SECTION 4.
INSTALLATION

Kyodo thoroughly inspects and tests each KG106 before shipment. However, a qualified technician must check transmitter frequency deviation and power before you install the radio.

4.1 POWER WIRING

The KG106 operates from a 12V to 15V negative ground source. It cannot operate in vehicles with positive ground electrical systems. The radio's built-in protection circuit prevents damage to the unit during polarity reversal. However, incorrect connections cause the fuses to blow.

Connect the red power lead to the positive (+) battery terminal. Do not connect the lead to any other ground point.

Connect the blue lead to the negative (-) battery terminal.

4.2 DRILLING OR CUTTING HOLES

Before drilling, check both sides of the surface to avoid damage to hidden wiring, the gas tank, etc. To protect cables, use rubber grommets in the holes.

4.3 CABLE ROUTING

Do not install power and antenna cables near areas of high temperatures. Be sure to avoid areas near exhaust systems, catalytic converters and mufflers.

4.4 VEHICLE ELECTRONICS

When installing the radio, consider the vehicle's electronic sub-systems. These systems include electronic cruise control and anti-skid braking systems. Before installation, consult the vehicle dealer about the systems' protection against RF energy. It is the vehicle operator's responsibility to check for possible interference before operating the radio while the vehicle is in motion.

4.5 INSTALLATION PROCEDURES

Figures 4-1 and 4-2 show the general location for the antenna, control head, speaker, microphone and transceiver for the KG106R in the front or trunk mount.

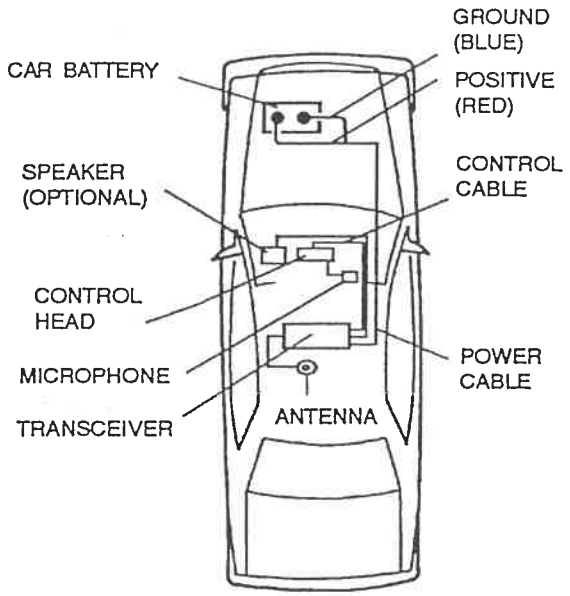

Figure 4-1. Front Mount Installation

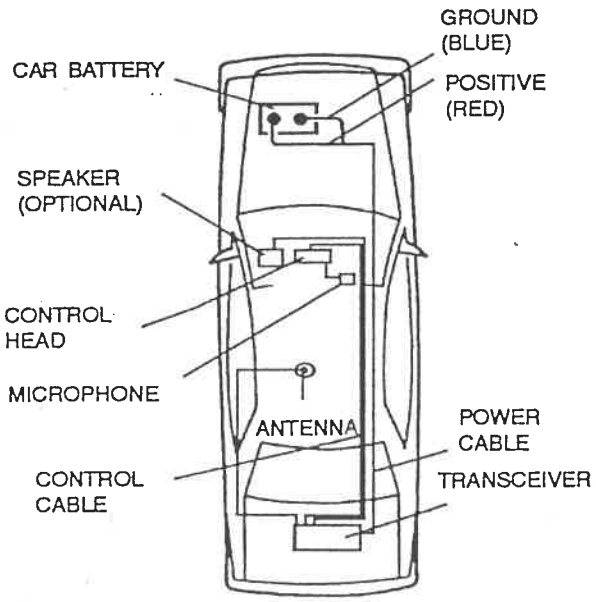

Figure 4-2. Trunk Mount Installation

4.6 ANTENNA

For best performance, mount the antenna in the center of the roof top. The reverse side of the mounting surface is under the interior dome light. The area must be a single thickness of sheet metal.

You can also mount the antenna on any flat, horizontal metal surface. Mounting on a slight angle (such as a trunk) provides fair reception, but a level surface is best.

You need an antenna standing wave ratio (SWR) of less than 4% (1.5:1) reflected power for proper performance. Installing the antenna on a non-metal (fiberglass) surface results in high SWR. Use a ground plane or ground screen to lower the ratio. Place the ground screen directly below the antenna base.

The ground screen's (or radial's) length and radius should be greater than 1/4 wavelength. If this size is not practical for the vehicle, use an antenna matching network to gain proper SWR.

Position the antenna as far from the transmitter as possible. Route the power and speaker leads to minimize direct RF pickup from the antenna.

Refer to the manufacturer's instructions supplied with the antenna for specific details.

