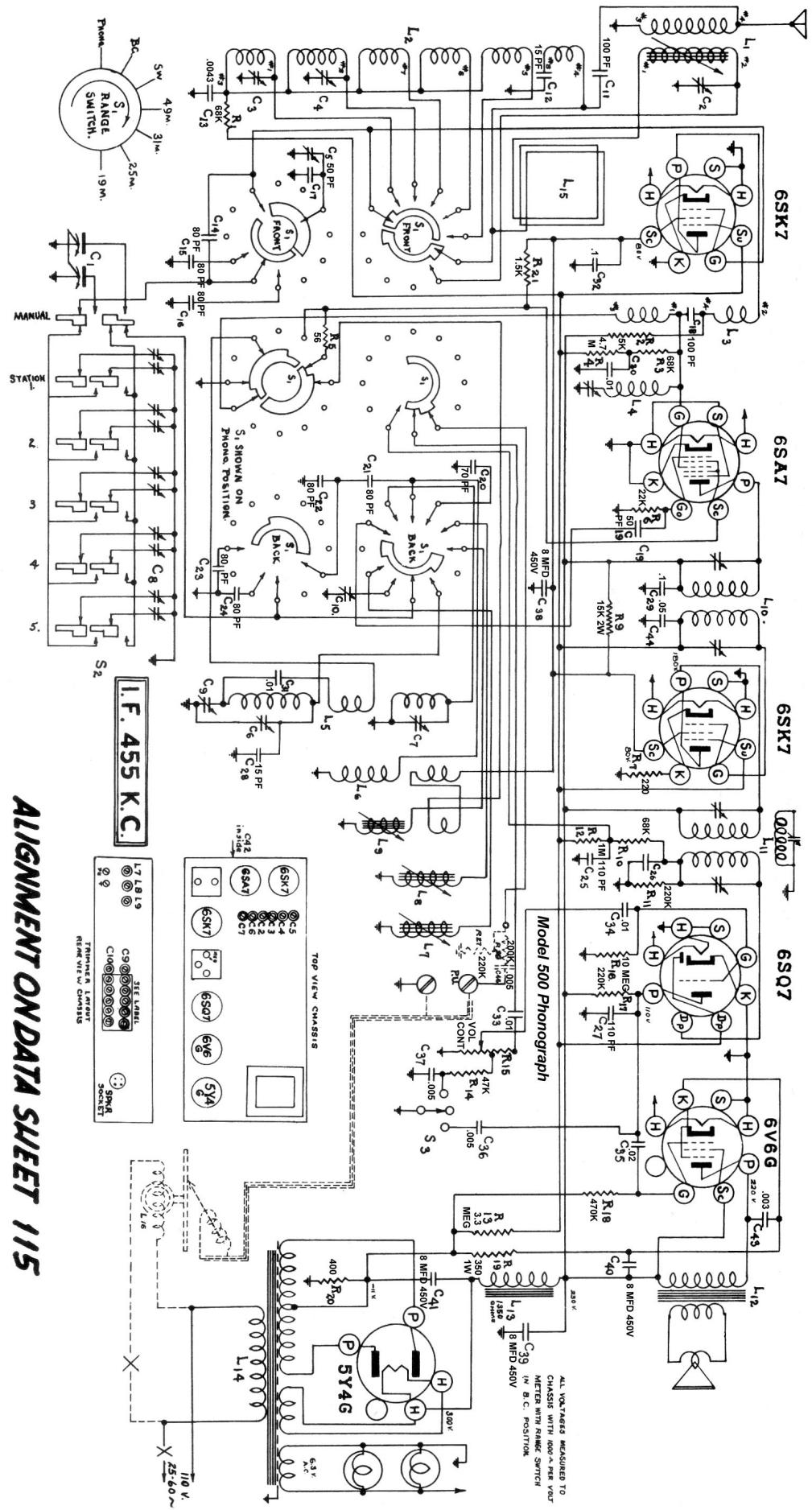


MODELS 489 - 500

ALIGNMENT ON DATA SHEET 115



Alignment Data Models 489, 489A, 499, 500, 500A

1941 - 42

WAVE BAND FREQUENCY RANGE

Broadcast 535 Kc. to 1725 Kc.
 Short Wave 7000 Kc. to 22000 Kc.
 49 Meter 5970 Kc. to 7000 Kc.
 31 Meter 9310 Kc. to 9820 Kc.
 25 Meter 11380 Kc. to 12040 Kc.
 19 Meter 14980 Kc. to 15600 Kc.

Press the push button marked "Manual". (499, 489, 500)

* NOTE: The second I.F. transformer is triple tuned, and designed to give a broad characteristic to facilitate automatic tuning. It must be aligned by tightening the Red trimmer as far as it will go. Then adjust the other two trimmers for maximum output. Finally adjust the red trimmer for maximum output but do not readjust the other two.

