NOTE
ILLUSTRATIONS ARE
KEYED WITH TMC
IDENTIFICATION
NUMBERS

UNCLASSIFIED

MASTER COPY
DO NOT DESTROY

INSTALLATION MANUAL

for

GENERAL PURPOSE TRANSMITTER

MODEL GPT-200K

(AN/FRT-62)

THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y. OTTAWA, ONTARIO

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.

CHANGE NO. 1 GPT-200K

INSTRUCTION BOOK CHANGE NOTICE

Date June 15,1964

Manual affected: Installation Manual for General Purpose Transmitter GPT-200K (AN/FRT-62) IN -304

PAGE	PAR	FIG	TABLE	REMARKS
1-2			1-1	Change AC Input Power characteristic description number 2 to: "..., 1000A/phase" to: "..., 400A/phase"
1-7/1-8		1-2(2)		Change "AUXILIARY POWER PANEL MODEL APP-3," to: "... APP-8"
1-9/1-10		1-2(3)		Add following drawer (in rear first frame) beneath POWER SUPPLY DRAWER MODEL CPP-5: "STANDING WAVE CONTROL UNIT DRAWER MODEL SW-CU-1"
1-18 and 1-19			1-2	Appropriately add page 2 of this change notice to pages in table.
1-35 and 1-36			1-2	Appropriately add page 3 of this change notice to pages in table.
1-54			1-3	Change: 1. Gross weight of crate 35 and 38 to: 280 2. Length of crate 35 and 38 respectively to: 46-3/8 and 60-3/4 3. Width of crate 38 to 35-1/4 4. Height of crates 35 and 38 respectively to: 30-3/4 and 24-3/8
1-66			1-4	Change equipment item 11 from "claw hammer," to: "Nail Puller"

SHOULD ADDITIONAL COPIES OF THIS CHANGE NOTICE BE REQUIRED, PLEASE CONTACT:

THE TECHNICAL MATERIEL CORP., 700 Fenimore Road, Mamaroneck, New York

Attn.: Director of Eng. Services.

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1	46. Line Filterboard	1	A-3479		Ac input filter network, rear first frame.
	47. Line Filterboard	2	MS-3686		Brackets for mounting cover over line filter-board.
	48. Cover, Line Filterboard	1	LD-1392		Safety cover for line filterboard
	49. Line Filterboard, Mounting Hardware Kit:				Line filterboard and bracket mounting hardware
	Screw, Binderhead	4	SCBP1032BN6		
	Screw, Binderhead	4	SCBP1032BN12		
	Screw, Binderhead	1	SCBP1032BN9		
	Screw, Binderhead	1	SCBP1032BN10		
	Washer, External	10	LWE10MRN		
	Washer, Flat	10	FW10HBN		
2	5. Insulators	1	NS-128-1	E8114	Insulated electrical feed-throughs, third to fourth and second to third frames, respectively
		1	NS-107	E7304	

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
35	7. Tube Lift	1	A-2706		Special installation device for installing pa tubes V5001 and V5002
38	9. Rf OUTPUT/TER-100K Coaxial Transmission Line Sections and TER-100K Interconnect Cables:				
	Connector	2	MS-3106B20-27P		
	Plug, Electrical	1	PL-134 NG		
	Plug, Electrical	1	PL-149		
	Adaptor	1	PO-280		
	Ungassed Coupling	3	PO-294		
	Adaptor	2	PO-279		
	Switch	2	RL-149		
	Tee	1	PO-278		
	Miter Elbow	2	PO-263-50		
	Mounting Hardware Set	1	PO-263-50		
	Cable	1	CA-645-1		
	Cable	1	CA-783		
	Cable	2	CA-823		

CHANGE NO. 1 GPT-200K

INSTRUCTION BOOK CHANGE NOTICE

Date June 15, 1964

Manual affected: Installation Manual for General Purpose Transmitter GPT-200K (AN/FRT-62) (cont) IN -304

PAGE	PAR	FIG	TABLE	REMARKS
1-67		1-5		Change "INPUT POWER REQUIREMENTS" from: "..., 1000A Per ø" to: "..., 400A Per ø"
2-7	2-3			Change step 8d to read: "Route ac interconnect cable, coming through access hole in shield, to ac input terminal board in bottom rear compartment of second frame. Cable will be connected later on."
2-7	2-3			Add the following after step 9d: e. Using line filterboard mounting hardware from crate 1, 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. f. Using remaining hardware, tightly bolt the fine filterboard cover support brackets (contained in crate 1) to the frame wall, one bracket above and below the filterboard. g. Position and secure filterboard cover (contained in crate 1) to filterboard brackets.

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Manual affected: Installation Manual for General Purpose Transmitter GPT-200K (AN/FRT-62) (cont) IN -304

PAGE	PAR	FIG	TABLE	REMARKS
2-7 (cont)				h. Connect ac interconnect cable, coming through access hole in shield, to ac input terminal board in bottom rear compartment of second frame.
2-10	2-3			Change step 11c to read: "Temporarily remove outer and inner r-f shields from upper rear compartment of the third frame."
2-14	2-3			Add the following after step 15f: NOTE When the porcelain insulator is assembled, it is physically located inside the second frame. g. Mount porcelain insulated feed-through E7304 with hardware (contained in crate 2) on the wall toward rear of third frame.
2-31	2-3			Add the following after step 26a: NOTE The standing wave control drawer, shipped installed in front of first frame, must be removed and installed in the rear of the frame.

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INSTRUCTION BOOK CHANGE NOTICE

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Manual affected: Installation Manual for General Purpose Transmitter GPT-200K (AN/FRT-62) (cont) IN -304

PAGE	PAR	FIG	TABLE	REMARKS
2-32		2-16		In front view change callout: AUXILIARY POWER PANEL APP-3 to ...APP-8 In rear view add (immediately below power supply control drawer CPP-5): STANDING WAVE CONTROL DRAWER SW-CU-1
2-34	2-3			Delete step 34b and appropriately re-letter substeps.
2-42	2-3			Add following to incomplete sentence in step 34n: ...tighten set screw.
2-49				Change step 41b(5) from: "... (MS-2-27)." to: "...(MS-2027)."
2-76	2-3			Add following after step 69d: e. Assemble and mount rf output/TER-100K coaxial transmission line sections (contained in crate 38) to flanged rf coax line on top of eighth frame (see figure 1-2). f. Connect GPT-200K/TER-100K interconnect cables (contained in crate 38).

RECORD OF CORRECTIONS MADE

Change No.	Date of Change	Date Entered	Entered By

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LIST OF ILLUSTRATIONS (cont)

LIST OF ILLUSTRATIONS (cont)

INTRODUCTION

This manual presents information for installing a TMC Model GPT-200K General Purpose Synthesized Transmitter, commonly called the 200K transmitter. The manual is subdivided into two chapters: General Information and Installation. If further information on the 200K transmitter is required, refer to the operations and maintenance manuals.

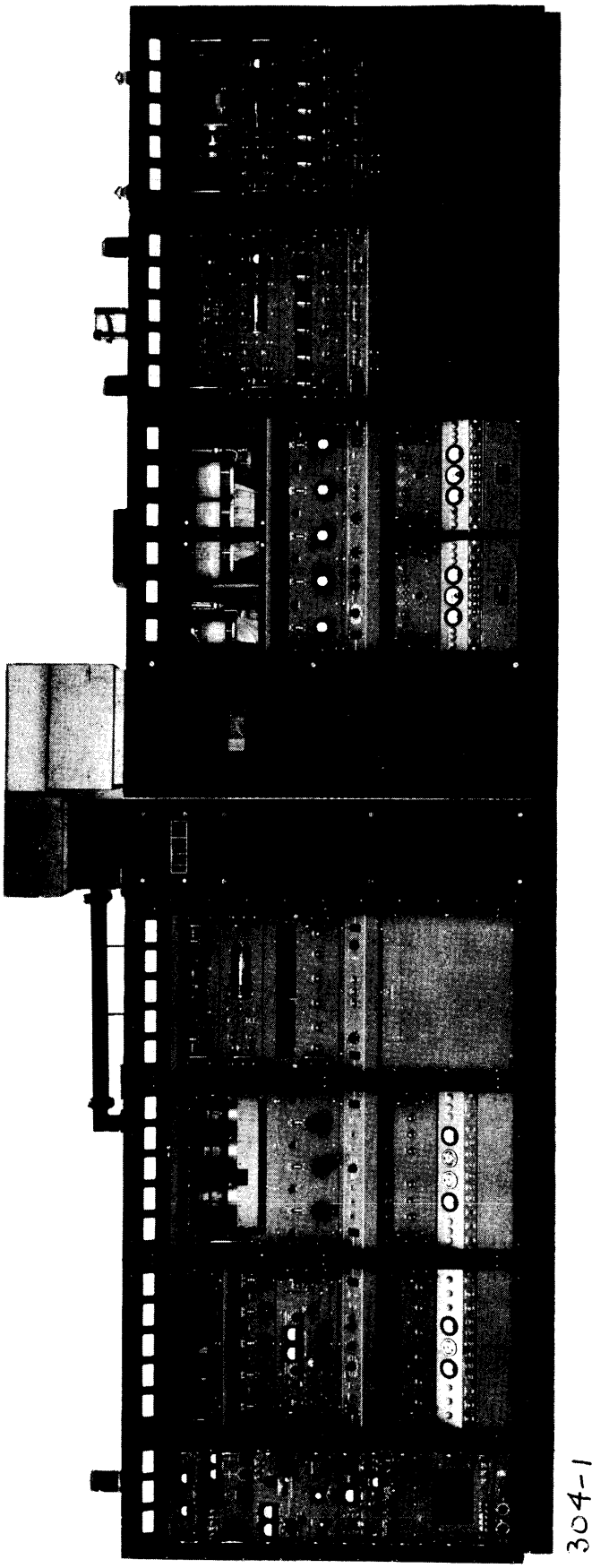


Figure 1-1. TMC Model GPT-200K General Purpose Transmitter (Synthesized)

CHAPTER 1

GENERAL INFORMATION

1-1. SCOPE.

This chapter presents two sections of general information for installing the 200K transmitter. Section I contains data on the purpose and description of equipment supplied and leading particulars. Section II presents various pre-installation considerations that should be made before starting actual assemblage of the transmitter.

SECTION I

PURPOSE AND DESCRIPTION

1-2. GENERAL.

The 200K transmitter, figure 1-1, is a general purpose synthesized transmitter having several modes of operation (SSB, ISB, AM, CW, and FAX) in a frequency range of 2 to 28 megacycles. The 200K transmitter can be subdivided into three stages, namely: (1) A TMC-10K transmitter whose output is 10 kw PEP (peak envelop power) which is modified to drive stage two; (2) A 40 kw power amplifier and power supply whose output is 40 kw PEP which is modified to drive stage three; (3) A third stage whose output is 200 kw PEP. Note stage one and two make up a modified TMC-40K transmitter.

The three stages are physically housed in nine mechanical frame assemblies. Each of these frames can be conveniently identified, figure 1-2, from left to right, as frame one, two, three, etc. Frames one and two are the exciter and 10K power amplifier, respectively, of stage one. Frames three and four

are the 40 kw power amplifier and power supply, respectively, of stage two. Frames five through nine are the buffer, tube, final power amplifier, 140 kw power supply "A", and 140 kw power supply "B", respectively, of stage three. However, for purposes of simplication, each frame assembly will be herein referred to as the first frame, second frame, or sixth frame, etc., as applicable.

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 simplified reference symbol numbers are assigned. For example, the fourth frame and assemblies contained, figure 1-2, are assigned simplified symbol numbers in the 8100 to 8500 numerical series; so that high voltage rectifier tube V8401 is installed in the high voltage rectifier drawer 8400 which is then installed in the fourth frame 8100.

1-3. LEADING PARTICULARS.

Table 1-1 lists leading particulars of the 200K transmitter. The table includes power requirements, operational modes, inputs and outputs, weight, and cooling.

Table 1-1. Leading Particulars

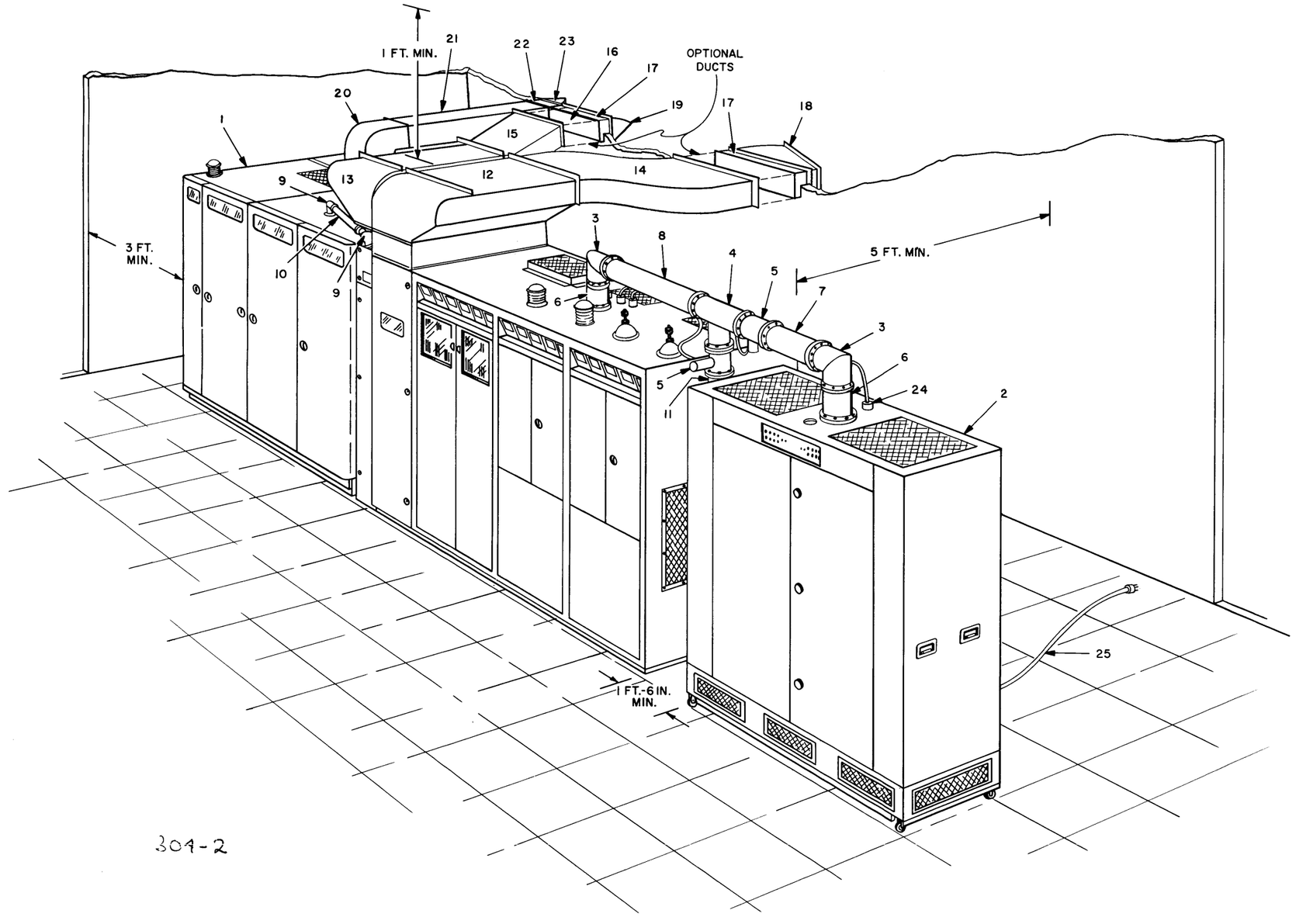
CHARACTERISTIC	DESCRIPTION
AC Input Power:	1. 230V, 3 phase, 60 cycles, 200A/phase 2. 230V, 3 phase, 60 cycles, 1000A/phase
Power Dissipation:	300,000 watts (approximately)

Table 1-1. Leading Particulars (cont)

CHARACTERISTIC	DESCRIPTION
Inputs:	1. Keying for CW 2. Tone audio 3. Voice audio 4. Dc voltage for facsimile 5. Teletype
Operational Modes:	1. SSB (single sideband) 2. ISB (Independent sideband) 3. AM (Amplitude Modulated) 4. CW (Carrier Wave) 5. FSK (Frequency Shift Keying) 6. FAX (Facsimile)
RF Output Power:	
Normal	1. 200,000 watts peak envelope power (PEP)
Reduced Emergency	2. 100 Kilowatts PEP 3. 40kw PEP 4. 10kw PEP 5. 1kw PEP
Output Frequency Range:	2 to 28 megacycles
Gross Weight:	26,000 lbs (est.)
Air Cooling at Intake Temperature at 25°C:	
First and Second Frames	2600 cu ft/min with back pressure of 2.25 inches of water
Third and Fourth Frames	7350 cu ft/min with back pressure of 8 inches of water
Fifth and Sixth Frames	6000 cu ft/min with back pressure of 9 inches of water
Seventh Frame	4500 cu ft/min with back pressure of 2-1/2 inches of water
Eighth and Ninth Frames	3000 cu ft/min with back pressure of 2-1/2 inches of water
Output Impedance:	
(1) Unbalanced	50 ohms
(2) Balanced	600 ohms

1-4. EQUIPMENT SUPPLIED.

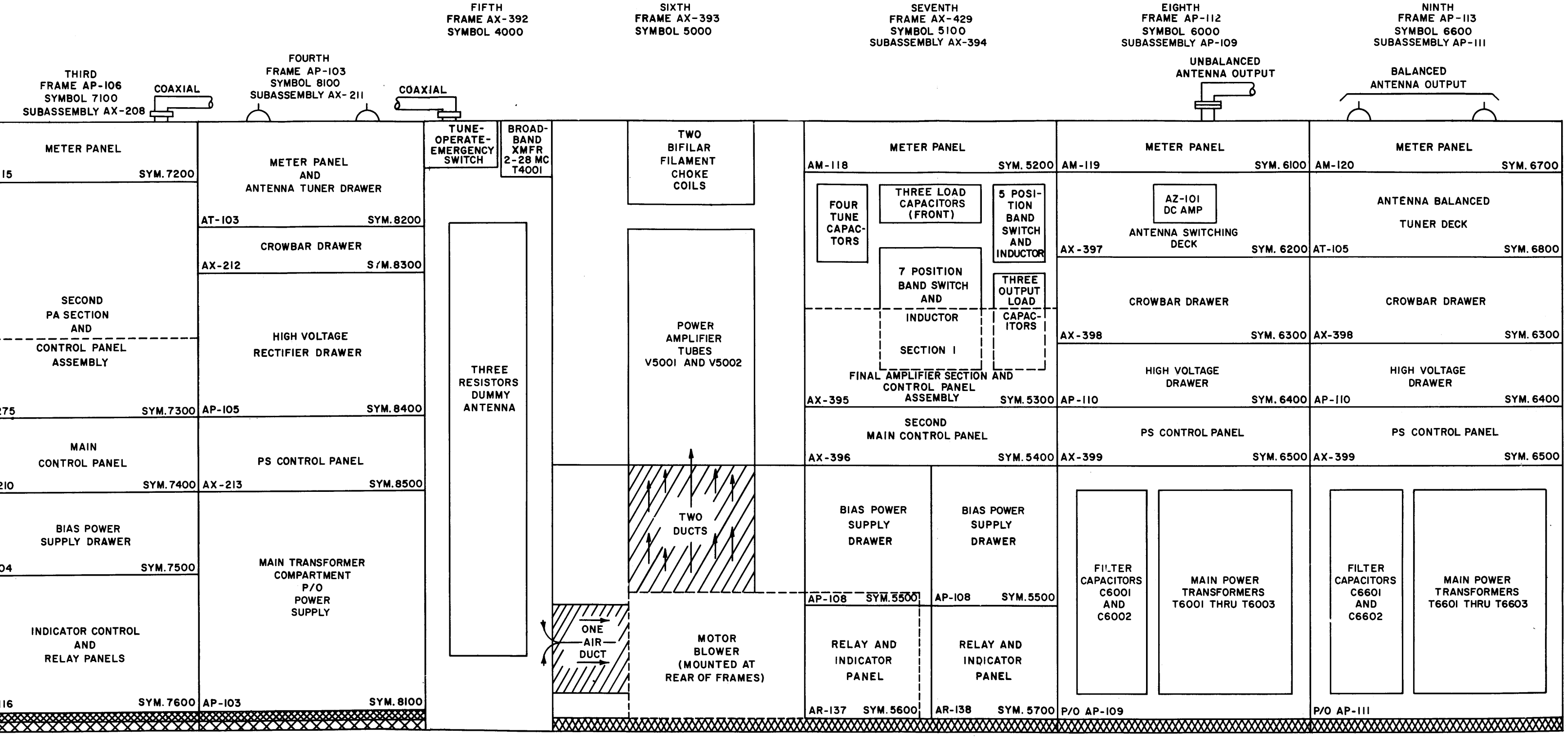
Table 1-2 lists all electrical, and mechanical assemblies, piece-parts, special tools, literature, and schematics shipped as equipment supplied. The table lists crate number, content(s), quantity, TMC part number, reference symbol, and function. Subassemblies of assemblies presented are not called-out; identification of subassemblies can be obtained by referring to the applicable operation and maintenance manuals. Crates containing spare parts are not included in the table.



LEGEND

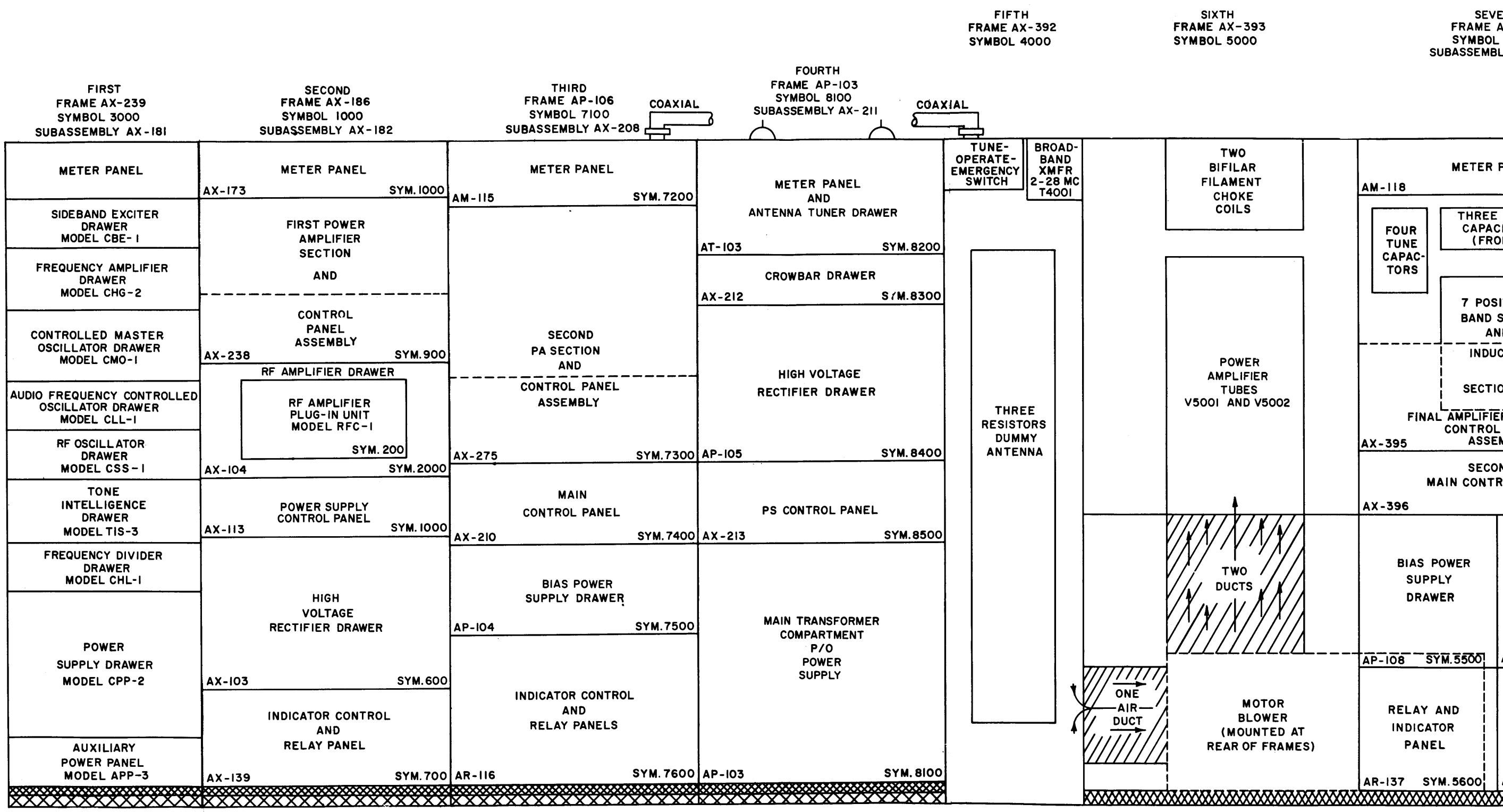
1	GPT-200K TRANSMITTER, GENERAL PURPOSE
2	DISSIPATOR, RF POWER
3	MITER ELBOW, 6⅛" 50Ω EIA FLG
4	TEE, 6⅛" 50Ω, EIA FLG
5	SWITCH, RF COAXIAL, 6⅛" 50Ω EIA FLG
6	RIGID XMSN LINE, 6⅛" 50Ω EIA FLG
7	RIGID XMSN LINE, 6⅛" 50Ω EIA FLG
8	RIGID XMSN LINE, 6⅛" 50Ω EIA FLG
9	MITER ELBOW, 3⅛" 50Ω EIA FLG
10	RIGID XMSN LINE, 3⅛" 50Ω EIA FLG
11	RIGID XMSN LINE, 5" 50Ω EIA FLG
12	DUCT
13	DUCT
14	S DUCT
15	ANGLE DUCT
16	DUCT, 2FT EXTENSION W/FLG
17	DUCT, BULKHEAD MOUNTING
18	DUCT, EXTERNAL EXHAUST
19	DUCT, EXTERNAL INTAKE
20	DUCT
21	DUCT
22	DUCT
23	DUCT, EXTERNAL EXHAUST
24	EXTERNAL CABLE
25	AC CABLE, TER-100K

Figure 1-2. General Component Identification (sheet 1 of 3)



FRONT VIEW

Figure 1-2. General Component Identification (sheet 2 of 3)



304-3

FRONT VIEW

SEVENTH
FRAME AX-429
SYMBOL 5100
SUBASSEMBLY AX-394

SIXTH
FRAME AX-393
SYMBOL 5000

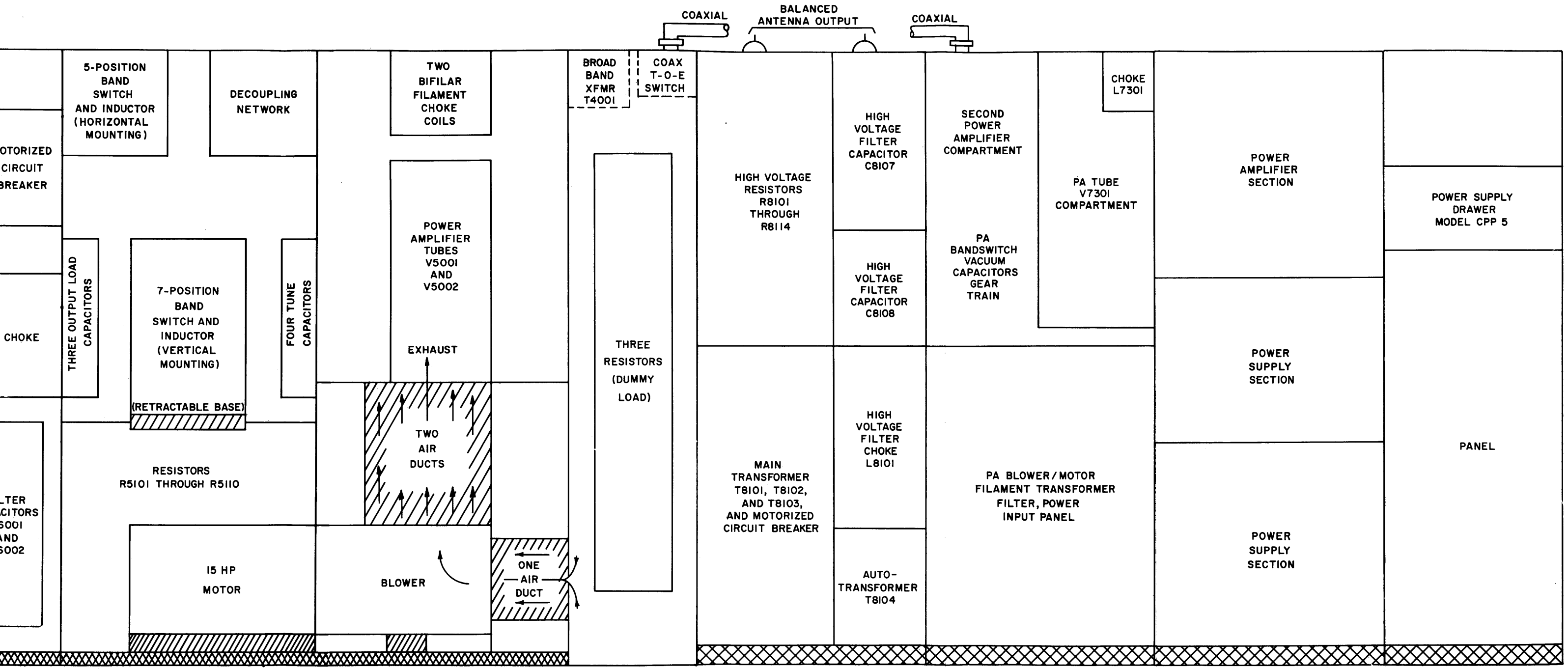
FIFTH
FRAME AX-392
SYMBOL 4000

FOURTH
FRAME AP-103
SYMBOL 8100
SUBASSEMBLY AX-211

THIRD
FRAME AP-106
SYMBOL 7100
SUBASSEMBLY AX-208

SECOND
FRAME AX-186
SYMBOL 1000
SUBASSEMBLY AX-182

FIRST
FRAME AX-239
SYMBOL 3000
SUBASSEMBLY AX-181



REAR VIEW

Figure 1-2. General Component Identification (sheet 3 of 3)

NINTH
FRAME AP-113
SYMBOL 6600
SUBASSEMBLY AP-111

EIGHTH
FRAME AP-112
SYMBOL 6000
SUBASSEMBLY AP-109

SEVENTH
FRAME AX-429
SYMBOL 5100
SUBASSEMBLY AX-394

SIXTH
FRAME AX-393
SYMBOL 5000

FIFTH
FRAME AX-392
SYMBOL 4000

FOURTH
FRAME AP-103
SYMBOL 8100
SUBASSEMBLY AX-211

BALANCED ANTENNA OUTPUT

UNBALANCED ANTENNA OUTPUT

COAXIAL

BALANCED ANTENNA OUTPUT

COAXI

CONTACTORS

CONTACTORS

HIGH VOLTAGE RESISTORS R6604 THROUGH R6622

MOTORIZED CIRCUIT BREAKER

SHORT-ING RELAY

CHOKE

CONTACTORS

CONTACTORS

HIGH VOLTAGE RESISTORS R6004 THROUGH R6022

MOTORIZED CIRCUIT BREAKER

SHORT-ING RELAY

CHOKE

5-POSITION BAND SWITCH AND INDUCTOR (HORIZONTAL MOUNTING)

THREE OUTPUT LOAD CAPACITORS

7-POSITION BAND SWITCH AND INDUCTOR (VERTICAL MOUNTING)

(RETRACTABLE BASE)

DECOUPLING NETWORK

FOUR TUNE CAPACITORS

TWO BIFILAR FILAMENT CHOKE COILS

POWER AMPLIFIER TUBES V5001 AND V5002

EXHAUST

TWO AIR DUCTS

BROAD BAND XFMR T4001

COAX T-O-E SWITCH

THREE RESISTORS (DUMMY LOAD)

HIGH VOLTAGE RESISTORS R8101 THROUGH R8114

HIGH VOLTAGE FILTER CAPACITOR C8107

HIGH VOLTAGE FILTER CAPACITOR C8108

HIGH VOLTAGE FILTER CHOKE L8101

MAIN TRANSFORMER T8101, T8102, AND T8103, AND MOTORIZED CIRCUIT BREAKER

AUTO-TRANSFORMER T8104

MAIN POWER TRANSFORMERS T6601 THROUGH T6603

FILTER CAPACITORS C6601 AND C6602

MAIN POWER TRANSFORMERS T6001 THROUGH T6003

FILTER CAPACITORS C6001 AND C6002

RESISTORS R5101 THROUGH R5110

15 HP MOTOR

BLOWER

ONE AIR DUCT

304-4

REAR VIEW

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1	Assorted Loose Items:				
	1. Manuals, Technical	1 set			
	2. Data, Test	1 set			
	3. Eitel McCulloch Warranty	1			Warranty for tube TMC P/N 4CX5000A
	4. Machlett tube (ML-6697) Warranty	2			Warranty for tube
	5. Penta Laboratory Warranty	1			Warranty for tube TMC P/N TV-100
	6. Sola Voltage Regulator	1			Warranty for voltage regulator
	7. Straps, Grounding				Ground first and second frames
		2	MS-1753-2-18		
		2	MS-1753-2-30		
	8. 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-122.3-604	R814, R815	
		2	RW-122-1-405	R810, R811	

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	9. Capacitor, Variable with PO-185-1 and MS-1696	1	AM-103	C916	Output balance, second frame
		1	AM-113	C927	Tuning second frame
	with PO-185-6 and MS-2368	1	AM-114	C928	Load second frame
	10. 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
	11. Lamp Socket Assembly, High Voltage and	1	AX-166		H.V. indicator, top first frame
	Lamp	1	BI-106-1	I300	Lamp for indicator
	12. Plugs, Electrical	1	PL-134		Female plug for customer use in connecting to convenience ac outlet jack, bottom front panel, first frame
		2	PL-149		Universal connector plug for customer use, in connecting to jack J904, top second frame
		1	PL-157		Connector plugs for customer use in connecting to MONITOR OUTPUT jack, bottom front panel, first frame
		2	PL-218		Male plug for customer use in making an extension cord in conjunction with plug PL-134

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	13. Cable, Emergency Output	1	CA-582-1		Emergency output cable
	14. Cables, supplied with each TMC Model VOX when a component of transmitter	1 1 1	CA-108 CA-109 CA-502		Cables for bench testing modular drawer assemblies.
	15. Cable, Interconnect	1	CA-615		Ac input power buss connects between terminal board on rear of base for third and fourth frames and terminal board in bottom rear of second frame.
	16. Bag 1: Wrenches, Allen	1 set			Special Installation tools
	17. Bag 1A: Assorted Allen head type screws 1/4 inch long				Extra hardware (hdwr)

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	18. Bag 2:				Same as bag 1
	Brystal Key		TI-100		
	19. Bag 3:				
	Screw, Machine, Hex-head	10	SCHH3716SS24		Frame to base hdwr
	Washer, Flat	10	FW37HBN		
	Washer, Lock	10	LWS37MRN		
	20. Bag 4:				
	Screw, Machine, Hex-head	1	SCHH6211BN24		Ground strap hdwr
	Nut, Plain, Hex	3	NTH6211BN23		
	Washer, Flat	9	FW62HBN		
	Washer, Lock	4	LWS62MRN		
	21. Bag 5:				
	Screw, Machine	4	SCFP0832BN6		Shield to base hdwr
	Screw, Machine	12	SCRP2520SS8		Access plate to base hdwr
	22. Bag 6:				
	Screw, Machine Hex-head	3	SCHH3716SS16		Base to base hdwr
	Washer, Flat	3	FW37HBN		
	Washer, Lock	3	LW37MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	23. Bag 7:				
	Screw, Machine, Hex-head	16	SCHH3716SS14		Frame to base hdwr
	Washer, Flat	16	FW37HBN		
	Washer, Lock	16	LWS37MRN		
	24. Bag 8:				
	Screw, Machine	4	SCFP8328N6		Shield to base hdwr
	25. Bag 9:				
	Screw, Machine, Hex-head	10	SCHH3118SS16		Frame to frame hdwr
	Washer, Flat	10	FW31HBN		
	Washer, Lock	10	LWS31MRN		
	26. Bag 10: Same as Bag 9				
	27. Bag 11: Same as Bag 9				
	28. Bag 12: Same as Bag 9				

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	29. Bag 13:				
	Screw, Machine, Hex-head	4	SCHH5013SS48		Main power transformer to frame hdwr
	Washer, Flat	4	FW50HBN		
	Washer, Lock	4	LWS50MRN		
	30. Bag 14:				
	Screw, Machine, Hex-head	4	SCHH3716SS32		Transformer to frame hdwr
	Washer, Flat	4	FW43HBN		
	Washer, Lock	4	LW537MRN		
	31. Bag 15: Same as Bag 14				
	32. Bag 16: Same as Bag 14				
	33. Bag 17:				
	Screw, Machine, Hex-head	4	SCHH3118SS16		Transformer to frame hdwr
	Washer, Flat	4	FW31HBN		
	Washer, Lock	4	LWS31MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	34. Bag 18:				
	Nut, Plain, Hex	4	NTH3118BN18		Transformer to frame hdwr
	Washer, Flat	4	FW31HBN		
	Washer, Lock	4	LWS31MRN		
	35. Bag 19:				
	Nut, Plain Hex	6	NTH1032BP12		Bandswitch to frame hdwr
	Washer, Flat	6	FW10BPL		
	Washer, Lock	6	LWS10MRN		
	Set screw	3	SLHC1032SS4		
	36. Bag 20:				
	Screw, Machine	11	SCBP1032BN8		Drawer front panel to frame mounting hdwr
	Washer, NON-metallic	11	WA-101-5		
	37. Bag 21: Same as Bag 20				
	38. Bag 22: Same as Bag 20				
	39. Bag 23: Same as Bag 20				
	40. Bag 23A:				
	Special Hardware	10	SC-158-1		Special hdwr for typing fourth and fifth frames

