

# Montgomery Ward & Co.

**Model: 62-470**

**Chassis:**

**Year: Pre October 1938**

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

## Resources

**Riders Volume 10 - MONT WARD 10-13**

**Riders Volume 10 - MONT WARD 10-14**

**Riders Volume 10 - MONT WARD 10-15**

**Riders Volume 9 - MONT WARD 9-17**

# MONTGOMERY-WARD & CO. MODELS 62-370, 62-470, 62-700

## Schematic, Voltage, Socket Coils, Phono

JUNE, 1938  
A18-178

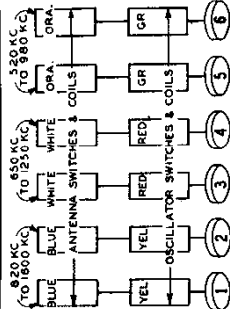
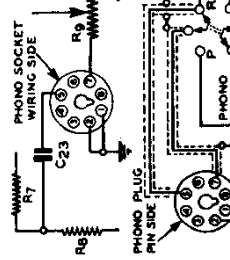
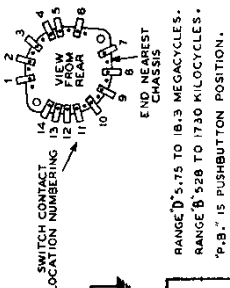
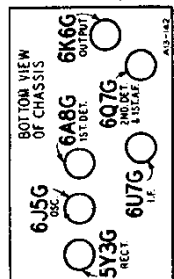
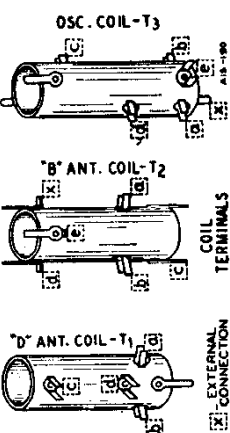
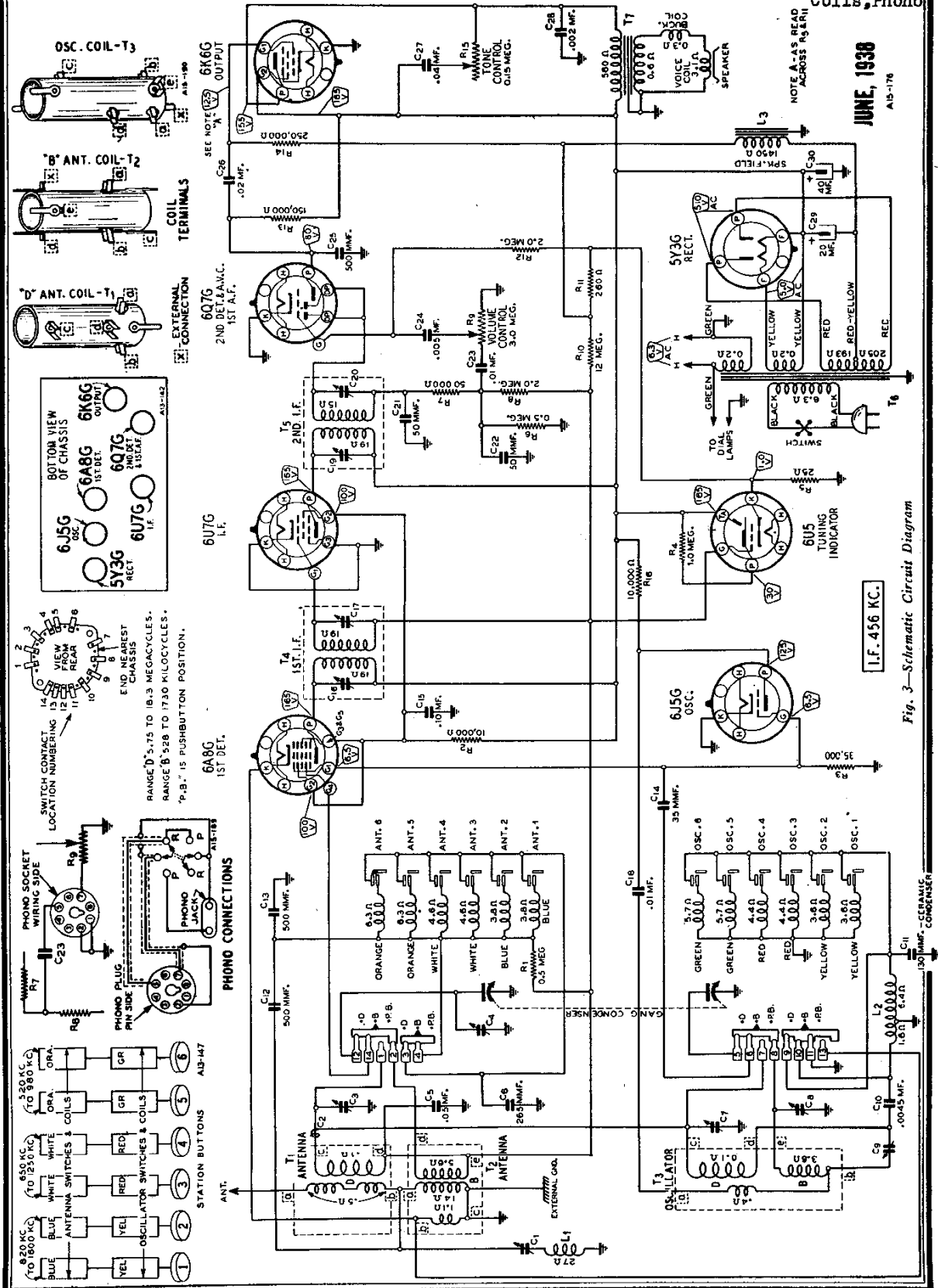


