

MODELS 41-608 AND 41-609, CODE 122

Models 41-608 and 41-609, Code 122, are similar to Models 41-608 and 41,609, Code 121, with the exception of the phonograph amplifier tube and circuit. A type 7C6 tube is used in the phonograph amplifier in the 41-608 and 41-609, Code 122, chassis, whereas a 7C7 tube is used in the Code 121.

The Code 122 "Specifications", "Light-Beam Reproducer Adjustments" and "Aligning R. F. and I. F. Compensators" instructions are the same as those given for Code 121 on page 107, but the replacement parts in the Code 122 phonograph amplifier differ from Code 121. These part changes are shown in the replacement parts below and the schematic diagram.

Replacement Parts — Models 41-608 and 41-609, Code 122

SCHEMATIC DIAGRAM NUMBERS 37, 38, 45, 46, 48 NOT USED ON THESE MODELS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
1	Loop Aerial (Model 41-608)	76-1124		Cover (Reproducer Head)	76-1104		Cabinet (41-608)	10508A
2	Loop Aerial (Model 41-609)	76-1125		Jewel, Armature and Frame Assembly	318-2168		Cabinet (41-609)	10509
3	Aerial Transformer (Model 41-608)	32-3531		Lamp	34-2408		Clip (Coil Mounting)	28-5003
4	Aerial Transformer (Model 41-609)	32-3536		Lamp Shield	27-2782		Clip (Coil Mounting)	28-5002
5	Mica Condenser (250 mmdfd.)	60-125157		Lamp Socket Assembly	76-1107		Connector (Input Transformer)	37-0191
6	Mica Condenser (100 mmdfd.)	60-1192		Lamp Socket Assembly	76-1107		Dial Scale	27-5857
7	Tuning Condenser	31-2481		Pivot Bracket Assembly (Mtg. Reproducer)	76-1110		Dial Pointer	31-2488
8	Compensator (Aerial, 12 M. C.)	31-6384		Reproducer Arm (Without Parts)	28-7316FC56		Drive Cord (Pointer)	31-2487
9	Compensator (Aerial, 1500 K. C.)	31-6385		Tube and Lens Assem. (For Lamp Socket)	76-1111		Drive Cord (Band Indicator)	31-2488
7A	Compensator (580 K. C.) Part of 7	32-3558		Spring (L.Light Adjustment)	28-8968		Drive Cord (Tuning Condenser)	31-2400
8	R. F. Transformer (S.W.) Model 608 Only	32-3530		Screw (Light Adjustment)	W-2224		Drive Drum (Tuning Condenser)	36-9883
9	Oscillator Transformer	32-3530		Screw (Coil Mounting)	W-2204		Indicator Bracket & Spring Assem. (Dial)	76-1071
10	Mica Condenser (.98 mmdfd.)	30-1186		Lock Washer (Coil Mounting)	W-2222		Jewel (41-609 Cabinet)	27-4777
11	Compensator (Oscillator, 12 M. C.)	31-6378		Resistor (100,000 ohms)	35-410339		Knob (Push-button)	27-4332
11A	Compensator (1500 K. C.) Part of 11	31-6377		Resistor (100 mmdfd.)	60-110157		Knob (Push-button)	27-4824
11B	Comp. (Adj. Light Beam Rep.) Part of 11	31-6377		Resistor (100,000 ohms)	35-410339		Plug Assembly (Shunt)	76-1103
12	Power Switch, Part of 16	42-1676		Resistor (330,000 ohms)	33-433339		Spring (Tuning Condenser Drive)	36-1528
13	Resistor (33,000 ohms)	33-333339		Resistor (330,000 ohms)	33-433339		Spring (Tuning Drive Cord)	28-8791
14	Mica Condenser (250 mmdfd.)	60-125157		Resistor (470,000 ohms)	30-4572		Spring (Tuning Cond., Dr. Shaft Grog.)	28-8995
15	Resistor (1.5 megohm)	30-4519		Resistor (470,000 ohms)	33-447339		Socket (Pilot Lamp) Cabinet	76-1128
