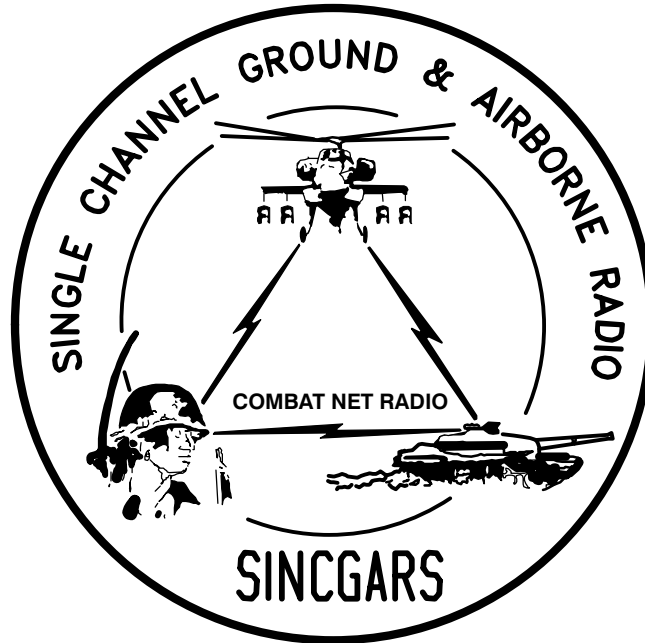


## **TECHNICAL BULLETIN**



**INSTALLATION INSTRUCTIONS FOR  
INSTALLATION KIT  
ELECTRONIC EQUIPMENT MK-2326/VRC  
(NSN 5895-01-225-3332) (EIC: N/A)  
TO PERMIT INSTALLATION OF  
RADIO SET AN/VRC-89/91/92 SERIES  
IN A  
TRUCK, UTILITY: 1 1/4 TON, 4x4, M998 SERIES**

Approved for public release; distribution is unlimited.

---

**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**1 SEPTEMBER 1999**

**INSTALLATION INSTRUCTIONS FOR  
 INSTALLATION KIT  
 ELECTRONIC EQUIPMENT MK-2326/VRC  
 (NSN 5895-01-225-3332) (EIC: N/A)  
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 IN A  
 TRUCK, UTILITY: 1 1/4 TON, 4x4, M998 SERIES**

**REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command Fort Monmouth, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000. The Fax number is 732-532-1413, DSN 992-1413. You may also e-mail your recommendation to AMSEL-LC-LEO-PUBS-CHG@ce-com3.monmouth.army.mil.

In either case a reply will be furnished direct to you.

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\*This manual supersedes TB 11-5820-890-20-28, dated 1 September 1993

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## 0.1 SCOPE.

This technical bulletin provides Installation Instructions for Electronic Equipment MK-2326/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

Truck, Utility: 1 1/4 Ton, 4x4, M998 Series

The MK is used for installation of radio set components at field locations. The information contained in this technical bulletin is the official authorization to perform the installation at the unit maintenance level.

### NOTES

This technical bulletin is not an authorization for requisition or turn-in of vehicles.

This technical bulletin does not establish quantity or types of vehicles assigned to using units.

This technical bulletin does not contain information on the maintenance or replacement of the MKs. This information is contained in the MAC of TM 11-5820-890-20-2 and RPSTL of TM 11-5820-890-20P.

## 0.2 GENERAL INFORMATION.

The MK becomes operable when all the radio set components are installed in the vehicle and correct power is supplied. Refer to TM 11-5820-890-20-1 or TM 11-5820-890-20-2 for installation, Operational (OP) Check instructions, and required maintenance procedures. Refer to TM 11-5820-890-20P for repair parts.

Included in the Radio Set AN/VRC-89/91/92 Series is:

Radio Set AN/VRC-89/91/92 Series (for RT-1523(C)/U)

## 0.3 MAINTENANCE FORMS, RECORDS, AND REPORTS.

**0.3.1 Reports of Maintenance and Unsatisfactory Equipment.** See section 4.2.2.3 for information.

**0.3.2 Report of Packaging and Handling Deficiencies.** See section 4.2.2.1 for information.

**0.3.3 Discrepancy in Transportation Deficiency Report (TDR) (SF361).** See section 4.2.2.2 for information.

## 0.4 CONSOLIDATED INDEX OF ARMY PUBLICATIONS.

Refer to the latest issue of DA Pam 25-30 to determine whether there are new changes, or additional publications pertaining to the equipment.

## 1. PURPOSE OF INSTALLATION.

The Electronic Equipment MK–2326/VRC (MK) contains the items needed to mount Radio Set AN/VRC– 89/91/92 Series in a Truck, Utility: 1 1/4 Ton, 4 x 4, M998 Series (vehicle). If Radio Set AN/VRC–92 Series is authorized, see section 5.6 for instructions to install MT–6353/VRC mounting base.

## 2. END ITEM OR SYSTEM TO BE MODIFIED.

Not applicable.

## 3. APPLICATION TIMES.

**3.1 Time for Completion of Installation.** Using two people, a total of 4.0 work hours is required. Typical vehicle downtime is 4.5 hours.

**3.2 Time for Installation of One Assembly or Component.** The following table lists the time required to install one component. All times have been rounded off to the nearest half hour. The sum of these times will not reflect the typical vehicle downtime.

ITEM	SECTION	TIME
Antenna AS–3900/VRC	5.1	1.0
Mounting Base, Electrical Equipment MT–6352/VRC	5.4	1.5
Cables	5.5	1.0

## 4. PREPARATION FOR INSTALLATION.

This section explains how to prepare the vehicle and MK for installation.

**4.1 Preparation of Vehicle.** To prepare the vehicle for installation, insure that the site includes adequate lighting and a power source when drilling is required. Inspect the vehicle for damage that could affect installation. Have any such damage repaired before installing MK.

**4.1.1 Items to be Removed.** Remove existing AN/VRC–12 radio family installation kit/harness. See TM 11–5820–401–20–2 for removing items used with intercom systems, or TM 11–5820–401–20–1 (used without intercom systems), and TM 9–2320–280–20.

**4.1.2 List of Items to be Retained.** Not applicable.

**4.2 Preparation of MK.** To prepare MK, unpack, inspect and check inventory.

**4.2.1 Precautions During Handling.** Observe these steps to prevent equipment damage.

- a. Keep dust covers in place on connectors.
- b. Do not disassemble or modify parts in MK unless authorized to do so.
- c. Keep mounting hardware covered and protected until needed.
- d. When exposed to moisture, rain or salt water, keep all parts dry to prevent corrosion.

## **4.2.2 Unpack and Inspect Equipment.**

**4.2.2.1 Inspect Packaging for Evidence of Damage.** Any shipping damage should be reported on SF364 Report of Discrepancy (ROD) as prescribed in AR 735–11–2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400–64/MCO 4430.3F.

**4.2.2.2 Unpack and Inventory MK.** If any item is missing, fill out and forward Transportation Deficiency Report (TDR) (SF361) as described in AR 55–38/NAVSUPINST 4610.33C/AFR 75–18/MCO P4610.19D/DLAR 450015.

**4.2.2.3 Examine Each Item for Damage.** If any item is damaged, fill out and forward SF364 Report of Discrepancy (ROD) as prescribed in AR 735–11–2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400–64/MCO 4430.3F. All damages should be reported as prescribed by DA Pam 738–750, as contained in Maintenance Management Update.

## **4.3 MK, Distribution, and Consumables.**

**4.3.1 Items Supplied in MK and/or Required for Installation.** Use Table 4–1 and figure 4–1 to identify and inventory MK parts supplied to install Radio Set AN/VRC–89/91/92 Series. Refer to Table 4–2 and figure 4–2 to identify additional items required to install Radio Set AN/VRC–92 Series.

### **4.3.2 Distribution and Issue Instructions.**

- a. US Forces: Do not requisition MK. They will be shipped automatically.
- b. US Army Depots: Requisition MK through supply channels.
- c. Multiservice: Instructions shall be included for multiservice modifications.
- d. MAP/MAS Countries: Instructions shall be provided for MAP/MAS countries.

Table 4-1. Parts List for Installation of Radio Set AN/VRC-89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985-01-297-2971	Antenna AS-3900/VRC (A3017899-1)	2	PAOOF A	4-1, 2
5305-00-847-1159	Screw, Cap, Hexagon (3/8-16 x 1 3/4 in) MS35307-365	8	PAOZZA	
5310-00-913-8881	Nut, Hexagon (3/8-16 in) MS51971-3	8	PAOZZA	4-1, 4
5310-00-061-1258	Washer, Lock, Internal/External-Toothed (3/8 in) MS45904-76	16	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	4	PAOZZA	4-1, 1
5306-00-225-9086	Bolt, Machine (5/16-24 x 5/8 in) MS90726-31 (Not Used)	2	PAOZZA	
5330-01-205-2864	Gasket (A3013655-1)	2	PAOZZA	4-1, 11
5965-01-222-1420	Loudspeaker - Control Unit LS-671/VRC (A3014065-1)	2	PAOFFA	
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352/VRC (A3013367-1)	1	PAOOF A	4-1, 10
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	5	PAOOF A	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	10	PAOZZA	4-1, 10
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5	5	PAOZZA	
5995-01-274-5084	Cable Assembly, Power, Electrical CX-13302/VRC (6 FT, 0 IN) (A3014039-5)	1	PAOZZA	4-1, 9
5995-01-219-7035	Cable Assembly, Radio Frequency CG-3855/VRC (18 FT, 0 IN) (A3014031-8)	1	PAOZZA	
5995-01-225-1660	Cable Assembly, Radio Frequency CG-3855/VRC (21 FT, 0 IN) (A3014031-17)	1	PAOZZA	4-1, 5
5995-01-219-4704	Cable Assembly, Special Purpose, Electrical CX-13292/VRC (6 FT, 0 IN) (A3014038-3)	2	PAOZZA	
5995-01-466-0693	Lead, Electrical (0 FT, 5 IN) (A3013552-10)	1	XBOZZA	4-1, 7
5306-00-225-9089	Bracket, Mounting - Antenna (A3014546-1) Bolt, Machine (5/16-24 x 1 in) MS90726-34	2 4	XBOZZA PAOZZA	
5340-00-057-3043	Clamp, Loop (1/2-5/16 in) MS21333-112	2	PAOZZA	4-1, 7
5340-00-809-1490	Clamp, Loop (1/4-1/4 in) MS21333-98	2	PAOZZA	
5340-00-984-8540	Clamp, Loop (1/2-1/4 in) MS21333-102	1	PAOZZA	4-1, 7
5340-00-050-2740	Clamp, Loop (3/4-13/64 in) MS21333-75	7	PAOZZA	
5340-00-922-6300	Clamp, Loop (1-13/64 in) MS21333-77	3	PAOZZA	4-1, 7
5340-00-057-2904	Clamp, Loop (1/2-13/64 in) MS21333-71	8	PAOZZA	
5340-00-922-6301	Clamp, Loop (1 1/4-13/64 in) MS21333-79	2	PAOZZA	4-1, 7
4020-01-341-8795	Fiber Rope Assembly, Single Leg (A3167672-1)	2	PAOZZA	

