

JERROLD

®

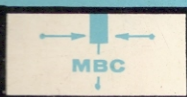
Instruction Manual

GENERAL PURPOSE

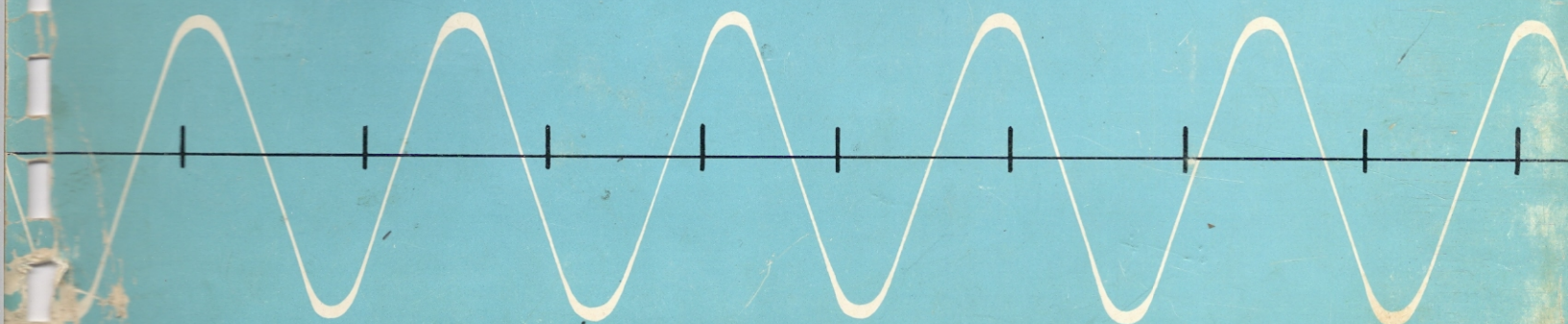
SWEEP GENERATORS

Models 601 and 602

JERROLD



**PRECISION INSTRUMENTS FOR
MEASUREMENTS BY COMPARISON**



SWEEP FREQUENCY GENERATOR

MODELS 601 AND 602

SERIES 1 THRU 3

Instruction Manual IP-PM-005.3



®

ELECTRONICS CORPORATION

INDUSTRIAL PRODUCTS DIVISION

THE JERROLD BUILDING, PHILADELPHIA 32, PA.

JERROLD

SWEEP FREQUENCY GENERATOR



**MODELS 601 AND 602
SERIES 1**



**MODELS 601 AND 602
SERIES 2 AND 3**

TABLE OF CONTENTS

	PAGE
Frontispiece	ii
General Description	1
Specifications	1-2
Circuit Description	3
Maintenance	4
V & R Measurements Chart	5
Replacement Parts Lists	6-8
Schematic Circuit Diagrams	11-14

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

LABORATORY OF PHYSICAL CHEMISTRY

CHICAGO, ILL.

REPORT OF THE LABORATORY OF PHYSICAL CHEMISTRY

FOR THE YEAR 1921

EDITED BY

PROFESSOR OF PHYSICAL CHEMISTRY

1922

CHICAGO, ILL.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

LABORATORY OF PHYSICAL CHEMISTRY

CHICAGO, ILL.

REPORT OF THE LABORATORY OF PHYSICAL CHEMISTRY

FOR THE YEAR 1922

EDITED BY

PROFESSOR OF PHYSICAL CHEMISTRY

CHICAGO, ILL.

1923

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

LABORATORY OF PHYSICAL CHEMISTRY

CHICAGO, ILL.

REF. ECO 2686

Addendum A3 to Instruction Manual 435-188.3

JERROLD

SWEEP FREQUENCY GENERATOR

MODELS 601 and 602

Change Parts List and Schematic Circuit Diagram:-

C-32 Qty. 1 to read: 3.3 pf TCZ, Jerrold Part #121-006

R-4 Qty. 1 to read: 39 ohms, 1/2 W, 5% Jerrold Part #112-182

JERROLD ELECTRONICS---INDUSTRIAL PRODUCTS DIVISION

PHILADELPHIA 32, PA.

CKE, January 1964.

All data subject to change without notice.

IP-PM-005-A1

JERROLD
SWEEP FREQUENCY GENERATOR
MODELS 601-R and 602-R

ADDENDUM TO INSTRUCTION MANUAL IP-PM-005

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE

JERROLD ELECTRONICS CORPORATION, INDUSTRIAL PRODUCTS DIVISION
THE JERROLD BUILDING, PHILADELPHIA 32, PA.

SWEEP FREQUENCY GENERATOR
MODELS 601-R and 602-R

DESCRIPTION

Jerrold rack-mounting sweep frequency generator models 601-R and 602-R are similar to the portable models 601 and 602, but their versatility is greatly enhanced by the following additional features:

1. A built-in MARKER AMPLIFIER and appropriate connectors allow the hook-up of external marker generators and permit to vary the amplitude of the markers displayed on an oscilloscope.
2. A built-in DETECTOR permits direct connection of the instrument to the vertical input of an oscilloscope.
3. An extended VARIABLE ATTENUATOR network for 1, 3, 6, 10 and 2 x 20 db permits to insert a large variety of attenuation values up to a maximum of 60 db.

Model 601-R covers a frequency range from 12 to 225 mc, Model 602-R covers a frequency range from 4 to 112 mc.

Both instruments are designed for 19" standard relay rack mounting.

OPERATIONAL CONTROLS AND CONNECTIONS

A. FRONT PANEL

<u>NAME</u>	<u>SCHEMATIC DESIGNATION</u>	<u>TYPE & POSITION</u>	<u>FUNCTION</u>
SWEEP WIDTH	R-35	Potentiometer CW and CCW	Controls the width of the sweep frequency.
CENTER FREQ.	R-31	Potentiometer CW and CCW	Controls the mean or resting frequency about which the oscillator sweeps.
ALC	R-9	Potentiometer CW and CCW	Provides fine adjustment of oscillator output level.
MARKER AMPLIFIER	R-64	Potentiometer CW and CCW	Provides adjustment of marker amplitude.
PHASE	R-26	Potentiometer CW and CCW	Controls and adjusts the phase between the driving voltage on the reactor of the sweep generator and the horizontal drive voltage to the oscilloscope.
BLANKING PUSH-PULL	SW-7	Push-pull switch mounted on shaft of R-26. PUSH PULL	Blanks return trace. No blanking.
POWER-OFF	SW-1	Toggle switch	Energizes and de-energizes the unit
FREQ. MCS/S	SW-2	11-position rotary switch	Selects one of 11 overlapping sweep frequency ranges.
ATTENUATOR	SW-4, 5, 6, 8, 9 and 10	Slide-switches	Insert attenuator networks to provide 1, 3, 6, 10 or 2 x 20 db, or any combination to obtain various attenuation values of up to 60 db.
DETECTOR	J-7, J-8	BNC (50 ohm) connectors	For connection of RF input, unused connector to be terminated.
RF OUT	J-6	BNC (50 ohm) connector	RF sweep output connector.

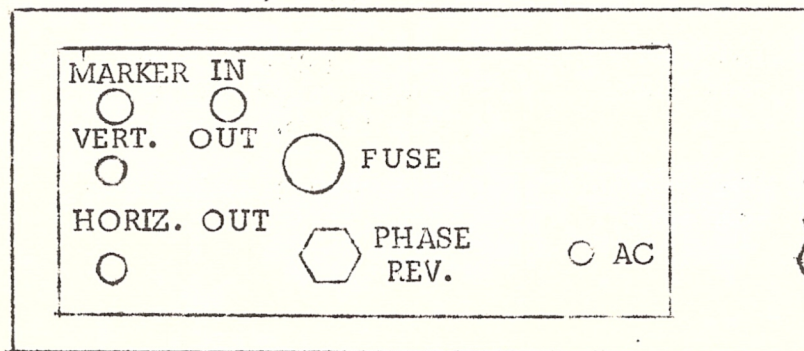
B. CHASSIS-MOUNTED CONTROLS

<u>NAME</u>	<u>SCHEMATIC DESIGNATION</u>	<u>TYPE & POSITION</u>	<u>FUNCTION</u>
TILT	C-12	Variable capacitor CW and CCW	Adjusts flatness of response curve displayed on oscilloscope
DET. MATCH	C-14	Variable capacitor CW and CCW	Adjusts frequency characteristics of diodes CR-1 and CR-2 to match those of diodes CR-4 and CR-5 of the built-in detector.
AGC LIMITER	R-69	Potentiometer CW and CCW	Limits the automatic gain control level (Factory-adjusted)
LIN	R-68	Potentiometer CW and CCW	Adjusts linearity of sweep width. (Factory-adjusted)

C. REAR OF CABINET

PHASE REV.	SW-3	Toggle switch	Transposes display of sweep on oscilloscope; left-to-right, or right-to-left.
MARKER IN	J-4, J-5	BNC (50 ohm) connectors	For connecting external marker generators
HORIZ. OUT	J-9	BNC (50 ohm) connector	For feeding horizontal deflection voltage to oscilloscope.
VERT. OUT	J-10	BNC (50 ohm) connector	For connecting to vertical input of oscilloscope.

