

★
AN 16-45-401

ILLUSTRATED PARTS BREAKDOWN

**VARIABLE MASTER OSCILLATOR
TYPE 115 MODEL 1**

(NORTHERN RADIO CO., INC.)

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SECTION I INTRODUCTION

1-1. CONTENTS.

1-2. This Illustrated Parts Breakdown illustrates and lists the assemblies and parts of Variable Master Oscillator Type 115 Model 1 manufactured by Northern Radio Company, Inc., New York, New York. The Variable Master Oscillator measures 10-1/2 inches high by 19 inches wide by 14 inches deep and weighs 54 pounds.

1-3. TABLE OF CONTENTS.

1-4. The Table of Contents lists the first page of each section in the Illustrated Parts Breakdown. It also designates the initial page of illustrations and the initial page of the parts list for each component within the Illustrations and Components Parts List, Section II.

1-5. ILLUSTRATIONS AND COMPONENTS PARTS LIST.

1-6. This parts list is not to be considered as authority for disassembly or reassembly procedures. The parts list and accompanying illustrations are intended only as an aid in identifying and ordering parts. Servicing, overhaul, or repair shall be done only by authorized personnel guided by applicable handbooks.

1-7. The Illustrations and Components Parts List, Section II, illustrates the equipment and lists the assemblies, sub-assemblies, and detail parts according to assigned reference symbols.

1-8. The numbers, listed alpha-numerically under the column heading "Reference Symbol No.," are the location numbers for the parts described or referenced opposite them in the "Description" column. Bulk items (hardware items; i.e. screws, washer, nuts, terminals, etc.) are assigned the same reference symbol within a component. The reference symbol is also used to key the parts in the illustration(s).

1-9. The "Stock No." column lists the Air Force stock number for the initial occurrence of an item. Subsequent occurrences of the same stock number in succeeding components are referenced to this initial occurrence.

1-10. The "Description" column nomenclates and/or describes the item at the initial occurrence in a component. Subsequent listings of the same part within the component are described by noun name only and referenced to this first descriptive listing.

1-11. The following manufacturer's code together with a part number has been used beneath the nomenclature in the "Description" column to identify all items except Army-Navy, JAN or Northern Radio parts.

CODE	MANUFACTURER
AB	Allen Bradley Co. Milwaukee, Wis.
AHH	Arrow-Hart and Hegeman Electric Co. Hartford, Conn.
AMP	American Phenolic Corp. Chicago, Ill.
ANL	American Lava Corp. Chattanooga, Tenn.
BGW	Boston Gear Works Inc. succ. by Boston Gear Works Div. Murray Co. of Texas
CDCM	Chicago Die Casting Manufacturing Co. Chicago, Ill.
CDN	Cardwell, Allen D Manufacturing Corp. Plainville, Conn.
CGT	Cambridge Thermionic Corp. Cambridge, Mass.
CIN	Cinch Manufacturing Co. Chicago, Ill.
CLD	Cornell-Dubilier Electric Corp. South Plainfield, N. J.
CN	Centralab Div. Globe Union, Inc. Milwaukee, Wis.
CPT	Croname, Inc. Chicago, Ill.
DLC	Dial Light Co. of America, Inc. New York, N.Y.
-	Elco Corp. Philadelphia, Pa.
ERC	Erie Resistor Corp. Erie, Pa.
FLK	Flintkote Co., The New York, N.Y.
FTC	Feed Transformer Co. New York, N.Y.
GCE	General Cement Manufacturing Co. Rockford, Ill.
GE	General Electric Co. Schenectady, N.Y.
GLEC	General Electric Co. Lamp Dept. Cleveland, Ohio
HAW	Hubbel, Harvey, Inc. Bridgeport, Conn.
HMM	Hammarlund Manufacturing Co. New York, N.Y.
ICA	Insuline Corp. Long Island City, N.Y.
IPC	Industrial Products Co. Div. of Knudsen Inc. Danbury, Conn.
IRC	International Resistance Co. Philadelphia, Pa.
JNS	Jones, Howard B. Div. Cinch Mfg. Corp. Chicago, Ill.

CODE	MANUFACTURER
KUE	Kurman Electric Co. Inc. Bay City, Mich.
LTF	Littelfuse, Inc. Chicago, Ill.
MAL	Mallory, P.R., and Co., Inc. Indianapolis, Ind.
MCL0	Mechanical Industries Production Co. Akron, Ohio
MFP	Stronghold Screw Products, Inc. Chicago, Ill.
MLL	Millen, James, Manufacturing Co., Inc. Malden, Mass.
NAC	National Co., Inc. Malden, Mass.
PCL	Premier Crystal Laboratories, Inc. New York, N. Y.
PK	Parker-Kalon Corp. New York, N. Y.
PRME	Precision Metal Products Co. Malden, Mass.
PTH	Philadelphia Thermometer Co. Philadelphia, Pa.
RAD	Radio Condenser Co. Camden, N. J.
SAS	States Co., The Hartford, Conn.
SH	Shakeproof, Inc. Div. Illinois Tool Works Chicago, Ill.
SMO	Sangamo Electric Co. North Adams, Mass.
STM	Stimpson, Edwin B., Co. Brooklyn, N. Y.
TIN	Tinnerman Products, Inc. Cleveland, Ohio
VEE	Veeder-Root, Inc. Hartford, Conn.
WAL	Ward Leonard Electric Co. Mount Vernon, N. Y.
WMPC	Whitehead Metal Products Co., Inc. New York, N. Y.
WS	Weston Electrical Instrument, Corp. Newark, N. J.

1-12. When purchased parts are not assigned a number by the manufacturer or when the number assigned does not fully describe the item, the manufacturer's code will appear with a qualifying note "Coml." Part numbers appearing directly after the description and not identified in the foregoing manner are Northern Radio parts.

1-13. The total number of a bulk item used within a component is listed parenthetically following the description.

1-14. The "Source Code" column is for use of a code to designate the type of procurement for any one item.

1-15. SYMBOLS USED IN THE ILLUSTRATIONS AND COMPONENTS PARTS LIST.

1-16. An "*" appears in the "Stock No." column in lieu of an Air Force stock number for parts which are not subject to wear, loss, or failure. A "#" in the "Stock No." column used in conjunction with (NHA -) in the "Description" column signifies the part is not authorized for replenishment in itself, but can only be replaced by ordering the next higher assembly indicated. A "***" in the "Stock No." column denotes alternate parts at a reference symbol location. In such cases the preferred part is listed first.

1-17. MANUFACTURER'S PART NUMBER CROSS-INDEX TO REFERENCE SYMBOL NUMBER.

1-18. The Manufacturer's Part Number Cross-Index To Reference Symbol Number, Section III, is an alpha-numerical listing of all the part numbers listed in the Illustrations and Components Parts List, Section II, cross referenced to their respective reference symbols and to the illustration figure in which they appear. The illustration referenced for bulk items (see paragraph 1-8) will be the first figure which pictures the item within each component. "No Number" or "Coml" parts are alpha-numerically arranged by main noun and further differentiating information.

1-19. SPECIAL SERVICE TOOLS.

1-20. Special Service Tools, Section IV list those tools which are specifically made for this equipment and must be obtained from Northern Radio.

1-21. USE OF PARTS CATALOG.

1-22. The following paragraphs provide information to facilitate rapid and accurate use of this Illustrated Parts Breakdown under various conditions.

1-23. If the part number is known and it is necessary to physically identify or locate the part, the part number should be located in the Manufacturer's Part Number Cross-Index to Reference Symbol Number, Section III. The reference symbol given should be located on the referenced illustration in the Illustrations and Components Parts List, Section II.

1-24. If the reference symbol is known and a part number is required, location of the reference symbol in the parts list of the Illustration and Components Parts List, Section II, will furnish full information.

1-25. If the physical appearance or location of a part is known, and a part number required, the item should be located in the illustrations of the Illustrations and Components Parts List, Section II. The information required can be obtained by tracing the reference symbol keyed to the part in the illustration to the component parts list.