Table 4-1. Parts List for Installation of Radio Set AN/VRC-89/91/92 Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5325-01-240-7325	Grommet, Nonmetallic (1/4 in) (A3013068-2)	2	XBOZZA	
5965-00-043-3463	Handset H-250/U Holder, Handset (A3050666-1)	2 1	PAOZZA XBOZZA	4-1, 3
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5	10	PAOZZA	
5310-00-761-6882	Nut, Hexagon (1/4 -20 in) MS51967-2	10	PAOZZA	
5310-00-934-9751	Nut, Hexagon (No. 10-32 in) MS35650-302	4	PAOZZA	
	Plate, Mounting (A3014550-1)	2	XBOZZA	4-1, 8
	Screw, Externally-Relieved Body (A3018701-2)	4	XBOZZA	
5305-00-958-5246	Screw, Machine, Flat-Head (1/4-20 x 3/4 in) MS35190-289	2	PAOZZA	
5305-00-225-9091	Screw, Cap, Hexagon (5/16-24 x 1 1/4 in) MS90726-36	6	PAOZZA	
5305-00-225-3839	Screw, Cap Hexagon (1/4-20 X 1 in) MS90728-8	1	PAOZZA	
5305-00-071-2237	Screw, Cap, Hexagon (1/4-20 x 2 in) MS90725-14	2	PAOZZA	
5305-01-259-6322	Screw, Machine, Tapping, Hex-Head (No.10-32 x 1/2 in) 12342499-1	15	PAOZZA	
5305-01-006-2052	Screw, Machine, Hex-Head (No.10-32 x 5/8 in) MS51849-65	4	PAOZZA	
5305-00-958-5247	Screw, Machine, Flat-Head (1/4-20 x 1 in) MS35190-291	2	PAOZZA	
5305-00-068-0502	Screw, Cap, Hexagon (1/4 - 20 x 3/4 in) MS90725-6	4	PAOZZA	
5305-00-984-7341	Screw, Machine, Flat-Head (No. 10-32 x 5/8 in) MS35191-273	1	PAOZZA	
	Shelf, Electrical Equipment (A3050664-1)	1	XBOZZA	4-1, 6
5975-00-111-3208	Strap, Tiedown, Electrical Components MS3367-5-9	10	PAOZZA	
5310-00-081-4219	Washer, Flat (5/16 in) MS27183-12	8	PAOZZA	
5310-00-045-3296	Washer, Lock (No. 10) MS35338-43	20	PAOZZA	
5310-00-582-5965	Washer, Lock (1/4 in) MS35338-44	9	PAOZZA	
5310-00-407-9566	Washer, Lock (5/16 in) MS35338-45	4	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	10	PAOZZA	
5310-00-889-2528	Washer, Lock, Internal/External Toothed (1/4 in) MS45904-68	4	PAOZZA	



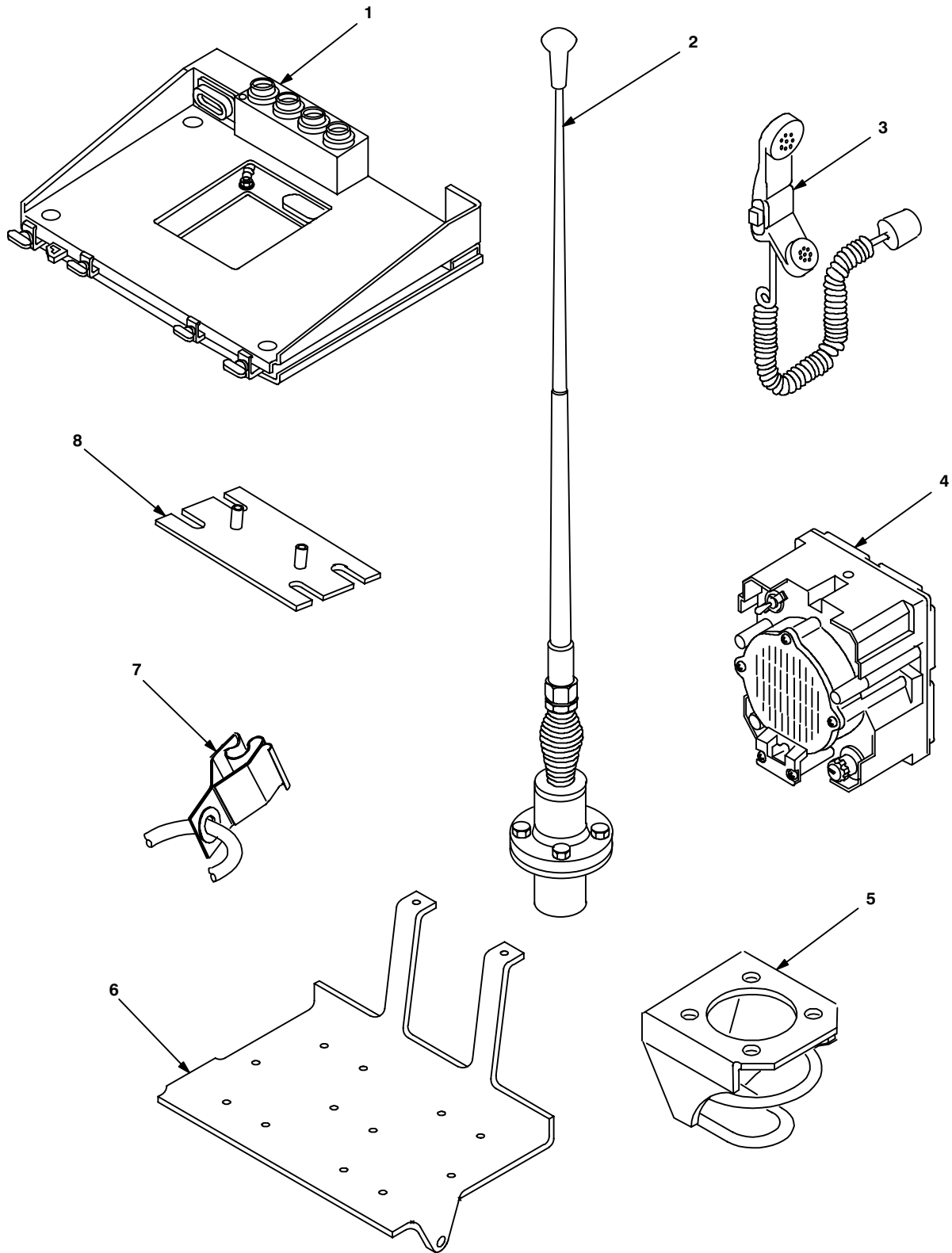


Figure 4-1 (1). MK Illustrated Parts List

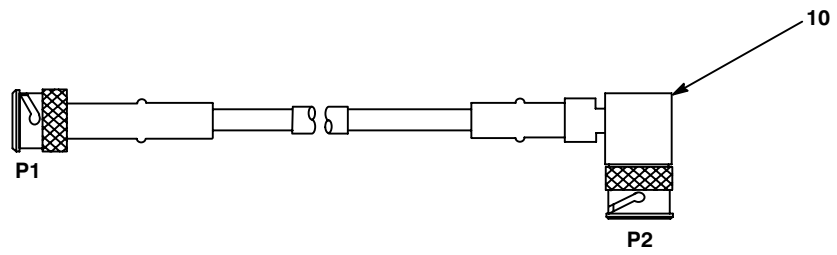
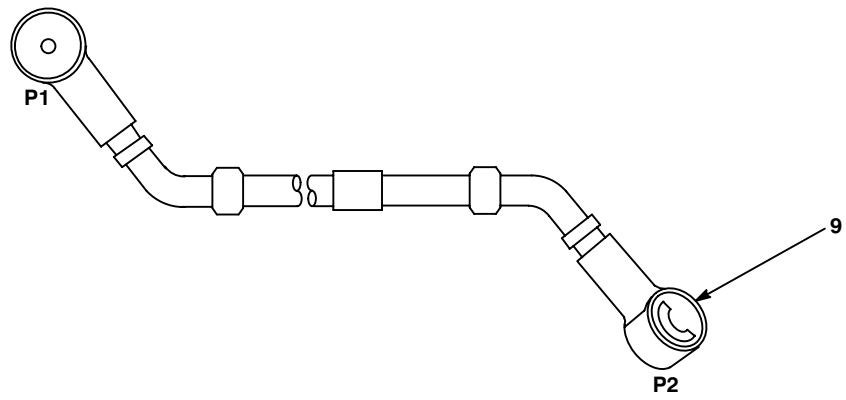
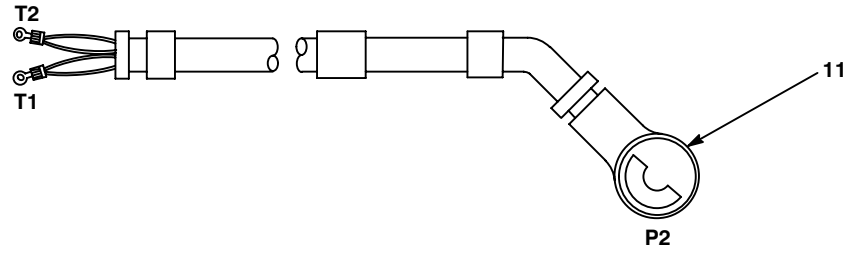


Figure 4-1 (2). MK Illustrated Parts List

Table 4-2. Additional Items Required for Installation of Radio Set AN/VRC-89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5975-01-235-1962	Mounting Base, Electrical Equipment MT-6353/VRC (A3014053-1)	1	PAOOHA	4-2, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	4	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5	2	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (3 Not Used)	6	PAOZZA	
5310-00-081-4219	Washer, Flat (5/16 in) MS27183-12 (Not Used)	2	PAOZZA	
5975-00-111-3208	Nut Strip (A3014064-1)	1	XBOZZA	4-2, 5
5975-00-111-3208	Strap, Tiedown, Electrical Components MS3367-5-9	4	PAOZZA	
5995-01-300-9324	Cable Assembly, Power, Electrical CX-13303/VRC (4 FT, 6 IN) (A3014040-9)	1	PAOZZA	4-2, 4
5995-01-222-4209	Cable Assembly, Special Purpose, Electrical CX-13291/VRC (3 FT, 0 IN) (A3014037-1)	1	PAOZZA	4-2, 2
5995-01-219-7025	Cable Assembly, Radio Frequency CG-3856/VRC (5 FT, 0 IN) (A3014032-3)	1	PAOZZA	4-2, 3