16	Push-button and Power Switch Complete	42-1576		Resistor (4.7 megohm)	33-422339		Socket (Pilot Lamp) Indicator	76-1077
17	Mica Condenser (250 mmdfd.)	60-125157		Resistor (220,000 ohms)	33-422339		Socket (Pilot Lamp) Dial	76-1078
18	R. F. Choke	32-3559		Tone Control	35-4051		Socket (6 prong tube)	27-8036
19	Resistor (.01 mfd., 400 volts)	33-333339		Resistor (.004 mfd., 400 volts)	30-4578		Socket-Rubber (Loktal type-osc. tube)	27-6139
20	Resistor (33,000 ohms)	33-333339		Condenser (100 mmdfd.)	60-110157		Socket (Loktal)	27-6139
21	Electrolytic Condenser (8-12-16 mfd.)	33-333339		Condenser (.01 mfd., 400 volts)	30-4572		Socket (3 prong aerial)	27-6145
22	Resistor (4700 ohms)	33-247339		Condenser (1006 mfd., 400 volts)	30-4591		Socket (Phonograph Reproducer)	27-8150
23	Condenser (.05 mfd., 200 volts)	30-4519		Resistor (1.5 megohm)	33-447339		Shaft (Tuning)	56-6086
24	Resistor (2.2 megohms)	33-522339		Resistor (470,000 ohms)	33-447339		Shaft (Off-On)	28-2043
25	Condenser (.05 mfd., 400 volts)	30-4519		Condenser (.01 mfd., 400 volts)	30-4572		Tab Kit (41-608)	27-5660
26	Resistor (4700 ohms)	33-247339		Resistor (3900 ohms)	33-239339		Tab Kit (41-609)	40-8549
27	1st I. F. Transformer	32-3465		Condenser (.0015 mfd.)	30-4616		Tab Kit (41-608)	40-8549
28	Resistor (1.5 megohm)	33-510339		Output Transformer	32-3433			
29	Condenser (.05 mfd., 200 volts)	30-4519		Cone Assembly (For Spkr. 36-1528-4)	36-1476			
30	2nd I. F. Transformer	32-3466		Field Coil (For Spkr. 36-1528-4)	33-3396			
31	Resistor (33,000 ohms)	33-333339		Resistor (780-268-28-26 ohms)	33-3396			
32	Resistor (.05 mfd., 200 volts)	30-4519		Pilot Lamps (Push-buttons, Dial)	34-2014			
33	Resistor (330 ohms)	33-133336		Resistor (23 ohms) Model 41-609 Only	34-2019			
34	Resistor (1 megohm)	33-510339		Pilot Lamp, Cabinet 41-609 Only	34-2206			
35	Condenser (.05 mfd., 200 volts)	30-4519		Power Transformer (115 volts, 60 cycle)	32-8132			
36	Resistor (10,000 ohms)	33-103339		Condenser, Dual (.011-01 mfd.)	3903-ODG			
39	Resistor (470,000 ohms)	33-447339		Phonograph Motor (115 volts, 60 cycle)	35-1252			
40A	Compensator (Part of 40)	33-447339		Phonograph Motor (115 volts, 50 cycle)	37-1251			
40B	Mica Condenser (Part of 40)	33-447339		Motor Switch	42-2828			
40C	Resistor (47,000 ohms, Part of 40)	33-347339		Socket (Home Recording Connection)	27-6150			
40D	Mica Condenser (Part of 40)	33-347339		Shunt Plug (Home Recording Connection)	76-1103			
41	Condenser (.1 mfd., 400 volts)	30-4485						
42	Mica Condenser (100 mmdfd.)	60-110157						
43	Resistor (680,000 ohms)	33-468339						
44	Condenser (1.05 mfd., 400 volts)	30-4578						
45	Resistor (100,000 ohms)	33-410339						
46	Condenser (.05 mfd., 200 volts)	30-4519						
47	Resistor (330,000 ohms)	33-433339						
51	Condenser (.006 mfd., 200 volts)	30-4591						
52	Resistor (3300 ohms)	33-233339						
53	Condenser (.05 mfd., 400 volts)	30-4518						
54	Input Trans. (Light Beam Reproducer)	32-1125						
55	Philo Light-Beam Reproducer Complete with Tone Arm	35-2175						

