
PHILCO

TUBE MANUAL

SOCKET LAYOUTS
of ALL PHILCO SETS
• TUBE CHARACTER-
ISTICS • SCHEMATICS
• BASE LAYOUTS •
DIMENSIONS

RADIO MANUFACTURERS SERVICE



A PHILCO SERVICE PLAN

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PHILCO TUBE MANUAL

SOCKET LAYOUTS FOR
ALL PHILCO HOME
AND AUTO RADIOS

•
COMPLETE CHARACTER-
ISTICS • SCHEMATICS •
BASE LAYOUTS • BULB
SIZES AND STYLES



PHILCO PARTS AND SERVICE DIVISION

PHILCO RADIO TUBES

SOCKET LAYOUTS—SCHEMATICS CHARACTERISTICS—DIMENSIONS

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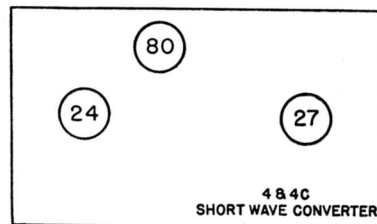
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CROSS-REFERENCE MODEL-LOCATING TABLE

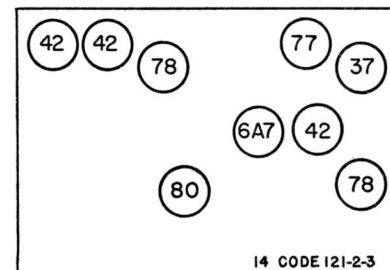
Use this table to find models listed under others which have the same socket layout

HOME RADIO MODELS		AUTO RADIO MODELS	
MODEL	SEE MODEL	MODEL	SEE MODEL
22	71	12 (Code 121)	8
23	14 (Code 221)	12 (Code 122)	9
24	51	700	11
25	43	809	806
26	19	826	817
27	19	827	817
45	29	B-6	6
66	60	C	10
89 (Code 121-2)	19	CT11	816
91	14 (Code 221)	DPV	10
118	18	E	10
144	44	F1440, F1442	C1450
211	111	G1418	817
212	112	G1436	C1450
220	20	H	800
270	70	J	11
370	70	LT14X3	FT9
296	96	NT12X	FT9
470	4, 70	NT12X2	FT9
490	4, 90	NT15	816
500 (121)	16 (122)	N1418	817
501 (121)	16 (122)	N1433H	C1450
500 (122)	16 (126)	N1434	C1450
501 (122)	16 (126)	PA	9
503	18	PB	6
504	44	PHXD	800
505	60	PT14	FT9
506	44	P1417	817
507	18	P1421	L1424
509	201	P1426	L1424
551	51	P1430	C1450
625	620	Q	11
630	620	R	11
635	620	ST12	FT9
665	660	ST15	816
37-84 (Code 121)	84	S1431	C1450
38-15	38-12	S1437	C1450
Other 38 Models Not Listed—See Corresponding "37" Models		T5	12
		T7, T8	806

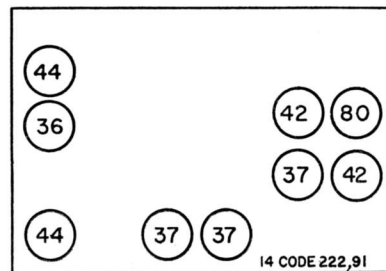
SOCKET LAYOUTS.....PHILCO MODELS 4—15



← MODEL 4
(Short Wave
Converter)

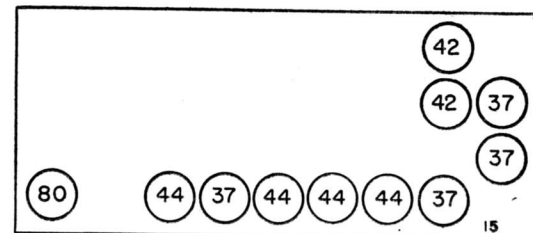


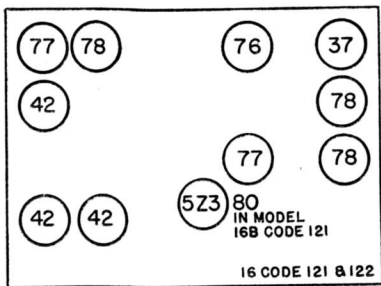
MODEL 14 →
Code 121
Code 122
Code 123



← MODEL 14
Code 221
Code 222
← MODEL 91
← MODEL 23

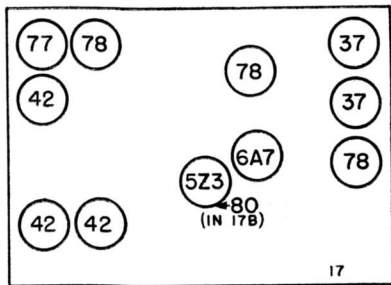
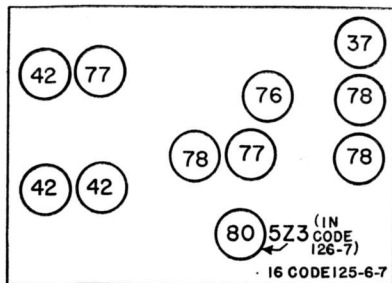
MODEL 15 →





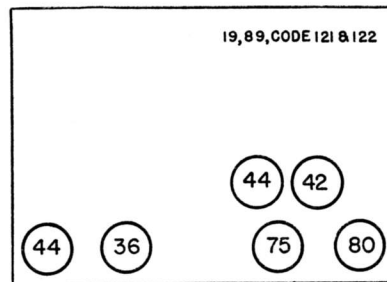
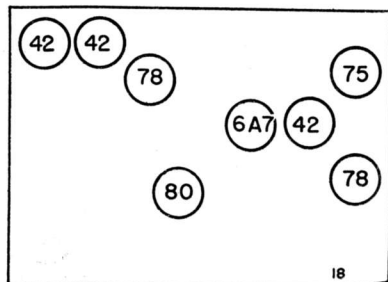
← MODEL 16
Code 121
Code 122
Code 123
← MODELS 500 & 501
Code 121

MODEL 16 →
Code 125
Code 126
Code 127
MODELS 500 & 501 →
Code 122



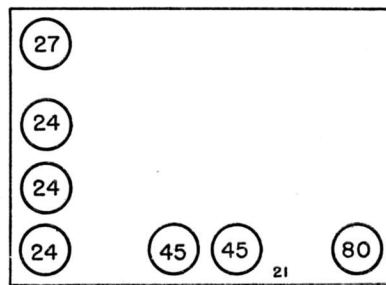
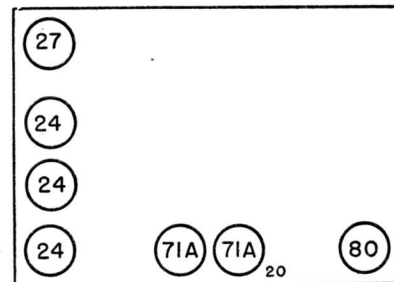
← MODEL 17

MODEL 18 →
MODEL 118 →
MODEL 503 →
MODEL 507 →



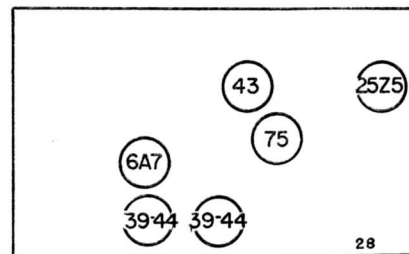
← MODEL 19
← MODEL 89
Code 121
Code 122
← MODEL 26
← MODEL 27

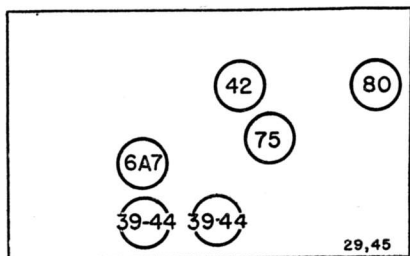
MODEL 20 →
MODEL 220 →



← MODEL 21

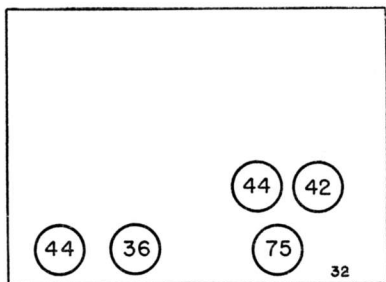
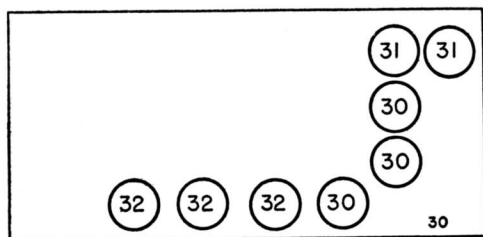
MODEL 28 →





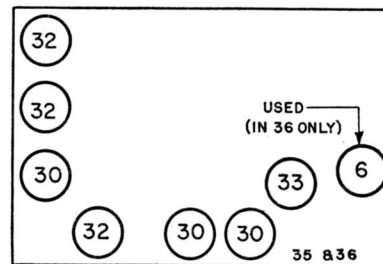
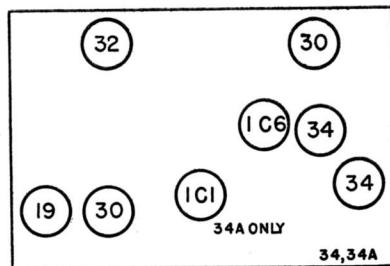
← MODEL 29
← MODEL 45

MODEL 30 →



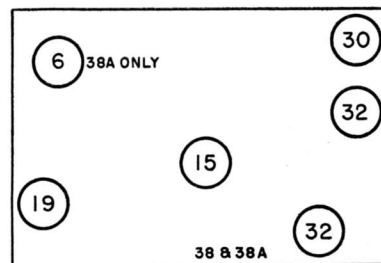
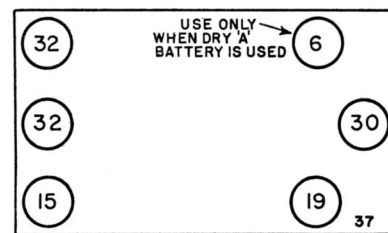
← MODEL 32

MODEL 34 →
MODEL 34A →



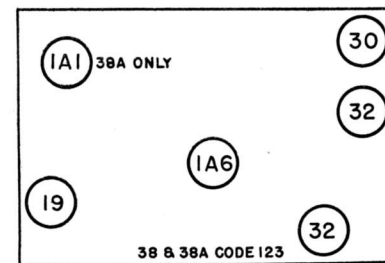
← MODEL 35
← MODEL 36

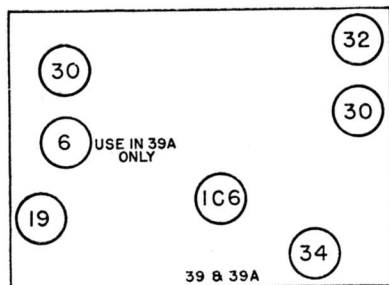
MODEL 37 →



← MODEL 38
← MODEL 38A

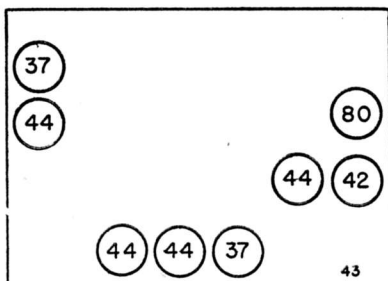
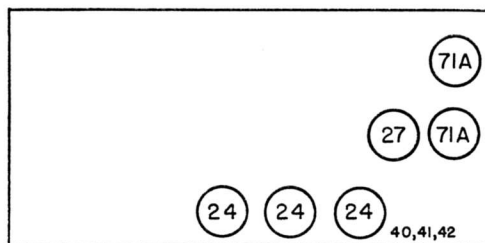
MODEL 38 →
MODEL 38A →
both Code 123





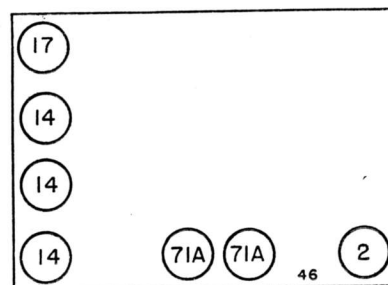
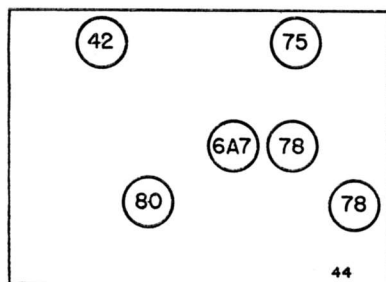
← MODEL 39
← MODEL 39A

MODEL 40 →
MODEL 41 →
MODEL 42 →



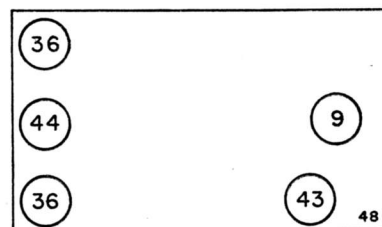
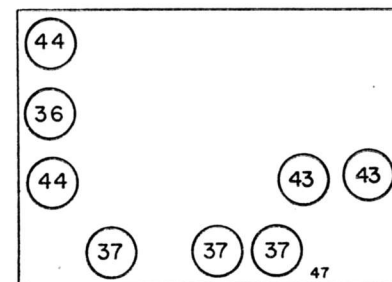
← MODEL 43
← MODEL 25

MODEL 44 →
MODEL 144 →
MODEL 504 →
MODEL 506 →



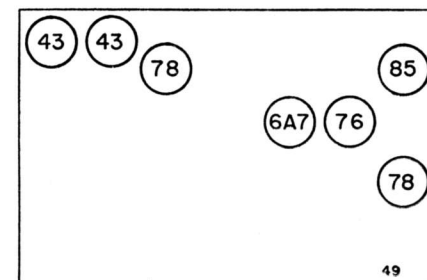
← MODEL 46

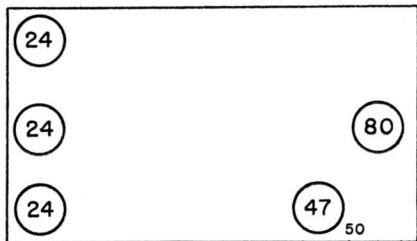
MODEL 47 →



← MODEL 48

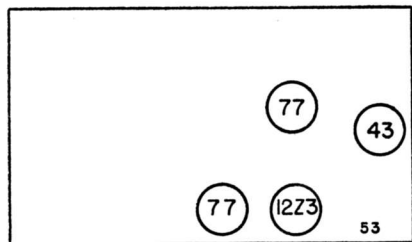
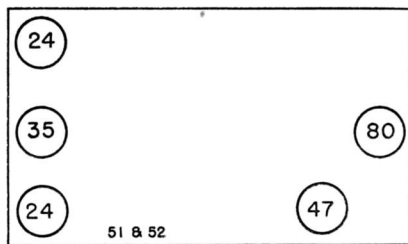
MODEL 49 →





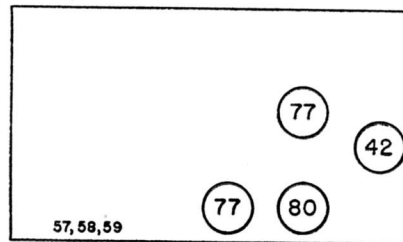
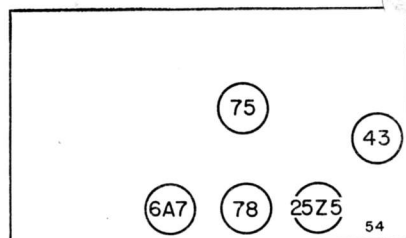
← MODEL 50

MODEL 51 →
MODEL 52 →
MODEL 24 →
MODEL 551 →



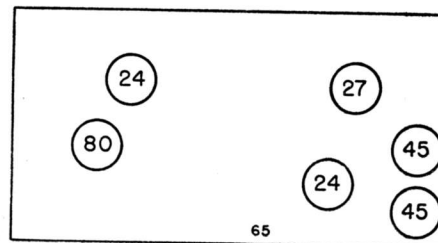
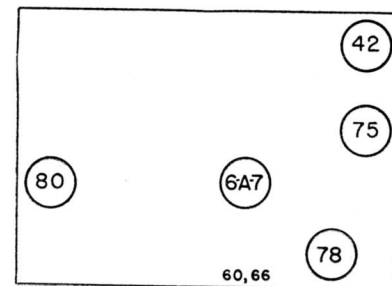
← MODEL 53

