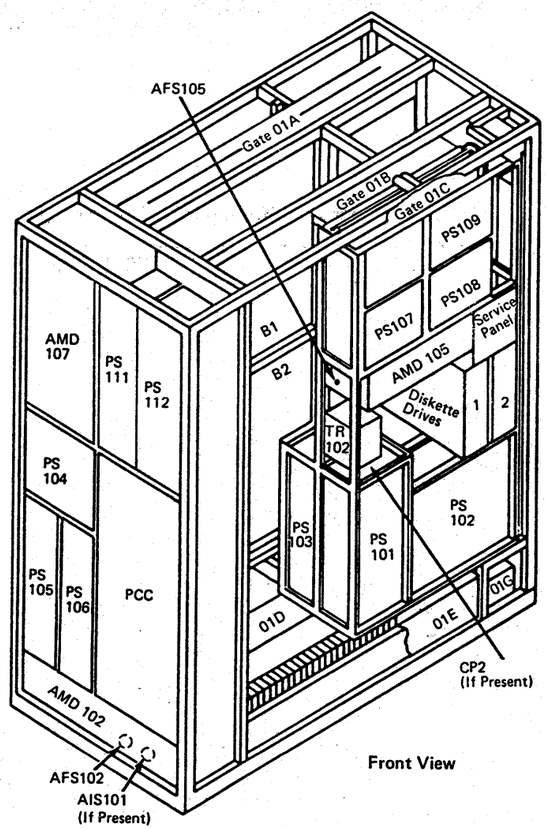
PS102 CP3 Tripped

PS102 CP3 tripped indicates a short in the +5 Vdc distribution to the diskette drives.

Possible causes:

- PS102
- Short in dc distribution cable
- Diskette drive 1 or diskette drive 2 shorted.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cables at PS102 J/P10 and J/P11. 3. Reset CP3. 4. Press Check Reset. 5. Press service panel Power On.
2	Is CP3 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 11.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS102 J10. 3. Press Check Reset. 4. Press service panel Power On.
4	Is CP3 tripped?	1. Short in diskette drive 1. 2. Go to step 8.
5	Go to **Instructions** column.	1. Reconnect cable at PS102 J11. 2. Press Check Reset. 3. Press service panel Power On.
6	Is CP3 tripped?	1. Short in diskette drive 2. 2. Go to step 8.



Front View

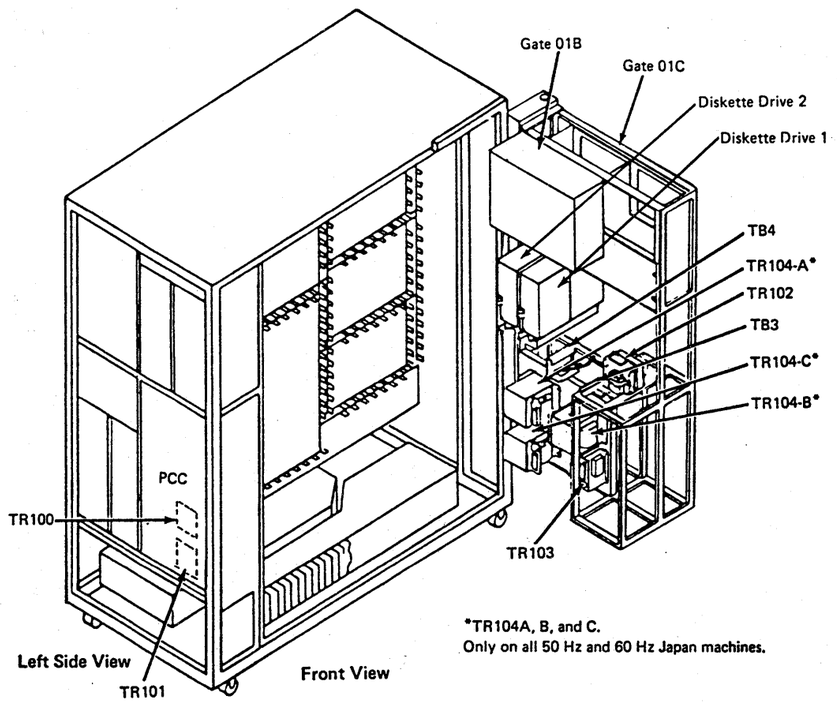
Left Side View

4381
B/M 2676380

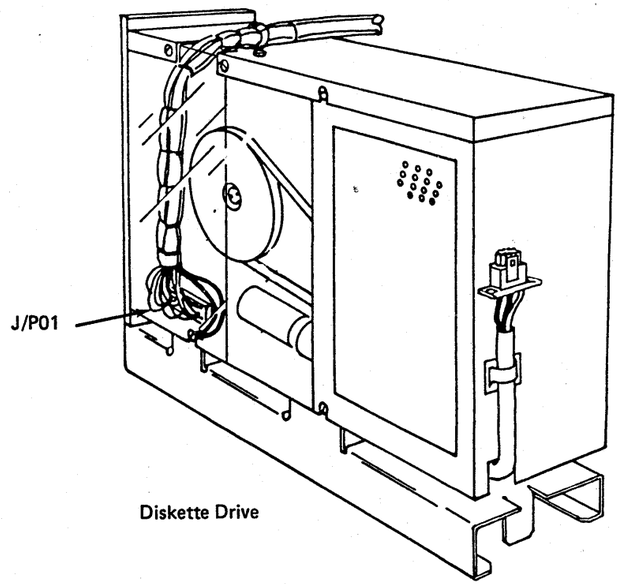
MI	PN 6169084
Seq BA095	1 of 2

EC A20558				
01 Oct 84				

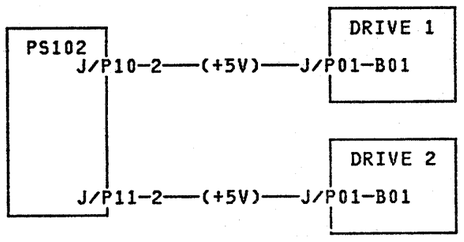
Step	Conditions	Instructions
7	Go to **Instructions** column.	Go to step 11.
8	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Ensure cables are reconnected at PS102 J/P10 and J/P11. 3. Disconnect cable at the failing diskette drive connector J/P01. 4. Press Check Reset. 5. Press service panel Power On.
9	Is CP3 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 to diskette drive. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 11.
10	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange diskette drive. 4. Go to step 11.
11	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 Diskette drive 1 Diskette drive 2. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



*TR104A, B, and C.
Only on all 50 Hz and 60 Hz Japan machines.



Diskette Drive



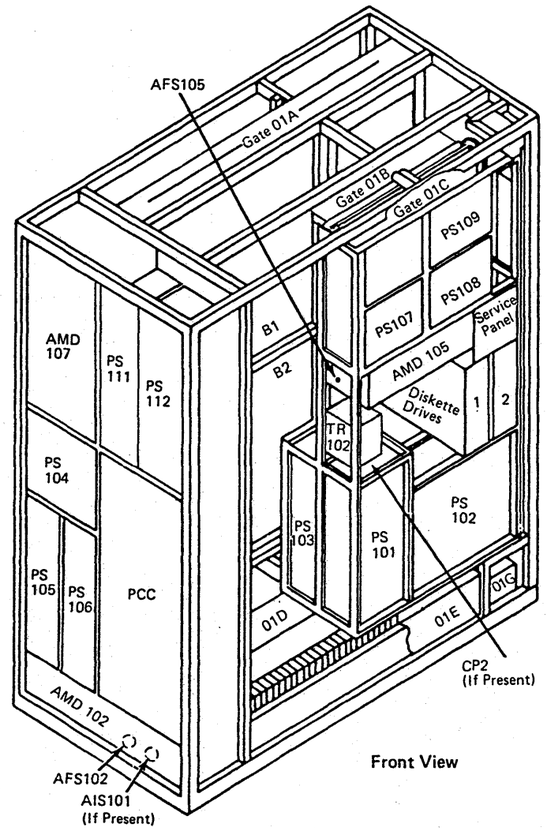
PS102 CP4 Tripped

PS102 CP4 tripped indicates a short in the +8.5 Vdc distribution to the 01A-A2 board.

Possible causes:

- PS102
- Short in dc distribution
- 01A-A1V2 card.

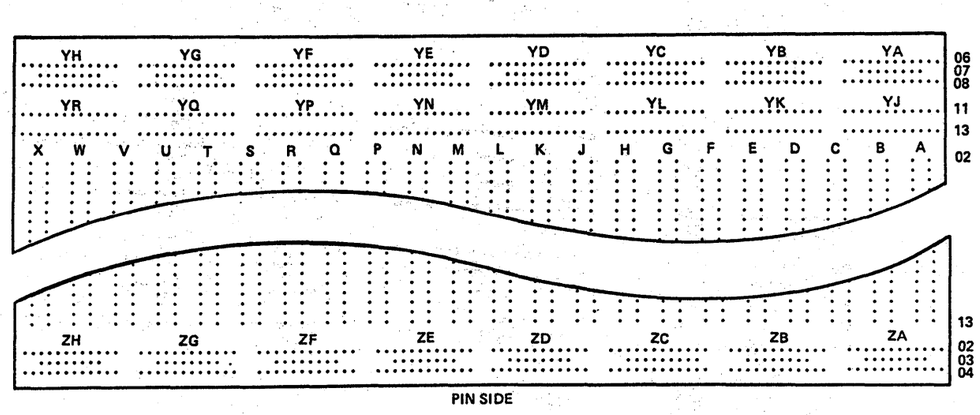
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cable at PS102 J/P15. 3. Reset CP4. 4. Press Check Reset. 5. Press service panel Power On.
2	Is CP4 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 14.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS102 J15. 3. Disconnect cable at 01A-A2ZE (pin side). 4. Press Check Reset. 5. Press service panel Power On.
4	Is CP4 tripped?	Short in dc distribution between PS102 J/P15 and 01A-A2ZE. 1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P15 to 01A-A2ZE (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 14.

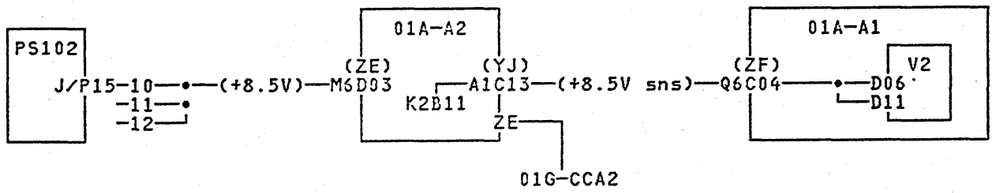


Front View

Left Side View

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2ZE (pin side). 3. Disconnect cable at 01A-A1ZF (card side). 4. Disconnect cable at 01A-A2ZE (card side). 5. Press Check Reset. 6. Press service panel Power On.
6	Is CP4 tripped?	Go to page PR 251.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A1ZF (pin side). 3. Press Check Reset. 4. Press service panel Power On.
8	Is CP4 tripped?	Go to page PR 241.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2ZE (card side). 3. Press Check Reset. 4. Press service panel Power On.
10	Is CP4 in the On position?	Go to step 14.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect RSF cable at 01G-CCA2. 3. Reset CP4. 4. Set service panel Power Off switch to Power Off and then back to Normal. 5. Press Check Reset. 6. Press service panel Power On.
12	Is CP4 tripped?	1. Exchange cable from 01A-A2ZE (card side) to 01G-CCA2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 14.
13	Go to **Instructions** column.	Failure in modem or modem cable external to the processor. 1. Correct or exchange failing device. 2. Go to step 14.
14	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board 01G. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





4381-3 B/M 2676380	MI Seq BA100	PN 6169085 2 of 2	EC A20558 01 Oct 84	EC A20560 18 Feb 85			

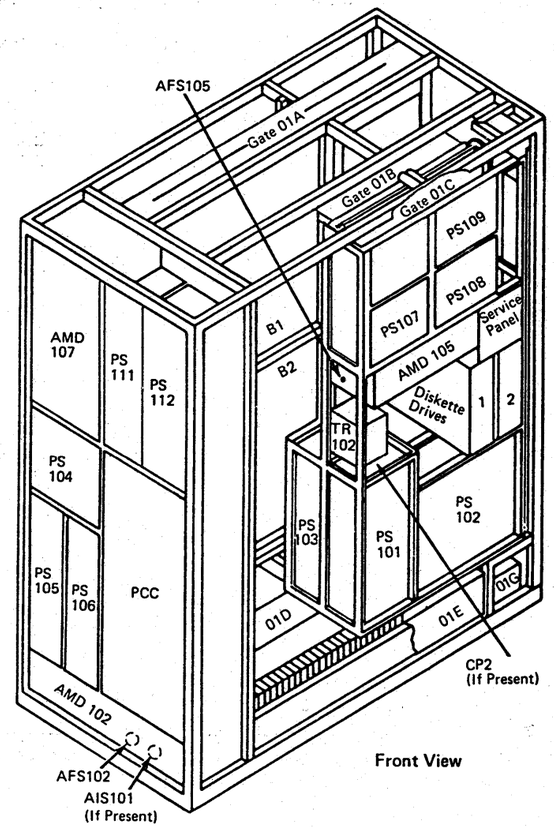
PS102 CP5 Tripped

PS102 CP5 tripped indicates a short in the -5 Vdc distribution to the diskette drives, 01A-A1, and 01A-A2.

Possible causes:

- PS102
- Short in diskette drive 1 or diskette drive 2
- Short in dc distribution
- 01A-A1V2 card.

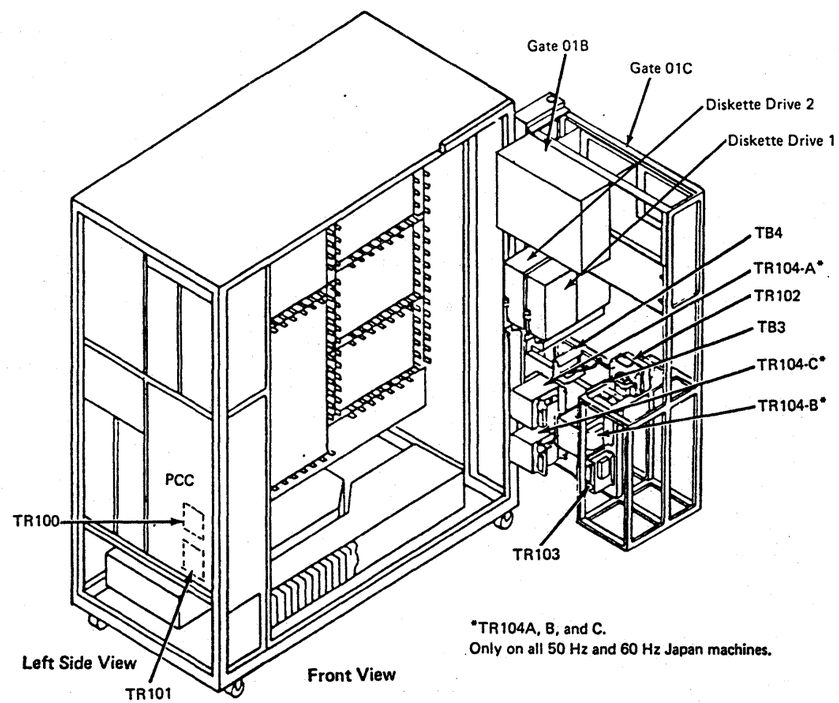
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cables at PS102 J/P10, J/P11, and J/P14. 3. Reset CP5. 4. Press Check Reset. 5. Press service panel Power On.
2	Is CP5 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 18.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS102 J10 (diskette drive 1). 3. Press Check Reset. 4. Press service panel Power On.
4	Is CP5 tripped?	Go to step 8.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS102 J11 (diskette drive 2). 3. Press Check Reset. 4. Press service panel Power On.
6	Is CP5 tripped?	Go to step 8.
7	Go to **Instructions** column.	Go to step 11.



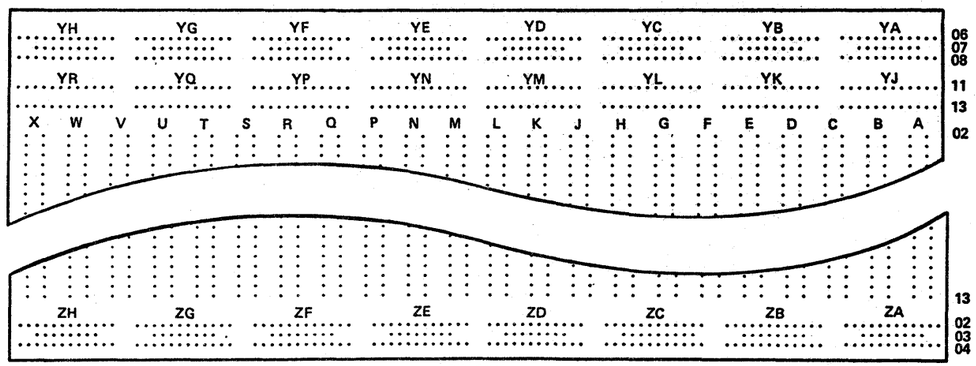
Front View

Left Side View

Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cable at failing diskette drive connector J/P01. 3. Ensure cables are reconnected at PS102 J10 and J11. 4. Reset CP5. 5. Press Check Reset. 6. Press service panel Power On.
9	Is CP5 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange the cable from PS102 J/P10 or J/P11 to the failing diskette drive. 3. Go to step 18.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange diskette drive. 3. Go to step 18.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS102 J14. 3. Disconnect cable at 01A-A2YF (pin side). 4. Press Check Reset. 5. Press service panel Power On.
12	Is CP5 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P14 to 01A-A2YF (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 18.
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2YF (pin side). 3. Disconnect cable at 01A-A1ZF (card side). 4. Press Check Reset. 5. Press service panel Power On.
14	Is CP5 tripped?	Go to page PR 251.

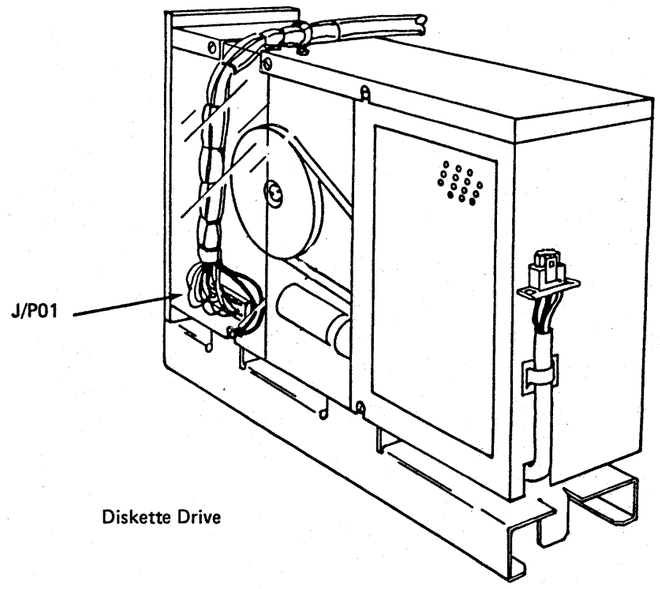


*TR104A, B, and C.
Only on all 50 Hz and 60 Hz Japan machines.

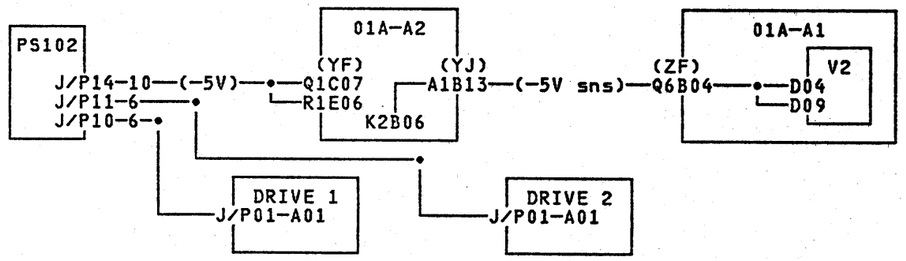


PIN SIDE

Step	Conditions	Instructions
15	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A1ZF (card side). 3. Press Check Reset. 4. Press service panel Power On.
16	Is CP5 tripped?	Go to page PR 241.
17	Go to **Instructions** column.	Go to step 18.
18	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board Diskette drive 1 Diskette drive 2. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



Diskette Drive



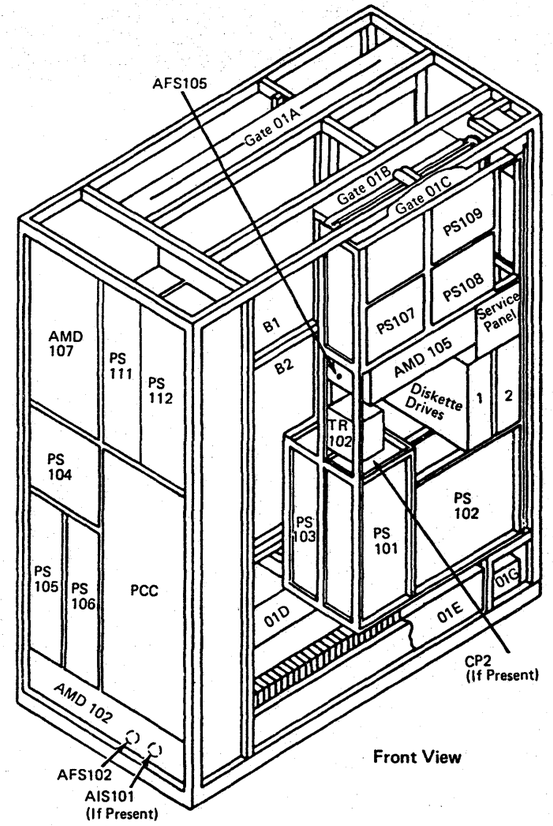
PS102 CP6 Tripped

PS102 CP6 tripped indicates a short in the -12 Vdc distribution to the 01A-A2 board.

Possible causes:

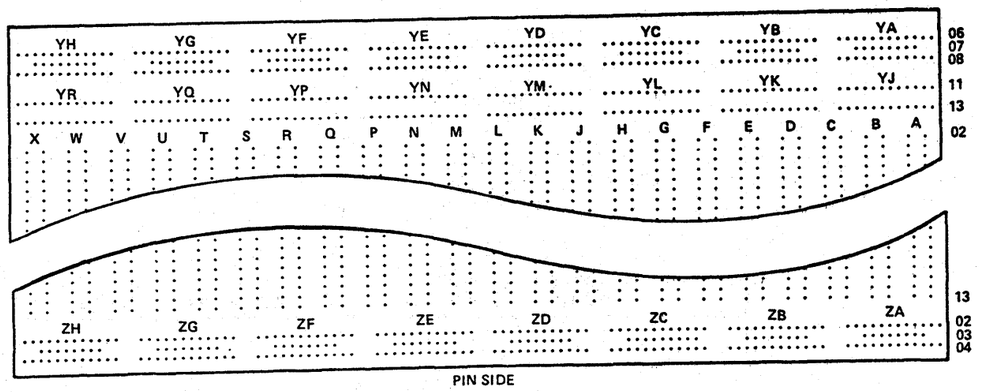
- PS102
- Short in DC distribution
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Press service panel Power Off. 2. Disconnect cables at PS102 J/P15. 3. Reset CP6. 4. Set service panel Power Off switch to Power Off and then back to Normal. 5. Press Check Reset. 6. Press service panel Power On.
2	Is CP6 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 14.
3	Go to **Instructions** column.	1. Press service panel Power Off. 2. Reconnect cable at PS102 J15. 3. Disconnect cable at 01A-A2ZA. 4. Set service panel Power Off switch to Power Off and then back to Normal. 5. Press Check Reset. 6. Press service panel Power On.
4	Is CP6 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable between PS102 J/P15 and 01A-A2ZA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 14.



Front View

Left Side View



PIN SIDE

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2ZA. 3. Disconnect cable at 01A-A1ZF. 4. Disconnect cable at 01A-A2ZE (card side). 5. Press Check Reset. 6. Press service panel Power On.
6	Is CP6 tripped?	Go to page PR 251.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A1ZF. 3. Press Check Reset. 4. Press service panel Power On.
8	Is CP6 tripped?	Go to page PR 241.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2ZE (card side). 3. Press Check Reset. 4. Press service panel Power On.
10	Is CP6 in the On position?	Go to step 14.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect RSF cable at 01G-CCA2. 3. Reset CP6. 4. Press Check Reset. 5. Press service panel Power On.
12	Is CP6 tripped?	1. Exchange cable from 01A-A2ZE (card side) to 01G-CCA2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 14.
13	Go to **Instructions** column.	Failure in modem or modem cable external to the processor. 1. Repair or exchange failing device. 2. Go to step 14.
14	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board 01G gate. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.

PR 212

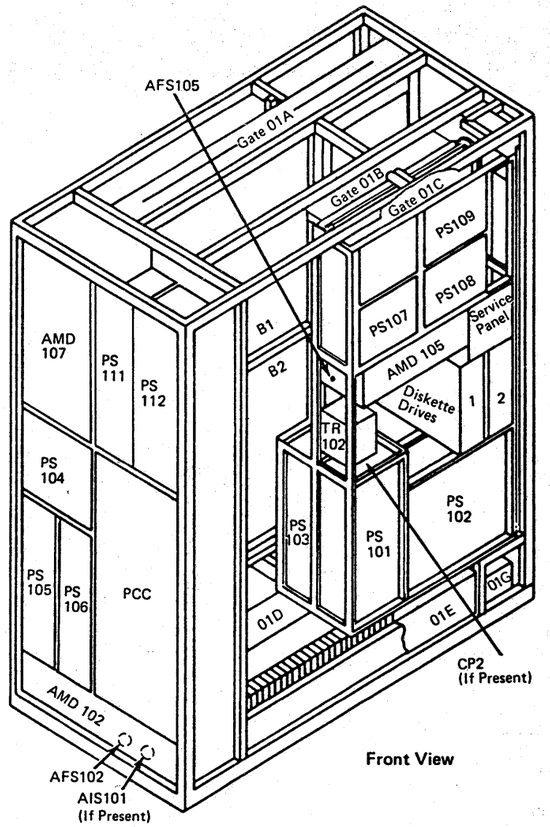
PS102 CP7 Tripped

PS102 CP7 tripped indicates a short in the +12 Vdc distribution to the 01A-A2 board.

Possible causes:

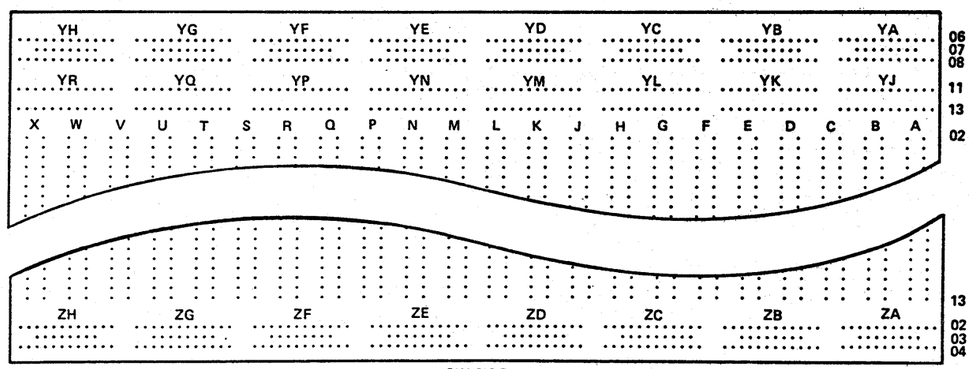
- PS102
- Short in DC distribution
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cables at PS102 J/P14 and J/P15. 3. Reset CP7. 4. Press Check Reset. 5. Press service panel Power On.
2	Is CP7 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 9.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cables at PS102 J14 and J15. 3. Disconnect cables at 01A-A2YA and YC (pin side). 4. Press Check Reset. 5. Press service panel Power On.
4	Is CP7 tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable between PS102 J/P14, J/P15 and 01A-A2YA, YC. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 9.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A2YA and YC (pin side). 3. Disconnect cable at 01A-A1ZF (card side). 4. Press Check Reset. 5. Press service panel Power On.



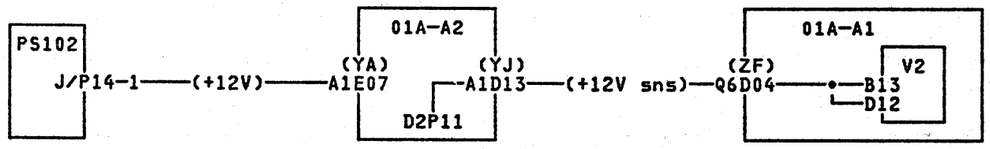
Front View

Left Side View



PIN SIDE

Step	Conditions	Instructions
6	Is CP7 tripped?	Go to page PR 251
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A1ZF. 3. Press Check Reset. 4. Press service panel Power On.
8	Is CP7 tripped?	Go to page PR 241.
9	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



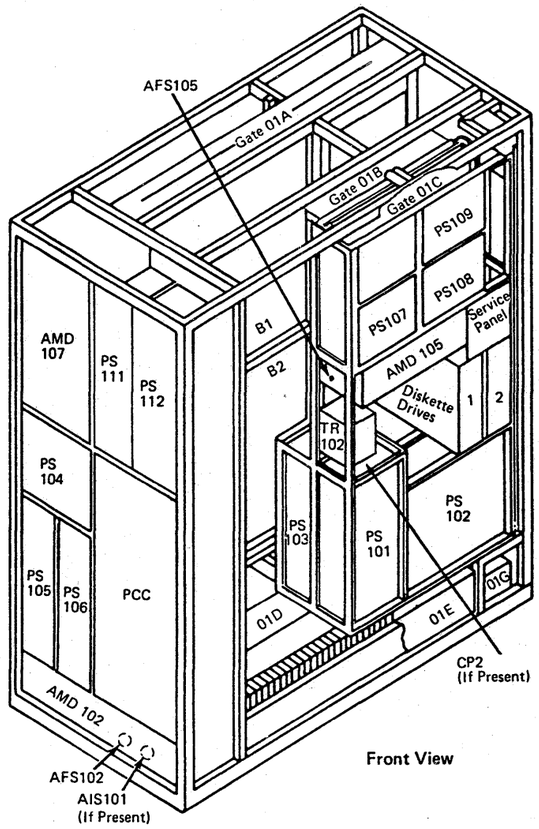
False CP Tripped Indication

Power code 0A or A0 with no CPs tripped indicates a false PS102 CP tripped condition.