MOUNTING PARTS

Clamp (Cable)	28-1867
Pin (1st, 2nd, 3rd I. F. Trans.)	W-1249
Nut (Speaker Mounting)	W-124
Pin (Chng. Mounting)	W-144
Rubber Corner Chassis	27-5854
Rubber Grommet (Tuning Unit to Cabinet)	27-4596
Rubber Connector (Tuning Cond. Drive)	27-9432
Rubber Washer (Chassis Mounting)	28-5665
Rubber Washer (Changer Mounting)	34-4034
Sleeve (Loop Mounting)	16-1907
Sleeve (Tuning Unit to Cabinet)	28-2258
Sleeve (P. S. W.)	28-5665
Sleeve (Loop)	36-1505
Sleeve (Loop)	28-2257
Screw (Loop)	16-1907
Scale Strap	56-1881
Screw (Loop)	W-1827
Screw (Loop)	W-288
Screw (Chassis)	W-1345
Cable (Pickup Bezel)	W-2073
Screw (Changer Mounting)	W-2225
Spring (Mounting Changer)	28-6970
Washers (Mounting Changer)	W-1715

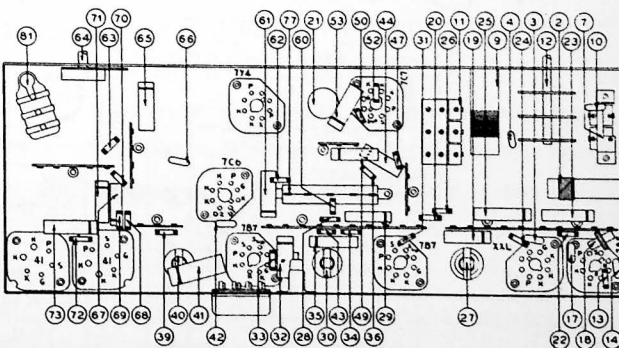
MISCELLANEOUS PARTS

Automatic Record Changer with 115 volt, 60 cycle Motor	35-1233
Bezel (Push-button-41-608)	35-1239
Bezel (Push-button-41-609)	27-4843
Cable Assembly (Reproducer Transformer to Chassis)	56-1893
Cable (Pickup Light)	41-3554
Cable (Speaker)	41-3553
Cable and Plug Assembly (Changer)	41-3549

TUBE SOCKET VOLTAGES

D. C. voltages were measured with a 1000 ohms per volt voltmeter, Philco Model 027. Line voltage 120 volts A. C., no signal being received — range switch broadcast.