Fig. 3—Schematic Circuit Diagram

MODELS 62-370, 62-470, 62-700

Alignment, Trimmers

MONTGOMERY WARD & CO.

Power Consumption - 50 Watts (At 117 volts 60 cycles)

Power Output - - - - - 1.0 Watts Undistorted  
2.0 Watts Maximum

Selectivity - - - 38 KC Broad at 1000 times Signal

Sensitivity

B Range (Manual Tuning).....15 Microvolts Average  
B Range (Automatic Tuning).....15 Microvolts Average  
D Range .....25 Microvolts Average

Intermediate Frequency - - - - - 456 KC

Speaker - - - - - 6" or 8" Dynamic

Tuning Frequency Range

B Range (Manual Tuning).... 528 to 1730 KC (Kilocycles)  
D Range (Manual Tuning)....5750 to 18300 KC (Kilocycles)  
Buttons 1 and 2 (Automatic Tuning).....820 to 1600 KC  
Buttons 3 and 4 (Automatic Tuning).....650 to 1250 KC  
Buttons 5 and 6 (Automatic Tuning).....520 to 980 KC

**ALIGNMENT PROCEDURE**

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:

An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

Dummy Antennas—.1 mf., 200 mmf., and 400 ohms.

| SIGNAL GENERATOR                |                     | DUMMY ANTENNA | BAND SWITCH  | CONDENSER SETTING  | ADJUST TRIMMERS TO MAXIMUM (Unless otherwise specified)      |
|---------------------------------|---------------------|---------------|--|--|--|
| FREQUENCY SETTING               | CONNECTION AT RADIO |               |  |  |  |
| <b>I. F.</b>                    |                     |               |  |  |  |
| 456 KC                          | Grid of 1st Det.    | .1 mf.        | B Range  | Turn Rotor to Full Open  | 1st I.F. (C16) & (C17)<br>2nd I.F. (C19) & (C20)             |
| <b>RANGE B</b>                  |                     |               |  |  |  |
| 1730 KC                         | Antenna Lead        | 200 mmf.      | B Range  | Turn Rotor to Full Open  | Oscillator Range B (C8)                                      |
| 1500 KC                         | Antenna Lead        | 200 mmf.      | B Range  | Turn Rotor to Max. Output<br>Set Indicator to 1500 KC—<br>See Note A | Ant. Range B (C4)  |
| 600 KC                          | Antenna Lead        | 200 mmf.      | B Range  | Turn Rotor to Max. Output  | 600 KC (C9)<br>Rock Rotor—See Note B                         |
| <b>WAVE TRAP</b>                |                     |               |  |  |  |
| 456 KC                          | Antenna Lead        | 200 mmf.      | B Range  | Turn Rotor to 600 KC<br>Adjust Sig. Gen.—See Note C                  | Wave Trap (C1)<br>Adjust for MINIMUM Output                  |
| <b>RANGE D</b>                  |                     |               |  |  |  |
| 18,300 KC                       | Antenna Lead        | 400 Ohm       | D Range  | Turn Rotor to Full Open  | Oscillator Range D (C7)                                      |
| 15,000 KC                       | Antenna Lead        | 400 Ohm       | D Range  | Turn Rotor to Max. Output  | Ant. Range D (C3)<br>Rock Rotor—See Note B                   |
