UNCLASSIFIED

INSTALLATION MANUAL

for

GENERAL PURPOSE TRANSMITTER

MODEL GPT-40K

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N.Y. OTTAWA, ONTARIO

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MAMARONECK, N.Y. **OTTAWA, CANADA**

Issue Date: 1 Jan. 196

NOTICE

THE TECHNICAL MATERIEL CORPORATION
COMMUNICATIONS ENGINEERS
700 FENIMORE ROAD MAMARONECK, N. Y.

Warranty

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes,* fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes*furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

*Electron tubes also include semi-conductor devices.

PROCEDURE FOR RETURN OF MATERIAL OR EQUIPMENT

Should it be necessary to return equipment or material for repair or replacement, whether within warranty or otherwise, a return authorization must be obtained from TMC prior to shipment. The request for return authorization should include the following information:

1. Model Number of Equipment.
2. Serial Number of Equipment.
3. TMC Part Number.
4. Nature of defect or cause of failure.
5. The contract or purchase order under which equipment was delivered.

PROCEDURE FOR ORDERING REPLACEMENT PARTS

When ordering replacement parts, the following information must be included in the order as applicable:

1. Quantity Required.
2. TMC Part Number.
3. Equipment in which used by TMC or Military Model Number.
4. Brief Description of the Item.
5. The *Crystal Frequency* if the order includes crystals.

PROCEDURE IN THE EVENT OF DAMAGE INCURRED IN SHIPMENT

TMC's Warranty specifically excludes damage incurred in shipment to or from the factory. In the event equipment is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved and not with TMC.

All correspondence pertaining to Warranty Claims, return, repair, or replacement and all material or equipment returned for repair or replacement, within Warranty or otherwise, should be addressed as follows:

THE TECHNICAL MATERIEL CORPORATION
Engineering Services Department
700 Fenimore Road
Mamaroneck, New York

RECORD OF CORRECTIONS MADE

Change No.	Date of Change	Date Entered	Entered By

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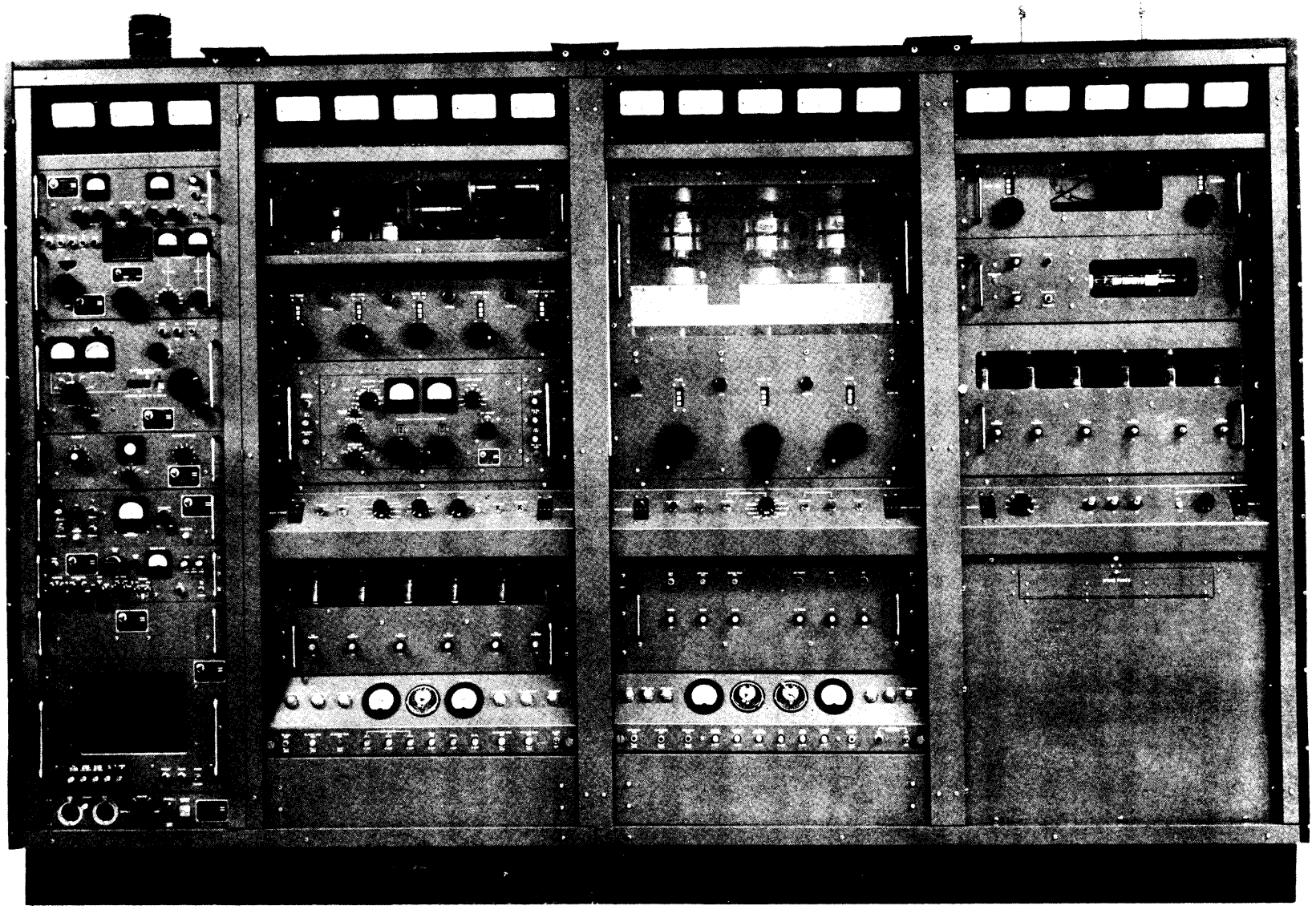

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Figure 1-1. TMC Model GPT-40KE General Purpose Transmitter (Synthesized)

SECTION 1

GENERAL INFORMATION

1-1. PURPOSE AND DESCRIPTION.

General Purpose Transmitter, Model GPT-40K is a synthesized transmitter having several modes of operation (SSB, ISB, AM, AM equivalent, CW, FSK, and FAX) in a frequency range of 2 to 28 megacycles. The GPT-40K transmitter can be subdivided into three stages: (1) a synthesized exciter; (2) a 10-kw transmitter that is modified to drive stage 3; (3) a 40-kw linear power amplifier.

The three stages are housed in four mechanical frame assemblies. Each can be conveniently identified, figure 1-2 (from left to right), as the auxiliary, main, PA and PS frames. The auxiliary frame contains the exciter; the main frame contains the modified 10-kw power amplifier; the PA and PS frames contain the linear power amplifier with its associated power supply and control circuits. For purposes of simplification, each frame assembly will be herein referred to as the first frame, second frame, third frame, or fourth frame.

A more detailed subdivision of the transmitter is made by assigning formal nomenclature and part numbers to assemblies, subassemblies, components, and piece-parts. In addition to formal nomenclature and part numbers, common names are used, and a definite series of symbol numbers is assigned to each assembly. For example, components in the 40-kw high-voltage rectifier are assigned symbol numbers in the 8400 series so that high-voltage rectifier tube V8401 is installed in the high-

voltage rectifier which is then installed in the fourth frame (symbol series 8100).

1-2. LOGISTICS.

Table 1-1 presents logistics (including nomenclature) for the GPT-40K transmitter.

1-3. TECHNICAL CHARACTERISTICS.

Table 1-2 lists technical characteristics for the GPT-40K transmitter. Data presented covers functional and environmental characteristics.

1-4. EQUIPMENT SUPPLIED.

Table 1-3 lists all major equipment supplied by crate number, contents, quantity, TMC part numbers, and reference symbol designations. Also a brief function of each item is provided.

1-5. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

Table 1-4 lists equipment required to install the 40K transmitter. Although these items are required, they are not supplied because they should be contained in an equipped maintenance shop.

1-6. ASSOCIATED MANUALS.

Table 1-5 presents a list of associated equipment manuals. This list provides a convenient reference for readily obtaining information on the 40K transmitter.

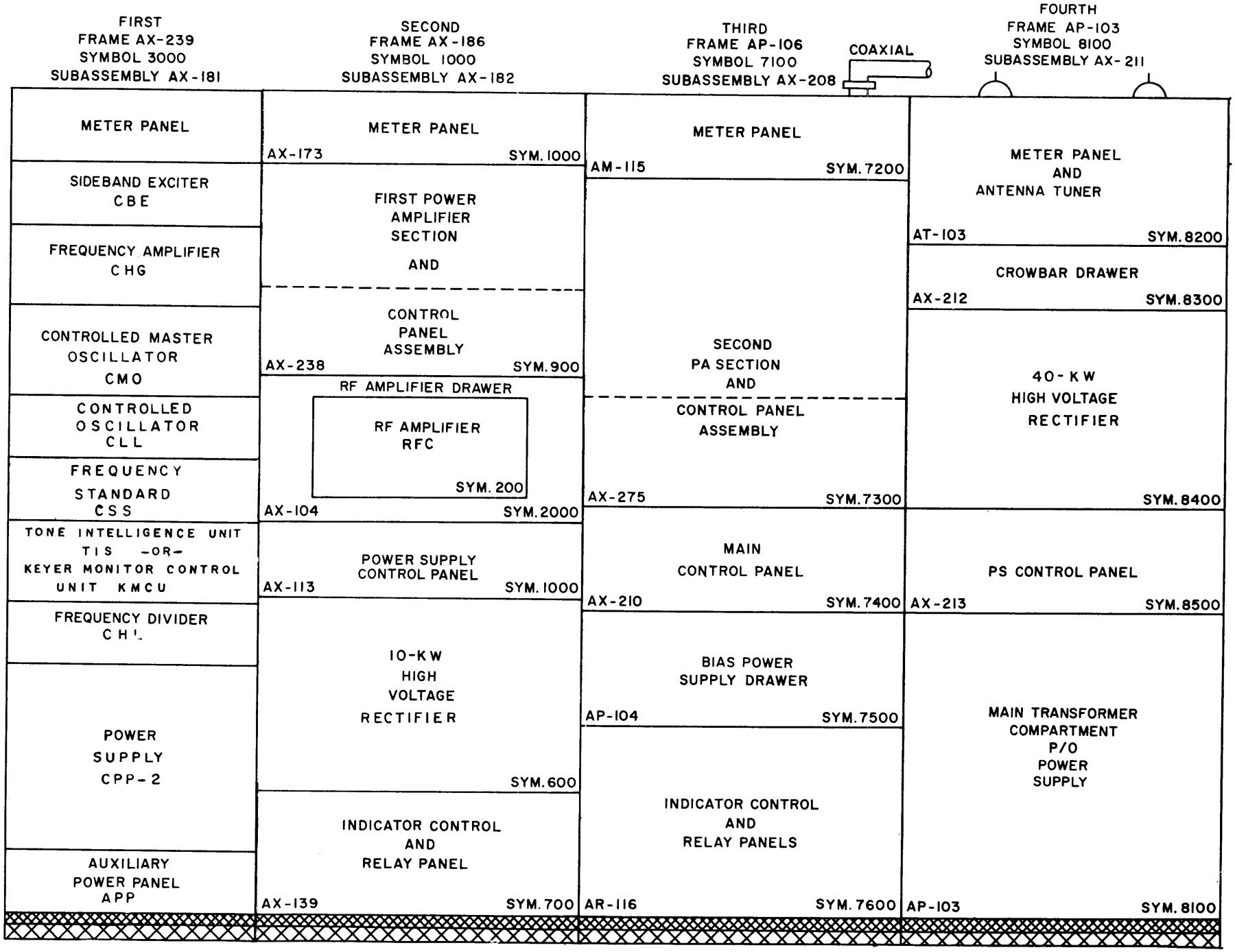
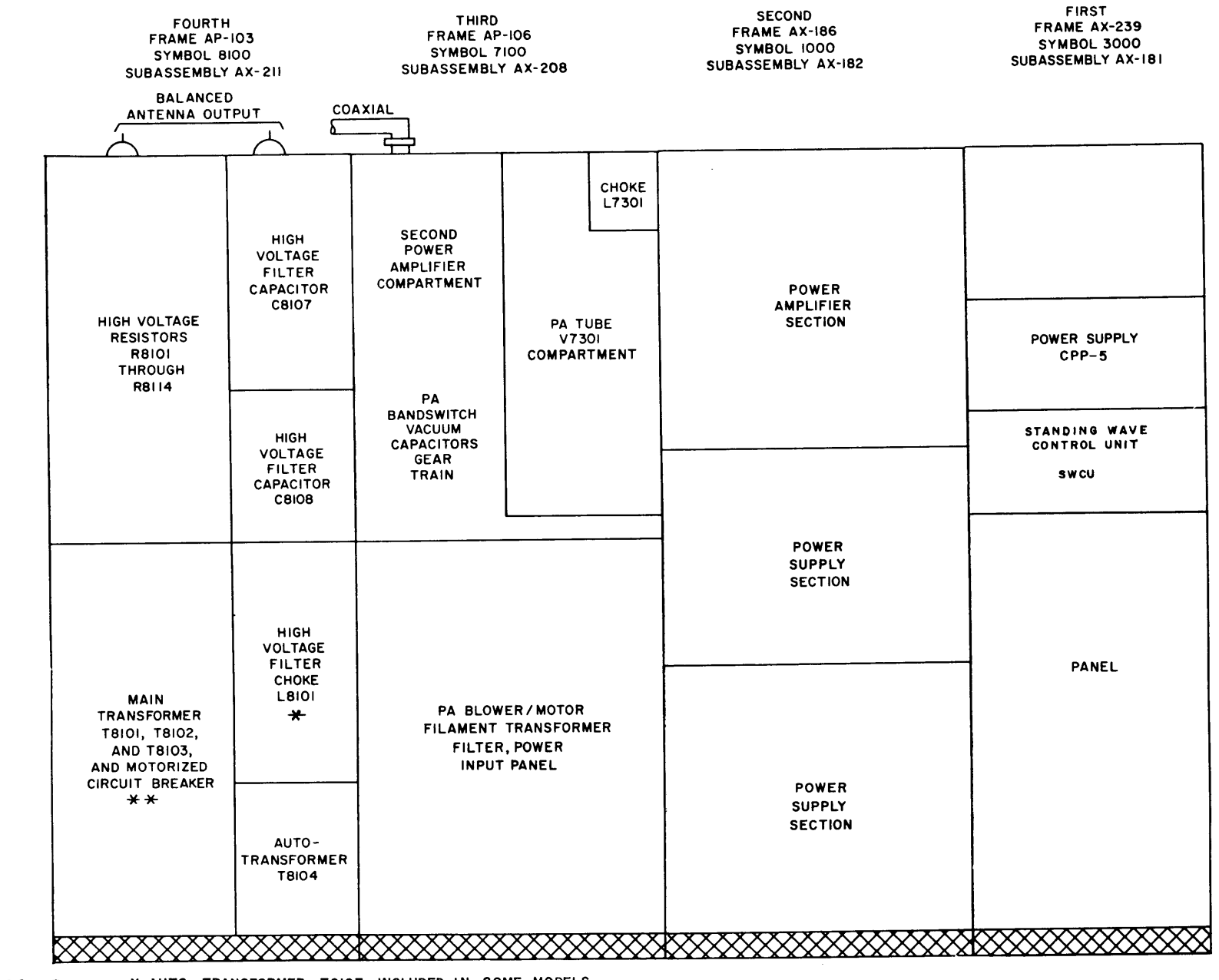


Figure 1-2. General Component Identification (sheet 1 of 2)



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* AUTO TRANSFORMER T8107 INCLUDED IN SOME MODELS.
** IN SOME MODELS, MOTORIZED CIRCUIT BREAKER IS INSTALLED IN PA BLOWER/MOTOR CONPARTMENT OF THIRD FRAME.

Figure 1-2. General Component Identification (sheet 2 of 2)

TABLE 1-1. LOGISTICS

NOMENCLATURE		DIMENSIONS IN INCHES			WEIGHT IN LB
FORMAL	COMMON	HGT	W	D	
General Purpose Transmitter, Model GPT-40K	40k Transmitter	90			
Cabinet, Electrical Equipment	First Frame	72	21	38-5/8	385
Sideband Exciter, Model CBE	Sideband exciter drawer	5-1/4	19	12-7/8	17
Frequency Amplifier, Model CHG	Frequency amplifier drawer	10-1/2	19	19-1/4	40
Controlled Master Oscillator, Model CMO	Controlled master oscillator drawer	10-1/2	19	18	45
Controlled Oscillator, Model CLL	Audio frequency controlled oscillator drawer	5-1/4	19	19	25
Frequency Standard, Model CSS	Rf oscillator drawer	5-1/4	19	14-3/4	30
Tone Intelligence Unit, Model TIS	Tone intelligence drawer	5-1/4	19	17-1/8	26
or					
Keyer Monitor Control Unit, Model KMCU	Keyer Monitor Control Unit	5-1/4	19	10-3/8	13.5
Frequency Divider, Model CHL	Frequency divider drawer	5-1/4	19	15	20
Power Supply, Model CPP-2	Power supply drawer	12-1/4	19	16	67
Auxiliary Power Panel, Model APP	Auxiliary power panel	3-1/2	19	4	10

TABLE 1-1. LOGISTICS (CONT)

NOMENCLATURE		DIMENSIONS IN INCHES			WEIGHT IN LB
FORMAL	COMMON	HGT	W		
Power Supply, Model CPP-5	Power supply drawer	5-1/4	19	16-1/2	50
Standing Wave Control Unit, Model SWCU	Standing wave control unit drawer	3-1/2	19		15
Cabinet, Electrical	Second frame	72	32	33-5/8	835*
Rf Amplifier drawer, with:	Rf amplifier	11-3/4	28-3/4	20-1/2	100
Rf Amplifier, Model RFC-1	Rfc drawer				
High Voltage Rectifier Drawer	HVR drawer	10-3/4	28-3/4	16-3/4	76
Cabinet, Electrical Equipment	Third frame	73-1/2	32-1/8	38-5/8	650
Bias Power Supply	Bias power supply drawer		28-3/4	10-3/4	75
Cabinet, Electrical Equipment	Fourth frame	74	33	39	712
Meter Panel and Antenna Tuner	Antenna tuner drawer	14-3/4	28-3/4	21	86
Crowbar Drawer	Crowbar drawer	8	28-3/4	17-1/4	40
High Voltage Rectifier	HVR drawer	14	28-3/4	18-3/4	111

* Weight as shipped.

Table 1-2. Technical Characteristics

Frequency range	2 to 28 megacycles.
Modes of operation	SSB, ISB, AM, AM equivalent, CW, FSK, and FAX.
Output power:	
Normal	40,000 watts peak envelope power (PEP).
Emergency	10,000 watts; 1,000 watts.
Output impedance:	Pi-L network matches load with voltage standing wave ratio (VSWR) of 2:1 maximum.
Unbalanced	50 or 70 ohms.
Balanced	600 ohms.
Tuning	Synthesized frequency control with 100 cycles per second (cps) incremental front panel tuning through the entire frequency range.
Stability and accuracy	1 part in 10^8 per day for ambient temperature change of 15°C (59°F) within the range of 0° to 50°C (32° to 122°F).
Unwanted sideband rejection	500 cps single tone 60 db down from full PEP output.
Spurious signals	At least 60 db below full PEP output.
Carrier insertion	-55 db to -3 db referenced to full PEP output.

Table 1-2. Technical Characteristics (Cont)

Audio response	CBE-1: Within ±1.5 db from 350 to 7500 cps. CBE-2: Within ±1.5 db from 250 to 3500 cps.
Audio inputs	600 ohms balanced -20 to +10 dbm continuously adjustable to full PEP output. An unbalanced input can also be applied.
Heat dissipation	40 kw (maximum).
Keying:	
FSK	75 bauds (100 wpm) maximum 50v, 100v, 20ma, 60ma, all neutral, floating, or either side grounded. 12 to 1,000 cps shift.
CW	140 bauds maximum. Keying voltages same as FSK plus dry contact keying. -5 to +5vdc or 0 to +20vdc for linear shift of 12,000 cycles.
Ambient operating temperature	Between 0° and 50°C (32° and 122°F).
Humidity	Maximum 90%.
Volume of air:	
Intake	7,350 CFM (est)
Exhaust	6,615 CFM (est)
Intake and exhaust openings:	
Intake	Three 12" x 26"
Exhaust	Two 14" x 24", three 13-7/8" x 28-7/8", and one 10-1/2" x 23-1/2".
Heat loss unducted:	
Standby	30.0 kw (approximately)
Full power condition	42.0 kw (approximately)

Table 1-2. Technical Characteristics (cont)

Temperature rise: Standby Full power condition	 15°C (59°F) 25° to 30°C (77° to 86°F)
Power requirement	210-240 vac, 50-60 cps, three phase, approximately 260 amps/phase. Operation at 380-480 vac, 50-60 cps, three phase, approximately 130 amps/phase, is also available.

Table 1-3. Equipment Supplied

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
1	1. Bag 1:				Base-to-base mounting hardware
	Screw, Machine, Hexhead	3	SCHH3716SS/6		
	Washer, Lock	3	LWS37MRN		
	Washer, Flat	3	FW37HBN		
	2. Bag 2:				Ground strap mounting hardware
	Screw, Machine, Hexhead	1	SCHH6211BN24		
	Washer, Lock	4	LWS62MRN		
	Washer, Flat	9	FW62HBN		
	Nut, Hexhead	3	NTH6211BN32		
	3. Bag 3:				First and second frame-to-base mounting hardware
	Screw, Machine, Hexhead	10	SCHH3716SS24		
	Washer, Lock	10	LWS37MRN		

Table 1-3. Equipment Supplied (Cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/ PN	DESIGNATION SYM	FUNCTION
1 (cont)	3. Bag 3: (cont)				
	Washer, Flat	10	FW37HBN		
	4. Bag 4:				Line filterboard mounting hardware
	Screw, Machine, Binderhead	4	SCBP1032BN6		
	Screw, Machine, Binderhead	4	SCBP1032BN12		
	Screw, Machine, Binderhead	1	SCBP1032BN9		
	Screw, Machine, Binderhead	1	SCBP1032BN10		
	Washer, Flat	10	FW10MRN		
	Washer, External	10	LWE10MRN		
	Nut, Hexhead	4	NTH1032BN12		
	5. Bag 5:				Third and fourth frame-to-base mounting hardware
	Screw, Machine, Hexhead	13	SCHH3716SS24		
	Washer, Lock	13	LWS37MRN		
	Washer, Flat	13	FW37HBN		
	6. Bag 6:				Frame-to-frame mounting hardware
	Screw, Machine, Hexhead	30	SCHH3118SN16		
	Washer, Lock	30	LWS1MRN		
	Washer, Flat	30	FW31HBN		

Table 1-3. Equipment Supplied (Cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
1 (cont)	7. Bag 7:				Transformers T800 to frame mounting hardware
	Screw, Machine, Hexhead	4	SCHH5013SS48		
	Washer, Lock	4	LWS50HBN		
	Washer, Flat	4	FW50MRN		
	8. Bag 8:				Transformers T801, T802, and T803 to frame mounting hardware
	Screw, Machine, Hexhead	12	SCHH2520BN8		
	Washer, Lock	12	LWS25MRN		
	Washer, Flat	12	FW25HBN		
	9. Bag 9:				Drawer to frame mounting hardware
	Screw, Machine, Binderhead	44	SCBP1032BN8		
	Washer, Fiber	44	WA-101-5		
	10. Bag 10:				Door latch plates and brackets to frame mounting hardware
	Screw, Machine, Bind-head	24	SCBP1032BN10		
	Screw, Flat	24	SCFP1032BN8		
	Washer, Lock External	24	LWE10MRN		
	Washer, Lock	24	LWS10MRN		
	Washer, Flat	24	FW10HBN		
	Washer, Flat	24	FW25HBN		
	Nut, Hexhead	24	NTH1032BN12		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
1 (cont)	11. Bag 11:				Rear door hinges to frame mounting hardware
	Screw, Machine, Hexhead	12	SCHH2520BN8		
	Washer, Lock	12	LWS25MRN		
	Washer, Flat	12	FW25HBN		
	12. Bag 12:				Trim strips to frame mounting hardware
	Screw, Machine, Binderhead	67	SCBP0832BN6		
	Nut, Speed	32	NT-108-5		
	13. Bag 13:				Side panels to frame mounting hardware
	Screw, Machine, Hexhead	20	SCHH3118SS24		
	Washer, Lock	20	LWS31MRN		
	Washer, Flat	20	FW31HBN		
	14. Bag 14:				Cover top to frame mounting hardware
	Screw, Machine, Hexhead	22	SCHH2520SS24		
	Washer, Lock	22	LWS25MRN		
	Washer, Flat	22	FW25HBN		
	15. Line Filterboard	1	A-3479		Filter ac input line voltage
	16. Line Filterboard				Brackets for mounting cover
	Bracket, Cover Support	2	MS-3689		
	17. Cover, Line Filter-board	1	LD-1392		Safety Cover

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
1 (cont)	18. Manuals, Technical	1 set			
	19. Data, Test	1 set			
	20. Eitel McCulloch Warranty	1			Warranty for tube TMC P/N 4CX5000A
	21. Machlett Tube (ML-6697) Warranty	1			Warranty for tube V7301
	22. Penta Laboratory Warranty	1			Warranty for Tube TMC P/N TV-100
	23. Sola Voltage Regulator	1			Warranty for voltage regulator
	24. Straps, Grounding				Ground first and second frames
		2	MS-1753-2-18		
		2	MS-1753-2-30		
	25. Resistors, Fixed				High wattage power supply bleeder resistors, rear second frame
		8	RW-118F-183	R802 thru R809	
		3	RW11-118F-502	R816,R819, R820	
		2	RW-1196-181	R812,R813	
		2	RW-12 3-604	R814,R815	
		2	RW-122-1-405	R810,R811	
	26. Capacitor, Variable with PO-185-1 and MS-1696	1	AM-103	C916	Output balance, second frame
	with PO-185-6 and MS-2368	1	AM-113	C927	Tuning second frame
		1	AM-114	C928	Load second frame

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
1 (cont)	27. Tube, Electron	1	TV-100	V203	Output tube, second frame
		6	872-A*	V600 thru V605*	H.V. rectifier, second frame
		1	4CX5000A	V900	PA tube, second frame
	28. Lamp Socket Assembly, High Voltage	1	AX-124		H.V. indicator, top first frame
	and Lamp	1	BI-106-1	I3000	Lamp for indicator
	29. Plugs, Electrical	1	PL-134		Female plug for connecting to convenience a-c outlet, bottom front panel, first frame
		2	PL-149		Universal connector plug for connecting to jack J904, top second frame
		1	PL-157		Connector plugs for connecting to MONITOR OUTPUT jack, bottom front panel, first frame
		2	PL-218		Male plug for making extension cord in conjunction with plug PL-134
	30. Hinges, Rear Door	3	MS-2041		Rear door hinges, third frame
		3	MS-2042		
	31. Door Latch Plates: Bottom Front and Rear	6	MS-2122		Securing doors to first through fourth frames
	Top Front and Rear	6	MS-1660		

* Tubes V600 through V605 are not supplied when solid state power supply HVRC is used.

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
1 (cont)	32. Door Latch Brackets				Same as item 31
	Top, Front, and Rear	6	MS-1661		
		6	MS-2123		
	33. Plugs, Button:				Dress side panels and covers
	1/2 inch	8	HB-101-3		
	7/8 inch	48	HB-101-6		
	34. Cable, Emergency Output	1	CA-582-1		Emergency output cable
	Cable, Interconnect	1	CA-615		Ac input power buss connects between power distribution terminal board on inside rear of base for third and fourth frames and terminal board in bottom rear of second frame
	35. Wrenches, Allen:				
		1	WR-100-12		Special installation tools
		1	WR-100-20		
	36. Bag 15:				Mounting hardware for transformer T8107.
	Screw, Machine, Hexhead	4	SCHH2520SS16		
	Washer, Flat	4	FW25HBN		
	Washer, Lock	4	LWS25MRN		
2	1. Capacitors:	3	CB-160	C7330, C7331,& C7332	Tune and load, third frame
		3	CO-106-1000-30C	C7325 & C7328, & C8207	Fixed capacitors in PA, third frame Antenna tuning, fourth frame

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
2 (cont)	1. Capacitors: (cont)	1	CX-103	C7316	Fixed capacitor in PA circuit, third frame
		1	CO-107-6-30C	C7326	Fixed capacitor in PA circuit, third frame
	2. Choke	1	CL-271	L7312	Choke in PA circuit, third frame
	3. Connector	1	JJ-137	J902	
	4. Contact Assembly	2	AX-223	E8115 & E8116	Threaded metal rods for bowl assemblies, top fourth frame
	5. Insulators:	1	NS-128	E8114	Insulated electrical feed throughs
		1	NS-107	E7304	
	6. Resistors	1	RW-119GIRO	R8101	Power supply circuit, fourth frame
		10	RW-118F183	R8102 thru R8111	
		6	RW-118F5RO	R8112 thru R8114 &	
		2		R8301 thru R8303	
	7. Tubes, Electron	1	7568	V8301	Crowbar drawer circuit, fourth frame
		6	6895*	V8401 thru V8406*	H V R drawer circuit, fourth frame

* Supplied when high-voltage rectifier AP-105 is used.

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
3	Mounting Base Assembly, with shield and access doors	1			Metal structure that can be bolted to floor and, first and second frames are bolted on
4	Mounting Base Assembly, with shield and access doors	1			Metal structure that can be bolted to floor and, third and fourth frames are bolted on
5	First Frame Assembly, with:	1	AX-239	3000	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1			Equipment status indicators, top first frame
	Power Distribution panel	1	APP		
	Standing Wave Control Unit Drawer	1	SWCU		
6	Second Frame Assembly, with:	1	AX-186	1000	Metal cabinet that houses electrical equipment
	Power Amplifier	1	AX-238		Power amplifier
	Main Power Panel	1			
	Relay Panel	1	AX-139	700	Indicator control and relay panel
7	Third Frame Assembly, with:	1	AP-106	7100	Metal cabinet that houses electrical equipment
	Power Amplifier Control, Front Panel and Power Amplifier Section	1	AX-275	7300	
	Panel Main Control	1	AX-210	7400	Main control panel
	Relay Panel	1	AR-116	7600	Indicator control and relay panel

TABLE 1-3. EQUIPMENT SUPPLIED (CONT)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
8	Fourth Frame Assembly, with:	1	AP-103	8100	Metal cabinet that houses electrical equipment
	Power Supply Control Panel	1	AX-213	8500	Power supply control panel
	Spare Fuse Panel	1	MS-2095		
9	Power Transformer	1	TF-203	T800	Power transformer, second frame
10*	Power Transformer	1	TF-211 or TF-335	T8101	Power transformer, fourth frame
11**	Power Transformer	1	TF-211 or TF-335	T8102	Power transformer, fourth frame
12**	Power Transformer	1	TF-211 or TF-335	T8103	Power transformer, fourth frame
13**	Power Transformer	1	TF-215	T7101	Power transformer, fourth frame
14**	Power Transformer	1	TF-5016	L8101	Filter in power supply circuit, fourth frame
15**	Capacitors	2	CP-107	C8107 and C8108	Filters in power supply circuit, fourth frame

* Crate 10 may contain power transformer T8107 (TMC part number TF-336).
** If crate 10 contains power transformer T8107 (TMC part number TF-336), all succeeding crate numbers are increased by "1."

