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PART V OF VOLUME II

APPENDIX

# EXCITER FRAME AND ACCESSORIES



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

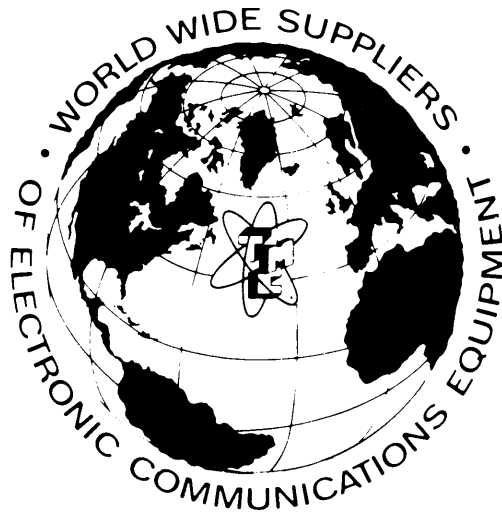
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# TABLE OF CONTENTS FOR PART V OF VOLUME II

## SECTION 1 — GENERAL DESCRIPTION

Paragraph		Page
5-1-1	General . . . . .	1-1—2-0

## SECTION 2 — INSTALLATION AND MAINTENANCE

5-2-1	General . . . . .	1-1—2-0
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## SECTION 3 — PARTS LIST

# LIST OF ILLUSTRATIONS FOR PART V OF VOLUME II

## SECTION 2 — INSTALLATION AND MAINTENANCE

Figure	Title	Page
II-5-2-1	Exciter Frame, GPT-10K and GPT-40K (Synthesized), Wiring Diagram . . . . .	2-1—2-2
II-5-2-2	Front Panel Layout and Schematic Diagram, APP-3 . . . . .	2-3—2-4
II-5-2-3	Meter Box Assembly on Auxiliary Frame, GPT-10K and GPT-40K . . . . .	2-5—2-6

## PART V. APPENDIX—EXCITER FRAME AND ACCESSORIES

### SECTION I. GENERAL DESCRIPTION

#### 1-1. GENERAL.

Refer to the following illustrations in companion manual for pictorial information relative to the auxiliary frame assembly.

Part I (Vol II), figure I-1-1-a: Front view of Sideband Generator in relation to GPT-10K Transmitter.

Part I (Vol II), figure I-1-1-c: Front view of Sideband Generator in relation to GPT-40K Transmitter.

Part I (Vol I), figure I-1-2-b: Isometric Diagram, GPT-10K Transmitter (synthesized version).

The above illustrations show that the SBG-1 or -2 equipment consists of the units called out in the Table of Contents for Volume II. This section (Part V, Appendix) deals with the electrical equipment cabinet together with all non-removable parts such as wiring assemblies, meter box assembly (AX-107), auxiliary frame sub-assembly (AX-181), and auxiliary power panel assembly (APP-3).

The following sections (1) describe installation and maintenance and (2) present the electrical spare parts list pertaining to the AX-239 exciter frame and accessories.

### SECTION 2. INSTALLATION AND MAINTENANCE

#### 2-1. GENERAL.

TMC's manual entitled "Installation Instructions, Radio Transmitter Models GPT-10K and GPT-40K" presents complete installation instructions, not only of the exciter frame but also of the associated Power Amplifier and Power Supply frames. Removal of removable equipment units stacked in the GPT-10K and GPT-40K exciter frames leaves the basic exciter framework with (1) cable and other subassemblies, (2) small equipment components, (3) meter box assembly, and (4) auxiliary power panel assembly (model APP-3).

The wiring assembly (figure 5-2-1) shows external connections among all equipments on the synthesized auxiliary frame final assembly (Model AX-239).

The auxiliary power panel assembly Model APP-3 (figure 5-2-2) provides two convenience 115-volt AC outlets together with a coaxial RF outlet associated

with a selector switch which channels one of three selected RF voltages developed in GPT-10K or GPT-40K to external test equipment.

The meter box assembly Model AX-107 (figure 5-2-3) shows meter connection wiring between the three meters on AX-107 and components in the PA section of GPT-10K.

To facilitate maintenance, the removable equipment units stacked in the GPT-10K and GPT-40K exciter frames are equipped with slides that permit the individual units to be tilted. This design, which facilitates maintenance, complicates cable placement. Cables should be laced and dressed so that the removable equipment units may be withdrawn, tilted, and reinserted without encountering obstructions. If binding is evident on re-insertion of the units, DO NOT RAM the units into place; ramming them into place may damage the obstructing cable. To avoid this, check that all cabling is in the clear.