LOCATION OF CONTROLS AT REAR OF CABINET



REPLACEMENT PARTS LIST

MODEL #601-R SERIES #1

RELEVANT DWG #861-328

NOTE: FOR MODEL 602-R COMPONENTS DIFFERING IN VALUES
FROM THOSE LISTED HERE FOR MODEL 601-R SEE TABLE ON
DWG #861-328.

<u>ITEM</u>	<u>JERROLD PART #</u>	<u>QTY.</u>	<u>SCHEMATIC DESIGNATION</u>	<u>MFR.'s NAME</u>	<u>MFR.'s NO.</u>	<u>DESCRIPTION</u>
<u>CAPACITORS</u>						
1	121-039	2	C-1, 37	Centralab.	TCZ1.8	1.8 uuf, ± 0.25 uuf 600V
2	121-006	1	C-2	Centralab.	TCZ3.3	3.3 uuf, ± 0.25 uuf 600V
3	121-009	1	C-3	Centralab.	TCZ6.8	6.8 uuf, ± 0.5 uuf, 600V
4	121-010	1	C-4	Centralab.	NPO8.2	8.2 uuf, ± 0.5 uuf, 600V
5	121-011	1	C-5	Centralab.	TCZ10	10 uuf, ± 0.5 uuf, 600V
6	121-013	1	C-6	Centralab.	TCZ15	15 uuf, $\pm 2\%$, 600V
7	121-014	1	C-7	Centralab.	TCZ20	20 uuf, $\pm 2\%$, 600V
8	121-019	1	C-8	Centralab.	TCZ30	30 uuf, $\pm 2\%$, 600V
9	121-024	1	C-9	Centralab.	TCZ47	47 uuf, $\pm 2\%$, 600V
10	121-030	1	C-10	Centralab.	TCZ75	75 uuf, $\pm 2\%$, 600V
11	129-108	4	C-11, 13, 16, 27	Erie	327	1000 uuf, $\pm 20\%$, 500V, feed-thru
12	128-505	2	C-12, 14	Erie	535	0.7-3.0 uuf, 300V trimmer
13	123-115	4	C-15, 24 39, 40	Erie	GP2-332	1000 uuf, 500-600V ceramic
14	129-154	2	C-17, 18	Erie	362	1500 uuf, $\pm 20\%$, 500V, feed-thru
15	123-113	1	C-19	Erie	GP2-331	470 uuf, $\pm 10\%$, 500-600V
16	127-016	1	C-20	Cornell Dubilier	BBR-12-150	12 uf, 150V, electrolytic
17	125-023	1	C-21	Sprague	Black Beauty	0.25 uf, 400V, paper molded.

<u>ITEM</u>	<u>JERROLD PART #</u>	<u>QTY.</u>	<u>SCHEMATIC DESIGNATION</u>	<u>MFR. 's NAME</u>	<u>MFR. 's NO.</u>	<u>DESCRIPTION</u>
18	125-026	1	C-22	Cornell Dubilier	PM6D47	4700 uuf, 600V, paper-molded
19	125-020	1	C-23	Sprague	2TM-P1	0.1 uf, 200V, paper-molded
20	129-200	5	C-25, 26 48, 54, 55	Allen Bradley	FA5C- 102W	1000 uuf, feed-thr
21	127-026	2	C-28, 29	Cornell Dubilier	BR2035T	20 uf, 350V, electrolytic
22	127-605	1	C-30A, B	Pyramid	TM-D-40- 350	40/40 uf, 350V dual-electrolytic
23	125-001	3	C-31, 34, 35	Aerovox	88W	0.047 uf, 400V, paper molded
24	125-013	2	C-32, 33	Cornell Dubilier	CUB451	0.01 uf, 400V, paper-molded
25	127-004	1	C-36	Pyramid	TD40-250	40 uf, 250V, electrolytic
26	123-101	1	C-38	Erie	GP2-331	25 uuf, $\pm 10\%$, 500-600V, ceramic
27	121-001	4	C-41, 44 61, 64	Centralab.	NPO-0.5	0.5 uuf, ± 0.25 uuf 600V
28	129-187	2	C-45, 57	Allen Bradley	FT series	50 uuf, feed-thru
29	123-111	3	C-46, 49, 53	Erie	GP series	330 uuf, 500-600V ceramic
30	124-034	3	C-47, 52, 59	Erie	817BPD	0.02 uf, 600V, ceramic
31	126-004	1	C-50	Mallory	MC241	300 uuf, $\pm 20\%$, 500V, mica
32	127-019	1	C-51	Sprague	Black Beauty Type	0.5 uf, 200V, electrolytic
33	123-122	1	C-56	Centralab.	HI-KAP	50 uuf, $\pm 10\%$, 600V, electrolytic
34	129-194	1	C-58	Allen Bradley	FT series	1000 uuf, feed-thru
35	121-061	2	C-66, 69	Centralab.	TCZ3.6	3.6 uuf, ± 0.25 uuf 600V
36	121-003	2	C-67, 68	Centralab.	TCZ1	1 uuf, ± 0.25 uuf, 600V

<u>ITEM</u>	<u>JERROLD PART #</u>	<u>QTY.</u>	<u>SCHEMATIC DESIGNATION</u>	<u>MFR.'s NAME</u>	<u>MFR.'s NO.</u>	<u>DESCRIPTION</u>
37	121-005	2	C-70, 71	Centralab	TCZ 2. 2	2. 2 uuf, ± 0.25 uuf 600V
<u>CRYSTAL DIODES</u>						
38	129-100	5	CR-1, 2, 3, 4, 5	GE	IN34	Germanium, point- contact
<u>FUSES</u>						
39	101-336 or 101-344	1	FS-1	Little Fuse	3AG	1 Amp., 125V, SLO-BLO, or 0.5 Amp., 250V, SLO-BLO
<u>CONNECTORS</u>						
40	188-103	9	J-1, 2, 3, 4, 5, 7, 8, 9, 10	Amphenol	31-102	BNC type UG-657/ chassis fitting
41	185-106	1	J-6	Amphenol	31-206	BNC type, bulk- head jack
<u>COILS</u>						
42	157-015	1	L-1	Electric Winding Co.	HE-23	Solenoid coil, sweep
43	109-103	1	L-2	Crowley	XR-7939	Iron core choke, filament
44	147-005	1	L-3	Jerrold	157-005	Choke coil, filament
45	143-101	1	L-4	Jerrold	143-101	Choke, filter
46	158-100	1	L-5	Jerrold	158-100	Coil, plate, 25 mH
<u>PILOT LIGHT</u>						
47	102-002	1	PL-1	GE	#47	6-8V, 0.15A, bayonet
<u>RESISTORS</u>						
48	112-506	2	R-1, 2	Allen Bradley	EB series	15K, 1/2W, $\pm 5\%$
49	112-380	1	R-3	Allen Bradley	EB series	1.5K, 1/2W, $\pm 5\%$
50	112-200	1	R-4	Allen Bradley	EB series	51 ohms, 1/2W, $\pm 5\%$
51	112-327	1	R-5	Allen Bradley	EB series	750 ohms, 1/2W, $\pm 5\%$