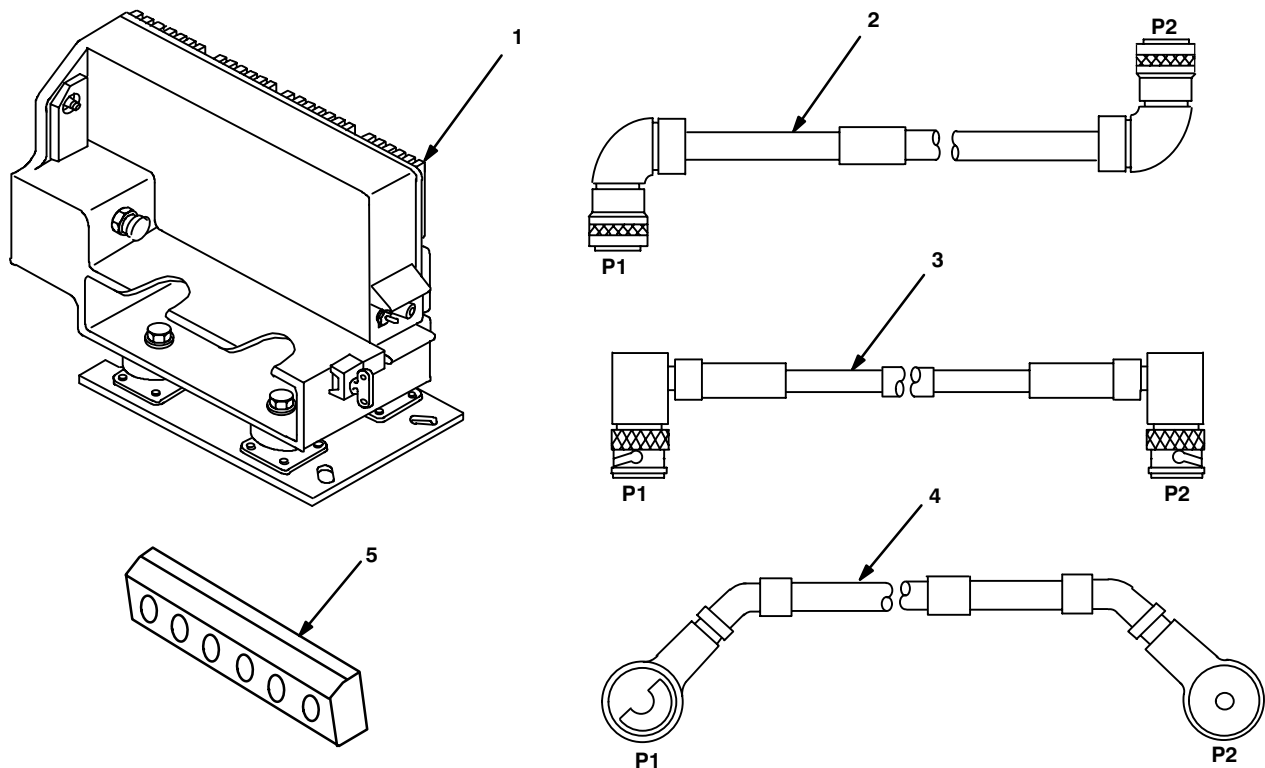


Figure 4-2. Illustrated Parts List for Table 4-2

**4.3.3 Consumable Materials.** The table below lists materials required for installation but not supplied with MK.

NSN	NOMENCLATURE
8040-00-117-8510	Adhesive-Sealant, Clear, RTV
6850-00-880-7616	Silicone Compound, MIL-S-8660
8030-00-292-1102	Conductive Anti-seize Compound

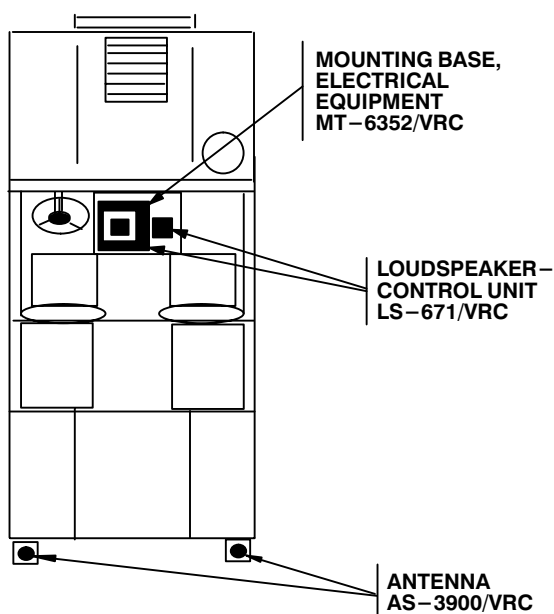
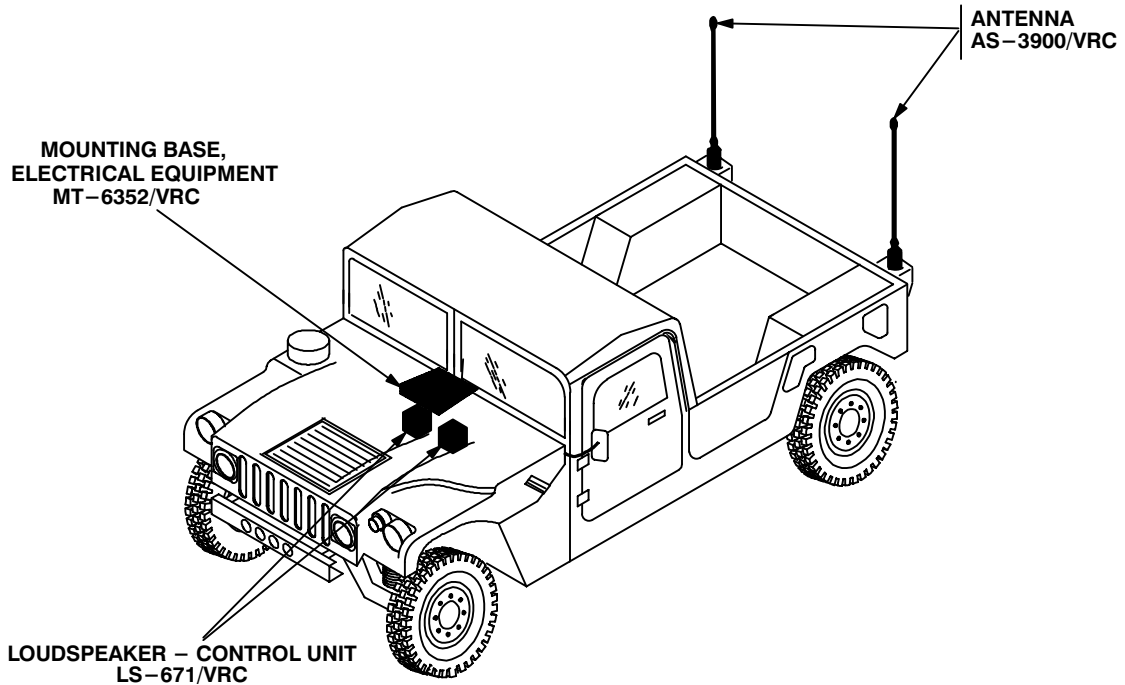
**4.4 Tools and Test, Measurement, and Diagnostic Equipment (TMDE) Required.** The following tools and TMDE are needed for installation.

NOMENCLATURE	NSN	QUANTITY
Radio Set*		1
Electric Grinder or Equivalent		1
Pocket Knife, Electrician's	5110-00-240-5943	1
Screwdriver, No. 2 Point Phillips, 4 in	5120-00-234-8913	1
Screwdriver, 1/4 in Flatblade, 4 in	5120-00-222-8852	1
Pliers, Round Nose	5120-00-240-6172	1
Pliers, Diagonal Cutting	5110-00-965-0974	1
Wrench, Open/Box: 7/16 in	5120-00-228-9505	1
1/2 in	5120-00-228-9506	1
9/16 in	5120-00-228-9507	1
5/16 in	5120-00-228-9503	1
3/8 in	5120-00-228-9504	1
1/4 in	5120-00-228-9997	1
Handle, Socket Wrench	5120-00-240-5364	1
Socket: 7/16 in	5120-00-227-6703	1
1/2 in	5120-00-237-0977	1
9/16 in	5120-00-227-6704	1
5/16 in	5120-00-235-5878	1
3/8 in	5120-00-227-6702	1
1/4 in	5120-00-236-2264	1
Nutdriver: 1/4 in	5120-00-241-3188	1
5/16 in		
Electric Drill	5130-00-889-8994	1
Drill Bits: 11/32 in	5133-00-227-9664	1
1 3/8 in		1

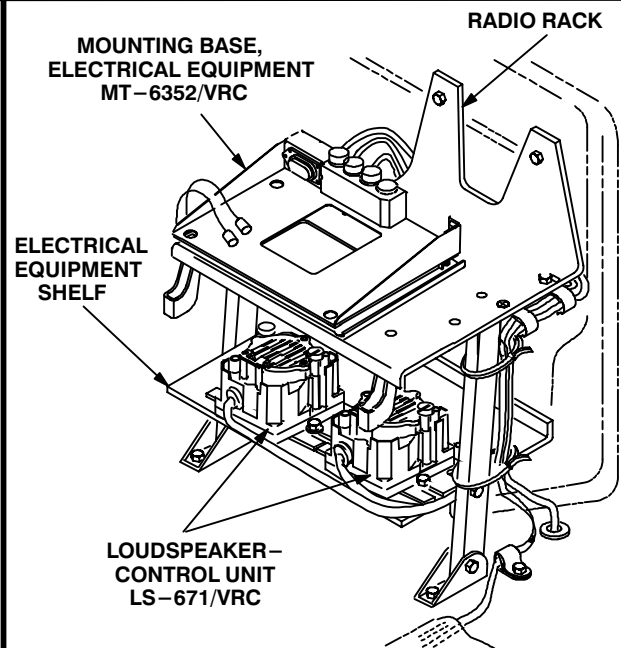
\* Use radio issued with your vehicle if available.

### 5. INSTALLATION PROCEDURES.

This section describes where and how to install MK items in the vehicle. See figure 5-1 for an overall view of where vehicular MK equipment, as well as radio components, typically will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully. If Radio Set AN/VRC-92 Series is authorized, see section 5.6 for instructions to install MT-6353/VRC mounting base.



**TOP VIEW**



**DASHBOARD AREA**

**Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations**

5. INSTALLATION PROCEDURES. Continued.

INSTALLATION  
FOR  
AN/VRC-89/91/92 Series

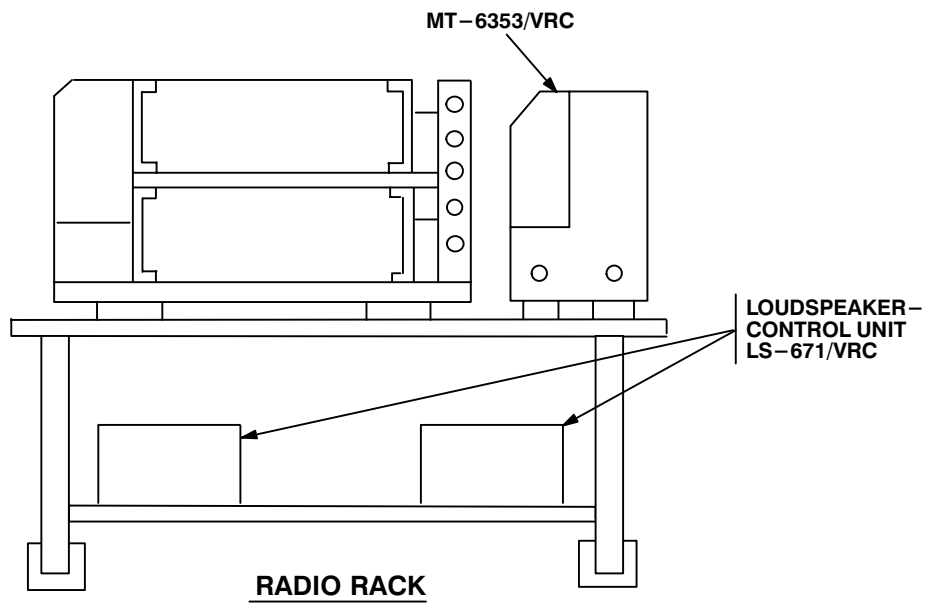


Figure 5-1 (2). MK and Radio Installation: Radio Equipment Locations

**5.1 Installation of Antenna AS-3900/VRC (antenna).** Use the following procedure to install both antennas. See figure 5-1 (1) for locations.