MODEL 54 →



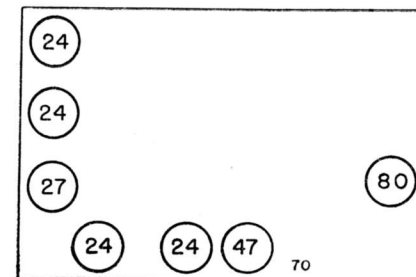
← MODEL 57
← MODEL 58
← MODEL 59

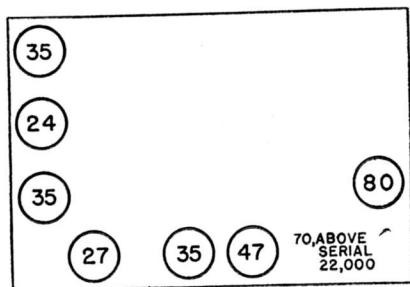
MODEL 60 →
MODEL 66 →
MODEL 505 →



← MODEL 65

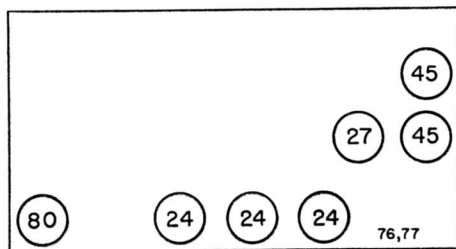
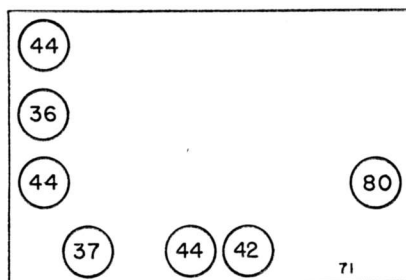
MODEL 70 →
(below serial 22,000)
MODEL 270 →
MODEL 370 →
MODEL 570 →





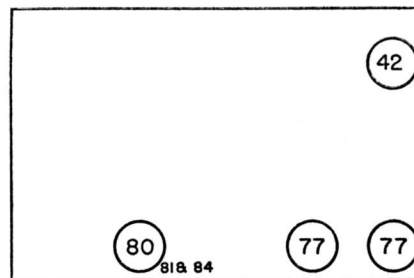
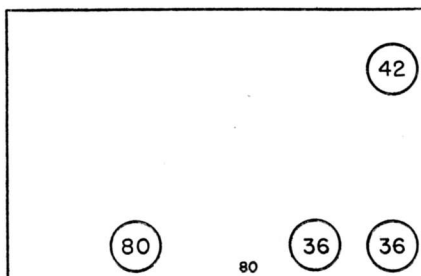
← MODEL 70
(above serial 22,000)

MODEL 71 →
MODEL 22 →



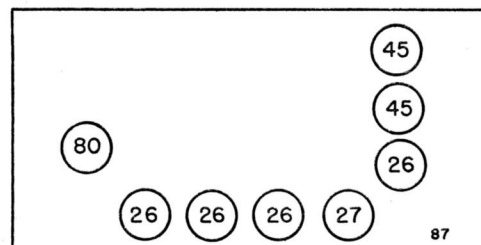
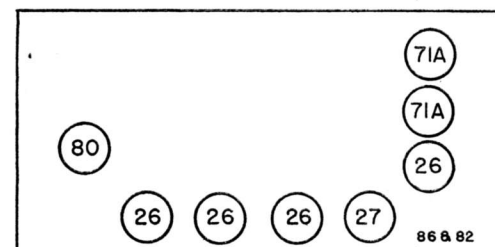
← MODEL 76
← MODEL 77

MODEL 80 →



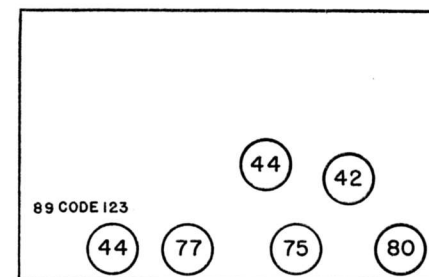
← MODEL 81
← MODEL 84
← MODEL 37-84
Code 121

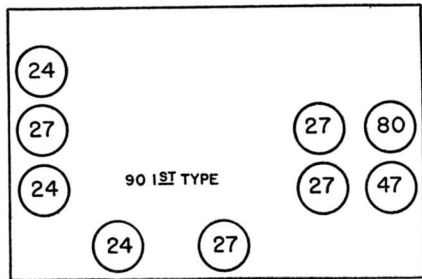
MODEL 86 →



← MODEL 87

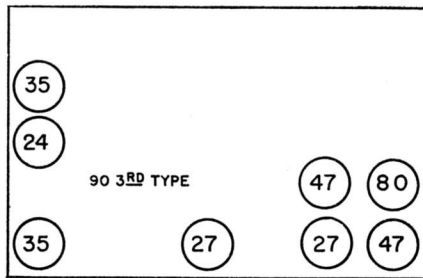
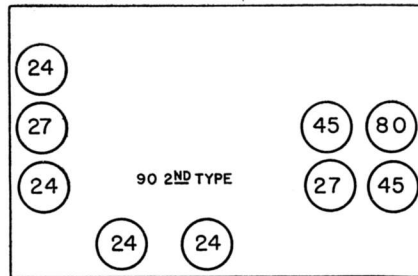
MODEL 89 →
Code 123





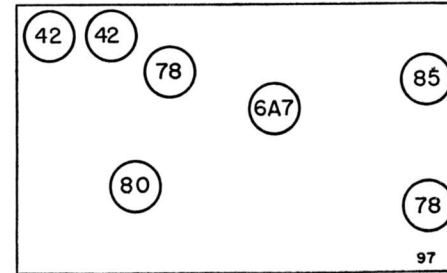
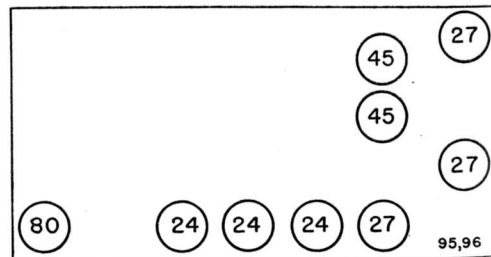
← MODEL 90
(below serial 237,001)

MODEL 90 →
(237,001—353,099)



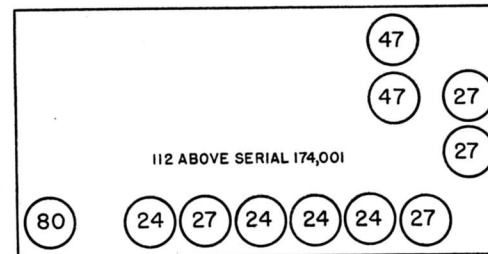
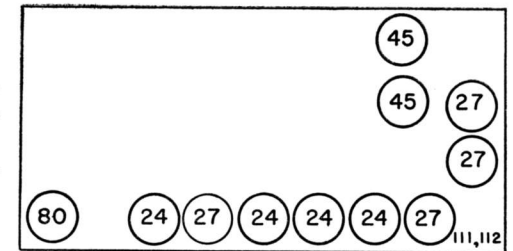
← MODEL 90
(above serial 353,100)

MODEL 95 →
MODEL 96 →
MODEL 296 →



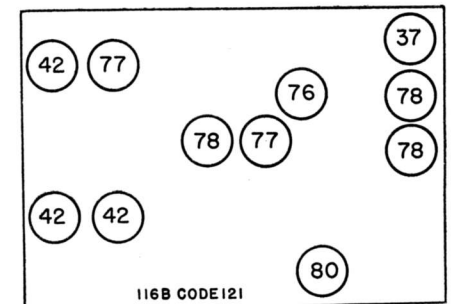
← MODEL 97

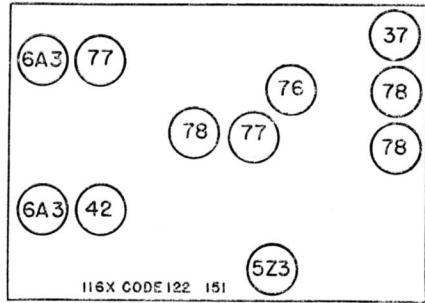
MODEL 111 →
MODEL 112 →
(below serial 174,001)
MODEL 211 →



← MODEL 112
(above serial 174,001)
← MODEL 212

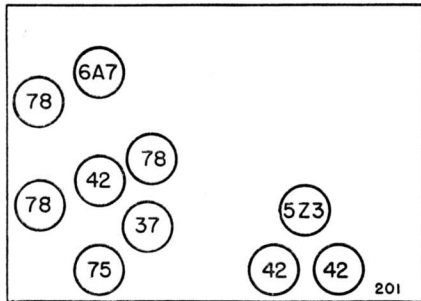
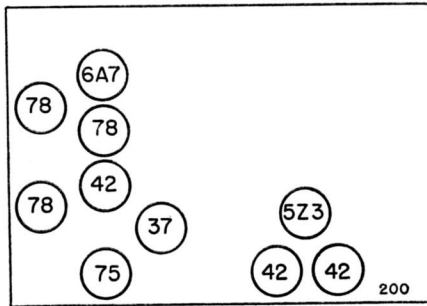
MODEL 116B →





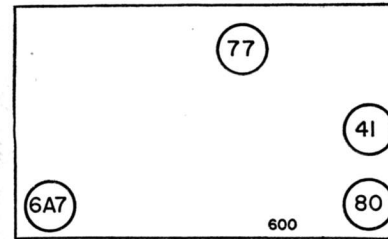
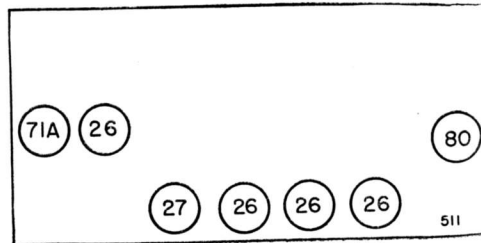
← MODEL 116X

MODEL 200 →



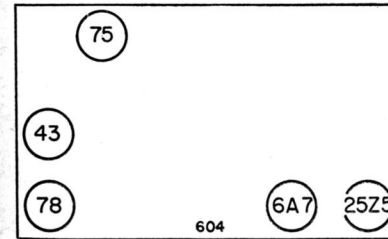
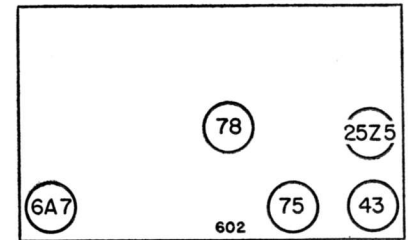
← MODEL 201
← MODEL 509

MODEL 511 →



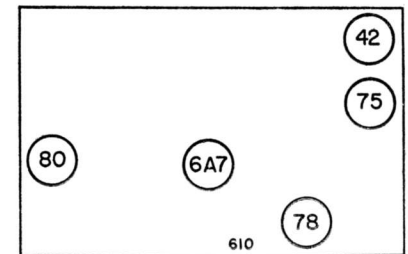
← MODEL 600

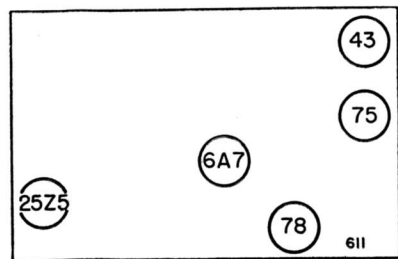
MODEL 602 →



← MODEL 604

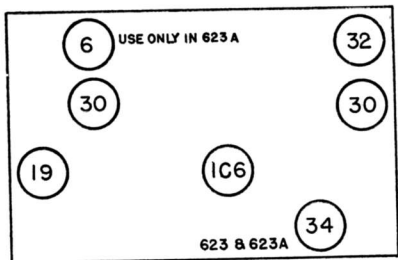
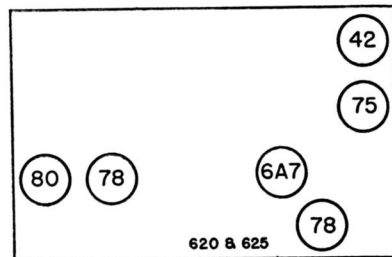
MODEL 610 →





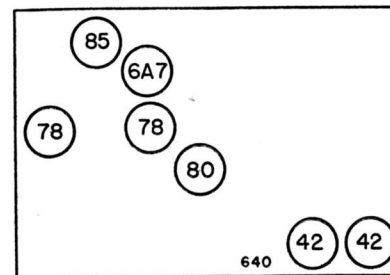
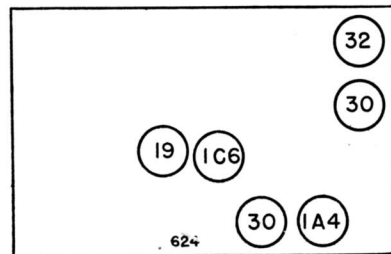
← MODEL 611

- MODEL 620 →
- MODEL 625 →
- MODEL 630 →
- MODEL 635 →



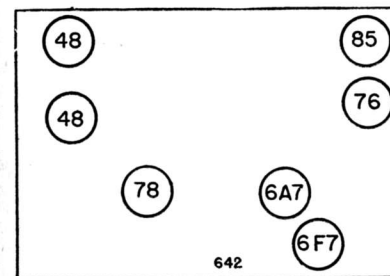
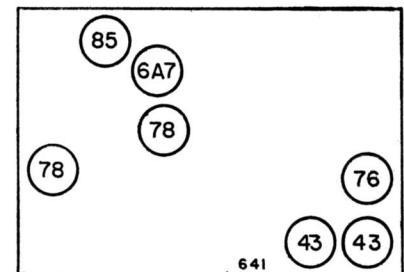
← MODEL 623
← MODEL 623A

MODEL 624 →



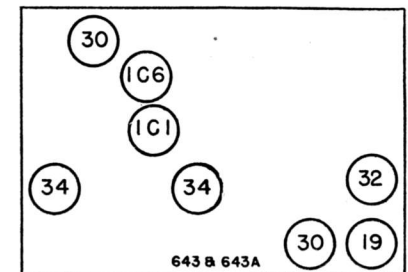
← MODEL 640

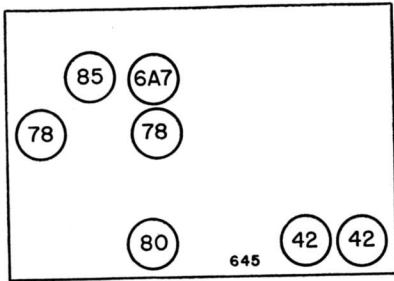
MODEL 641 →



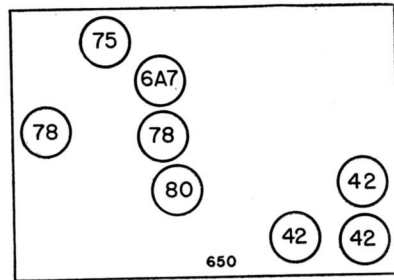
← MODEL 642

- MODEL 643 →
 - MODEL 643A →
- Note: The Type 1C1 tube is used in 643A only.