4.7 TRANSMITTER/RECEIVER UNIT

Select a location which will be protected from heat, dust and water. Preferred locations are under the seat, behind the rear seat, or in the luggage compartment. Position the mounting bracket allowing a minimum of 12 cm (5") behind and 10 cm (4") in front to provide space for ventilation and cabling. Using the mounting bracket as a pattern, drill four holes, 3 mm (7/64") diameter.

NOTE:

Be extremely careful not to drill into fuel tank, fuel or brake lines or electrical wiring.

Attach the mounting bracket using the four black self-tapping screws provided. The rubber pads must be on the upper side. The end with two notches is the rear of the plate. Use spacer washers as necessary to prevent the bracket from warping if mounting on an uneven surface. See Figure 4-3 to install the T/R unit onto the mounting bracket as follows:

Table 4-1. Transmitter/Receiver Unit

STEP	PROCEDURE
1	Unlock the latch by turning the key clockwise.
2	Engage the rear mounting studs into the slots at the rear of the base-plate.
3	Pull the unit forward and press down.
4	Lock the latch by turning the key counterclockwise.

4.8 CONTROL CABLE

Select the route for the cable considering that the trunk mount cable is approximately 4.8 m (15.8") long. You should start from the control unit location and proceed toward the T/R unit. The gray connector will attach to the T/R unit. Install the cable along the vehicle floor under the carpeting, avoiding sharp bends. Removal of the door sill plate is usually required. Follow the edges of the passenger compartment to avoid stress on the cable by passengers entering or riding in the vehicle. Use tape or grommets to protect the cable from sharp metal edges. Attach the cable to the chassis if necessary to avoid vibration. Plug the gray connector into the T/R unit and tighten the holding screws on each side.

Control unit installation will vary depending on the type of system.

4.9 POWER CABLE

The power cable will run from the vehicle battery to the T/R unit. Follow the same precautions used in installing the control cable. To avoid the danger of accidental shorting, remove the fuse from its holder until installation is complete and you are ready to test the system. Connect the cable terminals directly to the battery posts, red to positive (+) and blue to negative (−). Connect the metal connector to the front of the T/R unit.

4.10 MICROPHONE HANG-UP CLIP

See Figure 4-3 and follow the steps below to install the microphone hang-up clip:

Table 4-2. Microphone Hang-up Clip

STEP	PROCEDURE
1	Use the hang-up clip (13) as a template. Drill three 1/8" mounting holes.
2	Mount the clip with three #8 self-tapping screws (10).
3	When the radio contains the Tone Squelch option, you must connect the hang-up clip to the chassis ground. NOTE: The Tone Squelch disable feature functions through the button on the back of the microphone.
4	When mounting to a plastic surface, install a ground lead under one of the screws. Fasten the other end to either the chassis ground or to the main unit's mounting board.
5	Plug in.

REF. NO.	PART NAME	PART NO.	QTY.
1	SELF-TAPPING SCREW	–	4
2	FLAT WASHER	–	4
3	MOUNTING BRACKET	3A10-0319	1
4	FUSE	FU-12.5A	2
5	BATTERY CABLE	–	1
6	ANT. CABLE	–	0
7	CONTROL UNIT MTG. BRKT.	–	1
8	CONTROL CABLE	–	1
9	MOUNTING BOLT	5.9 x 8	2
10	SCREW	99-40-0204-1214	3
11	SELF-TAPPING SCREW	STB-5 x 15	2
12	MICROPHONE	KD-357M	1
13	HANGER	14-11-64-01	1
14	WASHER	99-47-1104-23	3
15	TRANSCEIVER	KG106	1
16	KEY	VMZ-C	2

