SERVICE MANUAL

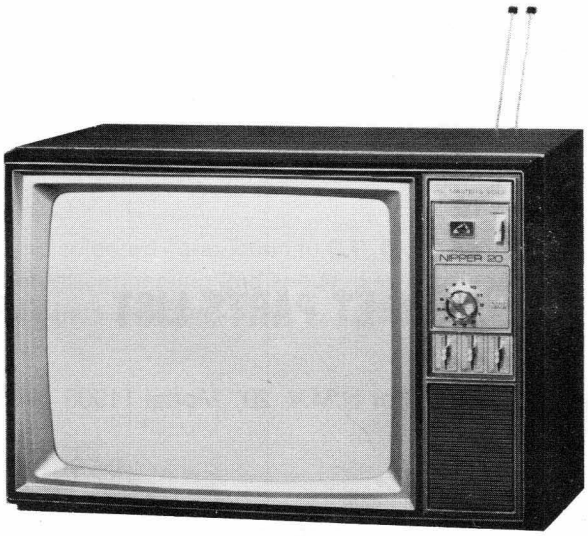
20 inch Monochrome Television
MODEL 11005

HIS MASTER'S VOICE

"HIS MASTER'S VOICE"

MANUFACTURED & DISTRIBUTED BY
E.M.I. (AUSTRALIA) LIMITED
(INCORPORATED IN N.S.W.)

6 PARRAMATTA ROAD,
HOMEBUSH, N.S.W.



SPECIFICATIONS

CHANNELS

13 Australian VHF Channels

POWER SUPPLY

220-260 Volt 50 Hz AC Power only 75W

AERIAL

External	300 ohm balanced
External	Telescopic Dipole

INTERMEDIATE FREQUENCIES

Vision Carrier	36.875 MHz.
Sound Carrier	31.375 MHz.
Sound Intercarrier	5.5 MHz.

FUSES

AC	FU601	1.0A.
DC	FU602	.7A

January, 1975

Part No. 684-2691

CAUTION

The normal B+ voltages in these receivers are not dangerous, but exercise extreme caution when servicing. The high voltage at the picture tube anode (11,000 volts) will give an unpleasant shock but does not supply enough current to give a fatal shock. However, secondary human reactions to otherwise harmless shocks have been known to cause injury.

Always discharge the picture tube to its adquadag coating before handling the tube. The picture tube is highly evacuated, and if broken, may violently expel glass fragments. Always wear goggles when handling the picture tubes.

Damage to transistors can result from incorrect servicing technique. It is strongly recommended that all soldering be done with the set switched off and the soldering iron made electrically common with the chassis.

CABINET PARTS LIST

Part Nos. For H.M.V. 20" Model 11005

PART NUMBER	DESCRIPTION
2076102833	BEZEL (LV)
2076102100	ESCUTCHEON FOR CONTROLS (GKB-AUM)
2071205434	INLAY, H.M.W. DECORATION PLATE (EMLV (A))
2071205447	INLAY, VHF DECORATION PLATE (EMLV (B))
2071205452	INLAY, CONTROLS DECORATION PLATE (EMLV (C))
2087002145	KNOB, VHF CHANNEL SELECTOR (C438)
2087100544	KNOB, VHF FINE TUNING (F227)
2087400153	KNOB, VOL., CONT., BRIGHT. (S16)
2087900308	KNOB, POWER SWITCH
2071000142	CABINET (EM)
2076400504	HANDLE FOR SIDE (450S)
2085200932	BACK COVER (EMLV)
2076301574	COVER FOR C.R.T. NECK (EM)
2085400158	BOTTOM COVER (LVH)
2076700059	BOTTOM FOOT (BKC)
2076400961	ANTENNA BASE FOR VHF ROD ANTENNA (EM)
2051500038	VHF ROD ANTENNA (APC)
2049100483	TERMINAL FOR ANTENNA (C)
2075905133	CAUTION LABEL FOR ANTENNA (TWLV)
2030000136	LOUDSPEAKER 4" (8 OHMS)

DISMANTLING INSTRUCTIONS

Back Cover Removal

(1) Push telescopic aerials into retracted position.
(2) Disconnect external aerial lead.
(3) Remove seven screws.
(4) Lift back away.

Tuner Removal

(1) Pull off all knobs from front of receiver.
(2) Unplug 240 volt lead to mains switch and tuner leads to P.C.B.
(3) Remove four nuts and washers.
(4) Withdraw tuner.

Chassis Removal

(1) Remove back.
(2) Remove C.R.T. socket and soldered connection to C.R.T. dag earthing.
(3) Unplug 240 volt lead to mains switch, tuner leads to P.C.B. and speaker.
(4) Remove anode cap (when disconnecting 2nd anode, discharge it to chassis ground only).
(5) Remove three nuts and washers at rear of chassis.
(6) Tilt chassis up at rear and withdraw.

Picture Tube Removal

(1) Remove back.
(2) Remove C.R.T. socket and soldered connection to C.R.T. dag earthing.
(3) Remove anode cap (when disconnecting 2nd anode, discharge it to chassis earth only.)
(4) Remove four nuts and washers securing C.R.T.
(5) Withdraw C.R.T.

Speaker Removal

(1) Remove back.
(2) Unplug speaker leads.
(3) Remove four screws securing speaker.
(4) Withdraw speaker.

ADJUSTMENTS

When servicing, make sure A.C. power line voltage is 240v ± 10% 50Hz. When the power is 'on' never attempt to short or open any part of the circuit. Do not discharge or arc when checking high voltage. When replacing parts in the receiver the power plug should preferably be disconnected.

