

TECHNICAL INFORMATION
AND
SERVICE DATA

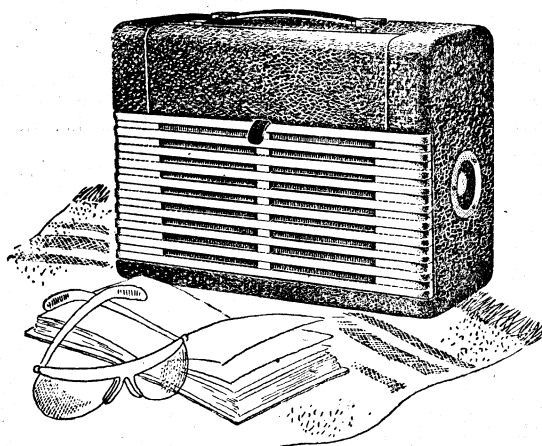


Portable Model 452-P
FIVE VALVE, BROADCAST,
BATTERY OPERATED SUPERHETERODYNE

AND

Portable Model 453-P
FIVE VALVE, TWO BAND,
BATTERY OPERATED SUPERHETERODYNE
INCORPORATING DATA ON CHRYSLER-DODGE-DE SOTO
MODELS CDD6 AND CDD7

ISSUED BY
AMALGAMATED WIRELESS (A/SIA) LTD.



ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGES:

Models 452-P, CDD6, Medium Wave 540-1600 Kc/s
(555-187.5 M.)
Models 453-P, CDD7, Medium Wave 540-1600 Kc/s
(555-187.5 M.)
Short Wave 6-18 Mc/s
(50-16 M.)

INTERMEDIATE FREQUENCY 455 Kc/s

BATTERY COMPLEMENT:

- 1 — 1.5 volts portable "A" Battery.
- 2 — 45 volts Mini-max dry cell "B" Battery.

BATTERY CONSUMPTION:

- "A" Battery — 300 mA.
- "B" Battery — "Maximum" — 14 mA.
- "Medium" — 8 mA.

LOUDSPEAKER (Permanent Magnet):

- 6 inch — Code AG23.
- Transformer — XA8.
- V.C. Impedance — 3 ohms at 400 c.p.s.

UNDISTORTED POWER OUTPUT 200 milliwatts
(Bty. Switch at Maximum)

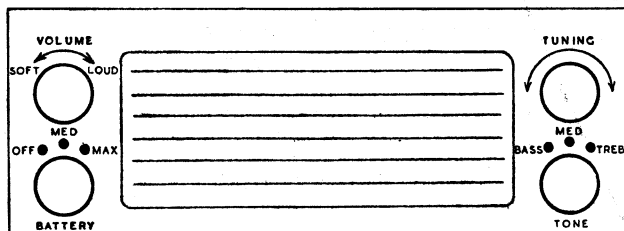
VALVE COMPLEMENT:

- (1) 1T4 R.F. Amplifier.
- (2) 1R5 Converter.
- (3) 1T4 I.F. Amplifier.
- (4) 1S5 Detector, A.F. Amplifier, A.V.C
- (5) 3V4 Output.

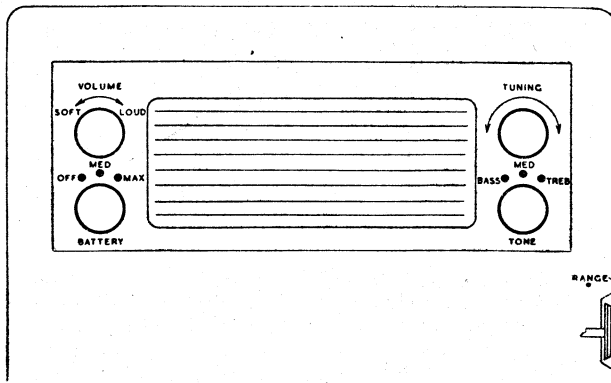
MECHANICAL SPECIFICATIONS.

