

**FM 500C / FM 1C
POWER SUPPLY
RETRO-FIT KIT
INSTRUCTIONS**

May, 1994

IM No 597-0016-001

IMPORTANT INFORMATION

EQUIPMENT LOST OR DAMAGED IN TRANSIT.

When delivering the equipment to you, the truck driver or carrier's agent will present a receipt for your signature. Do not sign it until you have: 1) inspected the containers for visible signs of damage and 2) counted the containers and compared with the amount shown on the shipping papers. If a shortage or evidence of damage is noted, insist that notation to that effect be made on the shipping papers before you sign them.

Further, after receiving the equipment, unpack it and inspect thoroughly for concealed damage. If concealed damage is discovered, immediately notify the carrier, confirming the notification in writing, and secure an inspection report. This item should be unpacked and inspected for damage WITHIN 15 DAYS after receipt. Claims for loss or damage will not be honored without proper notification of inspection by the carrier.

RF PRODUCT TECHNICAL ASSISTANCE – REPAIR SERVICE – REPLACEMENT PARTS.

Technical assistance is available from Broadcast Electronics by letter, prepaid telephone, fax, or E-mail. Equipment requiring repair or overhaul should be sent by common carrier, prepaid, insured, and well protected. If proper shipping materials are not available, contact the Customer Service Department for a shipping container. Do not use the mail equipment. We can assume no liability for inbound damage, and necessary repairs become the obligation of the shipper. Prior arrangement is necessary. Contact the Customer Service Department for a Return Authorization.

Emergency and warranty replacement parts may be ordered from the following address. Be sure to include the equipment model number, serial number, part description, and part number. Non-emergency replacement parts may be ordered directly from the Broadcast Electronics stock room by fax at the number shown below.

FACILITY CONTACTS –

Broadcast Electronics, Inc. – Quincy Facility
4100 N. 24th St. P.O. BOX 3606
Quincy, Illinois 62305
Telephone: (217) 224-9600
Fax: (217) 224-9607
E-Mail: General – bdcast@bdcast.com
Web Site: www.bdcast.com

RF PRODUCT TECHNICAL ASSISTANCE – REPAIR – EMERGENCY/WARRANTY REPLACEMENT PARTS –

Telephone: (217) 224-9600
E-Mail: rfservice@bdcast.com
Fax: (217) 224-9607

NON-EMERGENCY REPLACEMENT PARTS –

Fax: (217) 224-9609

RETURN, REPAIR, AND EXCHANGES.

Do not return any merchandise without our written approval and Return Authorization. We will provide special shipping instructions and a code number that will assure proper handling and prompt issuance of credit. Please furnish complete details as to circumstances and reasons when requesting return of merchandise. All returned merchandise must be sent freight prepaid and properly insured by the customer.

WARRANTY ADJUSTMENT.

Broadcast Electronics, Inc. warranty is included in the Terms and Conditions of Sale. In the event of a warranty claim, replacement or repair parts will be supplied F.O.B. factory. At the discretion of Broadcast Electronics, the customer may be required to return the defective part or equipment to Broadcast Electronics, Inc. F.O.B. Quincy, Illinois. Warranty replacements of defective merchandise will be billed to your account. This billing will be cleared by a credit issued upon return of the defective item.

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MODIFICATIONS.

Broadcast Electronics, Inc. reserves the right to modify the design and specifications of the equipment in this manual without notice. Any modifications shall not adversely affect performance of the equipment so modified.

597-0016-001

979-0016-001

POWER SUPPLY RETROFIT KIT

Installation Instructions

Required Tools:

11 / 32 inch nut driver
3 / 16 inch nut driver
Phillips screwdriver
1/ 16 inch Allen wrench (included P/N 836-0014)
Pin removal tool (included P/N 710-0002)
Adjustment tool (included P/N 407-0186)

Assembly Procedure:

Notice: Part of this assembly (9, 10) may have already been done at the factory. Page references are to the drawings section of these instructions.

1. Remove all AC power from transmitter to retrofit.
2. Remove Power Amplifiers and the back panel from transmitter. Keep all screws as they will be reused.
3. Remove the input connector and directional coupler sample of the low pass filter.
4. Remove the two remaining screws supporting the low pass filter.
5. Looking from the front of the transmitter, remove the right side panel and discard.
6. Disconnect the control wire and wires # 15, #16, # 17, #30 and #31 from the power supply.
7. Remove thumb screw on flushing fan to gain access to power supply mounting screw.
8. Remove old power supply.
9. Assemble the power supply support (P/N 471-0970) and the power supply mother board (P/N 919-0423 - modified).
10. Assemble power supply support to new right panel as shown on page 11.
11. Assemble low pass filter to new right side panel as shown in page 14 and set assembly aside for later mounting.
12. Remove the N type RF connectors from the old back panel and assemble on new.
13. Remove the Remote Terminal strip to gain access to J20.
14. Using a 3 / 16 inch nut driver, remove the two hex nuts for J20.
15. With Phillips screwdriver, remove mounting screws for the RFI decoupling PCB.
16. Assemble the removed components from step 13 and 15 onto new back panel.

17. Using the supplied Allen wrench and a screwdriver, remove the AC receptacle from the old panel. Be careful not to strip the head of Allen screws.
18. Assemble the AC receptacle on the new panel with the new hardware as shown on page 7 and 8.
19. Run wire #31 (supplied shorter black wire) to E2 through the top grommet as seen on page 12.
20. Run wire #30 (supplied longer Black wire) to E1 through the lower grommet as seen on page 12.

Controller Board Modifications:

1. Remove Transmitter Controller board by removing center thumb screw and all connectors.
2. Using pin removal tool supplied, remove the wire from pin 7 of connector J705 and discard wire.
3. Using Harness provided (P/ N 949-0400-001) insert pins as follows:
 - I. wire #64 to Pin 8 of connector J705 (Ground)
 - II. wire #65 to pin 7 of connector J705 (Power Supply Mute)
 - III. wire #67 to pin 9 of connector J705 (Power Supply Control)
 - IV. route harness connector end to the back of transmitter
4. Identify socket connector J705 and J704 on Controller board.
5. From the controller back side, solder a jumper of wire between pin 6 and 8 of socket connector J705 (ground).
6. From the controller back side, solder a jumper of wire between pin 9 of socket connector J705 and pin 3 of socket connector J704 (+5 volts).
7. Reinstall transmitter Controller board.
8. Plug in all connectors to controller card, including J705 and J704.

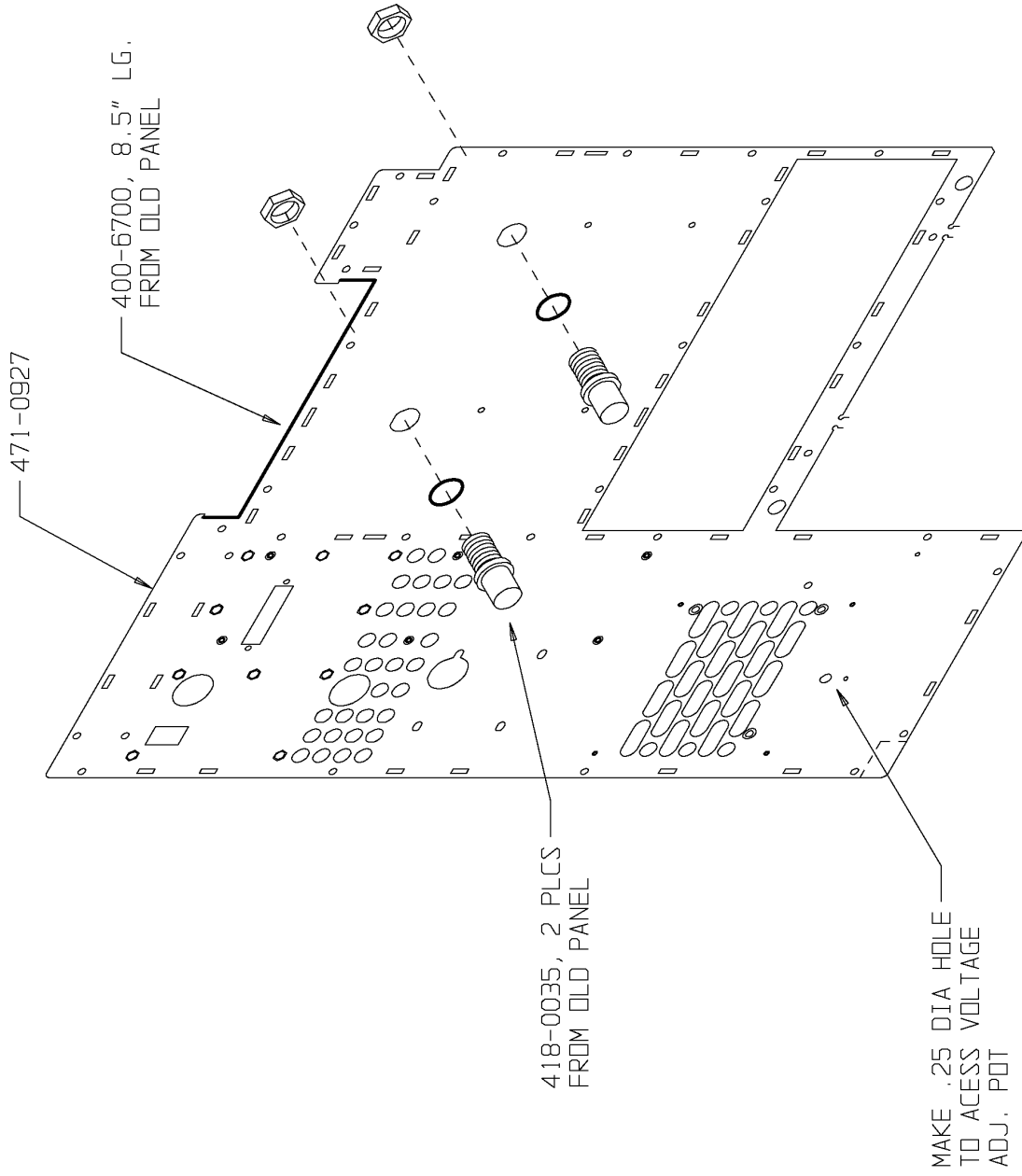
Final Assembly:

1. Assemble right panel onto transmitter.
2. Wire AC cables to Power Supply Mother board terminals using lock split - (P/N 423-8005) and 8-32 Hex Nut (P/N 421-8002) as follows:
 - I. wire # 15 to E2
 - II. wire # 16 to E3
 - III. wire # 17 to E1
3. Place lock split (P/N423-8005) and 8-32 Hex Nut (P/N421-8002) unto E4 and E5.
4. Wire DC cables to Power Supply Mother board terminals using another lock split (P/N 423-8005) and 8-32 Hex Nut (P/N 421-8002) as follows:
 - I. wire #30 (longer) to E4
 - II. wire #31 (shorter) to E5
5. Make a 1/4 inch hole on new back panel directly behind voltage adjustment pot on Power Supply Mother board. See page 1 and 13.
6. Install transmitter back panel. Including small AC receptacle panel.
7. Replace transmitter Power Amplifiers.
8. Connect transmitter output to antenna or dummy load.
9. Refer to voltage adjustment instructions prior to energizing the transmitter.

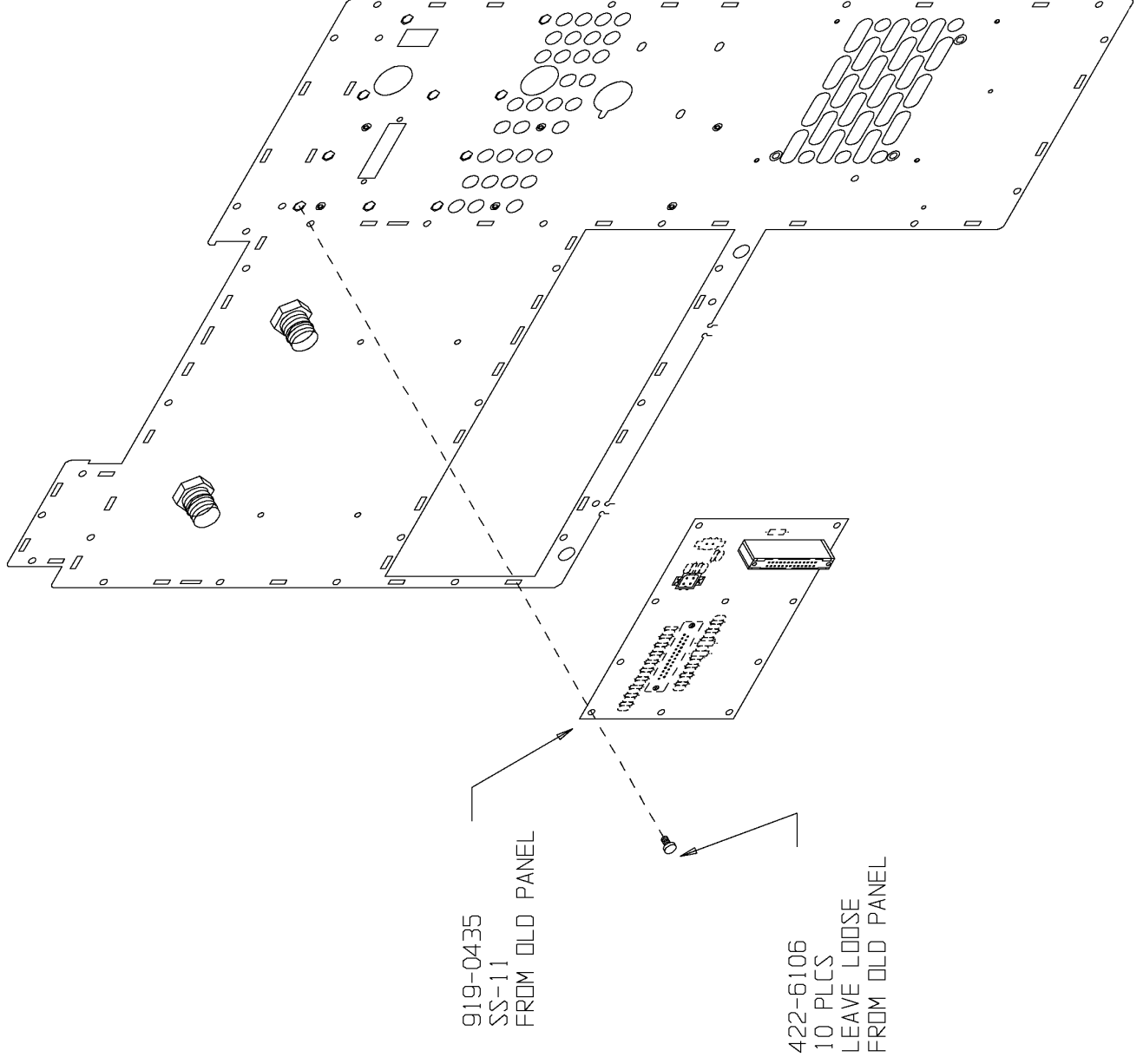
Power Supply Voltage Adjustment:

1. Using Adjustment tool provided, carefully turn pot on Power Supply Mother board fully clockwise. Access pot through 1/4 inch hole on back panel. See Final Assembly step 5.
2. Turn breaker to ON position on the front of the transmitter.
3. Press the Transmitter ON button.
4. Press the PWR SUPPLY VDC switch on the transmitter's front panel. The meter should read about 10 to 11 volts. The power amplifier modules' LEDs would be read at this time.
5. Press the LOWER button for about 15 seconds to lower the forward power to its lowest level.
6. Carefully and slowly adjust the Power Supply Mother board pot counter-clockwise until front panel reads about 42 to 43 volts.
7. Press RESET button if lit.
8. Press FWR POWER switch on front of transmitter.
9. Press RAISE button to increase power output of transmitter until it reads 1000 Watts.
10. Turn voltage adjust pot until module status lights just turn yellow.
11. Press PWR SUPPLY VDC switch and note the voltage at which the LEDs turn yellow.
12. Turn voltage adjust pot to about 1 volt above the reading on step 11.
13. Unit is ready to operate normally.

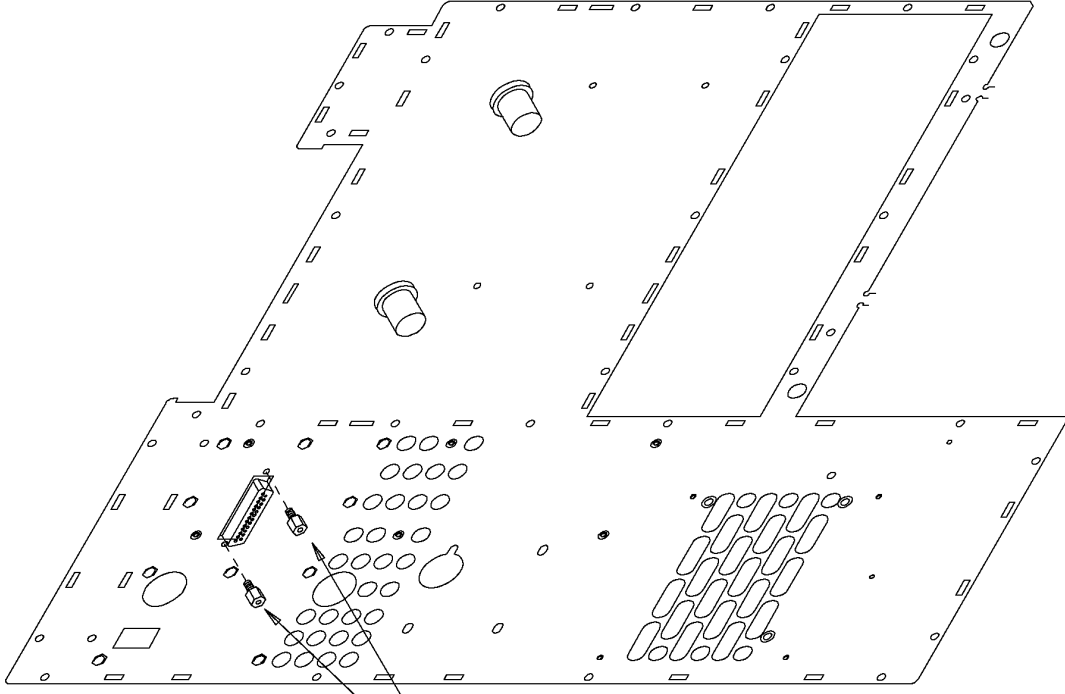
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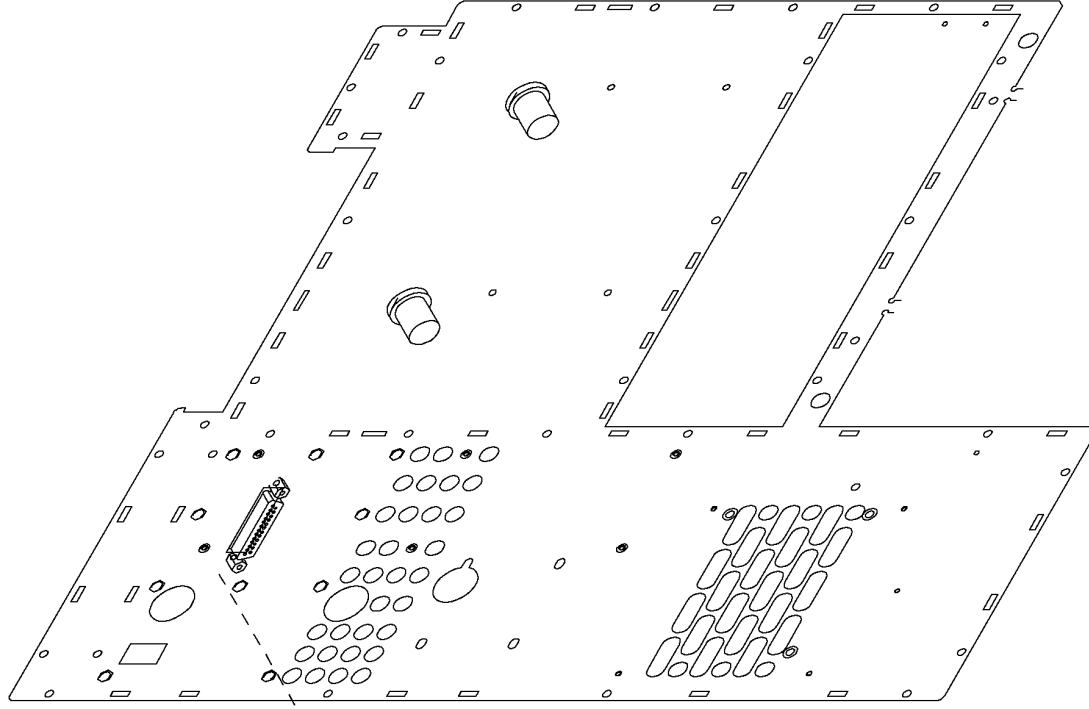
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420-0817, 2 PLCS,
LOCTITE ON THREADS
FROM OLD PANEL