**5.1.1 Installation of Antenna Base.**

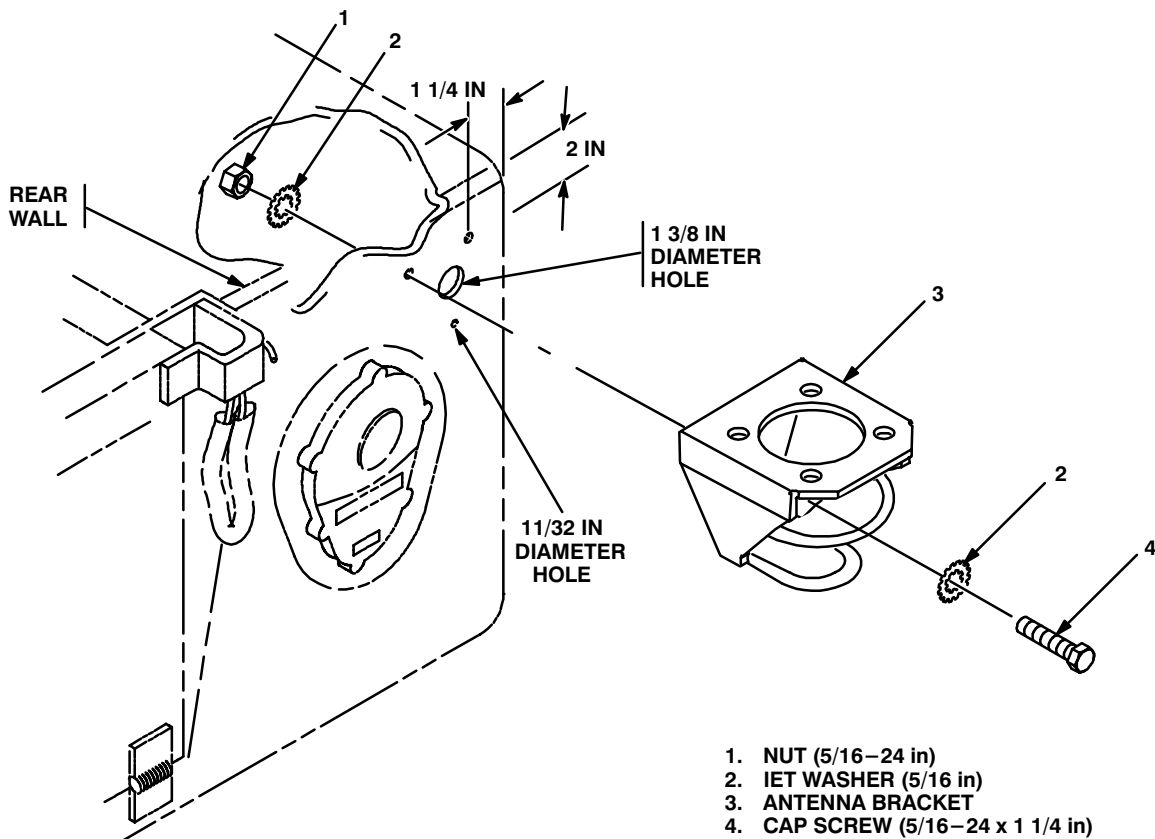
ITEM	ACTION	REMARKS
------	--------	---------

**NOTE**

Apply a thin coat of adhesive-sealant to both sides of each internal/external-toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.

- |   |   |   |
|---|---|---|
| <p>a. Mounting holes for antenna bracket (3) and grommet.</p> | <p>If mounting holes exist, disregard this step and go to step b.</p> | <p>Tools: Electric drill, 11/32 in and 1 3/8 in drill bits.</p> |
|---|---|---|

Using antenna bracket (3) as a template and dimensions shown, drill three 11/32 in diameter holes and one 1 3/8 in diameter hole through rear wall of vehicle. See figure 5-2 (1).



**Figure 5-2 (1). Antenna Base Installation: Installing Antenna Bracket**

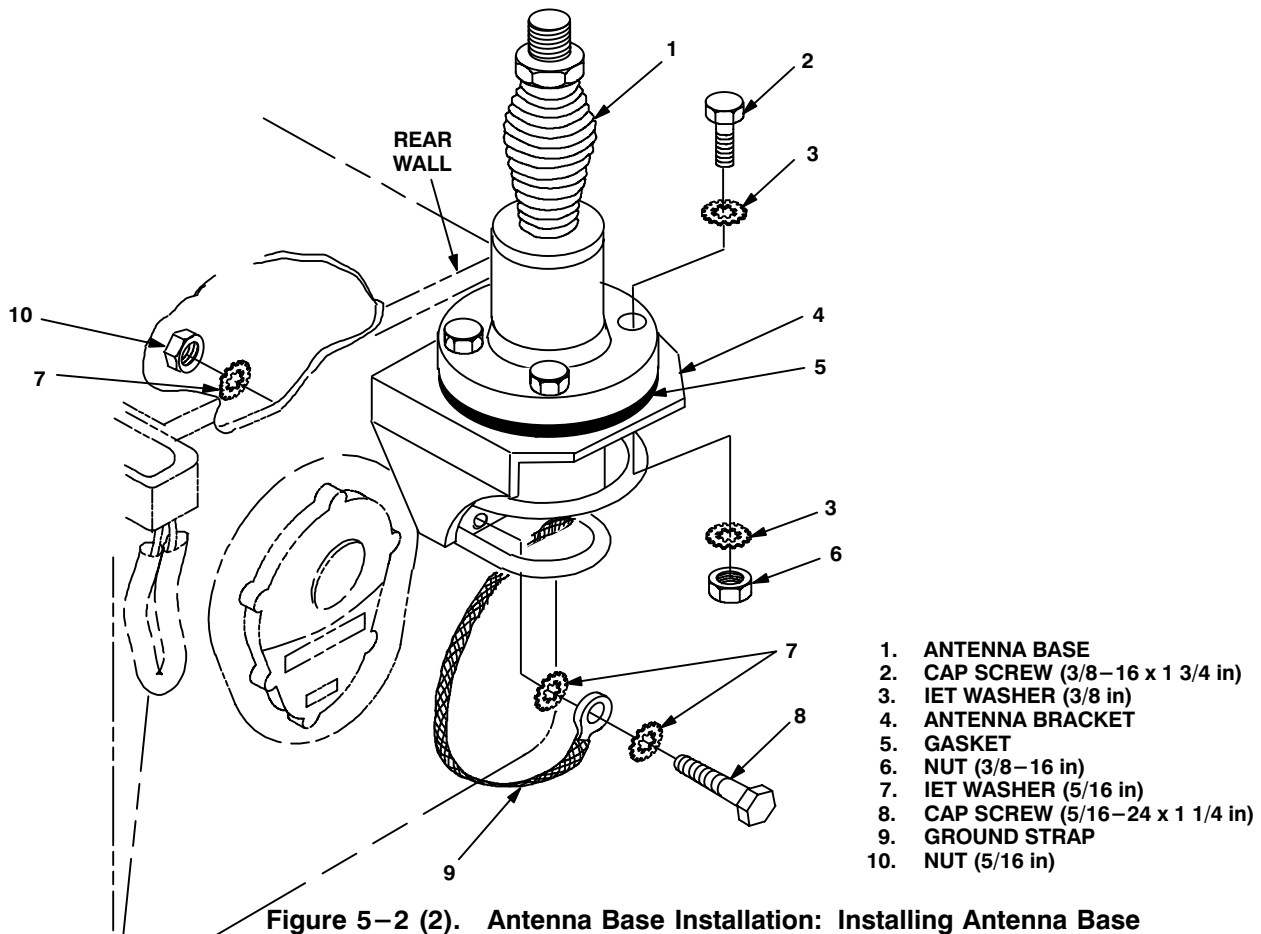
5.1.1 Installation of Antenna Base. Continued

ITEM	ACTION	REMARKS
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**NOTE**

To insure good electrical grounding, remove 1 in diameter of paint around mounting holes in vehicle before installing antenna bracket. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound.

- |  |  |  |
|--|--|--|
| b. Antenna bracket (3).  | Remove a 1" diameter area of paint around both sides of mounting holes in antenna bracket (3). Clean the paint removed areas and apply a thin coat of conductive anti-seize compound | Tools: Electric grinder or equivalent.           |
| c. Antenna bracket (3).  | Align mounting holes over three 11/32 in diameter holes drilled in step a. See figure 5-2 (1).   |  |
| d. Two cap screws (4), four internal/external-toothed (IET) washers (2) and two nuts (10). | Install and secure to two upper mounting holes in antenna bracket (3) and rear wall.   | Tools: 1/2 in socket and 1/2 in open/box wrench. |



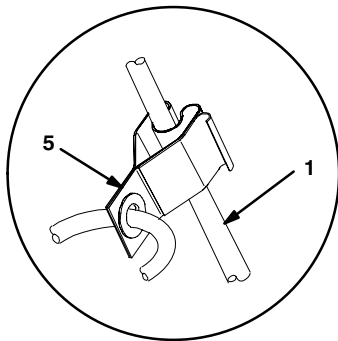


5.1.1 Installation of Antenna Base. Continued

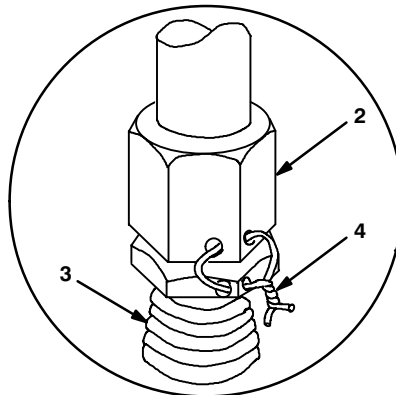
ITEM	ACTION	REMARKS
e. Gasket (5).	Place on antenna bracket (4) and align mounting holes. See Figure 5-2 (2).	
f. Antenna base (1).	Place on top of gasket (5) and antenna bracket (4); then align mounting holes. See Figure 5-2 (2).	
g. Four cap screws (2), eight IET washers (3) and four nuts (6).	Install and secure to antenna base (1) and antenna bracket (4).	Tools: 9/16 in socket and 9/16 in open/box wrench.
h. Ground strap (9), cap screw (8), three IET washers (7) and nut (10).	Install and secure to bottom hole in antenna bracket (4) and rear wall.	Tools: 1/2 in socket and 1/2 in open/box wrench.

**5.1.2 Installation of Top Antenna Assembly.** The top portion of the antenna includes a lower element and an upper element (with installed cap). Use the following procedure to assemble, install and tie down all antennas.

ITEM	ACTION	REMARKS
a. Antenna elements (1, 2).	Apply silicone compound to element threads and assemble. See figure 5-3.	
b. Antenna element (2).	Install and hand-tighten to antenna base (3).	
c. Lock wire (4).	Install to antenna element (2) and antenna base (3). See figure 5-3, detail A.	
	Cut and remove excess wire with diagonal cutting pliers.	
d. Fiber rope assembly (5).	Attach clip to antenna element (1). Tie rope to vehicle to position antenna in desired location. See figure 5-3, detail B.	