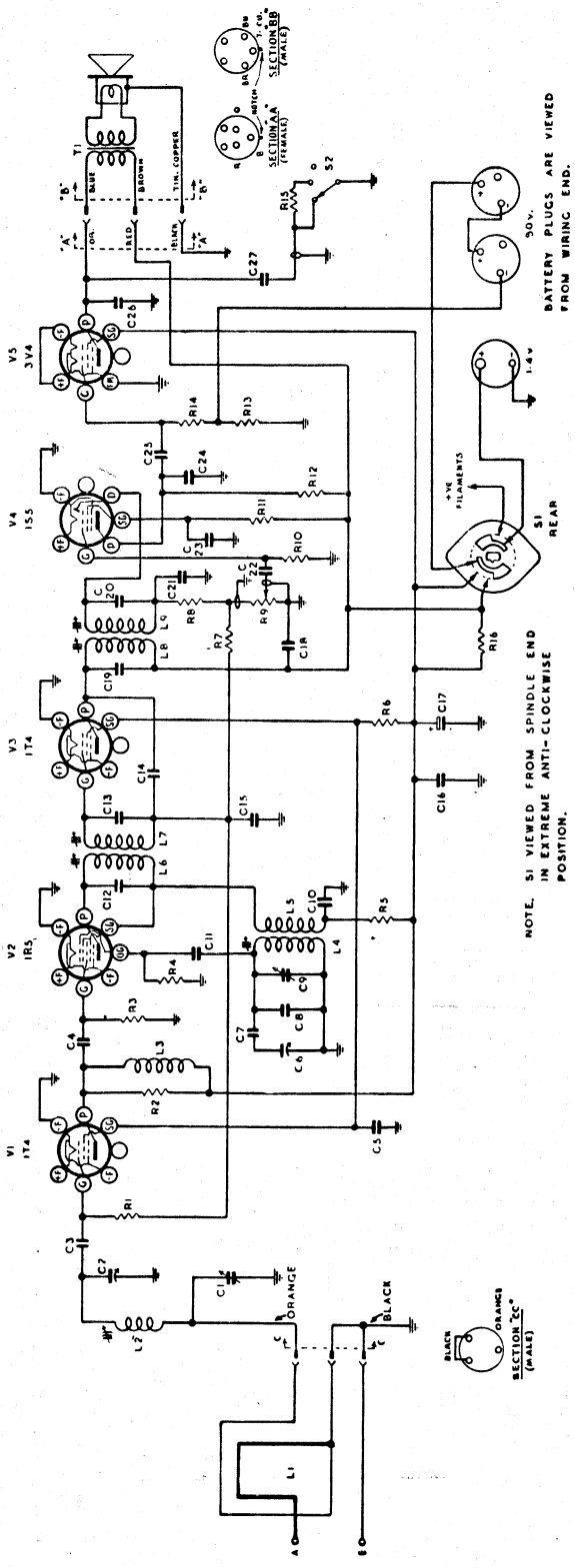
	Height.	Width.	Depth.
Cabinet Dimensions (inches)	11 $\frac{3}{4}$	15	6 $\frac{1}{2}$
Carton Dimensions (inches)	14 $\frac{3}{4}$	16 $\frac{1}{8}$	7 $\frac{3}{8}$
Chassis Base Dimensions (inches)	2 $\frac{1}{2}$	11 $\frac{3}{8}$	4 $\frac{1}{2}$
Weight (nett lbs.)	19 lbs., complete with Batteries		