NOTE :
* ANTENNA CABLE (# 6) IS NOT SUPPLIED

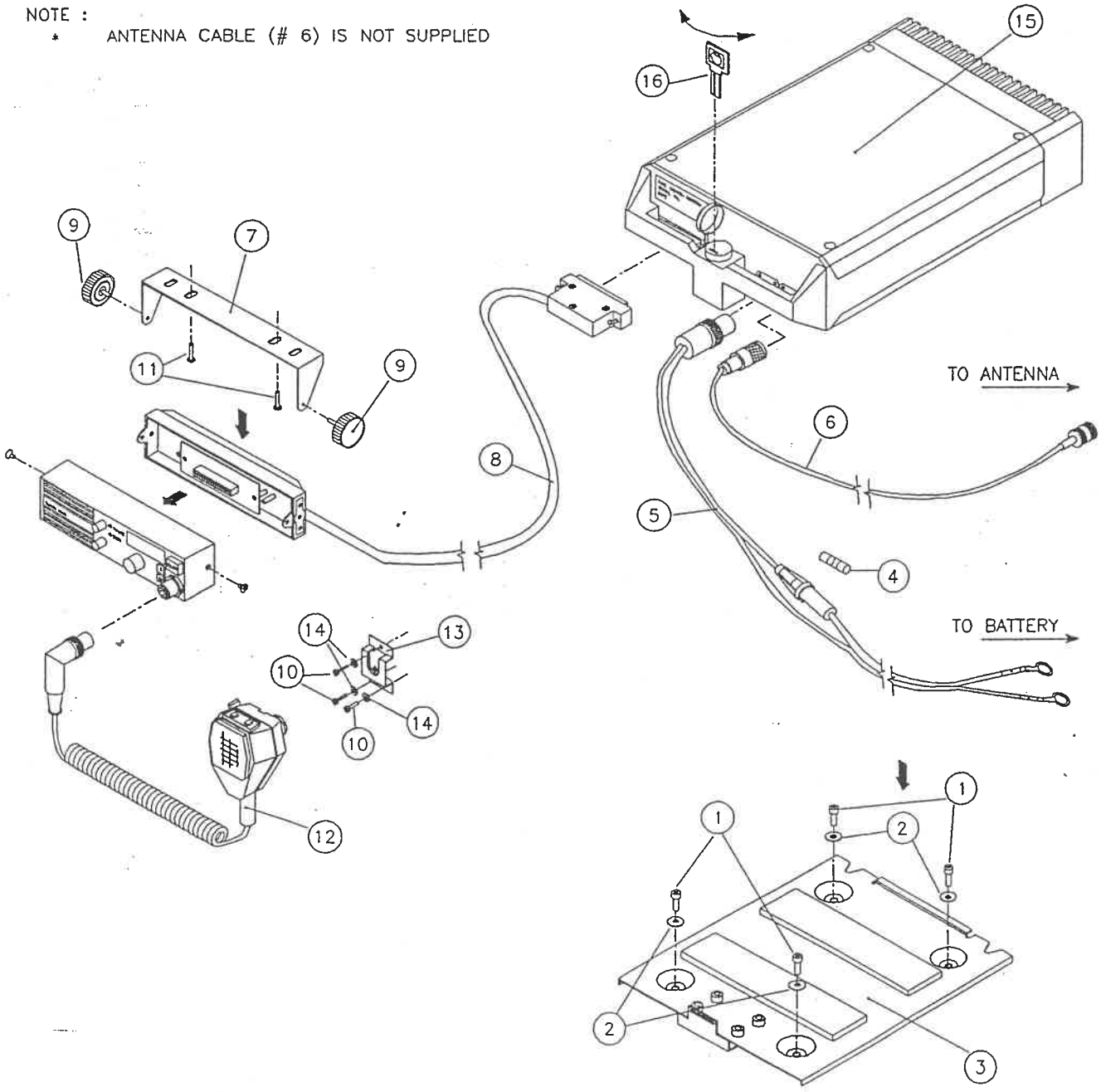

Figure 4-3. Installation-Mobile/Repeater

4.11 HANDSET

The handset base unit may be mounted either vertically or horizontally on any flat surface.

It is recommended that the surface be stiff enough so that the forces encountered by the base when taking the handset on and off hook do not warp or bend the base around the two screw holes. In some cases (especially when mounting on carpeted or upholstered surfaces) it may be best to use an adjustable mounting post or backing plate made of sheet metal to eliminate the bending forces in the base unit. (See Figure 4-4)

Table 4-3. Handset

STEP	PROCEDURE
1	Use the base unit (4) as a template. Drill two 5/32" mounting holes.
2	Mount the cradle with two #6 sheet metal screws (2).
3	Plug In.

REF. NO.	PART NAME	PART NO.	QTY.
1	HANDSET	–	1
2	SHEET METAL SCREW	–	2
3	FLAT WASHER	–	2
4	CRADLE	–	1

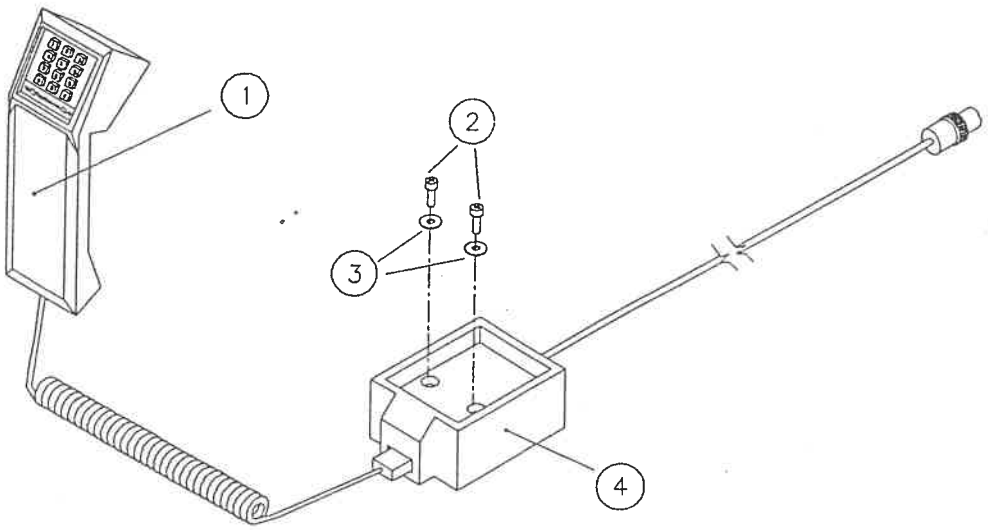

Figure 4-4. Handset Installation