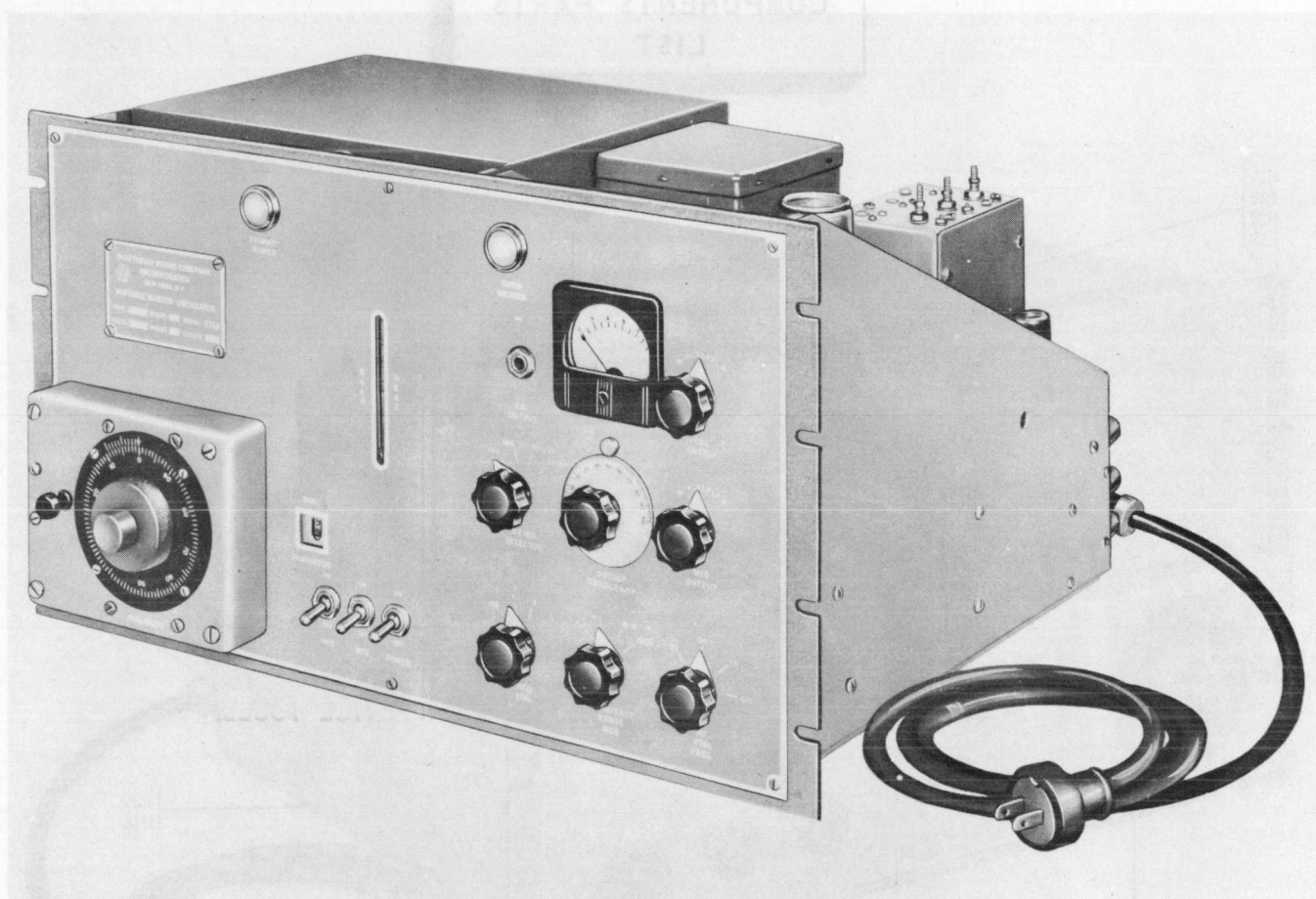


Figure 1. Variable Master Oscillator Type 115, Model 1

SECTION II
ILLUSTRATIONS AND
COMPONENTS PARTS
LIST

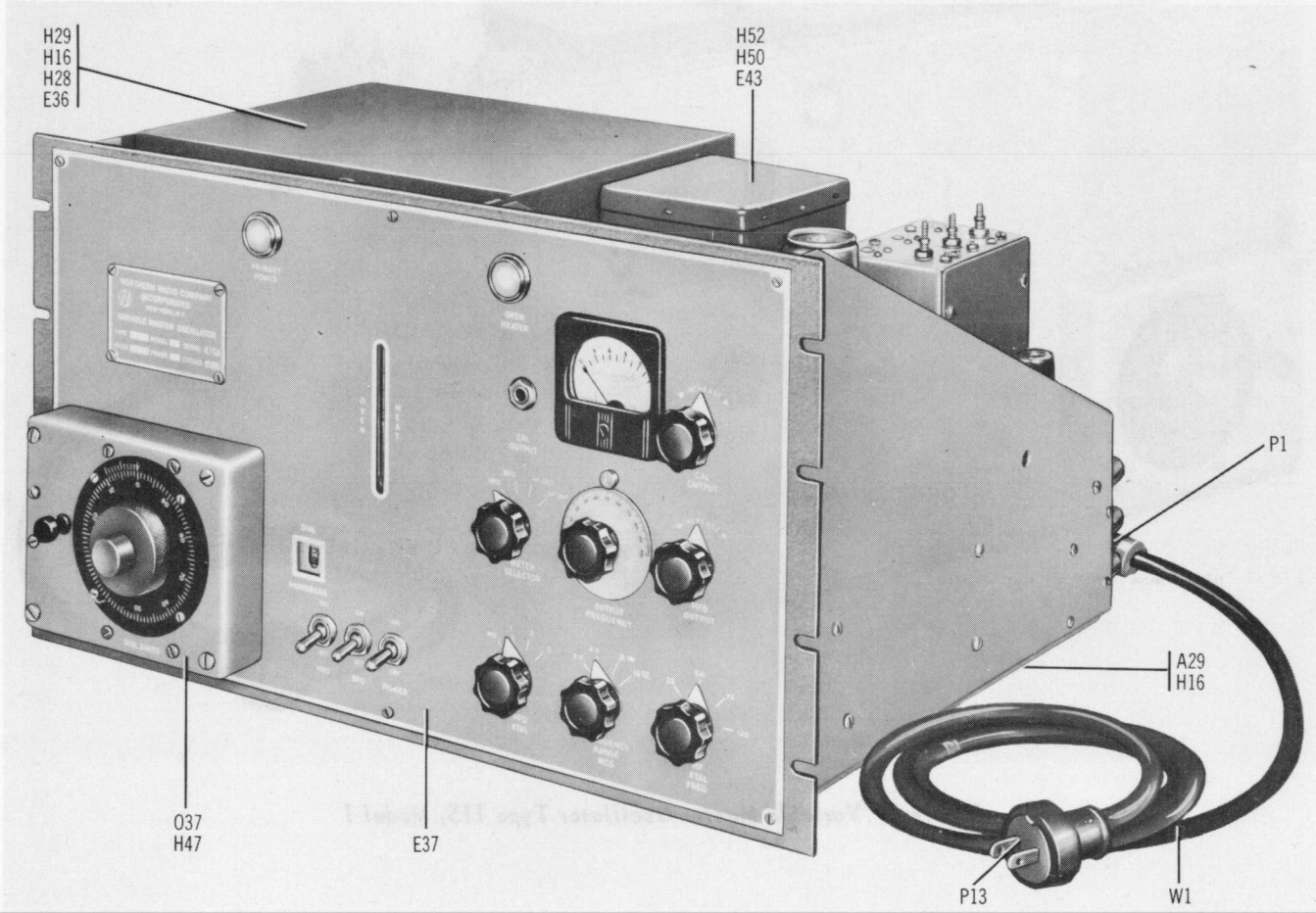


Figure 2. Variable Master Oscillator Type 115, Model 1

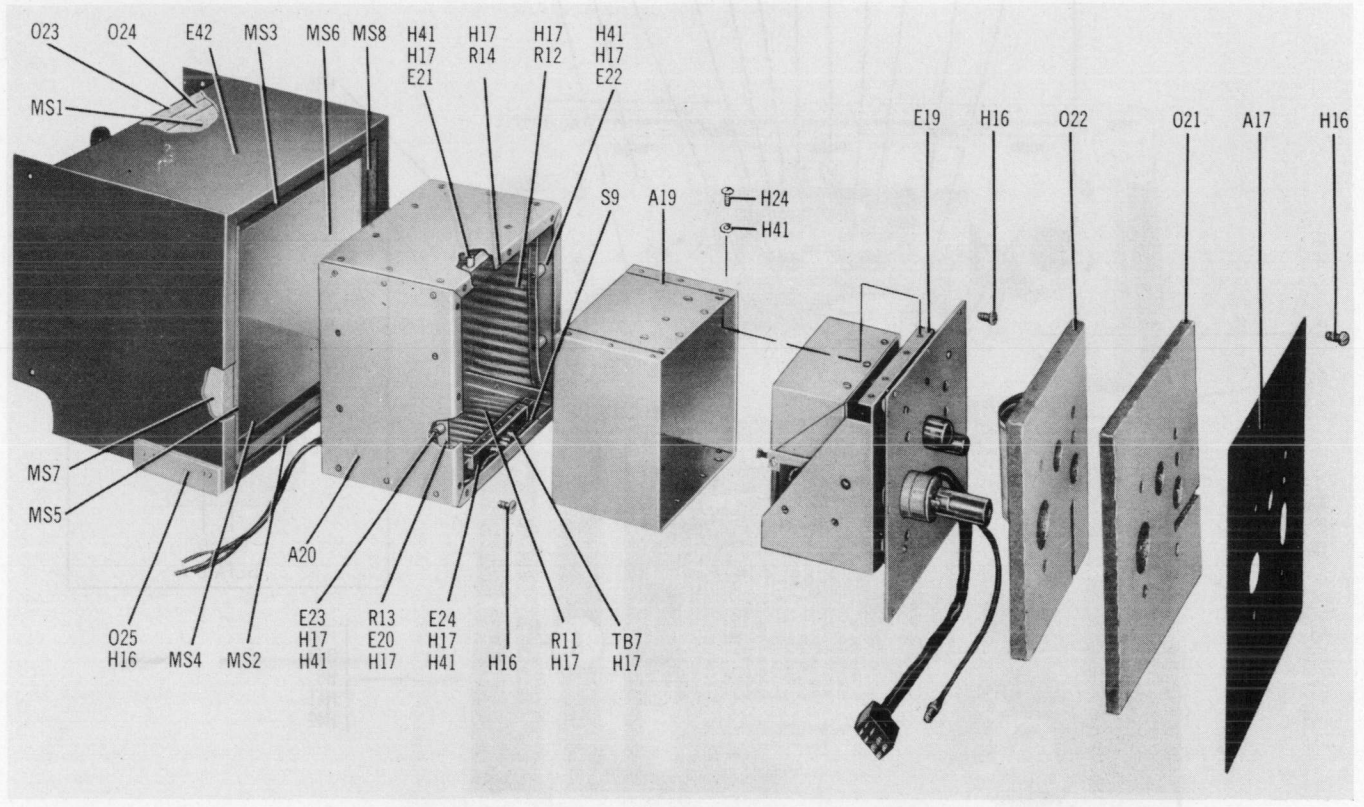


Figure 3. Oven Assembly (E36), Exploded View

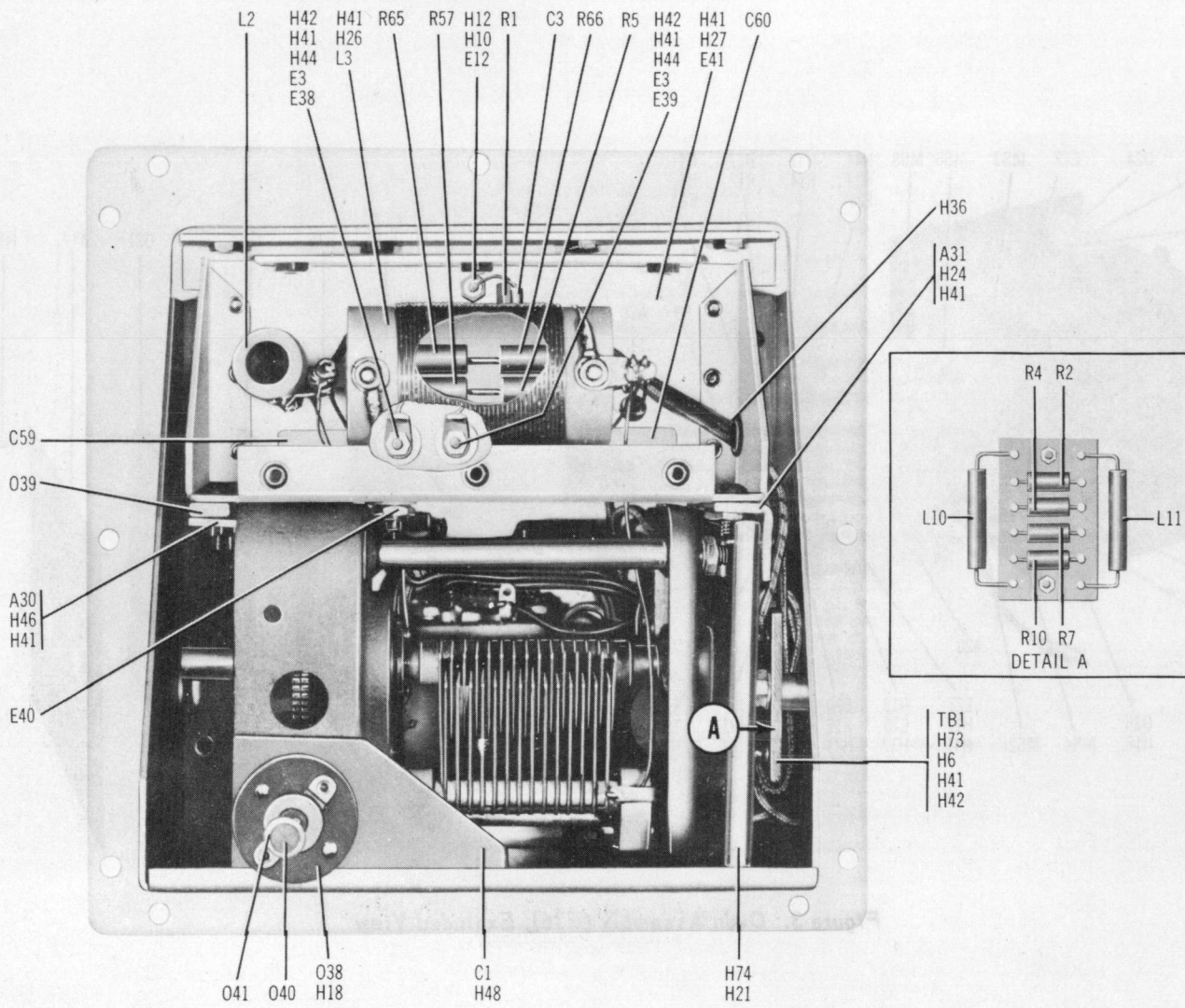


Figure 4. Inner Oven (E19), Front View

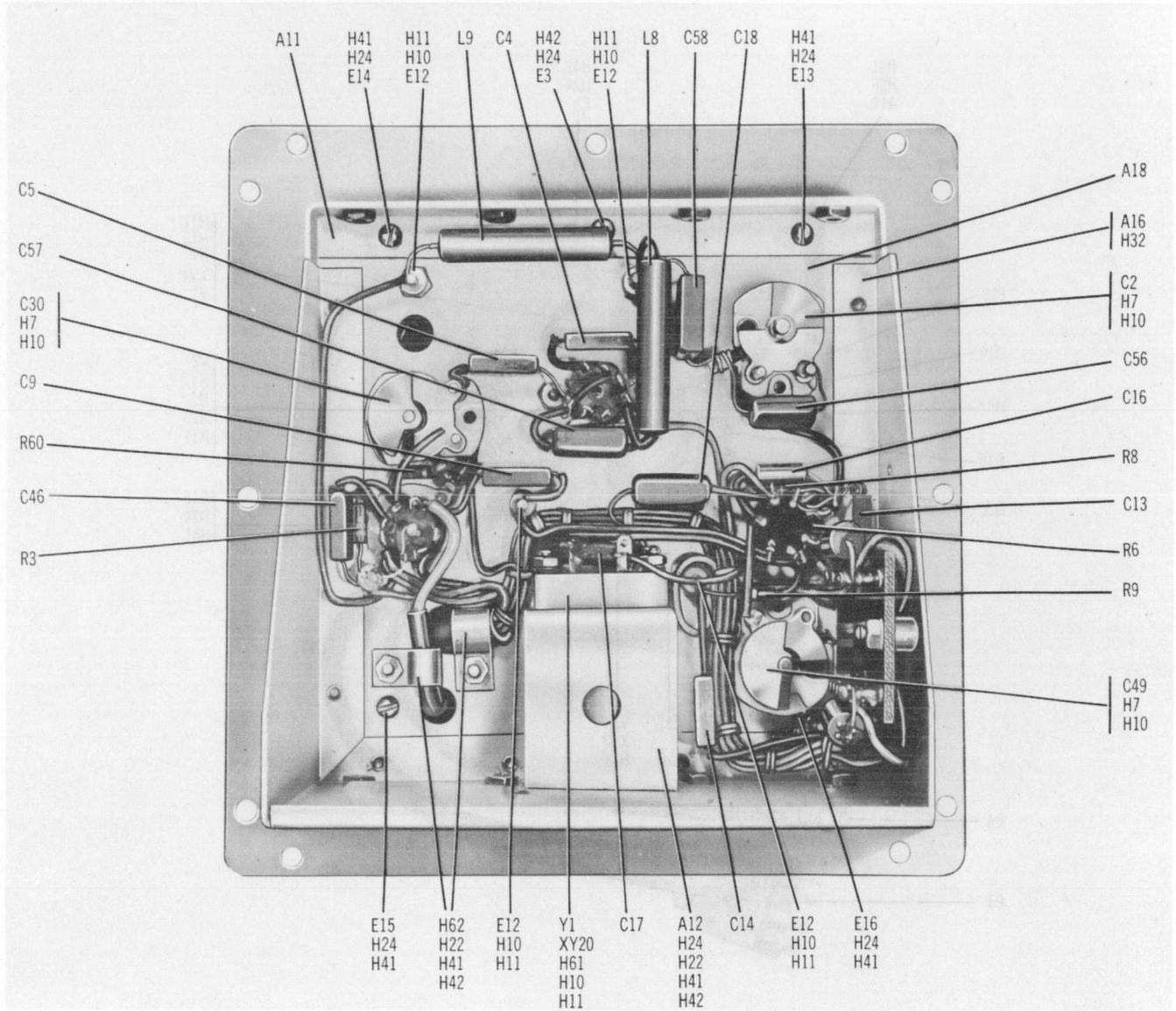


Figure 5. Inner Oven (E19), Front View with C1 and E41 Removed

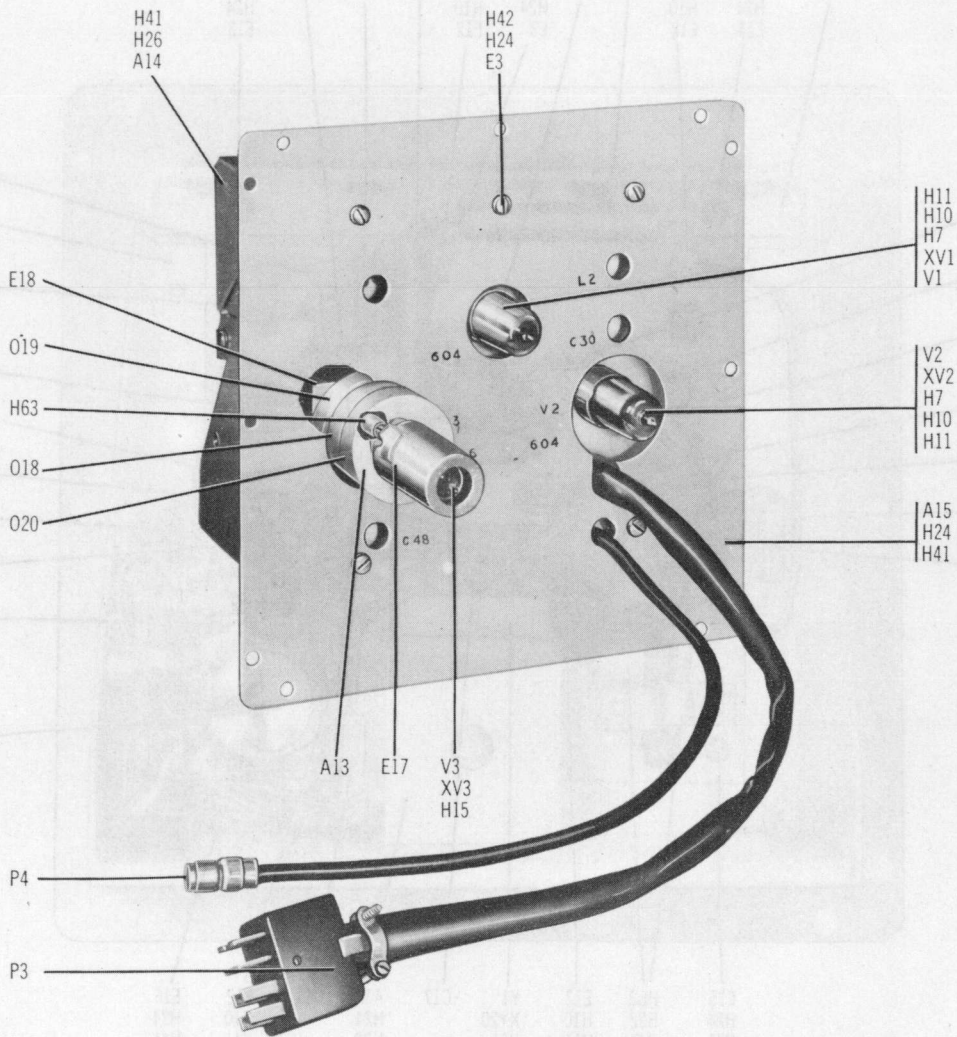


Figure 6. Inner Oven (E19), Rear View

Figure 5. Inner Oven (E19), Front View with C1 and E41 Removed

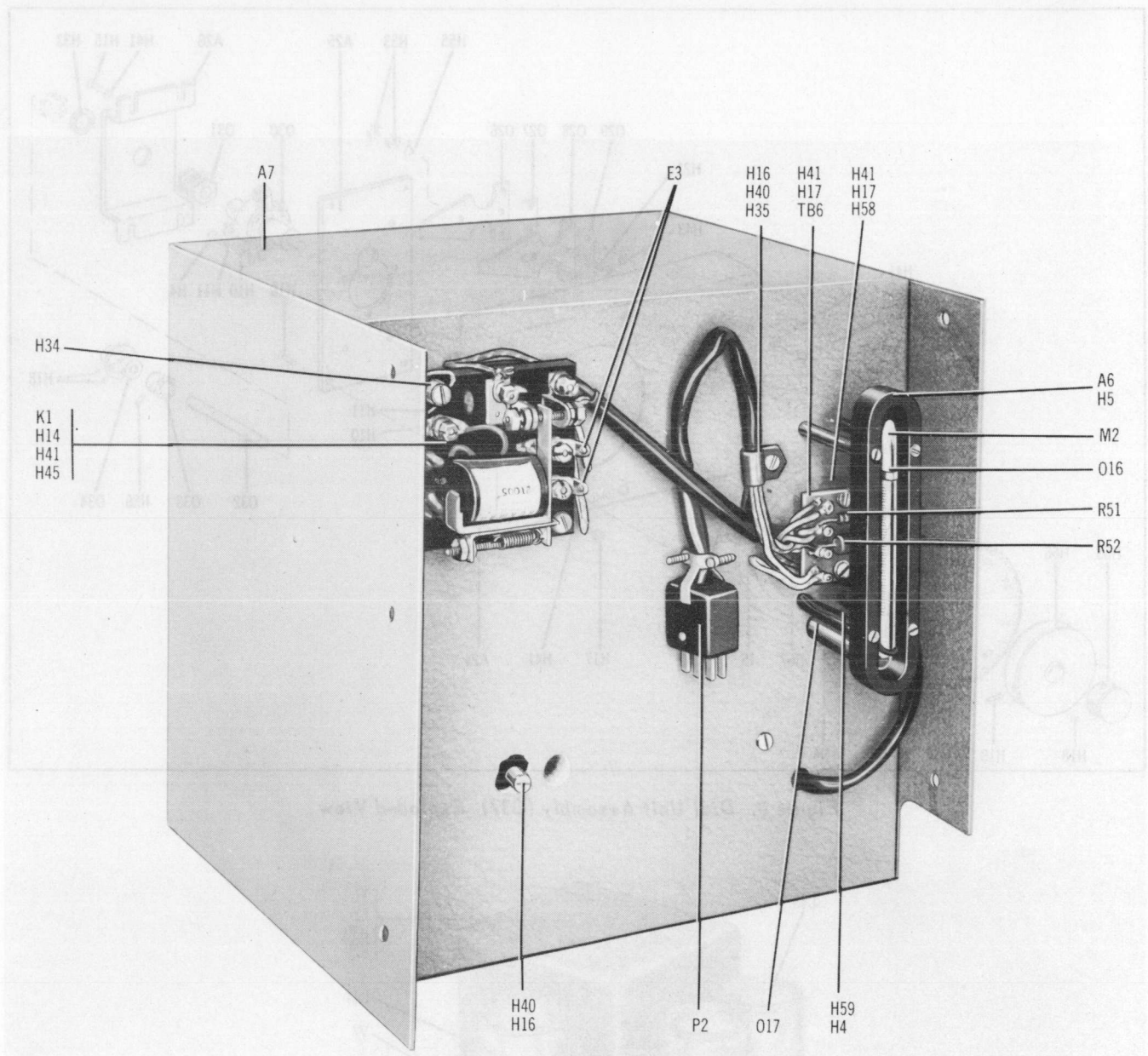


Figure 7. Outer Oven (E42), Front View

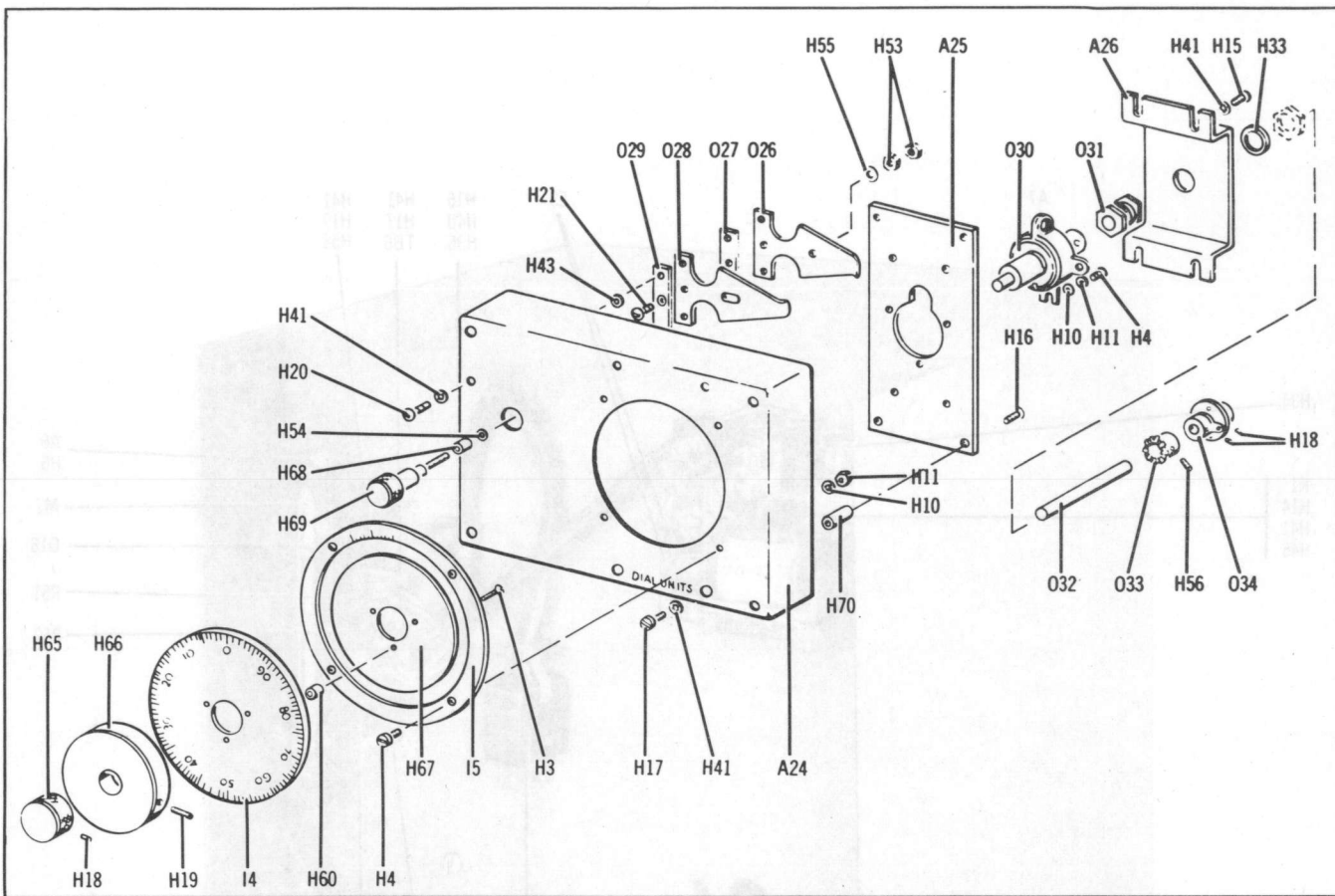


Figure 8. Dial Unit Assembly (O37), Exploded View

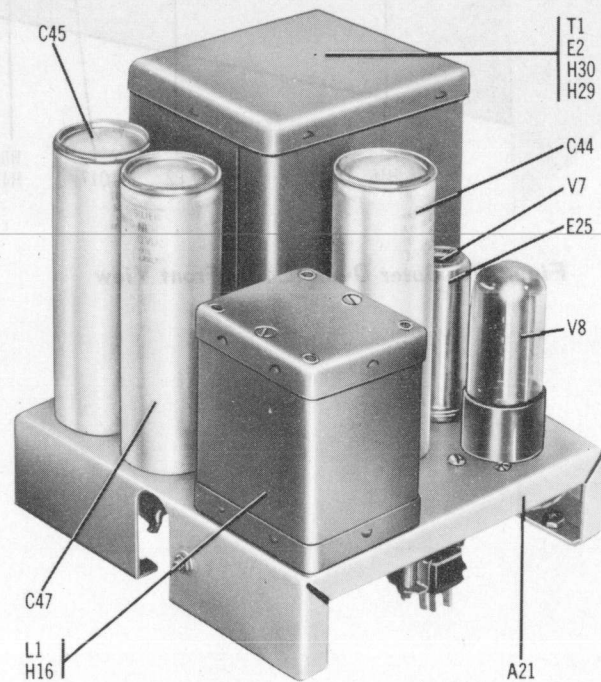


Figure 9. Power Supply Assembly (E43), Top View

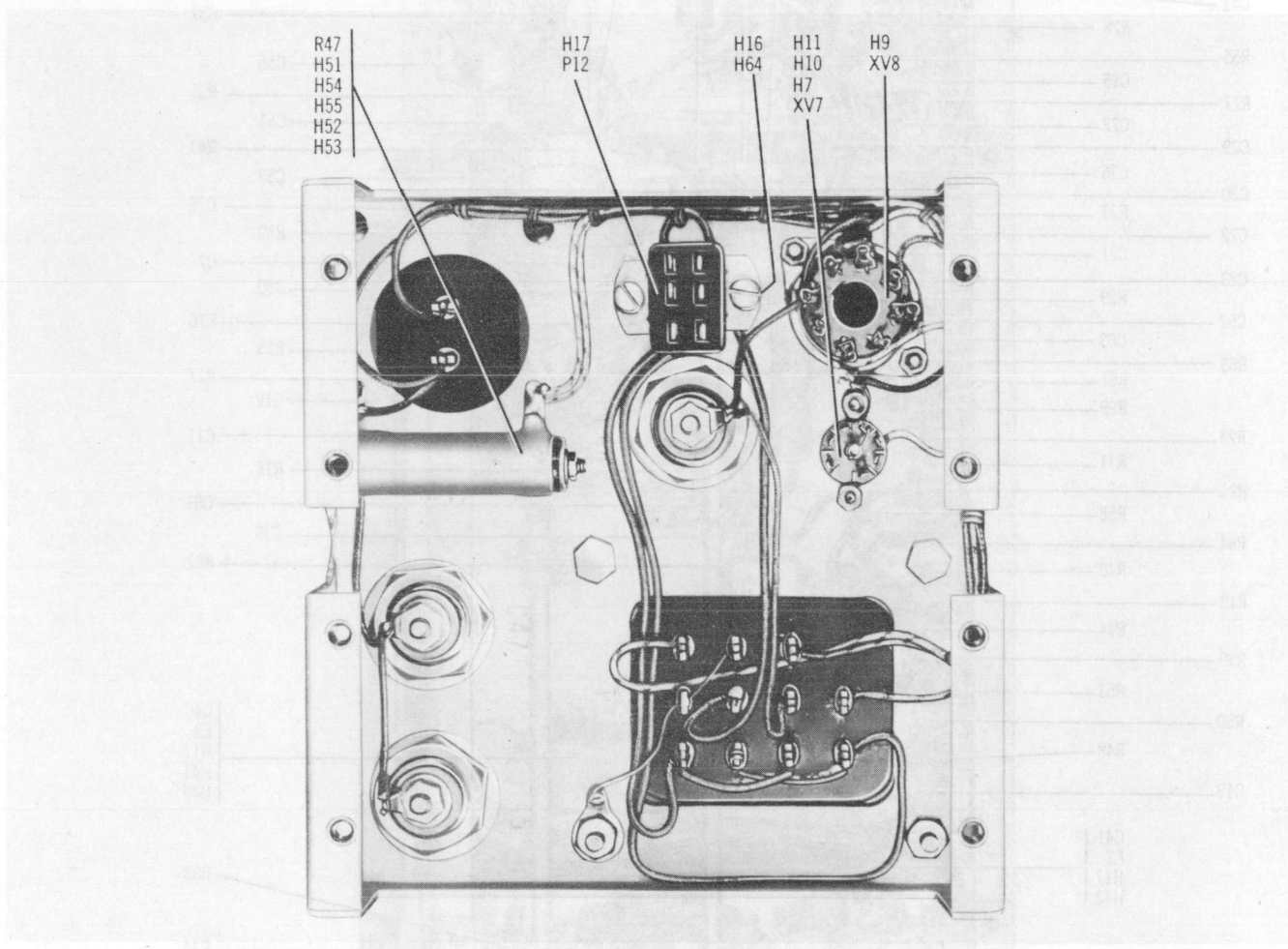


Figure 10. Power Supply Assembly (E43), Bottom View

Figure 11. Front Panel and Chassis Assembly (E37), Chassis Bottom View

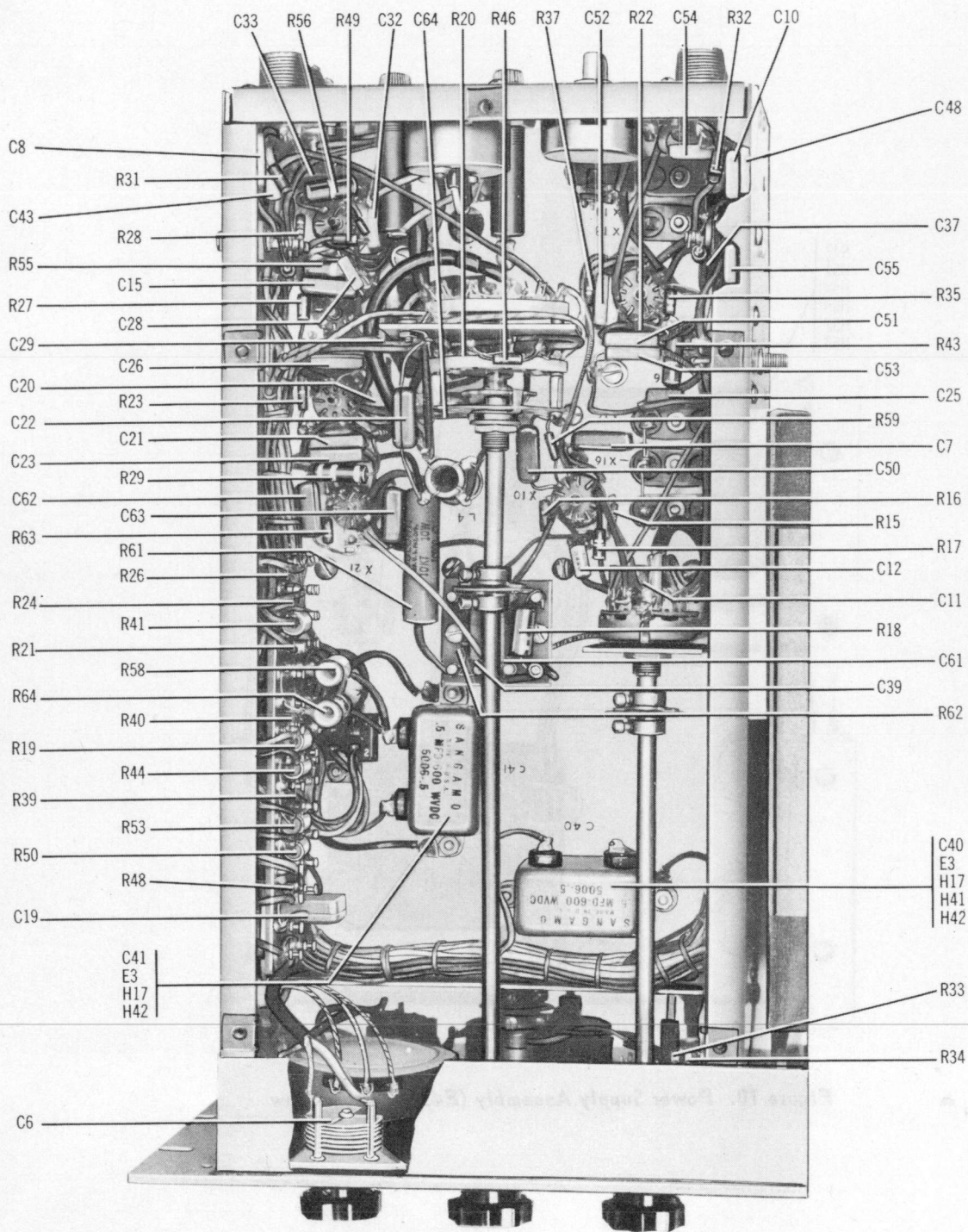


Figure 11. Front Panel and Chassis Assembly (E37), Chassis Bottom View

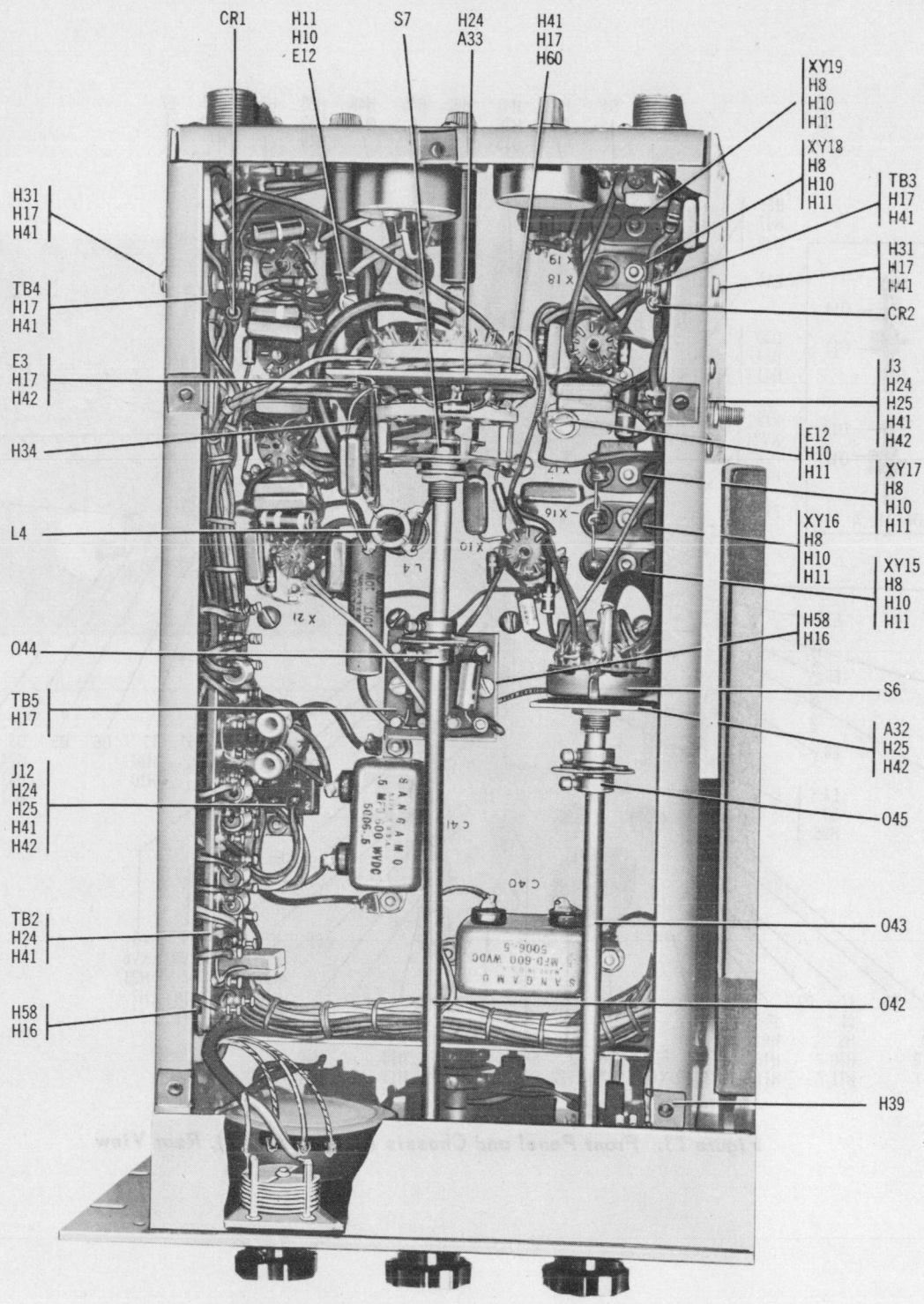


Figure 12. Front Panel and Chassis Assembly (E37), Chassis Bottom View

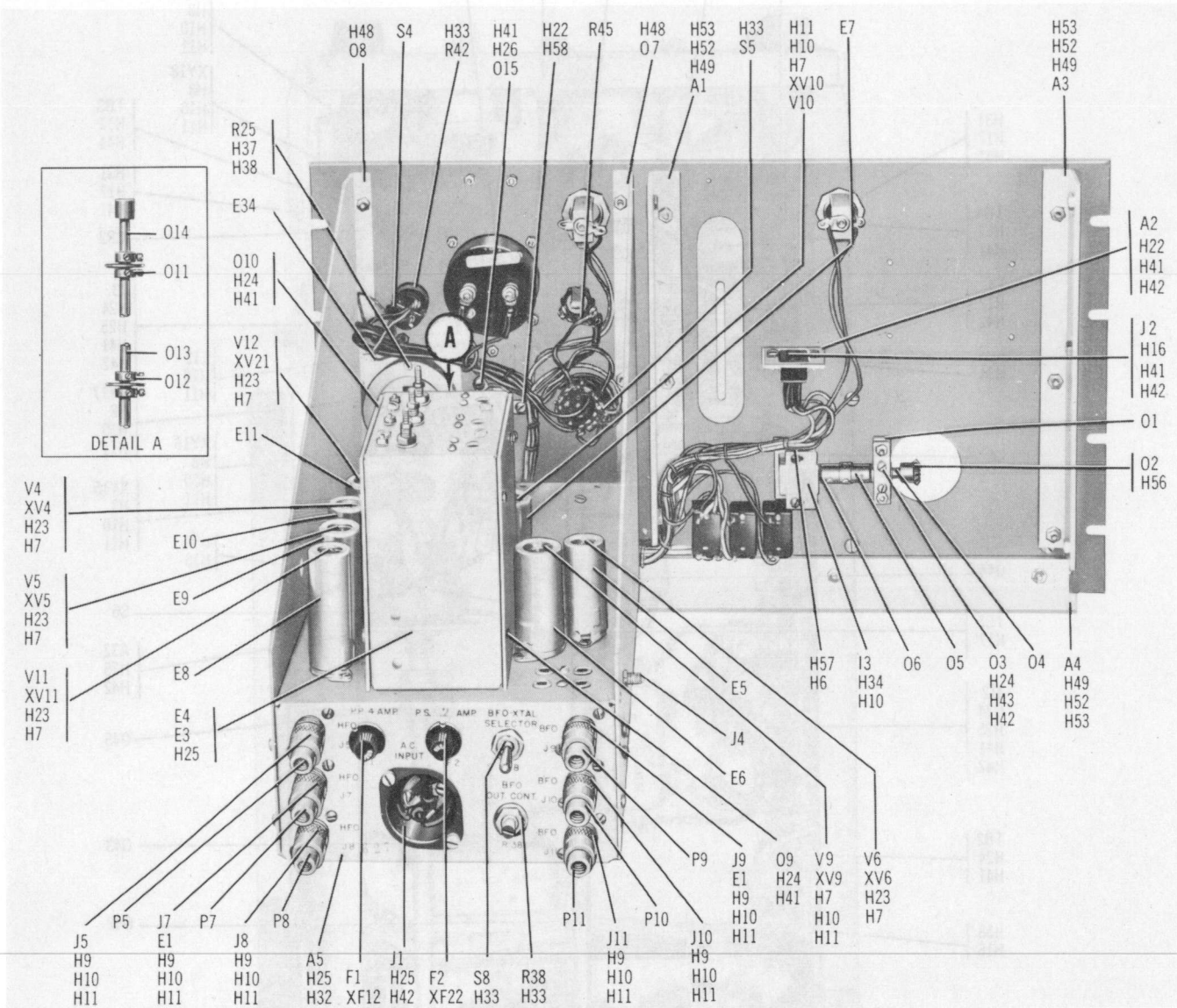


Figure 13. Front Panel and Chassis Assembly (E37), Rear View

Figure 13. Front Panel and Chassis Assembly (E37), Chassis Bottom View

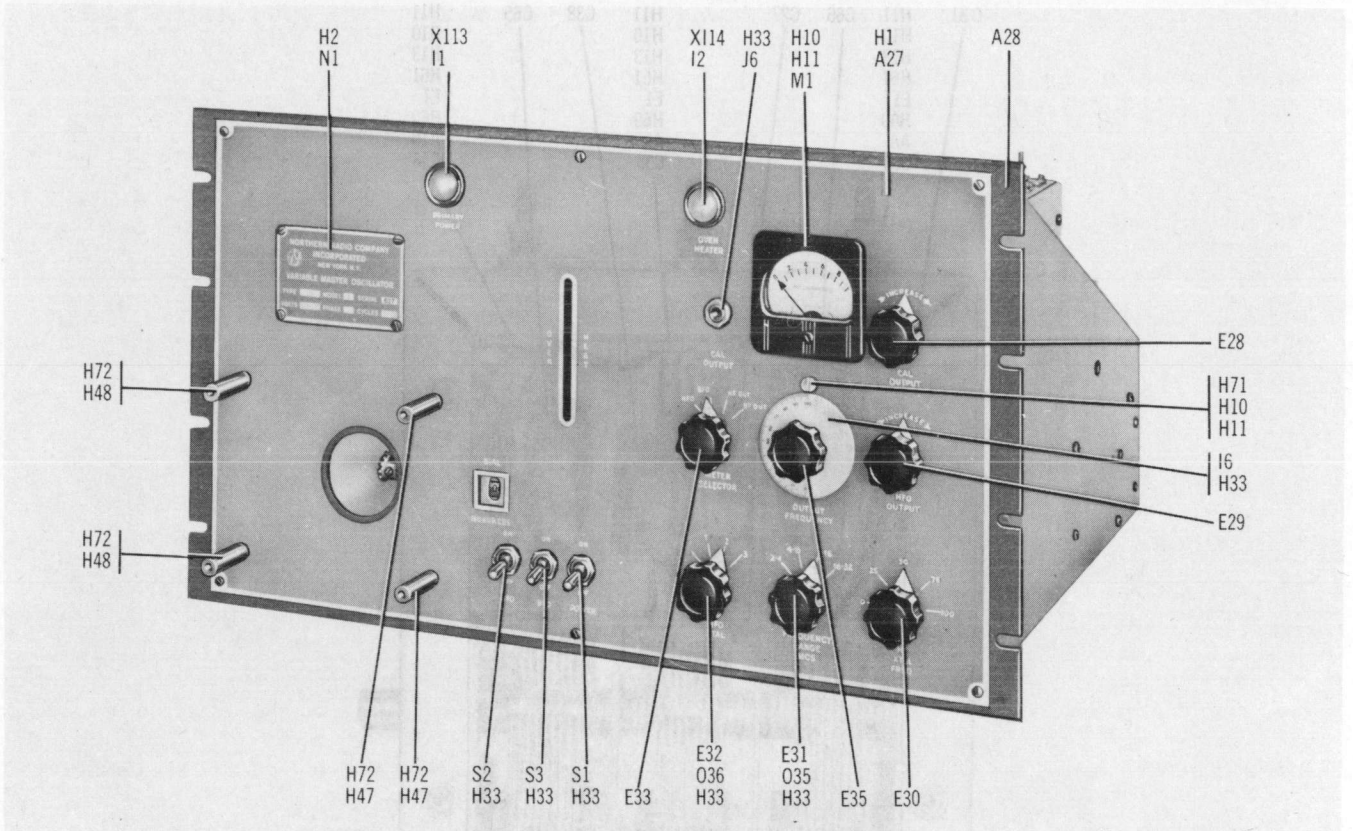


Figure 14. Front Panel and Chassis Assembly (E37), Panel Front View

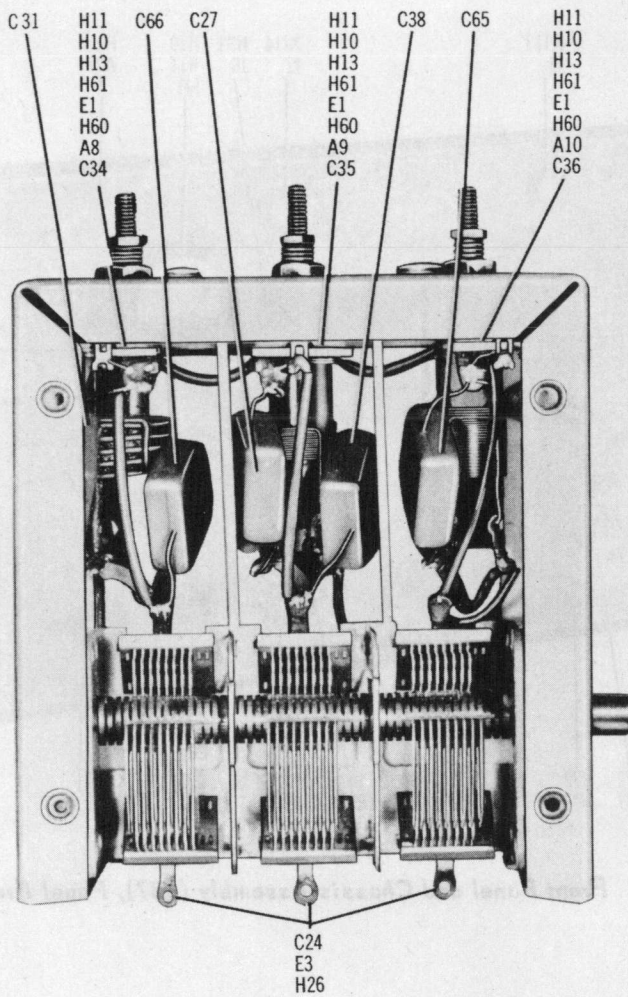


Figure 15. R-F Tuner Assembly (E4), Right Side View

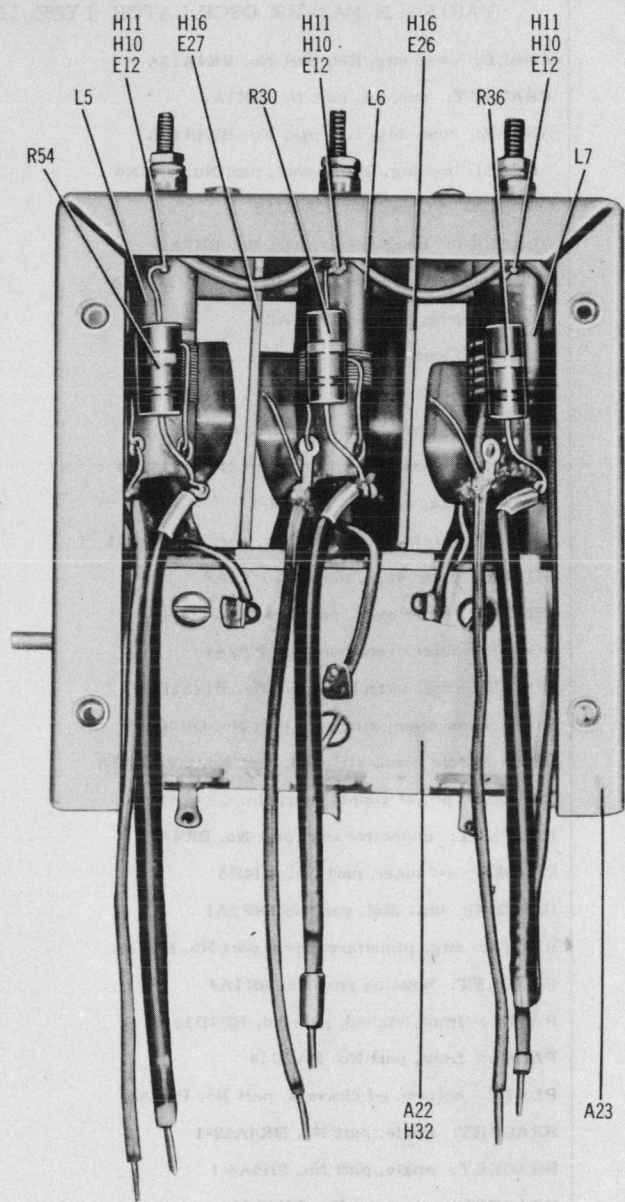


Figure 16. R-F Tuner Assembly (E4), Left Side View

