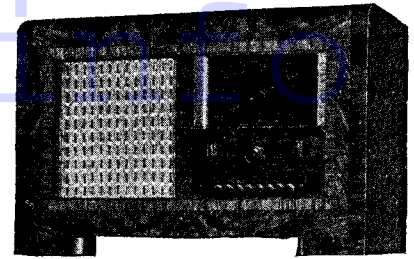


DECCA PT/ML TWO BAND PRESTOMATIC



A 4-valve and rectifier chassis is incorporated in the Decca PT/ML, a Prestomatic superhet giving medium- and long-wave coverage only.

THE absence of a separate wave-change switch is a feature of the Decca PT/ML Prestomatic receiver. The two end buttons on the control panel, which contains eight, are used instead, one being for medium waves and the other for long.

The six remaining buttons in between provide six pre-set stations, two being on the long waves.

To change from automatic to manual tuning it is only necessary to press the wave-change button for the band required, and then tune on the gang. To change back to automatic the button for the required station only has to be pressed.

The buttons switch in pre-set condensers across aerial and oscillator coils.

CIRCUIT.—The input is by a series aerial condenser to a set of inductively coupled medium- and long-wave aerial coils to the signal grid of V1, a triode hexode frequency changer. A series grid resistance R1 ensures stable operation, whilst a grid condenser C2 isolates the A.V.C. potentials from the aerial coils.

An orthodox wave-selection switch is not used, but control of wavebands is incorporated in the Prestomatic tuning panel. The oscillator anode electrode of V1 is coupled to the reaction winding by means of a load-resistance and coupling condenser.

V1 is coupled to V2, an H.F. pentode operating as the I.F. amplifier, by an I.F.

transformer. Both V1 and V2 are A.V.C. controlled.

A transformer in the anode circuit of V2 has a centre-tapped secondary winding. The secondary tapping is connected to the demodulating diode load R11, and the resulting potentials fed via an H.F. stopper resistance, coupling condenser and manual volume control to the grid of V4, an output pentode. The other diode of V3, fed by a condenser C13, provides the impulse energising the A.V.C. line to V1 and V2.

A pentode compensator condenser effects a fixed tone modification, and a variable tone control circuit consists of R17 and R16.

Mains equipment consists of a transformer, a full-wave rectifying valve V5,

electrolytic smoothing condensers and a smoothing choke (the speaker field). A mains suppressor condenser C12 is included.

