TECHNICAL MANUAL
UNIT MAINTENANCE

FIGHTING VEHICLE, INFANTRY
M2 (2350-01-048-5920)
M2A1 (2350-01-179-1027)

AND

FIGHTING VEHICLE, CAVALRY
M3 (2350-01-049-2695)
M3A1 (2350-01-179-1028)

TURRET

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HEADQUARTERS,
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FOR
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M2 (2350-01-048-5920)
M2A1 (2350-01-179-1027)
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M3 (2350-01-049-2695)
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WASHINGTON, D.C., 16 October 1987

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WARNINGS

This list summarizes critical WARNINGS in this manual. They are repeated here to let you know how important they are. Study these WARNINGS carefully; they can save your life and the lives of soldiers you work with.

WARNING

Energized system and equipment can burn you. If MASTER POWER switch is on, electrical system and equipment will be energized. Make sure MASTER POWER SWITCH is off when you work on electrical system or equipment.

WARNING

Battery post and cables touched by metal objects can short circuit and burn you. Gas from batteries can explode and injure you. Battery acid can blind you or burn you.

Do not wear jewelry when you work on electrical system.
Use caution when you work near battery or electrical system with tools or other metal objects.
Do not get acid on your skin or in your eyes.
Do not allow sparks near batteries.

WARNING

Start up of equipment or moving parts could injure you or others.

If other soldiers are working on your vehicle, be sure you know what they are doing.
Place DO NOT OPERATE tags on MASTER POWER and TURRET POWER switches when needed to prevent startup.
WARNING

Unsafe use of chemical products, tools, and equipment can injure you. Read and follow warnings and instructions on labels of all chemical products. Follow all general shop safety procedures. See unit commander for further instructions on safety.

WARNING

If you enter turret with turret power on, you may be killed or injured. Do not enter turret while turret power is on. Keep turret shield door closed and latched while turret power is on and turret is in operation.

WARNING

Gun barrel assembly can burn you. Let weapons cool, or wear heat protective mittens when you handle hot gun barrels and gun parts.

WARNING

Looking at sun through integrated sight unit (ISU) may cause blindness. Do not look at sun through ISU.
WARNING

Cleaning solvent is poisonous, and can burn. Continued exposure to solvent can cause skin problems.

- Always use in area with good air flow away from heat or flames.
- Do not breathe solvent fumes.
- Do not put hands in solvent.
- Apply solvent with brush.
- If solvent gets on hands, wash them.
- If solvent gets in eyes, flush with fresh water and get medical help.
- Keep fire extinguisher nearby.

WARNING

Radiation Hazard

The antireflective coating on all infrared optics contains thorium fluoride which is slightly radioactive. The only potential hazard involves ingestion (swallowing or inhaling) of this coating material. Dispose of broken lenses, etc., in accordance with AR 385-11.

WARNING

Unlocked ramp can open to move down slowly. If ramp system is damaged, unlocked ramp can fail suddenly. Soldier can be killed or injured. Equipment can be damaged. Take care when you work near ramp. Keep away from ramp that has come open during vehicle operation.

For artificial respiration and first aid, see FM 21-11.
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**Replace CGE/DCGE Isolators** | 18-5
REMOVE/INSTALL COMMAND GUIDANCE ELECTRONICS
(WELDED TURRET BASKET)

DESCRIPTION
This task covers: Remove (page 18–2). Install (page 18–3).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


   CAUTION
   Loose cables can be caught and damaged by moving parts of the turret. Make sure to secure loose cables if turret is to be operated upon removal of any line replaceable units.

2. REMOVE FOUR PLUGS (1) FROM FOUR JACKS (2) AS FOLLOWS:

   2W201P2 FROM 2J04
   2W103P2 FROM 2J02
   2W102P1 FROM 2J01
   2W104P2 FROM 2J03

   TAG PLUGS.
3. REMOVE CGE (1) FROM TURRET.
   a. Remove four screws (2), lockwasher (3), five washers (4, 5), ground wire (6), and CGE (1) from four isolators (7) on turret. Discard lockwasher.

4. INSTALL CGE (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of four screws (2).
   b. Apply sealing compound (Item 20) to threads of four screws (2).
   c. Install CGE (1), ground wire (6), five washers (4, 5), new lockwasher (3), and four screws (2) on four isolators (7).

5. TORQUE FOUR SCREWS (2) TO 73–79 IN-LB (84–91 CMKG).
6. INSTALL FOUR PLUGS (1) ON FOUR JACKS (2) AS FOLLOWS:
   2W104P2 ON 2J03
   2W102P1 ON 2J01
   2W103P2 ON 2J02
   2W201P2 ON 2J04.


END OF TASK
REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS (WELDED TURRET BASKET) — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.1), Install (page 18–4.2).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:

- 2W235P1 FROM 2J05
- 2W231P2 FROM 2J04
- 2W132P1 FROM 2J01
- 2W134P2 FROM 2J03
- 2W133P2 FROM 2J02

GO TO NEXT PAGE

Change 4 18–4.1
NOTE
Prevent studs from turning. Use wrench on hex barrel of stud.

3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6). Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6).
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6).

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   - 2W235P1 ON 2J05
   - 2W231P2 ON 2J04
   - 2W132P1 ON 2J01
   - 2W134P2 ON 2J03
   - 2W133P2 ON 2J02


END OF TASK
REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.3). Install (page 18–4.4).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS Follows:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02

GO TO NEXT PAGE
Prevent studs from turning. Use wrench on hex barrel of stud.

3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6) and isolator. Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) and isolators on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6) and isolators.
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6) and isolator.

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   2W235P1 ON 2J05
   2W231P2 ON 2J04
   2W132P1 ON 2J01
   2W134P2 ON 2J03
   2W133P2 ON 2J02


END OF TASK
REPLACE DCGE GROUND STRAP (CABLE 2W7) (WELDED TURRET BASKET) - M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18-4.5). Install (page 18-4.6).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Lockwasher
- Lockwasher
- Self-locking nut
- Self-locking nut
- Ground strap

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE LEFT FRONT AND CENTER TURRET FLOOR PLATES. See task: REPLACE TURRET FLOOR PLATES, page 4-26.

NOTE
- Prevent stud from turning. Use wrench on hex barrel of stud.

2. REMOVE DCGE GROUND STRAP (1) FROM TURRET.
   a. Remove locknut (2), two washers (3), ground strap (1), washer (3), lockwasher (4), and screw (5) from turret basket (6). Discard locknut and lockwasher.
   b. Remove locknut (7), lockwasher (8), ground strap (1), and washer (9) from stud (10). Discard locknut, lockwasher, and ground strap.

GO TO NEXT PAGE
3. INSTALL NEW DCGE GROUND STRAP (1) ON TURRET.
   a. Install washer (2), new ground strap (1), new lockwasher (3), and new locknut (4) on stud (5).
   b. Install screw (6), new lockwasher (7), washer (8), ground strap (1), two washers (8), and new locknut (9) on turret basket (10).

REPLACE DCGE GROUND STRAP (CABLE 2W7) (COMPOSITE TURRET BASKET) -M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.7). Install (page 18–4.8).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher (2)
- Ground strap

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) -M2A1, M3A1, page 18–4.3

3. REMOVE DCGE GROUND STRAP (1) FROM AMMO CAN (2).
   a. Remove screw (3), washer (4), lockwasher (5), ground strap (1), and lockwasher (5) from ammo can (2).
   Discard lockwashers.

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# CHAPTER 18
MAINTENANCE OF COMMAND GUIDANCE ELECTRONICS

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REMOVE/INSTALL COMMAND GUIDANCE ELECTRONICS
(WELDED TURRET BASKET)

DESCRIPTION

This task covers: Remove (page 18–2). Install (page 18–3).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


   CAUTION

   Loose cables can be caught and damaged by moving parts of the turret. Make sure to secure loose cables if turret is to be operated upon removal of any line replaceable units.

2. REMOVE FOUR PLUGS (1) FROM FOUR JACKS (2) AS FOLLOWS:

   2W201P2 FROM 2J04
   2W103P2 FROM 2J02
   2W102P1 FROM 2J01
   2W104P2 FROM 2J03

   TAG PLUGS.
3. REMOVE CGE (1) FROM TURRET.
   a. Remove four screws (2), lockwasher (3), five washers (4, 5), ground wire (6), and CGE (1) from four isolators (7) on turret. Discard lockwasher.

4. INSTALL CGE (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of four screws (2).
   b. Apply sealing compound (Item 20) to threads of four screws (2).
   c. Install CGE (1), ground wire (6), five washers (4, 5), new lockwasher (3), and four screws (2) on four isolators (7).

5. TORQUE FOUR SCREWS (2) TO 73–79 IN-LB (84–91 CMKG).

GO TO NEXT PAGE
6. INSTALL FOUR PLUGS (1) ON FOUR JACKS (2) AS FOLLOWS:
   2W104P2 ON 2J03
   2W102P1 ON 2J01
   2W103P2 ON 2J02
   2W201P2 ON 2J04.

REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS (WELDED TURRET BASKET) — M2A1, M3A1

DESCRIPTION
This task covers: Remove (page 18–4.1). Install (page 18–4.2).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02

GO TO NEXT PAGE
NOTE
Prevent studs from turning. Use wrench on hex barrel of stud.

3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6). Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6).
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6).

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   2W235P1 ON 2J05
   2W231P2 ON 2J04
   2W132P1 ON 2J01
   2W134P2 ON 2J03
   2W133P2 ON 2J02


END OF TASK

18-4.2 Change 4
REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.3). Install (page 18–4.4).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02

GO TO NEXT PAGE
Prevent studs from turning. Use wrench on hex barrel of stud.

3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6) and isolator. Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) and isolators on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6) and isolators.
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6) and isolator.

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   2W235P1 ON 2J05
   2W231P2 ON 2J04
   2W132P1 ON 2J01
   2W134P2 ON 2J03
   2W133P2 ON 2J02

REPLACE DCGE GROUND STRAP (CABLE 2W7) (WELDED TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.5). Install (page 18–4.6).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Lockwasher
- Lockwasher
- Self-locking nut
- Self-locking nut
- Ground strap

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


   NOTE
   Prevent stud from turning. Use wrench on hex barrel of stud.

2. REMOVE DCGE GROUND STRAP (1) FROM TURRET.
   a. Remove locknut (2), two washers (3), ground strap (1), washer (3), lockwasher (4), and screw (5) from turret basket (6). Discard locknut and lockwasher.
   b. Remove locknut (7), lockwasher (8), ground strap (1), and washer (9) from stud (10). Discard locknut, lockwasher, and ground strap.

GO TO NEXT PAGE
NOTE
Prevent stud from turning. Use wrench on hex barrel of stud.

3. INSTALL NEW DCGE GROUND STRAP (1) ON TURRET.
   a. Install washer (2), new ground strap (1), new lockwasher (3), and new locknut (4) on stud (5).
   b. Install screw (6), new lockwasher (7), washer (8), ground strap (1), two washers (8), and new locknut (9) on turret basket (10).


END OF TASK
REPLACE DCGE GROUND STRAP (CABLE 2W7) (COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.7). Install (page 18–4.8).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher (2)
- Ground strap

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) –M2A1, M3A1, page 18–4.3

3. REMOVE DCGE GROUND STRAP (1) FROM AMMO CAN (2).
   a. Remove screw (3), washer (4), lockwasher (5), ground strap (1), and lockwasher (5) from ammo can (2). Discard lockwashers.

GO TO NEXT PAGE
NOTE
Prevent stud from turning. Use wrench on hex barrel of stud.

3. INSTALL NEW DCGE GROUND STRAP (1) ON TURRET.
   a. Install washer (2), new ground strap (1), new lockwasher (3), and new locknut (4) on stud (5).
   b. Install screw (6), new lockwasher (7), washer (8), ground strap (1), two washers (8), and new locknut (9) on turret basket (10).


END OF TASK
REPLACE DCGE GROUND STRAP (CABLE 2W7) (COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.7). Install (page 18–4.8).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher (2)
- Ground strap

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) –M2A1, M3A1, page 18–4.3

3. REMOVE DCGE GROUND STRAP (1) FROM AMMO CAN (2).
   a. Remove screw (3), washer (4), lockwasher (5), ground strap (1), and lockwasher (5) from ammo can (2). Discard lockwashers.
4. INSTALL NEW DCGE GROUND STRAP (1) ON AMMO CAN (2).
   a. Apply sealing compound (Item 21) to threads of screw (3).
   b. Apply sealing compound (Item 20) to threads of screw (3).
   c. Install new lockwasher (4), new ground strap (1), new lockwasher (4), washer (5), and screw (3) on ammo can (2).

5. INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) -M2A1, M3A1, page 18–4.3


END OF TASK
REPLACE CGE/DCGE ISOLATORS

INITIAL SETUP

Tools:
Turret mechanic’s tool set (Item 31, App F)

Materials/Parts:
Sealing compound (Item 20, App C)
Sealing compound (Item 21, App C)
Isolators (4)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REPLACE

NOTE
If vehicle is M2/M3 with welded turret basket, do step 1. If vehicle is M2A1/M3A1 with welded turret basket do step 2. If vehicle is M2A1/M3A1 with composite turret basket, do step 3.

1. REMOVE COMMAND GUIDANCE ELECTRONICS. See task: REPLACE COMMAND GUIDANCE ELECTRONICS (WELDED TURRET BASKET), page 18-2.


3. REMOVE DIGITAL COMMUNICATION ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) — M2A1, M3A1, page 18-4.3.

4. REMOVE FOUR ISOLATORS (1) FROM TURRET BASKET (2).
   a. Remove four studs (3) and eight washers (4) from four sleeve nuts (5).
   b. Remove four washers (6), sleeve nuts (5), washers (6), and isolators (1) from turret basket (2). Discard isolators.

GO TO NEXT PAGE
6. INSTALL FOUR PLUGS (1) ON FOUR JACKS (2) AS FOLLOWS:
   2W104P2 ON 2J03
   2W102P1 ON 2J01
   2W103P2 ON 2J02
   2W201P2 ON 2J04.


END OF TASK
REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS
(WELDED TURRET BASKET) — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.1). Install (page 18–4.2).

INITIAL SETUP

Tools:
  Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
  Lockwasher (4)
  Self-locking nut (4)

Personnel Required:
  ITV/IFV/CFV Trt Mech 45T10

References:
  TM 9–2350–252–10–1
  TM 9–2350–252–10–2

Equipment Conditions:
  Engine stopped (TM 9–2350–252–10–1)
  Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02
REMOVE/INSTALL COMMAND GUIDANCE ELECTRONICS
(WELDED TURRET BASKET)

DESCRIPTION

This task covers: Remove (page 18–2). Install (page 18–3).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


   **CAUTION**
   Loose cables can be caught and damaged by moving parts of the turret. Make sure to secure loose cables if turret is to be operated upon removal of any line replaceable units.

2. REMOVE FOUR PLUGS (1) FROM FOUR JACKS (2) AS FOLLOWS:
   - 2W201P2 FROM 2J04
   - 2W103P2 FROM 2J02
   - 2W102P1 FROM 2J01
   - 2W104P2 FROM 2J03

   TAG PLUGS.
3. REMOVE CGE (1) FROM TURRET.
   a. Remove four screws (2), lockwasher (3), five washers (4, 5), ground wire (6), and CGE (1) from four isolators (7) on turret. Discard lockwasher.

