PHILCO
MADE IN NEW ZEALAND

Model 1205

Description:

Model 1205 is a high-quality 8-tube superheterodyne of great sensitivity and power, having frequency ranges of 550 K.C. to 1600 K.C. on the broadcast band, and two normal short-wave bands covering from 2.5 M.C. to 18 M.C., plus five spread bands for 31, 25, 19, 16 and 13 metres. The normal bands are tuned by a variable condenser, while the spread bands are tuned by a three-gang permeability tuner driven from the same control, with shunt aligning condensers for each band, and designed to spread the short-wave frequencies more than twenty times further apart.

Specifications:

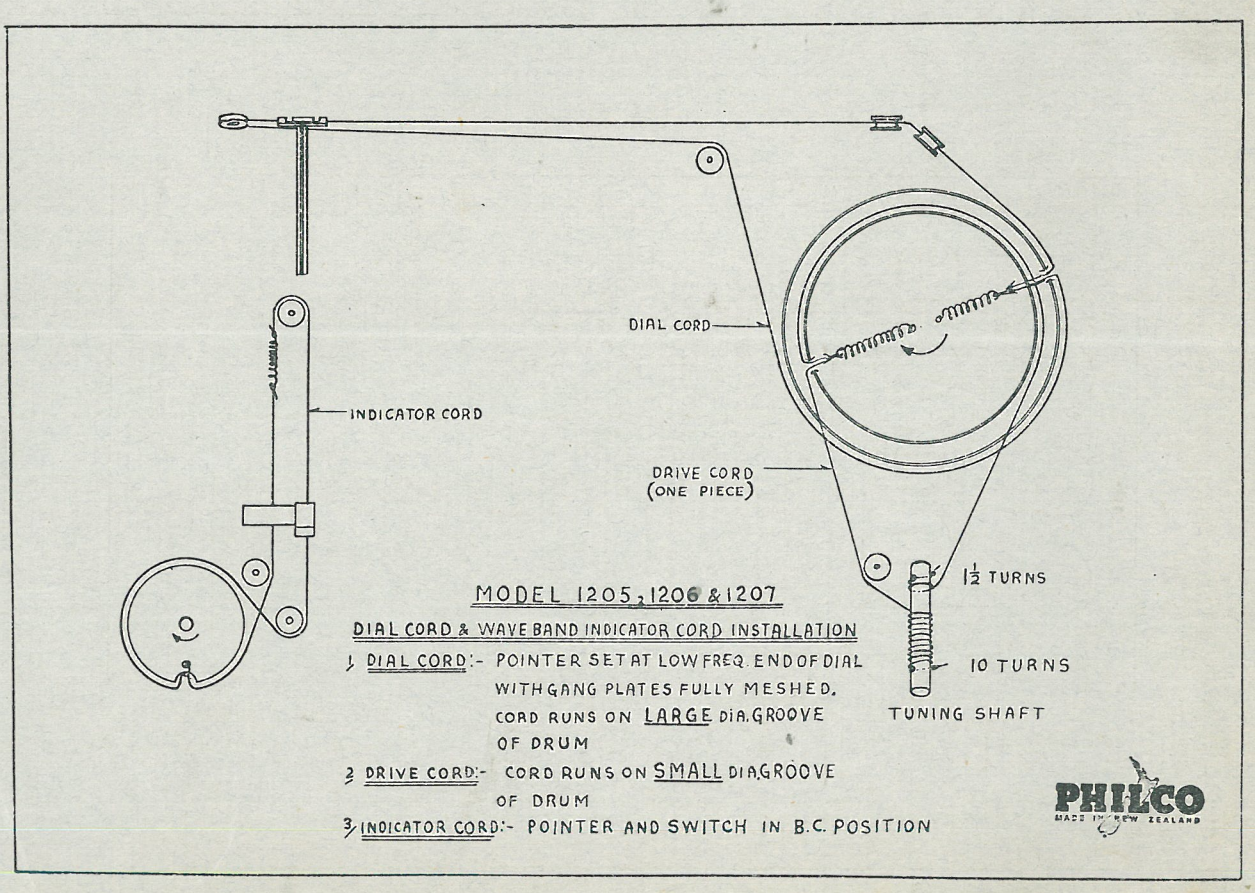
TUBES

R.F. Amplifier	6U7G
Frequency Converter	7B8
I.F. Amplifier	6U7G
2nd Detector/Amplifier	6Q7GT
Phase Inverter	6J5G
Output	7C5 (2)
Rectifier	5Y3G

Power Supply: 230v. A.C., 50 cycles.
Power Consumption: 80 watts.