Chassis Removal.—The cabinet has a

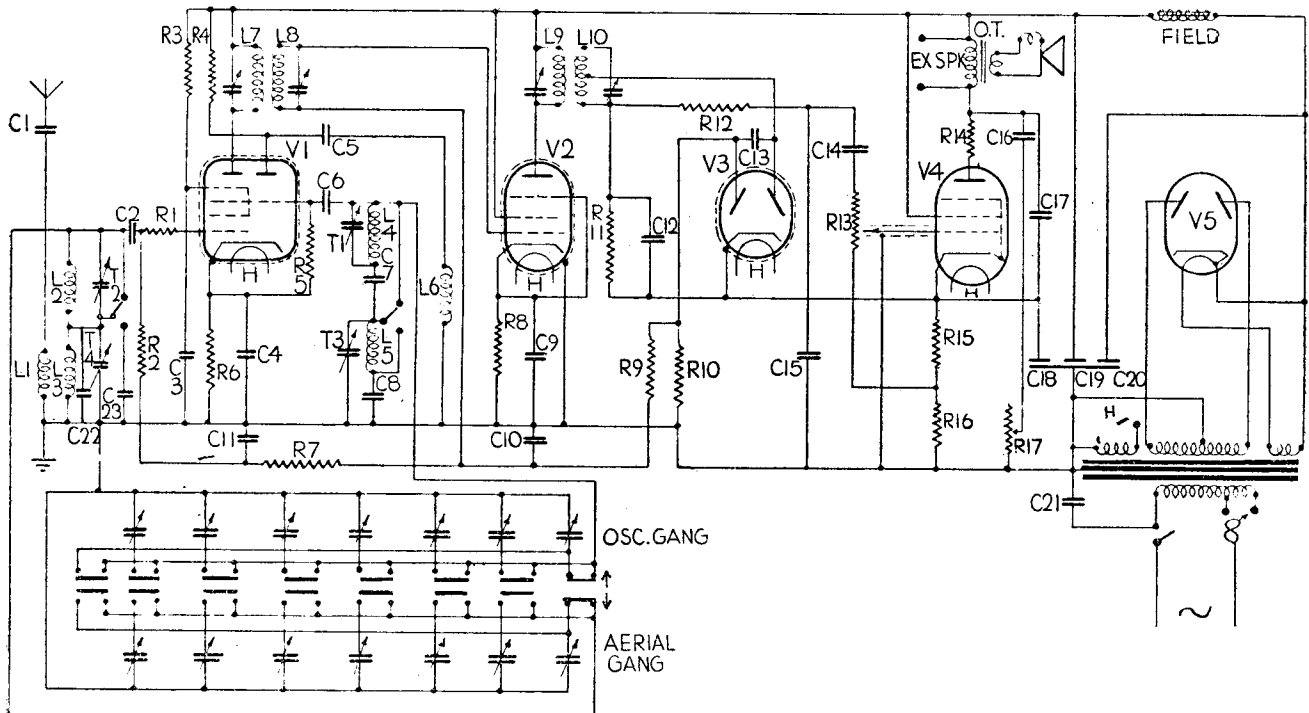
VALVE READINGS

No signal. Volume maximum. M.W. min. cap. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	M/a.
1	<i>Mazda.</i> ACTH1	Anode ..	242	5.9
		Screen ..	120	8.
		Osc. anode ..	70	5.5
2	VP4B, or ACVP2 <i>Mullard.</i>	Anode ..	242	8.7
		Screen ..	250	3.
3	2D4A. <i>Mullard.</i>	Diodes only	—	—
4	Pen. A4	Anode ..	235	28
		Screen ..	250	4.1
		Heater ..	315	—
5	R2, or 1W4/350 (4)			

RESISTANCES

R.	Purpose.	Ohms.
1	V1 series grid	40
2	V1 A.V.C. feed	500,000
3	V1 screen decoupling	15,000
4	Osc. anode load	30,000
5	Osc. grid leak	50,000
6	V1 cathode bias	200
7	V1 A.V.C. decoupling	500,000
8	V2 cathode bias	200
9	V2 A.V.C. decoupling	500,000
10	A.V.C. diode load	500,000
11	Demodulating diode load	300,000
12	H.F. stopper	70,000
13	Volume control	500,000
14	V4 anode stabiliser	150
15	V4 cathode bias (part)	140
16	V4 cathode bias (part)	180
17	Tone control	50,000



A separate wave-change switch is not incorporated in the Decca PT/ML, two of the buttons on the Prestomatic panel being employed instead. One is for long waves and the other for medium.

For more information remember
www.savoy-hill.co.uk

false bottom, removal of which provides access to the Touch-Tuning trimmers.

Remove the back of the cabinet, the three grub-screw fixed-control knobs and the eight Prestomatic buttons (pull-off type). Take out the bolts from the base and unclasp the aerial wire from the roof of the cabinet. Remove the bakelite aerial, earth and pick-up panel (secured by three wood screws).

The chassis may then be removed to the extent of the speaker cable. If desired, the speaker and the red and black leads to the two centre tags on the L.S. panel may be removed, when the speaker and chassis may be operated externally of the cabinet.

