TRANSISTOR EIGHT

RADIOLA PORTABLE

MODEL B32

GENERAL DESCRIPTION

The Model B32 is an eight transistor, battery operated superheterodyne portable receiver designed for the reception of the Medium Wave Band.

Features of design include:—
Ferrite rod aerial, with provision for car aeriai or external aerial and earth systems; high gain i.f. transformers; audodyne converter; high sensitivity; tuning meter; provision for auxiliary power supply Type PS9Z.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

Frequency Range ..... 525-1620 Kc/s (571-1855 Metres)
Intermediate Frequency ..... 455 Kc/s
Battery Complement . 9 volt battery Eveready type 2761

Battery Consumption:
Zero Output ..... 15 mA
50 mW Output ..... 40 mA
Full Output ..... 100 mA

Loudspeaker:
6" x 4"—50257.
V.C. Impedance ... 80 ohms centre tapped at 400 cps.
Undistorted Power Output ..... 400 mW

Controls:
Tuning—the top right hand control.
On/Off-Volume—the centre right hand control.
Tone—the bottom right hand control.

Dimensions:
Height ..... 8¼"; Width ..... 12⅞"; Depth ..... 3⅞"
Weight (with battery) ..... 8 lbs. 4 ozs.

Transistor Complement:

AWV 2N1637	R.F. Amplifier
AWV 2N1639	Converter
AWV 2N1638	1st I.F. Transformer
AWV 2N1638	2nd I.F. Transformer
AWV 2N408	Audio Amplifier
AWV 2N408	Driver
AWV 2N217S (2)	P-P Output
1N87A or OA90	Detector Diode
1N87A or OA90	AGC Diode
1N87A or OA90	Overload Diode
AS2	Compensation Diode

Dial Cord Replacement

At least 44 inches of dial cord will be necessary for replacement purposes. Commence with the gang closed and the anchor bobbin on the drive spindle as indicated in Fig. 2. Make sure that the cord is fully tensioned before connecting it to the tension spring which is then anchored to the pin remote from the drive spindle. The pointer may now be attached without decreasing the cord tension.

If the drive spindle or gears have been removed for any reason reassembly must conform to that shown in Fig. 2. The flat on the drive spindle is the important item as this determines the position of the anchor bobbin. The split gears may be 180° out to that shown but the hole in each gear must be in line to provide the correct tension to the anti-backlash spring.

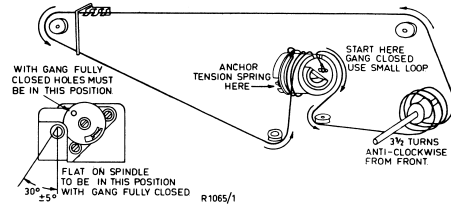


Fig. 2

ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken. It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and can only be re-adjusted by skilled operators using special equipment.

For all alignment operations, keep the generator output as low as possible to avoid a.g.c. action and set the volume control in the maximum position.

Testing Instruments:

Signal Generator—modulated 400 c.p.s. or modulated oscillator.