<u>ITEM</u>	<u>JERROLD PART #</u>	<u>QTY.</u>	<u>SCHEMATIC DESIGNATION</u>	<u>MFR. 's NAME</u>	<u>MFR. 's No.</u>	<u>DESCRIPTION</u>
52	112-614	4	R-7, 21, 48, 62	Allen Bradley	EB series	100K, 1/2W, ±10%
53	112-662	1	R-8	Allen Bradley	EB series	240K, 1/2W, ±5%
54	118-012	1	R-9	Ohmite	CU-5021	5K, 2W, potentiom
55	112-398	1	R-10	Allen Bradley	EB series	2K, 1/2W, ±5%
56	112-644	1	R-11	Allen Bradley	EB series	180K, 1/2W, ±5%
57	112-656	6	R-12, 14, 18, 27, 28, 59	Allen Bradley	EB series	220K, 1/2W, ±10%
58	112-668	1	R-13	Allen Bradley	EB series,	270K, 1/2W, ±5%
59	112-452	1	R-15	Allen Bradley	EB series	5.1K, 1/2W, ±5%
60	112-704	1	R-16	Allen Bradley	EB series	510K, 1/2W, ±5%
61	112-740	1	R-17	Allen Bradley	EB series	1M, 1/2W, ±10%
62	112-776	1	R-19	Allen Bradley	EB series	2M, 1/2W, ±5%
63	112-698	2	R-20, 38	Allen Bradley	EB series	470K, 1/2W, ±10%
64	113-005	1	R-22	Tru-Ohm	FRL series	1K, 10", wire-wound
65	113-021	1	R-23	Tru-Ohm	FRL series	5K, 10W, wire-wound
66	113-010	1	R-24	Tru-Ohm	FRL series	2.5K, 10W, wire-wound
67	112-143	1	R-25	Allen Bradley	EB series	18 ohms, 1/2W, ±10%
68	118-047	1	R-26	Chicago Tel. Supply	K-45	100K, ±30%, poten- tiometer, with push-pull switch
69	112-363	1	R-29	Allen Bradley	GB series	1K, 1W, ±10%
70	112-692	1	R-30	Allen Bradley	EB series	430K, 1/2W, ±5%
71	118-060	1	R-31	Chicago Tel. Supply	#35	250K, 1/2W, linear, 3/8 shaft & bushing
72	112-686	1	R-32	Allen Bradley	EB series	390K, 1/2W, ±5%
73	112-650	1	R-33	Allen Bradley	EB series	200K, 1/2W, ±5%
74	112-602	1	R-34	Allen Bradley	EB series	82K, 1/2W, ±5%
75	118-061	1	R-35, 36	Chicago Tel. Supply	#2-35	250K + 1M, dual potentiometer, 3/8 shaft & bushing.

ITEM	JERROLD PART #	QTY.	SCHEMATIC DESIGNATION	MFR.'s NAME	MFR.'s NO.	DESCRIPTION
76	112-818 or 112-821	1	R-37	Allen Bradley	EB series	4.3M, 1/2W, ±5% or 4.7M, 1/2W, ±5%
77	112-713	1	R-39	Allen Bradley	EB series	620K, 1/2W, ±5%
78	112-236	4	R-40, 42, 46, 47	Allen Bradley	EB series	100 ohms, 1/2W, ±10%
79	112-362	3	R-41, 43, 61	Allen Bradley	EB series	1K, 1/2W, ±10%
80	112-404	3	R-44, 60, 63	Allen Bradley	EB series	2.2K, 1/2W, ±10%
81	112-422	1	R-45	Allen Bradley	EB series	3.3K, 1/2W, ±5%
82	112-290	1	R49	Allen Bradley	EB series	270 Ω, 1/2W, ±10%
83	115-009	2	R-50, 51	Continental Carbon	CF-15 series	247.5Ω, 1/2W, ±1%
84	115-006	1	R-52	Continental Carbon	CF-15 series	71.15Ω, 1/2W, ±1%
85	115-005	4	R-53, 54, 55, 56	Continental Carbon	CF-15 series	61.1Ω, 1/2W, ±1%
86	115-007	2	R-57, 58	Continental Carbon	CF-15 series	96.25Ω, 1/2W, ±1%
87	118-014	1	R-64	Ohmite	CU-5041	500K, 2W, potentiometer
88	112-569	1	R-65	Allen Bradley	EB series	47K, 1/2W, ±5%
89	112-311	2	R-66, 67	Allen Bradley	EB series	390Ω, 1/2W, ±10%
90	118-008	1	R-68	Centralab	BA811- 1533	100K, potentiometer slot-lock, left side key
91	118-007	1	R-69	Chicago Tel. Supply	#45	1M, 1/4W, potentiometer
92	115-004	1	R-70	Continental Carbon	CF-15 series	37.35Ω, 1/2W, ±1%
93	115-003	1	R-71	Continental Carbon	CF-15 series	17.6Ω, 1/2W, ±1%
94	115-001	1	R-72	Continental Carbon	CF-15 series	5.77Ω, 1/2W, ±1%
95	115-008	2	R-73, 74	Continental Carbon	CF-15 series	150.5Ω, 1/2W, ±1%
96	115-010	2	R-75, 76	Continental Carbon	CF-15 series	292.4Ω, 1/2W, ±1%
97	115-012	2	R-77, 78	Continental Carbon	CF-15 series	870Ω, 1/2W, ±1%

RECTIFIERS

98	137-706	8	SiR-1 thru 8	Sarkes Tarzian	M-150	150mA, silicon diode
----	---------	---	--------------	-------------------	-------	----------------------

<u>ITEM</u>	<u>JERROLD PART #</u>	<u>QTY.</u>	<u>SCHEMATIC DESIGNATION</u>	<u>MFR. 's NAME</u>	<u>MFR. 's NO.</u>	<u>DESCRIPTION</u>
<u>SWITCHES</u>						
99	162-002	1	SW-1	Carling	T110B	SPST, Toggle
100	161-102	1	SW-2	Oak	87166-F6	Rotary, Wafer
101	162-008	1	SW-3	Carling	316-63	SPDT, Toggle
102	162-003	6	SW-4, 5, 6, 8, 9, 10	Stackpole	SS-50	DPDT, Slide
103	part of 118-047	1	SW-7, mounted on R-26	Chicago Tel. Supply	part of K-45	push-pull switch, part of R-26 potentiometer
<u>TRANSFORMERS</u>						
104	144-033	1	T-1	Jerrold	144-033	Reactor coil assembly
105	141-154	1	T-2	Jerrold	141-154	115/230V AC, 60/50 cps, power transformer
<u>TUBES</u>						
106	131-326	1	V1A, B	RCA	6BS8	Twin-triode, 9- pin, miniature
107	131-315	1	V-2	RCA	6CU5	Pentode, 7-pin, miniature
108	131-400	3	V-3A, B 4A, B 9A, B	RCA	12AT7	Twin-triode, 9- pin miniature
109	131-328	1	V-5	RCA	6K6	Pentode, 9-pin miniature
110	131-327	1	V-6	RCA	6CL6	Pentode, 9-pin miniature
111	132-100	2	V-7, 8	RCA	0A2	Voltage regulator, 9-pin miniature

ST. #435-188.3

IP-PM-005-A2

JERROLD

SWEEP FREQUENCY GENERATOR

MODELS 601 and 602

ADDENDUM A2 TO INSTRUCTION MANUAL 1P-PM-005

JERROLD ELECTRONICS CORPORATION - INDUSTRIAL PRODUCTS DIVISION

PHILADELPHIA 32, PA.

KEE, SEPT. 1963

See data subject to change without notice.

Page 1, para 1, after "11 overlapping ranges", continue:

as indicated on the front panel, with
a maximum variation of $\pm 5\%$ on
any one range.

para 2, delete: The horizontal output can be
completely phased through 360 degrees.
substitute: The horizontal output can
be phased through approx. 360 degrees.

SPECIFICATIONS

Delete all, substitute as follows: -

FREQUENCY RANGES

Model 601: 11 ranges from 12 mc max. on lowest range, to
225 mc min. on highest range.

Model 602: 11 ranges from 4 mc max. on lowest range, to
112 mc min. on highest range.

SWEEP WIDTH Variable from $\pm 1\%$ to $\pm 60\%$ of center
frequency.

RF OUTPUT RESPONSE (as measured with Jerrold Model D86 Detector)	Model 601: 0.5 volts rms, flat within $\pm 3/4$ db.
	Model 602: 2.5 volts rms, flat within $\pm 1/2$ db.