To obtain access to the underside of the chassis the Prestomatic trimmer assembly must be removed. First remove the two metal screws and lock washers from the front (underside) of the chassis, and the two metal bolts from the rear, and then the seven wires from the trimmer bank assembly. The points to which these wires are connected are indicated by numbers in the drawing of the trimmer bank assembly, and the colours of the wires respectively are: Red-yellow to 1, yellow to 2, green to 3, black-white to 4, green-yellow to 5, blue-yellow to 6 and red to 7.

The black wire from the trimmer assembly should then be unsoldered from point 8 on the sub-chassis drawing. Point 8 is the L.W. aerial trimmer.

Special Notes.—The mains adjustment

device takes the form of a common socket connected by a bridging member to one of two sockets. The bridging member constitutes a fuse. This may be replaced by unscrewing both pins, and feeding 1 amp. fuse wire through the hole provided.

Sockets at the rear enable a pick-up to be connected. This should have a high output, as it feeds only one stage of L.F. amplification.

A similar pair of sockets enable an extension speaker to be operated. This should be of the permanent magnet type with a high impedance (8,000 ohms) matching transformer.

There are two dial lights mounted in screw-in holders and rated at 6 volts .5 amp.

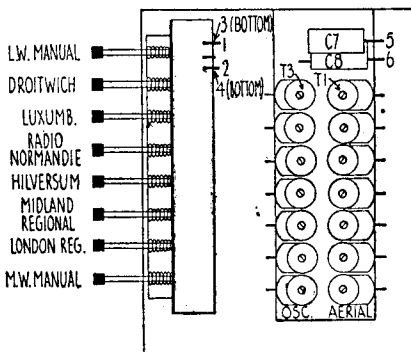
(Continued on page 42)

WINDINGS (D.C. Resistances)

Winding.	Ohms.	Range.	Where measured.
L1	14	—	C1 and chassis.
L2	2.6	—	Across tags
L3	12.6	—	Across tags
L4	1.6	—	Across tags
L5	3.6	—	Across tags
L6	5.7	—	C5 and chassis
L7	6	—	Anode V1 and H.T. line
L8	6	—	Top grid V2 and R9 + C10
L9	6	—	Anode V2 and H.T. line
L10 (part)	3.4	—	Demod. diode V3 and R11 + R12
O.T. prim.	300	—	Across ext. L.S. sockets
M.T. prim.	31	—	On-off switch and 240 volts pin
Total H.T. sec.	580	—	Anodes V5
Field	1,350	—	Red and blue leads

CONDENSERS

C.	Purpose.	Mfds.
1	Series aerial	.0004
2	V1 grid isolating	.0001
3	V1 screen decoupling	.1
4	V1 cathode bias shunt	.1
5	Osc. anode coupling	.0002
6	Osc. grid coupling	.0001
7	M.W. fixed padder	.001
8	L.W. fixed padder	.00053
9	V2 cathode bias shunt	.1
10	V2 A.V.C. decoupling	.02
11	V1 A.V.C. decoupling	.02
12	H.F. by-pass	.0001
13	A.V.C. diode coupling	.0001
14	L.F. coupling	.02
15	H.F. by-pass	.0001
16	Tone control	.05
17	Pentode compensator	.006
18	V4 cathode bias shunt	50
19	H.T. smoothing	8
20	H.T. smoothing	8
21	Mains suppressor	.006
22	L.W. aerial fixed trimmer	.00003



Decca PT/ML on Test

MODEL PT/ML. — Standard model for A.C. mains, 200-250 volts, 50-60 cycles. Price 9½ gns.

DESCRIPTION. — Four-valve, plus rectifier, two-band table model superhet, incorporating Prestomatic tuning.

FEATURES. — "Airplane," full-vision scale calibrated in metres and station names with quick movement tuning control. Other controls for combined volume and master switch, wave selection and tone control. Prestomatic button panel with choice of six stations. Buttons, when pressed, automatically switch receiver to correct waveband of station. Sockets for high impedance L.S. and pick-up. Fuse in mains adjustment bridging member.

LOADING.—60 watts.