| <b>PERMEABILITY TUNING UNIT</b> |                     |               | <b>BUTTON DEPRESSED</b><br>(Band Switch in Push Button Position) | <b>TURN SETTING SCREW TO MAXIMUM OUTPUT</b><br>—See Instruction Book | <b>ADJUST COIL POSITION TO MAXIMUM OUTPUT</b><br>—See Note D |
| 1100 KC                         | Antenna Lead        | 200 mmf.      | No. 1  | Setting Screw No. 1  | Antenna Coil No. 1   |
| 1100 KC                         | Antenna Lead        | 200 mmf.      | No. 2  | Setting Screw No. 2  | Antenna Coil No. 2   |
| 850 KC                          | Antenna Lead        | 200 mmf.      | No. 3  | Setting Screw No. 3  | Antenna Coil No. 3   |
| 850 KC                          | Antenna Lead        | 200 mmf.      | No. 4  | Setting Screw No. 4  | Antenna Coil No. 4   |
| 700 KC                          | Antenna Lead        | 200 mmf.      | No. 5  | Setting Screw No. 5  | Antenna Coil No. 5   |
| 700 KC                          | Antenna Lead        | 200 mmf.      | No. 6  | Setting Screw No. 6  | Antenna Coil No. 6   |

Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each range is completed, repeat the procedure as a final check.

**NOTE A**—If the pointer is not at 1500 KC on the dial, loosen the 2 clamps which hold the pointer assembly on the cord, move the pointer to the 1500 KC mark, and tighten the clamps.

**NOTE B**—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

**NOTE C**—Leave condenser rotor at the 600 KC setting and adjust the signal generator until maximum output is obtained at or near 456 KC.

**NOTE D**—At the top of the permeability tuning unit can be seen six "W" openings. Insert the end of a pair of long nose pliers or a screwdriver in the "W" opening of the proper button and adjust the position of the antenna (rear) coil by twisting the pliers or screwdriver until maximum output is obtained.

**CAUTION**—When aligning the short wave bands be sure NOT to adjust at the image frequency. This can be checked as follows: Let us say the signal generator is set for

15,000 KC. The signal will then be heard at 15,000 on the dial of the radio. The image signal, which is much weaker, will be heard at

15,000 less 912 KC, or 14,088 KC on the dial. It may be necessary to increase the input signal to hear the image.

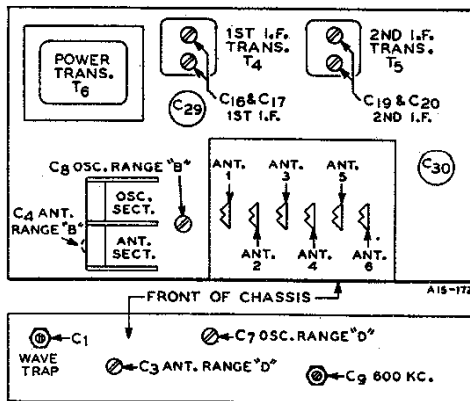


Fig. 2—Location of Trimmers

MODEL 93BR560A  
 MODEL 93BR657A  
 MODEL 93BR713A  
 Tuner Data

MONTGOMERY WARD & CO.

MODELS 62-370, 62-470  
 62-700  
 MODELS 62-704 to 62-712  
 MODELS 62-902, 62-905

MODELS 93BR560A, 93BR657A, 93BR713A

**PROCEDURE FOR SETTING THE AUTOMATIC TUNER PUSHBUTTONS NOW, PROCEED AS FOLLOWS—**

Unlock the tuner mechanism. (NOTE.—The automatic tuner mechanism is locked tight when radio is shipped from the factory.)

