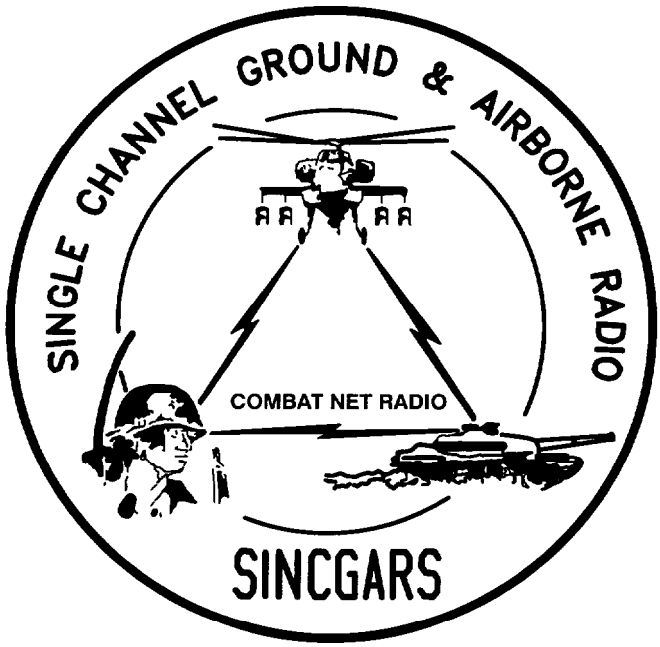
TECHNICAL BULLETIN



INSTALLATION INSTRUCTIONS FOR INSTALLATION KIT, ELECTRONIC EQUIPMENT MK-2392/VRC (NSN 5895-01-216-9746) (EIC:N/A) TO PERMIT INSTALLATION OF RADIO SETS: AN/VRC-87/88/90 SERIES, OR AN/VRC-89/91/92 SERIES IN A TANK, COMBAT, FULL-TRACKED: M1, M1A1 AND M1 IM AND M1A2

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HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1999

TECHNICAL BULLETIN

NO. 11–5820–890–20–68

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HEADQUARTERS,
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WASHINGTON, D.C. 1 AUGUST 1999

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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 11–5820–890–20–68, dated 1 September 1993.**

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0.1 SCOPE.

This technical bulletin provides Installation Instructions for Electronic Equipment MK-2392/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

- Tank, Combat, Full-Tracked: MI, M1A1 and MI IM, AND M1A2 Abrams

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-87/88/90 Series or AN/VRC-89/91/92 Series is:

- Radio Set AN/VRC-87/88/90 Series or AN/VRC-89/91/92 (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 Repot-t 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 Installation kit, Electronic Equipment MK-2392/VRC (MK) contains the items needed to mount Radio Set An/VRC-87/88/90 Series or AN/VRC-89/91/92 Series in a Tank Combat, Full-Tracked: M!, MI Al, MI IM andM1A2 (Vehicle). If Radio Set AN/VRC-92 Series is authorized, see Section 5.5 for instruction 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 2.5 work hours is required. Typical vehicle downtime is 3.0 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-3916/VRC	5.1	1.0
Mounting Base, Electrical Equipment MT-6352/VRC	5.2	1.5
Cables	5.4	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 9-2350-255-20.

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 4500.15.

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 Series: AN/VRC-87/88/90 or AN/VRC-89/91. 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 Series: AN/VRC-87/88/90 Series or AN/VRC-89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985-01-353-4943	Antenna, Vehicular, AS-3916/VRC (A3207487-1)	2	PAOOFA	4-1, 3
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 (Not Used)	8	PAOZZA	
5310-00-061-1258	Washer, Lock, Internal/External-Toothed (3/8 in) MS45904-76 (8 Not Used)	16	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (Not Used)	4	PAOZZA	
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) (Not Used)	2	PAOZZA	
4010-01-381-1521	Wire Rope Assembly (A3207523-1)	2	PAOZZA	
5895-01-151-9914	Control-Monitor C-I 1291/VRC (A3148258-1)	1	PAOFDA	4-1, 2
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	2	PAOOFA	
5310-00-407-9566	Washer, Lock (5/16 in) MS35338-45	2	PAOZZA	
5310-00-081-4219	Washer, Flat (5/16 in) MS27183-12	4	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16 - 24 in) MS51968-5	2	PAOZZA	
5305-00-068-0506	Screw, Cap, Hexagon (1/4-28 x 3/4 in) MS90726-6	2	PAOZZA	
5310-00-582-5965	Washer, Lock (1/4 in) MS35338-44	2	PAOZZA	
5310-00-809-4058	Washer, Flat (1/4 in) MS27183-10	2	PAOZZA	
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352/VRC (A3013367-1)	1	PAOOFA	4-1, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	5	PAOOFA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	10	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16 - 24 in) MS51968-5	5	PAOZZA	
5995-01-219-4695	Cable Assembly, Power, Electrical CX-13304/VRC (9 FT, 0 IN) (A3014041-1)	1	PAOZZA	4-1, 7
5995-01-219-7029	Cable Assembly, Radio Frequency CG-3855/VRC (5 FT, 0 IN) (A3014031-2)	1	PAOZZA	4-1, 6
5995-01-219-7030	Cable Assembly, Radio Frequency CG-3855/VRC (7 FT, 0 IN) (A3014031-3)	1	PAOZZA	4-1, 6
5995-01-218-6466	Cable Assembly, Special Purpose, Electrical CX-13290/VRC (22 FT, 0 IN) (A3014035-4)	1	PAOZZA	4-1, 8
5995-01-219-7307	Cable Assembly, Special Purpose, Electrical CX-13300/VRC (6 FT, 0 IN) (A3014044-4)	2	PAOZZA	4-1, 4

Table 4-1. Parts List for Installation of Radio Set Series: AN/VRC-87/88/90 Series or AN/VRC-89/91/92 Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5995-01-303-4951	Cable Assembly, Special Purpose, Electrical CX-13313/VRC (2 FT, 7 IN) (A3018360-1)	1	PAOZZA	4-1, 5
	Clamp, Loop (2 7/8 - 1/4 in) (A3013069-1)	4	XBOZZA	
5340-00-922-3380	Clamp, Loop (1 1/2 - 1/4 in) MS9350-23	1	PAOZZA	
5305-00-068-0501	Screw, Cap, Hexagon (1/4-20 x 5/8 in) MS90725-5	5	PAOZZA	
5975-00-570-9598	Strap, Tiedown, Electrical Components MS3367-7-9	20	PAOZZA	
5310-00-582-5965	Washer, Lock (1/4 in) MS35338-44	5	PAOZZA	