Sensitivity and Selectivity

MEDIUM WAVES (200-550 metres). — Good gain and representative selectivity. Sensitivity well maintained over band. Reasonably good background.

LONG WAVES (900-2,000 metres). — Representative gain and selectivity. All main stations easily received.

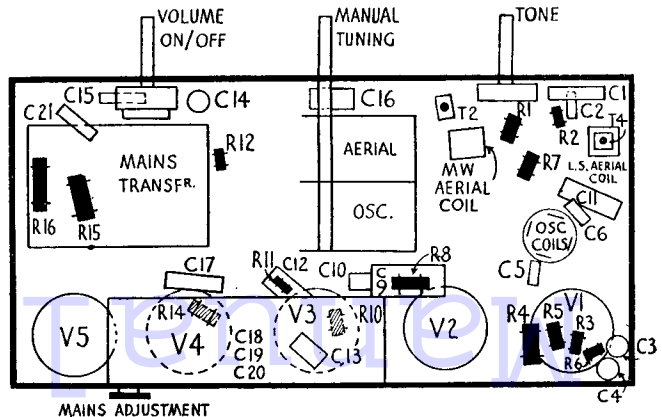
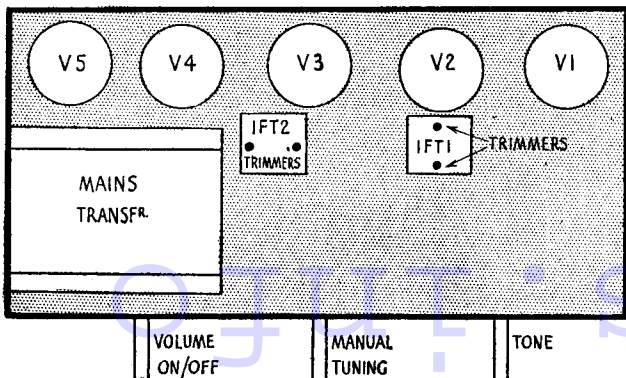
Acoustic Output

Very well balanced tone, with good high- and low-note radiation and noticeable attack. Tone control not too vigorous in action, general reproduction of music very pleasing, with nice quality on speech.

Prestomatic Tuning

Pre-set condensers are used, there being four sets for medium-wave and two sets for long-wave stations. The other two buttons on the control panel serve in place of a wavechange switch. Adjustment is simple. Receivers are sent out from the works with different station groupings according to the area in which they are to be sold.

A REPLACEMENT condenser for Cs18, 19, 20 is the 3569 type (8 + 8 + 50 mfd.) produced by A. H. Hunt, Ltd., Garratt Lane, Wandsworth, London, S.W.18, at 8s. 6d.



Left shows the arrangement of components on the top of the Decca PT/ML chassis, while the underside layout is on the right. Above are the Prestomatic panel connections.

DECCA MODEL PT/ML PRESTOMATIC

(Continued from page 41.)

Although T1 and T3, the medium- and long-wave oscillator trimmers, are shown for the sake of clarity directly across the oscillator coils in the circuit, they are actually on the trimmer assembly strip.

Alignment Notes

Alignment operations should be carried out with the chassis in the cabinet where access may be obtained to all trimmers.

I.F. Circuits.—Connect an output meter across the primary of the speaker transformer. Turn gang to maximum capacity and press the medium-wave manual knob fully in. Turn volume control to maximum and tone control to high position. Connect a service oscillator between the top grid cap of V1 and chassis.

Tune the service oscillator to 456 kcs. and adjust first the trimmers of I.F.T.2 and then I.F.T.1 for maximum, reducing the input from the oscillator as the circuits come into line. This must be done to prevent the A.V.C. action giving misleading results.

Signal Circuits.—Connect the service oscillator to the A and E sockets via a dummy aerial. Only feed sufficient input to obtain reliable peaks in the output meter, and reduce the input as the circuits come into line.