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
16**	Band Switch	1	AS-120		Tuning band switch, third frame
17**	1. Power Supply, Drawer Assembly	1	Model CPP-5		Power supply drawer, rear first frame
	2. Frequency Divider, Drawer Assembly	1	Model CHL		Frequency divider drawer, first frame
	3. R F Oscillator, Drawer Assembly	1	Model CSS		R-f oscillator drawer, first frame
18**	1. A F Controlled Oscillator Assembly	1	Model CLL		A-f oscillator drawer, first frame
	2. Tone Intelligence, Drawer Assembly ***	1	Model TIS		Tone intelligence drawer, first frame
	3. Sideband Exciter, Drawer Assembly	1	Model CBE		Sideband exciter drawer, first frame
19**	1. Controlled Master Oscillator, Drawer Assembly	1	Model CMO		Controlled master oscillator drawer, first frame
	2. Frequency Amplifier, Drawer Assembly	1	Model CHG		Frequency amplifier drawer, first frame
20**	Power Supply	1	Model CPP-2		Power Supply drawer, first frame
21**	RF Amplifier Drawer Assembly with plug-in RF Amplifier unit Model RFC	1	AX-104	2000	RF amplifier and control panel, second frame
22**	High-Voltage Rectifier or Solid State Power Supply	1	AX-103 or HVRC	600	H.V.R, second frame
23**	Bias Power Assembly Supply, Drawer	1	AP-104	7500	Bias power supply drawer, third frame

** If crate 10 contains transformer T8107 (TMC part number TF-336), all succeeding crate numbers are increased by "1"

*** In some models, Tone Intelligence Drawer Assembly TIS is replaced by Keyer Monitor Control Unit KMCU.

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
24**	High-Voltage Rectifier or Solid State Power Supply	1	AP-105 or HVRB	8400	H.V.R. drawer, fourth frame
25**	Crowbar Circuit Drawer	1	AX-212	8300	Crowbar drawer, fourth frame
26**	Antenna Tuner Drawer	1	AT-103	8200	Meter panel and antenna tuner drawer, fourth frame
27**	Tube, Electron	1	ML-6697	V7301	Power amplifier tube, third frame
28**	Exterior Covers and Trim strips:	1			Exterior doors, covers, and trim strips for frames one through fourth.
	1. Second Frame Trim, Front Left Side	1	MS-1634		
	2. First and Second Frame Trim, Front Top	1	MS-1635		
	3. First and Second Frame Trim, Front Bottom	1	MS-1636		
	4. First Frame Trim, Front Hinged Right Side	1	MS-1637		
	5. First Frame Door, Rear	1	MS-1648		
	6. First and Second Frame Trim, Rear Center	1	MS-1669		
	7. First Frame Trim, Rear Right Side	1	MS-1670		
	8. Fourth Frame Trim, Rear Left Side	1	MS-1672		

** If crate 10 contains power transformer T8107 (TMC part number TF-336), all succeeding crate numbers are increased by "1"

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
28** (cont)	9. First and Second Frame Trim, Rear Top and Bottom	2	MS-1672		
	10. First and Second Frame Cover, Top	1	MS-1699		
	11. First Frame Trim Front Hinged Left Side	1	MS-1920		
	12. Fourth Frame Trim, Front Right Side	1	MS-2025		
	13. Second and Third Frame Trim, Front	1	MS-2026		
	14. Third and Fourth Frame Trim, Front	1	MS-2027		
	15. Third and Fourth Frame Trim, Front Top	1	MS-2028		
	16. Third and Fourth Frame Trim, Front Bottom	1	MS-2029		
	17. Second Frame Door, Rear	1	MS-2037		
	18. Third and Fourth Frame Trim, Rear	1	MS-2051		
	19. Second and Third Frame Trim, Rear	1	MS-2052		
	20. Third and Fourth Frame Trim, Rear Top and Bottom	2	MS-2053		
	21. Fourth Frame Cover, Right Side	1	MS-2116-2		
	22. First Frame Cover, Left Side	1	MS-2117		

** If crate 10 contains power transformer T8107 (TMC part number TF-336), all succeeding crate numbers are increased by "1"

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
28** (cont)	23. First Frame Door, Front	1	MS-2119		
	24. Fourth Frame Door, Front	1	MS-2118		
	25. Third Frame Trim, Center Rear	1	MS-2300		
29**	Exterior Covers and Doors:				Exterior covers and doors, second and third frames
	1. Fourth Frame Door,Rear	1	MS-1647		
	2. Third and Fourth Frame Cover, Top	1	MS-1997		
	3. Third Frame Door, Rear	1	MS-2037		
	4. Second Frame Door, Front	1	MS-2120-1		
	5. Third Frame Door, Front	1	MS-2120-2		

** If crate 10 contains power transformer T8107 (TMC part number TF-336), all succeeding crate numbers are increased by "1"

Table 1-4. Equipment Required But Not Supplied

Equipment	Purpose
1. Box Wrenches, assorted sizes	Fastening mounting hardware
2. Open End Wrenches, Assorted sizes	Same as item 1
3. Spin Tights, sizes: 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16	Same as item 1
4. Socket Wrench Set, socket sizes to 1-1/8	Same as item 1
5. Screw Drivers, Flat Head, assorted sizes	Same as item 1
6. Screw Drivers, Phillips-head, assorted	Same as item 1
7. Crowbar	Open packing crates
8. Fork-Lift or equivalent	Moving heavy objects (e.g. packing crates and voltage transformers)
9. Low-Speed Electric Drill and carborundum bit or equivalent	Drilling equipment anchoring holes
10. Case cutter	Open cardboard packing cases
11. Nail Puller	Open packing crates
12. Pair of snips	Cutting strap bands

Table 1-5. Associated Manuals

EQUIPMENT	MANUAL
First Frame	Maintenance Manual for Transmitting Set, Radio, Model GPT-10K, Vol II.
Sideband exciter drawer	
Frequency amplifier drawer	
Controlled master oscillator drawer	
Audio frequency controlled oscillator drawer	
Rf oscillator drawer	
Tone intelligence drawer	Technical Manual for General Purpose Transmitter, Model GPT-10K, Synthesized, Vol 1S.
Frequency divider drawer	
Power supply drawer CPP-2	
Auxiliary power panel	
Power Supply drawer CPP-5	
Standing wave control unit drawer	
Second Frame	
Rf amplifier drawer	
Rfc drawer	
HVR drawer 600	
Third Frame	Maintenance Manual for GPT-40K Transmitter, Vol III.
Bias power supply drawer	
Fourth Frame	
Antenna tuner drawer	
Crowbar drawer	
HVR drawer 8400	

SECTION 2

PRE-INSTALLATION

2-1. INTRODUCTION.

The following paragraphs present pre-installation considerations for installing the GPT-40K transmitter at a land site. Most of these considerations are also applicable for a mobile-van or shipboard installation.

2-2. ENVIRONMENT.

The 40K transmitter operates under a broad range of environmental conditions (refer to table 1-2). These conditions must be taken into consideration when selecting the equipment location.

2-3. LOCATION OF PERIPHERAL EQUIPMENT.

There is no distance limitation governing the location of peripheral equipment (i.e. facsimile and teletype machines, microphones, keys, test equipment, etc.) other than providing practical and compatible inter-equipment operation (refer to table 1-2).

Consideration should be given to the routing and length of input signal cables before assembling the transmitter. Signal input cable entry is made through the base assemblies of the equipment during installation. All signal inputs are spade lug connections terminating inside the rear of the first frame. This point can be used as a reference in determining exact input signal cable lengths.

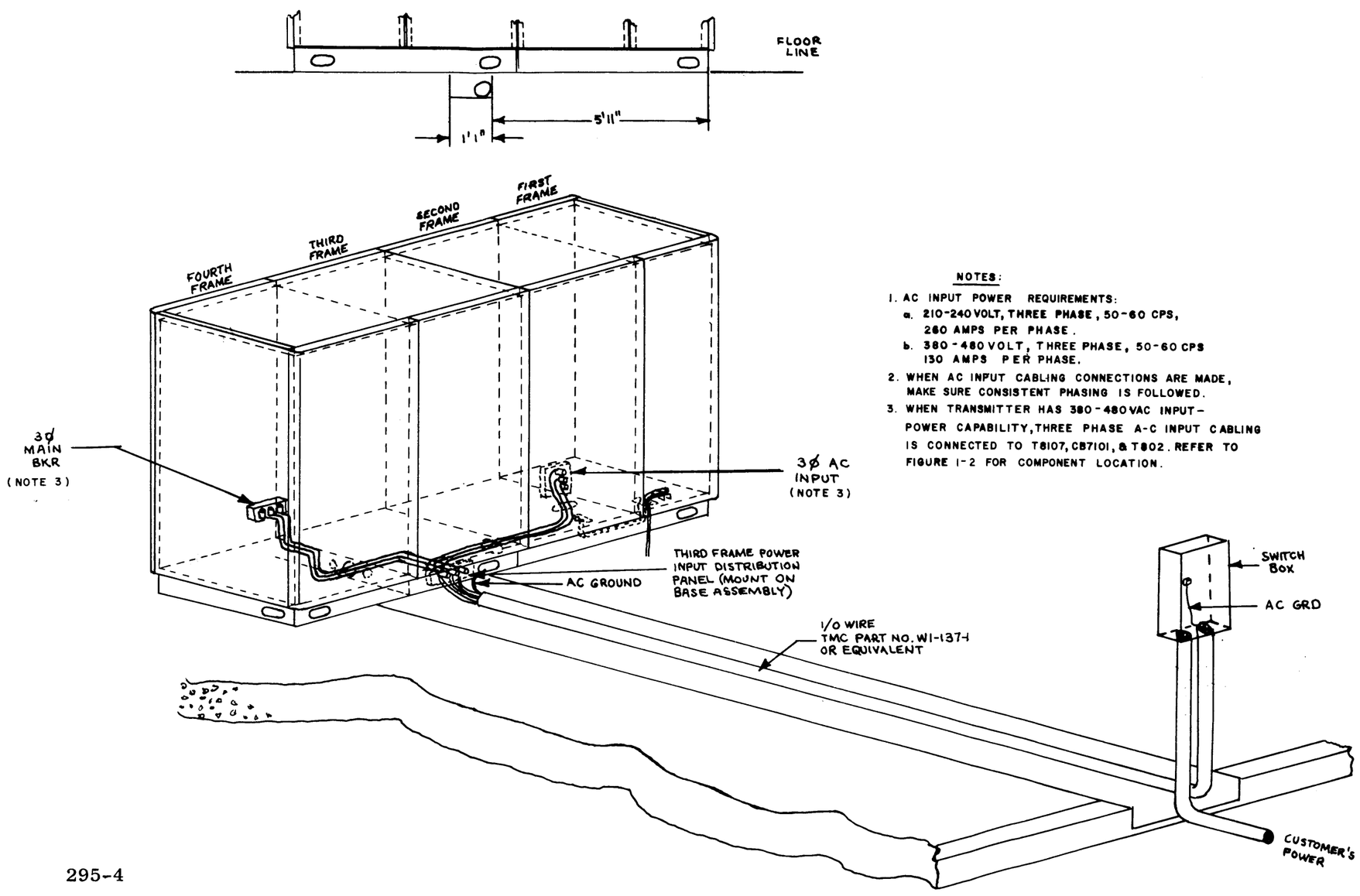
2-4. AC INPUT POWER REQUIREMENTS.

Three methods of laying out input power cables can be used. Figure 2-1 illustrates the sub-floor-level cable raceway method, which requires provisioning for troughs during construction of the building. If these provisions have not been made, removable access plates are located on the base assemblies to permit cable entry in the floor-level and ceiling routing methods.

It should be noted that input power under full power output conditions is based on the maximum allowable plate dissipation of the final amplifier rather than on various modes of operation. Primary input power under standby and full power conditions is 38.5 kw and 73.5 kw, respectively. In fulfilling practical and adequate ac input power requirements, consider the transmitter draws 100 kw. This requirement can be used in providing the appropriate size peripheral ac input power line, switch or breaker boxes, etc. for the transmitter. Under maximum current conditions, the transmitter draws approximately 260 amperes per phase for 210-240 vac input, or approximately 130 amperes per phase for 380-480 vac input. Ac input feeder cables must be 1/0 wire.

2-5. STATION GROUND.

The 40K transmitter must be grounded to station ground. Accordingly, a 5/8-11 stud has been centered and welded to the base assembly of the transmitter. The exact location of this stud is 11-1/4 inches in from the rear corner on the inside of the base assembly, under the first frame. If



NOTES:

1. AC INPUT POWER REQUIREMENTS:
   a. 210-240 VOLT, THREE PHASE, 50-60 CPS, 260 AMPS PER PHASE.
   b. 380-480 VOLT, THREE PHASE, 50-60 CPS 130 AMPS PER PHASE.
2. WHEN AC INPUT CABLING CONNECTIONS ARE MADE, MAKE SURE CONSISTENT PHASING IS FOLLOWED.
3. WHEN TRANSMITTER HAS 380-480 VAC INPUT-POWER CAPABILITY, THREE PHASE A-C INPUT CABLING IS CONNECTED TO T8107, CB7101, & T802. REFER TO FIGURE 1-2 FOR COMPONENT LOCATION.

Figure 2-1. Typical Input Power Cabling Requirements, Installation Diagram.

the station ground has not been established, locate an appropriate station ground cable in this vicinity before starting the installation procedure. Complementary hardware for the stud is provided to connect station ground to the transmitter during installation.

2-6. EQUIPMENT ANCHORING.

Anchoring the transmitter to the floor in a land installation should not be necessary since ground equipment weight is approximately 7,000 lbs. However in a shipboard or mobile-van installation, the transmitter should be anchored. Anchoring holes are drilled in the base assemblies; these base assemblies may be used as templates to determine anchor points.

2-7. ANTENNA TRANSMISSION LINE.

The output impedance or load for the 40K transmitter is 50 ohms (unbalanced output) or 600 ohms (balanced output). When working into either load, it is not necessary to use a rigid transmission line. A flexible 3-1/8 inch (recommended or 1-5/8 inch minimum) coaxial line for unbalanced operation or a pair of insulated #6 copper wires for balanced operation are required. The length of the transmission line(s) is governed by the physical routing distance between the transmitter and antenna. A 3-1/8 inch standard EIA (Electronics Industry Association) flange connector is used as the unbalanced output jack of the transmitter. Any compatible connector plug may be used on the end of the transmission line.

2-8. HEAT DISSIPATION.

The transmitter cabinets are semi-pressurized and forced-air cooled, refer to table 1-2, by self-contained blowers. Approximately 90 percent of the heat generated by the transmitter is dissipated through exhaust air-ducts. The remaining 10 percent (maximum) of the heat is radiated by the surface area of the transmitter. This 10 percent will load the room air-conditioner and the subsequent effect on room-temperature should be taken into consideration.

2-9. DIMENSIONAL CLEARANCES.

Figure 2-2 illustrates minimum dimensional clearances required for typical 40K transmitter installation. Additional clearance considerations are discussed in following paragraphs.

Physically, the largest single part of the transmitter is an uncrated frame assembly, measuring three feet wide, three and a half feet deep, and six and a half feet high (approximately). These dimensions necessitate entrance door(s) sizes, leading to the intended installation point, which will allow adequate frame passage.

Figure 2-2 also presents air intake and exhaust port dimensions for transmitter top covers and side panels. After planning final transmitter location, these dimensions can be used as a reference point in and for fabricating the desired air duct system. Location and sizes of exterior wall cut-outs for the air duct system will ultimately be determined by ducting used.

The type of output transmission line (transmitter to antenna) is

another clearance consideration. Hole sizes in the exterior walls between transmitter and antenna will be governed by the type of output transmission line selected.

It may be practical to outline overall dimensions of the transmitter on the floor with a piece of soft chalk or a plumbline, before starting the installation procedures. After using this outline as a guide to position transmitter base assemblies; in the installation procedure, these lines could be removed.

2-10. TRANSMITTER LOCATION.

All of the proceeding data should be taken into account when locating the 40K transmitter. In addition, some practical and obvious things to consider would be: accessibility and work space; heat zones; and habitability.

Equipment accessibility and work space should be provided for personnel to facilitate ease in installing, operating, or maintaining the transmitter. Since installation requires the greater amount of working floor area, it might be used as a criteria for locating the transmitter.

Heat zones should be avoided. These zones would be spaces above or adjacent to heating or heat producing apparatus or piping ducts.

Habitability features with respect to locating might be: neat peripheral wiring for personnel safety; and, passageway clearance for personnel in the case of co-located equipments.

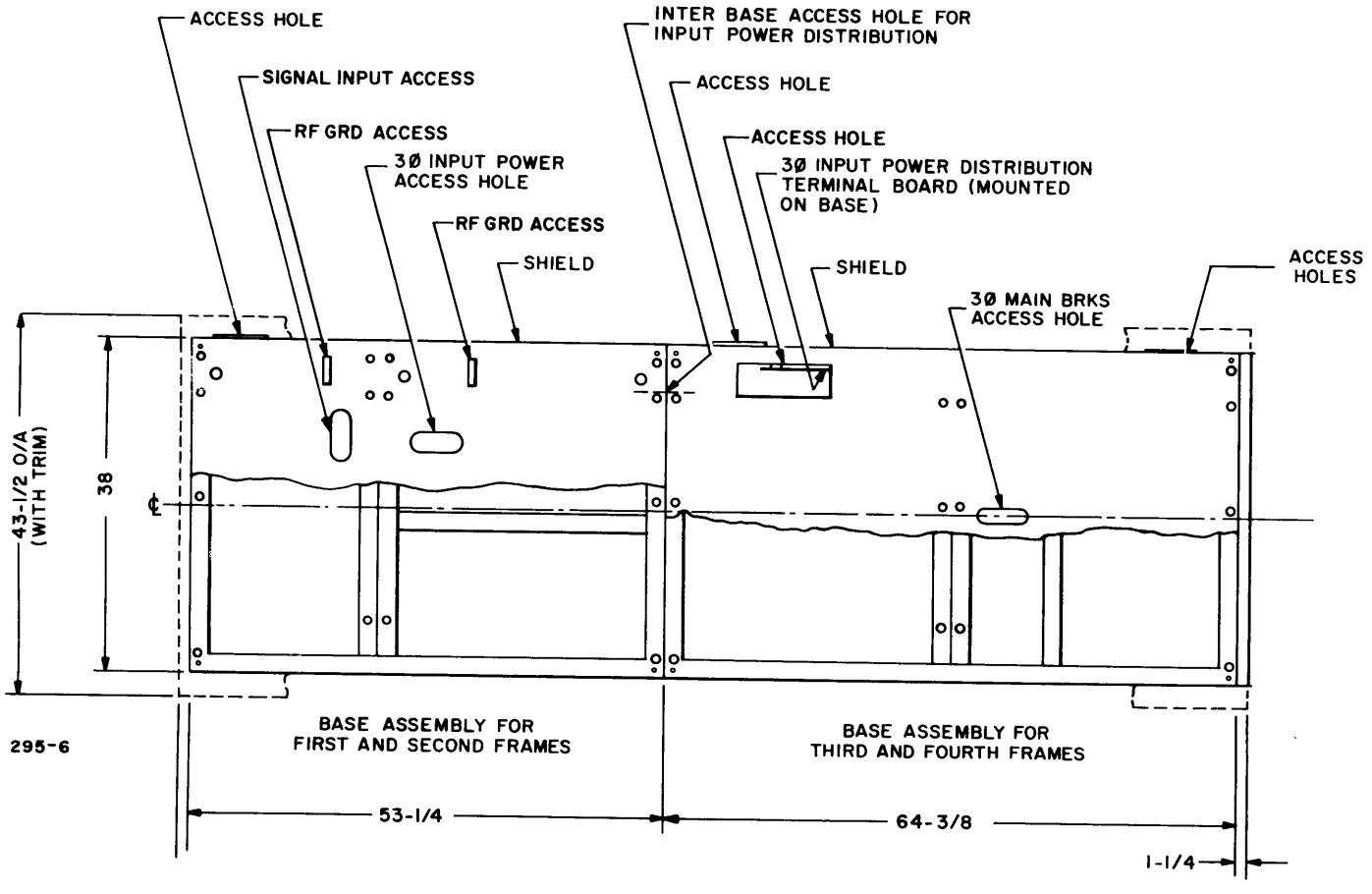
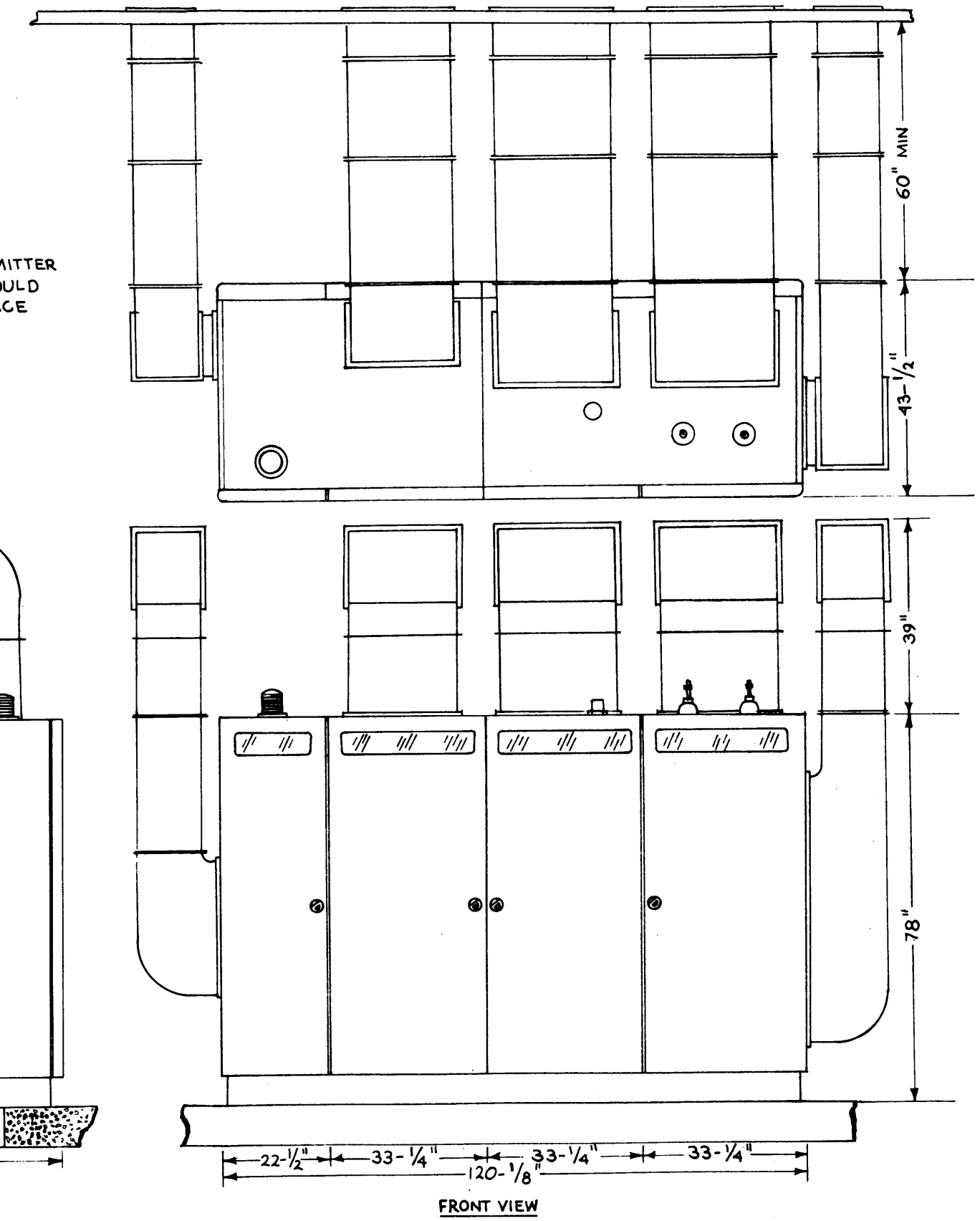
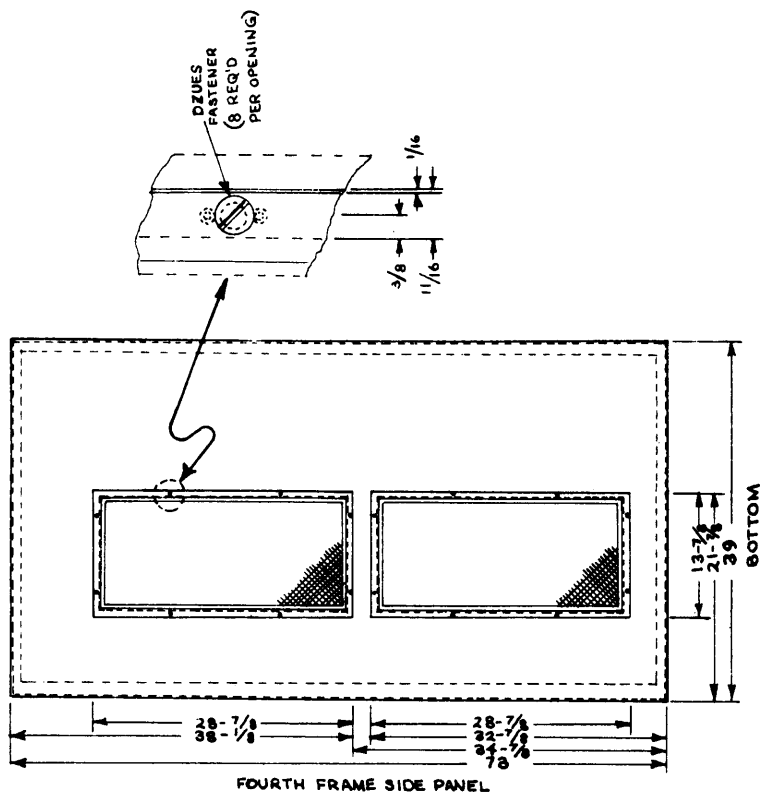
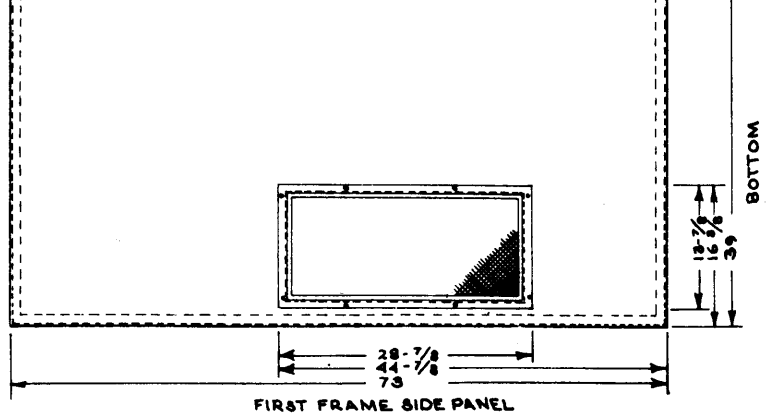
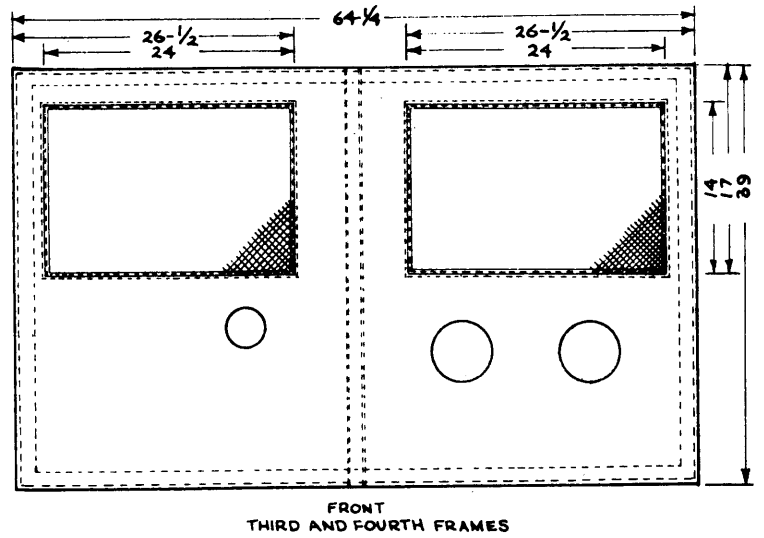


Figure 2-2. Dimensional Clearance Requirements, Installation Diagram (sheet 1 of 2).









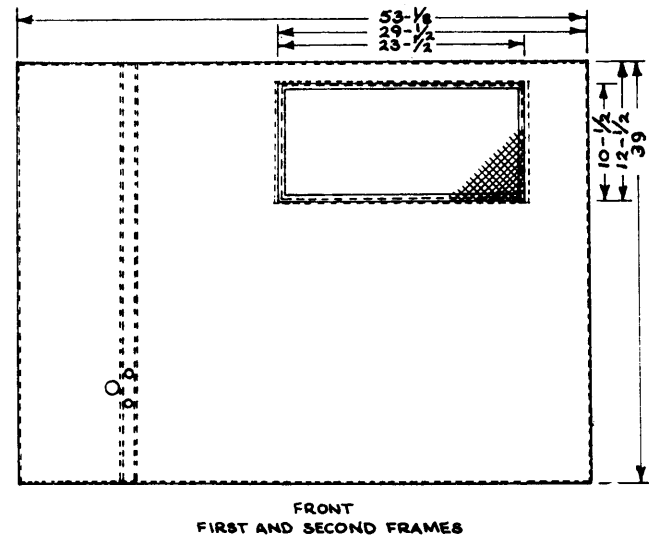
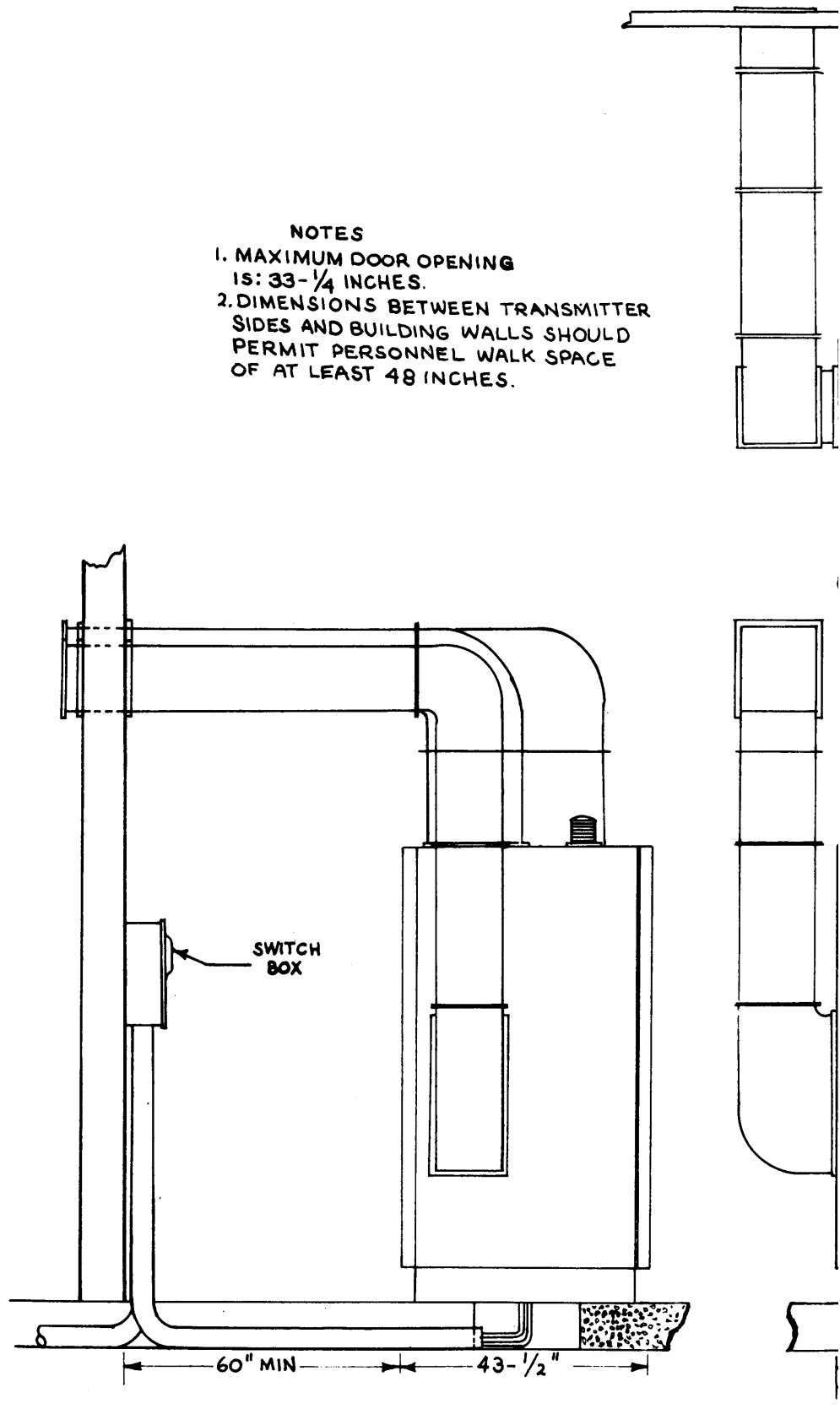


Figure 2-2. Dimensional Clearance Requirements, Installation Diagram (sheet 2 of 2).

