Mk. II

TSL

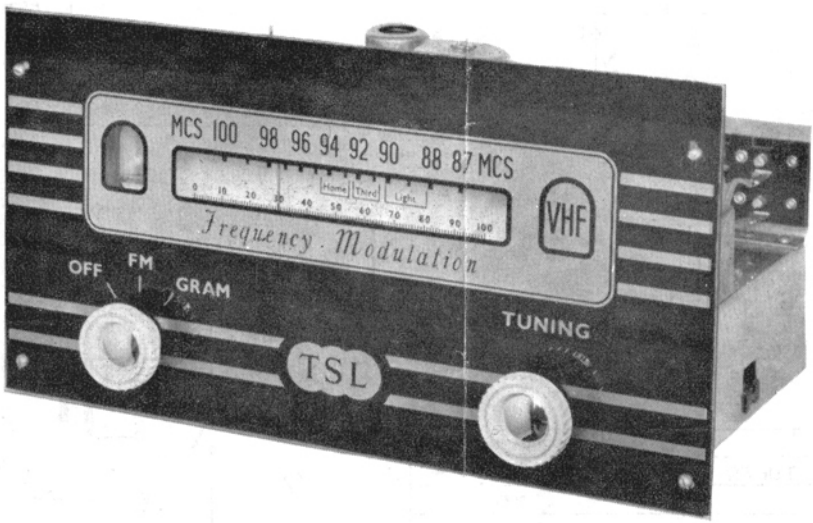
High Stability

FM/VHF TUNER

INSTALLATION

AND

MAINTENANCE



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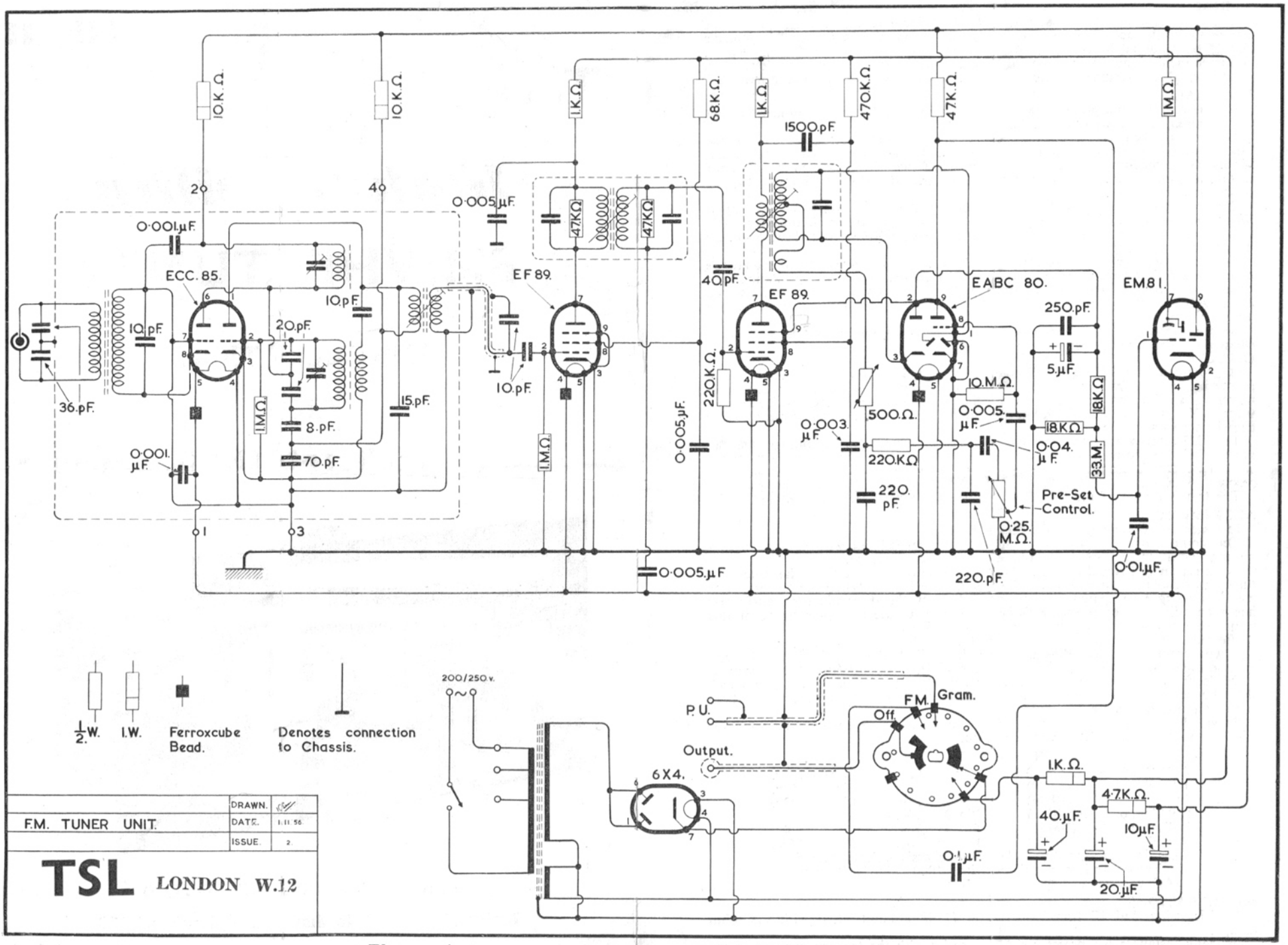