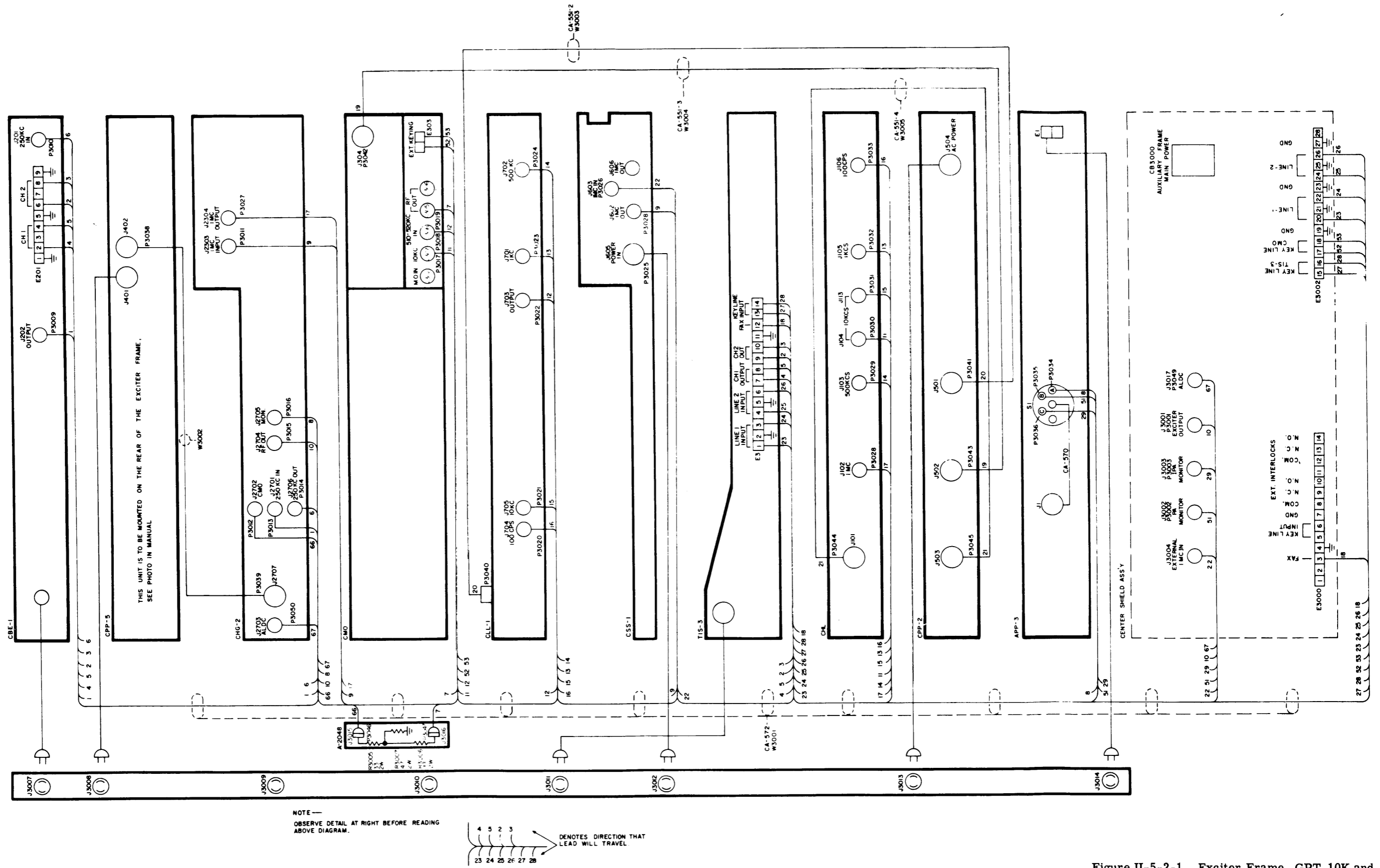
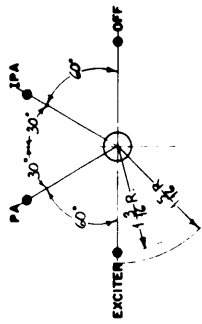
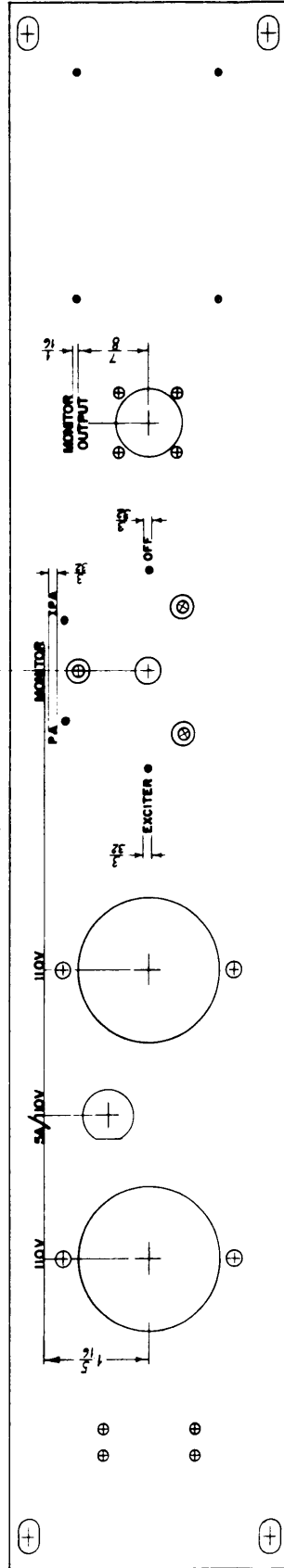