NOTES

1. MAXIMUM DOOR OPENING IS: 33-1/4 INCHES.
2. DIMENSIONS BETWEEN TRANSMITTER SIDES AND BUILDING WALLS SHOULD PERMIT PERSONNEL WALK SPACE OF AT LEAST 48 INCHES.



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SECTION 3

LOGISTICS

3-1. MATERIAL HANDLING.

Whether the equipment is crated or uncrated, various precautions must be observed in material handling.

CAUTION

Crates must never be rolled, crushed, dropped, or struck- they contain delicate electronic apparatus that can be damaged.

General safety precautions should be adhered to when moving the equipment to prevent damage to equipment or injury to personnel. Weight alone is not an indication that equipment can be moved safely by personnel; size is also an important consideration. A light-weight, large, and bulky item cannot easily be handled by one man. When personnel are involved in handling, a good rule-of-thumb to determine safe limit for carrying is: 50 pounds for one man; or 100 pounds for two men. When lifting an item, bend the knees, keep back straight and lift with the legs. Before handling material, refer to tables 1-1 and 3-1 for crated and uncrated weights and dimensions.

3-2. PACKAGING DATA.

The 40k transmitter is packaged in 29 or 30 numbered crates (29 crates are used for transmitters that have 210-240

vac input-power capability; 30 crates are used with transmitters that have 380-480 vac input-power capability). Running spares that may be shipped with the transmitter are not discussed in this manual. Physically locate crate 1 closest to the intended point of installation; locate the other crates according to their numerical sequency such that crate 29 is farthest away from crate 1. Arranging crates in this manner makes unpacking and assembling the transmitter easier.

The transmitter is cleaned, preserved, packaged, and marked in accordance with MIL-P-116, PMD-40, and MIL-STD-129. Figure 3-1 illustrates typical equipment packing methods.

Table 3-1 lists the crated weights and dimensions of the 40k transmitter. Additional reference can be made to table 1-1 for uncrated weights and dimensions.

TABLE 3-1. CRATED WEIGHTS AND DIMENSIONS

CRATE NO.	GROSS WEIGHT IN LBS.	DIMENSIONS IN INCHES		
		HGT	W	D
1	201	32	23-7/8	30-3/4
2	263	45-1/8	38-3/8	22-1/4
3	234	56-3/8	40-1/8	8
4	273	67-3/4	40-1/8	8
5	768	82-1/8	50-1/4	32-1/4
6	1298	81-3/8	42	51-1/2
7	1130	81-3/8	42	51-1/4

TABLE 3-1. CRATED WEIGHTS AND DIMENSIONS (CONT)

CRATE NO.	GROSS WEIGHT IN LBS.	DIMENSIONS IN INCHES		
		HGT	W	D
8	1166	81-3/8	42	51-1/4
9	539	28-3/4	19-3/4	24
10*	180	18-5/8	11-5/8	17-7/8
11*	654	26-3/8	16-5/8	38
12*	654	26-3/8	16-5/8	38
13*	654	26-3/8	16-5/8	38
14*	150	16-1/4	10-1/2	16-7/8
15*	149	23-1/4	13-1/4	12-1/4
16*	210	24-3/4	15-1/4	21-1/8
17*	201	40-3/4	27	28-3/4
18*	212	32	23-7/8	30-3/4
19*	202	32	23-7/8	30-3/4
20*	214	32	23-7/8	30-3/4
21*	143	27-1/4	21-5/8	17-1/4
22*	240	40	30-3/4	22
23**	233	40	30-3/4	22
24*	217	39-7/8	30-3/4	22
25**	289	40-3/4	34-5/8	27-3/4
26*	187	40	30-3/4	22
27*	250	40-3/4	34-5/8	27-3/4
28*	146	28-1/2	26-3/4	24-3/4
29*	643	77-5/8	27-1/2	44-1/4
30*	648	77-5/8	22-1/4	44-1/4

*The content of crate 10 is omitted when transmitter is configured for 210-240 vac input-power. Crates "11" through "30" are then numbered "10" through "29".

TABLE 3-1. CRATED WEIGHTS AND DIMENSIONS (CONT)

** When transmitter is configured with solid-state rectifiers instead of gaseous-tube rectifiers, crate 23 weight is 183 lbs. instead of 233 lbs. and weight of crate 25 is 208 lbs. instead of 289 lbs.

3-3. EQUIPMENT INSPECTION.

The 40K transmitter has been assemblied, calibrated, and tested at the factory before shipment. Inspect all packages for possible transit damage. While following the procedural installation instructions, carefully unpack each crate as indicated. Inspect all packing material for parts that may have been shipped as loose items.

With respect to equipment damage for which the carrier is liable, the Technical Materiel Corporation will assist in describing methods of repair and the furnishing of replacement parts.

3-4. UNCRATING METHODS.

These following uncrating methods must be adhered to when unpacking the transmitter to prevent equipment damage. Keep in mind the information, previously discussed, on material handling, packaging data, and equipment inspection.

a. Remove wire straps or bands from around crates with a pair of snips.

b. Unless otherwise specified, remove nails from three sides of the crates with a nail puller. Do not use a claw hammer, pinch bar, etc.

c. When the sides of a crate have been removed, the moisture-proof paper must be ripped off. If a knife is used, care should be exercised not to mar equipment.

d. If equipment is not packed in a cardboard carton, it may be removed from the crate as prescribed in the installation procedure.

e. If after removing moisture-proof paper, a cardboard carton is encountered, carefully open with a case cutter.

f. Where applicable, remove the following:

(1) Creased cardboard blocking pieces.

(2) Barrier bags.

(3) Tape.

(4) Molded cushioning.

(5) Cellulose wadding.

(6) Tissue paper.

g. An inventory of the equipment should be made at this time. As parts are unpacked, they should be marked off on the packing list or equipment supplied list. If anything is damaged refer to paragraph 3-3.

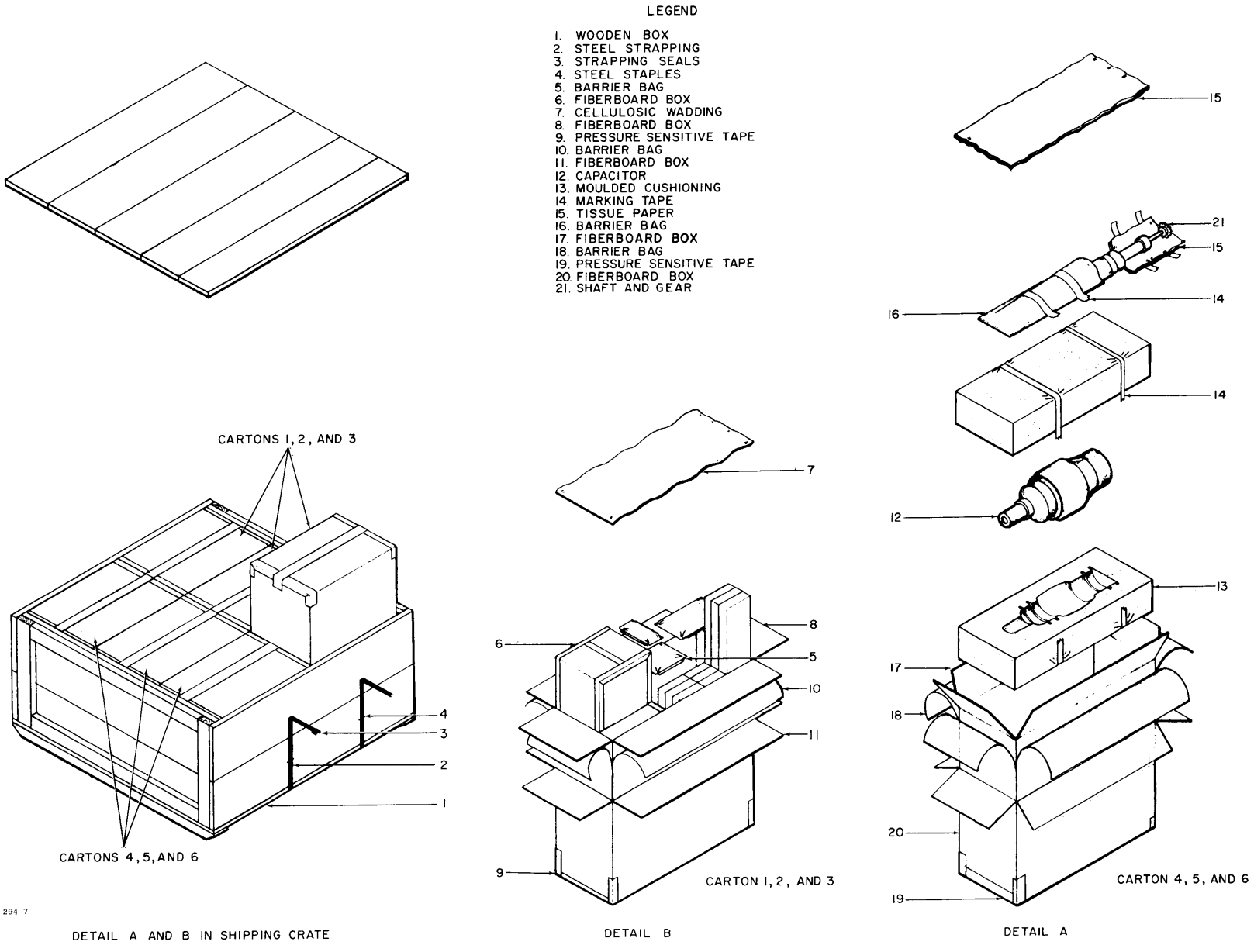


Figure 3-1. Typical Equipment Packaging (sheet 1 of 5)

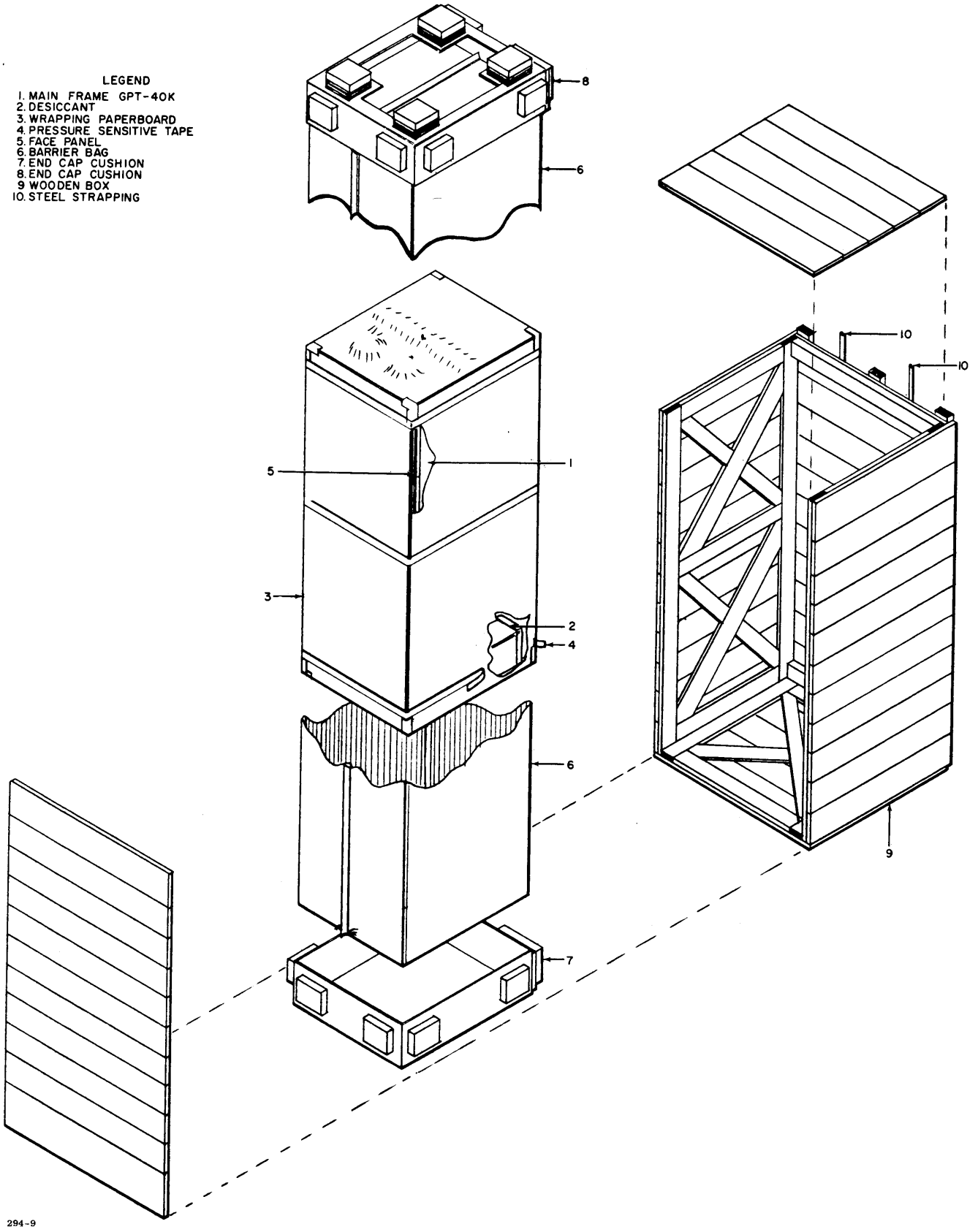


Figure 3-1. Typical Equipment Packaging (sheet 2 of 5)

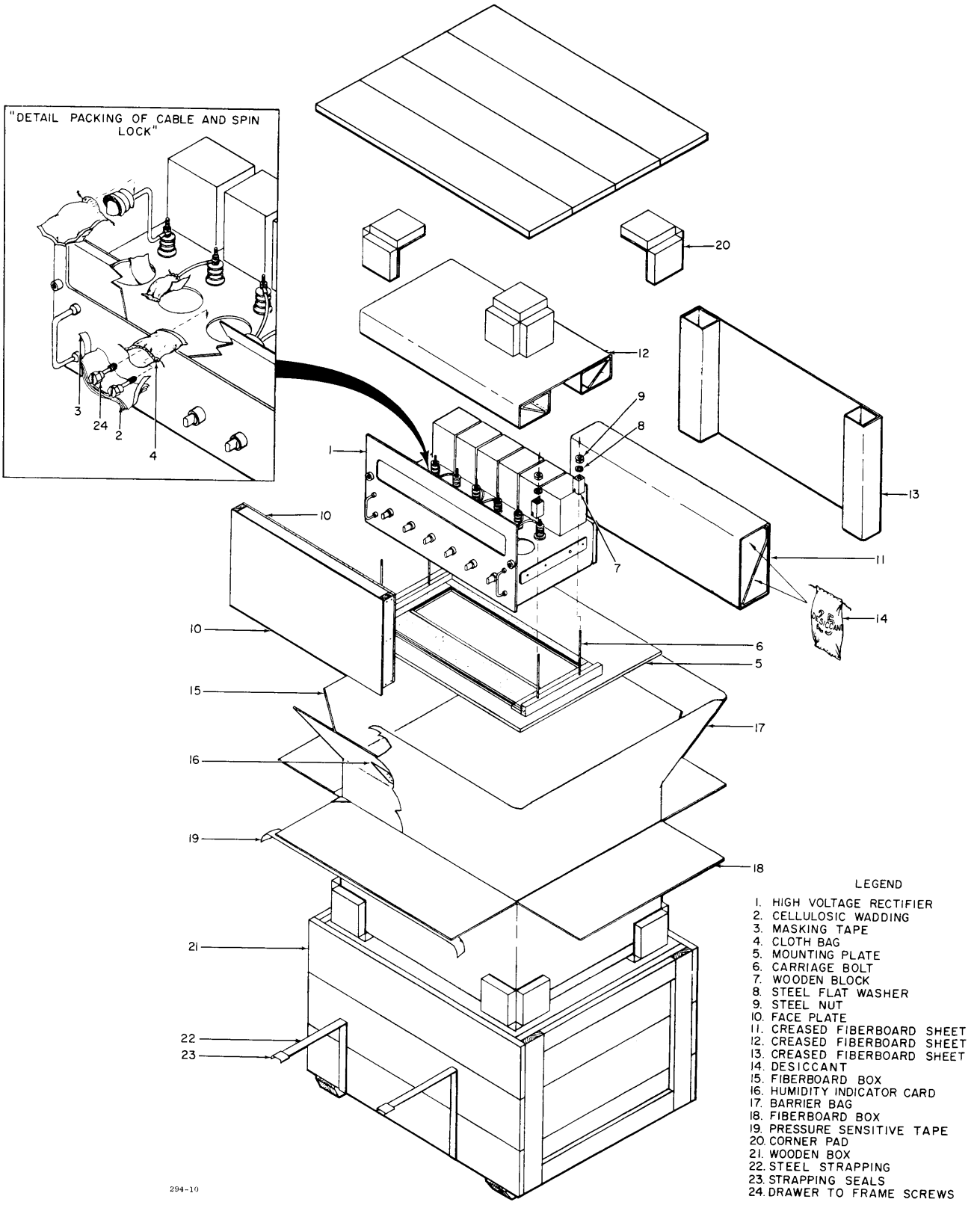


Figure 3-1. Typical Equipment Packaging (sheet 3 of 5)

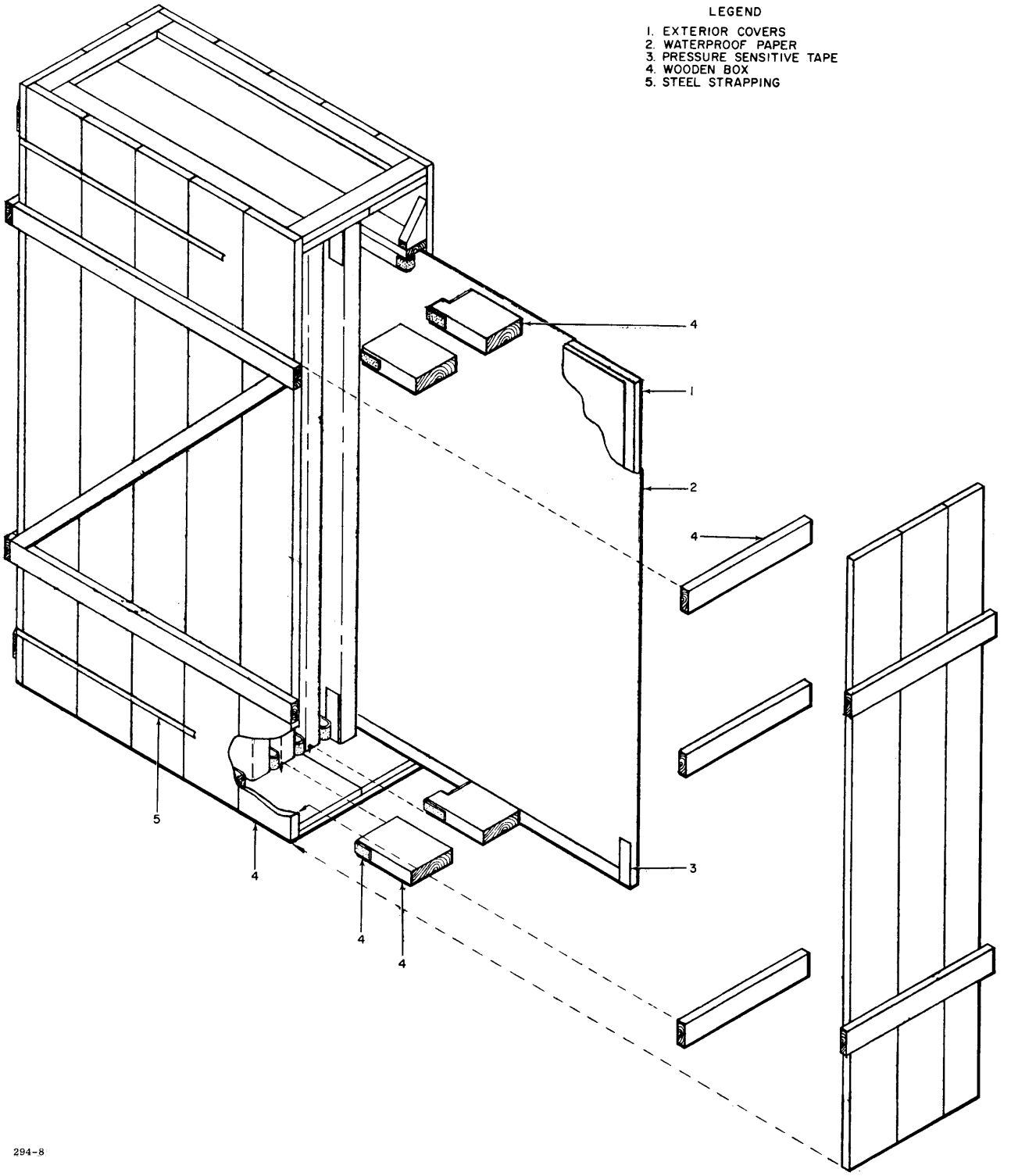


Figure 3-1. Typical Equipment Packaging (sheet 4 of 5)

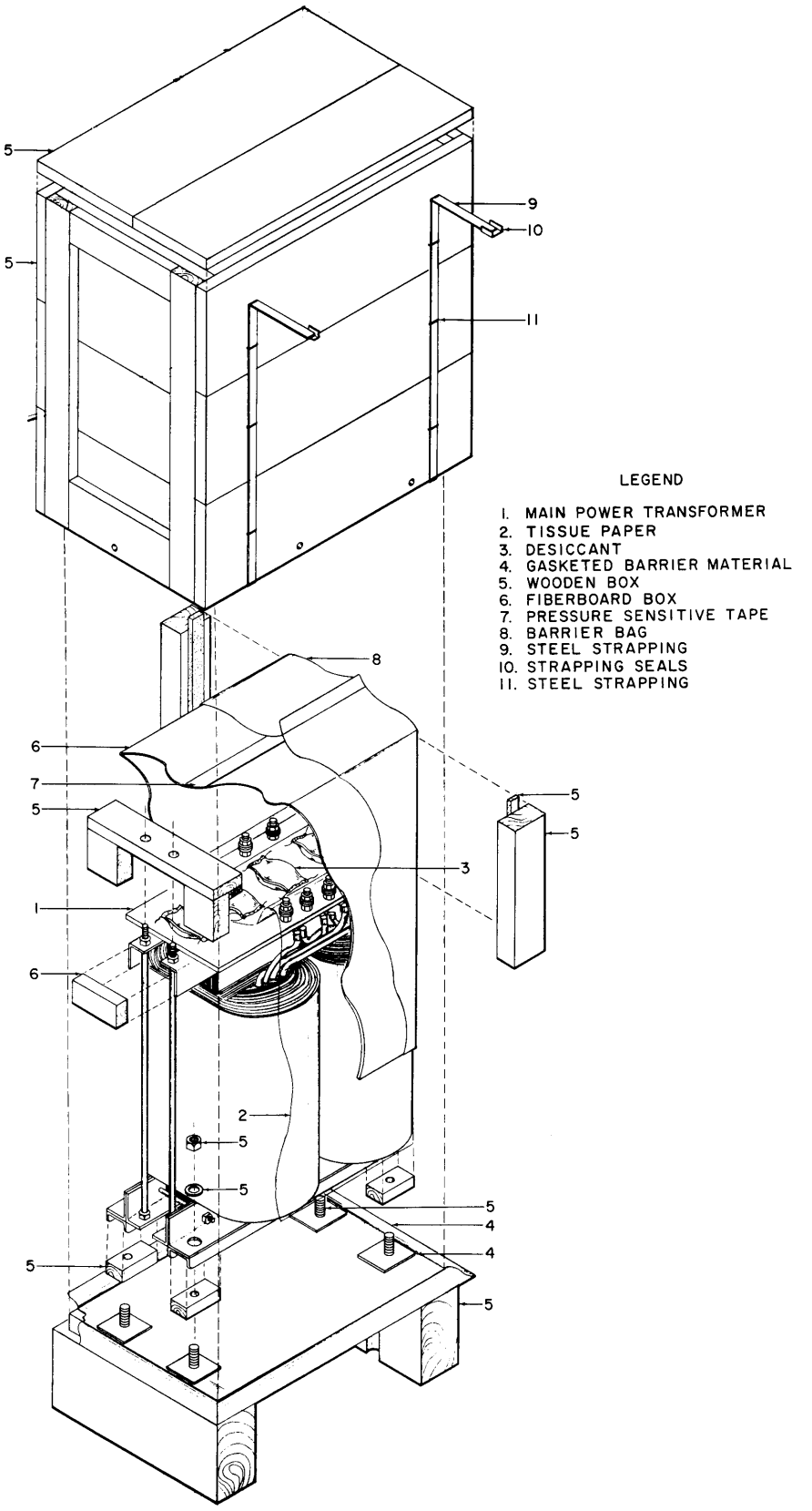


Figure 3-1. Typical Equipment Packaging (sheet 5 of 5)

SECTION 4

INSTALLATION PROCEDURE

4-1. GENERAL INSTRUCTIONS.

A minimum number of assemblies, subassmeblies, components and hardware have been disassembled from the 40K transmitter and separately packaged, thus reducing the possibility of equipment damage in transit The method of disassembly and separate packaging of the transmitter also permits realistic equipment handling.

Carefully read the instructions for each step. After reading, consider the complexity involved in performing the step. It may be advisable to simulate a complex step before actually doing it. Make sure each step has been completed before proceeding to the next.

Cables, wires, and other miscellaneous items that are disconnected during transmitter disassembly are tagged and taped to the equipment. The information on a given tag indicates the designated terminal on a component to which the tagged item must be connected. Make sure all cables and wires have been connected as designated on tags and that all packing material, tags, and tape have been removed before sealing up a frame or section of a frame with an r-f shield, front panel, drawer, or piece of exterior trim (a door, cover, etc.). If any confusion arises regarding cable or wire connections that must be made, refer to the applicable circuit diagram in section 5 of this manual.

Temporary removal and replacement of panels, r-f shields, and

component mounting assemblies are specifically called out in the procedure in order to install various items. Do not anticipate instructions; to insure correct installation, perform each step exactly as it is written.

A list of equipment required to install the transmitter is presented in table 1-4. Non-specialized tools are not supplied with the equipment since these items should be contained in an equipped maintenance shop.

Make sure installation personnel adhere to previously outlined techniques on uncrating and material handling (see section 3).

STEP 1

a. Unpack assorted loose items from crate 1 and 2.

b. Check each item contained against equipment supplied list.

STEP 2

a. Unpack crate 3.

b. Remove shield from base assembly, figure 4-1, for the first and second frames. Shield will be replaced later.

c. Position base assembly in accordance with pre-installation planning (see figure 2-2).

STEP 3

a. Unpack crate 4.

b. Remove shield from base assembly for the third and fourth frames. Shield will be replaced later.

NOTE

Make sure both base assemblies are correctly positioned. This can be determined by locating access holes on the long side of base assemblies toward the intended rear side of the transmitter.

c. Position base assembly adjacent to base assembly positioned in step 3 (see figure 4-1).

d. Using hardware from crate 1 bag 1, tightly bolt two base assemblies together (see figure 4-1).

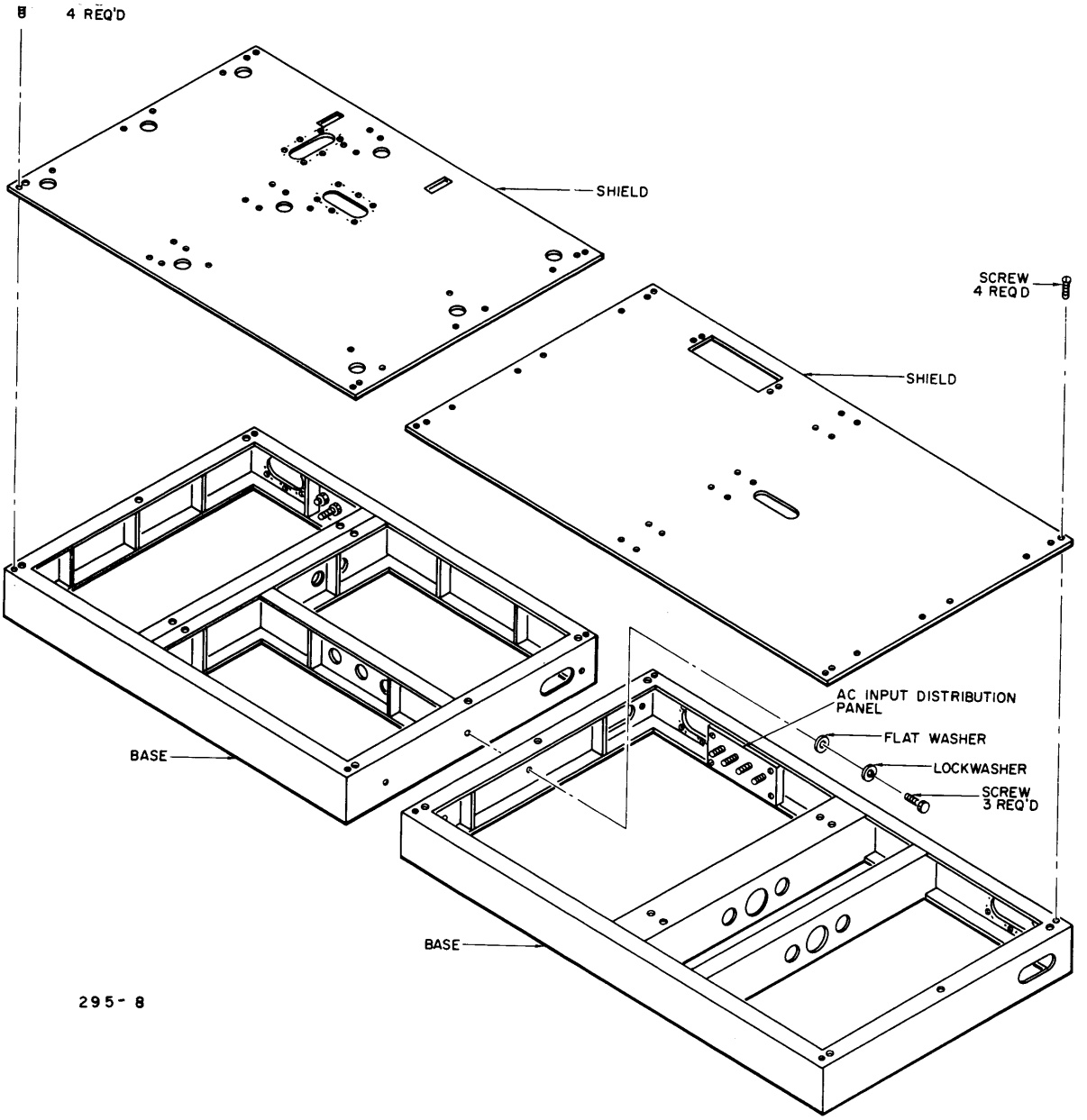


Figure 4-1. Base Assemblies for the First Through Fourth Frames, Installation Diagram.