Controls 452-P



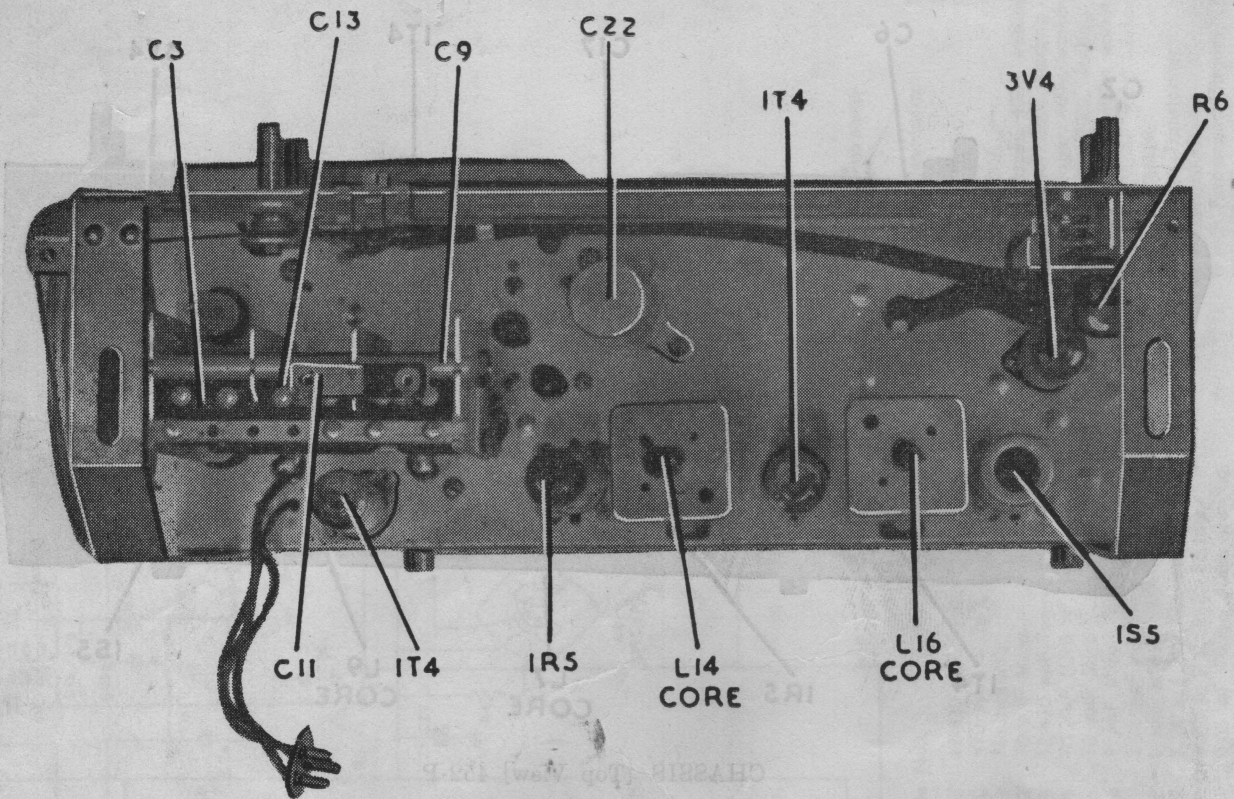
Controls 453-P



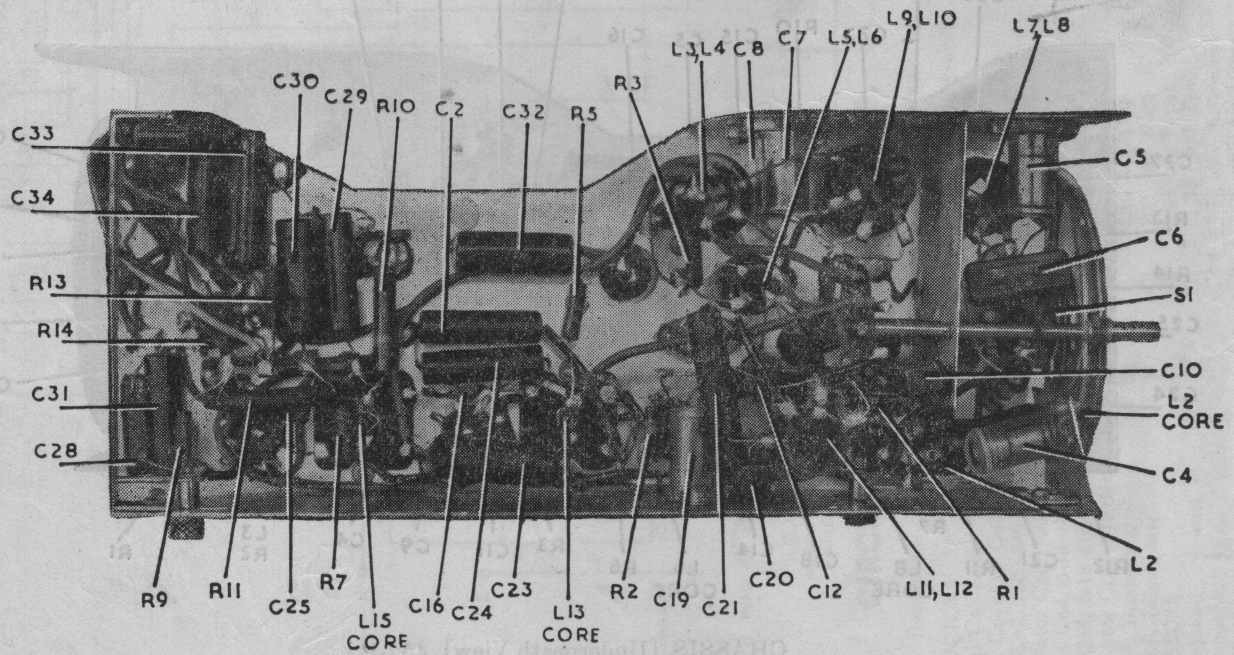


CIRCUIT CODE—MODEL 452-P.

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.
L1	INDUCTORS		C5	0.05 μ F Paper, 200v. working		C20	70 μ F Mica		
L2	Aerial Coil Loop	22430	C6	12-430 μ F Tuning	18629	C21	100 μ F Mica		
L3	Loop Coupling Coil	22718	C7	490 μ F $\pm 2\frac{1}{2}\%$ Padder		C22	0.025 μ F Paper, 400v. working		
L4, L5	Compensating Coil (includes R2)	22720	C8	9 μ F Mica	19659	C23	0.1 μ F Paper, 200v. working		
L6, L7	Oscillator Coil, 540-1600 Kc/s	9206A	C9	3-25 μ F Air Trimmer		C24	200 μ F Mica		
L8, L9	1st I.F. Transformer	22700	C10	0.05 μ F Paper, 200v. working		C25	0.025 μ F Paper, 400v. working		
R1	2nd I.F. Transformer	22703	C11	70 μ F Mica		C26	0.005 μ F Paper, 600v. working		
R2	RESISTORS		C12	70 μ F Mica		C27	TRANSFORMERS		
R3	1 megohm		C13	70 μ F Mica		T1	Loudspeaker Transformer	XA8	
R4	10,000 ohms		C14	9 μ F Mica		S1	SWITCHES		
R5	10,000 ohms		C15	0.01 μ F Paper, 600v. working		S2	ON/OFF Switch	23252	
R6	50,000 ohms		C16	0.1 μ F Paper, 200v. working			Tone Switch	23260	
			C17	20 μ F 200, P.V. Electrolytic			LOUDSPEAKER		
			C18	0.1 μ F Paper, 200v. working			6 inch Permanent Magnet		AG23
			C19	70 μ F Mica					



CHASSIS [Top View] 453-P



CHASSIS [Underneath View] 453-P

GENERAL DESCRIPTION.

The portable models 452-P/CDD6 are broadcast and the models 453-P/CDD7, two-band receivers housed in cabinets attractively finished in leatherette. They embody a hinged front cover which effectively protects the dial and controls from damage, dust and weather.