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
1 (cont)	41. Hinges, Rear Door				
		3	MS-2041		Rear door hinges, third frame
		3	MS-2042		
	42. Door Latch Plates:				
	Bottom Front and Rear	6	MS-2122		Securing doors to first through fourth frames
	Top Front and Rear	6	MS-1160		
	43. Door Latch Brackets				
	Top, Front, and Rear	6	MS-1661		Same as item 2
		6	MS-2123		
	44. Plugs, Button				
	1/2 inch	8	HB-101-3		Dress side panels and covers
	7/8 inch	48	HB-101-6		
	45. Wrenches, Allen	1	WR-100-12		
		1	WR-100-20		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
2	Assorted Loose Items:				
	1. Capacitors:	3	CB-160	C7330, C7331, and C7332	Tune and load, third frame
		3	CO-106-1000-30C	C7325 and C7328, and C8207	Fixed capacitors in PA, third frame Antenna tuning, fourth frame
		1	CX-103	C7316	Fixed capacitor in PA circuit, third frame
		1	CO-107-6-30C	C7326	Same as above
	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 and E8116	Threaded metal rods for bowl assemblies, top fourth frame
	5. Insulator		NS-128-1	E8114	Insulated electrical feed through

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
2 (cont)	6. Resistors	1	RW-119GIRO	R8101	Power supply circuit, fourth frame
		10	RW-118F183	R8102 thru R8111	
		6	RW-118F5RO	R8112 thru R8114 and	
		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
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

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
5	Second Frame Assembly, with:	1	AX-186	1000	Metal cabinet that houses electrical equipment
	Power Amplifier	1	AX-238		Power amplifier, second frame
	Main Power Panel	1			
	Relay Panel	1	AX-139	700	Indicator control and relay panel, second frame
6	First Frame Assembly, with:	1	AX-239	3000	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1			Equipment status indicators, top firstframe
	Power Distribution Panel	1	Model APP-3 Ser. No. 6275		
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, third frame
	Relay Panel	1	AR-116	7600	Indicator control and relay panel, third frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
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, fourth frame
	Spare Fuse Panel	1	MS-2095		
9	Power Transformer	1	TF-203	T800	Power transformer, second frame
10	Power Transformer	1	TF-211	T8101	Power transformer, fourth frame
11	Power Transformer	1	TF-211	T8102	Power transformer, fourth frame
12	Power Transformer	1	TF-211	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

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
16	Band Switch	1	AS-120		Tuning band switch, third frame
17	1. Power Supply, Drawer Assembly	1	Model CPP-5 Ser. No. 6275		Power supply drawer, rear first frame
	2. Frequency Divider, Drawer Assembly	1	Model CHL-1 Ser. No. 6275		Frequency divider drawer, first frame
	3. R F Oscillator, Drawer assembly	1	Model CSS-1A Ser. No. 6275		R F oscillator drawer, first frame
18	1. A F Controlled Oscillator Assembly	1	Model CLL-1 Ser. No. 6275		A F oscillator drawer, first frame
	2. Tone Intelligence, Drawer Assembly	1	Model TIS-3 Ser. No. 6275		Tone intelligence drawer, first frame
	3. Sideband Exciter, Drawer Assembly	1	Model CBE-1 Ser. No. 6275		Sideband exciter drawer, first frame
19	1. Controlled Master Oscillator, Drawer Assembly	1	Model CMO-1 Ser. No. 6275		Controlled master oscillator drawer, first frame
	2. Frequency Amplifier, Drawer Assembly	1	Model CHG-2 Ser. No. 6275		Frequency amplifier drawer, first frame
20	Power Supply	1	Model CPP-2 Ser. No. 6275		Power Supply drawer, first frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
21	RF Amplifier Drawer Assembly with plug-in RF Amplifier unit Model RFC-1	1	AX-104	2000	RF amplifier and control panel, second frame
22	High-Voltage Rectifier, Drawer Assembly	1	AX-103	600	H.V.R., second frame
23	Bias Power Assembly Supply, Drawer	1	AP-104	7500	Bias power supply drawer, third frame
24	High-Voltage Rectifier, Drawer Assembly	1	AP-105	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		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
28 (cont)	3. First and Second Frame Trim, Front Bottom	1	MS-3646		
	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-1671		
	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		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
28 (cont)	15. Third and Fourth Frame Trim, Front Top	1	MS-2028		
	16. Third and Fourth Frame Trim, Front Bottom	1	MS-3645		
	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		
	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		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
29	Fifth Frame Assembly, with:		AX-393	5000	Metal cabinet that houses electrical equipment
	Front and Rear Doors and Interconnect Box Assembly TMC P/N A-2749				
30	Assorted Loose Items:				
	1. Resistors	10	RW-118F252	R5101 thru R5110	High wattage bleeder resistors, rear seventh frame
	2. Switch, Matrix Assembly	1	A-2750		Coax switch, upper fifth frame
	3. Exhaust Fan	1	BL-118	B-5304	Cool seventh frame
	4. Fifth Frame Trim, Filler	2	MS-3290		Filter trim between bottom fourth and fifth frames
	5. Rods, shorting	3	A-1990-5		Protection devices, mounted in rear of seventh, eighth, and ninth frames
	6. Bag 24:				
	Screw, Machine, Hexhead	10	SCNH2520BN10		Frame to Frame Hdwr
	Washer, Flat	10	FW25HBN		
	Washer, Lock	10	LWS25MRN		
	7. Bag 25:				
	Screw, Machine	4	SCBP1052BN8		Fifth frame filler trim hdwr
	Washer, Flat	4	FW10HBN		
	Washer, Lock	4	LWS10MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	8. Bag 26:				
	Screw, Machine, Hexhead	14	SCHH3716SS24		Frame to base hdwr
	Washer, Flat	14	FW37HBN		
	Washer, Lock	14	LWS37MRN		
	9. Bag 27:				Extra shield to base hdwr
		6	SCFP0632BN6		
	10. Bag 28:				Frame to base hdwr
	Screw, Machine, Hexhead	12	SCHH5013SS48		
	Washer, Flat	12	FW50HBN		
	Washer, Lock	12	LWS50MRN		
	11. Bag 29:				Shield to base hdwr
	Screw, Machine	6	SCFP0632BN6		
	12. Bag 30:				Base to base hdwr
	Screw, Machine, Hexhead	3	SCHH3716SS16		
	Washer, Flat	3	FW37HBN		
	Washer, Lock	3	LWS37MRN		
	13. Bag 31:				Capacitor C5026 mounting
	Screw, Machine	4	SCBP1024BN8		hdwr, sixth frame
	Washer, Flat	4	FW10HBN		
	Washer, Lock	4	LWS10MRN		
	14. Bag 32:				Frame to frame hdwr
	Screw, Machine, Hexhead	10	SCHH3118S516		
	Washer, Flat	10	FW31HBN		
	Washer, Lock	10	LWS31MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	15. Bag 33: Same as Bag 32				
	16. Bag 34: Same as Bag 32				
	17. Bag 35:				Exhaust Fan to seventh frame hdwr
	Screw, Machine	6	SCBP0832BN6		
	Washer, Flat	6	FW08HBN		
	Washer, Lock	6	LWS08MRN		
	18. Bag 36:				Main Blower to sixth and seventh frame hdwr
	Screw, Machine, Hexhead	12	SCHH2520BN10		
	Washer, Flat	12	FW25HBN		
	Washer, Lock	12	LWS25MRN		
	19. Bag 37:				Fifth frame to sixth frame hdwr
	Screw, Machine, Hexhead	14	SCHH2520SS12		
	Washer, Flat	14	FW25HBN		
	Washer, Lock	14	LWS25MRN		
	20. Bag 38:				Input transformer mounting hdwr
	Washer, Flat	8	FW50HBN		
	Nut	4	NTH3118		
	Washer, Lock	4	LWS31MRN		
	Washer, Flat	4	FW31HBN		
	Screw, Machine	12	SCBP1032BN8		Grid to frame grounding hdwr

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	21. Bag 39:				
	Nut Plain, Hex	6	NTH3118BN18		Capacitor mounting hdwr
	Washer, Flat	6	FW31HBN		
	Washer, Lock	6	LWS31MRN		
	22. Bag 40:				
	Screw, Machine, Hexhead	20	SCHH3716BN32		Main power transformer mounting hdwr, eighth and ninth frames
	Washer, Flat	20	FW374BN		
	Washer, Lock	20	LWS37MRN		
	23. Bag 41: Same as Bag 40				
	24. Bag 42: Same as Bag 40				
	25. Bag 43:				Balance transformer T6801 mounting hdwr
	Screw, Machine, Hexhead	4	SCHH2520BN12		
	Washer, Flat	4	FW25HBN		
	Washer, Lock	4	LWS25MRN		
	26. Bag 43A:				
		12	SC-143-2420-28		Bowl assembly mounting hdwr, ninth frame
		12	NTH-137-2520		
	27. Bag 43B:				Same as bag 43
	Screw, Machine	4	SCBP1032BN16		
	Washer, Flat	4	FW10HBN		
	Washer, Lock	4	LWS10MRN		
	28. Bag 44:				Antenna balanced tuner deck mounting hdwr, ninth frame
	Screw, Machine	14	SCBP1032BN8		
	Washer, Lock	14	LWS10MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	29. Bag 45:				
	Screw, Machine	10	SCBP1032BN8		Control panel to frame hdwr (eighth and ninth frames
	30. Bag 46:				Extra cover tops hdwr
	Screw, Machine, Hexhead	48	SCHH2520SS20		
	Washer, Flat	48	FW25HBN		
	Washer, Lock	48	LWS25MRN		
	31. Bag 47:				
	Screw, Machine, Hexhead	20	SCHH2520SS24		Panel mounting hdwr
	Washer, Flat	20	FW25HBN		
	Washer, Lock	20	LWS25MRN		
	32. Bag 48:				
	Screw, Machine, Hexhead	10	SCHH2520S10		Trim to seventh, eighth, and ninth frames hdwr
	33. Bag 49:				Cover tops to frame mounting hdwr (first through fourth and sixth through ninth frames)
		54	SCHH2520SS24		
		54	FW25HBN		
		54	LWS25MRN		
	34. Bag 50				Air intake assembly to fifth frame hdwr
		10	SCBP1032BNB		
	35. Bag 51				
		12	SCBP1032BN8		Fan guard to seventh frame hdwr
		12	FW10HBN		
		12	LWSMRN		
	36. Bag 52				
		32	SCBP0832BN6		Front trim hdwr (first through fourth frame)

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	37. Bag 53				
		35	SCBP0832BN6		Rear trim hdwr
	38. Bag 54				
		32	NT1085		Tinnerman type clip to attach front trim to frame
	39. Bag 55				
		24	FW10HBN		Door latch hdwr
		24	FW25HBN		
		24	LWS10MRN		
		24	LWE10MRN		
		24	NTH1032BN12		
		24	SCBP1032BN10		
		24	SCFP1032BN8		
	40. Bag 56				
		12	SCHH2520BN8		Rear hinge hdwr
		12	FW25HBN		
		12	LWS25MRN		
	41. Bag 57:				Trim to center rear third frame hdwr
		4	SCBP1032BN8		
		4	FW10HBN		
		4	LWS10MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
30 (cont)	42. Bag 58:				Relay panel hdwr
		6	SCFP0632BN6		
	43. Bag 59:				Bowl assembly and meter panel hdwr
		24	NTH1032BN12		
		24	SCBP1032BN10		
		24	FW10HBN		
		24	LWS10MRN		
	43. Bag 60:				Bottom panel to frame hdwr
		10	SCFP0632BN6		
		6	SCBP1032BN32		
		3	SCBP0632BN6		
	45. Bag 61:				Extra hdwr
		50	SCBP1032BN8		
		50	FW10HBN		
		50	LWS10MRN		
	46. Bag 61A:				Extra hdwr
		20	SCBP0632BN8		
		20	FW06HBN		
		20	LWS06MRN		
	47. Bag 61B:				Extra hdwr
		20	SCBP0832BN8		
		20	FW08HBN		
		20	LWS08MRN		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
31	Mounting Base Assembly, with: shield and access doors	1			Metal base structure that can be bolted to floor and, sixth and seventh frame are bolted on
32	Mounting Base Assembly, with: shield and access doors	1			Metal base structure that can be bolted to floor and, eighth and ninth frames are bolted on
33	Sixth Frame Assembly			5000	Metal cabinet that houses electrical equipment
34	1. Capacitor Assembly	1	AT-105	C6801	Antenna tuning, ninth frame
	2. Input Transformer Assembly	1	TR-180	T4001	Coupling, transformer, fifth frame
35	Assorted Loose Items:				
	1. Fifth Frame Door, top Front	1	MS-3166		Front door, fifth frame
	2. Feed Through	2	NS-107	E5001 & E5002	Electrical feed through, sixth frame
	3. Socket Assembly, Lamp	2	AX-166		H V indicator, eighth frame
	4. Plate, Interconnect	2	PM-880		Metal plates to electrically connect assembly A-2821 to band switch, seventh frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
35 (cont)	5. Relay Panels		AR-137 AR-138	5600 5700	Relay and indicator panels, seventh frame
	6. Shaft	1	PM-1002		Mechanically tuning capacitor assembly A-2821, seventh frame
36	Assorted Loose Items:				
	1. Capacitor, with: Mounting Brackets	1 2	CO-109-2 MS-3540	C5026	Capacitor in PA amplifier circuit, sixth frame
	2. Ring, Screen to Tube	 2 2	 PM-969 PM-970		When four halves are bolted together they form a ring. Rings hold screens to tubes, sixth frame
	3. Ring, Split	1 1 2	PO-267-1 PO-267-2 PO-268		PA tube electrical connectors, sixth frame
	4. Resistors:				
		1	RW-119G1RO	R6004	High wattage power supply bleeder resistors, rear eighth frame
		14	RW-118F183	R6005 thru R6018	
		3	RW-118F3RO	R6019 thru R6021	
		1	RW-119G131	R6022	
		6	RW-118F5RO	R6301 thru R6303	Crowbar drawer circuit, eighth and ninth frames

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
36 (cont)	5. Tubes, Electron				
		2	7568	V6301	Crowbar drawer circuit, eighth and ninth frames
		2	7241	V5502 & V5503	Voltage regulator tubes for bias power supply drawer
		3	OD3W	V5504 thru V5506	
	6. Vacuum Capacitor with:	2	CO-108-1	C5001 & C5002	Capacitor in pa amplifier circuit, sixth frame
	Mounting Brackets	2			
	7. Transmission Line Connector, with Inner conductors	1	PO-288		RF coax section for unbalanced output, top eighth frame
	8. Inner Conductor	1	PO-289-2		Part of assembly 283, eighth frame
37	Capacitor Assembly		A-2821		Power Amplifier circuit, sixth frame (although physically located in seventh frame)
38	Assorted Loose Items:				
	1. Capacitor	2	CO-110	C5304 & C5308	Voltage dividers for meters, seventh frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
38 (cont)	2. Drawings, schematic	1 Set			
	3. Capacitor Assembly	2		C5014 & C5015	Capacitor in PA amplifier circuit, sixth frame
	4. Insulator Feed-thru	2	AX-450	E6801, E6802	Bowl assemblies, top ninth frame
	5. Plate Connectors				
		1	PM-883		
		1	PM-884		
	6. Resistors	1	RW-6G1RO	R6604	High wattage power supply bleeder resistors, rear ninth frame
		14	RW-118F183	R6605 thru R6618	
		3	RW-1183RO	R6619 thru R6621	
		1	RW-119G131	R6622	
	7. Feedthrough, Insulator with hardware	2	NS-115		Insulated electrical feed through, fifth to sixth frame
	8. Tubes, Electron				
		2	7241	V5503 & V5503	Voltage regulator tubes for bias power supply
		3	OD3W	V5504 thru V5506	drawer, seventh frame
		1	7241		Spare for V5502 or V5503, SPARE box, sixth frame
					Interframe coaxial RF transmission line, third to fifth frame
		2	OD3W		Spares for V5504, V5505, or V5506, SPARE box, sixth frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
39	1. Transmission Line and, Elbows	1 2	PO-266 PO-248		
	2. Transmission Line, Emergency Output	2	PO-264		Coaxial RF transmission line from fifth frame matrix switch to seventh frame pa circuits
40	Seventh Frame Assembly, with:	1	AX-429	5100	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1	AM-118	5200	
	Front Panel Power Amplifier Control and Power Amplifier Section	1	AX-395	5300	
	Panel, Main Control	1	AX-396	5400	Main control panel, seventh frame
41	Main Blower Assembly	1	BL-113	B5101	Main blower, rear sixth and seventh frames
42	Tubes, Electron	2	ML-8317	V5001 & V5002	Final PA output tubes, sixth frame
43	Eighth Frame Assembly, with:	1	AP-112	6000	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1	AM-119	6100	Equipment status meter panel, eight frame
	Panel, Power Supply Control	1	AX-399	6500	Power Supply control panel, eight frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
44	Ninth Frame Assembly, with:	1	AP-113	6600	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1	AM-120	6700	Equipment status meter panel, ninth frame
	Panel, Power Supply Control	1	AX-399	6500	Power Supply control panel, ninth frame
45	Capacitors	2	CP-112	C6003, C6004	HV power supply filters, bottom eight frame
46	Capacitors	2	CP-112	C6603, C6604	HV power supply filters, bottom ninth frame
47	Power Transformer	2	TF-253	T6602, T6603	Input HV power supply transformers, ninth frame
48	Power Transformer	2	TF-253	T6003, T6601	Input HV power supply transformers, eight and ninth frame, respectively
49	Power Transformer	2	TF-253	T6001, T6002	Input HV power supply transformers, eight frame
50	Balance Transformer		TR-179	T6801	Antenna balancing transformer, ninth frame

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
51	Exterior Covers and Trim Strips:				Exterior covers and trim strips, various frames
	1. Seventh Frame Cover, Top	1	MS-3161		
	2. Seventh Frame Door, Bottom Right Front	1	MS-3171		
	3. Seventh Frame Door, Bottom Left Front	1	MS-3172		
	4. Seventh Frame Door, Top Right Rear	1	MS-3175		
	5. Seventh Frame Door, Top Left Rear	1	MS-3176		
	6. Seventh Frame Panel, Bottom Rear	1	MS-3177		
	7. Seventh Frame Trim Bottom Center	1	MS-3202		
	8. Seventh Frame Window Door, Top Left Front	1	A-2693		
	9. Seventh Frame Window Door, Top Right Front	1	A-2692		
	10. Seventh Frame Window, Meter Box	1	A-2695		
	11. Sixth Frame Air Duct Adaptor	1	MS-3186		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
51 (cont)	12. Eighth and Ninth Frame Windows, Meter Box	2	A-2694		
	13. Seventh Frame Hinge, Rear Door	1	MS-3249		
	14. Seventh and Eighth Frame Hinge, Rear Door	1	MS-3250		
	15. Eighth and Ninth Frame Hinge, Rear Door	1	MS-3251		
	16. Ninth Frame Hinge, Rear Door	1	MS-3179		
	17. Eighth and Ninth Frame Hinge Shims, Rear Door	1 1	MS-3250 MS-3251		
52	Exterior Covers and Trim Strips:				Exterior covers and panels, various frames
	1. Eighth Frame Cover, Top	1	MS-3162		
	2. Ninth Frame Cover, Top	1	MS-3163		
	3. Eighth Frame Panel, Bottom Front	1	MS-3168		
	4. Ninth Frame Panel, Bottom Front	1	MS-3168		
	5. Eighth Frame Panel, Bottom Rear	1	MS-3169		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
52 (cont)	6. Ninth Frame Panel, Bottom Rear	1	MS-3252		
	7. Fifth Frame Air Duct Adaptor	1	MS-3185		
53	Exterior Covers and Doors:				
	1. Fourth Frame Door, Rear	1	MS-1647		Exterior covers and doors, second and third frames
	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		
54	Exterior Covers, Trim Strips, and Doors:				Exterior trim strips and doors, various frames
	1. Ninth Frame Panel, Right Side	1	MS-3164		
	2. Sixth Frame Door, Front	1	MS-3170-1		
	3. Sixth Frame Door, Rear	1	MS-3170-2		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
54 (cont)	4. Seventh Frame Trim Front	1	MS-3181		
	5. Eight Frame Trim, Front	1	MS-3182		
	6. Ninth Frame Trim, Front	1	MS-3182		
55	Exterior Doors:				Exterior doors, eighth and ninth frames
	1. Eighth Frame Door, Right Front	1	MS-3173		
	2. Ninth Frame Door, Right Front	1	MS-3173		
	3. Eighth Frame Door, Left Front	1	MS-3174		
	4. Ninth Frame Door, Left Front	1	MS-3174		
	5. Eighth Frame Door, Right Rear	1	MS-3179		
	6. Ninth Frame Door, Right Rear	1	MS-3179		
	7. Eighth Frame Door, Left Rear	1	MS-3180		
	8. Ninth Frame Door, Left Rear	1	MS-3180		

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
56	Bias Supply Drawer	1	AP-108	5500	Bias power supply drawer, seventh frame
57	Same as crate No. 56				
58	High Voltage Rectifier Drawer	1	AP-110	6400	H. V. R. drawer, eighth frame
59	High Voltage Rectifier Drawer	1	AP-110	6400	H. V. R. drawer, ninth frame
60	Crowbar Circuit Drawer	1	AX-398	6300	Crowbar drawer, eighth frame
61	Crowbar Circuit Drawer	1	AX-398	6300	Crowbar drawer, ninth frame
62	Air Duct, Straight Section	2			
63	Air Duct, Offset Section	1			
64	Air Duct, Offset Section	1			
65	Air Duct, Elbow, Air Duct, Outlet and Air Duct, and Straight Sections				
66	Air Duct, Outlet Section	1			
67	Air Duct, Outlet Section	1			

Table 1-2. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	PART NO.	DESIGNATOR	FUNCTION
68	Air Duct, Elbow Section	1			
69	Air Duct, Elbow Section	1			

SECTION II

PRE-INSTALLATION

1-5. GENERAL

Dimensional clearances, packing an unpacking data, inspection, input power cabling layout, equipment anchoring, and equipment required but not supplied warrant consideration and planning before undertaking transmitter assemblage. The detailed pre-installation information presented in following paragraphs is for a typical 200K transmitter land installation.

1-6. DIMENSIONAL CLEARANCES

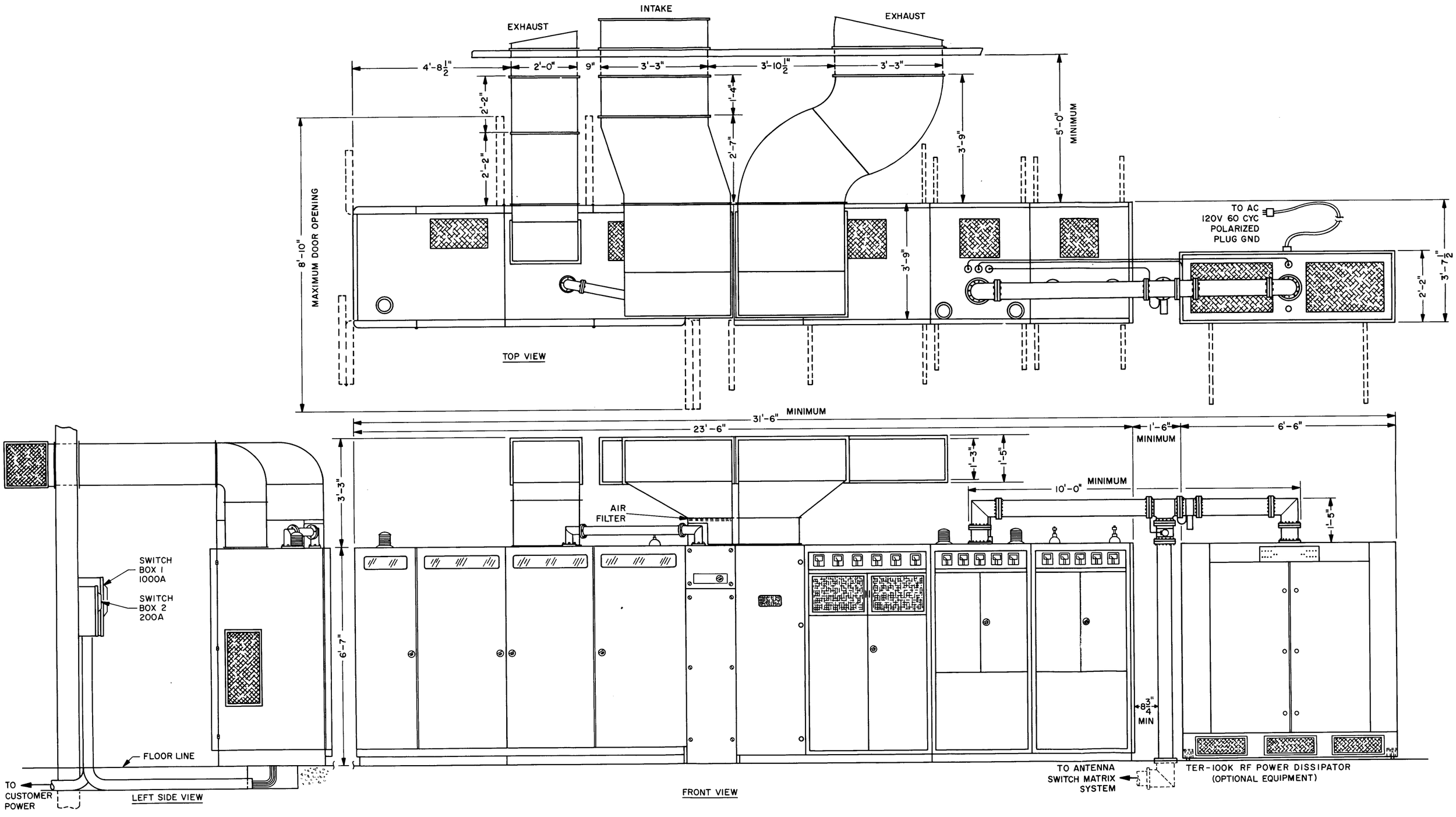
Figure 1-3 illustrates minimum dimensional clearances required for typical 200K transmitter installation. Additional clearance considerations are discussed in following paragraphs.

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.

If the typical dimensional clearances shown in figure 1-3 are extended, additional air duct sections can be used.

The type of output transmission line (transmitter to antenna) is another clearance consideration. Construction of necessary hole sizes in the exterior walls between transmitter and antenna will be governed by type selected.

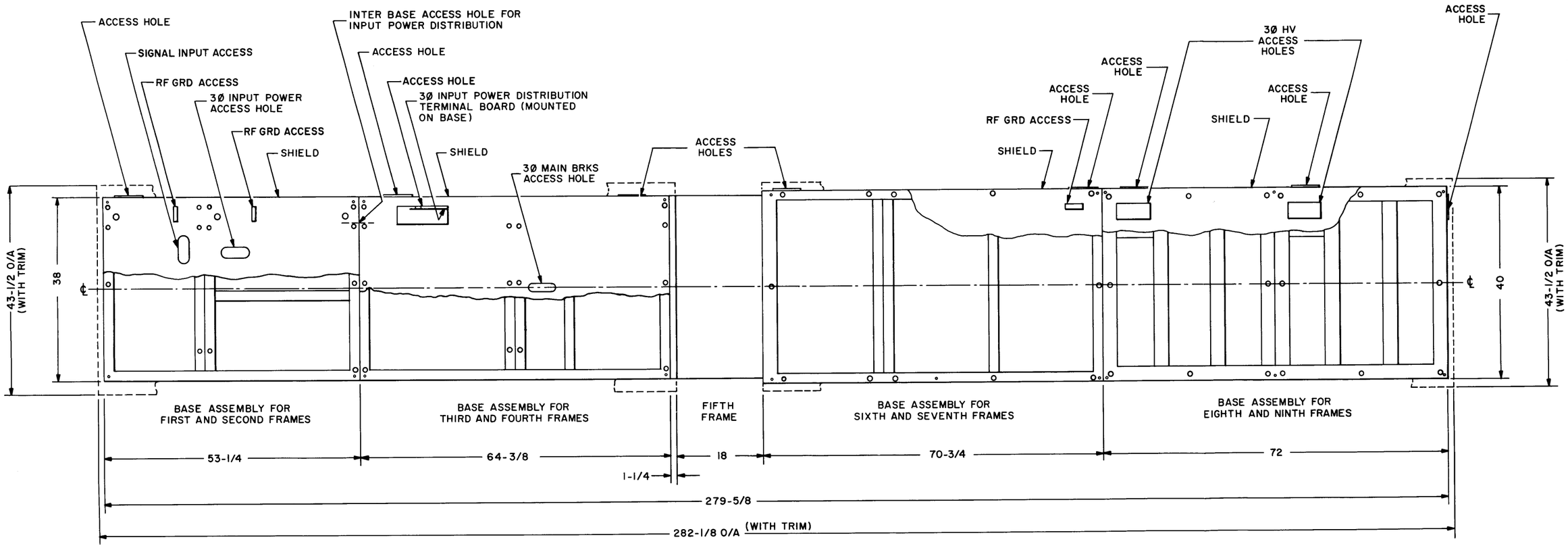
It may be advisable to outline overall dimensions of the transmitter on the floor with a piece of soft chalk or a plumb-line, before starting the installation procedures. After using this outline as a guide to position transmitter base assemblies, in the installation procedure, these lines could be removed.



3c4-5

Figure 1-3. General Layout Requirements

(sheet 1 of 3)

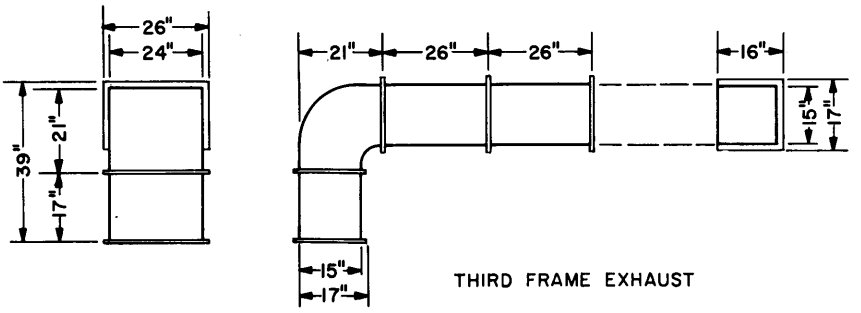


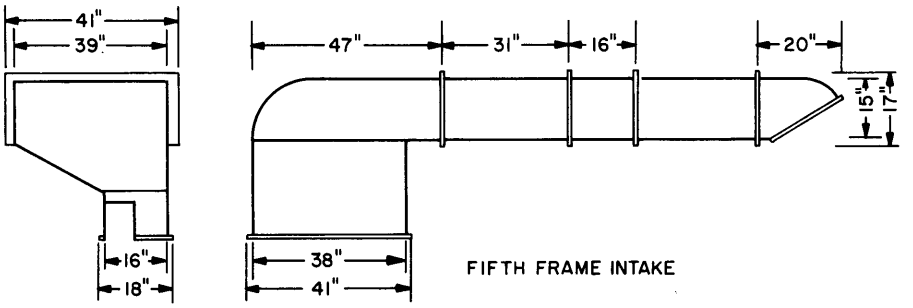
304-6

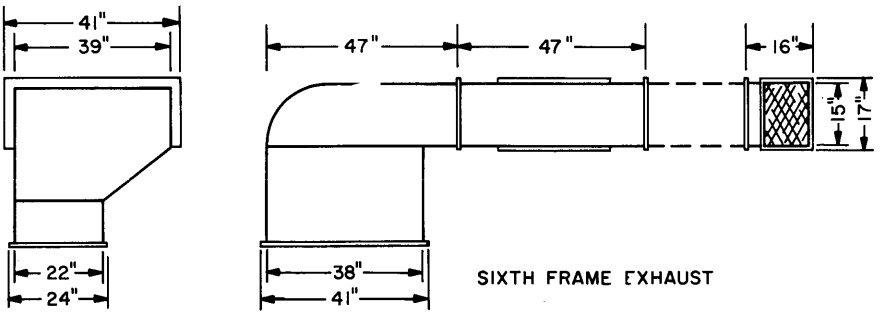
TOP VIEW - BASE PLAN

Figure 1-3. General Layout Requirements

(sheet 2 of 3)







304-7

Figure 1-3. General Layout Requirements

(sheet 3 of 3)

1-7. PACKING AND UNPACKING DATA

The 200K transmitter is packed in 69 crates (not including running spares). Each crate is assigned a number from one to sixty-nine and appears on the crate. Now that package one has been opened and before starting the actual installation procedure, physically locate package one closest to the intended point of installation, locate the other packages according to their numerical sequence such that package 69 is placed farthest away from package one. Storing packages in this manner will make unpacking and assembling the transmitter easier.

Figure 1-4 illustrates typical equipment packing methods. Specific crating data for each crate, is presented in table 1-3.

Table 1-3. Packaging Data

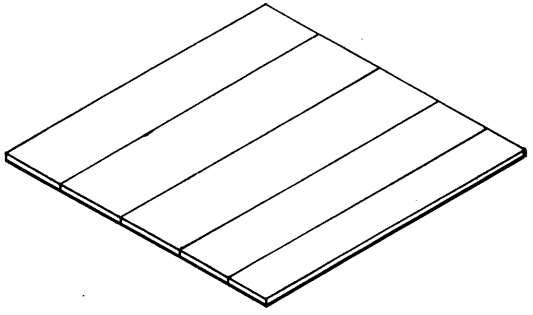
CRATE NO.	GROSS WEIGHT IN LBS	CRATED DIMENSIONS IN INCHES		
		LENGTH	WIDTH	HEIGHT
1	201	32	23-7/8	30-3/4
2	263	45-1/8	38-3/8	22-1/4
3	234	56-3/8	40-1/8	8
4	273	67-3/4	40-1/8	8
5	1298	31-3/8	23	51-1/2
6	768	82-1/8	50-1/4	32-1/4
7	1130	21-3/8	42	50-1/4
8	1166	81-3/8	42	51-1/4
9	539	28-3/4	19-3/4	24
10	654	26-3/8	16-5/8	38
11	654	26-3/8	16-5/8	38
12	654	26-3/8	16-5/8	38
13	150	16-1/4	10-1/2	16-7/8
14	149	23-1/4	13-1/4	12-1/4
15	210	24-3/4	15-1/4	21-1/8
16	201	40-3/4	27	28-3/4
17	212	32	23-7/8	30-3/4
18	202	32	23-7/8	30-3/4
19	214	32	23-7/8	30-3/4
20	143	27-1/4	21-5/8	17-1/4
21	240	40	30-3/4	22
22	233	40	30-3/4	22
23	217	39-7/8	30-3/4	22
24	289	40-3/4	34-5/8	27-3/4

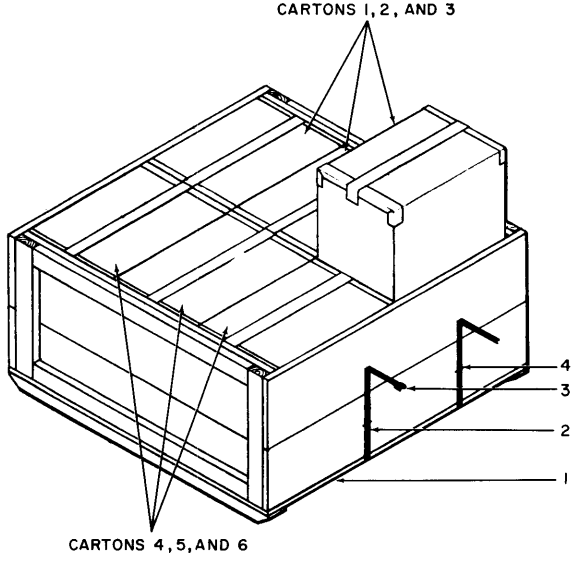
Table 1-3. Packaging Data (cont)

CRATE NO.	GROSS WEIGHT IN LBS	CRATED DIMENSIONS IN INCHES		
		LENGTH	WIDTH	HEIGHT
25	187	40	30-3/4	22
26	250	40-3/4	34-5/8	27-3/4
27	146	28-1/2	26-3/4	24-3/4
28	643	77-5/8	27-1/2	44-1/4
29	680	87-1/4	47-1/4	31
30	175	37	30-1/2	24-1/4
31	265	71-1/2	42-1/2	5-1/4
32	295	76	42-1/4	5-1/4
33	1007	83-1/2	33-1/4	53
34	180	39-3/4	30-3/4	22
35	231	31-3/4	23-5/8	31
36	235	37	30-1/2	24-1/4
37	245	43-3/4	30-7/8	21-5/8
38	171	37	30-1/2	24-1/4
39	88	57-3/4	10-3/4	17
40	2312	83	54-3/4	55
41	545	40-1/2	41	33-1/2
42	972	82	42	72-5/8
43	1627	83-1/4	45-1/4	55-1/4
44	1510	83-1/4	45-1/4	55-1/4
45	294	29	16-1/2	17-1/2
46	294	29	16-1/2	17-1/2
47	2273	31	36	42
48	2273	31	36	42
49	2273	31	36	42
50	204	34-7/8	23-7/8	27-5/8
51	610	54-3/8	29-3/8	54-1/4
52	342	42-5/8	32-5/8	41-5/8
53	648	77-5/8	22-1/4	44-1/4
54	655	80-1/2	31-3/4	51-1/2
55	295	44	28-1/4	32-1/2
56	229	32-1/2	28-1/4	24
57	229	32-1/2	28-1/4	24
58	281	43-7/8	30-1/8	24-7/8
59	281	43-7/8	30-1/8	24-7/8
60	189	43-7/8	30-1/8	21-1/2
61	189	43-7/8	30-1/8	21-1/2
62	108	40-3/8	20-3/8	30
63	169	54	21-1/8	51-3/4
64	218	81	21-1/8	50-7/8
65	160	64-3/8	33-1/4	29
66	116	49-5/8	20-1/8	39
67	78	45-1/8	19-3/8	24-1/2
68	186	45-1/8	31-7/8	50-3/4
69	224	45-1/8	41-1/2	50-3/4

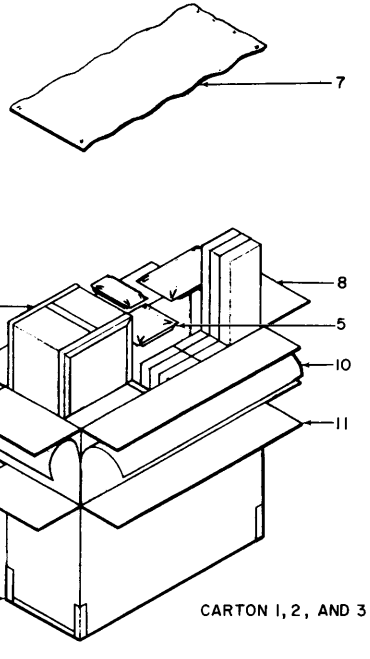
LEGEND

1. WOODEN BOX
2. STEEL STRAPPING
3. STRAPPING SEALS
4. STEEL STAPLES
5. BARRIER BAG
6. FIBERBOARD BOX
7. CELLULOSIC WADDING
8. FIBERBOARD BOX
9. PRESSURE SENSITIVE TAPE
10. BARRIER BAG
11. FIBERBOARD BOX
12. CAPACITOR
13. MOULDED CUSHIONING
14. MARKING TAPE
15. TISSUE PAPER
16. BARRIER BAG
17. FIBERBOARD BOX
18. BARRIER BAG
19. PRESSURE SENSITIVE TAPE
20. FIBERBOARD BOX
21. SHAFT AND GEAR