STEP 4

NOTE

Only part of this step can be performed now. The remaining part of the step (physically bending and routing grounding straps up through shield to respective frame studs and then mounting) must be performed as transmitter assembly progresses.

STEP 5 (cont)

Using hardware from crate 1 bag 2, bolt grounding straps (contained in crate 1), as indicated in figure 4-2 to the base assembly.

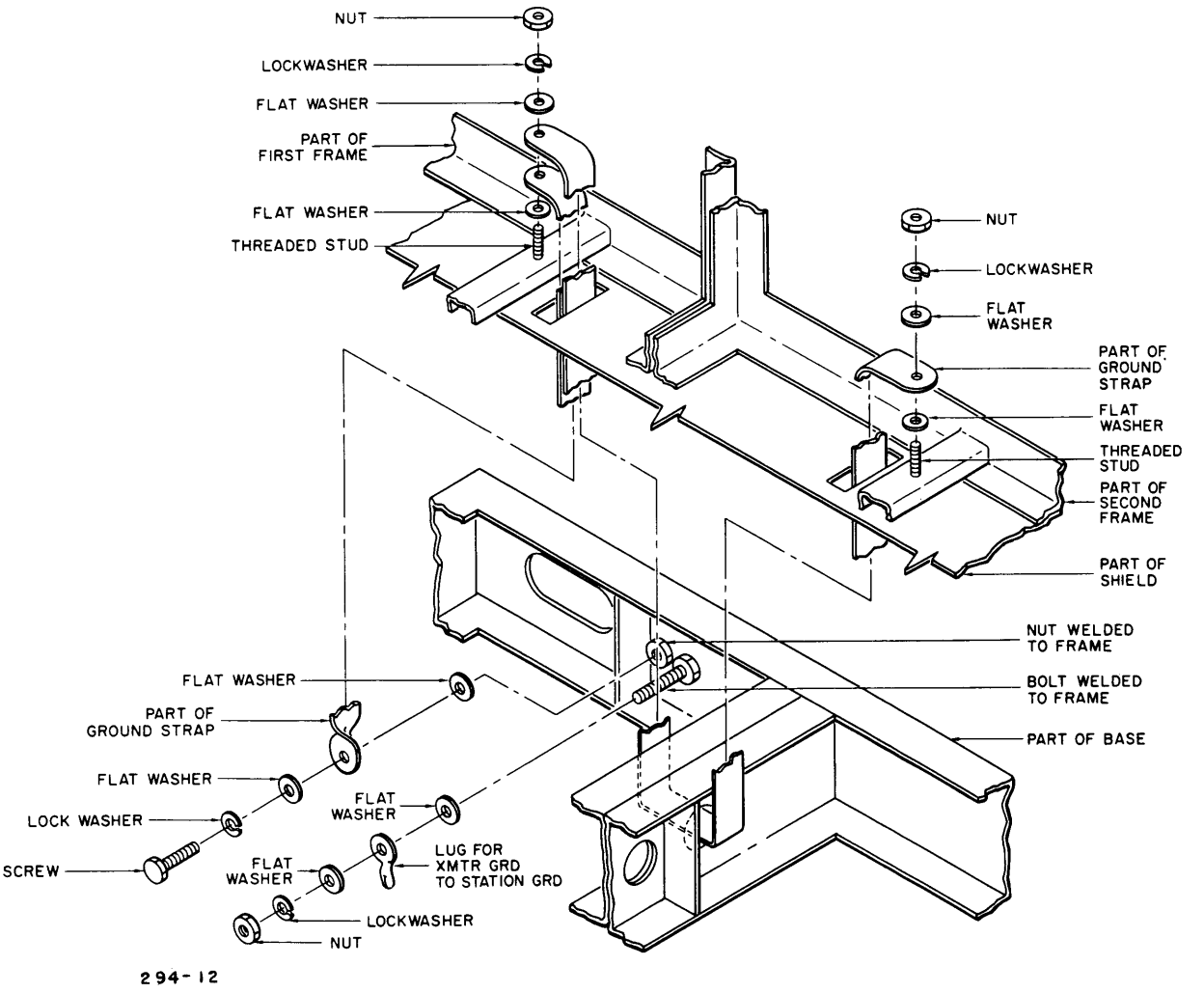


Figure 4-2. Ground Straps, Installation Diagram

STEP 6

NOTES

1. DO NOT connect ac input power cables to the ac input switch box.

STEP 6 (cont)

NOTES (cont)

2. When connecting cables or wires, make sure cables are connected as indicated in the cabling diagram.

a. Route ac input power and input signal cables into base assemblies (see figure 2-1).

NOTE

Ac interconnect cable must be routed through access holes. As transmitter assembly progresses.

b. Connect ac input power cable from switch box and ac interconnect cable CA-615 (contained in crate 1) to power distribution terminal board located on rear of base assembly for third and fourth frames.

STEP 7

NOTES

1. Grounding straps connected in step 5 must be bent and routed through small rectangular access holes in shield.

2. Ac interconnect cable, input signal, and pa-monitor cables must be routed through appropriate access holes in shield.

a. Properly position shield, figure 4-1 on base assembly for first and second frames.

b. Using hardware previously removed, tightly bolt shield to base assembly.

STEP 8

a. Unpack crate 5.

b. Position first frame on base assembly (see figure 4-3).

c. Ground strap coming through shield will be connected later.

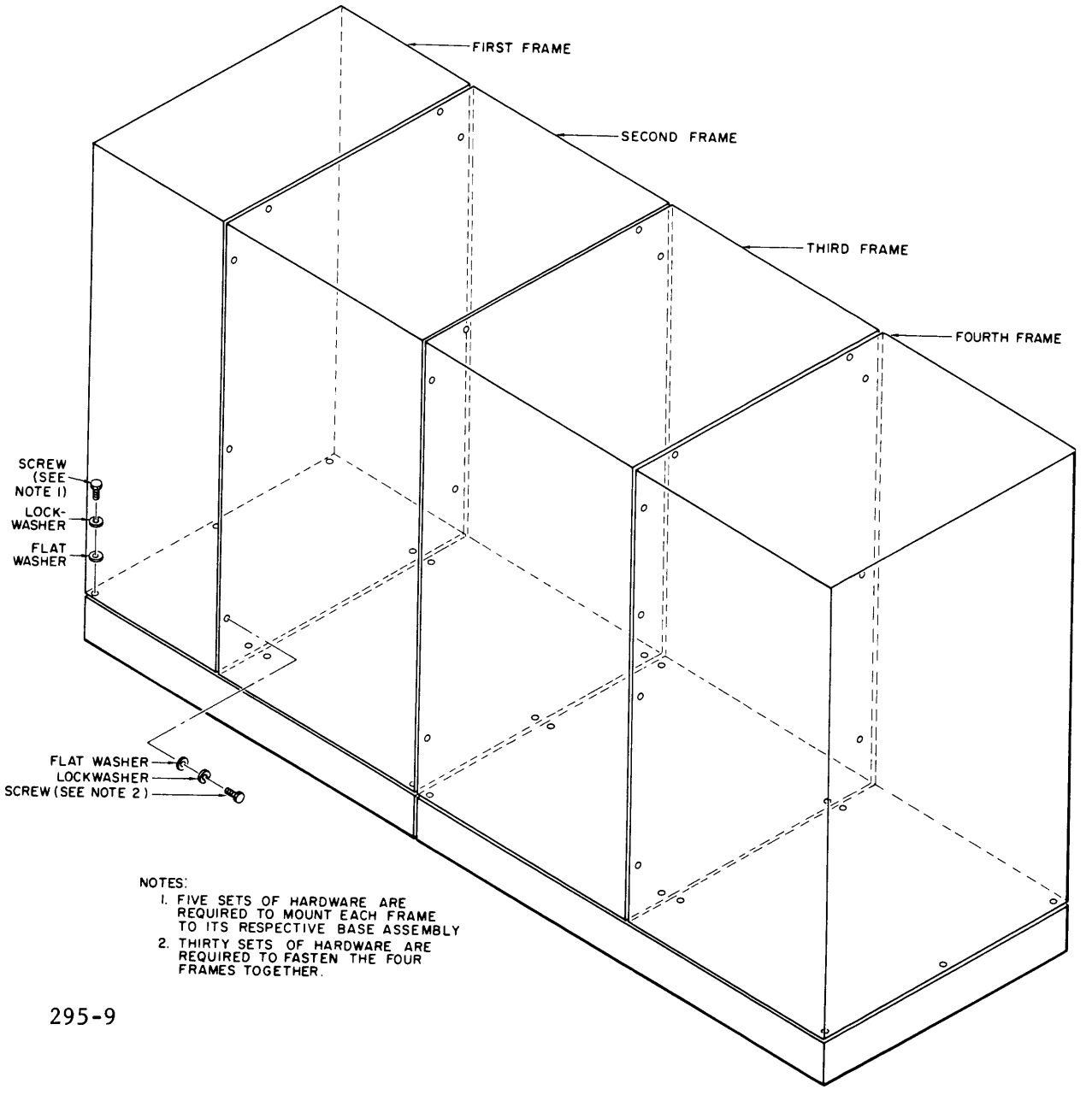


Figure 4-3. First through Fourth Frames, Installation Diagram

STEP 9

a. Unpack crate 6.

b. Position second frame on base assembly (see figure 4-3).

c. Using hardware from crate 1, bag 3, loosely bolt first and second frames to base assembly.

d. Using hardware from crate 1, bag 4, tightly bolt the line filterboard (contained in crate 1) to the wall (first and second frame wall) inside the bottom rear of the first frame.

e. Using remaining hardware from crate 1, bag 4, tightly bolt the line filterboard cover support brackets (contained in crate 1) to the frame wall, one bracket above and below the filterboard.

f. Position and secure filterboard cover (contained in crate 1) to filterboard brackets.

g. Route ac interconnect cable, (coming through access hole in shield), to ac input terminal board or to transformer T802 in bottom rear compartment of second frame; connect colored-coded wires as indicated in the schematic diagram.

h. Mount grounding straps to threaded studs in bottom rear of frames, figure 4-2, using remaining hardware from crate 1, bag 2.

i. Temporarily remove the shield from the upper rear of second frame.

j. Temporarily remove the glass window panel from the front of the second frame.

k. Mount connector JJ-137 (contained in crate 2) on the upper right side of second frame (see figure 4-4).

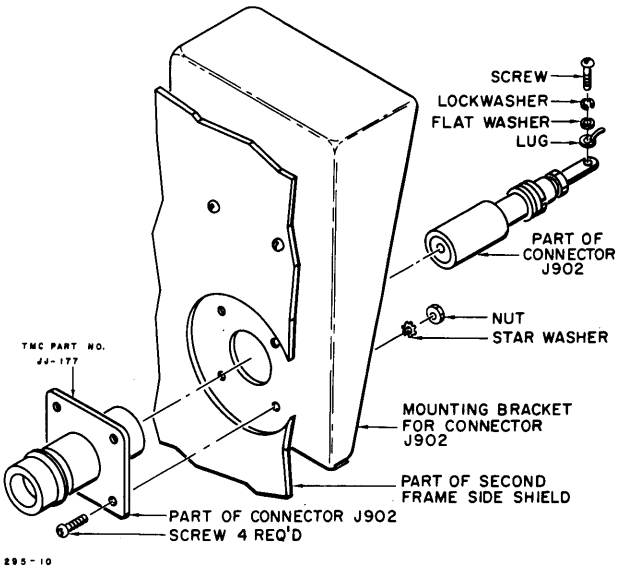


Figure 4-4. Output Connector, Installation Diagram

STEP 10

a. Properly position shield, figure 4-1 on base assembly for third and fourth frames.

b. Route ac input power cables through rectangular access hole in shield.

c. Using hardware previously removed, tightly bolt shield to base assembly (see figure 4-1).

STEP 11

a. Unpack crate 7.

b. Position third frame on base, figure 4-3 adjacent to second frame.

c. Temporarily remove outer and inner r-f shields from upper rear compartments of the third frame.

d. Temporarily remove glass-window panel from the front of the third frame.

STEP 12

a. Unpack crate 8.

b. Position the fourth frame on base, figure 4-3 adjacent to the third frame.

c. Temporarily remove the large blank panel from bottom front of the fourth frame.

d. Temporarily remove shield from exposed side of the fourth frame.

e. Using hardware from crate 1 bag 5, loosely bolt third and fourth frames to the base assembly (see figure 4-3).

NOTE

The porcelain insulator must be located on outside of frame when assembled so that it is physically inside the third frame (see figure 4-16).

f. Mount porcelain insulated feedthrough E8114 with hardware (contained in crate 2) to left side of fourth frame.

STEP 13

a. Using hardware from crate 1 bag 6, loosely bolt frames together (see figure 4-3).

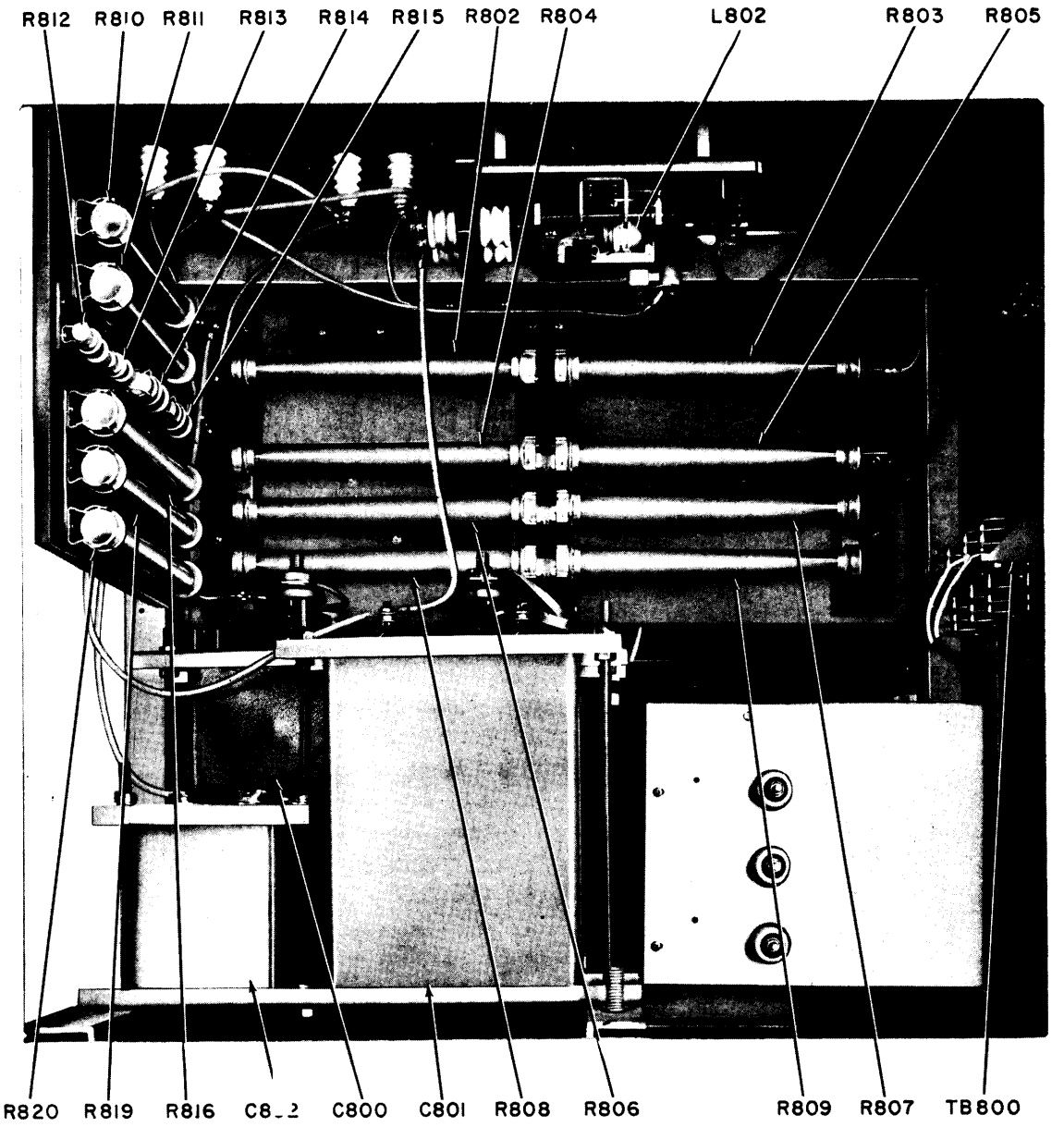
b. After all hardware is loosely bolted, so that all frame assemblies are mechanically aligned, tighten all frame to base and frame to frame hardware.

STEP 14

NOTE

Make sure each resistor is placed in its designated position.

Mount fixed resistors R802 through R820 (contained in crate 1) on resistor board, figure 4-5 in bottom rear section of second frame.



316-29

Figure 4-5. Lower Compartment of the Second Frame, Rear View

STEP 15

a. Remove hardware from retaining strap (figure 4-6).

b. Observe contact fingers inside socket for tube V900; contact fingers should not be bent.

c. Carefully lift tube V900 (contained in crate 1), handles

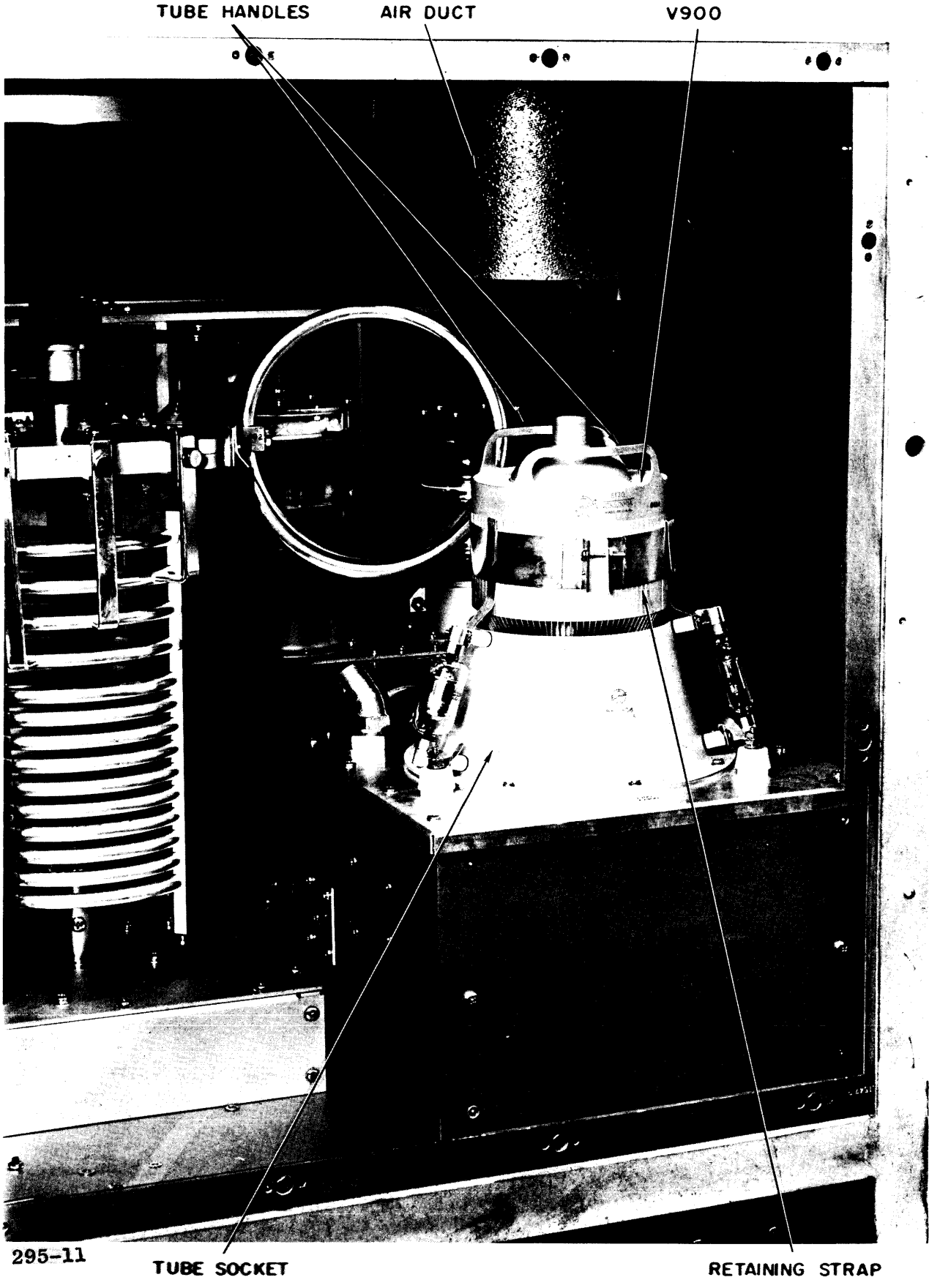


Figure 4-6. Upper Compartment of Second Frame, Rear View

STEP 15 (cont)

first, up into air duct in top of frame until base of tube clears socket.

d. Carefully lower tube straight down into socket until slight resistance is encountered. Make sure tube is centered in socket.

e. In one motion while firmly grasping tube handles: rotate tube about a quarter of a turn and push tube firmly down into socket. A slight amount of effort may be required to seat tube. Caution should be observed in seating tube so as not to damage contact fingers in socket. Check tube seating; it must be all the way down and centered in tube socket.

f. Replace retaining strap hardware.

NOTE

When the porcelain insulator is assembled, it is physically located inside the second frame.

g. Mount porcelain insulated feedthrough E7304 with hardware (contained in crate 2) on the wall, toward rear of the third frame (see figure 4-8).

STEP 16

a. Rotate front panel PA TUNE, PA LOAD, and OUTPUT BAL controls, on the second frame, until corresponding counters indicate "000."

b. Rotate the shafts on variable capacitors C916, C927, and C928 (contained in crate 1) until their plates are fully open (minimum capacitance).

645.18-6

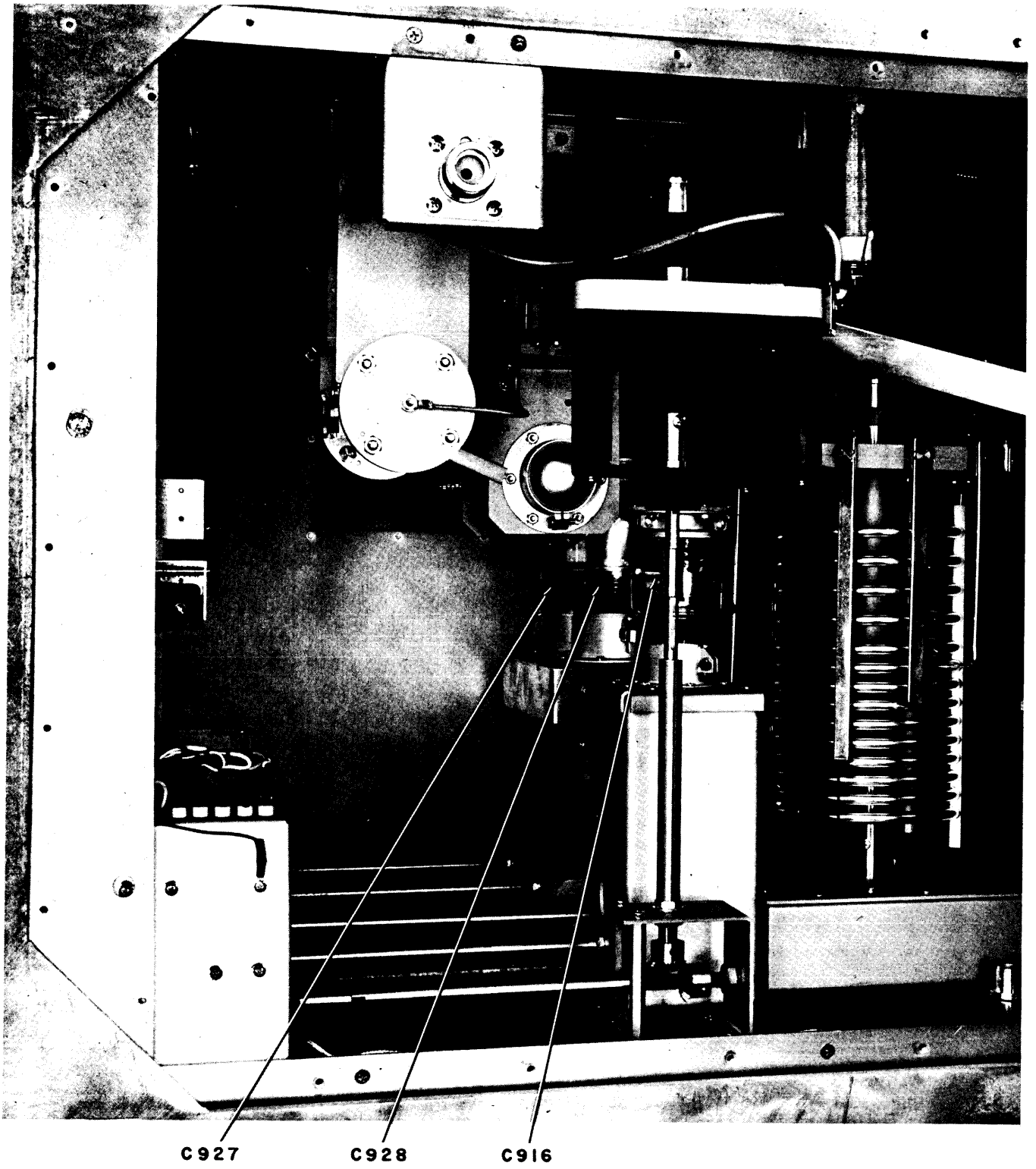
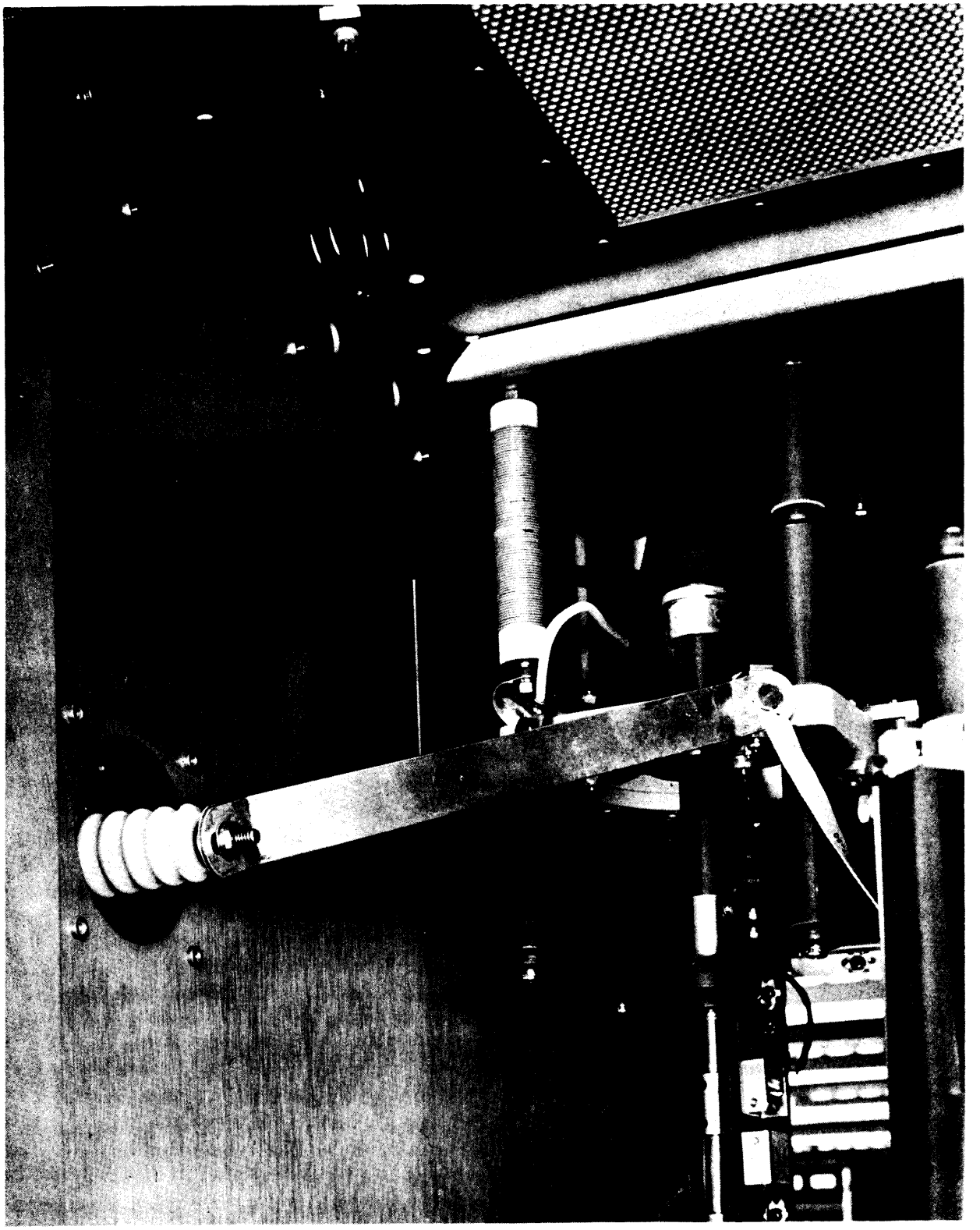


Figure 4-7. Upper Compartment of the Second Frame, Side View.



295-13

Figure 4-8. Insulated Feed-through E7304 and Connections, Detailed View.

STEP 16 (cont)

NOTE

Gears on the capacitor shafts must mesh with gears on front panel tuning shafts.

c. Install capacitors C928 (PA tune), C927 (PA load), and C916 (output balance), figure 4-7, in their respective flange-clamp mountings. Tighten all retaining hardware.

d. Replace the glass window panel on the front of the frame.

STEP 17

a. Unpack crate 9.

b. Temporarily remove the indicator, control, and relay panel from the front of the second frame. To remove panel: Unscrew large slotted hex-head screws on front panel; Pull panel forward to clear frame; carefully rest panel on something of relatively equal height; do not remove or damage wiring connected to panel.

c. Position power transformer T800, figure 4-9, into botton front of second frame.