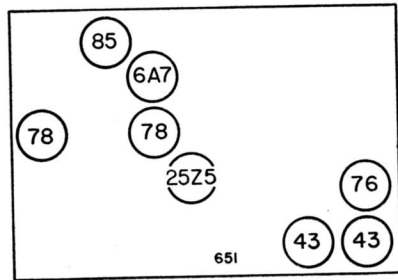




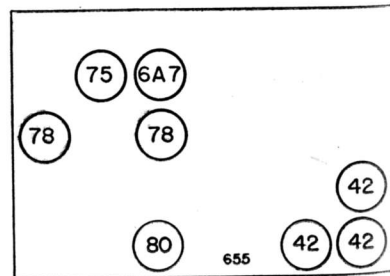
← MODEL 645



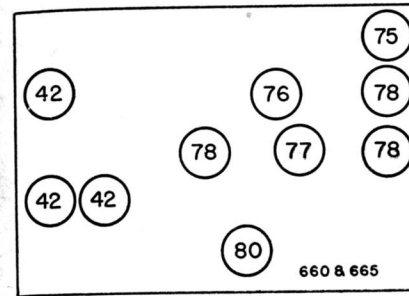
MODEL 650 →



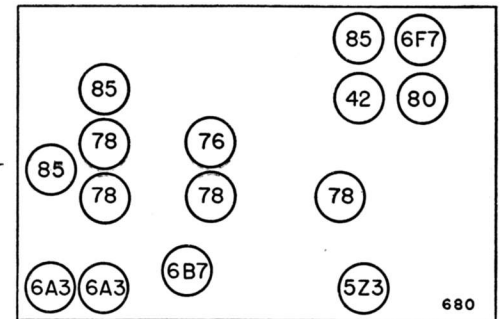
← MODEL 651



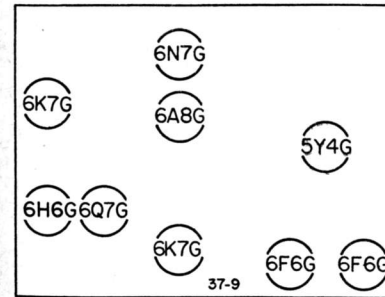
MODEL 655 →



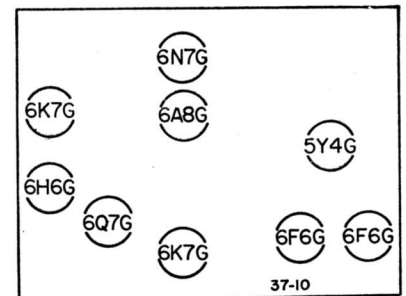
← MODEL 660
← MODEL 665



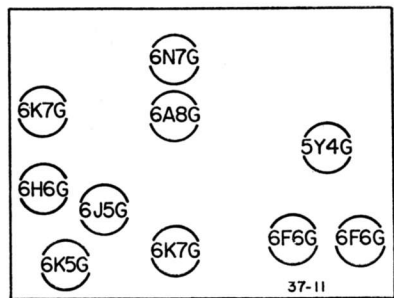
MODEL 680 →



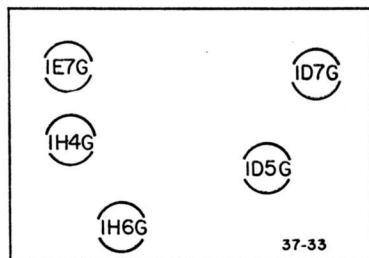
← MODEL 37-9



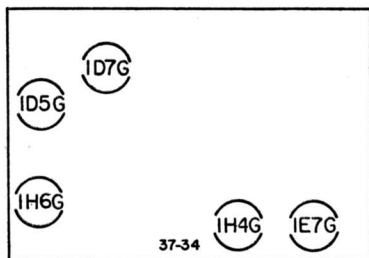
MODEL 37-10 →



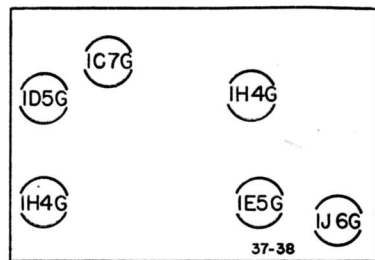
← MODEL 37-11



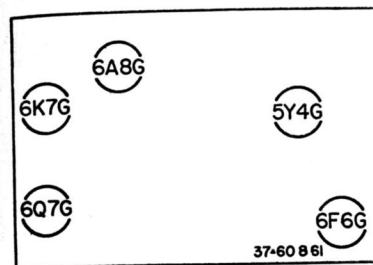
MODEL 37-33 →



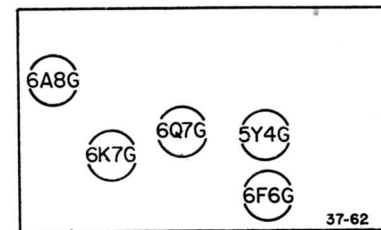
← MODEL 37-34
← MODEL 38-34
Code 121



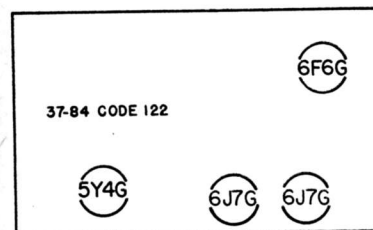
MODEL 37-38 →



← MODEL 37-60
← MODEL 37-61
← MODEL 38-60

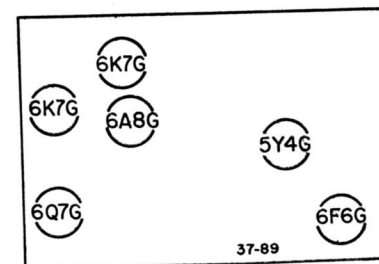


MODEL 37-62 →
MODEL 38-62 →



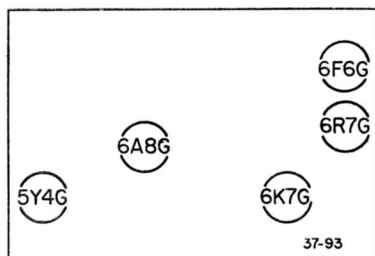
← MODEL 37-84
Code 122

MODEL 37-89 →
MODEL 38-89 →
Code 121

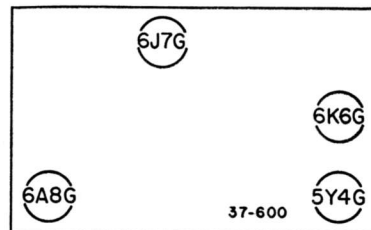


SOCKET LAYOUTS PHILCO MODELS 37-93—37-116

SOCKET LAYOUTS PHILCO MODELS 37-600—37-610

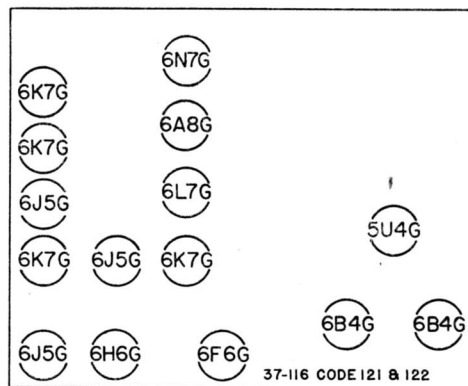


← MODEL 37-93
← MODEL 38-93

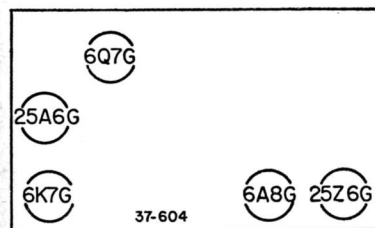
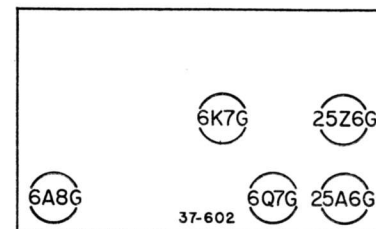


← MODEL 37-600

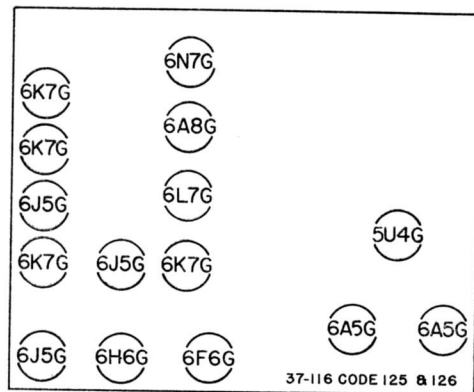
MODEL 37-116 →
Code 121
Code 122



MODEL 37-602 →

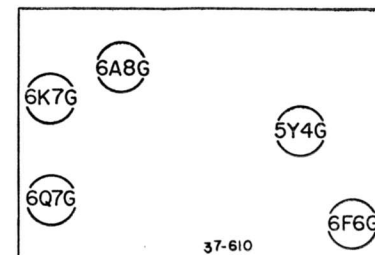


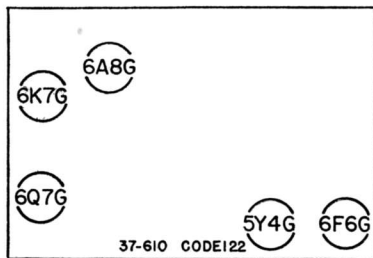
← MODEL 37-604



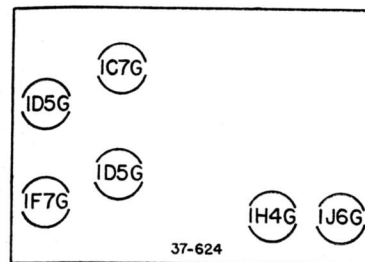
← MODEL 37-116
Code 125
Code 126

MODEL 37-610 →
Code 121 & 125
MODEL 38-610 →



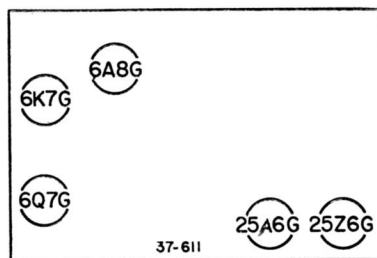


← MODEL 37-610
Code 122
Code 126

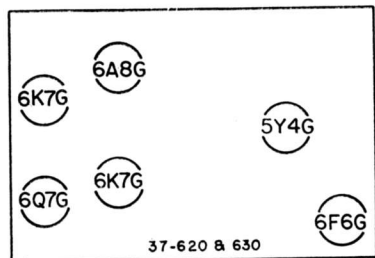
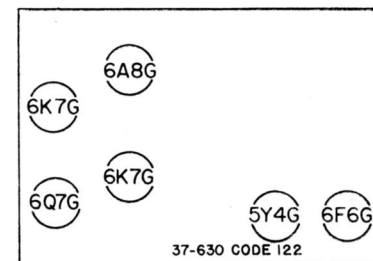


← MODEL 37-624
← MODEL 38-624

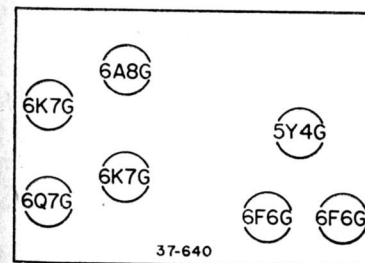
MODEL 37-611 →



MODEL 37-630 →
Code 122

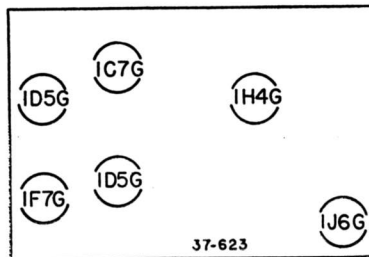


← MODEL 37-620
← MODEL 37-630
Code 121
← MODEL 38-620
← MODEL 38-630

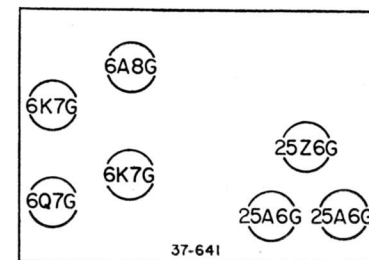


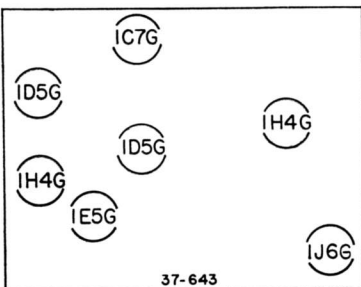
← MODEL 37-640
← MODEL 38-640

MODEL 37-623 →
MODEL 38-623 →



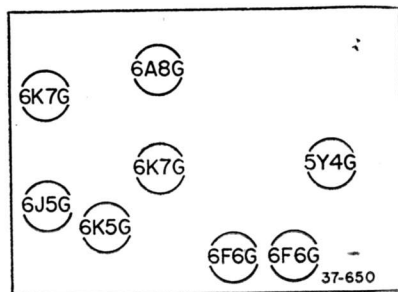
MODEL 37-641 →
MODEL 38-641 →





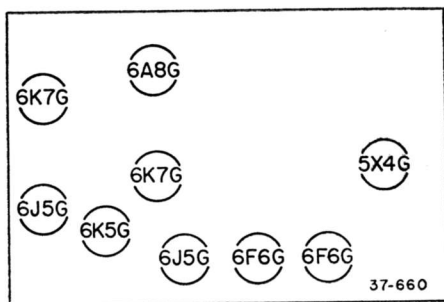
← MODEL 37-643
← MODEL 38-643

37-643



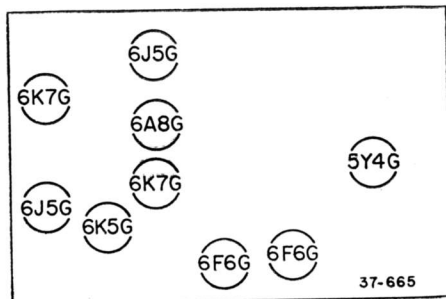
MODEL 37-650 →

37-650



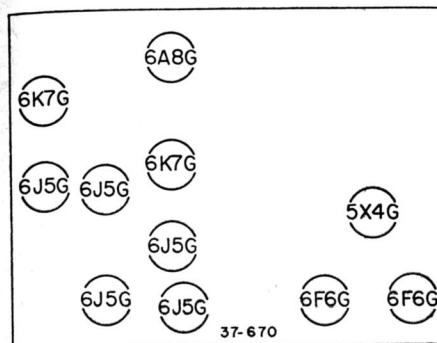
← MODEL 37-660

37-660



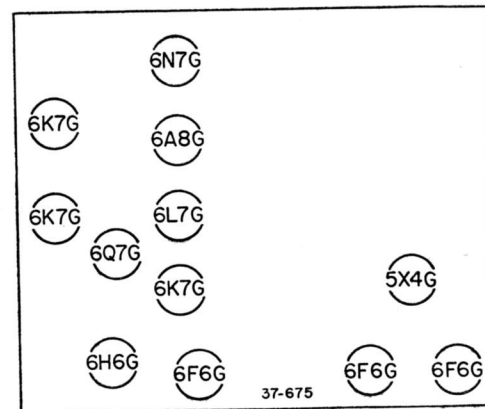
MODEL 37-665 →
MODEL 38-665 →

37-665



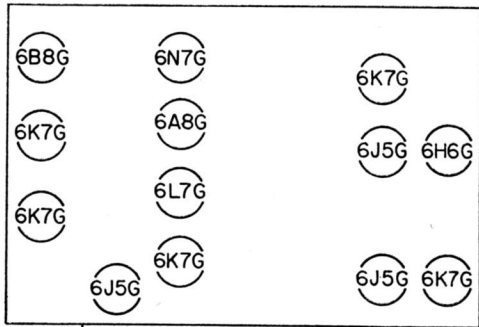
← MODEL 37-670

37-670

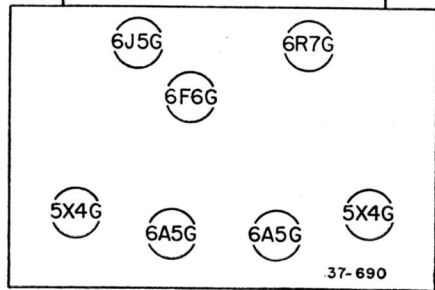


MODEL 37-675 →

37-675

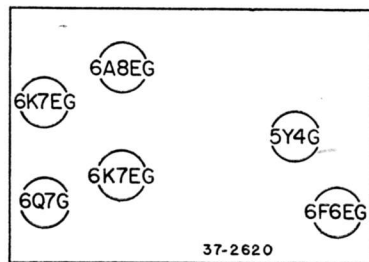


← MODEL 37-690

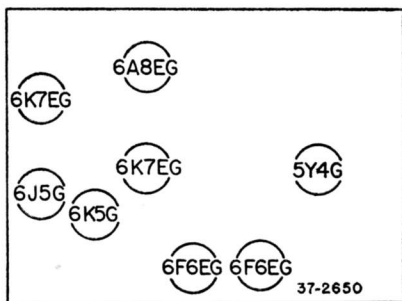


37-690

MODEL 37-2620 →
MODEL 38-2620 →

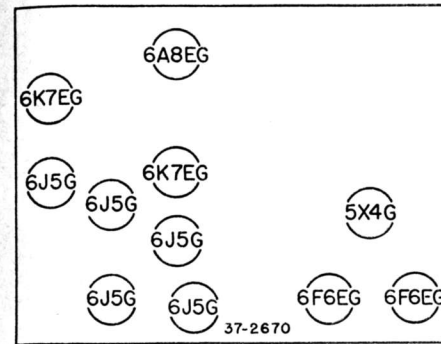


37-2620



37-2650

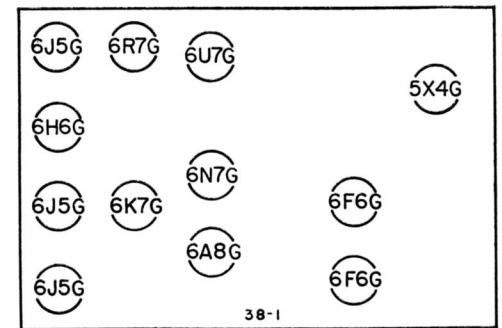
← MODEL 37-2650
← MODEL 38-2650



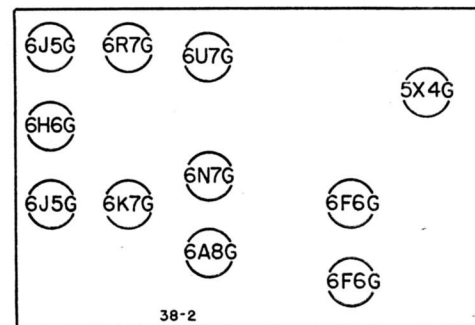
37-2670

← MODEL 37-2670

MODEL 38-1 →

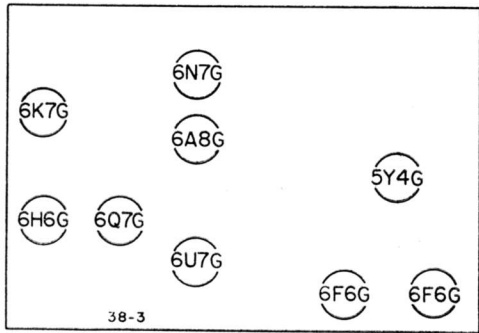


38-1



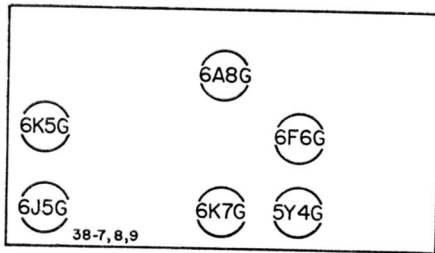
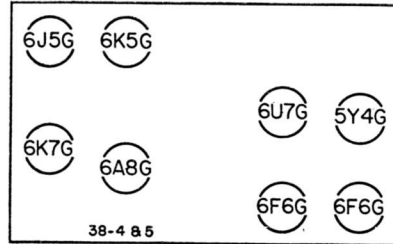
38-2