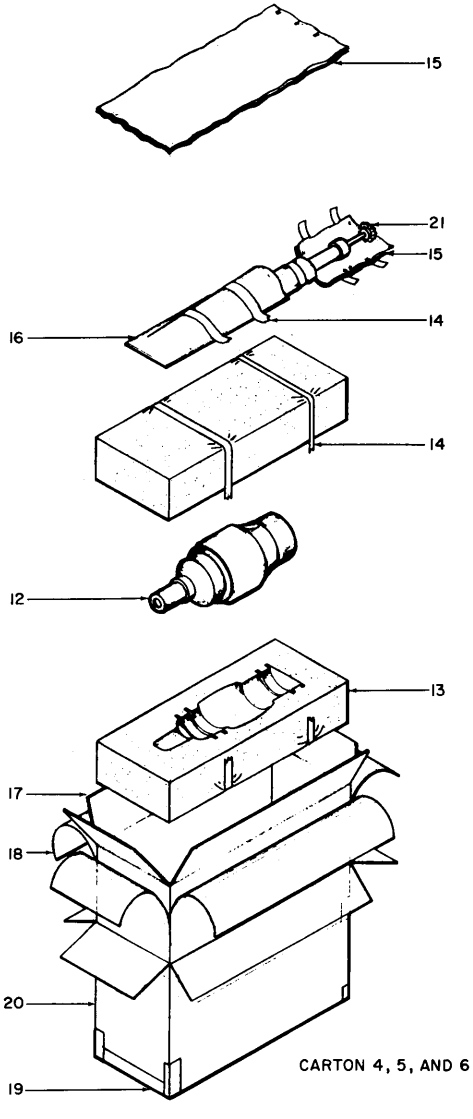




DETAIL A AND B IN SHIPPING CRATE



DETAIL B



DETAIL A

294-7

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

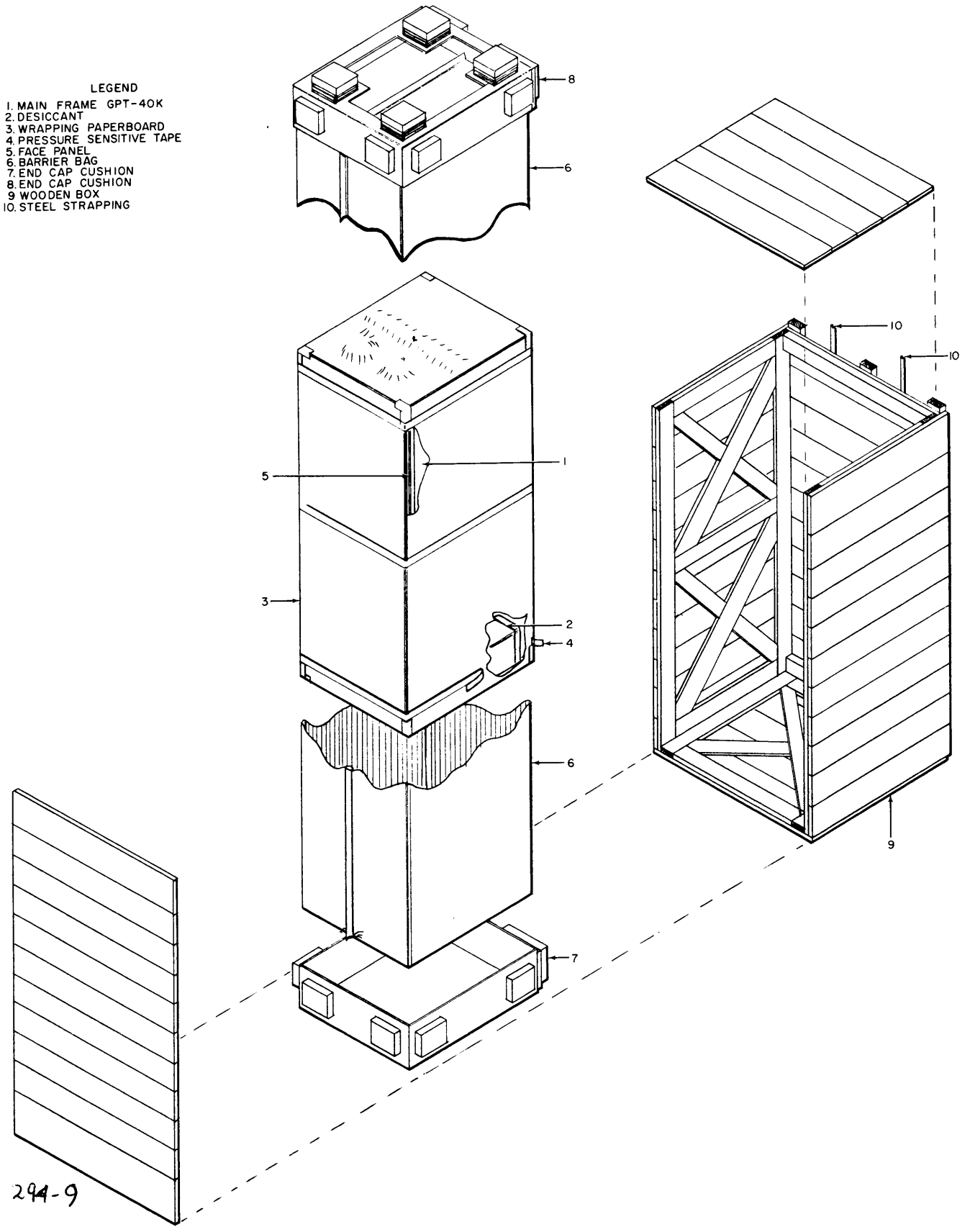


Figure 1-4. Typical Equipment Packaging

(sheet 2 of 5)

1-57/1-58

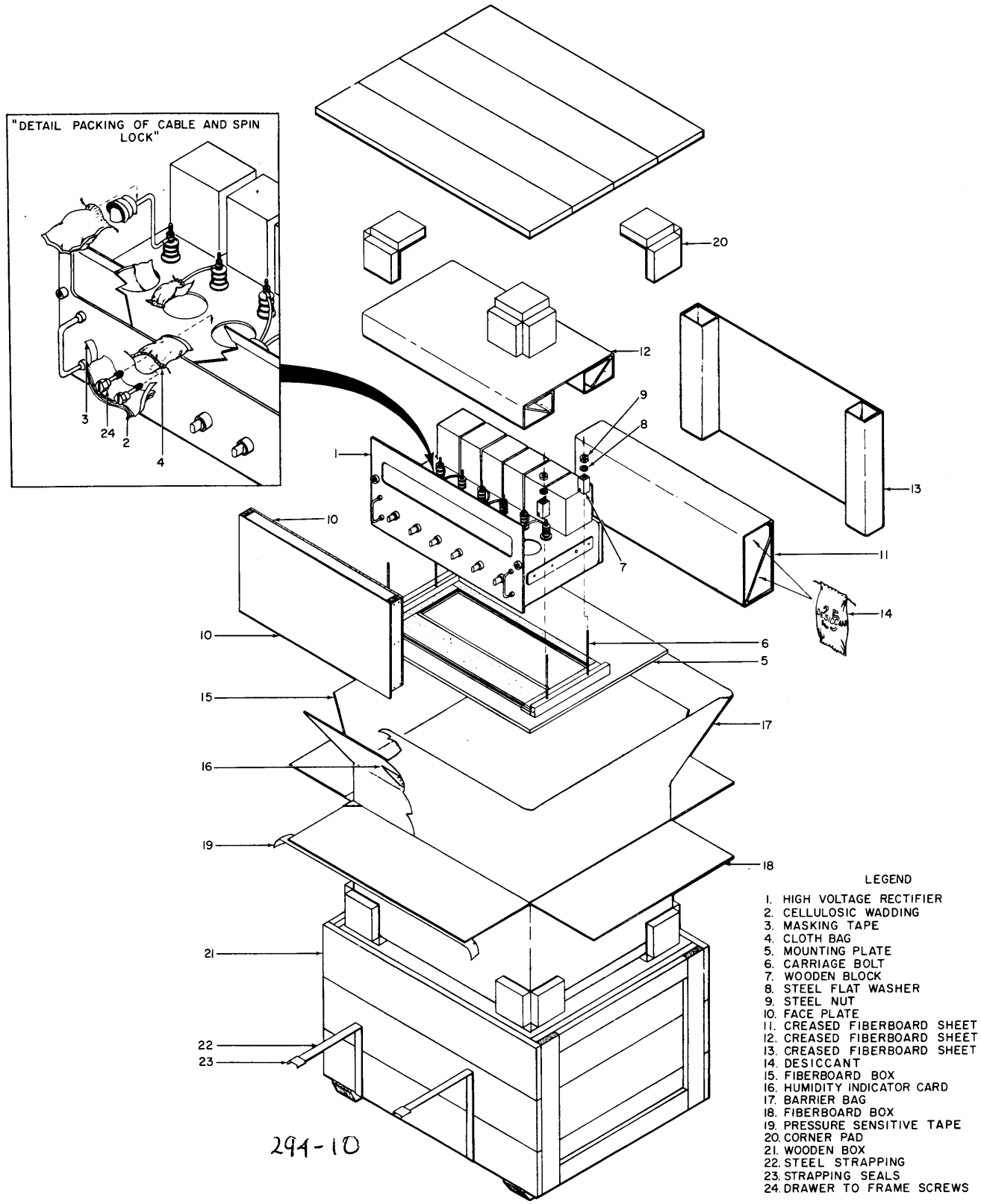


Figure 1-4. Typical Equipment Packaging

(sheet 3 of 5)

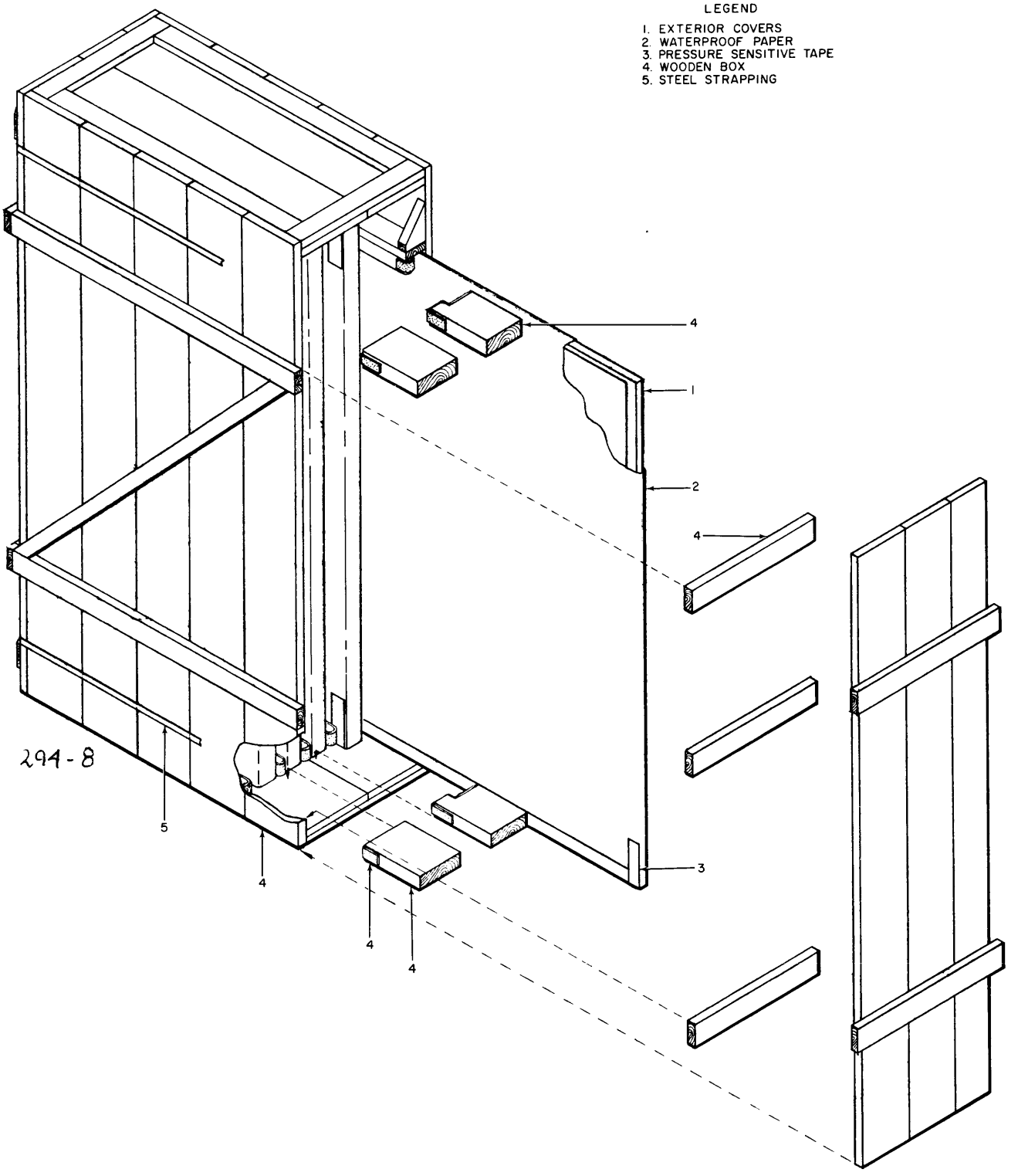


Figure 1-4. Typical Equipment Packaging

(sheet 4 of 5)

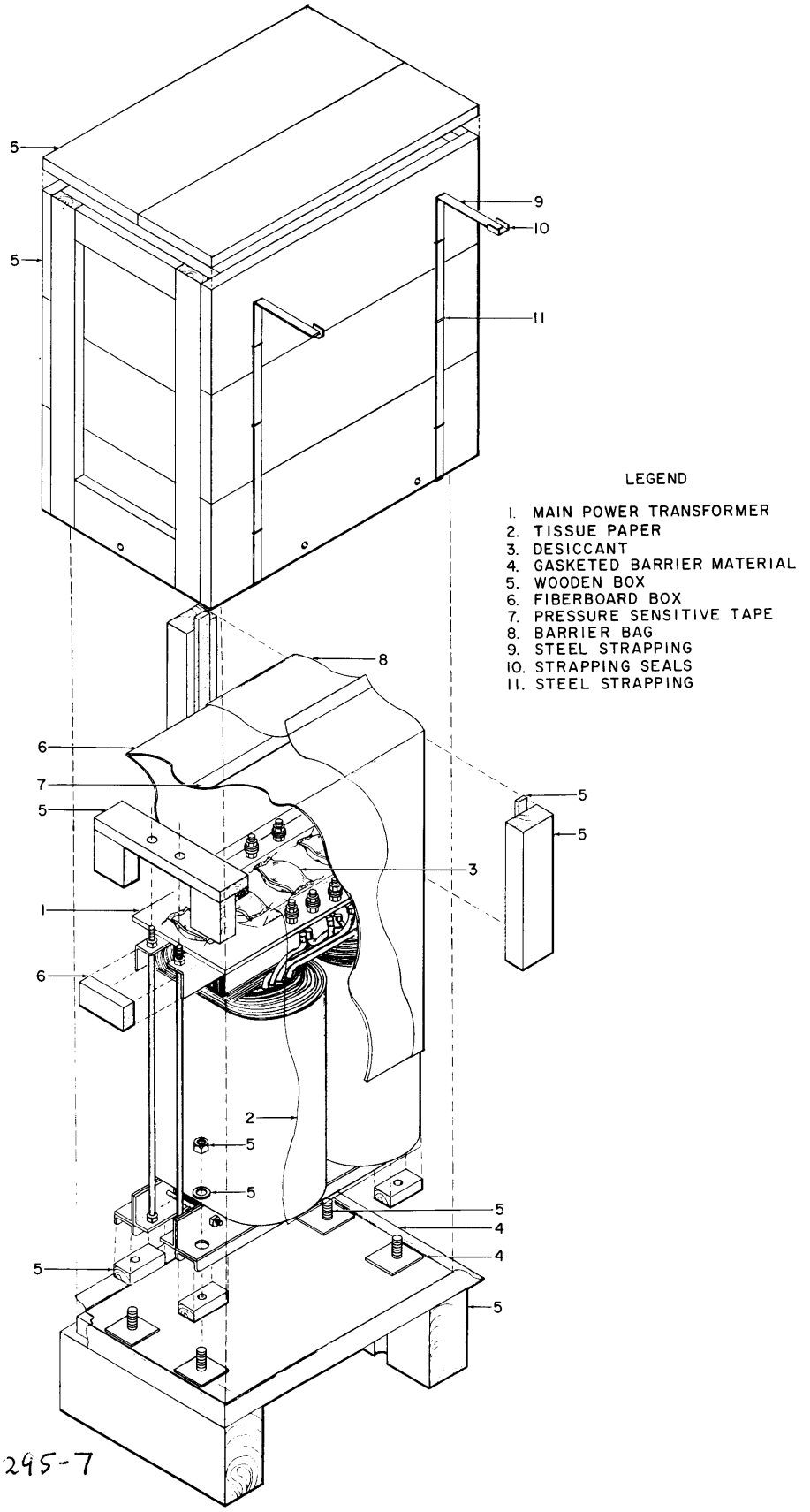


Figure 1-4. Typical Equipment Packaging

(sheet 5 of 5)

1-8. INSPECTION

The 200K 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 which 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.

1-9. LAYOUT REQUIREMENTS FOR INPUT POWER

Two methods of laying out input power cables can be used. Figure 1-5 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 doors are located on the base assemblies to permit cable entry.

1-10. EQUIPMENT ANCHORING

Provisions for anchoring the transmitter to the floor in a land installation, gross equipment weight (est 26,000 lbs.) should not require anchoring to maintain stability. However in a shipboard or mobile-van installation, anchoring the transmitter may be employed. Using the base assemblies drilled holes as a template during assembly, the desired anchor techniques (including shock mounting) may be used.

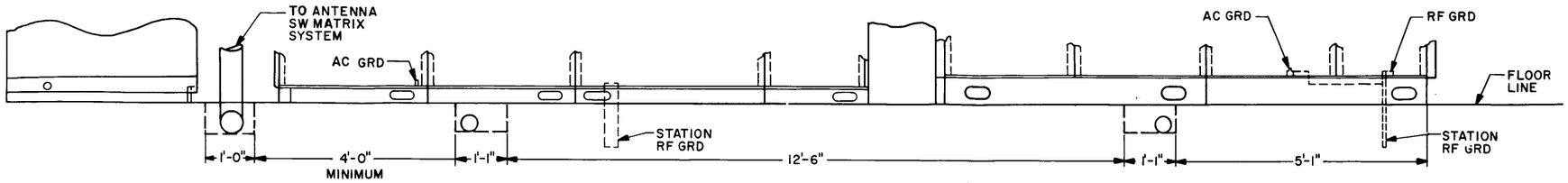
1-11. EQUIPMENT REQUIRED BUT NOT SUPPLIED

Table 1-4 lists equipment required to install the 200K

transmitter. Although items listed are required, they are not supplied.

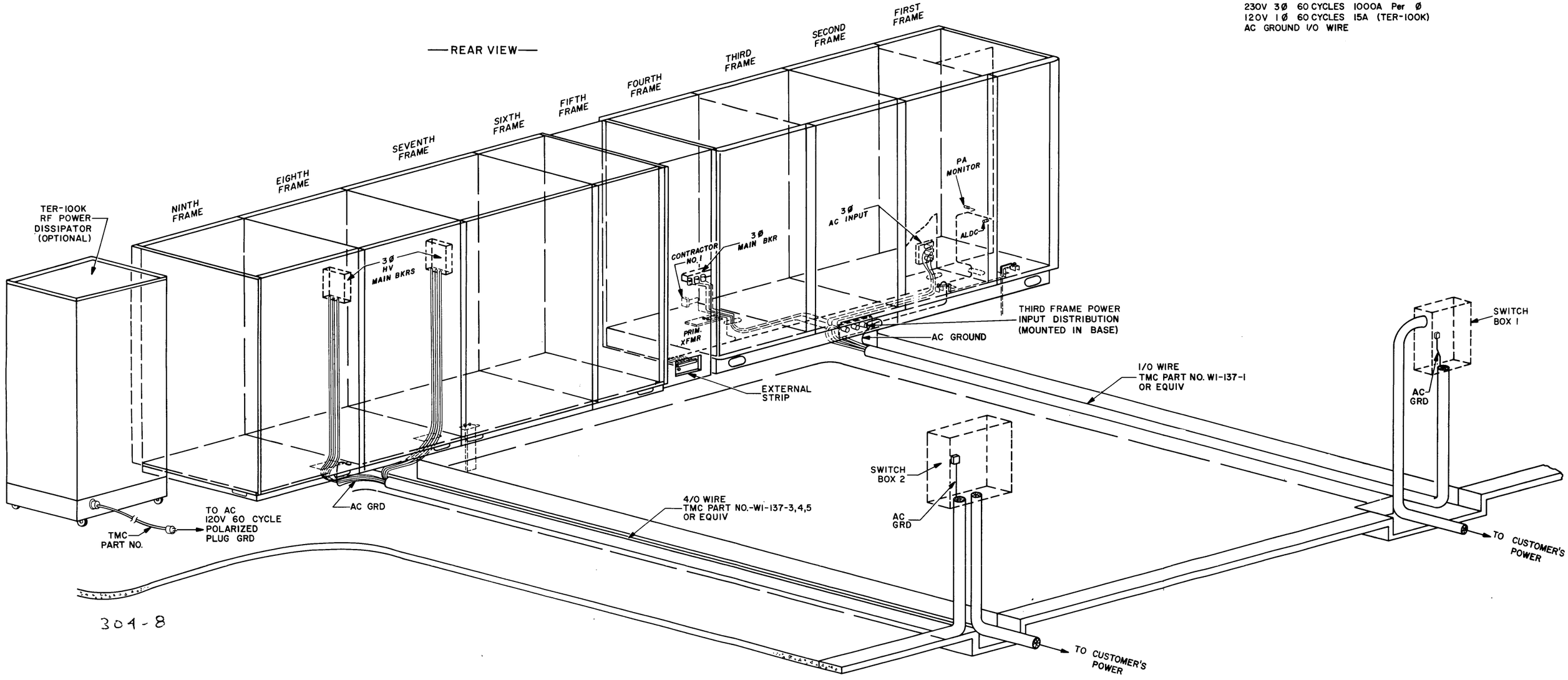
Table 1-4. Equipment Required But Not Supplied

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. Claw hammer	Open packing crates



INPUT POWER REQUIREMENTS

230V 3Ø 60 CYCLES 200A Per Ø
230V 3Ø 60 CYCLES 1000A Per Ø
120V 1Ø 60 CYCLES 15A (TER-100K)
AC GROUND I/O WIRE



304-8

Figure 1-5. Input Power Cabling, Layout Diagram

CHAPTER 2

INSTALLATION

2-1. INTRODUCTION.

A minimum number of assemblies, subassemblies, components, and hardware have been disassembled from the 200K 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. This chapter presents logical step-by-step instructions for unpacking the shipping crates containing the transmitter and subsequent assembly.

2-2. GENERAL.

Carefully read each step before performing the actual installation instruction. Depending upon the complexity of the instruction, it may be advisable to simulate the procedural step. Make sure each step has been completed before proceeding to the next. Where instructions are not readily obvious, illustrations are provided to complement the procedure.

Inter- and intraframe cable and wire harnesses and other miscellaneous items that are disconnected from separately packaged assemblies are tagged and taped to the equipment. This tape must be removed, as encountered, to properly install the transmitter. The information on a given tag indicates the designated terminal on a component to which the tagged item must be connected. Make sure all unconnected wires have been connected, as designated on tags, before sealing-up a frame or section of a frame with rf shield, front panel, or exterior trim (door, cover, etc.) If any confusion arises regarding

cable or wire connections that must be made, schematic diagrams are provided in the operation and maintenance manual.

Temporary removal and replacement of panels, rf shields, or component mounting assemblies are specifically called-out in the procedure inorder to install various items. To prevent unnecessary removal and replacement, follow the installation instructions.

2- 3. PROCEDURE

The following procedure is for installing the 200K transmitter to operate with an unbalanced output. Refer to the operations and maintenance manual for necessary changes that must be made to operate with a balanced output.

STEP 1

a. Unpack assorted loose items from crate 1.

b. Check each item contained against equipment supplied list.

STEP 2

a. Unpack assorted loose items from crate 2.

b. Same as step 1b.

STEP 3

a. Unpack crate 3.

b. Remove shield from base assembly.

c. Position base assembly for the first and second frames in accordance with pre-installation planning of required overall dimensional clearances (see figures 1-3 and 2-1).

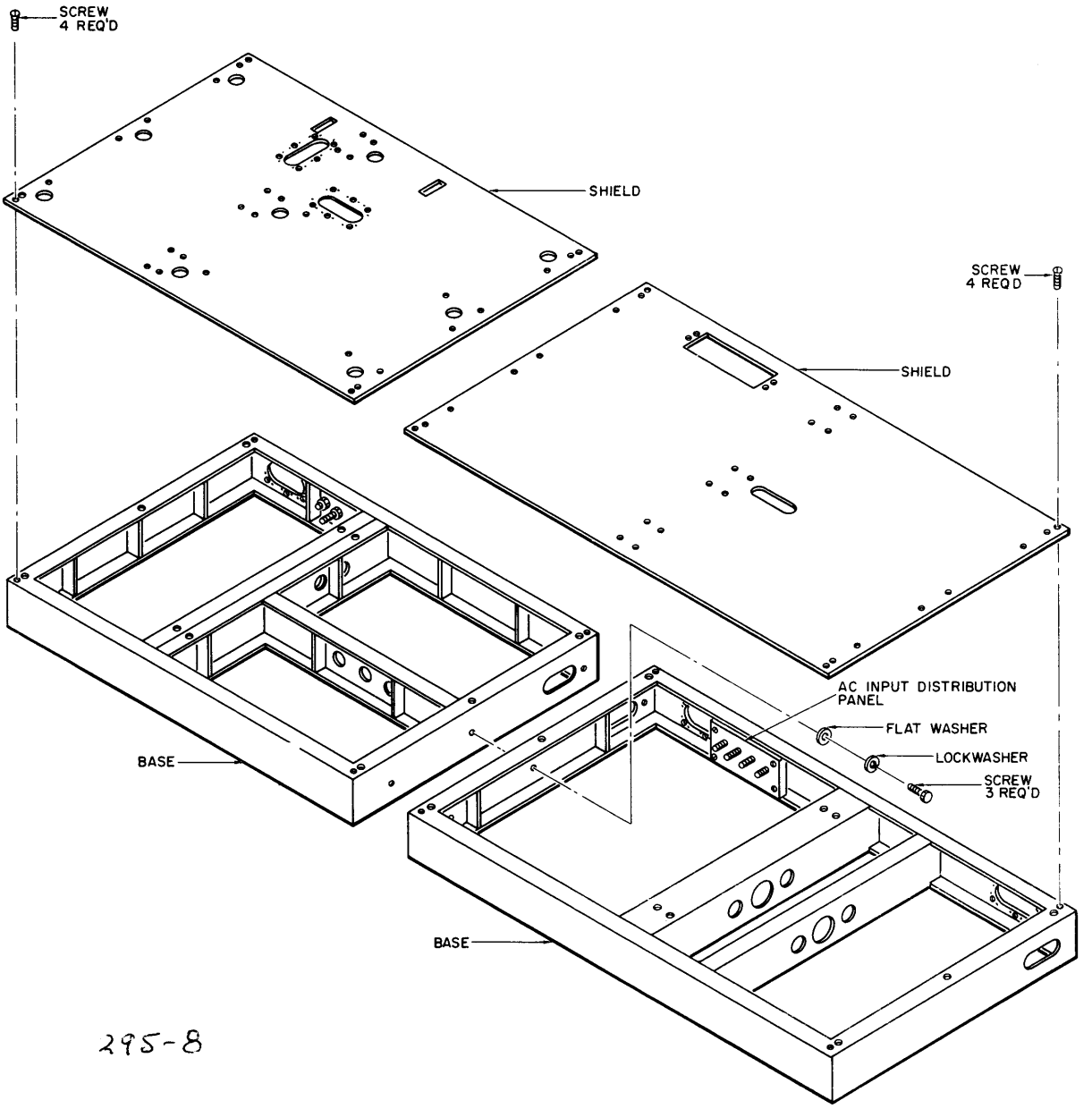


Figure 2-1. Base Assemblies for the First through Fourth Frames, Installation Diagram.

STEP 4

a. Unpack crate 4.

b. Remove shield from base assembly.

c. Position base assembly for the third and fourth frames adjacent to base assembly positioned in step 3 (see figure 2-1).

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.

d. Using hardware from crate 1 bag 6, tightly bolt two base assemblies together (see figure 2-1).

STEP 5

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

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 assemblage progressed.

STEP 6

WARNING

DO NOT turn on or apply ac input power to the transmitter until specifically instructed to do so.

a. Physically route ac input power and input signal cables into base assemblies (see figure 1-5).

NOTES

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

2. When connecting cables or wires, make sure color-coded cables are connected as indicated in the schematic diagram.

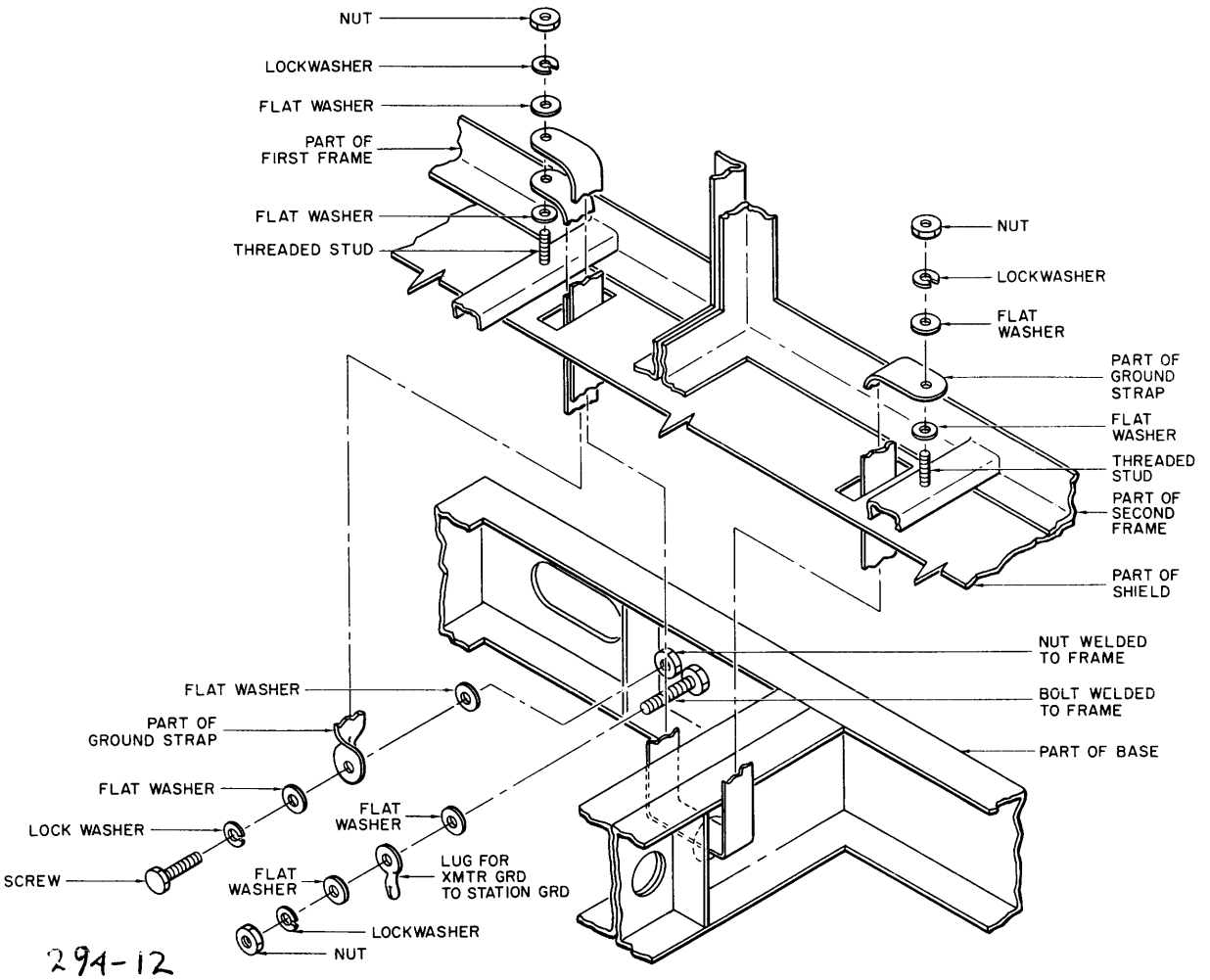


Figure 2-2 . Ground Straps, Installation Diagram

STEP 6 (cont)

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.

NOTE

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

c. Route, figure 1-5, pa-monitor cable (contained in crate 1) through base assemblies.

NOTES

1. The pa-monitor cable must be routed through access holes as transmitter assemblage progresses.

2. One end of the cable is connected in rear of first frame and other end will be connected in bottom rear of fifth frame.

STEP 7

a. Properly position shield, figure 2- 1, on base assembly for first and second frames.

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.

STEP 7 (cont)

b. Using hardware from crate 1 bag 5, tightly bolt shield to base assembly.

STEP 8

a. Unpack crate 5.

b. Position second frame on base (see figure 2-3).

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

d. Route ac interconnect cable, coming through access hole in shield, to ac input terminal board in bottom rear compartment of second frame; and, appropriately connect colored-coded wires as indicated in the schematic diagram.

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

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

STEP 9

a. Unpack crate 6.

b. Position first frame on base, figure 2-3, adjacent to second frame.

c. Using hardware from crate 1 bag 3, loosely bolt first and second frames to base assembly (see figure 2-3).

d. Mount grounding straps to threaded studs in bottom rear of frames, figure 2-3, using remaining hardware from crate 1 bag 4.

STEP 10

a. Properly position shield, figure 2-1, on base assembly for third and fourth frames.

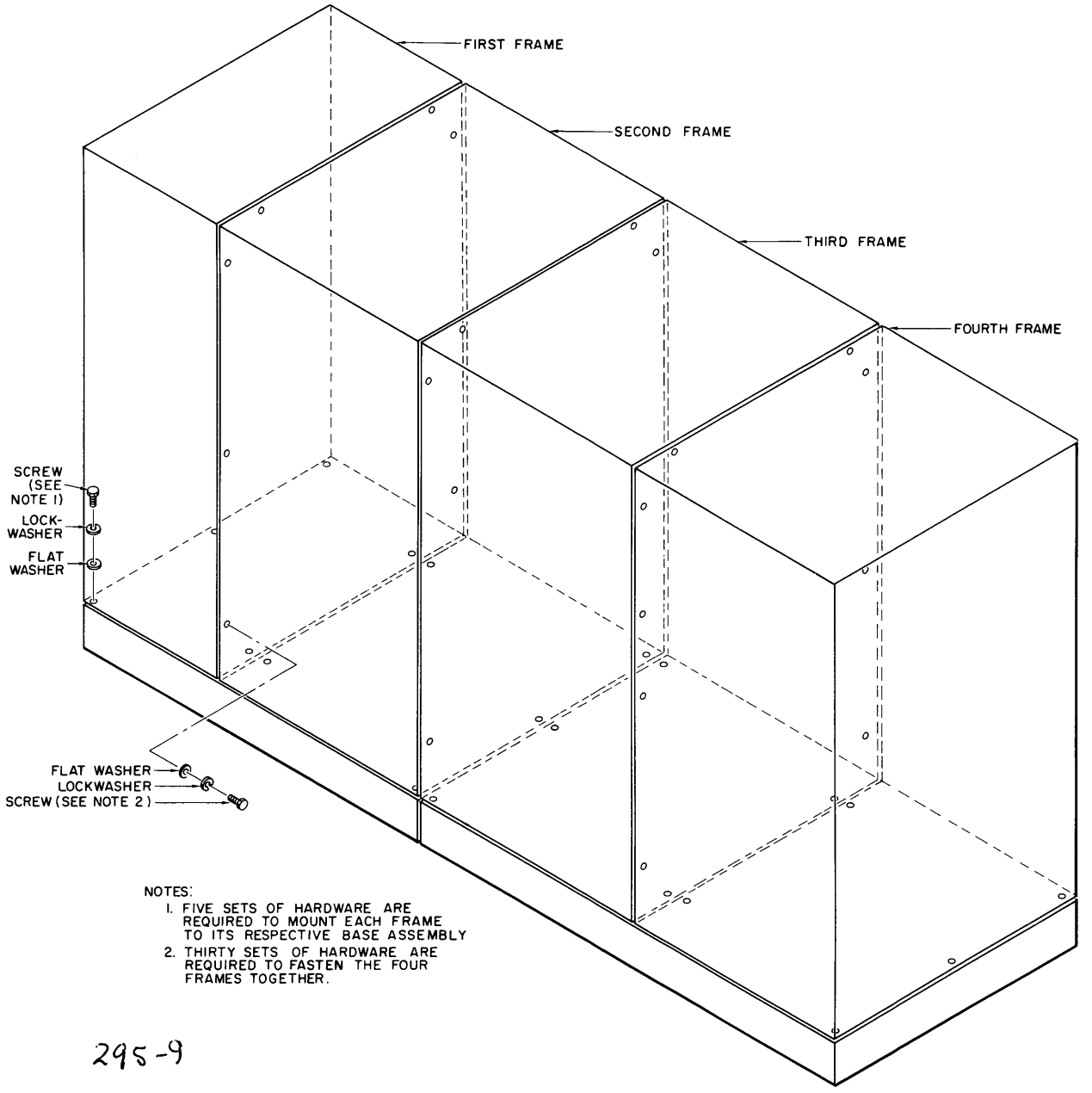
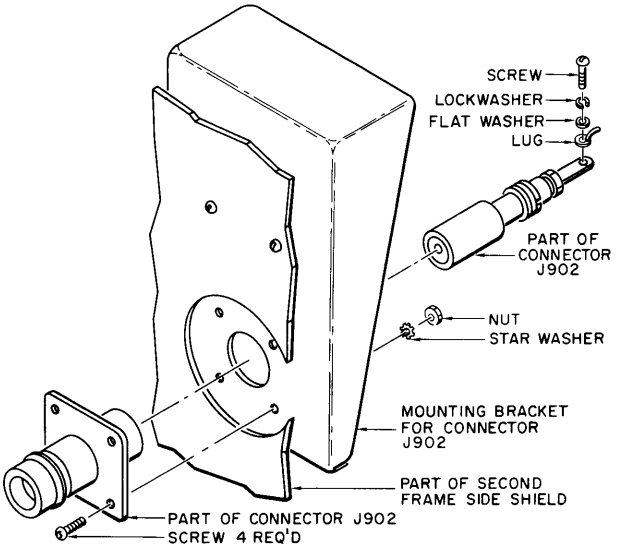


Figure 2-3 . First through Fourth Frames, Installation Diagram



295-10

Figure 2-4. Output Connector, Installation Diagram

STEP 10 (cont)

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

c. Using hardware from crate 1 bag 8, tightly bolt shield to base assembly (see figure 2-1).