4. INSTALL CGE (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of four screws (2).
   b. Apply sealing compound (Item 20) to threads of four screws (2).
   c. Install CGE (1), ground wire (6), five washers (4, 5), new lockwasher (3), and four screws (2) on four isolators (7).

5. TORQUE FOUR SCREWS (2) TO 73–79 IN-LB (84–91 CMKG).

GO TO NEXT PAGE
6. INSTALL FOUR PLUGS (1) ON FOUR JACKS (2) AS FOLLOWS:
   2W104P2 ON 2J03
   2W102P1 ON 2J01
   2W103P2 ON 2J02
   2W201P2 ON 2J04.


END OF TASK
DESCRIPTION

This task covers: Remove (page 18–4.1). Install (page 18–4.2).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02

GO TO NEXT PAGE
3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6). Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6).
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6).

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   2W235P1 ON 2J05
   2W231P2 ON 2J04
   2W132P1 ON 2J01
   2W134P2 ON 2J03
   2W133P2 ON 2J02

REMOVE/INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS
(COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.3). Install (page 18–4.4).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lockwasher (4)
- Self-locking nut (4)

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE FIVE PLUGS (1) FROM FIVE JACKS (2) AS FOLLOWS:
   - 2W235P1 FROM 2J05
   - 2W231P2 FROM 2J04
   - 2W132P1 FROM 2J01
   - 2W134P2 FROM 2J03
   - 2W133P2 FROM 2J02
NOTE
Prevent studs from turning. Use wrench on hex barrel of stud.

3. REMOVE DCGE (1) FROM TURRET.
   a. Remove locknut (2), lockwasher (3), ground strap (4), and washer (5) from stud (6) and isolator. Discard locknut and lockwasher.
   b. Remove three locknuts (2), washers (5), and DCGE (1) from studs (6) and isolators on turret. Discard locknuts.

4. INSTALL DCGE (1) ON TURRET.
   a. Install DCGE (1), three washers (5), and new locknuts (2) on studs (6) and isolators.
   b. Install washer (5), ground strap (4), new lockwasher (3), and new locknut (2) on stud (6) and isolator.

5. INSTALL FIVE PLUGS (7) ON FIVE JACKS (8) AS FOLLOWS:
   2W235P1 ON 2J05
   2W231P2 ON 2J04
   2W132P1 ON 2J01
   2W134P2 ON 2J03
   2W133P2 ON 2J02


END OF TASK
REPLACE DCGE GROUND STRAP (CABLE 2W7) (WELDED TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.5). Install (page 18–4.6).

INITIAL SETUP

Tools: Turret mechanic's tool kit (Item 31, App F)

Personnel Required: ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Lockwasher
- Lockwasher
- Self-locking nut
- Self-locking nut
- Ground strap

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


   NOTE
   Prevent stud from turning. Use wrench on hex barrel of stud.

2. REMOVE DCGE GROUND STRAP (1) FROM TURRET.

   a. Remove locknut (2), two washers (3), ground strap (1), washer (3), lockwasher (4), and screw (5) from turret basket (6). Discard locknut and lockwasher.

   b. Remove locknut (7), lockwasher (8), ground strap (1), and washer (9) from stud (10). Discard locknut, lockwasher, and ground strap.

GO TO NEXT PAGE
NOTE
Prevent stud from turning. Use wrench on hex barrel of stud.

3. INSTALL NEW DCGE GROUND STRAP (1) ON TURRET.

   a. Install washer (2), new ground strap (1), new lockwasher (3), and new locknut (4) on stud (5).

   b. Install screw (6), new lockwasher (7), washer (8), ground strap (1), two washers (8), and new locknut (9) on turret basket (10).


END OF TASK
REPLACE DCGE GROUND STRAP (CABLE 2W7) (COMPOSITE TURRET BASKET) –M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 18–4.7). Install (page 18–4.8).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Lockwasher (2)
- Ground strap

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) –M2A1, M3A1, page 18–4.3

3. REMOVE DCGE GROUND STRAP (1) FROM AMMO CAN (2).
   a. Remove screw (3), washer (4), lockwasher (5), ground strap (1), and lockwasher (5) from ammo can (2). Discard lockwashers.
4. INSTALL NEW DCGE GROUND STRAP (1) ON AMMO CAN (2).
   a. Apply sealing compound (Item 21) to threads of screw (3).
   b. Apply sealing compound (Item 20) to threads of screw (3).
   c. Install new lockwasher (4), new ground strap (1), new lockwasher (4), washer (5), and screw (3) on ammo can (2).

5. INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) -M2A1, M3A1, page 18–4.3


END OF TASK
REPLACE CGE/DCGE ISOLATORS

INITIAL SETUP

Tools:
- Turret mechanic's tool set (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Isolators (4)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
If vehicle is M2/M3 with welded turret basket, do step 1. If vehicle is M2A1/M3A1 with welded turret basket do step 2. If vehicle is M2A1/M3A1 with composite turret basket, do step 3.

1. REMOVE COMMAND GUIDANCE ELECTRONICS. See task: REPLACE COMMAND GUIDANCE ELECTRONICS (WELDED TURRET BASKET), page 18–2.


3. REMOVE DIGITAL COMMANCE GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) — M2A1, M3A1, page 18–4.3.

4. REMOVE FOUR ISOLATORS (1) FROM TURRET BASKET (2).
   a. Remove four studs (3) and eight washers (4) from four sleeve nuts (5).
   b. Remove four washers (6), sleeve nuts (5), washers (6), and isolators (1) from turret basket (2). Discard isolators.

GO TO NEXT PAGE
5. INSTALL FOUR NEW ISOLATORS (1) ON TURRET BASKET (2).
   a. Position four new isolators (1) into CGE/DCGE mounting holes in turret basket (2).
   b. Install four washers (3), sleeve nuts (4), and washers (3) on turret basket (2).
   c. Apply sealing compound (Item 21) to threads of studs (5) on one end only.
   d. Apply sealing compound (Item 20) to threads of studs (5) on same end.
   e. Install treated ends of four studs (5) and eight washers (6) in four sleeve nuts (4).
   f. Tighten four studs (5) in four sleeve nuts (4).

NOTE
If vehicle is M2/M3 with welded turret basket, do step 6. If vehicle is M2A1/M3A1 with welded turret basket do step 7. If vehicle is M2A1/M3A1 with composite turret basket, do step 8.

6. INSTALL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE COMMAND GUIDANCE ELECTRONICS (WELDED TURRET BASKET), page 18–2.


8. INSTALL DIGITAL COMMAND GUIDANCE ELECTRONICS. See task: REPLACE DIGITAL COMMAND GUIDANCE ELECTRONICS (COMPOSITE TURRET BASKET) — M2A1, M3A1, page 18–4.3.

END OF TASK
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REPLACE TOW ELEVATION DRIVE FLEXIBLE SHAFT

DESCRIPTION

This task covers: Remove (page 19-2). Install (page 19-3).

INITIAL SETUP

Tools:

- Turret mechanic’s tool kit (Item 31, App F)

References:

- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:

- Flexible shaft

Equipment Conditions:

- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:

- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE GUNNER’S HANDSTATION. See task: REPLACE GUNNER’S HANDSTATION, page 7-126.


NOTE

Flexible shaft ends are different. The end with the longer inner shaft is installed on the gun elevation gearbox.

4. REMOVE FLEXIBLE SHAFT (1) FROM TOW ELEVATION DRIVE GEARBOX (2).
5. REMOVE FLEXIBLE SHAFT (1) FROM GUN ELEVATION GEARBOX (2).

6. INSTALL NEW FLEXIBLE SHAFT (1) ON GUN ELEVATION GEARBOX (2).
7. INSTALL FLEXIBLE SHAFT (1) ON TOW ELEVATION DRIVE GEARBOX (2).


10. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.


END OF TASK
REPLACE TOW ROTOR SPUR GEAR SECTOR

DESCRIPTION

This task covers: Remove (page 19-5). Install (page 19-7).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Grease (Item 14, App C)
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Spur gear sector

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


4. MANUALLY DEPRESS TOW LAUNCHER TO CLEAR ELECTRICAL-MECHANICAL POST (1) FROM SADDLE (2). See TM 9-2350-252-10-2.

5. MANUALLY RAISE TOW LAUNCHER UNTIL ELECTRICAL-MECHANICAL POST (1) CLEARS SADDLE (2). See TM 9-2350-252-10-2.

GO TO NEXT PAGE
6. MANUALLY ELEVATE TOW LAUNCHER TO ACCESS UPPER SCREW (1). See TM 9-2350-252-10-2.

7. REMOVE UPPER SCREW (1) AND WASHER (2) FROM GEAR SECTOR (3).

8. MANUALLY DEPRESS TOW LAUNCHER TO ACCESS CENTER SCREW (4) AND RETAINER SCREW (5). See TM 9-2350-252-10-2.

9. REMOVE CENTER SCREW (4) AND WASHER (6) FROM GEAR SECTOR (3).

10. REMOVE RETAINER SCREW (5) AND WASHER (7) FROM RETAINER (8).

11. MANUALLY LOWER TOW LAUNCHER TO STOWED POSITION. See TM 9-2350-252-10-2.

12. REMOVE LOWER SCREW (9) AND WASHER (10) FROM GEAR SECTOR (3).
13. REMOVE GEAR SECTOR (1) FROM RETAINER (2).
   a. Turn handwheel back until last tooth of gear sector (1) is free.
   b. Remove gear sector (1) from retainer (2).

   **WARNING**
   TOW launcher can fall if TOW launcher is not fully stowed. Soldiers can be killed or injured. Equipment can be damaged. Make sure stow pin is in saddle. Do not work under TOW launcher.

   **NOTE**
   If turret is equipped with digital electronic control assembly (DECA), do step 13.1. If turret is equipped with electronic control assembly (ECA), go to step 14.

   13.1 PERFORM TEST 2635, ADVANCED-BIT TEST PROCEDURES (page 3-642).


15. PERFORM TEST 2784. See page 3-409.

16. APPLY A THIN COAT OF GREASE TO TEETH OF NEW GEAR SECTOR (1).

17. POSITION GEAR SECTOR (1) ON RETAINER (2).
   a. Position gear sector (1) on retainer (2).
   b. Turn handwheel (3) forward until holes in gear sector (1) and retainer (2) are aligned.
NOTE

Gear sector must contact retainer surface while torquing sector screws.

Gear sector and retainer holes must be aligned to torque lower screw.

18. INSTALL LOWER SCREW (1) AND WASHER (2) IN GEAR SECTOR (3).
   a. Aline holes in retainer (4) and gear sector (3).
   b. Apply sealing compound (Item 21) to threads of lower screw (1).
   c. Apply sealing compound (Item 20) to threads of lower screw (1).
   d. Install washer (2) and lower screw (1) in gear sector (3) to a snug fit.
   e. TORQUE BOTTOM SCREW (1) TO 151-166 FT-LB (21-23 MKG).

19. MANUALLY DEPRESS TOW TO MAXIMUM DEPRESSION.

20. INSERT WOODEN BLOCK BETWEEN ELECTRICAL MECHANICAL POST (5) AND TOW SUPPORT BRACKET (6).

21. BACK OFF HANDWHEEL TO RELIEVE PRESSURE OF SPUR GEAR SECTOR.
22. INSTALL CENTER SCREW (1) AND WASHER (2) ON GEAR SECTOR (3).
   a. Apply sealing compound (Item 21) to threads of center screw (1).
   b. Apply sealing compound (Item 20) to threads of center screw (1).
   c. Install washer (2) and center screw (1) on gear sector (3) to a snug fit.

23. INSTALL WASHER (4) AND RETAINER SCREW (5) ON RETAINER (6).
   a. Apply sealing compound (Item 21) to threads of retainer screw (5).
   b. Apply sealing compound (Item 20) to threads of retainer screw (5).
   c. Install washer (4) and retainer screw (5) on retainer (6).
   d. TORQUE RETAINER SCREW (5) TO 32–36 FT-LB (4–5 MKG).
   e. Depress TOW and remove wooden block.

24. MANUALLY RAISE TOW UNTIL ELECTRICAL-MECHANICAL POST (7) CLEARS TOW SUPPORT BRACKET (8).
25. MANUALLY ELEVATE TOW LAUNCHER UNTIL UPPER SCREW (1) CAN BE INSTALLED IN GEAR SECTOR (2) AND RETAINER (3). See TM 9-2350-252-10-2.

26. INSERT WOODEN BLOCK BETWEEN REAR OF TOW (4) AND HULL (5).

27. CONTINUE TO ELEVATE TOW TO RELIEVE PRESSURE ON SPUR GEAR SECTOR.

28. INSTALL WASHER (6) AND UPPER SCREW (1) ON GEAR SECTOR (2).
   a. Apply sealing compound (Item 21) to threads of upper screw (1).
   b. Apply sealing compound (Item 20) to threads of upper screw (1).
   c. Install washer (6) and upper screw (1) on gear sector (2).
   d. TORQUE UPPER SCREW (1) TO 151-166 FT-LB (21-23 MKG).

29. CHECK TORQUE OF LOWER SCREW (7). IF NEEDED, TORQUE LOWER SCREW TO 151-166 FT-LB (21-23 MKG).
WARNING
When electrical circuit for TOW elevation drive is broken, TOW launcher can fall rapidly, injuring soldiers. Make sure TOW elevation drive motor and connectors are installed.

32. ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR (FINE). See page 19–43.


37. BORESIGHT TOW LAUNCHER. See page 20–88.

END OF TASK

30. MANUALLY DEPRESS TOW LAUNCHER TO ACCESS CENTER SCREW (1). See TM 9–2350–252–10–2. REMOVE WOODEN BLOCK.

31. TORQUE CENTER SCREW (1) TO 151–166 FT-LB (21–23 MKG).
## Section II. MAINTENANCE OF TOW ELEVATION DRIVE, MOTOR, AND GEARBOX

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ADJUST TOW ELEVATION DRIVE BRAKE LINKAGE

**INITIAL SETUP**

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Cotter pin

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

**ADJUST**

1. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

2. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

3. CHECK POSITION OF BRAKE RELEASE HANDLE (1).
   a. If brake release handle (1) is not parallel with end of motor (2), go to step 4. If brake release handle is parallel with end of motor, go to step 8.
WARNING
TOW rotor could move and injure you. Make sure TOW launcher is in stowed position and TOW elevation drive select lever is in manual position before removing brake link.

4. REMOVE BRAKE LINK (1) FROM BRAKE RELEASE HANDLE (2).
   a. Remove cotter pin (3), washer (4), pin (5), and brake link (1) from brake release handle (2). Discard cotter pin.
   b. Move brake link (1) down enough to access two jam nuts (6, 7).

5. FIND BRAKE ENGAGEMENT POINT.
   a. Loosen jam nuts (6, 7) and back them away from brake link (1) as far as possible.
   b. Install brake link (1) and pin (5) in brake release handle (2).
   c. Turn handwheel (8) forward slowly and move brake link (1) toward select lever (9) until handwheel cannot be turned.
   d. Turn jam nut (7) until it rests against brake link (1).

6. ADJUST BRAKE LINK (1).
   a. Try to turn handwheel (8) forward while moving brake link (1) toward housing (10) just until handwheel begins to turn freely.
   b. Turn jam nut (7) until it rests against brake link (1); then, turn jam nut 1/2 turn more.
   c. Remove pin (5) and brake link (1) from brake release handle (2). Move brake link (1) down enough to access jam nut (6).
   d. Tighten jam nut (6) against brake link (1).

