

DATE 1-7-59  
SH. 1 OF 11  
COMPILED BY  
Ollie Pose

# TMC SPECIFICATION NO. S-403

TITLE: PRODUCTION TESTING OF MODEL RTP-2

JOB

APPROVED 

REV. B

INSTRUCTIONS FOR THE PRODUCTION

TESTING OF THE MODEL RTP-2

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### 1. Purpose and Description

See: Instruction Book

### 2. Test Equipment Required:

- a. Volt Ohmmeter, Simpson, Model 260 or equivalent
- b. AC Voltmeter, Heathkit, Model AV-2
- c. Load Resistor, 2500  $\Omega$ , 160 W
- d. Load Resistor, 1400  $\Omega$ , 80 W

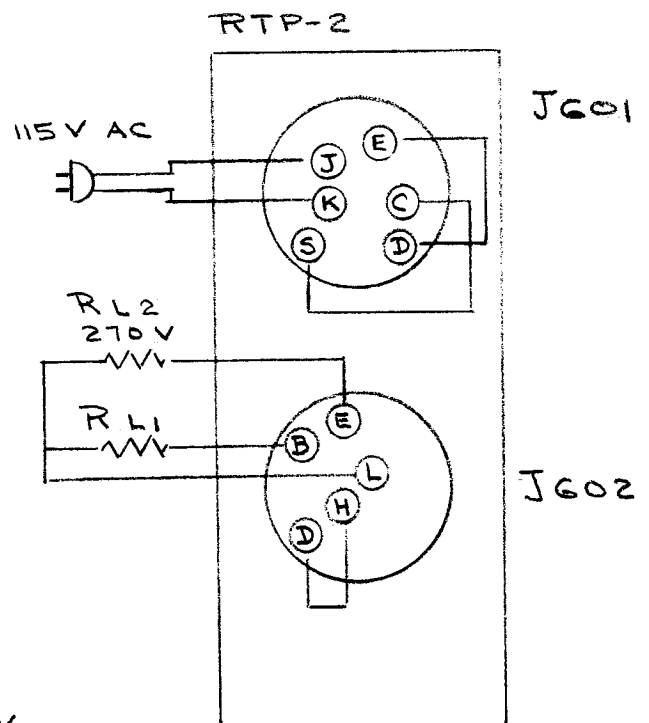
### 3. General Instrument Layout:

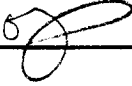
AC VOLT METER  
HEATH KIT MODEL  
AV-2

VOLT OHM METER  
SIMPSON MODEL  
260  
OR EQUIVALENT

$$R_{L1} = 2,500 \Omega, 160 W$$

$$R_{L2} = 1,400 \Omega, 80 W$$



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4. Test Instructions:

- A. Proceed as outlined in Test Sequence and Procedure paragraph #5 to follow.
- B. Fill in blanks on report sheet in the first part only, rejecting those units which do not meet the specifications noted herein.
- C. Sign report sheet and submit it to your supervisor.

5. Test Sequence and Procedure:

A. General Inspection:

1. Chassis:

- a. Inspect the unit for obvious mechanical imperfections.
- b. Inspect the unit for loose screws, and improper parts.

Place appropriate check mark on the report sheet.

2. Front Panel:

- a. Inspect all knobs for correct size and alignment.
- b. Inspect the panel for loose screws and other imperfections.

Place appropriate check mark on the report sheet.

3. Components and Tubes:

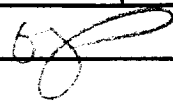
- a. Inspect all components for obvious imperfections.
- b. Inspect for proper tubes.

NOTE: Do not apply power to the RTP-2 if one or more VR tubes are missing.

Place appropriate check mark on the report sheet.

4. Wiring and Harness Cable:

- a. Inspect for burned and badly mishandled wires.
- b. The H.V. Filament wiring must be as far as possible from all metal (ground) parts. The portion

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of H.V. Filament line which is fed through rubber grommet must be in tubing.

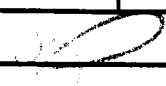
Place appropriate check mark on the report sheet.

**B. Continuity Test:**

**1. J601**

- a. Place mode SW (S601) to "Phone" position.
- b. Final plate SW (S604) in "ON" position.
- c. CB602 and CB603 in "ON" position.
- d. Normal - Bypass switch (S602) in normal position.
- e. Take following readings and keep switches in position noted above except as noted in "remarks".

PIN #	CONTINUITY TO GROUND	CONTINUITY TO	REMARKS
A	Short		
B	Short		
F	Open		
G	Open	Pin F of J601; short	Place jumper to short output at J601.
I	5 to 25 $\Omega$	J603; 35 to 40K	Resistance to ground will depend on setting of R609
P	45-55K	Terminal 18 of E602	
S	Open	Pin X of J602	
U	27 to 33K	Pin B of J602	
V	Open	Pin F of J602, 350 to 1000 $\Omega$	Resistance reading will depend on setting of R603.
W		Pin I of J602; short	
X	Short		

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2. Place appropriate check mark on the report sheet.