TIGHTEN 919-0435

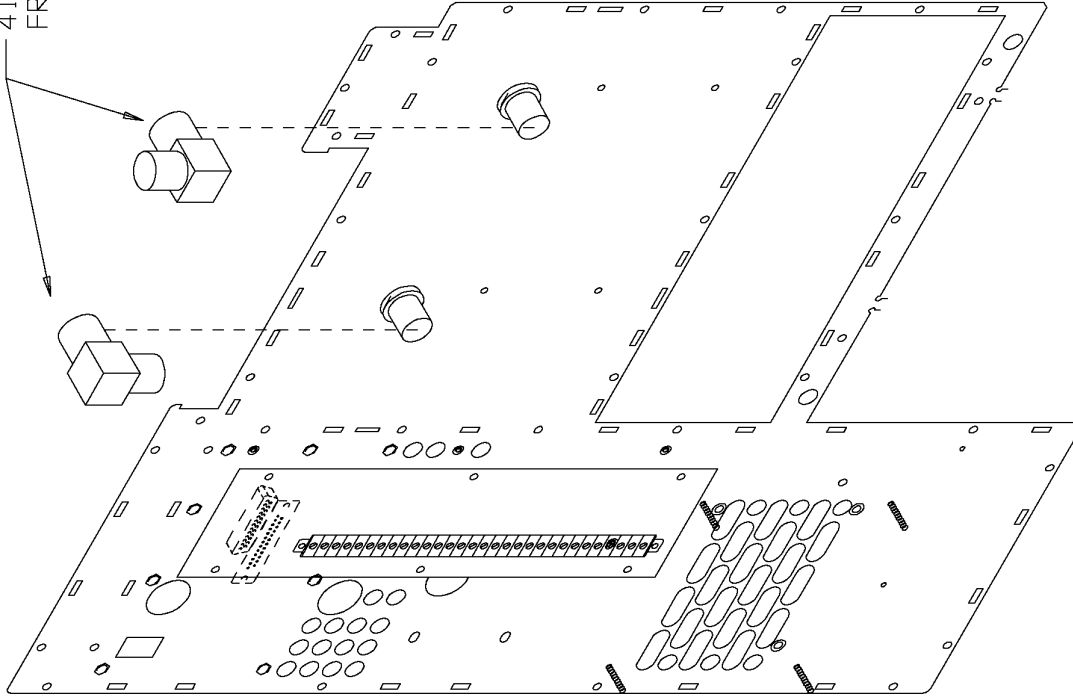
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919-0406-104
SS11
FROM OLD PANEL