Figure II-5-2-1. Exciter Frame, GPT-10K and GPT-40K (Synthesized), Wiring Diagram



MONITOR & DETAIL

—TOP—



—FRONT VIEW—

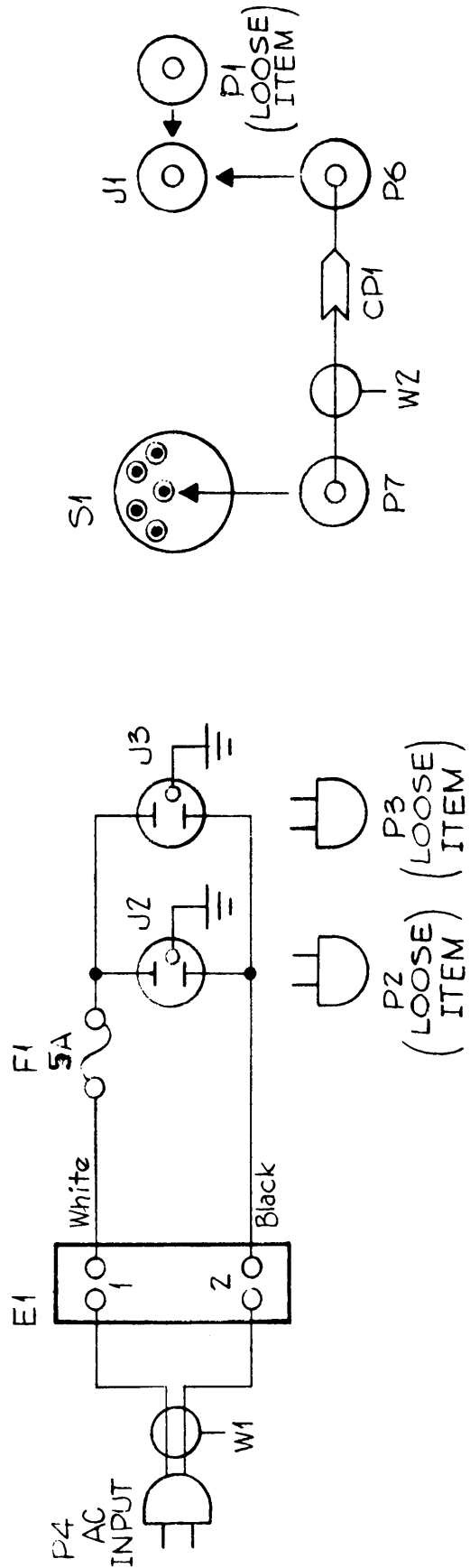