STEP 11

a. Unpack crate 7.

b. Position third frame on base, figure 2-3, adjacent to second frame.

c. Temporarily remove top and bottom shields from rear of 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 2-3, 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 7, loosely bolt third and fourth frames to the base assembly (see figure 2-3).

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

STEP 12 (cont)

f. NOTE

The porcelain insulator must be located on outside of frame when assemblied so that it is physically inside of the third frame (see figure 2-15).

STEP 13

a. Using hardware from crate 1 bag 9 through 11, loosely bolt frames together (see figure 2-3).

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

Mount fixed resistors R802 through R820 (contained in crate 1) on resistor board, figure 2-5 , in bottom rear section of second frame.

NOTE

Make sure each resistor is placed in its designated position.

STEP 15

a. Remove hardware from retaining strap (figure 2- 6).

b. Observe pins inside the tube socket.

CAUTION

Pins located inside mounting socket for tube V900 must not be bent. Check pins carefully before attempting to install tube in socket.

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

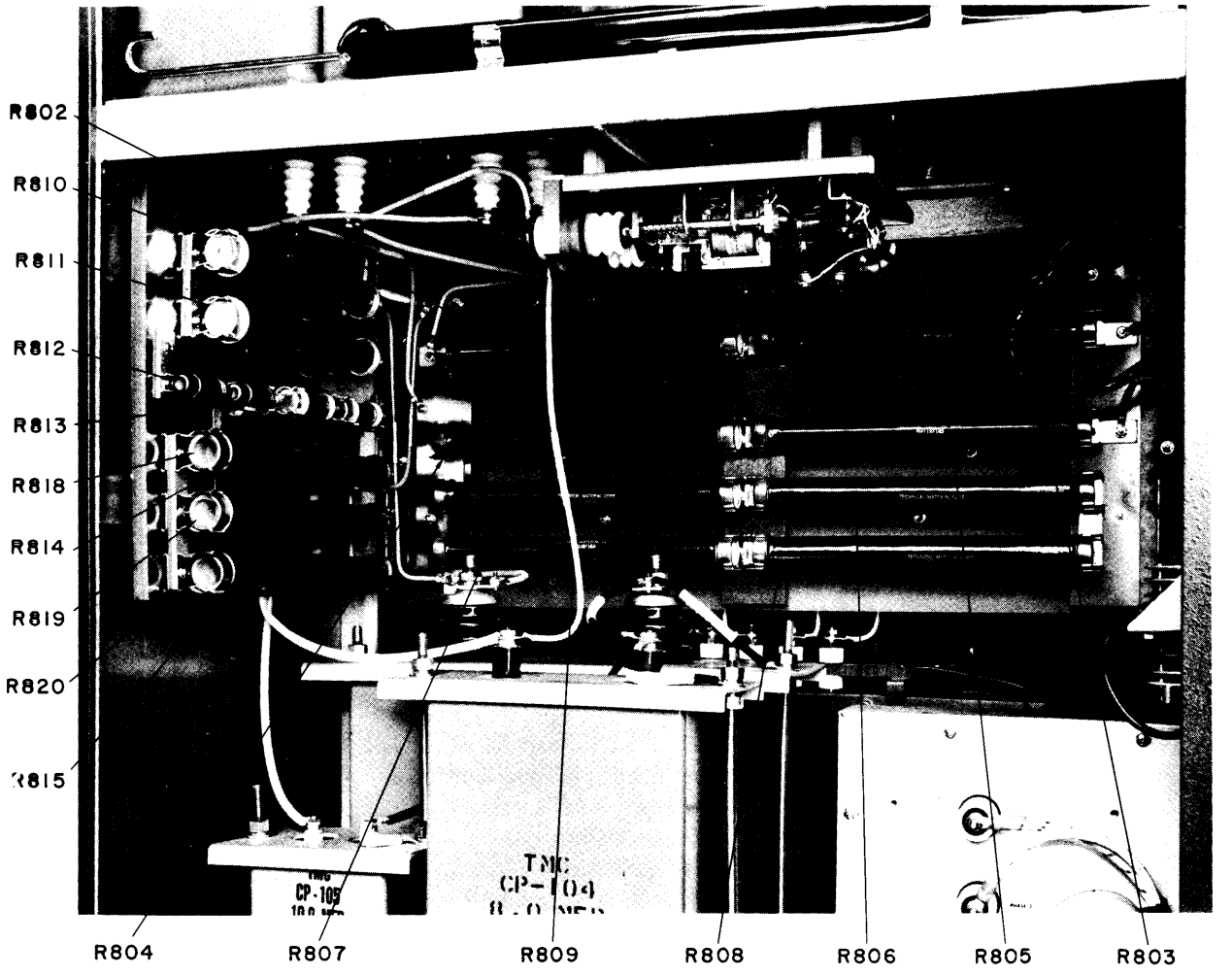


Figure 2-5. Lower Compartment of the Second Frame, Rear View

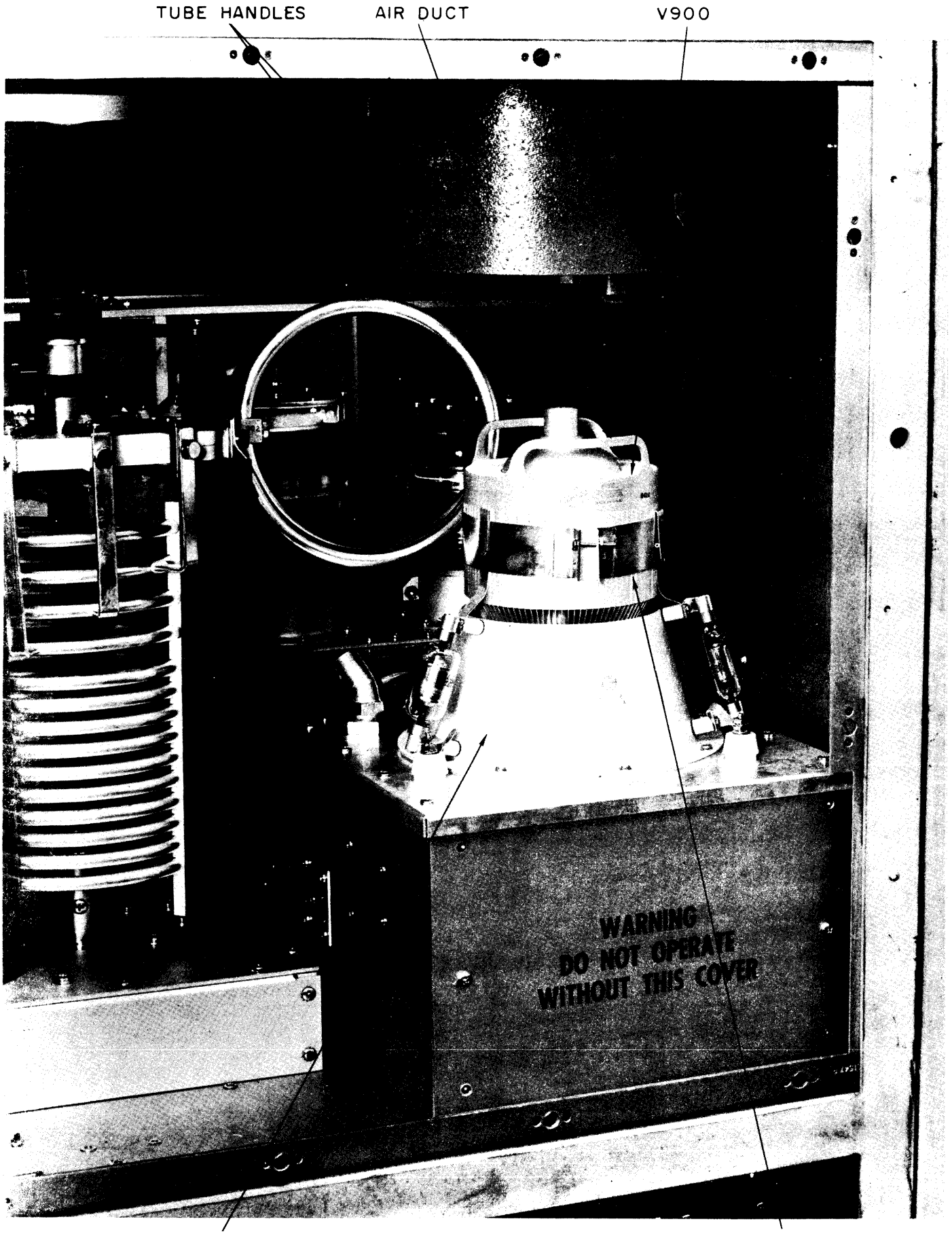


Figure 2-6. Upper Compartment of the Second Frame, Rear View.

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 pins in socket. Check tube seating: it must be all the way down and centered in tube socket.

f. Replace retaining strap hardware.

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).

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

NOTE

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

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

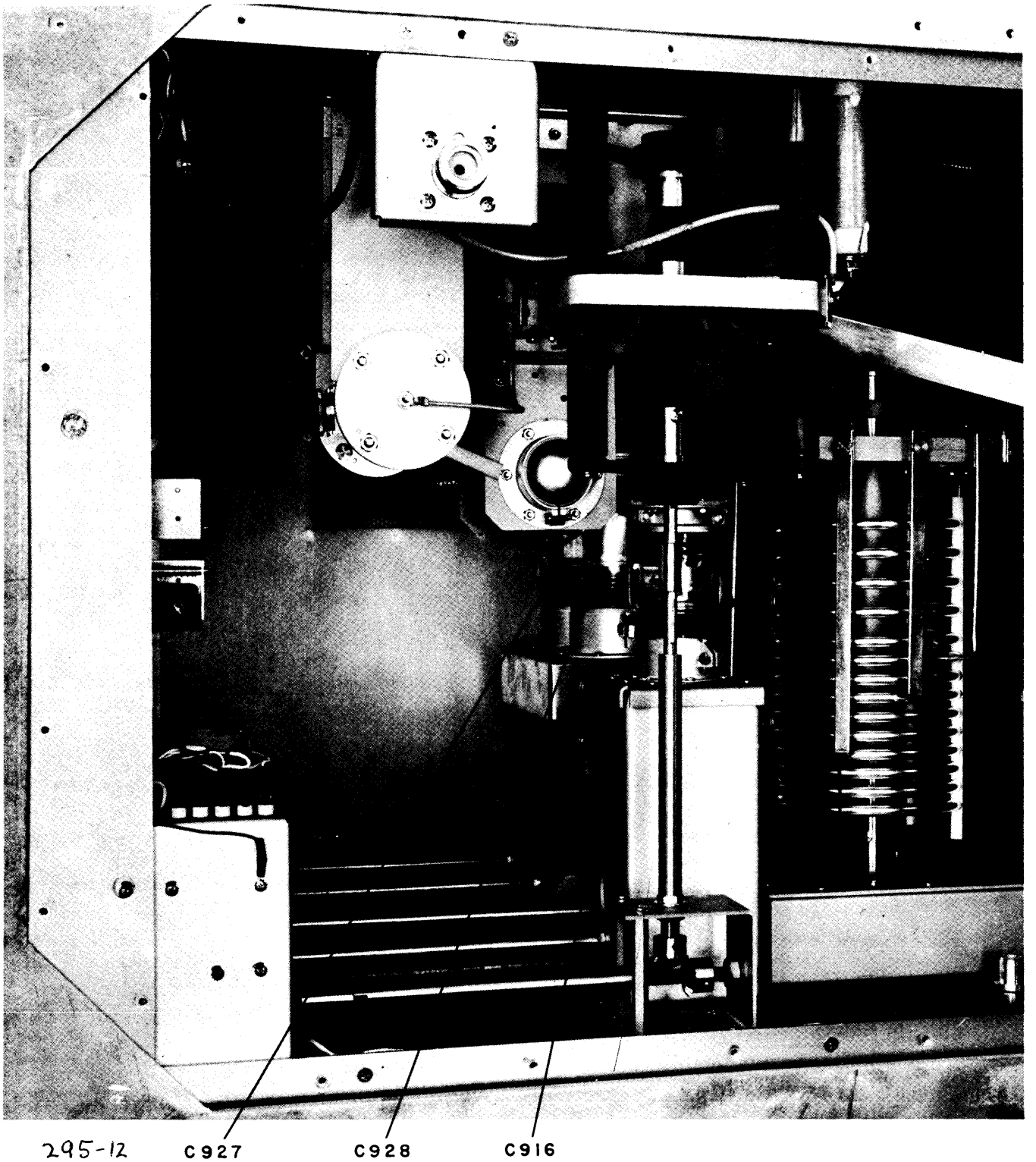


Figure 2-7 . Upper Compartment of the Second Frame, Side View N.

STEP 17

a. Unpack crate 9.

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

c. Position power transformer T800, figure 2-8, into bottom front of second frame.

d. Using hardware from crate 1 bag 13, tightly bolt T800 to the frame.

e. Replace power distribution panel.

STEP 18

a. Unpack crates 10, 11, and 12.

b. Unbolt crossbar, figure 2-9, on side of frame.

c. Position power transformer T8101, T8102, and T8103 into frame (see figure 2-9).

d. Using hardware from crate 1 bags 14 through 16, tightly bolt each transformer to frame.

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

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

g. Remount crossbar to frame.

NOTE

Threaded studs on transformers must be connected to the crossbar.

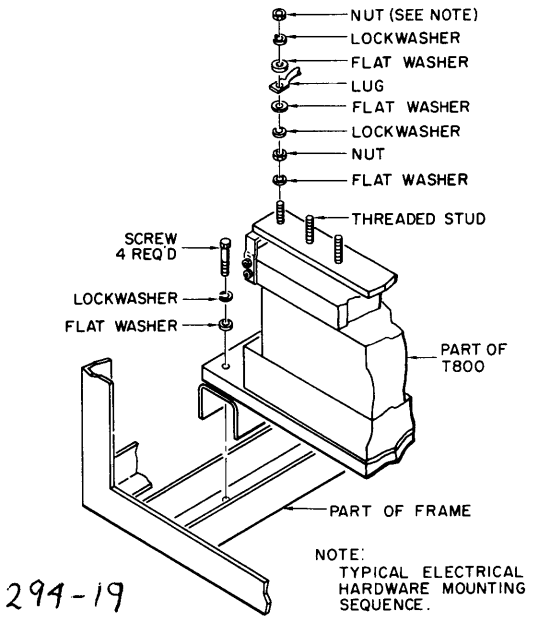
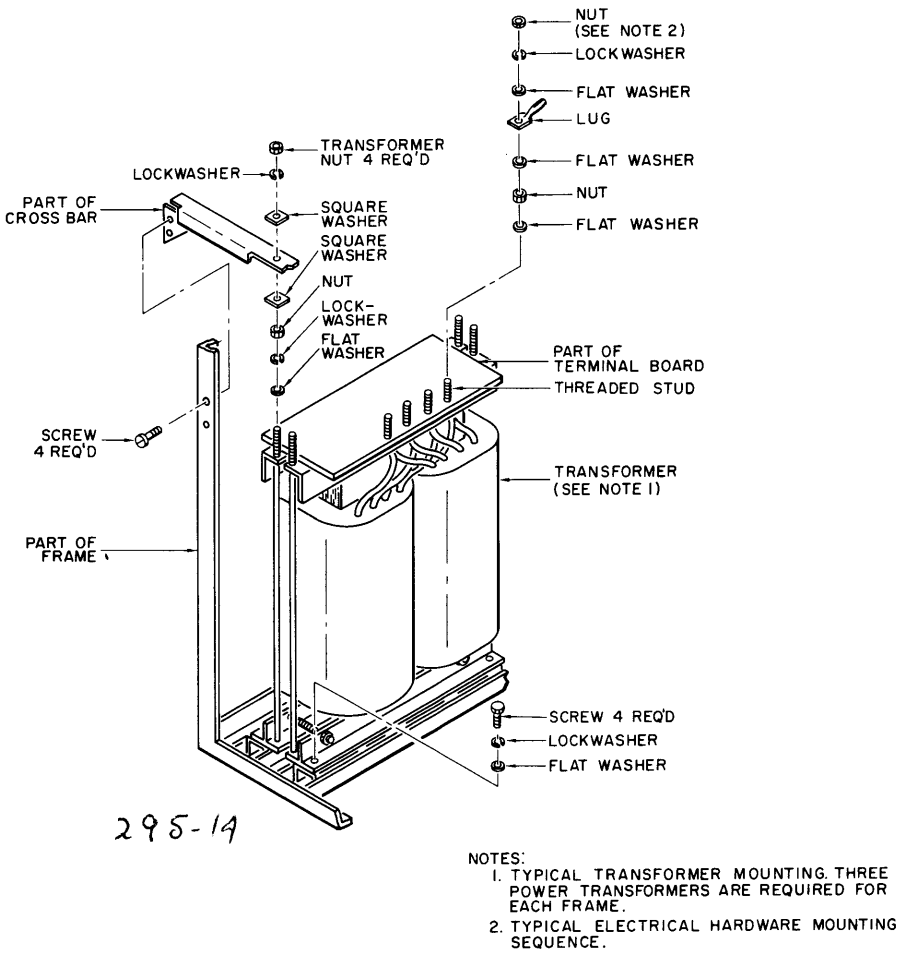


Figure 2- 8. Transformer T800, Installation Diagram



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

Figure 2-9 . Power Transformer, Installation Diagram.

STEP 19

a. Unpack crate 13.

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; And, carefully rest panel on something of relatively equal height—do not remove or damage wiring connected to panel.

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

NOTE

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

d. Using hardware from crate 1 bag 17, tightly bolt T7101 to frame in the following sequence: first a flat washer; second, a lockwasher; and third, a bolt.

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

f. Replace indicator control panel.

STEP 20

a. Unpack crate 14.

b. Position filter choke L8101 into rear of fourth frame, figure 2-10, above auto-transformer T8104. Make sure the two off center porcelain electrodes on top of choke are closiest to side of frame.

CAUTION

Do not damage the four threaded studs underneath choke.

c. Using hardware from crate 1 bag 18, mount choke to frame by placing following hardware sequence onto each

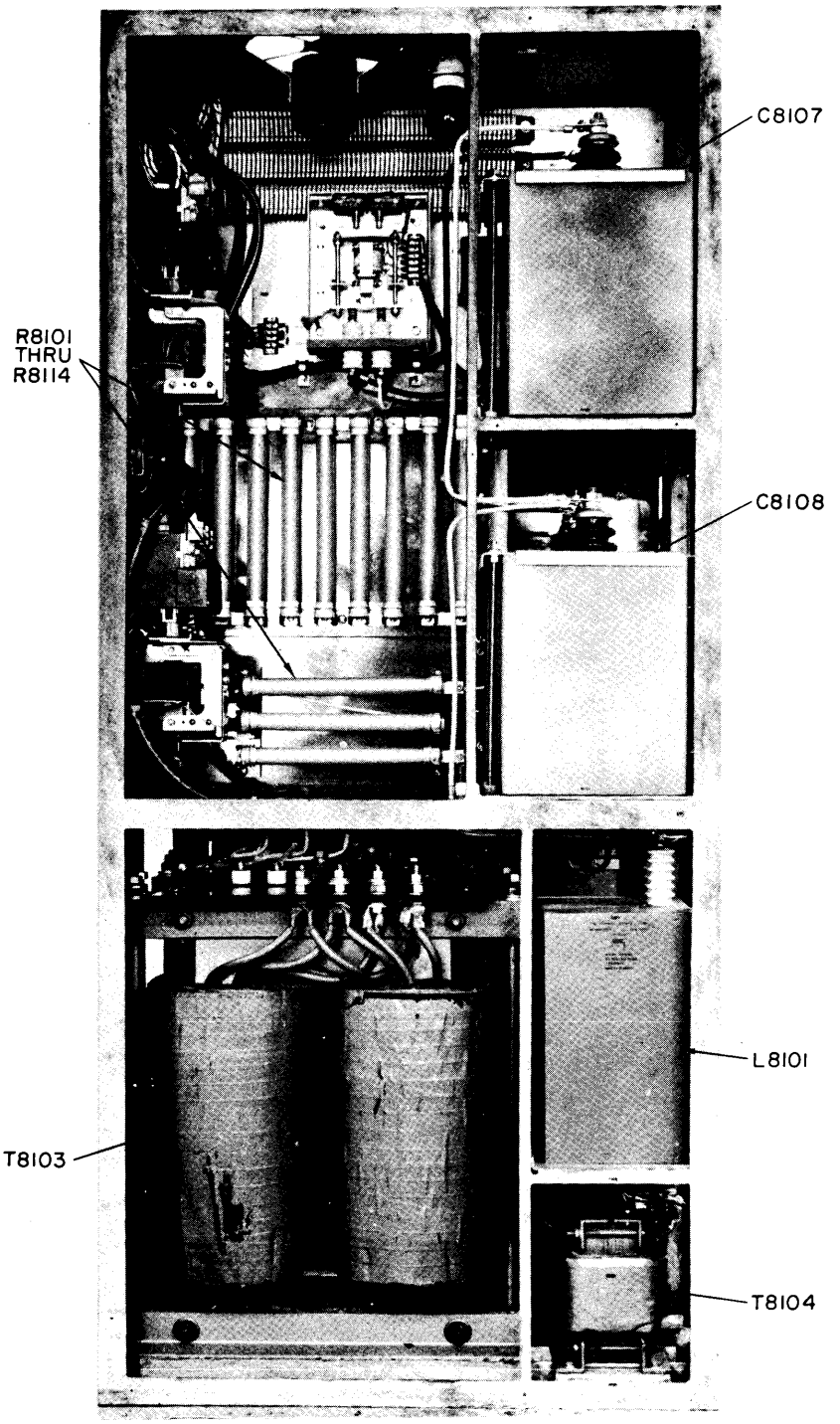


Figure 2-10. Fourth Frame, Rear View

STEP 20 (cont)

threaded stud: first, flat washer; second, lock washer; and third, hex-head nut. Tighten mounting hardware.

NOTE

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

STEP 21

a. Unpack crate 15.

b. Temporarily remove plexi-glass safety shield, figure 2-11, mounted on rear of fourth frame.

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

d. Position capacitors C8107 and C8108 in frame.

e. Replace mounting assemblies, figure 2-11, to secure capacitors.

NOTE

Mounting assemblies for both capacitors are identical.

f. Replace plexi-glass safety shield on frame in front of C8108.

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

STEP 22

Mount resistors R8101 through R8114 (contained in crate 1) or resistor board in rear of fourth frame (see figure 2-10).

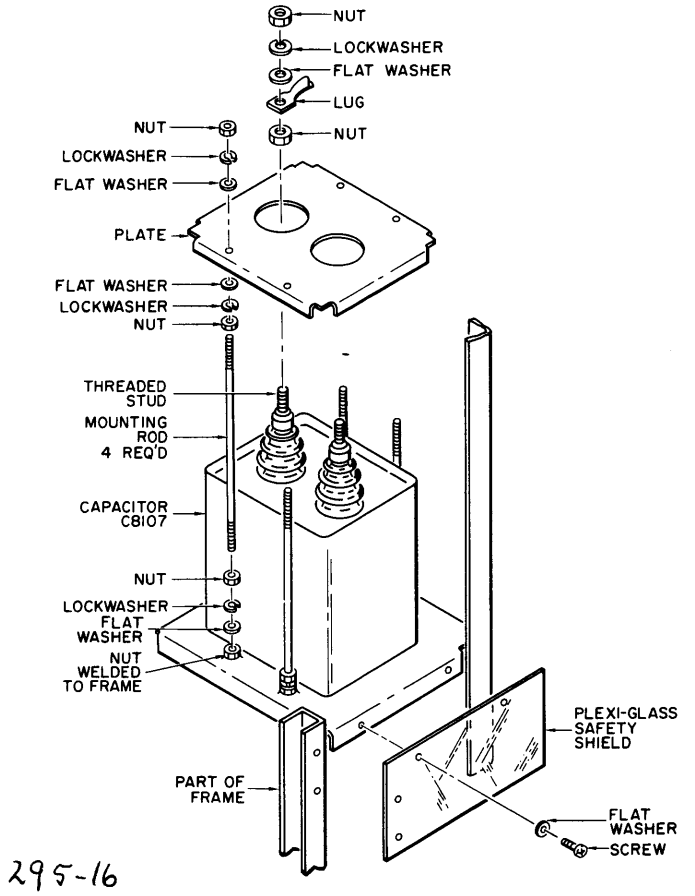


Figure 2-11. Filter Capacitor, Installation Diagram

STEP 23

a. Remove hardware holding rear bracket, figure 2-12, 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) as indicated in figure 2-12. And remount rear flange-clamp bracket to top of frame.

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).

STEP 24

a. Unpack crate 16.

b. Back out three allen head shaft set screws, figure 2-13, in shaft on hands with mounting plate in rear of fourth frame.

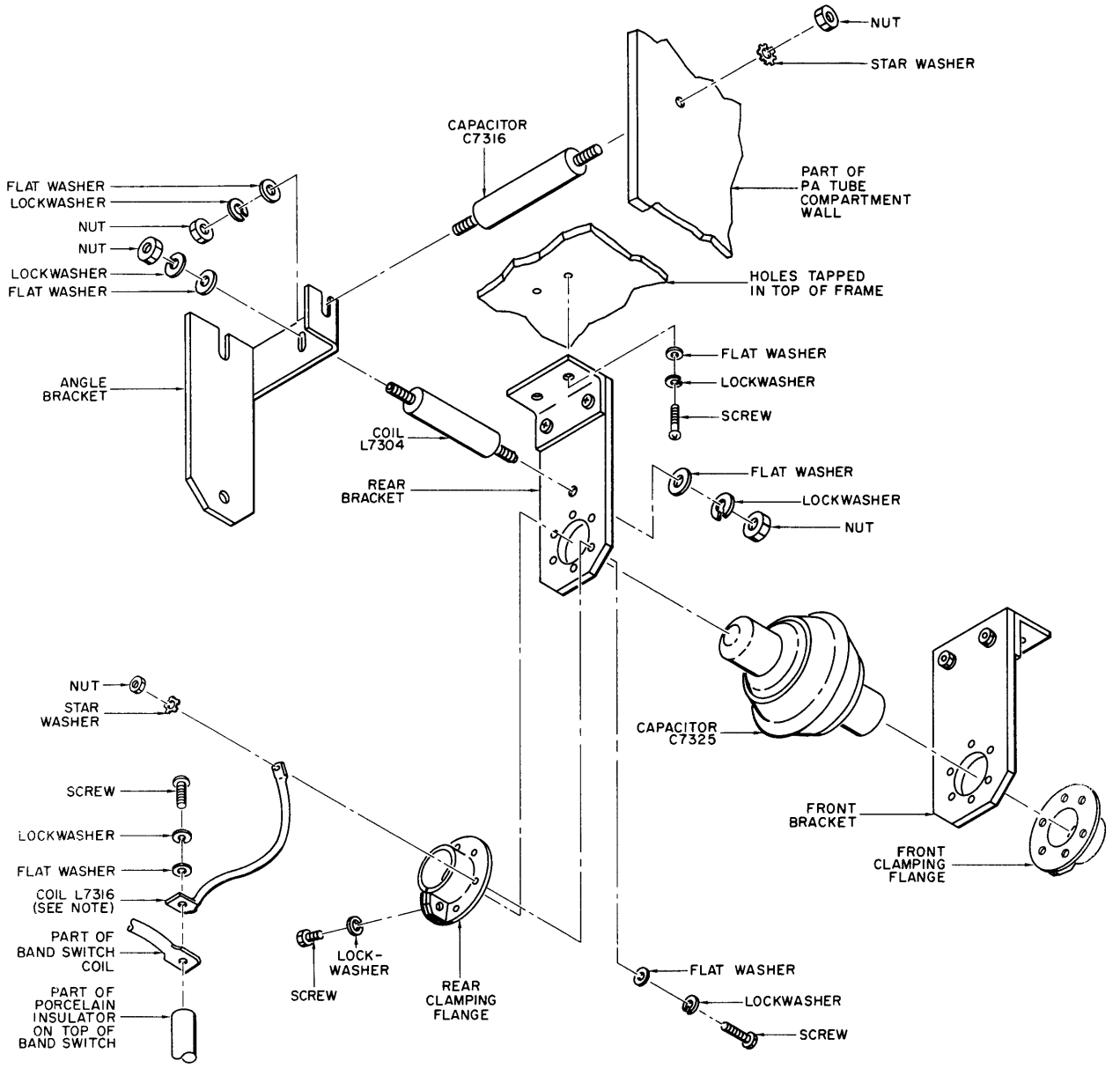
c. Temporarily remove three bolts from front bracket, figure 2- , which is attached to front left leg of band switch

NOTE

Do not remove front bracket from leg of bandswitch.

d. Temporarily remove two bolts, figure 2- 13, 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



295-17

Figure 2-12. Third Frame PA Circuit Components, Installation Diagram

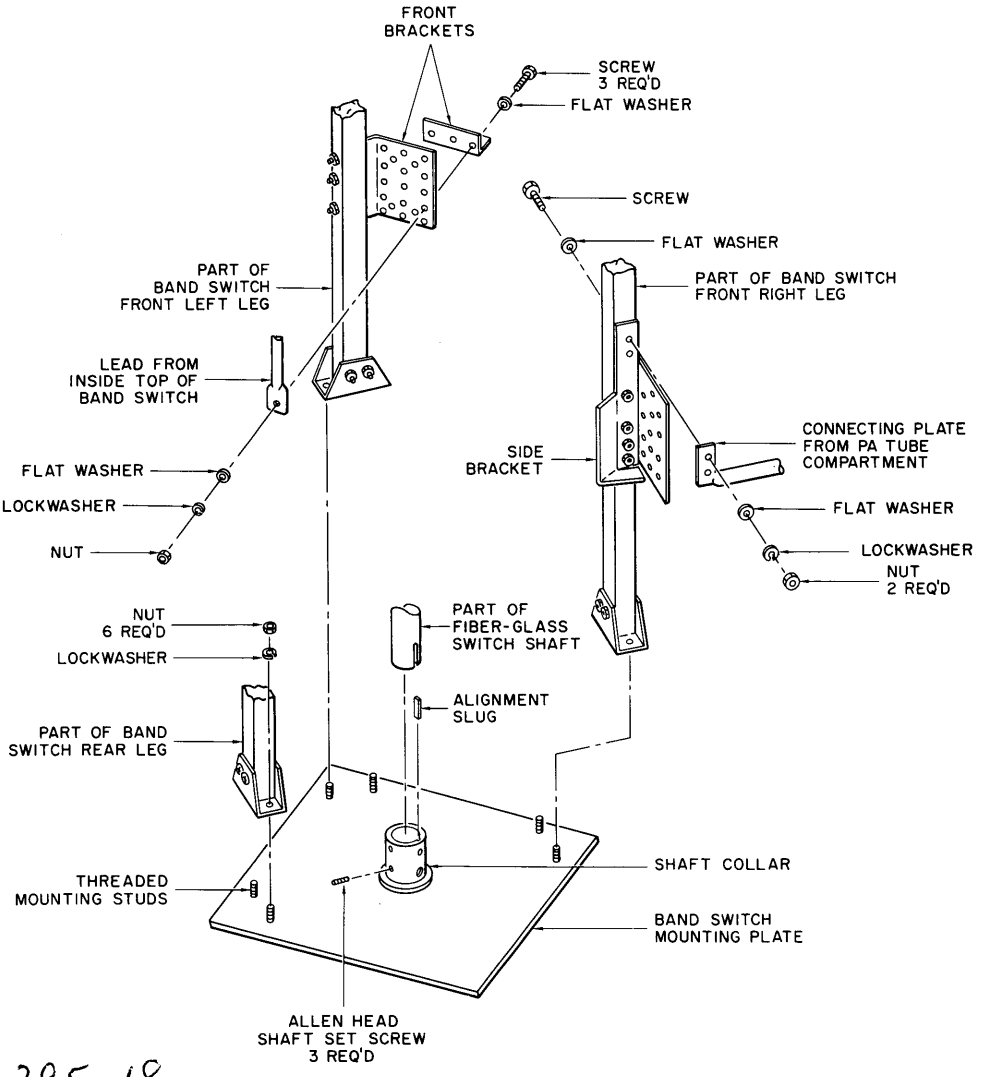


Figure 2-13. Third Frame Band Switch, Installation Diagram.

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

f. Using hardware from crate 1 bag 19, secure band switch to mounting plate (see figure 2-13).

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

h. Replace two bolts in side bracket, include electrical connecting plate lead coming through adjacent PA tube compartment shield.

i. Replace three bolts that attach front brackets, figure 2-13, 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 2-13 and 2-14).

STEP 25

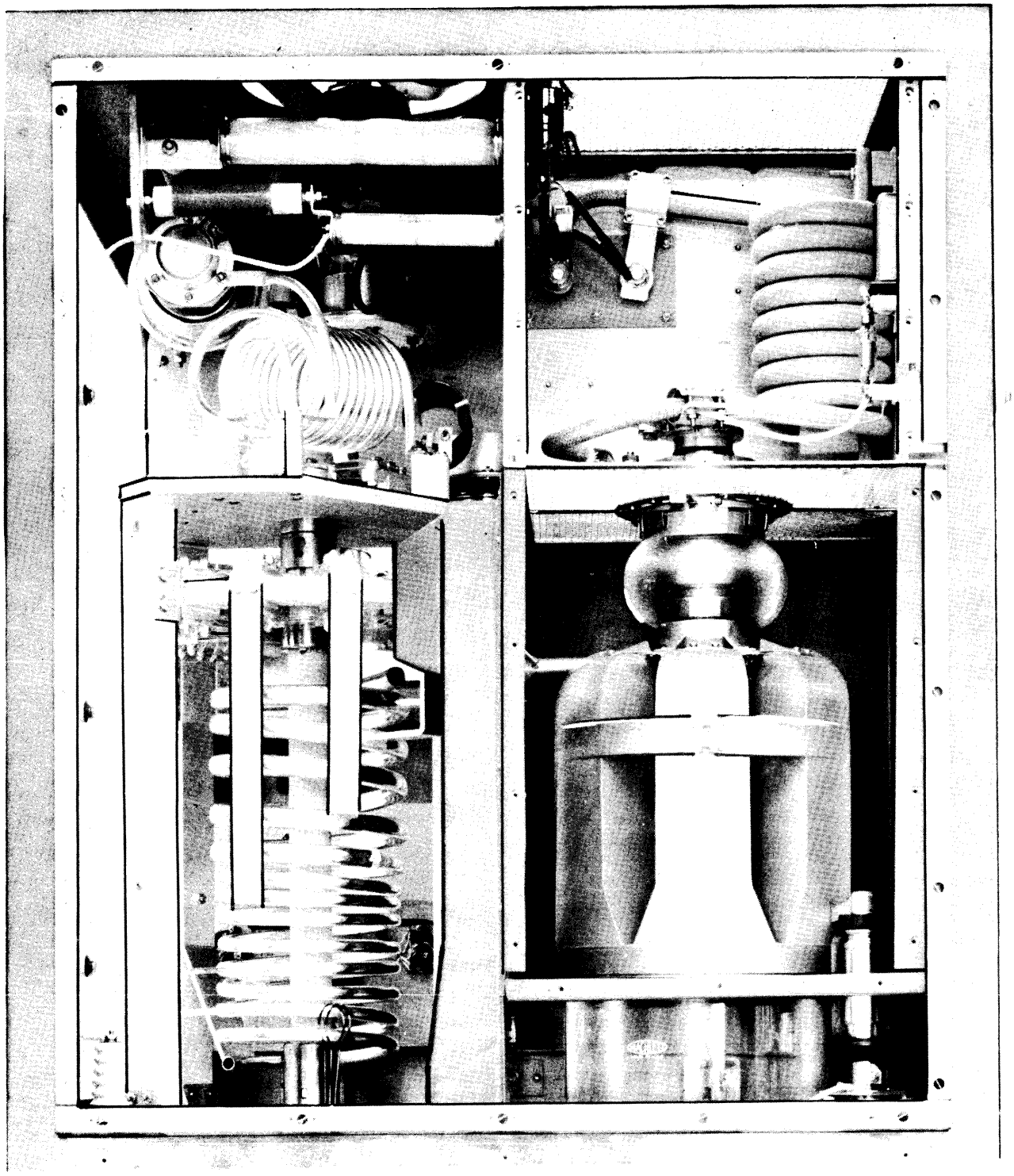
a. Insert capacitors C7328, C7330, C7331, and C7332 (contained in crate 2) into respectively designated mounting assemblies (see figure 2-15).

