

# **INSTALLATION MANUAL**

## **MASTR® EXECUTIVE II MOBILE COMBINATIONS**

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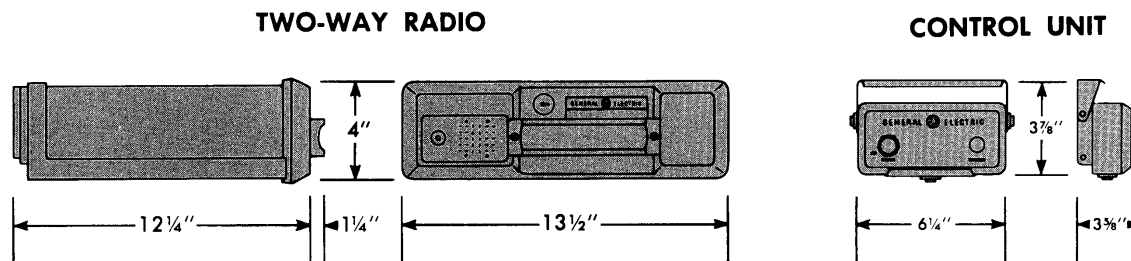


Figure 1 – Mounting Dimensions

### INSTALLATION EQUIPMENT

The equipment required for installing the Two-Way Radio includes:

- An electric drill for drilling mounting holes
- Drills and circle cutters (see sizes in box below)
- A soldering iron for the antenna cable
- Phillips and flat-blade screwdrivers and a 5/16-inch hex head driver for mounting screws.

### DRILL SIZES

No. 31 (1/8-inch) Drill for No. 8 Self-Tapping Screws  
 No. 27 (9/64-inch) Drill for No. 10 Self-Tapping Screws  
 9/32-Inch Drill for Lo-Band Antenna and 1/4-inch Bolt  
 3/4-Inch Punch or Holesaw for High Band/UHF Antenna  
 1-3/8-Inch Circle Cutter, Holesaw and Socket Punch for Lo-Band Antenna  
 1-1/8-Inch Circle Cutter, Holesaw and Socket Punch for rubber grommet.

## UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the Two-Way Radio. It is recommended that you identify the items in the packing case and check them off in the appropriate column below before discarding the packing material. If any damage has occurred to the equipment during shipment, file a claim with the carrier immediately.

### EQUIPMENT

- Two-Way Radio .....
- Control Unit .....
- Speaker .....
- Microphone .....
- Microphone Bracket .....
- Antenna Cable and RF Connector .....   
(25-88 MHz antenna whip shipped  
in separate carton)
- Top Cover (Medium Power) 19D402629P2 ....
- Top Cover (High Power) 19B227535G1 .....
- Bottom Cover 19C303911G4 (Standard).....
- Bottom Cover 19C303911G6 (Hi Power) .....
- Mounting Hardware 19A122244G6 .....
- Fuse Assembly (12-Volt) ..... 
  - High Power (30 Amp Fuse)  
(66 to 110 Watts)  
19B216021G3
  - Medium Power (20 Amp Fuse)  
(35 to 65 Watts)  
19B216021G6
  - Low Power (15 Amp Fuse)  
(to 35 Watts)  
19B216021G1

- Power/Control Cable .....   
19C303910-G1 – G4
- Alignment Tools (2) .....
- Key 5491682-P8 .....

### OPTIONAL EQUIPMENT

- |                                      | OPTION NUMBER |
|--------------------------------------|---------------|
| Window Mounting Kit .....            | 1706          |
| Handset Model 19B209100P3 with ..... | 1703          |
| Hookswitch 19B204867-G4              |               |
| Weatherproof Box .....               | 1710          |
| Internal/External Speaker .....      | 1707          |

## PLANNING THE INSTALLATION

Before starting, plan your installation carefully—so that it will be:

- Convenient for the operator to use
- Neat
- Protected from damage from water
- Easy for the serviceman to service

- Out of the way of auto mechanics
- Out of the way of passengers

It is suggested that you take advantage of the experience of one of the many authorized General Electric Service Stations located throughout the United States by having them install your Two-Way Radio and make the final adjustments.