422-6107
6 PLCS
FROM OLD PANEL

417-0105, 2 PLCS
FROM OLD PANEL

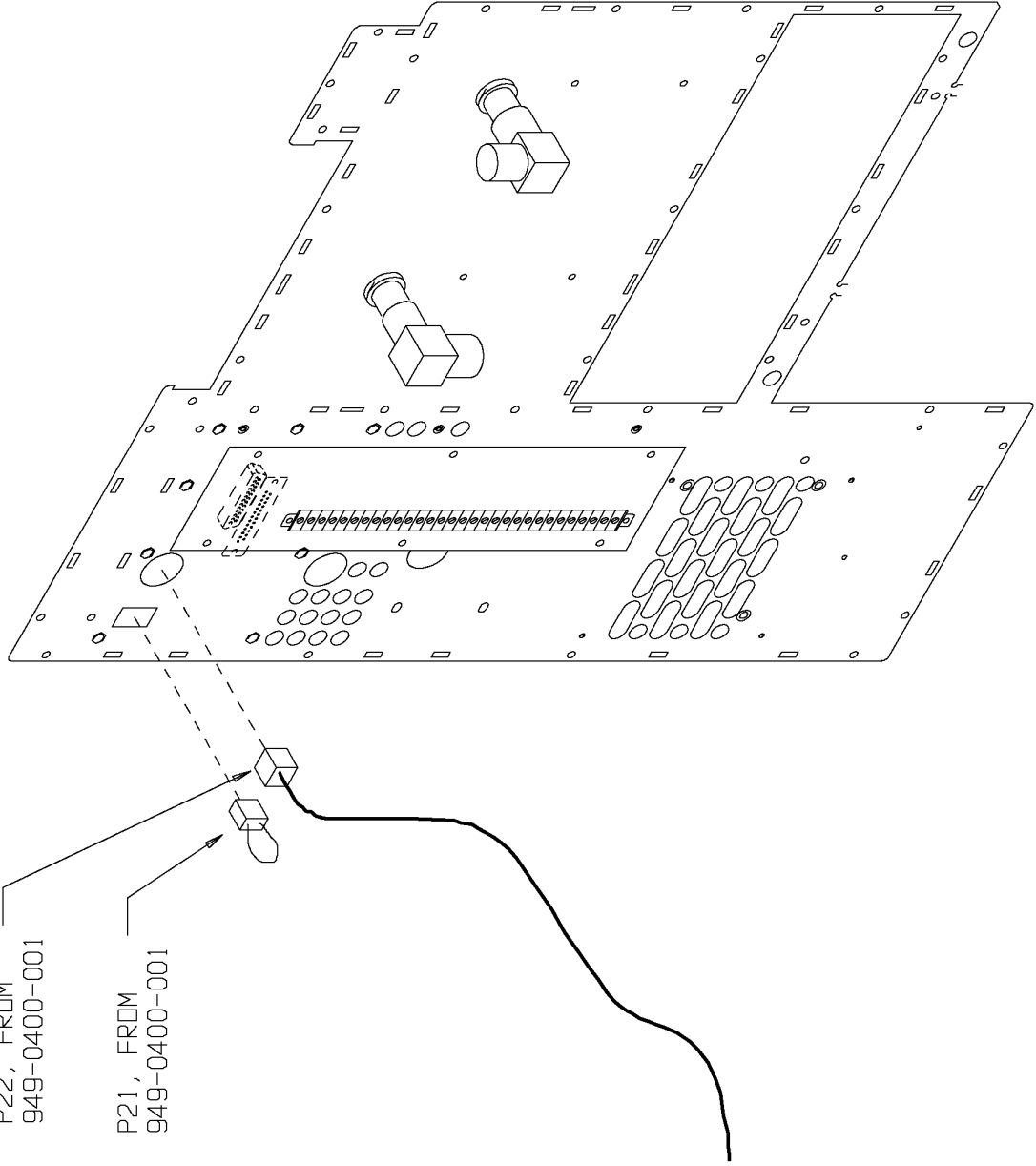


421-4008
(4) PLCS
FROM OLD PANEL

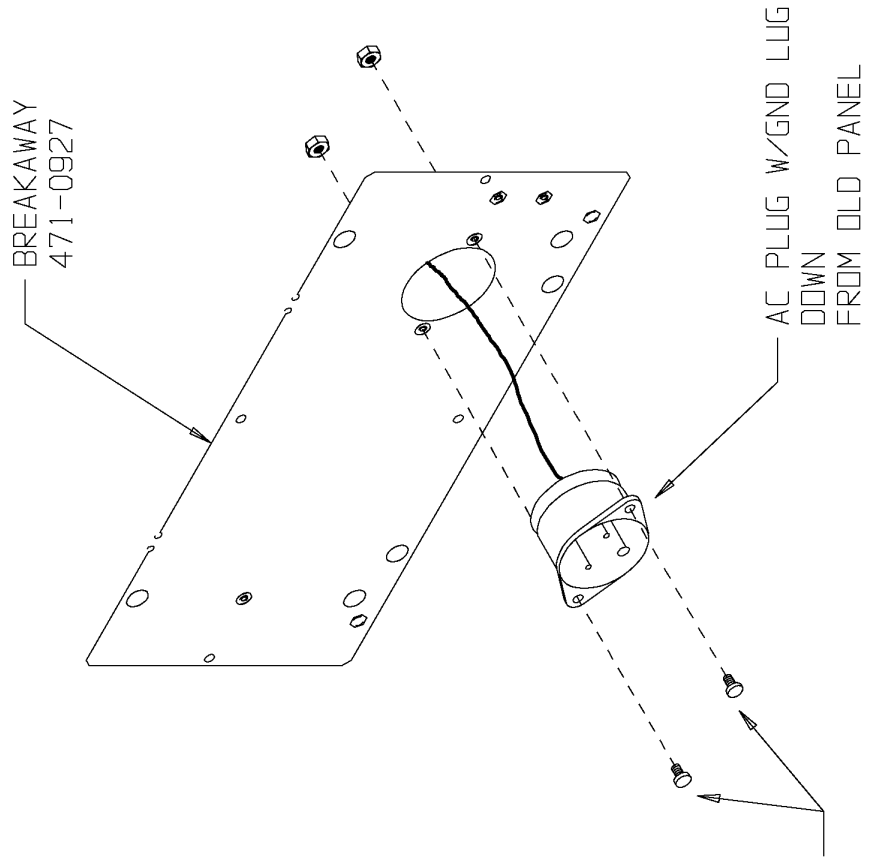
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P22, FROM
949-0400-001