Figure II-5-2-2. Front Panel Layout and Schematic Diagram, APP-3

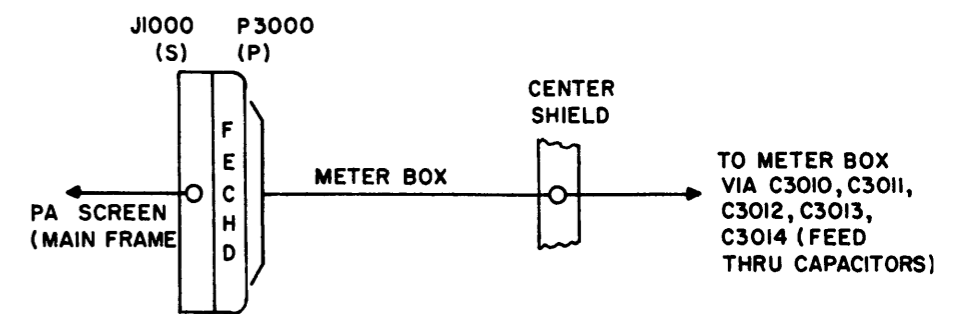
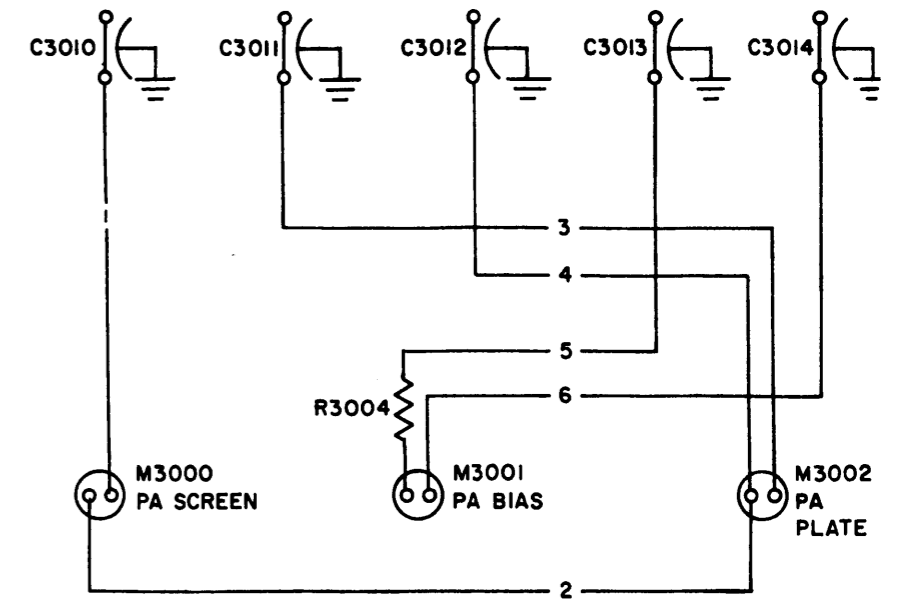
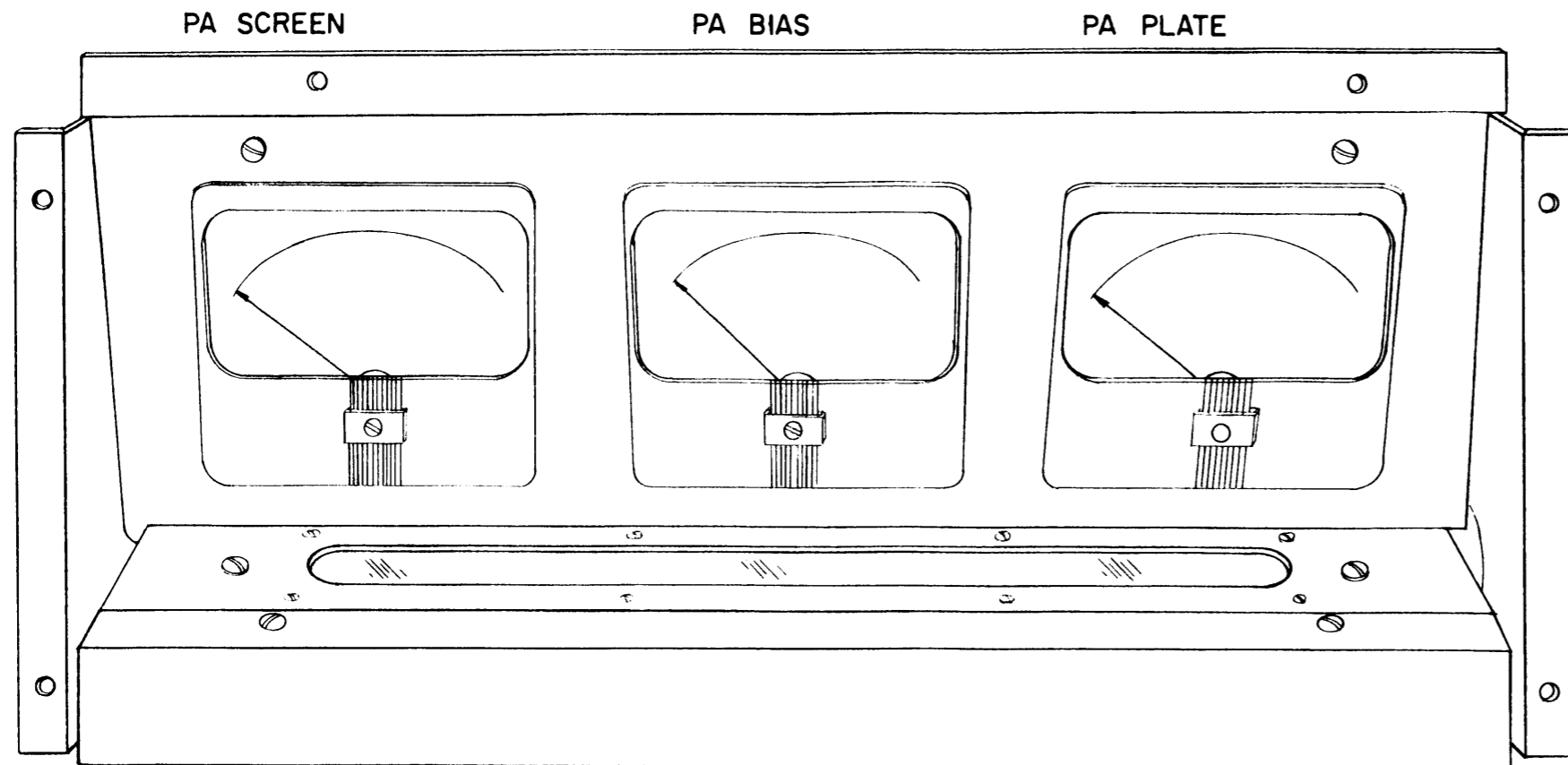