Possible causes:

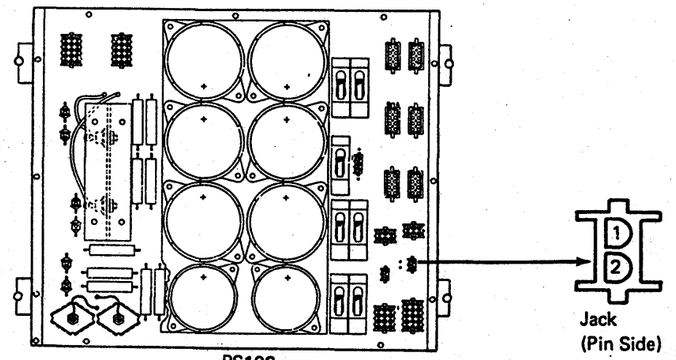
- PS102
- Open CP tripped sense loop
- 01A-A1V2 card.

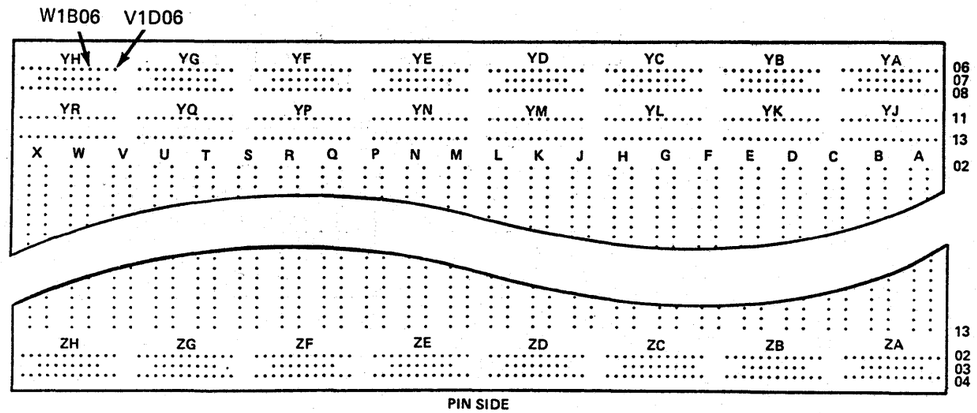
Step	Conditions	Instructions
1	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B02.
2	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 12.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1W1B06.
4	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 12.
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P13-2.
6	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YH to PS102 J/P13. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 12.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P13-1.
8	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 12.



Front View

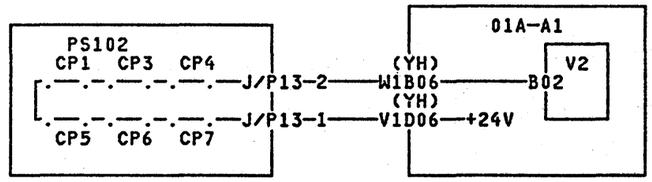
Left Side View





4381 B/M 2676380	MI Seq BA120	PN 6169089 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
9	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V1D06.
10	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P13 to 01A-A1YH. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 12.
11	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 12.
12	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



Short In 01A-A1 Board

You are here because a short is indicated in the 01A-A1 board.

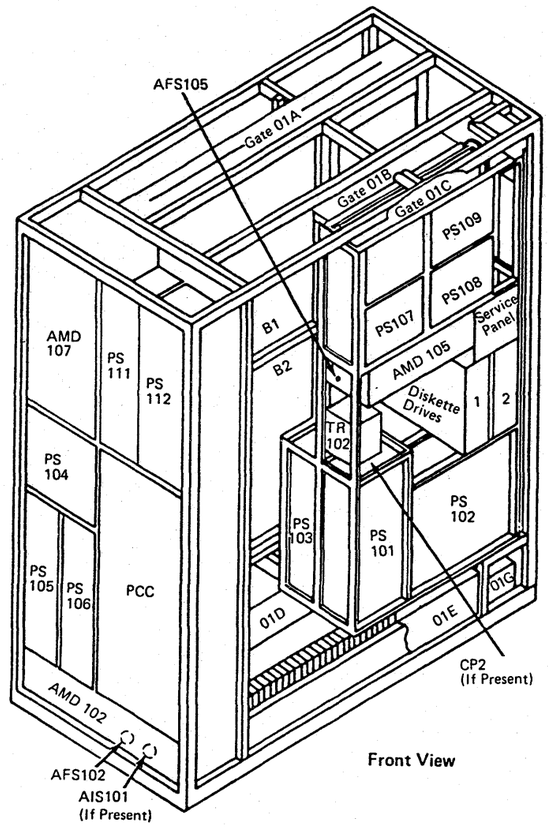
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove cards from the 01A-A1 board. 3. Disconnect cable at 01A-A1ZF (card side). 4. Measure resistance at the pin location in table **A** for the failing CP. With card 01A-A1V2 removed, all readings should indicate an open.
2	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 5.
3	Go to **Instructions** column.	1. Reinstall 01A-A1V2 card. 2. Measure resistance at the pin location in table **B** for the failing CP. The meter should indicate more than 100 ohms.
4	Is resistance less than 100 ohms?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 5.
5	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall 01A-A1 cards. 3. Reconnect cable at 01A-A1ZF (card side). 4. Reinstall and check all cables and cards for proper seating in the 01A-A1 board. 5. Reset any tripped CPs. 6. Set PCC CB1 and CB2 on. 7. Go to page PR 901.

A

Failing CP	Measuring Points	With V2 Removed
CP1	01A-A1V2D05 to D08	Open
CP4	01A-A1V2D06 to D08	Open
CP5	01A-A1V2D04 to D08	Open
CP6	01A-A1V2D02 to D08	Open
CP7	01A-A1V2D12 to D08	Open

B

Failing CP	Measuring Points	With V2 Installed
CP1	01A-A1V2D05 to D08	> 100 Ohms
CP4	01A-A1V2D06 to D08	> 100 Ohms
CP5	01A-A1V2D04 to D08	> 100 Ohms
CP6	01A-A1V2D02 to D08	> 100 Ohms
CP7	01A-A1V2D12 to D08	> 100 Ohms



Front View

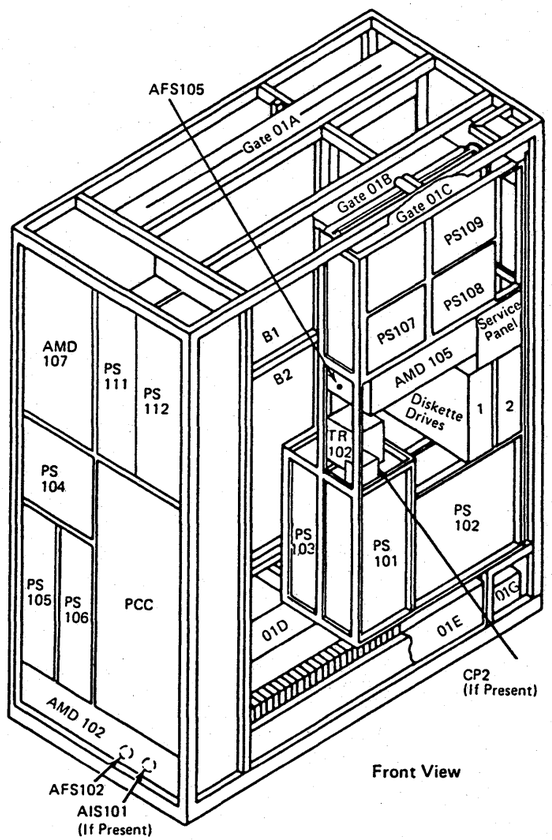
Left Side View

0 0 0

Short In 01A-A2 Board

You are here because an indication of a short in the 01A-A2 board.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reset tripped CP. 3. Remove all cards from the 01A-A2 board. 4. Remove the cable from 01A-A2YJ (card side). 5. Set PCC CB1 and CB2 on. 6. Press Check Reset. 7. Press service panel Power On.
2	Is any PS102 CP tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Reset tripped CP. 4. Go to step 8.
3	Go to **Instructions** column.	1. Reconnect DC sense cable at 01A-A2YJ (card side). 2. Press Check Reset. 3. Press service panel Power On.
4	Is any PS102 CP tripped?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2YJ to 01A-A1ZF (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Reinstall cards. 4. Reset tripped CP. 5. Go to step 8.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reinstall one card in 01A-A2 board. 3. Press Check Reset. 4. Press service panel Power On.
6	Is any PS102 CP tripped?	1. Remove the card just reinstalled, and continue installing the remaining cards using steps 5, 6, and 7. • If only one card is failing; exchange the card. • If more than one card is failing, you have a load problem: Invoke your support structure. Exchange PS102. 2. Go to step 8.
7	Go to **Instructions** column.	1. Repeat steps 5, 6, and, 7 until all cards are reinstalled, then go to step 8.
8	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Ensure PCC CB1 and CB2 are off. 3. Reinstall and check all cables and cards for proper seating at the 01A-A2 board. 4. Reset any tripped CPs. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 901.



Front View

Left Side View

4381-3 B/M 2676380	MI Seq BA130	PN 6169091 1 of 1	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

0 0 0

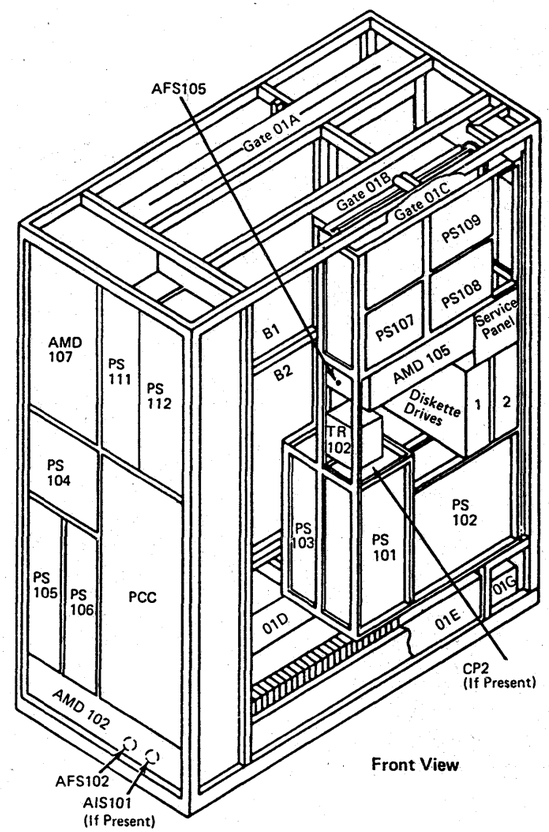
Power Codes 1A ,A1, 2A, A2

Power codes 1A, A1, 2A, and A2 indicate -5 Vdc missing or out of tolerance at the 01A-A2 board.

Possible causes:

- Open in -5 Vdc distribution
- Open in -5 Vdc sense line
- 01A-A1V2 card
- PS102.

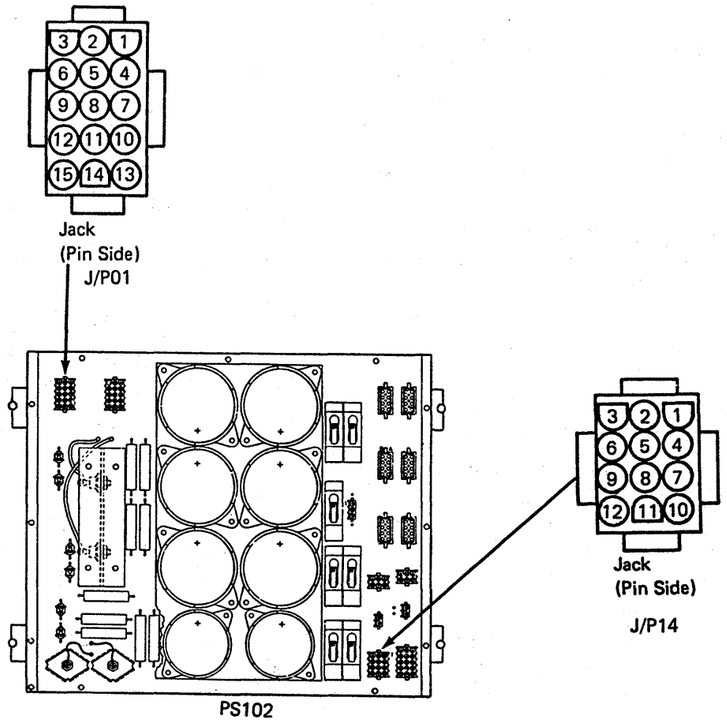
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds. This will ensure an accurate power code.
2	Is a power code displayed?	Go to step 24.
3	Go to **Instructions** column.	1. Press Check Reset. 2. Press service panel Power On. 3. Wait 10 seconds.
4	Is there a 1A, A1, 2A, or A2 power code displayed?	1. Set PCC CB1 and CB2 off. 2. Check TR102 F1.
5	Is TR102 F1 good?	1. Set PCC CB1 and CB2 on. 2. Go to step 8.
6	Go to **Instructions** column.	1. Exchange F1. 2. Set PCC CB1 and CB2 on. 3. Press service panel Power On.
7	Is power complete?	Go to step 27.
8	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at PS102 J/P14-11 + lead at PS102 J/P14-10. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present for 2 to 5 seconds.

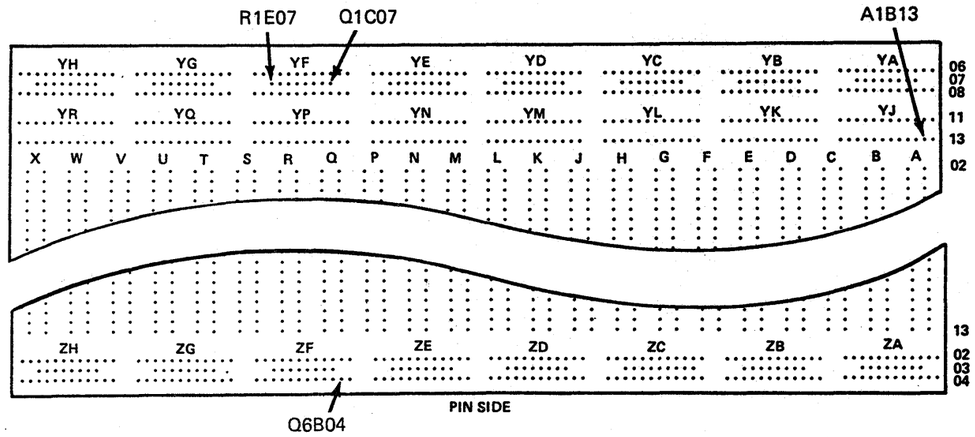


Front View

Left Side View

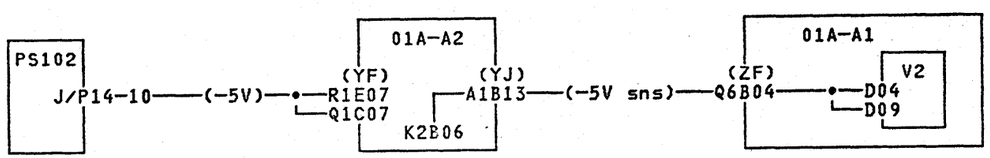
Step	Conditions	Instructions
9	Is voltage -4.5 to -5.5 Vdc?	Go to step 14.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS102 P01. 3. Set PCC CB1 and CB2 on. 4. Measure for 5 **Vac** at the following points: PS102 P01-7 to P01-1 PS102 P01-4 to P01-1 (cable end). To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
11	Is voltage greater than 4.5 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 27.
12	Is voltage less than 4.5 **Vac** at both points?	Go to page PR 361.
13	Is voltage less than 4.5 **Vac** at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Go to step 27.
14	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A2V2D08 + lead at 01A-A1V2D04 + lead at 01A-A1V2D09. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
15	Is voltage -4.5 to -5.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 27.





Step	Conditions	Instructions
16	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1Q6B04. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
17	Is voltage -4.5 to -5.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 27.
18	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1B13. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
19	Is voltage -4.5 to 5.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from 01A-A2YJ to 01A-A1ZF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 27.
20	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2Q1C07 + lead at 01A-A2R1E07. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

Step	Conditions	Instructions
21	Is voltage -4.5 to -5.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 27.
22	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P14-10. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
23	Is voltage -4.5 to -5.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS102-J/P14 to 01A-A2YF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 27.
24	Go to **Instructions** column.	Measure for -5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D04.
25	Is voltage 0.0 to -0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 27.
26	Go to **Instructions** column.	Go to page PR 351.
27	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



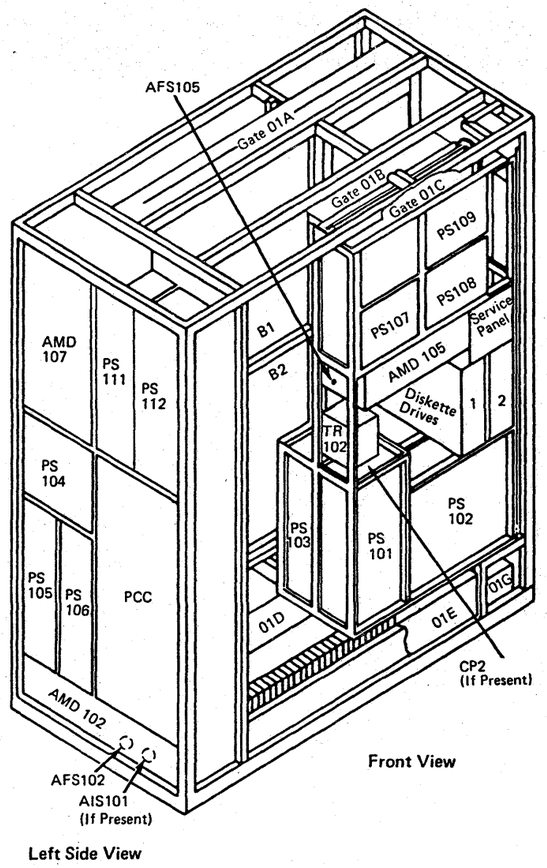
Power Codes 3A, A3, 4A, A4

Power codes 3A, A3, 4A, and A4 indicate -12 Vdc missing or out of tolerance at the 01A-A2 board.

Possible causes:

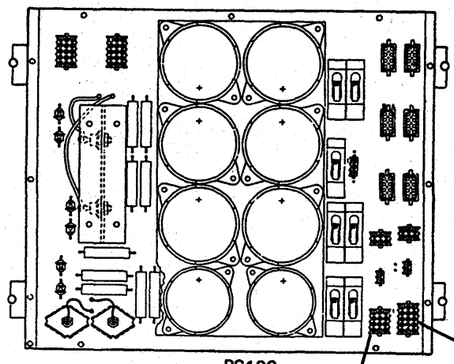
- Open in -12 Vdc distribution
- Open in -12 Vdc sense line
- 01A-A1V2 card
- PS102.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds.
2	Is a power code displayed?	Go to step 20.
3	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at PS102 J/P15-3 + lead at PS102 J/P15-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
4	Is voltage -11.5 to -12.5 Vdc?	Go to step 9.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS102 P01. 3. Set PCC CB1 and CB2 on. Measure for -12 Vac at the following points: PS102 P01-15 to 2 PS102 P01-14 to 2 (cable end). To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
6	Is voltage greater than -11.5 Vac at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 23.

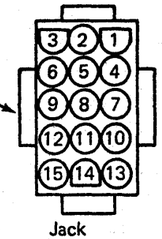


Left Side View

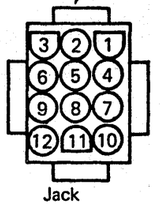
Front View



PS102



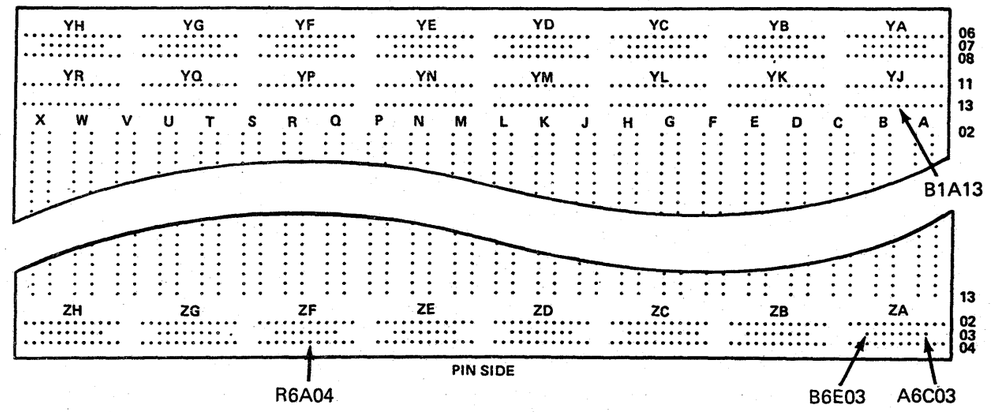
Jack
(Pin Side)
J/P15

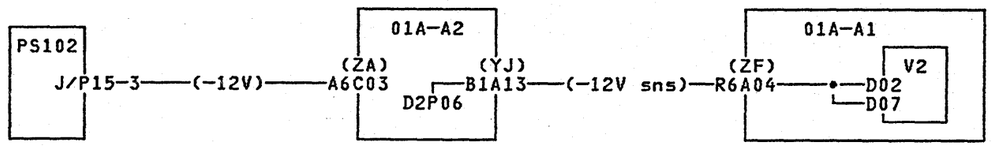


Jack
(Pin Side)
J/P14

Step	Conditions	Instructions
7	Is voltage less than -11.5 Vac at both points?	Go to page PR 361.
8	Go to **Instructions** column.	Set PCC CB1 and CB2 off. 1. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 2. Go to step 23.
9	Go to **Instructions** column.	Measure for -12 Vdc at the following points. - lead at 01A-A1V2D08 + lead at 01A-A1V2D07 + lead at 01A-A1V2D02. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
10	Is voltage -11.5 to -12.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 23.
11	Is voltage -11.5 to -12.5 Vdc at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
12	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1R6A04. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
13	Is voltage -11.5 to -12.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
14	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2B1A13. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
15	Is voltage -11.5 to -12.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from 01A-A2YJ to 01A-A1ZF (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 23.
16	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A6C03 + lead at 01A-A2B6E03. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
17	Is voltage -11.5 to -12.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 23.
18	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P15-3. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

Step	Conditions	Instructions
19	Is voltage -11.5 to -12.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS102 J15 to 01A-A2ZA (pin side). 3. Go to step 23.
20	Go to **Instructions** column.	Measure for -12 Vdc at the following points: - lead at 01A-A1V2D02 + lead at 01A-A1V2D08.
21	Is voltage 0.0 to -0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 23.
22	Go to **Instructions** column.	Go to page PR 351.
23	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





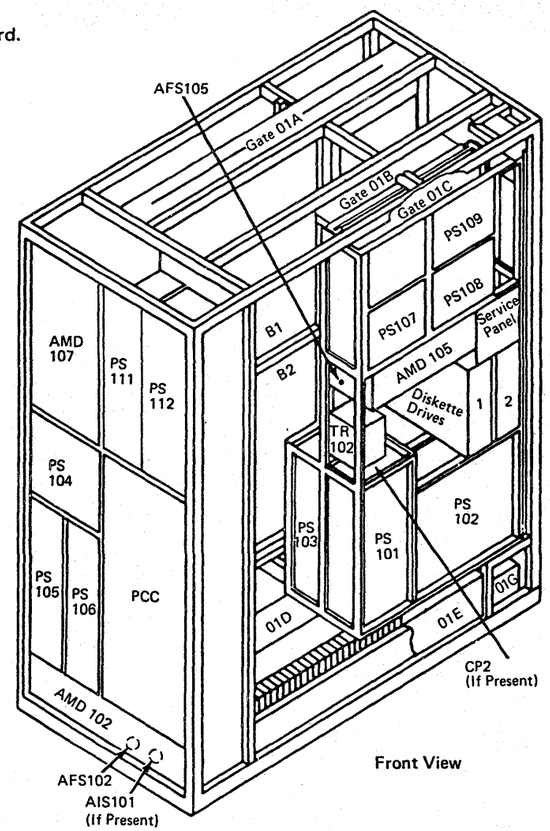
Power Codes 5A, A5, 6A, A6

Power codes 5A, A5, 6A, and A6 indicate +5 Vdc missing or out of tolerance at the 01A-A2 board.

Possible causes:

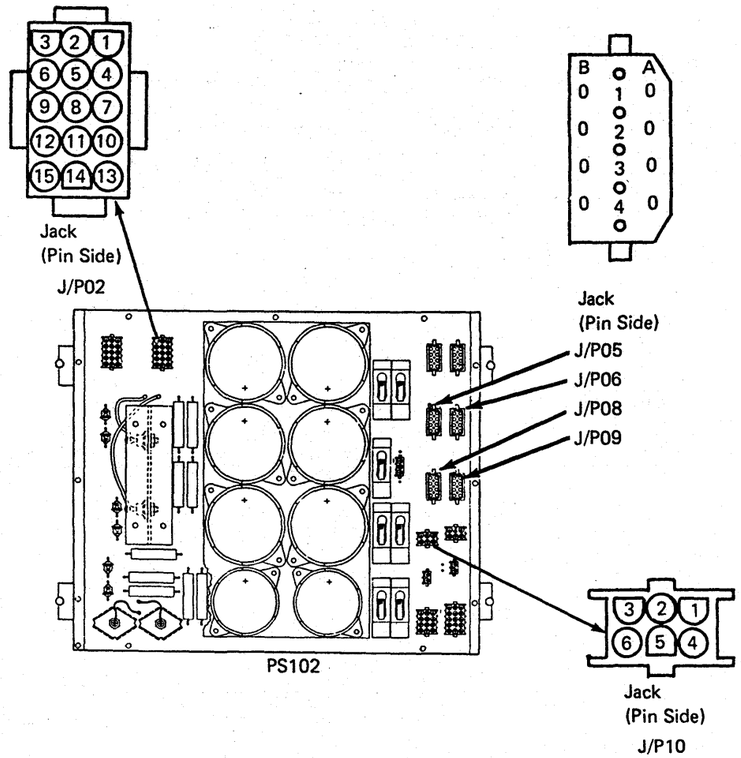
- Open in +5 Vdc distribution
- Open in +5 Vdc sense line
- 01A-A1V2 card
- PS102
- Short in 01A-A1 board.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds. This ensures a valid power code.
2	Is a power code displayed?	Go to step 25.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at PS102 J/P10-1 + lead at PS102 J/P10-2. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
4	Is voltage greater than +4.5 Vdc?	Go to step 9.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS102 P02. 3. Set PCC CB1 and CB2 on. Measure for 5 **Vac** at the following points: PS102 P02- 2 to 1 PS102 P02- 3 to 1 PS102 P02- 5 to 4 PS102 P02- 6 to 4 PS102 P02- 9 to 7 PS102 P02- 8 to 7 PS102 P02-11 to 10 PS102 P02-12 to 10 PS102 P02-14 to 13 PS102 P02-15 to 13 (cable end). To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.