GO TO NEXT PAGE
7. INSTALL BRAKE LINK (1) ON MOTOR BRAKE RELEASE HANDLE (2).
   a. Install brake link (1), pin (3), washer (4), and new cotter pin (5) on motor brake release handle (2).

8. CHECK ADJUSTMENT OF BRAKE LINKAGE.
   a. Turn handwheel (6) forward.
   b. If handwheel (6) turns easily, go to step 9. If handwheel does not turn easily, do steps 4 thru 8. If handwheel does not turn easily after doing steps 4 thru 8, REPLACE TOW ELEVATION DRIVE MOTOR. See page 19-22.

9. MOVE TOW ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

10. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
ADJUST TOW ELEVATION DRIVE SHIFT LINKAGE

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Materials/Parts:
- Extreme grease (Item 12, App C)
- Grease (Item 14, App C)
- Grease (Item 10, App C)
- Tech petrolatum (Item 26, App C)
- Cotter pin (2)
- Preformed packing
- Spring pin (4)
- Lock screw (4)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

ADJUST

1. REMOVE GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.


5. REMOVE PLUG 2W304P1 (1) FROM JACK 2A203J1 (2).

GO TO NEXT PAGE
6. REMOVE BRAKE LINK (1) FROM BRAKE RELEASE HANDLE (2).
   a. Remove cotter pin (3), washer (4), pin (5), and brake link (1) from brake release handle (2). Discard cotter pin.

7. REMOVE MOTOR (6) FROM GEARBOX (7).
   a. Remove four lock screws (8), washers (9), and motor (6) from gearbox (7). Discard lock screws.

8. DELETED.


11. REMOVE CLEVIS (10) FROM LINK (11).
    a. Remove cotter pin (12), washer (13), and pin (14) from clevis (10). Discard cotter pin.
    b. Remove spring pin (15) from link (11). Discard spring pin.
    c. Remove clevis (10) from link (11).
12. FIND MANUAL ENGAGEMENT POINT.
   a. Slowly turn handwheel (1).
   b. Push shift rod (2) in until noise indicates that gears are beginning to mesh.
   c. Hold shift rod (2), and stop turning handwheel (1).
   d. Scribe a mark (3) on shift rod (2) where shift rod meets housing (4).

NOTE
Adjustment is correct when holes in clevis and arm are alined while shift rod is at mark and spring pin holes in link and shaft are alined.

13. CHECK CLEVIS (5) ADJUSTMENT.
   a. Hold shift rod (2) in so that mark (3) on shift rod meets housing (4).
   b. Position link (6) in clevis (5).
   c. Check that holes in clevis (5) and link (6), and spring pin holes (7) in link and shaft (8) are alined.
   d. If holes are not alined, go to step 14. If holes are alined, go to step 15.

14. ADJUST CLEVIS (5).
   a. Hold shift rod (2) so that mark (3) on shift rod meets housing (4).
   b. Separate clevis (5) from link (6).
   c. Rotate clevis (5) in or out, as needed, to aline holes in clevis and link (6), and spring pin holes (7) in link and shaft (8).
   d. Go to step 13.
15. SET GEAR MESH DEPTH.
   a. Separate clevis (1) from link (2).
   b. Turn clevis (1) two full turns right.

16. INSTALL LINK (2) IN CLEVIS (1).
   a. Install link (2), pin (3), washer (4),
      and new cotter pin (5) in clevis (1).
   b. Install new spring pin (6) in link (2).

16.1. ADJUST TOW ELEVATION DRIVE
      BRAKE SENSITIVE SWITCH. See
      page 19–25.

17. MOVE TOW ELEVATION DRIVE SE-
      LECT LEVER TO MANUAL POSITION.

18. INSTALL MOTOR (7) ON GEARBOX (8).
   a. Coat new preformed packing (9) with
      tech petrolatum, and install in groove
      (10) on motor (7).
   b. Coat shaft (11) of motor (7) with
      grease (Item 12).
   c. Coat threads of four new lock screws
      (12) with grease (Item 14).
   d. Install motor (7), four washers (13),
      and new lock screws (12) on
      gearbox (8).

19. TORQUE FOUR LOCK SCREWS (12) TO
    20–23 FT-LB (4 MKG).
20. INSTALL BRAKE LINK (1) ON BRAKE RELEASE HANDLE (2).
   a. Coat brake link (1) with grease (Item 10).
   b. Install brake link (1), pin (3), washer (4), and new cotter pin (5) on brake release handle (2).

21. INSTALL PLUG 2W304P1 (6) ON JACK 2A203J1 (7).

22. ADJUST TOW ELEVATION DRIVE BRAKE LINKAGE. See page 19-14.

23. CHECK ADJUSTMENT OF LINKAGE.
    HAVE HELPER ASSIST.
    a. Turn handwheel (8) forward.
    b. If TOW launcher depresses, go to step 24.
    c. If TOW launcher does not depress, go to step 11.

24. MOVE TOW ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

25. CHECK ADJUSTMENT OF LINKAGE.
    HAVE HELPER ASSIST.
    a. Turn handwheel (8) forward.
    b. If TOW launcher does not move, go to step 26.
    c. If TOW launcher moves, go to step 11.


29. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.

END OF TASK
REPLACE TOW ELEVATION DRIVE MOTOR

DESCRIPTION

This task covers: Remove (page 19-22). Install (page 19-23).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Extreme grease (Item 12, App C)
- Grease (Item 14, App C)
- Grease (Item 10, App C)
- Tech petrolatum (Item 26, App C)
- Cotter pin
- Self-locking screw (4)
- Preformed packing
- DC motor

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.


5. REMOVE PLUG 2W304P1 (1) FROM JACK 2A203J1 (2).
**CAUTION**

Damage to equipment can occur if screws are removed from unsupported motor. Support motor before removing screws.

7. REMOVE MOTOR (6) FROM GEARBOX (7).
   a. Remove four lock screws (8), washers (9), and motor (6) from gearbox (7).
      Discard lock screws.

8. ADJUST TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH. See page 19-25.

**INSTALL**

9. INSTALL NEW MOTOR (6) ON GEARBOX (7).
   a. Coat new preformed packing (10) with tech petrolatum, and install in groove (11) on motor (6).
   b. Coat shaft (12) of new motor (6) with grease (item 12).
   c. Coat threads of four new lock screws (8) with grease (item 14).
   d. Install motor (6), four washers (9), and lock screws (8) on gearbox (7).

10. TORQUE FOUR LOCK SCREWS (8) TO 20-23 FT-LB (3 MKG).

**GO TO NEXT PAGE**
11. INSTALL BRAKE LINK (1) ON BRAKE RELEASE HANDLE (2).
   a. Coat brake link (1) with grease (Item 10).
   b. Install brake link (1), pin (3), washer (4), and new cotter pin (5) on brake release handle (2).

12. INSTALL PLUG 2W304P1 (6) ON JACK 2A203J1 (7).


17. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.

END OF TASK
ADJUST TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH

INITIAL SETUP

**Tools:**
- Turret mechanic’s tool kit (Item 31, App F)
- Multimeter (Item 15, App F)

**Personnel Required:**
- ITV/IFV/CFV Trt Mech 45T10

**References:**
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

**Equipment Conditions:**
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

ADJUST

1. REMOVE GUNNER’S HANDSTATION. See task: REPLACE GUNNER’S HANDSTATION, page 7–126.


5. REMOVE TOW ELEVATION DRIVE MOTOR. See task: REPLACE TOW ELEVATION DRIVE MOTOR, page 19–22.

STEPS 6 AND 7 DELETED.

8. REMOVE PLUG 2W302P2 (2W310P2) (1) FROM JACK 2A203J2 (2).

GO TO NEXT PAGE

10. Connect probes to pins A (1) and B (2) on jack 2A203J2 (3). Use multimeter.

11. If switch actuator arm (4) is installed, go to step 12. If switch actuator arm (5) with set screw (6) is installed, go to step 19.
NOTE
If continuity exists after reaching full travel of switch, switch is defective.

12. CHECK ADJUSTMENT OF SWITCH (1).
   a. If continuity exists, go to step 13. If continuity does not exist, go to step 23.

13. CHECK TRAVEL OF SWITCH (1).
   a. If full travel of switch (1) has not been reached, go to step 14. If full travel of switch has been reached, go to step 25.

14. LOOSEN NUT (2) ON SWITCH (1).

15. ADJUST SWITCH (1).
   a. Turn switch (1) 1/2 turn toward bracket (3).

16. TIGHTEN NUT (2) ON SWITCH (1).

17. TORQUE NUT (2) TO 20–25 IN-LB (2.2–2.8 CM·KG)

18. GO TO STEP 12.

NOTE
Steps 19 thru 22 apply only to vehicles with set screw on switch actuator arm.

If continuity exists after reaching full travel of switch, switch is defective.

19. CHECK ADJUSTMENT OF SET SCREW (4).
   a. If continuity exists, go to step 19.1. If continuity does not exist, go to step 23.

19.1. CHECK TRAVEL OF SWITCH (1).
   a. If full travel of switch (1) has not been reached, go to step 20. If full travel of switch has been reached, go to step 25.

20. LOOSEN NUT (5) ON SET SCREW (4).

21. ADJUST SET SCREW (4).
   a. Turn set screw (4) right until continuity does not exist.

22. TIGHTEN NUT (5) ON SET SCREW (4).
23. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

24. CHECK ADJUSTMENT OF SWITCH (1).
   a. If continuity does not exist, go to step 25. If continuity exists, go to step 27.

25. REPLACE TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH. See page 19-38.

26. GO TO STEP 9.

27. DISCONNECT PROBES FROM PINS A (2) AND B (3) ON JACK 2A203J2 (4).


STEPS 30 THRU 32 DELETED.

33. ADJUST TOW ELEVATION DRIVE BRAKE LINKAGE. See page 19-14.


37. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7-126.
REPLACE TOW ELEVATION DRIVE GEARBOX

DESCRIPTION

This task covers: Remove (page 19–32). Install (page 19–35).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Grease (Item 14, App C)
- TOW elevation drive gearbox

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

REFERENCES:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

NOTE
Check that drain holes are clean each time a gearbox is removed/installed.

1. REMOVE GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7–126.


19–32 Change 2
7. REMOVE PLUG 2W302P3 (2W310P3) (1) FROM JACK 2A203J3 (2).

8. REMOVE PLUG 2W302P2 (2W310P3) (3) FROM JACK 2A203J2 (4).

9. REMOVE CLAMP (5) FROM ROTOR (6).
   a. Remove screw (7) and clamp (5) from rotor (6).

11. REMOVE FLEXIBLE SHAFT (1) FROM GUN ELEVATION DRIVE GEARBOX (2).

CAUTION
Equipment can get damaged if TOW elevation drive gearbox falls. Support gearbox before you remove screws.

12. REMOVE TOW ELEVATION DRIVE GEARBOX (3) FROM TURRET. HAVE HELPER ASSIST.
   a. Remove flexible shaft (1) from TOW elevation drive gearbox (3).
   b. Remove four screws (4) and washers (5) from TOW elevation drive gearbox (3).
   c. Pry TOW elevation drive gearbox (3) from dowel pins (6), and remove from turret.
1. CHECK DRAIN HOLE (1) TO SEE IF IT IS CLOGGED.
   a. If drain hole (1) is clean, go to step 13.
   b. If drain hole (1) is not clean, clean drain hole.

---

NOTE
very time that you remove/install a gearbox, check that drain holes are clean.

12. INSTALL NEW TOW ELEVATION DRIVE GEARBOX (1.1) ON TURRET. HAVE HELPER ASSIST.
   a. Apply grease to output pinion gear (2).
   b. Apply coat of grease to threads of four screws (3).
   c. Slide TOW elevation drive gearbox (1.1) on dowel pins (4) on turret.
   d. Install four washers (5) and screws (3) on TOW elevation drive gearbox. Finger tighten screws.
   e. Install flexible shaft (6) on TOW elevation drive gearbox (1.1).

14. TORQUE FOUR SCREWS (3) TO 54–59 FT-LB (7–8 MKG).

---

GO TO NEXT PAGE
15. INSTALL FLEXIBLE SHAFT (1) ON GUN ELEVATION DRIVE GEARBOX (2).

16. APPLY GREASE TO MESHING SURFACE OF TOW ROTOR SPUR GEAR SECTOR (3).

17. INSTALL TOW ROTOR SPUR GEAR SECTOR. See task: REPLACE TOW ROTOR SPUR GEAR SECTOR, page 19–5.
18. INSTALL CLAMP (1) AND SCREW (2) ON ROTOR (3).

19. INSTALL PLUG 2W302P2 (2W310P2) (4) ON JACK 2A203J2 (5).

20. INSTALL PLUG 2W302P3 (2W310P3) (6) ON JACK 2A203J3 (7).


23.1. ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR (FINE). See page 19–43.


29. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
TM 9-2350-252-20-2-3

REPLACE TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH

DESCRIPTION

This task covers: Remove (page 19-38). Install (page 19-39).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Switch

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFVICFV Trt Mech 45T10

REMOVE

1. REMOVE GUNNER’S HANDSTATION. See task: REPLACE GUNNER’S HANDSTATION, page 7-126.


5. REMOVE PLUG 2W304P1 (1) FROM JACK 2A203J1 (2) ON TOW ELEVATION DRIVE MOTOR (3).
6. REMOVE PLUG 2W302P2 (2W310P2) (1) FROM JACK 2A203J2 (2) ON SWITCH (3).

7. REMOVE SWITCH (3) FROM BRACKET (4).
   a. Remove nut (5), lock washer (6), and switch (3) from bracket (4). Discard switch.

8. INSTALL NEW SWITCH (3) ON BRACKET (4).
   a. Install new switch (3), lock washer (6), and nut (5) on bracket (4). Tighten nut finger tight.

10. INSTALL PLUG 2W302P2 (2W310P2) (1) ON JACK 2A203J2 (2) ON SWITCH (3).

11. INSTALL PLUG 2W304P1 (4) ON JACK 2A203J1 (5) ON TOW ELEVATION DRIVE MOTOR (6).


15. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7–126.

16. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR ASSEMBLY (COARSE)

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

ADJUST COARSE

1. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

2. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


10. INSTALL PLUG 2W302P3 (1) ON JACK 2A203J3 (2).

NOTE
If turret is equipped with a digital electronic control assembly (DECA), do step 11. If turret is equipped with an electronic control assembly (ECA), go to step 11.1.

11. PERFORM TEST 2635, ADVANCED-BIT TEST PROCEDURE (page 3–642).


END OF TASK
ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR ASSEMBLY (FINE)

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)
STE-M1/FVS test set (Item 30, App F)
Turret drive level (Item 14, App F)
Level support (Item 29, App F)

Reference:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

ADJUST FINE

1. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

2. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


GO TO NEXT PAGE
11. REMOVE FLEXIBLE SHAFT (1) FROM GUN ELEVATION DRIVE GEARBOX (2).

CAUTION
Equipment can get damaged if TOW elevation drive gearbox fails. Support gearbox before you remove screws.