Figure II-5-2-3. Meter Box Assembly on Auxiliary Frame, GPT-10K and GPT-40K



### **SECTION 3. PARTS LIST**

Reference designations have been assigned to identify all maintenance parts of the equipment. They are used for marking the equipment (adjacent to the part they identify) and are included on drawings, diagrams, and the parts list. The letters of a reference designation indicate the kind of part (generic group), such as resistor, amplifier, electron tubes, etc. The number differentiates between parts of the same generic group. Parts of the same first major unit are numbered from 1 to 199; parts of the second 201 to 299, etc. Two consecutive series of numbers have been assigned to major units in which there are more than 100 parts of the same generic group. Sockets associated with a particular plug-in device, such as

an electron tube or fuse, are identified by a reference designation which includes the reference designation of the plug-in device. For example, the socket for fuse F7 is designated XF7. The parts for each major unit are grouped together. Column 1 lists the reference series of each major unit, followed by the reference designations of the various parts in alphabetical and numerical order. Column 2 gives the name and describes the various parts. Major part assemblies are listed in their entirety; subparts of a major assembly are listed in alphabetical and numerical order with reference to its major assembly. Column 3 indicates how the part is used within a major component. Column 4 lists each Technical Materiel Corporation part number.



**AUXILIARY FRAME AX-239**

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
B3000	FAN, axial (CCW): single phase; 115/230 v, 50/60 cps; capacitance 4 uf; nominal RPM 3400; insulation class B; 100 watts full load.	Air Circulator	BL-105
B3001	Same as B3000.	Air Circulator	
C3000 thru C3009	NOT USED		
C3010	CAPACITOR, fixed: ceramic; feed-thru; 1000 uuf, $\pm 20\%$ , 500 wvdc.	Feed-thru Bypass PA Screen Volt.	CK70A102M
C3011	Same as C3010.	Feed-thru Bypass PA Screen Volt.	
C3012	Same as C3010.	Feed-thru Bypass PA Plate Volt.	
C3013	Same as C3010.	Feed-thru Bypass PA Bias	
C3014	Same as C3010.	Feed-thru Bypass PA Bias	
C3015	Same as C3010.	Feed-thru Bypass Alarm	
C3016	Same as C3010.	Feed-thru Bypass Alarm	
C3017	CAPACITOR, fixed: paper; 4 uf, $\pm 10\%$ , 600 wvdc.	Starter, B3001	CP41B1FF405K
C3018	Same as C3017.	Starter, B3000	
C3019	NOT USED		
C3020	NOT USED		
C3021	NOT USED		
C3022	NOT USED		
C3023	NOT USED		
C3024	NOT USED		
C3025	CAPACITOR, fixed: mica; 1000 uuf, $\pm 10\%$ , 500 wvdc, cnar. B.	Key Line Input Bypass	CM20B102K
C3026	NOT USED		
C3027	Same as C3025.	Key Line Input Bypass	
C3028	Same as C3025.	Key Line Input Bypass	
C3029	Same as C3025.	Key Line Input Bypass	
C3030	Same as C3025.	Line 1 Bypass	
C3031	Same as C3025.	Line 1 Bypass	