← MODEL 38-2



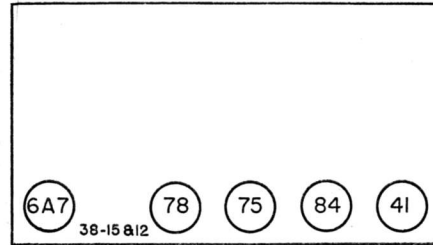
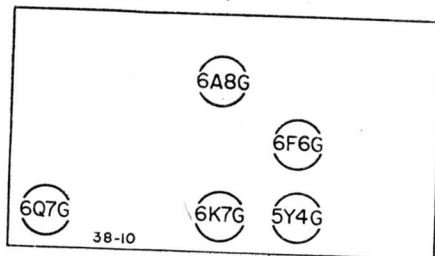
← MODEL 38-3

MODEL 38-4 →
MODEL 38-5 →



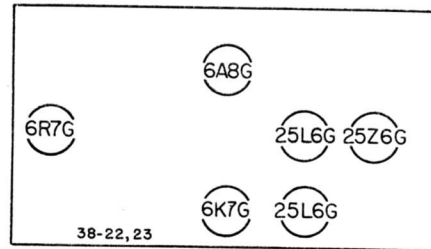
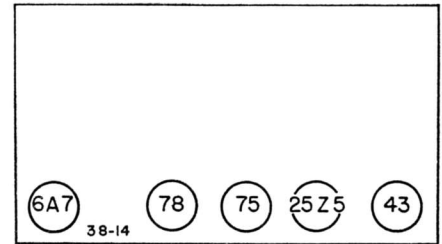
← MODEL 38-7
← MODEL 38-8
← MODEL 38-9

MODEL 38-10 →



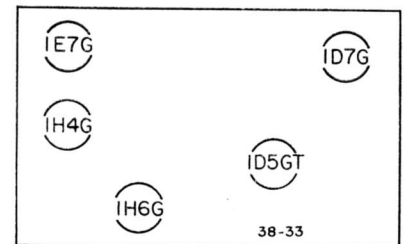
← MODEL 38-12
← MODEL 38-15

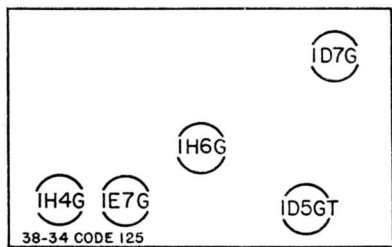
MODEL 38-14 →



← MODEL 38-22
← MODEL 38-23

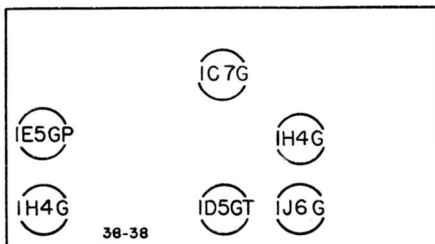
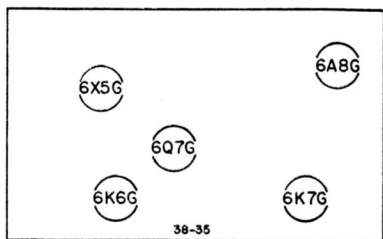
MODEL 38-33 →





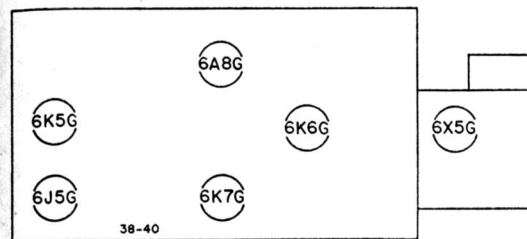
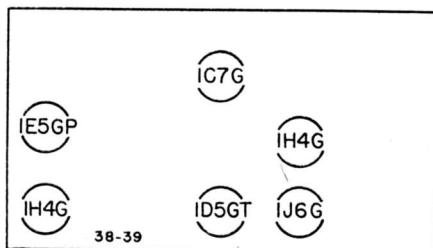
← MODEL 38-34
Code 125

MODEL 38-35 →



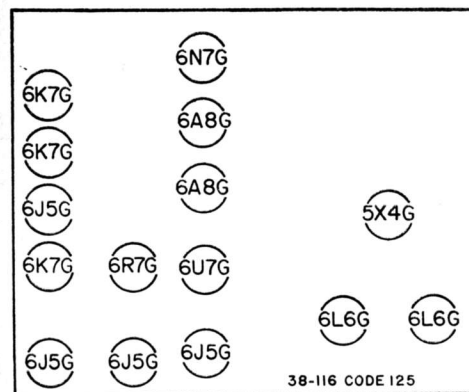
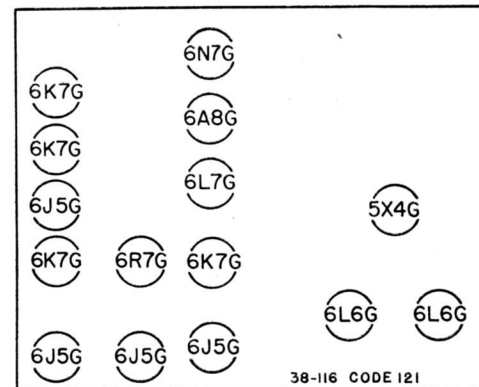
← MODEL 38-38
Code 125

MODEL 38-39 →



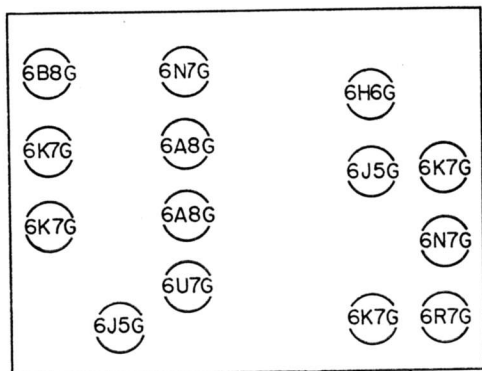
← MODEL 38-40

MODEL 38-116 →
Code 121

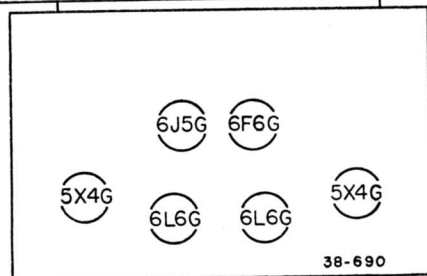


← MODEL 38-116
Code 125

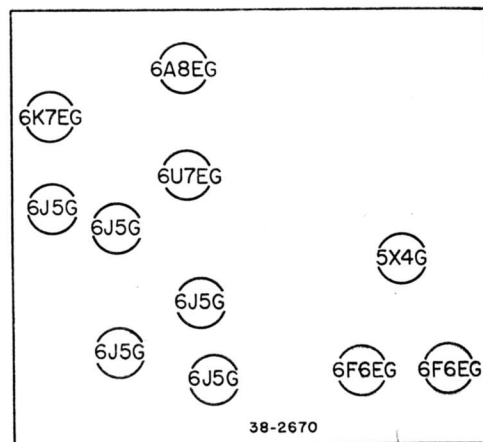
AUTO RADIO (TRANSITONE) SETS



← **MODEL 38-690**
Code 125

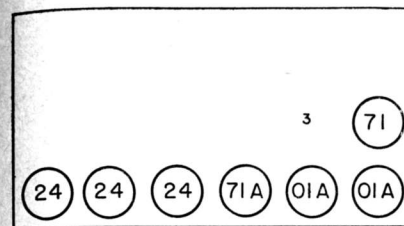


38-690

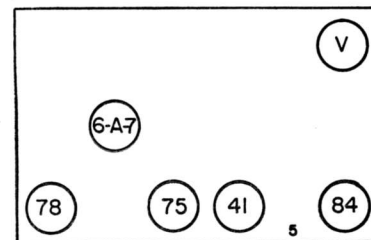


MODEL 38-2670 →

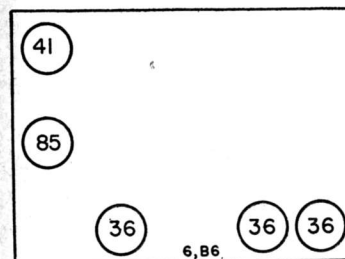
38-2670



← **MODEL 3**



MODEL 5 →

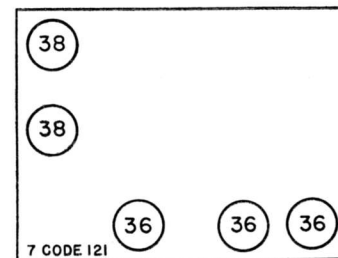


← **MODEL 6**
← **MODEL 6F**
← **MODEL B6**
← **MODEL PB**

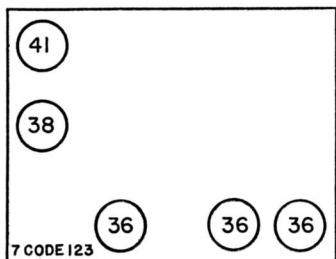
Note: Models 6F and PB have a type 84 rectifier tube in separate unit.

6, B6

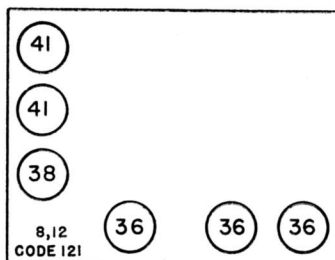
MODEL 7 →
Code 121



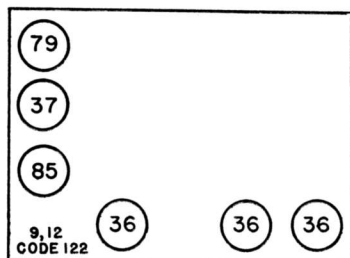
7 CODE 121



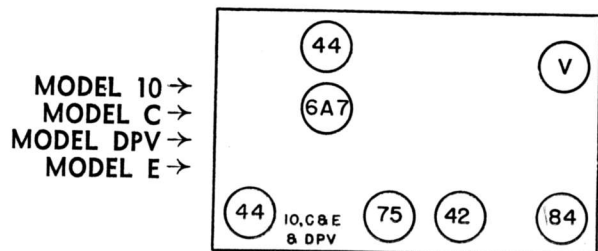
← MODEL 7
Code 123



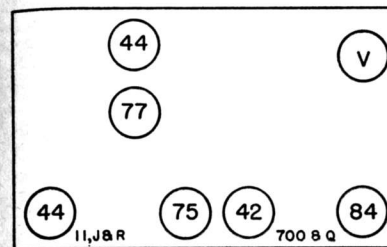
MODEL 8 →
MODEL 12 →
Code 121



← MODEL 9
← MODEL 12
Code 122
← MODEL PA

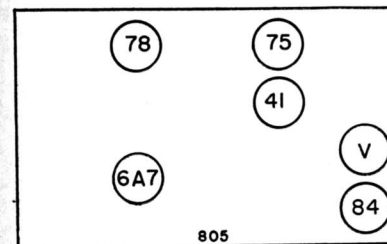
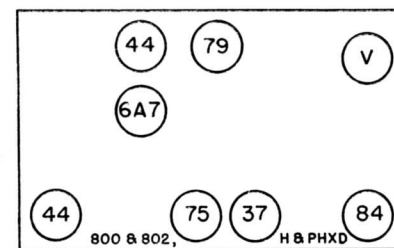


MODEL 10 →
MODEL C →
MODEL DPV →
MODEL E →



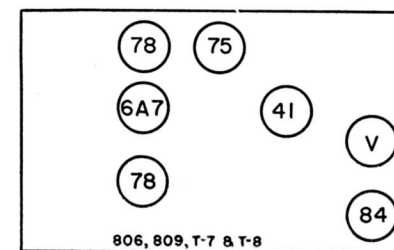
← MODEL 11,700
← MODEL J
← MODEL Q
← MODEL R

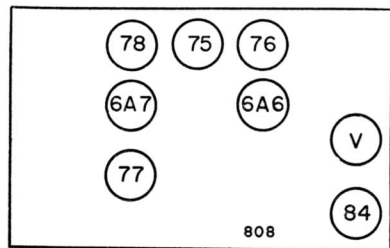
MODEL 800 →
MODEL 802 →
MODEL H →
MODEL PHXD →



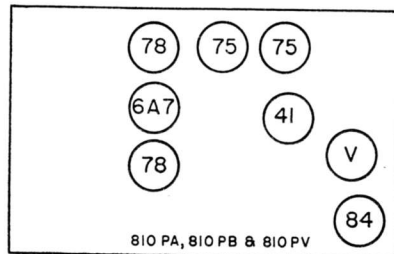
← MODEL 805

MODEL 806 →
MODEL 809 →
MODEL T-7 →
MODEL T-8 →

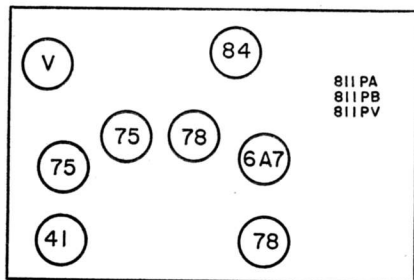




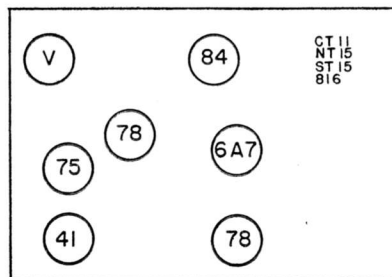
MODEL 808



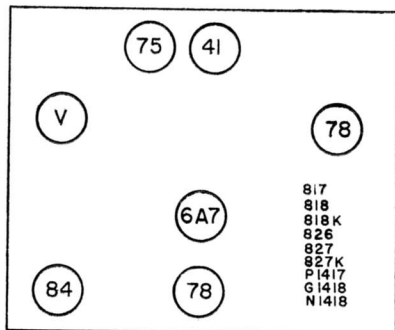
MODEL 810PA
MODEL 810PB
MODEL 810PV



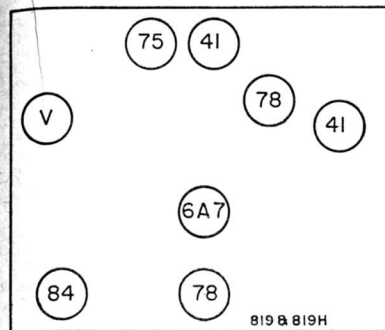
MODEL 811PA
MODEL 811PB
MODEL 811PV



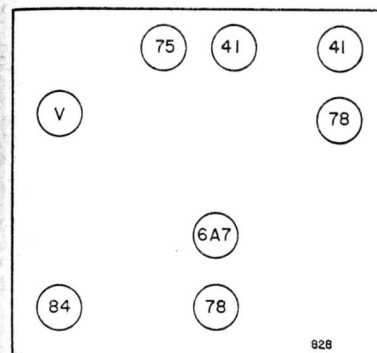
MODEL 816
MODEL CT11
MODEL NT15
MODEL ST15
MODEL S1416



