JERROLD®

INSTRUCTION SHEET

435-357.3

BROAD-BAND TV/FM AMPLIFIER

MODEL 2300-A

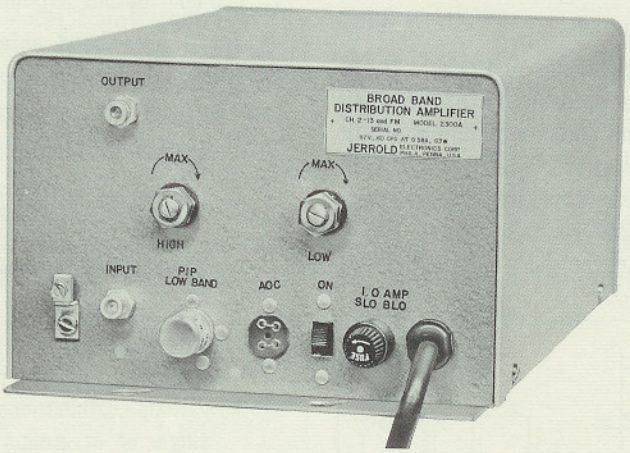

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Fig. 1—MODEL 2300-A

DESCRIPTION

The Jerrold Broad-Band TV/FM Amplifier Model 2300-A is a high-gain, high-output distribution amplifier for use in medium-size systems. The unit comprises a single chassis containing two amplifiers (hi-band and lo-band) and a single power supply.

Model 2300-A features include 75-ohm input and output fittings, separate gain controls for the hi and lo bands, separate tilt controls for each band which compensate for unequal cable loss, a fixed-value, plug-in attenuator pad for control of the lo-band input, and provision for the use of Jerrold Model OC-238 to supply plug-in automatic overload control. This ruggedly-constructed amplifier is designed for long service with a minimum of maintenance.

CONTENTS OF PACKAGE

- **1 Unit Model 2300-A**
- **2 Male Connectors Model F-59A**
- **4 Wood Screws**
- **1 Instruction Sheet 435-357.2**

SPECIFICATIONS

BANDWIDTH	54-108 and 174-216 mc
MINIMUM GAIN	
LO-BAND	39 db
HI-BAND	40 db
FM-BAND (98 mc)	39 db
(108 mc)	23 db approx.
IMPEDANCE (input and output)	75 ohms
MINIMUM INPUT	—6 dbj* (500 microvolts) for 40 db S/N ratio
OUTPUT CAPABILITY PER CHANNEL (for 7 channels at ½% cross-modulation)	0.3 v (50 dbj)
FLATNESS OF RESPONSE	1.5 db p/v max.
TILT CONTROL RANGE (hi, lo-band) Adjustable via holes in top cover	±1.5 db.
INPUT PAD (lo-band)	Equipped with PIP-0. Replace with desired value PIP-3, 6, 9, 12, 15, 18, or 21.
GAIN CONTROL, TYPE AND RANGE	
LO-BAND	Manual 14 db
HI-BAND	Manual 14 db
AUTOMATIC OVERLOAD CONTROL	Available via plug-in Model OC-238
TUBE COMPLEMENT	(2) 6DJ8, (2) 6EJ7, (2) 12BY7A, (1) 6CB6
POWER SOURCE	117 v, 60 cps
POWER CONSUMPTION	63 watts
DIMENSIONS	14¼" L x 7½" W x 5¼" H
SHIPPING WEIGHT	12½ lbs.

*0 dbj = 1,000 microvolts across 75 ohms.

INSTALLATION

MOUNTING

Model 2300-A may be mounted in either the vertical or horizontal position on any flat surface. Be sure that the mounting location is such that sufficient ventilation and protection from the weather are provided for the amplifier.

ANTENNA CONNECTION

Model 2300-A may be used with any commercially available TV/FM antenna or any combination of antennas.

1. 75-ohm output antennas.
   a. Broad-band TV/FM antenna

      No accessory equipment required.

      Connect one end of a piece of RG-59/U cable (long enough to extend from the antenna output terminal to the 2300-A location) to the antenna output terminal and run cable to 2300-A location. Prepare cable end (see Fig. 2), attach an F-59A connector, and connect cable to INPUT fitting on 2300-A. Hand-tighten F-59A firmly and then wrench-tighten no more than 1/6 turn.