1. Remove the snap-in button from the dial escutcheon plate on the front panel of the radio (see "C," Reset Lock Screw, Fig. 2). If the snap-in button will not come out easily using your fingers, pry it off with a screwdriver or a knife, being careful not to mar the finish on the escutcheon plate.

2. Unlock the tuner mechanism by inserting a screwdriver through the hole in the panel. Press in and loosen the locking screw by turning it to the right as far as it will turn without forcing. You will note that as the locking screw is turned it will turn easily until the dial reaches its stop and then a slight amount of force will be required to actually start unlocking the tuner mechanism. Beyond this point, the locking screw is completely unlocked. At this point, the tuner mechanism is completely unlocked. The tuner mechanism is now unlocked.

**SETTING PUSHBUTTONS:**

1. Press in all the way any one of the automatic tuner push-buttons. Holding it in firmly, press on the Dial Tuning Control, No. 4, and tune in the station indicated on the station call letter tab on this pushbutton. You will note that in order to tune the station, the Dial Tuning Control will have to be pressed slightly. Move the Dial Tuning Control very slowly up and down (while still holding the automatic tuner pushbutton in firmly), noting the width of the window in the section of the cathode-ray tuning eye which is visible through the tuning eye. The station will then be clearest and accurately tuned in.
2. Press in another tuner pushbutton. Holding it in firmly, press on the Dial Tuning Control and carefully tune in the station indicated on the call letter tab on this pushbutton.

3. Follow this procedure until you have selected all of your favorite stations. (NOTE.—If the dial mechanism works for one of the pushbuttons it is due to the tuner mechanism not being unlocked all the way. Loosen the reset locking screw. The Dial Tuning Control should turn the dial drum freely with a pushbutton pushed in.)

**LOCKING THE TUNER MECHANISM**

1. To lock the tuner mechanism insert a screwdriver through the hole in the escutcheon panel and press in and turn the reset locking screw to the left, until it cannot be turned any further without forcing it.
2. This will lock the tuner mechanism and all the stations selected on the tuner pushbuttons will be locked in place for automatic tuning. Press in any one of the pushbuttons and—YOUR FAVORITE STATION IS SELECTED.

MODELS 62-370, 62-470, 62-700, 62-902, 62-905; 62-704 to 62-712  
**Procedure for Setting the Station Buttons**

**Selecting the Stations to be Set**

There are 6 buttons on the push button tuning dial by means of which 6 stations may be set for quick tuning. They are numbered 1 to 6 in Fig. 2.

Make a list of your favorite stations, those which you tune in regularly. There may be any number up to and including 6 in this list.

It is better to list the station with the highest kilocycle number first, the station with the next lower kilocycle number next, and so on.

**Frequencies Covered by Each Button**

The frequency range of each station button is shown in Fig. 2. Any station within the range of a button may be set. Although, in some cases, it may be possible to set a certain station on several buttons, it is better to set the stations so that the kilocycle numbers decrease from buttons 1 to 6.

**Setting a Station Button**

Select a station from the list you have prepared, preferably the station with the highest kilocycle number and tune in this station. The station is now set on this button.

To determine whether the correct station has been set, turn the band switch knob back to the BROADCAST position. The same station should be heard (provided the tuning knob has not been turned). If it is not, turn the band switch knob to the PUSH BUTTON TUNING position again and retune with the setting screw.

Remove the station call letter tab from the sheets provided and push the tab all the way to the bottom of the rectangular space above the correct station button opening in the escutcheon plate. Then cover the call letter tab with one of the clear celluloid tabs.

Proceed in the same manner to set stations on any of the remaining buttons. Use blank tabs above buttons on which stations are not set. After all of the stations have been set, carefully replace the escutcheon plate.

If at any time you wish to change the setting of a button from one station to another, repeat the above procedure. Changing the setting of one button will not affect the setting of any of the other buttons. The old call letter tab may be removed by sticking a pin through the notch in the celluloid tab and through the call letter tab.

MODELS 93BR560A, etc.