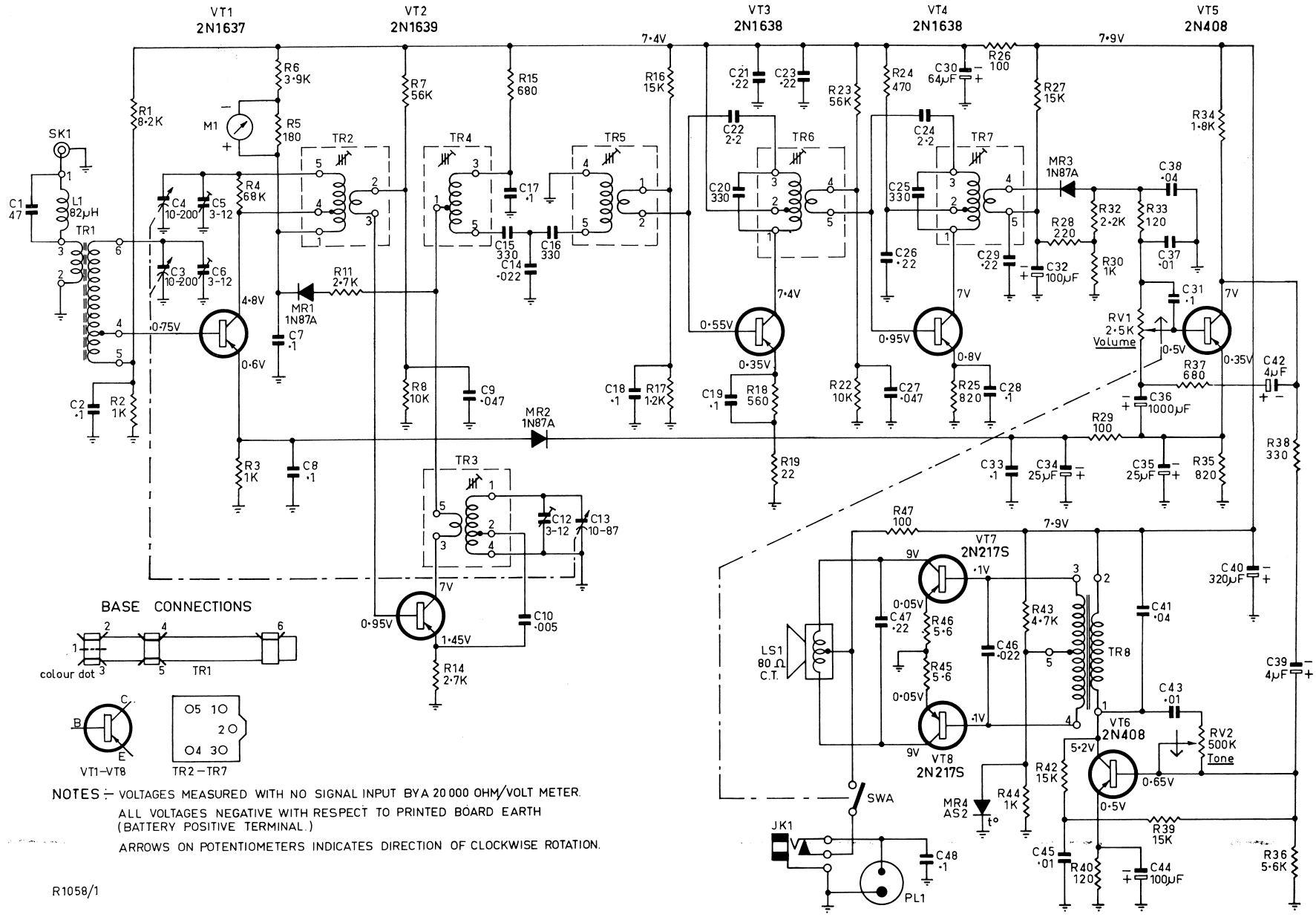
If the modulated oscillator is used, connect a 0.22 megohms non-inductive resistor across the output terminals.

No output transformer is used in this receiver since the speaker has a centre tapped 80 ohms voice coil and is connected directly to the collectors of the output transistors. For output measurement, if an indication only is required, Output Meter type 2M8832 switched to 5000 ohms and connected across the output collectors, should be adequate. For correct reading of power output an a.c. meter, with neither probes earthed, connected across the output collectors will measure the voltage across the 80 ohms load. The normal alignment level of 50mW occurs when 2 volts is indicated on the a.c. voltmeter.

ALIGNMENT TABLE

ORDER	CONNECT "HIGH" SIDE OF GENERATOR TO:	TUNE GENERATOR TO:	TUNE RECEIVER TO:	ADJUST FOR MAX. PEAK OUTPUT
1	R.F. Section of Gang	455 Kc/s	Gang fully closed	Cores in TR7, TR6, TR5 and TR4
	Repeat adjustment until maximum output is obtained.			
2	Inductively coupled to Rod Aerial*	1,620 Kc/s	Gang fully open	H.F. Osc. Adj. (C12)
	Shunt R.F. section of gang with a 2.2K ohms resistor in series with a 0.1μf capacitor.			
3	Inductively coupled to Rod Aerial*	1,500 Kc/s	1,500 Kc/s	H.F. Aerial Adj. (C6)
4	Inductively coupled to Rod Aerial*	600 Kc/s	600 Kc/s	L.F. Osc. Core. Adj. (TR3)†
	Repeat adjustments 3 and 4 as required and then remove shunt network.			
5	Inductively coupled to Rod Aerial*	600 Kc/s	600 Kc/s	L.F. R.F. Core Adj. (TR2)
6	Inductively coupled to Rod Aerial*	1,500 Kc/s	1,500 Kc/s	H.F. R.F. Adj. (C5)
	Repeat adjustments 5 and 6 as required.			

* A coil comprising 3 turns of 16 gauge D.C.C. wire, about 12" in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than 1 foot from it.
† Rock the tuning control back and forth through the signal.



NOTES :- VOLTAGES MEASURED WITH NO SIGNAL INPUT BY A 20 000 OHM/VOLT METER.
ALL VOLTAGES NEGATIVE WITH RESPECT TO PRINTED BOARD EARTH (BATTERY POSITIVE TERMINAL.)
ARROWS ON POTENTIOMETERS INDICATES DIRECTION OF CLOCKWISE ROTATION.

R1058/1

Changes since circuit was drawn:
R20 a 1K ohms ± 10% ½ watt resistor, 608025, has been added from the emitter of VT3 to the junction of MR2 and C33.
C22 is now a 4.7pf ± 10% NPO bead capacitor, 220220.