NOTES

1. Gears, figure 2-15, on capacitors C7330 and C7332 shafts must mesh with gears on front panel tuning shafts.

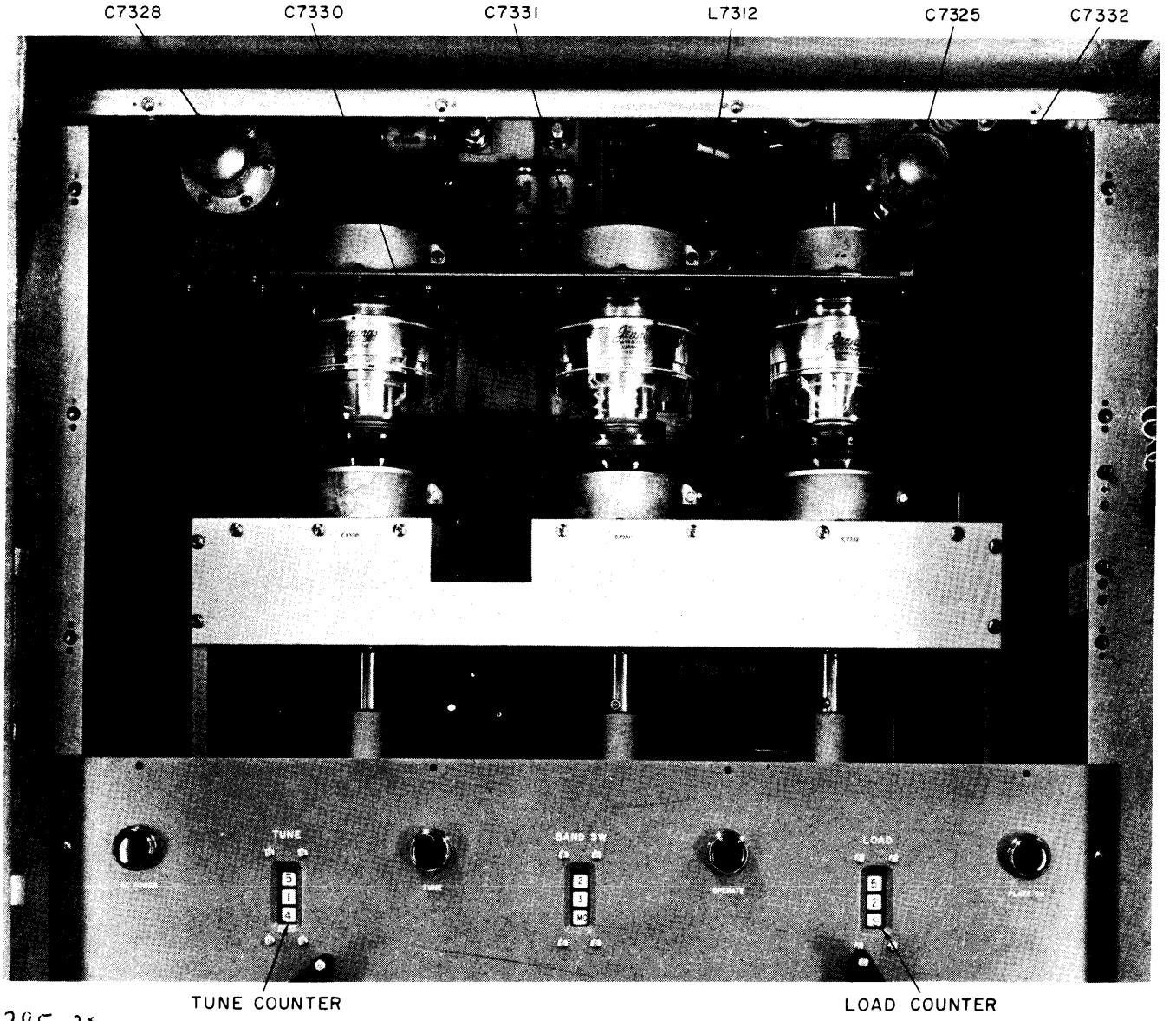
2. Shaft, gear assemblies and bracket assembly for capacitor C7331 must line-up (see figure 2-15).

b. With tandom chain, figure 2-15, removed, rotate shafts of capacitors C7331 and C7332 so that plates in both capacitors are fully closed.



295-19

Figure 2-14. Third Frame Band Switch and PA Circuit Components, Rear View.



295-28

Figure 2-15. Third Frame PA Compartment, Front Views (sheet 1 of 3).

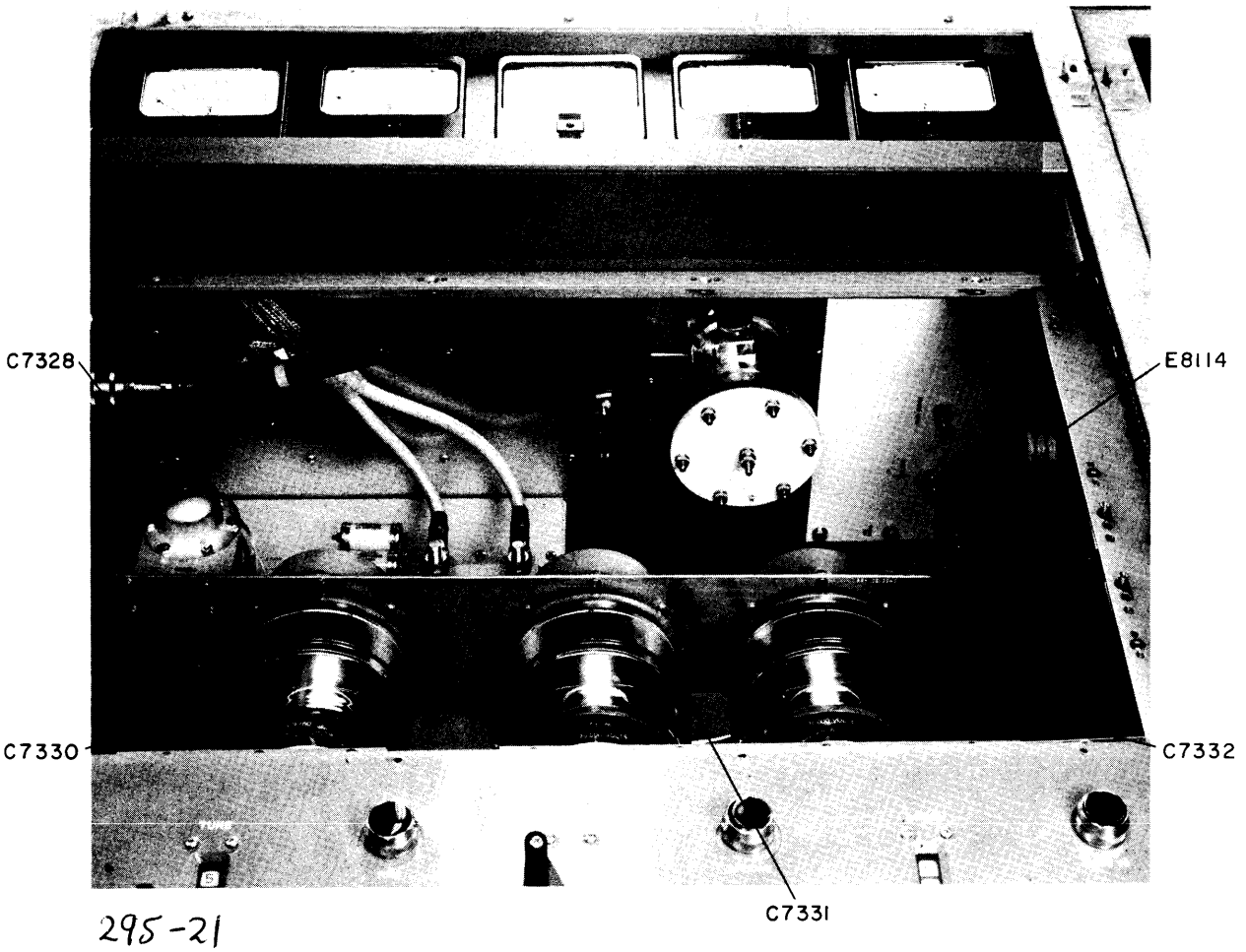


Figure 2-15. Third Frame PA Compartment, Front Views (sheet 2 of 3).

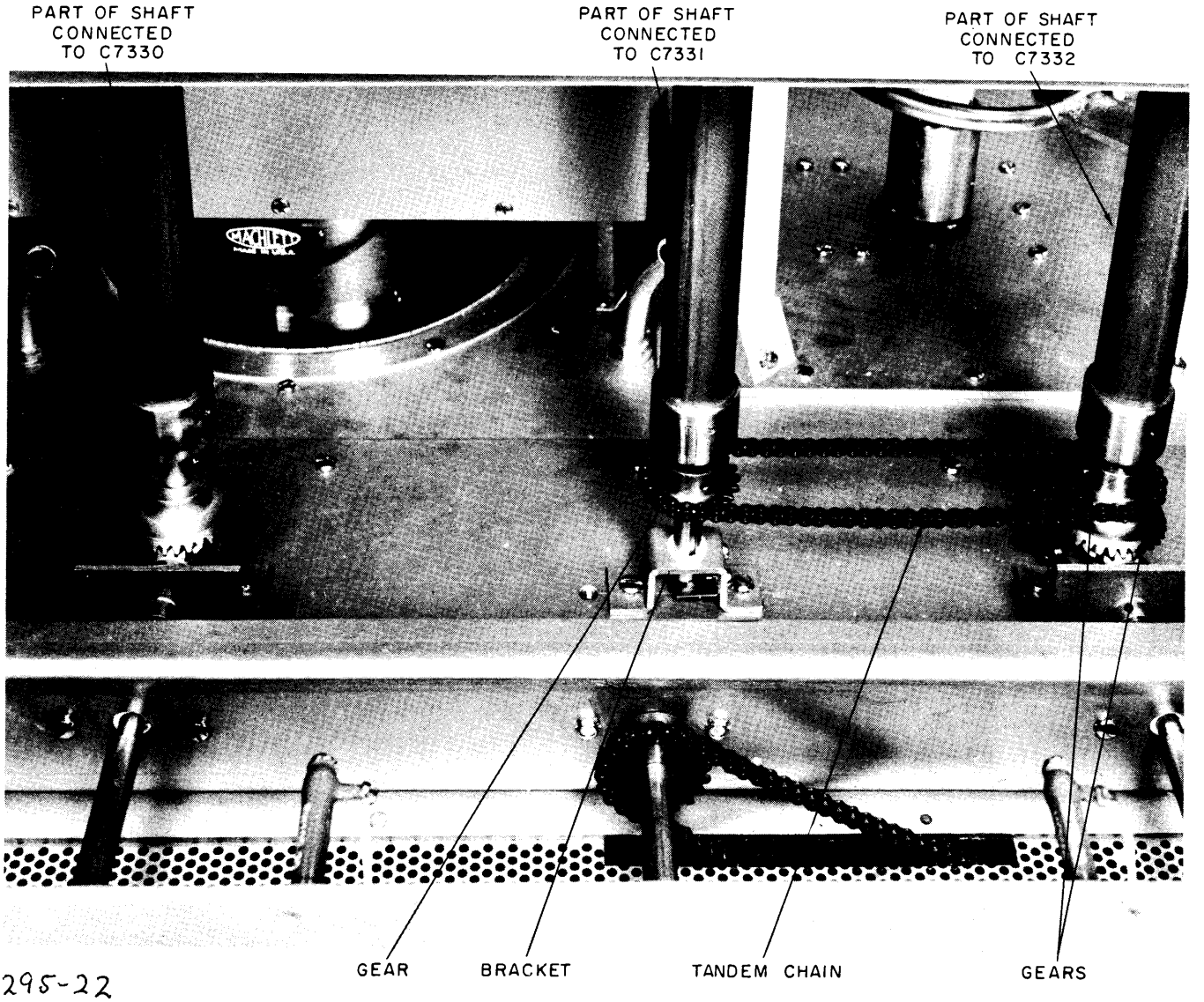


Figure 2-15. Third Frame PA Compartment, Front Views (sheet 3 of 3).

STEP 25 (cont)

c. With tandem chain replaced, figure 2-15, rotate front panel LOAD control until capacitor plates are fully open.

CAUTION

Do not force control past its mechanical stop.

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

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

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.

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

g. Replace glass-window panel (previously removed) on front of the third frame, in front of the capacitors just installed.

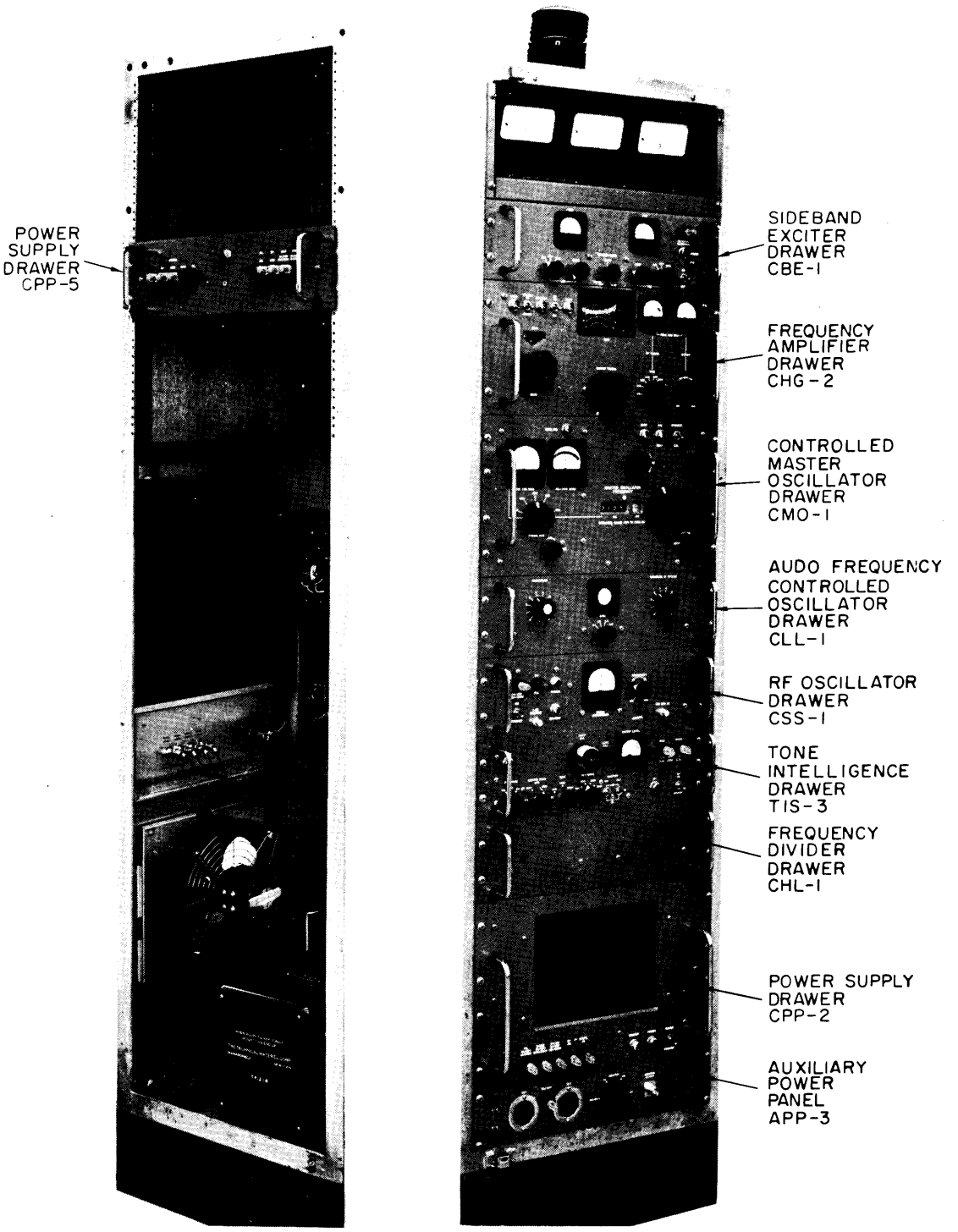
STEP 26

a. Unpack crates 17, 18, 19.

b. Install each drawer assembly in its designated position, figure 2-16, 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.

8



304-9

Figure 2-16. First Frame, Front and Rear View.

STEP 26 (cont)

b. (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 bags 20 through 39, secure front panel of drawer to frame.

STEP 27

a. Unpack crate 21.

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

c. Loosen screw on retaining strap (see figure 2-17).

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.

STEP 28

a. Unpack crate 22.

b. Insert six high voltage rectifier tubes V600 through V605 (contained in crate 1), figure 2-18, into tube sockets in high voltage rectifier drawer.

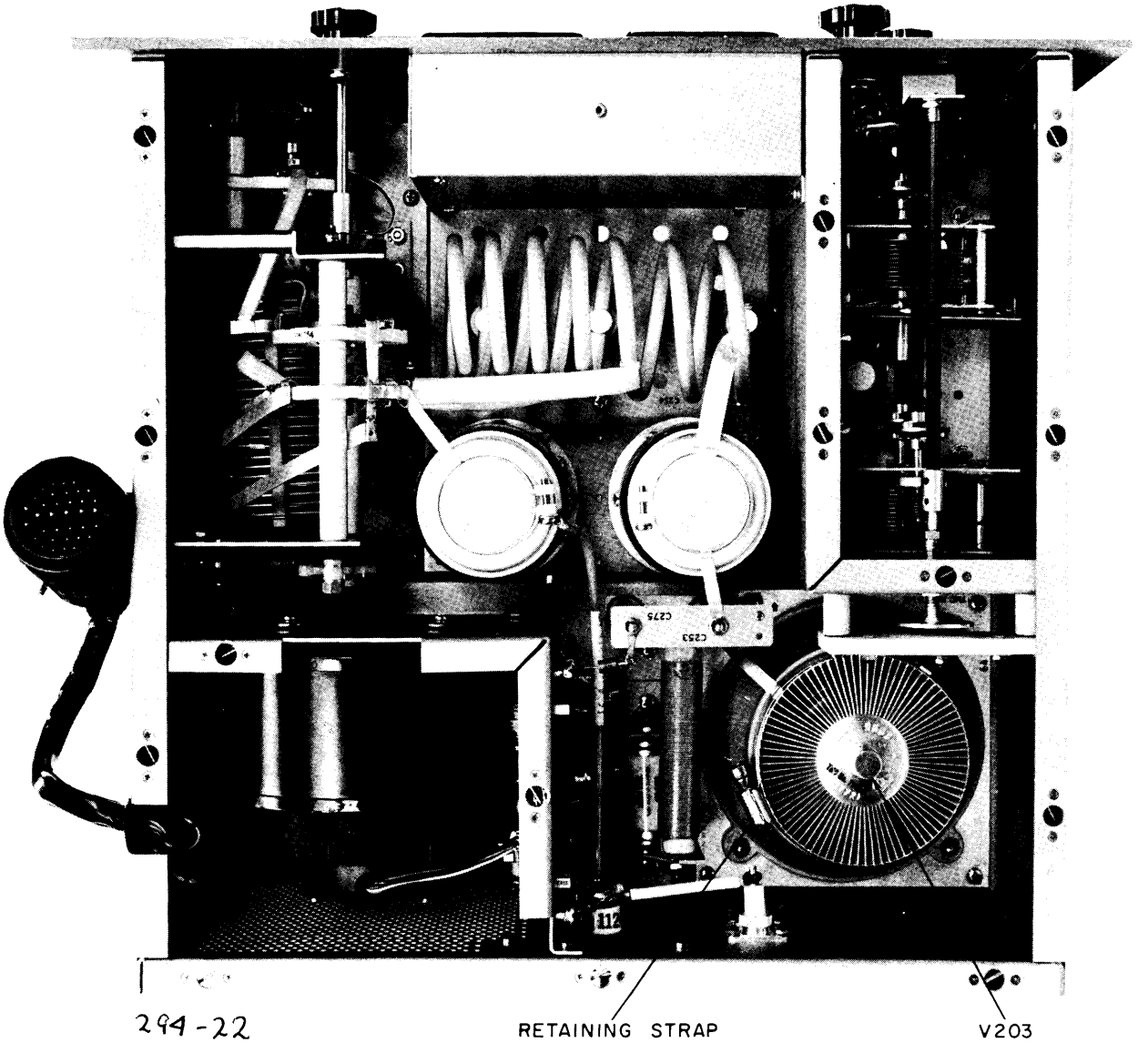


Figure 2-17. RFC Amplifier Drawer, Top View.

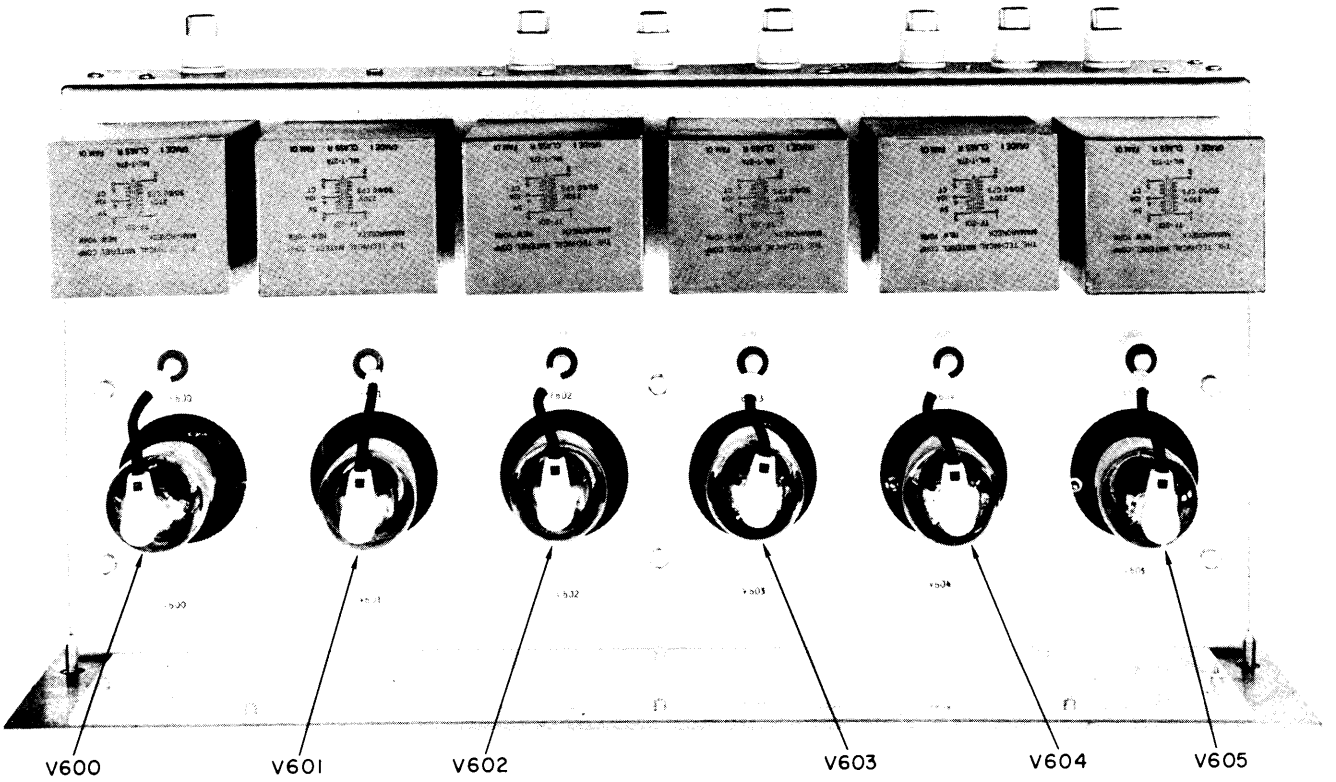


Figure 2-18. High Voltage Rectifier Drawer 600, Top View.

STEP 28 (cont)

c. Attach electrical plate connector caps to tubes.

d. Install drawer into front of second frame.

STEP 29

a. Unpack crate 23.

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

STEP 30

a. Unpack crate 24.

b. Insert six high voltage rectifier tubes V8401 through V8406 (contained in crate 2), figure 2-19, 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.

STEP 31

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

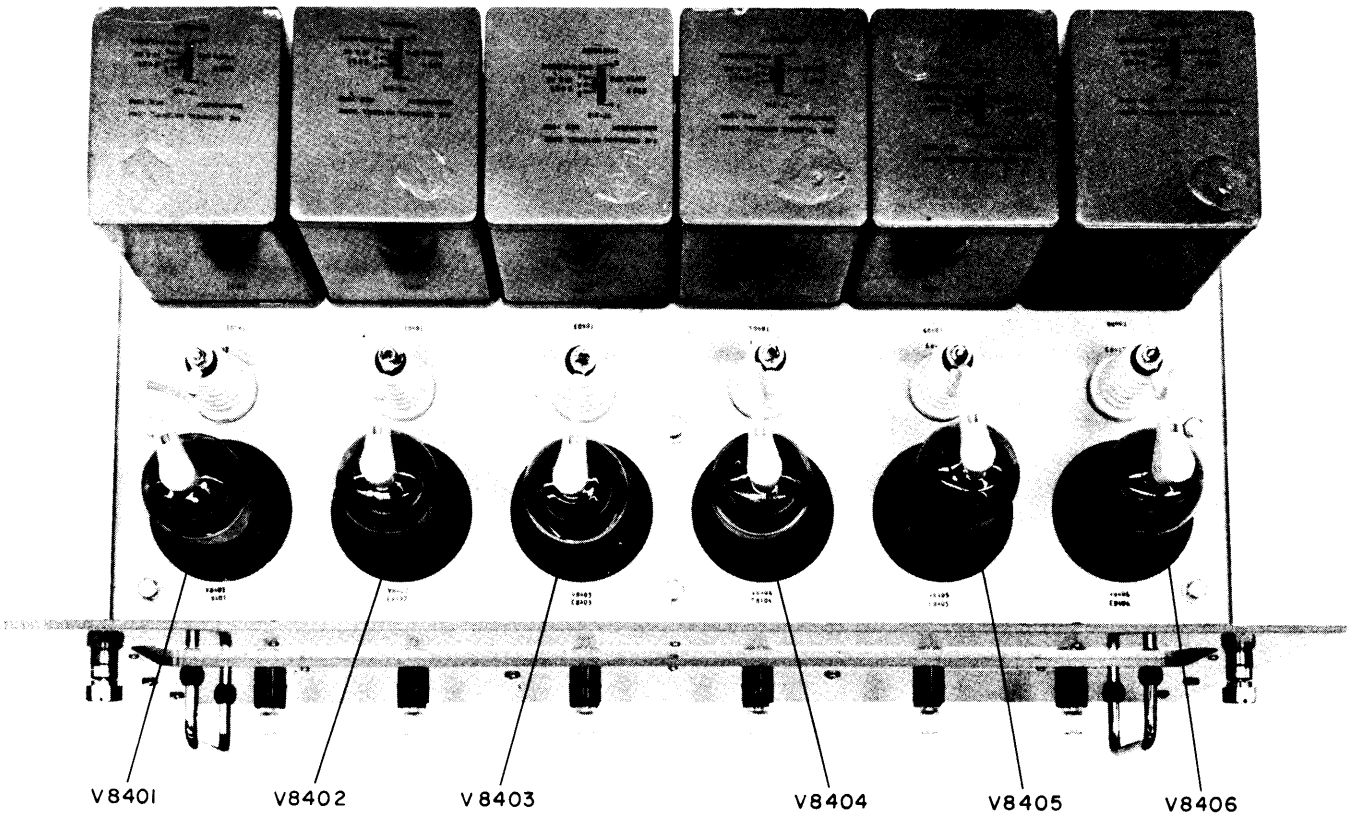
NOTES

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.

STEP 32

a. Unpack crate 25.

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



295-23

Figure 2-19. High Voltage Rectifier Drawer 8400 Top View.

STEP 32 (cont)

c. Install the following components (contained in crate 2), figure 2-20, 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 33

a. Unpack crate 26.

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

c. Loosen set screw, figure 2-21, on both flange-clamps.

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

e. Position capacitor C8207 (contained in crate 2) in 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 34

a. Unpack crate 27.

b. Temporarily remove two shields, top and bottom covering PA tube compartment in rear of third frame.

c. Temporarily remove hardware retaining inner screen, figure 2-22, to walls of tube compartment.

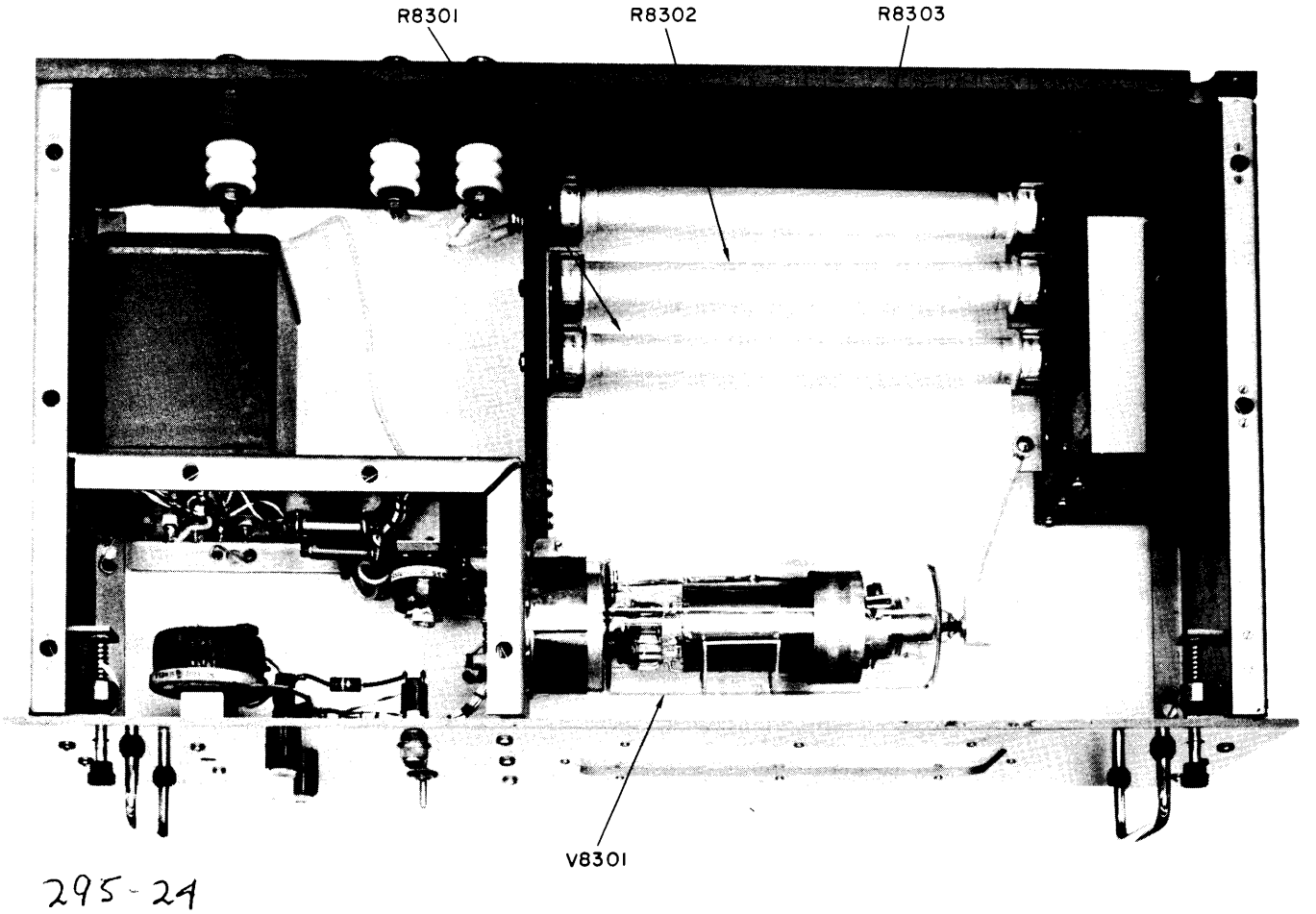


Figure 2-20. Crowbar Drawer 8300, Top View.

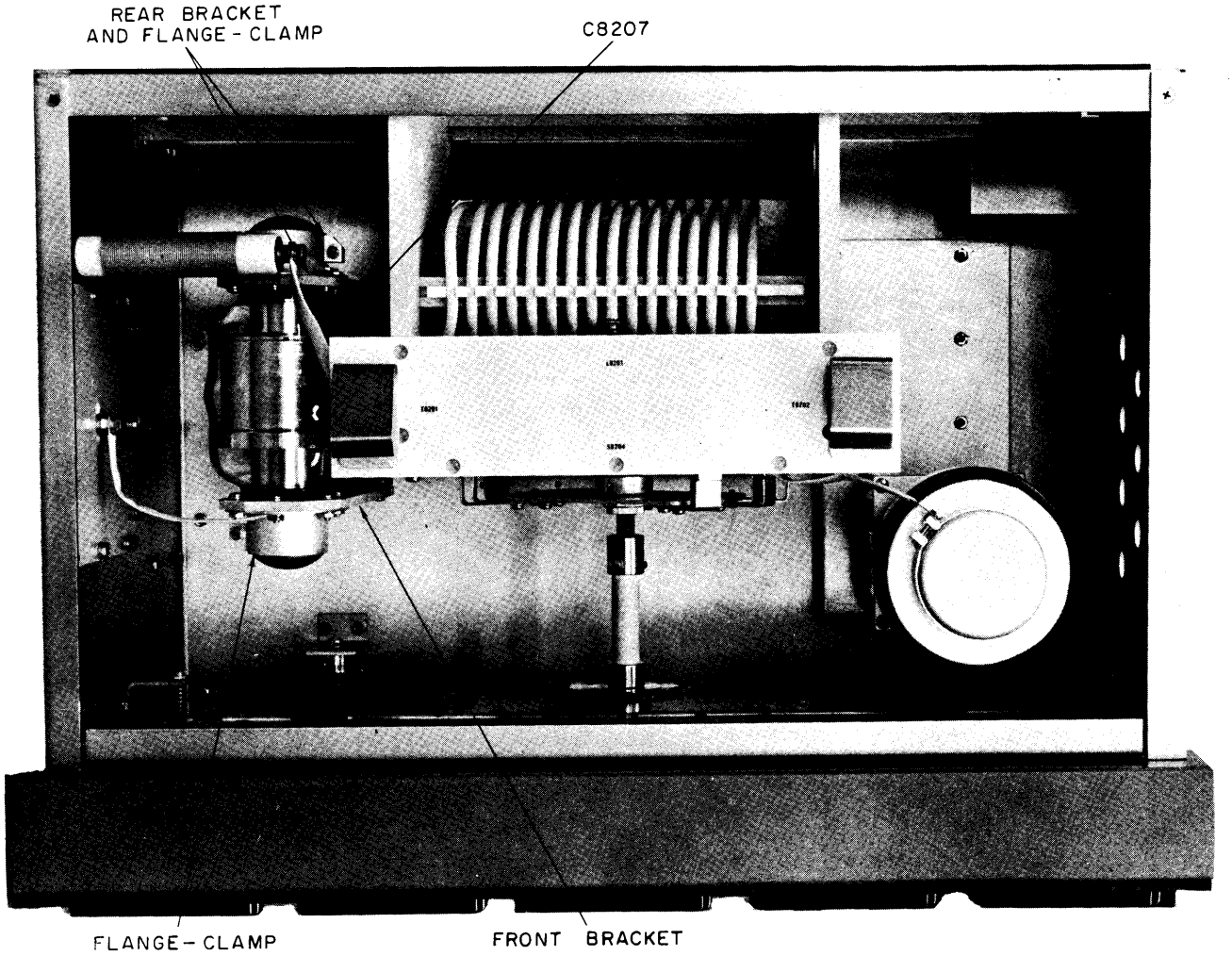
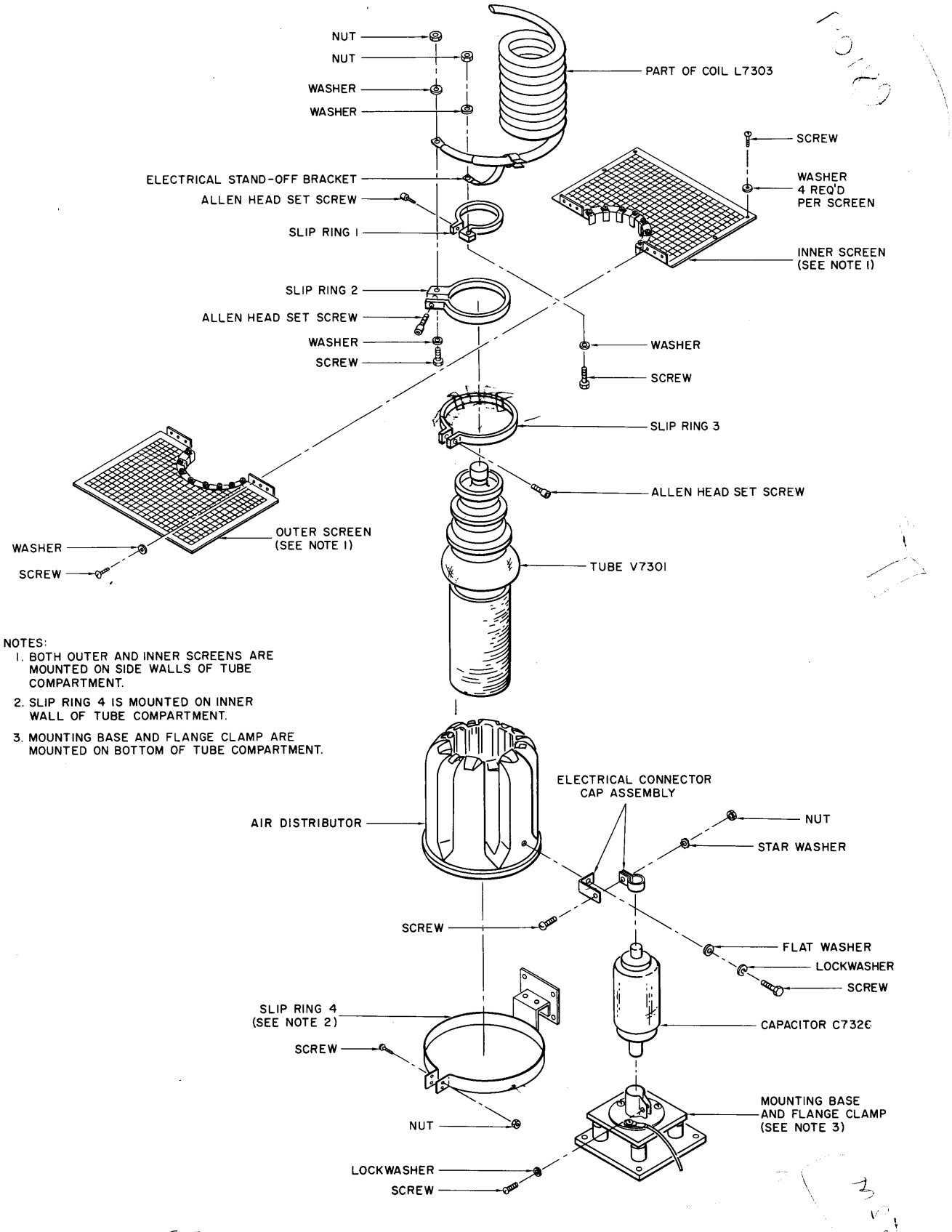


Figure 2-21. Antenna Tuner Drawer 8200, Top View.