Components Parts List

Reference Symbol No.	Stock No.	Description	Source Code
VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1			
A1		ANGLE: oven mtg, RH, part No. BK4A13A	
A2	*	BRACKET: support, part No. BK1A2	
A3		ANGLE: oven mtg, LH, part No. BK4A13B	
A4		ANGLE: bracing, front panel, part No. BK4A6	
A5	*	CHASSIS: r-f, part No. CZ4C15	
A6		BRACKET: thermometer, part No. BK7A2	
A7		BOX: outer oven, stripped, part No. OV2C2-1A	
A8		PLATE: mtg, part No. PT4A27	
A9		PLATE: Same as A8	
A10		PLATE: Same as A8	
A11		SUPPORT: inner oven, part No. A115116	
A12		BRACKET: calibrator, xtal, part No. A115114	
A13		PLATE: mtg, part No. PT1A1-1	
A14		COVER: shield, main inductor, part No. SH4B1	
A15		COVER: inner oven, part No. PT1A4	
A16		CHASSIS: inner oven, part No. C115118-1	
A17		COVER: outer oven, part No. PT2A4	
A18		COVER: inner oven box, part No. B115117	
A19		BOX: inner oven, stripped, part No. OV4C6-1	
A20		BOX: middle oven, stripped, part No. OV4C5-5A	
A21	*	CHASSIS: power supply, part No. CZ4C17	
A22		BRACKET: capacitor mtg, part No. BK4A41	
A23	*	CHASSIS: r-f tuner, part No. SH4B3	
A24		HOUSING: unit dial, part No. NP2A1	
A25		PLATE: mtg, planetary drive, part No. PT1A3	
A26		BRACKET: housing part No. BK1A4	
A27		PANEL: front, etched, part No. NP4D13	
A28	*	PANEL: front, part No. PA2C14	
A29		PLATE: bottom, r-f chassis, part No. PT4A8	
A30		BRACKET: angle, part No. BK4A19-1	
A31		BRACKET: angle, part No. SH4A4-1	
A32		BRACKET: mtg, part No. BK4A40	
A33		BRACKET: mtg, part No. BK4A39	
CR1		CRYSTAL UNIT: rectifying GE part No. 1N48	
CR2		CRYSTAL: Same as CR1	
C1		CAPACITOR: variable, air dielectric, 220 mmf max, 21 mmf min CDN part No. 4.080	
C2		CAPACITOR: variable, air dielectric, 23 mmf max, 4 mmf min HMM part No. APC25	
C3		CAPACITOR: fixed, mica dielectric, 100 mmf \pm 5%, 500 vdcw SMO part No. RR1310	