12. REMOVE TOW ELEVATION DRIVE GEARBOX (3) FROM TURRET. HAVE HELPER ASSIST.
   a. Remove flexible shaft (1) from TOW elevation drive gearbox (3).
   b. Remove four screws (4) and washers (5) from TOW elevation drive gearbox (3).
   c. Pry TOW elevation drive gearbox (3) from dowel pins (6), and remove from turret.
12.1. CHECK DRAIN HOLE (1) TO SEE IF IT IS CLOGGED.
   a. If drain hole (1) is clean, go to step 13.
   b. If drain hole (1) is not clean, clean drain hole.

NOTE
Every time that you remove/install a gearbox, check that drain holes are clean.
Flexible shaft ends are different. The end with the longer inner shaft is installed on the gun elevation drive gearbox.

13. INSTALL NEW TOW ELEVATION DRIVE GEARBOX (1.1) ON TURRET. HAVE HELPER ASSIST.
   a. Apply grease to output pinion gear (2).
   b. Apply coat of grease to threads of four screws (3).
   c. Slide TOW elevation drive gearbox (1.1) on dowel pins (4) on turret.
   d. Install four washers (5) and screws (3) on TOW elevation drive gearbox. Finger tighten screws.
   e. Install flexible shaft (6) on TOW elevation drive gearbox (1.1).

14. TORQUE FOUR SCREWS (3) TO 54-59 FT-LB (7-8 MKG).
15. INSTALL FLEXIBLE SHAFT (1) ON GUN ELEVATION DRIVE GEARBOX (2).

16. APPLY GREASE TO MESHING SURFACE OF TOW ROTOR SPUR GEAR SECTOR (3).

17. INSTALL TOW ROTOR SPUR GEAR SECTOR. See task: REPLACE TOW ROTOR SPUR GEAR SECTOR, page 19-5.
18. INSTALL CLAMP (1) AND SCREW (2) ON ROTOR (3).

19. INSTALL PLUG 2W302P2 (2W310P2) (4) ON JACK 2A203J2 (5).

20. INSTALL PLUG 2W302P3 (2W310P3) (6) ON JACK 2A203J3 (7).


23.1. ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR (FINE). See page 19–43.


28. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7–126.

29. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
REPLACE TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH

DESCRIPTION

This task covers: Remove (page 19-38). Install (page 19-39).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

Materials/Parts:
- Switch

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE GUNNER’S HANDSTATION. See task: REPLACE GUNNER’S HANDSTATION, page 7–126.


5. REMOVE PLUG 2W304P1 (1) FROM JACK 2A203J1 (2) ON TOW ELEVATION DRIVE MOTOR (3).
7. REMOVE SWITCH (3) FROM BRACKET (4).
   a. Remove nut (5), lock washer (6), and switch (3) from bracket (4). Discard switch.

8. INSTALL NEW SWITCH (3) ON BRACKET (4).
   a. Install new switch (3), lock washer (6), and nut (5) on bracket (4). Tighten nut finger tight.

9. ADJUST TOW ELEVATION DRIVE BRAKE SENSITIVE SWITCH. See page 19–25:

GO TO NEXT PAGE
10. INSTALL PLUG 2W302P2 (2W310P2) (1) ON JACK 2A203J2 (2) ON SWITCH (3).

11. INSTALL PLUG 2W304P1 (4) ON JACK 2A203J1 (5) ON TOW ELEVATION DRIVE MOTOR (6).


15. INSTALL GUNNER'S HANDSTATION. See task: REPLACE GUNNER'S HANDSTATION, page 7–126.

16. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR ASSEMBLY
(COARSE)

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

ADJUST COARSE

1. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

2. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


GO TO NEXT PAGE
10. INSTALL PLUG 2W302P3 (1) ON JACK 2A203J3 (2).

NOTE
If turret is equipped with a digital electronic control assembly (DECA), do step 11. If turret is equipped with an electronic control assembly (ECA), go to step 11.1.

11. PERFORM TEST 2635, ADVANCED-BIT TEST PROCEDURE (page 3–642).


ADJUST TOW ELEVATION DRIVE VARIABLE RESISTOR ASSEMBLY (FINE)

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)
- Turret drive level (Item 14, App F)
- Level support (Item 29, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Reference:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

ADJUST FINE

1. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

2. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


GO TO NEXT PAGE
5. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

6. ZERO TURRET DRIVE LEVEL (1) ON ISU MOUNTING PLATE (2).
   a. Loosen thumbscrew (3) below 0° level (4).
   b. Position level (1) on ISU mounting plate (2).
   c. Rotate knob (5) on level (1) until -1.2° level (6) bubble centers.
   d. Tighten thumbscrew (3) below 0° level (4).

7. INSTALL SUPPORT (7) ON TOW LAUNCHER (8).
   a. Install tapered shaft (9) of support (7) in boresight mounting hole (10) on TOW launcher (8). Position support with two pins (11) at top.
8. INSTALL LEVEL (1) ON SUPPORT (2).
   a. Position magnetic surface of level (1) on support (2) as shown.

   NOTE
   If turret is equipped with a digital electronic control assembly (DECA), do step 9. If turret is equipped with an electronic control assembly (ECA), go to step 9.1.


   9.1. PERFORM STE-M1/FVS TEST 2786.
   See page 3–409.

10. MOVE TOW ELEVATION DRIVE SELECT LEVER TO POWER POSITION.

11. ELEVATE TOW LAUNCHER TO MAXIMUM ELEVATION. See

12. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See

13. CHECK HANDWHEEL (3) TRAVEL.
    a. Turn handwheel (3) back.
    b. If handwheel (3) turns 1/2 turn or more to upper mechanical stop, go to step 14.
    c. If not, go to step 9.

14. TURN HANDWHEEL (3) FORWARD TWO TURNS AWAY FROM UPPER MECHANICAL STOP.

15. MOVE TOW ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See

GO TO NEXT PAGE
16. DEPRESS TOW LAUNCHER TO MAXIMUM DEPRESSION. See TM 9-2350-252-10-2.

17. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

18. CHECK HANDWHEEL (1) TRAVEL.
   a. Turn handwheel (1) forward.
   b. If handwheel (1) turns 1/2 turn or more to lower mechanical stop, go to step 19.
   c. If not, go to step 9.

19. TURN HANDWHEEL (1) BACK TWO TURNS AWAY FROM LOWER MECHANICAL STOP.

20. REMOVE LEVEL (2) AND SUPPORT (3) FROM TOW LAUNCHER (4).

21. IF TOW ELEVATION DRIVE IS FAULTY, GO TO STEP 22. IF TOW ELEVATION DRIVE IS NOT FAULTY, GO TO STEP 23.

22. REPLACE TOW ELEVATION DRIVE GEAR-BOX. See page 19-32.

23. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.


END OF TASK
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REMOVE/INSTALL TOW LIFT MECHANISM

DESCRIPTION

This task covers: Remove (page 19-48). Install (page 19-55).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 724 lb (330.5 kg)
- Nylon sling (2) 25 ft (Item 9, App C)
- 14mm socket, 3/8 inch drive (Item 26, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Cotter pin
- Lock washer (2)
- Lock washer (2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

NOTE
If TOW lift mechanism cannot be operated without force or special equipment, go to step 1.1.

Be sure TOW launcher is in horizontal position.

1. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9–2350–252–10–2. GO TO STEP 2.
1.1 MANUALLY TRAVERSE TURRET TO 3200 MILS. See TM 9-2350-252-10-2.

1.2 MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

1.3 MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

1.4 TURN GUN ELEVATION HANDWHEEL UNTIL TOW LAUNCHER STOW PIN (1) IS CLEAR OF STOW SADDLE (2).

WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

1.5 ATTACH SLING (3) TO TOW LAUNCHER (4). HAVE HELPER ASSIST.

a. Attach sling (3) to TOW launcher (4) at approximate center point (5).

b. Use lifting device to take up slack in sling to support TOW launcher.
NOTE

Gearbox may be secured to lower bracket with pin or screw. Do step 1.6 only if gearbox is secured to lower bracket with cotter pin, washer and pin.

1.6 REMOVE PIN (1) FROM LOWER BRACKET (2). HAVE HELPER ASSIST.

a. Remove cotter pin (3) and washer (4) from pin (1). Discard cotter pin.

b. Drive pin (1) out. Use care not to distort pin.

NOTE

Do step 1.7 only if gearbox is secured to lower bracket with locknut and screw.

1.7 REMOVE SCREW (5) FROM LOWER BRACKET (6). HAVE HELPER ASSIST.

a. Remove locknut (7).

b. Drive screw (5) out.

c. Discard screw and locknut.
CAUTION
Initially raising TOW launcher too far will damage cables. Use care when raising TOW launcher.

1.8 RAISE TOW LAUNCHER (1) TO GAIN ACCESS TO SHIELD (2).
   a. Use lifting device to raise TOW launcher (1) only enough to gain access to screws holding shield (2) to TOW lift mechanism (3).

1.9 REMOVE PLUG 2W306P1 (4) FROM JACK 2A204J1 (5).

1.10 REMOVE SHIELD (2) FROM HOUSING (6). HAVE HELPER ASSIST.
   a. Remove four screws (7) and shield (2) from housing (6).

1.11 REMOVE TWO PLUGS (8) FROM TWO JACKS (9) AS FOLLOWS:
   2W306P2 FROM 2A204J2
   2W306P4 FROM 2A204J4.
   TAG PLUGS.
1.12 REMOVE PLUG 2W306P3 (1) FROM JACK 2A204J3 (2).

1.13 REMOVE GROUND STRAP (3) FROM GEARBOX (4).
   a. Remove screw (5), two lock washers (6), and ground strap (3) from gearbox (4). Discard lock washers.

1.14 REMOVE MANUAL RELEASE KNOB (7) AND JAM NUT (8) FROM CABLE SLEEVE (9).
   a. Turn jam nut (8) away from manual release knob (7).
   b. Remove manual release knob (7) and jam nut (8) from cable sleeve (9).
NOTE
Step 1.15 should be done only if cable sleeve is mounted on faceplate using two nuts and two lock washers.

1.15 REMOVE CABLE SLEEVE (1) FROM FACEPLATE (2).
   a. Remove rubber boot (3) from faceplate (2).
   b. Remove two nuts (4), cable sleeve (1), and two lock washers (5) from faceplate (2). Discard lock washers.

NOTE
Step 1.16 should be done only if cable sleeve is mounted on faceplate using sealing nut.

1.16 REMOVE CABLE SLEEVE (1) FROM FACEPLATE (2).
   a. Remove sealing nut (6), lock washer (7), nut (8), and cable sleeve (1) from faceplate (2).

1.17 MANUALLY LEVEL TOW LAUNCHER WHILE TOW LAUNCHER IS RAISED WITH LIFTING DEVICE. GO TO STEP 17.
1. MANUALLY TRAVERSE TURRET TO 1650 MILS. See TM 9-2350-252-10-2.

**WARNING**
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

3. ATTACH TWO SLINGS (1, 2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.
   a. Attach sling (1) to left of bracket (4).
   b. Attach sling (2) around TOW launcher (3) halfway between electrical mechanical post (5) and end of launcher.
   c. Position two slings (1, 2) and lifting device to obtain vertical lift. Take up slack in slings to support TOW launcher (3).

4. REMOVE SHIELD (6) FROM HOUSING (7).
   a. Remove four screws (8) and shield (6) from housing (7). Have helper assist.

5. REMOVE TWO PLUGS (9) FROM TWO JACKS (10) AS FOLLOWS:
   - 2W306P2 FROM 2A204J2
   - 2W306P4 FROM 2A204J4.
   TAG PLUGS.

**GO TO NEXT PAGE**
NOTE
Gearbox may be secured to lower bracket with pin or screw.

6. INSPECT PIN (1) ON LOWER BRACKET (2).
   a. If pressure on pin (1) must be released by raising ballscrew (3), go to step 7.
   b. If pressure on pin (1) must be released by lowering ballscrew (3), go to step 8.

WARNING
Wrench can rotate and injure soldiers. Do not pull manual release knob when raising ballscrew.

NOTE
Step 7 should be done only if ballscrew must be raised to release pressure on pin.

7. RAISE BALLSCREW (3).
   a. (H) Raise ballscrew (3) until pressure on pin (1) is released. Use 14 mm socket at manual drive input (4).
   b. Go to step 9.
NOTE
Step 8 should be done only if ballscrew must be lowered to release pressure on pin.

8. LOWER BALLSCREW (1).
   a. (H) Pull manual release knob (2).
   b. Lower ballscrew (1) until pressure on pin (3) is released.

9. REMOVE PIN (3) FROM LOWER BRACKET (4). HAVE HELPER ASSIST.
   a. While holding gearbox (5), remove cotter pin (6), washer (7), and pin (3). Discard cotter pin.
NOTE
Step 10 should be done only if gearbox is secured to lower bracket with locknut and screw.

10. REMOVE SCREW (1) FROM LOWER BRACKET (2). HAVE HELPER ASSIST.
   a. While holding gearbox (3), remove locknut (4) and screw (1). Discard locknut and screw.

11. REMOVE PLUG 2W306P1 (5) FROM JACK 2A204J1 (6).

12. REMOVE PLUG 2W306P3 (7) FROM JACK 2A204J3 (8).

13. REMOVE GROUND STRAP (9) FROM GEARBOX (3).
   a. Remove screw (10), two lock washers (11), and ground strap (9) from gearbox (3). Discard lock washers.
14. **REMOVE MANUAL RELEASE KNOB (1) AND JAM NUT (2) FROM CABLE SLEEVE (3).**
   a. Turn jam nut (2) away from manual release knob (1).
   b. Remove manual release knob (1) and jam nut (2) from cable sleeve (3).

**NOTE**
Step 15 should be done only if cable sleeve is mounted on faceplate using two nuts and two lock washers.

15. **REMOVE CABLE SLEEVE (3) FROM FACEPLATE (4).**
   a. Remove rubber boot (5) from faceplate (3).
   b. Remove two nuts (6), cable sleeve (3), and two lock washers (7) from faceplate (4). Discard lock washers.
   c. Go to step 17.
NOTE
Step 16 should be done only if cable sleeve is mounted on faceplate using sealing nut.

16. REMOVE CABLE SLEEVE (1) FROM FACEPLATE (2).
   a. Remove sealing nut (3), lock washer (4), nut (5), and cable sleeve (1) from faceplate (2).

CAUTION
Gearbox can be damaged. Support gearbox before you remove locknut and screws.

NOTE
Step 17 should be done only if gearbox is secured to upper bracket with locknut and screw.

17. REMOVE GEARBOX (6) FROM UPPER BRACKET (7). HAVE HELPER ASSIST.
   a. Remove locknut (8), screw (9), and gearbox (6) from upper bracket (7). Discard locknut and screw.
   b. Go to step 19.
CAUTION
Gearbox can be damaged. Support gearbox before you remove cotter pin, washer, and pin.

NOTE
Step 18 should be done only if gearbox is secured to upper bracket with cotter pin, washer, and pin.

18. REMOVE GEARBOX (1) FROM UPPER BRACKET (2). HAVE HELPER ASSIST.
   a. Remove cotter pin (3), washer (4), pin (5), and gearbox (1) from upper bracket (2). Discard cotter pin.

NOTE
If screw and locknut were removed in step 17 they will be replaced by a new type pin, washer, and cotter pin.

19. INSTALL PIN (5) IN UPPER BRACKET (2).
   a. Install pin (5), washer (4), and new cotter pin (3).

CAUTION
Cable can be damaged. Do not force or crimp cable when you install cable sleeve.

NOTE
Step 20 should be done only if cable sleeve is mounted on faceplate using two nuts and two lock washers.