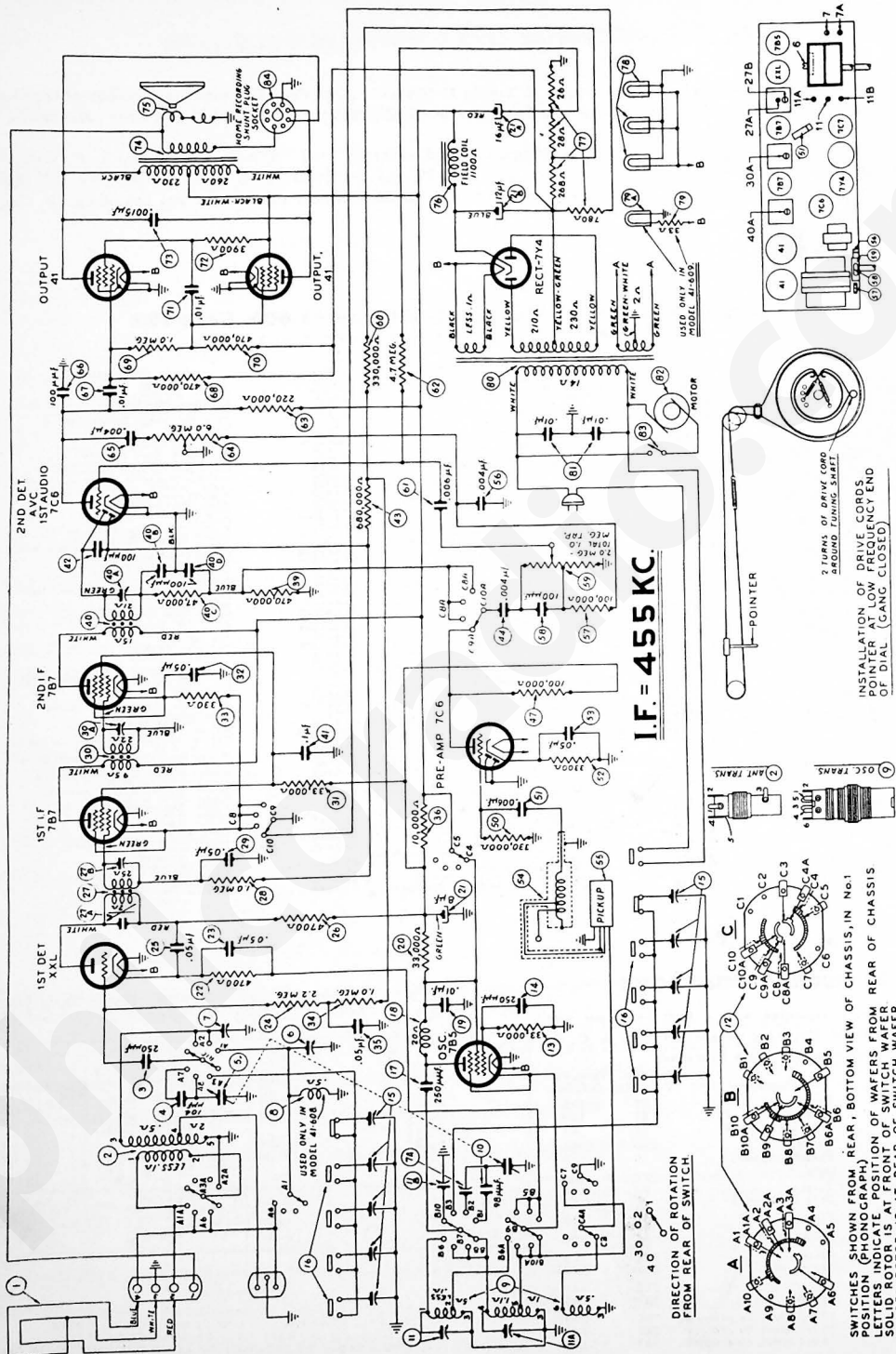
Tube	Location	Radio Pos. D. C. Volt.	Phone Pos. D. C. Volt.
7B5 Osc.	Plate	27	185
" "	Screen	27	185
" "	Bias (Grid Leak)	7	47
XXL 1st Det.	Plate	130	180
" "	Bias (Cathode)	6	8
7B7 at & 2nd I. F.	Plate	227	185
" "	Screen	72	185
" "	Bias (Cathode)	1.5	57
7C6 2nd Det. 1st Audio	Plate	165	140
7C6 Preamp.	Plate	45	125
41 Output Phase Inv.	Plate	222	183
" "	Screen	213	177
41 Output	Plate	222	183
" "	Screen	227	185
	12 mf. elect. to ground	305	290
	16 mf. elect. to ground	227	185
	8 mf. elect. to ground	137	178



PART LOCATIONS — UNDERSIDE OF CHASSIS

MODELS 41-608 AND 41-609, CODE 122
NOTE — PARTS 51, 56, 57, 58 AND 59 LOCATED ON TOP OF CHASSIS

MODELS 41-608 AND 41-609, CODE 122 (CONTINUED)



SCHEMATIC DIAGRAM MODELS 41-608 AND 41-609, CODE 122

SEE PAGE 111 FOR SOCKET VOLTAGES

PRODUCTION CHANGES

MODELS 41-608, CODE 122 and 41-609, CODE 122

To improve tone reproduction and eliminate Microphonics, changes were made on sets marked Run 6, as follows:

Schematic Diagram Number (44) — Condenser changed from .004 mfd. to .001 mfd., Part No. 30-4601. The condenser was removed from its present location in the diagram and relocated in series with the plate of the 7C6 preamplifier tube and the Band switch contact C9A.

Schematic Diagram Number (51) — Condenser changed from .006 mfd. to .003 mfd., Part No. 30-4469.

Schematic Diagram Number (56) — Condenser changed from .004 mfd. to .002 mfd., Part No. 30-4579.

An additional condenser .004 mfd. Part No. 30-4578, was connected in series with Band switch contact C8A and the wire which connects to resistor (39).

To improve the padding range of the aerial circuit at 1500 K. C. and 580 K. C. the compensators (7) and (7A) on diagram was changed from Part No. 31-6365 to 31-6401.