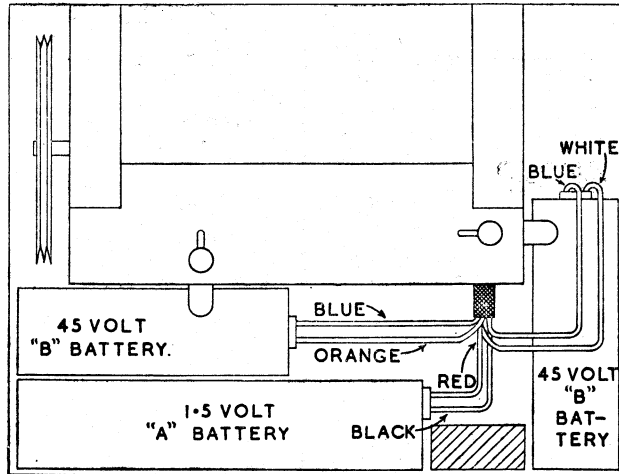
Features of their design include: Tropic-proof construction, automatic volume control, magnetite cores in I.F. trans-

formers, broadcast oscillator coils and loop coupling coils, air-dielectric trimming capacitors, straight-line tuning dial.

DRIVE CORD REPLACEMENT.

Follow the diagram which is affixed to the back of the front plate assembly. This shows the route of the cord and the method of attachment.

Battery Connections



ALIGNMENT PROCEDURE.

MANUFACTURER'S SETTING OF ADJUSTMENTS.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered, unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using specialised equipment.

For all alignment operations, except aerial stage, connect

the "low" side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

TESTING INSTRUMENTS.

- (1) A.W.A. Junior Signal Generator, type 2R3911
- (2) A.W.A. Modulated Oscillator, type J6726.
If the modulated oscillator is used, connect an 0.25 megohm non-inductive resistor across the output terminals, and, for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE—MODELS 452-P/CDD6.

Order	Connect "high" side of generator to:	Tune generator to:	Tune receiver to:†	Adjust for maximum peak output
1	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L9 Core
2	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L8 Core
3	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L7 Core
4	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L6 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Section of Gang (Drive end)	540 Kc/s	540 Kc/s	L.F. Osc. Core Adj. (L4)
6	Aerial Section of Gang (Drive end)	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C9)
The chassis should now be fitted into the cabinet and the aerial plug connected to the aerial socket.				
7	*Inductively coupled to loop	600 Kc/s	600 Kc/s	L.F. Aer. Core Adj. (L2)‡
8	*Inductively coupled to loop	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C1)‡

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument and placed co-axial with the loop and distant not less than 1 foot from it.

† Before removing the chassis from the cabinet, mark the alignment points on the back of the front plate assembly.

‡ This adjustment is accessible through a hole in the right-hand end of the cabinet after removing the cover from the hole.

ALIGNMENT TABLE—MODELS 453-P/CDD7.

Order	Connect "high" side of generator to:	Tune generator to:	Tune receiver to:†	Adjust for maximum peak output
1	Centre Section of Gang	455 Kc/s	540 Kc/s	L16 Core
2	Centre Section of Gang	455 Kc/s	540 Kc/s	L15 Core
3	Centre Section of Gang	455 Kc/s	540 Kc/s	L14 Core
4	Centre Section of Gang	455 Kc/s	540 Kc/s	L13 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Orange Lead on Aerial Plug	16 Mc/s	16 Mc/s	Osc. Adj. (C19)
6	Orange Lead on Aerial Plug	16 Mc/s	16 Mc/s	R.F. Adj. (C7)
7	Orange Lead on Aerial Plug	16 Mc/s	16 Mc/s	Aer. Adj. (C5)
8	Aerial Section of Gang	600 Kc/s	600 Kc/s	Osc. Core Adj. (L6)
9	Aerial Section of Gang	1500 Kc/s	1500 Kc/s	Osc. Adj. (C17)
10	Aerial Section of Gang	1500 Kc/s	1500 Kc/s	R.F. Adj. (C8)
The chassis should now be fitted into the cabinet and the aerial plug connected to the aerial socket.				
11	*Inductively coupled to loop	600 Kc/s	600 Kc/s	Aer. Core Adj. (L2)‡
12	*Inductively coupled to loop	1500 Kc/s	1500 Kc/s	Aer. Adj. (C4)‡

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument and placed co-axial with the loop and distant not less than 1 foot from it.