20. INSTALL CABLE SLEEVE (6) ON FACEPLATE (7).
   a. Install nut (8), two new lock washers (9), nut (10) on cable sleeve (6) and faceplate (7).
   b. Install rubber boot (11) on sleeve (6).
   c. TORQUE NUT (10) TO 20-40 IN-LB (23-46 CMKG).
   d. Go to step 22.
CAUTION
Cable can be damaged. Do not force or crimp cable when you install cable sleeve.

NOTE
Step 21 should be done only if cable sleeve is mounted on faceplate using sealing nut.

21. INSTALL CABLE SLEEVE (1) ON FACEPLATE (2).
   a. Install nut (3) and lock washer (4) on cable sleeve (1). Install sealing nut (5) on cable sleeve (1) and faceplate (2).
   b. TORQUE SEALING NUT (5) TO 4-5 IN-LB (5-6 CMKG).
   c. TORQUE NUT (3) TO 20-40 IN-LB (23-46 CMKG).

22. INSTALL MANUAL RELEASE KNOB (6) AND JAM NUT (7) ON CABLE SLEEVE (1).
   a. Install jam nut (7) and manual release knob (6) on cable sleeve (1).
   b. Tighten jam nut (7) against manual release knob (6).
23. INSTALL GROUND STRAP (1) ON GEARBOX (2).
   a. Install ground strap (1), two new lock washers (3), and screw (4) on gearbox (2).

24. INSTALL PLUG 2W306P3 (5) ON JACK 2A204J3 (6).

25. INSTALL PLUG 2W306P1 (7) ON JACK 2A204J1 (8).

26. CHECK POSITION OF GEARBOX (2).
   a. If ballscrew (9) must be raised to aline gearbox (2) with lower bracket (10), go to step 27.
   b. If ballscrew (9) must be lowered to aline gearbox (2) with lower bracket (10), go to step 28.
WARNING
Wrench can rotate and injure soldiers. Do not pull manual release knob when raising ballscrew.

NOTE
Step 27 should be done only if ballscrew must be raised to aline gearbox with lower bracket.

27. RAISE BALLSCREW (1) AND ALINE GEARBOX (2).

a. (H) Raise ballscrew (1) until gearbox (2) is alined with lower bracket (3). Use 14 mm socket at manual drive input (4).

b. Go to step 29.

NOTE
Step 28 should be done only if ballscrew must be lowered to aline gearbox with lower bracket.

28. LOWER BALLSCREW (1) AND ALINE GEARBOX (2).

a. (H) Pull manual release knob (5).

b. Lower ballscrew (1) until gearbox (2) is aligned with lower bracket (3).
NOTE
If screw and locknut were removed in step 1.7 or 10, they must be replaced by a new pin, washer, and cotter pin.

29. INSTALL GEARBOX (1) ON LOWER BRACKET (2).
   a. Install gearbox (1), pin (3), washer (4), and new cotter pin (5) on lower bracket (2).

30. INSTALL TWO PLUGS (6) ON TWO JACKS (7) AS FOLLOWS:
    2W306P4 ON 2A204J4
    2W306P2 ON 2A204J2.

31. INSTALL SHIELD (8) ON HOUSING (9).
    HAVE HELPER ASSIST.
    a. Apply sealing compound (Item 21) to threads of four screws (10).
    b. Apply sealing compound (Item 20) to threads of four screws (10).
    c. Install shield (8) and four screws (10) on housing (9).
    d. TORQUE FOUR SCREWS (10) TO 54-59 FT-LB (7-8 MKG).
32. RELEASE TENSION ON TWO SLINGS (1, 2).
   a. Turn manual drive input (3) to raise ballscrew (4) until sling tension is released. Use 14mm socket at manual drive input.

   **NOTE**
   If sling was attached in step 1.5, remove only one sling in step 33.

33. REMOVE TWO SLINGS (1, 2) FROM TOW LAUNCHER (5). HAVE HELPER ASSIST.

34. CHECK OPERATION OF TOW LAUNCHER IN MANUAL AND POWER MODES. See TM 9-23520-252-10-2.

35. LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

---

**END OF TASK**
REPLACE TOW LIFT MOTOR

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Machine key
- Retaining ring
- TOW lift motor

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE TOW LIFT MOTOR AND PINION ASSEMBLY. See task: REPLACE TOW LIFT MOTOR AND PINION ASSEMBLY, page 19–63.

3. REMOVE SPUR GEAR (1) FROM MOTOR (2).
   a. Remove retaining ring (3), spur gear (1), and key (4) from shaft (5) of motor (2). Discard retaining ring and key.

INSTALL

4. INSTALL SPUR GEAR (1) ON NEW MOTOR (2).
   a. Install new key (4), spur gear (1), and new retaining ring (3) on shaft (5) of motor (2).

5. INSTALL TOW LIFT MOTOR AND PINION ASSEMBLY. See task: REPLACE TOW LIFT MOTOR AND PINION ASSEMBLY, page 19–63.


END OF TASK
REPAIR TOW LIFT MOTOR AND PINION ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Machine key
- Retaining ring
- Spur gear

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE TOW LIFT MOTOR AND PINION ASSEMBLY. See task: REPLACE TOW LIFT MOTOR AND PINION ASSEMBLY, page 19-63.

3. REMOVE SPUR GEAR (1) FROM MOTOR (2).
   a. Remove retaining ring (3), spur gear (1), and key (4) from shaft (5) of motor (2). Discard spur gear, retaining ring, and key.

INSTALL

4. INSTALL NEW SPUR GEAR (1) ON MOTOR (2).
   a. Install new key (4), spur gear (1), and new retaining ring (3) on shaft (5) of motor (2).

5. INSTALL TOW LIFT MOTOR AND PINION ASSEMBLY. See task: REPLACE TOW LIFT MOTOR AND PINION ASSEMBLY, page 19-63.


END OF TASK
REPLACE TOW LIFT MOTOR AND PINION ASSEMBLY

DESCRIPTION

This task covers: Remove (page 19-63). Install (page 19-64).

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
Extreme grease (Item 12, App C)
Grease (Item 14, App C)
Tech petrolatum (Item 26, App C)
Motor and pinion
Preformed packing
Self-locking screw (4)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REMOVE


   CAUTION
   Equipment can be damaged if you remove screws without supporting motor. Support motor before you remove screws.

2. REMOVE MOTOR AND PINION (1) FROM GEARBOX (2).
   a. Remove four lock screws (3), washers (4), motor and pinion (1), and preformed packing (5) from gearbox (2). Discard lock screws and preformed packing.
3. INSTALL NEW MOTOR AND PINION (1) ON GEARBOX (2).
   a. Coat new preformed packing (3) with tech petrolatum.
   b. Install preformed packing (3) in groove (4) on motor (1).
   c. Coat threads of four new lock screws (5) with grease (Item 14).
   d. Coat gear (6) on motor and pinion (1) with grease (Item 12).
   e. Install motor and pinion (1), four washers (7), and lock screws (5) on gearbox (2).

4. TORQUE FOUR LOCK SCREWS (5) TO 132-168 IN-LB (208-230 CMKG).


6. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
ADJUST TOW LIFT UPPER POSITION SWITCH

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)
Multimeter, (Item 15, App F)
STE-M1/FVS test set (Item 30, App F)
Turret drive level (Item 14, App F)
14mm socket, 3/8 inch drive
(Item 26, App F)

Materials/Parts:
Grease (Item 14, App C)
Sealing compound, grade A
(Item 20, App C)
Sealing compound, grade N
(Item 21, App C)
Wiping rag (Item 29, App C)

Materials/Parts (cont):
Self-locking screw (4)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10
Helper (H)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

ADJUST

1. MOVE TRAVERSE DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

2. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

3. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

5. ZERO TURRET DRIVE LEVEL (1) ON ISU MOUNTING PLATE (2).
   a. Thoroughly clean mounting plate (2). Use wiping rag.
   b. Loosen thumbscrew (3) below 0° level (4).
   c. Place turret drive level (1) on ISU mounting plate (2).
   d. Rotate knob (5) on turret drive level (1) until 0° level (4) bubble centers.
   e. Tighten thumbscrew (3) below 0° level (4).

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**WARNING**

Unsupported TOW launcher can fall and injure soldiers. Use caution when working under TOW launcher.

6. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

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**NOTE**

Mounting surface for level is not magnetic. Level must be held in place by hand.

7. ZERO TURRET DRIVE LEVEL (6) UNDER TOW LAUNCHER (7).
   a. Position turret drive level (6) against baseplate (8) of TOW launcher (7).
   b. Turn manual drive input (9), or pull handle (10) to raise or lower TOW launcher (7) until 90° (B) level (11) bubble centers. Have helper assist.
8. ZERO TURRET DRIVE LEVEL (1) ON SIDE OF TOW LAUNCHER (2).
   a. Loosenthumbscrew(3)below 0° level(4).
   b. Position turretdrive level(1)on sideof TOW launcher(2).
   c. Rotate knob (5) on turretdrive level(1) until — 1.2° level(6) bubble centers.
   d. Tightenthumbscrew (3) below 0° level(4).

9. REMOVE SHIELD (7) FROM HOUSING (8).
   a. Remove fourscrews (9) and shield (7) from housing (8).

WARNING
Unsupported TOW launcher can fall and injure soldiers. Use caution when working under TOW launcher.

10. REMOVE PLUG 2W306P2 (10) FROM JACK 2A204J2 (11).

GO TO NEXT PAGE
NOTE
Discard gasket only if it is too worn or damaged for further use.

11. REMOVE COVER (1) FROM GEARBOX (2).
   a. Remove four lock screws (3), washers (4), and cover (1) from gearbox (2). Discard four lock screws.
   b. Remove gasket (5) from gearbox (2). Discard gasket if damaged.

12. INSTALL ADAPTER CA1430 (6) ON CONNECTOR P2 (7) OF CABLE CX308 (8). USE STE-M1/FVS.

13. INSTALL ADAPTER CA1430 (6) ON JACK 2A204J2 (9).
14. Connect probes to pin holes B (1) and C (2) on connector P1 of cable CX308 (3). Use multimeter.


16. Manually raise tow launcher (4) until continuity exists.
   a. Turn manual drive input (5) to raise tow launcher (4) until continuity exists. Use 14mm socket. Have helper assist.

17. Check position of bubble (6) in 0° level (7).
   a. If bubble (6) in 0° level (7) is past line (8) toward tow launcher (4), note location of bubble and go to step 18.
   b. If bubble (6) in 0° level (7) is past line (9) away from tow launcher (4), note location of bubble and go to step 20.
   c. If bubble (6) in 0° level (7) is centered, go to step 22.
18. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

NOTE
Adjustment screw should be loosened 1/2 turn per each short line on level.

19. LOOSEN ADJUSTMENT SCREW (1) ON PLATE (2). GO TO STEP 15.

20. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

NOTE
Adjustment screw should be tightened 1/2 turn per each short line on level.

21. TIGHTEN ADJUSTMENT SCREW (1) ON PLATE (2). GO TO STEP 15.
22. DISCONNECT PROBES FROM PIN HOLES B (1) AND C (2) ON CONNECTOR P1 OF CABLE CX308 (3).

23. REMOVE ADAPTER CA1430 (4) FROM JACK 2A204J2 (5).

NOTE
New gasket should be installed only if worn or damaged gasket was discarded in step 11.

25. INSTALL COVER (9) ON GEARBOX (10).
   a. Install gasket (11) on gearbox (10).
   b. Apply grease to threads of four new lock screws (12).
   c. Install cover (9), four new lock screws (12) and washers (13) on gearbox (10).

26. TORQUE FOUR LOCK SCREWS (12) TO 4.5-5.5 IN-LB (5.2-6.3 CMKG).

GO TO NEXT PAGE
28. INSTALL SHIELD (3) ON HOUSING (4).
   a. Apply sealing compound (Item 21) to threads of four screws (5).
   b. Apply sealing compound (Item 20) to threads of four screws (5).
   c. Install shield (3) and four screws (5) on housing (4).
   d. TORQUE FOUR SCREWS (5) TO 54–59 FT-LB (7–8 MKG).

27. INSTALL PLUG 2W306P2 (1) ON JACK 2A204J2 (2).

27.1. REMOVE TURRET DRIVE LEVEL FROM LAUNCHER.


31. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK
ADJUST TOW LIFT LOWER POSITION SWITCH

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)
- Turret drive level (Item 14, App F)
- Multimeter (Item 15, App F)
- 14mm socket, 3/8 inch drive (Item 26, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Grease (Item 14, App C)
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Self-locking screw (4)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10–1)
- Turret shut down (TM 9-2350-252-10–2)

ADJUST

1. MOVE TRAVERSE DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

2. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

3. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


5. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

6. REMOVE SHIELD (1) FROM HOUSING (2).
   a. Remove four screws (3) and shield (1) from housing (2). Have helper assist.

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7. REMOVE PLUG 2W306P4 (1) FROM JACK 2A204J4 (2).

NOTE
Gasket should be discarded only if gasket is too worn or damaged for further use.

8. REMOVE COVER (3) FROM GEARBOX (4).
   a. Remove four lock screws (5), washers (6), and cover (3) from gearbox (4). Discard lock screws.
   b. Remove gasket (7) from gearbox (4).

9. INSTALL ADAPTER CA1432 (8) ON CONNECTOR P2 (9) OF CABLE CX308 (10). USE STE-M1/FVS.

10. INSTALL ADAPTER CA1432 (8) ON JACK 2A204J4 (2).
WARNING
When electrical circuit is broken between TOW lift motor and electronic control assembly, TOW launcher can fall rapidly, injuring soldiers. Stand clear when manually releasing brake.

CAUTION
Access cover can be damaged when lowering TOW launcher. Make sure cover is clear of TOW launcher before lowering.
Cable can be damaged when you lower TOW launcher. Keep cable free of TOW launcher.

11. MANUALLY LOWER TOW LAUNCHER (1) TO MECHANICAL STOP.
   a. Pull knob (2) out to lower TOW launcher (1) to mechanical stop. Be sure electrical mechanical post (3) does not seat in saddle (4).

12. ZERO TURRET DRIVE LEVEL (5) ON TOW LAUNCHER (1).
   a. Loosen thumbscrew (6) below 0° level (7).
   b. Position level (5) on side of TOW launcher (1).
   c. Rotate knob (8) on level (5) until 0° level (7) bubble centers.
   d. Tighten thumbscrew (6) below 0° level (7).

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13. (H) MANUALLY RAISE TOW LAUNCHER (1) HALFWAY TO FIRING POSITION.
   a. Turn manual drive input (2) to raise TOW launcher (1) halfway to firing position. Use 14mm socket.

14. CONNECT PROBES TO PIN B (3) AND PIN C (4) ON CONNECTOR P1 (5) OF CABLE CX308 (6). USE MULTIMETER.
WARNING
When electrical circuit is broken between TOW lift motor and electronic control assembly, TOW launcher can fall rapidly, injuring soldiers. Stand clear when manually releasing brake.

15. MANUALLY LOWER TOW LAUNCHER (1) UNTIL CONTINUITY EXISTS.

   a. Slowly pull knob (2) to lower TOW launcher (1) until continuity exists.