Regulated Supply. Check and if necessary adjust R607 so that the D.C. voltage between emitter of TR601 and chassis is 100 ± 10V. This adjustment should be done after the receiver has been operating for at least five minutes.

Deflection Yoke *(position and angle)*

Loosen the clamp screw, push the yoke as far forward as possible and adjust the horizontal tilt of the picture before refastening the clamp screw.

Centring. Adjust the 2 ring magnets to centre the picture.

Horizontal Hold. Set the horizontal oscillator coil L401 to the centre of its lock-in range. Check that there is no delay in picture locking when changing channel.

Vertical Size. Adjust R511 as required.

Focus. The C.R.T. socket PCB allows choice of positions 1, 2 or 3 for best focus.

INTERCARRIER I.F. ALIGNMENT

Measuring Equipment:—

(1) 5.5 MHz generator or off air signal.
(2) High impedance voltmeter.
(3) Resistive dividing network consisting of two series connected 47K resistors.

Procedure:—

(a) Tune in to a weak station or inject an accurate 5.5 MHz signal via a 2.2K ohm resistor and 0.1 uF series capacitor to TP202 on the P.C.B. at a level of about 2 mV.
(b) Connect one end of the resistive divider to TP301 on the P.C.B. and the other end to earth; connect the voltmeter between the centre point of the divider and earth.
(c) Tune the ratio detectors (T301) pink coloured core for maximum indication.
(d) Leave the resistive divider between TP301 and earth with one end of the voltmeter connected to its centre point and re-connect the other terminal of the voltmeter to TP302 on the P.C.B.
(e) Increase the 5.5MHz level by about 35dB.
(f) Tune the ratio detectors (T301) blue coloured core for zero volts.
(g) Repeat the above procedure as necessary for accurate tuning.

5.5 MHz TRAP

With the signal generator connected as above and at a level of about 500mV, adjust 5.5MHz trap L209 for minimum signal voltage at "K" pin on P.C.B. for C.R.T. cathode under the condition of maximum contrast.

VISION I.F. ALIGNMENT

Measuring Equipment:—

(1) I.F. Sweep generator.
(2) Oscilloscope.
(3) 0-5 volt bias supply or 250K ohm potentiometer.

Procedure:—

(a) Connect the oscilloscope to TP202 and set its sensitivity at about 300mV/cm.
(b) Inject the R.F. output from the sweep generator into the lead through capacitor test point on the tuner marked TP101 via a .01uF capacitor.
(c) Connect the variable bias supply to TP201 on the P.C.B. or alternatively connect a 250K ohm potentiometer as a variable resistor between the +12V supply and TP201.

VISION I.F. ALIGNMENT (Continued)

Alignment Procedure	1	2	3	4	5	6
Coiled to be aligned	L202	L201	T201	T202	L203	T101
Frequency MHz	38.375	31.375	36.875	34.5	33.0	34.5
Adjust For	Min.	Min.	Max.	Max.	Max.	Max.

(d) Set the channel selector to a high frequency unused channel e.g. Ch. 11 and adjust the bias with a medium input signal.

(e) Adjust coils L202, L201, L203 and transformers T201, T101, T202 as in the above table.

(f) If unable to obtain the response as in Fig. 1 adjust the Tuner output IF coil transformer T101 and T201.

(g) Increase the input signal by 15dB and re-adjust the bias for the same output as previously. If response is not satisfactory adjust T201 and tuner output coil transformer T101 as necessary.

(h) Check and Re-set trap tuning if necessary.

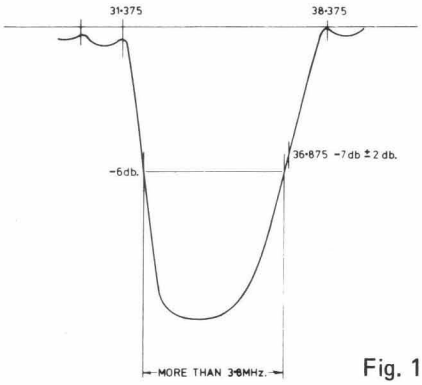


Fig. 1

PRINTED CIRCUIT BOARD ASSEMBLY (Top View)