FREQUENCY LINEARITY	The instantaneous frequency corresponds to the instantaneous horizontal deflection voltage within $\pm 4\%$ of the p-p voltage at 2:1 sweep width.
---------------------	--

SOURCE IMPEDANCE	50 ohms																		
HORIZONTAL SWEEP OUTPUT	Sine voltage of line frequency with phasing over a range of approx. 360 degrees provided.																		
BLANKING	Push-pull front panel switch provides blanking of return trace or no blanking.																		
TUBE COMPLEMENT	<table border="0"> <tr> <td>V-1 RF Sweep Oscillator</td> <td>6BS8 (Model 601)</td> </tr> <tr> <td></td> <td>6992 (Model 602)</td> </tr> <tr> <td>V-2 Cathode Follower</td> <td>6CU5</td> </tr> <tr> <td>V-3 ALC</td> <td>12AT7</td> </tr> <tr> <td>V-4 Blanking</td> <td>12AT7</td> </tr> <tr> <td>V-5 Reactor Driver</td> <td>6K6</td> </tr> <tr> <td>V-6 Reactor Driver</td> <td>6CL6</td> </tr> <tr> <td>V-7 Neg. Voltage Regulator</td> <td>OA2</td> </tr> <tr> <td>V-8 Pos. Voltage Regulator</td> <td>OA2</td> </tr> </table>	V-1 RF Sweep Oscillator	6BS8 (Model 601)		6992 (Model 602)	V-2 Cathode Follower	6CU5	V-3 ALC	12AT7	V-4 Blanking	12AT7	V-5 Reactor Driver	6K6	V-6 Reactor Driver	6CL6	V-7 Neg. Voltage Regulator	OA2	V-8 Pos. Voltage Regulator	OA2
V-1 RF Sweep Oscillator	6BS8 (Model 601)																		
	6992 (Model 602)																		
V-2 Cathode Follower	6CU5																		
V-3 ALC	12AT7																		
V-4 Blanking	12AT7																		
V-5 Reactor Driver	6K6																		
V-6 Reactor Driver	6CL6																		
V-7 Neg. Voltage Regulator	OA2																		
V-8 Pos. Voltage Regulator	OA2																		
POWER REQUIREMENTS	75 watts approx., 115/230 volts ac, 50/60 cps.																		
FUSING	Type 3AG, 1 amp., 115v ac																		
DIMENSIONS	11 $\frac{1}{2}$ " H, 14 $\frac{1}{2}$ " D, 7 $\frac{3}{4}$ " W.																		
NET WEIGHT	22 lbs.																		
SHIPPING WEIGHT	31 $\frac{1}{2}$ lbs.																		

NOTES

Page 4, para 3, a. Equipment required, delete:

(1) Accurate VTVM

(1) T-type feed-thru connector (Jerrold
Model TO-20 or equivalent).

b. Alignment, (1), change to read:

Maximum output with ALC at least

0.5 volts rms on all ranges.

(3) delete sentence

"The response ----- Model 602", substitute:

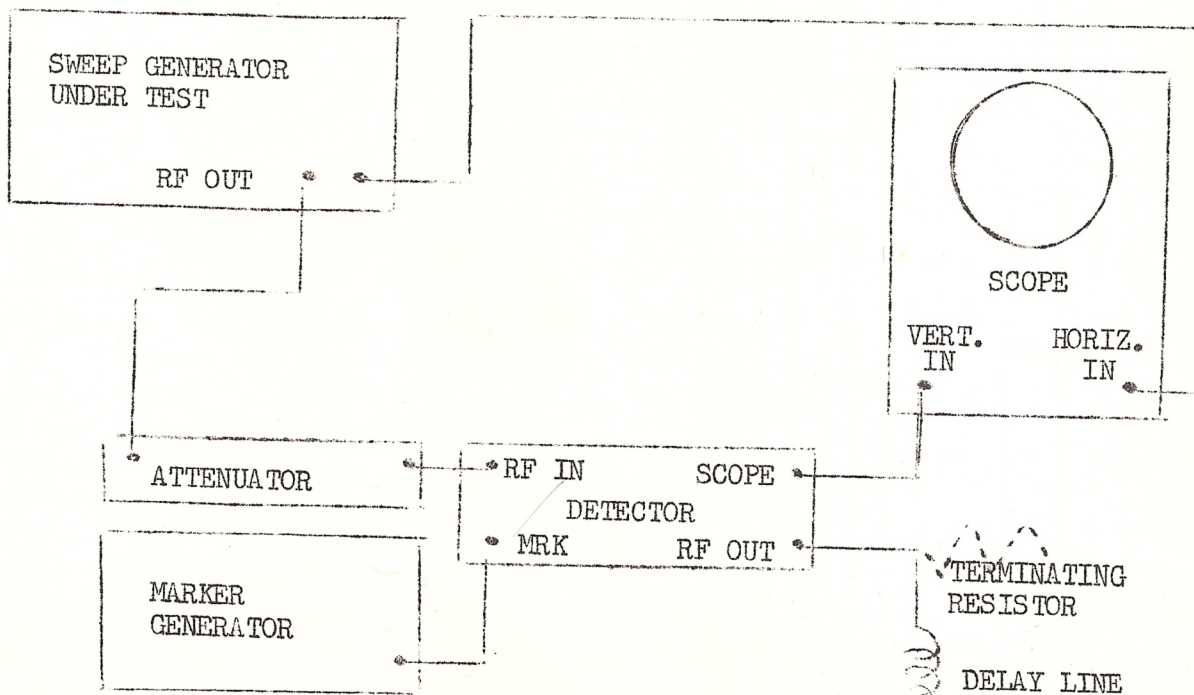
The response should be flat within $\pm 3/4$ db

at 0.5 volts rms for Model 601, and

$\pm 1/2$ db at 2.5 volts rms for Model 602.

HOOK-UP BLOCK DIAGRAM

Substitute the diagram below:



SWEEP FREQUENCY GENERATOR

Models 601 and 602 - Series 1 thru 3

GENERAL DESCRIPTION

Jerrold Models 601 and 602 are portable, wide-band sweep frequency generators for testing and aligning rf circuits in the frequency range from 4 to 225 megacycles. Model 601 operates in the range from 12 to 225 mc, Model 602 in the range from 4 to 112 mc. The frequencies covered by each model are divided into 11 overlapping ranges. The sweep-width in any range is continuously variable from a minimum of approx. $\pm 1\%$ to a maximum of $\pm 60\%$ of center frequency.

Both models feature a push-pull "Hartley" oscillator swept by a saturable reactor, and controlled by circuitry that levels the oscillator output to within 1 db over the entire sweep width. The horizontal output can be completely phased through 360

degrees. The instruments have means for blanking of the return trace, thus providing on the oscilloscope a zero reference for gain measurements.

A detector matching trimmer permits the matching of a variety of external detectors to the frequency characteristics of the internal ALC (automatic level control) to obtain accurate oscilloscope presentation.

The Jerrold Sweep Frequency Generator Models 601 and 602 combine the portability and ruggedness that are indispensable in a field instrument with the excellence of performance and versatility of application associated only with laboratory equipment.

SPECIFICATIONS

FREQUENCY RANGE	Model 601: 12 to 225 mc in 11 ranges. Model 602: 4 to 112 mc in 11 ranges.
SWEEP WIDTH	Variable from $\pm 1\%$ to $\pm 60\%$ of center frequency.
RF OUTPUT RESPONSE	Model 601: 1.0 volt RMS, flat within $\pm \frac{1}{2}$ db. Model 602: 2.5 volts RMS, flat within $\pm \frac{1}{2}$ db.
HORIZONTAL SWEEP OUTPUT	Sine voltage of 60 cps, complete phasing over a range of 360 degrees.
BLANKING	Model Series 1: Internal blanking. Model Series 2 & 3: Push-pull blanking switch on front panel.
POWER SOURCE	Model Series 1 & 2: 117 v ac, 60 cps. Model Series 3: 115/230 v ac, 60/50 cps.
POWER CONSUMPTION	Model Series 1: 70 watts. Model Series 2 & 3: 75 watts.
DIMENSIONS	11½" X 14½" X 7¾"
NET WEIGHT	22 lbs.
SHIPPING WEIGHT	31½ lbs.