**DETAIL B**



**DETAIL A**

- 1. ANTENNA ELEMENT (UPPER)
- 2. ANTENNA ELEMENT (LOWER)
- 3. ANTENNA BASE
- 4. LOCK WIRE
- 5. FIBER ROPE ASSEMBLY

**Figure 5-3. Top Antenna Assembly Installation**

**5.2 Installation of Electrical Equipment Shelf.**

ITEM	ACTION	REMARKS
a. Existing radio rack assembly.	Deinstall all parts except roadside mounting bracket. Discard existing mounting hardware removed from front hole in curbside mounting bracket.	
b. Curbside floor padding.	Cut away floor padding around curbside mounting bracket mounting holes in vehicle floor.	Tools: pocketknife.
c. Existing curbside mounting bracket and mounting holes.	Remove a 1" diameter area of paint around mounting holes in vehicle floor. Remove a 1" diameter area of paint around both sides of mounting holes in curbside mounting bracket. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound.	Tools: Electric grinder or equivalent.
d. Existing mounting hardware removed in step a.	Reinstall to rear hole in existing mounting bracket. See Figure 5–4, Detail A.	
e. Ground strap (6), cap screw (7) and two IET washers (8).	Install and secure one end of ground strap to front hole of existing mounting bracket. See Figure 5–4, Detail A.	Tools: 7/16 in socket.
f. Existing radio rack assembly curbside supporting leg.	Remove a 1" diameter area of paint around both sides of mounting hole in curbside support leg. Clean the paint removed area and apply a thin coat of conductive anti-seize compound.	Tools: Electric grinder or equivalent.
g. Existing radio rack assembly.	Reinstall to vehicle.	
h. Electrical equipment shelf (5).	Remove a 1" diameter area of paint around both sides of mounting holes that mate with mounting holes in radio rack support legs. Remove a 1" diameter area of paint around both sides of mounting holes in top arms of electrical equipment shelf (5) and around both sides of mating mounting holes in radio rack. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound.	Tools: Electric grinder or equivalent.
i. Electrical equipment shelf (5).	Position between two support legs under radio rack; then align mounting holes. See Figure 5–4.	
j. Cap screw (4), lock washer (2) and nut (3).	Install and secure to electrical equipment shelf and roadside support leg.	Tools: 7/16 in socket and 7/16 in open/box wrench.
k. Ground strap (6), (not shown) cap screw (7), two IET washers (8) and nut (3).	Install and secure loose end of ground strap (installed in step e) to electrical equipment shelf (5) and curbside support leg.	Tools: 7/16 in socket and 7/16 in open/box wrench.
l. Two flat-head machine screws (1), two lock washers(2) and two nuts (3).	Install and secure top arms of electrical equipment shelf (5) to bottom of radio rack.	Tools: Phillips screwdriver and 7/16 in open/box wrench

2 Installation of Electrical Equipment Shelf. Continued.

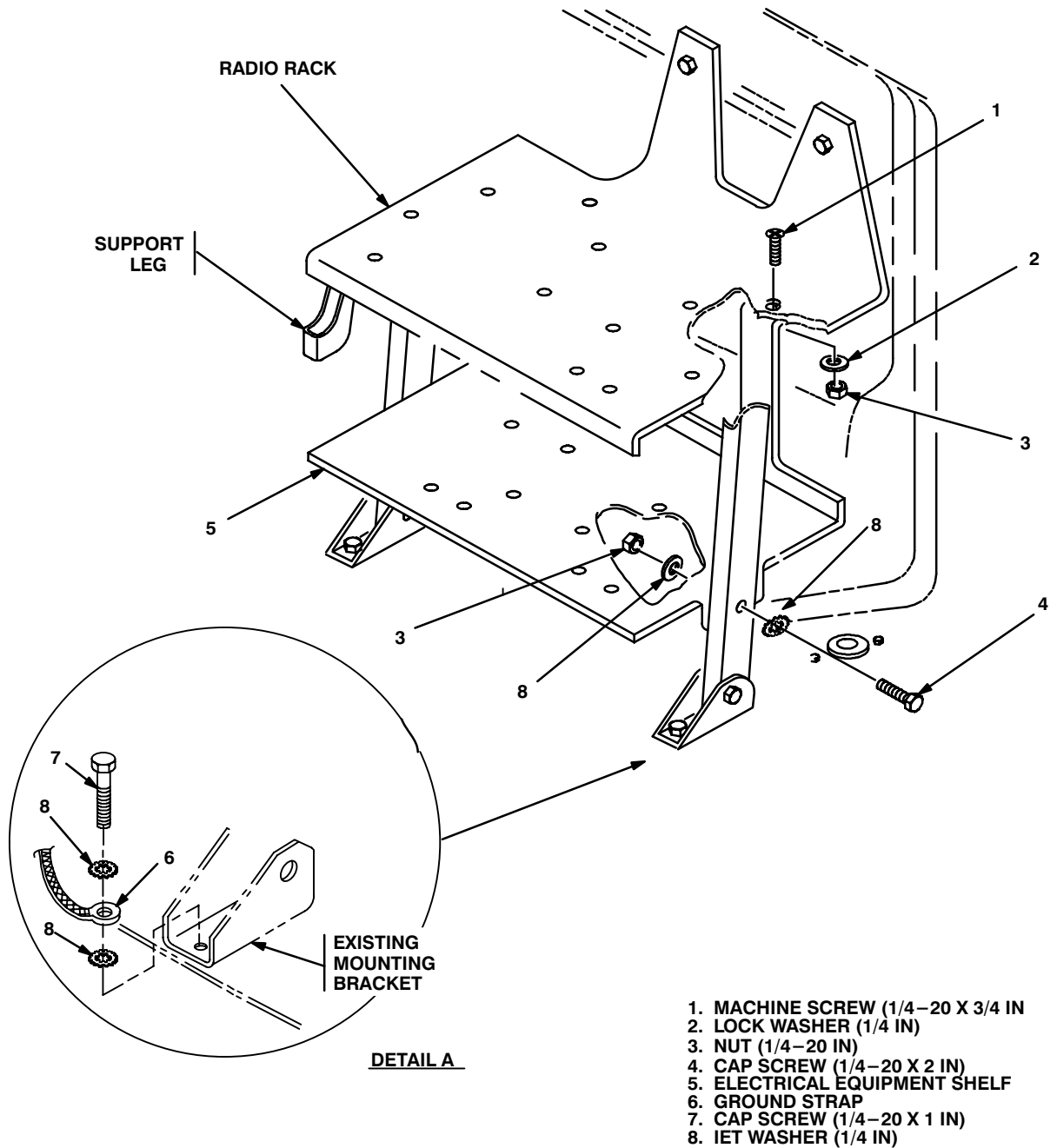


Figure 5-4. Electrical Equipment Shelf Installation

**5.3 Installation of Loudspeaker – Control Unit LS-671/VRC (speaker).** Use the following procedure to mount both speakers.

ITEM	ACTION	REMARKS
a. Mounting bracket (2).	Align bottom slots over two forward mounting holes in electrical equipment shelf (8). See figure 5-5.	
b. Two machine bolts (3), four flat washers (4), two lock washers (5) and two nuts (6).	Install and secure to mounting bracket (2) and electrical equipment shelf (8).	Tools: 1/2 in socket and 1/2 in open/box wrench.
c. Speaker (9).	Place on mounting bracket (2).	
d. Two externally-relieved body screws (1).	Thread through and secure to speaker (9) and mounting bracket (2).	Tools: Flatblade screw-driver.
e. Handset (7).	Connect and secure to speaker (9) connector J2.	

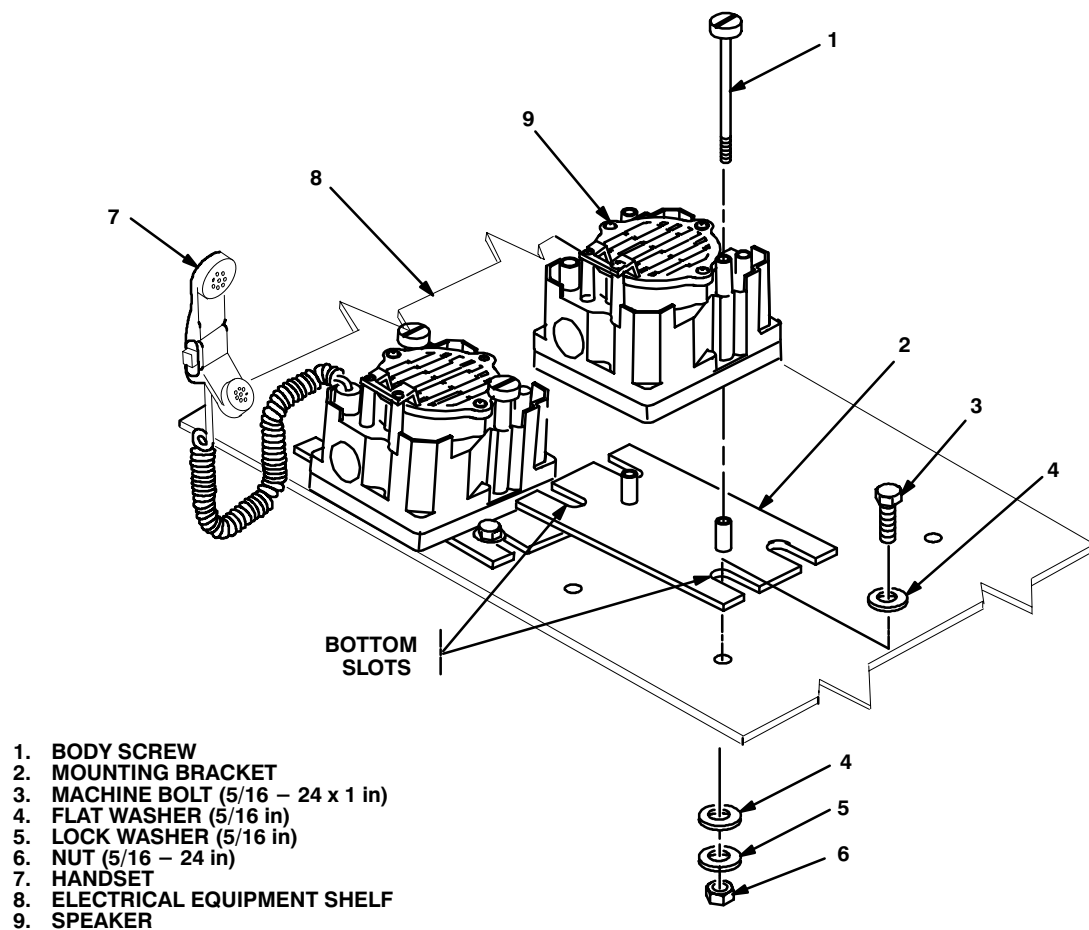


Figure 5-5. Speaker Installation

**5.4 Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base).** Remove and retain attaching bag of 5/16 in mounting hardware for installation. To insure good electrical grounding, any rust, corrosion or paint around mounting holes in radio shelf should be removed before installing the mounting base. See figure 5-6 and perform the following steps.