16. CHECK POSITION OF BUBBLE (3) IN 1.2° LEVEL (4).

   a. If bubble (3) in 1.2° level (4) is past line (5) towards TOW launcher (1), note location of bubble, and go to step 17.

   b. If bubble (3) in 1.2° level (4) is past line (6) away from TOW launcher (1), note location of bubble, and go to step 19.

   c. If bubble (3) in 1.2° level (4) is centered, go to step 21.
17. MANUALLY RAISE TOW LAUNCHER HALFWAY TO FIRING POSITION TO GAIN ACCESS TO ADJUSTMENT SCREW (1) ON PLATE (2).

**NOTE**
Adjustment screw should be tightened 1/2 turn per each short line on level.

18. TIGHTEN ADJUSTMENT SCREW (1) ON PLATE (2). GO TO STEP 15.

19. MANUALLY RAISE TOW LAUNCHER HALFWAY TO FIRING POSITION TO GAIN ACCESS TO ADJUSTMENT SCREW (1) ON PLATE (2).

**NOTE**
Adjustment should be loosened 1/2 turn per each short line on level.

20. LOOSEN ADJUSTMENT SCREW (1) ON PLATE (2). GO TO STEP 15.
21. REMOVE TURRET DRIVE LEVEL (1) FROM TOW LAUNCHER (2).

22. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

23. DISCONNECT PROBES FROM PIN B (3) AND C (4) ON CONNECTOR P1 (5) OF CABLE CX308 (6).

GO TO NEXT PAGE
24. REMOVE ADAPTER CA1432 (1) FROM JACK 2A204J4 (2).

25. REMOVE ADAPTER CA1432 (1) FROM CONNECTOR P2 (3) OF CABLE CX308 (4).

26. INSTALL COVER (5) ON GEARBOX (6).
   a. Install gasket (7) on gearbox (6).
   b. Apply grease to threads of four new lock screws (8).
   c. Install cover (5), four lock screws (8), and washers (9) on gearbox (6).

27. TORQUE FOUR LOCK SCREWS (8) TO 4.5-5.5 IN-LB (5.2-6.3 CMKG).

28. INSTALL PLUG 2W306P4 (10) ON JACK 2A204J4 (2).

29. INSTALL SHIELD (11) ON HOUSING (12).
   a. Apply sealing compound, grade N (Item 21) to threads of four screws (13).
   b. Apply sealing compound, grade A (Item 20) to threads of four screws (13).
   c. Install shield (11) and four screws (13) on housing (12). Have helper assist.
   d. TORQUE FOUR SCREWS (13) TO 54-59 FT-LB (7-8 MKG).

30. MANUALLY LOWER TOW LAUNCHER TO STOWED POSITION. See TM 9-2350-252-10-2.

31. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

32. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK
REPLACE TOW LIFT GEARBOX

DESCRIPTION

This task covers: Remove (page 19-81). Install (page 19-82).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Extreme grease (Item 12, App C)
- Grease (Item 14, App C)
- Tech petrolatum (Item 26, App C)
- Self-locking screw (4)
- Preformed packing
- TOW lift gearbox

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


   CAUTION
   Equipment can be damaged if you remove screws without supporting motor. Support motor before you remove screws.

2. REMOVE MOTOR AND PINION (1) FROM GEARBOX (2).
   a. Remove four lock screws (3), washers (4), motor and pinion (1), and preformed packing (5) from gearbox (2). Discard lock screws and preformed packing.

GO TO NEXT PAGE
3. INSTALL MOTOR AND PINION (1) ON NEW GEARBOX (2).
   a. Coat new preformed packing (3) with tech petrolatum.
   b. Install preformed packing (3) in groove (4) on motor and pinion (1).
   c. Coat threads of four new lock screws (5) with grease (Item 14).
   d. Coat gear (6) on motor and pinion (1) with grease (Item 12).
   e. Install motor and pinion (1), four washers (7), and lock screws (5) on gearbox (2).

4. TORQUE FOUR LOCK SCREWS (5) TO 132-168 IN-LB (208-230 CMKG).


7. ADJUST TOW LIFT LOWER POSITION SWITCH. See page 19-73.

END OF TASK
REPLACE TOW LIFT BALLSCREW BELLOWS

DESCRIPTION

This task covers: Remove (page 19–83). Install (page 19–87).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 724 lb (330.5 kg)
- Nylon sling (2), 25 ft (Item 9, App C)
- 14mm socket, 3/8 inch drive (Item 26, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Dust and moisture boot (bellows)
- Cotter pin

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. MANUALLY TRAVERSE TURRET BETWEEN 850 AND 1600 MILS. See TM 9-2350-252-10-2.

   NOTE
   Be sure TOW launcher is in horizontal position:

2. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

   WARNING
   Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

3. ATTACH TWO SLINGS (1, 2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.

   a. Attach sling (1) to left of bracket (4).
   b. Attach sling (2) around TOW launcher (3) halfway between electrical mechanical post (5) and end of launcher.
   c. Position two slings (1, 2) and lifting device to obtain vertical lift. Take up slack in slings (1, 2) to support TOW launcher (3).
4. REMOVE SHIELD (1) FROM HOUSING (2).
   a. Remove four screws (3) and shield (1) from housing (2). Have helper assist.

**NOTE**
Gearbox may be secured to upper bracket with pin or screw.

5. INSPECT PIN (4) ON UPPER BRACKET (5).
   a. If pressure on pin (4) must be released by raising ballscrew (6), go to step 6.
   b. If pressure on pin (4) must be released by lowering ballscrew (6), go to step 7.

**WARNING**
Wrench can rotate and injure soldiers. Do not pull manual release knob when raising ball screw.

**NOTE**
Step 6 should be done only if ballscrew must be raised to release pressure on pin.

6. RAISE BALLSCREW (6).
   a. (H) Raise ballscrew (6) until pressure on pin (4) is released. Use 14 mm socket at manual drive input (7).
   b. Go to step 8.
NOTE
Step 7 should be done only if ball screw must be lowered to release pressure on pin.

7. LOWER BALLSCREW (1).
   a. (H) Pull manual release knob (2).
   b. Lower ball screw (1) until pressure on pin (3) is released.

WARNING
Unsupported TOW lift mechanism can fall and injure or kill soldiers. Secure TOW lift mechanism when removing pin or screw.

NOTE
Step 8 should be done only if gearbox is secured to upper bracket with cotter pin, washer, and pin.

8. REMOVE PIN (3) FROM UPPER BRACKET (4). HAVE HELPER ASSIST.
   a. While holding gearbox (5), remove cotter pin (6), washer (7), and pin (3). Discard cotter pin.
NOTE
Step 9 should be done only if gearbox is secured to upper bracket with locknut and screw.

9. REMOVE SCREW (1) FROM UPPER BRACKET (2). HAVE HELPER ASSIST.
   a. While holding gearbox (3), remove locknut (4) and screw (1). Discard locknut and screw.

CAUTION
Gearbox and cables can be damaged if allowed to fully swing down. Lower gearbox until accessible for bellows removal.

10. REMOVE BELLOWS (5) FROM BALLSCREW (6).
    a. Pull manual release knob (7).
    b. Lower ballscrew (6) to down position, and tilt bellows (5) for clearance. Use 14 mm socket at manual drive input (8).
    c. Loosen two screws (9, 10) in two clamps (11, 12) on bellows (5).
    d. Remove clamp (11), bellows (5), and second clamp (12) from ballscrew (6).
11. INSTALL NEW BELLOWS (1) ON BALLSCREW (2).
   a. Aline rod end (3) with opening in upper bracket (4).
   b. Position clamp (5) and bellows (1) on gearbox assembly cover (6), and tighten screw (7) in clamp (5).
   c. Position bellows (1) and clamp (8) on cap (9), and tighten screw (10) in clamp (8).
   d. TORQUE TWO SCREWS (7) AND (10) TO 24-28 IN-LB (28-32 MKG).

12. RAISE BALLSCREW (2) TO ALINE WITH UPPER BRACKET (4).
   a. Raise ball screw (2) to up position.
      Use 14 mm socket at manual drive input (11).
NOTE
If screw and locknut were removed in step 9, they will be replaced by a new type pin, washer, and cotter pin.

13. INSTALL PIN (1) IN UPPER BRACKET (2).
   a. Install pin (1), washer (3), and new cotter pin (4).

14. INSTALL SHIELD (5) ON HOUSING (6).
   a. Apply sealing compound (Item 21) to threads of four screws (7).
   b. Apply sealing compound (Item 20) to threads of four screws (7).
   c. Install shield (5) and four screws (7) on housing (6). Have helper assist.
   d. TORQUE FOUR SCREWS (7) TO 54-59 FT-LB (7-8 MKG).

15. RELEASE TENSION ON TWO SLINGS (8, 9).
   a. Turn manual drive input (10) to raise ball screw (11) until sling tension is released. Use 14 mm socket.

16. REMOVE TWO SLINGS (8, 9) FROM TOW LAUNCHER (12). HAVE HELPER ASSIST.

17. CHECK OPERATION OF TOW LAUNCHER IN MANUAL AND POWER MODES. See TM 9-2350-252-10-2.

18. LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

END OF TASK
REPLACE TOW LIFT UPPER POSITION SWITCH

DESCRIPTION

This task covers: Remove (page 19-89). Install (page 19-91).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 724 lb (330.5 kg)
- Nylon sling, 25 ft (2) (Item 9, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Materials/Parts:
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade A (Item 20, App C)
- Grease (Item 14, App C)
- Self-locking screw (2)
- Self-locking screw (4)
- Receptacle connector (switch)

References:
- TM 9-2350–252–10–1
- TM 9-2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9-2350–252–10–1)
- Turret shut down (TM 9-2350–252–10–2)

REMOVE


WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

3. ATTACH TWO SLINGS (1, 2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.
   a. Attach sling (1) to left of bracket (4).
   b. Attach sling (2) around TOW launcher (3) halfway between electrical mechanical post (5) and end of launcher.
   c. Position two slings (1, 2) and lifting device to obtain vertical lift. Take up slack in slings to support TOW launcher (3).

GO TO NEXT PAGE
4. REMOVE SHIELD (1) FROM HOUSING (2).
   a. Remove four screws (3) and shield (1) from housing (2). Have helper assist.

5. REMOVE PLUG 2W306P2 (4) FROM JACK 2A204J2 (5).

6. REMOVE NUT (6) FROM JACK 2A204J2 (5).

8. REMOVE SWITCH PLATE (12) FROM GEARBOX (8).
   a. Remove two lock screws (13), washers (14), adjustment screw (15), washer (16), and switch plate (12) from gearbox (8). Discard lock screws.

NOTE
Gasket should be discarded only if gasket is too worn or damaged for further use.

7. REMOVE COVER (7) FROM GEARBOX (8).
   a. Remove four lock screws (9), washers (10), cover (7), and gasket (11) from gearbox (8). Discard lock screws.
   b. Push jack 2A204J2 (5) out of cover (7).
9. REMOVE SWITCH (1) FROM SWITCH PLATE (2).
   a. Remove azimuth locking nut assembly (3), nut (4), lock washer (5), key washer (6), and switch (1) from switch plate (2). Do not discard lock washer.

10. INSTALL NEW SWITCH (1) ON SWITCH PLATE (2).
   a. Install switch (1), key washer (6), lock washer (5), and nut (4) on switch plate (2).

11. ADJUST SWITCH (1) IN SWITCH PLATE (2).
   a. Adjust two nuts (7, 8) until the distance between the back of the switch plate (2) and the switch wheel (9) is 1-3/64 - 1-5/64 inches (27mm).
   b. TORQUE NUT (7) 20-25 IN-LB (23 - 28 CMKG).
NOTE
Azimuth locking nut assembly is properly installed when tab of plate is in keyway and bushing will not turn.

12. ALINE SWITCH WHEEL (1).
   a. Turn wheel (1) until wheel is aligned up and down.
   b. Install azimuth locking nut assembly (2) on switch (3) with tab of plate (4) aligned with keyway. Plate is aligned properly when bushing (5) does not turn with locking nut.
   c. Tighten azimuth locking nut assembly (4) against nut (6).
   d. TORQUE AZIMUTH LOCKING NUT ASSEMBLY (6) 13-15 IN-LB (15-17 CMKG).

13. INSTALL SWITCH PLATE (7) ON GEARBOX (8).
   a. Coat threads of two new lock screws (9) and adjustment screw (10) with grease.
   b. Install switch plate (7), two washers (11), lock screws (9), washer (12), and adjustment screw (10) on gearbox (8). Finger tighten adjustment screw.
   c. TORQUE TWO LOCK SCREWS (9) TO 9-12 IN-LB (11-14 CMKG).

15. REMOVE TWO SLINGS (1, 2) FROM TOW LAUNCHER (3). HAVE HELPER ASSIST.

NOTE
During performance of step 16, do not install ballistic shield.


WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

17. ATTACH TWO SLINGS (1, 2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.

a. Attach sling (1) to left of bracket (4).

b. Attach sling (2) around TOW launcher (3), halfway between electrical mechanical post (5) and end of launcher.

c. Position slings (1, 2) and lifting device to obtain vertical lift. Take up slack in slings to support TOW launcher (3).
NOTE
New gasket should be installed only if worn or damaged gasket was discarded in step 7.

18. INSTALL COVER (1) ON GEARBOX (2).
   a. Coat threads of four new lock screws (3) with grease.
   b. Position new gasket (4) on cover (1).
   c. Position jack 2A204J2 (5) in cover (1).
   d. Install gasket (4), cover (1), four washers (6), and new lock screws (3) on gearbox (1).
   e. TORQUE FOUR LOCK SCREWS (3) TO 4.5-5.5 IN-LB (5.2-6.3 CMKG).

19. INSTALL NUT (7) ON JACK 2A204J2 (5).
20. TORQUE NUT (7) TO 15-18 IN-LB (17-21 CMKG).
21. INSTALL PLUG 2W306P2 (8) ON JACK 2W204J2 (5).

22. INSTALL SHIELD (9) ON HOUSING (10).
   a. Apply sealing compound (Item 21) to threads of four screws (11).
   b. Apply sealing compound (Item 20) to threads of four screws (11).
   c. Install shield (9) and four screws (11) on housing (10). Have helper assist.
   d. TORQUE FOUR SCREWS (11) TO 54-59 FT-LB (7-8 MKG).

23. REMOVE TWO SLINGS (12, 13) FROM TOW LAUNCHER (14). HAVE HELPER ASSIST.
25. MANUALLY LOWER TOW LAUNCHER TO STOWED POSITION. See TM 9-2350-252-10-2.

END OF TASK
REPLACE TOW LIFT LOWER POSITION SWITCH

DESCRIPTION

This task covers: Remove (page 19-95). Install (page 19-97).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Nylon sling, 25 ft (2) (Item 9, App C)
- Lifting device with rated lift capability of at least 724 lb (330.5 kg)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Grease (Item 14, App C)
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade A (Item 20, App C)
- Self-locking screw (2)
- Self-locking screw (4)
- Receptacle connector (switch)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. MANUALLY TRAVERSE TURRET BETWEEN 850 AND 1600 MILS. See TM 9-2350-252-10-2.

2. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

3. ATTACH TWO SLINGS (1, 2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.
   a. Attach sling (1) to left of bracket (4).
   b. Attach sling (2) around TOW launcher (3) halfway between electrical mechanical post (5) and end of launcher.
   c. Position two slings (1, 2) and lifting device to obtain vertical lift. Take up slack in slings to support TOW launcher (3).