MAIN BOARD

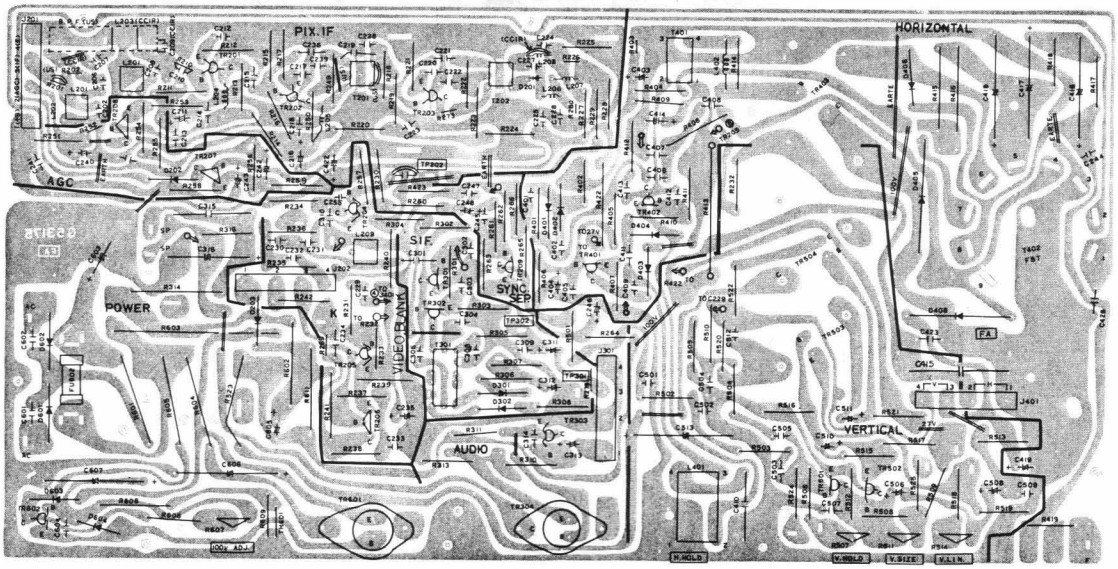


Fig. 2

NECK BOARD

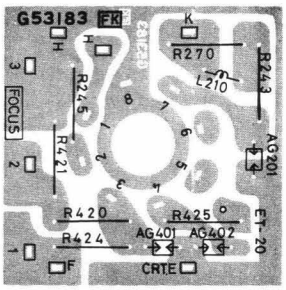


Fig. 3

CHASSIS VIEW

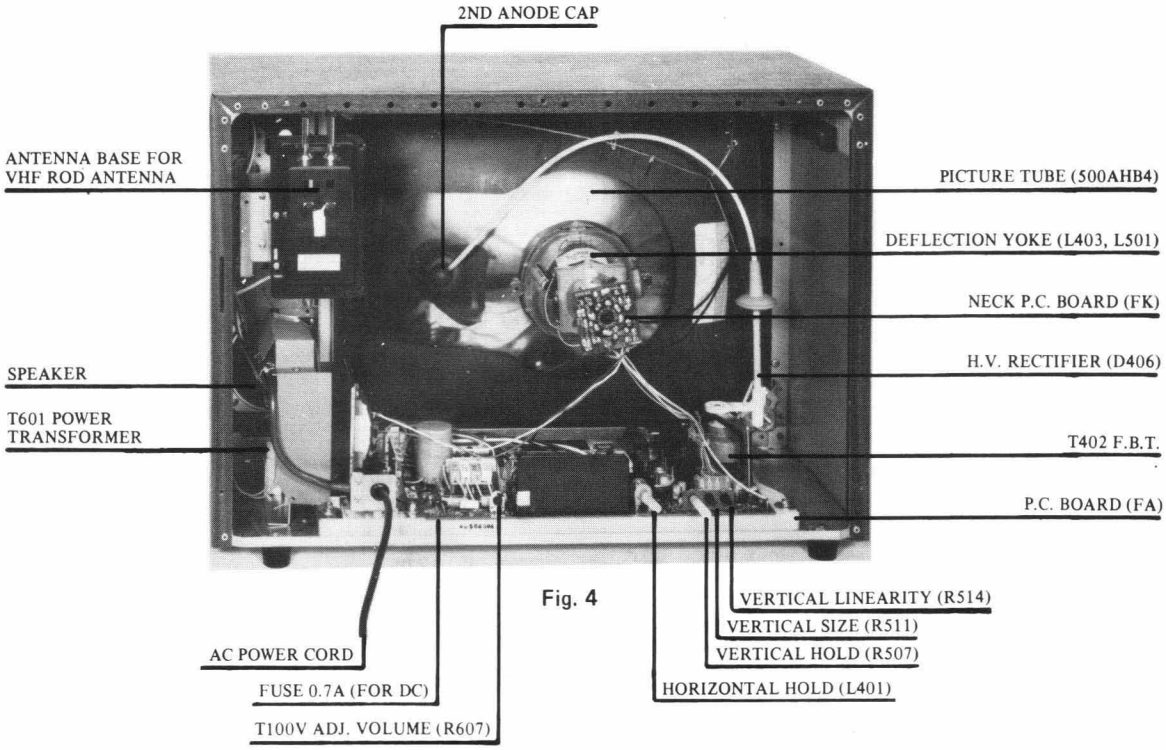


Fig. 4

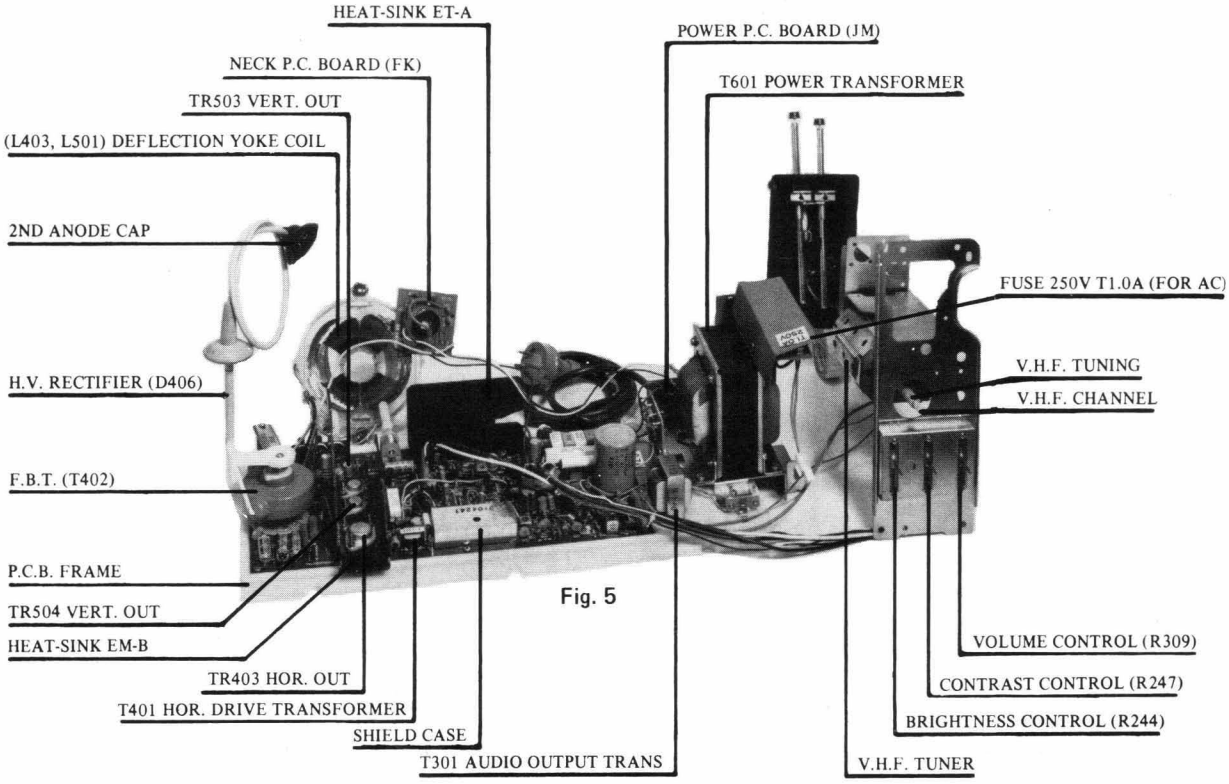


Fig. 5

CHASSIS PARTS LIST

Schematic Location	Part No.	Description
L201	2018400032	31.375 MHz Trap (H)
L202	2018400028	38.375 MHz Trap (G)
L203	2018400045	Peaking (I)
L204	2014710105	Peaking (J)
L206	2014700046	IF Filter Coil, 36 MHz
L207	2014700051	IF Filter Coil, 72 MHz
L209	2019200002	5.5 MHz Trap Coil AE
L210	2014100542	Peaking Coil
R201	2036102800	15 ohm ± 5% ¼W Carbon Film
R202	2036102689	6.8 ohm ± 5% ¼W Carbon Film
R210	2036102741	10 ohm ± 5% ¼W Carbon Film
R211	2035100855	220 ohm ± 10% ¼W Composition
R212	2036100781	330 ohm ± 10% ¼W Composition
R214	2036100848	470 ohm ± 10% ¼W Composition
R215	2036101115	2.7K ohm ± 10% ¼W Composition
R216	2036101205	4.7K ohm ± 10% ¼W Composition
R217	2036100870	560 ohm ± 10% ¼W Composition
R218	2036101055	1.8K ohm ± 10% ¼W Composition
R219	2036101149	3.3K ohm ± 10% ¼W Composition
R220	2035100619	56 ohm ± 10% ¼W Composition
R221	2036100908	680 ohm ± 5% ¼W Carbon Film
R222	2036101149	3.3K ohm ± 5% ¼W Carbon Film
R223	2035100715	100 ohm ± 10% ¼W Composition
R224	2035100432	22 ohm −10 ¼W Composition
R225	2036101084	2.2K ohm ±5% ¼W Carbon Film
R226	2036103736	5.6K ohm ±5%¼W Carbon Film
R227	2036101149	3.3K ohm ±5% ¼W Carbon Film
R228	2036101742	150K ohm ±5% ¼W Carbon Film
R229	2035101138	1K ohm ±10% ¼W Composition
R230	2036100690	180 ohm ±5% ¼W Carbon Film
R231	2035202043	150K ohm ±10% ¼W Composition
R232	2035202607	3.3M ohm ±10% ¼W Composition
R233	2035101765	33K ohm ±10% ¼W Composition
R234	2036100720	220 ohm ±5% ¼W Carbon Film
R235	2036100814	390 ohm ±5% ¼W Carbon Film
R236	2036100218	8.2 ohm ±5% ¼W Carbon Film
R237	2035101484	6.8K ohm ±10% ¼W Composition
R238	2036101359	12K ohm ±5% ¼W Carbon Film
R239	2036100609	100 ohm ±5% ¼W Carbon Film
R240	2035200965	390 ohm ±10% ¼W Composition
R241	2039101027	6.8K ohm ±5% 2W Metal Oxide Film
R242	2035102116	220K ohm ±10% ¼W Composition
R243	2035101138	1K ohm ±10% ¼W Composition
R244	2043520004	100K ohm Slide Carbon V.R.
R245	2036100999	1.2K ohm ±5% ¼W Carbon Film
R247	2043520067	2K ohm Slide Carbon V.R.
R249	2036101359	12K ohm ±5% ¼W Carbon Film
R250	2036100609	100 ohm ±5% ¼W Carbon Film
R251	2036101448	22K ohm ±5% ¼W Carbon Film
R252	2036103736	5.6K ohm ±5% ¼W Carbon Film
R253	2036100937	820 ohm ±5% ¼W Carbon Film
R254	2036100814	390 ohm ±5% ¼W Carbon Film
R255	2035101039	560 ohm ±10% ¼W Composition