C4		CAPACITOR: fixed, mica dielectric, 1,000 mmf \pm 10%, 500 vdcw SMO part No. KR1210	
C5		CAPACITOR: fixed, mica dielectric, 10 mmf \pm 5%, 500 vdcw SMO part No. RR1410	

Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
C6		CAPACITOR: variable, air dielectric, 52 mmf max, 3.7 mmf min HMM part No. HF50	
C7		CAPACITOR: Same as C4	
C8		CAPACITOR: fixed, mica dielectric, 1,000 mmf \pm 10%, 500 vdcw, SMO type No. K1210 SMO Coml	
C9		CAPACITOR: fixed, mica dielectric, 5 mmf \pm 10%, 500 vdcw, SMO type No. K1550 SMO Coml	
C10		CAPACITOR: Same as C8	
C11		CAPACITOR: Same as C8	
C12		CAPACITOR: fixed, ceramic dielectric, 10 mmf \pm 5% mmf, 600 vdcw CN part No. TCZ10	
C13		CAPACITOR: Same as C8	
C14		CAPACITOR: Same as C8	
C15		CAPACITOR: Same as C8	
C16		CAPACITOR: Same as C12	
C17		CAPACITOR: Same as C4	
C18		CAPACITOR: fixed, mica dielectric, 10,000 mmf \pm 10%, 300 vdcw, SMO type No. CO6110 SMO Coml	
C19		CAPACITOR: Same as C18	
C20		CAPACITOR: Same as C8	
C21		CAPACITOR: Same as C8	
C22		CAPACITOR: fixed, mica dielectric, 5,000 mmf \pm 10%, 500 vdcw, SMO type No. C1250 SMO Coml	
C23		CAPACITOR: fixed, mica dielectric, 100 mmf \pm 10%, 500 vdcw, SMO type No. K1310 SMO Coml	
C24		CAPACITOR: variable, air dielectric, 3 sections, 266.5 mmf max, 8 mmf min, 266.5 mmf max, 8 mmf min, 266 mmf max, 8 mmf min RAD part No. 253119	
C24A	#	CAPACITOR: part of C24 (NHA C24)	
C24B	#	CAPACITOR: part of C24 (NHA C24)	
C24C	#	CAPACITOR: part of C24 (NHA C24)	
C25		CAPACITOR: fixed, mica dielectric, 50 mmf \pm 5%, 500 vdcw SMO part No. RR1450	
C26		CAPACITOR: Same as C23	
C27		CAPACITOR: Same as C22	
C28		CAPACITOR: Same as C23	
C29		CAPACITOR: Same as C8	
C30		CAPACITOR: Same as C2	
C31		CAPACITOR: Same as C22	
C32		CAPACITOR: Same as C8	
C33		CAPACITOR: Same as C8	