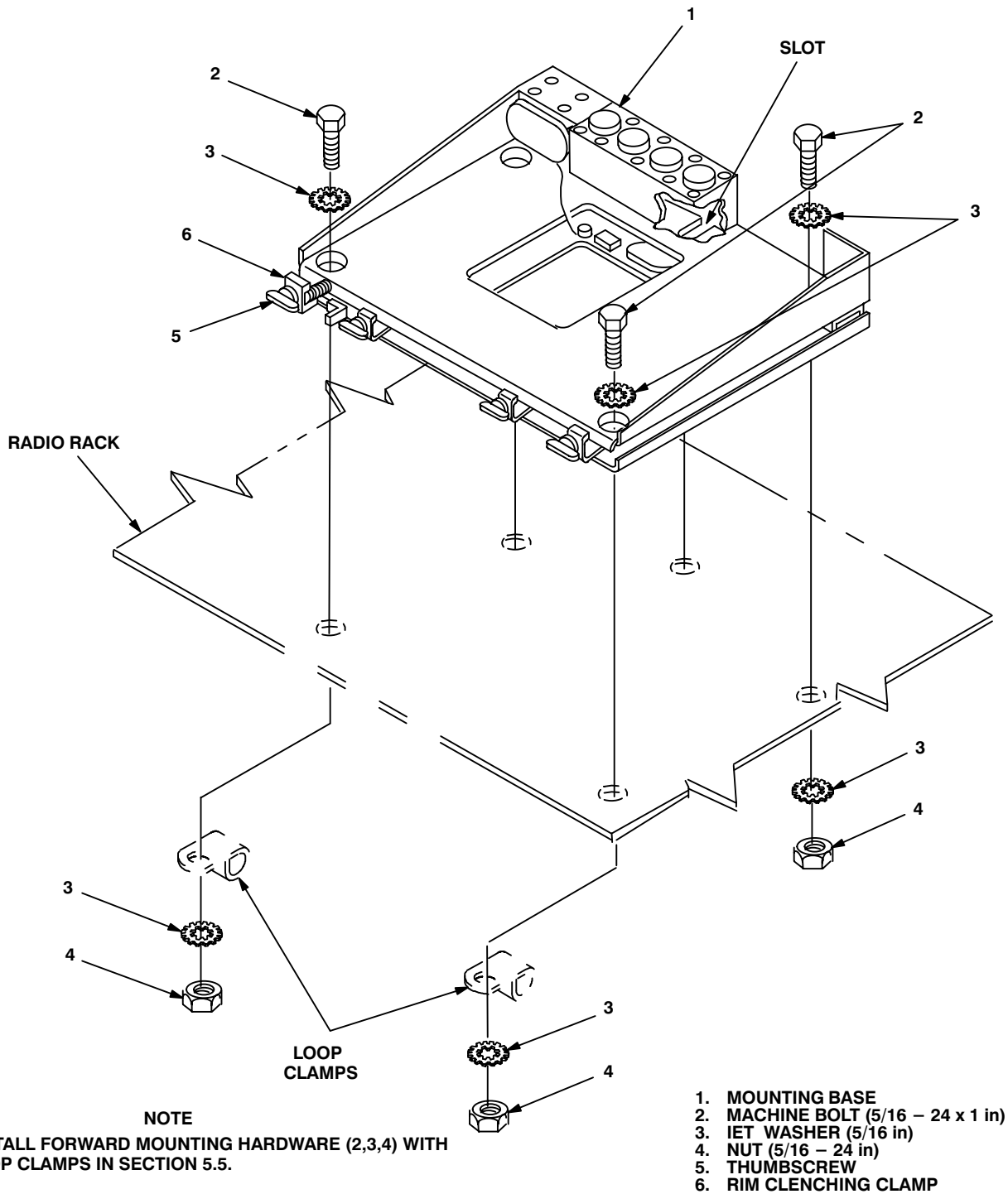


Figure 5-6. Mounting Base Installation

**5.4 Installation of Mounting Base, Electrical Equipment MT–6352/VRC (mounting base).** Continued

ITEM	ACTION	REMARKS
<b>NOTE</b>		
<p>Apply a thin coat of adhesive–sealant to both sides of each internal/external–toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.</p>		
<p>a. Mounting base (1) and radio rack.</p>	<p>Remove a 2” square area of paint on the underside of the mounting base (1) around left front and rear mounting holes. Remove a 2” square area of paint on the radio rack around the existing mounting holes that mate with left front and rear mounting holes of mounting base (1). Clean the paint removed areas and apply a thin coat of conductive anti–seize compound.</p>	<p>Tools: Electric grinder or equivalent.</p>
<p>b. Mounting base (1).</p>	<p>Place on radio rack over existing holes. See Figure 5–5.</p>	
<p>c. Two outer thumbscrews (5).</p>	<p>Turn ccw until both sets of threads have cleared center of holes.</p>	
<p>d. Mounting base (1).</p>	<p>Align four holes and rear slot with matching hole pattern in radio rack.</p>	
<p>e. Three machine bolts (2), six IET washers (3) and three nuts (4) .</p>	<p>Install and secure to two rear holes and slot in mounting base (1) and radio rack.</p>	<p>Tools: 1/2 in socket and 1/2 in open/box wrench.</p>

**5.5 Installation of Cables.** To accomplish the installation, leave loop clamps and tiedown straps loose enough to adjust cable slack and allow easy adjustment of equipment. When installation is complete, tighten and secure clamps and tiedown straps.

**WARNING**

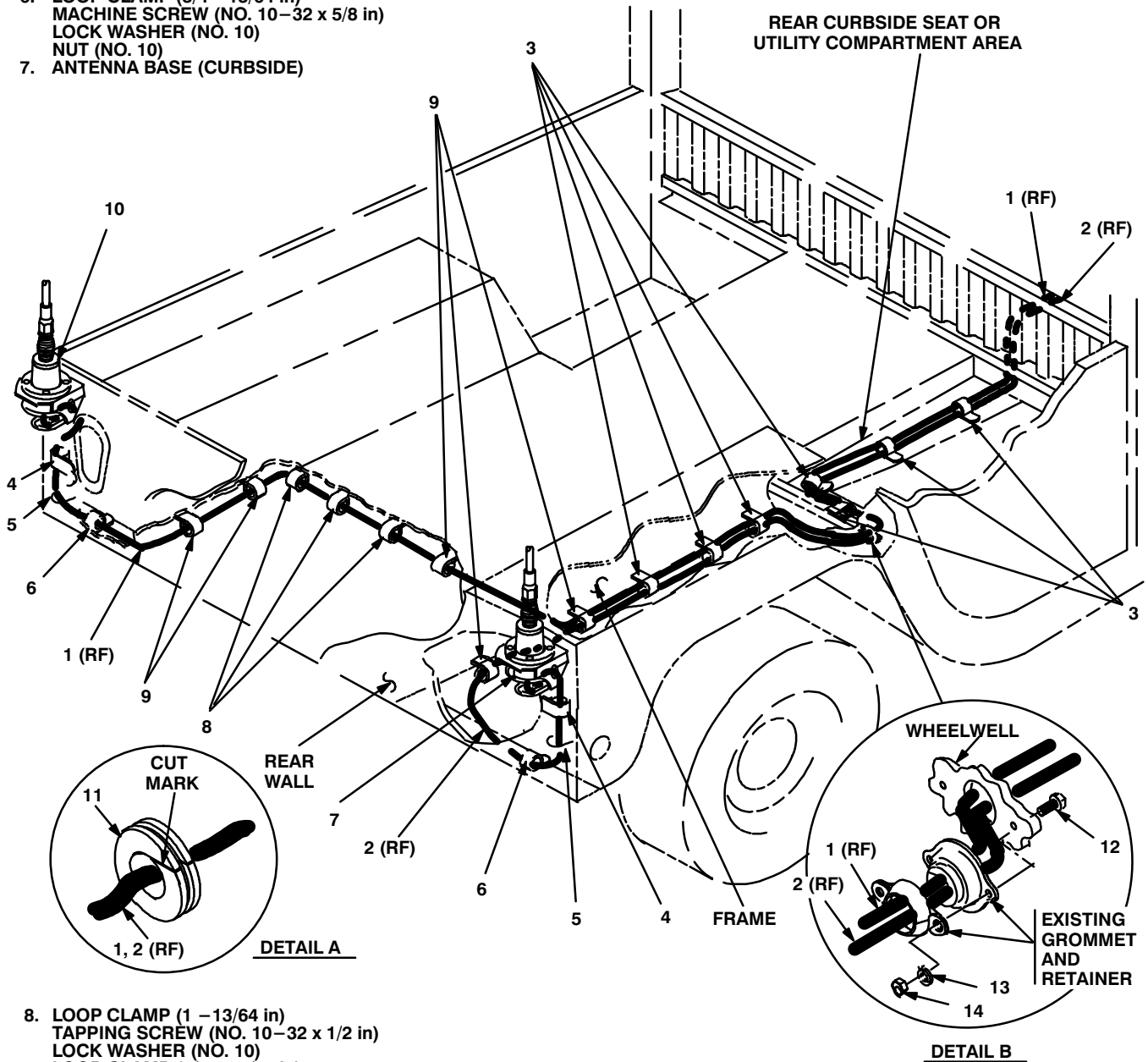
Make sure vehicle power source is positioned OFF or disconnected before installing cables.

ITEM	ACTION	REMARKS
a. RF cable (1) connector P1.	Insert through grommet hole in rear road-side wall and antenna bracket; then connect and secure to antenna base (10) connector J1. See figure 5–7 (1).	
b. Grommet (11).	Cut through on mark shown; then wrap around RF cable (1) and install to grommet hole in rear wall. See figure 5–7 (1), detail A.	Tools: Pocket Knife.
c. RF cable (1).	From rear roadside wall, route below frame to rear curbside wheel well. See figure 5–7 (1).	
d. Loop clamp (4) and existing mounting hardware.	Wrap clamp around RF cable (1); then install to rear roadside reflector (on inside corner of rear wall). See figure 5–7 (1) for location(s).	
e. Tiedown strap (5).	Wrap around RF cable (1), then install loosely to rear roadside taillight wiring harness.	
f. Loop clamp (6), hex-head machine screw (no. 10–32 x 5/8 in), lock washer (no. 10) and nut (no.10–32 in).	Wrap clamp around RF cable (1) and existing harness; then install to bottom edge of rear roadside wall.	Tools: 5/16 in socket and 5/16 in open/box wrench.
g. Two loop clamps (9), two hex-head tapping screws (no.10–32 x 1/2 in) and two lock washers (no.10).	Wrap clamps around RF cable (1) and existing cable harness; then install to mounting holes on bottom of rear roadside frame.	Tools: 5/16 in socket.
h. Three loop clamps (8), one loop clamp (9), four hex-head tapping screws (no.10–32 x 1/2 in) and four lock washers (no.10).	Wrap clamps around RF cable (1) and existing cable harness; then install to across bottom surface of rear frame.	Tools: 5/16 in socket.
i. RF cable (2) connector P1.	Insert through grommet hole in rear curb-side wall; then connect and secure to antenna base (7) connector J1. See figure 5–7 (1).	
j. Grommet (11).	Cut through on mark shown; then wrap around RF cable (2) and install to grommet hole in rear wall. See figure 5–7 (1), detail A.	Tools: Pocket Knife.