† Before removing the chassis from the cabinet, mark the alignment points on the back of the front plate assembly.

‡ This adjustment is accessible through a hole in the right-hand end of the cabinet after removing the cover from the hole.

MECHANICAL REPLACEMENT PARTS.

Item	Part No.	Item	Part No.
Aerial, plug assembly (452-P/CDD6)	23894	Dial, scale Model 452-P	23334
Aerial, plug assembly (453-P/CDD7)	23893	Model CDD6	23362
Cabinet	C90	Model 453-P	23336
Cabinet, back assembly	23278	Model CDD7	23364
Cabinet, grille	23233	Drive, cord assembly	9576M
Cable, battery	23902	Knob	23266
Cable, speaker	23903	Socket, valve	19965
Cable, tone	23904	Socket, valve cushion	23274
Cable, volume	23905	Socket, valve cushion (453-P/CDD7 only)	23273
Dial, clamp	23263	Strip, tag 1 way	22945
Dial, frame assembly	23236	1 way	21761
Dial, pointer assembly	23276	1 way (452-P/CDD6 only)	7628
		4 way	8022

D.C. RESISTANCE OF WINDINGS.

Models 452-P/CDD6.

Winding	D.C. Resistance in ohms.
Loop Coupling Coil (L2)	1.5
Compensating Coil (L3)	40
Oscillator Coil—	
Primary (L4)	2
Secondary (L5)	6
I.F. Transformer Windings	10
Loudspeaker Input	
Transformer (T1)—	
XA8 Primary	425 or 510
Secondary	*

* Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

Models 453-P/CDD7.

Winding	D.C. Resistance in ohms.
Loop Coupling Coil (L2)	1.5
R.F. Coil (M.W.)—	
Primary (L3)	80
Secondary (L4)	4
R.F. Coil (S.W.)—	
Primary (L9)	10
Secondary (L10)	*
X Aerial Coil (S.W.)—	
Primary (L7)	4
Secondary (L8)	*
Oscillator Coil (M.W.)—	
Primary (L5)	2
Secondary (L6)	6
X Oscillator Coil (S.W.)—	
Primary (L11)	*
Secondary (L12)	*
I.F. Transformer Windings	10
Loudspeaker Input	
Transformer (T1)—	
XAB Primary	425 or 510
Secondary	*

* Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

SOCKET VOLTAGES.

VALVES	Bias Volts		Screen Grid to Chassis Volts		Anode to Chassis Volts		Anode Current mA		Filament Volts	
	Max.†	Med.‡	Max.	Med.	Max.	Med.	Max.	Med.	Max.	Med.
1T4 R.F. Amp.	0	0	35	25	82	45	1.3	0.6	1.4	1.4
1R5 Converter ...	0	0	50	35	50	35	0.8	0.3	1.4	1.4
1T4 I.F. Amp.	0	0	35	25	84	85	1.1	0.6	1.4	1.4
1S5 Det., A.F. Amp., A.V.C.	0	0	15*	15*	20*	20*	0.06	0.06	1.4	1.4
3V4 Output	-5.5	-3.0	84	50	80	85	6.0	3.5	1.4	1.4

† Max. = Maximum position of Battery Switch.

‡ Med. = Medium position of Battery Switch.

* Calculated from measured current. An ordinary voltmeter will register a lower value.

Measured with no signal input. Volume control at maximum clockwise.