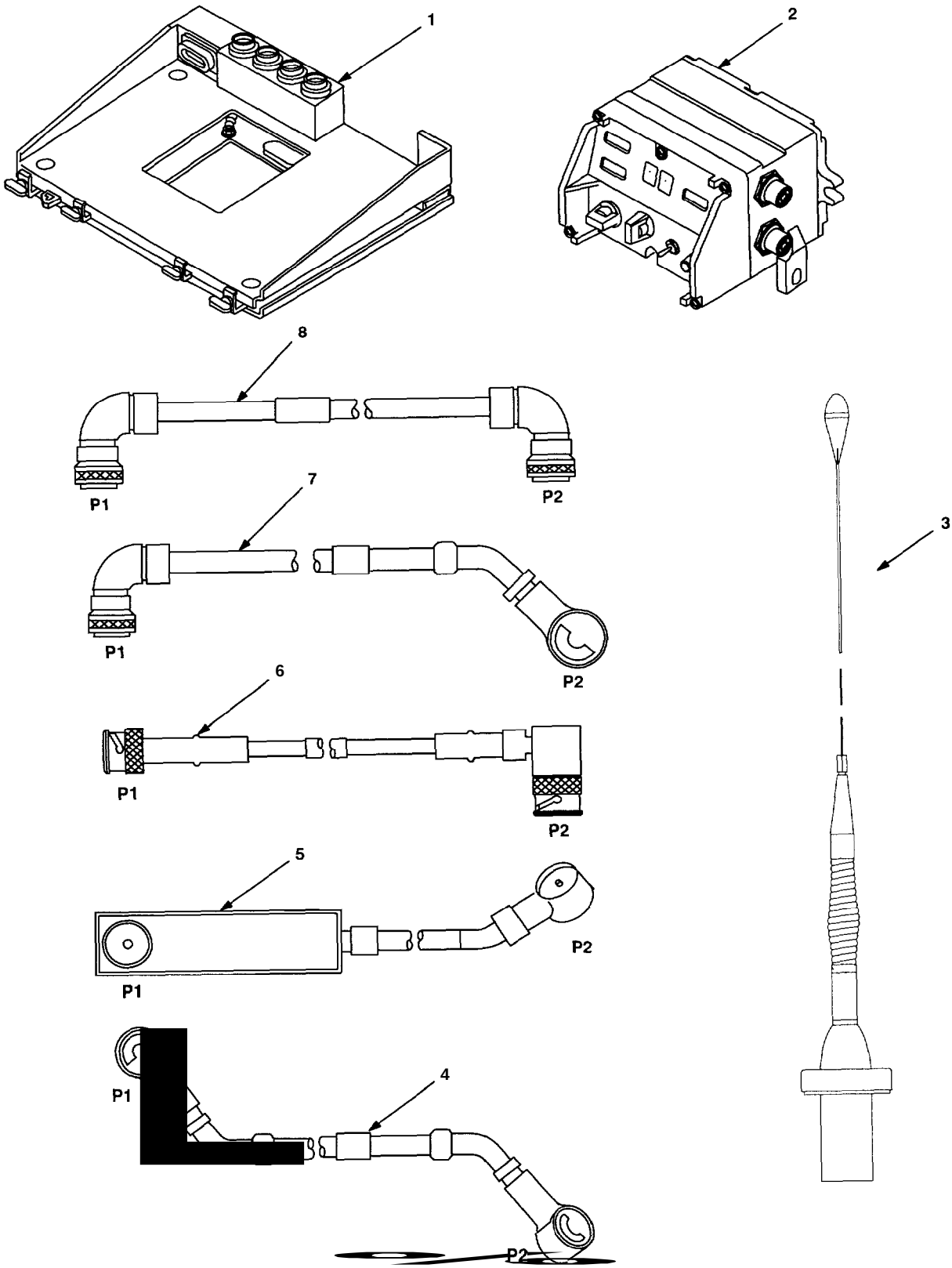


Figure 4-1. MK Illustrated Parts List

Table 4-2. Additional Items Required for Installation of Radio Set AN/VRC-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	6	PAOZZA	
5310-00-081-4219	Washer, Flat (5/16 in) MS27183-12	2	PAOZZA	
	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

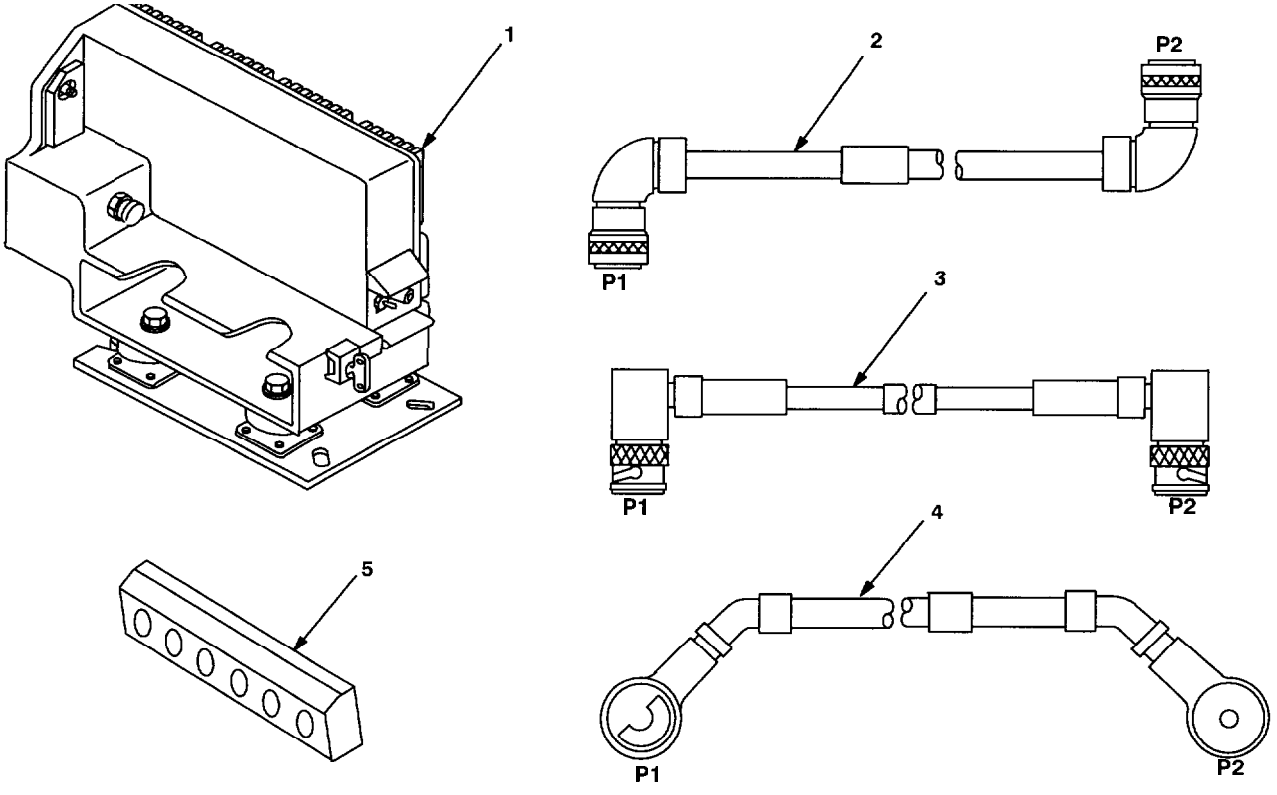


Figure 4-2. Illustrated Parts List for Table 4-2

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
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

* 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 vehicvular and 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 5.5 for instructions to install MT-6353/VRC mounting base.