R256	2036101234	5.6K ohm ±5% ¼W Carbon Film
R257	2035100925	330 ohm ±10% ¼W Composition
R258	2036100848	470 ohm ±5% ¼W Carbon Film
R259	2036101084	2.2K ohm ±5% ¼W Carbon Film
R260	2035101039	560 ohm ±10% ¼W Composition
R261	2035101138	1K ohm ±10% ¼W Composition
R262	2036102015	820K ohm ±5% ¼W Carbon Film
R263	2036101562	47K ohm ±5% ¼W Carbon Film
R264	2036101651	82K ohm ±5% ¼W Carbon Film
R265	2035101039	560 ohm ±10% ¼W Composition
R266	2035101312	2.7K ohm ±10% ¼W Composition
R269	2036104369	330K ohm ±5% ¼W Carbon Film
R270	2036101388	15K ohm ±5% ¼W Carbon Film
R273	2036102988	47 ohm ±5% ¼W Carbon Film
R275	2036100999	1.2K ohm ±5% ¼W Carbon Film
R276	2036103466	1K ohm ±5% ¼W Carbon Film
R280	2036103942	22K ohm ±5% ¼W Carbon Film
C200	2030015006	33MF 25V Electrolytic
C201	2028000640	120pF ±10% Disc Ceramic
C206	2028000314	15pF ±10% Disc Ceramic
C207	2028000314	15pF ±10% Disc Ceramic
C208	2028000314	15pF ±10% Disc Ceramic
C209	2028000640	120pF ±10% Disc Ceramic
C211	2030025043	4.7MF 25V Electrolytic
C212	2027050282	1500pF ±10% Disc Ceramic
C213	2027050282	1500pF −10% Disc Ceramic
C214	2027050282	1500pF ±10% Disc Ceramic
C215	2028000463	39pF ±10% Disc Ceramic
C216	2030015006	33MF 25V Electrolytic
C217	2027050282	1500pF ±10% Disc Ceramic
C218	2027050282	1500pF ±10% Disc Ceramic
C220	2027050282	1500pF ±10% Disc Ceramic
C221	2028000126	4pF ±0.5pF Disc Ceramic
C222	2027050282	1500pF ±10% Disc Ceramic
C223	2027050282	1500pF ±10% Disc Ceramic
C224	2027000482	0.01MF ±10% Disc Ceramic
C225	2027050282	1500pF ±10% Disc Ceramic
C227	2028000256	10pF ±1pF Disc Ceramic
C228	2028000256	10pF ±1pF Disc Ceramic
C229	2031100573	0.022MF ±10% Mylar
C230	2028000672	150pF ±10% Disc Ceramic
C231	2028000672	150pF ±10% Disc Ceramic
C232	2028000767	270pF ±10% Disc Ceramic
C233	2028000285	12pF ±10% Disc Ceramic
C234	2031103018	0.22MF ±20% Mylar
C235	2030000001	220MF 6.3V Electrolytic
C236	2028000101	3pF ±0.5pF Disc Ceramic
C238	2027050282	1500pF ±10% Ceramic Disc
C239	2027050282	1500pF ±10% Ceramic Disc
C240	2030010003	10MF 16V Electrolytic
C241	2027050282	1500pF ±10% Disc Ceramic
C242	2030025043	4.7MF 25V Electrolytic
C243	2030010003	10MF 16V Electrolytic
C244	2027050282	1500pF ±10% Disc Ceramic
C245	2031100296	4700pF ±10% Mylar
C246	2030015006	33MF 25V Electrolytic
C248	2030025019	1MF 50V Electrolytic
C252	2027050282	1500pF ±10% Disc Ceramic
C253	2027050282	1500pF ±10% Disc Ceramic
C255	2028000209	8pF ±0.5pF Disc Ceramic
C257	2028000616	100pF ±10% Disc Ceramic
C258	2028000640	120pF ±10% Disc Ceramic
C262	2028000143	5pF ±0.5pF Disc Ceramic
AG201	2047820015	Spark Gap B