F.M. TUNER UNIT.	DRAWN.	
	DATE.	1.11.56.
	ISSUE.	2.

TSL LONDON W.12

The manufacturers reserve the right to modify this circuit without notice.

INSTALLATION AND MAINTENANCE NOTES

AERIAL

The tuner is designed for use with a 75 ohm dipole aerial. B.B.C. transmissions are horizontally polarised so that unlike television aerials the aerial elements should be mounted horizontally. If the aerial is home constructed each element rod is 30 inches long, 75 ohm coaxial cable is suitable for the centre fed down lead.

The aerial is positioned to give the greatest indication on the tuning indicator.

GENERAL

On the rear apron a preset audio control is provided, this can be adjusted to suit the requirements of whatever amplifier is to be used.

Output is taken via a coaxial socket, coaxial cable can be used for the link between tuner and amplifier, this should not be longer than is necessary. Gramophone pick-up sockets are provided, when the selector switch is positioned to GRAM, tuner output is automatically disconnected and the pick-up is restored to the amplifier input.

The pick-up circuit does not feed through the audio stage of the tuner. When switched to GRAM, the valve heaters of the tuner are in circuit but no HT is applied, this allows instantaneous switching from GRAM to FM without any interval for warming up.

To avoid hum pick-up from stray A.C. fields, it is an advantage to mount the tuner on a foil covered baseboard or metal baseplate. On initial installation it is necessary to try the mains connections both ways round in order to phase the tuner with the audio equipment, failure to observe this can result in considerable hum pick-up.

Before connecting to mains source ensure that the voltage adjustment panel situated on the transformer is correctly set.

CIRCUIT

A grounded grid RF stage followed by an additive mixer is contained in the permeability tuned unit type UT342/75. Tuning slugs are of a non-ferrous nature, therefore, as the cord is drawn out of the unit, frequency decreases. I.F. transformer No. 1 is contained within the tuning unit, primary adjustment below chassis, secondary, above.

Two I.F. stages are incorporated, the second arranged as a limiter. On the second I.F. transformer the primary is below chassis and the secondary above. Ratio detection is used, on this transformer the primary is above chassis and the secondary below.

The triode section of the EABC80 is used as a normal voltage amplifier.

ALIGNMENT

Intermediate frequency is 10.7 Mc/s.

Realignment where necessary should only be carried out with equipment permitting visual indication, i.e., wobbulator and oscilloscope.

To inject an I.F. signal into the UT342, connection is made from the generator, through an isolating capacitor, to pin 2 of the VHF unit. When the discriminator curve is being investigated and the secondary of the discriminator transformer has been adjusted, the pre-set resistor in series with the tertiary winding of this transformer should be adjusted for optimum linearity.

Viewed from the rear and above, apart from the I.F. transformer core, there are two ceramic trimmer adjustments on the UT342, that on the left VHF and on the right, oscillator. The VHF trimmer is set for maximum sensitivity at 93 Mc/s. If the stations do not reasonably concide with the dial calibration, check that the drive cord is almost fully extended at the LF end of the dial. There should be approximately $\frac{1}{8}$" play.

Provided the cord is correctly set, calibration may be adjusted by the oscillator trimmer on the Home Service transmission.

VOLTAGE TABLE

UT342/75	(ECC85)	Tag 2	90v.	Tag 4	135v.
1st I.F.	(EF89)	Pin 7	230v.	Pin 8	57v.
2nd I.F.	(EF89)	Pin 7	235v.	Pin 8	20v.
Det/Audio	(EABC80)	Pin 9	90v.		
Indicator	(EM81)	Pin 7	20v.	Pin 9	170v.
Rectifier	(6X4)	Pin 1*	240v.	Pin 7	270v.

Readings are positive relative to chassis unless otherwise indicated and are taken with 1000 ohm/volt meter.
*AC voltage reading.

MODIFICATIONS

Models using 2nd IF transformer type 11748 are not fitted with 47k ohm damper resistors.

In many instances the preset resistor in series with the tertiary winding of the discriminator transformer is replaced with a fixed component, value 330 ohms $\pm$ 10%.