C34		CAPACITOR: variable, ceramic dielectric, 45 mmf max, 7 mmf min, 500 vdcw ERC part No. TS2A7-45	
C35		CAPACITOR: Same as C34	
C36		CAPACITOR: Same as C34	

Section II
Components Parts List

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Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
C37		CAPACITOR: Same as C25	
C38		CAPACITOR: Same as C22	
C39		CAPACITOR: Same as C8	
C40		CAPACITOR: fixed, paper dielectric, .5 mf \pm 20% - 10%, 600 vdcw, side terminals SMO part No. 5006RS-5	
C41		CAPACITOR: Same as C40	
C43		CAPACITOR: Same as C8	
C44		CAPACITOR: fixed, paper dielectric, 4 mf \pm 20%, 600 vdcw CLD part No. TLA6040	
C45		CAPACITOR: Same as C44	
C46		CAPACITOR: Same as C4	
C47		CAPACITOR: Same as C44	
C48		CAPACITOR: Same as C8	
C49		CAPACITOR: variable, air dielectric, 50 mmf max, 5 mmf min HMM part No. APC50	
C50		CAPACITOR: Same as C18	
C51		CAPACITOR: Same as C8	
C52		CAPACITOR: Same as C23	
C53		CAPACITOR: Same as C8	
C54		CAPACITOR: Same as C8	
C55		CAPACITOR: fixed, mica dielectric, 150 mmf \pm 5%, 500 vdcw SMO part No. RR1315	
C56		CAPACITOR: fixed, mica dielectric, 20 mmf \pm 5%, 500 vdcw SMO part No. RR1420	
C57		CAPACITOR: fixed, mica dielectric, 10,000 mmf \pm 5%, 300 vdcw SMO part No. CRO6110	
C58		CAPACITOR: Same as C57	
C59		CAPACITOR: Same as C18	
C60		CAPACITOR: Same as C18	
C61		CAPACITOR: Same as C23	
C62		CAPACITOR: Same as C18	
C63		CAPACITOR: Same as C18	
C64		CAPACITOR: Same as C22	
C65		CAPACITOR: Same as C22	
C66		CAPACITOR: Same as C22	
E1		TERMINAL: lug (5 each used) SH part No. 2506-04-00	
E2		TERMINAL: lug (1 each used) SH part No. 2506-10-00	
E3		TERMINAL: lug (19 each used) SH part No. 2506-06-00	
E4		R-F TUNER ASSY: see fig. 15 and 16 for breakdown, no number assy	
E5		SHIELD: tube Ⓢ TS102U02 (JAN-S-28A) ELCO Corp. part No. 120	
E6		SHIELD: tube Ⓢ TS103U03 (JAN-S-28A) ELCO Corp. part No. 191	