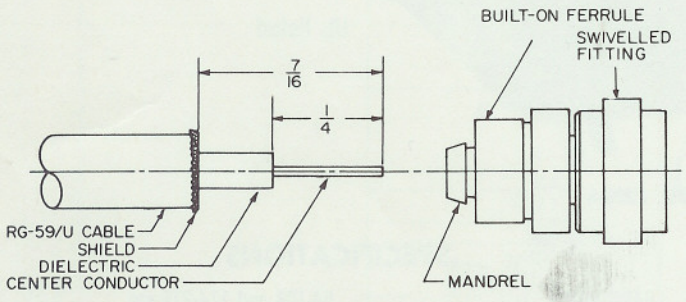


Fig. 2—RG-59/U Prepared for F-59A Male Connector

      Method: Prepare cable end and connect F-59A male connector to it. Remove 7/16″ of outer jacket without nicking shield. Fan back shield over outer jacket and trim off shield close to outer jacket. Remove ¼″ of dielectric without nicking center conductor. Without bending center conductor, scrape off any fuzz and inspect end for burrs. If present, trim with cutters. Push F-59A mandrel between cable dielectric and shield until built-on ferrule is completely over cable outer jacket. Crimp ferrule with Jerrold crimping tool Model PL-601 or PL-602.

   b. Lo-band TV/FM antenna and hi-band TV antenna
      Accessory equipment required—Jerrold VHF Cross-over Network Model LHS-76.

      Mount LHS-76 near 2300-A. Connect lo-band TV/FM antenna output to LOW fitting on LHS-76 via RG-59/U cable and connect hi-band TV antenna to HIGH fitting similarly. Connect COM fitting on LHS-76 to INPUT fitting on 2300-A via RG-59/U cable.

   c. Group of lo-band cut-to-channel yagis and hi-band cut-to-channel yagis

      Accessory equipment required—Jerrold Antenna Mixing Networks Models AMN-LO and AMN-HI, and Jerrold VHF Cross-over Network Model LHS-76.

      Combine the outputs of up to three non-adjacent lo-channel antennas with AMN-LO and the outputs of up to four non-adjacent hi-channels with AMN-HI. Combine the outputs of the AMN-LO and AMN-HI via an LHS-76 splitter and feed the combined outputs to the INPUT fitting on 2300-A. All interconnections via RG-59/U coaxial cable.

2. 300-ohm output antennas
   a. All broad-band antennas, groups of antennas, or antenna arrays

      Accessory equipment required—Jerrold 75-300 ohm Transformer Model TO-374 (mast-mounted).

      The output of TO-374 is connected to the INPUT fitting of 2300-A via RG-59/U cable.

   b. Groups of broad-band antennas or antenna arrays

      The outputs of all combinations of 300-ohm output antennas are most efficiently combined by using the proper Jerrold Antenna Mixing Networks Models TX in various combinations. These units may be mast-mounted singly or in groups between the antenna output and the input of transformer Model TO-374. Instruction Sheet 435-255 (shipped with all TX units) contains complete instructions.

EXTRA GAIN IN WEAK SIGNAL AREAS

If the antenna signals are very weak or the installer finds that the antenna must be located far away from the 2300-A location, it is recommended that a mast-mounted preamplifier (Model DSA-132 or DSA-202) be used to provide additional gain.

GROUNDING

A ground lug is provided on the front panel (lower left corner). Connect a piece of wire between this lug and a suitable ground.

USE OF PLUG-IN PADS

Model 2300-A is shipped with a PIP-0 pad in place. If further attenuation of lo-channel (2-6) signals is required, remove PIP-0 and replace with a PIP pad of the desired attenuation value. These pads are available in values of 3, 6, 9, 12, 15, 18, and 21 db.

AUTOMATIC OVERLOAD CONTROL

Model 2300-A is shipped with a shorting plug in the OC receptacle. Remove the plug and replace with Jerrold Model OC-238.

TILT CONTROLS

The unit is pre-aligned with a 6 db tilt in the lo-band (54-98 mc) and a 4 db tilt in the hi-band (174-216 mc). The tilt controls (L9 hi-band and L39 lo-band) may be adjusted through ports in the perforated cover of the amplifier. The port for the hi-band control is located nearest the front panel. Tilt control range is ±1.5 db.

DISTRIBUTION

Connection to splitters

The 39 db minimum gain of Model 2300-A provides ample signal for distribution purposes. The OUTPUT fitting of the 2300-A may be connected to a two-way splitter Jerrold Model 1592, a four-way splitter Jerrold Model 1514, or to an eight-way splitter Jerrold Model G-1518. Model 1592 provides two distribution lines with a signal at each output at least 35.5 db above the input to Model 2300-A. The signal at each of the four outputs of the 1514 will be at least 32 db above the 2300-A input and at each of the eight outputs of the G-1518 will be at least 29 db above the 2300-A input. An additional feature of the G-1518 is that it is equipped with new "Gamma" fittings which permit repeated, rapid connection and disconnection of any of the nine cables which may be connected to it.