Left Side View

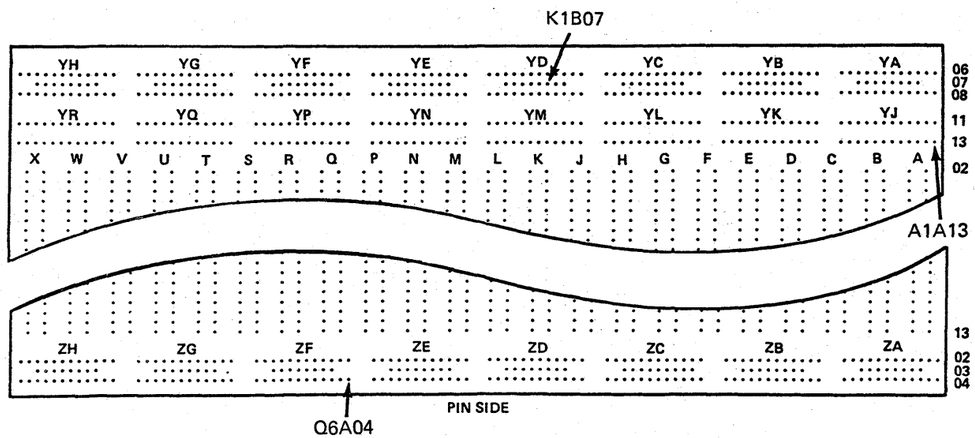
Front View

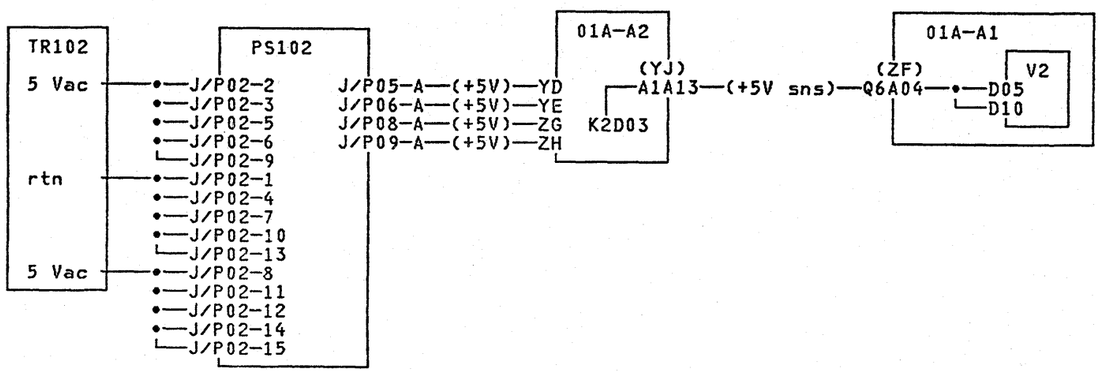


Step	Conditions	Instructions
6	Is voltage greater than 4.5 **Vac** at all points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 28.
7	Is voltage less than 4.5 **Vac** at all points?	Go to page PR 361.
8	Is voltage less than 4.5 **Vac** at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Go to step 28.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D10 + lead at 01A-A1V2D05. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
10	Is voltage greater than +4.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 28.
11	Is voltage less than +4.5 Vdc at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 28.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1Q6A04. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
13	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 28.
14	Is voltage less than +0.8 Vdc?	Go to step 19.
15	Is +1 to +4 Vdc present at either point.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A1ZF (card side). 3. Measure resistance to ground at the following point: + lead at 01A-A1Q6A04.
16	Is a short indicated?	1. Leave meter connected to 01A-A1Q6A04. 2. Remove 01A-A1V2 card. 3. Observe meter reading.
17	Is an open indicated?	1. Exchange 01A-A1V2 card. 2. Go to step 28.
18	Is a short indicated.	1. Exchange 01A-A1 board. 2. Go to step 28.
19	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1A13. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

Step	Conditions	Instructions
20	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from 01A-A2YJ to 01A-A1ZF. 3. Go to step 28.
21	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2K1B07. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
22	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 28.
23	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P05-A + lead at PS102 J/P06-A + lead at PS102 J/P08-A + lead at PS102 J/P09-A. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
24	Is voltage greater than +4.5 Vdc at all points?	+5 Vdc present at these points indicates that both distribution cables are open from PS102 to 01A-A2. 1. Check cable plugging. 2. Check PS102 output voltages. 3. Go to step 28.

Step	Conditions	Instructions
25	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D05.
26	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 28.
27	Go to **Instructions** column.	Go to page PR 351.
28	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





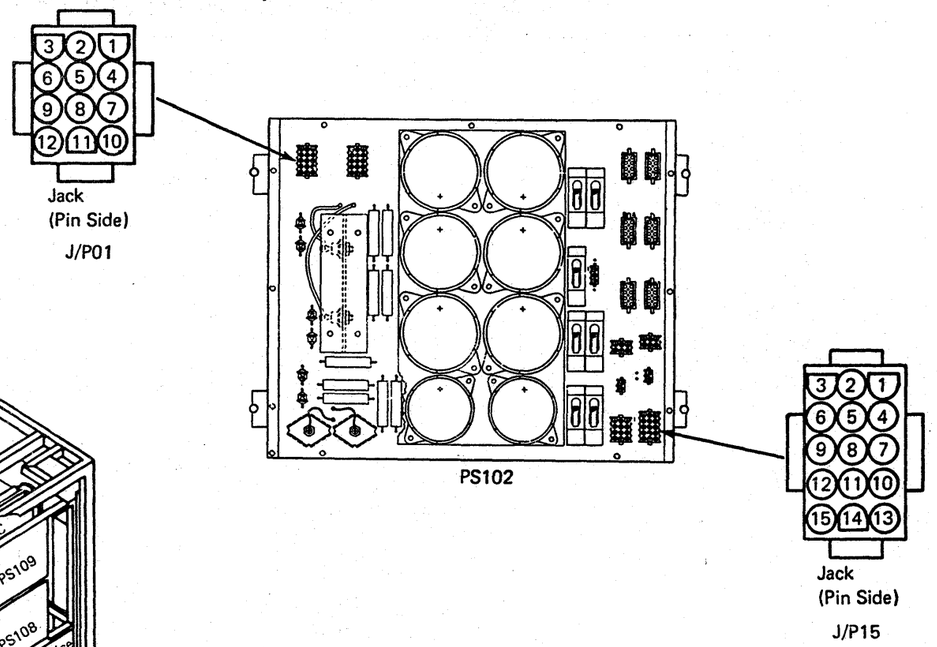
Power Codes 7A, A7, 0B, B0

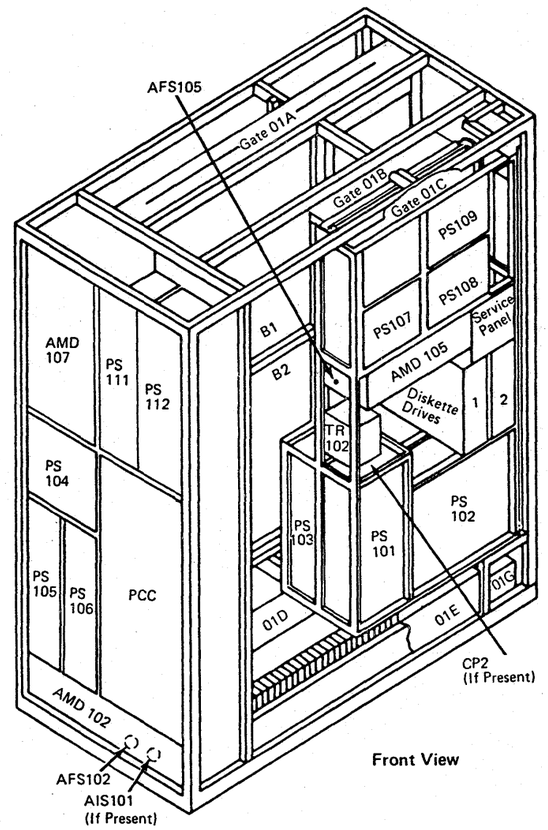
Power codes 7A, A7, 0B, and B0 indicate +8.5 Vdc missing or out of tolerance at the 01A-A2 board.

Possible causes:

- Open in +8.5 Vdc distribution
- Open in +8.5 Vdc sense line
- 01A-A1V2 card
- PS102.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds. This ensures a valid power code.
2	Is a power code displayed?	Go to step 20.
3	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at PS102 J/P15-9 + lead at PS102 J/P15-12. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
4	Is voltage greater than +8 Vdc?	Go to step 9.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS102 P01. 3. Set PCC CB1 and CB2 on. Measure for 8.5 **Vac** at the following points: PS102 P01-6 to 12 PS102 P01-9 to 12 (cable end). To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

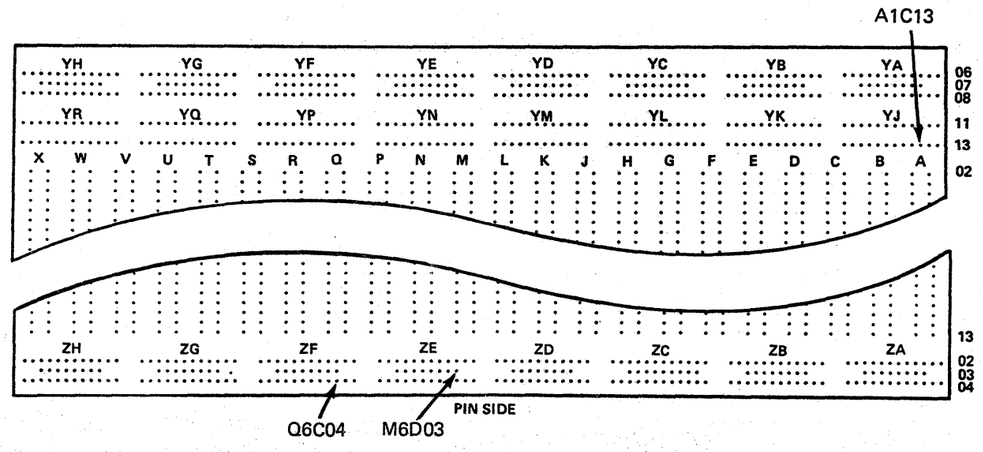




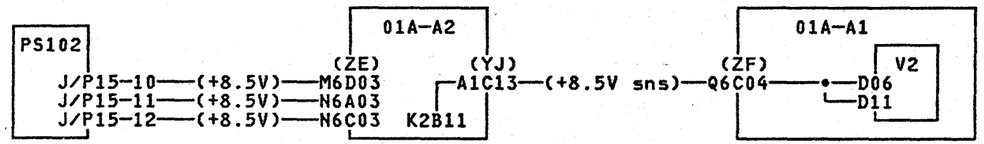
Front View

Left Side View

Step	Conditions	Instructions
6	Is voltage greater than 8 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 23.
7	Is voltage less than 8 **Vac** at both points?	Go to page PR 361.
8	Is voltage less than 8 **Vac** at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Go to step 23.
9	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D06 + lead at 01A-A1V2D11. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
10	Is voltage greater than +8 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 23.
11	Is voltage less than +8 Vdc at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
12	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1Q6C04. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
13	Is voltage greater than +8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
14	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1C13. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
15	Is voltage greater than +8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from 01A-A2YJ to 01A-A1ZF. 3. Go to step 23.
16	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2M6D03. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.



Step	Conditions	Instructions
17	Is voltage greater than +8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 23.
18	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P15-10 + lead at PS102 J/P15-11. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
19	Is voltage greater than +8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS102 J/P15 to 01A-A2ZD and ZE. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 23.
20	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D06.
21	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 23.
22	Go to **Instructions** column.	Go to page PR 351.
23	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



0 0 0

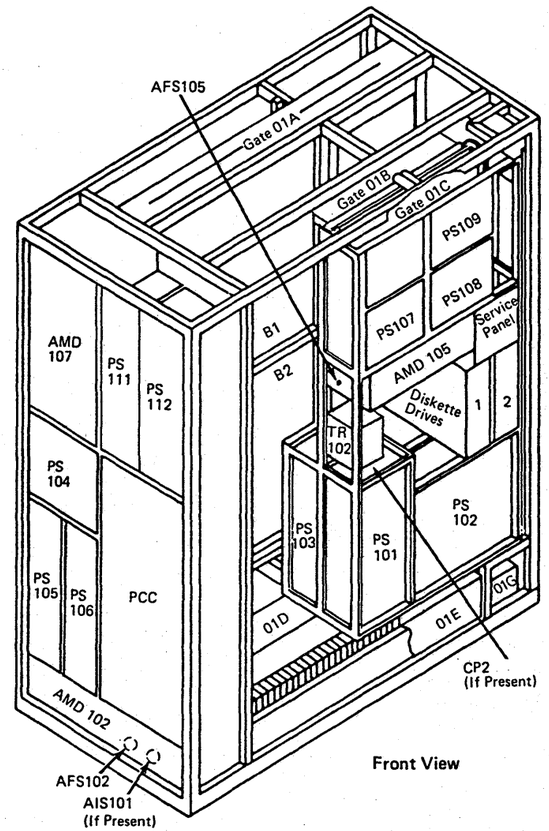
Power Codes 1B, B1, 2B, B2

Power codes 1B, B1, 2B, and B2 indicate +12 Vdc missing or out of tolerance at the 01A-A2 board.

Possible causes:

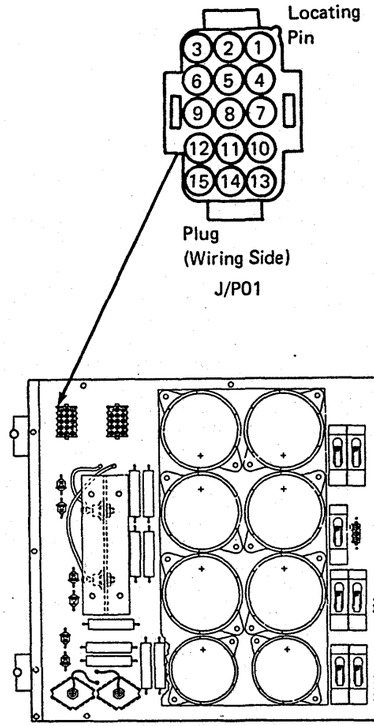
- Open in +12 Vdc distribution
- Open in +12 Vdc sense line
- 01A-A1V2 card
- PS102.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds. This ensures a valid power code.
2	Is a power code displayed?	Go to step 20.
3	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at PS102 J/P14-9 + lead at PS102 J/P14-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
4	Is voltage greater than +11.5 Vdc?	Go to step 9.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS102 J01. 3. Set PCC CB1 and CB2 on. 4. Measure for 12 **Vac** at the following points: PS102 P01-10 to P01-3 PS102 P01-13 to P01-3 (cable end). To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

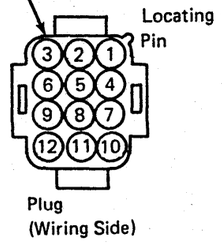


Front View

Left Side View

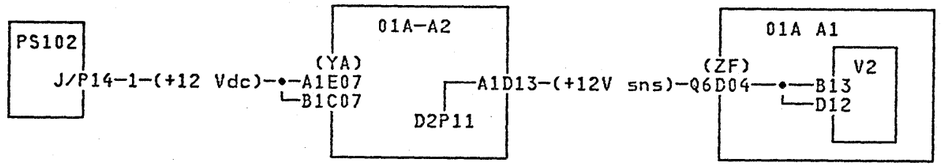


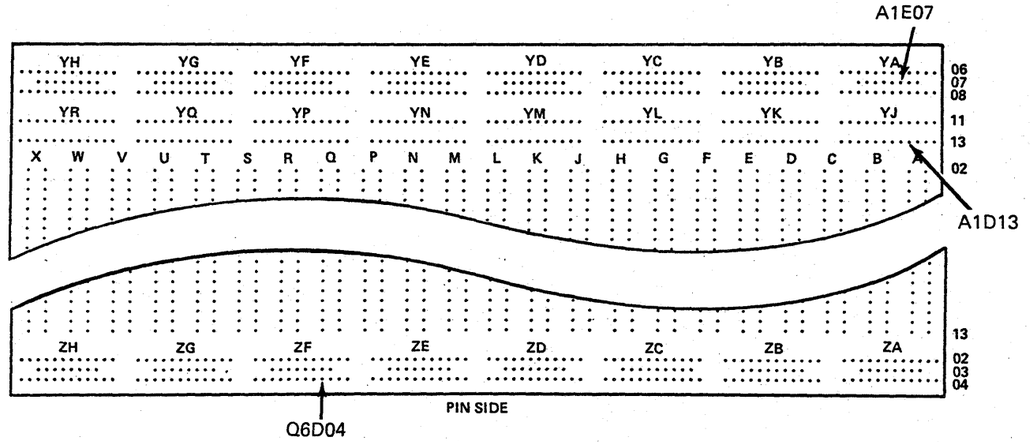
PS102



Step	Conditions	Instructions
6	Is voltage greater than 11 **Vac** at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 23.
7	Is voltage less than 11 **Vac** at both points?	Go to page PR 361.
8	Is voltage less than 11 **Vac** at only one point?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Go to step 23.
9	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B13 + lead at 01A-A1V2D12. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present for 2 to 5 seconds.
10	Is voltage greater than +11.5 Vdc at both points?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 23.
11	Is voltage less than +11.5 Vdc at one point?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
12	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1Q6D04. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
13	Is voltage greater than +11.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 23.
14	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1D13. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
15	Is voltage greater than +11.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from 01A-A2YJ to 01A-A1ZF (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 23.
16	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1E07. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
17	Is voltage greater than +11.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 23.
18	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS102 J/P14-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.

Step	Conditions	Instructions
19	Is voltage greater than +11.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange open cable from PS102 J/P15 and J/P14 to 01A-A2YA and ZA (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 23.
20	Go to **Instructions** column.	Measure for +12 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B13.
21	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A1-A1V2 card. 3. Go to step 23.
22	Go to **Instructions** column.	Go to page PR 351.
23	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





4381-3 B/M 2676380	MI Seq BA155	PN 6169096 3 of 3	EC A20558 01 Oct 84	EC A20560 18 Feb 85			

0 0 0

Power Codes 3B, B3

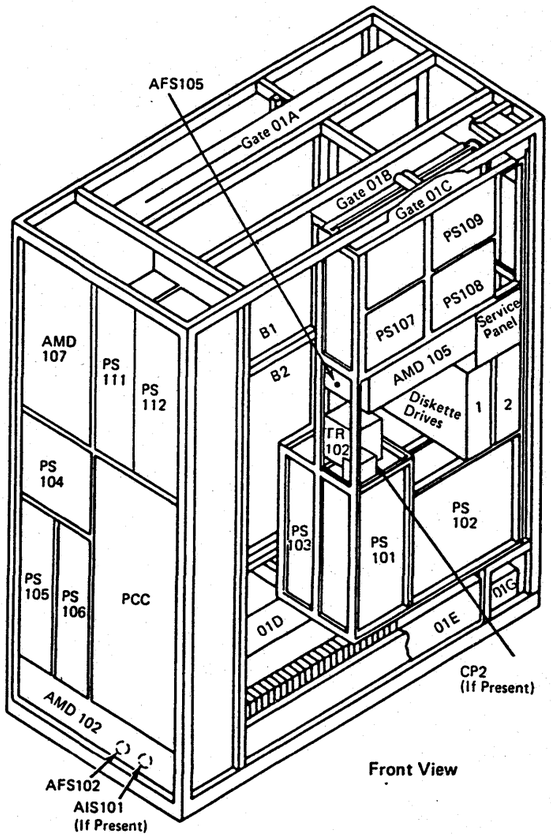
Power codes 3B and B3 indicate +24 Vdc missing or out of tolerance at the 01A-A2 board.

A 3B or B3 power code does not cause the processor to power down.

Possible causes:

- PS101
- PS102
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. Wait 30 seconds.
2	Is a power code displayed?	Go to step 18.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at 01A-A1V2D13. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present for 2 to 5 seconds.
4	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card (see note). **Note:** If still failing, exchange PS101. 3. Go to step 29.
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at 01A-A1S6A04. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present 2 to 5 seconds.

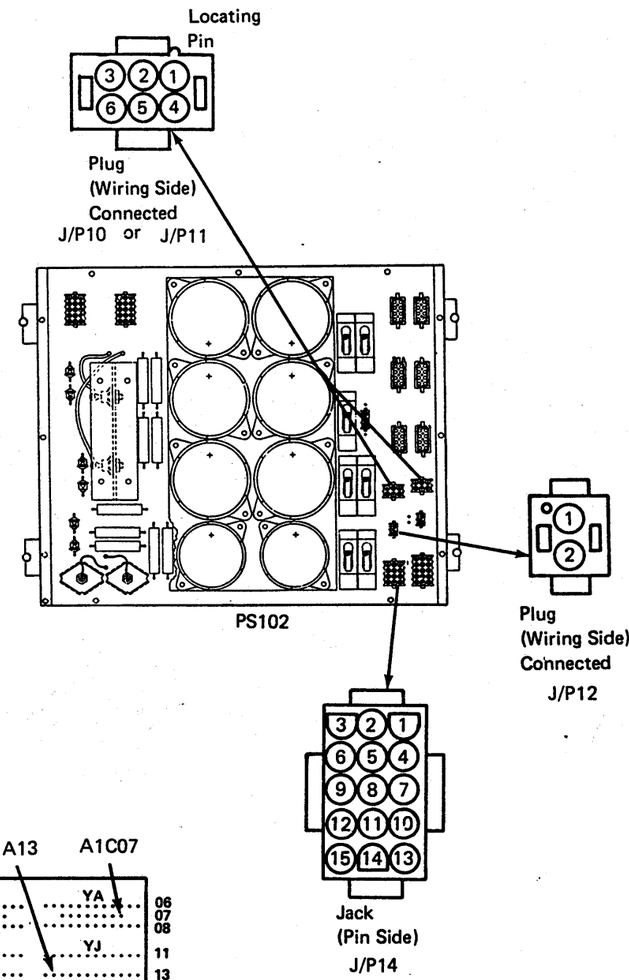


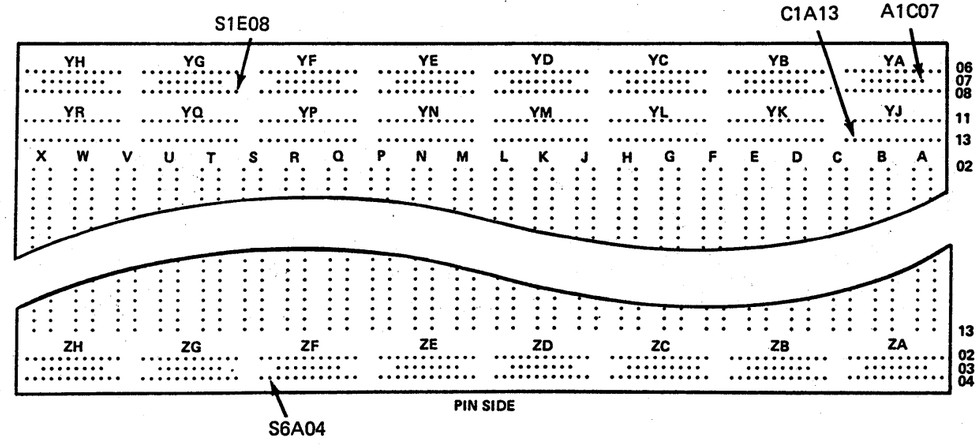
Front View

Left Side View

4381-3 B/M 2676380	MI Seq BA160	PN 6169097 1 of 4	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

Step	Conditions	Instructions
6	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 29.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at 01A-A2C1A13. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present 2 to 5 seconds.
8	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2YJ to 01A-A1ZF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 29.
9	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at 01A-A2A1C07. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present 2 to 5 seconds.
10	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 29.
11	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at PS102 J/P14-3. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present 2 to 5 seconds.

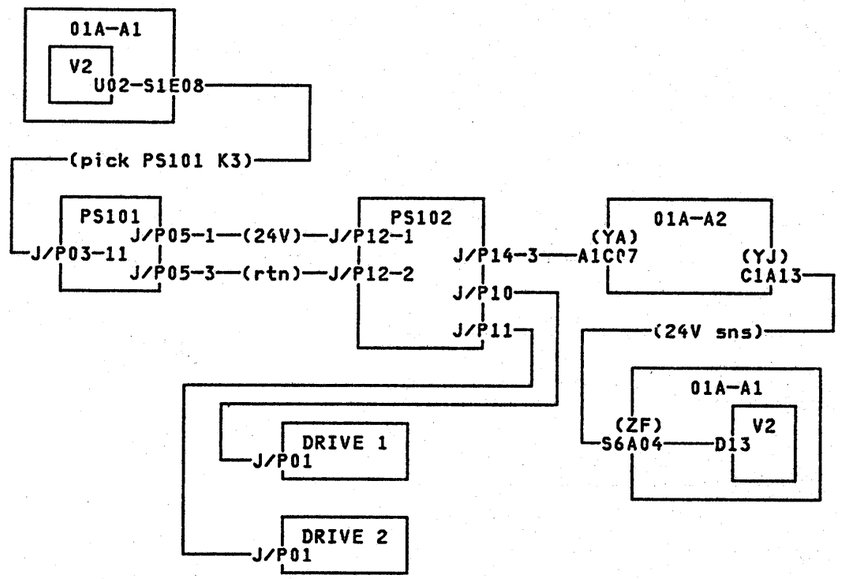


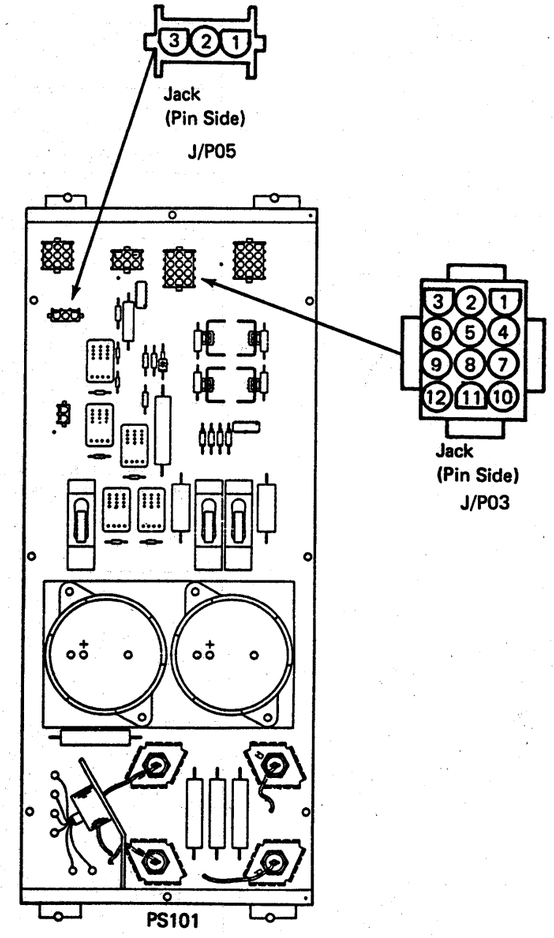


4381-3 B/M 2676380	MI Seq BA160	PN 6169097 2 of 4	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

Step	Conditions	Instructions
12	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS102 J/P14 to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 29.
13	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2V2D08 + lead at PS102 J/P12-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On. Voltage is present 2 to 5 seconds.
14	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 29.
15	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P05-1. To make a voltage check: 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press Check Reset. 3. Press service panel Power On. Voltage is present 2 to 5 seconds.
16	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P05 to PS102 J/P12. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 29.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 29.
18	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2D13.
19	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 29.
20	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P03-11.
21	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 29.
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A1V2 card. 3. Set PCC CB1 and CB2 on. 4. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U02.
23	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 29.
24	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1S1E08.
25	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 29.

Step	Conditions	Instructions
26	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS101 J/P03. 3. Set PCC CB1 and CB2 on. 4. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 P03-11 (cable end).
27	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P03 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 29.
28	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
29	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 PS102 01A-A1 board 01A-A2 board Diskette drive 1 Diskette drive 2. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





4381-3 B/M 2676380	MI Seq BA160	PN 6169097 4 of 4	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

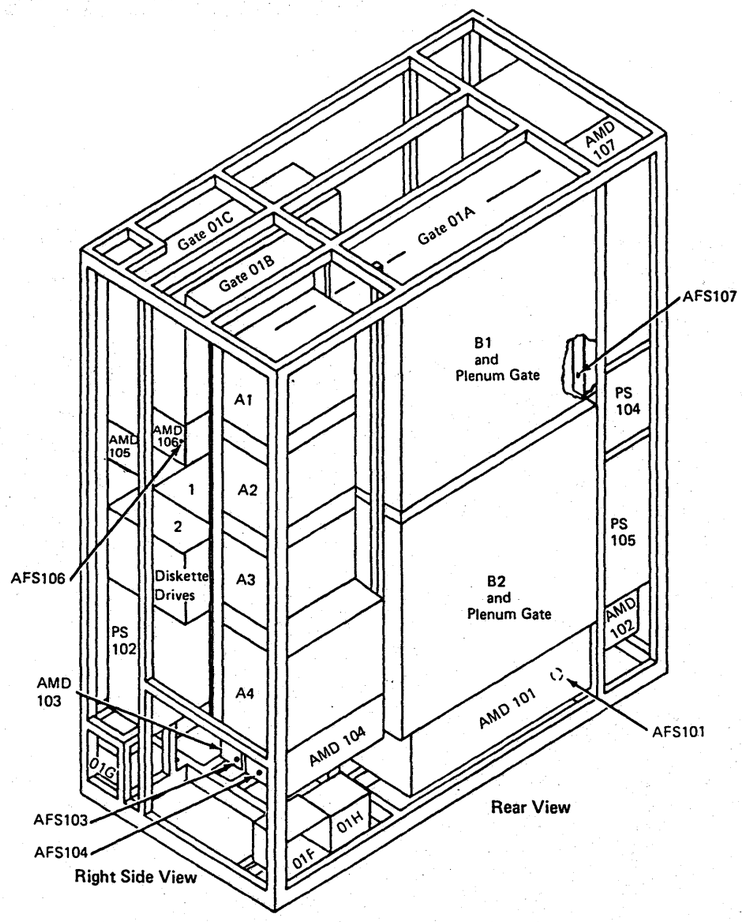
Power Codes 4B, B4

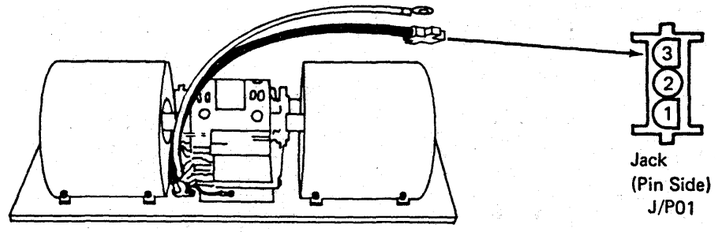
Power codes 4B and B4 indicate AFS103 or AMD103 has failed.

Possible causes:

- AFS103
- AMD103
- Dirty filter
- 01A-A1V2 card.