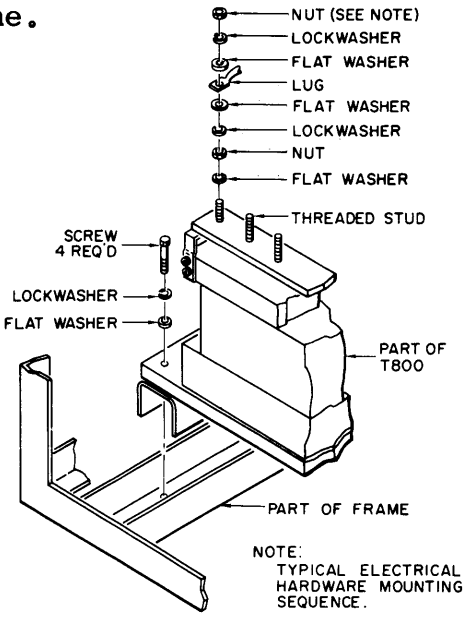


Figure 4-9. Transformer T800, Installation Diagram.

STEP 17 (cont)

d. Using hardware from crate 1, bag 7, tightly bolt T800 to frame.

e. Replace indicator control and relay panel.

STEP 18

a. Temporarily remove blank panel from front lower section of fourth frame.

NOTE

If transmitter is configured for 210-240 vac input, perform step h only. If transmitter is configured for 210-240/380-480 vac input, perform steps b through g only.

b. Unpack crate 10.

c. Using hardware from crate 1, bag 15, mount transformer T8107 in front portion of fourth frame.

d. Connect a-c interconnect cables to T8107 as indicated on schematic diagram.

e. Temporarily remove lower rear shield from third frame.

f. Connect a-c interconnect cables to circuit breaker CB7101 as indicated on schematic diagram.

g. Replace shield to rear of third frame.

h. Connect a-c interconnect cables to circuit breaker CB8101 as indicated on schematic diagram.

STEP 19

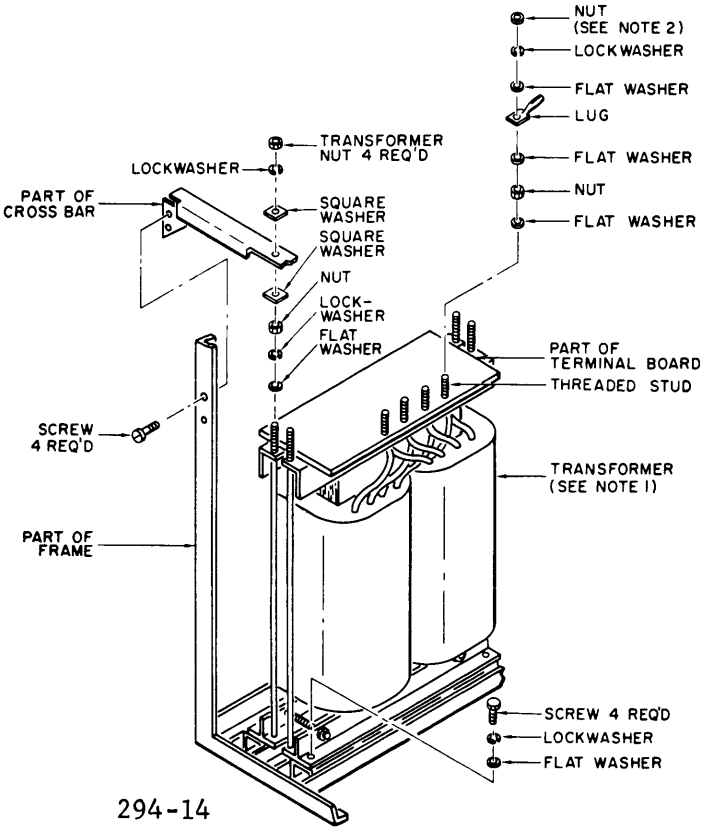
a. Unpack crates 11, 12, and 13.

b. Unbolt crossbar, figure 4-10, on side of frame.

STEP 19 (cont)

c. Position power transformers T8101, T8102, and T8103 into frame (see figure 4-10).

d. Using hardware from crate 1, bag 8, tightly bolt each transformer to frame.



NOTES:
1. TYPICAL TRANSFORMER MOUNTING. THREE POWER TRANSFORMERS ARE REQUIRED FOR EACH FRAME.
2. TYPICAL ELECTRICAL HARDWARE MOUNTING SEQUENCE.

Figure 4-10. Power Transformer, Installation Diagram.

STEP 19 (cont)

e. Connect electrical cables to transformers as indicated by tags on cables in frame.

f. Remount large blank front panel and side shield to frame.

NOTE

Threaded studs on transformers must be connected to the crossbar.

g. Remount crossbar to frame.

STEP 20

a. Unpack crate 14.

b. Temporarily remove the indicator control panel from front of third frame. To remove panel: Unscrew large slotted hex-head screws on front of panel; Pull panel forward to clear frame; carefully rest panel on something of relatively equal height; do not remove or damage wiring connected to panel.

NOTE

The off center electrical connecting studs on top of transformer must be located toward rear of frame when T7101 is positioned.

c. Temporarily remove transformer mounting hardware from frame.

d. Position power transformer T7101, into bottom front of the third frame.

e. Using hardware previously removed, tightly bolt T7101 to frame. A lockwasher should be placed between flat washer and head of bolt.

f. Connect electrical cables to transformer as indicated by tags on wires in frame.

g. Replace indicator control panel.

STEP 21

a. Unpack crate 15.

STEP 21 (cont)

CAUTION

Do not damage the four threaded studs underneath choke.

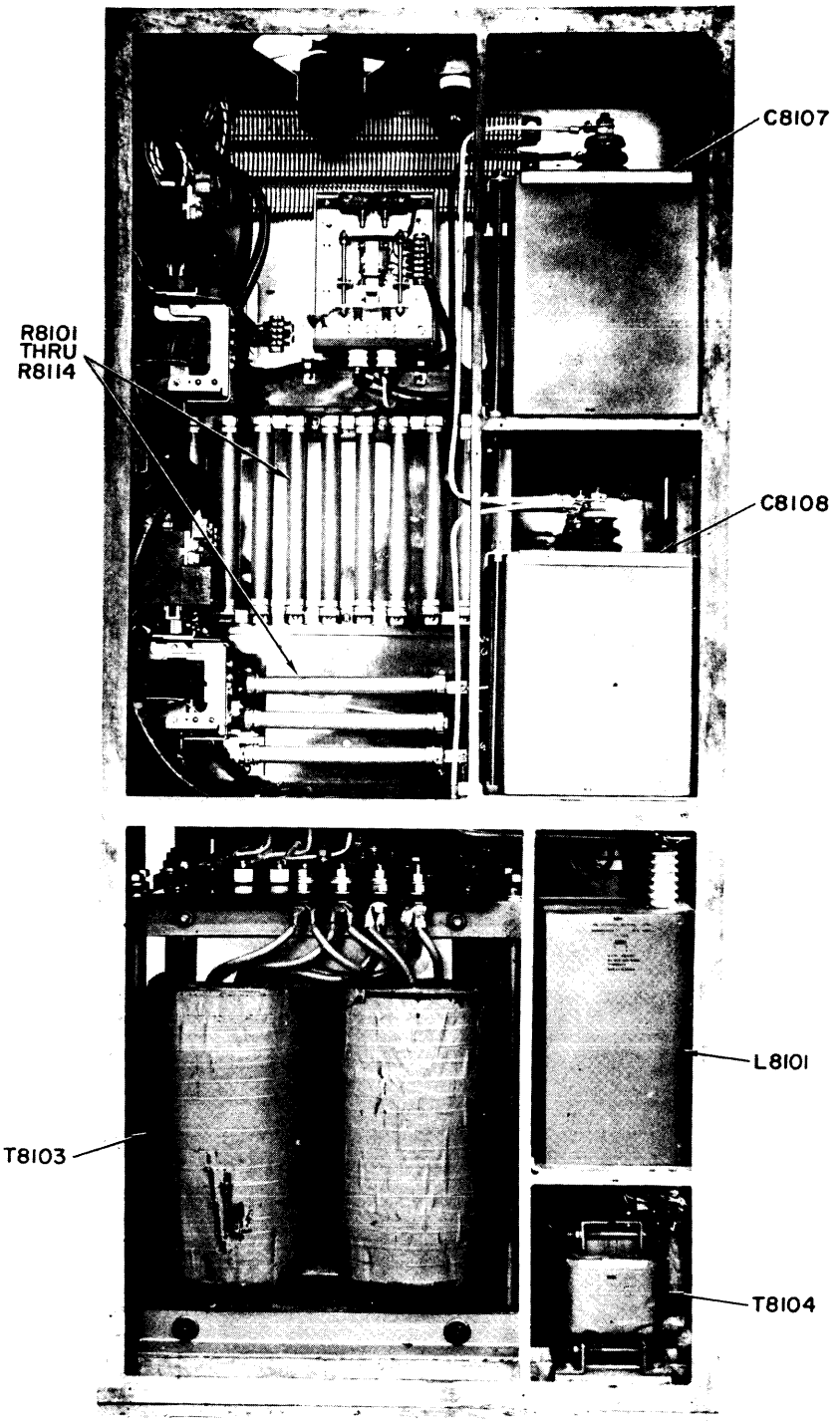


Figure 4-11. Fourth Frame, Rear View.

STEP 21 (cont)

b. Temporarily remove hardware from four studs on bottom of the choke.

c. Position filter choke L8101 rear of fourth frame, figure 4-11, above auto-transformer T8104. Make sure the two off-center porcelain electrodes on top of choke are closest to side of frame.

NOTE

Electrical connections should be made after capacitors C8107 and C8108 are installed.

d. Using hardware previously removed in step b, secure choke to frame. A lockwasher should be positioned between flat washer and hex-head nut.

STEP 22

a. Unpack crate 16.

b. Temporarily remove plexi-glass safety shield, figure 4-12, mounted on rear of fourth frame.

NOTE

Mounting assemblies for both capacitors are identical.

c. Remove mounting assemblies for capacitors C8107 and C8108 from frame.

d. Position capacitors C8107 and C8108 in frame (figure 4-11).

e. Replace capacitor mounting assemblies (figure 4-12).

f. Replace plexi-glass safety shield on frame.

g. Connect electrical cables to capacitors C8107 and C8108 and choke L8101 as indicated by tags on cables in frame.

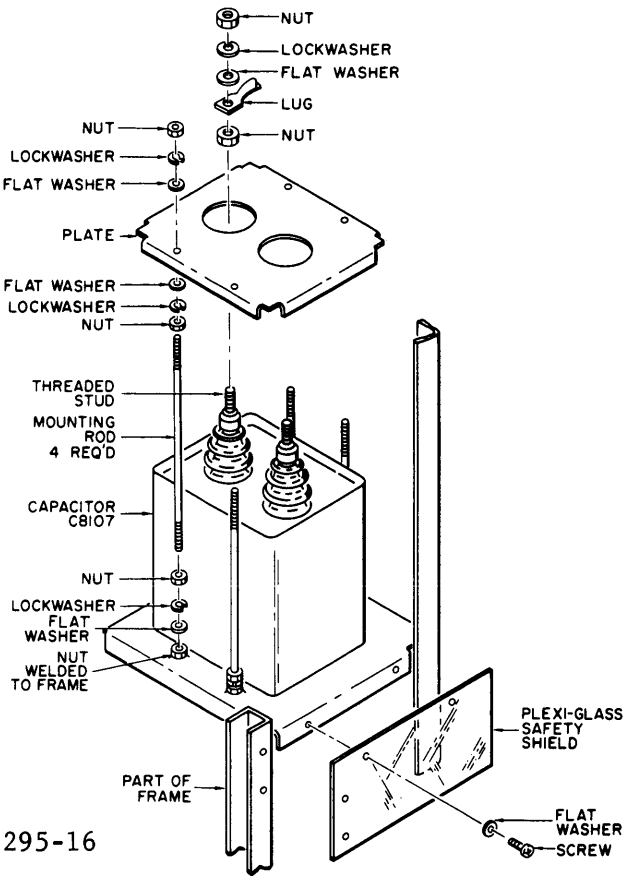


Figure 4-12. Filter Capacitor, Installation Diagram

STEP 23

Mount resistors R8101 through R8114 (contained in crate 1) or resistor board in rear of fourth frame (see figure 4-11).

STEP 24

a. Remove hardware holding rear bracket, figure 4-13 , to top of frame and end of coil L7304 attached to angle bracket.

b. Loosen set screws on both flange-clamps.

c. Position capacitor C7325 (contained in crate 2). And remount rear flange-clamp bracket to top of frame (figure 4-13).

d. Tighten both flange-clamp set screws to insure a good electrical connection to C7325.

e. Remount coil L7304 to the angle bracket.

f. Mount capacitor C7316 (contained in crate 2).

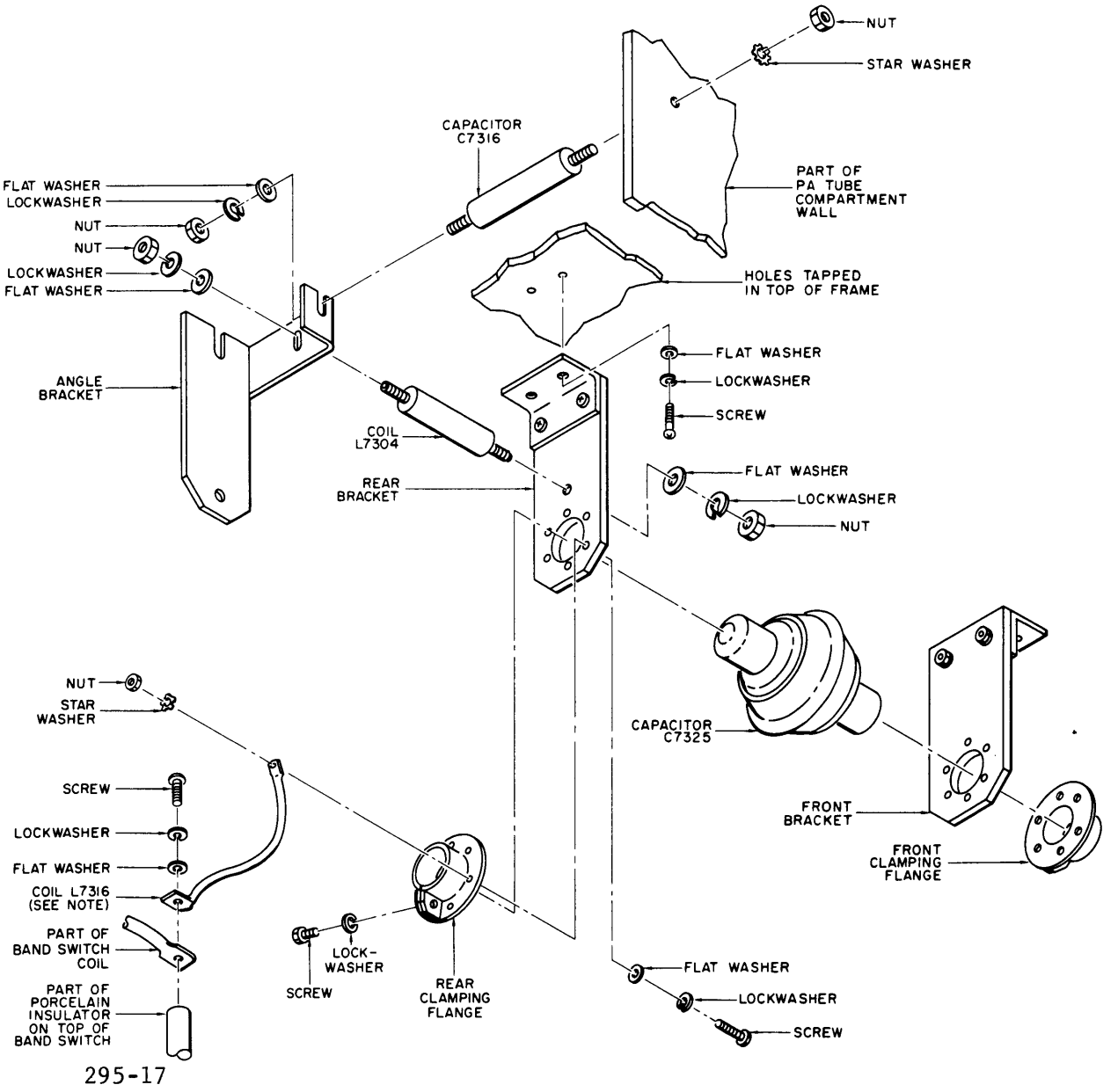


Figure 4-13. Third Frame Pa Circuit Components, Installation Diagram.

STEP 25

a. Unpack crate 17.

b. Back out three allen-head shaft set screws, figure 4-14. in shaft on band switch mounting plate in rear of fourth frame.

c. Temporarily remove hardware from threaded studs on band switch mounting plate.

NOTE
Do not remove front bracket from leg of band switch.

c. Temporarily remove three bolts from front bracket, figure 4-14, which is attached to front left leg of band switch.

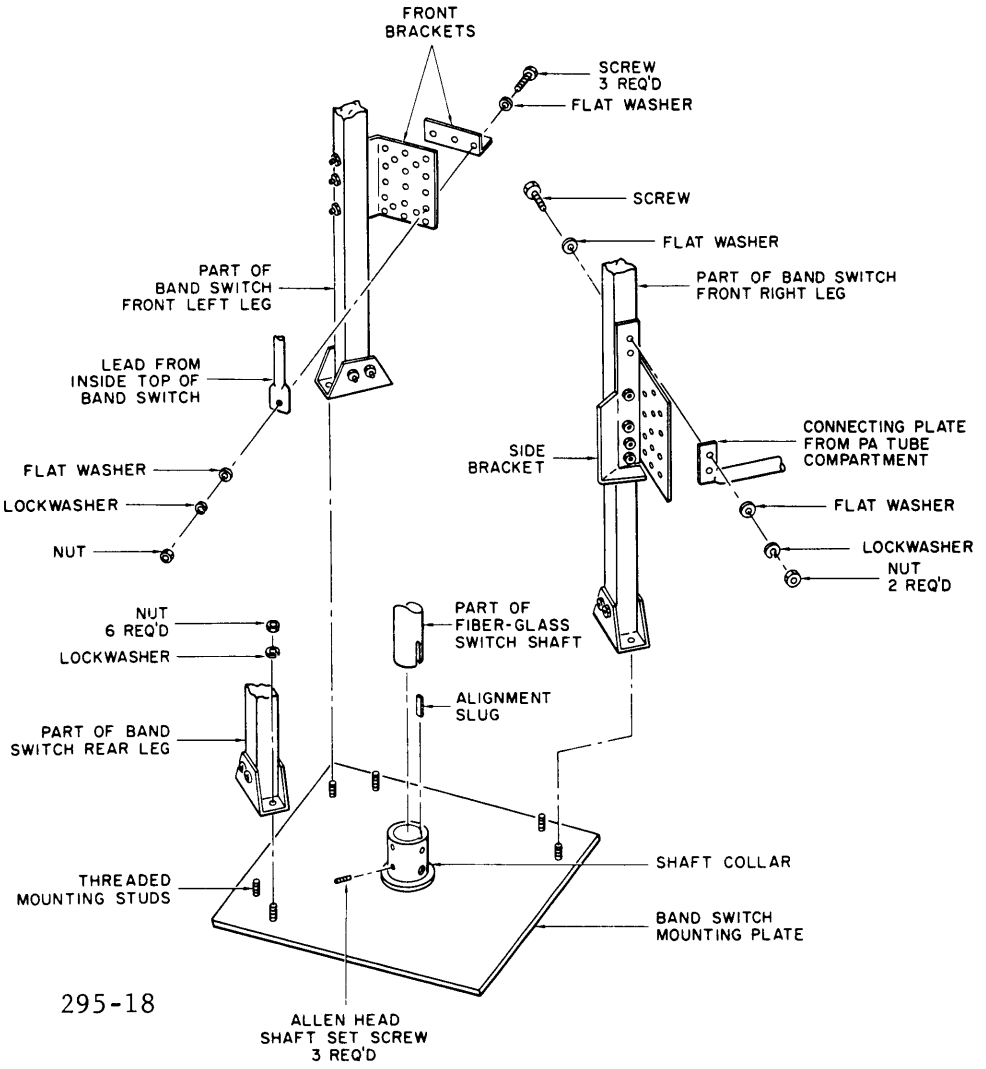


Figure 4-14. Third Frame Band Switch, Installation Diagram.

d. Temporarily remove two bolts, figure 4-14, from top of side bracket on front right leg of band switch.

e. Tilt top of band switch forward and carefully insert into rear of fourth frame over its mounting plate. Once the switch is in this position, carefully lower switch onto mounting plate so that the six threaded mounting studs and respective

holes in all leg brackets of switch align. Also check alignment of fiber-glass shaft alignment slug, and shaft collar.

f. Using hardware removed in step c, secure band switch to mounting plate (see figure 4-14).

g. Tighten three allen-head set screw in shaft on mounting plate to secure fiber-glass switch shaft.

h. Using hardware removed in step d, connect plate lead from PA tube compartment to side bracket of band switch.

i. Replace three bolts that attach front brackets, figure 4-14; include lead from inside top of band switch in hardware sequence.

j. Connect coil L7316 (taped to top of band switch during shipment of transmitter) to porcelain insulator on top of bandswitch and to flange-clamp (electrically connected to capacitor C7325, see figures 4-14 and 4-15).

STEP 26

NOTES

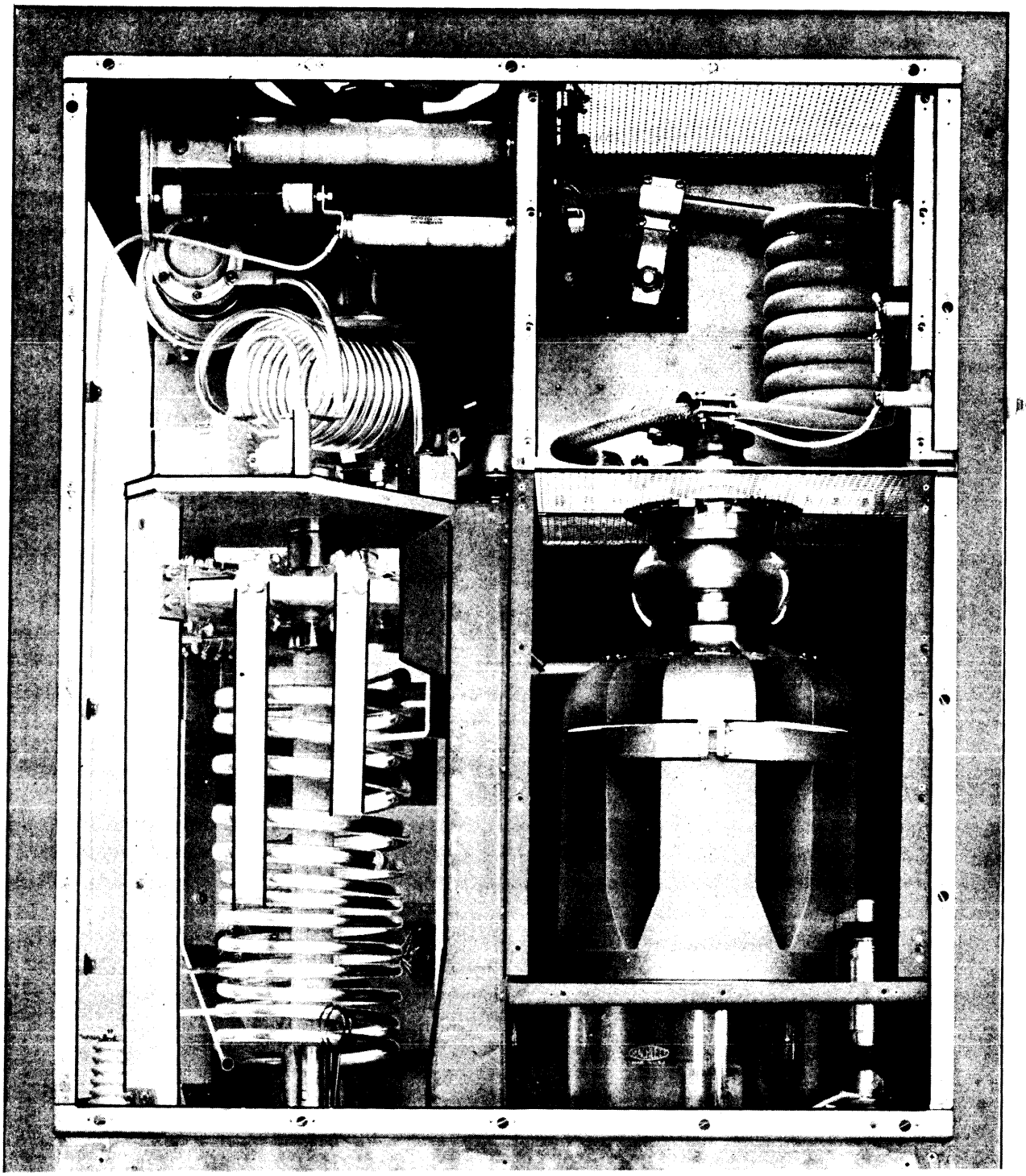
1. Gears, figure 4-16, on capacitors C7330 and C7332 shafts must mesh with gears on front panel tuning shafts.

2. Shaft, gear assemblies and bracket assembly for capacitor C7331 must line-up (see figure 4-16).

a. Insert capacitors C7328, C7330, C7331, and C7332 (contained in crate 2) into respectively designated mounting assemblies (see figure 4-16).

b. With tandem chain, figure 4-16, removed, rotates shaft of capacitors C7331 and C7332 so that plates in both capacitors are fully closed.

626.11-7



295-19

Figure 4-15. Third Frame Band Switch and Pa Circuit Components, Rear View.

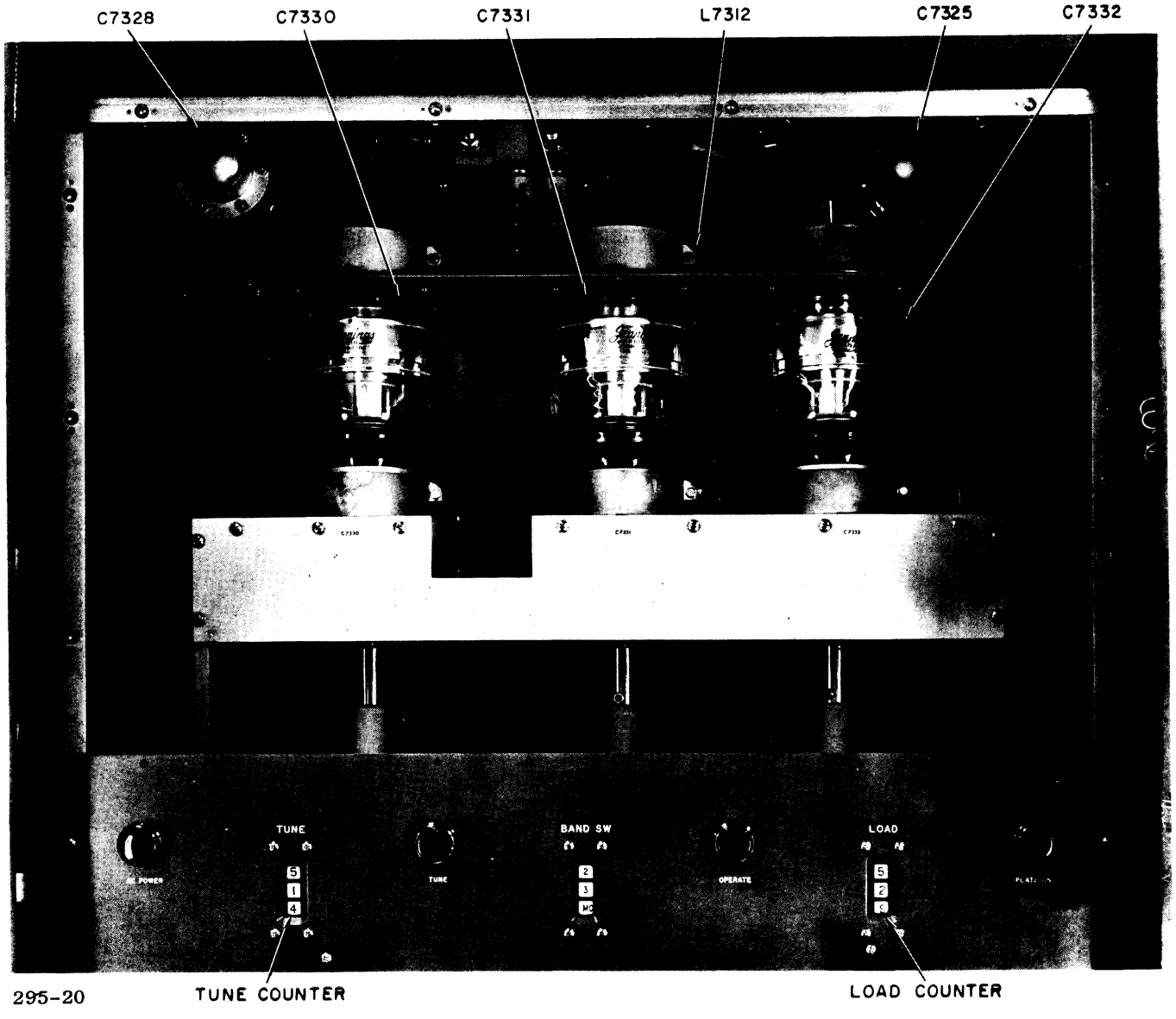


Figure 4-16. Third Frame Pa Compartment, Front Views (sheet 1 of 3).

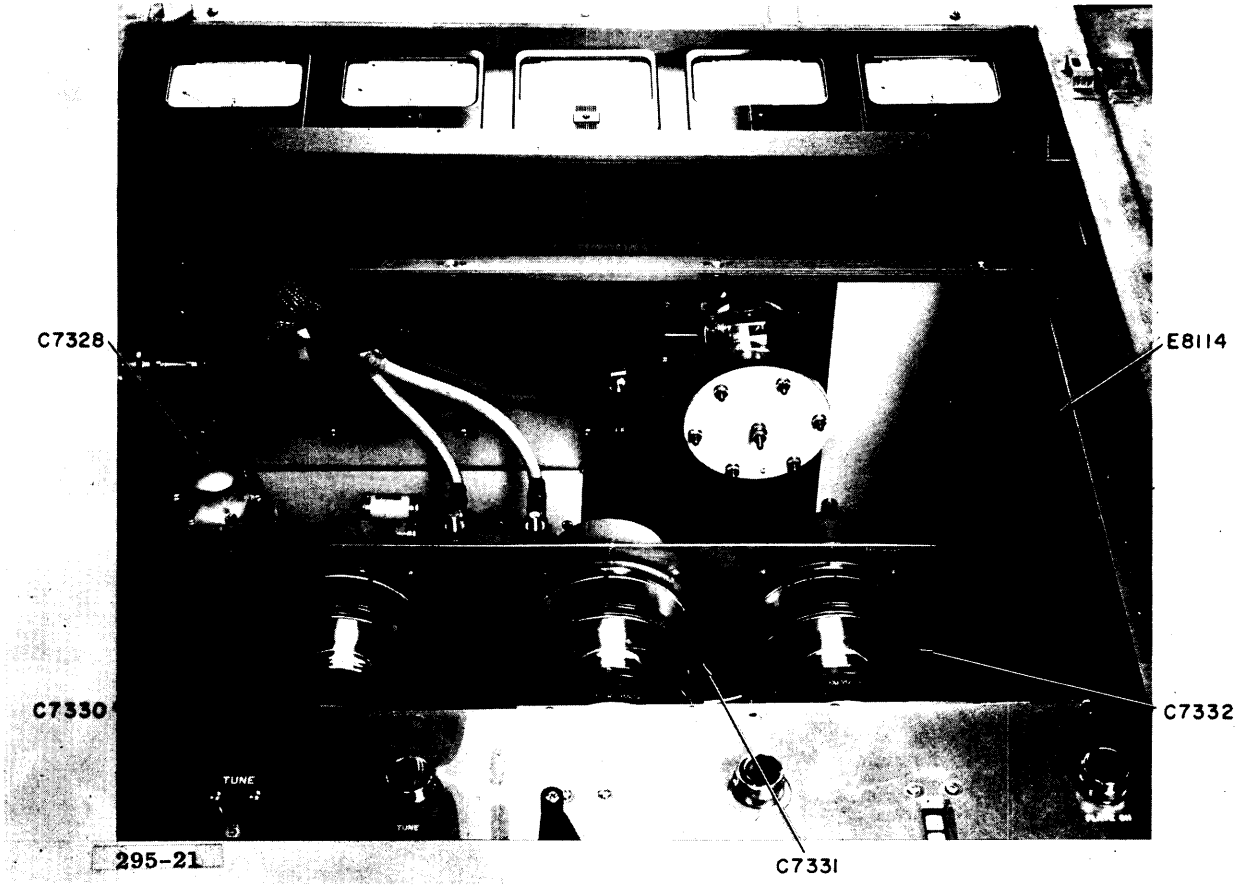


Figure 4-16. Third Frame Pa Compartment, Front Views (sheet 2 of 3).