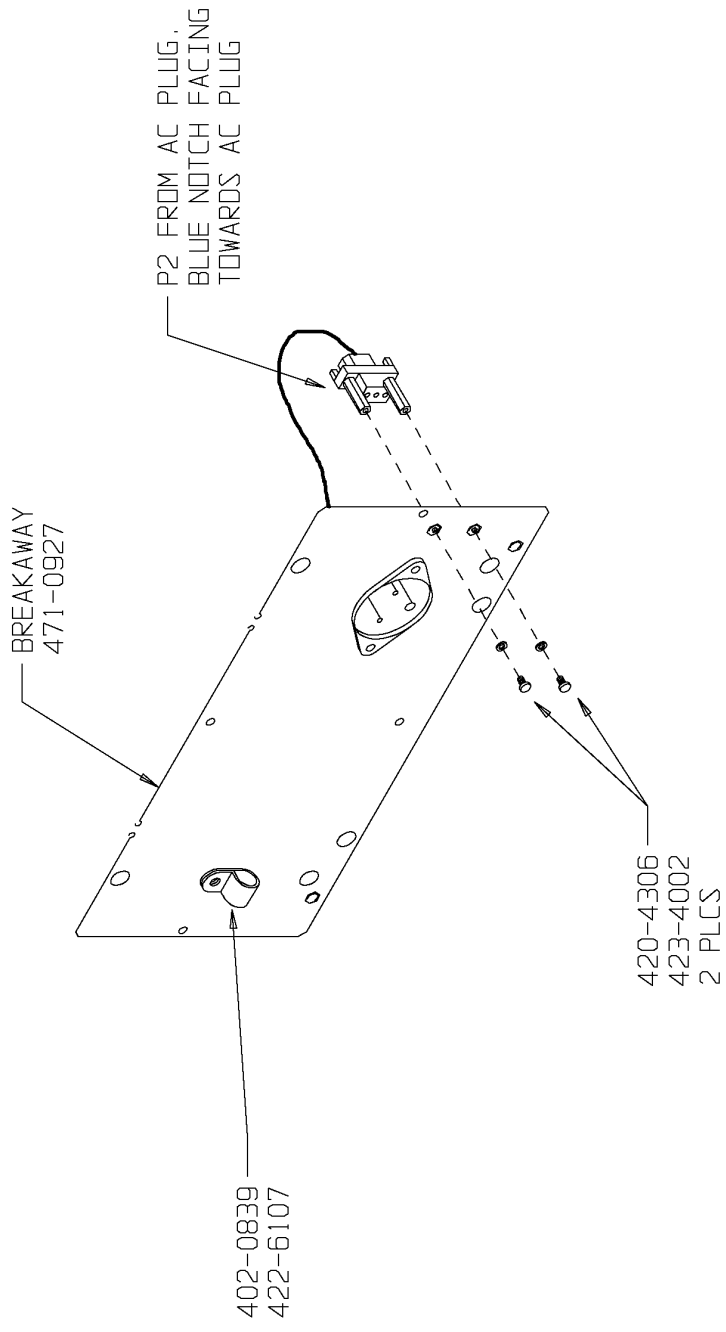
P21, FROM
949-0400-001

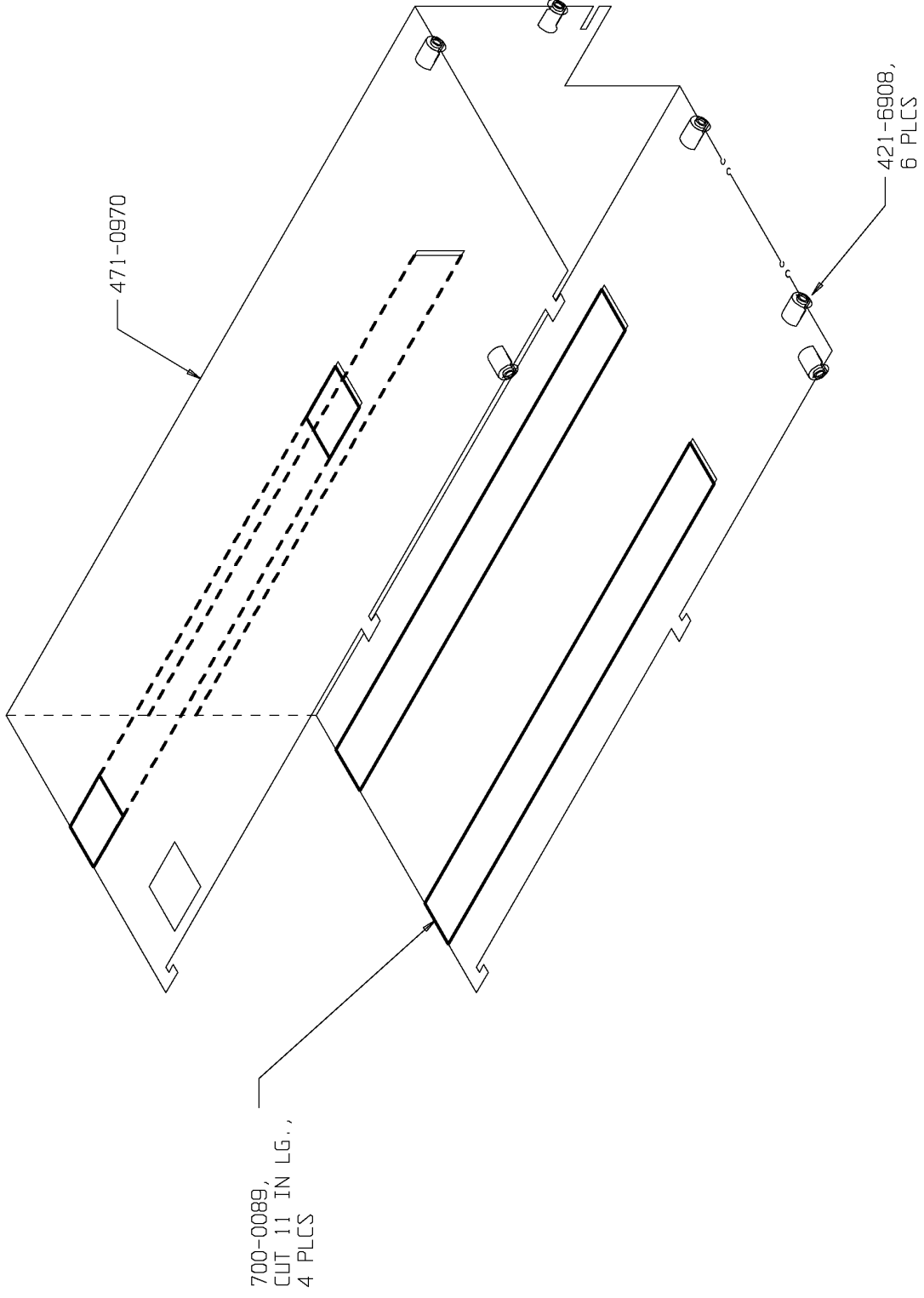


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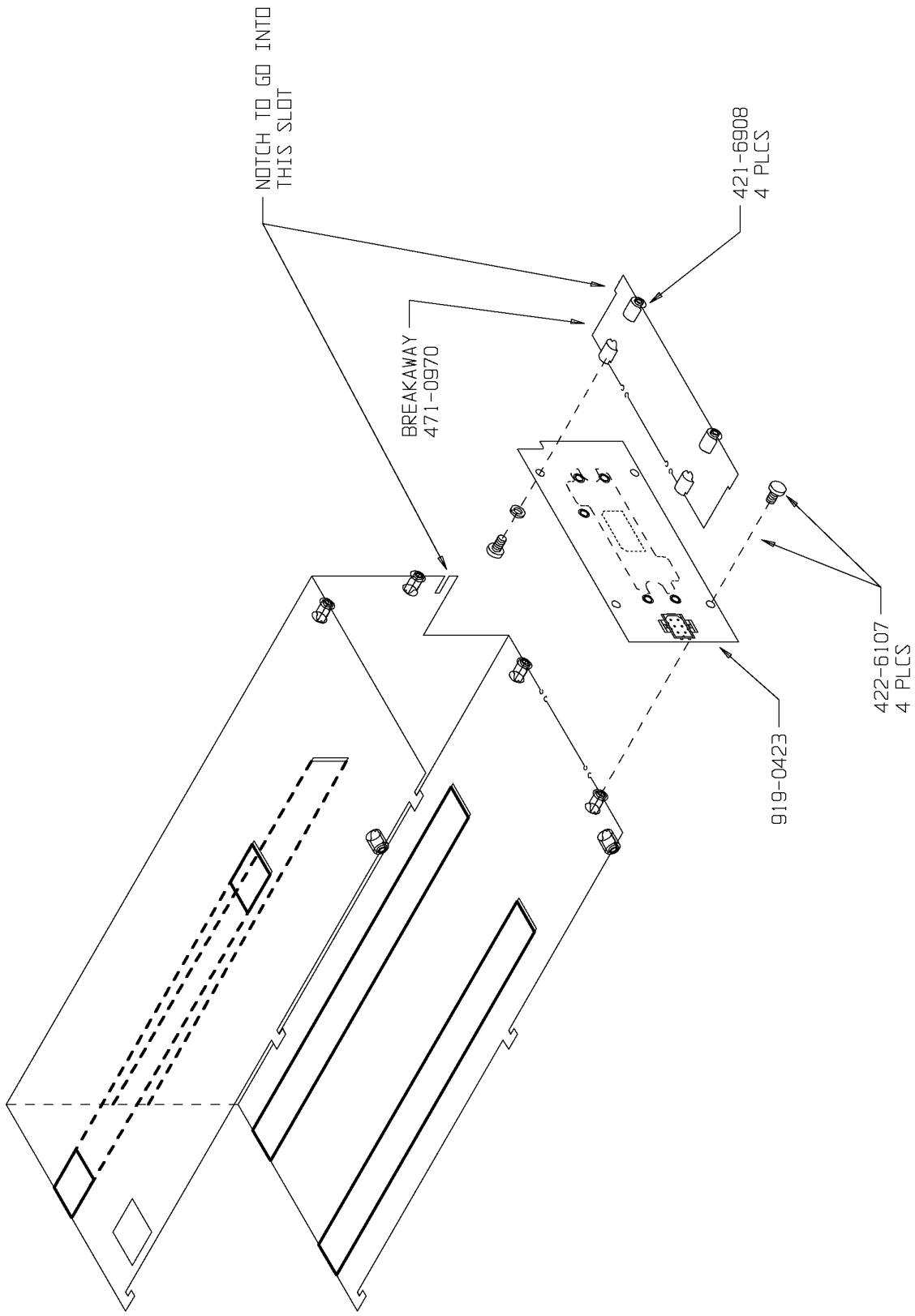