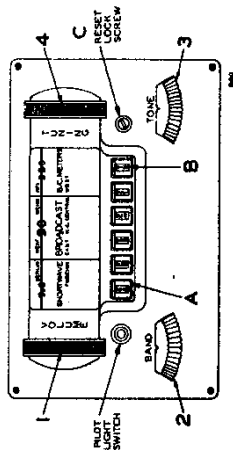


FIG. 1—FRONT VIEW

MODELS 62-370 etc.

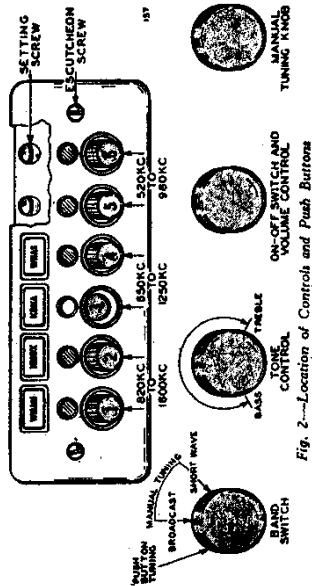


Fig. 2.—Location of Controls and Push Buttons

MODELS 62-370, 62-470, 62-700  
Installation of Model 62-298

MONTGOMERY-WARD & CO.

MODEL 62-298  
Remote Control Unit  
Description

**MODEL 62-298**

FOR USE WITH AIRLINE RADIO

|               |        |         |
|---------------|--------|---------|
| MODELS—62-370 | 62-403 | 62-700  |
| 62-390        | 62-470 | 62-900  |
| 62-401        | 62-490 | 62-1100 |

**DESCRIPTION**

The control consists of three main units, namely, the Remote Push-Button Assembly, the Magnet Assembly and the Relay Assembly.

Fig. 1 shows the three units with their proper names indicated. Also, attention is directed to various parts of each unit to which names have been assigned for the purpose of making reference in the installation procedure which is given step by step for each radio model on the following pages.

To attach the units to any of the radio models listed above, proceed in accordance with the instructions given for each model. Read over very carefully the procedure and study the illustrations to become familiar with the few important items of installation, such as the armature arms, plungers, latch bar, locating pins and locating holes.

Any stations which have been set up on the automatic tuning buttons at the radio may be selected at the remote position. Station call letters are supplied for the Remote Push-Button Assembly. Punch out from the sheets of station call letter tabs the call letters of the stations which have been set up for the automatic push-buttons on the front of the radio.

Pressing the button on the Remote Push-Button Assembly nearest the end from which the connector cable comes out will select the extreme right hand automatic push-button on the front of the radio cabinet. The second button from the cable end of the Remote Push-Button Assembly will select the second automatic push-button from the right hand side of the radio and so on.

Moisten the back of the station call letter tabs and paste them into the rectangular openings in the Remote Push-Button Assembly alongside their respective buttons.

**LOCATION**

The location of each unit is plainly shown in the illustrations of the radio models on the following pages of this instruction booklet.

In general, the Magnet Assembly is mounted on the top of the radio chassis over a rectangular hole which is covered with a removable cover plate. The purpose of this unit is to electrically operate the automatic push-buttons on the front of the radio, from a remote location. The Relay Assembly is mounted by means of two wood screws to the underside of the chassis cabinet shelf, (on mantle models mount the relay beside the radio chassis). The purpose of this unit is to control the Magnet Assembly.

**CAUTION**

Withdraw the A. C. line cord plug for the radio from the house lighting current and do not re-insert it or the A. C. line cord plug for the Remote Control Assembly until all of the steps incidental to the actual installation of the Remote Control units to the radio have been completed.

**INSTALLATION AND OPERATING SUGGESTIONS**

In the Installation Procedure, you will note certain tubes have been removed. This was done to render the top of the chassis more accessible for the actual installation of the Magnet Assembly. NOTE: If difficulty is encountered installing the Magnet Assembly on the top of the chassis while mounted in the cabinet, remove the radio chassis from the cabinet. Be sure to replace the tubes in their proper sockets and connect the grid cap wire to the cap of any tubes of this type which were removed.

After the Remote Control units are completely installed and the radio placed in operation, stations can be selected automatically by pressing any one of the buttons of the Remote Control Assembly. The stations, of course, must first be set up by adjusting the setting screws on the front of the radio. For specific information, see the instructions on this procedure in the Operating Instruction book supplied with the radio.