295-26

Figure 2-22. Third Frame PA Tube Compartment, Installation Diagram.

d. Temporarily remove hardware from slip ring 4; and then remove the heat sink, figure 2-22, from tube compartment.

e. Carefully insert tube V7301 into heat sink.

f. Place heat sink back into tube compartment.

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

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

i. Place electrical connectors cap assembly on capacitor C7326; and remount assembly to heat sink.

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

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

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

m. Reinstall inner screen in position; and, secure teeth on screens to tube with slip ring 3 by tightening set screw (see figure 2-14).

n. Place slip rings 2 and 1 (in this order), figure 2-22, on tube and tighten set screws.

CAUTION

Slip rings 1 and 2, figure 2-14, must not touch each other or screens.

o. 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 over-

STEP 34 (cont)

p. Replace shield covers on PA tube compartment.

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

STEP 35

Replace all shields, previously removed, on appropriate frames.

STEP 36

a. Remove one side of crate 28.

NOTE

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

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

c. Remove right side fourth frame cover MS-2116-2 (contained in crate 28) and position, figure 2-23, on side of fourth frame.

d. Using hardware from crate 1 bag 23A, tightly bolt side panel to the fourth frame.

STEP 37

a. Unpack crates 29 and 30.

b. Check each item contained in crate 30 against equipment supplied list.

c. Using hardware from crate 30 bag 25, tightly bolt fifth frame filler trim (contained in crate 30) to the bottom left side of fourth frame.

STEP 37 (cont)

c.

NOTE

Special hardware mounted to side of fourth frame must align with corresponding holes in side of fifth frame.

e. Using hardware from crate 30 bag 24, tightly bolt the fifth frame to special hardware mounted to the fourth frame.

STEP 38

a. Position first and second frame top cover MS-1699 (contained in crate 28).

b. Using hardware from crate 30 bag 46, tightly bolt cover to frames (see figure 2-23).

NOTE

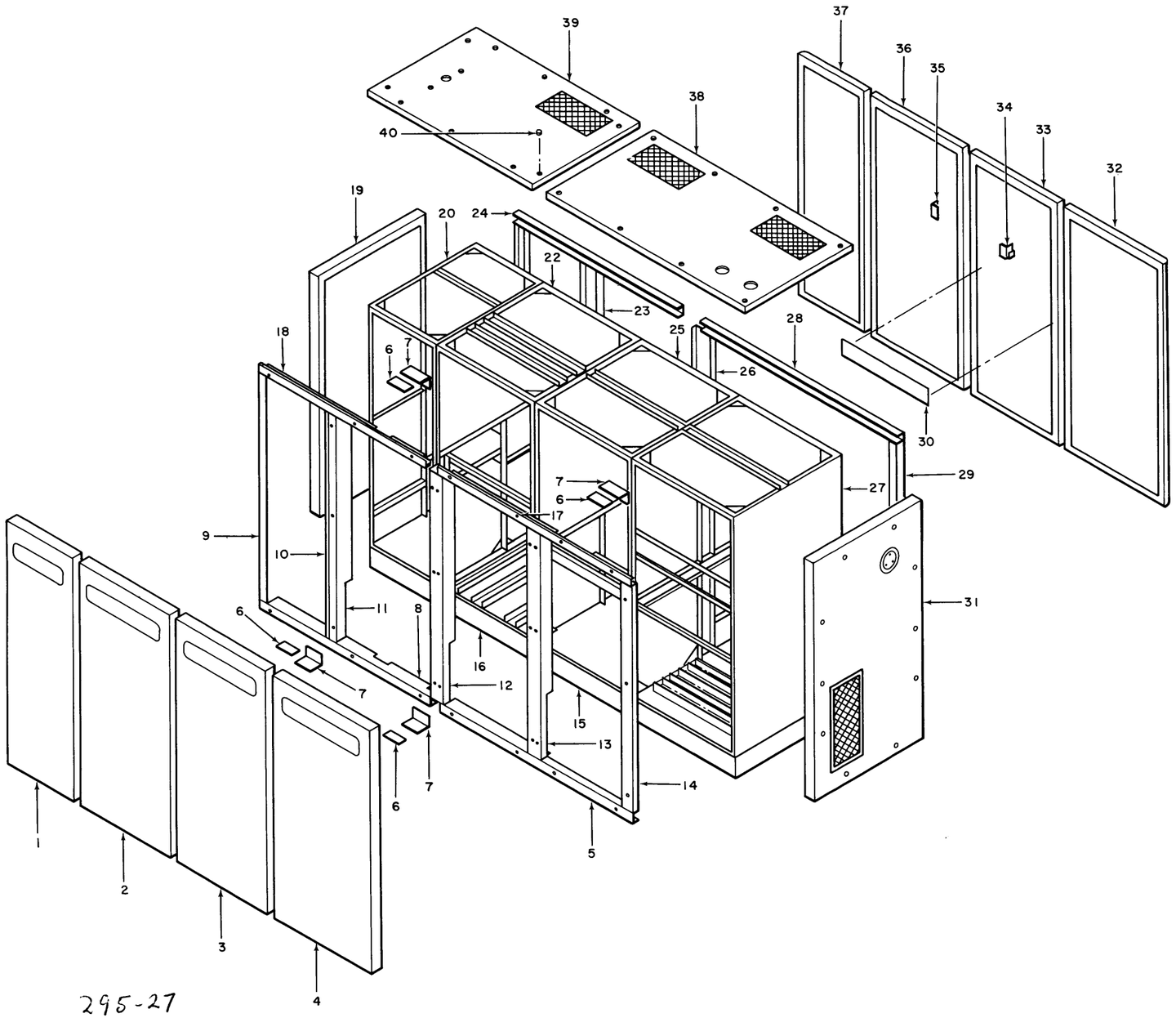
Keep unused hardware. It will be used in succeeding steps to attach covers to frames.

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

STEP 39

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 top of cover, above first frame.



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 2-23. Exterior Trim for the First through Fourth Frames, Installation Diagram.

STEP 39 (cont)

b. 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 previously 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 40

a. Using hardware from crate 30 bag 55, assemble and mount the following items (contained in crate 1) as prescribed.

(1) Assembly door latch plates, figure 2-24, 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 2-23).

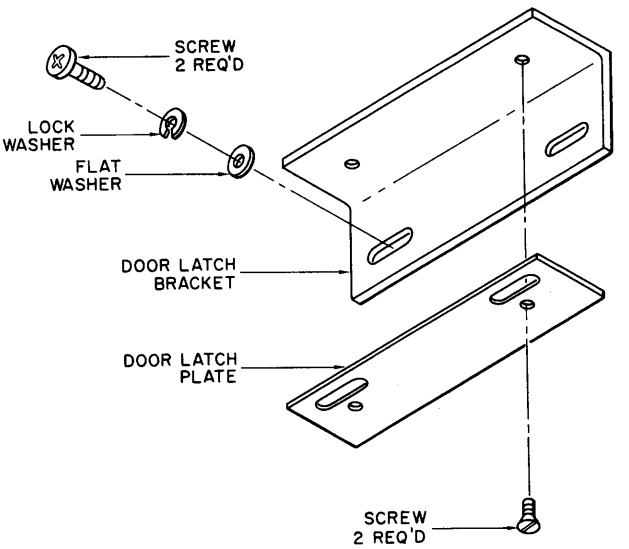
b. Using hardware from crate 30 bag 56, mount rear door hinges (contained in crate 1) on rear of third frame.

STEP 41

NOTE

Refer to figure 2-23.

a. Using hardware from crate 30 bag 54, push on the tinnerman type clip-nuts onto small "U" shaped brackets welded to



294-24

Figure 2-24. Door Latch Plates and Brackets, Installation Diagram

to front of the first through four frames.

b. Using hardware from crate 30 bag 52, mount the following items (contained in crate 28) as prescribed:

(1) First and second frame front top and bottom trim strips (MS-1635 and MS-3646).

(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).

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

(5) Third and fourth frame front trim strip (MS-2-27).

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

c. Using hardware from crate 30 bag 47, mount first frame left side cover MS-2117 (contained in crate 28).

d. Insert appropriate size button plugs (contained in crate 1) into first frame left side cover to frame.

e. Mount first frame hinged front right and left side trim strips MS-1637 and MS-1920 (contained in crate 28).

f. Using hardware from crate 30 bag 53, mount the following items (contained in crate 28) as prescribed:

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

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

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

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

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

STEP 41 (cont)

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

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

g. Using hardware from crate 30 bag 57, mount third frame center rear trim strip MS-2300 (contained in crate 28) to frame.

STEP 42

a. Unpack crate 31.

b. Butt base assembly for sixth and seventh frames to fifth frame (see figure 2-25).

NOTE

Extra shield to base hardware is contained in crate 30 bag 27.

STEP 43

a. Unpack crate 32.

b. Remove shield from base assembly.

c. Position base assembly for eighth and ninth frames adjacent to base assembly for sixth and seventh frames.

d. Using hardware from crate 30 bag 30, tightly bolt two base assemblies together (see figure 2-25).

STEP 44

Physically route ac input power cables into base assembly, see figure 1-5, for eighth and ninth frames.

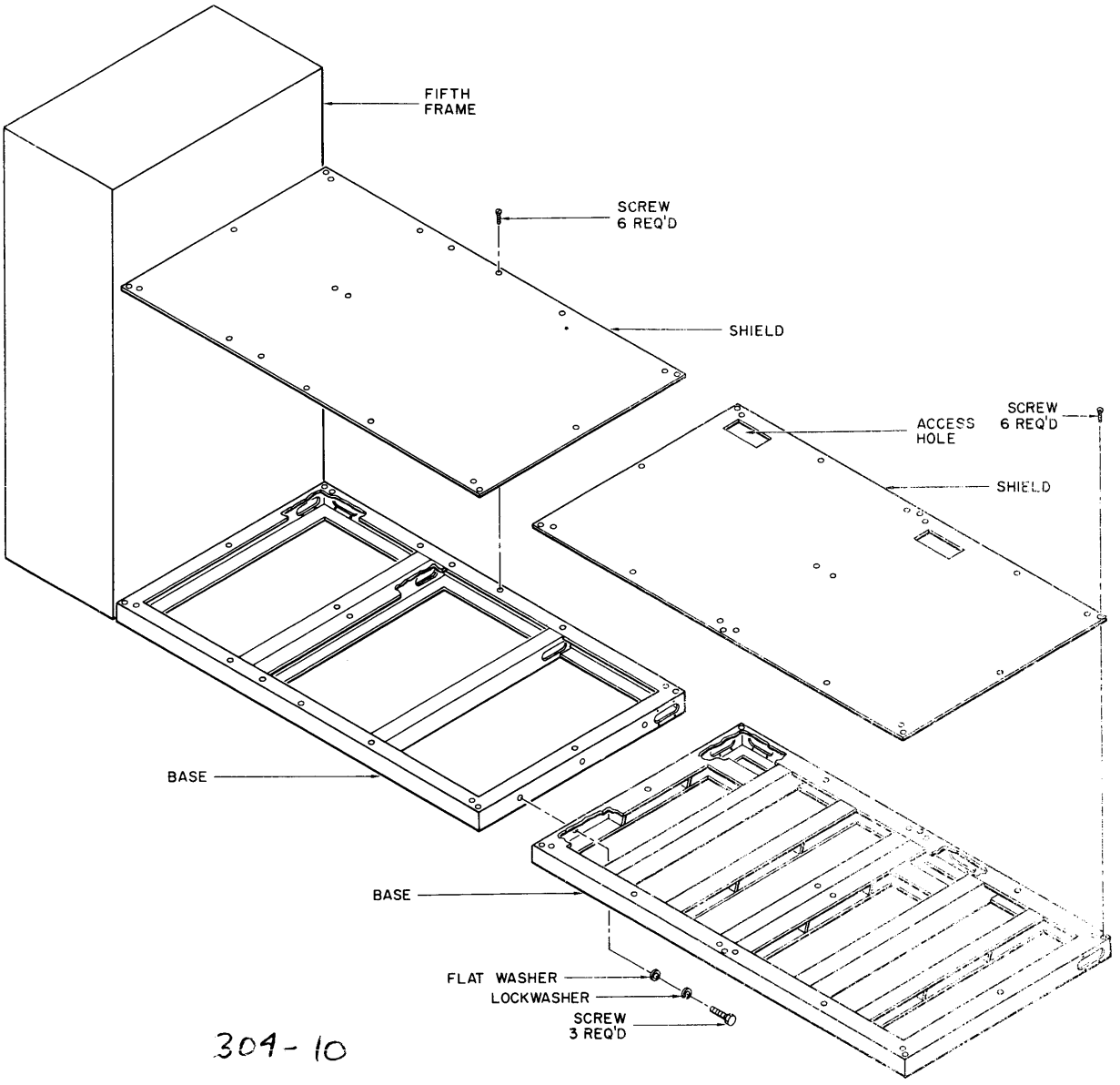


Figure 2-25. Base Assemblies for the Sixth through Ninth Frames, Installation Diagram.

STEP 44 (cont)

NOTE

Only part of this step can be performed now. The remaining part of the step (physically routing cables up through shield to respective main voltage circuit breakers; and then, appropriately connecting each wire) must be performed as transmitter assemblage progresses.

STEP 45

a. Properly position shield, figure 2-25, on base assembly for eighth and ninth frames.

NOTE

Ac input power cables must be routed through appropriate access holes in shield.

b. Using hardware from crate 30 bag 29, bolt shield to base assembly.

STEP 46

a. Unpack crate 33.

b. Position sixth frame on base assembly.

c. Using hardware from crate 30 bag 26, loosely bolt frame to base (see figure 2-26).

NOTE

Bag 26 contains fourteen sets of mounting hardware. Only six sets are used in this step. The remaining eight sets will be used in a succeeding step to bolt the seventh frame to the base.

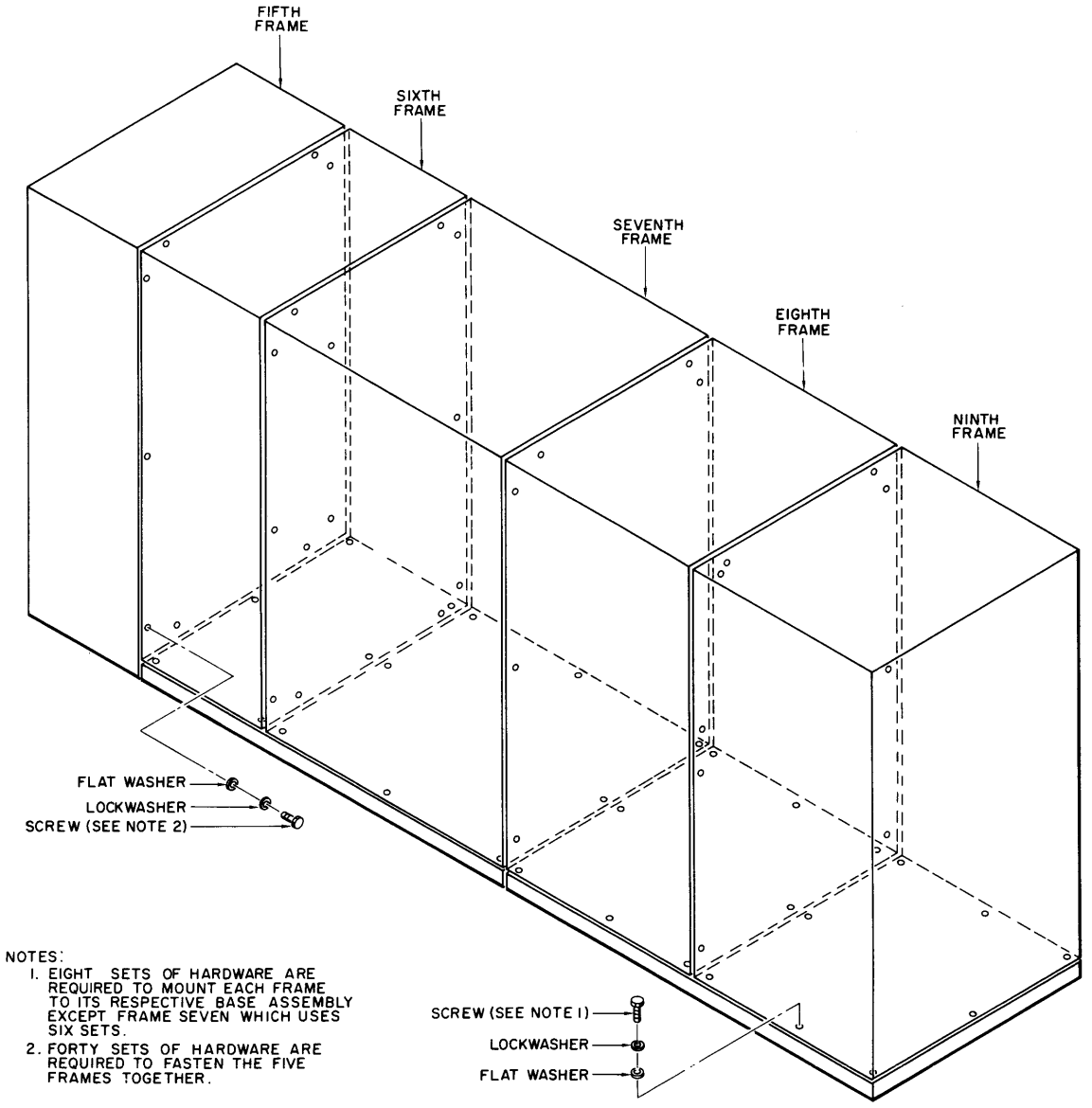


Figure 2-26 . Sixth through Ninth Frames, Installation Diagram.

STEP 46 (cont)

d. Using hardware from crate 30 bag 37, loosely bolt fifth and sixth frames, figure 2-26, together.

STEP 47

Unpack crate 34.

STEP 48

a. Unpack crate 35.

b. Check each item contained against equipment supplied list.

STEP 49

a. Unpack crate 36.

b. Check each item contained against equipment supplied list.

STEP 50

Unpack crate 37.

STEP 51

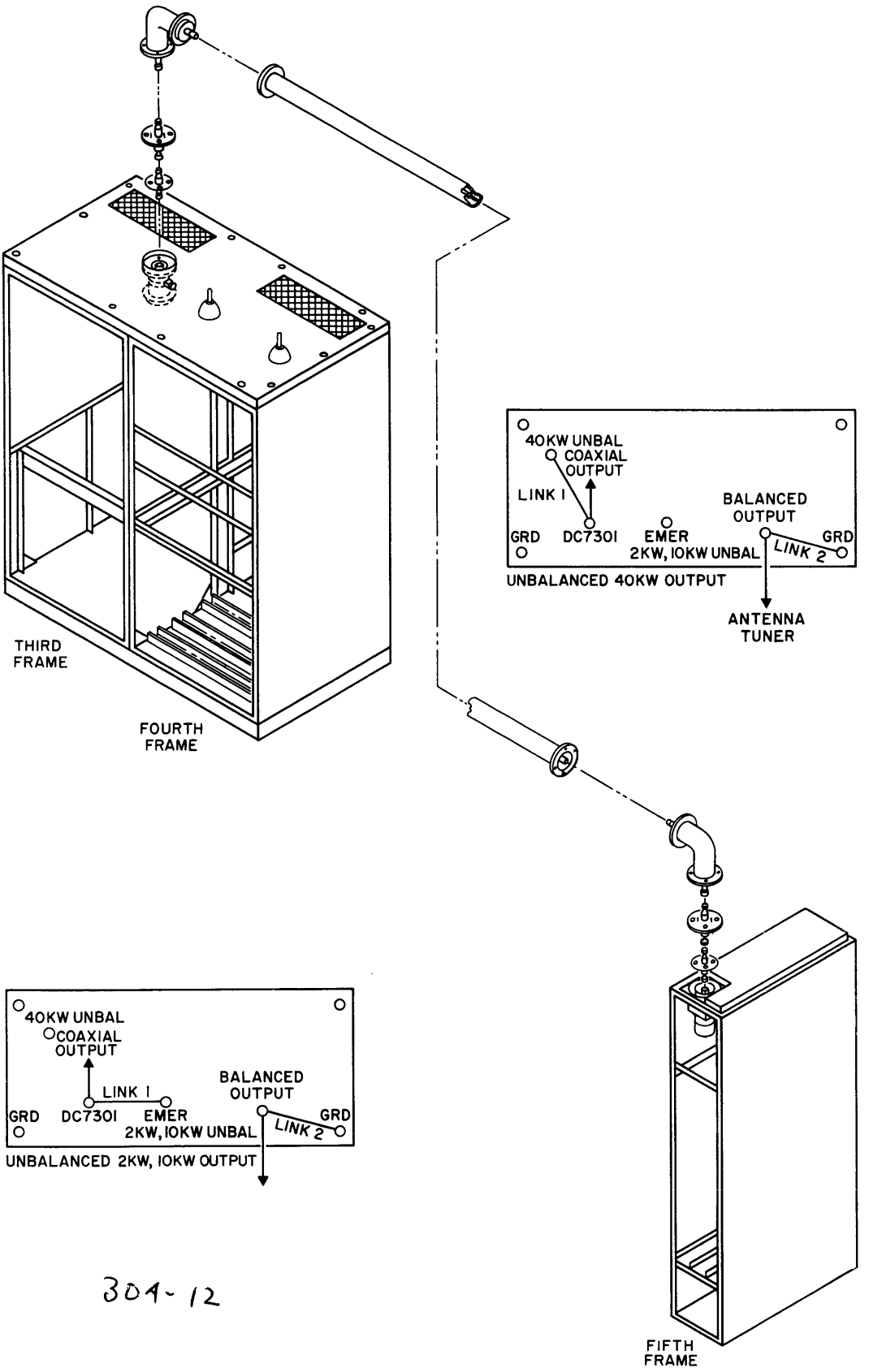
a. Unpack crate 38.

b. Check each item contained against equipment supplied list.

STEP 52

a. Unpack crate 39.

b. Mount interframe (third to fifth frame) rf coaxial transmission line (two elbows and a straight section) as shown in figure 2-27.



304-12

Figure 2-27. Interframe Coaxial RF Transmission Line, Installation Diagram.

STEP 53

Mount feedthrough insulator with hardware (contained in crate 38) into hole in side of the fifth frame (fifth to sixth frame side, top inside center). Refer to figure 2-28 for installation.

STEP 54

Install matrix switch assembly (contained in crate 30) in the upper section, figure 2-29, of the fifth frame.

NOTES

1. When the switch is positioned, make sure the angled support bracket (bolted to the inside of the frame) is under the lower clamping ring before ring is tightened.

2. The upper clamping ring must be tightened after switch is positioned.

3. The tune and operate connecting straps must be appropriately connected.

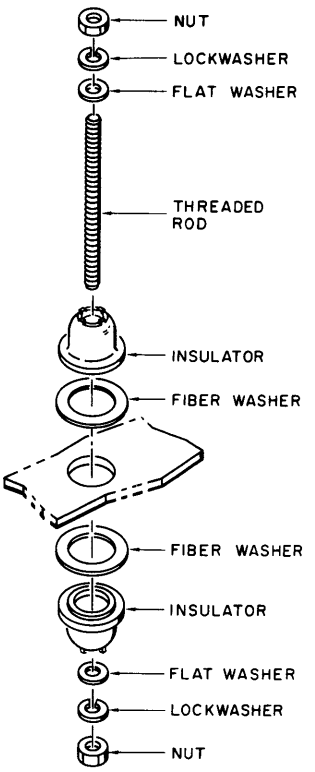
4. The cables with plugs, from the TUNE, OPERATE, and EMERGENCY sections of the switch must be connected to their respective jacks.

STEP 55

a. Insert one end of the emergency output coaxial transmission line (contained in crate 39) into the hole on the exposed side of the sixth frame.

b. Push coax through the sixth frame until the end inserted first contacts the emergency section of the matrix switch inside the fifth frame. (See figure 2-29).

c. Make sure the coax and hole in reduction collar on the matrix switch align. Then push coax into reduction collar and tighten side clamping ring.



304-13

Figure 2-28. Feedthrough Insulator, Installation Diagram.

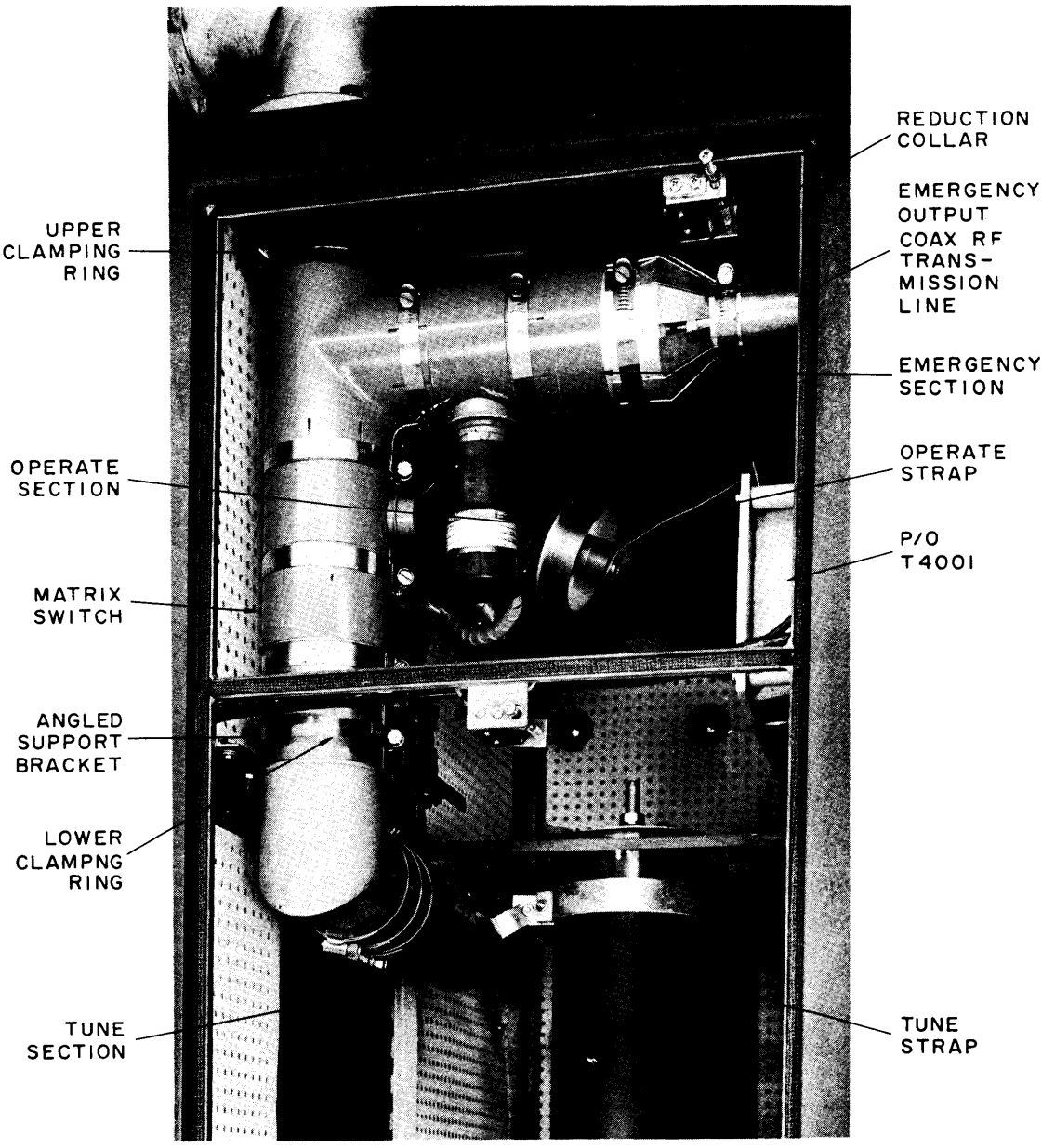


Figure 2-29. Matrix Switch, Front Views (sheet 1 of 2).

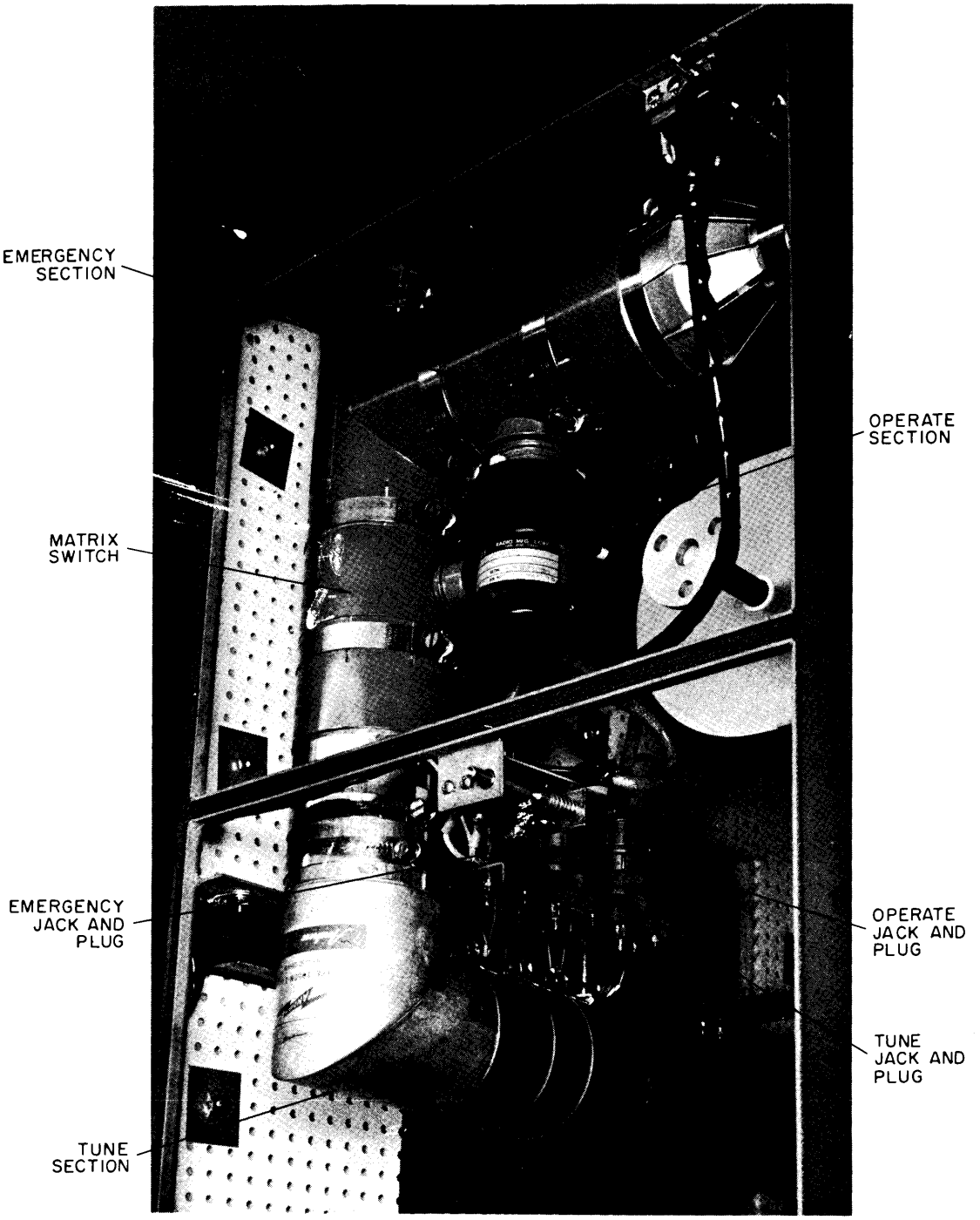


Figure 2-29. Matrix Switch, Front Views (sheet 2 of 2).

STEP 55 (cont)

NOTE

The unconnected end of the emergency output coax will be connected after the seventh frame is positioned.

STEP 56

a. Position input transformer assembly T4001 (contained in crate 34) into top front of the fifth frame (figure 2-30).

b. Using hardware from crate 30 bag 38, secure the transformer assembly to threaded studs.

c. Connect all electrical straps, cables, and wires in the fifth frame.

d. Rotate shaft on capacitor C4023 until plates are furthest apart. (Minimum stop).

e. Position the fifth frame top front door (contained in crate 35) on front of the frame and rotate doorretaining screws until door locks in place.

NOTES

1. Before positioning the door, make sure the counter on the front reads 000.

2. When the door is positioned, make sure the plate on the shaft from capacitor C4023 mechanically aligns with plate on the shaft from counter.

STEP 57

a. Unpack crate 40.

b. Position seventh frame on base assembly.

CAUTION

The emergency output coax section protruding out of the sixth frame

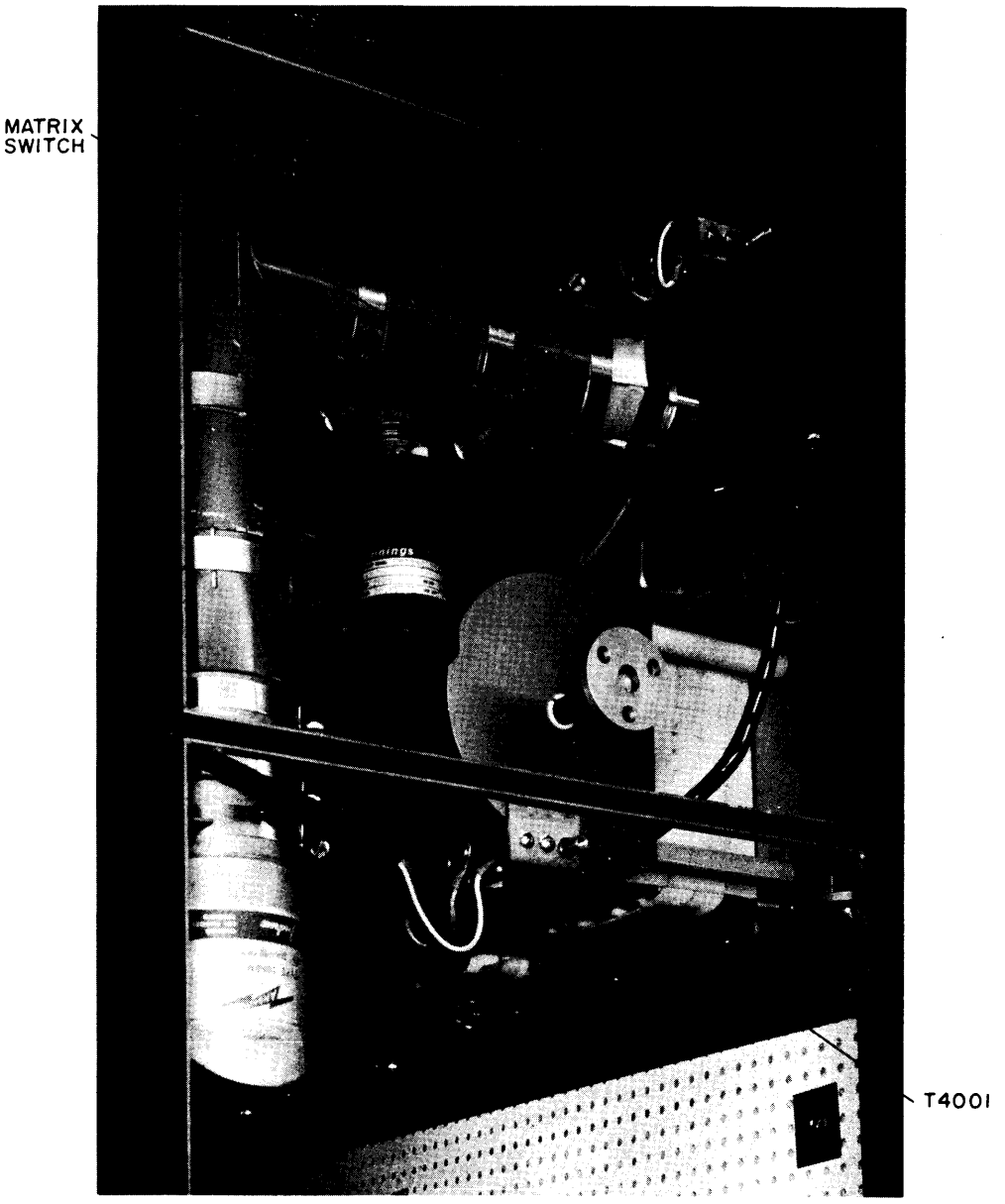


Figure 2-30. Input Transformer T4001.

must not be damaged when the frame is positioned.

c. Using remaining hardware from crate 30 bag 26, loosely bolt frame, figure 2-26, to base.

d. Using hardware from crate 30 bag 32, loosely bolt sixth and seventh frames, figure 2-26, together.

e. Using hardware from crate 30 bag 61B, mount, figure 2-31, capacitors C5304 and C5308 (contained in crate 38) onto top front mounting brackets inside the seventh frame.

f. Connect the emergency output coaxial transmission, located inside the frame just behind the meter panel.

STEP 58

a. Using hardware from crate 30 bag 35, tightly bolt exhaust fan (contained in crate 30) to the top rear of seventh frame.

b. Connect fan plug to jack on top of frame.