Medium Waves.—Press medium-wave manual button fully in. Tune set and oscillator to 200 metres (1,500 kc.) and adjust T1 and then T2 for maximum.

The padding is fixed, but check at 550 metres.

Long Waves.—Press long-wave manual button fully in. Tune set and oscillator to 1,000 metres (300 kc.), and adjust T3 and then T4 for maximum.

The long-wave padding is fixed, but check at 2,000 metres.

Press-button Alignment

Remove service oscillator and output meter, and connect an external aerial and earth, placing the cabinet on its side so as to obtain access to the trimmer panel through the false bottom.

Each button should be calibrated on the station it is to receive. For example, press the button inscribed London Regional, adjust the oscillator trimmer

(see sketch) to bring in the station, and then adjust the aerial trimmer to obtain maximum volume.

If desired, the station may be tuned in with the oscillator trimmer, the aerial and earth system removed, and a service oscillator, tuned to the frequency of the station concerned, connected in its place, and the aerial trimmer adjusted to give maximum volume. This prevents operation of the A.V.C. if the input is kept down. However, for all practical purposes, it will be found satisfactory to adjust the trimmers on the stations themselves.

ULTRA MODEL 202

(Continued from page 39.)

Tune service oscillator to 470 kc. and adjust the trimmers of I.F.T.2 and then I.F.T.1 for maximum response, reducing the input from the oscillator as the circuits come into line to keep the A.V.C. inoperative.

Signal Circuits.—Adjust the tuning pointer to lay between the two cream horizontal dial lines when the gang is fully closed.

Connect the service oscillator to the A and E sockets via a dummy aerial. To prevent operation of the A.V.C., only feed sufficient input to obtain reliable peaks in the output meter.

Medium Waves.—Tune set and oscillator to 200 metres (1,500 kc.), and adjust T1 and then T2 for maximum.

Tune set and oscillator to 500 metres (600 kc.), and adjust P1 for maximum, at the same time rocking the gang.

Repeat both operations until no further improvement results.

Long Waves.—Tune set and oscillator to 1,300 metres (230 kc.), and adjust T3 and then T4 for maximum response.

Tune set and oscillator to 1,700 metres (176.5 kc.), and adjust P2 for maximum simultaneously rocking the gang.

Repeat both operations until no further improvement results.

Short Waves.—Tune set and oscillator to 17 metres, screw T5 right up, unscrew until the second peak is heard, then adjust T6 for maximum response.

The short-wave padding is fixed, but check calibration at 30 and 51 metres.

I.F. Wavetrap.—Inject a strong signal of 470 kc., tune set to 950 metres and adjust W.T. trimmer for minimum response in the output meter.

Tune service oscillator to 464 kcs., and adjust the trimmers of I.F.T.2 and then I.F.T.1 for maximum, reducing the input from the service oscillator as the circuits come into line to keep below the point at which the A.V.C. begins to operate.

Signal Circuits.—The wavelength pointer should coincide with the right-hand vertical line on the dial when the gang is fully closed.

Connect the service oscillator to the A and E sockets via a dummy aerial, only feeding sufficient input to obtain reliable peaks in the output meter.

Medium Waves.—Tune set and oscillator to 214 metres (1,400 kcs.), this is marked with a small dot on the M.W. scale, and adjust T1 and then T2 for maximum response.

Tune set and oscillator to 500 metres

Marconiphone 851

(Continued from page 35.)

be found running across the coil former, and this loop must be bent up or down until maximum output is obtained.

It may be necessary to remove the coil can to identify the loop, but final adjustments must be made with the can in position and properly secured. Then recheck at 18 metres.

Medium Waves.—Tune oscillator to 195 metres (1,538.5 kc.), set gang to minimum capacity and adjust T3 for maximum response.

Tune service oscillator to 225 metres (1,333 kc.), tune in on receiver and adjust T4 and then T5 for maximum.

