"Miniwatt" TELEVISION COMPONENTS

In response to numerous enquiries about details and interchangeability of TV components, both current and superseded, we present a comprehensive list of all Miniwatt components introduced to the Australian market from the start of TV broadcasting in 1956 up to the present time.

The list is divided into six major sections, each one containing all types of one particular component. As far as possible the essential differences between individual types are specified to facilitate comparison. For many items, both a type number and a code number are given. This has been done because Miniwatt components used in Philips TV receivers are designated by factory code numbers.

Replacement of TV components by the Service Trade

The main purpose of this list is to enable the TV Service trade to find rapidly a suitable replacement item for a defective component. The list also shows that it is possible to cover the whole range of components by stocking only a relatively small number of strategic preferred items (shown in brown). It is Miniwatt's policy to ensure, where at all possible, that all the variations of a given component can be replaced by the type most recently introduced. Closer inspection of the list shows that the preferred component can replace the other types in the same subsection either directly or with only minor modifications.

Deflection Yokes

The difference between yoke types within each subsection is only in the presence or absence of external leads and plug and of an NTC resistor. All 70° and 90° types are supplied with plug and leads; the three preferred 110°/114° types do not have leads attached. There should be no difficulty, however, in transferring the old leads to the new yoke. All preferred types, with the exception of 70° units, have an NTC resistor included in the vertical coil circuit. Where the yoke to be replaced does not include an NTC resistor, it is a simple matter to connect the preferred type in such a way as to leave the resistor out of circuit. For details of the current AT 1011T series of yokes refer to the February 1963 issue of the Digest.

Line Output Transformers

Inspection of the table shows that all 110°/114° 16 KV transformers can be replaced by one preferred type NT 3101. This transformer includes an anti-ringing RC network which need not be removed when a type without such a network is to be replaced. Where types CZ.355.008 and CZ.355.010 have to be replaced in Philips TV receivers, the Philips Service Dept. has available type CZ.355.013 with tappings for 220 V and 240 V HT rails and also a longer EHT rectifier lead.

If the CZ.355.013 is to replace a type which originally had a shorter EHT rectifier lead, great care with lead dress must be taken to avoid corona effects or breakdown of the lead if close to earthed objects.

EHT Rectifier Sockets

The two types offered look exactly alike from the outside and are supplied in both black and white moulding material. They can be distinguished by inspecting the number impressed at the skirt of the moulding. Only the first three figures are significant and they indicate the value of the built-in series filament resistor, e.g., 105126 indicates 1.05 Ω resistance, 140418 indicates 1.40 Ω resistance.

Turret Tuners

The Miniwatt Division is sometimes asked whether an AT 7580 tuner can be replaced by an NT 3001 or NT 3006. There are no mechanical difficulties in achieving this, and a changeover is possible for conditions of low and medium signal strength. For high signal strength conditions, a redesign of the tuner AGC circuit is necessary because of the semi-remote-cutoff characteristics of the 6ES8 cascode valve. A tuner AGC voltage higher than that for the 6CW7 is required in order to avoid overload of the mixer. Types NT 3001 (10-channel) and NT 3006 (13-channel) are electrically interchangeable and type NT 3009 can be replaced by the preferred type NT 3011.

Tuner Coil Biscuits

While Miniwatt generally does not supply spare parts for tuners, and this includes tuner coil biscuits, they do make available in wide distribution throughout Australia all the special biscuits which had to be developed for the AT 7580 and NT 3001 tuners required in the special circumstances created by the introduction of new channel frequencies. These biscuits are marketed in pairs under the type number NT 3007 . . . / . . . and NT 3008 . . . / . . . Hence a pair of biscuits required to modify an NT 3001 tuner to receive channel O in Melbourne is supplied as NT 3007A0/00. Biscuits for the AT 7580 tuner have a red marking dot which distinguishes them from the NT 3001.

"Miniwatt" TV COMPONENTS

(Preferred types shown in brown)