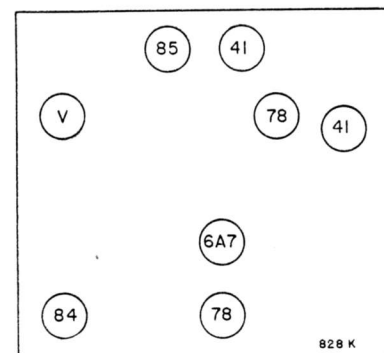
← MODEL 817
← MODEL 818
← MODEL 818K
← MODEL 826
← MODEL 827
← MODEL 827K
← MODEL P1417
← MODEL G1418
← MODEL N1418



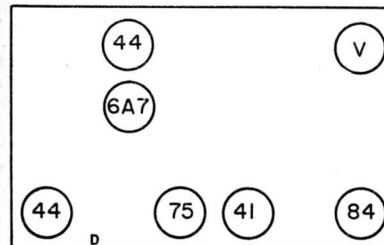
← MODEL 819
← MODEL 819H



MODEL 828

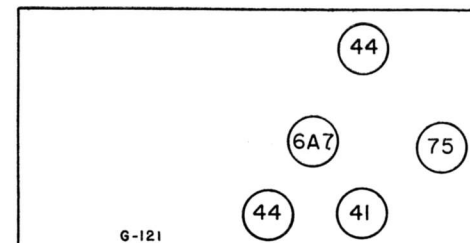


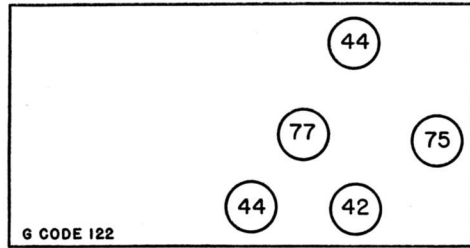
MODEL 828K



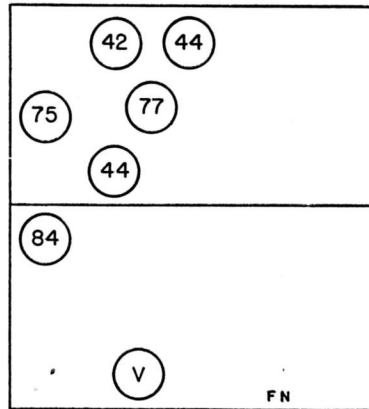
← MODEL D

MODEL G →
Code 121

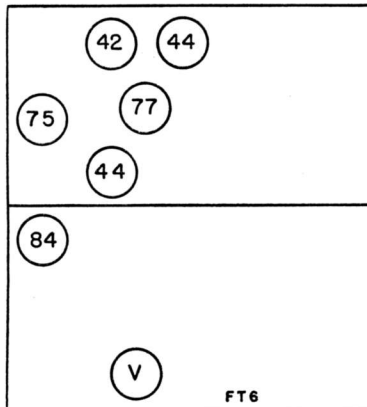




← MODEL G
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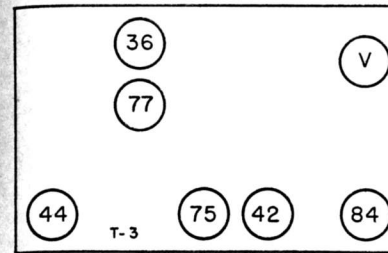
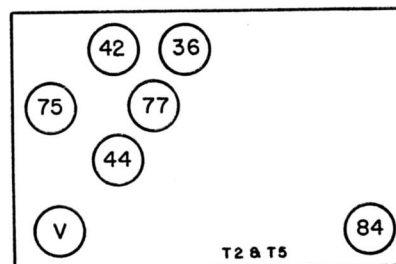


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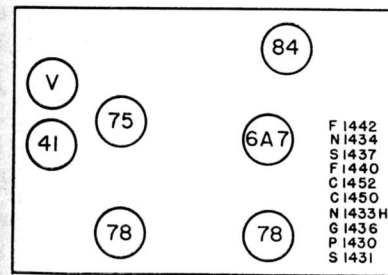
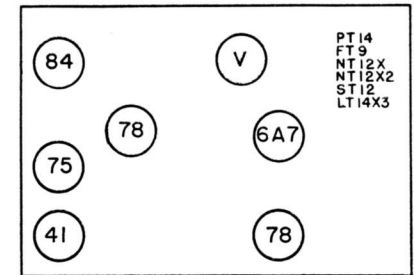
← MODEL FT-6

MODEL T-2 →
MODEL T-5 →



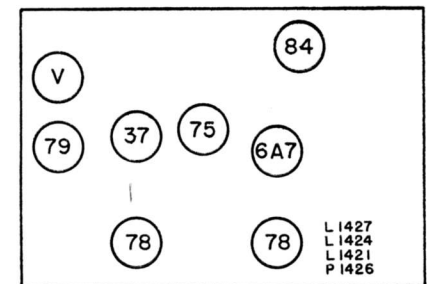
← MODEL T-3

- MODEL FT-9 →
- MODEL LT-14X3 →
- MODEL NT-12X →
- MODEL NT-12X2 →
- MODEL PT-14 →
- MODEL ST-12 →
- MODEL T14X4 →



- ← MODEL C-1450
- ← MODEL C-1452
- ← MODEL F-1440
- ← MODEL F-1442
- ← MODEL G-1436
- ← MODEL N-1433H
- ← MODEL N-1434
- ← MODEL P-1430
- ← MODEL S-1431
- ← MODEL S-1437

- MODEL L-1424 →
- MODEL L-1427 →
- MODEL L-1429 →
- MODEL L-1460 →
- MODEL P-1421 →
- MODEL P-1426 →



AVERAGE CHARACTERISTICS—PHILCO HIGH-EFFICIENCY TUBES

Type	Description	Base	Bulb	Type of Emitter	Filament Rating		Use	Plate Volts Neg.	Control Grid Volts	Screen Volts	Plate Current M.A.	Screen Current M.A.	Trans. Conductance Micro-mhos	Plate Resistance Ω	Amp. Factor	Recommended Load Resistance Ω	Rated Power Output Watts	Notes
					Volts	Amps.												
01A	Triode	4D	ST-14	F	5.0	.25	Det. Amp.	90	4.5		2.5		725	11,000	8.0			
1A1	Monode	4K	ST-12	F	1.0	.50	Ballast for 2v	135	9.0		3.0		800	10,000	8.0			
1A4	Tetrode	4K	ST-12C	F	2.0	.06	R.F. Amp.	180	3.0	67.5	2.3	7	700	750,000	525	Remote cutoff		
1A6	Heptode	6L	ST-12C	F	2.0	.06	Converter	135	3.0	67.5	1.2	2.5	275†	400,000	Ga=135v, Max. I=2.0 MA			Conversion conductance
1B1	Monode	4A	ST-12	F	1.0	.36	Ballast for 2v	180	3.0	67.5	1.5	2.0	300†	500,000	Ga=135v, Max. I=1.8 MA			
1B4T	Pentode	4K	ST-12C	F	2.0	.06	R.F. Amp.	180	3.0	67.5	1.7	.4	650	1,000,000	650	Sharp cutoff		
1B5/25S	Duo Diode Triode	6M	ST-12	F	2.0	.06	Det. Amp.	135	3.0		.8		575	35,000	20			
1C1	Monode	4A	ST-12	F	1.0	.745	Ballast for 2v	Battery Receiver	Operation from 3.2v				Dry Battery					
1C6	Heptode	6L	ST-12C	F	2.0	.12	Converter	See 1C7G Characteristics										
1C7G	Heptode	7Z	ST-12C	F	2.0	.12	Converter	135	3.0	67.5	1.7	2.3	400†	500,000	Ga=135v, Max. I=3.0 MA			
1D1	Monode	4A	ST-12	F	1.0	.24	Ballast for 2v	180	3.0	67.5	1.5	2.3	400†	600,000	Ga=135v, Max. I=4.5 MA			
1D5GT	Tetrode	5R	ST-12C	F	2.0	.06	R.F. Amp.	180	3.0	67.5	2.3	7	700	750,000	525	Remote cutoff		
1D7G	Heptode	7Z	ST-12C	F	2.0	.06	Converter	135	3.0	67.5	1.2	2.5	275†	400,000	Ga=135v, Max. I=2.0 MA			
1E1	Monode	4A	ST-12	F	1.0	.48	Ballast for 2v	180	3.0	67.5	1.5	2.0	300†	500,000	Ga=135v, Max. I=1.8 MA			
1E6GP	Pentode	5R	ST-12C	F	2.0	.08	R.F. Amp.	180	3.0	67.5	1.7	.4	650	1,000,000	650	Sharp cutoff		
1E7G	Duo Pentode	8C	ST-12	F	2.0	.24	Pwr. Amp.	135	4.5	135	7.5	2.1	1600	220,000	350	16,000	.300	Per section Push pull
1F4	Pentode	5K	ST-14	F	2.0	.12	Pwr. Amp.	See 1F5G Characteristics										
1F6G	Pentode	6X	ST-14	F	2.0	.12	Pwr. Amp.	135	4.5	135	8.0	2.6	1700	200,000	340	16,000	.340	
1F7G	Duo Diode Pentode	7AD	ST-12C	F	2.0	.08	Det. Amp.	180	1.5	67.5	2.0	.6	650	1,000,000	650			
1G1	Monode	4A	ST-12	F	1.0	.42	Ballast for 2v	Battery Receiver	Operation from 3.2v				Dry Battery					
1G5G	Pentode	6X	ST-14	F	2.0	.12	Pwr. Amp.	90	8.0	90	8.5	2.7	1500	135,000	200	8,500	.300	
1H4G	Triode	5S	ST-12	F	2.0	.06	Det. & Amp.	90	4.5		2.5		860	11,000	9.3			
								135	9.0		3.0		900	10,300	9.3			
								180	13.5		3.1		900	10,300	9.3			

1H6G	Duo Diode Triode	7AA	ST-12	F	2.0	.06	Det. & Amp.	135	3.0						35,000	20	10,000	2.1	Class B operation 50v RMS-G-G
1J6G	Duo Triode	7AB	ST-12	F	2.0	.24	Pwr. Amp.	135	3		4.0						10,000	1.9	
1K1	Monode	4A	ST-12	F	1.0	.55	Ballast for 2v	Battery Receiver	Operation from 3.2v		1.0								
1-V	Diode	4G	ST-12	K	6.3	.30	H-W. Rect.	350v Rms. Max.											
2	Monode	4A	S-14	F	9.0	.300	Ballast for A-C-DC Filament Circuits												
2A3	Triode	4D	ST-16	F	2.5	2.50	Pwr. Amp.	250	45	62	60		5250	800	4.2	2,500	3.5		
2A5	Pentode	6B	ST-14	K	2.5	1.75	Pwr. Amp.	250	16.5	250	34.0	7.5	2350	79,000	185	3,000	15		
								315	22.0	315	42.0	8.5	2600	100,000	260	7,000	3.0	Push pull Pentode operation	
								250	20.0	tie to plate	33.0		2300	2,700	6.2	3,000	.65		
2A6	Duo Diode Triode							350	38.0	tie to plate	56.0					8,000	15		
2A7	Heptode	6G	ST-12C	K	2.5	.8	Det. Amp.	250	2.0		1.0		1100	91,000	100	Max. I=1.4 MA			
								100	1.5	50	1.3		350†	500,000	Ga=100, Ga=250, Remote Cutoff				
								250	3.0	100	3.0		520†	360,000	200,000	Max. I=4.0 MA			
2B7	Duo Diode Pentode	7D	ST-12C	K	2.5	.8	Det. Amp.	100	3.0	100	5.8	1.7	950	300,000	285	Remote Cutoff			
								250	3.0	100	6.0	1.5	1000	800,000	800				
								250	4.5	50	.65		Plate voltage applied thru 1MΩ						
2E5	Triode	6R	ST-12	K	2.5	.8	A.F. Amp.	250	4.5	90									
3	Monode	4A	ST-16	F	128.0	.30	Tun'g Inder.	250	8.0	Target I=	4.5								
4	Monode	4A	ST-16	F	115.0	.40	Ballast tube f or AC-DC filament circuits												
5	Monode	4A	ST-16	F	115.0	.46	Ballast tube f or AC-DC filament circuits												
5U4G	Duo Diode	5T	ST-16	F	5.0	3.0	Full Wave	500v RMS per plate		250	250	250	250	250	250				
5V4G	Duo Diode	5L	ST-14	K	5.0	1.75	Foil Wave			200	200								
5W4G	Duo Diode	5T	MT-8A	F	5.0	1.50	Hi Vacuum Rectifier			110	110								
5X4G	Duo Diode	5Q	ST-16	F	5.0	3.0	Recifier			250	250								
5Y3G	Duo Diode	5T	ST-14	F	6.0	2.0	See 5Y4G Characteristics												
5Y4G	Duo Diode	5Q	ST-14	F	5.0	2.0				350	350								
										400	400								
										550	550								
5Z3	Duo Diode	4C	ST-16	F	5.0	3.0				500	500								
5Z4	Duo Diode	6L	MT-8A	K	5.0	2.0				400	400								
6	Monode	4A	ST-12	F	1.0	.685	Ballast for 2v	Battery Receiver	Operation from 3.2v										
6A3	Triode	4D	ST-16	F	6.3	1.0	Pwr. Amp.	250	45.0		60								
6A4/LA	Pentode	5B	ST-14	F	6.3	.3	Pwr. Amp.	100	6.5	100	7.5	1.6	1700	83,000	150	2,500	3.2		
													5250	800	4.2	11,000	.30		

Balance of Data on this tube on next page.