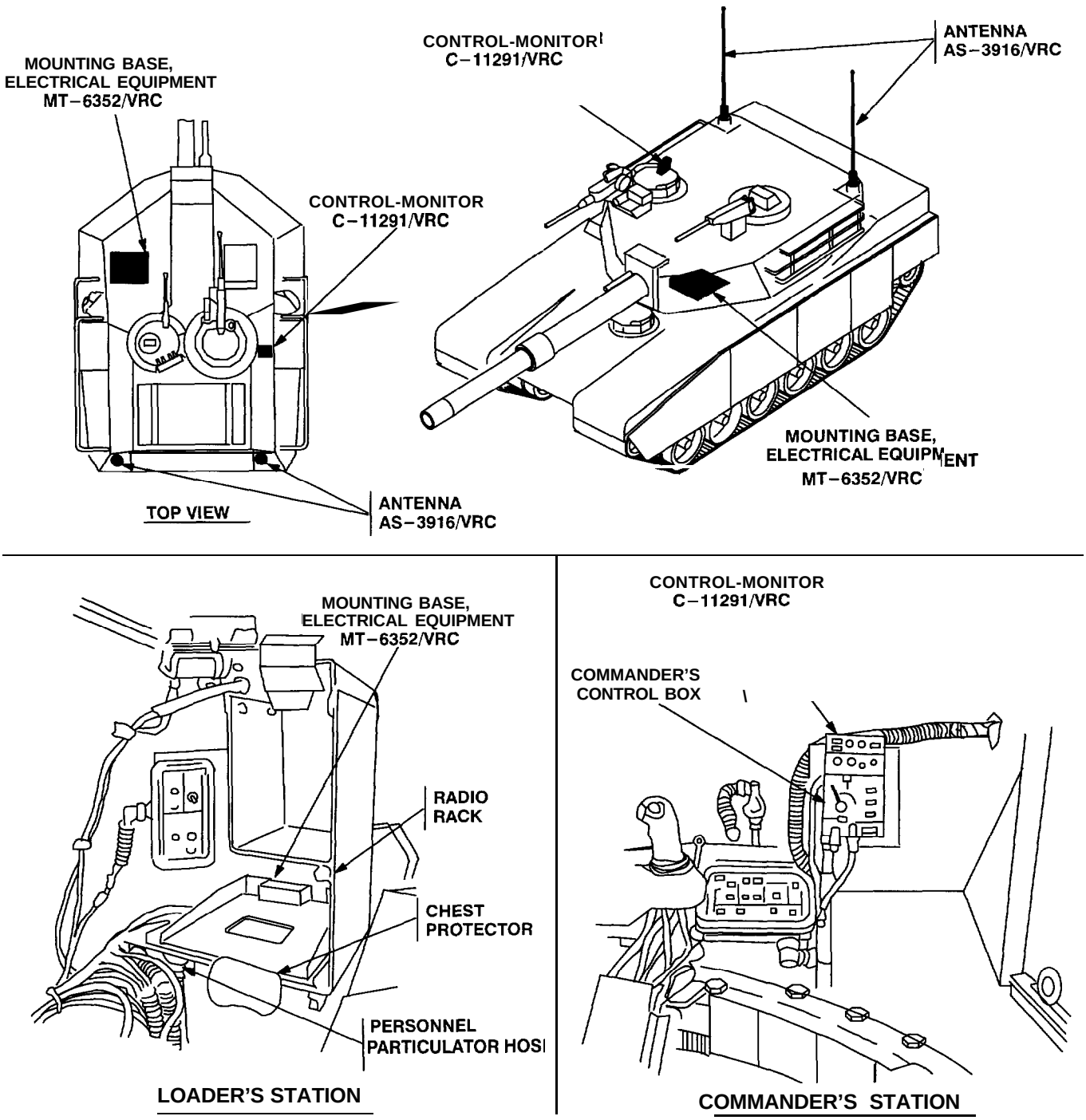
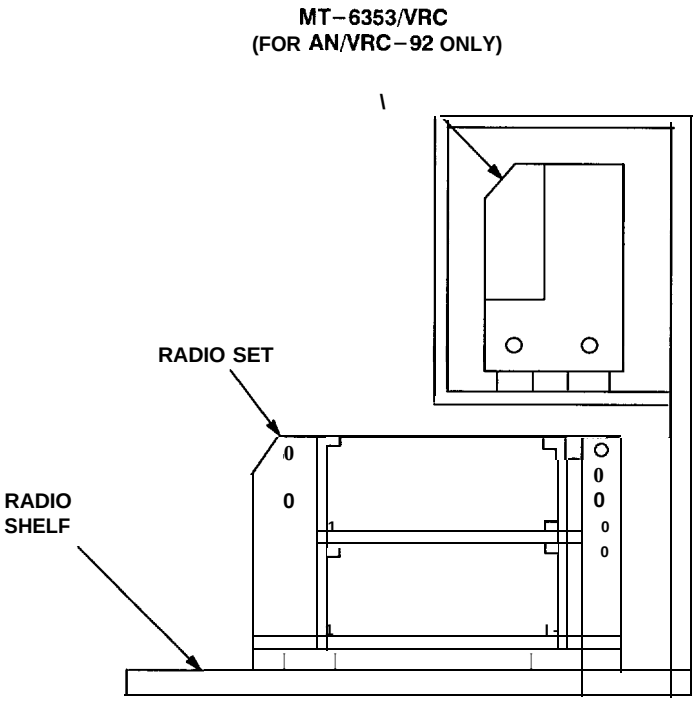


Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations

5. INSTALLATION PROCEDURES. Continued

INSTALLATION FOR
AN/VRC-87/88/90,
AN/VRC-89/91 OR
AN/VRC-92



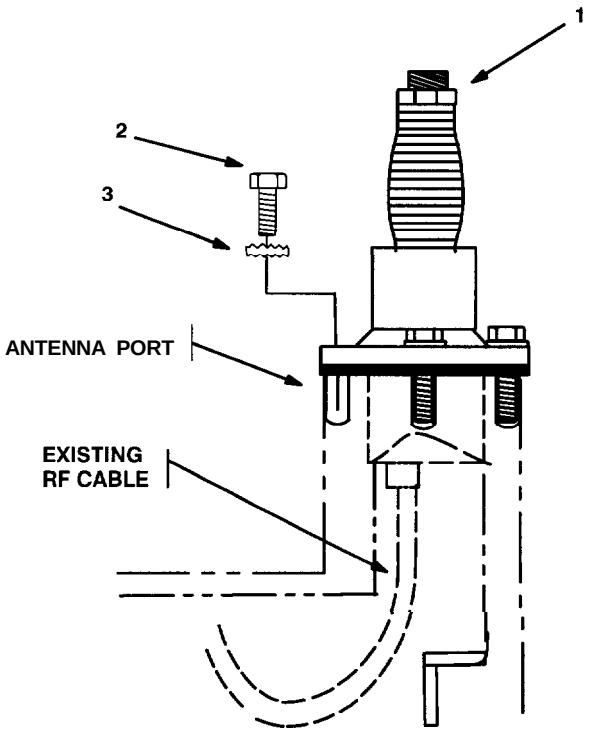
RADIO RACK

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

5.1 Installation of Antenna, Vehicular, AS−3916/VRC (antenna).

5.1.1 Installation of Antenna Base. Use the following procedure to install both antenna bases. See figure 5−1 (1) for locations. Remove ground strap from antenna base(s).

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.		
a. Existing antenna port.	Remove the paint (1" strip) for 360° centered around the four mounting holes. Clean the paint removed area and apply a thin coat of conductive anti-seize compound (CASC).	Tools: Electric grinder or equivalent.
b. Existing RF cable.	Connect and secure to antenna base (3) connector J1.	
c. Antenna base (3).	Place on top of antenna port; then align mounting holes.	
d. Four cap screws (1) and four internal/external−toothed (IET) washers (2).	Install and secure to antenna base (3) and antenna port.	Tools: 9/16 in socket.
e. Antenna base (3) and antenna port	Apply a bead of adhesive-sealant/silicon compound 360° around the seam between antenna base (3) and antenna port.	