422-6106,
421-6008
2 PLCS
FROM OLD PANEL

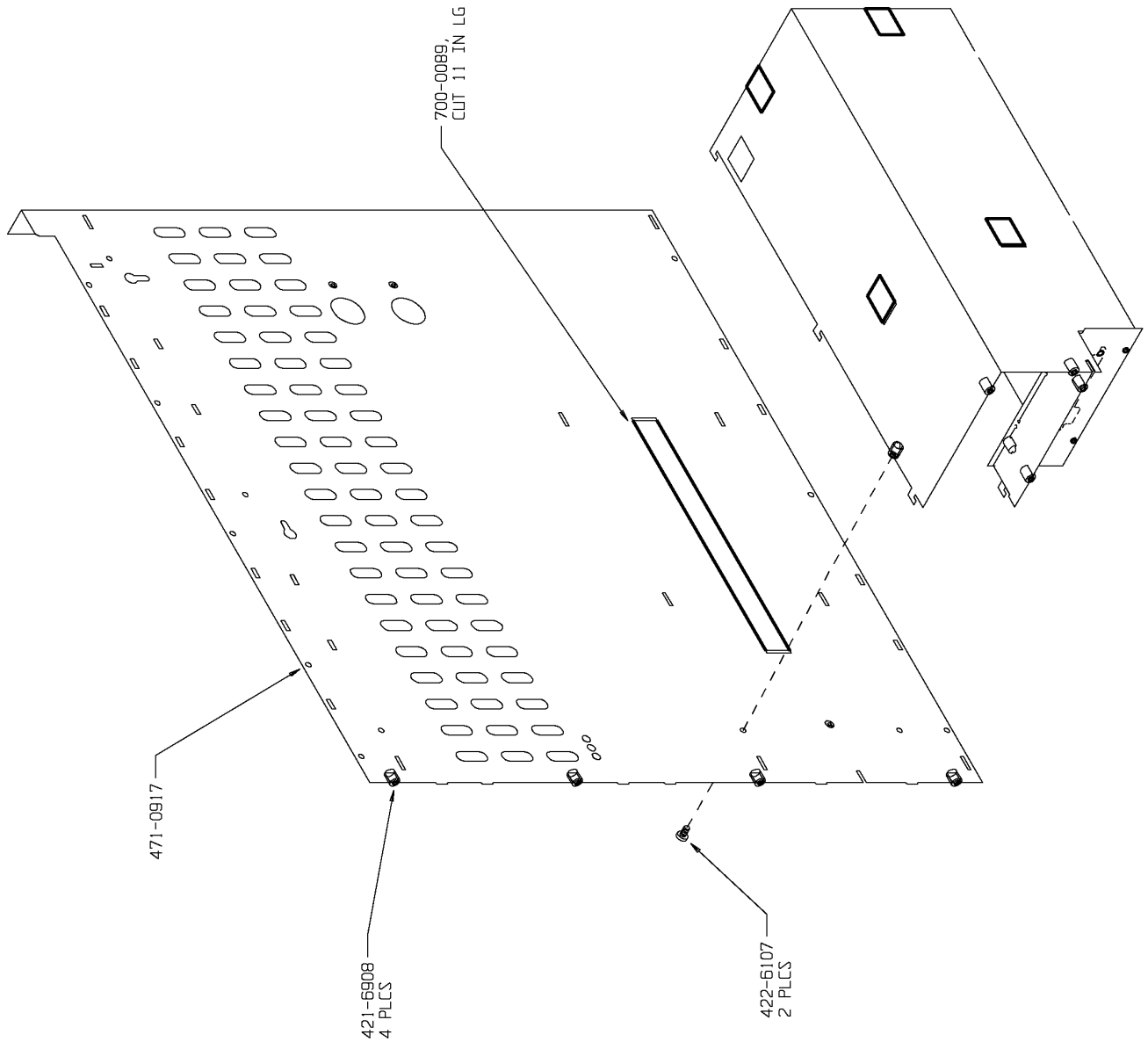




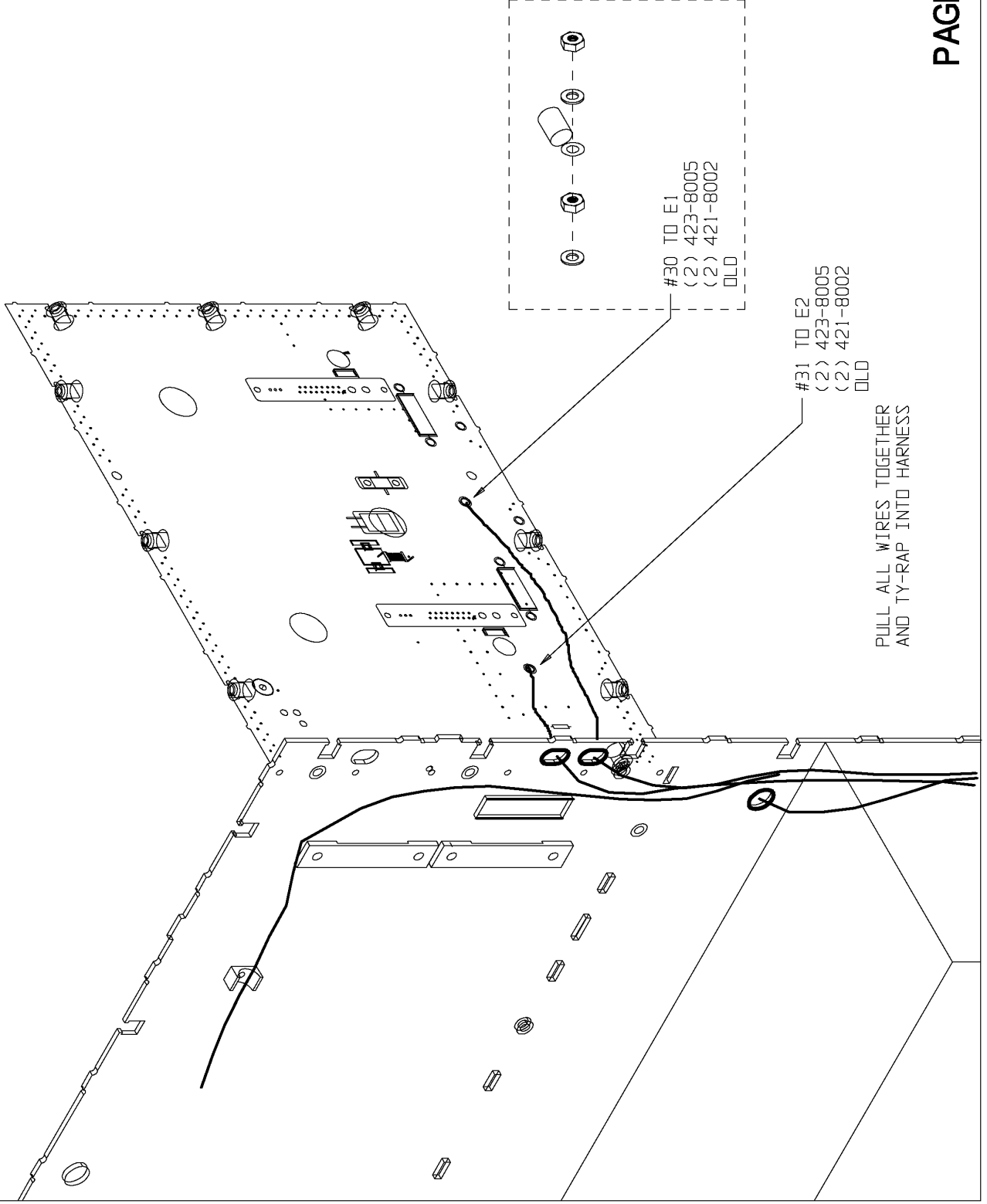
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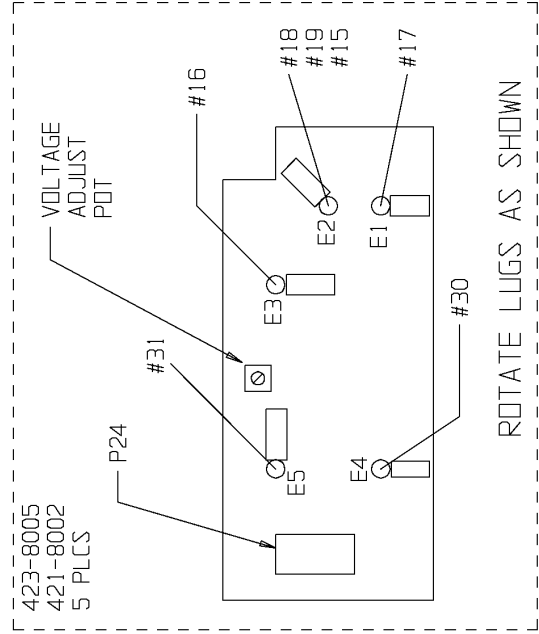
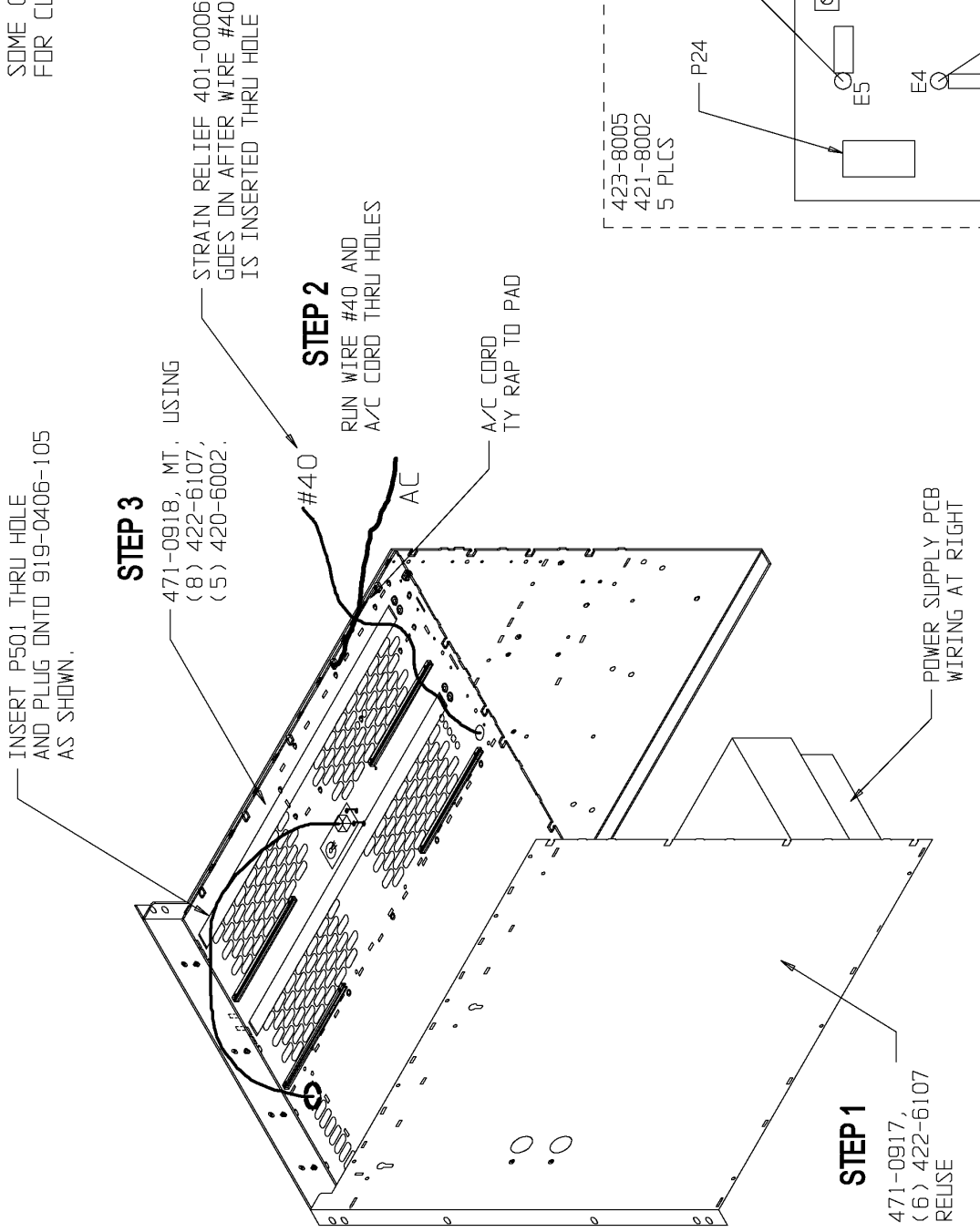


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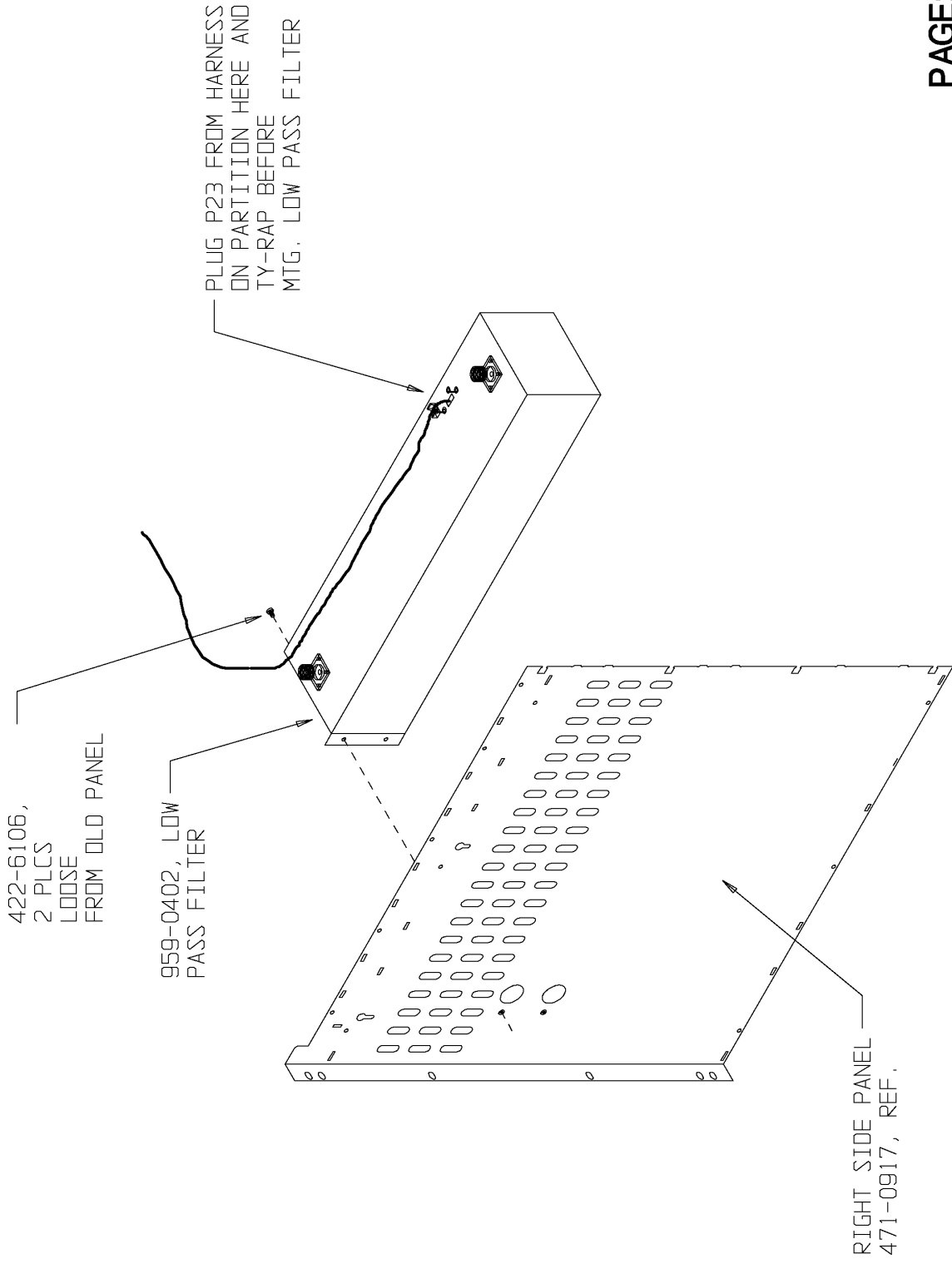
SOME COMPONENTS NOT SHOWN FOR CLARITY



SLIDE POWER SUPPLY 540-0016-001 IN FROM THE FRONT.
RECORD S/N ON YELLOW TAG THEN HANG
ON CIRCUIT BREAKER.