TUBE COMPLEMENT

SERIES 1


Tube #	Function	Model	Tube Type
V-1	RF Sweep Oscillator	601 602	6BC8 6992
V-2	Cathode follower	both	6CU5
V-3	ALC	both	12AT7
V-4	Blanking	both	12AT7
V-5	Reactor Driver	both	6CU5
V-6	Negative Voltage Regulator	both	OA2
V-7	Positive Voltage Regulator	both	OA2

SERIES 2 & 3

Tube #	Function	Model	Series 2	Series 3
V-1	RF Sweep Oscillator	601 602	6BC8 6992	6BS8 6922
V-2	Cathode follower	both	6CU5	6CU5
V-3	ALC	both	12AT7	12AT7
V-4	Blanking	both	12AT7	12AT7
V-5	Reactor Driver	both	6K6	6K6
V-6	Reactor Driver	both	6CL6	6CL6
V-7	Negative Voltage Regulator	both	OA2	OA2
V-8	Positive Voltage Regulator	both	OA2	OA2

OPERATIONAL CONTROLS AND CONNECTIONS

A. FRONT PANEL

Name	Schematic Designation	Type and Position	Function
HORIZONTAL PHASING	R-28	Potentiometer cw and ccw	Controls and adjusts the phase between the driving voltage on the reactor of the sweep generator and the horizontal drive voltage to the oscilloscope.
BLANKING PUSH-PULL (series 2 and 3 only)	SW-6	Push-Pull Switch mounted on shaft of R-28 PUSH PULL	Blanks return trace. No blanking.
ATTENUATOR 20 DB IN 20 DB OUT (series 1)	SW-3	2-position switch IN OUT	Provides 20 db attenuation. No attenuation.
	SW-4	2-position switch IN OUT Both switches IN	Provides 20 db attenuation. No attenuation Provide 40 db attenuation.
ATTENUATOR 10 DB IN 20 DB OUT (series 2 and 3)	SW-3	2-position switch IN OUT	Provides 10 db attenuation. No attenuation.
	SW-4	2-position switch IN OUT Both switches IN	Provides 20 db attenuation. No attenuation. Provide 30 db attenuation.
AGC (series 1) ALC (series 2 and 3)	R-9	Potentiometer	Permits fine adjustment of oscillator output level.
NORMAL PHASE REVERSE	SW-2	Toggle Switch NORMAL REVERSE	Transposes the display on the oscilloscope, left-to-right or right-to-left.
CENTER FREQUENCY	R-38	Potentiometer cw and ccw	Controls the mean or resting frequency about which the oscillator sweeps.
POWER ON OFF	SW-1	Toggle Switch ON OFF	Energizes unit from ac source. De-energizes unit.
SWEEP-WIDTH	R-40	Potentiometer cw and ccw	Controls the width of the sweep frequency.
FREQUENCY MC/S	SW-5	11-position switch	Selects one of 11 overlapping sweep frequency ranges.
RF OUT	J-1	F-81 connector (75 ohm) BNC connector (50 ohm)	RF sweep output connector.
HORIZONTAL  (series 1 only)	J-2	Banana Plug Receptacle	Connection for cable carrying horizontal deflection voltage to oscilloscope.
	J-3	Banana Plug Receptacle	Common ground connection.
HORIZONTAL (series 2 and 3)	J-2	F-61 connector (75 ohm) BNC connector (50 ohm)	Same function as J-2 and J-3 above.

B. CHASSIS CONTROLS

DET. MATCH (series 3) TILT (series 1 & 2)	C-13	Trimmer	Adjusts frequency characteristics of CR-1 and CR-2 to match those of an external detector.
TILT (series 3 only)	C-37	Trimmer	Adjusts flatness of response curve displayed on oscilloscope.
LIN.	R-50	Potentiometer cw and ccw	Adjusts linearity of sweep width. FACTORY ADJUSTED! DO NOT TOUCH!
AGC LEVEL LIMIT	R-51	Potentiometer cw and ccw	Limits the automatic gain control level. FACTORY ADJUSTED! DO NOT TOUCH!

CIRCUIT DESCRIPTION

(Compare with schematic circuit diagrams and parts lists and note the variations in values of some components between Model 601 and Model 602, and the differences between models of series 1, 2, and 3.)

A. RF OSCILLATOR

The radio frequency oscillator uses a twin triode (V-1) in a push-pull circuit, tuned by T-1 and by one of the capacitors C-1 to C-10. Grid bias is provided by the current flowing through grid leak resistors R-1 and R-2. The frequency of oscillation is determined by one of the capacitors C-1 to C-10, switchable through SW-5, and by the variable inductance of the T-1 primary.

Output power from the oscillator passes from the coupling coil on T-1 (this coil is very tightly magnetically coupled to the primary windings) to:

- (a) a voltage measuring circuit R-3, C-12 and rectifier diodes CR-1 and CR-2.
- (b) a back terminating resistor R-4 and thence via an attenuator network to RF OUT jack J-1.

The rf oscillator will tune easily over any one of the 11 bands with the output symmetrical with respect to center frequency when properly adjusted.

B. SWEEP CIRCUIT

The variation in frequency of the sweep oscillator is essentially obtained by varying the inductance of the primary windings on T-1, which in turn is determined by the degree of saturation in the core of T-1. For that purpose the entire T-1 assembly is cradled between the poles of L-2. L-2 is in the plate circuit of tubes V-5 and V-6. The variations in plate current of these tubes create the magnetic field necessary to saturate the core of T-1. The variations in plate current are controlled by the variations in ac drive on the grids of both tubes. This driving voltage is provided by the high voltage secondary of line transformer T-2 via a resistive dropping network. A portion of this voltage is fed to R-40 which acts as sweep width control.

C. CENTER FREQUENCY

The center frequency is controlled by varying the bias of V-5 and V-6. The amount of variation of bias is limited by R-41 (ganged with R-40) in order to hold the display to the useful portion of the sweep oscillator output. R-38, in series with R-41, then provides sufficient bias variation to adjust the center frequency within the range used. The supply voltages to both controls are regulated by VR tubes to provide stability.

D. OUTPUT LEVEL

In order to obtain a voltage output level which is constant with frequency, two diodes CR-1 and CR-2 (see par. A.a), acting as voltage doubler rectifiers, produce a dc voltage the amplitude of which is a measure of the rf voltage impressed on capacitor C-12. This dc voltage is filtered by C-15 and C-16 and applied to the grid of V-3A. V-3A and V-3B is a twin triode connected as a two-stage direct-coupled voltage amplifier. Its plate is connected to the grid of cathode follower V-2. The output of V-2 provides, via T-1, the plate supply for V-1. A delay bias control R-9 (ALC) in the return lead of CR-2 permits to vary the setting of the average voltage around

which the control circuit operates. It thus serves as a fine adjustment for the oscillator rf sweep output voltage.

E. OUTPUT AMPLITUDE SETTING

To further reduce the output level of the sweep generator, as may sometimes be necessary when it is desired to align sensitive equipment, an additional attenuator network has been incorporated in the sweep generator. The attenuation components can be switched in by either one or both switches SW-3 and SW-4. R-9 can still be employed to provide additional fine adjustment of the rf output level.

F. BLANKING CIRCUIT

In many measurement procedures it is very convenient if the oscillator can be turned off periodically to establish the zero output reference level for the circuit under measurement. Models 601 and 602 series 2 and 3 have a built-in blanking circuit which can be turned on and off by a push-pull switch SW-6 mounted on HORIZONTAL PHASING control R-28 (refer to Controls Chart). The essential part of the blanking circuit is a phase shifting network in the input to the screen grid of tube V-4A. This network is necessary to assure that the blanking of the output will occur at the extreme high frequency excursion of the oscillator, and will be removed at the extreme low frequency excursion of the oscillator. Tube V-4 generates a square wave which is applied to the automatic gain control circuit at tube V-2. This square wave is used to achieve blanking by periodically cutting off the plate current to V-2, thus removing all B+ from the oscillator tube V-1 and therefore reducing the oscillator output to zero.

G. HORIZONTAL SWEEP FOR OSCILLOSCOPE

Models 601, 602 incorporate a horizontal sweep circuit that insures the oscilloscope display will stay in phase with the frequency variations measured.

The sweep of the oscilloscope then becomes a true frequency reference. The horizontal sweep voltage is taken from windings on transformer T-2 and passed through a phase reversing switch SW-2 and a phasing network C-27, C-28, C-29, R-28, R-29, and R-30 to the output connector J-2 and thence via shielded cable to the oscilloscope. R-28 acts as HORIZONTAL PHASING control. Thus the horizontal output may be adjusted continuously in phase through 180 degrees, or the phase may be reversed 180 degrees and then readjusted by R-28.