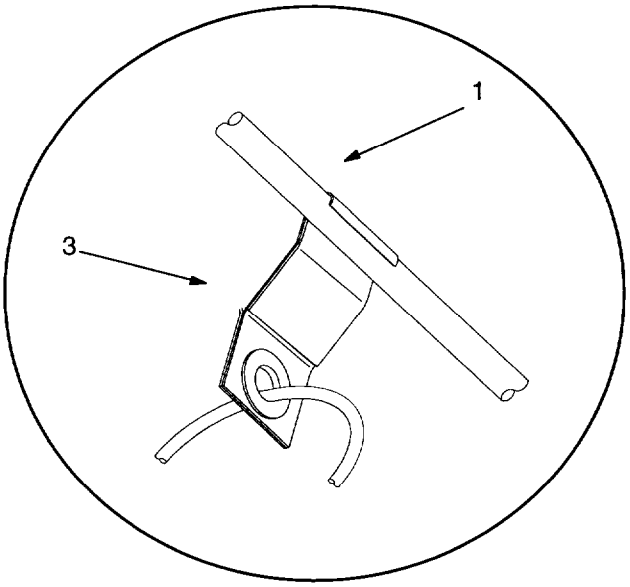


1. CAP SCREW (3/8−16 X 1 3/4 IN)
2. IET WASHER (3/8 IN)
3. ANTENNA BASE

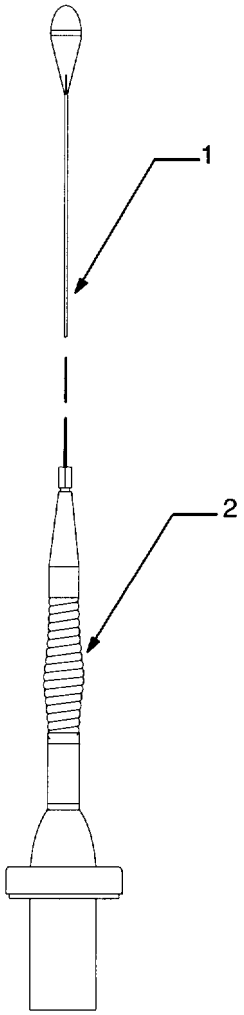
Figure 5−2. Antenna Base Installation: Rear Turret Exterior

5.1.2 Installation of Top Antenna Assembly. The top portion of the antenna consists of one element (with installed cap). Use the following procedure to install and tie down antenna.

ITEM	ACTION	REMARKS
a. Antenna elements (1).	Install and secure to antenna base (2).	
b. Wire Rope assembly (3).	Attach clip to antenna element (1). Tie rope to vehicle to position antenna in desired location. See figure 5−3, Detail A.	



DETAIL A



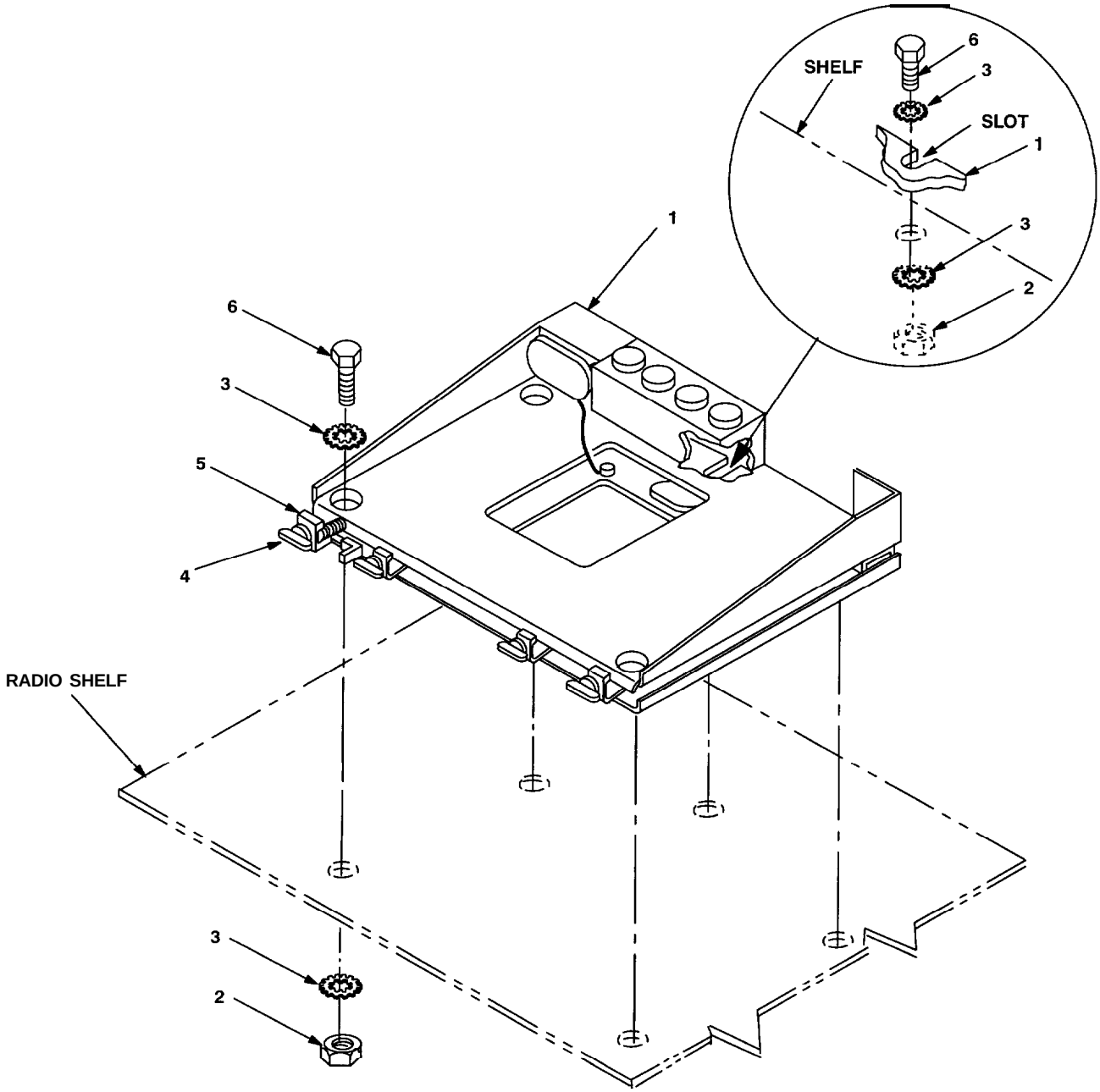
1. ANTENNA ELEMENT
2. ANTENNA BASE
3. WIRE ROPE ASSEMBLY

Figure 5−3. Top Antenna Assembly Installation

5.2 Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base). Remove an retain attaching bag of 5/16 mounting hardware. 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 5-1(1) for location; then see Figure 5-4 and peform the following steps.

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.	
a. Particular hose and loader's chest protector.	Temporarily remove. See figure 5-1 (1) for locations.	Tools: Electric grinder or equivalent.
b. Mounting base (1) and existing radio shelf.	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 existing radio shelf 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 CASC.	
c. Mounting base (1)	Place on existing radio shelf over existing holes. See Figure 5-4.	
d. Two outer thumbscrews (4).	Turn ccw until both sets of threads have cleared center of holes.	
e. Mounting base (1).	Align four holes and rear slot with matching hole pattern in radio shelf.	
f. Five machine bolts (6), ten internal/external-toothed (IET) washers (3) and five nuts (2).	Install and secure to mounting ase (1) and radio shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.
g. Two outer thumbscrews (4).	Tighten and secure to rim clenching clamps (5) and mounting base.	
h. Particular hose and loader's chest protector.	Reinstall and secure. See Figure 5-1(1) for locations.	

5.2 Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base). Continued..