### WARNING

**Interference with Vehicular Electronics** — *Electronic fuel injection systems, electronic anti-skid braking systems, electronic cruise control systems, etc., are typical of the types of electronic devices which may be prone to malfunction due to the lack of protection from radio frequency energy present when transmitting. If the vehicle contains such equipment, consult the dealer for the make of vehicle and enlist his aid in determining if such electronic circuits will perform normally when the radio is transmitting.*

## RUNNING CABLES

To assure the feasibility of the cable routings you plan to use, the cables should be run prior to installing the unit. Try to route the cables away from locations where they may be damaged by heat (exhaust systems, etc.) or where they may be in the way of automobile mechanics, the driver or passengers. Whenever possible, utilize existing holes in the firewall and trunk and the channels above or beneath the doors. If an existing hole is not conveniently located for the passage of the power cable, drill a 1-1/8-inch hole and insert rubber grommet. Be sure to leave enough slack in the cables to allow the radio to be pulled out, with power applied, for servicing. Refer to the Cable Routing diagram (Fig. 2) and the Cabling Diagram, (Fig. 3) for additional information.

Starting with the plug end of the Power/Control cable at the location of the trunk mount unit, run the black control cable to the Control Unit location. Tape the numbered leads before running the cable.

Run the red battery lead to the vicinity of the battery. Cut the red lead and connect the fuse assembly in the red lead with ring terminals and lockwashers provided. Assemble one lockwasher between each terminal and one under the head of each screw. Then mount the fuse assembly near the battery, and connect the red lead to the positive (+) battery terminal. Next, connect the brown lead to a good vehicle ground in the trunk compartment.

Refer to Figure 8 for Ignition Switch Cable connections.

Figure 2 – Cable Routing

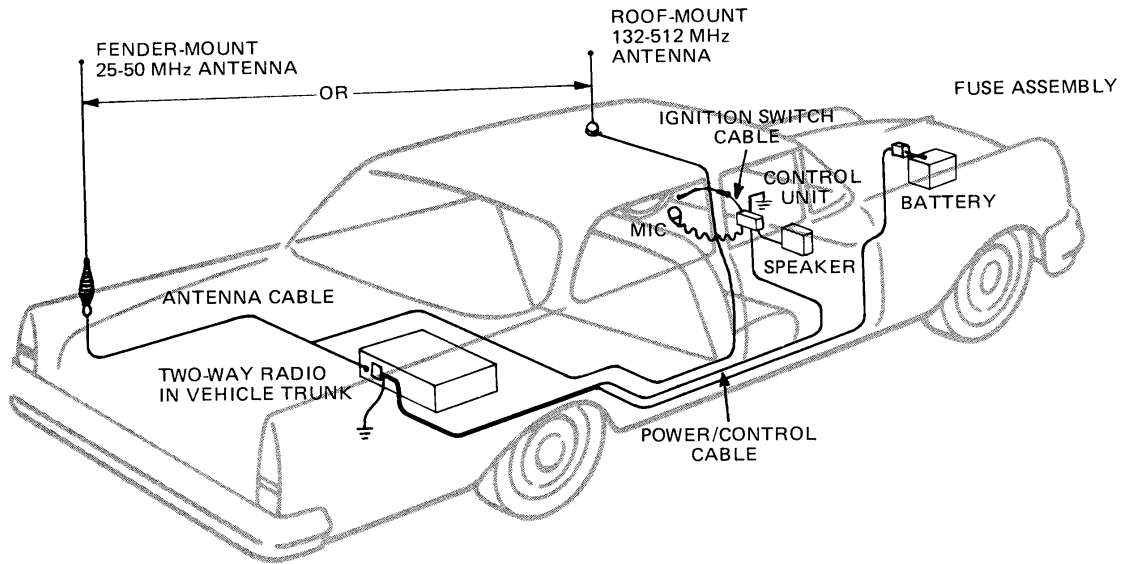
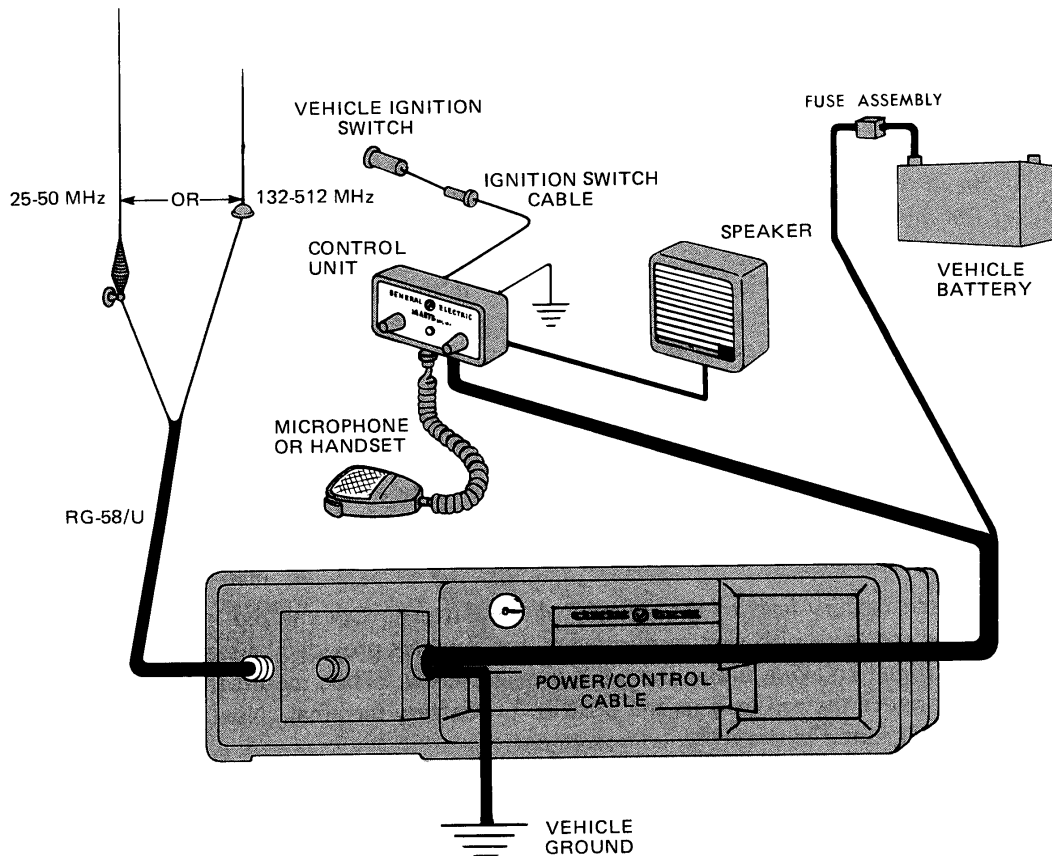