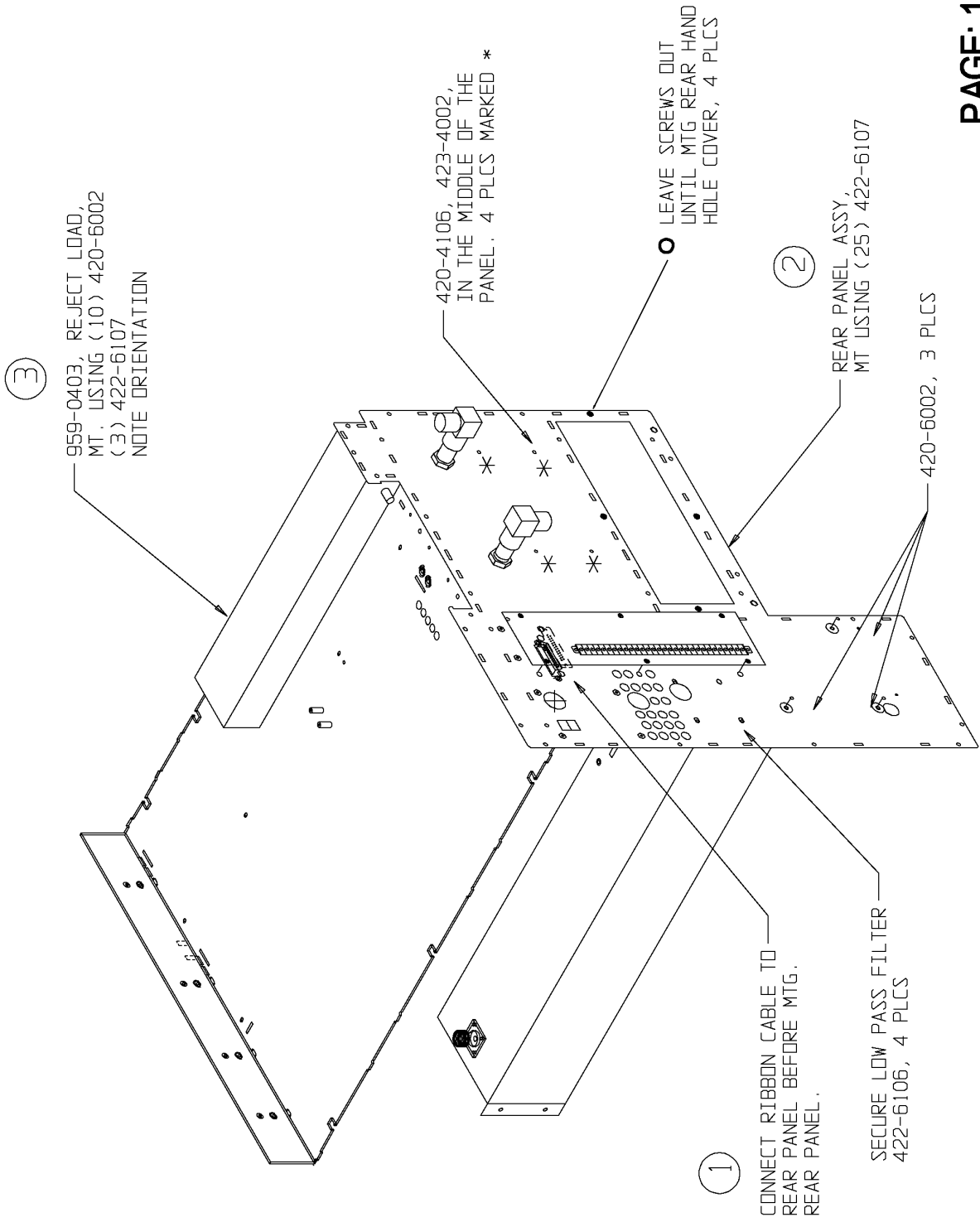
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KEEP LOOSE UNTIL YOU MT.
TO REAR PANEL.