AVERAGE CHARACTERISTICS — PHILCO HIGH-EFFICIENCY TUBES (Cont'd)

Type	Description	Base	Bulb	Type of Emitter	Filament Rating		Use	Plate Volts	Control Grid Volts Neg.	Screen Volts	Screen Current M.A.	Trans. Conductance Micro-mhos	Plate Resistance Ω	Amp. Factor	Recommended Load Resistance Ω	Rated Power Output Watts	Notes
					Volts	Amperes											
6N7G	Duo Triode	8B	ST-14	K	6.3 .8	Pwr. Amp.	250	0	.....	28	Class "B" Operation	800	8,000	8.0	8.0	Both sections in parallel
6Y7G	Duo Triode	.....	.....	.....	300 0	Driver	300	0	.....	35	Class "B" Operation	1,200	10,000	10.0	10.0	
6Q7	Duo Diode Triode	7V	MTT8B	K	6.3 .3	Det. Amp.	250	5	.....	6.0	3,100	3,200	40,000	.35	40,000	
6Q7G	Duo Diode Triode	7V	ST-12C	K	6.3 .3	Det. Amp.	See 6Q7G	6	Characteristics	7.0	.....	.....	11,000	35.0	40,000	.40
6R7	Duo Diode Triode	7V	MTT8B	K	6.3 .3	Det. Amp.	See 6R7G	3.0	Characteristics	.....	.....	800	88,000	70	.....	.....
6R7G	Duo Diode Triode	7V	ST-12C	K	6.3 .3	Det. Amp.	See 6R7G	3.0	Characteristics	.....	.....	1,200	58,000	70	.....	.....
6S7G	Pentode	7R	ST-12C	K	6.3 .3	Det. Amp.	250	9.0	.....	9.5	1,900	1,900	8,500	16	.....	.....
6T7G	Duo Diode Triode	7V	ST-12C	K	6.3 .15	Det. Amp.	250	3.0	.....	8.0	2.2	1,500	250,000	375	Remote Cutoff	.....
6U7G	Pentode	7R	ST-12C	K	6.3 .3	Det. Amp.	250	3.0	.....	8.2	2.0	1,600	800,000	1280	Remote Cutoff	.....
6V6	Pentode	7AC	MT-8A	K	6.3 .45	Pwr. Amp.	See 6V6G	3.0	Characteristics	.....	.....	1,000	65,000	65	.....	.....
6V6G	Pentode	7AC	ST-14	K	6.3 .45	Pwr. Amp. Push Pull	250	12.5	45.0	4.5	4,100	52,000	218	5,000	4.25
6X5	Duo Diode	6S	MT-8A	K	6.3 .6	Full Wave HI Vacuum Rectifier	300	20	.....	78.0	5.0	.....	.....	8,000	13.50	2 tubes
6X5G	Duo Diode	6S	ST-12C	K	6.5 .5	Rectifier	See 6X5G	0	Characteristics	.....	.....	.....	.....	.....	.....	.....
6Y7G	Duo Triode	8B	ST-12	K	6.3 .60	Pwr. Amp.	350V RMS per plate	0	75 Ma x.	.....	.....	.....	.....	7,000	5.5	.....
7	Monode	4A	ST-16	.....	.....	.....	250	0	.....	10.5	Class "B" Operation	.....	.....	14,000	8.0	.....
8	Monode	4A	ST-16	.....	176 .3	Ballast for A-C-DC filament circuit	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Monode	4A	ST-16	.....	132 .3	Ballast for A-C-DC filament circuit	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Triode	4D	ST-16	F	7.5 1.25	Pwr. Amp.	250	40	.....	18	.....	1,600	5,000	8.0	10,200	1.6
12A	Triode	4D	ST-14	F	5.0 .25	Det. Amp.	135	9	.....	6.2	.....	1,650	5,100	8.5	9,000	.13

12A5	Pentode	7F	ST-12	K	12.6 6.3	Pwr. Amp.	100	15	100	17.0	3.0	1,900	35,000	70	4,500	.85	Class "B" operation 50v RMS G-G
12A7	Diode Pentode	7K	ST-12C	K	12.6 3	Rect. Amp.	180	27	180	36.0	6.0	2,500	32,000	80	3,800	3.50	
12Z3	Diode	4G	ST-12	K	12.6 3	H. W. Hi Vac Rectifier	125V RMS	13.5	Max. 135	30 Ma x.	9.0	975	102,000	100	13,500	.55	
14	Tetrode	5E	ST-14C	K	14.0 3	Rectifier	250V	RMS	Max.	60 Ma x.	.....	.....	.....	.....	.....	.....	.....
15	Pentode	5F	ST-12C	K	2.0 .22	Amp.	250	3	90	4.0	1.7	1,050	600,000	630	Sharp Cutoff	.....	.....
17	Triode	5A	ST-12	K	14.0 3	Amp.	135	1.5	67.5	1.85	.3	750	800,000	600	Sharp Cutoff	.....	.....
18	Pentode	6B	ST-14	K	14.0 3	Pwr. Amp.	250	21	5.20	9.250	9.0	2,350	79,000	185	7,000	3.0	.....
19	Duo Triode	6C	ST-12	F	2.0 .26	Pwr. Amp.	250	16.5	250	34.0	7.5	.....	.....	.....	10,000	2.1	.....
22	Tetrode	4K	ST-14C	F	3.3 .132	Amp.	135	3	5.0	5.0	1.0	.....	.....	.....	10,000	1.9	.....
24A	Tetrode	5E	ST-14C	K	2.5 1.75	Amp.	135	1.5	67.5	3.7	1.3	500	250,000	125	10,000	1.6	.....
25A6	Pentode	7S	MT-8A	K	25.0 30	Pwr. Amp.	250	3	90	4.0	1.7	1,050	600,000	630	Sharp Cutoff	.....	.....
25A6G	Pentode	7S	ST-14	K	25.0 30	Pwr. Amp.	See 25A6G	Characteristics	.....	.....	.....	.....	.....	.....	.....	.....	.....
25B6G	Pentode	7S	ST-14	K	25.0 30	Pwr. Amp.	95	15	95	20.0	4.0	2,000	45,000	90	4,500	.9	.....
25L6	Pentode	7S	MT-8A	K	25.0 30	Pwr. Amp.	135	20	135	37.0	8.0	2,450	35,000	85	4,000	2.0	.....
25L6G	Pentode	7S	ST-14	K	25.0 30	Pwr. Amp.	See 25L6G	Characteristics	.....	.....	.....	.....	.....	.....	.....	.....	.....
25S	Duo Diode Triode	6M	ST-12	F	2.0 .130	Pwr. Amp.	110	7.5	110	49	4.0	8200	10,000	82	2,000	2.2	.....
25Z5	Duo Diode Triode	6E	ST-12	K	25.0 .30	Det. Amp. Dual HI Vac Rectifier	See 1B5	Characteristics	.....	.....	.....	.....	.....	.....	.....	.....	.....
25Z6	Duo Diode Triode	7C	MT-8A	K	25.0 .30	Dual HI Vac Rectifier	125V RMS	RMS	85 Ma x. per plate	85 Ma x. per plate	.....	.....	.....	.....	.....	.....	.....
26	Triode	4D	ST-14	F	1.5 1.05	Amp.	180	14.5	.....	6.2	.....	1,150	7,300	8.3	.....	.....	.....
27	Triode	5A	ST-12	K	2.5 1.75	Amp.	250	9	.....	5.2	.....	975	9,250	9.0	.....	.....	.....
30	Triode	4D	ST-12	F	2.0 .06	Amp.	135	21	.....	3.1	.....	900	10,300	9.3	.....	.....	.....
31	Triode	4D	ST-12	F	2.0 .130	Pwr. Amp.	180	13.5	.....	8.0	.....	925	4,100	3.8	7,000	.185	.....
32	Tetrode	4K	ST-14C	F	2.0 .06	Amp.	135	30.0	.....	12.3	.....	1,050	3,600	3.8	5,700	.375	.....
33	Pentode	5K	ST-14	F	2.0 .26	Pwr. Amp.	180	3.0	.....	1.7	.4	640	950,000	610	7,000	.375	.....

AVERAGE CHARACTERISTICS — PHILCO HIGH-EFFICIENCY TUBES (Cont'd)

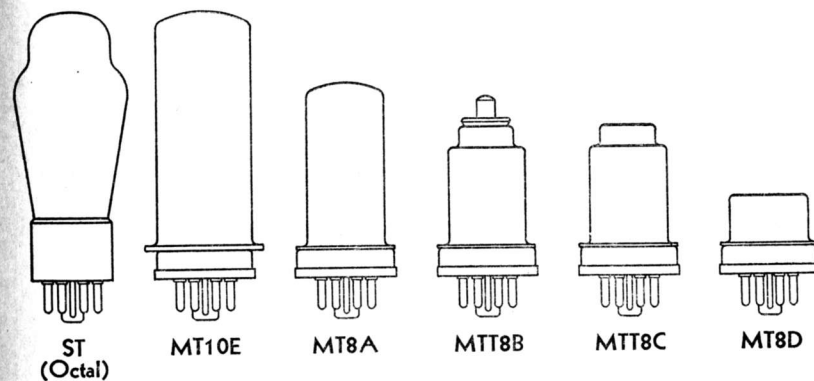
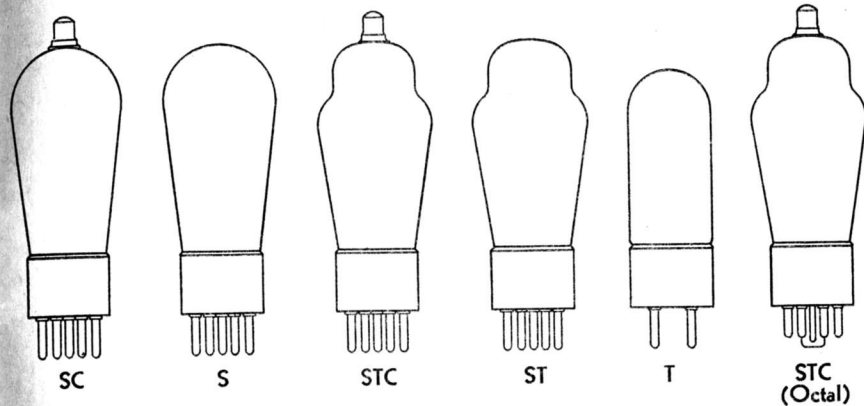
Type	Description	Base	Bulb	Type of Emitter	Filament Rating		Use	Plate Volts	Control Grid Volts Neg.	Screen Volts	Screen Current M.A.	Trans. Conductance Micro-mhos	Plate Resistance Ω	Amp. Factor	Recommended Load Resistance Ω	Rated Power Output Watts	Notes	
					Volts	Amps.												
34	Pentode	4M	ST-14C	F	2.0	.06	Amp.	180	18.0	180	5.0	1700	55,000	90	6,000	1.40		
35/51	Tetrode	5E	ST-14C	K	2.5	1.75	Amp.	180	3	67.5	1.0	600	600,000	360	Remote Cutoff			
36	Tetrode	5E	ST-12C	K	6.3	.30	Amp.	250	3	90	6.5	1090	400,000	420	Remote Cutoff			
37	Triode	5A	ST-12	K	6.3	.30	Amp.	250	3	90	3.2	1.7	1080	595	Sharp Cutoff			
38	Pentode	5F	ST-12C	K	6.3	.30	Pwr. Amp.	250	18	1100	7.5	1100	8,400	9.2				
39/44	Pentode	5F	ST-12C	K	6.3	.30	Amp.	250	25	250	22.0	3.8	100,000	120	10,000	2.5		
40	Triode	4D	ST-14	F	5.0	.25	Amp.	180	3	90.0	5.8	1.4	1050	1050	Remote Cutoff			
41	Pentode	6B	ST-12	K	6.3	.40	Pwr. Amp.	250	18	250	32.0	5.5	2200	150	7,600	3.4		
42	Pentode	6B	ST-14	K	6.3	.65	Pwr. Amp.	250	16.5	250	34.0	7.5	2350	185	7,000	3.4		
43	Pentode	6B	ST-14	K	25.0	.30	Pwr. Amp.	315	22.0	315	43.0	8.5	2600	260	7,000	5.0		
44	Pentode	5F	ST-14	K	6.3	.30	Amp.	250	20.0	tie to plate	33.0	2300	2,700	6.2	3,000	.65		
45	Triode	4D	ST-14	F	25.0	.30	Pwr. Amp.	95	15.0	95	20.0	4.0	2000	90	8,000	15.0	Push pull 2 tubes	
46	Tetrode	5C	ST-16	F	2.5	1.75	Pwr. Amp.	275	56	275	37.0	8.0	2450	85	4,600	2.0		
47	Pentode	5B	ST-16	F	2.5	1.75	Pwr. Amp.	250	33	tie to plate	34.0	2175	1,610	3.5	3,900	1.60		
48	Tetrode	6A	ST-16	K	30.0	.40	Pwr. Amp.	300	0	tie to G1	36.0	2050	1,700	3.5	4,600	2.00		
49	Tetrode	5C	ST-14	F	2.0	.12	Pwr. Amp.	400	0	tie to G1	8.0	2350	2,380	5.6	6,400	1.25		
50	Triode	4D	ST-16	F	7.5	1.25	Pwr. Amp.	250	16.5	250	12.0	6.0	60,000	150	5,800	20.0	2 tubes	
51	Tetrode	5E	ST-14C	K	2.5	1.75	Amp.	180	20	100	52.0	12.0	4,000	150	7,000	2.7		
53	Duo Triode	7B	ST-14	K	2.5	2.00	Pwr. Amp.	250	0	tie to G1	6.0	1125	4,175	4.7	11,000	.17		
								Repl. ace with 35/51	84	0	2.6	1800	3.8	8.0	2.3	8,000	2.3	2 tubes
								Repl. ace with 35/51	250	0	55.0	2100	Class "B" Operation	12,000	3.5	4,350	4.6	2 tubes
									0		28.0	Class "B" Operation		8.0	8.0			
									0		35.0			10,000	10.0			

55	Duo Diode Triode	6G	ST-12C	K	2.5	1.00	Det. Amp.	250	20		7.0	3200	11,000	35	20,000	.40	Both sections tied together		
56	Triode	5A	ST-12	K	2.5	1.00	Amp.	250	13.5	100	8.0	1100	7,500	8.3					
57	Pentode	6F	ST-12C	K	2.5	1.00	Amp.	250	1.5	100	5.0	1450	9,500	13.8	Sharp Cutoff				
58	Pentode	6F	ST-12C	K	2.5	1.00	Amp.	250	3	100	2.0	.5	>1.5M	1500	Remote Cutoff				
59	Pentode	7A	ST-16	K	2.5	2.00	Pwr. Amp.	250	18	250	8.2	2.0	800,000	1280	6,000	3.0			
								250	28	tie to plate	35	9.0	40,000	100	8,000	3.0			
								250	0	tie to G1	26	2600	2,300	6	5,000	1.25	Tie G3 to cathode		
								300	0	tie to G1	20				4,600	15.0	Tie G3 to plate		
								400	0	tie to G1	26				6,000	20.0	Tie G3 to plate		
71A	Triode	4D	ST-14	F	5.0	.25	Pwr. Amp.	180	40.5		20	1700	1,750	3.0	4,800	.79			
75	Duo Diode Triode	6G	ST-12C	K	6.3	.30	Det. Amp.	250	2.0		1.0	1100	91,000	100					
76	Triode	5A	ST-12	K	6.3	.30	Amp.	250	13.5	60	5.0	1450	9,500	13.8					
77	Pentode	6F	ST-12C	K	6.3	.30	Amp.	100	1.5	100	1.7	.4	1100	650,000	715	Sharp Cutoff			
								250	3	100	2.3	.5	>1.5M	1500					
								250	3	90	5.4	1.3	1275	315,000	400	Remote Cutoff			
78	Pentode	6F	ST-12C	K	6.3	.30	Amp.	250	3	100	7.0	1.7	1450	800,000	1160				
79	Duo Triode	6H	ST-12C	K	6.3	.60	Pwr. Amp.	180	0		7.5	Class "B" Operation			7,000	5.5			
								250	0		10.5	Class "B" Operation			14,000	8.0			
80	Duo Diode	4C	ST-14	F	5.0	2.0	Full Wave Hi Vac.	350	RMS per plate		125								
								400	RMS per plate		110								
								550	RMS per plate		135 Ma x. with suitable choke input								
81	Diode	4B	ST-16	F	7.5	1.25	Rectifier	700	RMS		85 Ma x.								
82	Duo Diode	4C	ST-14	F	2.5	3.00	F-W Mercury	500	RMS per plate		125 Ma x.								
83	Duo Diode	4C	ST-16	F	5.0	3.00	Rectifier	500	RMS per plate		250 Ma x.								
83V	Duo Diode	4L	ST-14	K	5.0	2.00	F-W Hi Vac.	400	RMS per plate		200 Ma x.								
84	Duo Diode	5D	ST-12	K	6.3	.60	Rectifier	350	RMS per plate		75 Ma x.								
85	Duo Diode Triode	6G	ST-12C	K	6.3	.30	Det. Amp.	135	10.5		3.7	750	11,000	8.3					
								180	13.5		6.0	975	8,500	8.3					
89	Pentode	6F	ST-12C	K	6.3	.4	Pwr. Amp.	250	20.0	250	32	5.5	1800	125	6,750	3.4	G3 tied to Cathode		
								250	31	tie to plate	32	1800	2,600	4.7	5,500	.90	G3 tied to Plate		
X99	Triode	4D	T-9	F	3.3	.063	Det. Amp.	90	4.5		2.5	425	15,500	6.6	4,500	1.35			
182B	Triode	4D	ST-14	F	5.0	1.25	Pwr. Amp.	250	35		20	2000	2,500	5.0	4,500	1.35			
183	Triode	4D	ST-14	F	5.0	1.25	Pwr. Amp.	250	65		20	1500	2,000	3.0	4,500	1.58			
485	Triode	5A	ST-12	K	3.0	1.25	Det. Amp.	180	9.0		5.8	1400	8,900	12.5					

PHILCO PILOT LAMPS — DIMENSIONS AND SPECIFICATIONS

Philco Part No.	Voltage	Current Drain Amps.	Color of Filament Support Bead	Dimensions		Base	Mazda Type No.
				Overall Height	Overall Diameter		
5316	2.0	.06	Pink	1 1/8"	1 3/32"	Min. Screw	.....
34-2046	2.0	.06	Pink	1 5/16"	7/16"	Min. Screw	.....
34-2065	2.0	.06	Pink	1 1/8"	1 3/32"	Min. Bayonet	.....
34-2150	2.1	.12	White	1 1/8"	1 3/32"	Min. Bayonet	.....
34-2170	2.1	.25	Blue	1 1/8"	1 3/32"	Min. Bayonet	.....
3463	2.5	.50	White	1 1/8"	1 3/32"	Min. Screw	41
34-2047	3.2	.50	Green	1 1/8"	1 3/32"	Min. Screw	42
4567	6-8	.15	Brown	1 1/8"	1 3/32"	Min. Screw	40
34-2031	6-8	.18	White	1 5/16"	7/16"	Min. Screw	50
6608	6-8	.25	Blue	1 1/8"	1 3/32"	Min. Screw	46
34-2068	6-8	.15	Brown	1 1/8"	1 3/32"	Min. Bayonet	.....
34-2040	6-8	.18	White	1 5/16"	7/16"	Min. Bayonet	51
34-2064	6-8	.25	Blue	1 1/8"	1 3/32"	Min. Bayonet	44
34-2184	6-8	.25	Blue	1 1/8"	1 3/32"	Min. Bayonet	*Black Tip
34-2039	6-8	.36	White	1 1/16"	9/16"	Min. Bayonet	55
34-2038	6-8	.55	White	1 7/16"	2 3/32"	Med. Bayonet	63

PHILCO TUBES..... BULB SIZES AND STYLES



Type	Height	Diameter	Type	Height	Diameter
S12	3 5/8"	1 9/16"	ST16	4 13/16"	2 1/16"
S14	4 1/8"	1 13/16"	ST12C	3 15/16"	1 9/16"
S17	5 1/16"	2 13/16"	ST14C	4 15/32"	1 13/16"
S19	5 11/16"	2 7/16"	T8	3 9/16"	1 1/16"
S21	5 11/16"	2 11/16"	T9	3 7/16"	1 1/16"
S12C	3 15/16"	1 9/16"	MT8A	3 1/8"	1 1/4"
S14C	4 1/2"	1 13/16"	MT8B	3"	1 1/4"
S21C	6 1/8"	2 11/16"	MTT8C	2 9/16"	1 1/4"
ST12	3 11/16"	1 9/16"	MT8D	1 1/2"	1 1/4"
ST14	4 1/8"	1 13/16"	MT10E	4 5/16"	1 5/8"

*Height of types 57 and 57 ST12C bulb is 4 3/8".