**AUXILIARY FRAME AX-239**

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
C3032	Same as C3025.	Line 1 Bypass	
C3033	Same as C3025.	Line 2 Bypass	
C3034	Same as C3025.	Line 2 Bypass	
C3035	Same as C3025.	Line 2 Bypass	
C3036	Same as C3025.	Key Line Input Bypass	
C3037	Same as C3025.	Key Line Input Bypass	
CB3000	BREAKER, circuit: 110/230 VAC, 10 amps, double pole.	Main Power Breaker	SW-251
DS3000	BUZZER, 230 VAC; 5-1/2" mtg. centers.	HV Plate Off Alarm	BZ-100
E3000	TERMINAL STRIP, barrier type: plastic; 14 terminals, screw w/feed thru solder lug type.	Ext. Interlock Term. Bd.	TM-100-14
E3001	NOT USED		
E3002	Same as E3000.	Line 1 and 2 Term. Bd.	
E3003	TERMINAL STRIP, barrier type, 2 terminals, black bakelite.	I3000 Term. Bd.	TM-102-2
E3004	CONTACT SET, relay: for K3000, TMC Part Number RL-130; consisting of 3 each moveable contacts, 3 each line contacts, 3 each load contacts.	Contact	AX-176
E3005	Same as E3004.	Contact	
E3006	Same as E3004.	Contact	
E3007	Same as E3004.	Contact	
E3008	Same as E3004.	Contact	
E3009	Same as E3004.	Contact	
E3010	TERMINAL, feed-thru, insulated: brass silver plated terminal; terminals mounted in 1/4" dia., breakdown voltages at 60 RMS.	Feed-thru	TE-114-2
E3011	Same as E3010.	Feed-thru	
E3012	Same as E3010.	Feed-thru	
E3013	Same as E3010.	Feed-thru	
E3014	Same as E3010.	Feed-thru	
E3015	Same as E3010.	Feed-thru	
E3016	Same as E3010.	Feed-thru	

**AUXILIARY FRAME AX-239**

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
E3017	Same as E3010.	Feed-thru	
E3018	Same as E3010.	Feed-thru	
E3019	Same as E3010.	Feed-thru	
F3000	FUSE, cartridge: 5 amp; time lag.	B3000 Fuse	FU-102-5
I3000	LAMP, incandescent: clear; 230/250 volts, 40 watts; standard screw base; 4" x 1-7/8" o/a.	Warning HV ON	BI-106-1
I3001	LAMP, fluorescent: standard, cool white; 1/2 in. dia. x 11-1/4 in. lg.	Meter Illum.	BI-107
J3000	CONNECTOR, receptacle: female, 4 contacts. J3000 used on Cable, W3000.	B3001 Input	MS3102A-14S-2S
J3001	JACK, bulkhead. J3001 used on Cable, W3001.	Exciter Output	JJ-172
J3002	Same as J3001. J3002 used on Cable, W3001.	PA Monitor	
J3003	Same as J3001. J3003 used on Cable, W3001.	IPA Monitor	
J3004	Same as J3001. J3004 used on Cable, W3001.	Ext. 1 Mc Input	
J3005	NOT USED		
J3006	Same as J3000.	B3000 Input Jack	
J3007	RECEPTACLE, twistlock: female; brown bakelite.	110 VAC Outlet	JJ-170
J3008	Same as J3007.	110 VAC Outlet	
J3009	Same as J3007.	110 VAC Outlet	
J3010	Same as J3007.	110 VAC Outlet	
J3011	Same as J3007.	110 VAC Outlet	
J3012	Same as J3007.	110 VAC Outlet	
J3013	Same as J3007.	110 VAC Outlet	
J3014	Same as J3007.	110 VAC Outlet	
J3015	CONNECTOR, receptacle: electrical; 1 female contact; 52 ohms; BNC type.	10 db Pad Jack	UG-625/U
J3016	Same as J3015.	10 db Pad Jack	
J3017	Same as J3001. J3017 used on Cable, W3001.	ALDC	