MAINTENANCE

CHECKING INPUT AND OUTPUT LEVELS

All specifications for Jerrold preamplifiers and distribution amplifiers are listed. It is recommended that a calibrated Field Strength Meter, such as the Jerrold Model 704-B, be used to set the proper input and output voltages to the Model 2300-A. It is suggested that a record of the antenna signal available on each antenna, the output and input level of each amplifier in the system, and the input level to various TV receivers be made at the time of installation. If it then becomes necessary to locate faults in the system, the operator can refer to the original records of the system and easily locate the trouble.

TUBE CHANGING

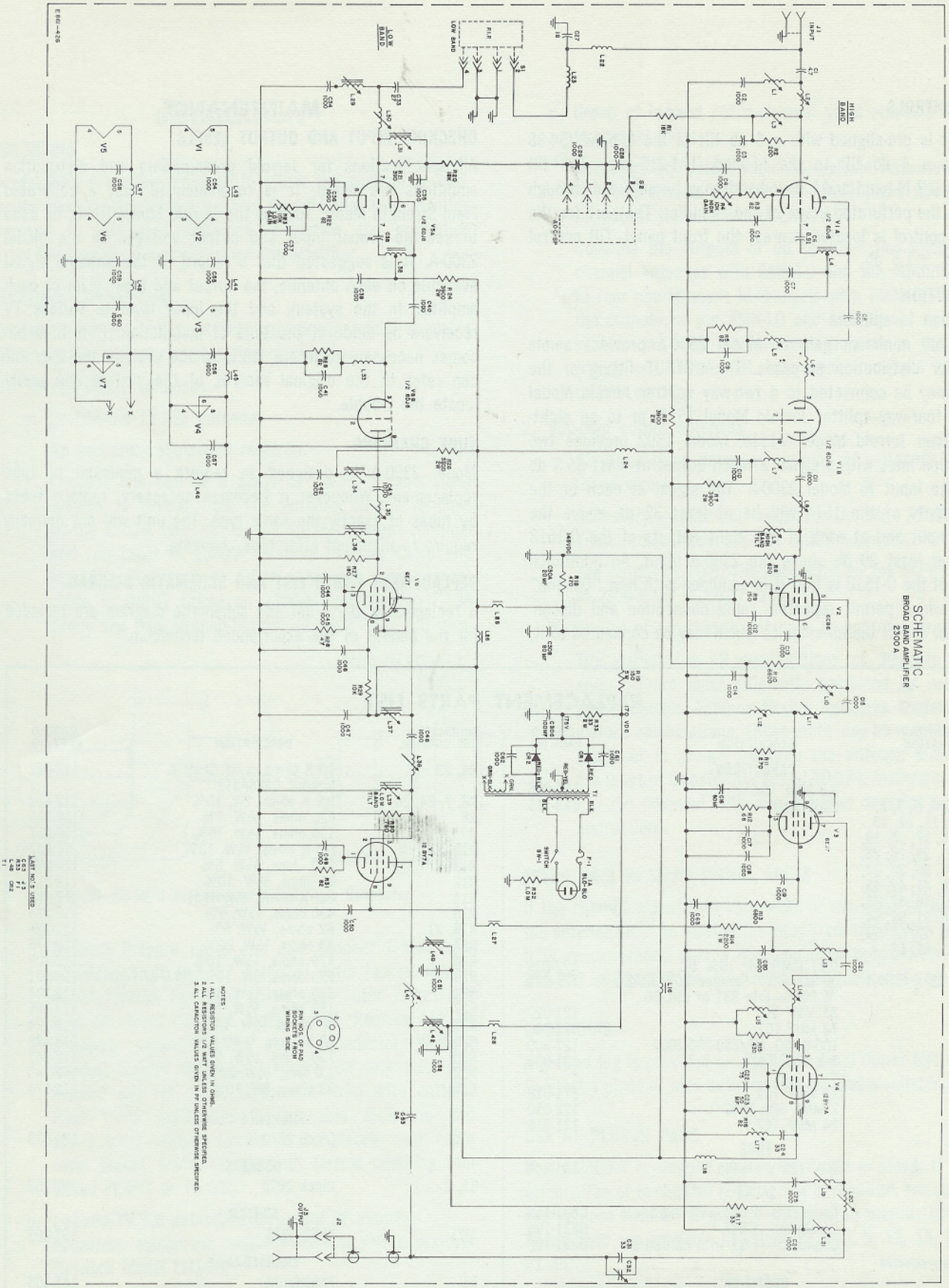
Model 2300-A is designed to require a minimum of tube replacement. Whenever it becomes necessary, replace tubes by tubes of exactly the same type. The unit will not normally require re-alignment after tube changing.