3. J602

PIN #	CONTINUITY TO GROUND	CONTINUITY TO	REMARKS
A	Open	Term. 17 of E602, short	
B	27 to 33K	To pin F of J602, 350 to 1000 $\Omega$	S601 in CW-FS position
C	Short		
E	45-55K	Term. 25 of E603 short	
G	190 to 250K	Junc. R618 & R619 short	
H	90 to 110K	Term. 20 of E602; 4 to 6K	
I	Open	Pin C of J602; short	S601 in CW-FS position
J	Short		
K	Open		
L	Short		
M	Open		
N	Open	Pin U of J602; 4 to 8 K	Resistance will depend on setting of R605
P	Open		
S	45-55 K		
T	Open		
U	Open	Term. 27 of E603; short	
V	Open		

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PIN #	CONTINUNITY TO GROUND	CONTINUNITY TO	REMARKS
W	Open		
X	Open		


4. Place appropriate check mark on the report sheet.

### C. Preliminary Voltage Test:

1. Set the filament line adjust switch (S-605) to the extreme counter clockwise position.
2. Connect the power to the unit as shown in paragraph #3, General Instrument Layout.
3. Throw transmitter plates switch to "OFF" position.
4. Throw final plates switch to "ON" position.
5. Throw the main power circuit breaker to "ON" position.
6. The filament line meter must read 85 to 115 VAC.
7. Main power indicator (I604) must light (green lense).
8. Final plates (red lens) I602 must light.
9. Voltage regulator tubes, V601 and V602 must operate.
10. Measure voltage at R607 (25K, 20W) located on regulator characteristics, must be approximately 550 volts D.C. (-10% + 25% is acceptable)
11. Measure voltage at terminal 25 of E603 mist be approximately 270 D.C. (-10% + 25% os acceptable)
12. Turn off the Main Power.
13. Place appropriate check mark on the report sheet.

### D. Time Delay Relay:

1. Turn on the Main Power.
2. Observe K603: in approximately 60 seconds the relay K603 must energiz and stay energized.
3. Wait one minute, then turn the Main Circuit Br aker quickly "Off" and "ON" again: the relay K603 must now

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remain in de-energized position.

4. After approximately 60 seconds the K603 must energize and stay in energized position.
5. Leave all switches in position as left in previous step, and place appropriate check mark on the report sheet.

**E. Transmitter Plates Relay:**

1. Throw the plates switch to "ON" position.
2. The Transmitter Plates Pilot (I603) must go on. (red lense)
3. The Transmitter Plates Relay, K601 must close.
4. Flip the Transmitter Plates ON and OFF a few times. The Relay K601 must follow. Leave the Plate switch in ON position.
5. Rotate the mode switch. The Transmitter Plates Pilot must stay ON in each active position and go OFF during travel between the active positions (Phone, Tune, CW-FS,SSB).
6. Place the Mode switch in CW-FS position to prepare for next test. Place appropriate check mark on the report sheet.

**F. Voltage (Power) Output Test:**

1. With Volt-ohmmeter Simpson Model 260 take following readings.
2. Mode switch in CW-FS position and MO By-pass normal position unless otherwise noted.
3. J602

PIN #	TO	VOLTS	REMARKS
A	Ground	240-300 DC	There must be no voltag when Transmitter Plat switch is in stand by - remote position.
B	Ground	450-550 DC	
E	Ground	240-300 DC	
F	Ground	450-550 DC	No voltage if ither Trans. Plates or Final switch is OFF.



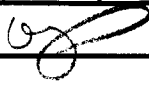
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PIN #	TO	VOLTS	REMARKS
N	Ground	Negative 103-108 DC	Voltage unchanged with Transmitter Plates sw. in either position.
N	Ground	Negative 90 to 130 V.	Mode sw. in SSB or Tune pos.. Voltage adjustable between the limits by Final Bias adj. (R605)
F	Ground	225-275 D.C.	Mode sw. in Tune position. No voltage when Mode sw. is either in Phone or SSB position.
U	Ground	Negative 205-215 DC	Voltage must be unchanged with Transmitter Plates switch in either position.
J	Ground	6.0 - 8.0 AC	
W	Pin K of J602	6.0 - 8.0 AC	
W	Pin V of J602	12.0 - 16.0 AC	
M	Pin T of J602	105-125 AC	No voltage when F601 (oven fuse) is removed.
M	Pin X of J602	Approx. 90-140 AC	Voltage is variable in 5V steps by filament adjust and must correspond to filament line meter

4. Turn off the Main Circuit Breaker. All Pilot lights must go off.

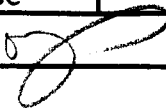
Place check mark on the report sheet.

G. MO - Bypass Switch

1. With Main Circuit Breaker in OFF position ; measure AC voltage at J602 between pins: M and T.

a. MO Bypass switch in Normal - no voltage.

b. MO Bypass switch in BYPASS - 105-125 Volts.

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c. All Pilot lights must not light.

Place check mark on the report sheet.

H. Hum Level Test:

1. Place MO Bypass switch in NORMAL.
2. Turn Main Power Circuit Breaker "ON".
3. Transmitter Plates Switch "ON".
4. Mode Switch in CW-FS position.
5. To avoid 60 seconds waiting period, press arms of K603 down. The Transmitter Plates Pilot light will light.
6. With AC Voltmeter at pin B of J602 to ground measure the voltage. Voltage must not exceed 1.5 VRM's
7. With AC Voltmeter at Pin E of J602 to ground measure the voltage. Voltage must not be greater than 1 V.R.M.S.

Units which meet the specification above are not ready for shipment. Final test must be given in a CAB-7 in conjunction with a RTF-2 as described in TMC Specification S- 584.

One copy of the Report Sheet must accompany each Model RTP-2.