H. DETECTOR MATCH AND TILT CONTROL

All models 601 and 602 incorporate a variable capacitor C-13 whose function it is to permit the matching of all external detectors with the internal AGC detectors of the sweep generators. C-13 is accessible under a plug button at the side of the housing. In older models it is located on the right side of the housing as viewed from the front panel, in later series on the left side. In addition, in later models, a variable capacitor C-37 has been added to permit further adjustment for flatness in case an oscilloscope display appears slightly tilted. C-37 is accessible from the chassis top.

MAINTENANCE

GENERAL

Models 601 and 602 have been engineered to provide accurate measurements and to give trouble-free long life service, whether used in the field or as bench instruments. Components have been carefully selected and tested and no maintenance problems should arise if the instruments are used properly and not subjected to abusive handling.

TUBE REPLACEMENT

Except for tube V-1, replacement of one of the other tubes will not critically affect the accuracy of the instrument.

RE-ALIGNMENT AFTER REPLACING V-1

a. Equipment required:

- (1) Laboratory type oscilloscope
- (1) Accurate VTVM
- (1) Marker generator, capable of covering the required frequency range.
- (1) Diode detector probe, capable of covering the required frequency range.
- (1) Variable attenuator
- (1) Delay line
- (1) T-type feed-thru connector (Jerrold Model TO-20, or equivalent)
- (1) Terminating resistor (50 ohm or 75 ohm, as necessary)

For hook-up see diagram below:

b. Alignment

After connecting the equipment as shown in the hook-up diagram, allow 20-30 minutes for warm-up, then check for:

- (1) Maximum output with ALC at least 0.7 volts rms on all ranges.
- (2) Sweep width to cover at least the range indicated for each switch position.
- (3) With delay line replaced by terminating resistor, check for flatness at full sweep width on each range. The response should be flat within $\pm \frac{1}{2}$ db at 1.0 volt rms for Model 601, and 2.5 volts for Model 602.

SATURABLE REACTOR

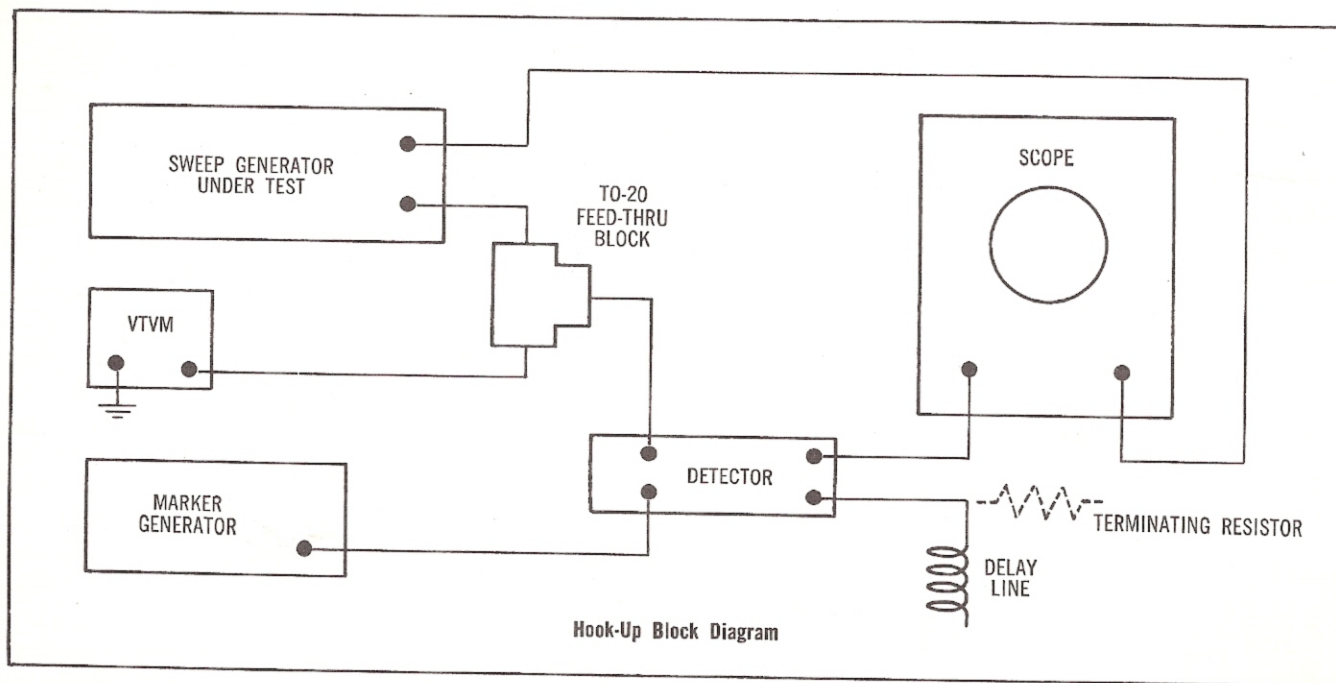
If the saturable reactor section does not function, even after replacing tube V-1, no attempt should be made to repair this circuit. Return the instrument to Jerrold Electronics Corporation, Service Division.

SERVICE

The Jerrold Service Division will effect prompt service on any instrument returned to the factory. For that purpose it is essential that each instrument so returned be accompanied by its identification tag giving the unit's serial number. Describe all characteristics of the equipment failure. Pack carefully and ship prepaid via express.

VOLTAGE AND RESISTANCE MEASUREMENTS

The voltage and resistance measurements charts given will be useful when checking out the instrument.



VOLTAGE AND RESISTANCE MEASUREMENTS CHART

TUBE PIN #	VOLTAGE								RESISTANCE							
	6BS8 or 6922	6CU5	12AT7	12AT7	6K6	6CL6	OA2	OA2	6BS8 or 6922	6CU5	12AT7	12AT7	6K6	6CL6	OA2	OA2
	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8
1	25	25	—50	50	0	0	0	150	INF.	INF.	450 K*	700 K*	10	0	0	250 K*
2	.25	N.C.	—5	—1	6.3 ac	—5	—150	0	7 K	N.C.	450 K*	1.5 M	0	400 K	8 K	0
3	0	6.3 ac	0	0	200	125	N.C.	N.C.	0	0	0	0	250 K*	250 K*	N.C.	N.C.
4	6.3 ac	0	6.3 ac	6.3 ac	150	0	N.C.	N.C.	0	0	0	0	250 K*	0	N.C.	N.C.
5	0	—50	6.3 ac	6.3 ac	—5	6.3 ac	0	150	0	450 K*	0	0	400 K	0	0	250 K*
6	25	250	—5	—50	75	200	N.C.	N.C.	INF.	250 K*	450 K*	450 K*	200 K*	250 K*	N.C.	N.C.
7	.25	250	—150	—175	0	0	—150	0	7 K	/	15 K	500 K	0	0	8 K	0
8	0	/	—150	—150	0	N.C.	—150	0	0	/	12 K	8 K	0	N.C.	/	/
9	0	/	0	0	/	N.C.	/	/	0	/	0	0	/	N.C.	/	/

NOTES: 1. All measurements made with all controls in minimum counter-clockwise position, BLANKING ON (push).
2. Resistances marked * will vary with capacitor charge.

REPLACEMENT PARTS

The replacement parts lists appended serve for quick identification of major equipment components and their values. When ordering such parts from Jerrold Electronics Corporation, give the instrument's serial number, the Jerrold part number, and the description as quoted on the parts list.

NOTES:

1. All item numbers with suffix "a" refer to Model 602, indicating the value as it differs from that of the same circuit component used in Model 601 (compare with table on schematic circuit diagram).
2. For variations in the values of circuit components between instruments of 50 ohms impedance and those of 75 ohms impedance, see the second table on the schematic circuit diagram.
3. A separate parts list is given for series 1 and series 2 models, listing those components which had different values from those in series 3 models.