4A	4B	4C	4D
4E	4G	4K	4L
4M	4T	5A	5B
5C	5D	5E	5F

5K	5L	5M	5Q
5R	5S	5T	5U
5V	5-7	6A	6B
6C	6D	6E	6F

6G 	6H 	6J 	6K
6L 	6M 	6Q 	6R
6S 	6T 	6W 	6X
7A 	7AA 	7AB 	7AC
7AD 	7B 	7C 	7D

7E 	7F 	7G 	7H
7K 	7Q 	7R 	7S
7T 	7U 	7V 	7W
7Z 	8A 	8B 	8C
8E 	8G 	<p>ABBREVIATIONS</p> <p>D1, D2, or Dp = Diode plate F = Filament G or G1 = Grid G2 = 2d grid G3 = 3d grid G4 = 4th grid G5 = 5th grid Gp = Pentode grid Gt = Triode grid H = Heater Hc = Heater center tap</p> <p>K = Cathode Kp = Pentode cathode Kr = Rect. cathode NC = No connection P = Plate Pp = Pentode plate Pr = Rect. plate Pt = Triode plate S = Shield Sc = Screen grid Sp = Suppressor grid Su = Suppressor</p> <p>XS = Sprayshield</p>	
8E 	8G 		

BASE ARRANGEMENTS BY TUBE TYPES

Type	Base	Type	Base	Type	Base
01A	4D	6E5	6R	42	6B
1A1	4A	6F5G	5M	43	6B
1A4	4K	6F6G	7S	45	4D
1A6	6L	6F7	7E	46	5C
1B1	4A	6G5	6R	47	5B
1B4	4M	6H6G	7Q	48	6A
1B5/255	6M	6J5G	6Q	49	5C
1C1	4A	6J7G	7R	50	4D
1C6	6L	6K5G	5U	53	7B
1C7G	7Z	6K6G	7S	55	6G
1D1	4A	6K7G	7R	56	5A
1D5GT	5R	6L5G	6Q	57	6F
1D7G	7Z	6L6G	7AC	58	6F
1E1	4A	6L7G	7T	59	7A
1E5GP	5R	6N6G	7W	71A	4D
1E7G	8C	6N7G	8B	75	6G
1F4	5K	6Q7G	7V	76	5A
1F5G	6X	6R7G	7V	77	6F
1F7G	7AD	6S7G	7R	78	6F
1G1	4A	6T7G	7V	79	6H
1G5G	6X	6U7G	7R	80	4C
1H4G	5S	6V6G	7AC	81	4B
1H6G	7AA	6X5G	6S	82	4C
1J6G	7AB	6Y7G	8B	83	4C
1K1	4A	7	4A	83V	4L
1V	4G	8	4A	84	5D
2	4A	9	4A	85	6G
2A3	4D	10	4D	89	6F
2A5	6B	12A	4D	X99	4D
2A6	6G	12A5	7F	182B	4D
2A7	7C	12A7	7K	183	4D
2B7	7D	12Z3	4G	485	5A
2E5	6R	14	5E		
3	4A	15	5F		
4	4A	17	5A		
5	4A	18	6B		
5U4G	5T	19	6C		
5V4G	5L	22	4K		
5W4G	5T	24A	5E		
5X4G	5Q	25A6G	7S		
5Y3G	5T	25B6G	7S		
5Y4G	5Q	25L6G	7AC		
5Z3	4C	25Z5	6E		
5Z4	5L	25Z6G	7Q		
6	4A	26	4D		
6A3	4D	27	5A		
6A4/LA	5B	30	4D		
6A5G	6T	31	4D		
6A6	7B	32	4K		
6A7	7C	33	5K		
6A8G	8A	34	4M		
6B4G	5S	35/51	5E		
6B7	7D	36	5E		
6B8G	8E	37	5A		
6C5G	6Q	38	5F		
6C6	6F	39/44	5F		
6D6	6F	40	4D		
6D8G	8A	41	6B		

TUBE TYPES BY BASE ARRANGEMENTS

4A	2, 3, 4, 5, 6, 7, 8, 9, 1A1, 1B1, 1C1, 1D1, 1E1, 1G1, 1K1	6Q	6C5G, 6J5G, 6L5G
4B	81	6R	2E5, 6E5, 6G5
4C	5Z3, 80, 82, 83	6S	6X5G
4D	01A, 2A3, 6A3, 10, 12A, 26, 30, 31, 40, 45, 50, 71A, X99, 182B, 183	6T	6A5G
4G	1V, 12Z3	6X	1F5G, 1G5G
4K	1A4, 22, 32	7A	59
4L	83V	7AA	1H6G
4M	1B4, 34	7AB	1J6G
5A	17, 27, 37, 56, 76, 485	7AC	6L6G, 6V6G
5B	6A4/LA, 47	7AD	1F7G
5C	46, 49	7B	6A6, 53
5D	84	7C	2A7, 6A7
5E	14, 24A, 35/51, 36	7D	2B7, 6B7
5F	15, 38, 39/44	7E	6F7
5K	1F4, 33	7F	12A5
5L	5V4G, 5Z4	7K	12A7
5M	6F5, G	7Q	6H6G, 25Z6G
5Q	5X4G, 5Y4G	7R	6J7G, 6K7G, 6S7G
5R	1D5GT, 1E5GP	7S	6F6G, 6K6G, 25A6G, 25B6G, 25L6G
5S	1H4G, 6B4G	7T	6L7G
5T	5U4G, 5W4G, 5Y3G	7V	6Q7G, 6R7G, 6T7G
5U	6K5G	7W	6N6G
6A	48	7Z	1C7G, 1D7G
6B	2A5, 18, 41, 42, 43	8A	6A8G, 6D8G
6C	19	8B	6N7G, 6Y7G
6E	25Z5	8C	1E7G
6F	6C6, 6D6, 57, 58, 77, 78, 89	8E	6B8G
6G	2A6, 55, 75, 85		
6H	79		
6L	1A6, 1C6		
6M	1B5/25S		

MODEL	Year	Total Tubes	Quantities & Types of Tubes Required
14 (221 & 2)	1932-3	9	2-44, 1-36, 3-37, 2-42, 1-80
14 (121-2-3)	1933-4	9	2-78, 1-5A7, 1-37, 1-77, 3-42, 1-80
15	1932-3	11	4-44, 4-37, 2-42, 1-80
16	1933-4	11	1-76, 2-77, 3-78, 3-42, 1-37, 1-5Z3
16B	1933-4	11	1-76, 2-77, 3-78, 3-42, 1-37, 1-80
17	1933-4	11	1-6A7, 3-78, 2-37, 1-77, 3-42, 1-5Z3
17B	1933-4	11	1-6A7, 3-78, 2-37, 1-77, 3-42, 1-80
18	1933-4	8	1-6A7, 2-78, 1-75, 3-42, 1-80
19	1933-4	6	1-36, 2-44, 1-75, 1-42, 1-80
20	1930-1	7	3-24, 1-27, 2-71A, 1-80
21	1931	7	3-24, 1-27, 2-45, 1-80
22	1932	7	1-36, 3-44, 1-37, 1-42, 1-80
23	1932	9	1-36, 2-44, 3-37, 2-42, 1-80
24	1932-3	5	2-24, 1-35, 1-47, 1-80
25	1932-3	8	4-44, 2-37, 1-42, 1-80
26	1933	6	1-36, 1-42, 1-75, 2-44, 1-80
27	1933	6	1-36, 2-44, 1-75, 1-42, 1-80
28	1934	6	1-6A7, 2-39 44, 1-75, 1-43, 1-25Z5
29	1934	6	1-6A7, 2-39 44, 1-75, 1-42, 1-80
30	1930-1	8	3-32, 3-30, 2-31
32	1934	6	1-36, 2-39 44, 1-75, 1-42, 1-84
34	1934	7	1-1-C-6, 2-34, 2-30, 1-32, 1-19
34A	1934	8	1-1-C-6, 2-34, 2-30, 1-32, 1-19, 1-1-C-1
35	1931-2	7	3-32, 3-30, 1-33
36	1932-3	8	3-32, 3-30, 1-33, 1-No. 6
37	1932-3	6	1-15, 2-32, 1-30, 1-19, 1-No. 6
38	1933-4	5	1-15, 2-32, 1-30, 1-19
38A	1933-4	6	1-15, 2-32, 1-30, 1-19, 1-No. 6
38 (123)	1934-5	5	1-1A6, 2-32, 1-30, 1-19
38A (123)	1934-5	6	1-1A6, 2-32, 1-30, 1-19, 1-No. 6
39	1935	6	2-30, 1-32, 1-34, 1-1C6, 1-19
40	1930	6	3-24, 1-27, 2-71A
41	1930	6	3-24, 1-27, 2-71A
42	1931	6	3-24, 1-27, 2-71A
43	1932	8	4-44, 2-37, 1-42, 1-80
44	1933-4	6	1-6A7, 2-78, 1-75, 1-42, 1-80
45	1934	6	1-6A7, 2-39 44, 1-75, 1-42, 1-80
46	1931	7	3-14, 1-17, 2-71A, 1-No. 2
47	1932-3	8	1-36, 2-44, 3-37, 2-43
48	1932-3	5	1-44, 2-36, 1-43, 1-No. 9
49	1934	7	1-6A7, 2-78, 1-76, 1-85, 2-43
50	1931	5	3-24, 1-47, 1-80
51	1932	5	2-24, 1-35, 1-47, 1-80
52	1932	5	2-24, 1-35, 1-47, 1-80
53	1933	4	1-12Z3, 1-43, 2-77
54	1933-4	5	1-25Z5, 1-43, 1-75, 1-6A7, 1-78
57	1933	4	2-77, 1-42, 1-80
58	1934	4	2-77, 1-42, 1-80
59	1934-5	4	2-77, 1-42, 1-80
60	1933-5	5	1-6A7, 1-78, 1-75, 1-42, 1-80
65	1929	6	2-24, 2-45, 1-80, 1-27
66	1934	5	1-6A7, 1-78, 1-75, 1-42, 1-80
70	1931	7	4-24, 1-27, 1-47, 1-80
70 Above Serial 22,000	1932	7	3-35, 1-24, 1-27, 1-47, 1-80
71	1932	7	3-44, 1-36, 1-37, 1-42, 1-80
76	1930	7	3-24, 1-27, 2-45, 1-80
77	1930	7	3-24, 1-27, 2-45, 1-80
80	1932	4	2-36, 1-42, 1-80
81	1933	4	2-77, 1-42, 1-80
84	1934-5	4	2-77, 1-42, 1-80
86	1928-9	8	4-26, 1-27, 2-71A, 1-80
87	1929	8	4-26, 1-27, 2-45, 1-80
89	1933-4	6	1-36, 2-44, 1-75, 1-42, 1-80
89 (123)	1935	6	1-77, 2-44, 1-75, 1-42, 1-80
90	1931	9	4-24, 2-27, 2-45, 1-80
90 Above Serial 237,001	1931	9	3-24, 4-27, 1-47, 1-80
90 Above Serial 353,100	1932	9	2-35, 1-24, 3-27, 2-47, 1-80
91	1932	9	2-44, 1-36, 3-37, 2-42, 1-80
95	1929-30	9	3-24, 3-27, 2-45, 1-80
96	1930	9	3-24, 3-27, 2-45, 1-80
97	1935	7	2-42, 1-85, 2-78, 1-6A7, 1-80

