

FM-BC TUNER PT-14



This system of reception permits the oscillator to be resonated with a high capacitance, 250 micromicrofarads in this case. Consequently, changes in the tube characteristics during warm-up do not produce objectionable changes in oscillator frequency. This contributes materially to the stability of the system. The actual schematic diagram is shown in Figure 3.



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PARTS REPLACEMENT

Below are instructions and methods for replacing the integral parts of the Tuner. Although this paragraph does not include instructions for all of the replaceable parts, the instructions are explicit enough to guide and assist the service man whenever it becomes necessary to replace any part that becomes faulty. A short analysis of the Tuner mechanism by the service man before attempting any replacement is highly recommended. It will be noticed that it is necessary, in some cases, to remove the Tuner from the chassis before making the replacement. Since it entails disconnecting leads, removing the Tuner from the chassis should be avoided, unless it is an absolute necessity. Many parts, such as cores, dial pulley, tuning gang and top core clamp, can be replaced without removing the Tuner from the chassis. A constant reference to Figure 4 will be necessary for the exact location of the component parts. Also, it will be necessary to refer to the specific receiver service manual for dial cord restringing instructions and alignment procedure. Of course, alignment of the FM and BC circuits will be necessary if the gang capacitor, iron cores, inductors, or trimmers are replaced, or if the position of the iron cores or inductors have changed in the Tuner.

IRON CORE REPLACEMENT

1. Remove the three screws (29) and lockwashers (17).
2. Remove the clamp and iron core assembly from the Tuner by merely lifting "up" on the bakelite piece (7) to which the cores are mounted.
3. Remove the core requiring replacement by turning the core in a counterclockwise direction.
4. To make the replacement, place spring (33) over the core stud and screw the core into the swivel nut (18).
5. Reassemble the Tuner.
6. It will be necessary to realign the FM circuits after replacing any core.

V.H.F. INDUCTOR REPLACEMENT

1. Unsolder all leads attached to the Tuner.
2. Disconnect the dial restringing system.
3. Remove the tuner mounting screws and lift the Tuner from the chassis.
4. Loosen the four screws (39).

5. To replace the faulty inductor, insert the center conductor of the inductor into the slot in the iron core. The tip must be pointed toward the front of the Tuner. The inductor should be placed between the clamp (7) as follows: The metal tubing of the first inductor (from the rear of the tuner) must be even with the top of the clamps (7); $1/32$ " of the metal tubing must be above the top of the clamps for the center inductor and $1/16$ " of the metal tubing of the third inductor should be above the clamps. It must be remembered that the oscillator frequencies depend upon the amount of iron core inserted in the inductor and during alignment the setting of this initial dimension is obtained by turning the swivel nuts (18).

6. Tighten the four screws (30). Care must be exercised when tightening these screws. If the screws are extremely tight, the inductor may be damaged or the iron core will not slide freely in the inductor.

7. Mount the tuner in the chassis.

8. Resolder all leads.

CAUTION: When soldering to the antenna or variable IF inductor, be careful that solder does not run over the threads of the capacitor. Never attempt to change the length of the connecting leads, as this may affect tuner tracking and performance.

9. It will be necessary to realign the FM circuits after replacing any inductor.

DRIVE PULLEY NOTES

Should it ever become necessary to remove or adjust the drive pulley (19) observe the following points when replacing:

1. The gang capacitor (C-5) must be positioned by means of its mounting screws (27) so that the drive pulley split gear (19) engages the rack gear (20) properly.

2. To eliminate play between the drive pulley and rack gear, it is necessary to offset the drive pulley split gear so that the torsion spring (35) will exert tension against the two halves of the split gear.

3. Before tightening the drive pulley setscrews (31) make sure that you position the drive pulley (19) as shown in Figure 4 - Detail A. With gang capacitor (C-5) fully meshed, the perm tuning cores should be spaced .020 as shown.