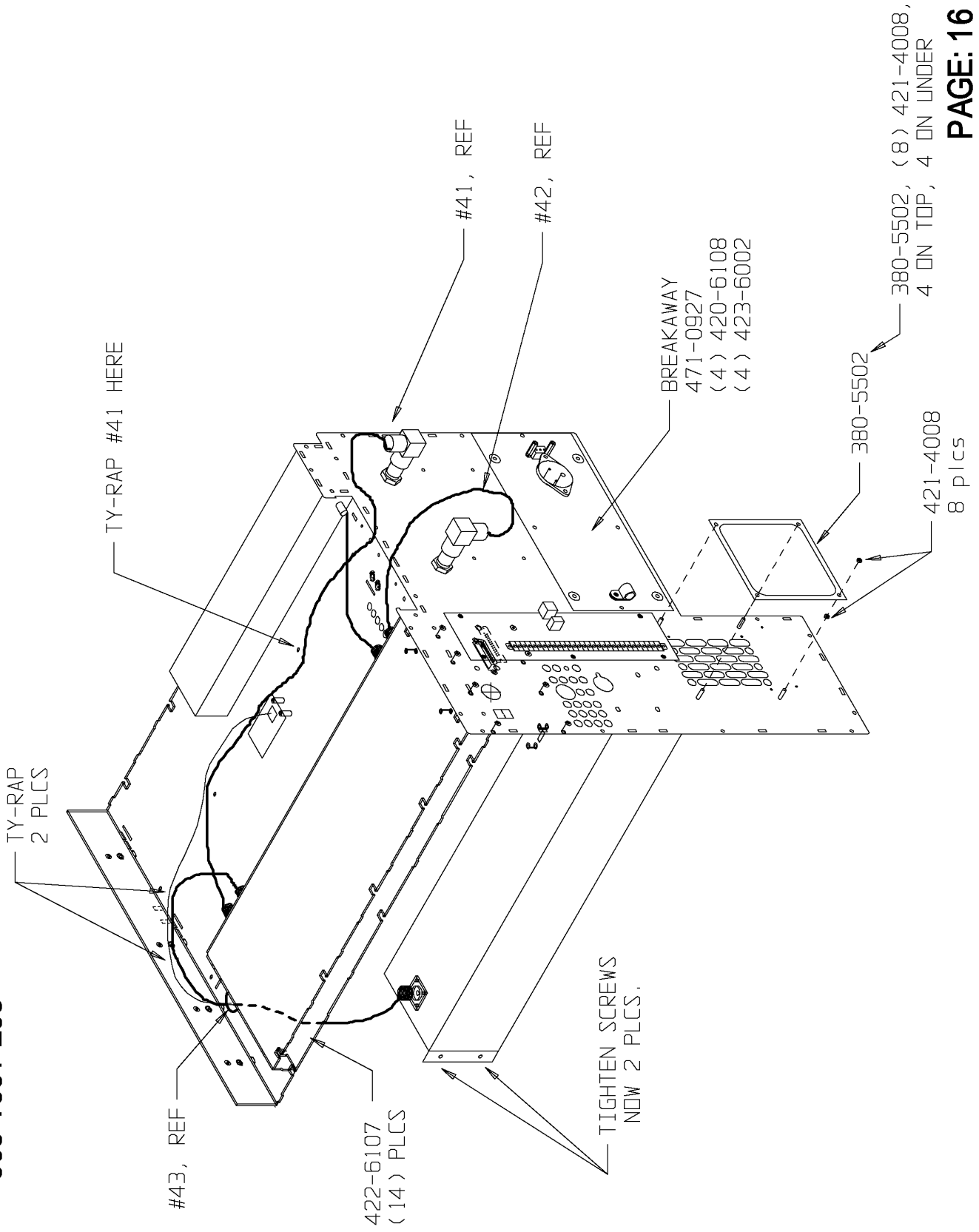


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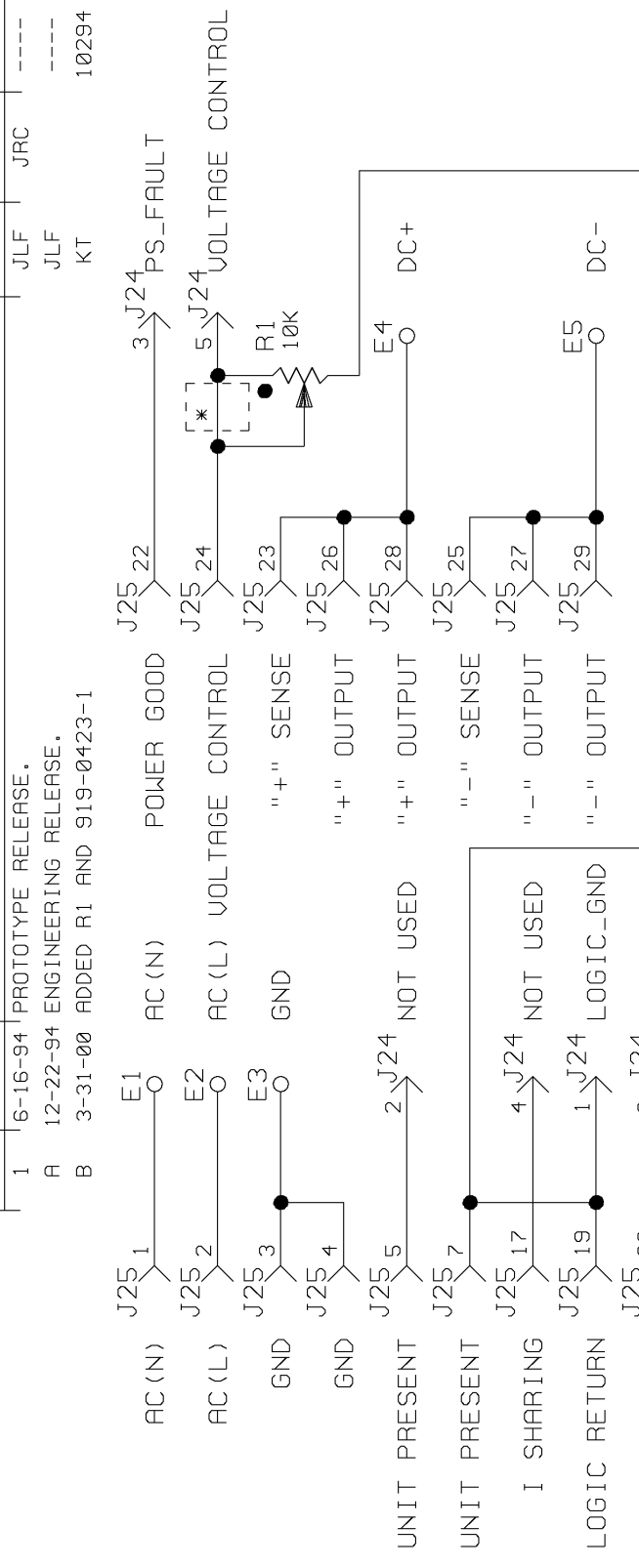
SOME COMPONENTS NOT SHOWN FOR CLARITY.



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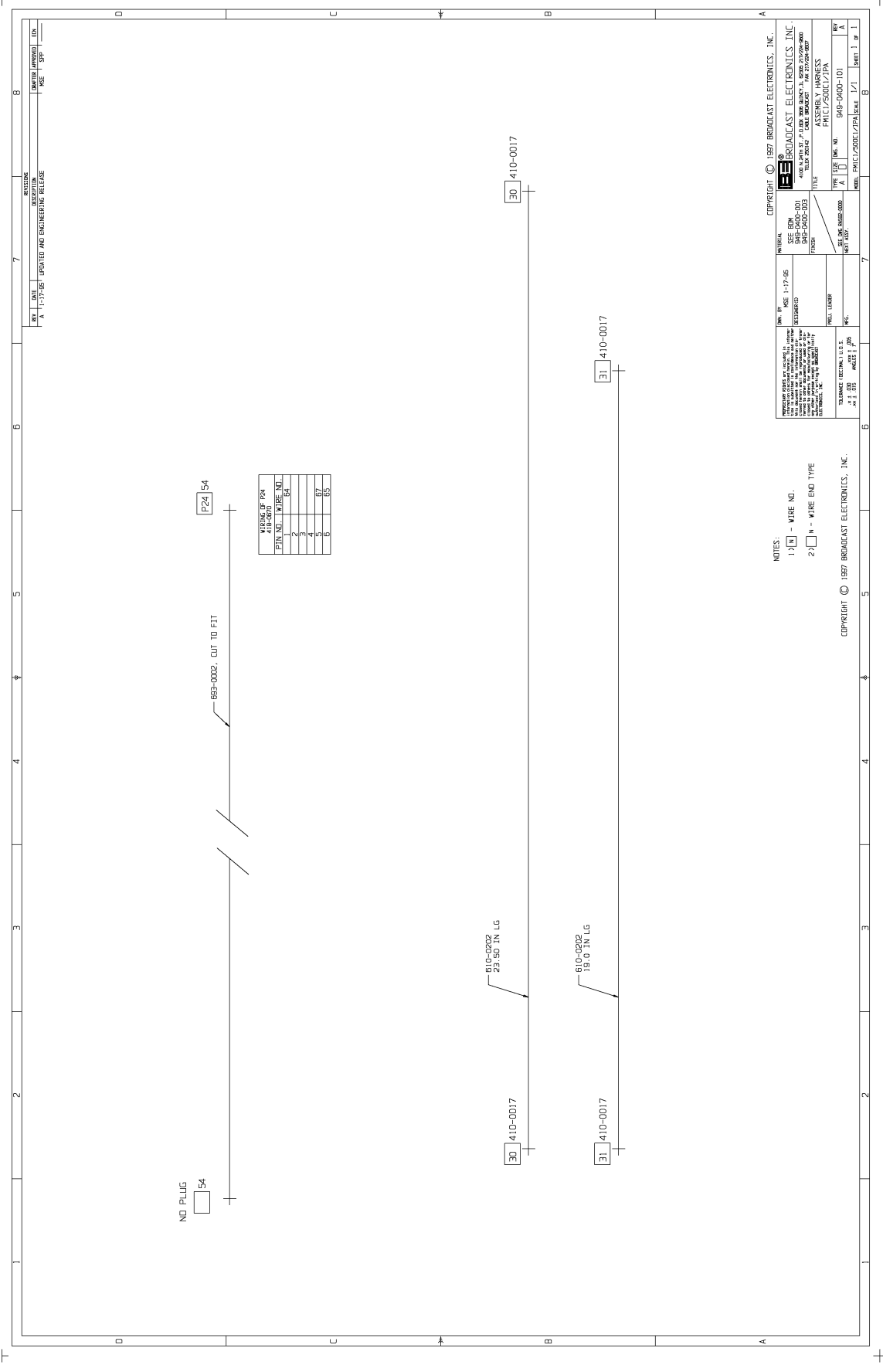
REV		DATE		DESCRIPTION		DRAFTER		APPROVED		ECN	
1		6-16-94		PROTOTYPE RELEASE.		JLF		JRC		----	
A		12-22-94		ENGINEERING RELEASE.		JLF				----	
B		3-31-00		ADDED R1 AND 919-0423-1		KT				10294	



NOTES:
 1) CUT TRACE IN DASHED SQUARE FOR 919-0423-1
 2) R1 NOT INSTALLED FOR 919-0423

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TOLERANCE (DECIMAL) U.O.S. .x ± .030 .xxx ± .005 .xx ± .015 ANGLES ± 1°		PROJ. LEADER		FINISH SEE DWG RA592-0000 NEXT ASSY.		TITLE SCHEMATIC POWER SUPPLY MOTHERBOARD	
TYPE S A		SIZE DWG. NO. 919-0423/-1		SCALE NONE		SHEET 1 OF 1	



WIRING FOR	
PIN NO.	WIRE NO.
1	54
2	
3	
4	
5	
6	
7	
8	

NOTES:

1. [K] - WIRE NO.
2. [N] - WIRE END TYPE

PREPARATION OF THIS DRAWING IS THE RESPONSIBILITY OF THE DESIGNER. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE CORRECTNESS OF THE INFORMATION CONTAINED HEREIN. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FOR THE INSTALLATION AND USE OF THIS EQUIPMENT. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS EQUIPMENT FROM DAMAGE AND THEFT. THE USER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THIS EQUIPMENT. THE USER SHALL BE RESPONSIBLE FOR THE DISPOSAL OF THIS EQUIPMENT.

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TITLE: ASSEMBLY HARNESS
 PART NO.: 893-0002-001
 REV: A

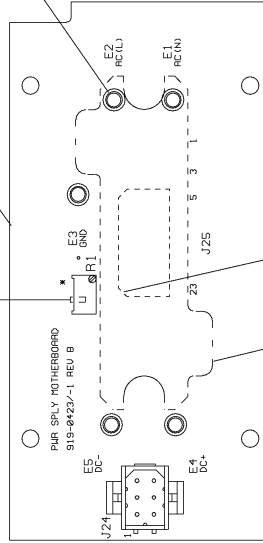
SHEET 1 OF 1

REV. DATE REVISION
 A 1-17-85 UPDATED AND ENGINEERING RELEASE

REVOLUTIONS		
REV	DATE	DESCRIPTION
1	6-16-94	PROTOTYPE RELEASE.
A	1-4-95	KEYED J24-6. INCREASED SLOWYSK CLEARANCE AT E4,ES. JLF ENGINEERING RELEASE.
B	3-31-00	ADDED R1 AND 919-0423-1

DRFTER	APPROVED	ECN
JLF	JRC	-----
JLF		-----
KT		10294

CUT TRACE BETWEEN PIN 2 & 3 OF R1 FOR 919-0423-1



INSTALL REM STUD #426-8007 FROM OPPOSITE SIDE (S PLCS), AND SOLDES INTO PLACE, BEFORE INSTALLING J25.

NOTE DIRECTION OF POLARIZING FEATURES

INSTALL J25 ON OPPOSITE SIDE

NOTES:
1) R1 NOT INSTALLED FOR 919-0423

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DESIGNER(S) JRC 6-23-94	PROJ. LEADER	FINISH	BROADCAST ELECTRONICS, INC. 4180 N. 24TH ST., P.O. BOX 3686 QUINCY, IL 62305 PH. 217/224-5686 TELEX 258142 CABLE BROADCAST FAX 217/224-9807	
		SEE DHG RA652-0000 NEXT ASSY.		
MFG.		TYPE SIZE DHG No.	TITLE	
.XX ± .015 ANGLES ± 1°		A B	PCB ASSEMBLY	
		MODEL FM-1C1	PWR SPLY MOTHERBOARD	
		SCALE 1/1	REV B	
		SHEET 1 OF 1		