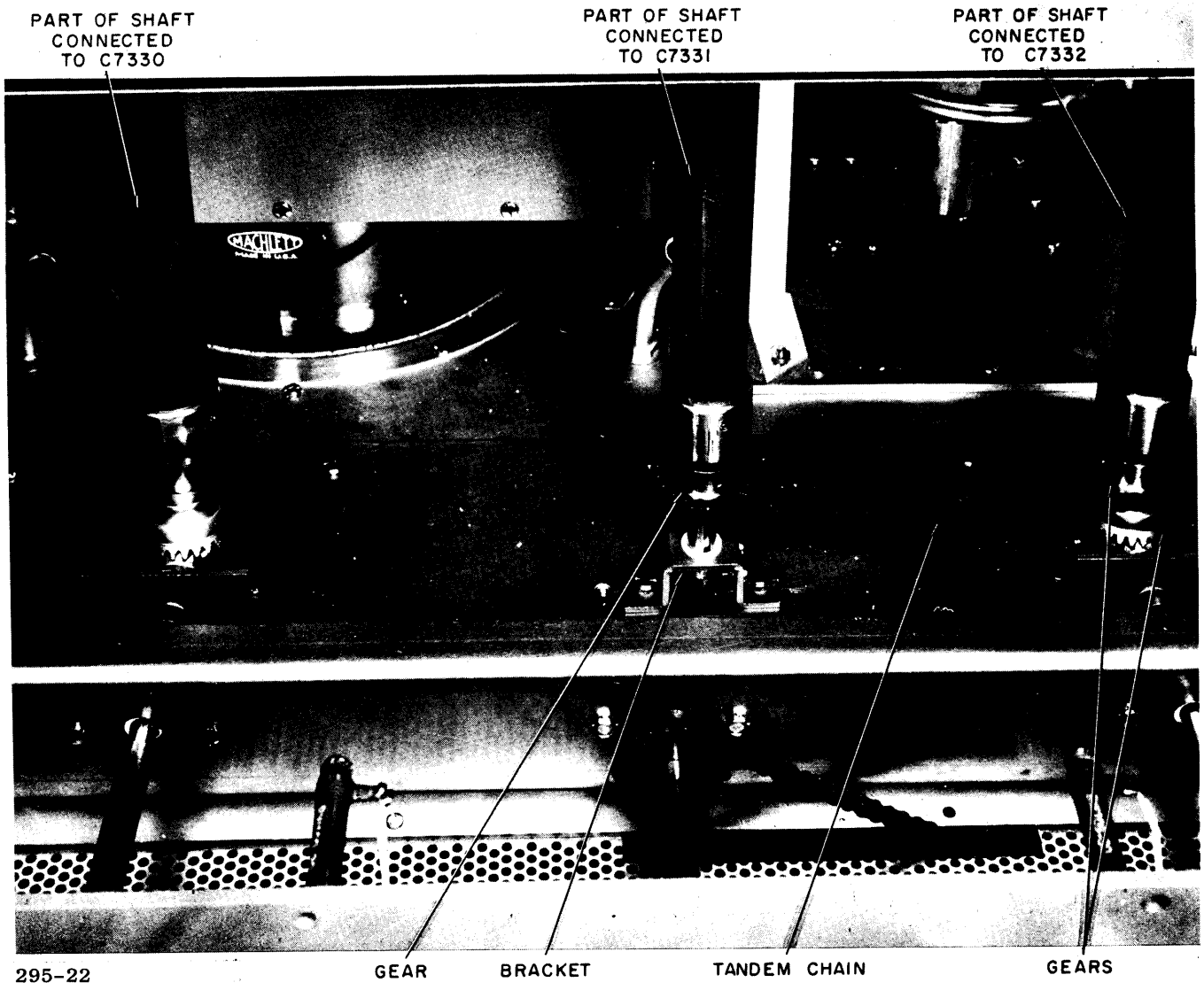


Figure 4-16. Third Frame Pa Compartment, Front Views (sheet 3 of 3).

STEP 26 (cont)

CAUTION

Do not force control past its mechanical stop.

c. With tandem chain replaced, figure 4-16 rotate front panel LOAD control until capacitor plates are fully open.

d. Set front panel LOAD counter to "000."

NOTES

1. DO NOT overtighten set screws.
2. Set screw on flange-clamp (located inside the pa tube compartment) holding capacitor C7328, which is not accessible through front of the frame, will be tighten later.
3. Adjust capacitor C7330 and front panel TUNE control in a similar manner as capacitors C7331 and C7332.

e. Tighten set screws on flange-clamps holding capacitors C7328, C7330, C7331, and C7332.

f. Connect coil L7312 (contained in crate 2) between flange-clamp around capacitor C7331 and porcelain insulator on top of band switch.

STEP 27

a. Connect links on output terminal board for desired output configuration (50-ohm unbalanced or 600-ohm balanced) as indicated by circuit diagram in section 5.

b. Replace glass window panel on front of third frame.

STEP 28

a. Unpack crates 18, 19, 20.

NOTE

The standing wave control drawer, shipped installed in front of first frame, must be removed and installed in the rear of the frame.

STEP 28 (cont)

b. Install each drawer assembly in its designated position, figure 4-17, in first frame as it is unpacked. To install any drawer assembly, proceed as follows:

(1) Untape or unstrap cable assemblies, cable retractors, and all other components secured to the inside of frame for shipment.

(2) Pull center section of the drawer track out until it locks in an extended position.

(3) Position slide mechanisms of drawer in tracks; and, ease drawer forward into rack until lock buttons engage hole in track.

(4) Make necessary drawer cable and electrical connections.

(5) Press lock buttons on track; and, slide drawer completely into compartment.

(6) Using hardware from crate 1 bag 9, secure front panel of drawer to frame.

STEP 29

a. Unpack crate 22.

b. Temporarily remove screen cover from top of RFC Amplifier drawer.

c. Loosen screw on retaining strap (see figure 4-18).

d. Insert tube V203 (contained in crate 1) into tube socket.

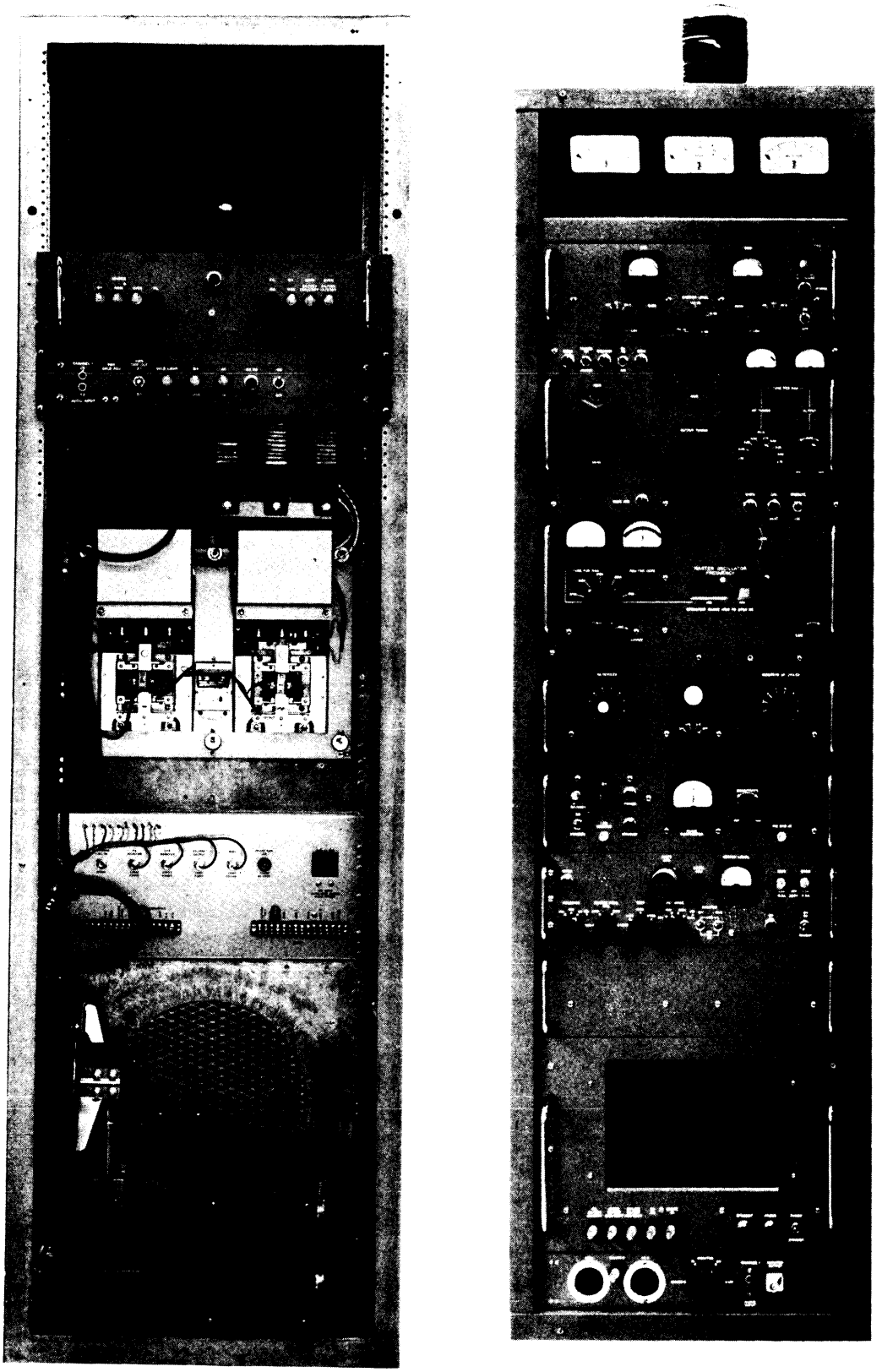
e. Tighten retaining strap screw so that V203 is held securely in place.

f. Replace screen cover on top of drawer.

g. Install drawer assembly in middle bay of second frame.

Front: 645.13-9

Rear: 645.13-2



294-20

Figure 4-17. First Frame, Front and Rear View.

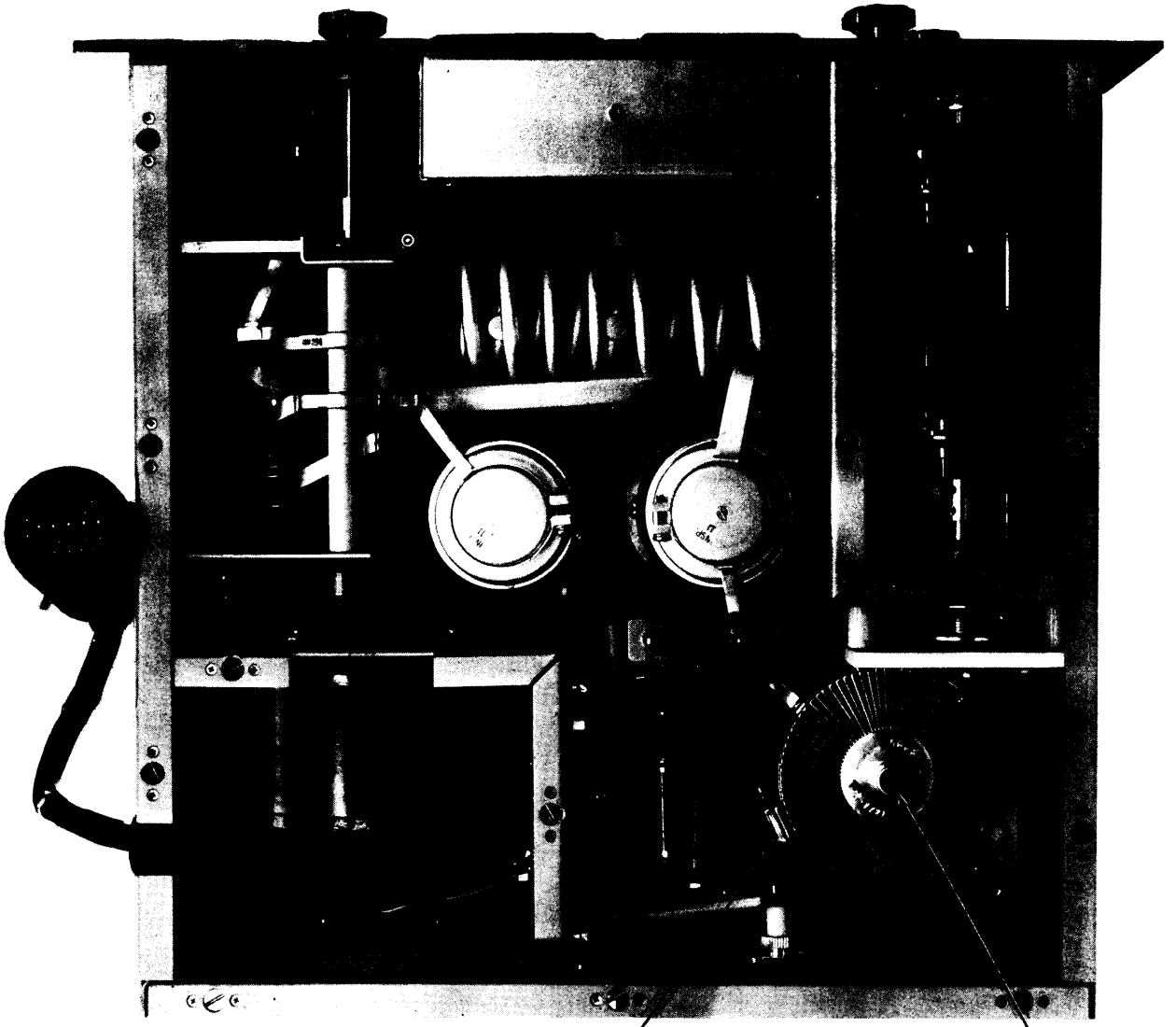


Figure 4-18. RFC Amplifier Drawer, Top View.

STEP 30

a. Unpack crate 23.

NOTE

Steps b and c are applicable only when High Voltage Rectifier AX-103 is used.

b. Insert six high voltage rectifier tubes V600 through V605 (contained in crate 1), figure 4-19, into tube sockets in high voltage rectifier drawer.

c. Attach electrical plate connector caps to tubes.

d. Install drawer into front of second frame.

595.6-3

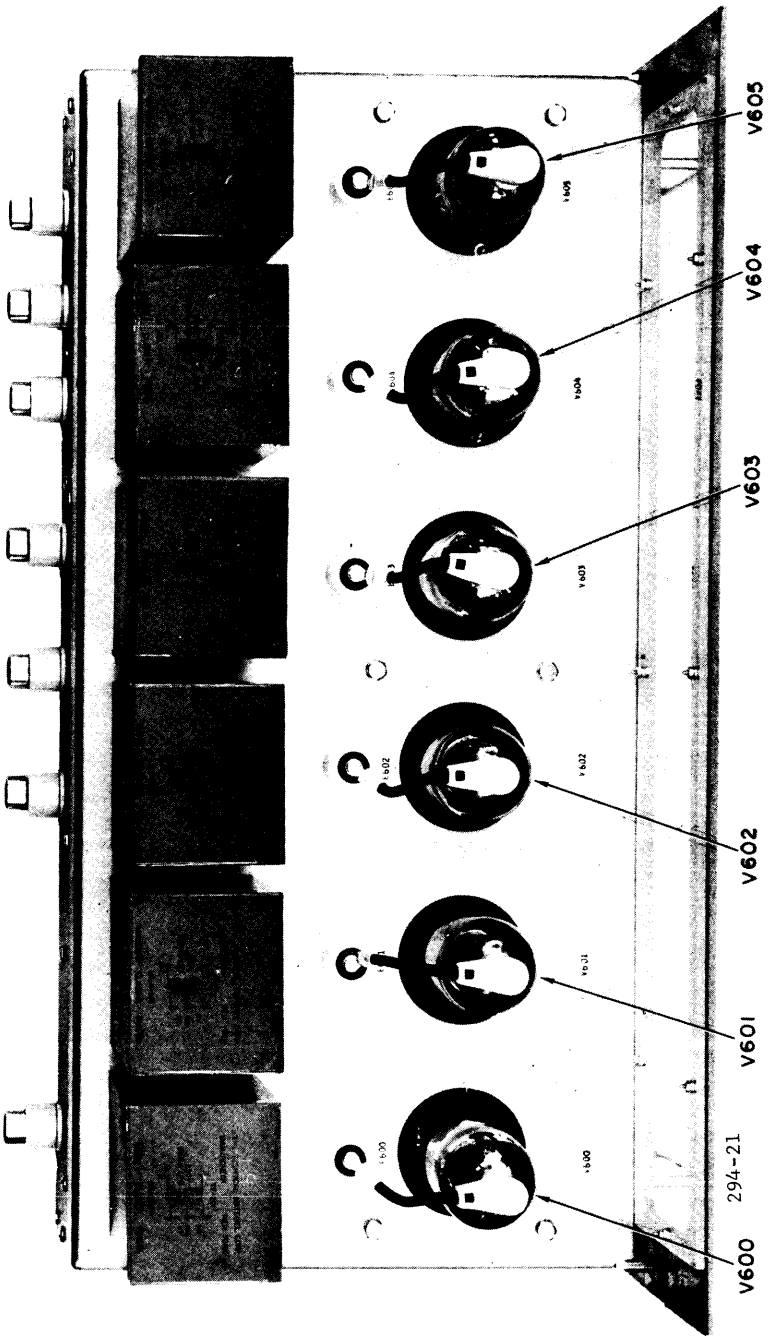


Figure 4-19. High Voltage Rectifier Drawer 600, Top View

STEP 31

a. Unpack crate 24.

b. Install bias power supply drawer into front of third frame.

STEP 32

a. Unpack crate 25.

NOTE

Steps b and c are applicable only when High-Voltage Rectifier AP-105 is used.

b. Insert six high-voltage rectifier tubes V8401 through V8406 (contained in crate 2), figure 4-20, into high-voltage rectifier drawer.

c. Attach electrical plate connector caps to tubes.

d. Install drawer assembly into front of first open bay up from bottom of fourth frame.

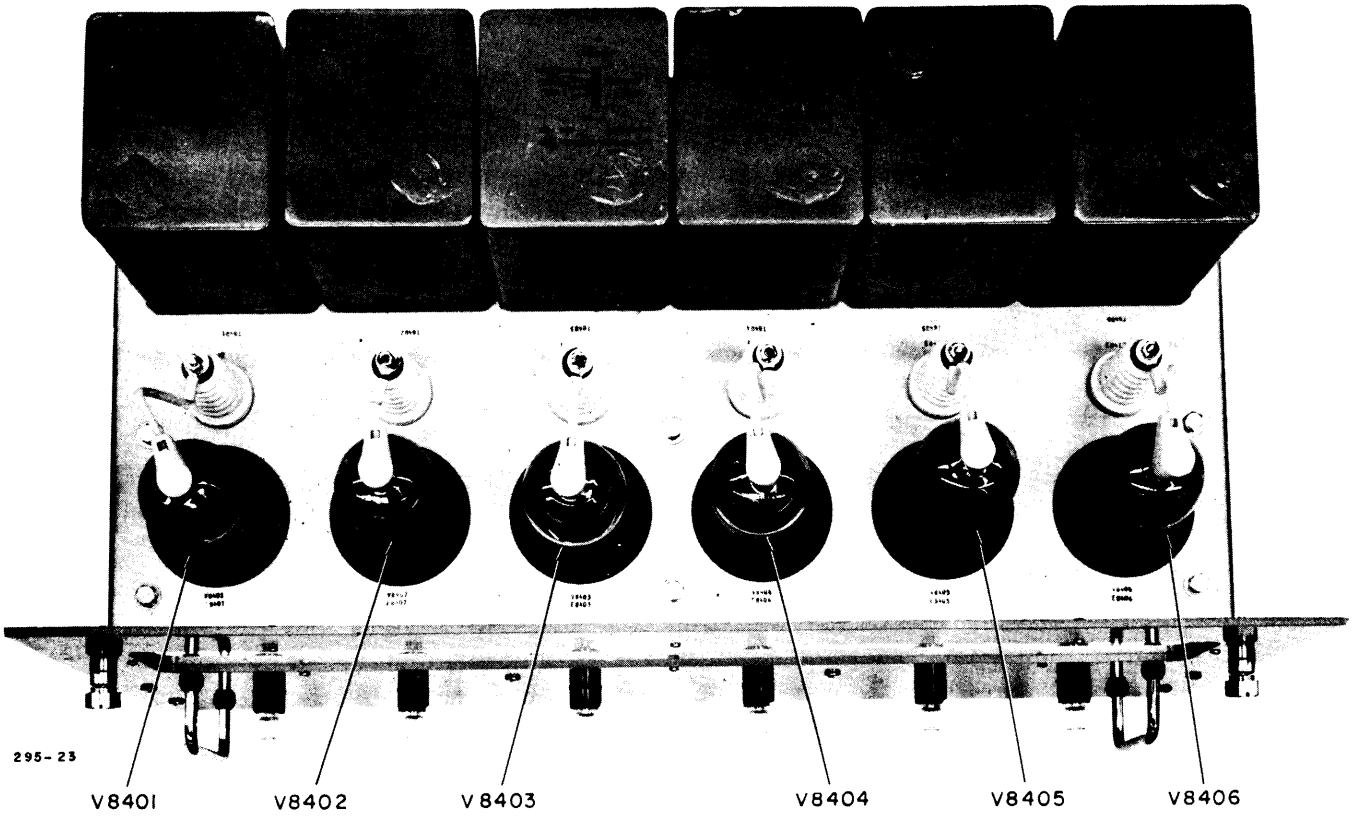


Figure 4-20. High Voltage Rectifier Drawer 8400, Top View.

608.19-25

STEP 33

NOTES

1. Hardware on the rods must be temporarily removed to position rod.

2. Rods must be inserted into bowl assemblies from inside of the frame.

3. Hardware must be replaced to secure rods and bowl assemblies.

Insert threaded bowl rods (contained in crate 2) into porcelain bowl assemblies located on top inside of the fourth frame.

STEP 34

a. Unpack crate 26.

b. Temporarily remove screen cover from top of the crowbar drawer.

c. Install the following components (contained in crate 2), figure 4-21. into the drawer:

1. Resistors R8301, R8302, and R8303.

2. Electron tube V8301.

d. Replace screen cover on drawer.

e. Install crowbar drawer into front of fourth frame, above high voltage rectifier drawer (previously installed).

STEP 35

a. Unpack crate 27.

b. Temporarily remove screen cover from top of antenna tuner drawer.

c. Loosen set screw, figure 4-22, on both flange-clamps.

d. Temporarily remove hardware holding the front bracket to bottom of drawer.

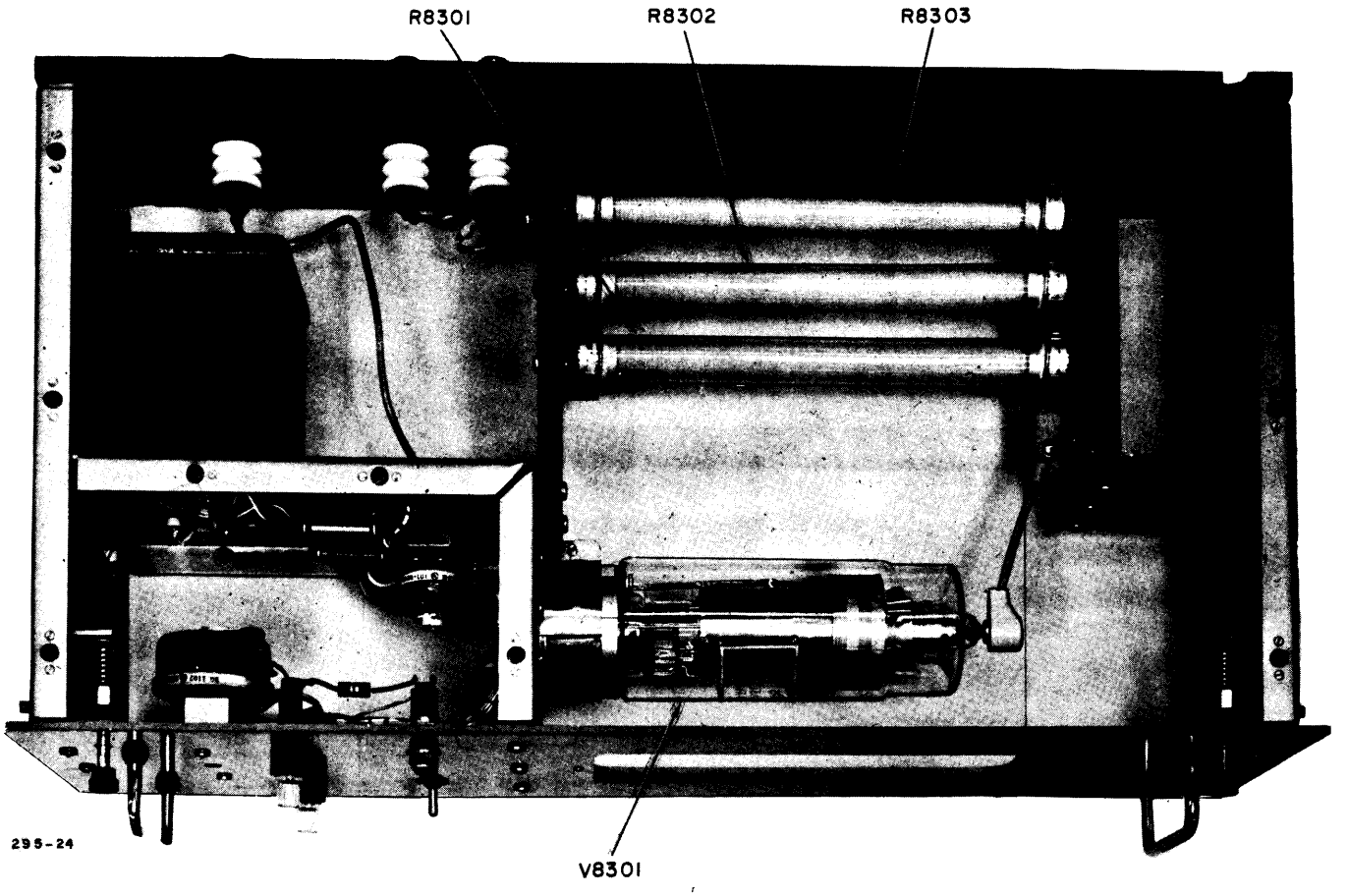


Figure 4-21. Crowbar Drawer 8300, Top View.

STEP 35 (cont)

e. Position capacitor C8207 (contained in crate 2) between flange clamps; remount front bracket on bottom of drawer; and, tighten set screws to insure good electrical connection.

f. Replace screen cover on top of drawer.

g. Install antenna tuner drawer into the front of fourth frame (top bay), above crowbar drawer previously installed.

STEP 36

a. Unpack crate 28 .

608.19-22

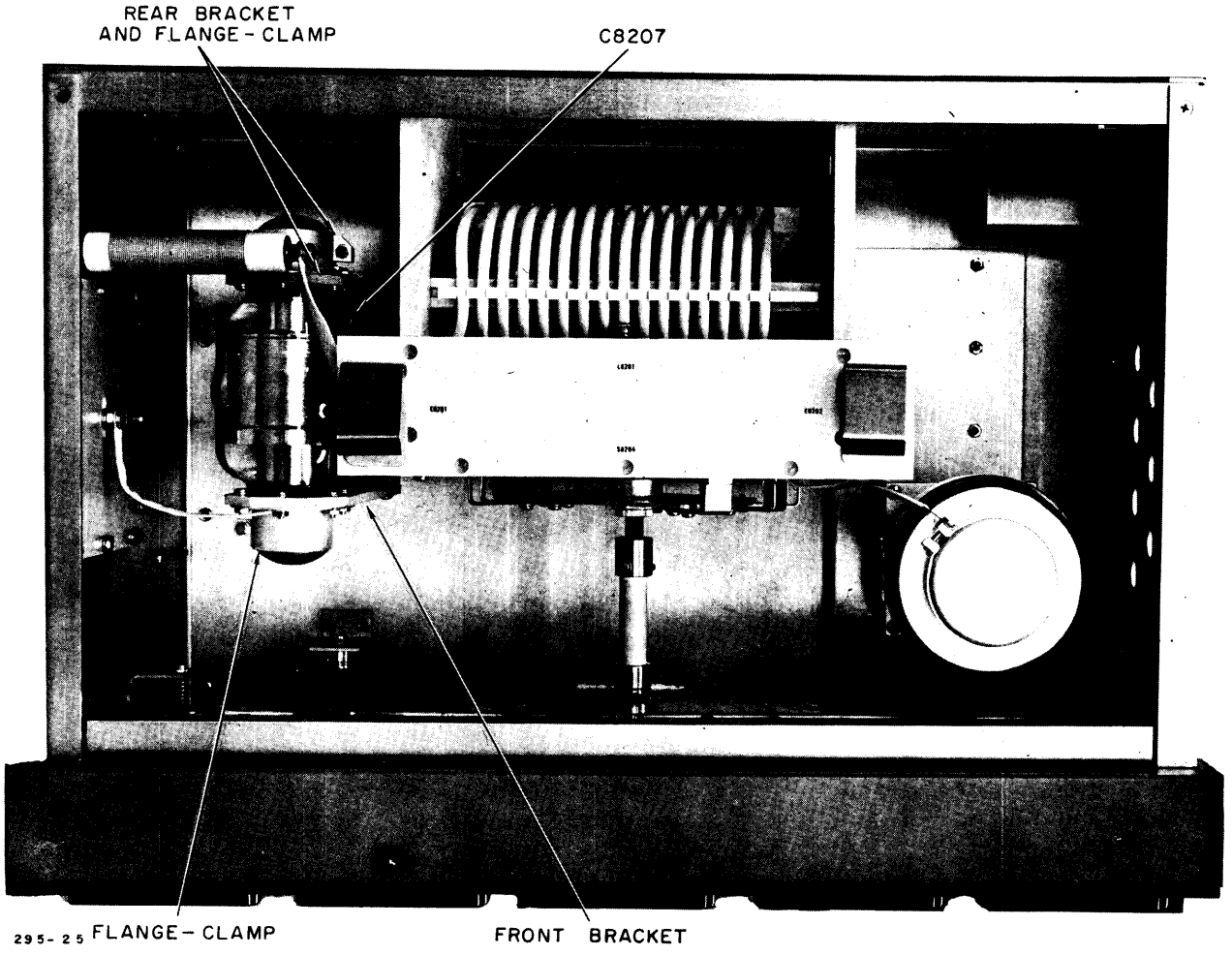


Figure 4-22. Antenna Tuner Drawer 8200, Top View.

b. Temporarily remove hardware retaining inner screen, figure 4-23 , to walls of tube compartment.

c. Temporarily remove hardware from slip ring 4; and then remove the heat sink, from tube compartment.

d. Carefully insert tube V7301 into heat sink.

e. Place heat sink back into tube compartment.

f. Temporarily remove electrical connector cap assembly (for capacitor C7326) from heat sink.

g. Loosen set screw on flange-clamp and insert capacitor C7326 (contained in crate 2) into flange-clamp.

h. Place electrical connector cap assembly on capacitor C7326; and remount assembly to heat sink.

i. Tighten set screw on flange-clamp to insure a good electrical connection to C7326.

j. Replace hardware on slip ring 4; tighten screws until ring holds heat sink securely in place.

k. Loosen allen head set screw on slip ring 3 and place down on tube.

l. Reinstall inner screen in position; and, secure teeth on screens to tube with slip ring 3 by tightening set screw (see figure 4-15).