TUNING BAND FREQUENCIES

Broadcast	550 K.C. — 1600 K.C.
S.W.1	2.5 M.C. — 7.5 M.C.
S.W.2.	7.5 M.C. — 18 M.C.
Bandspread, 31M	9.4 M.C. — 9.8 M.C.
25M	11.5 M.C. — 12 M.C.
,, 19M	14.9 M.C. — 15.5 M.C.
,, 16M	17.2 M.C. — 18 M.C.
,, 13M	20.8 M.C. — 21.8 M.C.



ALIGNMENT OF NORMAL TUNING RANGES.

Equipment Required—

Signal Generator and Dummy Aerial. (If a standard Dummy aerial is not available, use a 200 mmfd. condenser in series with the high side of the generator on Broadcast, and a 400 ohm resistor on short wave.)

Some form of output indicator is required, either a V.T.V.M. across the diode load resistor, or an audio output meter across the speaker voice coil leads.

Alignment of Normal Ranges:

(1) **I.F.**

Connect signal generator to fixed plates of the centre section of the gang through a .1 mfd. condenser with gang fully open and volume control at maximum, tone control high. (Note: These control settings are maintained throughout the whole alignment procedure.)

Tune signal generator to 455 K.C. and trim condensers C1, C2, C3 and C4 in that order for maximum output, keeping output of generator at minimum consistent with a readable indication on the meter. Repeat this procedure and check for correct alignment by tuning generator through resonance to see that there is only one peak of correct frequency.

(2) **Broadcast.**

(Note: See that dial pointer is set to calibration mark at low frequency end of B.C. band.)