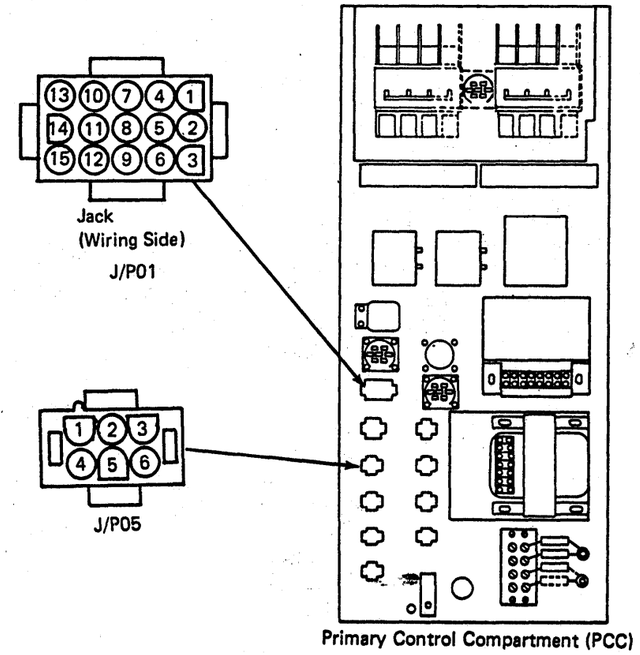
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. After MBC On indicator turns on, allow 30 seconds for AFS103 sensor to heat to a fault condition. A 4B or B4 power code at this time indicates AFS103 failed to heat to a fault condition.
2	Is a power code displayed?	Go to page PR 341.
3	Is no power code displayed?	1. Check that the AFS is aligned for proper airflow. 2. Press Check Reset. 3. Press service panel Power On. 4. Visually check that AMD103 and AMD104 are turning and the filter is clean. **Note:** AMDs will turn for approximately 5 seconds.
4	Is AMD103 turning?	Go to page PR 341 (AFS103 Failure).
5	Is AMD104 not turning?	Go to step 9.
6	Go to **Instructions** column.	Measure for line voltage at the following points: AMD103 J/P01-1 to 3. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
7	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD103. 3. Go to step 16.

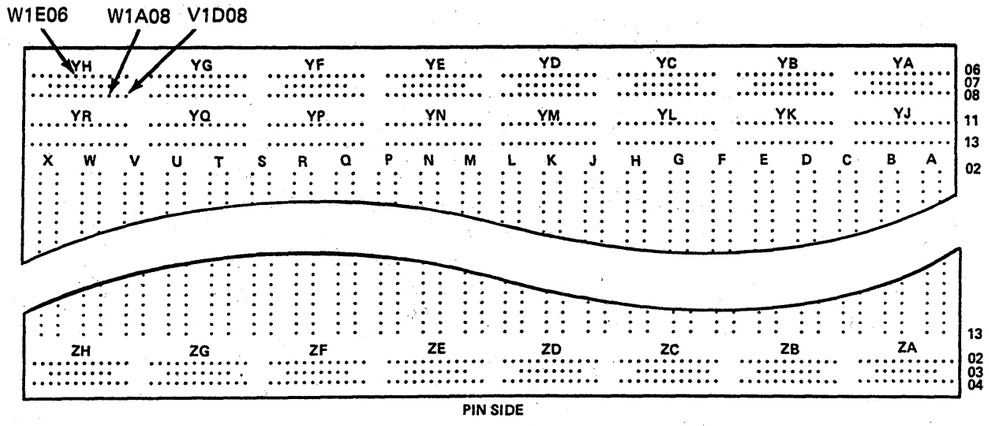




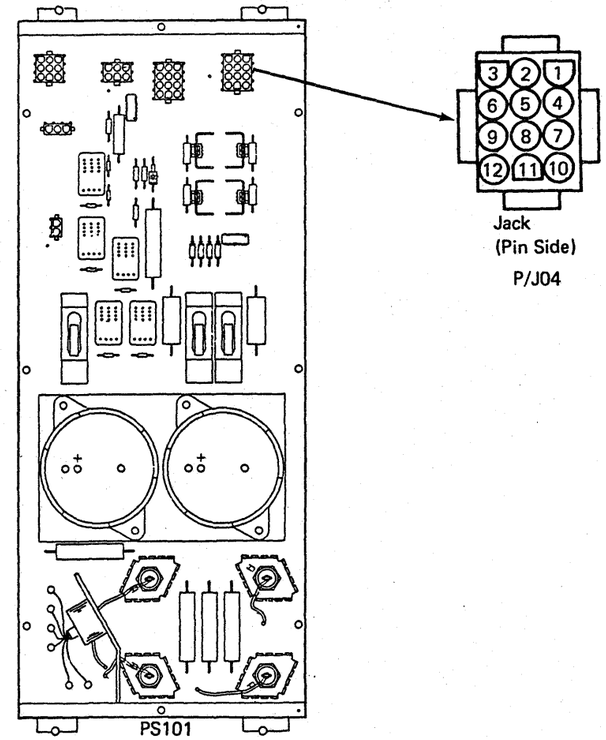
AMD 103

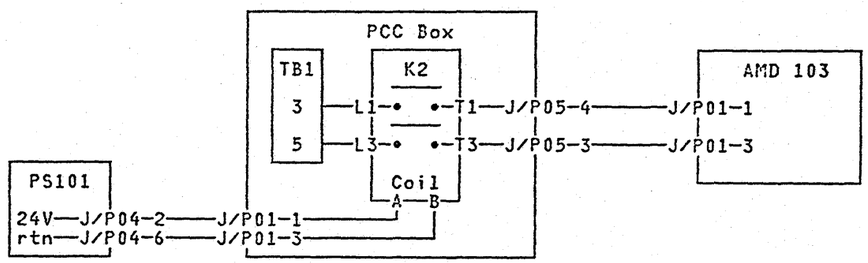
Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P05 to AMD103. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
9	Go to **Instructions** column.	Measure for line voltage at the following points: PCC J/P05-3 to 4. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
10	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P05 to AMD103. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
11	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC J/P01-3 + lead at PCC J/P01-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
12	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Isolate to one of the following: PCC K02 Cable from PCC K02 coil to PCC J/P01 AC distribution from PCC TB1 through K02 to PCC J/P05. 3. Go to step 16.

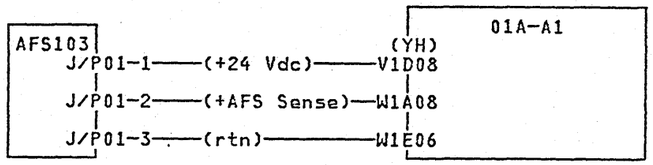




Step	Conditions	Instructions
13	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS101 J/P04-6 + lead at PS101 J/P04-2. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
14	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P04 to PCC J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 AFS103 AMD103 01A-A1 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.







0 0 0

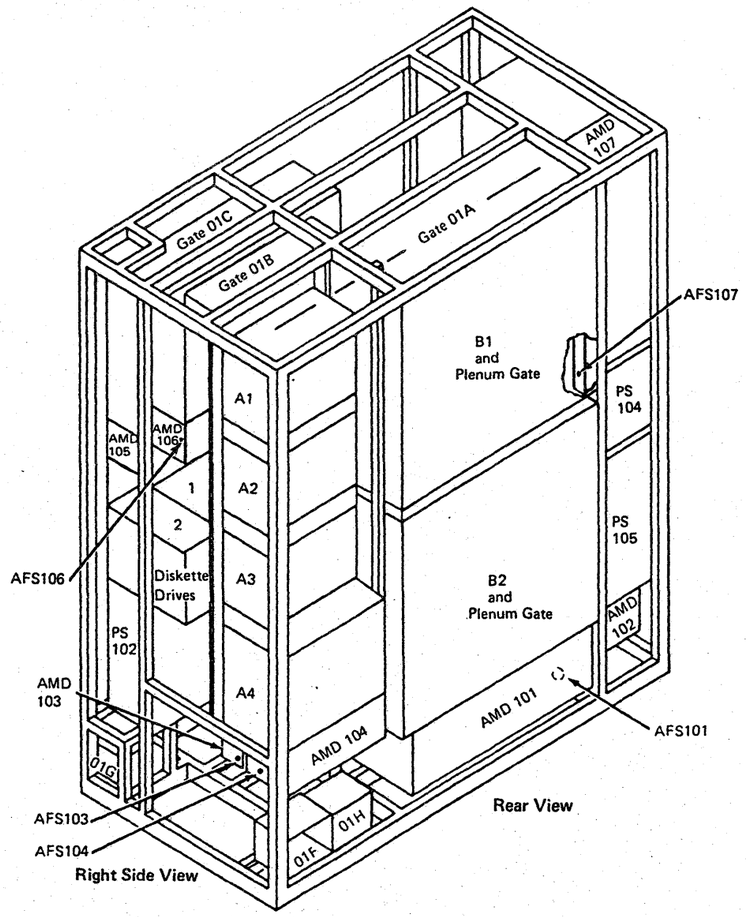
Power Codes 5B, B5

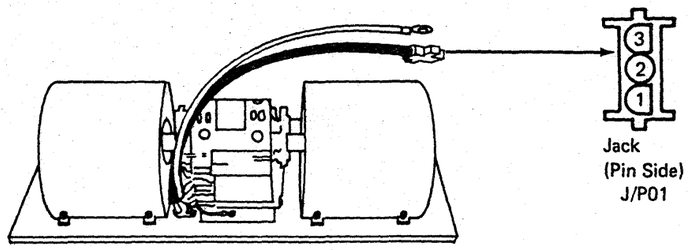
Power codes 5B and B5 indicate AFS104 or AMD104 failed.

Possible causes:

- AFS104
- AMD104
- Dirty filter
- 01A-A1V2 card.

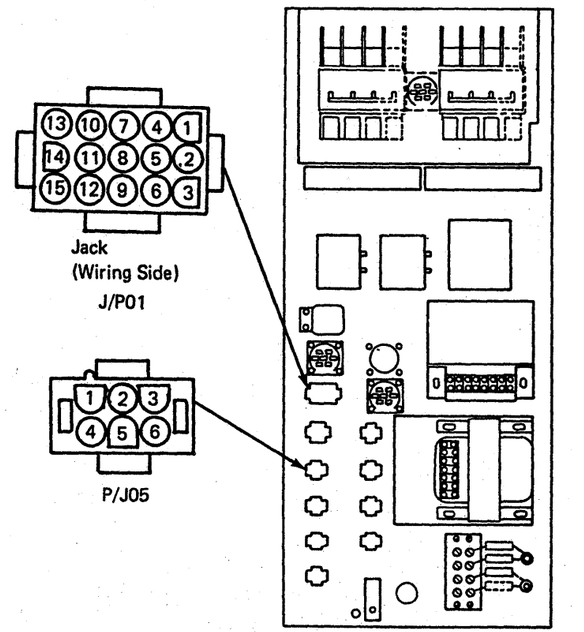
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set PCC CB1 and CB2 on. 3. After MBC On indicator turns on, allow 30 seconds for AFS104 sensor to heat to a fault condition. A 5B or B5 power code at this time indicates AFS104 failed to heat to a fault condition.
2	Is a power code displayed?	Go to page PR 341.
3	Go to **Instructions** column.	1. Check that AFS is aligned for proper airflow. 2. Press Check Reset. 3. Press service panel Power On. 4. Visually check that AMD103 and AMD104 are turning and the filter is clean. **Note:** AMDs will turn for approximately 5 seconds.
4	Is AMD104 turning?	Go to page PR 341. (AFS104 Failure).
5	Is AMD103 not turning?	Go to step 9.
6	Is AMD103 turning?	Measure for ac line voltage at the following points: AMD104 J/P01-1 to 3. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
7	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange AMD104. 3. Go to step 16.





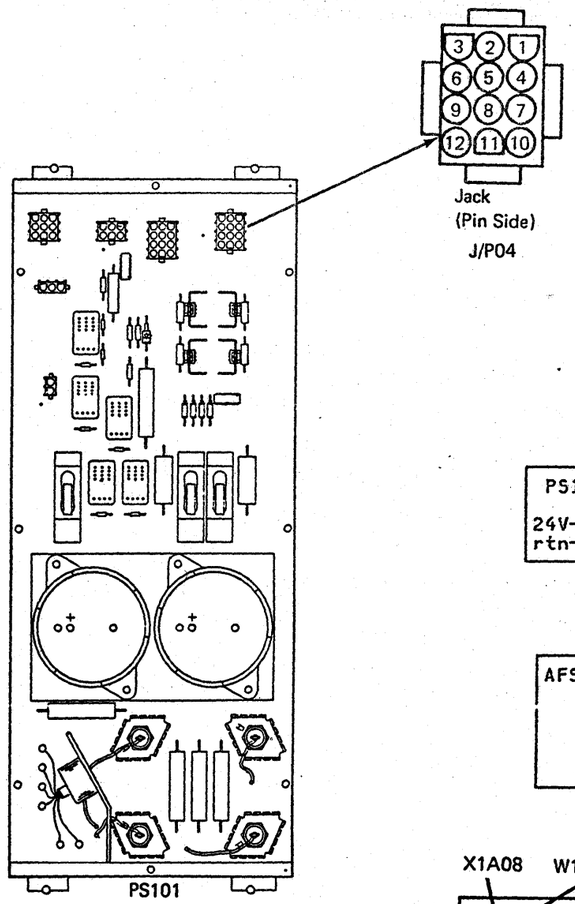
AMD 104

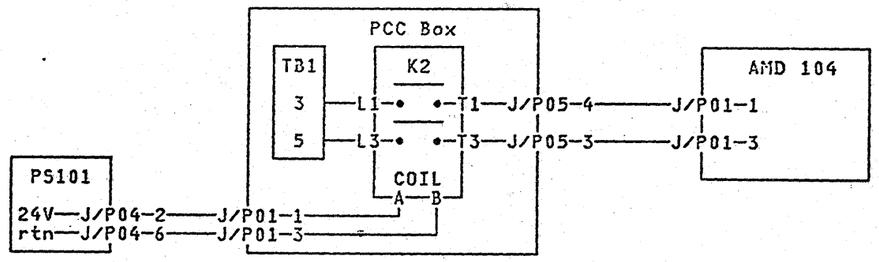
Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P05 to AMD104. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
9	Go to **Instructions** column.	Measure for ac line voltage at the following points: PCC J/P05-3 to 4. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
10	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P05 to AMD104. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
11	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC J/P01-3 + lead at PCC J/P01-1. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
12	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Isolate to one of the following: PCC K02 Cable from PCC K02 coil to PCC J/P01 AC distribution from PCC TB1 through K02 to PCC J/P05. 3. Go to step 16.

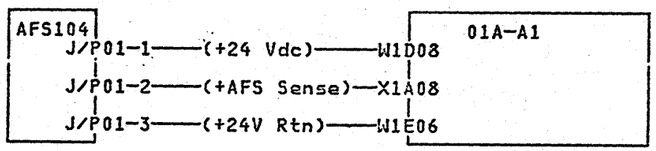


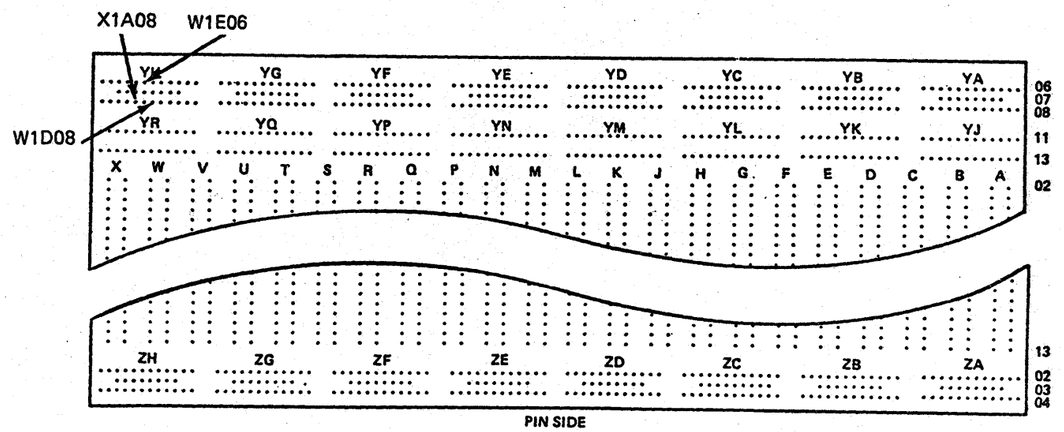
Primary Control Compartment (PCC)

Step	Conditions	Instructions
13	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS101 J/P04-6 + lead at PS101 J/P04-2. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
14	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P04 to PCC J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 PCC box AMD104. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.







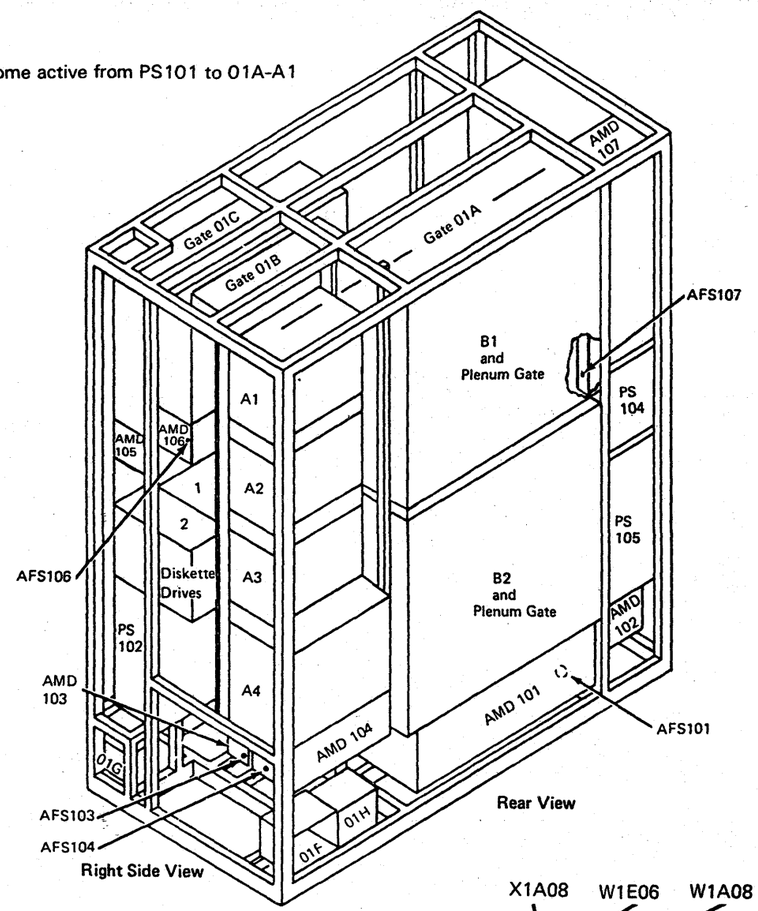


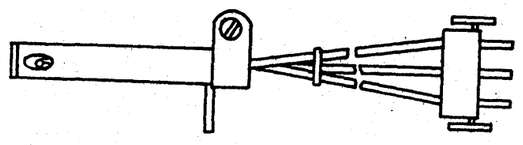
Air Flow Sensor (AFS) Failure

You are here to isolate an indication of an AFS103 or AFS104 failure.

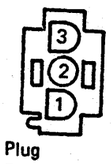
The AFS must heat to a fault condition within 30 seconds after +24 Vdc and +5 Vdc become active from PS101 to 01A-A1 board. After power-on action, AFS must cool to a no-fault condition.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at the failing AFS: AFS103 J/P01 AFS104 J/P01. 3. Set PCC CB1 and CB2 on. 4. Measure for +24 Vdc at the failing AFS at the following points (- lead at pin 3): AFS103 P01-1 to 3 AFS104 P01-1 to 3. Meter must be connected to the 'P' connector (cable end).
2	Is voltage less than +22 Vdc?	Go to step 13.
3	Go to **Instructions** column.	Measure for +3.3 Vdc at the failing AFS at the following points (- lead at pin 3): AFS103 P01-2 to 3 AFS104 P01-2 to 3. Meter must be connected to the 'P' connector (cable end).
4	Is voltage greater than +3 Vdc?	Go to step 10.
5	Go to **Instructions** column.	Measure for +3.3 Vdc at the failing AFS at the following points (- lead at 01A-A1V2D08): AFS103 01A-A1W1A08 AFS104 01A-A1X1A08.
6	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YH (card side) to AFS103 and AFS104. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 16.

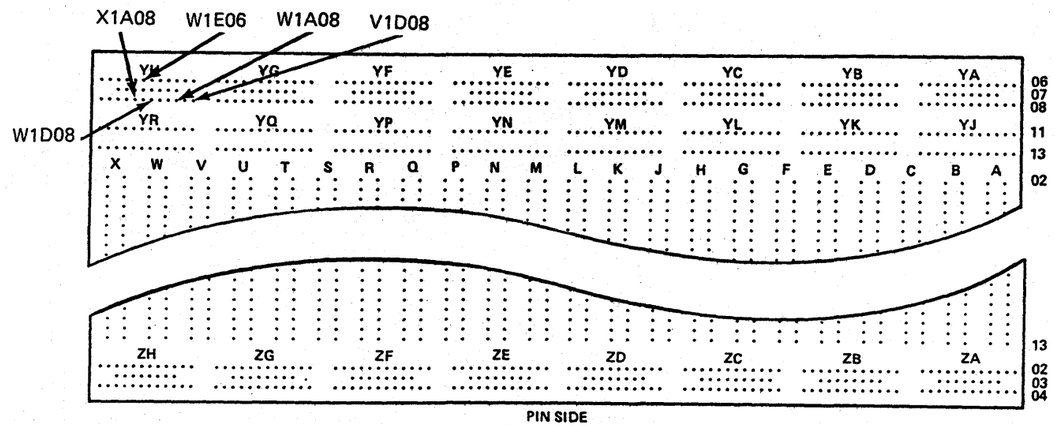




AFS103 or AFS104



Plug Disconnected J/P01



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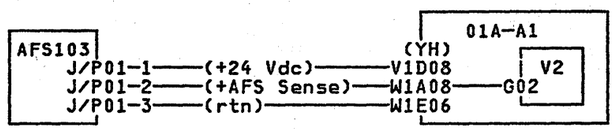
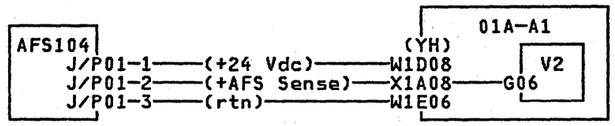
Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +3.3 Vdc at the failing AFS at the following points (- lead at 01A-A1V2D08): AFS103 01A-A1V2G02 AFS104 01A-A1V2G06.
8	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.
9	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 16.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at the failing AFS: AFS103 J01 AFS104 J01. 3. Measure for a voltage change from 3.3 to 0 Vdc for the failing AFS at the following points (- lead at pin 3): AFS103 J/P01-2 to 3 AFS104 J/P01-2 to 3. 4. Set PCC CB1 and CB2 on. Voltage is present for 1 second.
11	Did voltage level change?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 16.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange failing AFS103 or AFS104. **Note:** Check cable connector for pushed in pins and seating before exchanging AFS. Underfloor air conditioning may cause AFS to fail. 3. Go to step 16.
13	Go to **Instructions** column.	Measure for +24 Vdc at the failing AFS at the following points (- lead at 01A-A1V2D08): AFS103 01A-A1V1D08 AFS104 01A-A1W1D08.
14	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YH (card side) to AFS103 and AFS104. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board AFS103 AFS104. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.





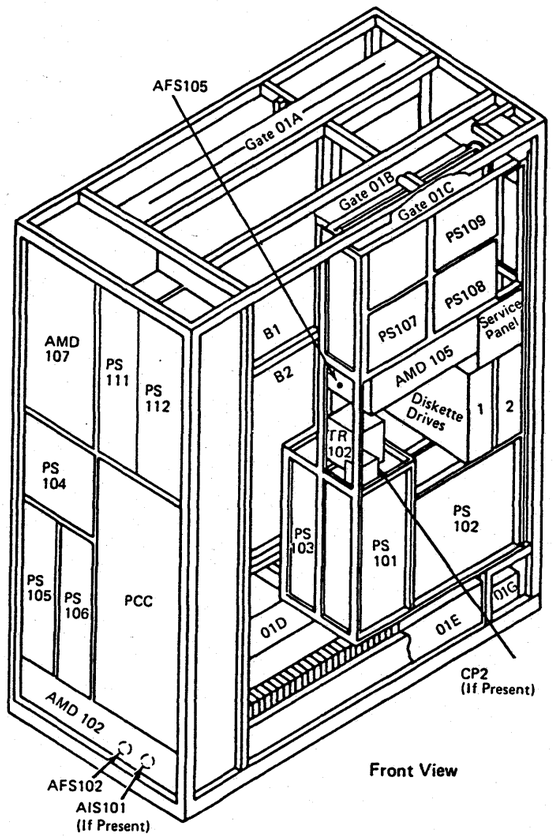
Power Code Displayed With Power Off

You are here because a two-digit power code displayed before power on. DC voltages are present at the 01A-A2 board before power on.

Possible causes:

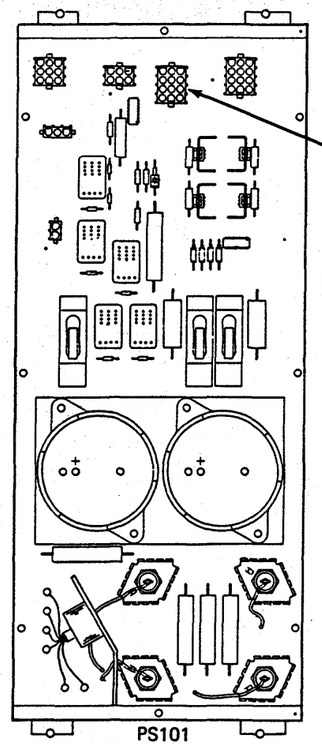
- PCC K02
- PS101
- 01A-A1V2 card.

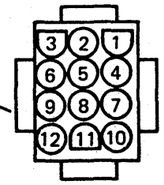
Step	Conditions	Instructions
1	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC J/P01-3 + lead at PCC J/P01-1.
2	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect the line voltage plug. 4. Exchange PCC K02. 5. Reconnect the line voltage plug. 6. Set PCC CB1 and CB2 on. 7. Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at PS101 J/P03-11.
4	Is voltage greater than +4.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 10.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1S1E08.
6	Is voltage greater than +4.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange the cable from 01A-A1YG to PS101 J/P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 10.



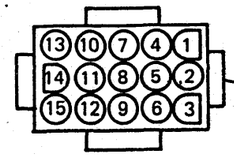
Front View

Left Side View

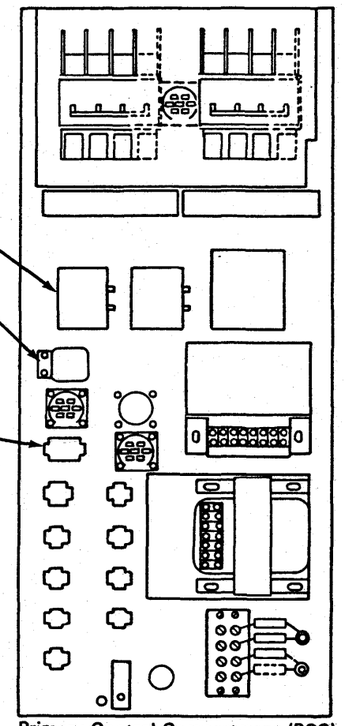




Jack
(Pin Side)
J/P03

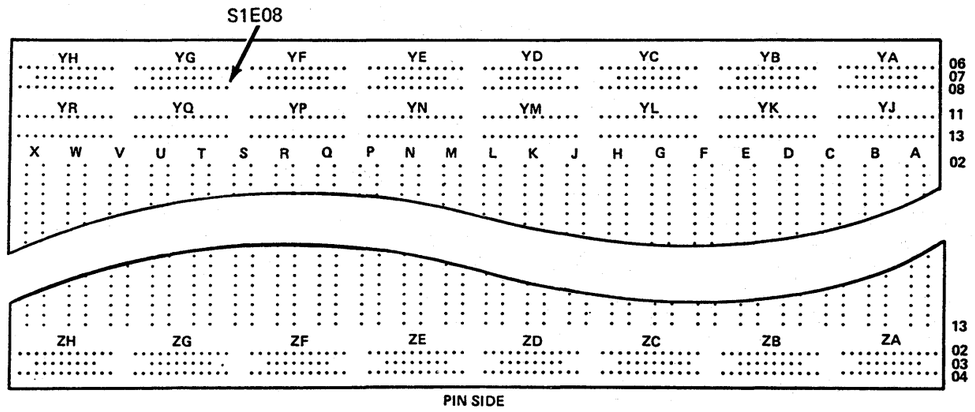


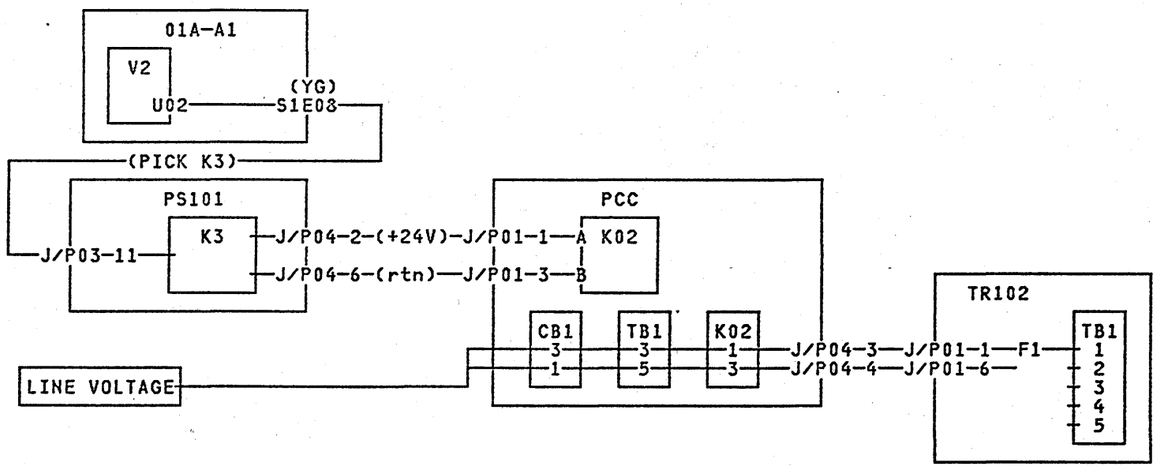
Jack
(Wiring Side)
J/P01



Primary Control Compartment (PCC)

Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U02.
8	Is voltage greater than +4.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 10.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1V2 card. 4. Go to step 10.
10	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box TR102 PS101 01A-A1 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.