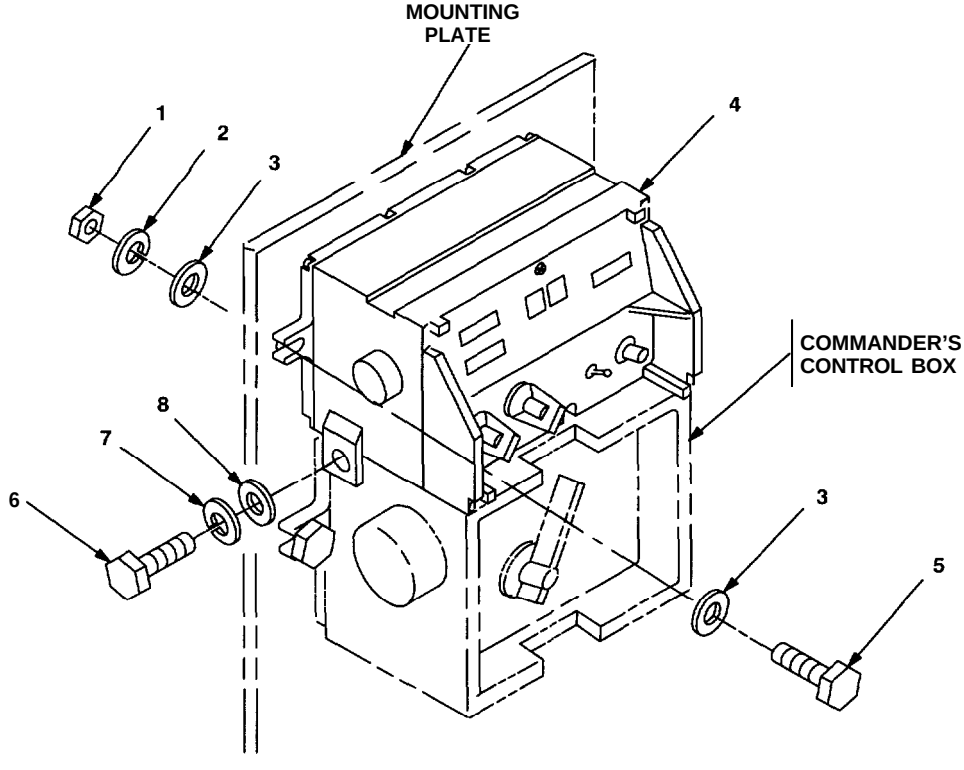


1. MOUNTING BASE
2. NUT (5/16-24 in)
3. IET WASHER (5/16 in)
4. THUMBSCREW
5. RIM CLENCHING CLAMP
6. MACHINE BOLT (5/16-24 x 1 in)

Figure 5-4. Mounting Base Installation: Loader's Station

5.1 Installation of Control Monitor C-I 1291/VRC (control-monitor). See figure 5-1 (1) for location.

ITEM	ACTION	REMARKS
a. Control-monitor (4).	Place on top of commander's control box and aline mounting holes. See figure 5-5.	
b. Two cap screws (6), two lock washers (7) and two flat washers (8).	Install and secure to control-monitor (4) and control box.	Tools: 7/16 in socket.
c. Two hex- head machine bolts (5), four flat washers (3), two lock washers (2) and two nuts (1).	Install and secure to control-monitor (4) and mounting plate.	Tools: 1/2 in socket and 1/2 in open/box wrench.



1. NUT (5/16-24 in)
2. LOCK WASHER (5/16 in)
3. FLAT WASHER (5/16 in)
4. CONTROL-MONITOR
5. MACHINE BOLT (5/16 - 24 x 1 in)
6. CAP SCREW (1/4-28 x 3/4 in)
7. LOCK WASHER (1/4 in)
8. FLAT WASHER (1/4 in)

Figure 5-5. Control-Monitor Installation: Commander's Station

5.4 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. Trough cover, floor plate and slip ring shield.	Temporarily remove. See figure 5-6 (1).	
b. Control cable (2).	Route from control-monitor (1) along existing cable harness to loader's station.	
c. Control cable (2) connector PI.	Connect and secure to control-monitor (1) connector J1.	

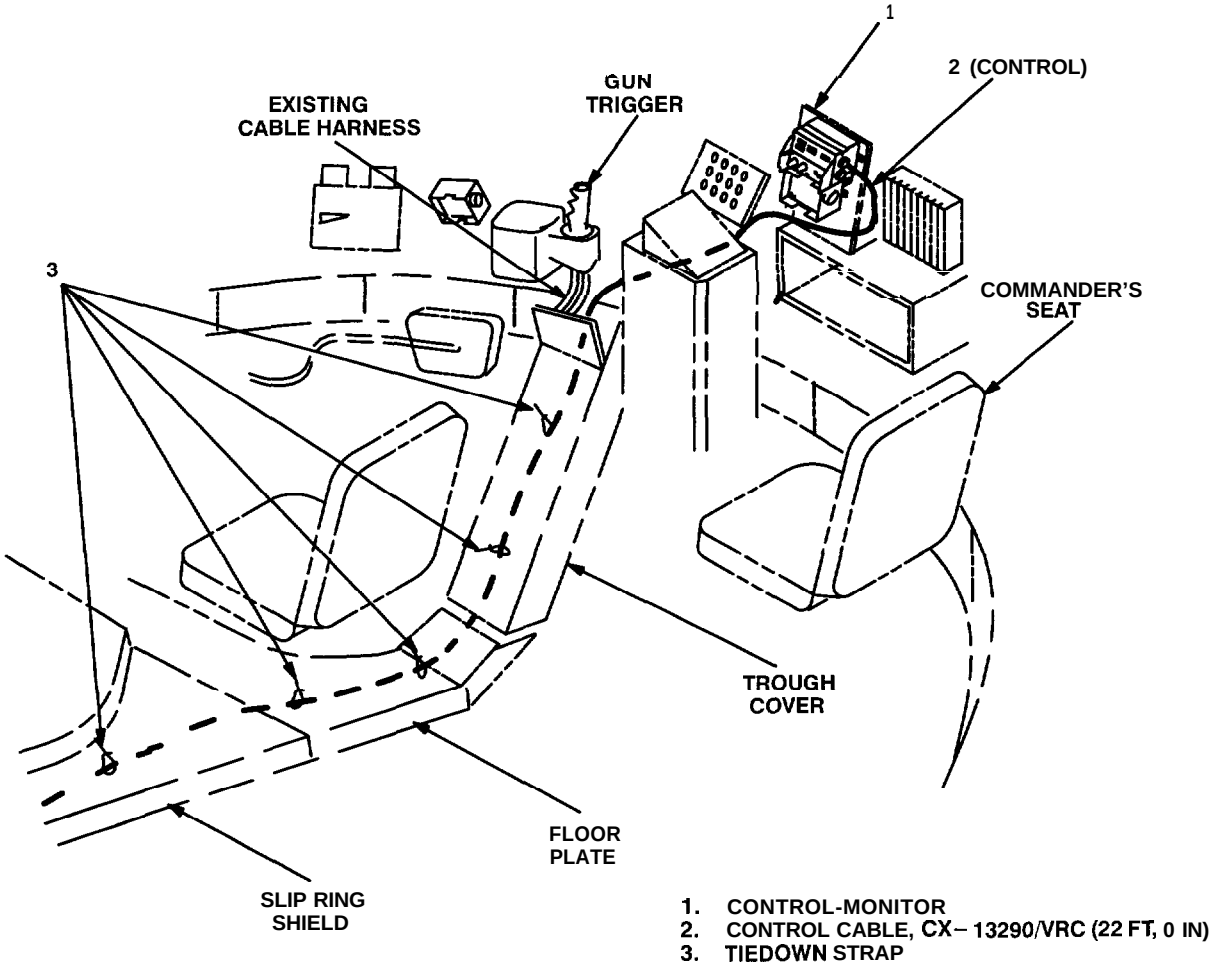
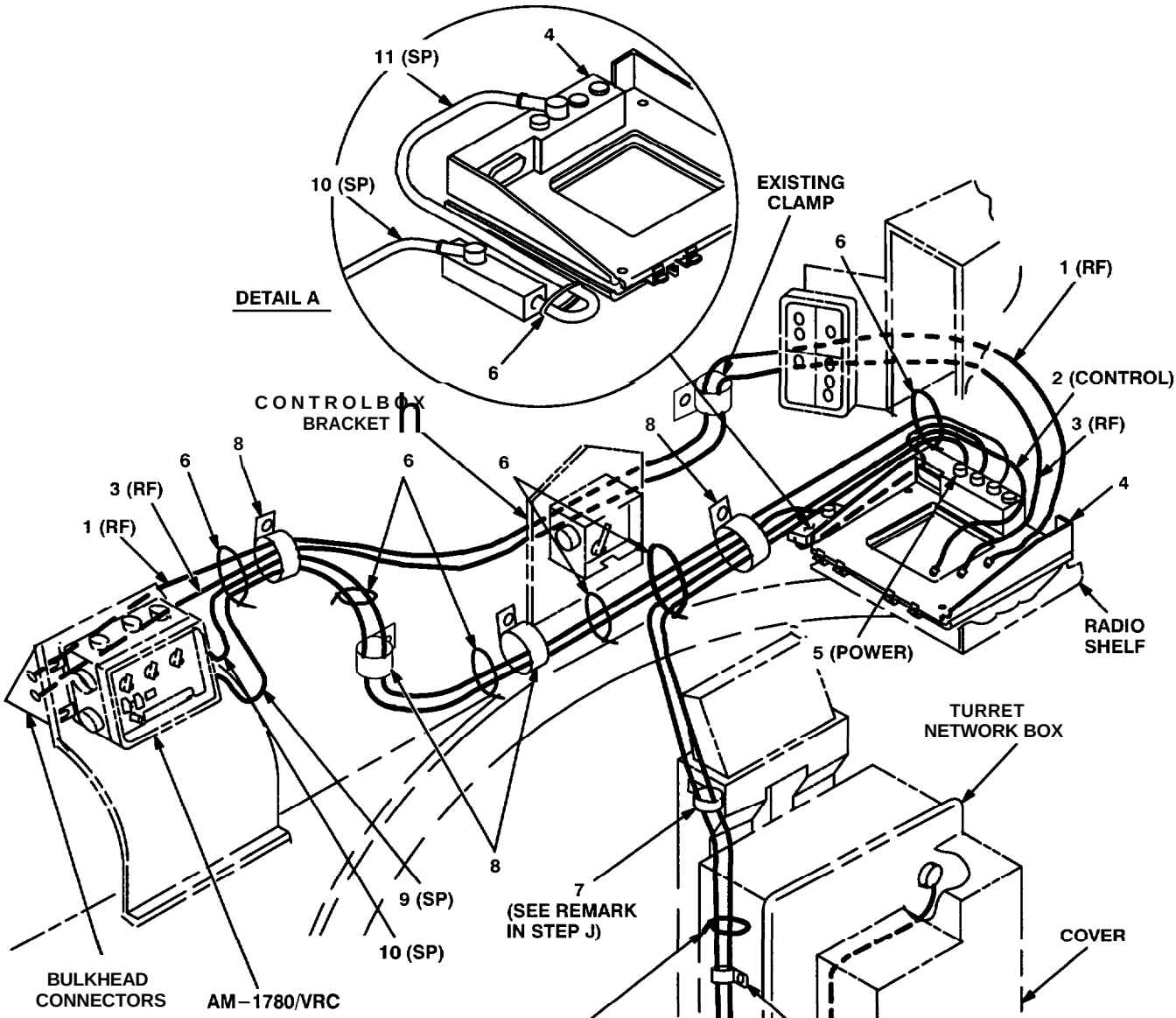