CHASSIS PARTS LIST (Continued)

Schematic Location	Part No.	Description
T201	2018300012	2nd Video IF
T202	2018300029	3rd Video IF
TR201	2003038208	2SC382G Transistor
TR202	2003038812	2SC388A Transistor
TR203	2003038812	2SC388A Transistor
TR204	2003037309	2SC373 Transistor
TR205	2003037227	2SC372Y Transistor
TR206	2003500307	SE7010 Transistor
TR207	2004305600	2SB56 Transistor
TR208	2004305600	2SB56 Transistor
TR209	2004060911	2SA609E Transistor
D201	2008000001	IN60 Diode
D202	2008000001	IN60 Diode
R301	2035101416	4.7K ohm ±10% ¼W Composition
R302	2036101171	3.9K ohm ±5% Carbon Film
R303	2036100908	680 ohm ±5% ¼W Carbon Film
R304	2036101149	3.3K ohm ±5% ¼W Carbon Film
R305	2035101346	3.3K ohm ±10% ¼W Composition
R306	2035101063	680 ohm ±10% ¼W Composition
R307	2035101731	27K ohm ±10% ¼W Composition
R308	2035101138	1K ohm ±10% ¼W Composition
R309	2043520078	10K ohm Slide Carton V.R.
R310	2036101562	47K ohm ±5% ¼W Carbon Film
R311	203510852	47K ohm ±10% ¼W Composition
R313	2036100458	39 ohm ±5% ¼W Carbon Film
R314	2039100756	1.2K ohm ±5% 2W Metal Oxide Film
R316	2039011200	22K ohm ±5% 1W Metal Oxide Film
C301	2028000143	5pF ±0.5pF Disc Ceramic
C303	2027000482	0.01MF ±10% Disc Ceramic
C304	2027000482	0.01MF ±10% Disc Ceramic
C306	2028000101	3pF ±0.5pF Disc Ceramic
C308	2027000482	0.01MF ±10% Disc Ceramic
C309	2031100725	0.04MF ±20% Mylar
C310	2027000482	0.01MF ±10% Disc Ceramic
C311	2030010003	10MF 16V Electrolytic
C312	2030010003	10MF 16V Electrolytic
C313	2030010003	10MF 16V Electrolytic
C314	2027000183	560pF ±10% Disc Ceramic
C315	2031203059	0.022MF ±10% Polypropylene
C316	2030140014	4.7MF 160V Electrolytic
T301	2019100018	Trans Ratio Detector M
T302	2019500132	Audio Output Transformer
TR301	2003037227	2SC372Y Transistor
TR302	2003038092	2SC380ATV Transistor
TR303	2003037309	2SC373 Transistor
TR304	2003051513	2SC515A Transistor
D301	2008000001	IN60 Diode
D302	2008000001	IN60 Diode