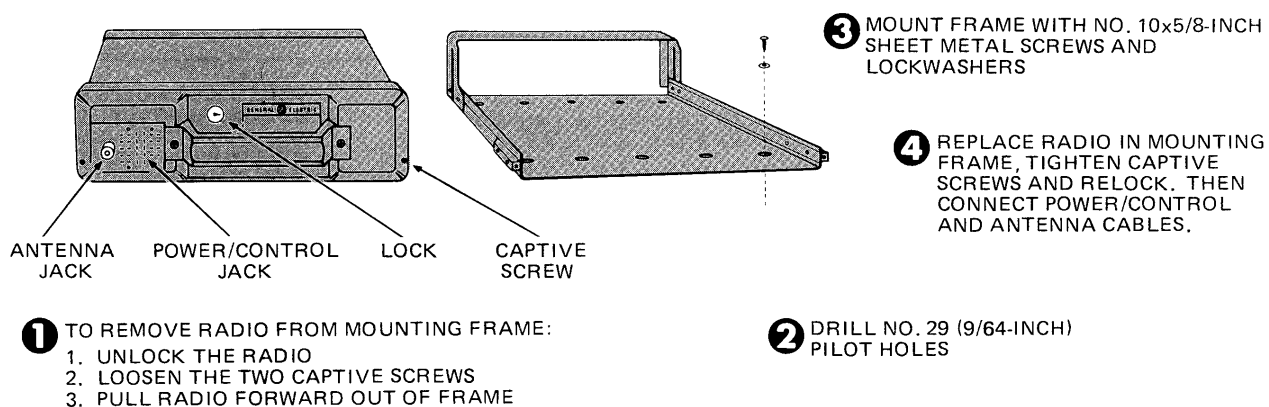
Figure 3 – Cabling Diagram



## INSTALLING THE TWO-WAY RADIO

The Two-Way Radio may be mounted horizontally, vertically or on its side. Select a mounting location with sufficient room for the radio to be pulled out of the mounting frame for servicing. Mount the radio as shown in Figure 4.

Figure 4 – Installing the Two-Way Radio (Typical)



### CAUTION

*Be careful to avoid damaging some vital part of the vehicle when drilling mounting holes. Always check to see how far the mounting screws will extend below the mounting surface before installing.*

### WARNING

*For passenger safety, mount the radio securely so that the unit will not break loose in the event of a collision. This is especially important in station wagons, vans and similar type installations where a loose radio could be extremely dangerous to the vehicle occupants.*

### CONTROL UNIT

The Control Unit should be mounted within convenient reach of the operator, and located so that it will not interfere with safe operation of the vehicle. Normally, the Control Unit is mounted on the underside and in the middle of the instrument panel. Use the swivel bracket from the Control Unit as a template for locating two mounting holes. Mount the Control Unit as shown in Figure 5. After mounting the unit, connect the numbered leads in the Power/Control Cable to the corresponding numbered pins on the back of the Control Unit. Connect the Ignition Switch Cables as shown in Figure 8.