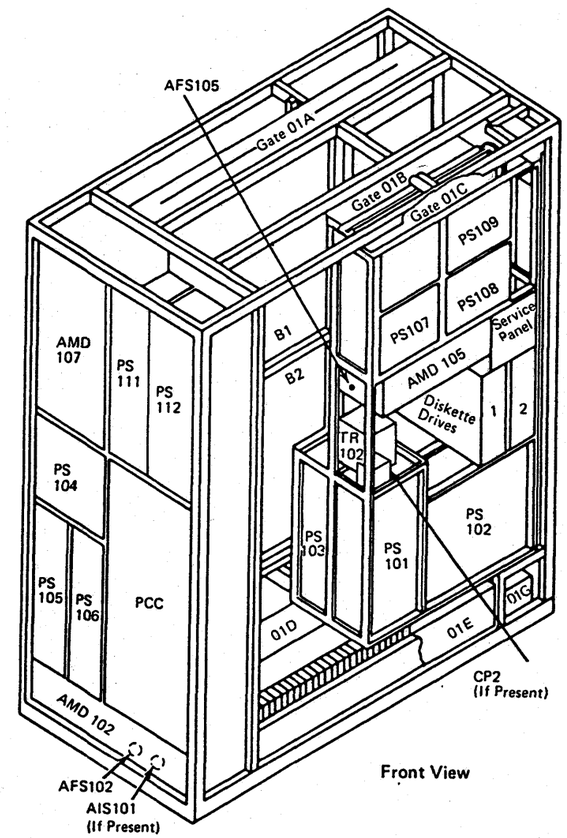
Missing Voltage At PS102

You are here because voltage is missing at PS102.

Possible causes:

- TR102
- PCC K02
- PS101 K3
- 01A-A1V2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	Measure for line voltage at the following points: TR102 TB1-1 to 2 (208V) TR102 TB1-1 to 3 (220V) TR102 TB1-1 to 4 (240V). **Note:** *For line voltage value, see label on* PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
2	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** *Check cable connectors for pushed in pins and seating before exchanging* TR102. 3. Go to step 27.
3	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check TR102 F1.
4	Is F1 open?	1. Exchange F1. 2. Set PCC CB1 and CB2 on. 3. Press Check Reset. 4. Press service panel Power On. 5. If power is complete, go to page END 001.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Measure for +24 Vdc at the following points: - lead at PCC J/P01-3 + lead at PCC J/P01-1. 3. Press Check Reset. 4. Press service panel Power On.
6	Is voltage greater than +22 Vdc?	Go to step 16.

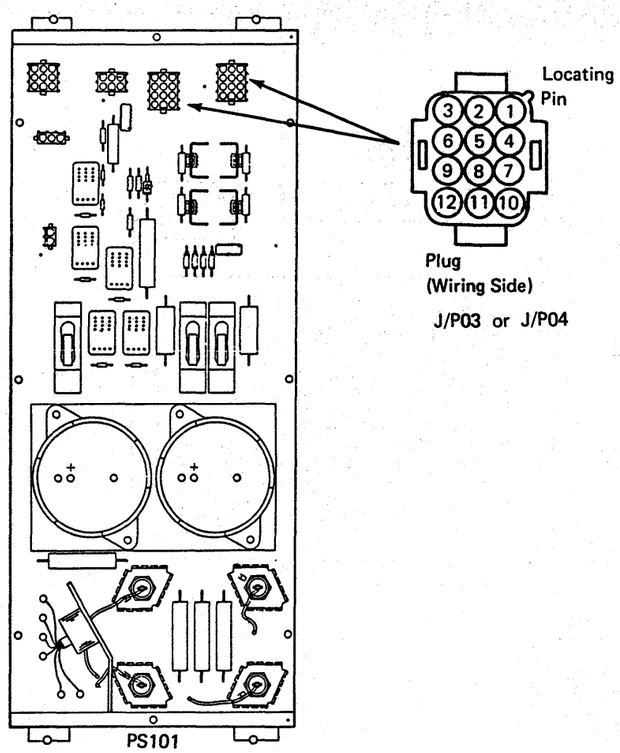


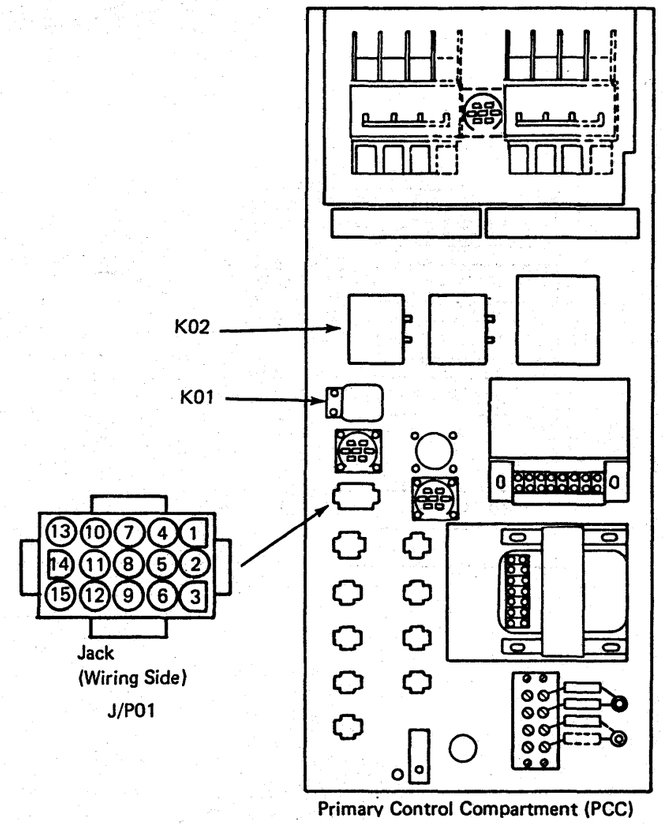
Front View

Left Side View

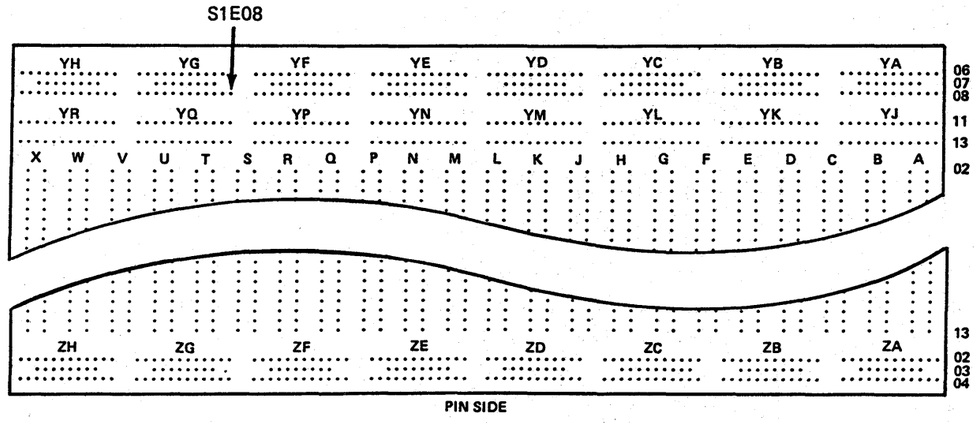
Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS101 J/P04-6 + lead at PS101 J/P04-2. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
8	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS101 J/P04 to PCC J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 27.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 J/P03-11. **Note:** Voltage level should change from +4 to 0 Vdc. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
10	Did voltage level change?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 27.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1S1E08. **Note:** Voltage level should change from +4 Vdc to 0 Vdc. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
12	Did voltage level change?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YG to PS101 J/P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 27.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U02. **Note:** Voltage level should change from +4 to 0 Vdc. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
14	Did voltage level change?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 27.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 27.
16	Go to **Instructions** column.	1. Open PCC box, and visually check PCC K02. 2. Press Check Reset. 3. Press service panel Power On.
17	Does PCC K02 fail to pick?	1. Set PCC CB1 and CB2 off. 2. Disconnect wall plug. 3. Exchange PCC K02 or cable from PCC K02 to PCC J/P01. 4. Go to step 27.
18	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at TR102 J/P01. 3. Set PCC CB1 and CB2 on. 4. Measure for line voltage at the following points: - lead at TR102 P01-1 + lead at TR102 P01-6 (cable end). **Note:** For line voltage value, see label on PCC box. To make a voltage check: 5. Press Check Reset. 6. Press service panel Power On.

Step	Conditions	Instructions
19	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR102. 3. Go to step 27.
20	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PCC J/P04. 3. Set PCC CB1 and CB2 on. 4. Measure for line voltage at the following points: - lead at PCC J04-3 + lead at PCC J04-4. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 5. Press Check Reset. 6. Press service panel Power On.
21	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P04 to TR102. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 27.
22	Go to **Instructions** column.	Measure for line voltage at the following points: - lead at PCC K02-T1 + lead at PCC K02-T3. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
23	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P04 to PCC K02. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 27.

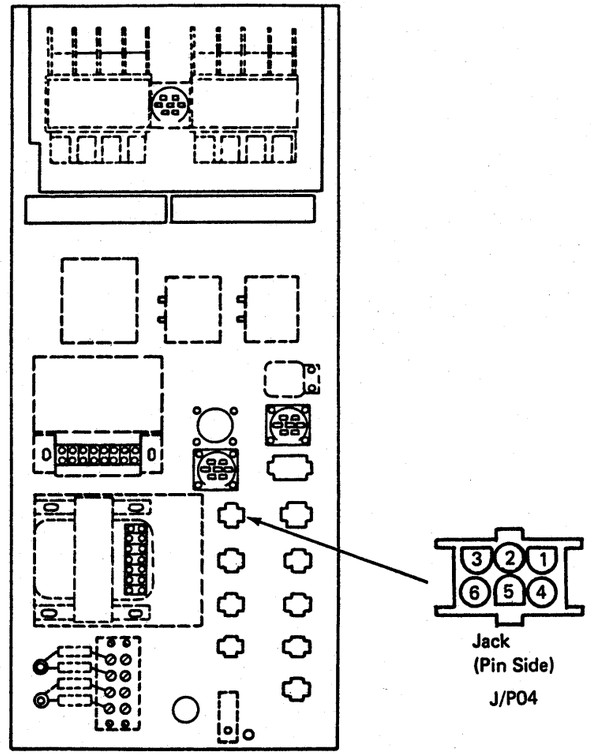




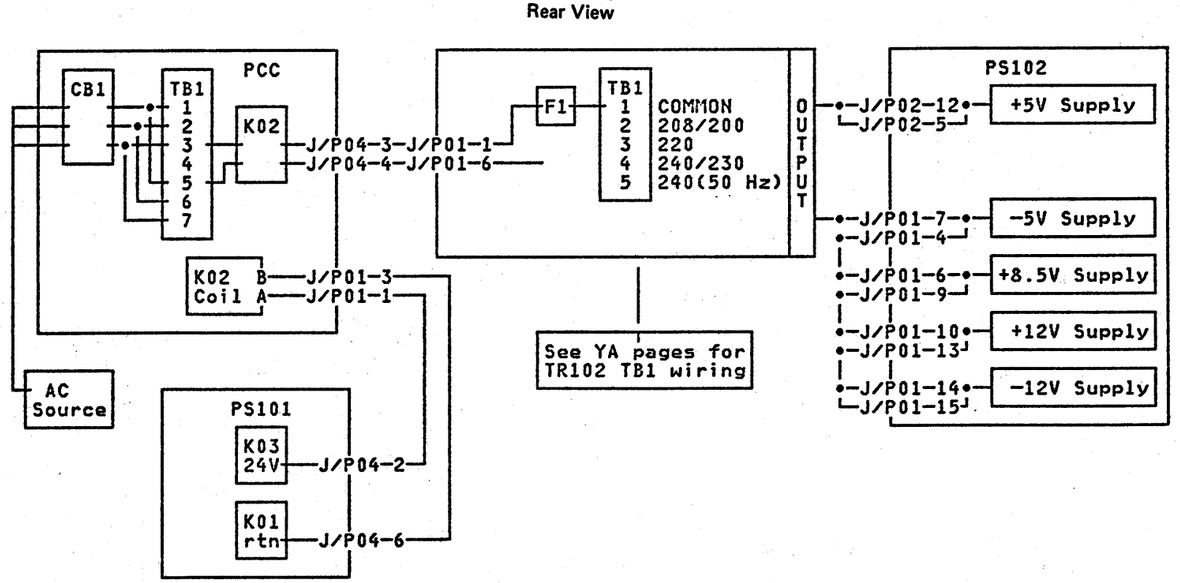
Primary Control Compartment (PCC)



Step	Conditions	Instructions
24	Go to **Instructions** column.	Measure for line voltage at the following points: - lead at PCC K02-L1 + lead at PCC K02-L3. **Note:** For line voltage value, see label on PCC box. To make a voltage check: 1. Press Check Reset. 2. Press service panel Power On.
25	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange PCC K02. 3. Go to step 27.
26	Go to **Instructions** column.	1. Isolate line voltage distribution problem to one of the following and exchange: CB1 T1, 2, 3 to TB1-1, 2, 3 TB1-1 to TB1-5 TB1-3, 5 to K02-L1 and L3 Input power plug Customer supplied power. **Note:** Check for loose wires before exchanging cable. 2. Go to step 27.
27	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 TR102 PS102. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



Primary Control Compartment (PCC)
Rear View



4381-3 B/M 2676380	MI Seg BA185	PN 6169102 4 of 4	EC A20558 01 Oct 84	EC A20560 18 Feb 85	EC A20562 30 Aug 85		

Lamp Test

You are here because the Lamp Test fails to light the following indicators:

Service panel

Power In Process
Power Complete
Basic Check
MBC On
I/O Power Hold.

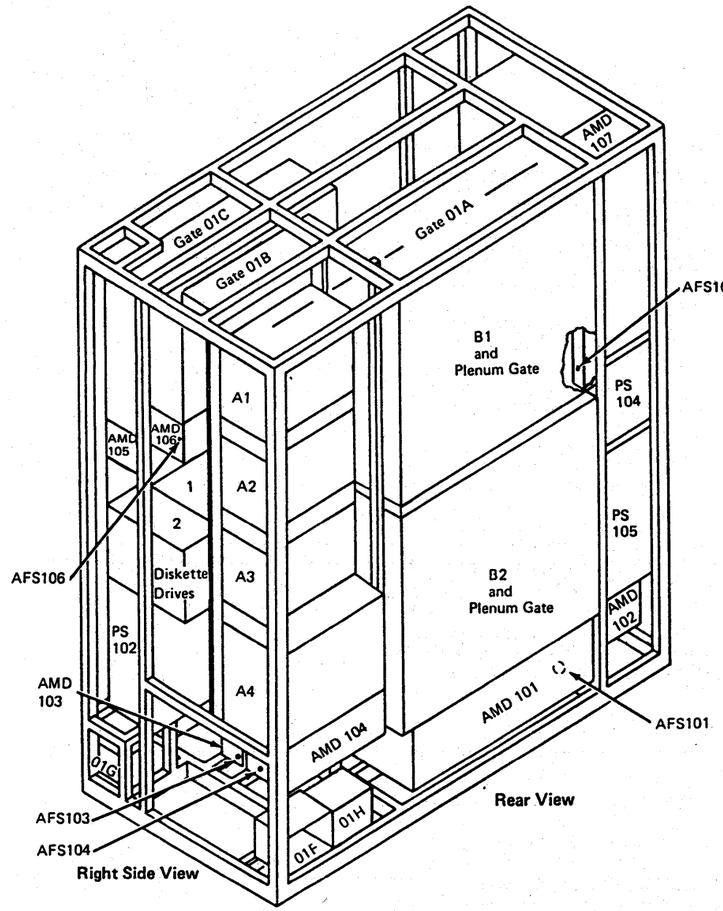
OCP

Power In Process
Power Complete
Basic Check
System
Wait
Chan-Chan Disabled.

Possible causes:

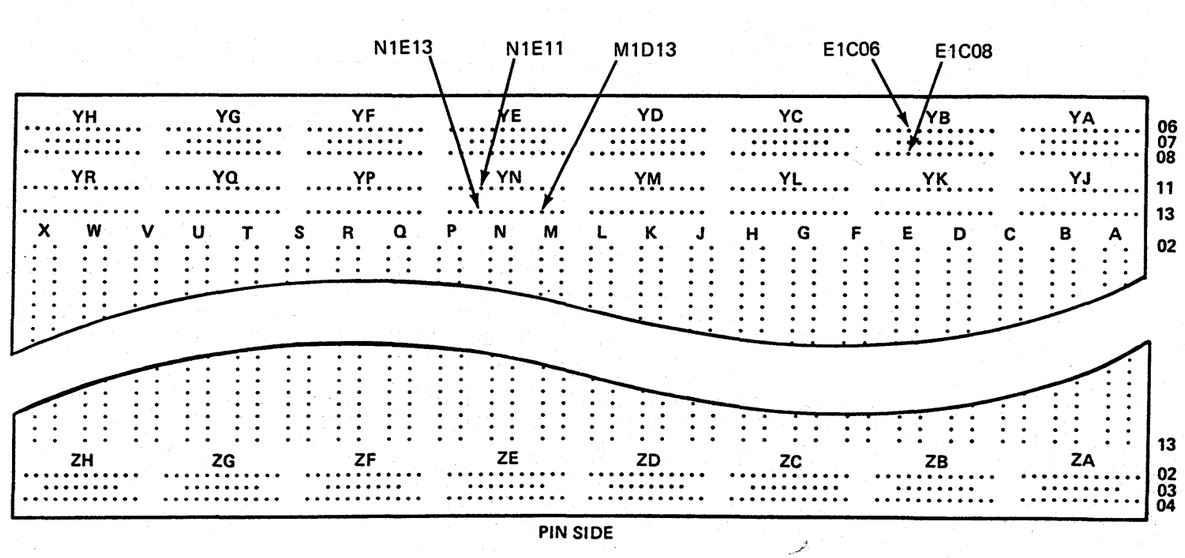
- 01A-A1V2 card
- Service panel
- OCP
- 01A-A1B2 (CTCA) card
- 01A-A1U2 reset card
- 01A-A2T2 (system or wait).

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set I/O Power Hold to Normal. 2. Press Lamp Test on the service panel.
2	Does I/O Power Hold or MBC On indicator fail to light?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 52.
3	Do only the MBC On and I/O Power Hold indicators light?	Go to step 14.
4	Do OCP indicators Basic Check or Power In Process or Power Complete fail to light?	Go to step 17.
5	Do service panel indicators Basic Check or Power In Process or Power Complete fail to light?	Go to step 20.
6	Go to **Instructions** column.	Press OCP Lamp Test.
7	Do System or Wait indicators fail to light?	Go to step 23. **Note:** MSS or processor power must be on.
8	Does Chan-Chan Disabled indicator fail to light?	Go to step 41. **Note:** MSS or processor power must be on.

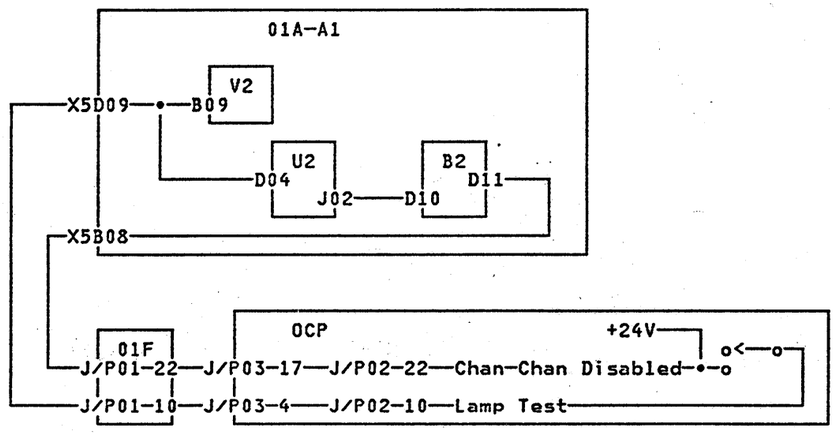


Step	Conditions	Instructions
9	Do only the MBC On and I/O Power Hold indicators light?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 52.
10	Do all indicators light except MBC On and I/O Power Hold?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 52.
11	Do all indicators fail?	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D09. 1. Press OCP Lamp Test. 2. Voltage must now be +24 Vdc.
12	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 52.
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange OCP. **Note:** Check cable connectors for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging OCP. 3. Go to step 52.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2G04. 1. Press Lamp Test on the service panel. 2. Voltage must now be +5 Vdc.
15	Is voltage greater than +4.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 52.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connectors at 01A-A1X3 and service panel connector A1 for pushed in pins and seating before exchanging service panel. Also suspect failure of 01A-A1 board. 3. Go to step 52.
17	Go to **Instructions** column.	Measure OCP indicators for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5B10 (Power Complete). + lead at 01A-A1X5B09 (Power In Process). + lead at 01A-A1X5B13 (Basic Check). 1. Press and hold Lamp Test. 2. Measure for 0 Vdc at the above points.
18	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** Also suspect 01A-A1 board. 3. Go to step 52.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange OCP. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging cable. 3. Go to step 52.
20	Go to **Instructions** column.	Measure service panel indicators for +3.5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3D04 (Power Complete). + lead at 01A-A1X3D02 (Power In Process). + lead at 01A-A1X3D05 (Basic Check). 1. Press and hold Lamp Test. 2. Measure for 0 Vdc at the above points.
21	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Also suspect 01A-A1 board. 4. Go to step 52.

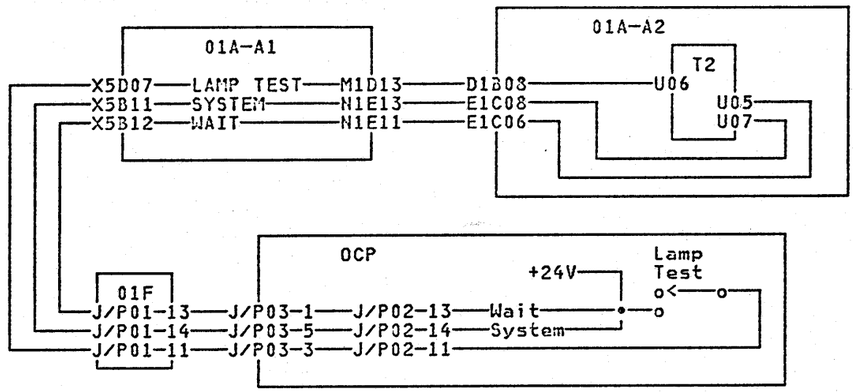
Step	Conditions	Instructions
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. Also suspect 01A-A1 board. 3. Go to step 52.
23	Go to **Instructions** column.	Measure for +24 Vdc at the following points for the failing indicator: - lead at 01A-A2T2D08 + lead at 01A-A2T2U05 (Wait) + lead at 01A-A2T2U07 (Sys).
24	Is voltage greater than +22 Vdc?	Go to step 32.
25	Go to **Instructions** column.	Measure for +24 Vdc at the following points for the failing indicator: - lead at 01A-A2T2D08 + lead at 01A-A2E1C06 (Wait) + lead at 01A-A2E1C08 (Sys).
26	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 52.
27	Go to **Instructions** column.	Measure for +24 Vdc at the following points for the failing indicator: - lead at 01A-A1T2D08 + lead at 01A-A1N1E11 (Wait) + lead at 01A-A1N1E13 (Sys).
28	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 52.
29	Go to **Instructions** column.	Measure for +24 Vdc at the following points for the failing indicator: - lead at 01A-A1T2D08 + lead at 01A-A1X5B12 (Wait) + lead at 01A-A1X5B11 (Sys).
30	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 52.
31	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange OCP. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging cable. 3. Go to step 52.
32	Go to **Instructions** column.	Measure for +1.6 Vdc at the following points: - lead at 01A-A2T2D08 + lead at 01A-A2T2U06. 1. Press Lamp Test on OCP. 2. Voltage must now be 0 Vdc.

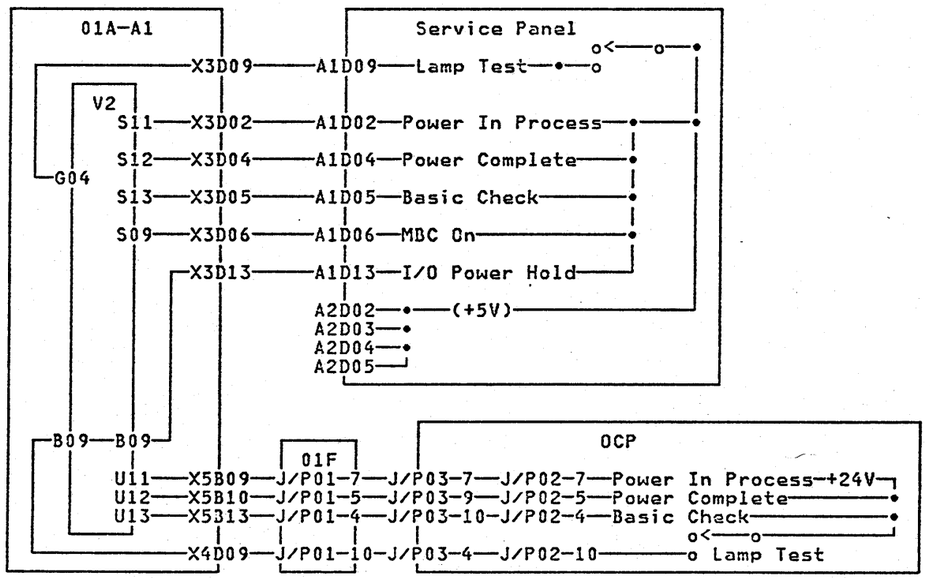


Step	Conditions	Instructions
33	Is voltage less than +1.2 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2T2 card. 3. Go to step 52.
34	Go to **Instructions** column.	Measure for +1.6 Vdc at the following points: - lead at 01A-A2T2D08 + lead at 01A-A1X5D07. 1. Press OCP Lamp Test. 2. Voltage must now be 0 Vdc.
35	Is voltage greater than +1.2 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging cable. 3. Go to step 52.
36	Go to **Instructions** column.	Measure for +1.6 Vdc at the following points: - lead at 01A-A2T2D08 + lead at 01A-A1M1D13. 1. Press OCP Lamp Test. 2. Voltage must now be 0 Vdc.
37	Is voltage greater than +1.2 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 52.
38	Go to **Instructions** column.	Measure for +1.6 Vdc at the following points: - lead at 01A-A2T2D08 + lead at 01A-A2D1B08. 1. Press OCP Lamp Test. 2. Voltage must now be 0 Vdc.
39	Is voltage greater than +1.2 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 52.
40	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 52.
41	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1X5B08.
42	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging OCP. 3. Go to step 52.
43	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1B2D11.
44	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 52.
45	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1B2D10. 1. Press Lamp Test on OCP. 2. Voltage must now be 0 Vdc.



Step	Conditions	Instructions
46	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1B2 card. 4. Go to step 52.
47	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1U2J02. 1. Press OCP Lamp Test. 2. Voltage must now be 0 Vdc.
48	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 52.
49	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1U2D04. 1. Press OCP Lamp Test. 2. Voltage must now be +24 Vdc.
50	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2U2 card. 4. Go to step 52.
51	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 52.
52	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel 01F-J/P1 OCP. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Press Lamp Test on OCP and observe indicators. 6. Press Lamp Test on service panel and observe indicators. 7. Go to page PR 901.