GO TO NEXT PAGE
4. REMOVE SHIELD (1) FROM HOUSING (2).
   a. Remove four screws (3) and shield (1) from housing (2). Have helper assist.

5. REMOVE PLUG 2W306P4 (4) FROM JACK 2A204J4 (5).

6. REMOVE NUT (6) FROM JACK 2A204J4 (5).

7. REMOVE COVER (7) FROM GEARBOX (8).
   a. Remove four lock screws (9), washers (10), cover (7), and gasket (11) from gearbox (8). Discard lock screws.
   b. Push jack 2A204J4 (5) out of cover (7).

NOTE
Gasket should be discarded only if gasket is too worn or damaged for further use.

8. REMOVE SWITCH PLATE (12) FROM GEARBOX (8).
   a. Remove two lock screws (13), washers (14), adjustment screw (15), washer (16), and switch plate (12) from gearbox (8). Discard lock screws.
9. REMOVE SWITCH (1) FROM SWITCH PLATE (2).
   a. Remove azimuth locking nut assembly (3), nut (4), lock washer (5), key washer (6), and switch (1) from switch plate (2). Do not discard lock washer.

10. INSTALL NEW SWITCH (1) ON SWITCH PLATE (2).
    a. Install switch (1), key washer (6), lock washer (5), and nut (4) on switch plate (2).

NOTE
Azimuth locking nut assembly is properly installed when tab of plate is in keyway and bushing will not turn.

11. ADJUST SWITCH (1) IN SWITCH PLATE (2).
    a. Adjust two nuts (4, 7) until the distance between the back of switch plate (2) and switch wheel (8) is 1-3/64 - 1-5/64 inch (27 mm).
    b. TORQUE NUT (4) TO 20-25 IN-LB (23-28 CMKG).
    c. TORQUE AZIMUTH LOCKING NUT ASSEMBLY (3) TO 13-15 IN-LB (15-17 CMKG).
13. INSTALL SWITCH PLATE (1) ON GEARBOX (2).
   a. Coat threads of two new lock screws (3) and adjustment screw (4) with grease.
   b. Install switch plate (1), two washers (5), lock screws (3), washer (6), and adjustment screw (4) on gearbox (2). Finger tighten adjustment screw.
   c. TORQUE TWO LOCK SCREWS (3) TO 9-12 IN-LB (11-14 CMKG).

14. SET .090 GAP BETWEEN GEARBOX (2) AND SWITCH PLATE (1). USE ADJUSTMENT SCREW (7).

15. REMOVE TWO SLINGS (8,9) FROM TOW LAUNCHER (10). HAVE HELPER ASSIST.

NOTE
During performance of step 16, do not install ballistic shield.

WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

17. ATTACH TWO SLINGS (1,2) TO TOW LAUNCHER (3). HAVE HELPER ASSIST.
   a. Attach sling (1) to left of bracket (4).
   b. Attach sling (2) around TOW launcher (3), halfway between electrical mechanical post (5) and end of launcher.
   c. Position slings (1,2) and lifting device to obtain vertical lift. Take up slack in slings to support TOW launcher (3).

NOTE
New gasket should be installed only if worn or damaged gasket was discarded in step 7.

18. INSTALL COVER (6) ON GEARBOX (7).
   a. Coat threads of four new lock screws (8) with grease.
   b. Position gasket (9) on cover (6).
   c. Position jack 2A204J4 (10) in cover (6).
   d. Install gasket (9), cover (6), four washers (11), and new lock screws (8) on gearbox (7).
   e. TORQUE FOUR LOCK SCREWS (8) TO 4.5-5.5 IN-LB (5.2-63 CMKG).

19. INSTALL NUT (12) ON JACK 2A204J4 (10).

20. TORQUE NUT (12) TO 15-18 IN-LB (17-21 CMKG).

22. INSTALL SHIELD (1) ON HOUSING (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install shield (1) and four screws (3) on housing (2). Have helper assist.
   d. TORQUE FOUR SCREWS (3) TO 54-59 FT-LBS (7-8 MKG).

23. REMOVE TWO SLINGS (4,5) FROM TOW LAUNCHER (6). HAVE HELPER ASSIST.


25. MANUALLY LOWER TOW LAUNCHER TO STOWED POSITION. See TM 9-2350-252-10-2.

END OF TASK
# CHAPTER 20
MAINTENANCE OF TOW LAUNCHER AND ROTOR

## Section I. MAINTENANCE OF TOW LAUNCHER AND ROTOR

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REPAIR TOW LAUNCHER LINK ADJUSTER ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

WARNING
TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE LINK ADJUSTER ASSEMBLY (1) FROM ARMOR (2) AND BRACKET (3).
   a. Hold tie rod (4), and loosen two jam nuts (5).
   b. Remove screw (6) and link adjuster assembly (1) from armor (2).
   c. Remove screw (7), link adjuster assembly (1), and washer (8) from bracket (3).
2. MEASURE AND RECORD DISTANCE BETWEEN CENTERS OF TWO ROD END BEARINGS (1).

3. REMOVE TWO ROD END BEARINGS (1) AND JAM NUTS (2) FROM TIE ROD (3).

5. ADJUST DISTANCE BETWEEN TWO ROD END BEARINGS (1) TO MATCH MEASUREMENT TAKEN IN STEP 2.
   a. Measure distance between centers of two rod end bearings (1).
   b. Screw two rod end bearings (1) in or out. Set distance between centers of two rod end bearings to match measurement taken in step 2.
   c. Finger tighten two jam nuts (2) against two rod end bearings (1).

NOTE
One end of tie rod is left-hand threaded.

NOTE
One end of tie rod is left-hand threaded.
6. INSTALL LINK ADJUSTER ASSEMBLY (1) ON BRACKET (2) AND ARMOR (3).
   a. Apply sealing compound (Item 21) to threads of two screws (4, 5).
   b. Apply sealing compound (Item 20) to threads of two screws (4, 5).
   c. Install washer (6), link adjuster assembly (1), and screw (4) on bracket (2).
   d. Install link adjuster assembly (1) and screw (5) on armor (3).

7. TORQUE TWO SCREWS (4, 5) TO 54-59 FT-LB (8 MKG).

8. CHECK ADJUSTMENT OF ARMOR (3) ON TOW LAUNCHER (7) WITH TOW LAUNCHER IN STOWED POSITION.
   a. If armor (3) completely covers missile exits on TOW launcher (7), go to step 10.
   b. If armor (3) does not completely cover missile exits on TOW launcher (7), go to step 9.
9. ADJUST ARMOR (1) ON TOW LAUNCHER (2).
   a. Loosen two jam nuts (3).
   b. Turn tie rod (4) until armor (1) completely covers missile exits on TOW launcher (2).

10. HOLD TIE ROD (4), AND TIGHTEN TWO JAM NUTS (3) AGAINST TWO ROD END BEARINGS (5).

END OF TASK
REPLACE TOW LAUNCHER REAR LOWER SHIELD

DESCRIPTION

This task covers: Remove (page 20-6). Install (page 20-7).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Rear lower shield

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

WARNING

TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

2. REMOVE THREE FASTENERS (1) FROM SHIELD (2).
4. INSTALL NEW SHIELD (1) ON BASEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install shield (1), four washers (4), and screws (3) on baseplate (2).
   d. TORQUE FOUR SCREWS (3) TO 264–268 IN–LB (401–407 CMKG).

3. REMOVE SHIELD (1) FROM BASEPLATE (2).
   a. Remove four screws (3), washers (4), and shield (1) from baseplate (2).

5. INSTALL THREE FASTENERS (5) ON SHIELD (1).

6. INSTALL TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

END OF TASK
REPLACE TOW LAUNCHER DUST COVER

INITIAL SETUP

Materials/Parts:
- Dust cover

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

WARNING
TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE COVER (1) FROM LAUNCHER (2).
   a. Pull cover (1) from three snap fasteners (3) and two side fasteners (4), and remove from launcher (2).

INSTALL

2. INSTALL NEW COVER (1) ON LAUNCHER (2).
   a. Install cover (1) on launcher (2). Fasten three snap fasteners (3) and two side fasteners (4).

END OF TASK
REPLACE TOW LAUNCHER DUST COVER SNAP FASTENERS

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Materials/Parts:
Snap fastener (3)

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE

WARNING
TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE TOW LAUNCHER DUST COVER.
See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

2. REMOVE THREE FASTENERS (1) FROM SHIELD (2).

INSTALL

3. INSTALL THREE NEW FASTENERS (1) ON SHIELD (2).

4. INSTALL TOW LAUNCHER DUST COVER.
See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

END OF TASK
REPLACE TOW SUPPORT BRACKET

DESCRIPTION

This task covers: Remove (page 20-10). Install (page 20-11).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- TOW support bracket

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

   NOTE
   Record number of shim(s) for later installation.

2. REMOVE BRACKET (1) FROM TURRET.
   a. Remove four screws (2), washers (3), shim(s) (4), if any, and bracket (1) from turret.
3. INSTALL NEW BRACKET (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of four screws (2).
   b. Apply sealing compound (Item 20) to threads of four screws (2).
   c. Install shim(s) (3), if any, bracket (1), four washers (4), and screws (2) on turret. Tighten screws finger tight.

4. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

5. ALINE BRACKET (1) AND ADD OR REMOVE SHIM(S) (3), IF ANY, UNTIL PIN (5) IS CENTERED IN BRACKET.

6. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

7. TORQUE FOUR SCREWS (2) ON BRACKET (1) TO 54-59 FT-LB (8 MKG).

8. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

END OF TASK
REPLACE TOW POST, ELECTRICAL–MECHANICAL

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Electrical–mechanical post

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

2. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.

3. REMOVE POST (1) FROM LAUNCHER (2).

INSTALL

4. INSTALL NEW POST (1) ON LAUNCHER (2).
   a. Install post (1) on launcher (2).
   b. TORQUE POST TO 130–143 FT-LB (18–21 MKG).

5. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.


END OF TASK

20-12 Change 1
DISARM MISSILE MANUALLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C) (M2, M3)
- Sealing compound, grade N (Item 21, App C) (M2, M3)
- Cotter pin (2) (M2, M3)

Personnel Required (cont):
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

WARNING
Accidental firing of TOW missile could kill or injure soldiers. Make sure ARM-SAFE-RESET switch is at SAFE.

1. MOVE ARM-SAFE-RESET SWITCH (1) ON WEAPONS CONTROL BOX (2) TO RESET THEN TO SAFE.

2. MANUALLY RAISE TOW LAUNCHER TO FIRE POSITION. See TM 9-2350-252-10-2.

3. MANUALLY ELEVATE TOW LAUNCHER TO 0 MILS. See TM 9-2350-252-10-2.

GO TO NEXT PAGE
NOTE
Do steps 4 thru 6 for M2 and M3, or M2A1 and M3A1 with launcher assembly PN 12295800-1 only.

4. OPEN COVER (1) ON LAUNCHER ASSEMBLY (2).
   a. Remove two screws (3) and washers (4) from cover (1).
   b. Open cover (1). Have helper assist.

5. REMOVE OVERRIDE SPACER BAR (5) FROM ACTUATOR MANUAL OVERRIDE (6).
   a. Remove two cotter pins (7) from override spacer bar (5). Discard cotter pins.
   b. Remove override spacer bar (5) from actuator manual override (6).
6. DISARM MISSILE MANUALLY.
   a. Turn actuator manual override (1) left until it stops.

7. DISARM MISSILE MANUALLY.
   a. Turn actuator manual override (2) right until it stops.

8. REMOVE MISSILE FROM TOW LAUNCHER. See TM 9-2350-252-10-2.

   NOTE
   Do step 9 thru 12 for M2 and M3, or M2A1 and M3A1 with launcher assembly PN 12295800-1 only.

9. INSTALL OVERRIDE SPACER BAR (3) ON ACTUATOR MANUAL OVERRIDE (1).
   a. Position override spacer bar (3) on actuator manual override (1).
   b. Turn actuator manual override (1) right until it stops against override spacer bar (3).
10. Deleted.

11. INSTALL TWO NEW COTTER PINS (2) IN OVERRIDE SPACER BAR (3).

12. CLOSE COVER (4).
   a. Close cover (4). Have helper assist.
   b. Apply sealing compound (Item 21) to threads of two screws (5).
   c. Apply sealing compound (Item 20) to threads of two screws (5).
   d. Install two washers (6) and screws (5) on cover (4).
   e. TORQUE TWO SCREWS (5) TO 54–59 FT-LB (7–8 MKG).

13. MANUALLY STOW TOW LAUNCHER.
    See TM 9-2350-252-10-2.

END OF TASK
ADJUST TOW RESOLVER

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)
- Support level (Item 29, App F)
- Level support (Item 14, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

ADJUST


2. MOVE GUN ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

3. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

4. MOVE TRAVERSE DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

5. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

6. INSTALL LEVEL (1) ON ISU MOUNTING PLATE (2).
   a. Position level (1) on ISU mounting plate (2).
   b. Rotate knob (3) on level (1) until 0° level (4) bubble centers.
   c. Tighten thumbscrew (5) below 0° level (4).

GO TO NEXT PAGE
NOTE
Top thumbscrew must be removed before installing support on TOW launcher.

7. INSTALL SUPPORT (1) ON TOW LAUNCHER (2).
   a. Install tapered shaft (3) of support (1) in boresight mounting hole (4) on TOW launcher (2). Position support with two pins (5) at top.

8. INSTALL LEVEL (6) ON SUPPORT (1).
   a. Position magnetic surface of level (6) on support (1) as shown.
   b. Turn handwheel (7) to elevate or depress TOW launcher (2) until 0° level (8) bubble centers. Have helper assist.

9. REMOVE LEVEL (6) AND SUPPORT (1) FROM TOW LAUNCHER (2).


END OF TASK
REPLACE TOW RESOLVER

DESCRIPTION

This task covers: Remove (page 20-20). Install (page 20-22).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Automotive grease (Item 7, App C)
- Cleaning solvent (Item 8, App C)
- Nonelectrical wire (Item 16, App C)
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade H (Item 23, App C)
- Wiping rag (Item 29, App C)
- Electrical resolver

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. REMOVE PLUG 2W101P2 (2W131P2) (1) FROM JACK 2A34J1 (2).

3. REMOVE JACK 2A34J1 (2) FROM BRACKET (3).
   a. Remove lock wire (4) from nut (5). Discard lock wire.
   b. Remove nut (5) and jack 2A34J1 (2) from bracket (3).
4. REMOVE LEAD 2A34J1 (1) FROM FOUR CLAMPS (2).
   a. Remove four screws (3) and clamps (2) from weldnuts (4) on turret.
   b. Remove lead 2A34J1 (1) from four clamps (2).

NOTE
Setscrew is located on raised surface on far side of drive arm.

5. REMOVE SETSCREW (5) FROM DRIVE ARM (6).

6. REMOVE TOW RESOLVER (7) FROM MOUNT (8).
   a. Remove three screws (9), cleats (10), and TOW resolver (7) from mount (8).

GO TO NEXT PAGE
7. REMOVE TOW RESOLVER (1) AND SHAFT (2) FROM COUPLING (3).
   a. Remove two setscrews (4) from coupling (3).
   b. Remove TOW resolver (1) and shaft (2) from coupling (3).