Ⓢ Suitable JAN replacement at reference symbol location

Reference Symbol N .	Stock N .	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
E7		SHIELD: Same as E6	
E8		SHIELD: tube Ø TS102U03 (JAN-S-28A)	ELCO Corp. part No. 149
E9		SHIELD: Same as E8	
E10		SHIELD: Same as E8	
E11		SHIELD: Same as E8	
E12		TERMINAL: stud (10 each used)	PRME part No. 5000
E13		INSULATOR: standoff	ANL part No. 1704
E14		INSULATOR: Same as E13	
E15		INSULATOR: Same as E13	
E16		INSULATOR: Same as E13	
E17		SHIELD: Same as E5	
E18		INSULATOR: disk, part No. PT1A1-3	
E19		OVEN: inner, see fig. 4 thru 6 for breakdown, no number assy	
E20		STRIP: insulator, part No. 1N7A1	
E21		INSULATOR: standoff (4 each used)	ANL part No. 1700
E22		INSULATOR: Same as E21 (4 each used)	
E23		INSULATOR: Same as E21 (4 each used)	
E24		INSULATOR: Same as E21 (4 each used)	
E25		SHIELD: Same as E8	
E26		SHIELD: r-f tuner, part No. BK4A42-1	
E27		SHIELD: r-f tuner, part No. BK4A42-2	
E28		KNOB:	ICA part No. 1166
E29		KNOB: Same as E28	
E30		KNOB: Same as E28	
E31		KNOB: Same as E28	
E32		KNOB: Same as E28	
E33		KNOB: Same as E28	
E34		INSULATOR: part No. 1N9A2	
E35		KNOB:	ICA part No. 1165
E36		OVEN ASSY: see fig. 3 for breakdown, no number assy	
E37		FRONT PANEL AND CHASSIS ASSY: see fig. 11 thru 14 for breakdown, no number assy	
E38		INSULATOR: bushing	ANL part No. 1172
E39		INSULATOR: Same as E38	
E40		TERMINAL: stud	CGT part No. X1795-B
E41		SHIELD: main inductor, part No. SH4B2	
E42		OVEN: outer, see fig. 7 for breakdown, no number assy	
E43		POWER SUPPLY ASSY: see fig. 9 and 10 for breakdown, no number assy	

Ø Suitable JAN replacement at reference symbol location

Section II
Components Parts List

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Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
F1		FUSE: cartridge, 4 amps, 250 v LTF part No. 312004	
F2		FUSE: cartridge, 2 amps, 125 v LTF part No. 313 .200	
H1		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 4-40, 1/8 in. lg (6 each used) MFP Coml	
H2		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 4-40, 3/16 in. lg (4 each used) MFP Coml	
H3		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 4-40, 5/8 in. lg (3 each used) MFP Coml	
H4		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 4-40, 3/8 in. lg (13 each used) MFP Coml	
H5		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 4-40, 3/4 in. lg (4 each used) MFP Coml	
H6		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 4-40, 3/8 in. lg (4 each used) MFP Coml	
H7		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 4-40, 1/4 in. lg (36 each used) MFP Coml	
H8		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 4-40, 1/2 in. lg (5 each used) MFP Coml	
H9		SCREW: machine, slot dr, oval hd, brs, nickel pl, No. 4-40, 5/16 in. lg (14 each used) MFP Coml	
H10		WASHER: lock, internal tooth, phosphor bronze, nickel pl, No. 4, 17/64 in. OD (69 each used) SH Coml	
H11		NUT: hexagon, brs, nickel pl, No. 4-40, 0.092 in. thick, 0.245 in. across flats (57 each used) MFP Coml	
H12		WASHER: flat, brs, nickel pl, 0.125 in. ID, 0.312 in. OD, 0.032 in. thick (4 each used) MFP Coml	
H13		WASHER: flat, fibre (6 each used) ICA part No. 5601	
H14		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 6-32, 3/4 in. lg (2 each used) MFP Coml	
H15		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 6-32, 1/4 in. lg (6 each used) MFP Coml	
H16		SCREW: machine, slot dr, bind hd, Sems with external tooth lockwasher, steel, Cd pl, No. 6-32, 3/8 in. lg (49 each used) SH Coml	
H17		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 6-32, 1/4 in. lg (59 each used) MFP Coml	
H18		SCREW: set, hex socket dr, cup point, steel, Cd pl, No. 6-32, 1/8 in. lg (9 each used) PK Coml	
H19		SCREW: set, hex socket dr, cup point, steel, Cd pl, No. 6-32, 3/8 in. lg (2 each used) PK Coml	
H20		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 6-32, 1/2 in. lg (2 each used) MFP Coml	

Reference Symbol	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
H21		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 6-32, 1/4 in. lg (3 each used) MFP Coml	
H22		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 6-32, 3/8 in. lg (9 each used) MFP Coml	
H23		CLAMP: (7 each used) CIN part No. 1060	
H24		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 6-32, 3/8 in. lg (38 each used) MFP Coml	
H25		SCREW: machine, slot dr, rd hd, Sems with external tooth lockwasher, steel, Cd pl, No. 6-32, 3/8 in. lg (49 each used) SH Coml	
H26		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 6-32, 5/16 in. lg (4 each used) MFP Coml	
H27		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 6-32, 3/8 in. lg (2 each used) MFP Coml	
H28		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 10-32, 1/2 in. lg (5 each used) MFP Coml	
H29		WASHER: lock, internal tooth, phosphor bronze, nickel pl, No. 10, 25/64 in. OD (9 each used) SH Coml	
H30		NUT: hexagon, brs, nickel pl, No. 10-32, 0.123 in. thick, 0.368 in. wide across flats (4 each used) MFP Coml	
H31		SPACER: part No. SK2A34-23 (4 each used)	
H32		RIVET: (19 each used) CRM part No. R3472-3/16	
H33		WASHER: flat brs, nickel pl, 3/8 in. ID, 11/16 in. OD, 1/32 in. thick (12 each used) MFP Coml	
H34		GROMMET: (2 each used) GCE part No. 1041	
H35		CLAMP: cable (1 each used) WMPC part No. CPC742-8	
H36		GROMMET: (1 each used) GCE part No. 1043	
H37		WASHER: flat, fibre (1 each used) GCE part No. 6517	
H38		WASHER: extruded, fibre (1 each used) GCE part No. 6529	
H39		NUT: lock (5 each used) TIN part No. 8091-632-1	
H40		SPACER: part No. SK2A34-27 (4 each used)	
H41		WASHER: lock internal tooth, phosphor bronze, nickel pl, No. 6, 9/32 in. OD (102 each used) SH Coml	
H42		NUT: hexagon, brs, nickel pl, No. 6-32, 0.108 thick, 0.307 in. across flats (32 each used) MFP Coml	
H43		WASHER: flat, brs, nickel pl, 0.149 in. ID, 0.375 in. OD, 0.032 in. thick (4 each used) GCE part No. 6155	
H44		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 6-32, 7/8 in. lg (2 each used) MFP Coml	
H45		WASHER: flat, fibre GCE part No. 6513	

Refer nce Symbol No.	St ck No.	Descripti n	Source C d
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
H46		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 6-32, 1/2 in. lg (2 each used) MFP Coml	
H47		SCREW: machine, slot dr, bind hd, brs, nickel pl, No. 8-32, 3/8 in. lg (6 each used) MFP Coml	
H48		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 8-32, 3/8 in. lg (10 each used) MFP Coml	
H49		SCREW: machine, slot dr, flat hd, brs, nickel pl, No. 8-32, 1/2 in. lg (10 each used) MFP Coml	
H50		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 8-32, 7/16 in. lg (8 each used) MFP Coml	
H51		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 8-32, 2-1/2 in. lg (1 each used) MFP Coml	
H52		WASHER: lock, internal tooth, phosphor bronze, nickel pl, No. 8, 21/64 in. OD (19 each used) SH Coml	
H53		NUT: hexagon, brs, nickel pl, No. 8-32, 0.123 in. thick, 0.338 in. wide across flats (14 each used) MFP Coml	
H54		WASHER: flat, brs, nickel pl, 0.174 in. ID, 0.375 in. OD, 0.032 in. thick (2 each used) SH Coml	
H55		WASHER: flat, fibre (3 each used) GCE part No. 6514	
H56		SCREW: set, slot dr, cup point, steel, Cd pl, No. 10-24, 1/8 in. lg (2 each used) PK Coml	
H57		SPACER: part No. SK2A34-17 (2 each used)	
H58		SPACER: part No. SK2A34-25 (9 each used)	
H59		SPACER: part No. SK2A34-18 (4 each used)	
H60		SPACER: part No. SK2A34-1 (11 each used)	
H61		SCREW: machine, slot dr, rd hd, brs, nickel pl, No. 4-40, 3/4 in. lg (8 each used) MFP Coml	
H62		CLAMP: (2 each used) ICA part No. 5201	
H63		SPACER: part No. SK2A34-20 (2 each used)	
H64		SPACER: part No. SK2A34-29 (2 each used)	
H65		KNOB: vernier, part No. KN1A2	
H66		KNOB: dial, main freq, part No. KN1A1	
H67		PLATE: dial lock, part No. A115119	
H68		SPACER: part No. SK2A34-13 (1 each used)	
H69		SCREW: adjustment, dial lock, part No. KN1A3	
H70		SPACER: part No. SK2A34-24 (4 each used)	
H71		INDICE: dial, part No. SA1A1	
H72		SPACER: part No. SK2A34-34 (4 each used)	
H73		SPACER: part No. SK2A34-5 (2 each used)	
H74		POST: spacing, part No. SH4A4-2 (2 each used)	
I1		LAMP: incandescent, 6 to 8 v, .9 to 1.2 w, .15 amps GLEC part No. 47	
I2		LAMP: glow, 1/25 w, 105 AC striking voltage, 105 DC striking v ltage GLEC part No. NE51	

Reference Symbol No.	Stock No.	Description	Source
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
I3		COUNTER: mechanical	VEE part No. AE114225
I4		DIAL: etched part No. NP4A42	
I5		DIAL: vernier, part No. NP4A43	
I6		DIAL: output freq, part No. A50006	
J1		CONNECTOR: receptacle	HAW part No. 6808
J2		CONNECTOR: receptacle	JNS part No. S306AB
J3		CONNECTOR: receptacle	JNS part No. S308AB
J4		CONNECTOR: receptacle	IPC part No. MC20
J5		CONNECTOR: receptacle	AMP part No. 83-1R
J6		JACK: telephone	MAL part No. SC1A
J7		CONNECTOR: Same as J5	
J8		CONNECTOR: Same as J5	
J9		CONNECTOR: Same as J5	
J10		CONNECTOR: Same as J5	
J11		CONNECTOR: Same as J5	
J12		CONNECTOR: Same as J2	
K1		RELAY: armature, adjust control to 20 gram min, gap contact to 0.008 in. min, pull piece gap to 0.005 in. min	KUE part No. 210C40 (unadjusted) KUE part No. N21005 (adjusted)
L1		REACTOR: filter choke, Spec No. 108	FTC part No. 14800
L2		COIL: r-f, part No. AD5A41	
L3		COIL: r-f, part No. 115-1-28	
L4		TRANSFORMER: r-f, part No. 115-1-24	
L5		TRANSFORMER: r-f, part No. 115-1-25	
L6		TRANSFORMER: r-f, part No. 115-1-26	
L7		TRANSFORMER: r-f, part No. 115-1-27	
L8		REACTOR: filament filter, Spec No. 183	
L9		REACTOR: Same as L8	
L10		REACTOR: Same as L8	
L11		REACTOR: Same as L8	
MS1		INSULATION: make from bulk Flintkote, 8-7/8 in. lg x 7-3/4 in. wide x 1/2 in. thick	FLK Coml
MS2		INSULATION: Same as MS1	
MS3		INSULATION: make from bulk Flintkote, 7-7/8 in. lg x 6-7/8 in. wide x 1/2 in. thick	FLK Coml
MS4		INSULATION: Same as MS3	
MS5		INSULATION: make from bulk Flintkote, 8-7/8 in. lg x 6-7/8 in. wide x 1/2 in. thick	FLK Coml
MS6		INSULATION: Same as MS5	

Reference Symbol N .	Stock N .	Description	Source Cod
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
MS7		INSULATION: make from bulk Flintkote, 9-7/8 in. lg x 7-3/4 in. wide x 1/2 in. thick FLK Coml	
MS8		INSULATION: Same as MS7	
M1		METER: ammeter, DC, 0 to 1 ma, graduated in increments of 0.5 ma \pm 2% accuracy at full scale reading, black pointer and scale markings, white background, WS model No. 506 WS Coml	
M2		SWITCH: mercury, bakelite case, 5 in. lg stem, 3-7/8 in. lg scale lg, contact at 60°C, PTH type No. VC325 PTH Coml	
N1		NAMEPLATE: part No. A115113	
O1		SPACER: pillow block, part No. SC1A5	
O2		GEAR: bevel CDCM part No. 900	
O3		BLOCK: bearing BGW part No. PPB4	
O4		SHAFT: coupling, CRES, 1/4 in. dia x 1-3/8 in. lg, no number part	
O5		COUPLING: rigid, for 1/4 in. dia shaft, BGW type No. FA5 BGW Coml	
O6		BUSHING: reducer, part No. CL1A1	
O7	*	PLATE: side, LH, r-f chassis, part No. BK4A43	
O8	*	PLATE: side, RH, r-f chassis, part No. BK4A44	
O9	*	PLATE: side, part No. PT4A40	
O10	*	PLATE: Same as O9	
O11		COUPLING: flexible NAC part No. TX22	
O12		COUPLING: Same as O11	
O13		SHAFT: coupling, CRES, 1/4 in. dia x 7-5/8 in. lg, no number part	
O14		SHAFT: coupling, CRES, 1/4 in. dia x 3/4 in. lg, no number part	
O15		DRIVE: planetary CPT part No. 27067	
O16		CLIP: thermostat, part No. CG1A2-6	
O17		SLEEVE: thermostat, part No. SH4A2	
O18		INSULATION: part No. PT1A1-2	
O19		INSULATION: Same as O18	
O20		INSULATION: Same as O18	
O21		INSULATION: rear outside, part No. IN4A11	
O22		INSULATION: rear inside, part No. IN4A13	
O23		INSULATION: front outside, part No. IN4A10-1	
O24		INSULATION: front inside, part No. IN4A10-2	
O25		PLATE: spacer, part No. PT2A1	
O26		JAW: rear, dial lock, part No. A115121	
O27		PLATE: spacer, part No. A115122	
O28		JAW: front dial lock, part No. A115120	
O29		PLATE: spacer, part No. A115123	
O30		DRIVE: planetary CPT part No. 599	
O31		BUSHING: shaft ICA part No. 1250	
O32		SHAFT: coupling, CRES, 1/4 in. dia x 2-1/4 in. lg, no number part	

Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
O33		GEAR: Same as O2	
O34		COUPLING: flexible, one end counter bored 5/16 in. dia, part No. A1104171 NAC part No. TX22 modified	
O35		BUSHING: Same as O31	
O36		BUSHING: Same as O31	
O37		DIAL UNITS ASSY: See fig. 8 for breakdown, no number assy	
O38		COUPLING: Same as O11	
O39		PLATE: spacer, part No. BK4A19-2	
O40		SHAFT: coupling bakelite, 1/4 in. dia x 1-3/4 in. lg, no number part	
O41		BUSHING: brs, 5/16 in. OD, 1/4 in. lg, no number part	
O42		SHAFT: coupling, CRES, 1/4 in. dia x 8-1/8 in. lg, no number part	
O43		SHAFT: coupling, CRES, 1/4 in. dia x 6-5/8 in. lg, no number part	
O44		COUPLING: Same as O11	
O45		COUPLING: Same as O11	
P1		CONNECTOR: plug, part of W1 HAW part No. 7257	
P2		CONNECTOR: plug JNS part No. P306CCT	
P3		CONNECTOR: plug JNS part No. P308CCT	
P4		CONNECTOR: plug IPC part No. MC-10	
P5		CONNECTOR: plug AMP part No. 83-1SP	
P7		CONNECTOR: Same as P5	
P8		CONNECTOR: Same as P5	
P9		CONNECTOR: Same as P5	
P10		CONNECTOR: Same as P5	
P11		CONNECTOR: Same as P5	
P12		CONNECTOR: plug JNS part No. P306AB	
P13		CONNECTOR: plug part of W1 HAW part No. 9972	
R1		RESISTOR: fixed, composition, 120,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF124K (JAN-R-11) AB part No. EB1241	
R2		RESISTOR: fixed, composition 1,000 ohms \pm 10%, 1 w Ⓞ RC30BF102K (JAN-R-11) AB part No. GB1021	
R3		RESISTOR: fixed, composition, 240,000 ohms \pm 5%, 1/2 w Ⓞ RC20BF244J (JAN-R-11) AB part No. EB2445	
R4		RESISTOR: fixed, composition, 10,000 ohms \pm 10%, 2 w Ⓞ RC42BF103K (JAN-R-11) AB part No. HB1031	
R5		RESISTOR: fixed, composition, 750 ohms \pm 5%, 2 w Ⓞ RC42BF751J (JAN-R-11) AB part No. HB7515	
R6		RESISTOR: fixed, composition, 47,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF473K (JAN-R-11) AB part No. EB4731	
R7		RESISTOR: fixed, composition, 100 ohms \pm 10%, 1/2 w Ⓞ RC20BF101K (JAN-R-11) AB part No. EB1011	

Ⓞ Suitable JAN replacement at reference symbol location

Reference Symbol No.	Stock N .	Descripti n	Sourc C d
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
R8		RESISTOR: fixed, composition, 100,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF104K (JAN-R-11) AB part No. EB1041	
R9		RESISTOR: fixed, composition, 10,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF103K (JAN-R-11) AB part No. EB1031	
R10		RESISTOR: Same as R2	
R11		RESISTANCE: element, 80 ohms \pm 5%, 200 w, 2 terminal bars nickel pl with 1/8 in. dia. holes in ends, four 3/16 in. dia. holes on 2-3/4 x 4-1/16 in. mtg centers, part No. RW9A1 SAS part No. WRS-23 modified	
R12		RESISTANCE: Same as R11	
R13		RESISTANCE: element, 80 ohms \pm 5%, 200 w, 2 terminal bars nickel pl, with 1/8 in. dia. holes in ends, four 3/16 in. dia. holes on 2-3/4 in. by 4-1/16 in. mtg centers, crimp in 1 terminal bar, part No. RW9A2 SAS part No. WRS-23 modified	
R14		RESISTANCE: Same as R11	
R15		RESISTOR: Same as R8	
R16		RESISTOR: Same as R8	
R17		RESISTOR: Same as R9	
R18		RESISTOR: fixed, composition, 15,000 ohms \pm 10%, 2 w Ⓞ RC42BF153K (JAN-R-11) AB part No. HB1531	
R19		RESISTOR: fixed, composition, 1,000 ohms \pm 10%, 2 w Ⓞ RC42BF102K (JAN-R-11) AB part No. HB1021	
R20		RESISTOR: fixed, composition, 4,700 ohms \pm 10%, 1/2 w Ⓞ RC20BF472K (JAN-R-11) AB part No. EB4721	
R21		RESISTOR: fixed, composition, 470 ohms \pm 10%, 1/2 w Ⓞ RC20BF471K (JAN-R-11) AB part No. EB4711	
R22		RESISTOR: Same as R8	
R23		RESISTOR: fixed, composition, 22,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF223K (JAN-R-11) AB part No. EB2231	
R24		RESISTOR: Same as R20	
R25		RESISTOR: variable, wire-wound, 50,000 ohms \pm 10%, 7 w, rd shaft, 7/8 in. lg. from mtg surface with 3/8 in. lg. x 1/16 in. deep flat MAL type No. E50MP MAL Coml	
R26		RESISTOR: Same as R20	
R27		RESISTOR: Same as R8	
R28		RESISTOR: fixed, composition, 33,000 ohms \pm 10%, 1/2 w Ⓞ RC20BF333K (JAN-R-11) AB part No. EB3331	
R29		RESISTOR: fixed, composition, 470 ohms \pm 10%, 1 w Ⓞ RC30BF471K (JAN-R-11) AB part No. GB4711	
R30		RESISTOR: Same as R19	
R31		RESISTOR: fixed, composition, 24,000 ohms \pm 5%, 1/2 w Ⓞ RC20BF243J (JAN-R-11) AB part No. EB2435	
R32		RESISTOR: fixed, composition, 10,000 ohms \pm 5%, 1/2 w Ⓞ RC20BF103J (JAN-R-11) AB part No. EB1035	
R33		RESISTOR: fixed, composition, 12 ohms \pm 5%, 1/2 w Ⓞ RC20BF120J (JAN-R-11) AB part No. EB1205	

Ⓞ Suitable JAN replacement at refer nce symbol location

Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
R34		RESISTOR: Same as R33	
R35		RESISTOR: Same as R8	
R36		RESISTOR: Same as R19	
R37		RESISTOR: Same as R9	
R38		RESISTOR: variable, wire-wound, 1,000 ohms \pm 10%, 2 w, rd shaft, 3/4 in. lg from mtg surface with 1/32 in. wide x 3/32 in. deep screw driver slot, IRC type No. W1000 IRC Coml	
R39		RESISTOR: Same as R4	
R40		RESISTOR: Same as R18	
R41		RESISTOR: fixed, composition, 12 ohms \pm 10%, 2 w @ RC42BF120K (JAN-R-11) AB part No. HB1201	
R42		RESISTOR: variable, composition, 500,000 ohms \pm 10%; 2 w, rd shaft, 7/8 in. lg from mtg surface, includes S4, IRC type No. Q with type 76 switch IRC Coml	
R43		RESISTOR: Same as R2	
R44		RESISTOR: Same as R9	
R45		RESISTOR: Same as R8	
R46		RESISTOR: Same as R8	
R47		RESISTOR: fixed, wire-wound, 7,500 ohms \pm 10%, 20 w WAL part No. 20F7500	
R48		RESISTOR: Same as R8	
R49		RESISTOR: fixed, composition, 51 ohms \pm 5%, 1/2 w @ RC20BF510J (JAN-R-11) AB part No. EB5105	
R50		RESISTOR: Same as R9	
R51		RESISTOR: fixed, composition, 56,000 ohms \pm 10%, 2 w @ RC42BF563K (JAN-R-11) AB part No. HB5631	
R52		RESISTOR: Same as R8	
R53		RESISTOR: Same as R18	
R54		RESISTOR: Same as R19	
R55		RESISTOR: fixed, composition, 220 ohms \pm 10%, 1 w @ RC30BF221K (JAN-R-11) AB part No. GB2211	
R56		RESISTOR: Same as R55	
R57		RESISTOR: Same as R5	
R58		RESISTOR: fixed, wire-wound, 350 ohms \pm 10%, 5w WAL part No. 5F350WL	
R59		RESISTOR: fixed, composition, 680 ohms \pm 10%, 1/2 w @ RC20BF681K (JAN-R-11) AB part No. EB6811	
R60		RESISTOR: Same as R59	
R61		RESISTOR: fixed, wire-wound, 10,000 ohms \pm 10%, 10 w, SPR type No. 10KT SPR Coml	
R62		RESISTOR: fixed, composition, 91,000 ohms \pm 5%, 1/2 w @ RC20BF913J (JAN-R-11) AB part No. EB9135	
R63		RESISTOR: Same as R3	
R64		RESISTOR: Same as R58	

@ Suitable JAN replacement at reference symbol location

Section II
Components Parts List

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Reference Symbol	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
R65		RESISTOR: Same as R5	
R66		RESISTOR: Same as R5	
S1		SWITCH: toggle AHH part No. 81024GB	
S2		SWITCH: toggle AHH part No. 81015AW	
S3		SWITCH: Same as S2	
S4		SWITCH: rotary, spst, 3 amps, 125 v AC or DC and 1 amp, 250 v AC only, part of R42 (NHA R42)	
S5		SWITCH: rotary, 3 poles, 4 throws, 4 positions max number of switching positions possible rd shaft 7/8 in. lg from mtg surface, MAL type No. 3234J MAL Coml	
S6		SWITCH, rotary, 3 poles, 4 throws, 4 positions max number of switching positions possible rd shaft 1-5/16 in. lg from mtg surface, MAL type No. 3234J MAL Coml	
S7		SWITCH: rotary, 2 sections, 4 poles, 5 throws 5 positions max number of switching positions possible rd shaft 2-1/4 in. lg from mtg surface, CN type No. 2515 CN Coml	
S8		SWITCH: toggle AHH part No. 81027CE	
S9		SWITCH: thermostatic, 72°C ± 2%, 2 amp AC, 115 v, MCLD type No. SU100L MCLD Coml	
TB1		BOARD: terminal, part No. TB1A1-2	
TB2		BOARD: terminal, part No. TB1A1-1	
TB3		BOARD: terminal, part No. TB1A2-1	
TB4		BOARD: Same as TB3	
TB5		BOARD: terminal part No. TB1A1-7	
TB6		BOARD: Same as TB5	
TB7		BOARD: terminal, part No. TB5A3	
T1		TRANSFORMER: power Spec No. 181 FTC part No. 18287	
V1		TUBE: electron ⊕ JAN6C4 (JAN-1A) GE part No. 6C4	
V2		TUBE: Same as V1	
V3		TUBE: electron ⊕ JAN6BE6 (JAN-1A) GE part No. 6BE6	
V4		TUBE: electron ⊕ JAN6AQ5 (JAN-1A) GE part No. 6AQ5	
V5		TUBE: Same as V4	
V6		TUBE: Same as V1	
V7		TUBE: electron ⊕ JANOA2 (JAN-1A) GE part No. OA2	
V8	**	TUBE: electron ⊕ JAN5Y3GT (JAN-1A) GE part No. 5Y3GT	
	**	TUBE: electron ⊕ JAN5W4 (JAN-1A) GE part No. 5W4	
V9		TUBE: electron ⊕ JAN12AU7 (JAN-1A) GE part No. 12AU7	

⊕ Suitable JAN replacement at reference symbol location

Reference Symbol No.	Stock No.	Description	Source Code
		VARIABLE MASTER OSCILLATOR TYPE 115 MODEL 1 (cont)	
V10		TUBE: Same as V9	
V11		TUBE: Same as V4	
V12		TUBE: Same as V4	
W1		CABLE ASSY: power, includes P1 and P13, Spec No. 232	
XF12		HOLDER: fuse LTF part No. 342001	
XF22		HOLDER: Same as XF12	
XI13		LIGHT: indicator DLC part No. 67B161	
XI14		LIGHT: Same as XI13	
XV1		SOCKET: electron tube ELCO Corp. part No. 235BC	
XV2		SOCKET: Same as XV1	
XV3		SOCKET: Same as XV1	
XV4		SOCKET: Same as XV1	
XV5		SOCKET: Same as XV1	
XV6		SOCKET: Same as XV1	
XV7		SOCKET: Same as XV1	
XV8		SOCKET: electron tube CIN part No. 9881	
XV9		SOCKET: electron tube ELCO Corp, part No. 169BC	
XV10		SOCKET: Same as XV9	
XV11		SOCKET: Same as XV1	
XV21		SOCKET: Same as XV1	
XY15		SOCKET: crystal AMP part No. 33-2T	
XY16		SOCKET: Same as XY15	
XY17		SOCKET: Same as XY15	
XY18		SOCKET: Same as XY15	
XY19		SOCKET: Same as XY15	
XY20		SOCKET: crystal MLL part No. K33102	
Y1		CRYSTAL UNIT: quartz, 100 kc \pm .0025%, PCL type No. PL100 PCL Coml	