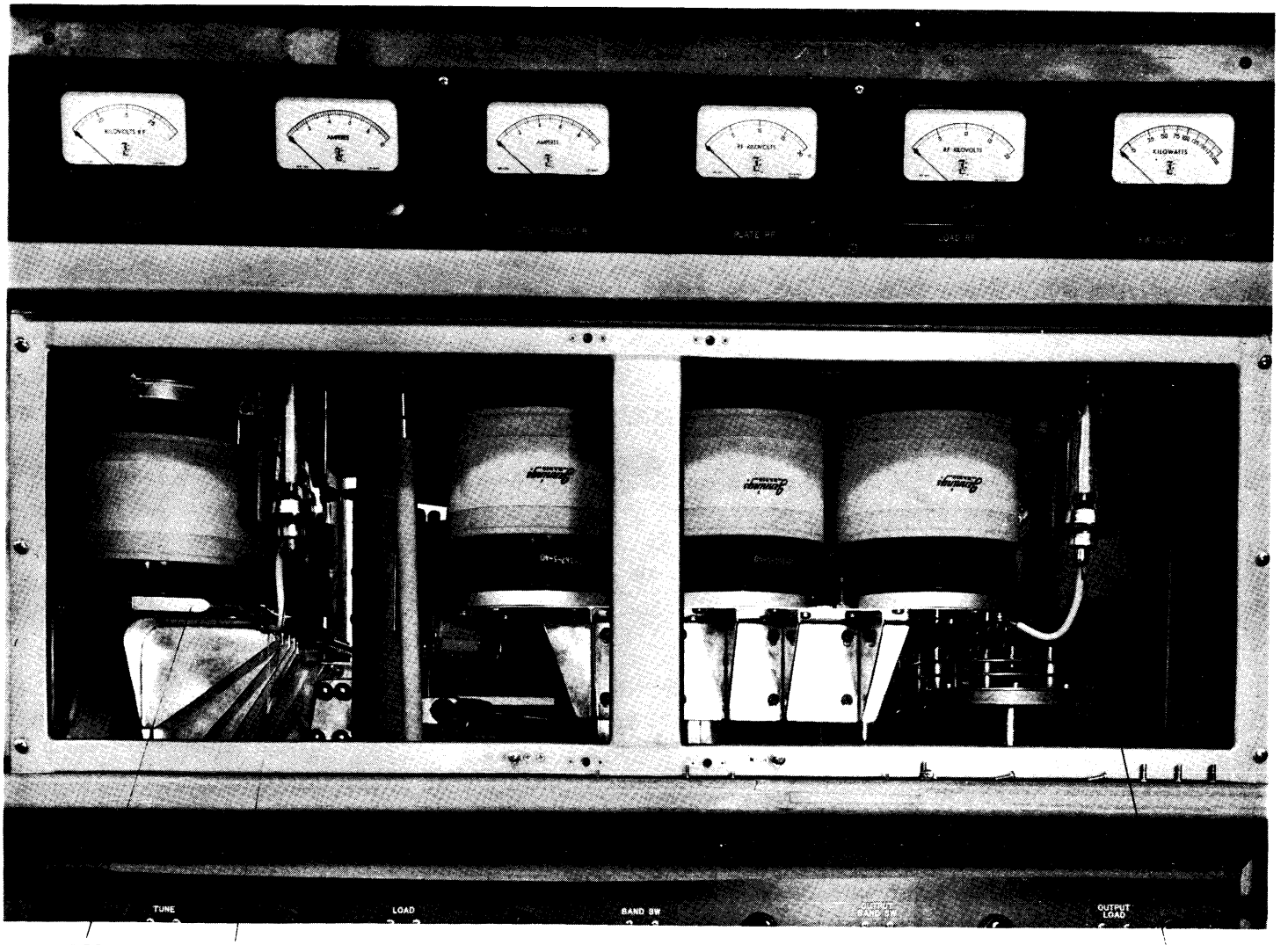


Figure 2-31. Seventh Frame, Upper Front View.

STEP 59

Mount-fixed resistors R5101 through R5110 (contained in crate 30) on resistor board, figure 2-32, in bottom rear section of the seventh frame.

NOTE

Make sure each resistor is placed in its designed position.

STEP 60

a. Unpack crate 41.

b. Temporarily remove the vertical frame posts from bottom rear of sixth and seventh frames.

NOTE

Violet colored PA tube filament cables coiled in bottom of sixth frame must be routed through the sixth and seventh frames and connected to the taps on main power transformers (refer to schematic diagram). Cable routing must be done as transmitter assemblage progresses.

c. Position main blower assembly into lower rear sections, figure 2-33, of the sixth and seventh frames.

d. Using hardware from crate 30 bag 36, tightly bolt main blower to the frames.

NOTE

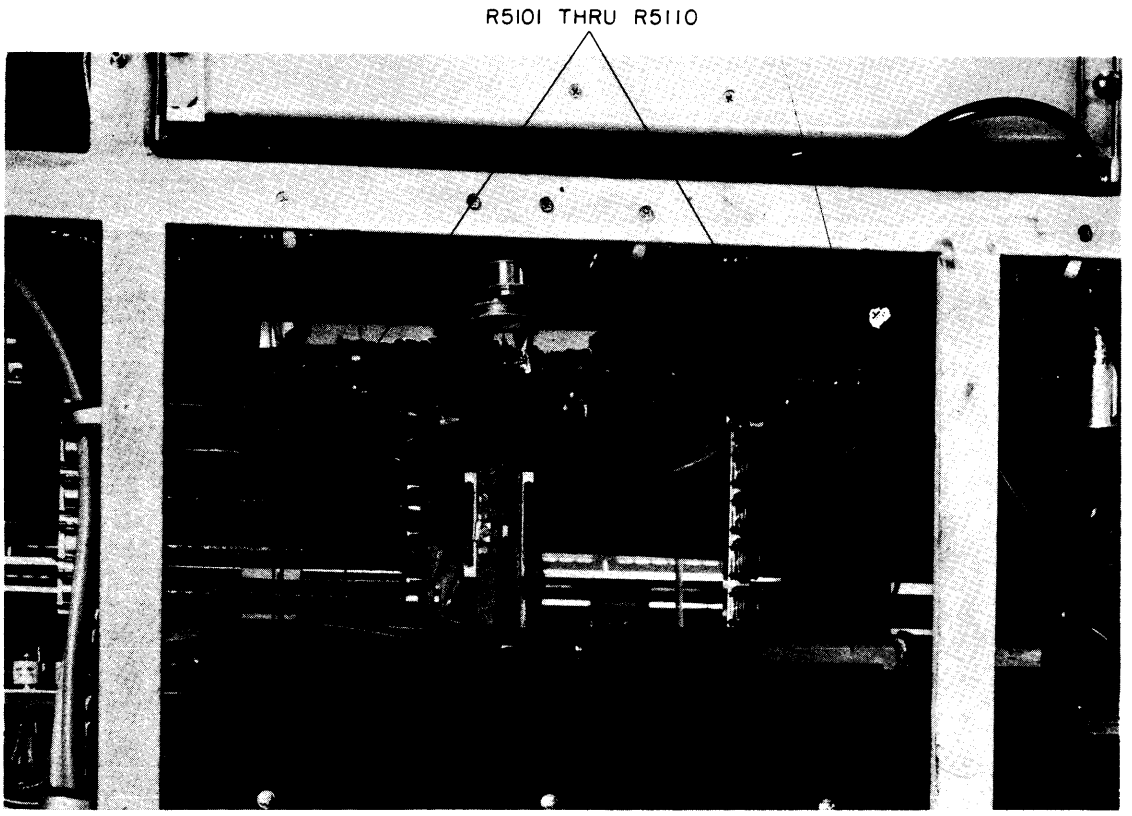
Do not connect the blowers rubber sleeves to the PA tube bases.

e. Replace vertical frame posts on frames.

f. Connect rubber sleeve on side of blower to interframe (sixth to fifth) air duct flange.

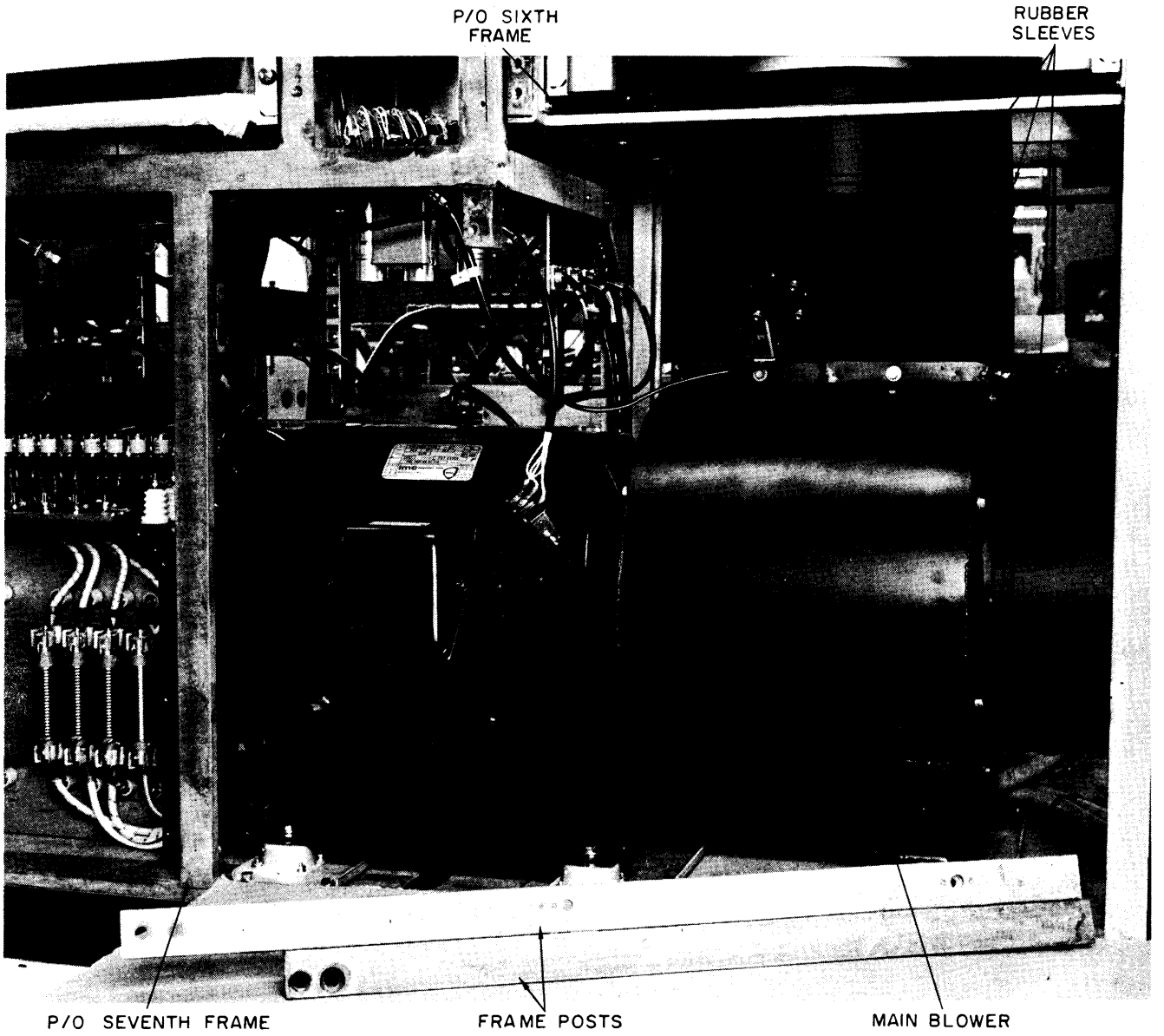
STEP 61

a. Temporarily remove SPARE box from the inside of the sixth frame. This can be done by removing four screws retain-



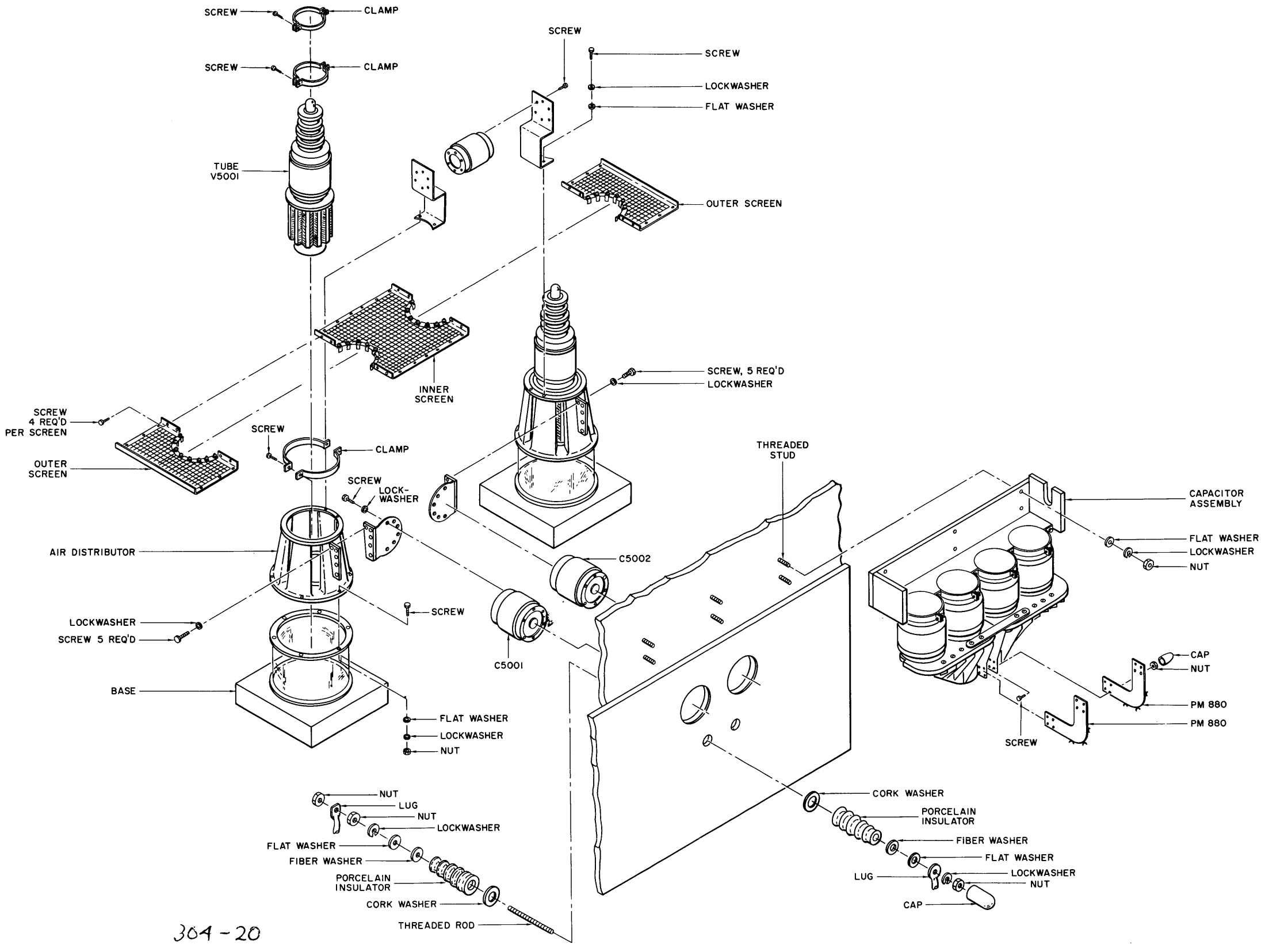
301-18

Figure 2-32. Lower Compartment of the Seventh Frame, Rear View.



304-19

Figure 2-33. Main Blower, Rear View.



304-20

Figure 2-34. Main PA Tubes and Associated Components, Installation Diagram.

ing box to front of the frame.

b. Temporarily remove outer screens (front and rear), figure 2-34, mounted to side of the sixth frame walls and inner screen.

c. Mount capacitors C5014 and C5015 (contained in crate 38) in the sixth frame (see figure 2-35).

d. Unlock drawer release catches, and pull-out tube mounting drawers (front and rear) on their tracks; do not remove drawer from sixth frame.

e. Unpack crate 42.

f. Position main PA tubes in their air distributors. And secure the tube anodes to their respective air distributors.

g. Install the porcelain feedthrough E5001 and E5002, figure 2-34, in the side wall (sixth to seventh frame side).

h. Push tube mounting drawers back into the frame; make sure drawer latches engage.

i. Using screen to tube rings (contained in crate 36), secure front and rear outer screen to the tubes (figure 2-34). And replace hardware that holds screens to frame walls and inner screen.

j. Mount split rings (contained in crate 36) around each tube; and connect wires, figure 2-35, in the immediate vacinity.

k. Using hardware from crate 30 bag 31, mount capacitor C5026 (contained in crate 36), figure 2-34 between PA tube air distributor.

l. Connect rubber sleeves on the main blower to the underside of tube mounting drawers.

m. Replace the SPARE box in its position.

STEP 62

a. Temporarily remove hardware from brackets on the air distributors in the sixth frame.

b. Position, figure 2-34, capacitors C5001 and C5002 (contained in crate 36) into interframe holes (sixth and seventh frames).

c. Using hardware previously removed, mount capacitors C5001 and C5002 to brackets, figure 2-34, on pa tubes air distributors.

STEP 63

a. Insert, figure 2-34, capacitor assembly A-2821 (contained in crate 37) into the top rear section of the seventh frame; and position assembly onto the threaded studs.

b. Using hardware from crate 30 bag 38, secure the capacitor assembly to threaded studs.

c. Mount plate connectors PM-883 and PM-884 (contained in crate 38) to the bottom of the capacitor assembly.

NOTE

The plate connectors and capacitors, C5001 and C5002 (coming through the frame wall) must line up, so that clamping rings (on the plate connectors) can be tightened around each respective capacitor C5001 and C5002.

d. Mount, figure 2-34, interconnect plates PM-880 between plate connectors and bracket on band switch.

e. Install, figure 2-36, tuning shaft (contained in crate 35) between right angle gear box mounted on shelf of compartment and gear box which is part of capacitor assembly A-2821.

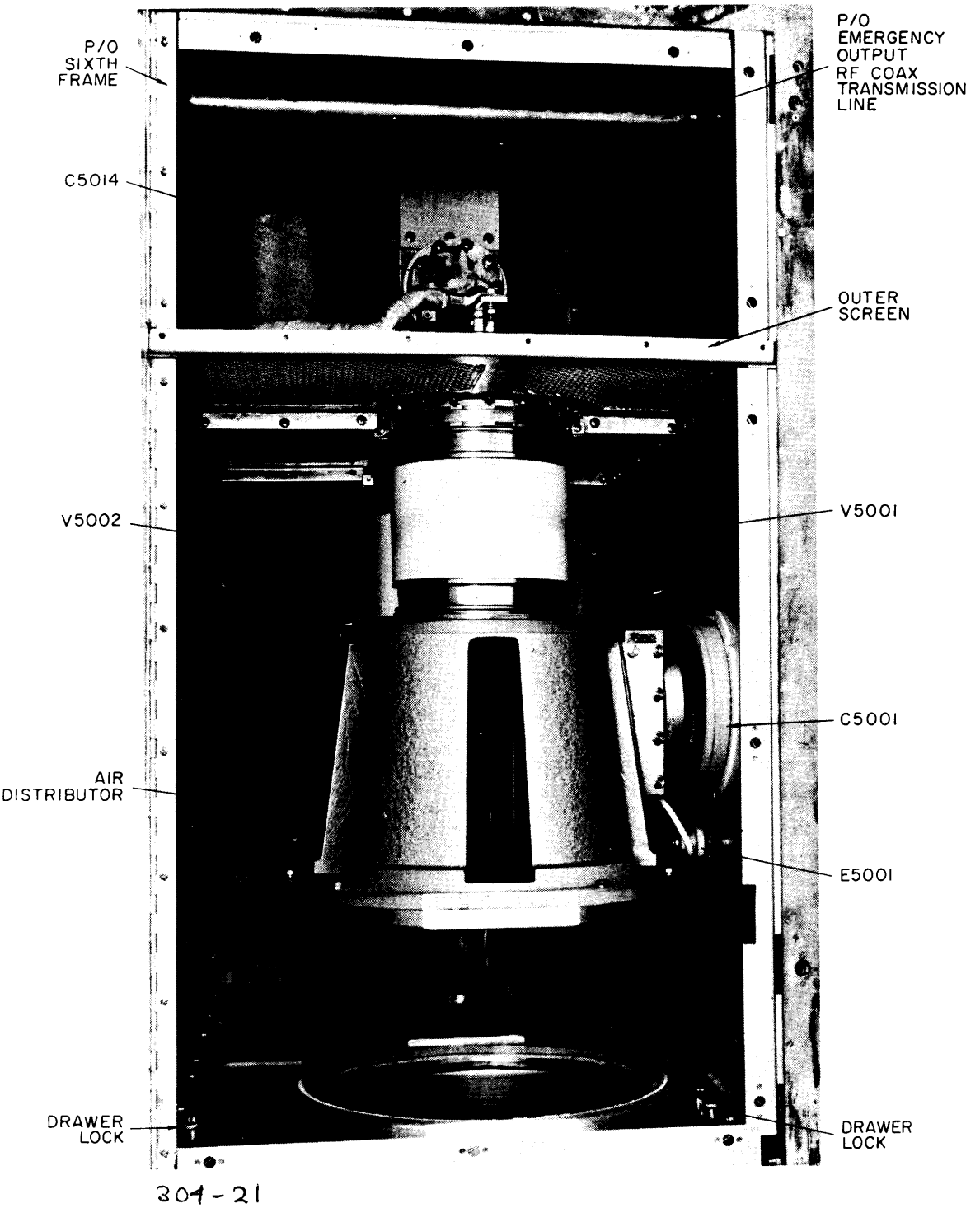


Figure 2-35. Main PA Tube Compartment, Front View

e.

NOTES

1. Before installing the tuning shaft, the capacitor assembly A-2821 must be adjusted. This is done by rotating capacitor shaft until gear driven plates are fully ~~down~~ in each capacitor. And, rotating front panel TUNE control until counter indicates "000." After adjusting, the tuning shaft is installed.

2. Hardware retaining right angle gear box to shelf must be temporarily removed to install tuning shaft.

STEP 64

a. Unpack crate 43.

b. Position eighth frame on base, figure 2-26, adjacent to seventh frame.

c. Using hardware from crate 30 bag 28, loosely bolt frame to base (see figure 2-26).

NOTE

Bag 28 contains twelve sets of mounting hardware. Only part of hardware is used in this step. The remaining hardware in the bag will be used in a succeeding step to bolt the ninth frame to the base.

d. Using hardware from crate 30 bag 33, loosely bolt seventh and eighth frames, figure 2-26, together.

e. Route ac input power cable into the frame, figure 1-5, and appropriately connect color-coded wires as indicated in the schematic diagram.

f. Temporarily remove power supply control panel from the front of the frame.

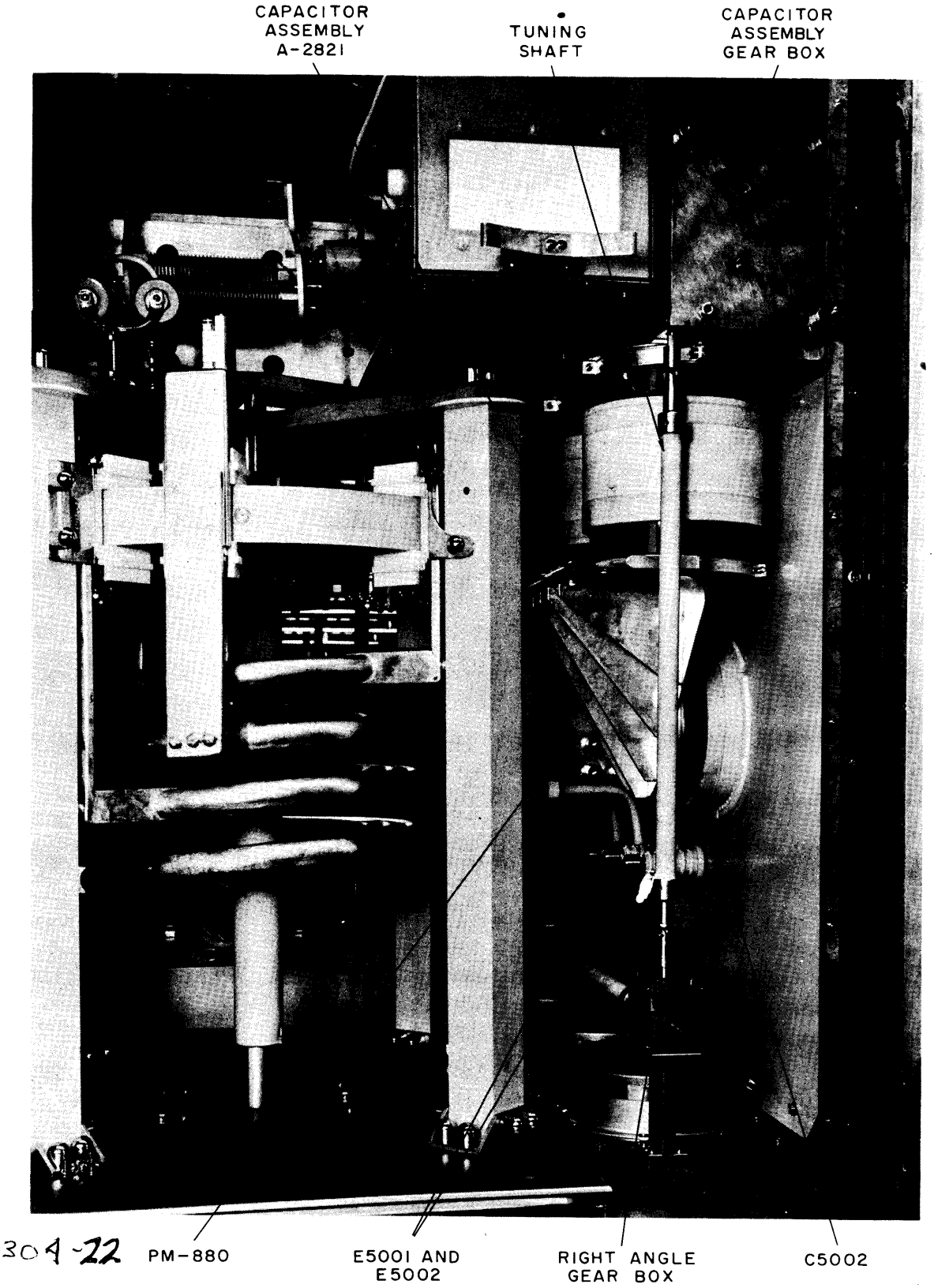


Figure 2-36 Upper Compartment of the Seventh Frame, Rear View.

STEP 65

a. Unpack crate 44.

b. Position ninth frame on base assembly, figure 2-26, adjacent to the eighth frame.

c. Temporarily remove power supply control panel from the front of the frame.

d. Using remaining hardware from crate 30 bag 28, loosely bolt ninth frame to base assembly (see figure 2-26).

e. Using hardware from crate 30 bag 33, loosely bolt eighth and ninth frames, figure 2-26, together.

f. Tighten all frame to base and frame to frame hardware for sixth through ninth frames (see figure 2-26).

g. Route ac input power cable into the frame (see figure 1-5).

STEP 66

Mount fixed resistors R6004 through R6022 (contained in crate 36) on resistor board, figure 2-37, in upper rear section of the eighth frame.

NOTE

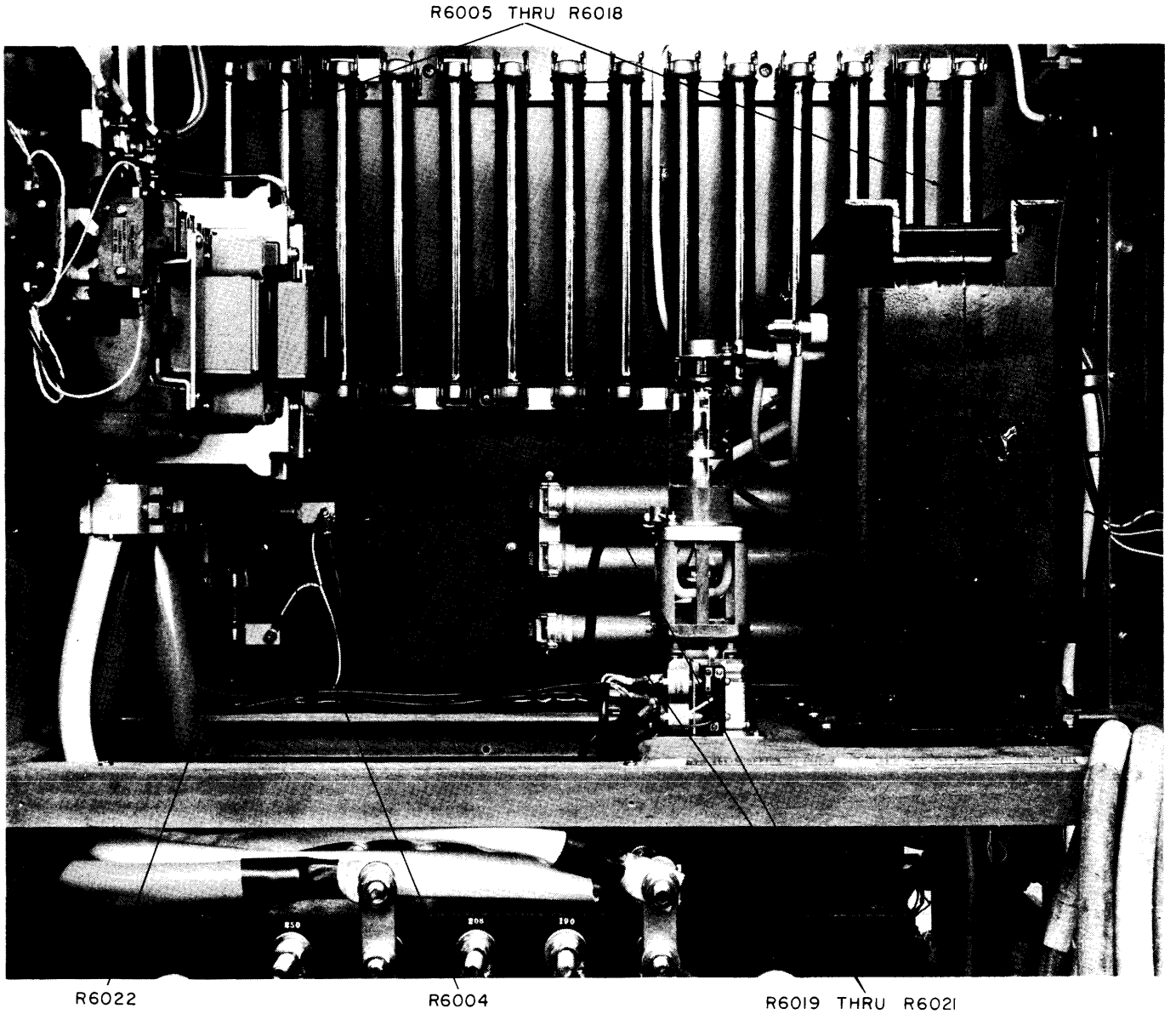
Make sure each resistor is placed in its designated position.

STEP 67

Mount fixed resistors R6604 through R6622 (contained in crate 38) on resistor board, figure 2-37, in upper section of the ninth frame.

NOTE

Make sure each resistor is placed in its designated position.



304-23

Figure 2-37. Upper Compartment of the Eighth or Ninth Frames, Rear View.

STEP 68

Mount shorting rods (contained in crate 30) in snap clips located in rear of seventh, eighth, and ninth frames; one shorting rod per frame.

STEP 69

a. Temporarily remove antenna switching drawer assembly (located below the meter panel on front of the eighth frame).

b. Position the flanged rf coaxial transmission line section (contained in crate 36) on top of the eighth frame (see figure 2-38).

c. Bolt coaxial section to flange on top of frame

d. Replace antenna switching panel assembly in frame.

STEP 70

a. Unpack crates 45 and 46.

b. Remove capacitor mounting assemblies, figure 2-39, from bottom of eighth and ninth frames.

c. Position capacitors, figure 2-39, in eighth and ninth frames.

d. Replace mounting assemblies.

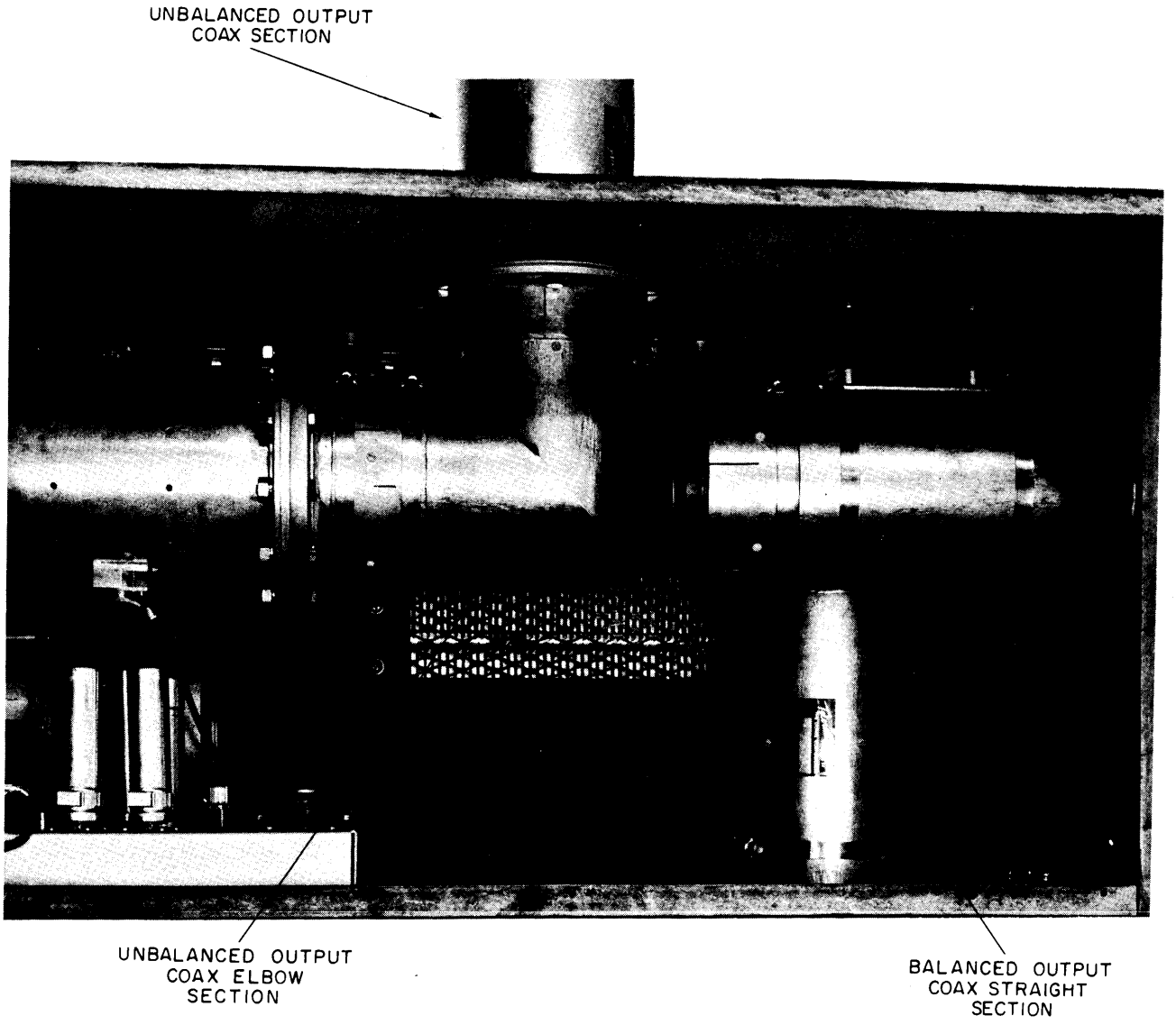
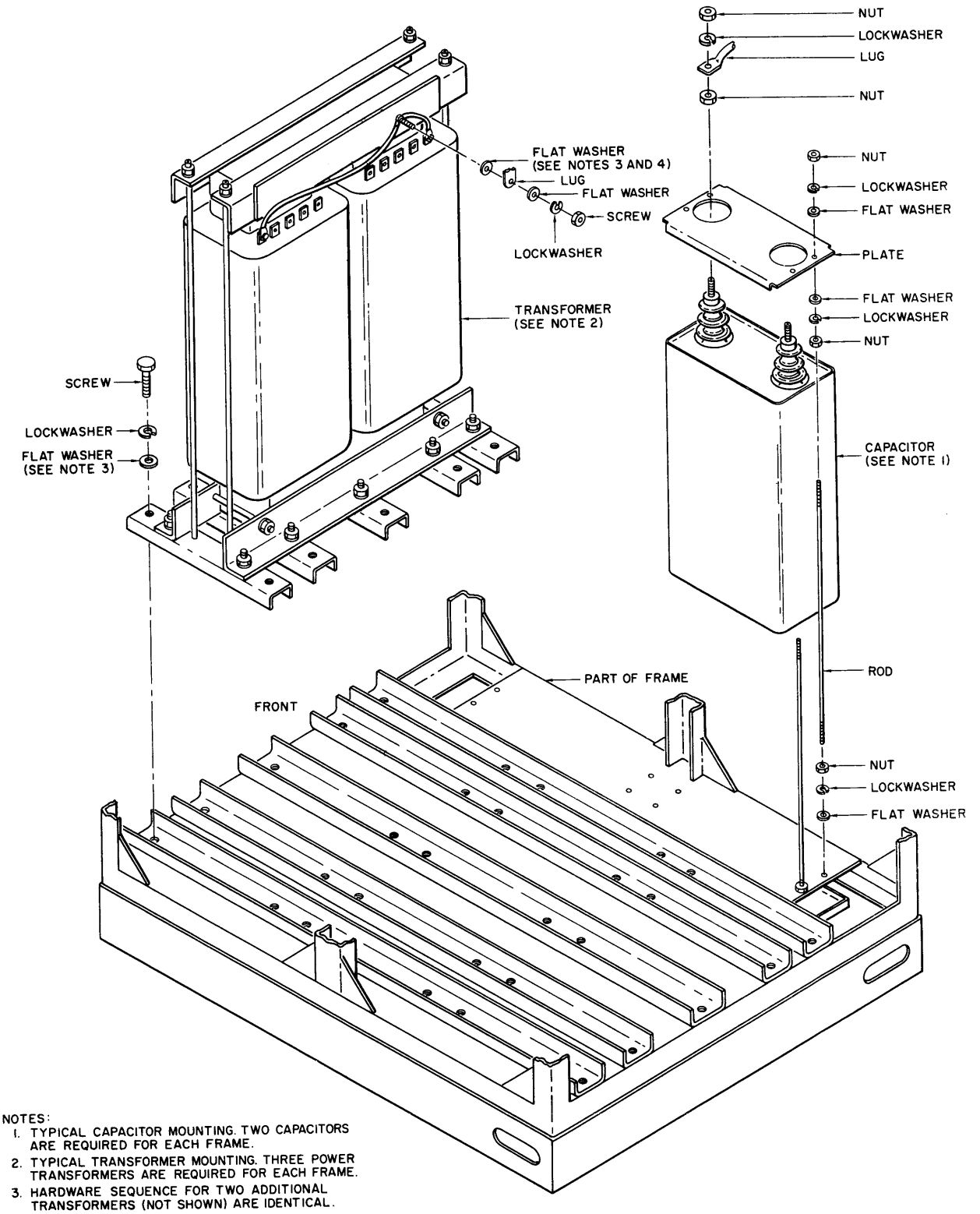


Figure 2-38. Unbalanced Output RF Coaxial Transmission Line, Front Views (sheet 1 of 2).

304-25

Figure 2-38. Unbalanced Output RF Coaxial Transmission Line, Front Views (sheet 2 of 2).