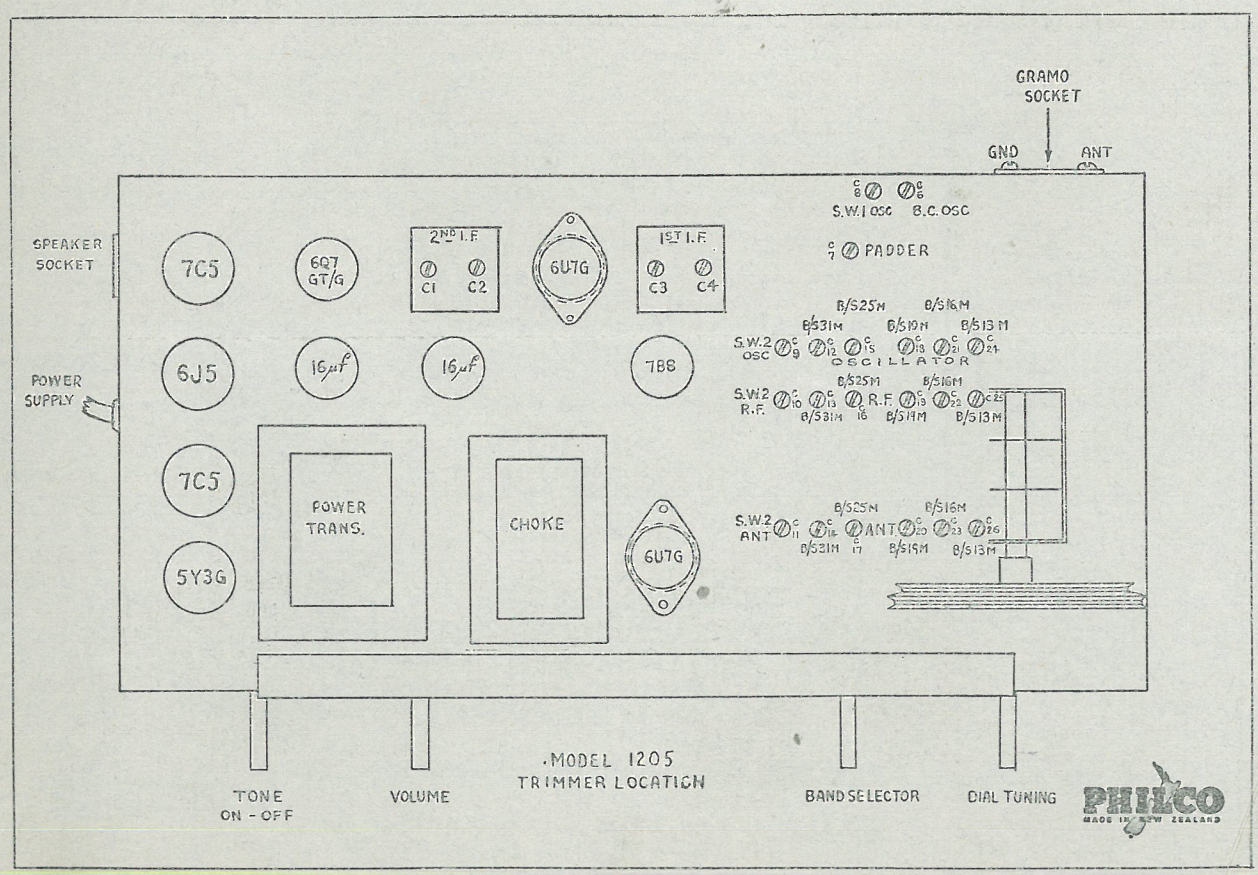
Connect generator to antenna terminal of set through dummy aerial or 200 mmfd. condenser. Adjust C6 at 1400 K.C. and C7 at 600 K.C., rocking gang for maximum output. Return to 1400 K.C. and check C6. There are no trimmers for antenna or R.F. circuits on B.C.

(3) **S.W.1**

Connect generator to antenna of set through dummy aerial or 400 ohm resistor. Set wave switch to S.W.1 and adjust C8 at 6 M.C. for maximum response. Check for image signal .91 M.C. higher on generator.

(4) **S.W.2**

Turn C10 all the way in. Set wave switch to S.W.2. Adjust C9 at 18 M.C. (check for image as in 3). Adjust C10 and C11 for maximum output. (It will probably be more satisfactory to adjust these trimmers on noise with aerial connected rather than with the generator.) The set may oscillate when C10 is being trimmed, and correct adjustment will be found to be on the maximum capacity side of the oscillation point.



ALIGNMENT PROCEDURE ON BANDSPREAD.

Complete alignment of the bandspread circuits of this receiver requires a good signal generator, together with a crystal calibrator. However, the calibration of these bands can be checked by comparison with short-wave broadcast stations of known frequency, and the signal generator calibration can be accurately checked by beating its output with the receiver tuned to a station of known frequency on the normal S.W.2 band. This method is useful for approximate positioning of the oscillator on these bands.

IMPORTANT.—On all spread bands in Model 1205 the oscillator frequency is **below** the signal frequency (i.e., image will be .91 M.C. **lower** on generator scale).