Component	Miniwatt Type No.	Equivalent Philips factory Code No.	Details
		DEFLECTION YOKES	
70°	**AT 1005**	A3.696.46	
	AT 1005/T00	CZ.320.910	as AT 1005, local production.
90°	AT 1007	A3.767.77	no NTC resistor.
	AT 1007/01	A3.790.92	with NTC resistor.
	AT 1007/T10	CZ.320.911.3 CZ.320.912	as AT1007, with frame leads reversed, local production.
	AT 1007/T11	CZ.320.918 CZ.320.921	as AT 1007/T10, with NTC resistor.
110°, 21"	AT 1009/01	3H.129.20	with NTC resistor, no leads.
	AT 1009T/01	CZ.320.923.3	as AT 1009/01, local production.
	AT 1009T/90	CZ.320.925	no NTC resistor, with leads.
	AT 1009T/91	CZ.320.924.5	with NTC resistor, with leads.
110°/114° 23" up to 16 KV	AT 1009T/93	CZ.320.928	as AT 1009T/90 with correction magnets for 23" CRT.
	AT 1009T/94	CZ.320.929 CZ.320.930	as AT 1009T/01 with correction magnets for 23" CRT.
	AT 1009T/95	CZ.320.934	as AT 1009T/94, with leads.
	AT 1009T/96	CZ.320.932	as AT 1009T/93 with adjustable correction magnets.
	AT 1009T/97	CZ.320.933	as AT 1009T/94, with adjustable correction magnets.
	AT 1009T/98	CZ.320.935	as AT 1009T/95 with adjustable correction magnets.
110°/114° 23" up to 18 KV	AT 1011T/93	CZ.320.941	no NTC resistor, with leads.
	AT 1011T/94	CZ.320.942	with NTC resistor, no leads.
	AT 1011T/95	CZ.320.943	with NTC resistor, with leads.
		LINE OUTPUT TRANSFORMERS	
70°	**AT 2010**	A3.767.41	
	AT 2010/T00	A3.767.41	as AT 2010, local production.
90°	**AT 2012** AT 2012/50	A3.767.94	
	AT 2012/T50	A3.767.94	as AT 2012/50, local production.
110°/114° 21"/23" 16 KV	AT 2016T/11	CZ.355.000	auxil. winding without centre-tap.
	AT 2016T/21	CZ.355.003	as AT 2016T/11, with centre-tap.
	AT 2016T/91	CZ.355.007	as AT 2016T/21 with RC network added.
	AT 2016T/92	CZ.355.007.1	as AT 2016T/91, with EHT rect. lead shortened and reversed.
	AT 2016T/93	CZ.355.003.2	as AT 2016T/21 with EHT rect. lead shortened and reversed.
	NT 3100	CZ.355.011	as AT 2016T/93 with polyester encapsulated EHT winding.
	NT 3101	CZ.355.009	as AT 2016T/92 with polyester encapsulated EHT winding.
		CZ.355.013	replaces CZ.355.008 and CZ.355.010 in Philips receivers.
110°/114° 23" 17.2 KV	**NT 3102**	CZ.355.012	
	NT 3103		as NT 3102, with RC network.

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(Preferred types shown in brown)

Component	Miniwatt Type No.	Equivalent Philips factory Code No.	Details
HORIZONTAL LINEARITY CONTROLS			
70°	AT 4005 AT 4005/T00	A3.802.05	for use with AT 2010 transformer. as 4005, local production.
90°	AT 4006 AT 4006/T00	A3.802.89	for use with AT 2012 transformer. as AT 4006, local production.
110°/114°	AT 4008 AT 4008T00	A3.768.53	for all Miniwatt 110°/114° transformers.
	AT4008T/90	CZ.320.081	for all Miniwatt 110°/114° transformers.
	AT 4008T/91	CZ.320.082	for all Miniwatt 110°/114° transformers.
EHT RECTIFIER SOCKETS AND ASSOCIATED LEADS			
70° Socket	AT 2010/3	P5.170.00.2/369	for use with AT 2010 transformer, incorporates 1.05 Ω filament resistor.
90°, 110°, 114° Socket	AT 7100	P5.170.02.1/369	for use with all Miniwatt 90° and 110°/114° transformers, incorporates 1.40 Ω filament resistor.
EHT heater lead	AT 2010/1/T00	A3.582.28.1/PA2	8¼" long.
	AT 7101	A3.582.68.1	19" long.
	AT 7101T/00	CZ.358.173	as AT 7101, local production.
	AT 7101/T01	A3.582.68.1/PA1	8¼" long.
	AT 7101/T02	CZ.358.113	15½" long.
EHT supply lead	AT 2010/2/T00	A3.582.05.2/PA5	18½" long.
	AT 7102	A3.582.69.1	18" long.
	AT 7102T/00	CZ.358.174	as AT 7102, local production.
	AT 7102/T01	A3.582.69.1	18½" long.
TURRET TUNERS			
10-channel	AT 7580	A3.767.32 CZ.210.919 to CZ.210.923	Valves: 6CW7, 6BL8.
	NT 3001	CZ.109.004 CZ.210.927	Valves: 6ES8, 6BL8.
13-channel	NT 3003	CZ.109.010	Valves: 6ES8, 6BL8, with electronic fine tuning.
	NT 3006	CZ.109.011	as NT 3003, with manual fine tuning.
	NT 3009	A3.179.24	Valves: 6ES8, 6HG8, printed coils.
	NT 3011	CZ.210.943	as NT 3009, modified coils.