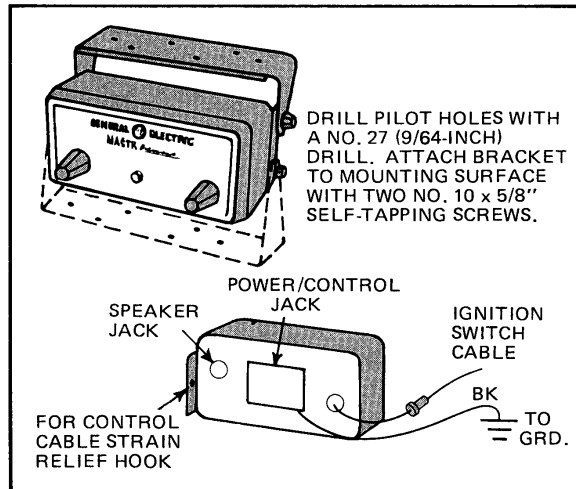


Figure 5 – Mounting the Control Unit

### SPEAKER

The speaker should be mounted where it will direct sound to the operator, but not interfere with his vision or provide a hazard to passengers in case of an accident. The speaker may be mounted on the lower edge of the instrument panel, on the firewall, above the windshield in some trucks, or behind the built-in speaker grille in some vehicles. Use the mounting bracket as a template for locating the mounting holes, and mount the speaker as shown in Figure 6.

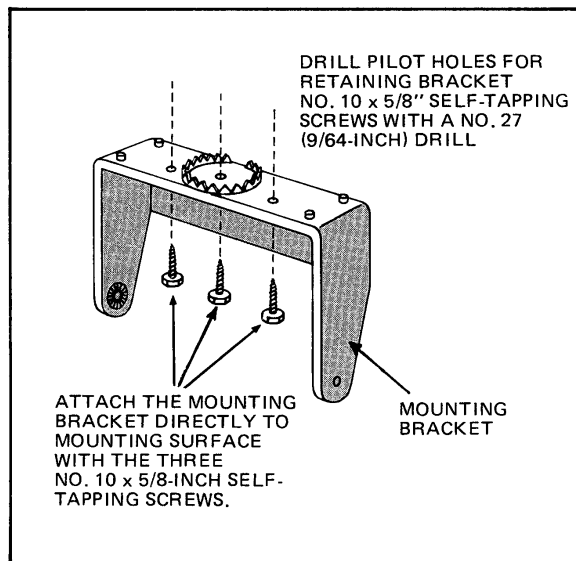


Figure 6 – Mounting the Speaker

### MICROPHONE

Mount the microphone near the Control Unit where it will be within easy reach of the operator but will not interfere with safe operation of the vehicle. After the microphone bracket is mounted (Figure 7), screw the microphone connector into the microphone jack on the bottom of the Control Unit.

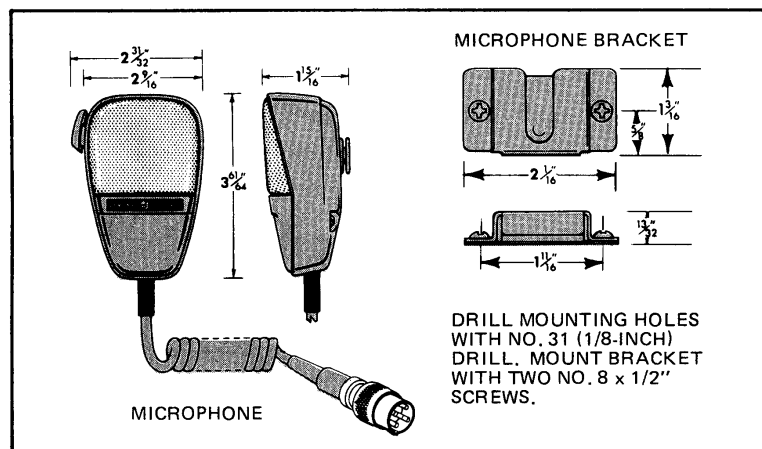


Figure 7 – Mounting the Microphone



### IGNITION SWITCH CABLE

Power to the radio can be controlled by one of the following two methods. Select the type of control desired, and connect the Ignition Switch Cable as directed in the connections chart.