Figure 5-6 (1). Cable Installation: Commander's Station

5.4 Installation of Cables. Continued

ITEM	ACTION	REMARKS
d. Tiedown straps (3).	Wrap around control cable (2) and install loosely to existing cable harness. See figure 5-6 (1) for location(s).	
e. Turret network box cover.	Temporarily remove. See figure 5-6 (2).	
f. Power cable (5) connector P1.	Connect and secure to turret network box connector J1.	
g. Turret network box cover.	Reinstall.	
h. Control cable (2) and power cable (5).	Route up left side of turret network box and along side of existing cable harness to radio shelf.	
i. Existing clamp and mount-hardware (on turret network box).	Wrap clamp around control cable (2) and power cable (5); then reinstall to left side of turret network box. See figure 5-6 (2) for location(s).	
j. Loop clamp (7), cap screw (1/4-20 x 5/8 in), lock washer (1/4 in) and nut (1/4-20 in).	Wrap clamp around control cable (2) and power cable (5); then install to existing hole above left side of turret network box.	Position loop of clamp towards center of turret to prevent cables from getting caught when turret traverses.
k. Two tiedown straps (6).	Install loosely around control cable (2) and power cable (5) along left side of network box.	
l. Control cable (2) and power cable (5).	Route up left side of turret network box and along side of existing cable harness to radio shelf.	
m. P2 connectors of control cable (2) and power cable (5).	Position on top of mounting base (4).	
n. P1 connectors of RF cables (1, 3).	Connect and secure to bulkhead connectors.	
o. SP cable (9) connector P1.	Connect and secure to AM-I 780/VRC connector J503.	
p. SP cable (10) connector P1.	Connect and secure to AM-I 780/VRC connector J501.	
q. SP cables (9, 10).	Route along turret wall and position near radio shelf.	
r. RF cables (1, 3).	Route along turret wall and behind control box bracket to radio shelf.	
s. Existing clamp and mounting hardware (on turret wall).	Wrap clamp around RF cables (1, 3); then install to existing boss on turret wall. See figure 5-6 (2) for location.	

5.4 Installation of Cables. Continued



1. RF CABLE, CG–3855/VRC (5 FT, 0 IN)
2. CONTROL CABLE, CX–13290/VRC (22 FT, 0 IN)
3. RF CABLE, CG–3855/VRC (7 FT, 0 IN)
4. MOUNTING BASE
5. POWER CABLE, CX–13304/VRC (9 FT, 0 IN)
6. TIEDOWN STRAP
7. LOOP CLAMP (1 1/2–1/4 in)
   CAP SCREW (1/4–20 x 5/8 in)
   LOCK WASHER (1/4 in)
   NUT (1/4–20 in).
8. LOOP CLAMP (2 7/8–1/4 in)
   CAP SCREW (1/4–20 x 5/8 in)
   LOCK WASHER (1/4 in)
9. SP CABLE, CX–13300/VRC (6 FT, 0 IN)
10. SP CABLE, CX–13300/VRC (6 FT, 0 IN)
11. SP CABLE, CX–13313/VRC (2 FT, 7 IN)

Figure 5–6 (2). Cable Installation: Loader's Station

5.4 Installation of Cables. Continued

ITEM	ACTION	REMARKS
t. P2 connectors of RF cables (1, 3).	Position on top of mounting base (4).	
u. SP cable (9) connector P2.	Connect and secure to mounting base (4) connector J4.	
v. SP cable (10) connector P2.	Connect and secure to SP cable (11) connector P1. See figure 5-6 (2), detail A.	
w. SP cable (11) connector P2.	Connect and secure to mounting base (4) connector J3.	
x. SP cable (11). P2.	Position on left side of mounting base, then secure with tiedown strap (6).	
y. Loop clamp (8), cap screw (1/4-20 x 5/8 in), and lock washer (1/4 in).	Wrap clamp around RF cables (1, 3) and SP cables (9,10); then install to existing boss to right of AM- 1780/VRC.	
z. Two loop clamps (8), two cap screws (1/4-20 x 5/8 in), and two lock washers (1/4 in).	Wrap around SP cables (9, 10); then install to existing bosses between AM-1780/VRC and loader's control box.	
aa. Loop clamp (8), cap screw (1/4-20 x 5/8 in), and lock washer (1/4 in).	Wrap clamp around control cable (2), power cable (5), and SP cables (9,10); then install to existing boss between loader's control box and radio shelf.	
ab. Seven tiedown straps (6).	Wrap around RF cables (1, 3), control cable (2), power cable (5) and SP cables (9,10); then secure to existing cable harness as required. See figure 5-6 (2) for approximate location(s).	
ac. All other tiedown straps (3, 6) previously installed.	Tightly secure after cable slack has been adjusted. See figures 5-6 (1) and 5-6 (2) for location(s).	
ad. Trough cover, floor plate and slip ring shield (removed in step a).	Reinstall and secure. See figure 5-6 (1).	
ae. Power cable (4) connector P2.	Connect and secure to mounting base (4) connector J1. See figure 5-6 (2).	