Hex Display

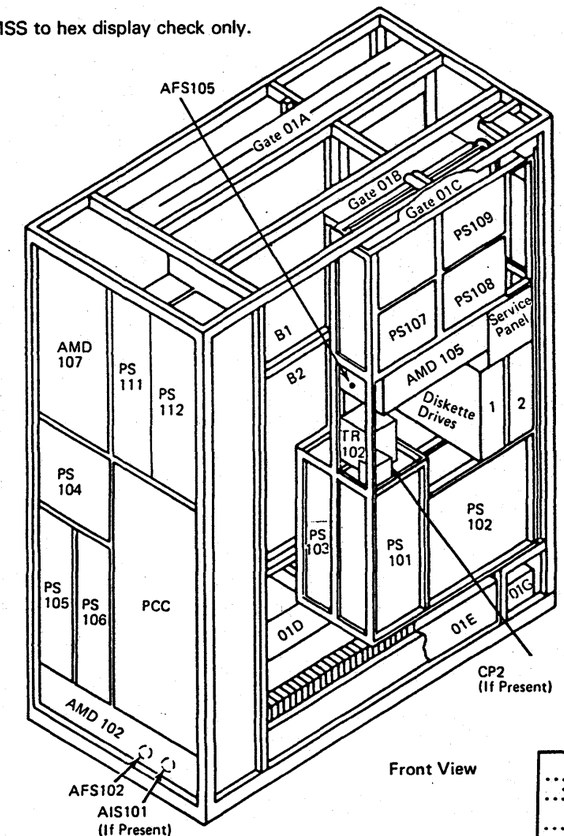
You are here because the hex display fails to indicate properly.

Possible causes:

- 01A-A1V2 card
- Service panel
- 01A-A2G4 card.

Note: MBC to hex display is a functional check only. MSS Diagnostic Option 90 is a MSS to hex display check only.

Step	Conditions	Instructions
1	Is the hex display blank?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 13.
2	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check the following for proper seating: 01A-A2G4 card 01A-A2ZC cable Service panel connectors A1, A2, and B2 01A-A1X4 cable. 3. Set PCC CB1 and CB2 on. 4. Trip PS102 CP1 (power code 0A or A0 should be displayed). 5. Reset PS102 CP1.
3	Does the hex display equal 0A or A0?	Go to step 9.
4	Go to **Instructions** column.	Measure for dc voltages indicated in table **A**: - lead at 01A-A1V2D08 + lead at pin location. 1. Record voltages measured.
5	Go to **Instructions** column.	1. Press Check Reset. Measure for dc voltages indicated in table **B**: - lead at 01A-A1V2D08 + lead at pin location. 2. Record voltages measured.
6	Is any voltage not correct?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Check board nets: 01A-A1X4B02 to V2S08 01A-A1X4B03 to V2S07 01A-A1X4B04 to V2J09 01A-A1X4B05 to V2J07. 4. Set PCC CB1 and CB2 on. 5. Go to step 9.



Left Side View

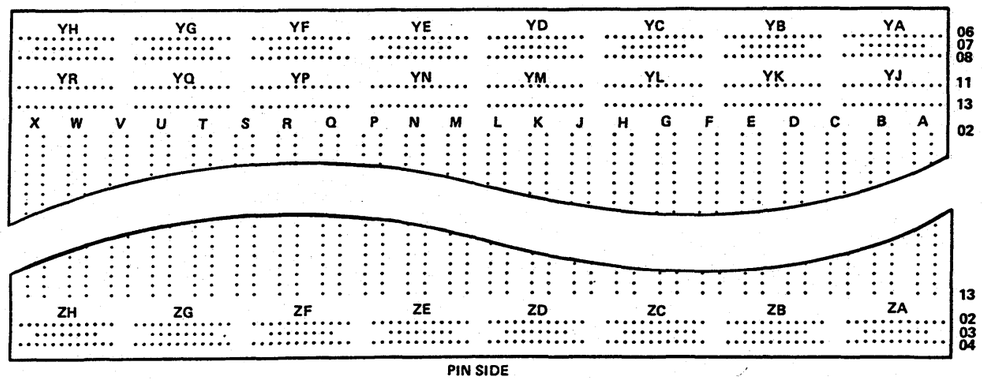
Front View

A

Pin Location	Line Name	Voltage
01A-A1X4B02	+ MBC Hex Display	> +5V
01A-A1X4B03	+ Blank Display	< +0.8V
01A-A1X4B04	+ Latch Digit 2	> +5V
01A-A1X4B05	+ Latch Digit 1	> +5V

B

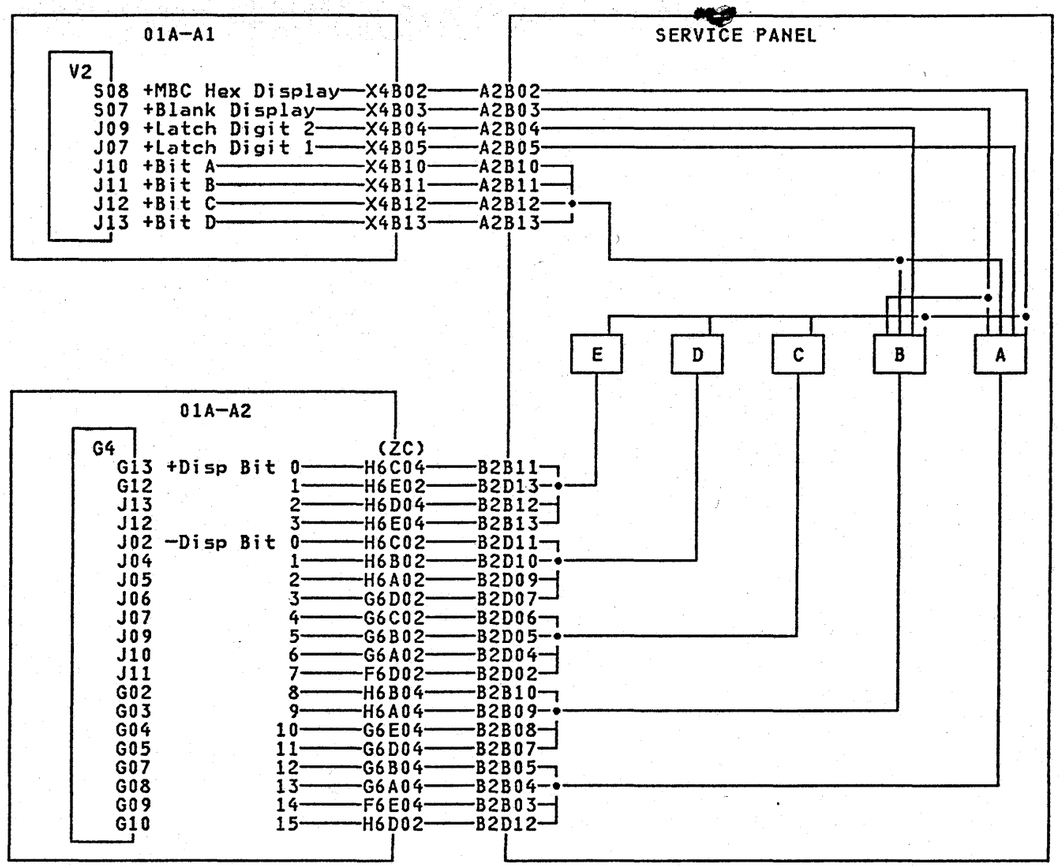
Pin Location	Line Name	Voltage After Check Reset
01A-A1X4B02	+ MBC Hex Display	< +0.8V
01A-A1X4B03	+ Blank Display	< +0.8V
01A-A1X4B04	+ Latch Digit 2	< +0.8V
01A-A1X4B05	+ Latch Digit 1	< +0.8V



PIN SIDE

Step	Conditions	Instructions
7	Are all voltages correct and the hex display does not equal 0A or A0?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Set PCC CB1 and CB2 on. 4. Trip PS102 CP1. 5. Reset PS102 CP1.
8	Is the hex display not equal to 0A or A0?	1. Set PCC CB1 and CB2 off. 2. Exchange the following FRUs in the order given: 01A-A1V2 card Cable from 01A-A1X4 to the service panel connector A2 01A-A1 board. 3. Set PCC CB1 and CB2 on. 4. Go to step 9.
9	Go to **Instructions** column.	1. Insert DIAG1 in diskette drive 1. 2. Press service panel Power On.
10	Is MSS Diagnostic screen displayed?	1. Run MSS Diagnostic Option 90. For instructions to run Diagnostic 90, see Volume A06, Service Aids, "Service Panel Checkout Procedure."
11	Does the hex display equal 80000?	Diagnostic Option 90 failed to start, press Logic Reset again. 1. If 80000 is still displayed, perform the following pushbutton checkout. • "Logic Reset" procedure on PR0451 • "OCP IML" procedure on PR0391. **Note:** FUNC1 required for switch checkout procedure.
12	Does Diagnostic Option 90 visual checkout fail?	1. Exchange the following FRUs one at a time in the order given, and rerun MSS Diagnostic Option 90. 01A-A2G4 card Service panel Cable from 01A-A2ZC (card side) to service panel connector B2 01A-A2 board. 2. Go to step 13.

Step	Conditions	Instructions
13	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Set CE Mode switch to Normal. 6. Go to page PR 901.



Operator Control Panel (OCP)

You are here because of a failing OCP pushbutton or to verify console pushbutton operations.

Use the following chart to locate the repair actions.

Pushbutton	Go to
Power On/IML	Step 1
Power Off	Step 15
Lamp Test	PR 371
Channel To Channel	Step 16

Power On/IML

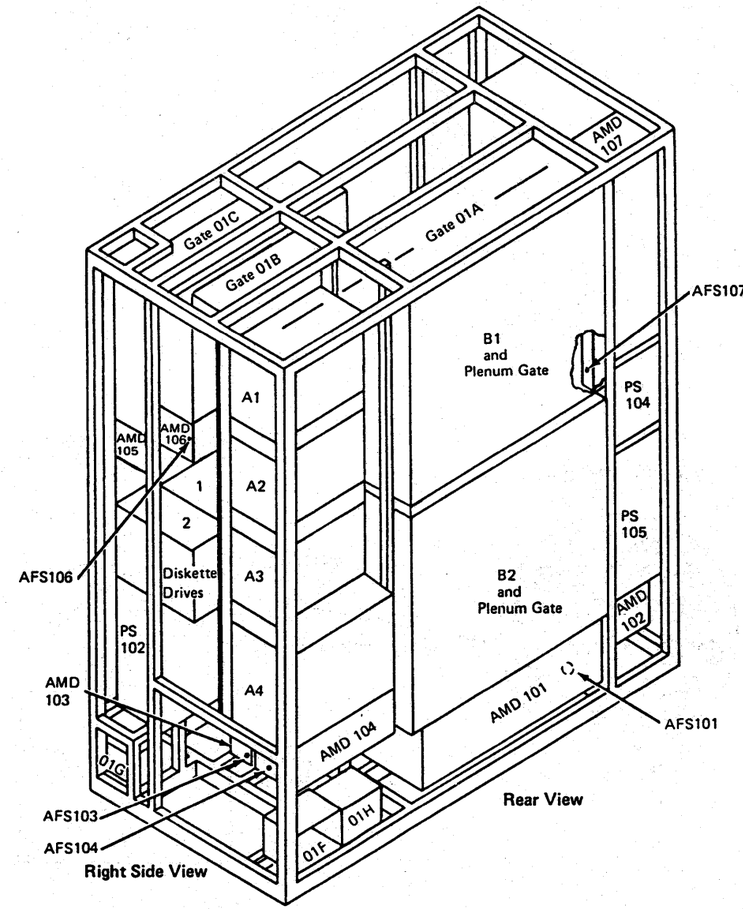
- With power complete and CE Mode switch set to Normal:

  Pressing Power On/IML with power complete will IML the processor and display the General Selection (Q) screen.

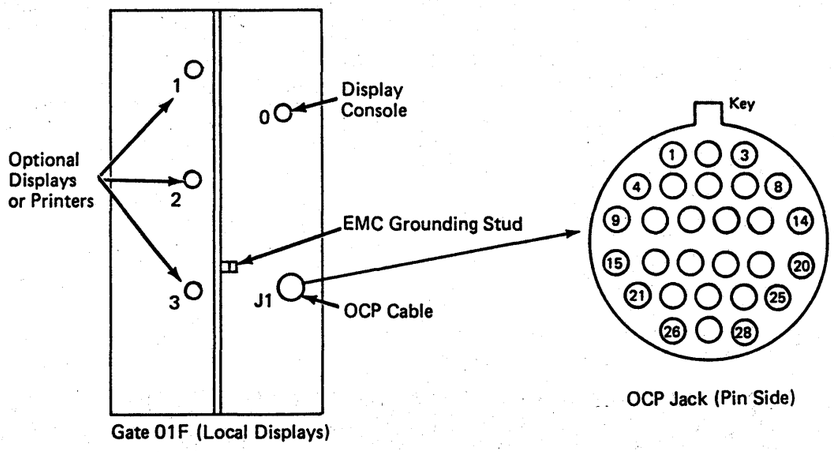
- With power incomplete and CE Mode switch set to Normal:

  Pressing Power On/IML with power incomplete will power up the complete system and display the Program Load (QL) screen.

Step	Conditions	Instructions
1	Does OCP IML fail?	Go to step 10.
2	Does OCP Power On fail?	1. Set CE Mode switch to Normal. 2. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5B02.
3	Is voltage greater than +22 Vdc?	Go to step 7.
4	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B05.
5	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 37.



Step	Conditions	Instructions
6	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 37.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5B03. Press Power On/IML on the OCP.
8	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 37.
9	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check for open cable, board for bent pins, and cable connector for pushed in pins and seating at the following points before exchanging OCP. 01A-A1X5B02 to 01F J/P1-3 01A-A1X5B03 to 01F J/P1-2 01F J/P1-3 to OCP J/P3-11 01F J/P1-2 to OCP J/P3-12. 3. Go to step 37.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2B02. Press Power On/IML on the OCP. The Voltage is expected to go from 24V to 0V.



Gate 01F (Local Displays)

OCP Jack (Pin Side)

Step	Conditions	Instructions
11	Did voltage go from 24V to 0V?	1. Set PCC CB1 and CB2 off. 2. Exchange the 01A-A1U2 card. 3. Go to step 37.
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D12. Press Power On/IML on the OCP. The Voltage is expected to go from 24V to 0V.
13	Did voltage go from 24V to 0V?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 37.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Isolate to one of the following: OCP (Display and Keyboard). Cable from 01F-J1 to 01A-A2X5D12 OCP cable. 3. Go to step 37.

Power Off

Pressing OCP Power Off causes the complete system to power down.

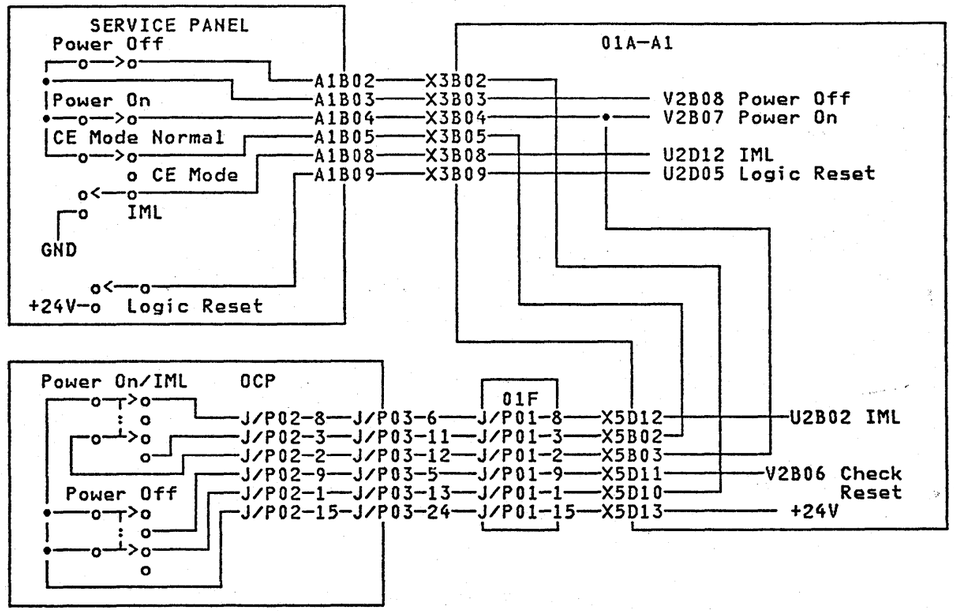
15	Does OCP Power Off fail?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check for open cable, bent pins, and cable connector for pushed in pins and seating before exchanging OCP. 3. Go to step 37.

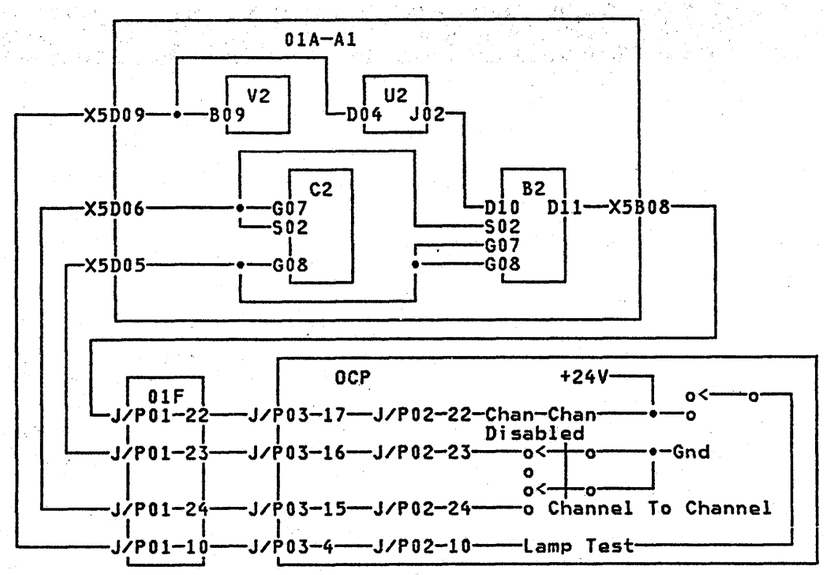
Channel To Channel

Pressing Channel To Channel on the OCP causes the Chan-Chan Disabled indicator to light and CTCA interfaces to be disabled.

Step	Conditions	Instructions
16	Is operation correct?	Go to page PR 901.
17	Go to **Instructions** column.	Press Lamp Test on the OCP.
18	Does Chan-Chan Disabled indicator fail to light?	Go to page PR 371.
19	Go to **Instructions** column.	Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1B2G08. **Note:** The CTCA is assumed to be enabled at this time.
20	Is voltage less than +0.8 Vdc?	Go to step 24.
21	Go to **Instructions** column.	Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D05.
22	Is voltage greater than +0.8 Vdc?	Go to step 36.
23	Go to **Instructions** column.	Go to step 35
24	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1B2S02.
25	Is voltage greater than +3.5 Vdc?	Go to step 27.
26	Go to **Instructions** column.	Go to step 34.
27	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1B2G08. Press Channel To Channel.
28	Is voltage less than +3.5 Vdc?	Go to step 34.

Step	Conditions	Instructions
29	Go to **Instructions** column.	Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1B2S02.
30	Is voltage less than +0.8 Vdc?	Go to step 34.
31	Go to **Instructions** column.	Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D06.
32	Is voltage less than +0.8 Vdc?	Go to step 35.
33	Go to **Instructions** column.	Go to step 36.
34	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1B2 and C2 CTCA cards. 4. Go to step 37.
35	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 37.
36	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F J/P1, and OCP before exchanging OCP. 3. Go to step 37.
37	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel OCP (Display and Keyboard). 3. Go to page PR 901.





Convenience Outlet

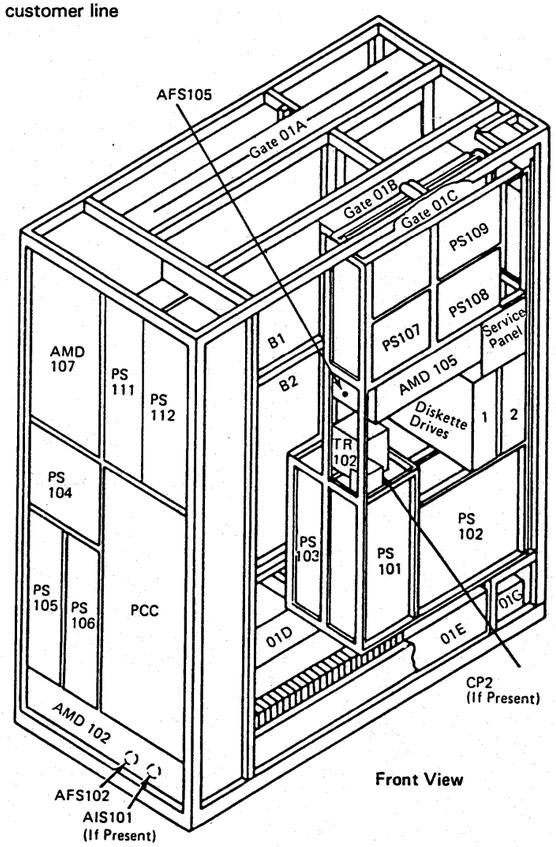
You are here because there is a failure of the convenience outlet.

Possible causes:

- Fuse F1
- K01
- TR100
- CP1.

The convenience outlet is active when PCC CB1, PCC CP1, and Unit Emergency Only switch are all on and customer line voltage is present at the PCC. at the PCC.

Step	Conditions	Instructions
1	Is the service panel 24 Volt indicator off?	Go to page PR 021.
2	Go to **Instructions** column.	1. Check for tripped PCC CP1. 2. Check PCC F1. 3. If necessary, reset CP, or exchange PCC F1. 4. If convenience outlet is OK, go to page END 001.
3	Does CP1 continue to trip or does PCC F1 continue to blow?	Go to step 25.
4	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC K01-B + lead at PCC K01-A.
5	Is voltage greater than +22 Vdc?	Go to step 11.
6	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC J/P01-2 + lead at PCC J/P01-4.
7	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P01 to PCC K01. 3. Go to step 36.
8	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS101 J/P04-1 + lead at PS101 J/P04-3.
9	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P01 to PS101 J/P04. 3. Go to step 36.

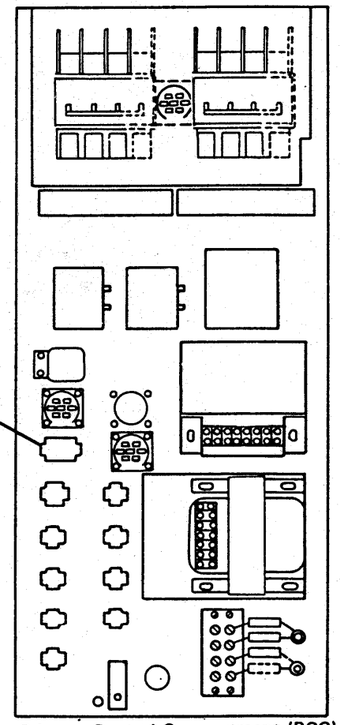


Left Side View

Front View

Jack
(Wiring Side)

J/P01

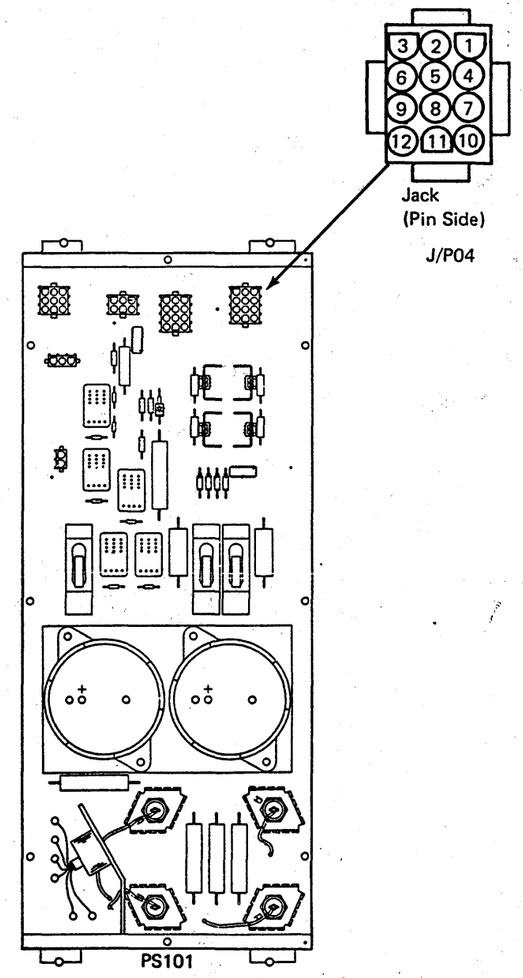


Primary Control Compartment (PCC)

4381-3 B/M 2676380	MI Seq BA205	PN 6169106 1 of 3	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

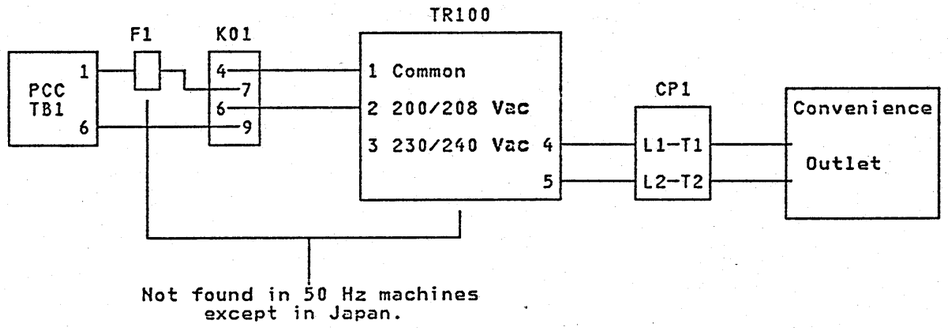
Step	Conditions	Instructions
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 36.
11	Go to **Instructions** column.	1. If 50 Hz, go to step 27. 2. Measure for line voltage at the following points: TR100 TB1-1 to 2 (200/208 **Vac**) TR100 TB1-1 to 3 (220/240 **Vac**). **Note:** For line voltage value, see label on PCC box.
12	Is line voltage present?	Go to step 18.
13	Go to **Instructions** column.	Measure for line voltage at the following points: PCC K01-4 to 6.
14	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC K01 to TR100 TB1. **Note:** Check cable for loose wires before exchanging cable. 3. Go to step 36.
15	Go to **Instructions** column.	Measure for line voltage at the following points: PCC K01-7 to 9. **Note:** For line voltage value, see label on PCC box.
16	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange PCC K01. 3. Go to step 36.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC TB1 to PCC K01. **Note:** Check cable for loose wires at K01, F1, and TB1 before exchanging cable. 3. Go to step 36.

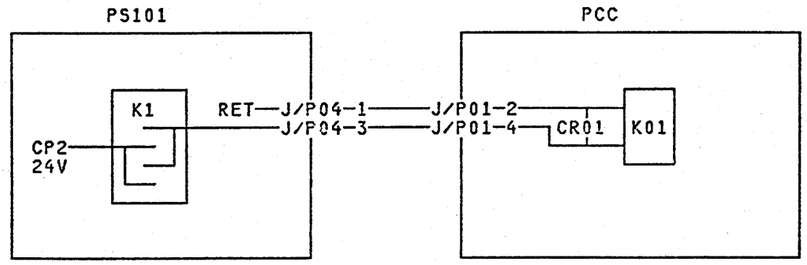
Step	Conditions	Instructions
18	Go to **Instructions** column.	Measure for 115 **Vac** at the following points: PCC CP1 T1 to T2.
19	Is ac voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange convenience outlet and cable from PCC CP1 to convenience outlet. **Note:** Check cable for loose wires before exchanging cable. 3. Go to step 36.
20	Go to **Instructions** column.	Measure for 115 **Vac** at the following points: PCC CP1-L1 to L2.
21	Is ac voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange CP1. 3. Go to step 36.
22	Go to **Instructions** column.	Measure for 115 **Vac** at the following points: TR100 TB1-4 to 5.
23	Is ac voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from TR100 to PCC CP1. **Note:** Check cable for loose wires before exchanging cable. 3. Go to step 36.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange TR100. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR100. 3. Go to step 36.
25	Is CP1 tripped?	1. Isolate to the following: Convenience outlet PCC CP1 Cable from CP1 to outlet. 2. Go to step 36.



		able utlet.
		loose wires ble.
		ltage at the following CP-L1 to L2.
		Set PCC CB1 and CB2 off. Exchange CP1. Go to step 36.
		Measure for line voltage at the following points: PCC K01-4 to 6.
32	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC K01 to PCC CP1. **Note:** Check cable for loose wires before exchanging cable. 3. Go to step 36.
33	Go to **Instructions** column.	Measure for line voltage at the following points: PCC K01-7 to 9. **Note:** For line voltage value, see label on PCC box.
34	Is line voltage present?	1. Set PCC CB1 and CB2 off. 2. Exchange PCC K01. 3. Go to step 36.
35	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC TB1 to PCC K01. **Note:** Check cable for loose wires at K01, F1, and TB1 before exchanging cable. 3. Go to step 36.
36	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Retry convenience outlet. 6. Go to page PR 901.

TR100





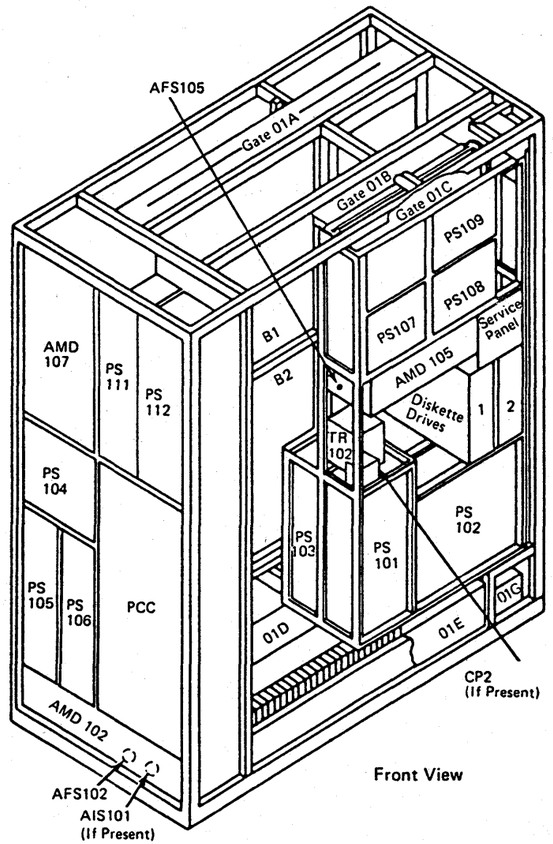
Power On Failure

You are here because the system fails to power on and there is no error indication.

