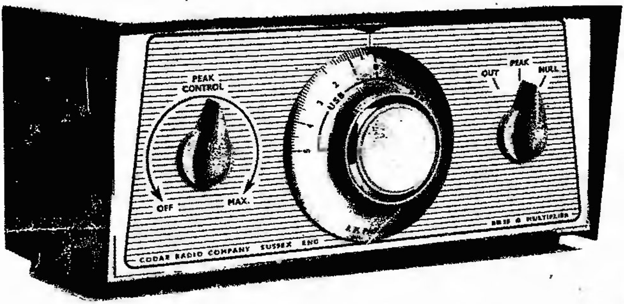

★ R.Q. 10. Q. MULTIPLIER/FILTER ★

The new CODAR RQ 10 Q Multiplier is a valve type electronic filter that can be used with any superhet receiver employing an I.F. between 450 and 470 Kc/s.

It provides a considerable increase in selectivity for either peaking or rejecting a signal on AM, CW or SSB. Both PEAK and NULL functions are tunable with the vernier control over the receiver I.F. passband.

The PEAK function will produce either a very narrow I.F. passband for AM or SSB reception, or a sharp peak for CW reception. The PEAK control allows for complete adjustment of I.F. Bandwidth or amplitude of peak up to the maximum position where feedback occurs to provide B.F.O. function for the reception of SSB and CW signals. For receivers without a product detector, improved resolution of SSB signals can be obtained as the amplitude of BFO injection is higher than the usual type of BFO and the vernier tuning control assists in obtaining the correct signal frequency.

The NULL function provides a deep rejection notch for eliminating an interfering hetrodyne, and is a steep sided slot without the combination of slot and peak as with the conventional type of crystal filter.

Special High Q Pot core enclosed Inductors are used to obtain the highest possible efficiency and an effective Q of over 4,000 is achieved. The performance plus ease of control and negligible insertion loss makes the RQ 10 superior to the average crystal filter unit.

Smart styling in Silver/grey Cabinet 8½ in. x 5 in. x 4 in. with Silver/black panel. (The RQ 10 is a matching unit in size and finish to the PR 30 Preselector).

Model RQ 10 for external power supplies 180-250 volts H.T. at 5 M/a, 6.3 volts .3 amp. L.T. (obtainable from receiver) £6 15s 0d. Carriage 3/6.

Model RQ 10X self powered version for 200-250 volts A.C. This model has accessory socket to provide up to 25 M/a at 200 volts H.T. and 6.3 volts 1 amp L.T. for other accessories. £8 8s. 0d. Carriage 4/6. Both models are complete with all cables, plugs, instructions.

G3IRE **CODAR RADIO COMPANY** G3HGQ

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CANADA CODAR RADIO COMPANY OF CANADA TWEED ONTARIO

INSTALLATION INSTRUCTIONS — CODAR RQ 10 and RQ 10 X "Q" Multiplier/Filter Unit

MODEL RQ 10 X.

This model only requires the power lead connected to the mains supply 200—250 volts AC, and the co-axial connected as detailed below. The PEAK control is fitted with an ON-OFF switch for the internal power supply, the OFF position being fully anti-clockwise.

A 4 pin plug and socket is provided at the rear of the Unit to supply H.T. and L.T. if required for other accessories, up to 25 M/a at 200 volts H.T. and 6.3 volts 1 amp A.C. Connections to this socket *viewed from rear* of Unit are as follows:—

Bottom right hand socket	H.T.+	Top left hand socket	H.T. – negative, chassis.
Bottom left hand socket	L.T. Common, chassis.	Top right hand socket	L.T. 6.3 volts.

MODEL RQ 10.

The 4 way power supply cable is supplied with the plug fitted and the coloured leads are connected to the receiver or external power supply as follows:—

RED	H.T. + 180—250 volts.	YELLOW	L.T. 6.3 volts A.C.
BLACK	H.T. negative, chassis.	BLUE	L.T. common, chassis.

The L.T. supply leads YELLOW and BLUE are brought separately to allow for connection to a receiver employing a centre tap earthed heater supply. In this case the two leads should be connected to the live heater supply points and only the BLACK H.T. negative lead connected to chassis. For the more common type of heater supply where one side is earthed to chassis, the YELLOW lead is connected to the live heater supply and the BLUE lead connected to chassis with the H.T. negative lead.

NOTE: The receiver or power supply should not be switched on before the 4 pin plug is inserted in the Unit socket as the pins are live.

OUTPUT CO-AXIAL CABLE.