5.5 Installation of Cables. Continued

1. RF CABLE, CG-3855/VRC (21 FT, 0 IN)
2. RF CABLE, CG-3855/VRC (18 FT, 0 IN)
3. LOOP CLAMP (1/2 - 13/64 in)  
TAPPING SCREW (NO. 10-32 x 1/2 in)  
LOCK WASHER (NO. 10)
4. LOOP CLAMP (1/4 - 1/4 in)
5. TIEDOWN STRAP
6. LOOP CLAMP (3/4 - 13/64 in)  
MACHINE SCREW (NO. 10-32 x 5/8 in)  
LOCK WASHER (NO. 10)  
NUT (NO. 10)
7. ANTENNA BASE (CURBSIDE)



8. LOOP CLAMP (1 - 13/64 in)  
TAPPING SCREW (NO. 10-32 x 1/2 in)  
LOCK WASHER (NO. 10)
9. LOOP CLAMP (3/4 - 13/64 in)  
TAPPING SCREW (NO. 10-32 x 1/2 in)  
LOCK WASHER (NO. 10)
10. ANTENNA BASE (ROADSIDE)
11. GROMMET
12. CAP SCREW (1/4-20 x 3/4 in)
13. LOCK WASHER (1/4 in)
14. NUT (1/4 - 20 in)

Figure 5-7 (1). Cable Installation: RF Cabling

## 5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
k. RF cable (2).	Route forward along bottom of curbside frame to rear wheel well. See figure 5–7(1).	
l. Loop clamp (4) and existing mounting hardware.	Wrap clamp around RF cable (2); then install to rear curbside reflector (on inside corner of rear wall).	
m. Tiedown strap (5).	Wrap around RF cable (2), then install loosely to taillight wiring harness. See figure 5–7 (1) for location(s).	
n. Loop clamp (6), hex–head machine screw (no. 10–32 x 5/8 in), lock washer (no. 10) and nut (no. 10–32 in).	Wrap clamp around RF cable (2) and existing cable harness; then install to bottom edge of rear wall.	Tools: 5/16 in socket.
o. Loop clamp (9), hex–head tapping screw (no.10–32 x 1/2 in) and lock washer (no. 10).	Wrap clamp around RF cable (2) and existing cable harness; then install to mounting hole on bottom of rear curbside frame.	Tools: 5/16 in socket.
p. Three loop clamps (3), one loop clamp (9), four hex–head tapping screws (no. 10–32 x 1/2 in) and four lock washers (no. 10).	Wrap clamps around RF cables (1, 2) and existing cable harness; then install to mounting holes on bottom of rear curbside frame.	Tools: 5/16 in socket.
q. Existing retainer and grommet.	Temporarily remove from grommet hole in rear curbside wheelwell. Discard old mounting hardware. See figure 5–7 (1), detail B.	
r. RF cables (1, 2).	Insert P2 connectors through grommet hole; then route cables through rear curbside seat or utility compartment area to radio rack. See figure 5–7 (1).	
s. Existing grommet (removed in step q).	Wrap around RF cable (2); then insert in grommet hole.	
t. Existing retainer, two cap screws (12), two lock washers (13) and two nuts (14).	Install and secure grommet and wheel–well. See figure 5–7 (1), detail B.	Tools: 7/16 in socket and 7/16 in open/box wrench.
u. Four loop clamps (3), four hex–head tapping screws (no. 10 – 32 x 1/2 in) and four lock washers (no. 10).	Wrap clamps around RF cables (1, 2); then install to existing holes in rear curbside seat or utility compartment area. See figure 5–7 (1) for location(s).	Tools: 5/16 in socket.
v. Front curbside floor padding.	Secure over RF cables (1, 2). See figure 5–7 (2).	

5.5 Installation of Cables. Continued

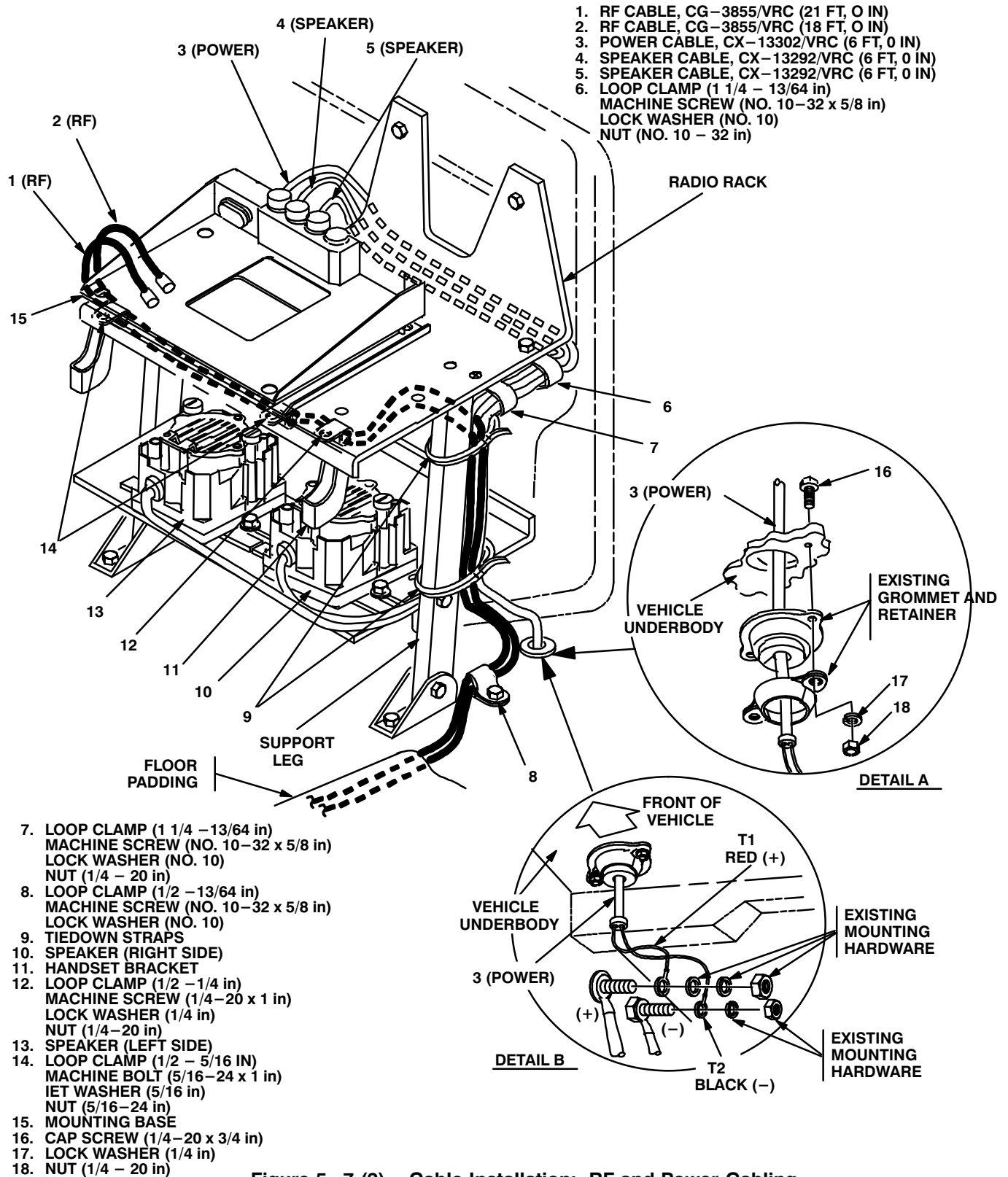


Figure 5-7 (2). Cable Installation: RF and Power Cabling

## 5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
w. Loop clamp (8), hex–head machine screw (no. 10–32 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (1, 2); then install to floor behind curbside leg support. See figure 5–7 (2) for location(s).	Tools: 5/16 in socket.
x. Handset bracket (11), loop clamp (12), two flat–head machine screws (1/4–20 x 1 in), two lock washers (1/4 in) and two nuts(1/4 – 20 in).	Wrap clamp around RF cables (1, 2); then install and secure to right forward mounting holes in radio rack.	Tools: Phillips screwdriver and 7/16 in open/box wrench.
y. Two loop clamps (14), two machine bolts (5/16 – 24 x 1 in), four IET wash–ers (5/16 in) and two nuts (5/16 – 24 in).	Wrap clamps around RF cables (1, 2); then install to forward mounting holes in mounting base (15) and radio rack. See figure 5–7 (2) for clamp location(s) and figure 5–6 for mounting hardware stackup.	Tools: 1/2 in socket and 1/2 in open/box wrench.
z. Two outer thumbscrews (5) on mounting base (1), fig–ure 5–6.	Tighten and secure to rim clenching clamps (6) and mounting base.	
aa. Power cable (3) connector P2.	Position on top of mounting base (15). See figure 5–7 (2).	
ab. Power cable (3).	Route under radio rack to existing grommet location behind loop clamp (8).	
ac. Existing retainer and grom–met.	Temporarily remove from grommet hole. Discard old mounting hardware. See figure 5–7 (2), detail A.	
ad. Power cable (3).	Insert through grommet hole to under body of vehicle; then position T1 and T2 terminal leads near terminal lugs. See figure 5–7 (2), detail B.	
ae. Power cable (3) terminal leads: T1 (red) and T2 (black).	Connect and secure to proper terminal lugs with existing mounting hardware.	Positive (+) lug is insulated and negative (–) lug is not.
af. Existing grommet (remov–ed in step ac).	Wrap around power cable (3), then insert in grommet hole. See figure 5–7 (2), detail A.	
ag. Existing retainer, two cap screws (16), two lock washers (17) and two nuts (18).	Install and secure to grommet and un–derbody.	Tools: 7/16 in socket and 7/16 in open/box wrench.

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
ah. Speaker cable (4) connector P2.	Connect an secure to mounting base (15) connector J3. See figure 5–7 (2).	
ai. Speaker cable (5) connector P2.	Connect and secure to mounting base (15) connector J4. See figure 5–7 (2).	
aj. Speaker cables (4, 5).	Route below radio rack near two speakers (10, 13).	
ak. Speaker cable (5) connector P1.	Connect and secure to speaker (10) connector J1.	
al. Speaker cable (4) connector P1.	Connect and secure to speaker (13) connector J1.	
am. Loop clamp (6), hex-head machine screw (no. 10–32 x 5/8 in), lock washer (no. 10) and nut (no. 10–32 in).	Wrap clamp around power cable (3) and two speaker cables (4, 5); then install to hole near curbside edge of radio rack. See figure 5–7 (2) for location(s).	Tools: 5/16 in socket and 5/16 in open/box wrench.
an. Loop clamp (7), flat-head machine screw (no. 10–32 x 5/8 in), lock washer (no. 10) and nut (no. 10–32 in).	Wrap clamp around power cable (3) and two speaker cables (4, 5); then install to hole near curbside edge of radio rack.	Tools: Phillips screwdriver and 5/16 in open/box wrench.
ao. Two tiedown straps (9).	Wrap around power cable (3), speaker cables(4, 5) and RF cables (1, 2), then secure loosely to curbside leg support.	
ap. Sealant.	Apply to and around previously installed grommets and drilled holes.	
aq. Power cable (3) connector P2.	Connect and secure to mounting base (15) connector J1.	