**Note:** In certain vehicles, the alternator noise level is excessive at the ignition switch terminal. In these cases the yellow lead should be connected directly to the battery.

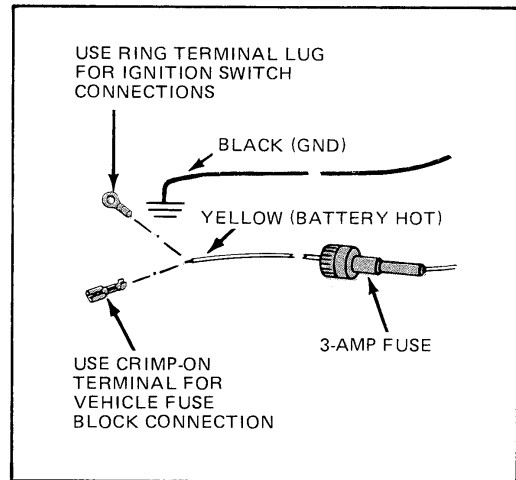


Figure 8 – Ignition Switch Cable

CONTROL METHOD	IGNITION SWITCH CONNECTIONS
<p>1. <b>Ignition Switch Control</b> – Transmitter and receiver operate only with ignition switch in Accessory or ON position.</p>	<p>ACCESSORY Terminal</p>
<p>2. <b>Ignition Switch Bypass</b> – Transmitter and receiver operate independently of ignition. Radio is turned ON and OFF by Control Unit switch.</p>	<p>HOT Terminal</p>

### HANDSET & HOOKSWITCH (OPTIONAL)

When the handset is removed from the hookswitch, the speaker is muted, audio is switched to the handset, and the Channel Guard (if present) is disabled. Mount the hookswitch and connect the cable as shown in Figure 9. Next, connect the handset plug to the microphone jack on the bottom of the Control Unit.

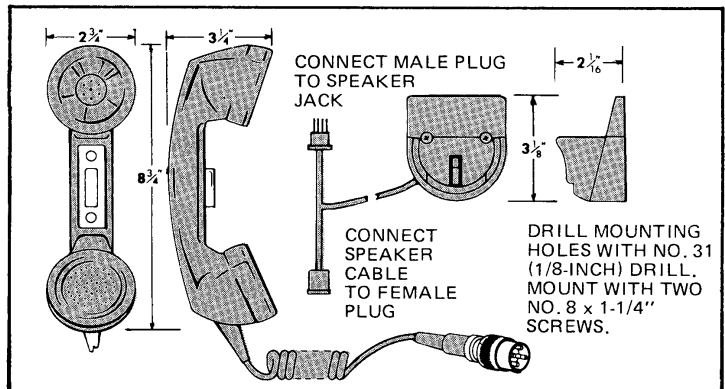


Figure 9 – Handset and Hookswitch Mounting

## **ANTENNA**

Installation instructions for the antenna are packaged with the antenna. The antenna must be installed in accordance with good engineering practice for optimum results.

For the 138–512 MHz antenna, the most effective mounting position is usually in the center of the roof of the vehicle. The antenna cable will normally run from the front of the Two-Way Radio, behind sections of the interior trim to a door or window post, and then up between the roof and headliner in the passenger compartment to the antenna base.

For the 29.7–50 MHz antenna, the most effective mounting position is usually on the driver's side of the vehicle near the top of the left rear fender or body of the vehicle.

Try to route the cable away from locations where it will be exposed to heat, sharp edges or mechanical damage, and where it will be out of the way of the driver, passengers or vehicle mechanics. Wherever possible, existing holes in the trunk wall, and the channels above or beneath doors and window columns should be utilized.

## **PLACING THE TWO-WAY RADIO IN OPERATION**

After completing the installation of the Two-Way Radio, the following final operations should be performed:

Have an electronics technician who holds a 1st or 2nd Class FCC Radiotelephone license make the final adjustments.

These include:

- |              |   |
|--------------|---|
| Transmitter: | Measure Forward and Reflected Power and adjust antenna length for optimum ratio. Set transmitter to rated power output (or to the specific output or input that may be required by the FCC station authorization). Measure the frequency and modulation and enter these measurements on the FCC-required Station Records. |
| Vehicle:     | Check to see if any electrical noise suppression is needed.   |

Instructions for making these adjustments are included in the Maintenance Manual for the Two-Way Radio. Give the alignment tools (packed with the unit) to the technician.

Fill out and mail the "ON ARRIVAL" Information Card.

Give the Operator's Manual for the Two-Way Radio to the person who is going to operate it, or place the Manual in the vehicle where he will find it.

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