AUXILIARY FRAME AX-239

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
K3000	CONTACTOR, relay: 220 v, 60 cps coil; auxiliary switch mounted on right side of panel; normally closed contacts.	Primary Contactor HV Rectifier	RL-103-1
K3001	CONTACTOR, relay: 220 v, 60 cps coil; auxiliary switch mounted on left side of panel; normally open contacts.	Primary Contactor HV Rectifier	RL-130-2
M3000	METER, PA screen: 0-1500 volt scale; 1 milliamp dc scale; 4-1/2 in. square case.	PS Screen Volt. Meter	MR-119
M3001	METER, PA bias: 0-400 meg. volt. scale; 1 milliamp dc movement; 4-1/2 in. square case.	PA Bias Volt. Meter	MR-122
M3002	METER, PA plate: 0-10 kilovolt scale; 1 milliamp dc movement; 4-1/2 in. square case.	PA Plate Volt. Meter	MR-121
M3003	TIME DELAY: 20 seconds; quick make, quick break, 250 v, 5 amp, switches.	Time Delay Relay HV Rectifier	TI-100
MP3000	FILTER, air: single pad; 16" lg. x 16" wide x 1/2" thk.	Air Filter	AD-103-4
MP3001	FILTER, air: single pad; 11-3/8" lg x 10-1/8" wide x 1/2" thk.	Air Filter	AD-103-2
MP3002	Same as MP3001.	Air Filter	
MP3003	RETRACTOR, cable: stainless steel spring; torque - .75 lbs. per inch; cable load - 1 lb. ; base material is 1/4" black bakelite.	Cable Retaining	SP-137-1
MP3004	Same as MP3003. DELETED DELETED DELETED	Cable Retaining	
P3000	CONNECTOR, plug: male; AN pin type. P3000 used on Cable, W3000.	Aux. to Main Frame Interconnect	MS3106B-20-27P
P3001	CONNECTOR, coaxial. P3001 used on Cable, W3000.	Exciter Output	PL-169
P3002	Same as P3001. P3002 used on Cable, W3000.	PA Monitor	
P3003	Same as P3001. P3003 used on Cable, W3000.	IPA Monitor	
P3004	CONNECTOR, receptacle: male.	B3001 Input Plug	MS3106A-14S-2P
P3005	Same as P3001. P3005 used on Cable, W3000.	Exciter Output	

**AUXILIARY FRAME AX-239**

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
P3006	Same as P3001. P3006 used on Cable, W3000.	PA Monitor	
P3007	Same as P3001. P3007 used on Cable, W3000.	IPA Monitor	
P3008	Same as P3004.	B3000 Input Plug	
P3009	Same as P3001. P3009 used on Cable, W3001.	CBE Output	
P3010	Same as P3001. P3010 used on Cable, W3001.	CBE 250 Kc In	
P3011	Same as P3001. P3011 used on Cable, W3001.	CHG 1 Mc In	
P3012	Same as P3001. P3012 used on Cable, W3001.	CHG, CMO In	
P3013	Same as P3001. P3013 used on Cable, W3001.	CHG 250 Kc In	
P3014	Same as P3001. P3014 used on Cable, W3001.	CHG 250 Kc Out	
P3015	Same as P3001. P3015 used on Cable, W3001.	CHG RF Out	
P3016	Same as P3001. P3016 used on Cable, W3001.	CHG Mon.	
P3017	Same as P3001. P3017 used on Cable, W3001.	CMO 10 Kc	
P3018	Same as P3001. P3018 used on Cable, W3001.	CMO 510-520 Kc In	
P3019	Same as P3001. P3019 used on Cable, W3001.	CMO RF Out	
P3020	Same as P3001. P3020 used on Cable, W3001.	CLL 100 cps	
P3021	Same as P3001. P3021 used on Cable, W3001.	CLL 10 Kc	
P3022	Same as P3001. P3022 used on Cable, W3001.	CLL Output	
P3023	Same as P3001. P3023 used on Cable, W3001.	CLL 1 Kc	
P3024	Same as P3001. P3024 used on Cable, W3001.	CLL 500 Kc	
P3025	Same as P3001. P3025 used on Cable, W3001.	CSS 1 Mc Out	

AUXILIARY FRAME AX-239

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
P3026	Same as P3001. P3026 used on Cable, W3001.	CSS 1 Mc In	
P3027	Same as P3001. P3027 used on Cable, W3001.	CSS 1 Mc Out	
P3028	Same as P3001. P3028 used on Cable, W3001.	CHL 1 Mc	
P3029	Same as P3001. P3029 used on Cable, W3001.	CHL 500 Kc	
P3030	Same as P3001. P3030 used on Cable, W3001.	CHL 10 Kc	
P3031	Same as P3001. P3031 used on Cable, W3001.	CHL 10 Kc	
P3032	Same as P3001. P3032 used on Cable, W3001.	CHL 1 Kc	
P3033	Same as P3001. P3033 used on Cable, W3001.	CHL 100 cps	
P3034	Same as P3001. P3034 used on Cable, W3001.	APP-3 Coax. Sw.	
P3035	Same as P3001. P3035 used on Cable, W3001.	APP-3 Coax. Sw.	
P3036	Same as P3001. P3036 used on Cable, W3001.	APP-3 Coax. Sw.	
P3037	NOT USED		
P3038	Same as P3000. P3038 used on Cable, W3002.	CPP-1 Power Output	
P3039	CONNECTOR, plug: female; angle type; 16 contacts, brass silver plated. P3039 used on Cable, W3002.	CHG-1 Power Input	PL-186
P3040	Same as P3039. P3040 used on Cable, W3003.	CLL-1 Power Input	
P3041	CONNECTOR, plug: male; angle type, 16 contacts, brass silver plated. P3041 used on Cable, W3003.	CPP-2 Power Output	PL-187
P3042	Same as P3039. P3042 used on Cable, W3004.	CMO Power Input	
P3043	Same as P3041. P3043 used on Cable, W3004.	CPP-2 Power Output	
P3044	Same as P3039. P3044 used on Cable, W3005.	CHL-1 Power Input	