Schematic Location	Part No.	Description
L401	2015200000	Horizontal Osc. Coil
L402	2014740008	Horizontal Filter Choke Coil, 18uH
L403	2021100049	Deflection Yoke
R401	2035101621	15K ohm ±10% ¼W Composition
R402	2035101558	10K ohm ±10% ¼W Composition
R403	2036103798	8.2K ohm ±5% ¼W Carbon Film
R404	2036101928	470K ohm ±5% ¼W Carbon Flim
R405	2035101416	4.7K ohm ±10% ¼W Composition
R406	2035101249	1.8K ohm ±10% ¼W Composition
R407	2036101055	1.8K ohm ±5% ¼W Carbon Film
R408	2039100874	2.7K ohm ±5% 2W Metal Oxide Film
R409	2036101414	18K ohm ±5% ¼W Carbon Film
R410	2036100814	390 ohm ±5% ¼W Carbon Film
R411	2035102253	470K ohm ±10% ¼W Composition
R412	2039010604	470 ohm ±5% 1W Metal Oxide Film
R413	2041500033	1.5K ohm ±10% 7W Wound Cemented
R414	2035100754	120 ohm ±10% ¼W Composition
R415	2039200332	120 ohm ±5% 3W Metal Oxide Film
R416	2039200332	120 ohm ±5% 3W Metal Oxide Film
R417	2035202255	470K ohm ±10% ½W Composition
R418	2035202255	470K ohm ±10% ½W Composition
R419	2035102017	270K ohm ±5% ¼W Carbon Film
R420	2036101830	270K ohm ±5% ¼W Carbon Film
R421	2035102184	330K ohm ±10% ¼W Composition
R422	2039100420	150 ohm ±5% 2W Metal Oxide Film
R423	2035101173	1.2K ohm ±10% ¼W Composition
R424	2036101801	220K ohm ±5% ¼W Carbon Film
R425	2036101509	33K ohm ±5% ¼W Carbon Film
C401	2027000331	2200pF ±20% Disc Ceramic
or	2031100160	2200pF ±20% Mylar
C402	2027000122	330pF ±10% Disc Ceramic
C403	2030025019	1MF 50V Electrolytic
C404	2030025019	1MF 50V Electrolytic
C405	2031100448	0.01MF ±20% Mylar
C406	2031100725	0.047MF ±20% Mylar
C407	2031100725	0.047MF ±20% Mylar
C408	2027000205	680pF ±10% Disc Ceramic
C409	2031100646	0.033MF ±10% Mylar
C410	2031000677	6800pF ±10% Polystyrene
C411	2031100864	0.1MF ±20% Mylar
C412	2028000589	82pF ±10% Disc Ceramic
C413	2031100651	0.033MF ±20% Mylar
C414	2030020037	33MF 35V Electrolytic
C415	2029040085	3900pF ±10% Paper, DC 1.5KV
C416	2030160022	3.3MF 350V Electrolytic
C417	2030160022	3.3MF 350V Electrolytic
C418	2030140021	10MF 160V Electrolytic
C419	2030020040	47MF 35V Eletrolytic
C421	2031200254	0.27MF ±10% Polypropylene
C422	2030010050	220MF 16V Electrolytic
C423	2071000009	680pF ±10% Disc Ceramic DC 1KV
C426	2027050282	1500pF ±10% Disc Ceramic
AG401	2047810002	Spark Gap D
AG402	2047810002	Spark Gap D

CHASSIS PARTS LIST (Continued)