CAUTION

Slip rings 1 and 2, figure 2- must not touch each other or screens.

m. Place slip rings 2 and 1 (in this order), figure 4-15 on tube and tighten set screws.

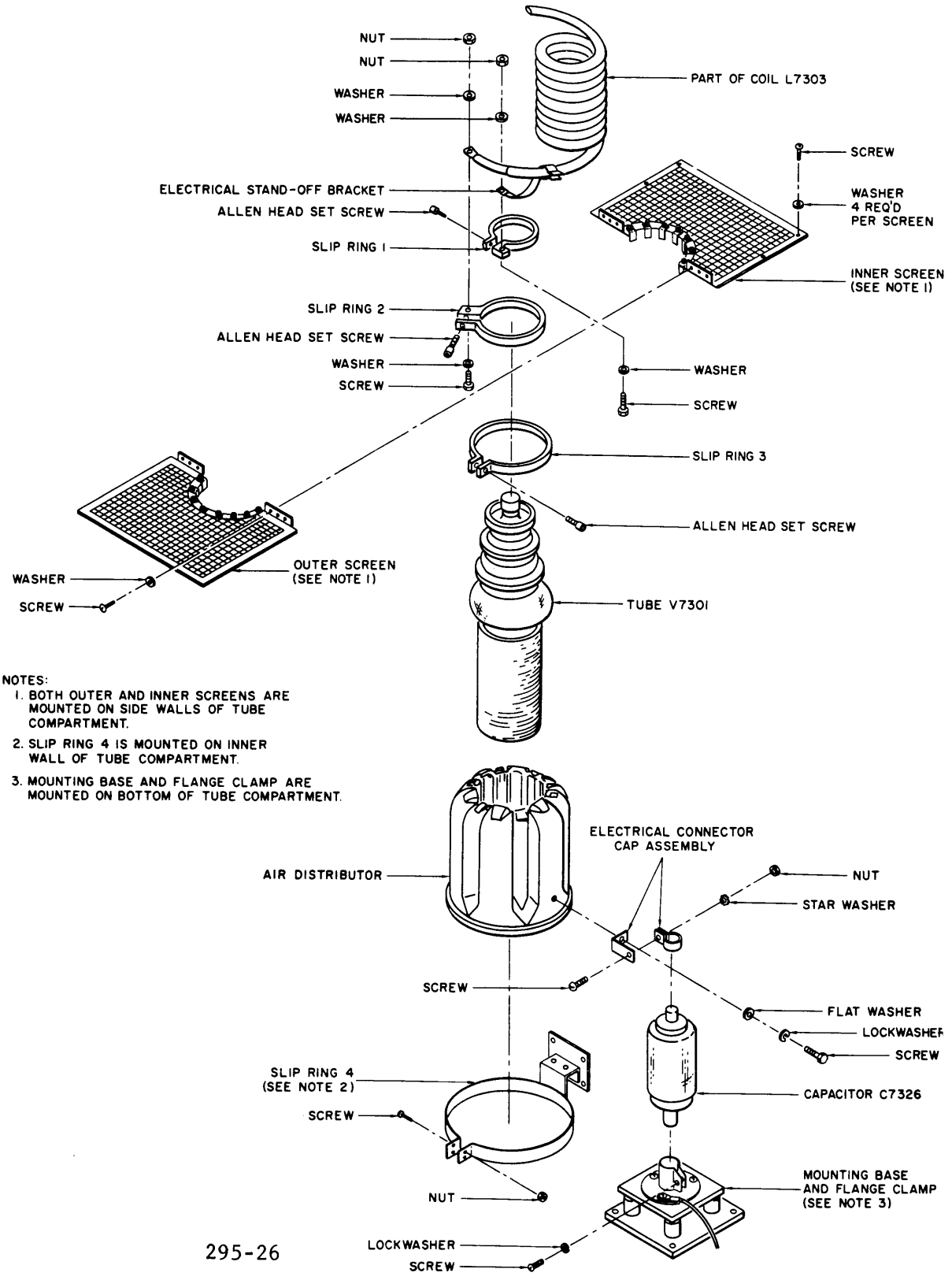


Figure 4-23. Third Frame Pa Tube Compartment, Installation Diagram.

STEP 36 (cont)

n. Tighten the set screw on the flange-clamp, located on inner compartment wall behind coil L7303, that holds one end of capacitor C7328 (previously installed). Do not overtighten set screw.

o. Replace shield covers on pa tube compartment.

p. Replace outer metal shield cover on upper section of third frame.

STEP 37

Replace all shields, previously removed, on appropriate frames.

STEP 38

a. Remove one side of crates 29 and 30.

NOTE

To prevent covers and trim from being scratched, do not remove items from a crate until the item is called for in the procedure.

b. Check each item contained against the equipment supplied list.

STEP 39

Using hardware from crate 1 bag 11, mount rear door hinges (contained in crate 1) on rear of the frames.

STEP 40

a. Appropriately position cover tops MS-1699 and MS-1997 (contained in crates 29 and 30, respectively) on top of the frames (see figure 4-25).

b. Using hardware from crate 1 bag 14, tightly bolt cover tops to respective frames.

STEP 40 (cont)

c. Insert appropriate size button plugs (contained in crate 1) into cover tops to frame mounting holes.

STEP 41

Using hardware from crate 1 bag 10, assemble and mount the following items (contained in crate 1) as prescribed.

(1) Assembly door latch plates, figure 4-24, to door latch brackets with two phillips flat head screws.

(2) Mount the resultant door latch assemblies on top and bottom, front and rear, of frames (see figure 4-23).

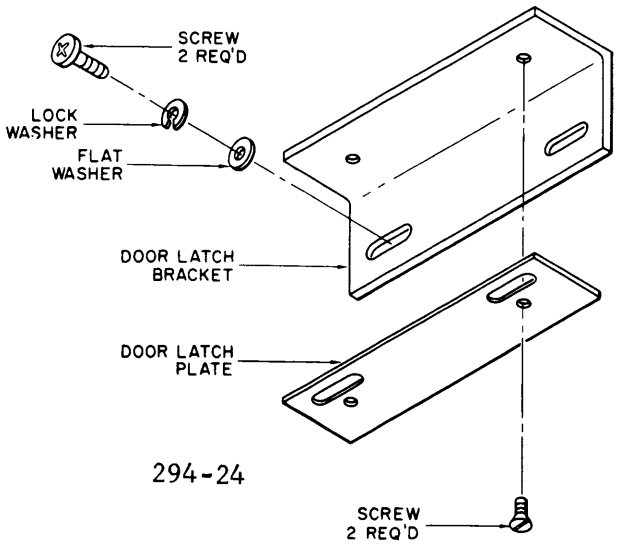


Figure 4-24. Door Latch Plates and Brackets, Installation Diagram.

STEP 42

a. Temporarily remove two sets of mounting hardware from threaded studs on bottom of high voltage lamp socket assembly (contained in crate 1).

b. Position lamp socket assembly on cover top, above first frame (see figure 4-17).

STEP 42 (cont)

NOTES

1. The large rubber washer must be placed between socket and cover when mounting.

2. The two wire leads coming from the bottom of socket feed through hole in cover and frame; and, connect to terminal board E3003 (mounted inside top of first frame).

c. Using hardware removed from socket assembly, replace in the following sequence: first, a flat washer; second, a lock washer; and third, a nut. Tighten hardware so that lamp socket is held securely in place; do not over tighten.

STEP 43

a. Using hardware from crate 1 bag 12, push on the tinnerman type clip-nuts onto small "U" shaped brackets welded to front of the first through four frames.

NOTE

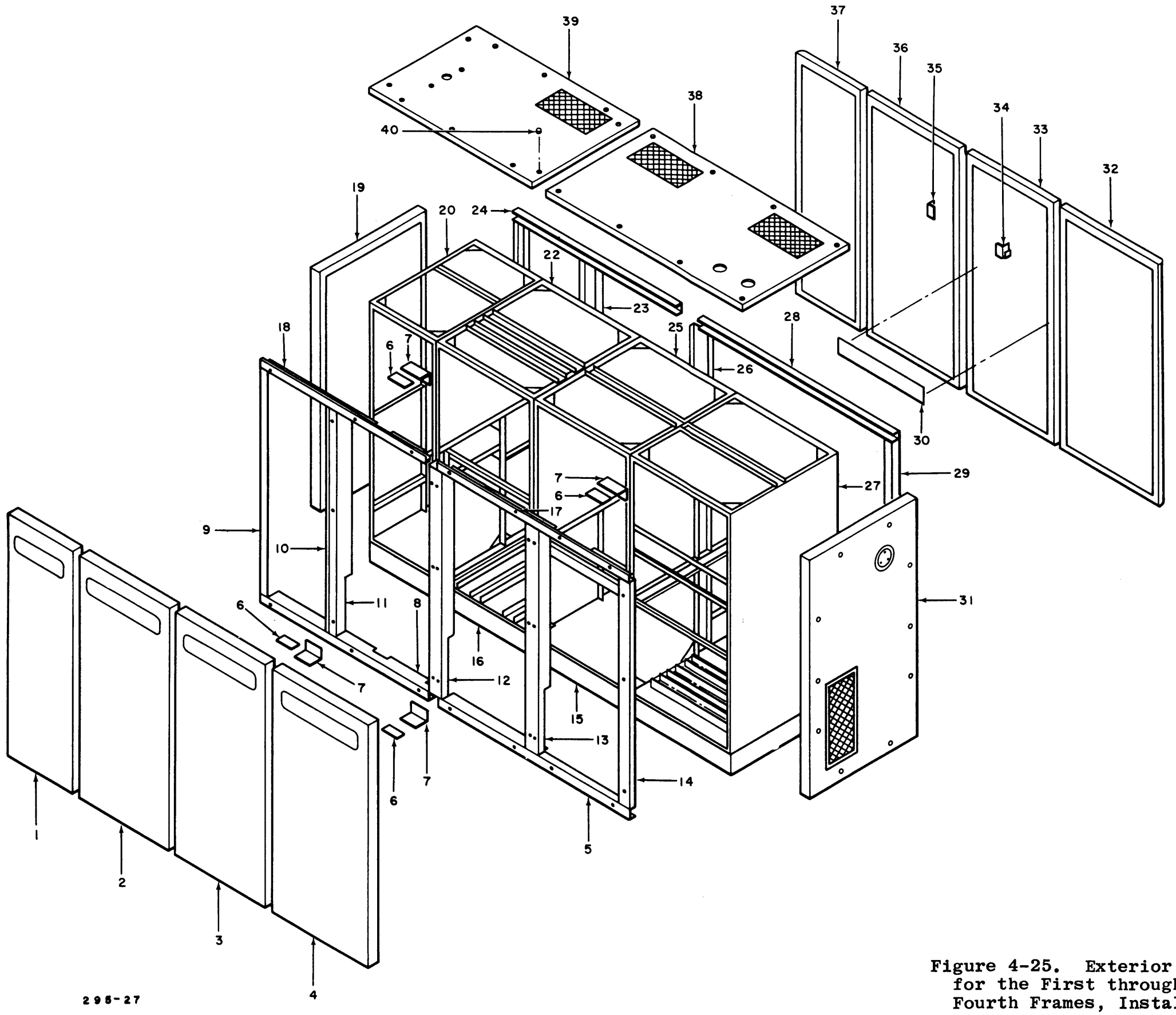
Refer to figure 4-25.

b. Using hardware from crate 1 bag 12, mount the following items (contained in crate 29) to respective frames as follows:

(1) First and second frame front top and bottom trim strips MS-1635 and MS-1636.

(2) Third and fourth frame front top and bottom trim strips MS-2028 and MS-3645.

(3) First and second frame front hinged trim strip MS-1634.



LEGEND

1. FIRST FRAME FRONT DOOR
2. SECOND FRAME FRONT DOOR
3. THIRD FRAME FRONT DOOR
4. FOURTH FRAME FRONT DOOR
5. THIRD AND FOURTH FRAME BOTTOM FRONT TRIM STRIP
6. DOOR LATCH PLATE
7. DOOR LATCH BRACKET
8. FIRST AND SECOND FRAME BOTTOM FRONT TRIM STRIP
9. FIRST FRAME LEFT FRONT TRIM STRIP
10. FIRST FRAME RIGHT FRONT HINGED TRIM STRIP
11. SECOND FRAME LEFT FRONT TRIM STRIP
12. SECOND AND THIRD FRAME FRONT TRIM STRIP
13. THIRD AND FOURTH FRAME FRONT TRIM STRIP
14. FOURTH FRAME RIGHT
15. THIRD AND FOURTH FRAME BASE
16. FIRST AND SECOND FRAME BASE
17. THIRD AND FOURTH FRAME TOP FRONT TRIM STRIP
18. FIRST AND SECOND FRAME TOP FRONT TRIM STRIP
19. FIRST FRAME SIDE PANEL
20. FIRST FRAME
21. FIRST FRAME REAR TRIM STRIP
22. SECOND FRAME
23. FIRST AND SECOND FRAME REAR TRIM STRIP
24. FIRST AND SECOND FRAME TOP REAR TRIM STRIP
25. THIRD FRAME
26. SECOND AND THIRD FRAME REAR TRIM STRIP
27. FOURTH FRAME
28. THIRD AND FOURTH FRAME TOP REAR TRIM STRIP
29. THIRD AND FOURTH FRAME REAR TRIM STRIP
30. THIRD FRAME CENTER REAR TRIM STRIP
31. FOURTH FRAME SIDE PANEL
32. FOURTH FRAME REAR DOOR
33. THIRD FRAME REAR DOOR
34. REAR DOOR BRACKET
35. REAR DOOR BRACKET
36. SECOND FRAME REAR DOOR
37. FIRST FRAME REAR DOOR
38. THIRD AND FOURTH FRAME COVER
39. FIRST AND SECOND FRAME COVER
40. BUTTON PLUG

Figure 4-25. Exterior Trim for the First through Fourth Frames, Installation Diagram.

(4) Second and third frame front trim strip MS-2026.

(5) Third and fourth frame front trim strip MS-2027.

(6) Fourth frame front trim strip MS-2025.

(7) First and second frame rear top and bottom trim strips MS-1672.

(8) Third and fourth frame rear top and bottom trim strips MS-2053.

(9) First frame rear right side trim strip MS-1670.

(10) First and second frame rear trim strip MS-1669.

(11) Second and third frame rear trim strip MS-2052.

(12) Third and fourth frame rear trim strip MS-2051.

(13) Fourth frame rear left side trim strip MS-1671.

(14) Third frame center rear trim strip MS-2300.

NOTE

It may be necessary to adjust top and bottom door latch assemblies, so that doors close properly.

(15) First frame front door MS-2119.

(16) Second frame front door MS-2120-1.

(17) Fourth frame front door MS-2118.

(18) Third frame front door MS-2120-2.

(19) First frame rear door MS-1648.

(20) Fourth frame rear door MS-1647.

c. Mount first frame hinged front right and left side trim strips MS-1637 and MS-1920 (contained in crate 29).

d. Mount second and third frame rear doors MS-2037 (contained in crates 29 and 30) on respective rear door hinge.

e. Using hardware from crate 1 bag 13, mount side panels MS-2117 and MS-2116 (contained in crate 29) to the side of the first and fourth frames, respectively.

f. Insert appropriate size button plugs (contained in crate 1) into side panel to frame holes.

STEP 44

Fabricate air ducts and appropriately mount, figure 2-2, on the transmitter.

STEP 45

Connect the antenna transmission line(s) to the transmitter. Operating with an unbalanced output, the transmission line is connected to the standard 3-1/8 inch EIA flange connector on top of the third frame. Operating with a balanced output, the transmission lines are connected to the bowl assemblies on top of the fourth frame.

STEP 46

a. Inspect the contents of all packing crates that have been opened. Make sure miscellaneous items (technical manuals, test data, tube warranties, extra hardware, or etc) have been removed before dispensing with packing materiel and shipping crates.

b. Any remaining crates are spare parts for the transmitter. These crates may be stored as desired.

STEP 47

CAUTION

Make sure primary ac input power is off; DO NOT apply power to the transmitter.

a. Connect ac input power cables to the ac input switch box. Observe proper phasing when connecting cables.

b. Refer to the operation and maintenance manual for transmitter operating procedures.

SECTION 5

CIRCUIT DIAGRAMS

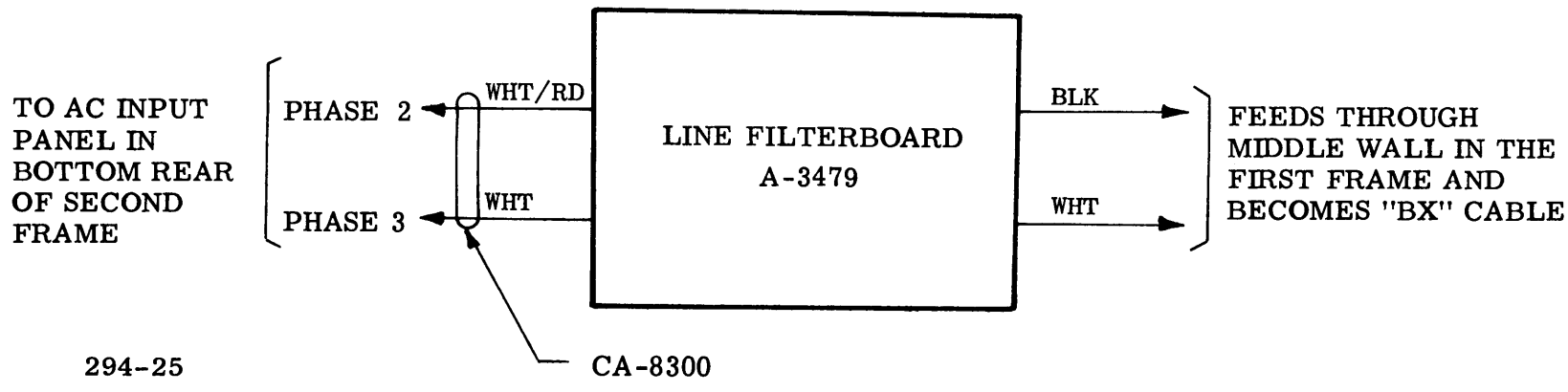


Figure 5-1. Line Filterboard A-3479, Cable Connection Diagram

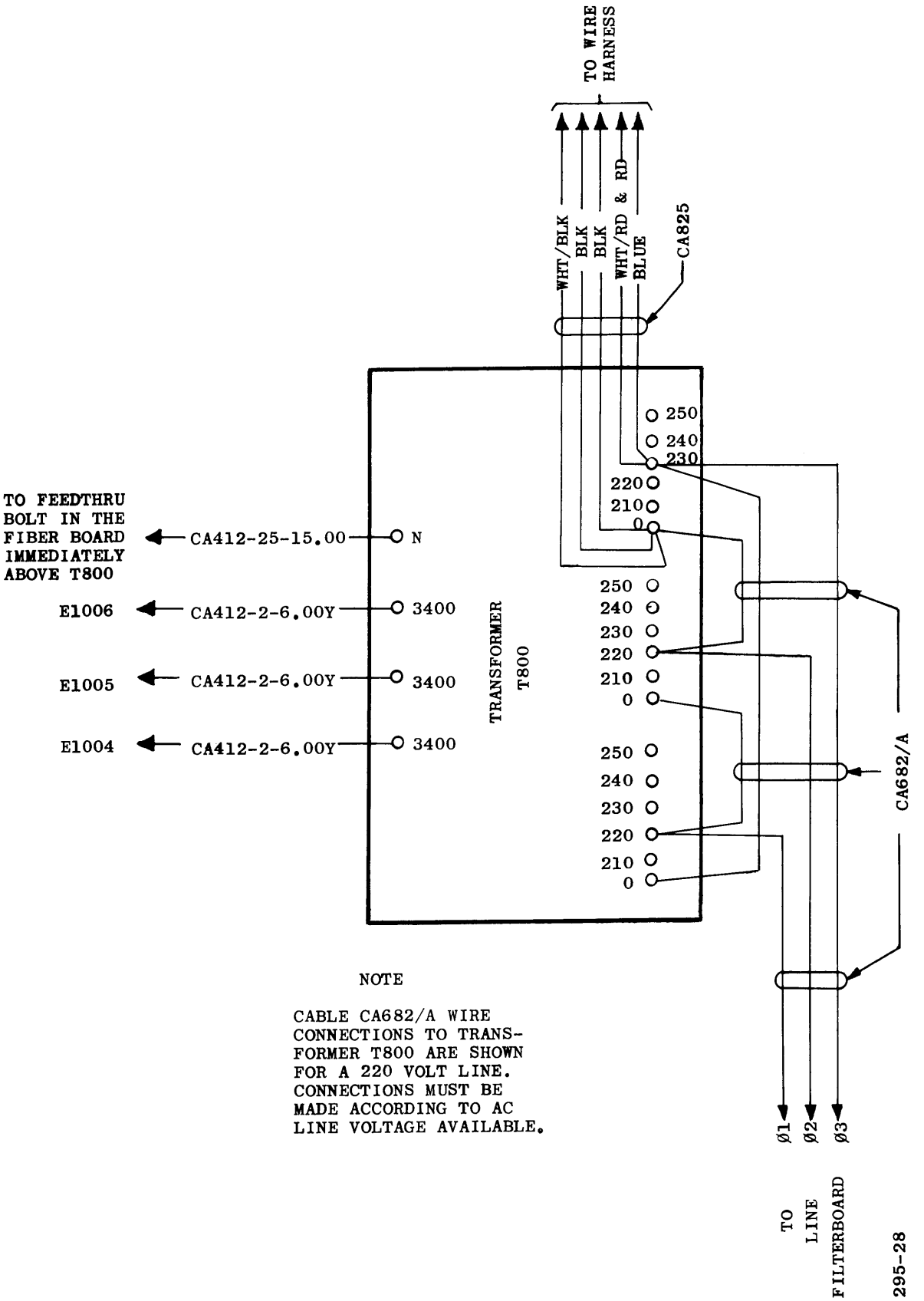


Figure 5-2. Transformer T800, Cable Connection Diagram

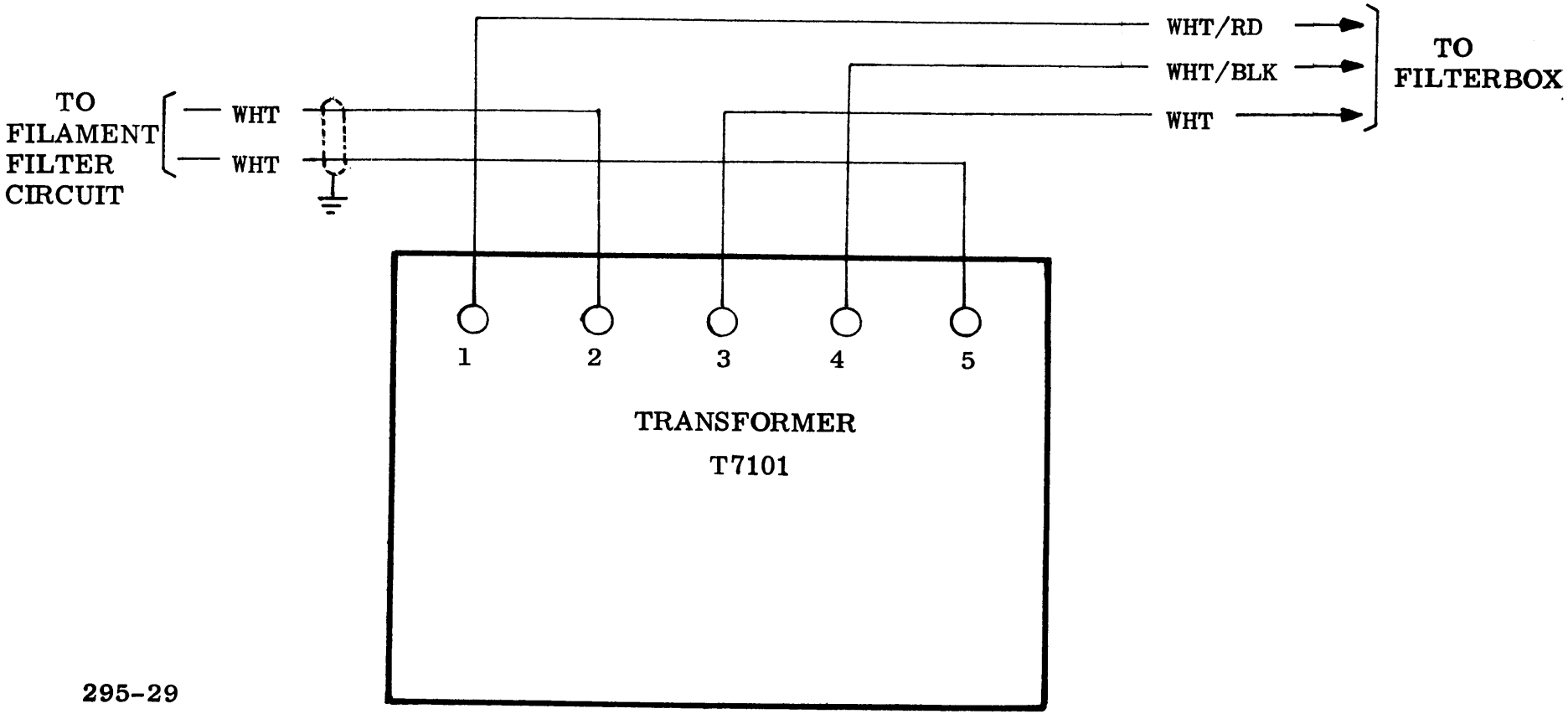


Figure 5-3. Transformer T7101, Cable Connection Diagram

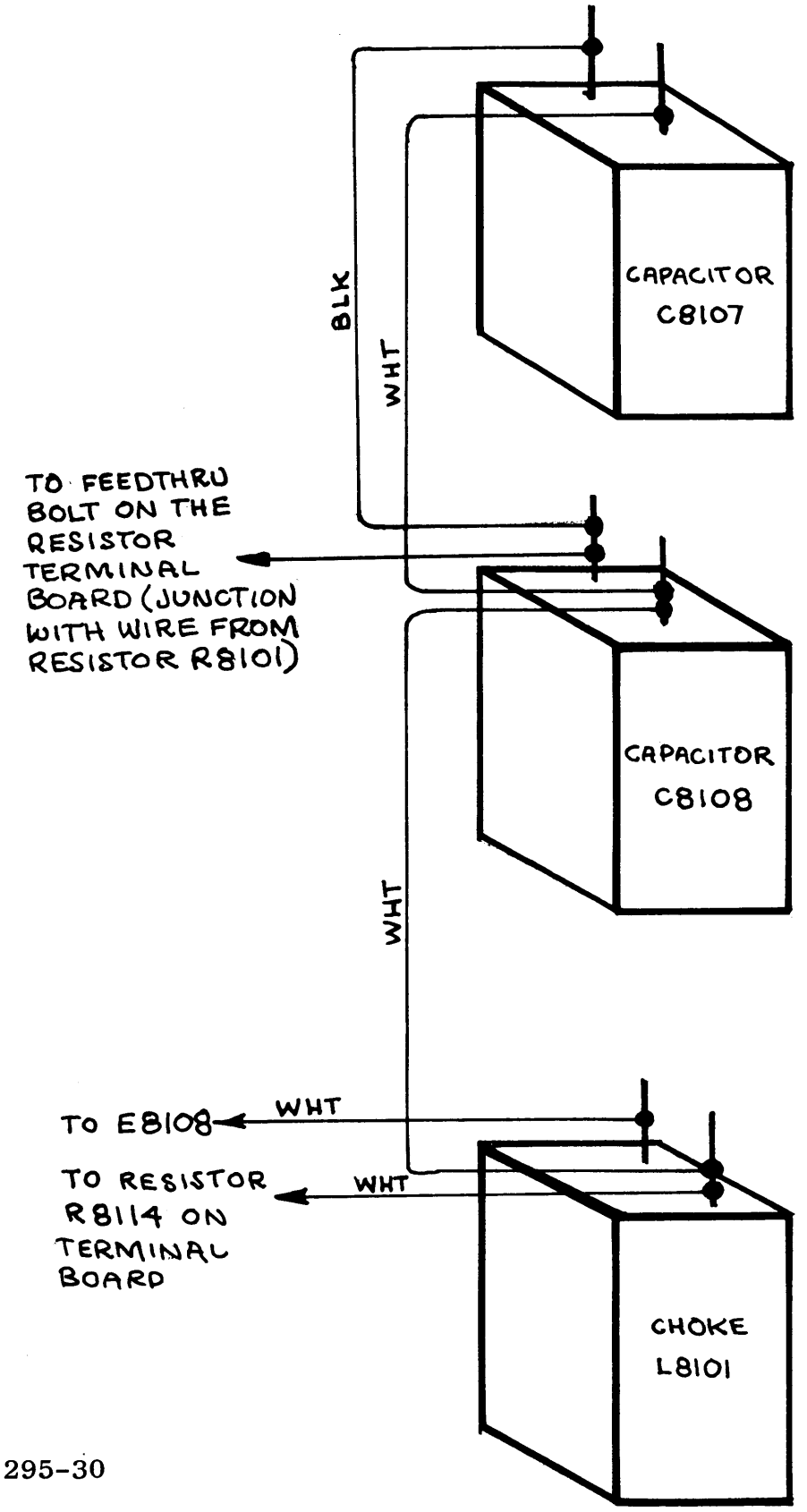


Figure 5-4. High Voltage Rectifier Filter Network C8107, C8108, and L8101, Cable Connection Diagram

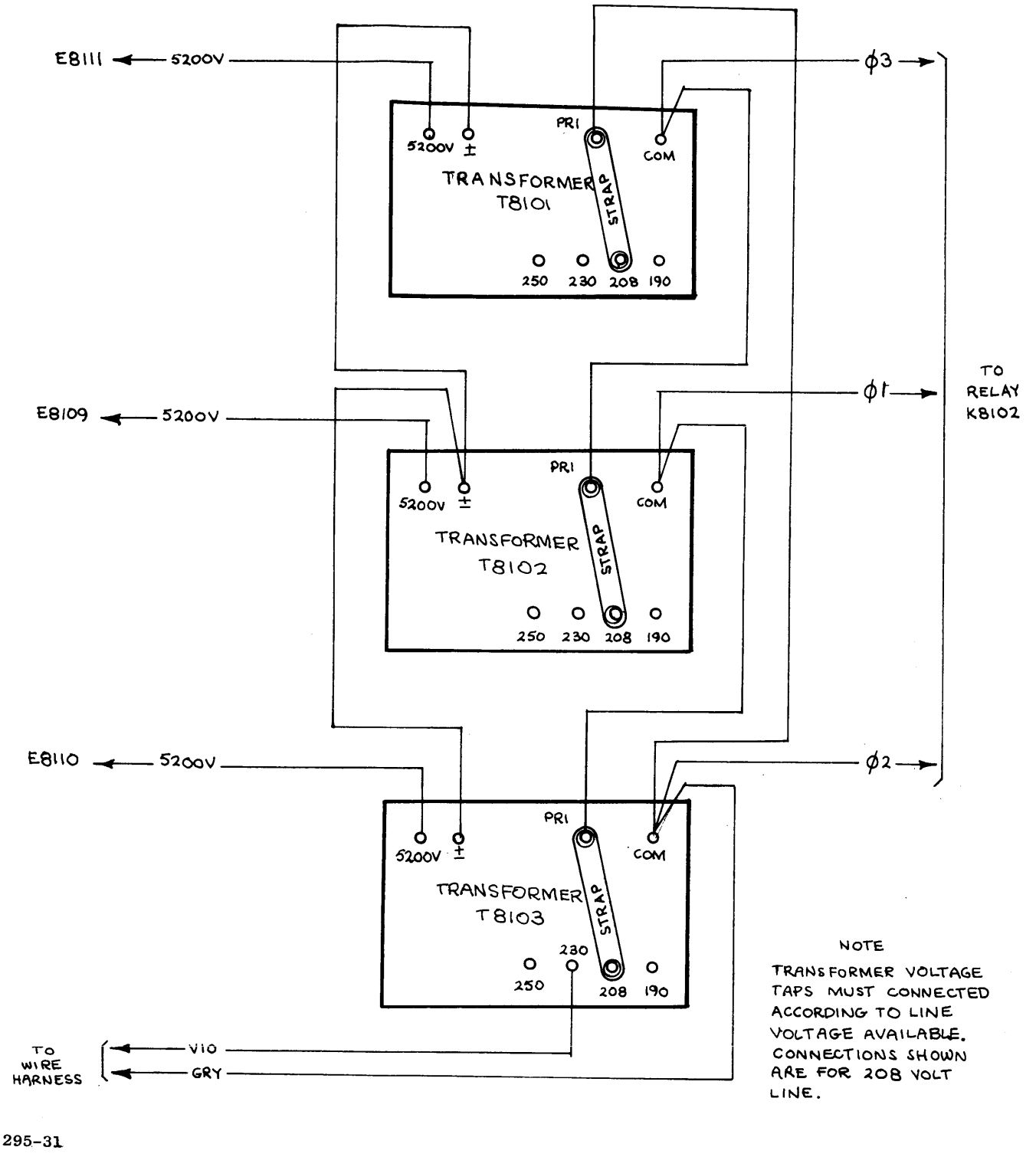


Figure 5-5. Main Power Transformers T8101, T8102, and T8103, Cable Connection Diagram (Sheet 1 of 2).