To select a station from the Remote Control Push-Button Assembly, press down on the button. DO NOT HOLD THE BUTTON DOWN. Press only one push-button at a time. Continual abuse of pushing down more than one button at a time or holding down buttons for a longer period than 30 seconds may result in the tube in the Relay Assembly burning out or damage to the coils in the Magnet Assembly.

10. Hold the Magnet Assembly in place and fasten it securely to the chassis base by means of the four screws.
11. Referring to Fig. 4, mount the relay to the underside of the chassis shelf, using the two wood screws and two spacer washers supplied. On mantle models mount the relay beside the radio chassis. Place the spacer washers between the base of the Relay Assembly and the cabinet shelf, passing the wood screws through the holes in the spacer washers. Arrange the wire connector cables to the Magnet Assembly and Relay Assembly beside the tube socket base as shown in Fig. 4 and put the four tubes, which were removed, back into their respective sockets. CAUTION—Be sure to put the tubes back into the proper sockets.
12. Reset stations for the automatic push-buttons, by means of the station setting screws on the front of the radio. For the complete procedure on this subject, consult the instruction book supplied with the radio.

MODELS 62-370, 62-470, and 62-700—7 TUBE MANTLE and CONSOLE

9. Rest the Magnet Assembly on the chassis base and move it slightly toward the back of the radio until the locating pins (see Fig. 1) on each side of the Magnet Assembly frame slip into the locating holes at both sides of the opening in the chassis base (see Fig. 3).

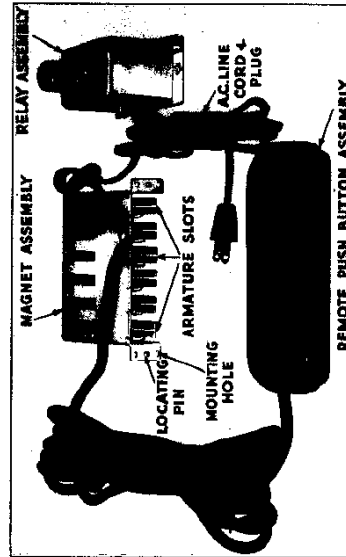


FIG. 1 GENERAL VIEW

Refer to Fig. 3, place the Magnet Assembly in position as shown so that the slots in the armatures are directly over the plug tabs. Now, carefully lower the Magnet Assembly, (the Magnet Assembly should be held in the armatures. A screw-driver will be helpful in lining up any armature which may not be directly over the plungers.

The armatures must slip over the plunger between the latch bar and the shoulder of the plunger (see Fig. 3); also, refer to drawing (Fig. A, Page 8) which illustrates this point more clearly.

**INSTALLATION PROCEDURE**

1. Disconnect the power supply cord for the radio from the house lighting current and do not re-insert the plug until the following procedure for installing the remote control units has been fully completed.
2. Remove the push button escutcheon plate on the front of the radio cabinet and unscrew all six station setting screws all the way out (counterclockwise).
3. Referring to Fig. 2, note that the following four tubes have been removed:  
6K6G Output Tube  
6Q7G 2nd Detector Tube  
6U7G I. F. Tube  
6A8G 1st Detector Tube
4. Remove the cover plate on the top of the chassis by taking out four screws. Fig. 3 is a view of the chassis showing the cover plate removed.
5. Pick up the Magnet Assembly (see Fig. 1) — note that there are six armature arms, each of which is slotted.
6. Before placing the Magnet Assembly in position, put the four screws which were used to hold the cover plate to the chassis into the mounting holes in the chassis. The Magnet Assembly should be held in the chassis by the armature arms and the fiber washers which are used to hold the mounting screws in the mounting holes until the Magnet Assembly is lowered into position. For details on how to use these fiber washers to the best advantage, see drawing Fig. D, Page 8.
7. Referring to Fig. 3, place the Magnet Assembly in position as shown so that the slots in the armatures are directly over the plug tabs. Now, carefully lower the Magnet Assembly, (the Magnet Assembly should be held in the armatures. A screw-driver will be helpful in lining up any armature which may not be directly over the plungers.
8. The armatures must slip over the plunger between the latch bar and the shoulder of the plunger (see Fig. 3); also, refer to drawing (Fig. A, Page 8) which illustrates this point more clearly.