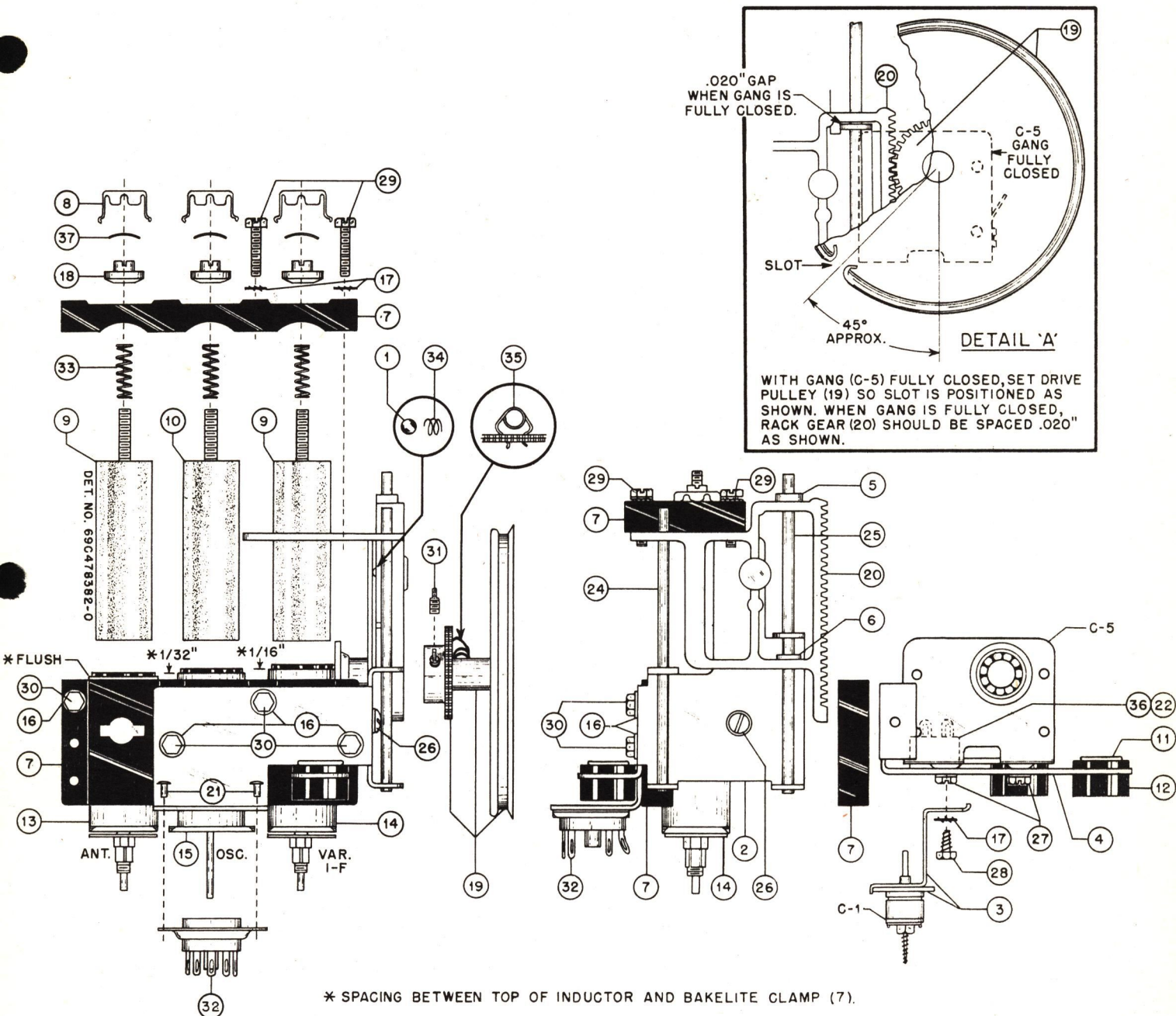


FIGURE 4. PARTS LOCATION

REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	LIST PRICE
	1X470540	FM-BC TUNING UNIT PT-14 (complete)	20.00
		Exchange	15.00
C-1	19A470426	Trimmer, variable air: 2.5 mmf to 30 mmf	.50
C-2	21R2729	Mica: 250 mmf 500V .....	.35
C-3	21R2729	Mica: 250 mmf 500V .....	.35
C-4	21R2730	Mica: 500 mmf 500V .....	.45
C-5	19K75415	Variable, 2 gang; cut oscillator plates	3.00
R-1	6R6046	1 meg 10% 1/2 W insulated .....doz	1.00
R-2	6R6004	1 meg 1/2 W insulated .....doz	1.00
1	43K470555	Ball, steel .....doz	.15
2	70C470437	Bracket, guide rod .....	.20
3	1X470554	Bracket & Strip Assembly (trimmer mtg)..	.20
4	70C470436	Bracket, tuner .....	.35
5	43A478009	Bushing, guide rod (upper) .....	.10
6	43A478010	Bushing, guide rod (lower) .....	.10
7	42B470431	Clamp, core and inductor .....	.30
8	42A72725	Clip, swivel nut .....doz	.35
9	46K471627	Core, powdered iron (FM Ant & Var IF) Specify color of paint dot on old core when ordering .....	.60
10	46K471799	Core, powdered iron (FM Osc) Specify color of paint dot on old core when ordering .....	.70
11	5A12105	Eyelet, mtg .....doz	.20
12	37K15125	Grommet, rubber (tuner mtg) .....doz	.50
13	24C470580	Inductor, VHF, and Capacitor (antenna)..	2.50
14	24K470581	Inductor, VHF, and Capacitor (Var IF)..	2.50
15	24K470582	Inductor, VHF, and Capacitor (Osc)	2.50
16	4S7650	Lockwasher: #6 internal; cadmium pla- ted .....per/c	.50
17	4S7666	Lockwasher: #6 external; cadmium pla- ted .....per/c	.50
18	2A72726	Nut, swivel .....	.05
19	1X470552	Pulley, Gears and Bushing Assembly ....	.65
20	44C470438	Rack, drive gear: die cast; includes two brass guide rod bushings ... ..	.45
21	5S7770	Rivet: .088 x 5/32; nickel plated .....per/c	.50
22	5S7707	Rivet: .122 x 5/32; nickel plated .....per/c	.50
24	47K470419	Rod, guide: 3-17/32" long .....	.15
25	47A470418	Rod, guide: 3-29/32" long .....	.15
26	3S7156	Screw: 6-32 x 3/16 slotted binderhead machine screw; cadmium plated .....per/c	.50
27	3S7155	Screw: 6-32 x 3/16 slotted hex head machine screw; cadmium plated .....per/c	.50
28	3S7506	Screw: #6 x 1/4 PKZ plain hex head; cadmium plated .....per/c	.50
29	3S1925	Screw: 6-32 x 5/8 slotted hex head machine screw; cadmium plated .....doz	.20
30	3S476002	Screw: 6-32 x 1-5/8 slotted hex head machine screw; cadmium plated .....doz	.20
31	3S7113	Setscrew: 8-32 x 1/4 slab head; cadmium plated .....doz	.50
32	9A470424	Socket, tube: Noval; 9 prong; tan .....	.65
33	41A74880	Spring, core tension .....per/c	.50
34	41A470518	Spring, compression .....per/c	.50
35	41A478047	Spring, torsion .....	.05
36	31A70083	Strip, terminal: 1 insulated #2 ground..	.05
37	4A74936	Washer, spring (swivel nut)doz	.15

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