5.5 Installation of Mounting Base, Electrical Equipment MT-6353/VRC. Use the following instructions to install MT-6353/VRC mounting base. Refer to Section 5.6 for connection of cables.

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. 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 5.6, step b.)	
a. MT-6353/VRC mounting base (1) and top shelf of radio rack.	Remove a 2" square area of paint on the underside of the mounting base (1) around the front two mounting holes. Remove 2" square area of paint on the radio shelf around the two front mounting holes. Clean paint removed areas and apply a thin coat of CASC.	Tools: Electric grinder or equivalent.
b. MT-6353/VRC mounting base (1).	Align front holes and rear slots with matching hole pattern in radio shelf. See Figure 5-7.	
c. 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 radio shelf.	Tools: 1/2 in socket.
d. Two machine bolts (2), four-t IET washers (3) and two nuts (4).	Install and secure to front holes in MT-6353/VRC mounting base (1) and radio shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.

5.5 Installation of Mounting Base, Electrical Equipment MT-6353/VRC. Continued

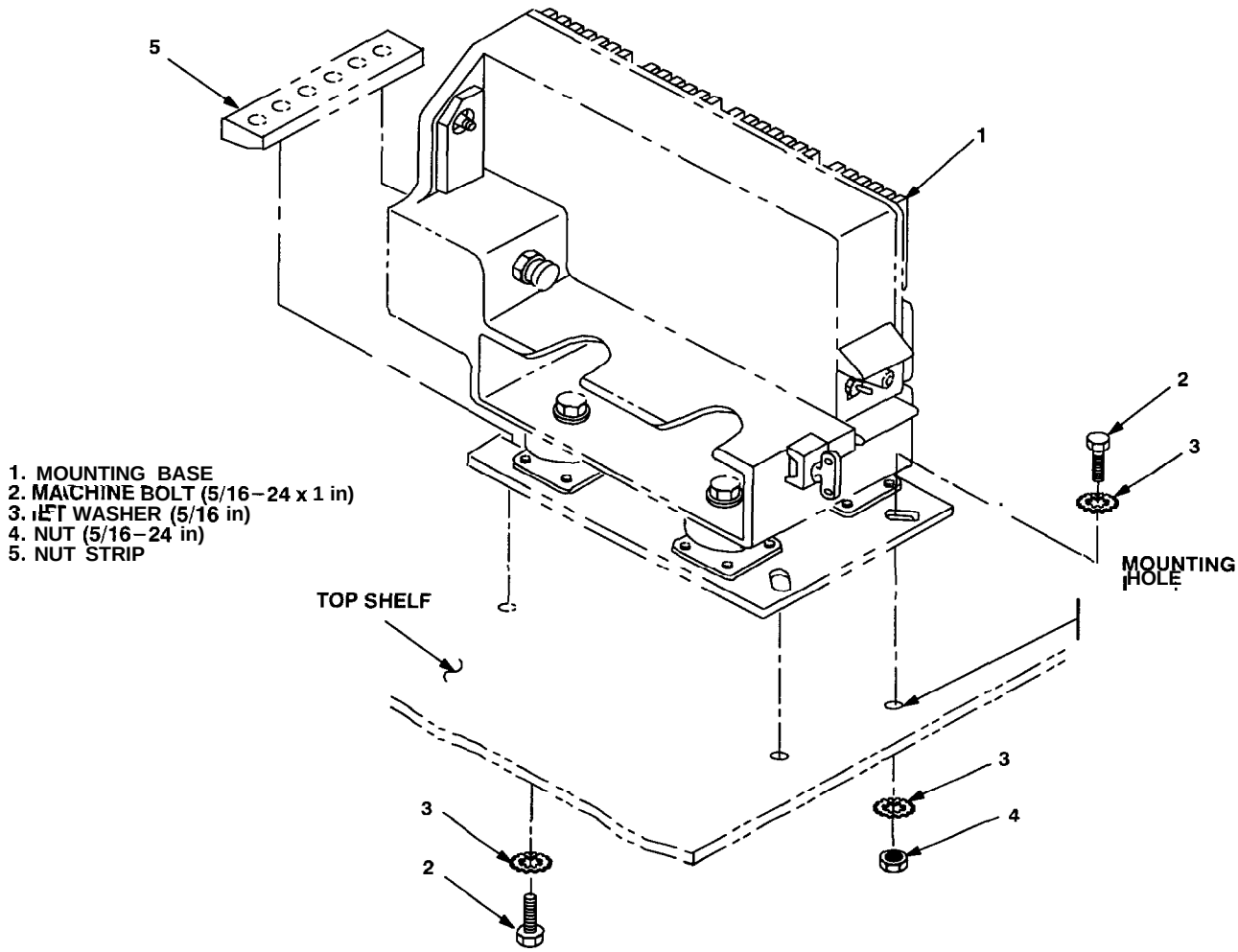
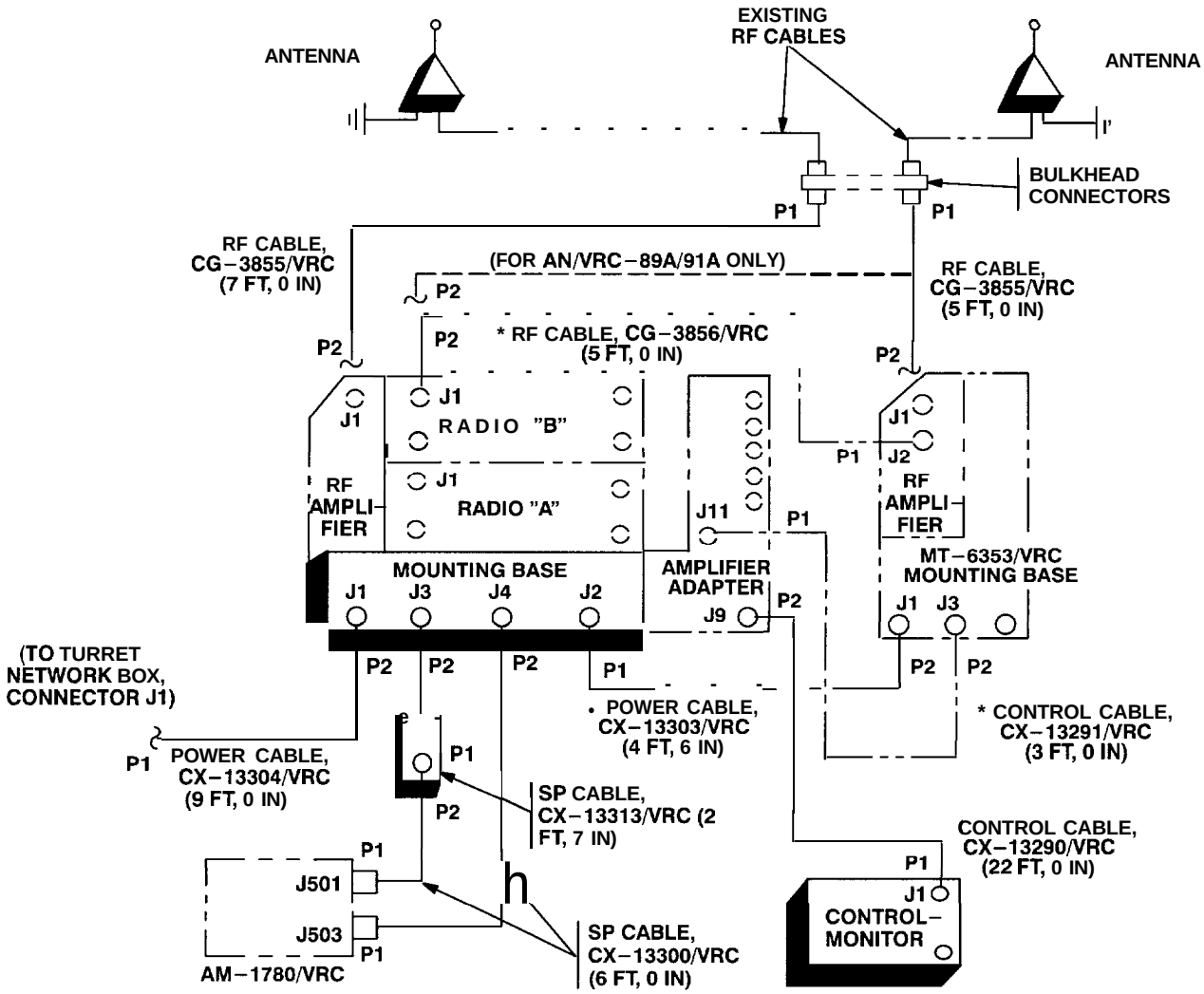