The Unit is designed for connecting to the receiver frequency changer (mixer) anode. On some receivers employing two I.F. stages (A.R. 88, etc.), it may be preferable to connect it to the first I.F. anode. The centre conductor of the co-ax cable is connected to the anode tag of the valveholder and the screen braiding to chassis close to the valveholder. Only co-ax cable must be used for the total connection between the receiver and the Unit, twisted lead or ordinary screened cable must not be used. To ensure obtaining resonance for balancing out the reactance of the cable (as detailed in SETTING UP) it should not be shorter than the length supplied with the Unit.

Fit co-axial plug supplied to other end of cable, and insert in co-ax socket on rear of Unit.

SETTING UP.

When the co-ax cable and power connections are completed, set the Unit switch to OUT and the PEAK control to minimum (anti-clockwise). If the Unit is the RQ 10 X model, switch on with PEAK control but do not advance control any further. Tune in a steady phone signal on the receiver. It is important that the recaiver is correctly tuned in to maximum signal and not off tune on either sideband.

With the trimmer tool supplied, adjust the core of L.1. through the fixing nut marked on base underneath for maximum signal. This adjustment tunes out the reactanca of the co-ax cable to cancel out its capacitive effect. The core tuning may be broad and the adjustment should be carried out carefully to ensore maximum signal.

PEAK FUNCTION.

Centre the I.F. Passband tuning dial on zero and set the Unit function switch to the PEAK position. With the trimmer tool, adjust the core of L.2. for maximum signal. This core tuning will be sharper than the previous coil, and if necessary the receiver gain control should be advanced slightly as the narrower I.F. bandwidth and sideband cutting may give the impression of lower audio output.

The receiver "S" meter or tuning indicator if fitted will indicate maximum signal. Advancing the PEAK control to the point just below where oscillation occurs will increase the signal carrier strength to its original level. At this point the receiver I.F. bandwidth will be very narrow, giving maximum selectivity with the modulation sounding deep and "woolly" due to the higher audio sidebands being completely removed. Check that the centre of the carrier is at the zero calibration on the I.F. Passband tuning dial and if necessary slightly adjust L.2. core for any correction.

NULL FUNCTION.

Check that NULL preset control is at minimum (fully anti-clockwise looking at rear of Unit, bottom right hand corner). Set function switch to NULL position. Swing I.F. Passband tuning control a few degrees slowly to each side of zero, at the same time advancing the NULL preset control towards maximum. As the full depth of the rejection slot is approached the modulation will become thin and distorted as the carrier is being removed. The tuning and preset control will become sharper as maximum attentuation occurs and the final tuning point will be within one degree either side of zero.

An alternative method for this adjustment is to use the receiver B.F.O. if fitted. Switch on B.F.O. to produce a beat note on the carrier and adjust as above until beat note is rejected as low as possible. To obtain the very high rejection facility of which the RQ 10 is capable, this initial adjustment should be carried out carefully. Maximum rejection will occur before the preset control reaches the fully clockwise maximum position. After completion of this adjustment, the I.F. Passband tuning should be tuned through full scale to check if oscillation occurs at any point. If so, the preset control has been advanced too far.

CORRECT USE OF YOUR RQ 10.

With the function switch in the OUT position, the Multiplier and Filter facilities are disconnected, leaving the receiver normal. Advancing the PEAK control in this switch position will provide B.F.O. facility for C.W. or S.S.B reception if required, otherwise the PEAK control should be torned down toward the minimum position.

A.M. RECEPTION

With the function switch in the PEAK position, advancing the PEAK control will narrow the I.F. passband of the receiver up to the point where oscillation will occur, and for maximum selectivity the PEAK control should be just below this point. A steady interfering hetrodyne on the wanted signal cen be removed by switching to the NULL position and tuning the I.F. Passband control to the hetrodyne frequency. Due to the very narrow bandwidth of the tunable slot, the control must be tuned slowly to locate on which sideband the interfering hetrodyne is placed. When tuning for NULL, two rejection points will be found. One is where the NULL removes the carrier thus reducing the hetrodyne but leaves the modulation distorted and the other point which is the correct one removes the hetrodyne leaving the signal and its modulation clear.

C.W. RECEPTION WITH RECEIVER B.F.O. on.

With the function switch in the PEAK position, the wanted signal can be peaked up by advancing the PEAK control to just below oscillation point and tuning the I.F. Passband control to the signal beat frequency. A considerable increase in signal strength will be obtained up to a point where "ringing" can occur. At this point the effective "Q" is so high that the circuit is triggered by the signal and "rings" at its frequency. For receivers without a B.F.O. the switch is placed in the OUT position as detailed above. The tuning control provides excellent adjustment for varying the pitch of the beat note.

SSB RECEPTION.

The PEAK position can be used for narrow bandwidth in conjunction with the receiver B.F.O. For receivers not fitted with a product detector improved reception of SSB signals can be obtained by using the B.F.O. function with the switch in the OUT position. The receiver AVC and B.F.O. should be switched off. The slow motion tuning control assists in tuning to the correct resolution point.

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