REPLACEMENT PARTS LIST
MODELS 601 AND 602, SERIES 3, IMPEDANCE 50 OHMS

Item	JERROLD Part #	QTY	Schematic Designation	Mfr's Name	Mfr's #	Description
CAPACITORS						
1	121-039 (Model 601 only)	1	C-1	Centralab	TCZ-1.8	1.8 uuf, $\pm .25$ uuf, 600 v
2	121-006	1	C-2	Centralab	TCZ-3.3	3.3 uuf, $\pm .25$ uuf, 600 v
2a	121-005	1		Centralab	TCZ-2.2	2.2 uuf, $\pm .25$ uuf, 600 v
3	121-009	1	C-3	Centralab	TCZ-6.8	6.8 uuf, $\pm .5$ uuf, 600 v
3a	121-008	1		Centralab	TCZ-5	5 uuf, $\pm .5$ uuf, 600 v
4	121-010	1	C-4	Centralab	TCZ-8.2	8.2 uuf, $\pm .5$ uuf, 600 v
5	121-011	1	C-5	Centralab	TCZ-10	10 uuf, $\pm .5$ uuf, 600 v
5a	121-012	1		Centralab	TCZ-12	12 uuf, $\pm 2\%$, 600 v
6	121-013	1	C-6	Centralab	TCZ-15	15 uuf, $\pm 5\%$, 600 v
6a	121-046	1		Centralab	TCZ-18	18 uuf, $\pm 5\%$, 600 v
7	121-014	1	C-7	Centralab	TCZ-20	20 uuf, $\pm 5\%$, 600 v
7a	121-016	1		Centralab	TCZ-24	24 uuf, $\pm 2\%$, 600 v
8	121-019	1	C-8	Centralab	TCZ-30	30 uuf, $\pm 2\%$, 600 v
8a	121-021	1		Centralab	TCZ-36	36 uuf, $\pm 2\%$, 600 v
9	121-024	1	C-9	Centralab	TCZ-47	47 uuf, $\pm 2\%$, 600 v
9a	121-028	1		Centralab	TCZ-62	62 uuf, $\pm 2\%$, 600 v
10	121-030	1	C-10	Centralab	TCZ-75	75 uuf, $\pm 2\%$, 600 v
10a	121-036	1		Centralab	TCZ-130	130 uuf, $\pm 2\%$, 600 v
11	123-115	2	C-12, 30	Erie	GP 2-331 series	1000 uuf, $\pm 20\%$, ceramic
12	128-505	2	C-13, 37	Erie	535	Trimmer, 7-3 uuf, 350 v
13	129-108	4	C-14, 31, 34, 35	Erie	327	1000 uuf, $\pm 20\%$, 600 v
14	129-154	2	C-15, 16	Erie	362	1500 uuf, $\pm 20\%$, 500 v
15	123-111	1	C-17	Erie	GP series	470 uuf, $\pm 10\%$, 600 v, ceramic
15a	123-237	1		Centralab	D6-751	750 uuf, $\pm 20\%$, 600 v
16	127-016	1	C-18	Cornell-Dubilier	BBR-12-150	12 uf, 150 v, electrolytic
17	125-026	1	C-19	Cornell-Dubilier	PM-6D-47	4700 uuf, 600 v
18	125-020	1	C-20	Sprague	2TM-P1	0.1 uf, 200 v
19	127-026	2	C-21, 22	Cornell-Dubilier	BR-2035-T	20 uf, 250 v, electrolytic
20	125-001	3	C-23, 24, 27	Sprague	67 P47304	0.47 uf, 400 v, paper molded
21	127-605	1	C-25, 26 (Dual)	Pyramid	TM-D40-350	40/40 uf, 350 v, electrolytic
22	125-013	2	C-28, 29	Cornell-Dubilier	CUB-4S1	.01 uf, 400 v, paper molded
23	121-038	1	C-32	Centralab	TCZ-1.2	1.2 uuf
24	121-040	1	C-33	Centralab	TCZ-2.7	2.7 uuf
25	121-005	1	C-36	Centralab	TCZ-2.2	2.2 uuf, $\pm .25$ uuf, 600 v
26	121-008	1	C-38	Centralab	TCZ-5	5 uuf, $\pm .5$ uuf, 600 v
27	124-034	1	C-39	Centralab	TCZ-02	.02 uf, ceramic disc
CRYSTAL DIODES						
28	139-100	2	CR-1, 2	Kemtron	IN34	Germanium, point-contact
FUSE						
29	101-344	1	FS-1	SLO-BLO	3 AG	1A/125 v
CONNECTORS						
30	185-106	1	J-1	Amphenol	31-206	BNC type
31	188-103	1	J-2	Amphenol	31-102	BNC type
CHOKE COILS						
32	143-101	1	L-1	Jerrold	143-101	special
33	157-015	1	L-2	Electrical Winding Co.	HE-23	solenoid
34	157-005	1	L-3	Jerrold	157-005	filament choke
35	109-103	1	L-4	Crowley	XB-7938	filament choke
PILOT LIGHT						
36	102-002	1	PL-1	GE	#47	6.3 v ac, 300 ma
RESISTORS NOTE: all resistors $\frac{1}{2}$ w and $\pm 5\%$ unless otherwise stated.						
37	112-506	2	R-1, 2	Allen-Bradley	EB series	15 K
38	112-380	1	R-3	Allen-Bradley	EB series	1500 Ω
39	112-200	1	R-4	Allen-Bradley	EB series	51 Ω
40	112-347	1	R-5	Allen-Bradley	EB series	750 Ω
41	112-614	2	R-6, 20	Allen-Bradley	EB series	100 K, $\pm 10\%$
42	112-398	1	R-7	Allen-Bradley	EB series	2 K
43	112-644	1	R-8	Allen-Bradley	EB series	180 K
44	118-012	1	R-9	Ohmite	CU-5021	Pot. 5 K, 2 w, $\frac{3}{8}$ " shaft & bush.
45	112-662	1	R-10	Allen-Bradley	EB series	240 K

REPLACEMENT PARTS LIST **MODELS 601 AND 602, SERIES 3, IMPEDANCE 50 OHMS**

Item	JERROLD Part #	QTY	Schematic Designation	Mfr's Name	Mfr's #	Description		
46	112-656	5	R-11, 13, 17, 29, 30	Allen-Bradley	EB series	220 K, $\pm 10\%$		
47	112-668	1	R-12	Allen-Bradley	EB series	270 K, $\pm 10\%$		
48	112-452	1	R-14	Allen-Bradley	EB series	5100 Ω		
49	112-704	1	R-15	Allen-Bradley	EB series	510 K		
50	112-713	1	R-16	Allen-Bradley	EB series	620 K, $\pm 10\%$		
51	112-776	1	R-18	Allen-Bradley	EB series	2 M		
52	112-698	2	R-19, 42	Allen-Bradley	EB series	470 K, $\pm 10\%$		
53	113-005	1	R-21	Tru-Ohm	FRL series	1 K, 10 w, $\pm 5\%$, wirewound		
54	113-021	1	R-22	Tru-Ohm	FRL series	5 K, 10 w, wirewound		
55	112-650	1	R-23	Allen-Bradley	EB series	200 K		
56	112-602	1	R-24	Allen-Bradley	EB series	82 K		
57	113-010	1	R-25	Tru-Ohm	FRL series	2.5 K, 10 w, wirewound		
58	112-110	1	R-26	Allen-Bradley	EB series	10 Ω , $\pm 10\%$		
59	112-198	1	R-27	Allen-Bradley	GB series	47 Ω , 1 w, $\pm 20\%$		
60	118-047	1	R-28	Chicago	K-45	Pot. 100 K, $\pm 30\%$, linear taper, with push-pull switch		
61	115-006	1	R-31	Continental Carbon	CF 15 series	71.15 Ω , $\frac{1}{2}$ w, $\pm 1\%$ depos. carbon		
62	115-009	1	R-32	Continental Carbon	CF 15 series	247.5 Ω , $\frac{1}{2}$ w, $\pm 1\%$ depos. carbon		
63	115-007	2	R-33, 34	Continental Carbon	CF 15 series	96.25 Ω , $\frac{1}{2}$ w, $\pm 1\%$, depos. carbon		
64	115-005	2 1	R-35, 36 R-37	Continental Carbon	CF 15 series	61.11 Ω , $\frac{1}{2}$ w, $\pm 1\%$, depos. carbon		
65	112-692			Allen-Bradley	EB series	430 K		
66	118-060	1 1	R-38 R-39	Chicago Tel. Suppl.	series 35	Pot. 250 K, $\frac{1}{2}$ w, linear taper, $\frac{3}{8}$ " shaft & bush.		
67	112-686			Allen-Bradley	EB series	390 K		
68	118-061	2	R-40, 41	Chicago Tel. Suppl.	series 2-45	Dual Pot. 250 K + 1 M, $\frac{1}{4}$ w, linear taper, $\frac{3}{8}$ " shaft & bush.		
69	112-740	1	R-43	Allen-Bradley	EB series	1 M, $\pm 10\%$		
70		1	R-44			4.3 or 4.7 M (factory selected for each unit)		
71	112-236	2	R-45, 48	Allen-Bradley	EB series	100 Ω		
72	112-362	2	R-46, 47	Allen-Bradley	EB series	1 K, $\pm 10\%$		
73	112-254 (model 602 only)	1	R-49 (replaces L-4 in M. 601)	Allen-Bradley	EB series	150 Ω		
74	118-008	1	R-50	Centralab	Radiohm BA-811-1533	Pot. 100 K, $\frac{3}{8}$ " slotted shaft w. locking bushing		
75	118-077	1	R-51	Chicago Tel. Suppl.	series 45	Pot. 1 M, $\frac{1}{4}$ w, $\frac{3}{8}$ " slotted shaft & bushing		
						RECTIFIERS		
76	137-706	4	SiR-1, 2, 3, 4	Sarkes-Tarzian	M-150	150 mA, Silicon diodes		
						SWITCHES		
77	162-001	1	SW-1	Carling	T-110B	SPST, Toggle		
78	162-008	1	SW-2	Carling	316-63	SPDT, Toggle		
79	162-003	2	SW-3, 4	Stackpole	SS-50	DPDT, Slide		
80	161-102	1	SW-5	Oak	87166-F6	Wafer		
81	part of 118-047	1	SW-6	Chicago Tel. Suppl.		Push-Pull (part of pot. R-28)		
						TRANSFORMERS		
82	144-031	1	T-1	Jerrold	144-031	Reactor coil assembly		
83	141-154	1	T-2	Jerrold	141-154	115/230 v ac, 60/50 cps Power Transformer		
						TUBES		
84	131-326	1	V-1	RCA	6BS8	Twin-Triode, 9-pin, miniature		
84a	131-602	1		Amperex	6922	Twin-Triode, 9-pin, miniature		
85	131-315	1	V-2	RCA	6CU5	Pentode, 7-pin, miniature		
86	131-400	2	V-3, 4	RCA	12AT7	Twin-Triode, 9-pin, miniature		
87	131-328	1	V-5	RCA	6K6	Pentode, 9-pin, miniature		
88	131-327	1	V-6	RCA	6CL6	Pentode, 9-pin, miniature		
89	132-100	2	V-7, 8	RCA	0A2	Voltage Regulator, 7-pin miniature		