MODEL	Year	Total Tubes	Quantities & Types of Tubes Required
111	1931	11	4-24, 4-27, 2-45, 1-80
112	1931	11	4-24, 4-27, 2-45, 1-80
112 Above Serial 174,001	1931	11	4-24, 4-27, 2-47, 1-80
116 (121)	1935	11	1-37, 3-42, 1-76, 2-77, 3-78, 1-80
116 (122) (151)	1935	11	1-5Z3, 2-6A3, 1-37, 1-42, 1-76, 2-77, 3-78
118	1934	8	1-5A7, 2-78, 1-75, 3-42, 1-80
144	1934	6	1-6A7, 2-78, 1-75, 1-42, 1-80
200	1934	10	1-6A7, 3-78, 1-37, 1-75, 3-42, 1-5Z3
201	1934	10	3-78, 1-75, 3-42, 1-6A7, 1-37, 1-5Z3
212	1931	11	4-24, 4-27, 2-45, 1-80
220	1931	7	3-24, 1-27, 2-71A, 1-80
270	1931	7	4-24, 1-27, 1-47, 1-80
370	1931	7	4-24, 1-27, 1-47, 1-80
470	1932	9	5-24, 2-27, 1-47, 1-80
490	1932	11	4-24, 5-27, 1-47, 1-80
500	1934	11	1-76, 2-77, 3-78, 3-42, 1-37, 1-5Z3
501	1934	11	1-76, 2-77, 3-78, 3-42, 1-37, 1-5Z3
503	1933-4	8	2-78, 1-6A7, 1-75, 3-42, 1-80
504	1933-4	6	1-6A7, 2-78, 1-75, 1-42, 1-80
505	1933-4	5	1-6A7, 1-78, 1-75, 1-42, 1-80
506	1934	6	1-6A7, 2-78, 1-75, 1-42, 1-80
507	1934	8	1-6A7, 2-78, 1-75, 3-42, 1-80
509	1934	10	3-78, 1-75, 3-42, 1-6A7, 1-37, 1-5Z3
511	1928	7	4-26, 1-27, 1-71A, 1-80
551	1932	5	2-24, 1-35, 1-47, 1-80
570	1931-2	7	4-24, 1-27, 1-47, 1-80
600	1936	4	1-6A7, 1-77, 1-41, 1-80
602	1936	5	1-6A7, 1-78, 1-43, 1-75, 1-25Z5
604	1936	5	1-6A7, 1-78, 1-75, 1-43, 1-25Z5
610	1935	5	1-6A7, 1-42, 1-75, 1-78, 1-80
611	1935	5	1-6A7, 1-25Z5, 1-43, 1-75, 1-78
620	1935	6	1-6A7, 1-42, 1-75, 2-78, 1-80
623	1935	6	1-1C6, 1-19, 2-30, 1-32, 1-1A4
623A	1935	7	1-1C6, 1-19, 2-30, 1-32, 1-1A4, 1-No. 6
624	1935-6	6	1-1C6, 1-1A4, 2-30, 1-32, 1-19
625	1935-6	6	1-6A7, 2-78, 1-75, 1-42, 1-80
630	1935	6	1-6A7, 1-42, 1-75, 2-78, 1-80
635	1935-6	6	1-6A7, 2-78, 1-75, 1-42, 1-80
640	1935	7	1-6A7, 2-42, 2-78, 1-85, 1-80
641	1935	7	1-6A7, 2-43, 1-76, 2-78, 1-85
642	1935	7	1-6A7, 1-6F7, 1-76, 1-78, 1-85, 2-48
643	1935	7	1-1C6, 1-19, 2-30, 1-32, 2-34
643A	1935	8	1-1C1, 1-1C6, 1-19, 2-30, 1-32, 2-34
645	1935-6	7	1-6A7, 2-78, 1-85, 2-42, 1-80
650	1935	8	1-6A7, 3-42, 1-75, 2-78, 1-80
651	1935-6	8	1-6A7, 2-78, 1-85, 1-76, 2-43, 1-25Z5
655	1935-6	8	1-6A7, 2-78, 1-75, 3-42, 1-80
660	1935	10	3-42, 1-75, 1-76, 1-77, 3-78, 1-80
665	1935-6	10	3-78, 1-77, 1-76, 1-75, 3-42, 1-80
680	1935	15	1-5Z3, 2-6A3, 1-6B7, 1-6F7, 1-42, 1-76, 4-78, 1-80, 3-85
37-9	1937	9	2-6K7G, 1-6N7G, 6H6G, 1-6A8G, 1-6Q7G, 1-5Y4G, 2-6F6G
37-10	1937	9	2-6K7G, 1-6N7G, 1-6H6G, 1-6A8G, 1-6Q7G, 1-5Y4G, 2-6F6G
37-11	1937	9	2-6K7G, 1-6N7G, 1-6H6G, 1-6A8G, 1-6J5G, 1-5Y4G, 2-6F6G
37-33	1937	5	1-1D7G, 1-1D5G, 1-1H6G, 1-1H4G, 1-1E7G
37-34	1937	5	1-1D7G, 1-1D5G, 1-1H6G, 1-1H4G, 1-1E7G
37-38	1937	6	1-1C7G, 1-1D5G, 2-1H4G, 1-1E5G, 1-1J6G
37-60	1937	5	1-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-61	1937	5	1-6A8G, 1-6K7G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-62	1937	5	1-6K7G, 1-6Q7G, 1-6A8G, 1-5Y4G, 2-6F6G
37-84 (122)	1937	4	2-6J7G, 1-6F6G, 1-5Y4G
37-89	1937	6	2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-93	1937	5	1-6K7G, 1-6R7G, 1-6A8G, 1-5Y4G, 1-6F6G
37-116 (121 & 122)	1937	15	4-6K7G, 1-6L7G, 1-6A8G, 1-6N7G, 1-6H6G, 1-6F6G, 3-6J5G, 2-6B4G, 1-5U4G
37-116 (125 & 126)	1937	15	4-6K7G, 3-6J5G, 1-6H6G, 1-6F6G, 1-6A8G, 1-6L7G, 2-6A5G, 1-6N7G, 1-5U4G
37-600	1937	4	1-6A8G, 1-6J5G, 1-6K6G, 1-5Y4G
37-602	1937	5	1-6A8G, 1-6K7G, 1-6Q7G, 1-25A6G, 1-25Z6G
37-604	1937	5	1-6A8G, 1-6K7G, 1-6Q7G, 1-25A6G, 1-25Z6G
37-610	1937	5	1-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-611	1937	5	1-6A8G, 1-6K7G, 1-6Q7G, 1-25A6G, 1-25Z6G
37-620	1937	6	2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-623	1937	6	1-1C7G, 2-1D5G, 1-1H4G, 1-1F7G, 1-1J6G
37-624	1937	6	2-1D5G, 1-1C7G, 1-1F7G, 1-1H4G, 1-1J6G
37-630	1937	6	2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
37-640	1937	7	2-6K7G, 1-6A8G, 1-6Q7G, 2-6F6G, 1-5Y4G
37-641	1937	7	2-6K7G, 1-6A8G, 1-6Q7G, 2-25A6G, 1-25Z6G
37-643	1937	7	2-1D5G, 1-1C7G, 2-1H4G, 1-1E5G, 1-1J6G

TUBE COMPLEMENTS..... MODELS 37-650—38-2670

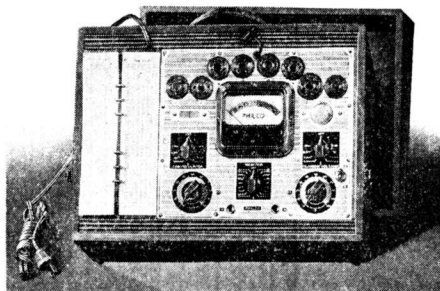
MODEL	Year	Total Tubes	Quantities & Types of Tubes Required
37-650	1937	8	2-6K7G, 1-6J5G, 1-6A8G, 2-6F6G, 1-5Y4G, 1-6K5G
37-660	1937	9	2-6K7G, 1-6A8G, 2-6J5G, 1-6K5G, 2-6F6G, 1-5X4G
37-665	1937	9	2-6K7G, 1-6A8G, 2-6J5G, 1-6K5G, 2-6F6G, 1-5Y4G
37-670	1937	11	2-6K7G, 1-6A8G, 5-6J5G, 2-6F6G, 1-5X4G
37-675	1937	12	3-6K7G, 1-6L7G, 1-6A8G, 1-6N7G, 1-6H6G, 1-6Q7G, 3-6F6G, 1-5X4G
37-690	1937	20	5-6K7G, 1-6L7G, 1-6A8G, 1-6N7G, 1-6H6G, 4-6J5G, 1-6B8G, 2-6B4G, 1-6R7G, 2-5X4G, 1-6F6G
37-2620	1937	6	2-6K7EG, 1-6A8EG, 1-6Q7G, 1-5Y4G, 1-6F6EG
37-2650	1937	8	2-6K7EG, 1-6A8EG, 1-6J5G, 1-5Y4G, 1-6K5G, 2-6F6EG
37-2670	1937	11	2-6K7EG, 1-6A8EG, 5-6J5G, 1-5X4G, 2-6F6EG
38-1	1937-8	12	3-6J5G, 1-6H6G, 1-6R7G, 1-6K7G, 1-6N7G, 1-6U7G, 1-6A8G, 2-6F6G, 1-5X4G
38-2	1937-8	11	2-6J5G, 1-6H6G, 1-6R7G, 1-6K7G, 1-6N7G, 1-6U7G, 1-6A8G, 2-6F6G, 1-5X4G
38-3	1937-8	9	1-6K7G, 1-6H6G, 1-6Q7G, 1-6N7G, 1-6A8G, 1-6U7G, 1-5Y4G, 2-6F6G
38-4, 38-5	1937-8	8	1-6J6G, 1-6K5G, 1-6K7G, 1-6A8G, 1-6U7G, 1-5Y4G, 2-6F6G
38-7, 38-8, 38-9	1937-8	6	1-6J5G, 6K5G, 1-6K7G, 1-6A8G, 1-5Y4G, 1-6F6G
38-10	1937-8	5	1-6Q7G, 1-6K7G, 1-6A8G, 1-5Y4G, 1-6F6G
38-12, 38-15	1937-8	5	1-6A7, 1-78, 1-75, 1-41, 1-84
38-14	1937-8	5	1-6A7, 1-78, 1-75, 1-43, 1-25Z5
38-22, 38-23	1937-8	6	1-6R7G, 1-6A8G, 1-6K7G, 2-25L6G, 1-25Z6G
38-33	1937-8	5	1-1E7G, 1-1H4G, 1-1H6G, 1-1D7G, 1-1D5GT
38-34 (121)	1937-8	5	1-1D7G, 1-1D5G, 1-1H6G, 1-1H4G, 1-1E7G
38-34 (125)	1937-8	5	1-1H4G, 1-1E7G, 1-1H6G, 1-1D7G, 1-1D5GT
38-35	1937-8	5	1-6A8G, 1-6Q7G, 1-6K7G, 1-6K6G, 1-6X5G
38-38 (125)	1937-8	6	1-1E5GP, 2-1H4G, 1-1C7G, 1-1D5GT, 1-1J6G
38-39	1937-8	6	1-1E5GP, 2-1H4G, 1-1C7G, 1-1D5GT, 1-1J6G
38-40	1937-8	6	1-6A8G, 1-6K5G, 1-6K6G, 1-6K7G, 1-6J5G, 1-6X5G
38-60	1937-8	5	1-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
38-62	1937-8	5	1-6K7G, 1-6Q7G, 1-6A8G, 1-5Y4G, 1-6F6G
38-89	1937-8	6	2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
38-93	1937-8	5	1-6K7G, 1-6R7G, 1-6A8G, 1-5Y4G, 1-6F6G
38-116 (121)	1937-8	15	4-6K7G, 4-6J5G, 1-6R7G, 1-6N7G, 1-6A8G, 1-6L7G, 2-6L6G, 1-5X4G
38-116 (125)	1937-8	15	3-6K7G, 4-6J5G, 1-6R7G, 1-6N7G, 2-6A8G, 1-6U7G, 2-6L6G, 1-5X4G
38-620	1937-8	6	2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-5Y4G
38-623	1937-8	6	1-1C7G, 2-1D5G, 1-1H4G, 1-1F7G, 1-1J6G
38-624	1937-8	6	2-1D5G, 1-1C7G, 1-1F7G, 1-1H4G, 1-1J6G
38-643	1937-8	7	2-1D5G, 1-1C7G, 2-1H4G, 1-1E5G, 1-1J6G
38-665	1937-8	9	2-6K7G, 1-6A8G, 2-6J5G, 1-6K5G, 2-6F6G, 1-5Y4G
38-690	1937-8	20	3-6J5G, 4-6K7G, 2-6A8G, 2-6N7G, 1-6B8G, 1-6U7G, 1-6H6G, 2-6L6G, 1-6R7G, 1-6F6G, 2-5X4G
38-2620	1937-8	6	2-6K7EG, 1-6A8EG, 1-6Q7G, 1-5Y4G, 1-6F6EG
38-2650	1937-8	8	2-6K7EG, 1-6A8EG, 1-6J5G, 1-5Y4G, 1-6K5G, 2-6F6EG
38-2670	1937-8	11	5-6J5G, 1-6A8EG, 1-6U7EG, 1-6K7EG, 1-5X4G, 2-6F6EG

TUBE COMPLEMENTS..... PHILCO AUTO RADIOS

MODEL	Year	Total Tubes	Quantities & Types of Tubes Required
3	1931	7	3-24, 2-01A, 2-71A
5	1933	5	1-6A7, 1-78, 1-75, 1-41, 1-84
6	1932-3	5	3-36, 1-85, 1-41
6F	1933	6	3-36, 1-85, 1-41, 1-84
7 (121)	1932	5	3-36, 2-38
7 (123)	1932	5	3-36, 1-38, 1-41
8	1932	6	3-36, 1-38, 2-41
9	1932-3	6	3-36, 1-85, 1-37, 1-79
9F	1933	7	3-36, 1-85, 1-37, 1-79, 1-84
10	1933-4	6	2-39 44, 1-6A7, 1-75, 1-42, 1-84
11	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
12 (121)	1932-3	6	3-36, 1-38, 2-41
12 (122)	1933	6	3-36, 1-37, 1-85, 1-79
700	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
800	1934	7	1-6A7, 2-44, 1-37, 1-75, 1-79, 1-84
802	1934	7	1-6A7, 2-44, 1-37, 1-75, 1-79, 1-84
805	1935	5	1-6A7, 1-41, 1-75, 1-78, 1-84
806	1935	6	1-6A7, 1-41, 1-75, 2-78, 1-84
808	1935	7	1-6A6, 1-6A7, 1-75, 1-76, 1-77, 1-78, 1-84
809	1935	6	1-6A7, 1-41, 1-75, 2-78, 1-84
810-PA, -PB, -PV	1935	7	1-6A7, 2-78, 2-75, 1-41, 1-84
811-PA, -PB, -PV	1936	7	1-6A7, 2-78, 2-75, 1-41, 1-84
816	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
817	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
818, 818K	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
819	1936	7	2-78, 1-6A7, 1-75, 2-41, 1-84
826	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
827, 827K	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
828	1937	7	1-6A7, 2-78, 1-75, 2-41, 1-84
828K	1937	7	1-6A7, 2-78, 1-85, 2-41, 1-84
B-6	1933	5	3-36, 1-85, 1-41
C	1934	6	2-39 44, 1-6A7, 1-75, 1-42, 1-84
CT-11	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
C-1450	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
C-1452	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
D	1934	6	1-6A7, 1-75, 2-44, 1-41, 1-84
DPV	1934	6	2-39 44, 1-6A7, 1-75, 1-42, 1-84
E	1934	6	2-39 44, 1-6A7, 1-75, 1-42, 1-84
FN	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
FT6	1935	6	2-44, 1-6A7, 1-75, 1-42, 1-84
FT9	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
F1440	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
F1442	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
G (121)	1934	5	2-44, 1-6A7, 1-75, 1-41
G (122)	1934	5	2-44, 1-77, 1-75, 1-42
G1436	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
H	1935	7	1-6A7, 2-44, 1-37, 1-75, 1-79, 1-84
J	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
LT14X3	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
L1424	1937	7	1-6A7, 2-78, 1-75, 1-37, 1-79, 1-84
L1427	1937	7	1-6A7, 2-78, 1-75, 1-37, 1-79, 1-84
NT-12X	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
NT-12X2	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
NT-15	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
N1433H	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
N1434	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
O	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
PA	1933	6	3-36, 1-85, 1-37, 1-79
PB	1933	5	3-36, 1-85, 1-41
PHXD	1935-6	7	1-6A7, 2-44, 1-37, 1-75, 1-79, 1-84
PT14	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
P1421	1937	7	1-6A7, 2-78, 1-75, 1-37, 1-79, 1-84
P1426	1937	7	1-6A7, 2-78, 1-75, 1-37, 1-79, 1-84
P1430	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
Q	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
R	1934	6	2-44, 1-77, 1-75, 1-42, 1-84
ST12	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
ST15	1936	6	2-78, 1-6A7, 1-75, 1-41, 1-84
S1431	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
S1437	1937	6	2-78, 1-6A7, 1-75, 1-41, 1-84
T-2	1935	5	1-77, 1-44, 1-36, 1-75, 1-42
T-3	1935	6	1-77, 1-44, 1-36, 1-75, 1-42, 1-84
T-5	1935	5	1-77, 1-44, 1-36, 1-75, 1-42
T-7	1935	6	1-6A7, 1-41, 1-75, 2-78, 1-84
T-8	1935	6	1-6A7, 1-41, 1-75, 2-78, 1-84

DESIGNED FOR TESTING PHILCO TUBES
AS WELL AS
ALL OTHER MAKES

PHILCO Model 066 TUBE TESTER



• Philco dealers and R. M. S. members will welcome this high-quality low-cost complete modern Philco tube tester . . . developed by Philco engineers as a result of a careful survey and analysis of today's serviceman's needs.

Model 066 gives the only absolutely dependable test because it applies a check that covers all characteristics of the tube at once . . . showing overall performance rating and condition . . . the actual output of the tube under the equivalent of broadcast receiving conditions.

The method of testing used is extremely simple . . . anyone can quickly become adept. A complete chart—especially developed by Philco—including every type of tube, with positions of controls shown for each type, is conveniently mounted alongside the control panel, for quick, handy use.

No other tester on the market has all these new desirable features . . . plus sturdy, compact construction and smart, trim appearance. An instrument you will be proud to own, and one that will be a permanent investment that will increase your income right from the day you buy it.

Notable Features of Model 066

- Tests every known type tube
- Indicates true overall efficiency
- Extremely simple test procedure
- Actual operating voltages used
- Large, easy-reading meter
- "Good" and "Bad" shown in color
- Sensitive Neon "short" test
- Rectifier and Diode tests included
- Latest style control knobs
- Convenient, sloping panel
- Removable cover
- For counter or portable use

Dimensions 15 $\frac{3}{4}$ " x 11 $\frac{1}{8}$ " x 7 $\frac{1}{2}$ " For 115 Volts, 60 Cycle.

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Quick Reference
TUBE COMPLEMENT
TABLE
FOR ALL PHILCO MODELS
Pages 60 to 63