REPLACEMENT PARTS LIST AND SCHEMATIC DIAGRAM

A replacement parts list and schematic diagram are included for the benefit of the experienced technician.

REPLACEMENT PARTS LIST

SCHEMATIC DESIGNATION	DESCRIPTION	JERROLD PART NO.
	CAPACITORS	
C1	3.3 MMF TCZ	121-006
C2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 25, 26, 28, 29, 34, 35, 36, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63	1000 MMF	123-115
C6	0.91 MMF GIM 10% QC	122-029
C16, 23	50 MF 6 V— Sprague 30D133A1	127-033
C22	75 MMF—Erie 831 or CRL-DD	
C24	33 MMF TCZ	121-020
C27	18 MMF TCZ	121-046
C30	100-80-20 MF/250-200-200V	127-900
C31	3.3 MMF TCZ	121-006
C32	*	*
C33	27 MMF TCZ	121-018
C38	2 MMF GIM 10%	122-030
C53	24 MMF TCZ	121-016
	FUSE	
F1	1 A, 125 V Slo-Blo	101-344
	JACKS	
J1	Connector—F-61A with hardware	C821-155
J2	Connector—F-59A	B821-196
J3	Connector—F-81 with hardware	B821-108
*Factory-selected		
	RECTIFIER	
CR1, 2	Solitron CER-71	137-714
	RESISTORS	
R1, 20	18 K ohms, ½W, 10%	112-521
R2	200 ohms, ½W, 5%	112-272
R3, 5, 22, 25	82 ohms, ½W, 10%	112-227
R4, 23	10 K ohms, w/sl. Shaft & locknut CRL8A811	112-002
R6, 7, 24, 26	3.9 K ohms, 2W, 10%	112-439
R8	620 ohms, ½W, 5%	112-335
R9	150 ohms, ½W, 10%	112-257
R10, 13	6.8 K ohms, ½W, 10%	112-467
R11	270 ohms, ½W, 5%	112-287
R12	68 ohms, ½W, 10%	112-215
R14	2.2 K ohms, 1W, 10%	112-405
R15	430 ohms, ½W, 5%	112-314
R16, 31	82 ohms, ½W, 5%	112-224
R17	33 ohms, ½W, 20%	112-176
R18	470 ohms, ½W, 10%	112-320
R19	150 ohms, 5W, 10% PW-5 or Equal	113-051
R21	390 ohms, ½W, 5%	112-308
R27	180 ohms, ½W, 5%	112-266
R28	47 ohms, ½W, 10%	112-194
R29	10 K ohms, ½W, 10%	112-488
R30	750 ohms, ½W, 5%	112-347
R32	1.0 Meg, ½W, 20%	112-743
R33	33 ohms, 2W, 10%	112-175
	SHORTING PLUG	
	Cinch 2770 K	184-013
	SOCKETS	
S1, 2	Cinch 2675	182-103
	SWITCH	
SW1	SPDT SS26	162-002
	TRANSFORMER	
T1	Transformer	141-105
	TUBES	
V1, 5	6DJ8	131-329
V2	6CB6	131-313
V3, 6	6EJ7	131-340
V4, 7	12BY7A	131-403



WARRANTY

Each unit of Jerrold Equipment is warranted for 90 days against original factory imperfections in material and workmanship.

In the event any unit of equipment should fail in service during this period, pack the complete defective unit carefully, attach a letter stating the reasons the unit was believed to be defective, and return it to our Service Department, Jerrold Electronics Corp., 15th Street and Lehigh Avenue, Phila., Pa. 19132, prepaying transportation charges. It shall be repaired or replaced at no charge.

Such service or repairs as may be necessary as the result of abuse or accident are not included in the warranty. In the event of any service breakdowns after the warranty period, this unit may be returned for repairs at a nominal charge.

Data Subject to Change Without Notice

JERROLD ELECTRONICS · PHILADELPHIA, PENNSYLVANIA 19132

DISTRIBUTOR SALES DIVISION

JERROLD ELECTRONICS

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