NOTES:
1. TYPICAL CAPACITOR MOUNTING. TWO CAPACITORS ARE REQUIRED FOR EACH FRAME.
2. TYPICAL TRANSFORMER MOUNTING. THREE POWER TRANSFORMERS ARE REQUIRED FOR EACH FRAME.
3. HARDWARE SEQUENCE FOR TWO ADDITIONAL TRANSFORMERS (NOT SHOWN) ARE IDENTICAL.
4. HARDWARE SEQUENCE RETAINING THE TRANSFORMERS LEADS ARE NOT SHOWN EXPLODED. WHEN MAKING ELECTRICAL CONNECTIONS TO THE TRANSFORMER, ONLY REMOVE AND REPLACE HARDWARE SHOWN.

304-26

Figure 2-39. Main HV Power Transformers and Capacitors, Installation Diagram.

STEP 71

a. Unpack crates 47, 48, and 49.

b. Position power transformers T6001, T6002, and T6003, figure 2-39, in the eighth frame. And tightly bolt each transformer to the frame as it is installed, using hardware from crate 30 bag 40.

c. Position and mount power transformers T6601, T6602, and T6603 in the ninth frame, following the same procedure as outlined for installing T6001, T6002, and T6003. Hardware for mounting transformers is in crate 30 bag 41.

STEP 72

a. Unpack crate 50.

b. Temporarily remove the following items from the front of the ninth frame:

(1) Glass window panel

(2) Meter panel

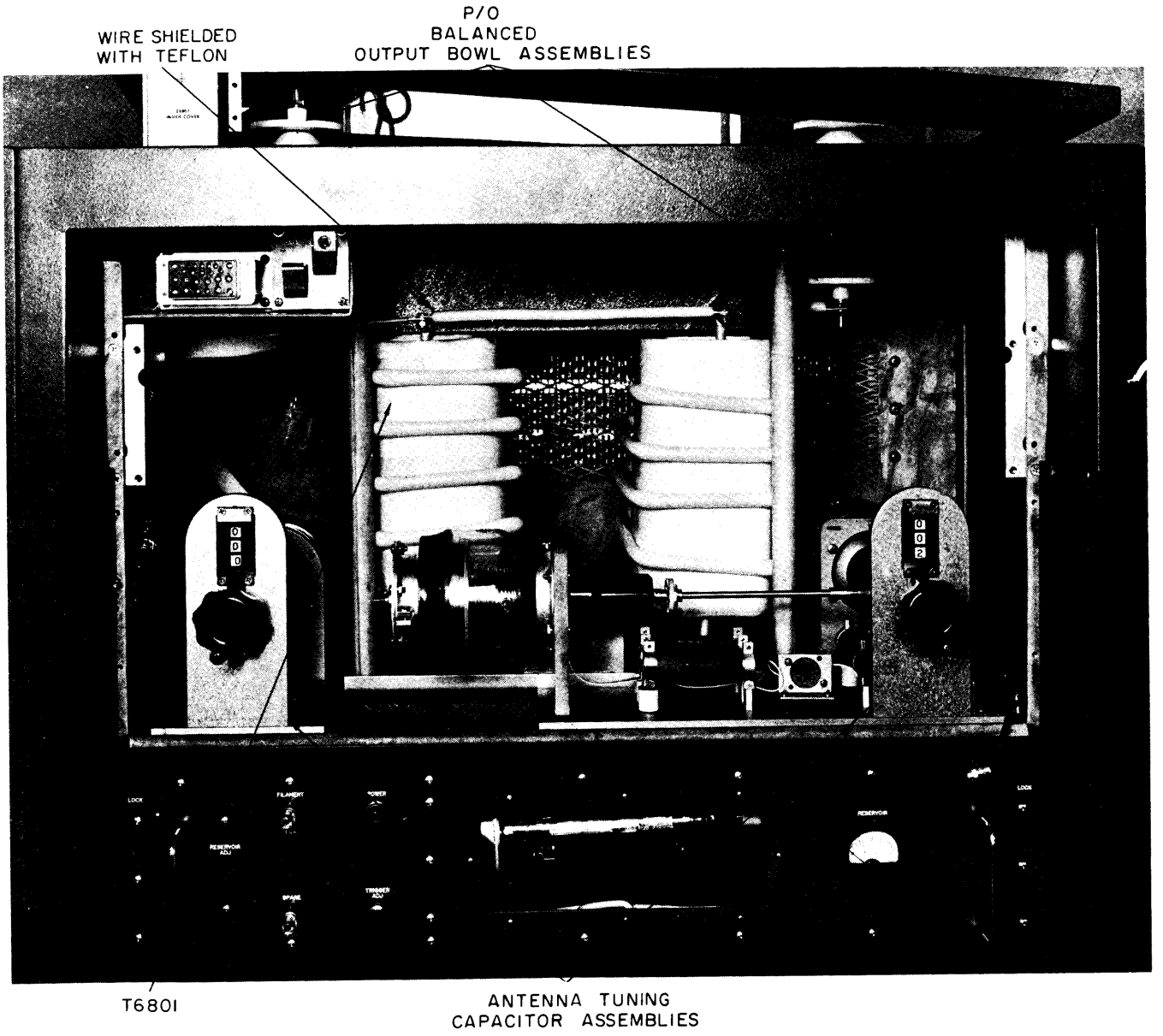
(3) RF shield behind the window and meter panels.

c. Position output balance transformer T6801, figure 2-40, in top of the ninth on compartment shelf.

NOTE

A 12 inch straight piece of teflon shielded wire on the upper part of the transformer may be used to identify the front of the assembly. When the transformer is inserted into the compartment this wire must be facing outward.

d. Using hardware from crate 30 bag 43, bolt balance transformer T6801 to the shelf.



304-27

Figure 2-40. Upper Compartment of the Ninth Frame, Front View.

STEP 73

a. Position antenna tuning capacitor assemblies (contained in crate 34) into top front compartment of the ninth frame.

b. Using hardware from crate 30 bag 44, bolt both assemblies to the frames compartment shelf.

c. Temporarily remove the control knobs on the shafts of the capacitor assemblies.

d. Using hardware from crate 30 bag 43A, mount, figure 2-41, the balanced output bowl assemblies E6801 and E6802 (contained in crate 38) to the top of the ninth frame (see figure 2-40).

e. Connect all straps, cables, and wires in the compartment.

f. Replace RF shield, meter panel, and glass window panel on the top of the ninth frame.

g. Replace control knobs on the antenna tuning capacitor assembly shafts.

STEPS 74

a. Remove one side of crate 51.

NOTE

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

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

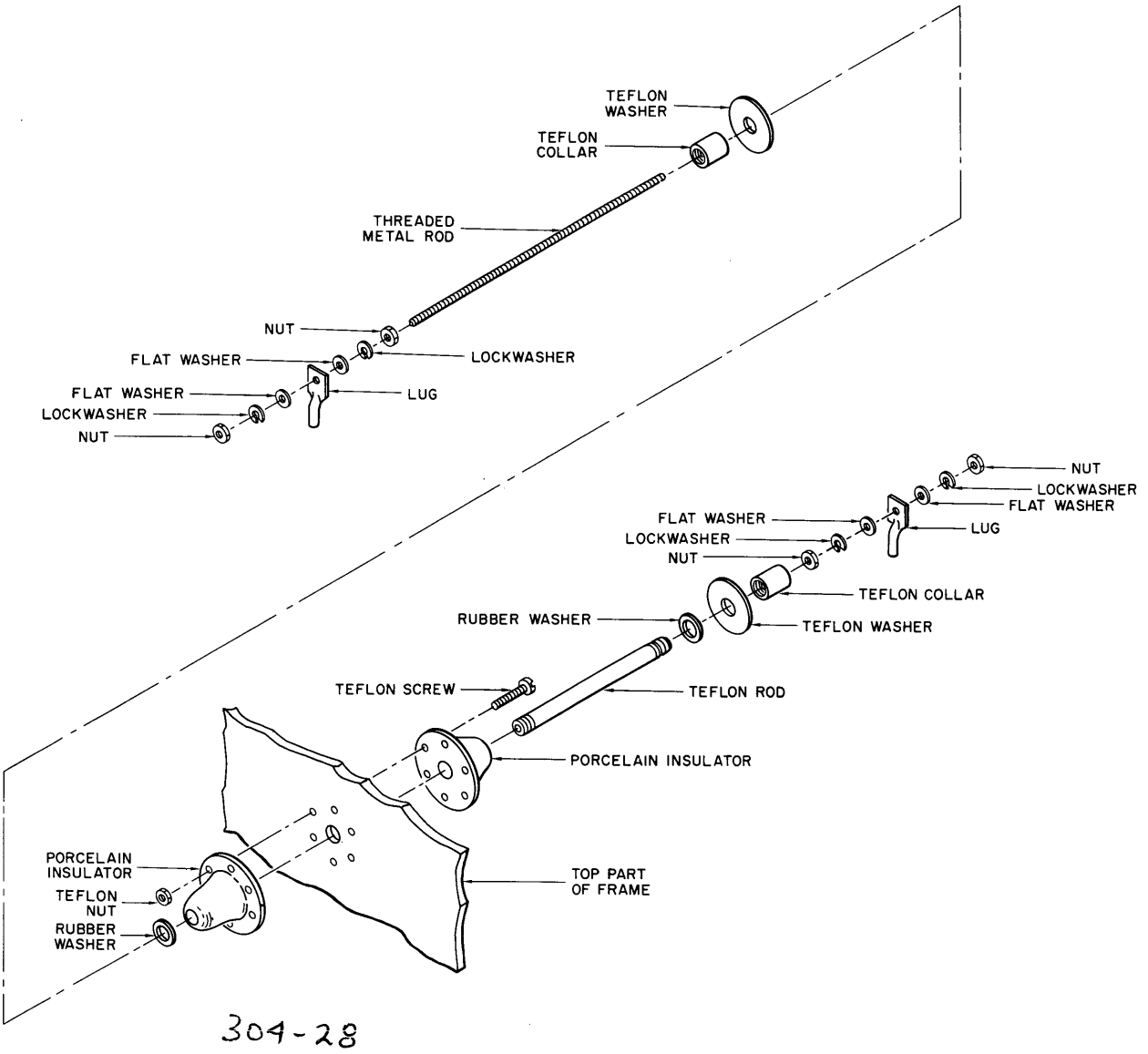


Figure 2-41. Balanced Output Bowl Assemblies, Installation Diagram.

STEP 75

a. Position sixth frame air duct adaptor MS-3186 (contained in crate 51) on top of frame (see figure 2-42).

b. Using hardware from crate 30 bag 50, tightly bolt air duct adaptor to frame.

STEP 76

a. Position seventh frame cover MS-3161 (contained in crate 51) on top of frame (see figure 2-42).

b. Using hardware from crate 30 bag 49, tightly bolt cover to frame.

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

d. Using hardware from crate 30 bag 57, mount seventh frame bottom front center trim strip MS-3202 (contained in crate 51).

STEP 77

a. Using hardware from crate 30 bag 56, mount the following items (contained in crate 51) as prescribed:

(1) Seventh frame rear door hinge MS-3249.

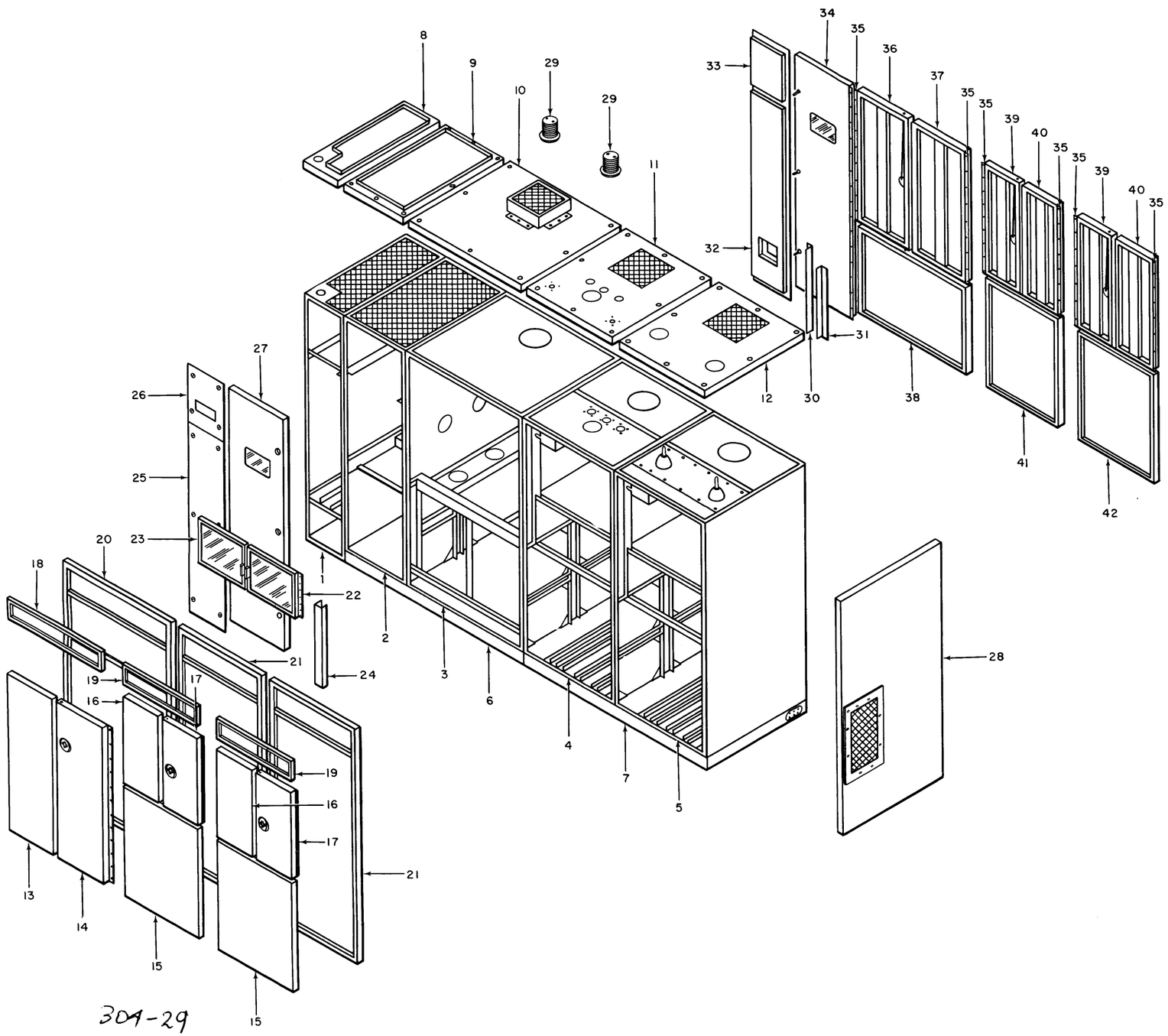
(2) Seventh and eighth frame rear door hinge MS-3250.

(3) Eighth and ninth frame rear door hinge MS-3251.

(4) Ninth frame rear door hinge MS-3179.

NOTE

When mounting hinges MS-3250 and MS-3251 use respective hinge shims provided in crate 51 (if supplied).



LEGEND

1. FIFTH FRAME
2. SIXTH FRAME
3. SEVENTH FRAME
4. EIGHTH FRAME
5. NINTH FRAME
6. SIXTH AND SEVENTH FRAME BASE ASSEMBLY WITH SHIELD
7. EIGHTH AND NINTH FRAME BASE ASSEMBLY WITH SHIELD
8. FIFTH FRAME AIR DUCT ADAPTOR
9. SIXTH FRAME AIR DUCT ADAPTOR
10. SEVENTH FRAME COVER
11. EIGHTH FRAME COVER
12. NINTH FRAME COVER
13. SEVENTH FRAME BOTTOM LEFT FRONT DOOR
14. SEVENTH FRAME BOTTOM RIGHT FRONT DOOR
15. EIGHTH AND NINTH FRAME BOTTOM FRONT PANELS
16. EIGHTH AND NINTH FRAME LEFT FRONT DOORS
17. EIGHTH AND NINTH FRAME RIGHT FRONT DOORS
18. SEVENTH FRAME METER BOX PANEL
19. EIGHTH AND NINTH FRAME METER BOX PANEL
20. SEVENTH FRAME FRONT TRIM STRIP
21. EIGHTH AND NINTH FRAME TRIM STRIPS
22. SEVENTH FRAME LEFT TOP FRONT WINDOW DOOR
23. SEVENTH FRAME RIGHT TOP FRONT WINDOW DOOR
24. SEVENTH FRAME BOTTOM FRONT CENTER TRIM STRIP
25. FIFTH FRAME BOTTOM FRONT DOOR
26. FIFTH FRAME TOP FRONT DOOR
27. SIXTH FRAME FRONT DOOR
28. NINTH FRAME SIDE PANEL
29. H.V. INDICATOR
30. SIXTH FRAME LEG POST
31. SEVENTH FRAME LEG POST
32. FIFTH FRAME BOTTOM REAR DOOR
33. FIFTH FRAME TOP REAR DOOR
34. SIXTH FRAME REAR DOOR
35. DOOR HINGE
36. SEVENTH FRAME REAR LEFT DOOR
37. SEVENTH FRAME REAR RIGHT DOOR
38. SEVENTH FRAME BOTTOM REAR PANEL
39. EIGHTH AND NINTH FRAME LEFT REAR DOORS
40. EIGHTH AND NINTH FRAME RIGHT REAR DOORS
41. EIGHTH FRAME BOTTOM REAR PANEL
42. NINTH FRAME BOTTOM REAR PANEL

Figure 2-42. Exterior Trim for the Fifth through Ninth Frames, Installation Diagram.

STEP 78

a. Mount the following items (contained in crates 51 and 55) on respective hinge as prescribed:

(1) Seventh frame top right rear door MS-3175.

(2) Seventh frame top left rear door MS-3176.

b. Mount seventh frame bottom rear panel MS-3177 (contained in crate 51) on frame.

STEP 79

a. Remove one side of crate 52.

NOTE

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

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

STEP 80

a. Using hardware from crate 30 bag 50, tightly bolt fifth frame air duct adaptor MS-3185 (contained in crate 52) on top of frame.

STEP 81

a. Temporarily remove the two screws from the top of both voltage lamp sockets (contained in crate 35) that hold lamp cover and glass to the lamp base.

b. Temporarily remove the two sets of lamp base mounting hardware from both sockets.

STEP 81 (cont)

c. Position lamp bases on the eighth frame top cover MS-3162 (contained in crate 52) and replace lamp base mounting hardware (see figure 2-42). Tighten hardware so that the lamp bases are held securely to the cover top.

d. Using the hardware from crate 30 bag 49, tightly bolt the following items (contained in crate 52) as prescribed:

(1) Eighth frame top cover MS-3162 (high voltage lamp sockets previously mounted on cover).

(2) Ninth frame top cover MS-3163.

NOTES

1. When mounting eighth frame top cover, wire connections for the high voltage lamp sockets must be routed up through top cover and rubber grommet in lamp base and connected to socket terminals inside lamp base.

2. After connecting electrical wires to each socket, the two screws that hold lamp cover and glass to the lamp base must be replaced.

e. Insert appropriate size button plugs (contained in crate 1) into top cover to frame holes.

STEP 82

a. Remove one side of crate 53.

NOTE

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

b. Check each item contained against equipment supplied list.

STEP 83

a. Position third and fourth frame top cover MS-1997 (contained in crate 53).

b. Using hardware from crate 30 bag 49 , tightly bolt cover to frames (see figure 2-42).

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

STEP 84

a. Mount the following items (contained in crates 28 and 53) on respective hinge as prescribed:

(1) First frame front door (MS-2119).

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

(3) Fourth frame front door (MS-2118).

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

(5) First frame rear door (MS-1648).

(6) Fourth frame rear door (MS-1647).

b. Mount second frame rear door MS-2037 (contained in crate 28) on respective rear door hinge.

c. Mount third frame rear door MS-2037 (contained in crate 53) on respective rear door hinge.

NOTE

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

STEP 85

a. Remove one side of crate 54.

NOTE

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

b. Check each item contained against equipment supplied list.

STEP 86

a. Using hardware from crate 30 bag 52 , appropriately mount the following items (contained in crate 54) as prescribed:

(1) Seventh frame front trim (MS-3181).

(2) Eighth frame front trim (MS-3182).

(3) Ninth frame front trim (MS-3182).

b. Using hardware from crate 30 bag 47 , tightly bolt ninth frame side cover MS-3164 (contained in crate 54) on frame.

c. Mount the following items (contained in crate 54) on respective hinge as prescribed:

(1) Sixth frame front door (MS-3170-1).

(2) Sixth frame rear door (MS-3170-2).

d. Using hardware from crate 30 bag 29, replace power supply control panels on the front of the eighth and ninth frames.

STEP 87

a. Position seventh frame meter box window A-2695 (contained in crate 51) on front of frame (see figure 2-42).

b. Using hardware from crate 30 bag 59, bolt window to frame.

c. Position eighth and ninth frame meter box windows A-2694 (contained in crate 51) on front of frame (see figure 2-42).

d. Using hardware from crate 30 bag 59, bolt one window to each frame.

STEP 88

Mount the following items (contained in crate 51) on respective hinge as prescribed:

(1) Seventh frame bottom right front door MS-3171.

(2) Seventh frame bottom left front door MS-3172.

(3) Seventh frame top right front window door A-2692.

(4) Seventh frame top left front window door A-2693.

STEP 89

Using hardware from crate 30 bag 60, mount the following items (contained in crate 52) on respective frame as prescribed:

(1) Eighth frame bottom rear panel MS-3169.

(2) Ninth frame bottom rear panel MS-3252.

(3) Eighth frame bottom front panel MS-3168.

(4) Ninth frame bottom front panel MS-3168.

STEP 90

a. Remove one side of crate 55.

NOTE

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

b. Check each item contained against equipment supplied list.

STEP 91

Mount the following items (contained in crate 55) on respective hinge as prescribed:

(1) Eighth frame right front door MS-3173.

(2) Ninth frame right front door MS-3173.

(3) Eighth frame left front door MS-3174.

(4) Ninth frame left front door MS-3174.

(5) Eighth frame right rear door MS-3179.

(6) Ninth frame right rear door MS-3179.

(7) Eighth frame left rear door MS-3180.

(8) Ninth frame left rear door MS-3180.

STEP 92

Using hardware from crate 30 bag 58, mount relay panels AR-137 and AR-138 (contained in crate 35) in bottom front bays of seventh frame (see figure 2-43).

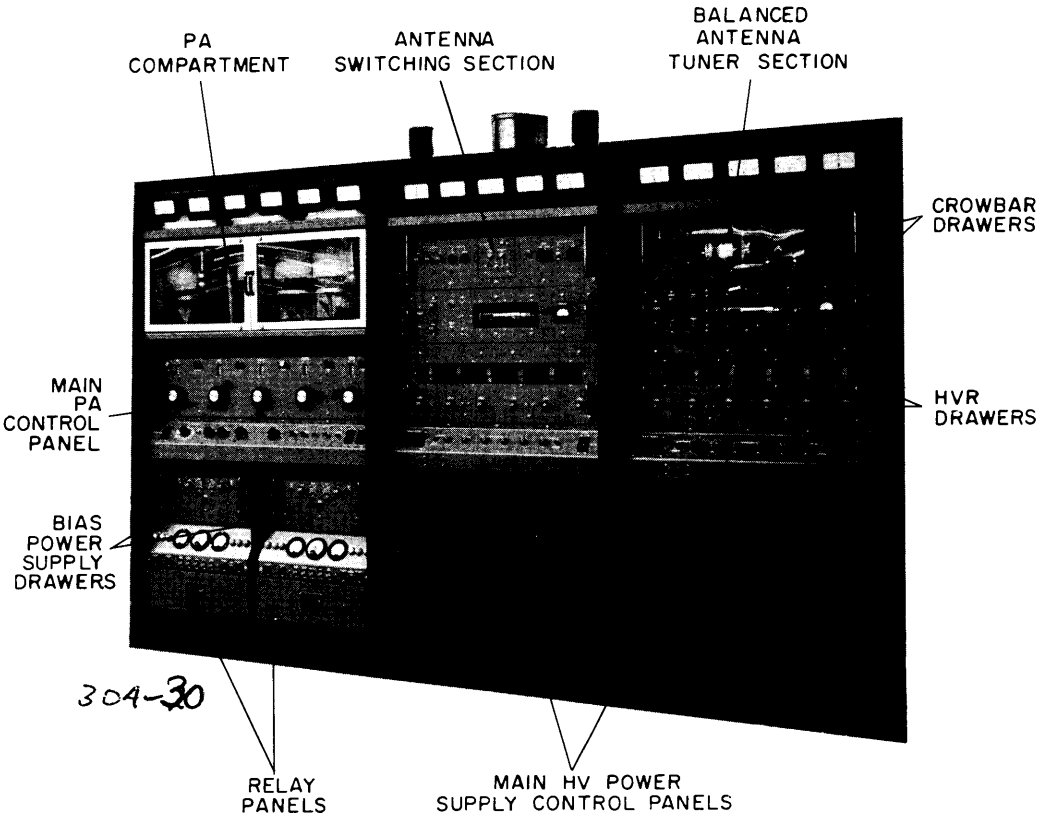


Figure 2-43. Seventh, Eighth, and Ninth Frames, Front View.

STEP 93

a. Unpack crate 56.

b. Temporarily remove screen cover from top of bias power supply drawer (see figure 2-44).

c. Install electron tubes V5502 through V5506 (contained in crate 36) in the drawer.

NOTE

Make sure each tube is placed in its designated position.

d. Replace screen cover on top of drawer.

e. Install bias power supply drawer into the lower front of the seventh frame (see figure 2-43).

STEP 94

a. Unpack crate 57.

b. Temporarily remove screen cover from top of bias power supply drawer.

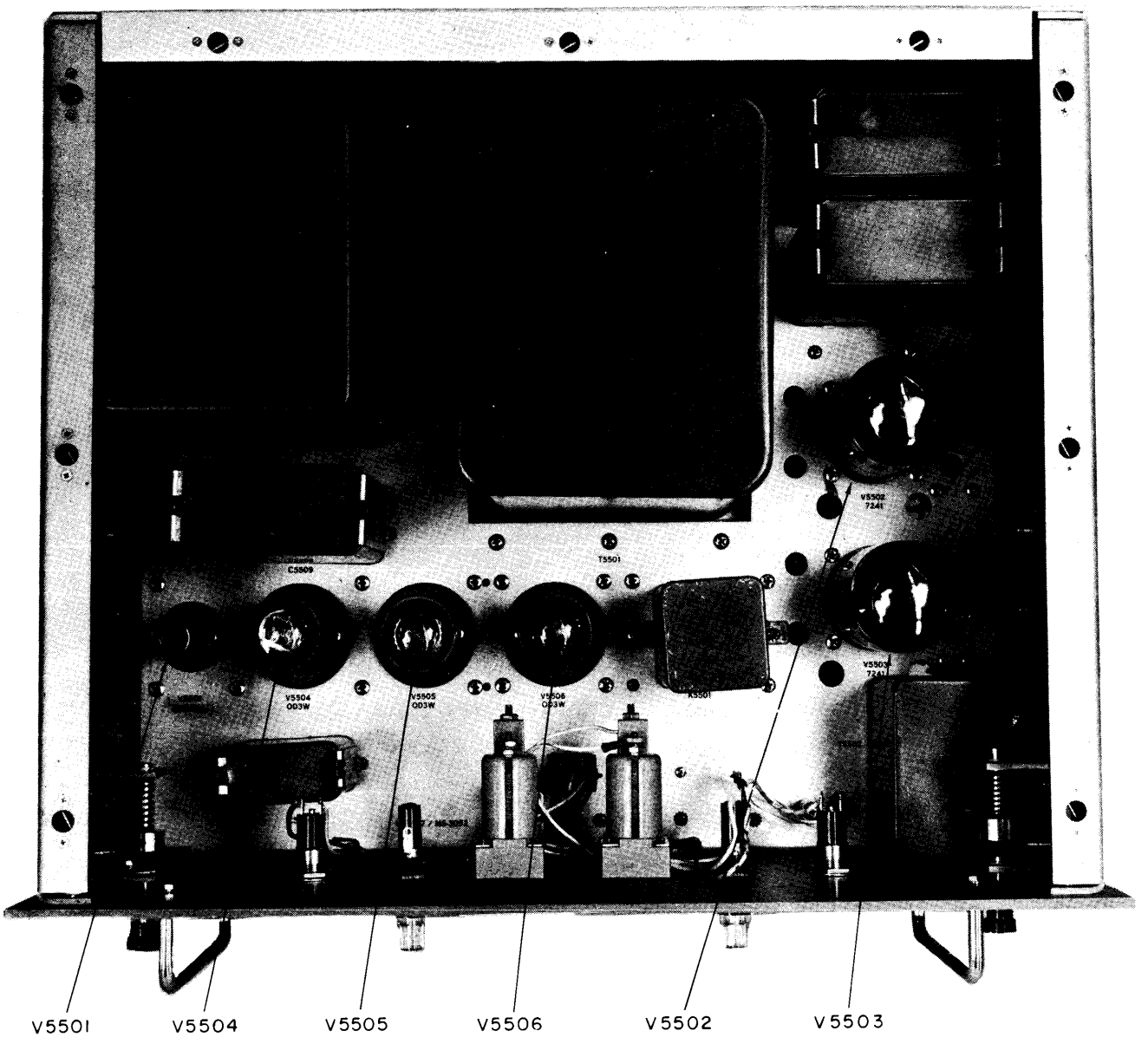
c. Install electron tube V5502 through V5506 (contained in crate 38) in the drawer (see figure 2-44).

NOTE

Make sure each tube is placed in its designated position.

d. Replace screen cover on top of drawer.

e. Install bias power supply drawer into the lower front of the seventh frame (see figure 2-43).



304-31

Figure 2-44. Bias Power Supply Drawer 5500, Top View.

STEP 95

a. Unpack crate 58.

b. Install high voltage rectifier drawer into middle front of the eighth frame (see figure 2-43).

STEP 96

a. Unpack crate 59.

b. Install high voltage rectifier drawer into middle front of the ninth frame (see figure 2-43).

STEP 97

a. Unpack crate 60.

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

c. Install the following components (contained in crate 36), figure 2- 45, into the drawer:

(1) Resistors R6301, R6302, and R6303.

(2) Electron tube V6301.

d. Replace screen cover on drawer.

e. Install crowbar drawer into front of eighth frame, figure 2-43, above high voltage rectifier drawer (previously installed).

STEP 98

a. Unpack crate 61.

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

c. Install the following components (contained in crate 36), figure 2- 45 , into the drawer:

c. (cont)

(1) Resistors R6301, R6302, and R6303.

(2) Electron tube V6301.

d. Replace screen cover on drawer.

e. Install crowbar drawer into front of ninth frame, figure 2-43, above high voltage rectifier drawer and next to eighth frame crowbar (previously installed).

STEP 99

a. Unpack crates 62 through 69.

b. Assembly air ducts, figure 2-46, and mount appropriately on the transmitter.

STEP 100

a. Connect a input power cables to the ac input switch boxes.

NOTE

DO NOT turn on ac power. Refer to operations and maintenance manuals for operating procedures.

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

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

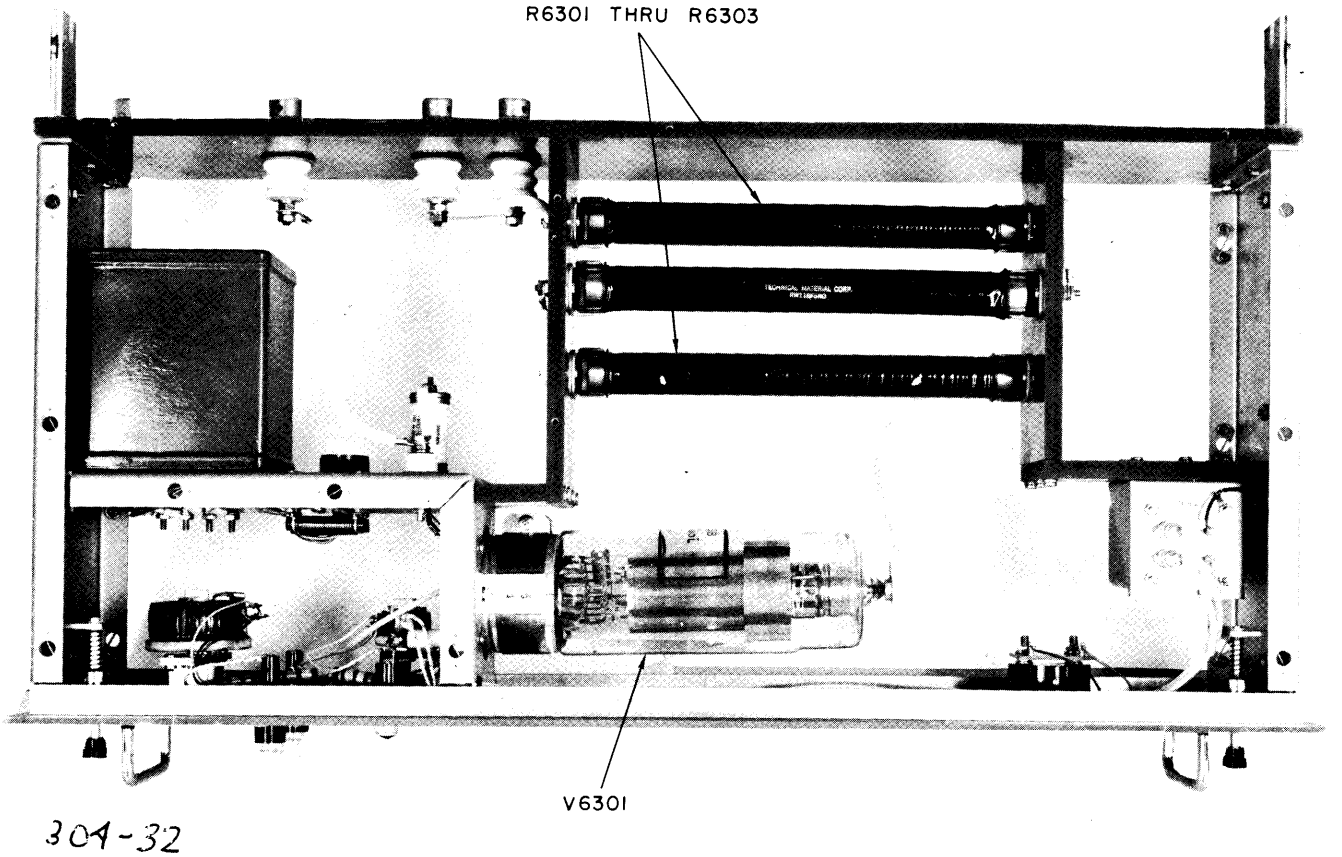


Figure 2-45. Crowbar Drawer 6300, Top View.

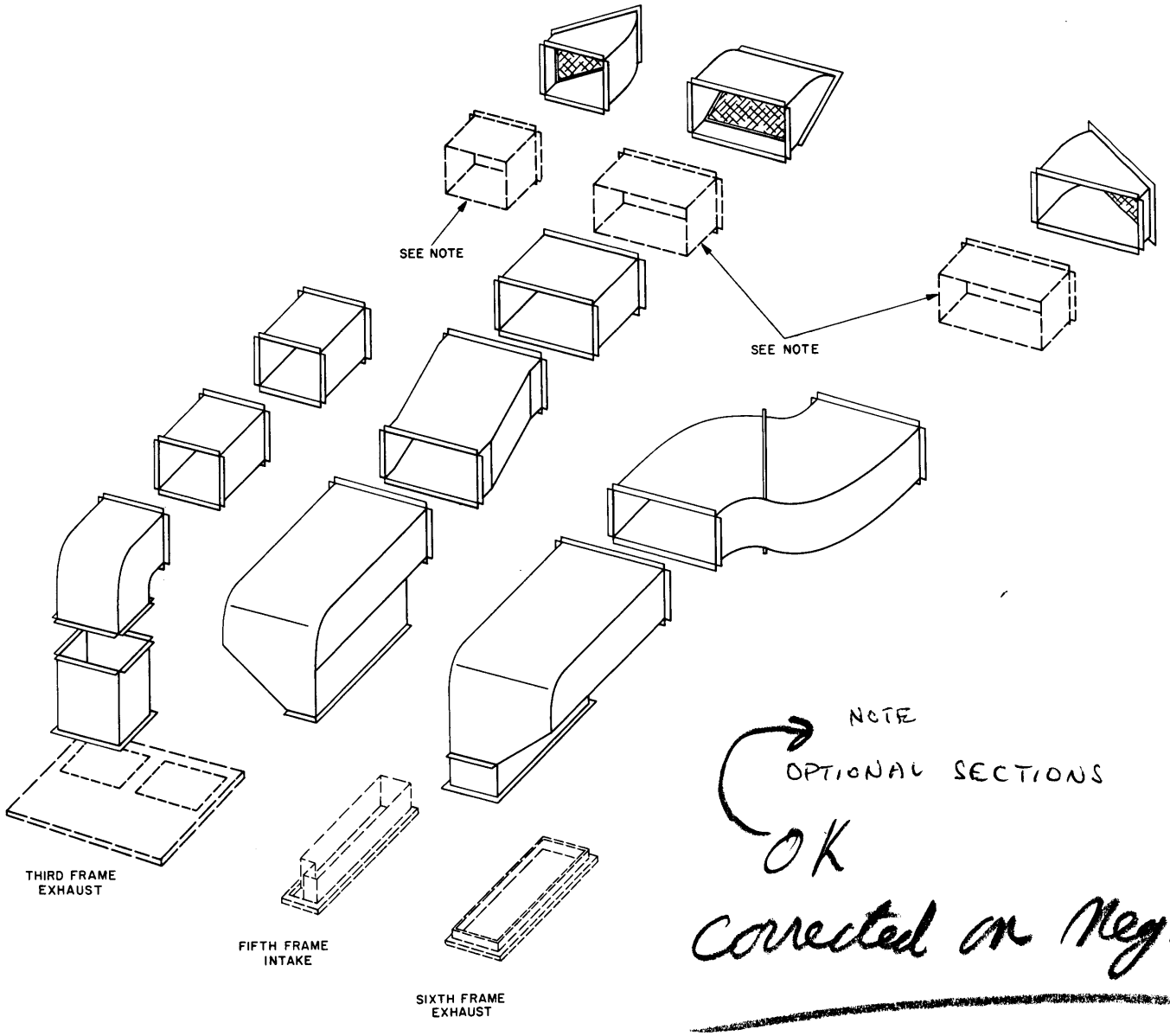


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Figure 2-46. Air Intake and Exhaust Ducting, Installation Diagram.