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MINIWATT TUNER COIL BISCUITS

Tuner Type AT 7580

Channel No.	Aerial		Oscillator/RF	
	Miniwatt Type No.	Factory Code No.	Miniwatt Type No.	Factory Code No.
0	NT 3008/AO	CZ.320.104	NT 3008/00	CZ.321.078
1	NT 3008/A1	CZ.320.105	NT 3008/01	CZ.321.079
2	—	A3.747.08	—	A3.747.03
3	—	A3.747.09	—	A3.747.04
4	NT 3008/A4	CZ.320.106	NT 3008/04	CZ.321.080
5	NT/3008/A5	CZ.320.107	NT 3008/05	CZ.321.081
5A	NT 3008/05A	CZ.320.108	NT 3008/A5A	CZ.321.082
6	—	A3.746.75	—	A3.746.70
7	—	A3.746.76	—	A3.746.71
8	—	A3.746.77	—	A3.746.72
9	—	A3.746.78	—	A3.746.73
10	—	A3.746.79	—	A3.746.74
11	NT 3008/A11	CZ.320.109	NT 3008/011	CZ.321.083

(These biscuits are generally marketed in aerial and oscillator biscuit pairs in cartons branded NT 3008.../...)

Tuner Type No. NT 3001

0	NT 3007/AO	CZ.320.097	NT 3007/00	CZ.321.070
1	NT 3007/A1	CZ.320.098	NT 3007/01	CZ.321.071
2	—	CZ.320.058	—	CZ.321.038
3	—	CZ.320.059	—	CZ.321.039
4	NT 3007/A4	CZ.320.100	NT 3007/04	CZ.321.073
5	NT 3007/A5	CZ.320.101	NT 3007/05	CZ.321.074
5A	NT 3007/A5A	CZ.320.102	NT 3007/05A	CZ.321.075
6	—	CZ.320.062	—	CZ.321.042
7	—	CZ.320.063	—	CZ.321.043
8	—	CZ.320.064	—	CZ.321.044
9	—	CZ.320.065	—	CZ.321.045
10	—	CZ.320.066	—	CZ.321.046
11	NT 3007/A11	CZ.320.103	NT 3007/011	CZ.321.076

(These biscuits are generally marketed in aerial and oscillator pairs in cartons branded NT 3007.../...)

Tuner Type No. NT 3006

Channel No.	Aerial Factory Code No.	Oscillator/RF Factory Code No.
0	CZ.320.084	CZ.321.057
1	CZ.320.085	CZ.321.058
2	CZ.320.086	CZ.321.059
3	CZ.320.087	CZ.321.060
4	CZ.320.088	CZ.321.061
5	CZ.320.089	CZ.321.062
5A	CZ.320.090	CZ.321.063
6	CZ.320.091	CZ.321.064
7	CZ.320.092	CZ.321.065
8	CZ.320.093	CZ.321.066
9	CZ.320.094	CZ.321.067
10	CZ.320.095	CZ.321.068
11	CZ.320.096	CZ.321.069

Tuner Type No. NT 3009

Channel No.	Marking on Strip	Factory Code No.
0	AU 0	A3.178.70
1	AU 1	A3.156.82
2	AU 2	A3.156.83
3	AU 3	A3.156.84
4	AU 4	A3.156.85
5	AU 5	A3.156.86
5A	AU 5A	A3.178.71
6	AU 6	A3.156.87
7	AU 7	A3.156.88
8	AU 8	A3.156.89
9	AU 9	A3.156.90
10	AU 10	A3.156.91
11	AU 11	A3.178.72

Tuner Type No. NT 3011

Channel No.	Marking on Strip	Factory Code No.
0	CZ 0	CZ.320.160
1	CZ 1	CZ.320.161
2	CZ 2	CZ.320.162
3	CZ 3	CZ.320.163
4	CZ 4	CZ.320.164
5	CZ 5	CZ.320.165
5A	CZ 5A	CZ.320.166
6	CZ 6	CZ.320.167
7	CZ 7	CZ.320.168
8	CZ 8	CZ.320.169
9	CZ 9	CZ.320.170
10	CZ 11	CZ.320.171
11	CZ 10	CZ.320.172

THE "Miniwatt" ELECTRONICS DIVISION OF

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