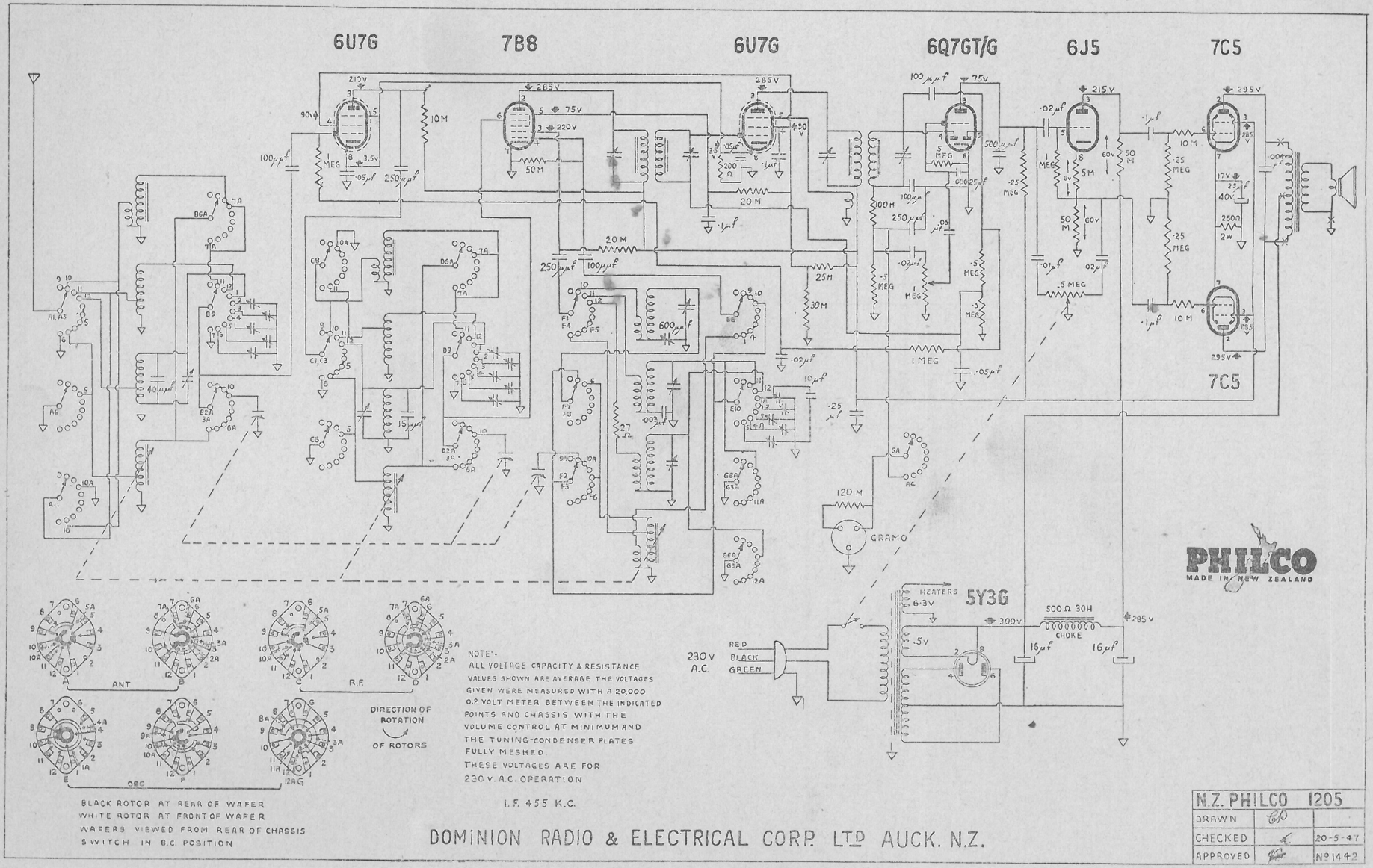
If it becomes necessary to re-align these bands, the following procedure is recommended:—

Adjust oscillator trimmer condenser until a station of known frequency is identified in its correct position. Beat the signal generator with this station and check for image .91 M.C. **lower** on generator scale. **Then adjust R.F. and Antenna trimmers on noise.** (It is important to check that the image signal is weaker than the fundamental.)

	31M	25M	19M	16M	13M
Osc.	C12	C15	C18	C21	C24
R.F.	C13	C16	C19	C22	C25
Ant.	C14	C17	C20	C23	C26

MECHANICAL ADJUSTMENT

The position of the iron cores in relation to the coils has been very carefully set and these should not be moved unless it is absolutely necessary. With the gang condenser fully open, the distance the core protrudes beyond the end of the coil former in the case of R.F. and Antenna coils is approximately 3/16in., and in the case of the oscillator coil approximately 3/20in.