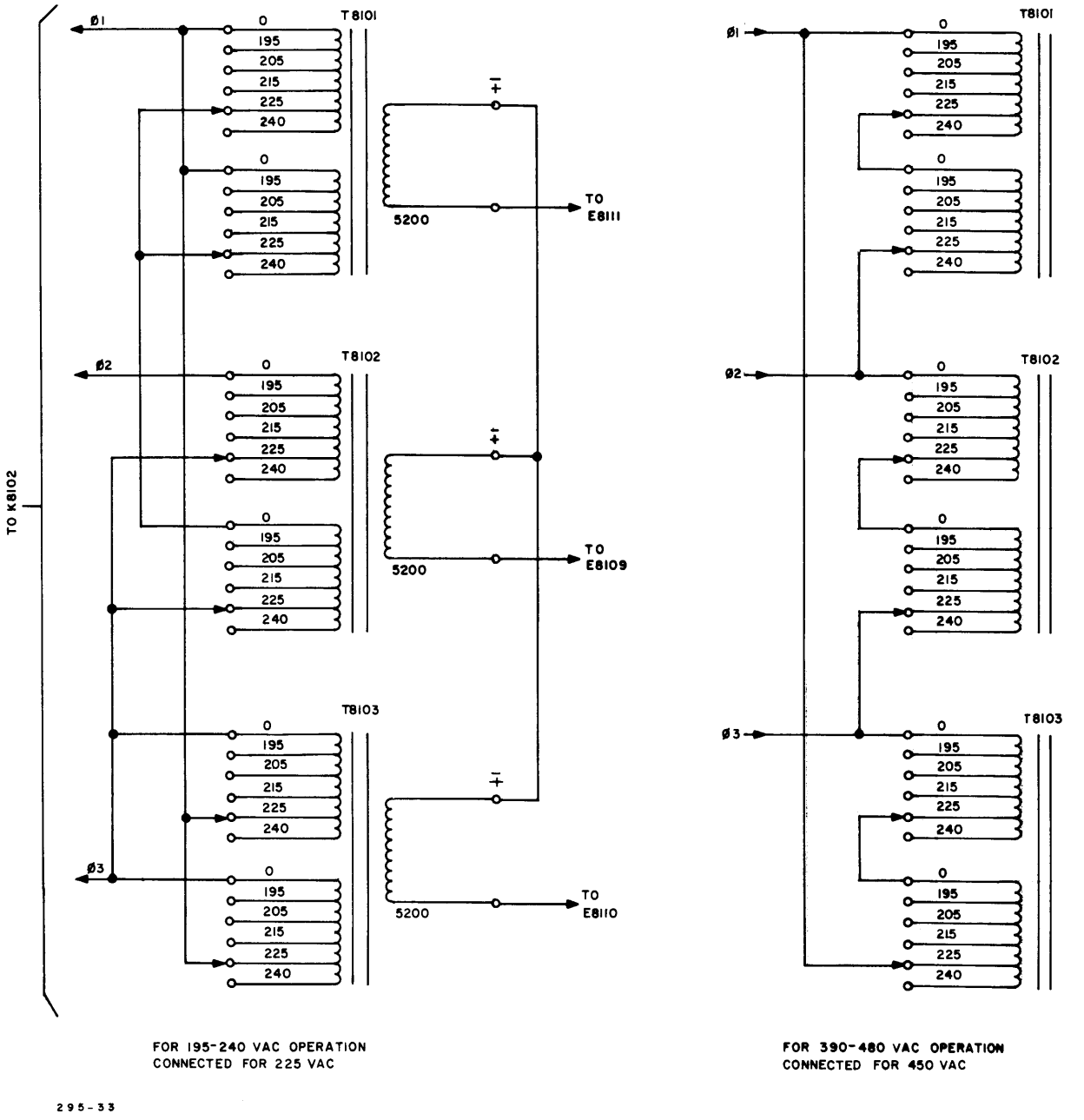


Figure 5-5. Main Power Transformers T8101, T8102, and T8103, Cable Connection Diagram (Sheet 2 of 2).

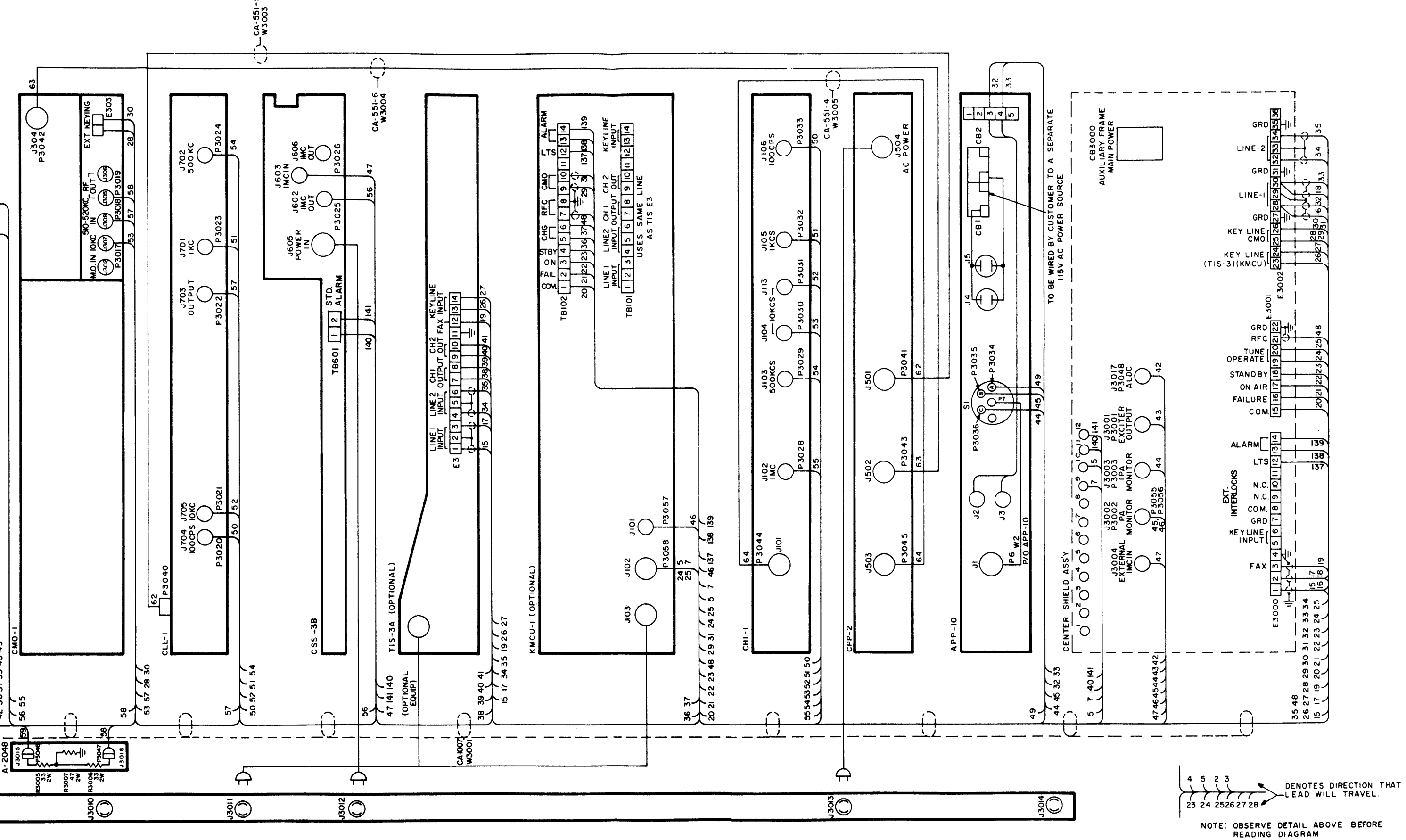
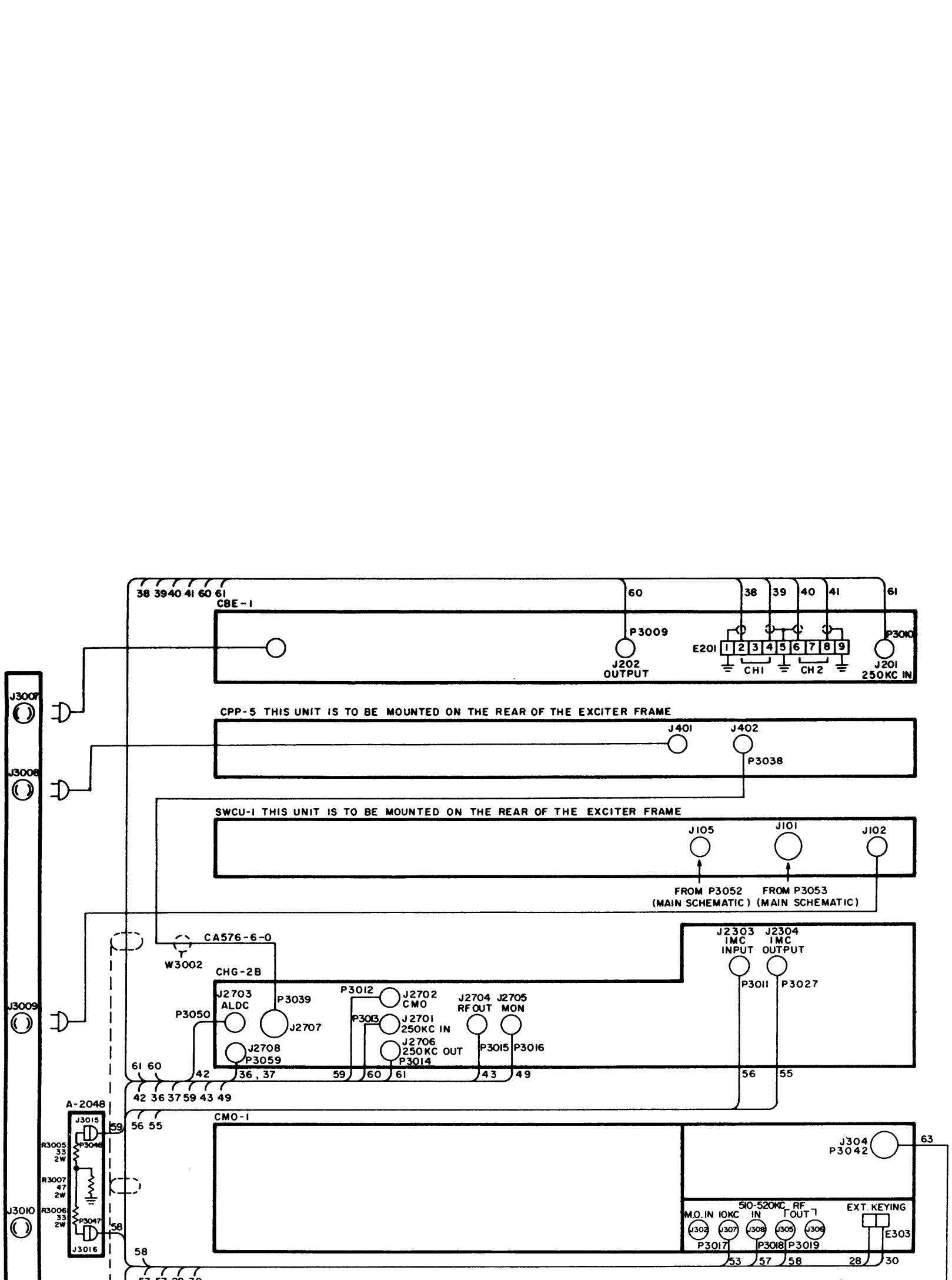
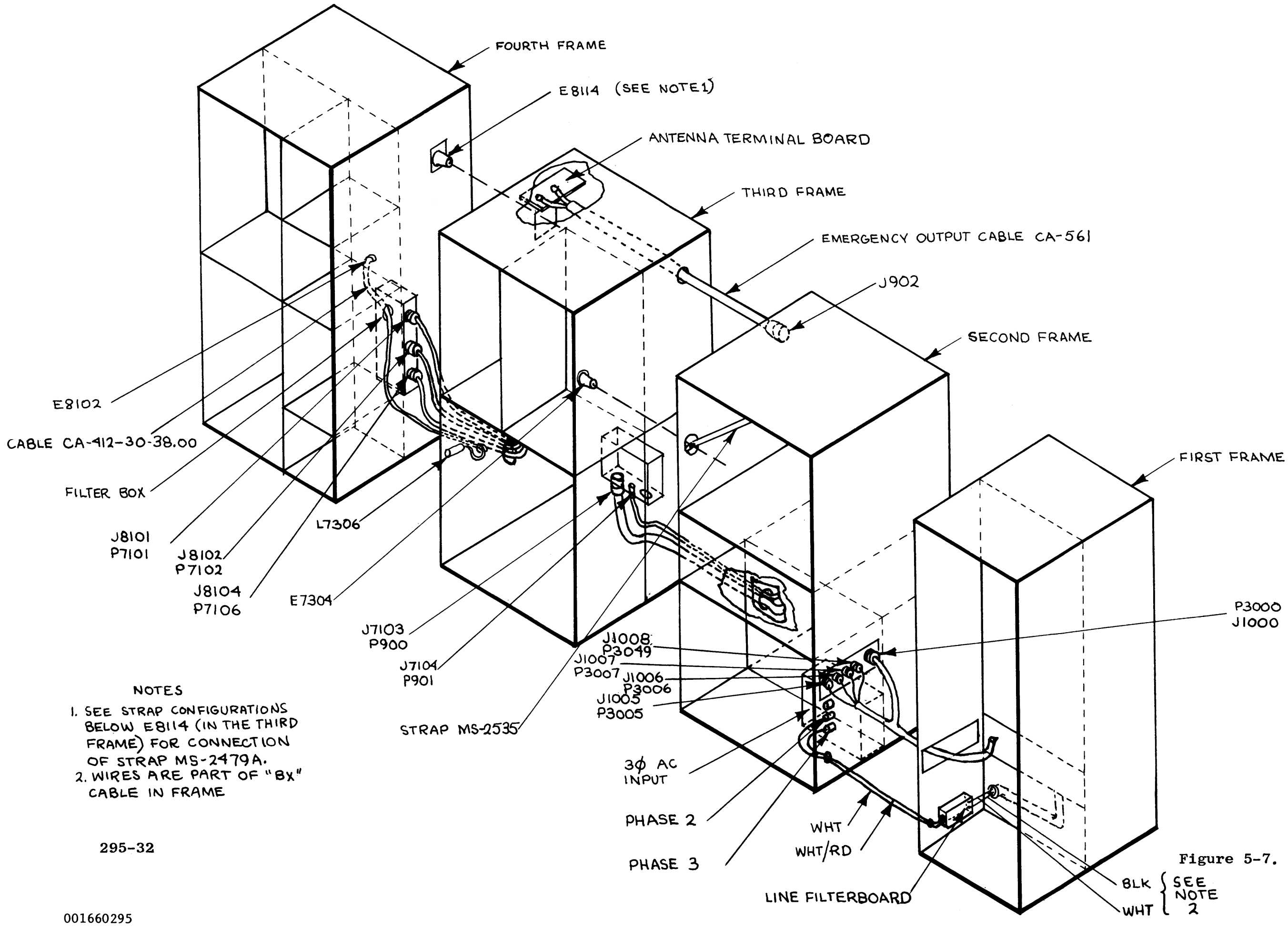


Figure 5-6. First Frame Drawers, Cable Connection Diagram.

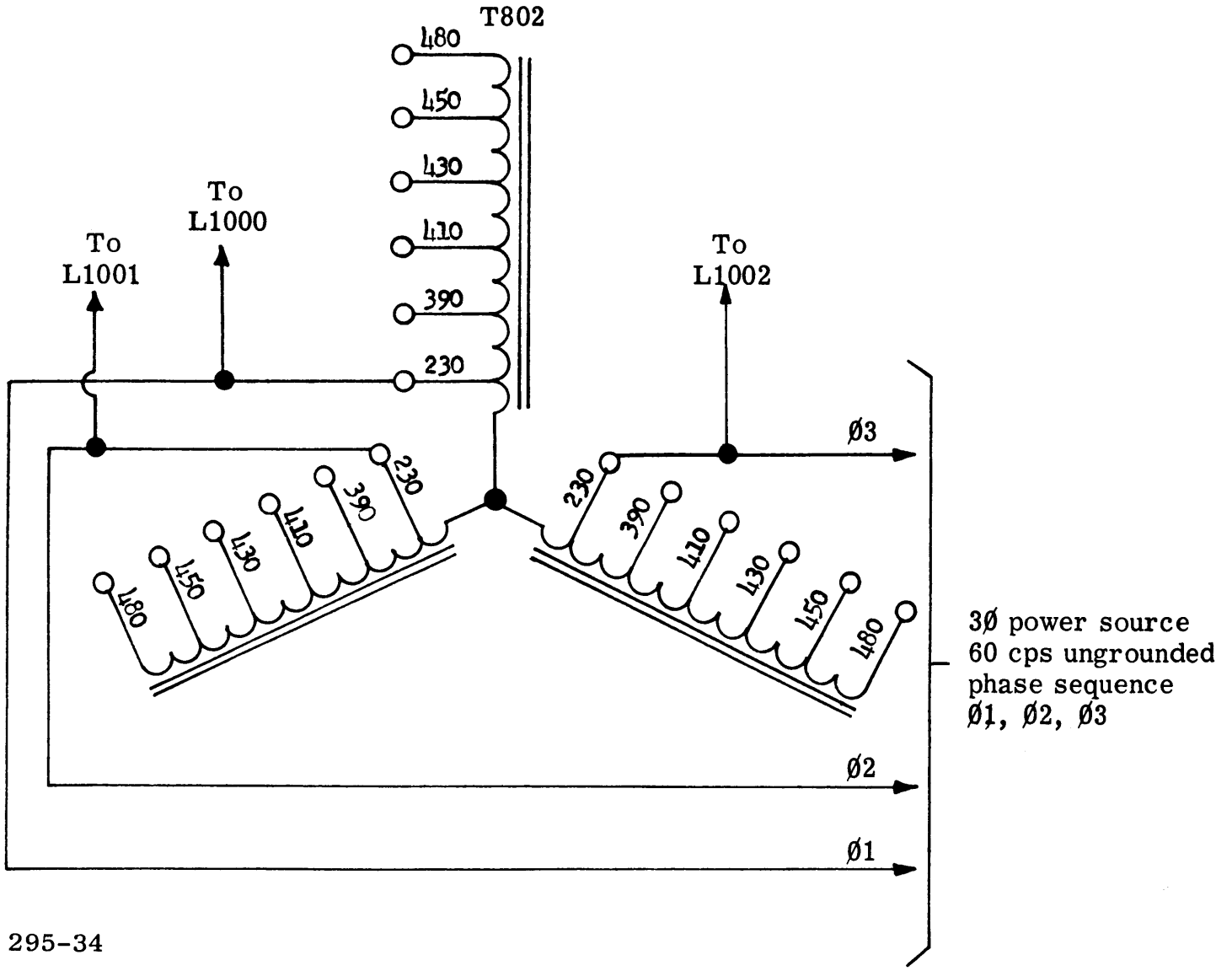

38 39 40 41 60 61
CBE-1
60
38
39
40
41
61
P3009
J202
OUTPUT
E201
1 2 3 4 5 6 7 8 9
CH1
CH2
P3010
J201
250KC IN
J3007
J3008
CPP-5 THIS UNIT IS TO BE MOUNTED ON THE REAR OF THE EXCITER FRAME
J401
J402
P3038
SWCU-1 THIS UNIT IS TO BE MOUNTED ON THE REAR OF THE EXCITER FRAME
J105
J101
J102
FROM P3052
(MAIN SCHEMATIC)
FROM P3053
(MAIN SCHEMATIC)
J3009
CA576-6-0
W3002
CHG-2B
J2303
IMC
INPUT
J2304
IMC
OUTPUT
P3011
P3027
J2703
ALDC
P3039
P3050
J2707
P3012
J2702
CMO
P3013
J2701
250KC IN
J2704
RF OUT
J2705
MON
J2708
P3059
J2706
250KC OUT
P3014
P3015
P3016
61 60
42
36 , 37
59
60
61
43
49
56
55
42 36 37 59 43 49
A-2048
J3015
J3016
R3005
33
2W
P3046
R3007
47
2W
R3006
33
2W
P3047
J3010
59
58
56 55
CMO-1
J304
P3042
63
510-520KC RF
OUT
IN
M.O. IN
10KC
J302
J307
J308
J305
J306
EXT. KEYING
E303
P3017
P3018
P3019
53
57
58
28
30
58



NOTES

1. SEE STRAP CONFIGURATIONS BELOW E8114 (IN THE THIRD FRAME) FOR CONNECTION OF STRAP MS-2479A.
2. WIRES ARE PART OF "BX" CABLE IN FRAME

Figure 5-7. Inter-frame Cable Connection Diagram.

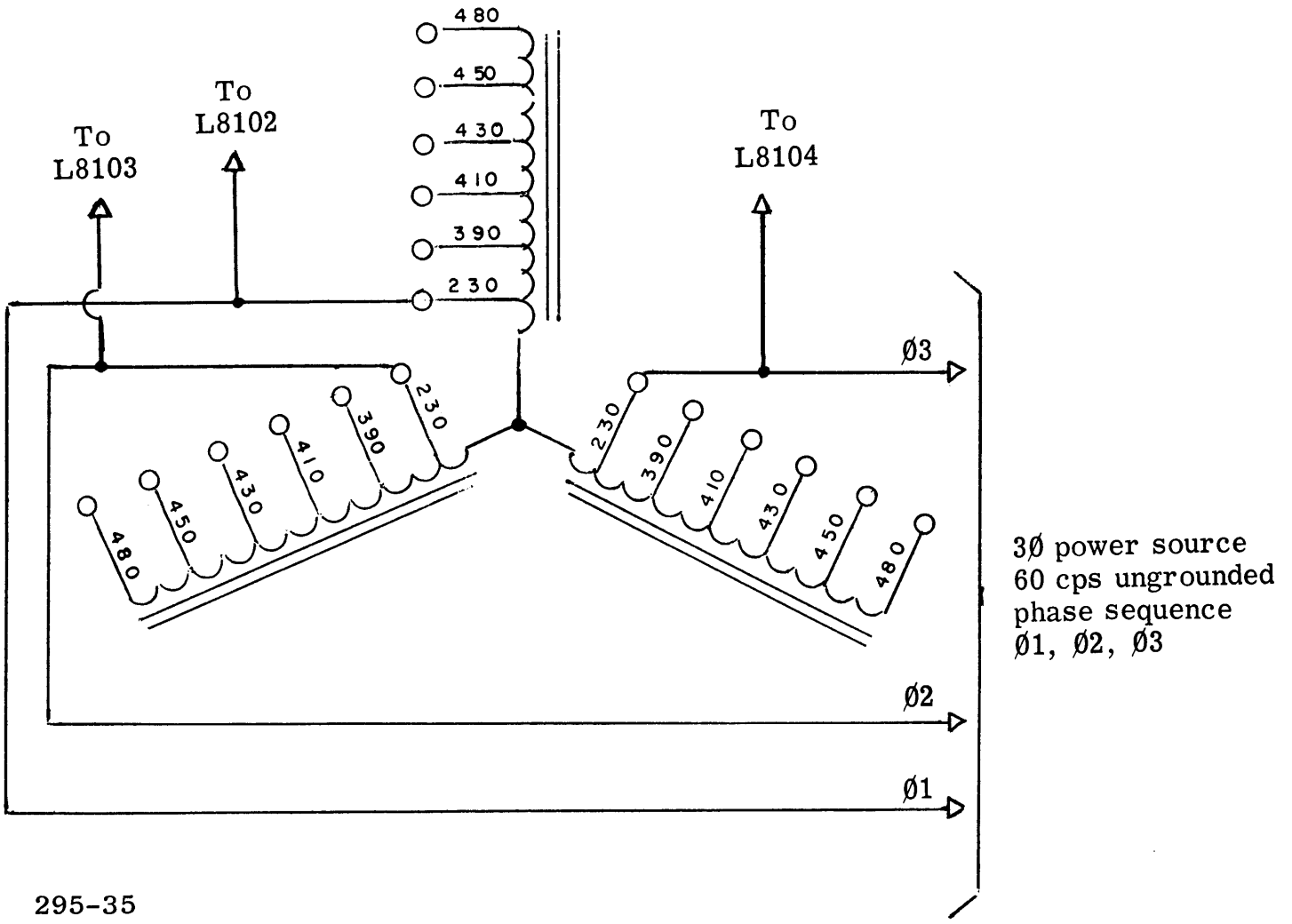


NOTES:

1. For 210-240 vac operation, connect as shown.
2. For 390-480 vac operation, connect to appropriate taps.

Figure 5-8. Transformer T802 Wiring Diagram.

T8107



295-35

NOTES:

1. For 195-240 vac operation, connect as shown.
2. For 390-480 vac operation, connect to appropriate taps.

Figure 5-9. Transformer T8107 Wiring Diagram.

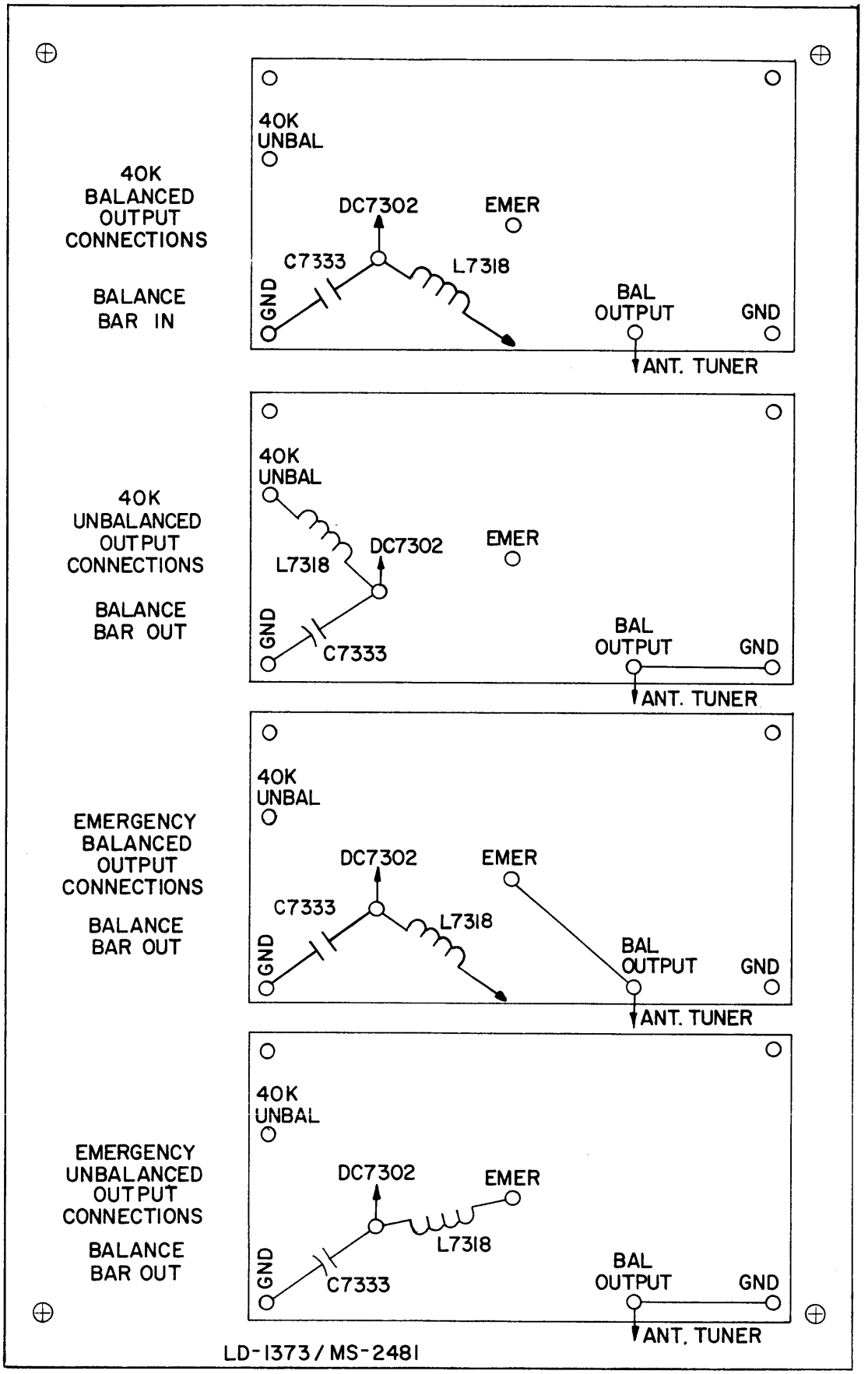


Figure 5-10. Output Link Connection Diagram.