ALIGNMENT: A well shielded oscillator and a suitable output meter are required to align this receiver. The output meter may be connected across the voice coil terminals of the speaker. Use the weakest readable signal for all alignment operations.

Set the pointer at the end calibration mark at the low frequency end of the dial (535 kc) with the gang in full mesh. Set the tone control at the Music position and the volume control full on. Set the Range Switch to correspond to the band being aligned, using broadcast for I.F. alignment.

Press the push button marked "Manual". (499, 489, 500)

* NOTE: The second I.F. transformer is triple tuned, and designed to give a broad characteristic to facilitate automatic tuning. It must be aligned by tightening the Red trimmer as far as it will go. Then adjust the other two trimmers for maximum output. Finally adjust the red trimmer for maximum output but do not readjust the other two.

Item	Dummy Antenna	Connection of signal Generator to Receiver	Signal Gen. Freq.	Receiver Dial Setting	Trimmers to be Adjusted	Description of Adjustment
1. .1 mfd. Condenser	Grid of 6SA7	455 kc	Any point that does not affect signal.	2nd I.F. 1st I.F. Transformers		Adjust for maximum output, then repeat operation. * See Note above.
2. .1 mfd. Condenser	Top Connector on front section of gang.	455 kc	Same as above.	Wave Trap Trimmer C42		Adjust for minimum signal.
3. Standard Dummy	Antenna Lead	1500 kc	1500 kc on BC Band	Oscillator Trimmer C6		Adjust to bring in the signal.
4. Standard Dummy	Antenna Lead	800 kc	800 kc on BC Band	Oscillator Series Pad C9		Adjust to bring in the signal.
5.						Repeat operations 3 & 4.
6. 400 ohm Carbon Resistor	Antenna Lead	21000 kc	21000 kc on S.W. Band	S.W. Oscillator Trimmer C7		Adjust to bring in the signal. See Note *
7. 400 ohm Carbon Resistor	Antenna Lead	21000 kc	21000 kc on S.W. Band	S.W. Antenna Trimmer C3		Adjust for maximum output while rocking gang.
8. 400 ohm Carbon Resistor	Antenna Lead	6300 kc	6300 kc on 49M Band	49M Oscillator Trimmer C10		Adjust to bring in the signal. See Note *
9. 400 ohm Carbon Resistor	Antenna Lead	6300 kc	6300 kc on 49M Band	49M Antenna Trimmer C4		Adjust for max. signal while rocking gang. Repeat operation 8.
10. 400 ohm Carbon Resistor	Antenna Lead	9600 kc	9600 kc on 31M Band	Oscillator Coil L7		Adjust iron core to bring in signal. See Note *
11. 400 ohm Carbon Resistor	Antenna Lead	11800 kc	11800 kc on 25M Band	Oscillator Coil L8		Adjust iron core to bring in signal. See Note *
12. 400 ohm Carbon Resistor	Antenna Lead	15300 kc	15300 kc on 19M Band	Oscillator Coil L9		Adjust iron core to bring in signal. See Note *
13. 400 ohm Carbon Resistor	Antenna Lead	15300 kc	15300 kc on 19M Band	Band Spread Trimmer C5		Adjust for Max. signal while rocking gang.
14.						Repeat operations 10, 11, 12. See Note **
15. Standard Dummy	Antenna Lead See Note †	600 kc	600 kc on BC Band	Antenna Coil L1		Adjust for maximum output.
16. Standard Dummy	Antenna Lead	1500 kc	1500 kc on BC Band	Antenna trimmer C2		Adjust for maximum output.

NOTE: In cases where it is not convenient to connect the signal generator to the control grid terminal of the 6SA7 tube, it may be connected to the Antenna lead, in which case a much higher signal input may be required.

* On 31M, 25M, 19M and S.W. Bands, the oscillator frequency is below that of the incoming signal. Check each oscillator setting by varying the frequency of the signal generator to see that the receiver will respond to a signal 910 kc below the desired signal frequency and not respond to one 910 kc above. When the antenna trimmers are aligned the receiver should respond to the correct frequency more readily than to the one 910 kc below. B.C. Band and 49M band are just the reverse of this procedure but need not be checked.

** Unless the signal generator is known to be absolutely accurate within 2 or 3 kc it is wise to perform operation 15 by changing the oscillator frequency to correspond with incoming signals of known frequency received on the antenna.

A 200 mmf Condenser may be used in place of the standard dummy antenna.

† If it is not convenient to align the receiver with the loop antenna connected, put a shorting connection across the loop terminals and align everything but the Broadcast Antenna circuit. This must be aligned at 600 kc and 1500 kc with the loop antenna attached.