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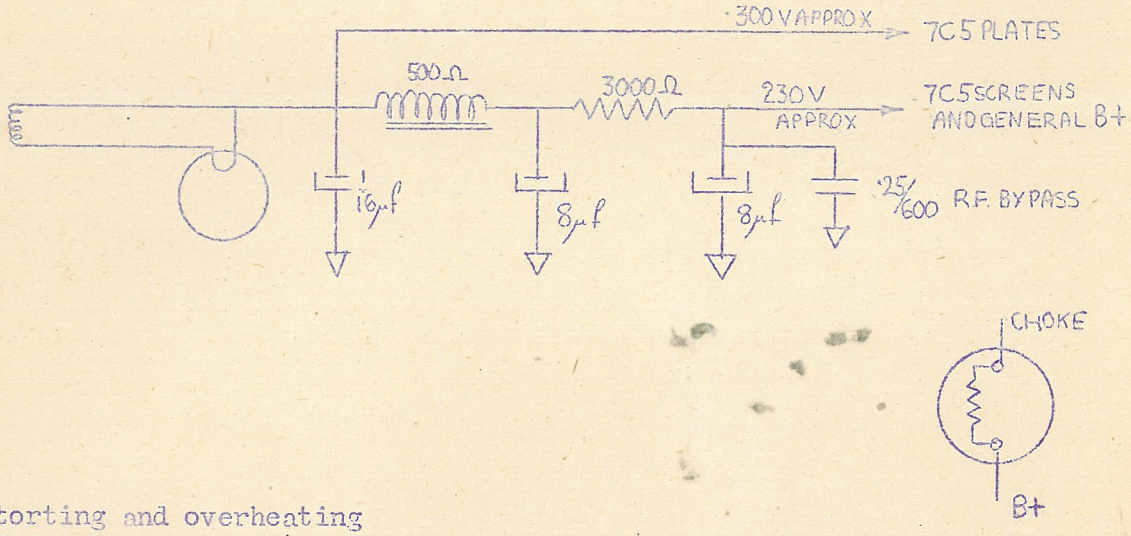
N.Z. PHILCO 1205		
DRAWN		
CHECKED		20-5-47
APPROVED		No 1442

1205 Improvement in Performance.

Hum level can be reduced, and general performance improved in this model by making the following modification.

The second double filter condenser must first be disconnected and all wires removed. A 3000 ohm resistor of at least 5 watts, is then wired to the two sections, and the condenser then rewired so that the lead from the choke goes to one section and all B+ circuit leads to the other.



Distorting and overheating of 7C5 Tubes.

One or other of the 7C5 tubes may become overheated with distortion due to leaky .1mfd coupling condenser allowing slight positive bias.

1201 & 1201A Slow Running Motor.

Slow and uneven running of the gram. motor may be due to oil on the rubber tyre of the idler wheel causing slip. In some cases it has been noted that the fan blades rub against the cheeks of the winding and this is cured by bending the blades slightly.

Failure of Motor to Turn Off.

Can be caused by the mercury tilt switch touching the bottom panel. The base panel may have become bent or warped.

Switch Type Controls. General.

A bumpy action of a volume or tone control potentiometer is not always an indication that the carbon is faulty. This trouble is often caused by the switch cam lever fouling the cover holding the switch and can be easily repaired by bending it down slightly.

I.F.'s.

Low I.F. gain can often be cause for despair as the trouble is sometimes obscure.

If a set has been standing for some time, especially in damp and humid weather, moisture collects between the trimmer plates. These can be dried by blowing dried air through the can, or heating cans with a soldering iron. It is seldom that the impregnated coils themselves cause the trouble.

High resistance leaks from B+ to A.V.C. across anchor points etc., are another cause of low gain. This applies a positive potential to the A.V.C. line which upsets the tube bias. It is usually necessary to trim the I.F.'s after changing tubes because of variations of the inter electrode capacities. This is of course true of all tuned circuits which include a vacuum tube.