Possible causes:

- 01A-A1V2 card
- 01A-A1U2 card
- 01A-A2D2 card
- 01A-A2E2 card
- Top card connectors misplugged or missing.

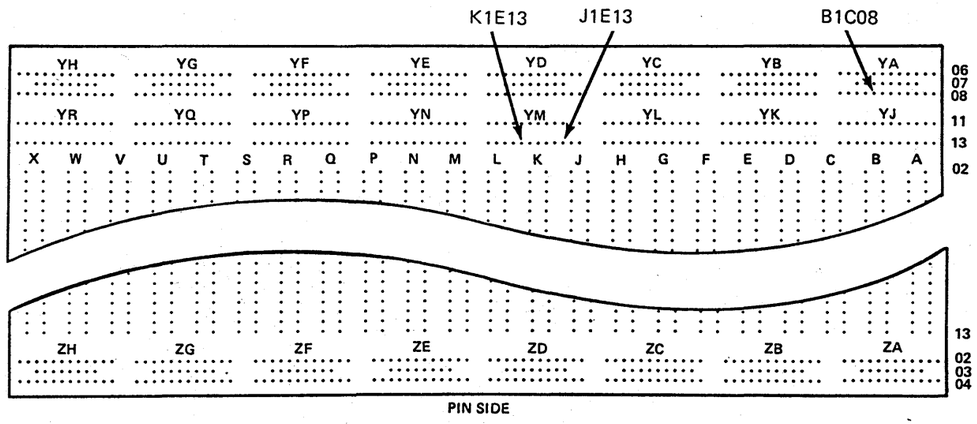
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Verify that the console is connected (01F-J/P1, OCP-J/P3). 3. Set PCC CB1 and CB2 on. 4. Press OCP Power On/IML. If power is complete, go to page PR 901. 5. Set CE Mode switch to Normal. 6. Insert DIAG1 in diskette drive 1.
2	Is the Basic Check indicator on?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 43.
3	Only fails to power on from OCP?	Go to page PR 391.
4	Only fails to power on from service panel?	Go to page PR 441.
5	Fails to power on from both panels?	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B08.
6	Is voltage greater than +22 Vdc?	Go to step 21.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B03.
8	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 43.
9	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - laed at 01A-A1V2D08 + laed at 01A-A1X3B02.

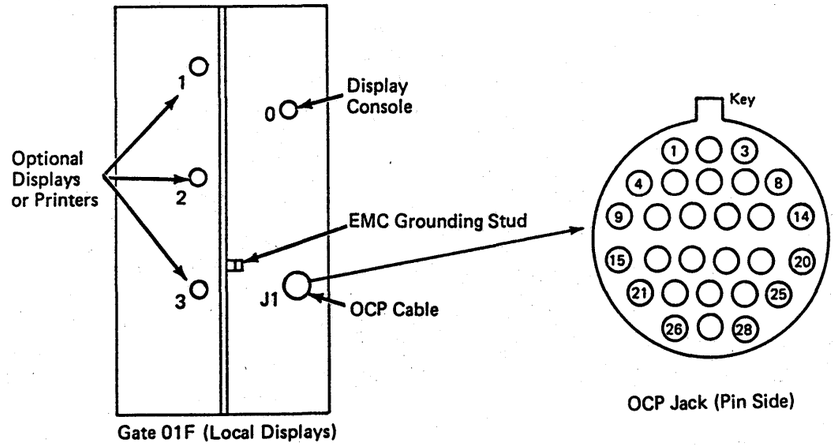


Front View

Left Side View

Step	Conditions	Instructions
10	Is voltage less than 22 Vdc?	Go to step 14.
11	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at service panel connector A1. 3. Check seating and continuity between the following points: 01A-A1X3B02 to service panel connector A1B02 01A-A1X3B03 to service panel connector A1B03.
12	Is an open indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X3 to service panel connector A1. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 43.
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 43.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D10.
15	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 43.
16	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D13.
17	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 43.
18	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Check seating and continuity at the following cable points: 01A-A1X5D13 to 01F J1-15 01A-A1X5D10 to 01F J1-1 01F P1-15 to OCP J3-24 01F P1-1 to OCP J3-13.



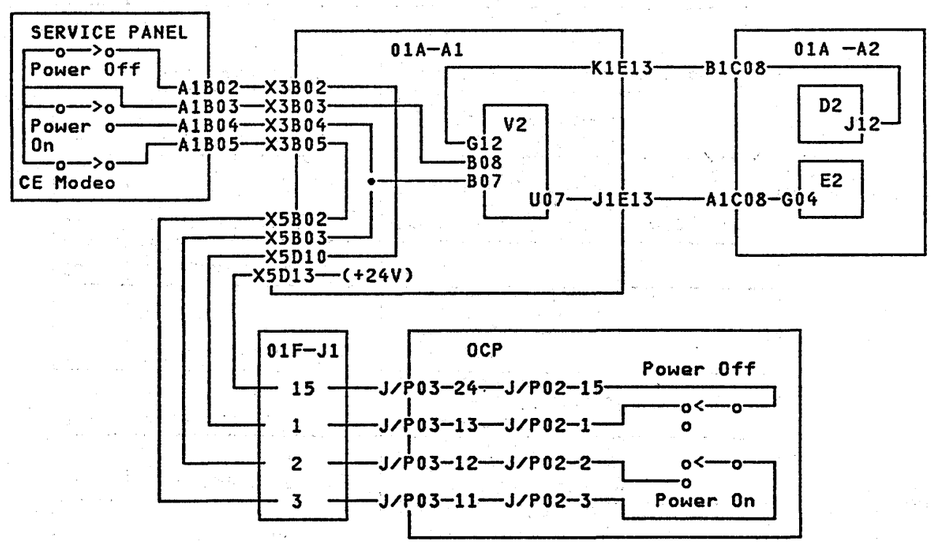


Step	Conditions	Instructions
19	Is open indicated in either cable?	1. Exchange open cable. 2. Reconnect cable from 01F J1 to OCP J3. 3. Go to step 43.
20	Go to **Instructions** column.	1. Exchange OCP keyboard. 2. Reconnect cable from 01F J1 to OCP J3. 3. Go to step 43.
21	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B07. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On.
22	Is voltage less than +22 Vdc?	Go to service panel "Power On" pushbutton checkout procedure on page PR 441.
23	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for +3.3 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G04.
24	Is voltage greater than +3 Vdc?	Go to step 32.
25	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2A1C08.
26	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 43.
27	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1E13.

Step	Conditions	Instructions
28	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 43.
29	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07.
30	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 43.
31	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 43.
32	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J12.
33	Is voltage greater than +3 Vdc?	Go to step 41.
34	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2B1C08.
35	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 43.
36	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1K1E13.
37	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 43.

Step	Conditions	Instructions
38	Go to **Instructions** column.	Measure for +3.3 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2G12.
39	Is voltage greater than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 43.
40	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 43.
41	Go to **Instructions** column.	1. Measure for +3.8 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J12. 2. Press service panel Power On. 3. Voltage should change from +3.3 Vdc to +3.8 Vdc.
42	Is voltage less than +3 Vdc?	1. Set PCC CB1 and CB2 off. 2. Isolate to 01A-A2D2 or 01A-A1V2 card. **Note:** Check seating of top card connectors at 01A-A2D2W2, X3 and 01A-A1V2. 3. Go to step 43.
43	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel 01F J/P1 OCP (Display and Keyboard). 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
44	Is the MSS Diagnostic screen displayed?	Go to page PR 901.
45	Is a MSS Ref Code displayed?	Follow instructions displayed on console screen.
46	Is there any two-digit power code or service panel indicator failure?	Go to page PR 001.

Step	Conditions	Instructions
47	Does the machine still fail without error indication?	1. Ensure PCC CB1 and CB2 are off. 2. Exchange the following cards or power supply: 01A-A1V2 card 01A-A1U2 card 01A-A2D2 card 01A-A2E2 card 01A-A2F2 card PS101 Top card connectors. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



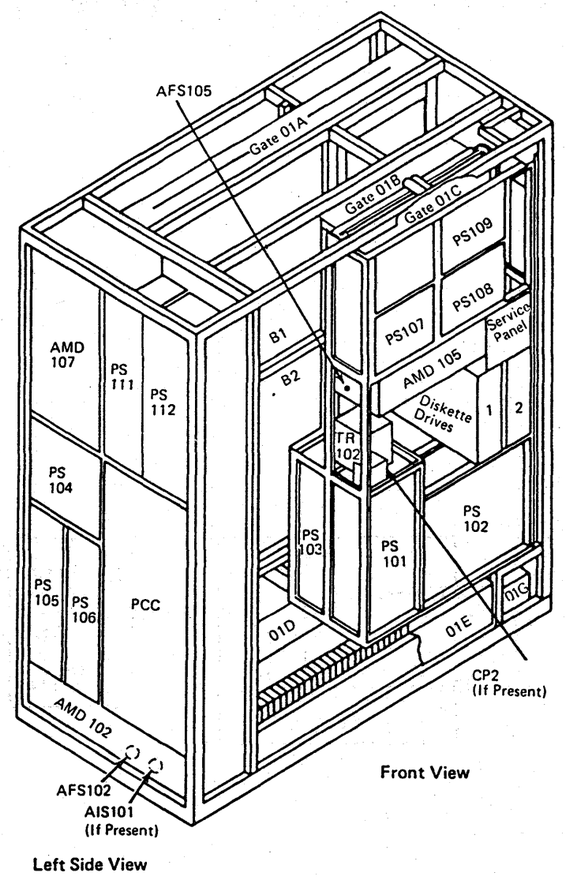
Power Off Failure

You are here because the processor fails to power off.

Possible causes:

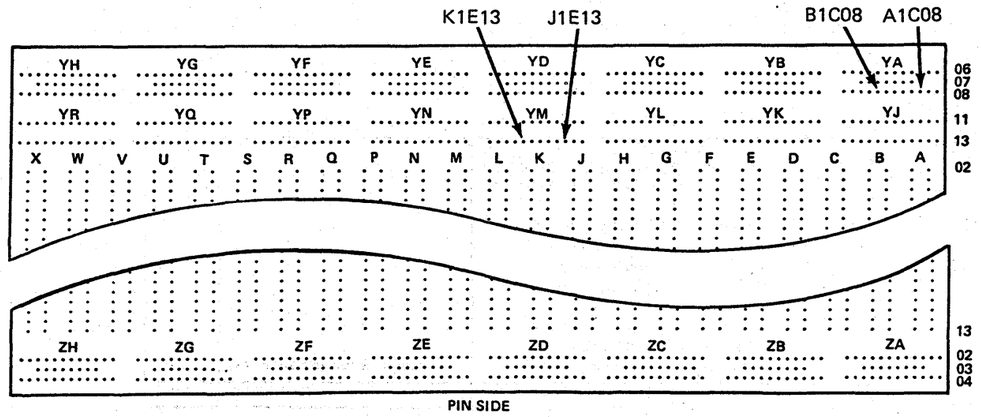
- OCP (Display and Keyboard)
- Service panel
- 01A-A1V2 card
- 01A-A2D2 card
- 01A-A2E2 card.

Step	Conditions	Instructions
1	Only fails to power off from service panel?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 16.
2	Only fails to power off from OCP?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check for open cable, bent pins and cable connector for pushed in pins and seating before exchanging OCP. 3. Go to step 16.
3	Fails to power off from both panels?	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B08. 2. Set service panel Power Off switch to Power Off and then back to Normal. 3. Voltage is expected to go from 24V to 0V.
4	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Also suspect board net from 01A-A1X3B03 to 01A-A1V2B08. 4. Go to step 16.
5	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1E13.
6	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** A TCC could also be defective. Ensure TCCs are seated and the TCC arrow is pointing up. 3. Also suspect net from 01A-A1V2U07 to 01A-A1J1E13. 4. Go to step 16.



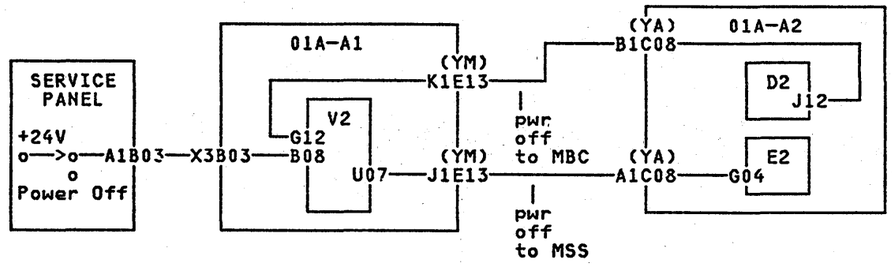
Front View

Left Side View



PIN SIDE

Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1C08.
8	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 16.
9	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2E2 card. 3. Also suspect open net from 01A-A2E2G04 to 01A-A2A1C08.
10	Is machine not failing?	Go to step 16.
11	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2B1C08.
12	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2D2 card. 3. Also suspect open net from 01A-A2D2J12 to 01A-A2B1C08. 4. Go to step 16.
13	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1K1E13.
14	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2YA to 01A-A1YM. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** A TCC could also be defective. Ensure TCCs are seated and the TCC arrow is pointing up. 3. Also suspect open net from 01A-A1K1E13 to 01A-A1V2G12. 4. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel OCP (Display and Keyboard). 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.



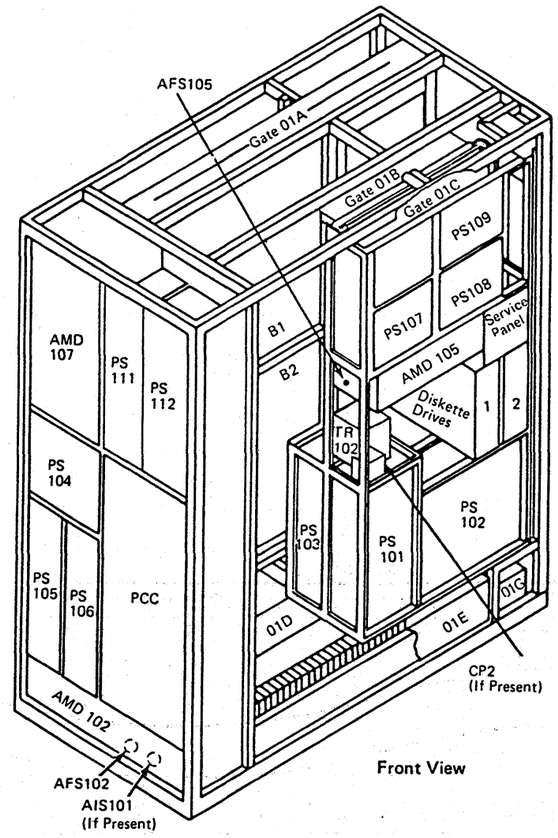
MBC Reset

You are here because of a MBC reset line failure.

Possible causes:

- 01A-A1U2 card
- 01A-A1V2 card
- 01A-A2F2 card.

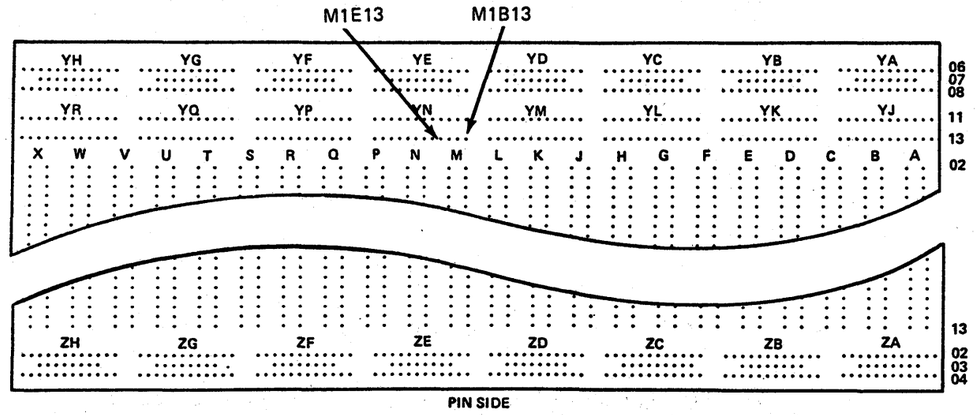
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U06.
2	Is voltage greater than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** A TCC could also be defective. Ensure TCCs are seated correctly and the TCC arrow is pointing up. 3. Go to step 32.
3	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1U2B12.
4	Is voltage greater than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. (See note.) **Note:** If still failing, exchange 01A-A1 board. 3. Go to step 32.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U06. 3. Press service panel Power On. 4. Wait 10 seconds and record voltage. Voltage should change from 0 to +4V.
6	Is voltage less than +2.4 Vdc?	Go to step 15.



Front View

Left Side View

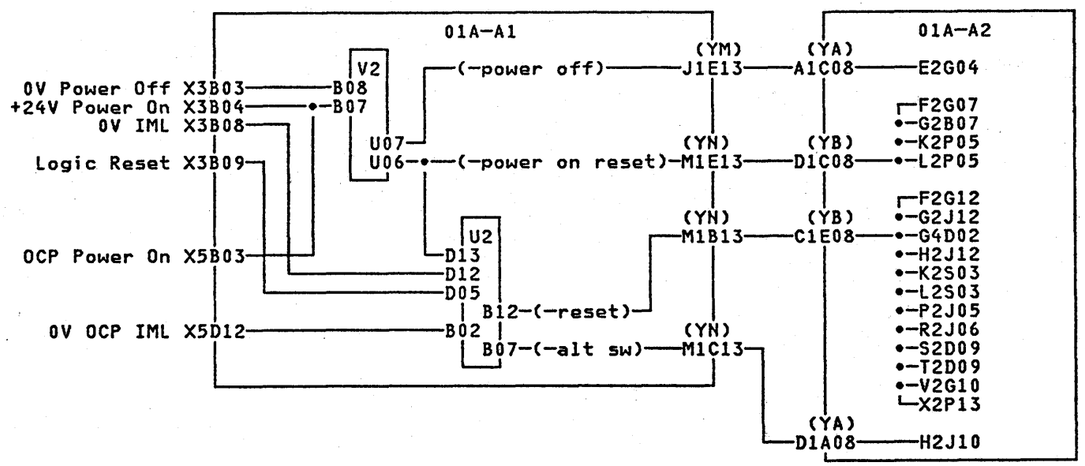
Step	Conditions	Instructions
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2B12. 3. Press service panel Power On. 4. Wait 10 seconds and record voltage. Voltage should change from 0 to +4 Vdc.
8	Is voltage less than +2.4 Vdc?	1. Leave the CE Meter connected to 01A-A1U2B12. 2. Set PCC CB1 and CB2 off. 3. Disconnect cable at 01A-A1YN (card side). 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On. 6. Wait 10 seconds before checking voltage.
9	Is voltage greater than +2.4 Vdc?	Go to step 20.
10	Go to **Instructions** column.	Measure and record voltages at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2D12 + lead at 01A-A1U2D05 + lead at 01A-A1U2B02.
11	Is voltage less than +0.8 Vdc at 01A-A1U2D12?	Go to page PR 451 "IML" pushbutton failure.
12	Is voltage greater than +22 Vdc at 01A-A1U2D05?	Go to page PR 451 "Logic Reset" pushbutton failure.
13	Is voltage less than +0.8 Vdc at 01A-A1U2B02?	Go to page PR 391 "Power On/IML" pushbutton failure.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. **Note:** If still failing, exchange 01A-A1 board. 3. Go to step 32.



Step	Conditions	Instructions
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A1YN (card side). 3. Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U06. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On. 6. Wait 10 seconds and record voltage. Voltage should change from 0 to +4 Vdc.
16	Is voltage greater than +2.4 Vdc?	Go to step 20.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A1U2 card. 3. Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U06. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On. 6. Wait 10 seconds and record voltage.
18	Is voltage greater than +2.4 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 32.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. **Note:** If still failing, exchange 01A-A1 board. 3. Go to step 32.
20	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1YN if disconnected (card side). 3. Remove cards 01A-A2G2 through 01A-A2X2. 4. Leave meter connected to the failing pin (U2B12 or V2U06). 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On. 7. Wait 10 seconds and record voltage.

Step	Conditions	Instructions
21	Is voltage greater than +2.4 Vdc?	Go to step 27.
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A2YB (card side). 3. Set PCC CB1 and CB2 on. 4. Leave meter connected to failing pin (U2B12 or V2U06). 5. Press service panel Power On. 6. Wait 10 seconds and record voltage.
23	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 32.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Remove 01A-A2F2 card. 3. Measure resistance at the following points: - lead at 01A-A1V2D08 + lead at failing pin (01A-A1U2B12 or 01A-A1V2U06). **Note:** Leave meter connected.
25	Is a short indicated?	1. Exchange 01A-A2 board. 2. Go to step 32.
26	Is an open indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2F2 card. 3. Go to step 32.
27	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D1C08 + lead at 01A-A2C1E08.

Step	Conditions	Instructions
28	Is voltage less than +0.8 Vdc at either point?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** If still failing, exchange 01A-A1 board. 4. Go to step 32.
29	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reinstall one of the cards removed from board 01A-A2 in step 20. 3. Leave meter connected to the failing pin. 4. Press service panel Power On. 5. Wait 10 seconds and record voltage.
30	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just reinstalled. 3. Repeat steps 29, 30, and 31 until all cards have been reinstalled in 01A-A2, then go to step 32.
31	Is voltage greater than +2.4 Vdc?	1. Repeat steps 29, 30, and 31 until all cards have been reinstalled in 01A-A2, then go to step 32.
32	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.



Service Panel

You are here because of a service panel switch or pushbutton failure or to verify service panel switch/pushbutton operations.

The following chart will direct you to the proper switch or pushbutton repair or repair procedure.

Switch/Pushbutton	Go To
Power On	Step 1
Power Off	Step 18
CE Mode	PR 461
Check Reset	PR 451
Logic Reset	PR 451
IML	PR 451
Copy SP Storage Data	PR 471
I/O Power Hold	PR 461
Lamp Test	PR 371

Power On

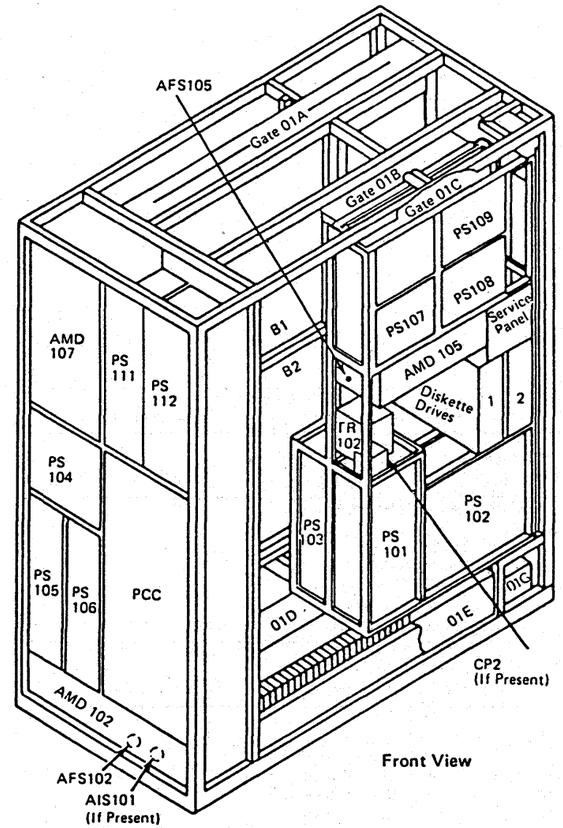
- With CE Mode switch set to Normal:

  Pressing service panel Power On causes the IPL screen to display and the Power Power Complete indicator on the OCP and the service panel to light.

- With CE Mode switch set to CE Mode:

  Pressing service panel Power On causes the Partial Power Up/Down screen to display and the Power In Process indicator on the OCP and the service panel to light.

Step	Conditions	Instructions
1	Is operation correct?	Go to step 32.
2	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B08.
3	Is voltage less than +22 Vdc?	Go to step 19.
4	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B07. 2. Press and hold service panel Power On.



Front View

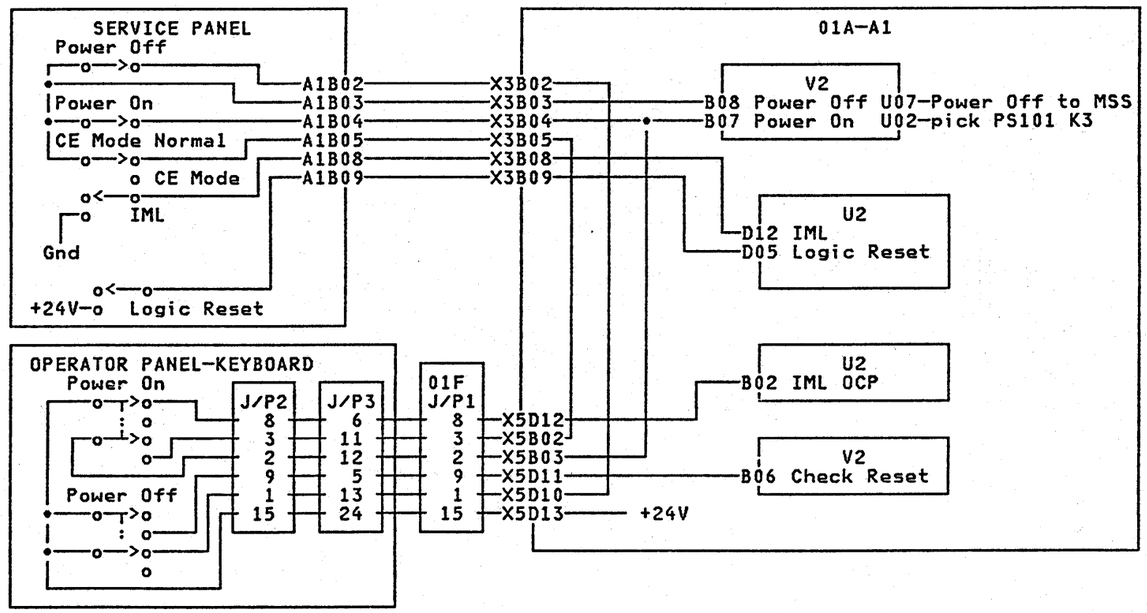
Left Side View

Step	Conditions	Instructions
5	Is voltage greater than +22 Vdc?	Go to step 15.
6	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B04. 2. Press and hold service panel Power On.
7	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
8	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B02. 2. Press and hold service panel Power On.
9	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 32.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D10.
11	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D13.
13	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging cable. 3. Go to step 32.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
15	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U02. 2. Press service panel Power On.
16	Is voltage greater than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 32
17	Go to **Instructions** column.	Power On is functioning correctly. Go to page PR 901.

Power Off

- Setting the service panel Power Off switch to the Power Off position causes a sequential power down of the I/O devices and processor power supplies.
- The Power Off switch must be set to the Normal position for Power On operations.

Step	Conditions	Instructions
18	Is operation correct?	Go to step 32.
19	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B08.
20	Is voltage less than +0.8 Vdc?	Go to step 25.
21	Is voltage greater than +22 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal.
22	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 32.
23	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Normal. 2. Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07. 3. Press service panel Power Off.
24	Is voltage less than +0.8 Vdc?	Service panel Power Off switch is operating correctly. Go to step 32.
25	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B02.
26	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 32.
27	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D10.
28	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
29	Go to **Instructions** column.	Measure for 0 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X5D13.
30	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 32.
31	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange OCP (Display and Keyboard). **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X5, 01F-J/P1, and OCP before exchanging cable. 3. Go to step 32.
32	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel 01F OCP (Display and Keyboard). 3. Set PCC CB1 and CB2 on. 4. Set CE Mode switch to Normal. 5. Set service panel Power Off switch to Normal. 6. Go to page PR 901.



Logic Reset, Check Reset, And IML

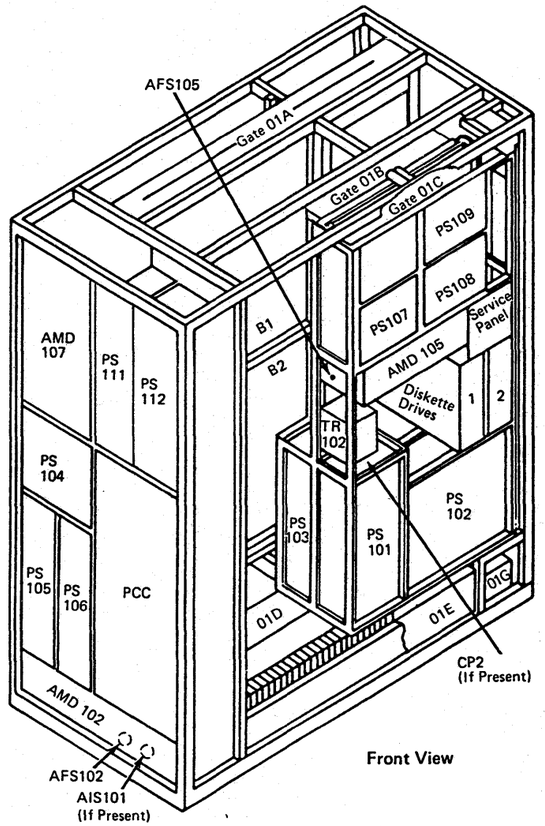
The following chart will direct you to the proper step for the pushbutton functions.