**AUXILIARY FRAME AX-239**

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
P3045	Same as P3041. P3045 used on Cable, W3005.	CPP-2 Power Output	
P3046	Same as P3001. P3046 used on Cable, W3001.	10 db Pad Connector	
P3047	Same as P3001. P3047 used on Cable, W3001.	10 db Pad Connector	
P3048	Same as P3001. P3048 used on Cable, W3000.	ALDC	
P3049	Same as P3001. P3049 used on Cable, W3000.	ALDC	
P3050	Same as P3001. P3050 used on Cable, W3001.	ALDC	
R3000	RESISTOR, fixed: finstrip; 12 ohms, 1250 watts; 15-1/4" lg x 2" wide x 1-3/8" high o/a.	Power Dropping HV Rect.	RR-127-1
R3001	Same as R3000.	Power Dropping HV Rect.	
R3002	Same as R3000.	Power Dropping HV Rect.	
R3003	RESISTOR, fixed: wire wound; 600 ohms, 25 watts; mtg brackets mount on 2-5/8" centers.	I3001 Dropping	RW-102
R3004	RESISTOR, fixed: composition; 470 K ohms, ±10%, 2 watts.	Metering	RC42GF474K
R3005	RESISTOR, fixed: composition; 33 ohms, ±10%, 2 watts.	10 db Pad	RC42GF330K
R3006	Same as R3005.	10 db Pad	
R3007	RESISTOR, fixed: composition; 47 ohms, ±10%, 2 watts.	10 db Pad	RC42GF470K
S3000	STARTER, fluorescent lamp: 8 watts; 3/16" dia x 1-1/2" lg o/a.	Starter, J3001	PO-170
T3000	TRANSFORMER, voltage regulator: primary 190-260 VAC, 50/60 cps; sec. - 118v/1 KVA, voltage regulation ±1% over primary range.	Volt. Reg. Aux. Frame	TF-208
T3001	BALLAST, fluorescent lamp: 8 watts; 118 volts, .17 amps 60 cps; 1-1/8" wide x 7/8" high x 5-15/16" lg o/a; 5-1/2" leads.	Ballast for J3001	PO-169
W3000	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED: consists of various MIL type RG-174/U and MWC wire; 10 connectors, symbols J3000,	Main Frame to Center Panel Interconnect	CA-571



AUXILIARY FRAME AX-239

SYM	DESCRIPTION	FUNCTION	TMC PART NO.
W3000	P3000, 3001, 3002, 3003, 3005, 3006, 3007, 3048, 3049 and various terminal lugs.		
W3001	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHES: consists of various MIL type RG-174/U and MWC wire, 36 connectors, symbols J3001, 3002, 3003, 3004, 3017, P3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3046, 3047, 3050 and various terminal lugs.	Main Cable	CA-572
W3002	CABLE ASSEMBLY, POWER, ELECTRICAL: 13 conductors, length 6 feet. Consists of P3038, P3039.	CPP-1 to CHG-1 Interconnect	CA-576-6-0
W3003	CABLE ASSEMBLY, POWER, ELECTRICAL: 16 conductors, length 7' 10". Consists of P3040, 3041.	CPP-2 to CLL-1 Interconnect	CA-551-2
W3004	CABLE ASSEMBLY, POWER, ELECTRICAL: 16 conductors, length 6' 10". Consists of P3042, 3043.	CPP-2 to CMO-1 Interconnect	CA-551-3
W3005	CABLE ASSEMBLY, POWER, ELECTRICAL: 16 conductors, length 6' 5". Consists of P3044, 3045.	CPP-2 to CHL-1 Interconnect	CA-551-4
XF3000	HOLDER, fuse: 100-250 volt, 20 amp, neon bulb indicator, 220 K ohm resistor.	Holder for F3000	FH-104-3
XI3000	SOCKET, lamp: with red lens.	HV ON Light Socket I3000	AX-124
XI3001 A	SOCKET, fluorescent lamp: 75 watts, 250 volts; 1-1/32" high x 5/8" wide x 5/16" thk o/a; 6 in. leads.	Socket for I3001	TS-141
XI3001 B	Same as XI3001A.	Socket for I3001	
XS3000	SOCKET, starter: fluorescent; 660 watts, 250 volts; 1-13/16" lg x 1-11/16" wide x 7/16" deep o/a; 8-3/4" leads.	Socket for S3000	TS-140