SECTION III
MANUFACTURER'S PART
NUMBER CROSS-INDEX TO
REFERENCE SYMBOL NUMBER

Part or Drawing No.	Reference Symbol No.	Figure No.	Part or Drawing No.	Reference Symbol No.	Figure No.
BUSHING:	O41	4	METER:	M1	14
CAPACITOR: 5 mmf	C9	5	NUT: 4-40	H11	5
CAPACITOR: 100 mmf	C23	11	NUT: 6-32	H42	4
	C26	11	NUT: 8-32	H53	8
	C28	11	NUT: 10-32	H30	9
	C52	11	OVEN ASSY:	E36	2
	C61	11	OVEN:	E19	3
CAPACITOR: 1,000 mmf large	C8	11	OVEN: outer	E42	3
	C10	11	POWER SUPPLY ASSY:	E43	2
	C11	11	R-F TUNER ASSY:	E4	13
	C13	5	RESISTOR: 1,000 ohms	R38	13
	C14	5	RESISTOR: .01 meg	R61	11
	C15	5	RESISTOR: .05 meg	R25	13
	C20	11	RESISTOR: .5 meg	R42	13
	C21	11	SCREW: 4-40 x 1/8	H1	14
	C29	11	SCREW: 4-40 x 3/16	H2	14
	C32	11	SCREW: 4-40 x 1/4	H7	5
	C33	11	SCREW: 4-40 x 5/16	H9	10
	C39	11	SCREW: 4-40 x 3/8 bind hd	H4	7
	C43	11	SCREW: 4-40 x 3/8 flat hd	H6	4
	C48	11	SCREW: 4-40 x 1/2	H8	12
	C51	11	SCREW: 4-40 x 5/8	H3	8
	C53	11	SCREW: 4-40 x 3/4 flat hd	H5	7
	C54	11	SCREW: 4-40 x 3/4 rd hd	H61	5
CAPACITOR: 1,000 mmf small	C4	5	SCREW: 6-32 x 1/8	H18	4
	C7	11	SCREW: 6-32 x 1/4 bind hd	H17	3
	C17	5	SCREW: 6-32 x 1/4 flat hd	H21	4
	C46	5	SCREW: 6-32 x 1/4 rd hd	H15	6
CAPACITOR: 5,000 mmf	C22	11	SCREW: 6-32 x 5/16	H26	4
	C27	15	SCREW: 6-32 x 3/8 bind hd	H24	3
	C31	15	SCREW: 6-32 x 3/8 bind hd Sems	H16	2
	C38	15	SCREW: 6-32 x 3/8 flat hd	H22	5
	C64	11	SCREW: 6-32 x 3/8 rd hd	H27	4
	C65	15	SCREW: 6-32 x 3/8 rd hd Sems	H25	12
	C66	15	SCREW: 6-32 x 3/8 set	H19	8
CAPACITOR: 10,000 mmf	C18	5	SCREW: 6-32 x 1/2 bind hd	H20	8
	C19	11			
	C50	11			
	C59	4			
	C60	4			
	C62	11			
	C63	11			
COUPLING: flexible	O34	8			
COUPLING: rigid	O5	13			
CRYSTAL UNIT:	Y1	5			
DIAL UNITS ASSY:	O37	2			
FRONT PANEL AND CHASSIS ASSY:	E37	2			
INSULATION: 7-7/8 x 6-7/8	MS3	3			
	MS4	3			
INSULATION: 8-7/8 x 6-7/8	MS5	3			
	MS6	3			
INSULATION: 8-7/8 x 7-3/4	MS1	3			
	MS2	3			
INSULATION: 9-7/8 x 7-3/4	MS7	3			
	MS8	3			

Part or Drawing No.	Reference Symbol No.	Figure No.	Part or Drawing No.	Reference Symbol No.	Figure No.
SCREW: 6-32 x 1/2 rd hd	H46	4	BK1A4	A26	8
SCREW: 6-32 x 3/4	H14	7	BK4A13A	A1	13
SCREW: 6-32 x 7/8	H44	4	BK4A13B	A3	13
SCREW: 8-32 x 3/8 bind hd	H47	2	BK4A19-1	A30	4
SCREW: 8-32 x 3/8 flat hd	H48	4	BK4A19-2	O39	4
SCREW: 8-32 x 7/16	H50	2	BK4A39	A33	12
SCREW: 8-32 x 1/2	H49	13	BK4A40	A32	12
SCREW: 8-32 x 2-1/2	H51	10	BK4A41	A22	16
SCREW: 10-24 x 1/8	H56	8	BK4A42-1	E26	16
SCREW: 10-32 x 1/2	H28	2	BK4A42-2	E27	16
SHAFT: 3/4 lg	O14	13	BK4A43	O7	13
SHAFT: 1-3/8 lg	O4	13	BK4A44	O8	13
SHAFT: 1-3/4 lg	O40	4	BK4A6	A4	13
SHAFT: 2-1/4 lg	O32	8	BK7A2	A6	7
SHAFT: 6-5/8 lg	O43	12	B115117	A18	5
SHAFT: 7-5/8 lg	O13	13	CG1A2-6	O16	7
SHAFT: 8-1/8 lg	O42	12	CL1A1	O6	13
SWITCH: mercury	M2	7	CPC742-8	H35	7
SWITCH: rotary, shaft 7/8	S5	13	CRO6110	C57 C58	5 5
SWITCH: rotary, shaft 1-5/16	S6	12	CZ4C15	A5	13
SWITCH: rotary shaft 2-1/4	S7	12	CZ4C17	A21	9
SWITCH: thermostatic	S9	3	C115118-1	A16	5
WASHER: No. 4	H10	4	EB1011	R7	4
WASHER: No. 6	H41	3	EB1031	R9 R17 R37 R44 R50	5 11 11 11 11
WASHER: No. 8	H52	2			
WASHER: No. 10	H29	2			
WASHER: 1/8 in. ID	H12	4	EB1035	R32	11
WASHER: 0.174 in. ID	H54	8	EB1041	R8 R15 R16 R22 R27 R35 R45 R46 R48 R52	5 11 11 11 11 11 13 11 11 7
WASHER: 3/8 in. ID	H33	13			
AD5A41	L2	4			
AE114225	I3	13			
APC25	C2 C30	5 5			
APC50	C49	5	EB1205	R33 R34	11 11
A1104171	O34	8			
A115113	N1	14	EB1241	R1	4
A115114	A12	5	EB2231	R23	11
A115116	A11	5	EB2435	R31	11
A115119	H67	8	EB2445	R3 R63	5 11
A115120	O28	8			
A115121	O26	8	EB3331	R28	11
A115122	O27	8	EB4711	R21	11
A115123	O29	8	EB4721	R20 R24 R26	11 11 11
A50006	I6	14	EB4731	R6	5
BK1A2	A2	13	EB5105	R49	11

Part or Drawing N .	Ref rence Symbol No.	Figur N .	Part r Drawing No.	Ref rence Symbol N .	Figure N .
EB6811	R59 R60	11 5	N21005	K1	7
EB9135	R62	11	PA2C14	A28	14
GB1021	R2 R10 R43	4 4 11	PPB4	O3	13
GB2211	R55 R56	11 11	PT1A1-1	A13	6
GB4711	R29	11	PT1A1-2	O18 O19 O20	6 6 6
HB1021	R19 R30 R36 R54	11 16 16 16	PT1A1-3	E18	6
HB1031	R4 R39	4 11	PT1A3	A25	8
HB1201	R41	11	PT1A4	A15	6
HB1531	R18 R40 R53	11 11 11	PT2A1	O25	3
HB5631	R51	7	PT2A4	A17	3
HB7515	R5 R57 R65 R66	4 4 4 4	PT4A27	A8 A9 A10	15 15 15
HF50	C6	11	PT4A40	O9 O10	13 13
IN4A10-1	O23	3	PT4A8	A29	2
IN4A10-2	O24	3	P306AB	P12	10
IN4A11	O21	3	P306CCT	P2	7
IN4A13	O22	3	P308CCT	P3	6
IN48	CR1 CR2	12 12	RC20BF101K	R7	4
IN7A1	E20	3	RC20BF103J	R32 R37 R44 R50	11 11 11 11
IN9A2	E34	13	RC20BF103K	R9 R17	5 11
JAN0A2	V7	9	RC20BF104K	R8	5
JAN12AU7	V9 V10	13 13		R15 R16 R22 R27 R35 R45 R46 R48 R52	11 11 11 11 11 13 11 11 7
JAN5W4	V8	9		R33 R34	11 11
JAN5Y3GT	V8	9		R1	4
JAN6AQ5	V4 V5 V11 V12	13 13 13 13	RC20BF120J	R23	11
JAN6BE6	V3	6	RC20BF124K	R31	11
JAN6C4	V1 V2 V6	6 6 13	RC20BF223K	R3	5
KN1A1	H66	8	RC20BF243J	R63	11
KN1A2	H65	8	RC20BF244J	R28	11
KN1A3	H69	8	RC20BF333K	R21	11
K33102	XY20	8	RC20BF471K	R20 R24 R26	11 11 11
MC10	P4	6	RC20BF472K	R6	5
MC20	J4	13	RC20BF473K	R49	11
NE51	I2	14	RC20BF510J	R59 R60	11 5
NP2A1	A24	8	RC20BF681K	R62	11
NP4A42	I4	8	RC20BF913J	R2 R10 R43	4 4 11
NP4A43	I5	8	RC30BF102K		
NP4D13	A27	14			

Part r Drawing N .	R f e r e n c e Symbol N .	Figur N .	Part r Drawing N .	R f e r e n c e Symbol N .	Figur N .
RC30BF221K	R55 R56	11 11	S308AB	J3	12
RC30BF471K	R29	11	TB1A1-1	TB2	12
RC42BF102K	R19 R30 R36 R54	11 16 16 16	TB1A1-2	TB1	4
			TB1A1-7	TB5 TB6	12 7
RC42BF103K	R4 R39	4 11	TB1A2-1	TB3 TB4	12 12
RC42BF120K	R41	11	TB5A3	TB7	3
RC42BF153K	R18 R40 R53	11 11 11	TCZ10	C12 C16	11 5
RC42BF563K	R51	7	TLA6040	C44 C45 C47	9 9 9
RC42BF751J	R5 R57 R65 R66	4 4 4 4	TS102U02	E5 E17	13 6
RR1310	C3	4	TS102U03	E8 E9 E10 E11 E25	13 13 13 13 9
RR1315	C55	11			
RR1410	C5	5	TS103U03	E6 E7	13 13
RR1420	C56	5	TS2A7-45	C34 C35 C36	15 15 15
RR1450	C25 C37	11 11			
RW9A1	R11 R12 R14	3 3 3	TX22	O11 O12 O38 O44 O45	13 13 4 12 12
RW9A2	R13	3			
R3472-3/16	H32	5	WRS23 (See RW9A1 and RW9A2)		
SA1A1	H71	14	X1795-B	E40	4
SC1A	J6	14	OA2	V7	9
SC1A5	O1	13	OV2C2-1A	A7	7
SH4A2	O17	7	OV4C5-5A	A20	3
SH4A4-1	A31	4	OV4C6-1	A19	3
SH4A4-2	H74	4	1041	H34	7
SH4B1	A14	6	1043	H36	4
SH4B2	E41	4	1060	H23	13
SH4B3	A23	16	108	L1	9
SK2A34-1	H60	8	115-1-24	L4	12
SK2A34-13	H68	8	115-1-25	L5	16
SK2A34-17	H57	13	115-1-26	L6	16
SK2A34-18	H59	7	115-1-27	L7	16
SK2A34-23	H31	12	115-1-28	L3	4
SK2A34-24	H70	8	1165	E35	14
SK2A34-25	H58	7	1166	E28 E29 E30 E31 E32 E33	14 14 14 14 14 14
SK2A34-27	H40	7			
SK2A34-29	H64	10			
SK2A34-30	H63	6			
SK2A34-34	H72	14	1172	E38 E39	4 4
SK2A34-5	H73	4	12AU7	V9 V10	13 13
S306AB	J2 J12	13 12	120	E5 E17	13 6

Section II
Part N . to Ref. Symbols

AN 16-45-401

Part or Drawing No.	Ref r nc Symbol N .	Figur N .	Part r Drawing No.	R ferenc Symb l No.	Figur N .
1250	O31	8	47	I1	14
	O35	14			
	O36	14			
14800	L1	9	5F350WL	R58 R64	11 11
149	E8	13	5W4	V8	9
	E9	13	5Y3GT	V8	9
	E10	13	5000	E12	4
	E11	13			
	E25	9			
169BC	XV9	13	5006RS-.5	C40 C41	11 11
	XV10	13	5201	H62	5
1700	E21	3			
	E22	3			
	E23	3	599	O30	8
	E24	3			
1704	E13	5	6AQ5	V4	13
	E14	5		V5	13
	E15	5		V11	13
	E16	5		V12	13
181	T1	7		6BE6	V3
	18287	T1	7	6C4	V1 V2
183		L8	5	6155	V6
	L9	5			
	L10	4	H43		8
	L11	4	H45		7
191	E6	13	6513	H55	8
	E7	13	6514	H37	13
20F7500	R47	10	6517	H38	13
21OC40	K1	7	6529	XI13 XI14	14 14
232	W1	2	67B161	J1	13
235BC	XV1	6	6808	P1	2
	XV2	6			
	XV3	6	7257	H39	12
	XV4	13			
	XV5	13	8091-632-1	S2 S3	14 14
	XV6	13			
	XV7	10			
	XV11	13			
	XV21	13	81015AW		
	2506-04-00	E1	13	81024GB	S1
2506-06-00	E3	4	81027CE	S8	13
2506-10-00	E2	9	83-1R	J5 J7 J8 J9 J10 J11	13 13 13 13 13 13
253119	C24	15	83-1SP	P5 P7 P8 P9 P10 P11	13 13 13 13 13 13
27067	O15	13			
312004	F1	13			
313-.200	F2	13			
33-27	XY15	12	900	O2 O33	13 8
	XY16	12			
	XY17	12			
	XY18	12			
	XY19	12			
342001	XF12	13	9881	XV8	10
	XF22	13	9972	P13	2
4.080	C1	4			

**SECTION IV
SPECIAL SERVICE
TOOLS**

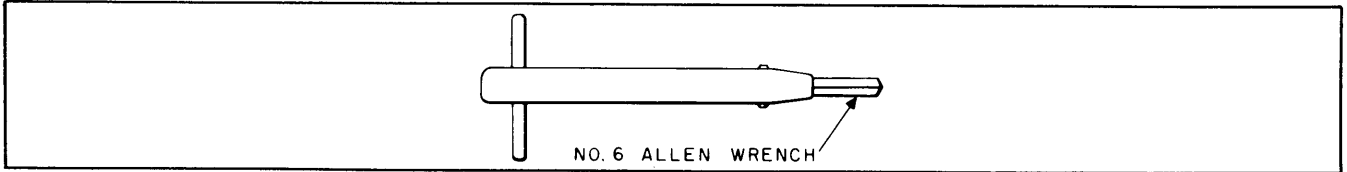


Figure 17. Special Allen Wrench

Stock No.	Description	Application	Source Code
	<p>WRENCH: standard No. 6 Allen Wrench with a long handle, part No. NRC257</p>	<p>To loosen set screws on gear 033 and flexible coupling 034</p>	