Tune service oscillator to 530 metres (566 kc.) and adjust P1 for maximum, at the same time rocking the gang.

Return to 195 metres and check setting of T5. **Long Waves.**—Tune oscillator to 725 metres (413.8 kc.), set gang to minimum and adjust T6 for maximum.

Tune oscillator to 800 metres (375 kc.), tune in on receiver and adjust T7 and T8 for maximum.

Tune oscillator to 1,900 metres (158 kc.), tune in on receiver and adjust P2 for maximum, simultaneously rocking the gang.

Check setting to T6 at 725 metres and then return to medium waves and go through entire M.W. and L.W. alignment again.

WINDINGS (D.C. Resistances)

Windings.	Ohms.	Range.	Measured between.
L1 .. ..	.1	SW	Top grid V1 and tag 1 S1.
L1+L2 ..	6	MW	Top grid V1 and tag 1 S1.
L1+L2+L3	20	LW	Top grid V1 and tag 1 S1.
L5 .. ..	.1	SW	Anode V1 and tag 23 S1.
L6	5.5	MW	Tag 25 and tag 23 S1.
L7	14	LW	Tag 23 and tag 24 S1.
L8 .. ..	.1	—	Cathode V1 and chassis.
L9 .. ..	.1	—	Across T1.
L10	5.5	—	Across T3.
L11	4.2	—	Across T6.
L12+L13+L14	6	—	Osc. anode V2 and R8.
L16	5	—	Anode V2 and screen V5.
L17 R24 ..	5	—	Top grid V3 and yellow / black lead IFT1.
L18	5	—	Anode V3 and red lead IFT2.
L19 R10 ..	500,000	—	Diode and cathode V4.
CK1	1,600	—	Tags 5 and 6 L.S.
O.T. prim.	400	—	Red and yellow leads from transformer.
M.T. prim.	26	—	Terminals M and 195/223 volts.
Total HT sec.	630	—	Anode pins V6.

KOLSTER-BRANDES 652

(Continued from page 45.)

cuit on the medium- and short-wave bands.

As the chassis is of the universal type, under certain conditions the chassis is "live" and should not be connected to earth.

Alignment Notes

I.F. Circuits.—Connect an output meter across the primary of the output transformer, taking the precaution of inserting a 2-mfd. condenser in series with one of the meter leads. Switch set to M.W. band, turn gang to maximum and volume to maximum. Connect a service oscillator between the top grid cap of V1 and chassis, leaving set connection made.

Tune service oscillator to 464 kcs., and adjust the trimmers of I.F.T.2 and then I.F.T.1 for maximum, reducing the input from the service oscillator as the circuits come into line to keep below the point at which the A.V.C. begins to operate.

Signal Circuits.—The wavelength pointer should coincide with the right-hand vertical line on the dial when the gang is fully closed.

Connect the service oscillator to the A and E sockets via a dummy aerial, only feeding sufficient input to obtain reliable peaks in the output meter.

Medium Waves.—Tune set and oscillator to 214 metres (1,400 kcs.), this is marked with a small dot on the M.W. scale, and adjust T1 and then T2 for maximum response.

Tune set and oscillator to 500 metres

(600 kcs.) and adjust P1 for maximum, simultaneously rocking the gang. P1 is the nut of the double padding condenser.

Repeat both operations until no further improvement results.

Long Waves.—Tune set and oscillator to 1,200 metres (250 kcs.) and adjust T3 and then T4 for maximum.

Tune set and oscillator to 1,714 metres (175 kcs.), also marked with a dot, and adjust P2 for maximum, simultaneously rocking the gang.

Repeat both operations.

Short Waves.—Tune set and oscillator to 17.6 metres (17 mcs.) and adjust T5 and T6 for maximum response.

The short-wave padding is fixed, but check at 50 metres (6 mcs.), and if any appreciable error is found then compensate with T5 to halve the error.