Schematic Location	Part No.	Description
T401	2021300012	Horizontal Drive Transformer
T402	2021000919	Flyback Transformer
TR401	2003037227	2SC372Y Transistor
TR402	2003073421	2SC734Y Transistor
TR403	2003064306	2SC643 Transistor
D401	2008000001	IN60 Diode
D402	2008000001	IN60 Diode
D403	2008000001	IN60 Diode
D404	2008000001	IN60 Diode
D405	2008130008	SB-2C Damper Diode
D406	2008110029	HF-1B Diode
D407	2009700074	HS25/1 H.V. Diode
D408	2008100101	UF-1 Diode
L501	2021100049	Deflection Yoke
R501	2035101558	10K ohm ±10% ¼W Composition
R502	2035102394	1M ohm ±10% ¼W Composition
R503	2035101558	10K ohm ±10% ¼W Composition
R504	2035101271	2.2K ohm ±10% ¼W Composition
R505	2036101509	33K ohm ±5% ¼W Carbon Film
R506	2036101562	47K ohm ±5% ¼W Carbon Film
R507	2042040046	100K, 250K, 5K ohm Semi-Fixed Ceramic V.R.
R508	2036101830	270K ohm ±5% ¼W Carbon Film
R509	2036101562	47K ohm ±5% ¼W Carbon Film
R510	2036101562	47K ohm ±5% ¼W Carbon Film
R511	2042040046	100K, 250K, 5K ohm Semi-Fixed Ceramic V.R.
R512	2036101388	15K ohm Semi-Fixed Ceramic V.R.
R513	2036100127	4.7 ohm ±5% ¼W Carbon Film
R514	2042040046	100K, 250K, 5K ohm Semi-Fixed Ceramic V.R.
R515	2035100754	120 ohm ±10% ¼W Composition
R516	2035101138	1K ohm ±10% ¼W Composition
R517	2036200974	2.7K ohm ±5% ½W Carbon Film
R518	2036100937	820 ohm ±5% ¼W Carbon Film
R519	2036100218	8.2 ohm ±5% ¼W Carbon Film
R520	2036100274	12 ohm ±5% ¼W Carbon Film
R521	2036101023	1.5K ohm ±5% ¼W Carbon Film
R522	2036100218	8.2 ohm ±5% ¼W Carbon Film
R523	2041400070	350 ohm ±10% 5W Wound Cemented
C501	2031100220	3300pF ±10% Mylar
C502	2031100220	3300pF ±10% Mylar
C503	2031100220	3300pF ±10% Mylar
C504	2031100725	0.047MF ±20% Mylar
C505	2031100646	0.033MF ±10% Mylar
C506	2030513025	2.2MF ±10% Aluminium Solid Electrolytic
C507	2027000122	330pF ±10% Disc Ceramic
C508	2035013025	2.2MF ±10% Aluminium Solid Electrolytic
C509	2031100651	0.033MF ±20% Mylar
C510	2030005033	100MF 10V Electrolytic
C511	2030005033	100MF 10V Electrolytic
C512	2031100448	0.01MF ±20% Mylar
C513	2030161010	3.3MF 350V Electrolytic
C514	2031202095	0.033MF ±20% Polypropylene
C515	2030015048	330MF 25V Electrolytic
TR501	2003073517	2SC735Y Transistor
TR502	2004060928	2SA609F Transistor
TR503	2003068018	2SC680BLC Transistor
TR504	2003068018	2SC680BLC Transistor
D501	2008000001	IN60 Diode
R601	2041400014	5.6 ohm ±10% 5W Wound Cemented
R602	2039100572	390 ohm ±5% 2W Metal Oxide Film
R603	2041600087	350 ohm ±10% 10W Wound Cemented
R604	2041400021	47 ohm ±10% 5W Wound Cemented
R605	2041450015	820 ohm ±10% 5W Wound Cemented
R606	2036100870	560 ohm ±5% ¼W Carbon Film
R607	2042000042	1K ohm Semi-Fixed Ceramic V.R.
R608	2039011200	22K ohm ±5% 1W Metal Oxide Film
R609	2035101526	8.2K ohm ±10% ¼W Composition
R611	2039100666	680 ohm ±5% 2W Metal Oxide Film
TH601	2010000568	TD5-C220 Thermistor
or	2010000883	MT-2000 Thermistor
or	2010000132	2KD-5 Thermistor
C601	2029850005	0.1MF Metalized Paper
C603	2030217516	330MF 160V Electrolytic
C604	2027050282	1500pF ±10% Disc Ceramic
C605	2030020055	100MF 35V Electrolytic
C606	2030140021	10MF 160V Electrolytic
C607	2030140021	10MF 160V Electrolytic
C609	2027050282	1500pF ±10% Disc Ceramic
C610	2027050282	1500pF ±10% Disc Ceramic
C611	2027050282	1500pF ±10% Disc Ceramic
C612	2027050282	1500pF ±10% Disc Ceramic
T601	2017900134	Power Transformer
TR601	2003102529	2SC1025E Transistor
TR602	2003073517	2SC735Y Transistor
D603	2008230042	EQB-01-06 Zener Diode
or	2008230025	IN4735 Zener Diode
D604	2008000001	IN60 Diode

CHASSIS PARTS LIST (Continued)

Schematic Location	Part No.	Description
D605	2009110015	IN3194 Diode
or	2009130075	RA-2 Diode
D606	2009110015	IN3194 Diode
or	2009130075	RA-2 Diode
D607	2009110015	IN3194 Diode
or	2009130075	RA-2 Diode
D608	2009110015	IN3194 Diode
or	2009130075	RA-2 Diode
MISCELLANEOUS ELECTRICAL PARTS		
	2068302409	Shielding Case ET
	2068302208	Shielding Case TK
	2075905079	Fuse Label EM-1, T1.OA 250V
	2075905080	Fuse Label EM-22, 0.7A
	2075903815	Earth Label 14DT
	2049300659	4P Socket for PC Connector
	2049600283	4P Plug for PC Connector
	2095002176	Power Cord SAA 240V 7.5A
	2049200001	Fuse Holder IP-A
FU602	2047020055	Fuse 0.7A
FU601	2047200080	Fuse SEMCO T1.OA 250V
	2049300211	CRT Socket F
	2065600209	Anode Cap R
	2082000687	Insulating Cap E
	2082400723	Cord Stopper
	2082400627	Cord Stopper TW-LV
	2082400082	Lead Clamper D
	2007920023	Mica Sheet, AC 203
	2076500490	Insulating Washer TZ
CRT	2001100513	Picture Tube 20" 110° (500AHB4)
	2065003273	Receptacle 2PB-A with wired (Socket)
	2065003285	Receptacle 2PB-B with wired (Plug)
SW601	2048200388	AC Power SW (AP)
	2055000305	Tuner-VHF (TUR-4D3ARZC-M8A)
	2068202318	Heat-Sink ET-A for TR601, 304
	2068206819	Heat-Sink EM-B for TR403, 503, 504
	2049600440	IP Plug A for Coaxial Cable