To improve the operating performance of the 7B5 oscillator tube, the R. F. choke (18) on the diagram was changed from Part No. 32-3559 to 32-3615.

The Automatic Record Changer on these models was changed from a gear drive turntable type to a rim drive turntable type. The service information for adjusting both of these changers will be found on pages starting with 135.

The record changer part numbers are as follows:

	Gear Drive Part No.	Rim Drive Part No.
Power Supply		
115 volt, 60 cycle	35-1233	35-1268
115 volt, 50 cycle	35-1239	35-1269

RUBBER MOUNTING FOR MOTOR BOARD

Special moulded rubber supports are now used, replacing the Neoprene motor board mounting supports. This change has been made to correct a low microphonic rumble which occurred on some sets when the lamp in the photo electric pickup was operated at maximum brilliance.

When the record changer was loaded with a full stack of records, the extra weight, in some cases, caused the Neoprene supports to compress sufficiently to allow the base of the record changer to rest on the tilt front spring bracket and this would also cause microphonics.

The new moulded rubber supports are used on all radio phonograph models equipped with record changers and can be obtained from the Service Division, if required, to correct any particular stubborn case of microphonics.

PRECAUTIONS TO PREVENT MICROPHONIC TROUBLES

Careful investigations of the field complaints of microphonics have shown that the dealers and servicemen have failed to follow the instructions prescribed for putting the radio phonograph models into service.

1 — The chassis bolts must be loosened and the shipping strips completely removed from under the radio chassis.

PRODUCTION CHANGES (CONTINUED)

2—The record changer hold-down bolts must be loosened sufficiently to permit the record changer to float freely on the moulded rubber supports and all packing must be removed from around the record changer.

It is extremely important that these two operations be completed before placing the radio phonograph in service in order to avoid microphonic trouble.

The speakers in the phonograph models are rubber mounted to prevent feed back and to permit the use of much greater volume without encountering microphonics. However, if the lamp in the photo-electric pickup head is not installed properly in its metal sleeve and touches the sleeve at any point, this will cause a high pitched microphonic singing condition. This can be easily corrected, simply by relocating the lamp properly in the sleeve.

HEAVIER SPRINGS IN CHANGER POSTS

If the changer mechanism blades do not strike between the records when playing a stack of 12" records, causing the record changer to stall, it is most likely caused by insufficient spring tension. Heavier springs are now used under the caps in the changer posts. Replacement springs are available from the Service Division and will correct this condition should it arise.

TURN TABLES FAILING TO START ON RIM DRIVE TYPE CHANGERS

The rim drive motor is mounted with the rotor vertical and with the lower end of the rotor shaft resting on a ball bearing. A few cases have been found in which the rotor would not run freely when turned by hand with the current "off" and with the

idler wheels held free of the rotor shaft pulley. Apparently the lower bearing was tight because it had shifted in shipment. Loosening the two mounting nuts and shifting the bearing will realign the rotor. This will insure starting and will reduce the load on the motor permitting it to run more freely.

On the later rim drive motor, the bearing mountings were changed and the motor mounting bracket was placed on the top of the motor. If the rotor does not spin freely in the later type motor, it can be freed up by wiggling the rotor shaft or by tapping the rotor shaft with the handle of a screw driver. Since the bearings themselves are floating bearings, this will realign the top and bottom bearings.

FLUTTER ON PHONOGRAPH REPRODUCTION MODELS 41-608P, 41-609P USING RIM DRIVE CHANGERS

We have found some cases of "flutter" on the Model 61-608P, which was caused by the pulley used in the rotor shaft of rim drive motors. The shaft hole in the pulley was slightly oversize and when the pulley was fastened to the shaft, the circumference of the pulley was thrown off center, causing a bad condition of flutter. The flutter can be completely cured by replacing the pulley with one having the proper size shaft hole. The pulley should fit snugly. The one causing the flutter fits loosely on the shaft and should be replaced. The part number of the pulley is 35-2396.

In some instances it has been found that gummy dirt in the record grooves of old records accumulates in the space between the jewel and the "U" shaped guard of the light beam pickup to such an extent that distortion of record reproduction takes place. Complaints of excessive noise and distortion should be checked at this point.