Pushbutton	Go To
Logic Reset	Step 1
Check Reset	Step 6
IML	Step 11

Logic Reset

Pressing Logic Reset causes a hardware reset of the MSS and posts an EC Ref Code on the ERD screen.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1U2D05. 2. Press and hold Logic Reset.
2	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 16.
3	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1X3B09. 2. Press and hold Logic Reset.
4	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel or cable from 01A-A1X3 to service panel connector A1. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 16.



Front View

Left Side View

Check Reset

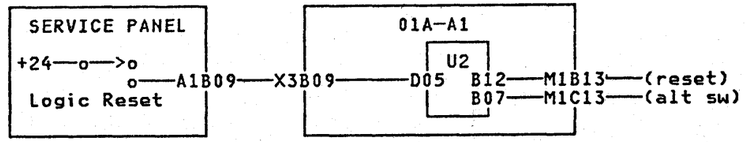
Pressing Check Reset resets 01A-A1V2 (MBC card).

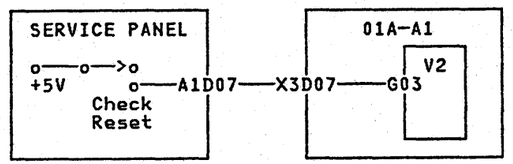
Step	Conditions	Instructions
6	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3D07. 2. Press Check Reset.
7	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel or cable from 01A-A1X3 to service panel connector A1. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 16.
8	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2G03. 2. Press Check Reset.
9	Is voltage greater than +3.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 16.
10	Is +5 Vdc present?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.

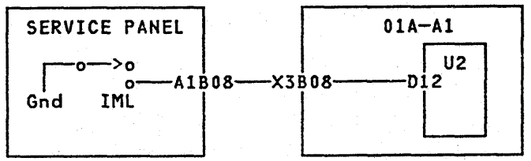
IML

Pressing IML causes an IML of the processor and the General Selection (Q) screen is displayed.

Step	Conditions	Instructions
11	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1U2D12. 2. Press and hold IML.
12	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 16.
13	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A1U2D08 + lead at 01A-A1X3B08. 2. Press and hold IML.
14	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 16.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel or cable from 01A-A1X3 to service panel connector A1. **Note:** Check board for bent pins and cable connector for pushed in pins and seating at 01A-A1X3 and service panel connector A1 before exchanging service panel. 3. Go to step 16.
16	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.







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CE Mode And I/O Power Hold

The following chart will direct you to the proper step for the switch functions.

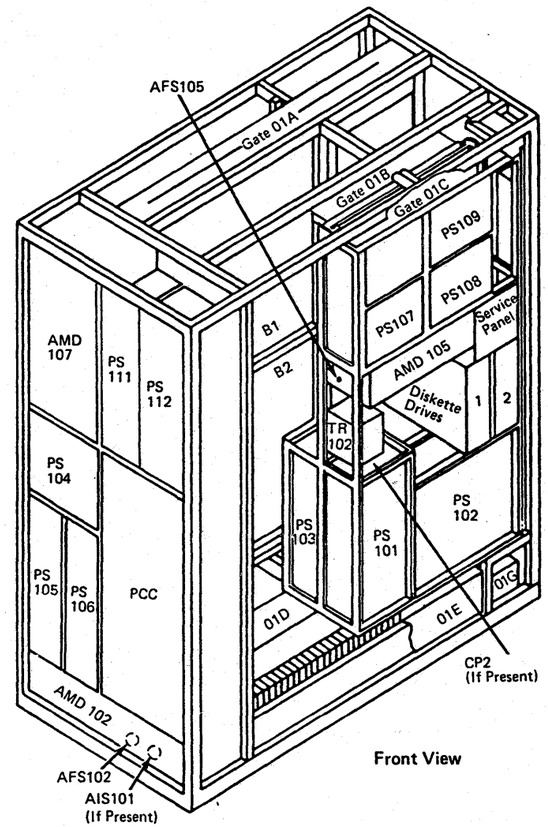
Switch	Go To
CE Mode	Step 1
Normal Mode	Step 41
I/O Power Hold	Step 15

CE Mode

- CE Mode position:
  Turns Basic Check indicator on.
  Test will be displayed on console line 22.
  Allows CE screens to be displayed.
  Disables OCP Power On function.

- Normal position:
  Turns Basic Check indicator off.
  Inhibits display of CE screens.
  Enables OCP Power On function.

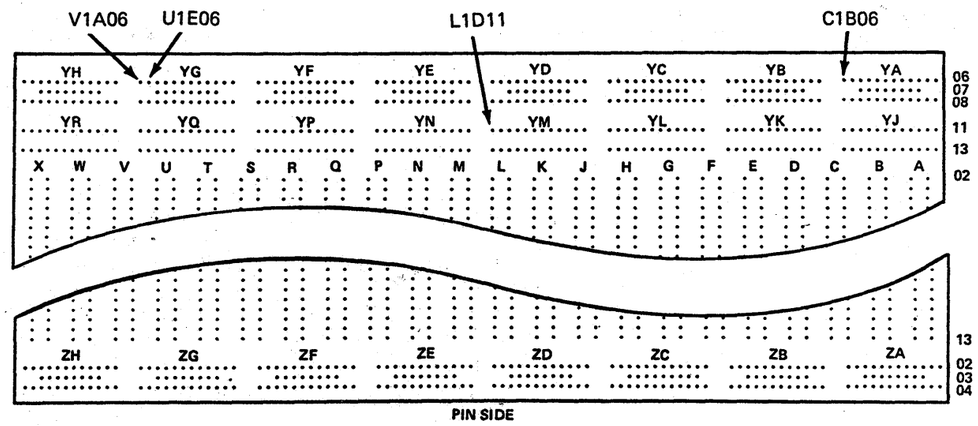
Step	Conditions	Instructions
1	Is operation correct?	Go to step 14.
2	Go to **Instructions** column.	Set CE Mode switch to CE Mode.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B05.
4	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 14.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2B08.
6	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2D2 card. 3. Go to step 14.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2C1B06.



Front View

Left Side View

Step	Conditions	Instructions
8	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 14.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1L1D11.
10	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 14.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U10.
12	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 14.
13	Is the Basic Check indicator off? or Is the console line 22 test indicator off?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Exchange 01A-A2D2 card. 4. If still failing, use second level to isolate failure. 5. Go to step 14.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: 01A-A1 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Set CE Mode switch to Normal. 5. Go to page PR 901.



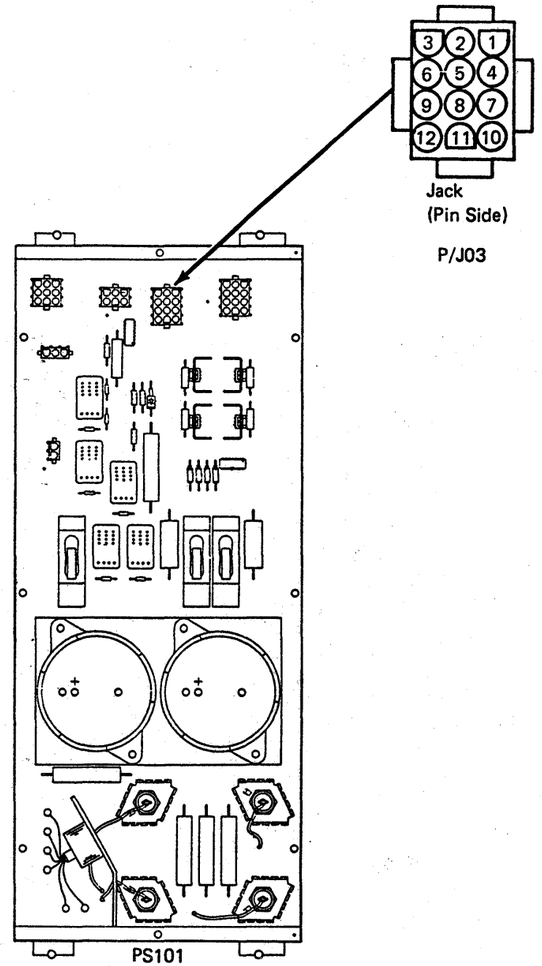
I/O Power Hold

- Normal position:
  Allows normal powering off of I/O devices when processor power off sequence is initiated.

- I/O Power Hold position:
  Allows the I/O devices to remain powered up after the processor Power Off sequence is complete.
  The I/O Power Hold indicator is on and an I/O Power Hold message is displayed on the console.

Step	Conditions	Instructions
15	Is operation correct?	Go to step 40.
16	Go to **Instructions** column.	Set the I/O Power Hold switch to the I/O Power Hold position.
17	Is the I/O Power Hold indicator on and I/O drops power?	Go to step 33.
18	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B11.
19	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 40.
20	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B10.
21	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. **Note:** Check for continuity between 01A-A1X3B10 to service panel connector A1B10 and 01A-A1X3B11 to service panel connector A1B11 before exchanging service panel. 3. Go to step 40.
22	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2J05.
23	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 40.
24	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2G05.
25	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 40.
26	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1K1E11.
27	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 40.
28	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2B1C06.
29	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2YA to 01A-A1YM. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 40.
30	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2D2D07.
31	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 40.

Step	Conditions	Instructions
32	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1D2 card. 3. Go to step 40.
33	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at PS101 J/P03. 3. Measure resistance at the following points: - lead at PS101 P03-2 + lead at PS101 P03-3 (cable end).
34	Is a short indicated?	1. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 2. Go to step 40.
35	Go to **Instructions** column.	Measure resistance at the following points: - lead at 01A-A1V1A06 + lead at 01A-A1U1E06.
36	Is a short indicated?	1. Exchange the cable from 01A-A1YG to PS101 J/P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 40.
37	Go to **Instructions** column.	Measure resistance at the following points: - lead at 01A-A1X3B13 + lead at 01A-A1X3B12.
38	Is a short indicated?	1. Exchange 01A-A1 board. 2. Go to step 40.
39	Go to **Instructions** column.	1. Exchange service panel. **Note:** Check for continuity between 01A-A1X3B12 to service panel connector A1B12 and 01A-A1X3B13 to service panel connector A1B13 before exchanging service panel. 2. Go to step 40.
40	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PS101 01A-A1 board 01A-A2 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Set I/O Power Hold to Normal. 5. Go to page PR 901.



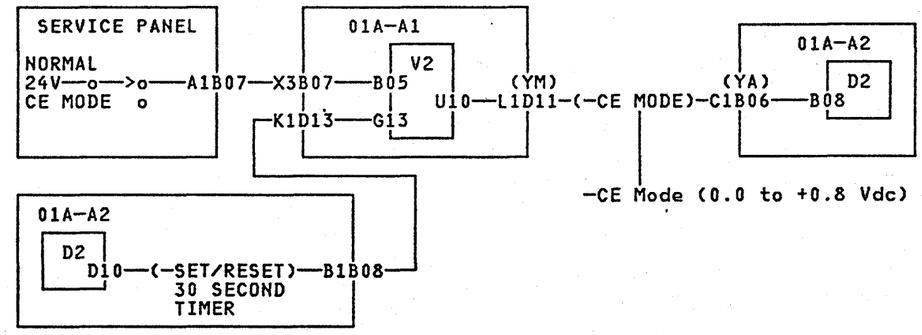
Normal Mode

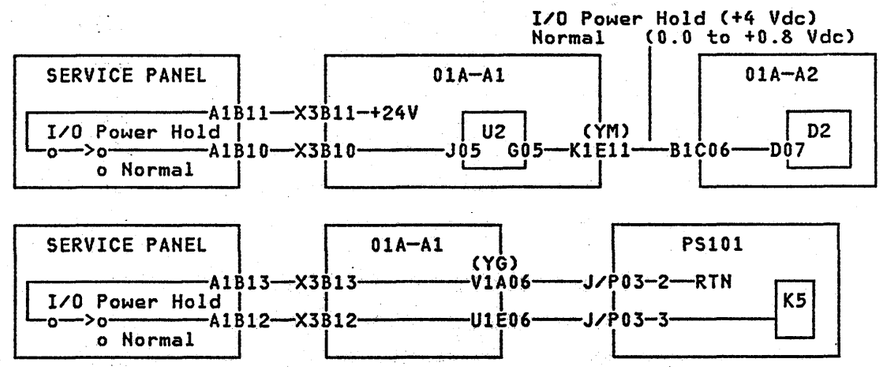
- Normal position:
  Turns Basic Check indicator off.
  Inhibits display of CE screens.
  Enables OCP Power On function.

- CE Mode position:
  Turns Basic Check indicator on.
  Test will be displayed on console line 22.
  Allows CE screens to be displayed.
  Disables OCP Power On function.

Step	Conditions	Instructions
41	Is operation correct?	Go to step 57.
42	Go to **Instructions** column	Set CE Mode switch to Normal.
43	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2B05.
44	Is voltage less than +22 Vdc?	Go to step 54.
45	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2B08.
46	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2D2 card. 3. Go to step 57.
47	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2C1B06.
48	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 57.
49	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1L1D11.
50	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange the cable from 01A-YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 57.
51	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U10.

Step	Conditions	Instructions
52	Is voltage less than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange the 01A-A1 board. 3. Go to step 57.
53	Is the Basic Check indicator on? or Is the console line 22 test indicator on?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Exchange 01A-A2D2 card. 4. If still failing, use second level to isolate failure. 5. Go to step 57.
54	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X3B07.
55	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 57.
56	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 57.
57	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following ares: 01A-A1 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Set CE Mode switch to Normal. 5. Go to page PR 901.

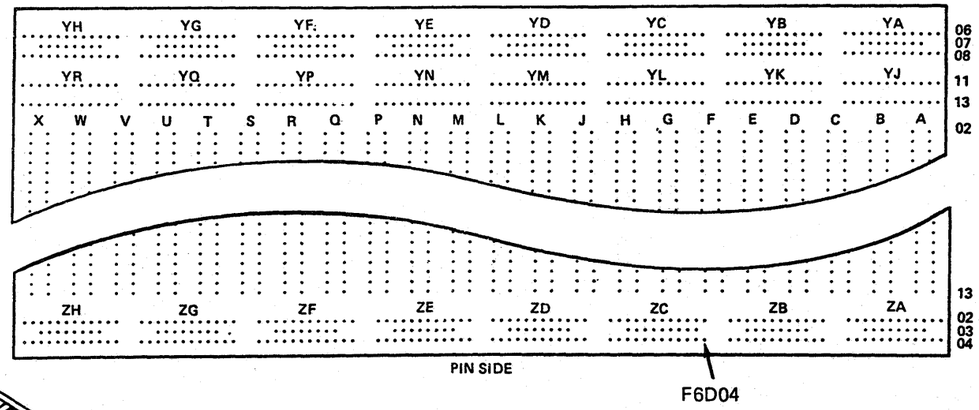


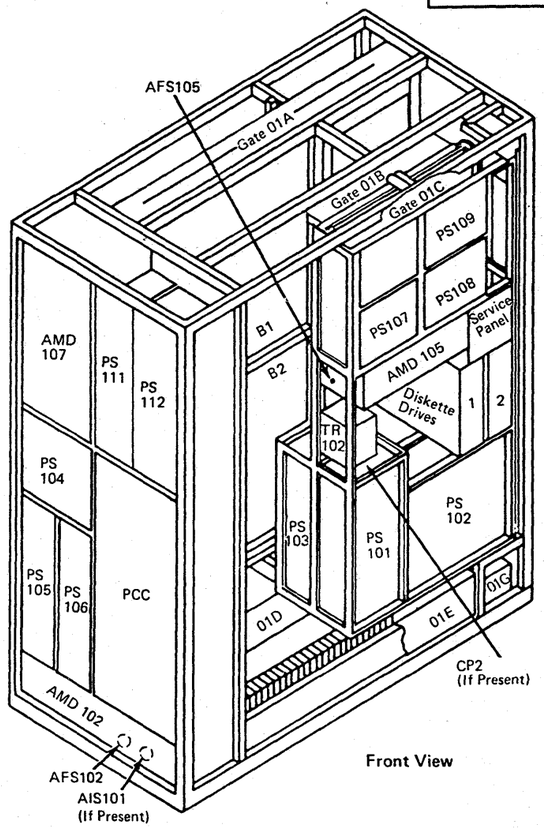


Copy SP Storage Data

Pressing Copy SP Storage Data causes 128K of service processor storage to be dumped to the FUNC2 diskette and a dump complete message displayed on the console.

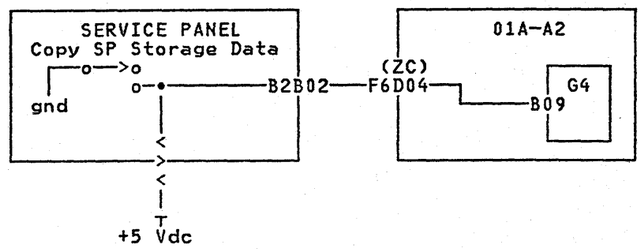
Step	Conditions	Instructions
1	Is operation correct?	Go to page PR 901.
2	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2F6D04. Press Copy SP Storage Data.
3	Is voltage greater than +3.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange service panel. 3. Go to step 7.
4	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2G4B09. Press Copy SP Storage Data.
5	Is voltage less than +3.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2G4 card. 3. Go to step 7.
6	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 7.
7	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A2 board Service panel. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 901.





Front View

Left Side View



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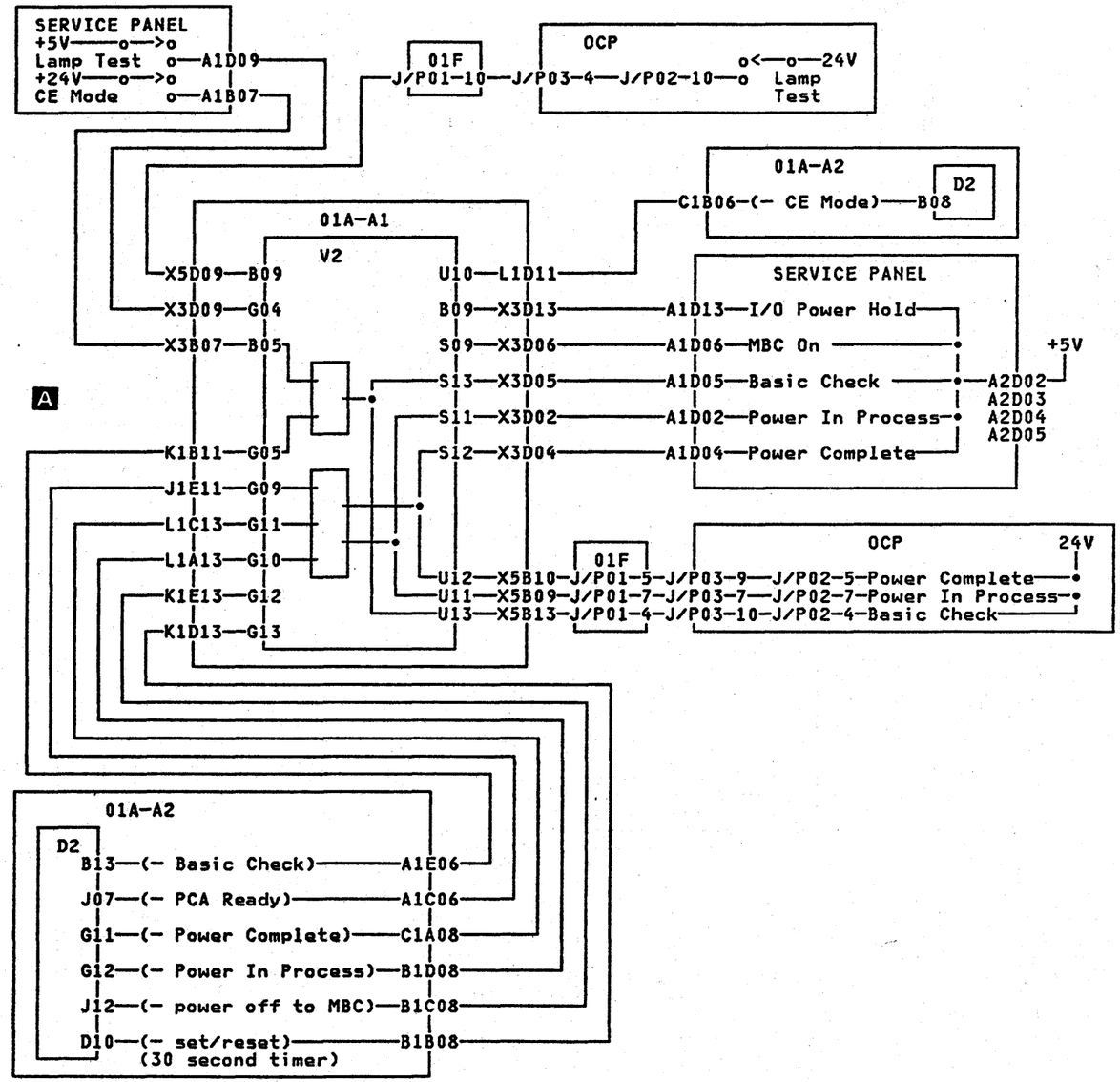
Miscellaneous Indicator Failures

You are here because a service panel or OCP indicator is on when it should not be or off when it should be on.

Possible causes:

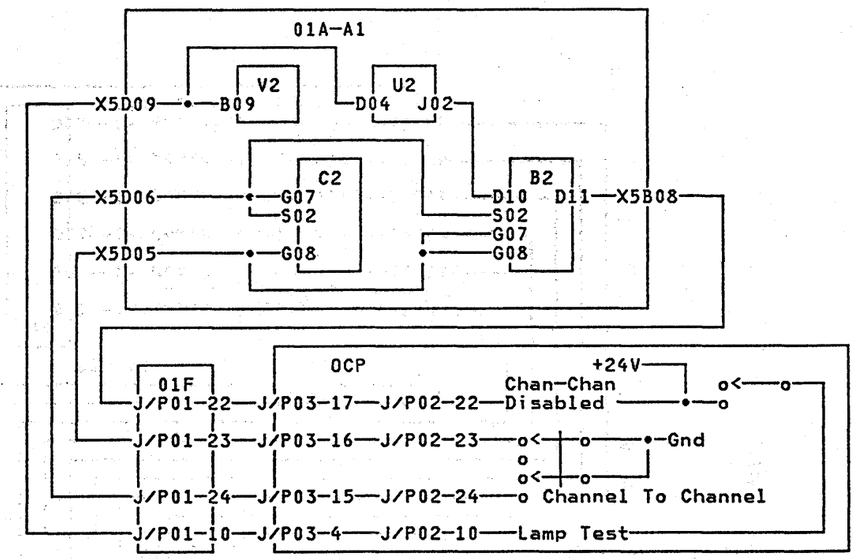
- 01A-A1V2 card
- 01A-A1U2 card
- 01A-A2D2 card
- Service panel
- OCP (Display and Keyboard)
- 01A-A1B2 (CTCA) card
- 01A-A1C2 (CTCA) card
- 01A-A2U2 (system or wait) card
- 01A-A2T2 (system or wait) card.

Step	Conditions	Instructions
1	Go to **Instruction** column.	1. MSS or PU power must be on. 2. Set I/O Power Hold to Normal. 3. Press Lamp Test on the service panel. 4. The following indicators should be on: Service Panel Power In Process Power Complete Basic Check MBC On I/O Power Hold. OCP Power In Process Power Complete Basic Check Chan-Chan Disabled.
2	Does lamp test fail?	Go to page PR 001.
3	Do you have a problem with the Power In Process or Power Complete indicators?	1. Isolate to one of the following FRUs: 01A-A1V2 card 01A-A2D2 card Service panel. 2. If indicators still fail, use diagram **A** to isolate the failure. 3. Go to step 9.
4	Do you have a problem with the Basic Check indicator?	1. Isolate to one of the following FRUs: 01A-A1V2 card 01A-A2D2 card Service panel OCP (Display and Keyboard). 2. If indicators still fail, use diagram **A** to isolate the failure.

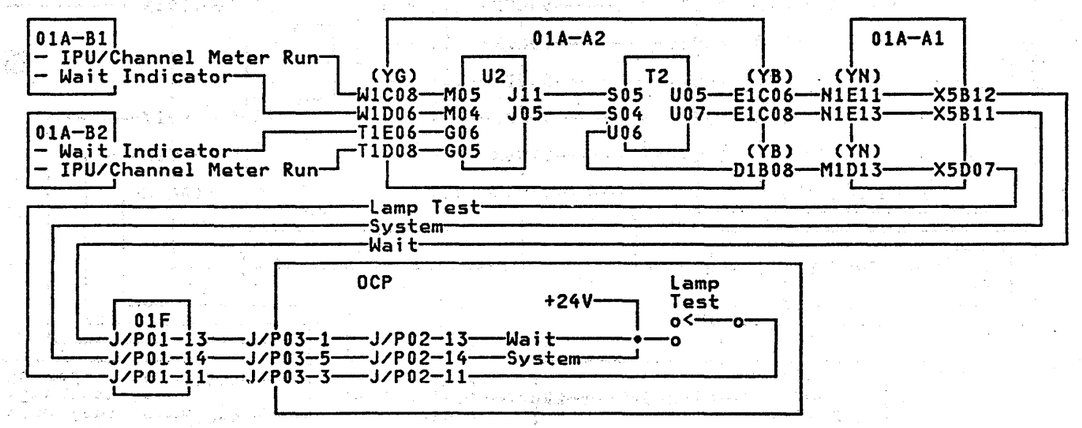


Step	Conditions	Instructions
5	Do you have a problem with the Chan-Chan Disabled indicator?	1. Isolate to one of the following FRUs: 01A-A1B2 card 01A-A1C2 card 01A-A1U2 card OCP (Display and Keyboard). 2. If indicators still fail, use diagram **B** to isolate the failure. 3. Go to step 9.
6	Do you have a problem with the System or Wait indicators?	1. Isolate to one of the following FRUs: 01A-A2U2 card 01A-A2T2 card OCP (Display and Keyboard). 2. If indicators still fail, use diagram **C** to isolate the failure. 3. Go to step 9.
7	Do you have a problem with the MBC On indicator?	Go to page PR 001.
8	Do you have a problem with the I/O Power Hold indicator?	Go to page PR 001.
9	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel 01F, OCP (Display and Keyboard). 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 901.

B



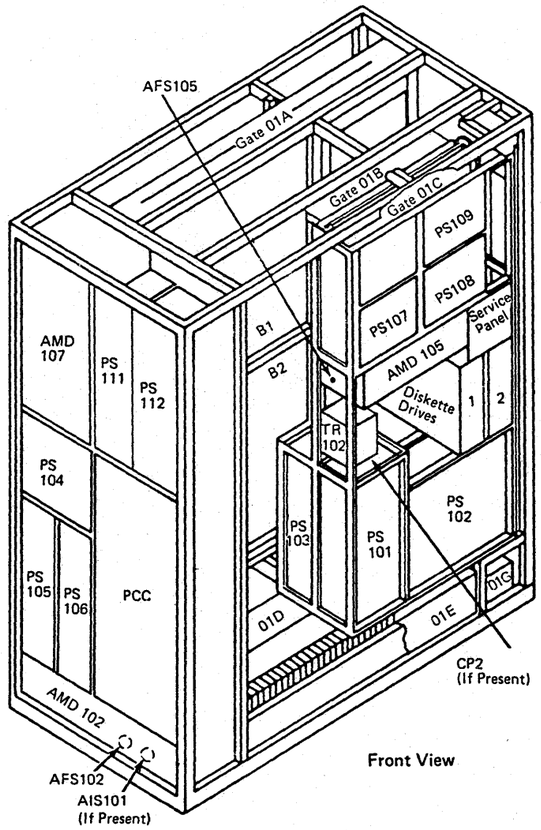
C



Power Repair Verification And Exit Procedure

- Ensure that all CPs and CBs are set on.
- Ensure that all modules, cards, or cables in the area of any FRUs exchanged, swapped, or disconnected are reinstalled.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set the CE Mode switch to Normal. 3. Ensure I/O Power Hold switch is set to Normal. 4. Ensure FUNC1 diskette is in diskette drive 1. 5. Ensure FUNC2 diskette is in diskette drive 2. 6. Press OCP Power On, and enter the time and date when requested. 7. Wait for the I/O to sequence on.
2	Do you have a Ref Code (UU RRRR IS) with UU equal to 1X?	1. Invoke your support structure. 2. Go to page PR 1001.
3	Do you have a two-digit power code?	1. Invoke your support structure. 2. Go to page PR 001.
4	Do you have a Ref Code (UU RRRR IS) with UU equal to F6?	1. Invoke your support structure. 2. Go to page MSS 036.
5	Is power complete?	Perform the following processing unit checkout: 1. Select the PU Diagnostic Selection (QG) screen. If the screen fails to display, go to step 5. 2. Select option I (PU isolation diagnostics). 3. If an error message is displayed, verify that cables, cards, and modules are reinstalled and seated correctly before following the displayed instructions. 4. If board 01A-A3 or 01B-A1 was exchanged, run the "Channel Wrap Test" in Volume A07, Diagnostics. 5. Go to page END 001.
6	Go to **Instructions** column.	1. Invoke your support structure. 2. Go to page START 001.



Front View

Left Side View

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