EMI

FOR H.M.V. SALES AND SERVICE ENQUIRIES CONTACT YOUR LOCAL DEALER OR:—

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QLD:	83 Robertson Street, Fortitude Valley, 4006	Phone 52 5271
S.A.:	105 Port Road, Bowden, 5007	Phone 46 3031
W.A.:	90/94 Daly Street, Belmont, 6104	Phone 65 5433
A.C.T.:	135 Newcastle Street, Fyshwick, 2609	Phone 95 1512

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QLD:	83 Robertson Street, Fortitude Valley, 4006	Phone 52 5271
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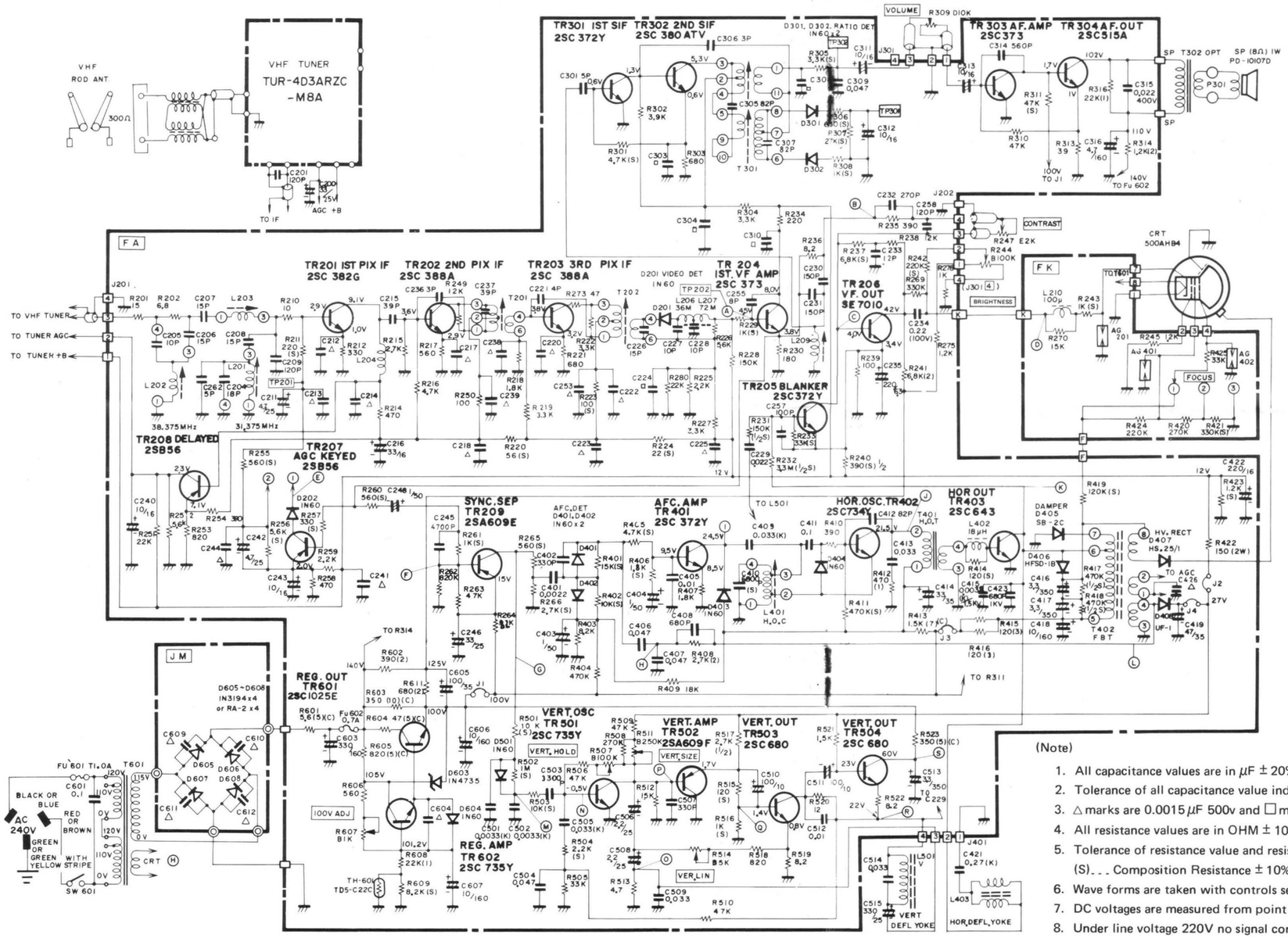
H Clark Pty Ltd
A Member of the EMI (Australia) Group of Companies

HIS MASTER'S VOICE MODEL 11005

EM-20LV (EMC-2014)
EM-20LVH (EMC-2013) CIRCUIT DIAGRAM



(Note)

1. All capacitance values are in μF ± 20%, 50V unless otherwise indicated.
2. Tolerance of all capacitance value indicated in (K) is ± 10%.
3. △ marks are 0.0015 μF 500v and □ marks are 0.01 μF 50V.
4. All resistance values are in OHM ± 10% 0.25W unless otherwise indicated, except item No. 5
5. Tolerance of resistance value and resistance type are as follows:
   (S)... Composition Resistance ± 10%, (C)... Cement Wound Resistance ± 10% (Numbers).... Watts.
6. Wave forms are taken with controls set for a normal picture.
7. DC voltages are measured from point indicated to ciruit ground with high impedance V.T.V.M.
8. Under line voltage 220V no signal condition.