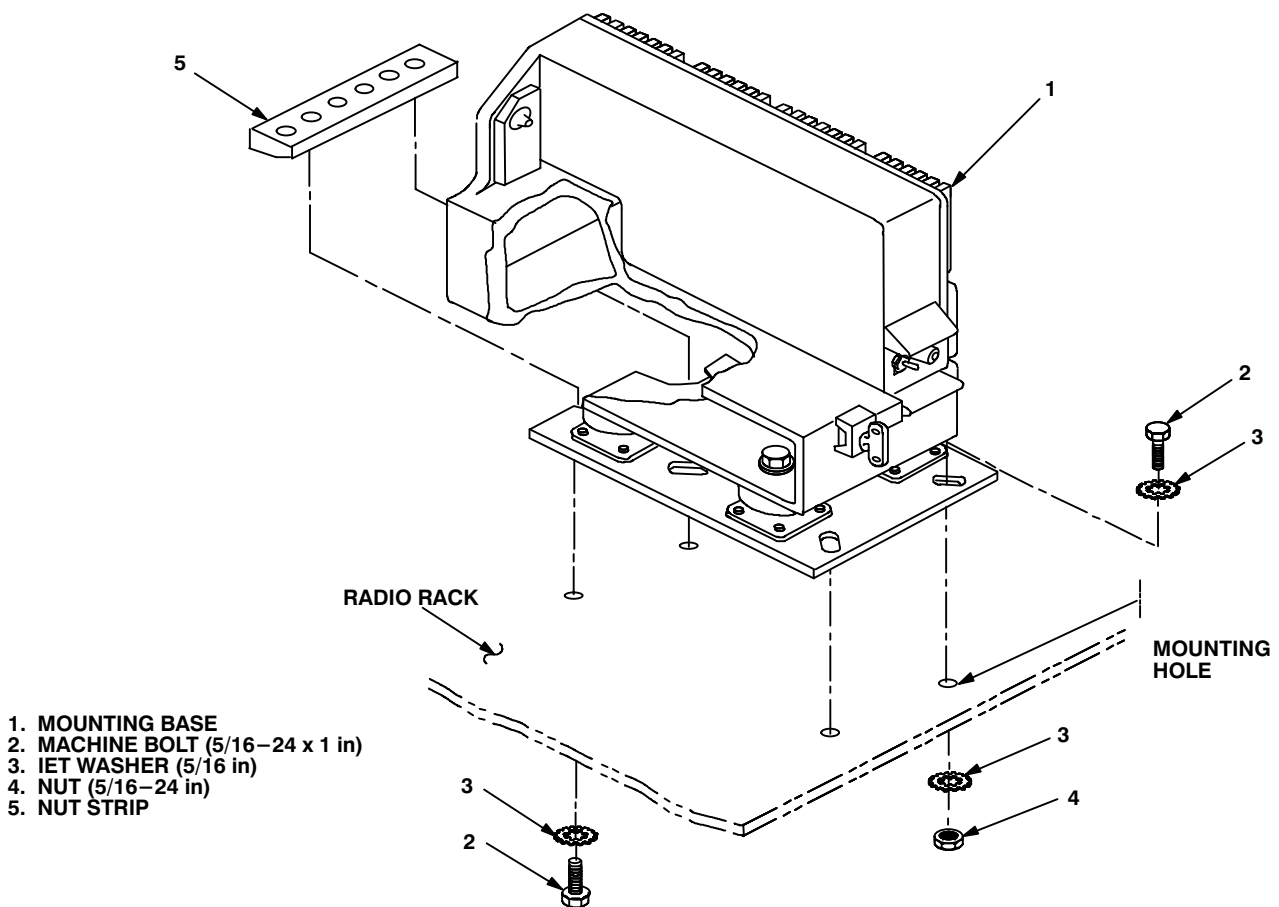
**5.6 Installation of Mounting Base, Electronic Equipment MT-6353/VRC.** If Radio Set AN/VRC-92 is authorized, use the following instructions to install MT-6353/VRC mounting base in the location shown in figure 5-1 (2). Refer to section 5.7 for connection of cables.

ITEM	ACTION	REMARKS
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**NOTE**

Apply a thin coat of adhesive-sealant to both sides of each internal/external-toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed. Before proceeding, connect and secure CX-13291/VRC control cable and CX-13303/VRC power cable to MT-6353/VRC mounting base. (Refer to Section 5.7, step b).

- |  |  |  |
|--|--|--|
| a. MT-6353/VRC mounting base (1) and radio rack. | Remove a 2" square area of paint on the underside of the mounting base (1) around the front two mounting holes. Remove a 2" square area of paint on the radio rack around the two front mounting holes. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound. | Tools. Electric grinder or equivalent. |
|--|--|--|



**Figure 5-8. MT-6353/VRC Mounting Base Installation**

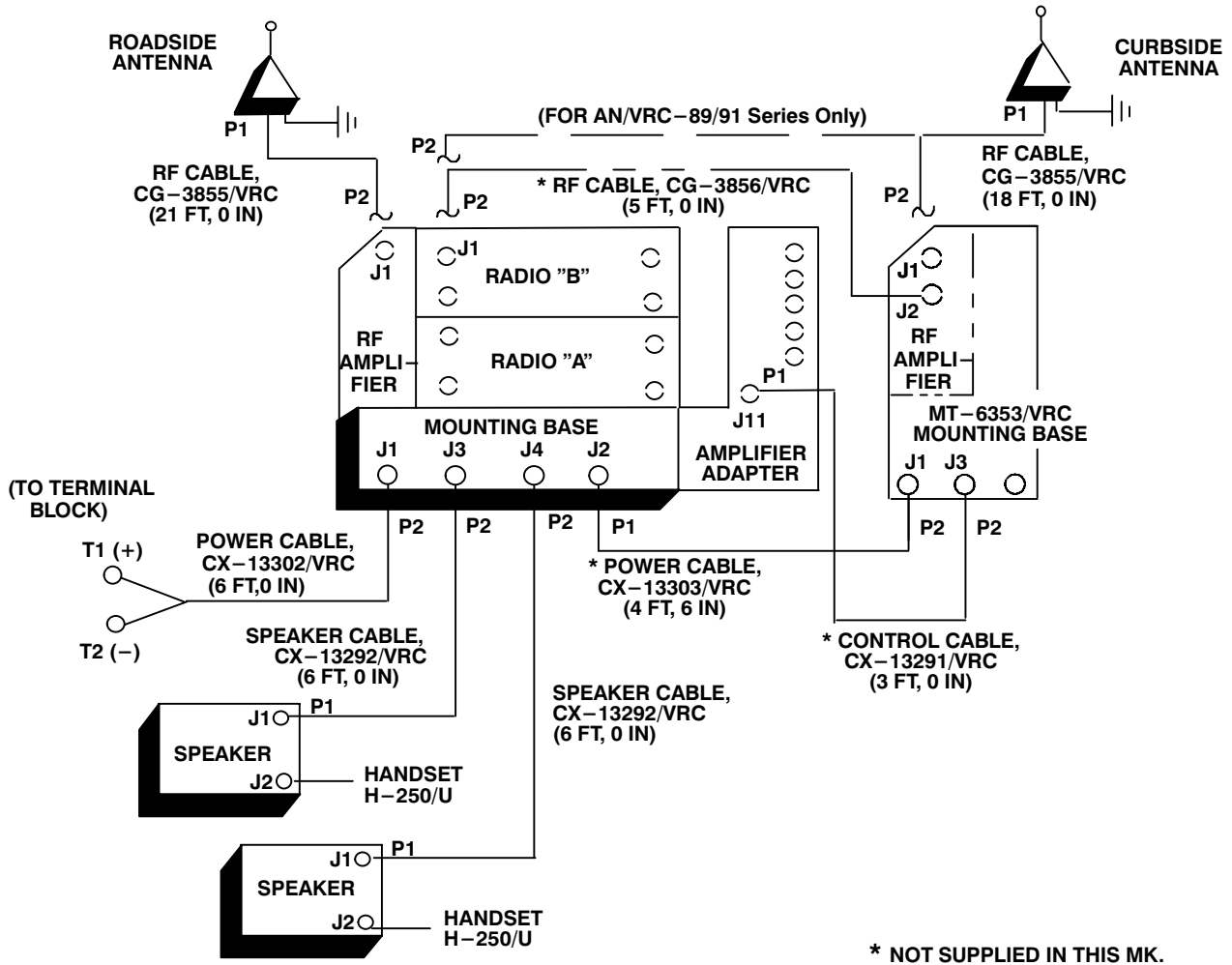
**5.6 Installation of Mounting Base, Electronic Equipment MT–6353/VRC.** Continued

ITEM	ACTION	REMARKS
b. MT–6353/VRC mounting base (1).	Place on radio rack over existing holes. See figure 5–8.	
c. MT–6353/VRC mounting base (1).	Align front holes and rear slots with matching hole pattern in radio rack. See figure 5–8.	
d. Two machine bolts (2), two IET washers (3) and nut strip (5).	Install and secure to rear slots in MT–6353/VRC mounting base (1) and rack.	Tools: 1/2 in socket.
e. Two machine bolts (2), four IET washers (3) and two nuts (4).	Install and secure to front holes in MT–6353/VRC mounting base and rack.	Tools: 1/2 in socket and 1/2 in open/box wrench.

**5.7 Post–Installation and Checkout.** After equipment is installed and cables are connected, perform the following steps.

ITEM	ACTION	REMARKS
a. Equipment.	Check for secure mounting. Check for loose parts, connectors and mounting hardware.	
b. Cables.	Check for proper installation and connection of cables. See figure 5–9 for cable connections. Unused cables should be stowed in appropriate place inside the vehicle.	
c. Loop clamps.	Check that all have been properly installed and tightened.	
d. Protective covers.	Insure that all installed cables are covered when not in use or connected.	
e. Radio issued with vehicle.	Install and connect cables. See TM 11–5820–890–20–1 or TM 11–5820–890–20–2 for installation and Operational (OP) Check instructions.	
f. MK line replaceable units.	See TM 11–5820–890–20P for Repair Parts and Special Tools List (RPSTL) information.	

5.7 Post-Installation and Checkout. Continued



\* NOT SUPPLIED IN THIS MK.

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX-13302/VRC (6 FT, 0 IN)	P2	Mounting Base	J1	T1: Red (+) T2: Black (-)	Terminal block	(+) lug (-) lug
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting Base	J3	P1	Speaker (left)	J1
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting Base	J4	P1	Speaker (right)	J1
CG-3855/VRC (21 FT, 0 IN)	P2	RF amplifier	J1	P1	Roadside antenna base	J1

Figure 5-9. Cable Diagram: For AN/VRC-89/91/92 Series



5.7 Post-Installation and Checkout. Continued

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CG-3855/VRC (18 FT, 0 IN)	P2	Radio "B" or RF amplifier (MT-6353/VRC)	J1	P1	Curbside antenna base	J1
* CX-13291/VRC (3 FT, 0 IN)	P1	Amplifier adapter	J11	P2	MT-6353/VRC mounting base	J3
* CG-3856/VRC (5 FT, 0 IN)	P2	Radio "B"	J1	P1	RF amplifier (MT-6353/VRC)	J2
* CX-13303/VRC (4 FT, 6 IN)	P1	Mounting base	J2	P2	MT-6353/VRC mounting base	J1

\* Not supplied in this MK.

Figure 5-9. Cable Diagram: For AN/VRC-89/91/92 Series Continued

## APPENDIX A

### REFERENCES

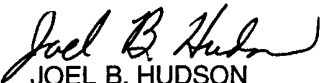
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AMDF	Army Master Data File (Microfiche)
AR 710-2	Supply Policy Below the Wholesale Level as Contained in Unit Supply UPDATE
AR 725-50	Requisitioning, Receipt and Issuing System in UPDATE
DA Pam 25-30	Consolidated Index of Army Publications (Microfiche)
DA Pam 710-2-1	Using Unit Supply System Manual Procedures as Contained in Unit Supply UPDATE
SB 11-131	Vehicular Radio Sets and Authorized Installations (SINCGARS)
TM 11-5820-890-10-1	Operator's Manual (ICOM Radio Sets)
TM 11-5820-890-10-3	Operator's Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20-1	Unit Maintenance Manual (ICOM Radio Sets)
TM 11-5820-890-20-2	Unit Maintenance Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20P	Repair Parts and Special Tools List

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**ERIC K. SHINSEKI**  
*General, United States Army*  
*Chief of Staff*

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IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
2-25	2-28		
3-10	3-3		3-1
5-6	5-8		
		FO-3	

Recommend that the installation antenna alignment procedure be changed throughout to specify a 20 IFF antenna lag rather than 10

REASON: Experience has shown that with only a 10 lag, the antenna servo system is too sensitive to gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 20 without degradation of operation.

Item 5, Functional column. Change  2 dB" to  3 dB".

REASON: The adjustment procedure for the TRANS POWER FAULT indicator call for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.

Add new step f.1 to read,  Replace cover plate removed in step d above."

REASON: To replace the cover plate.

ZONE C 3. On J1-2, change  +24 VDC" to  +5 VDC".

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

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