Figure 5-7. MT-6353/VRC Mounting Base Installation

5.6 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 5-8 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.	

5.6 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-13304/VRC (9 FT, 0 IN)	P2	Mounting base	J1	P1	Turret network box	J1
CG-3855/VRC (7 FT, 0 IN)	P2	RF amplifier (mounting base)	J1	P1	Bulkhead connector	
CG-3855/VRC (5 FT, 0 IN)	P2	Radio "B" or RF amplifier (MT-6353/VRC)	J1	P1	Bulkhead connector	

Figure 5-8 (1). Cable Diagram: For AN/VRC-89/91/92 Series

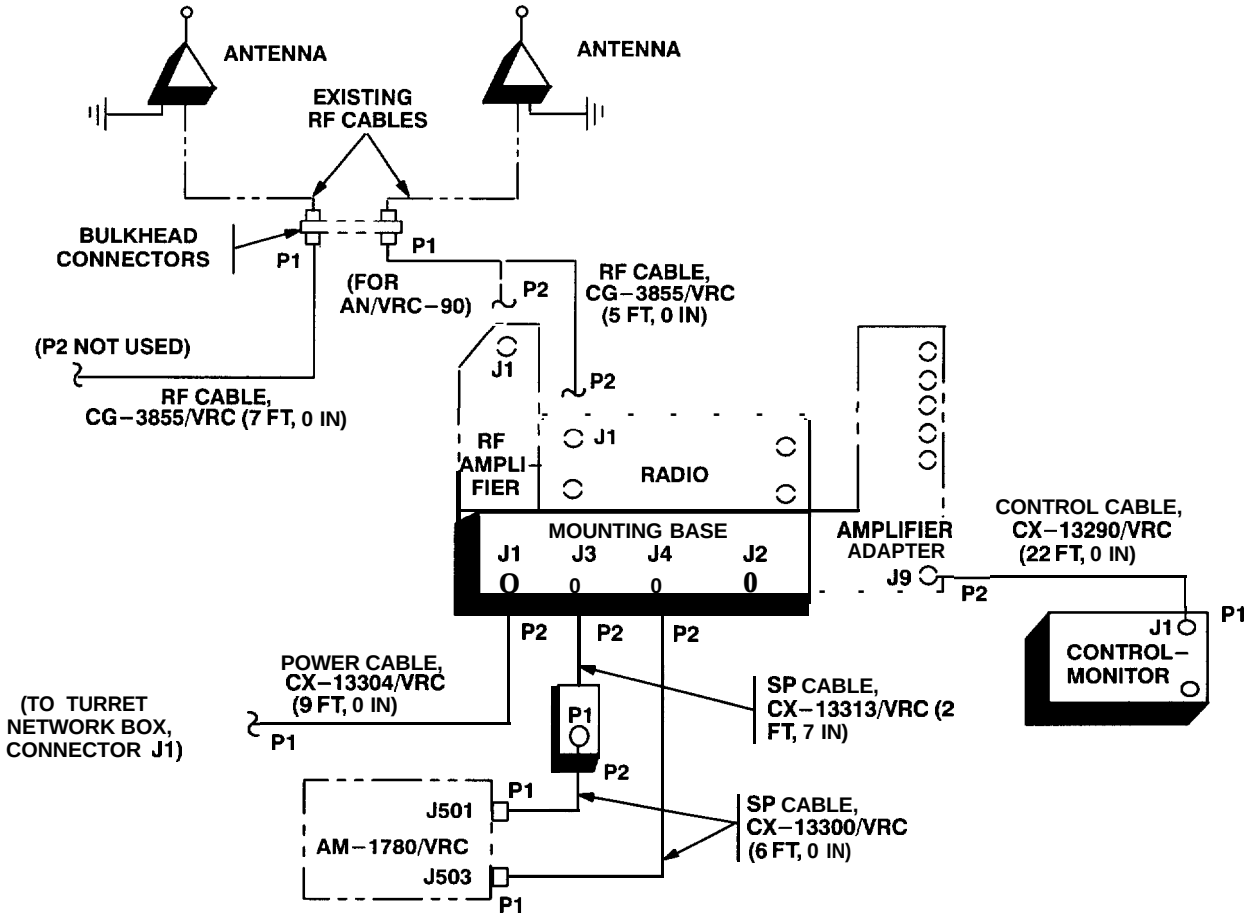
5.6 Post-Installation and Checkout. Continued

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX-13313/VRC (2 FT, 7 IN)	P2	Mounting base	J3	P1	CX-13300/VRC (6 FT, 0 IN)	P2
CX-13300/VRC (6 FT, 0 IN)	P2	CX-13313/VRC (2 FT, 7 IN)	P1	P1	AM-1780/VRC	J501
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base	J4	PI	AM-1780/VRC	J503
CX-13290/VRC (22 FT, 0 IN)	P1	Control-monitor	J1	P2	Amplifier-adapter	J9
* CX-13291/VRC (3 FT, 0 IN)	PI	Amplifier-adapter	J11	P2	MT-6353/VRC mounting base	J3
* CG-3856/VRC (5 FT, 0 IN)	P2	Radio "B"	J1	PI	RF amplifier (MT-6353/VRC)	J2
* CX-13303/VRC (4 FT, 6 IN)	PI	Mounting base	J2	P2	MT- 6353/VRC mounting base	J1

* Not supplied in this MK.

Figure 5-8 (1). Cable Diagram: For AN/VRC-89/91/92 Series

5.6 Post-Installation and Checkout. Continued



CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN
CX-13304/VRC (9 FT, 0 IN)	P2	Mounting base	J1	P1	Turret network box	J1
CX-13300/VRC (6 FT, 0 IN)	P2	CX-13313/VRC (2 FT, 7 IN)	P1	P1	AM-1780/VRC	J501
CX-13313/VRC (2 FT, 7 IN)	P2	Mounting base	J3	P1	CX- 13300/VRC (6 FT, 0 IN)	P2
CG-3855/VRC (5 FT, 0 IN)	P2	RF amplifier or radio	J1	P1	Bulkhead connector	
CX-13290/VRC (22 FT, 0 IN)	PI	Control-monitor	J1	P2	Amplifier-adapter	J9
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base	J4	P1	AM-1780/VRC	J503

Figure 5-8 (2). Cable Diagram: For AN/VRC-87/88/90 Series

APPENDIX A

REFERENCES

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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2-25	2-28			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 wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing stress to the drive train. Hunting is minimized by adjusting the lag to 20 without degradation of operation.
3-10	3-3		3-1	Item 5, Functional Description. Change □2 dB" to □3 dB". REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, □Replace cover plate removed in step e above." REASON: To replace the cover plate.
		FO-3		Zone C 3. On J 1-2, 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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