REPLACEMENT PARTS LIST
MODELS 601 AND 602, SERIES 1 AND 2
LISTING COMPONENTS WITH VALUES DIFFERING FROM THOSE IN SERIES 3 MODELS

Item	JERROLD Part #	QTY	Schematic Designation	Mfr's Name	Mfr's #	Description		
CAPACITORS								
2	121-040	1	C-2	Centralab	TCZ-2.7	2.7 uuf, $\pm .25$ uuf, 600 v		
3	121-008	1	C-3	Centralab	TCZ-5	5 uuf, $\pm .5$ uuf, 600 v		
4	121-041	1	C-4	Centralab	TCZ-7.5	7.5 uuf, $\pm .5$ uuf, 600 v		
5	121-042	1	C-5	Centralab	TCZ-9.1	9.1 uuf, $\pm .5$ uuf, 600 v		
6	121-012	1	C-6	Centralab	TCZ-12	12 uuf, $\pm 2\%$, 600 v		
7	121-046	1	C-7	Centralab	TCZ-18	18 uuf, $\pm 5\%$, 600 v		
8	121-018	1	C-8	Centralab	TCZ-27	27 uuf, ± 2 uuf, 600 v		
9	121-022	1	C-9	Centralab	TCZ-39	39 uuf, ± 2 uuf, 600 v		
10	121-028	1	C-10	Centralab	TCZ-62	62 uuf, $\pm 2\%$, 600 v		
	121-006	1	C-11	Centralab	TCZ-3.3	3.3 uuf, $\pm .25$ uuf, 600 v NOTE: C-11 has been eliminated in series 3 models.		
		1 each	C-32, 33, 36, 37, 38, 39			were not used in series 1 and 2 models		
CONNECTORS								
30	F-81	1	J-1	Jerrold	F-81	Feed-thru connector for 75 ohm version, both models 601 & 602		
31	F-6	1	J-2	Jerrold	F-61	Chassis connector for 75 ohm version, both models 601 & 602		
RESISTORS								
39	112-221	1	R-4	Allen-Bradley	EB series	75 Ω , $\frac{1}{2}$ w, $\pm 5\%$ for both models, 75 ohm version		
45	112-599	1	R-10	Allen-Bradley	EB series	75 K, $\frac{1}{2}$ w, $\pm 5\%$		
45a	112-620	1	R-10	Allen-Bradley	EB series	110 K, $\frac{1}{2}$ w, $\pm 5\%$		
50	112-740	2	R-16, 17	Allen-Bradley	EB series	1 M, $\frac{1}{2}$ w, $\pm 10\%$		
54	113-010	1	R-22	Tru-Ohm	FRL series	2.5 K, 10 w, wirewound		
56	112-662	1	R-24	Allen-Bradley	EB series	240 K, $\frac{1}{2}$ w, $\pm 5\%$		
61	112-212	1	R-31	Allen-Bradley	EB series	68 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
61a	112-242	1		Allen-Bradley	EB series	110 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
62	112-284	1	R-32	Allen-Bradley	EB series	240 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
62a	112-305	1		Allen-Bradley	EB series	360 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
63	112-233	2	R-33, 34	Allen-Bradley	EB series	100 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
63a	112-254	2		Allen-Bradley	EB series	150 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
64	112-209	2	R-35, 36	Allen-Bradley	EB series	62 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
64a	112-230	2		Allen-Bradley	EB series	91 Ω , $\frac{1}{2}$ w, $\pm 5\%$		
65	112-587	1	R-37	Allen-Bradley	EB series	62 K, $\frac{1}{2}$ w, $\pm 5\%$		
67	112-488	1	R-39	Allen-Bradley	EB series	10 K, $\frac{1}{2}$ w, $\pm 5\%$		
69	112-788	1	R-43	Allen-Bradley	EB series	2.4 M, $\frac{1}{2}$ w, $\pm 10\%$		
70	112-830	1 1 each	R-44 R-50, 51	Allen-Bradley	EB series	5.1 M, $\frac{1}{2}$ w, $\pm 5\%$ were not used in series 1 and 2 models		
TRANSFORMERS								
82	144-030	1	T-1	Jerrold	144-030	Reactor coil assembly (model 601 only)		
TUBES								
84	131-310	1	V-1	RCA	6BC8	Twin-Triode, 9-pin miniature (model 601 only)		
87	131-315	1	V-5	RCA	6CU5	Pentode, 7-pin miniature (series 1 only)		
88	132-100	2	V-6, 7	RCA	OA2	Voltage regulator, 7-pin miniature (series 1 only) NOTE: No 6CL6 tube was used in series 1. See specifications.		

Warranty

1. The Manufacturer warrants this test equipment, including all its component parts (except tubes, semi-conductors and relays), to be free from defects in material and workmanship under normal use and service, its obligations being limited to making good at its factory any part or parts so warranted which shall within one year after delivery by the Manufacturer be returned to it with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been thus defective.
2. The benefit of this warranty shall not apply to any instrument or part thereof which shall have been repaired or altered outside of a repair unit, authorized or approved by the Manufacturer, in any way so as in the judgment of the Manufacturer to affect its stability and reliability, nor which has been subject to misuse, neglect, accident or improper application.
3. The Manufacturer disclaims any warranty other than as specifically set forth herein, and may discontinue models or alter their specifications without any obligation to incorporate any modifications in equipment previously sold.

TO: [illegible] FROM: [illegible]

SUBJECT: [illegible]

DATE: [illegible]

BY: [illegible]

RE: [illegible]

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

8. [illegible]

9. [illegible]

10. [illegible]

11. [illegible]

12. [illegible]

13. [illegible]

14. [illegible]

15. [illegible]

16. [illegible]

17. [illegible]

18. [illegible]

19. [illegible]

20. [illegible]

JERROLD®

Jerrold Electronics Corporation

INDUSTRIAL PRODUCTS DIVISION

15th and Lehigh Avenue • Philadelphia 32, Pa.

BALDWIN 6-3456

REPRESENTED BY

EXPORT: Roche International, New York 16, N. Y., Cable ARLAB

CANADA: Jerrold Electronics (Canada) Ltd., Toronto, Canada

Printed in U.S.A.