8. CLEAN AND DRY TWO SHAFTS (2, 5). USE CLEANING SOLVENT AND WIPING RAGS.

9. INSTALL NEW TOW RESOLVER (1) AND SHAFT (2) ON COUPLING (3).
   a. Apply grease to threads of two setscrews (4).
   b. Install two setscrews (4) in coupling (3). Do not tighten.
   c. Install TOW resolver (1) and shaft (2) on coupling (3).
   d. Tighten two setscrews (4).

10. INSTALL TOW RESOLVER (1) IN MOUNT (6).
    a. Install TOW resolver (1), three cleats (7), and screws (8) on mount (6).
11. INSTALL SETSCREW (1) IN DRIVE ARM (2).
   a. Apply sealing compound (Item 21) to threads of setscrew (1).
   b. Apply sealing compound (Item 23) to threads of setscrew (1).
   c. Install setscrew (1) in drive arm (2).

12. ROUTE LEAD 2A34J1 (3) THROUGH FOUR CLAMPS (4).
13. INSTALL JACK 2A34J1 (1) ON BRACKET (2).
   a. Install jack 2A34J1 (1) and nut (3) on bracket (2).
   b. Install new lock wire (4) on nut (3).

14. INSTALL PLUG 2W101P2 (2W131P2) (5) ON JACK 2A34J1 (1).

15. INSTALL FOUR CLAMPS (6) AND SCREWS (7) ON WELDNUTS (8) ON TURRET.

16. ADJUST TOW RESOLVER. See page 20-17.

17. INSTALL ISU. See task REMOVE/INSTALL INTEGRATED SIGHT UNIT, page 22-39.

18. BORESIGHT TOW LAUNCHER. See TM 9-2350-252-10-2.

END OF TASK
REPLACE TOW LAUNCHER ARMOR

DESCRIPTION

This task covers: Remove (page 20-25), Install (page 20-27).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 430 lb (195 kg)
- Nylon sling, 25 ft (Item 9, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- TOW launcher armor

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

2. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.

3. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

4. REMOVE TOW LAUNCHER ASSEMBLY.

5. REMOVE TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.

6. ATTACH SLING (1) TO ARMOR (2) AS SHOWN. TAKE UP SLACK IN SLING. USE LIFTING DEVICE. HAVE HELPER ASSIST.
7. REMOVE ARMOR (1) FROM BASEPLATE (2).
   a. Remove 14 screws (3), washers (4) and armor (1) from baseplate (2). Use lifting device. Have helper assist.
   b. Place armor (1) on wood blocks. Use lifting device. Have helper assist.

8. REMOVE SLING (5) FROM ARMOR (1).


   NOTE
   Check for shims when removing hinges. If shims were used, save them for installation.

10. REMOVE TWO HINGES (6) FROM ARMOR (1).
    a. Remove four screws (7), washers (8), and two hinges (6) from armor (1).
NOTE
If shims were found when removing hinges in step 10, install same shims in step 11.

11. INSTALL TWO HINGES (1) ON ARMOR (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install two hinges (1), four washers (4), and screws (3) on armor (2).
   d. TORQUE FOUR SCREWS (3) TO 264-288 IN-LB (304-332 CMKG).


13. ATTACH SLING (5) TO ARMOR (2) AS SHOWN. HAVE HELPER ASSIST.

14. LIFT AND POSITION ARMOR (2) ON BASEPLATE (6). USE LIFTING DEVICE. HAVE HELPER ASSIST.

15. INSTALL ARMOR (2) ON BASEPLATE (6).
   a. Apply sealing compound (Item 21) to threads of 14 screws (7).
   b. Apply sealing compound (Item 20) to threads of 14 screws (7).
   c. Install armor (2), 14 washers (8), and screws (7) on baseplate (6).
   d. TORQUE 14 SCREWS (7) TO 264-288 IN-LB (304-332 CMKG).

GO TO NEXT PAGE
16. REMOVE SLING (1) FROM ARMOR (2).

17. INSTALL TOW LAUNCHER FRONT ARMOR. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.


19. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

20. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.


END OF TASK
## Section II. MAINTENANCE OF TOW LAUNCHER SPINDLE

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REPAIR/REPLACE TOW LAUNCHER BASEPLATE, SPINDLE, AND BEARING ASSEMBLY

DESCRIPTION

This task covers: Remove (page 20-30). Install (page 20-37).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 150 lb (70 kg)
- Nylon sling, 25 ft (Item 9, App C)
- Spanner socket (Item 28, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Automotive grease (Item 7, App C)
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Key washer
- Seal (2)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. REMOVE TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.


5. ATTACH SLING (1) TO BASEPLATE (2) AS SHOWN. TAKE UP SLACK IN SLING. USE LIFTING DEVICE. HAVE HELPER ASSIST.

6. REMOVE CABLE 2W104 (2W134) (3) FROM BASEPLATE (2).
   a. Remove three screws (4), washers (5), clamps (6), and cable 2W104 (2W134) (3) from baseplate (2).

8. LOWER BASEPLATE (1) TO FACE PLATE (2). USE LIFTING DEVICE. REMOVE SLING (3) FROM BASEPLATE. HAVE HELPER ASSIST.

9. RE-ATTACH SLING (3) TO BASEPLATE (1) AS SHOWN. TAKE UP SLACK IN SLING. USE LIFTING DEVICE. HAVE HELPER ASSIST.

10. REMOVE CAP (4) AND PLATE SPACER(S) (5) FROM FACEPLATE (2).

   a. Remove eight screws (6), washers (7), cap (4), and plate spacer(s) (5) from faceplate (2).
11. REMOVE NUT (1) AND KEY WASHER (2) FROM REAR SPINDLE (3).
   a. Straighten tang (4) of key washer (2).
   b. Remove nut (1) and key washer (2) from rear spindle (3). Use spanner socket. Discard key washer.

12. REMOVE FIVE SCREWS (5) AND WASHERS (6) FROM REAR SPINDLE (3) AND BASEPLATE (7).

GO TO NEXT PAGE
13. REMOVE REAR SPINDLE (1) AND SPACER (2) FROM BASEPLATE (3).
   a. Install three screws (4) in jacking holes (5) in rear spindle (1). Use screws from step 12.
   b. Tighten three screws (4) alternately to remove rear spindle (1) from baseplate (3). Pry spacer (2) from rear spindle (1).
   c. Remove three screws (4) from rear spindle (1).

14. REMOVE EIGHT SCREWS (6) AND WASHERS (7) FROM FRONT SPINDLE (8) AND FACEPLATE (9).

15. REMOVE FRONT SPINDLE (8) AND SPACER (10) FROM FACEPLATE (9).
   b. Tighten three screws (6) alternately to remove front spindle (8) from faceplate (9). Pry spacer (10) from front spindle.
   c. Remove three screws (6) from front spindle (8).
16. LIFT BASEPLATE (1) FROM FACE PLATE (2), AND PLACE TOP DOWN ON SUITABLE SURFACE. USE LIFTING DEVICE. REMOVE SLING (3) FROM BASEPLATE (1). HAVE HELPER ASSIST.

17. REMOVE FRONT AND REAR BEARINGS (4) AND SEALS (5) FROM FACEPLATE (2).
   a. Pry front and rear seals (5) from faceplate (2). Discard seals.
   b. Remove front and rear bearings (4) from faceplate (2).

GO TO NEXT PAGE
18. IF BASEPLATE IS AS SHOWN AT THE LEFT, GO TO STEP 26. IF BASEPLATE IS AS SHOWN AT THE RIGHT, GO TO STEP 19.

19. REMOVE FOUR SCREWS (1), WASHERS (2), AND HINGE (3) FROM BRACKET (4).

20. REMOVE EIGHT SCREWS (5), WASHERS (6), AND BRACKET (4) FROM BASEPLATE.

21. REMOVE SPACER (7) FROM BASEPLATE.
   a. Remove electrical mechanical post (8) from spacer (7).
   b. Remove three screws (9) and spacer (7) from baseplate.
22. INSTALL SPACER (1) ON BASEPLATE.
   a. Install spacer (1) and three screws (2) on baseplate.
   b. Install electrical mechanical post (3) on spacer (1).
   c. TORQUE ELECTRICAL MECHANICAL POST (3) TO 130-143 FT-LB (18-21 MKG).

23. INSTALL BRACKET (4) ON BASEPLATE.
   a. Apply sealing compound (Item 21) to threads of eight screws (5).
   b. Apply sealing compound (Item 20) to threads of eight screws (5).
   c. Install bracket (4), eight washers (6), and screws (5) on baseplate.

24. INSTALL HINGE (7) ON BRACKET (4).
   a. Apply sealing compound (Item 21) to threads of four screws (8).
   b. Apply sealing compound (Item 20) to threads of four screws (8).
   c. Install hinge (7), four washers (9), and screws (8) on bracket (4).

25. TORQUE TWELVE SCREWS (5, 8) TO 76-83 FT-LB (10-12 MKG).
26. INSTALL FRONT AND REAR BEARINGS (1) AND NEW SEALS (2) IN FACEPLATE (3).
   a. Apply thin coat of grease to front and rear seals (2) and to outer rim of front and rear bearings (1).
   b. Install front and rear bearings (1) in faceplate (3).
   c. Install front and rear seals (2) in faceplate (3).

27. INSTALL FRONT AND REAR SPACERS (4) IN FACEPLATE (3).
   a. Install front and rear spacers (4) in faceplate (3). Seat front and rear spacers within seals (2) and flush against bearings (1).
28. ATTACH SLING (1) TO BASEPLATE (2) AS SHOWN. HAVE HELPER ASSIST.

29. LIFT BASEPLATE (2) AND POSITION ON FACEPLATE (3) WITH SPINDLE HOLES (4) ALIGNED. USE LIFTING DEVICE. HAVE HELPER ASSIST.

30. INSTALL FRONT SPINDLE (5) IN FACEPLATE (3).
   a. Apply sealing compound (Item 21) to threads of eight screws (6).
   b. Apply sealing compound (Item 20) to threads of eight screws (6).
   c. Install front spindle (5), eight washers (7), and screws (6) in faceplate (3).
   d. TORQUE EIGHT SCREWS (6) TO 73-79 IN-LB (84-91 CMKG).

GO TO NEXT PAGE
31. INSTALL REAR SPINDLE (1) IN BASEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of five screws (3).
   b. Apply sealing compound (Item 20) to threads of five screws (3).
   c. Install rear spindle (1), five washers (4), and screws (3) in baseplate (2).
   d. TORQUE FIVE SCREWS (3) TO 73-79 IN-LB (84-91 CMKG).

32. INSTALL NEW KEY WASHER (5) AND NUT (6) ON REAR SPINDLE (1).
   a. Install key washer (5) and nut (6) on rear spindle (1). Use spanner socket.
   b. TORQUE NUT (6) TO 65-85 FT-LB (9-11 MKG). USE SPANNER SOCKET.
   c. Bend one tang (7) of key washer (5) into one slot on nut (6).
33. INSTALL CAP (1) ON FACEPLATE (2).
   a. Install cap (1), eight washers (3), and screws (4) on faceplate (2).
   b. TORQUE EIGHT SCREWS (4) TO 61-67 IN-LB (70-77 CMKG).

34. MEASURE GAP BETWEEN CAP (1) AND FACEPLATE (2). RECORD MEASUREMENT.

35. REMOVE CAP (1) FROM FACEPLATE (2).
   a. Remove eight screws (4), washers (3), and cap (1) from faceplate (2).

---

NOTE
Plate spacers are supplied in 0.002 inch thicknesses.

36. INSTALL CAP (1) AND PLATE SPACER(S) (5) ON FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of eight screws (4).
   b. Apply sealing compound (Item 20) to threads of eight screws (4).
   c. Use measurement made in step 34 and plate spacer(s) (5) to make gap between cap (1) and faceplate (2) 0.003 to 0.007 inch (0.076 to 0.178 mm).
   d. Install plate spacer(s) (5), cap (1), eight washers (3), and screws (4) on faceplate (2).
   e. TORQUE EIGHT SCREWS (4) TO 73-79 IN-LB (84-91 CMKG).

GO TO NEXT PAGE
37. REMOVE SLING (1) FROM BASE-PLATE (2). HAVE HELPER ASSIST.

38. REATTACH SLING (1) TO BASE-PLATE (2) AS SHOWN. HAVE HELPER ASSIST.

39. CHECK OPERATION OF SPINDLE AND BEARING ASSEMBLIES (3).
   a. Raise and lower baseplate (2) several times and check for rough operation.
   b. If rough operation or binding occurs, repeat steps 9 thru 17 and 26 thru 31.
   c. If rough operation or binding does not occur, raise baseplate (2), then go to step 40.

41. ADJUST TOW LIFT UPPER POSITION SWITCH. See page 19-65.

42. ADJUST TOW LIFT LOWER POSITION SWITCH. See page 19-73.

43. REMOVE SLING (1) FROM BASEPLATE (2). HAVE HELPER ASSIST.

44. INSTALL CABLE 2W104 (2W134) (3) ON BASEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of three screws (4).
   b. Apply sealing compound (Item 20) to threads of three screws (4).
   c. Install cable 2W104 (2W134) (3), three clamps (5), washers (6), and screws (4) on baseplate.
   d. TORQUE THREE SCREWS (4) TO 73-79 IN-LB (84-91 CMKG).

45. INSTALL TOW LAUNCHER ARMOR. See task: REPLACE TOW LAUNCHER ARMOR, page 20-25.


47. BORESIGHT TOW LAUNCHER. See TM 9-2350-252-10-2.

48. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

49. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

50. INSTALL TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.


END OF TASK
REPLACE TOW ROTOR FACEPLATE

DESCRIPTION

This task covers: Remove (page 20-44). Install (page 20-50).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated capability of at least 724 lb (330.5 kg)
- Nylon sling, 25 ft (Item 9, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10 Helper(H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Faceplate
- Lock washer (2)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. MANUALLY TRAVERSE TURRET TO 6200 MILS. See TM 9-2350-252-10-2.

3. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.


5. REMOVE TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.


13. MANUALLY TRAVERSE TURRET TO 3600 MILS. See TM 9-2350-252-10-2.

14. REMOVE CABLE 2W306 (1) FROM TWO CLAMPS (2).
   a. Remove two screws (3) and clamps (2) from weldnuts (4) on turret.
   b. Remove cable 2W306 (1) from two clamps.

15. REMOVE PLUG 2W306P7 (5) FROM JACK 2A200J7 (6) ON ELECTRONIC CONTROL ASSEMBLY (7).
16. PULL CABLE 2W306 (1) INTO TURRET.

17. REMOVE CABLE 2W306 (1) FROM FOUR CLAMPS (2).
   a. Remove four screws (3) and clamps (2) from weldnuts (4) on turret.
   b. Remove cable 2W306 (1) from four clamps (2).

18. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.
19. REMOVE CABLE 2W306 (1) FROM TWO CLAMPS (2).
   a. Remove two screws (3), washers (4), and clamps (2) from faceplate (5).
   b. Remove cable 2W306 (1) from two clamps (2).

20. REMOVE BRACKET (6) FROM FACEPLATE (5).
   a. Remove three screws (7), washers (8), and bracket (6) from faceplate (5).

21. REMOVE CABLE 2W306 (1) FROM TURRET.
   a. Pull cable 2W306 (1) and plug 2W306P7 (9) out of turret through faceplate (5).
22. REMOVE GROUND CABLE (1) FROM FACEPLATE (2).
   a. Remove screw (3), two lock washers (4), and ground cable (1) from faceplate (2). Discard lock washers.

23. ATTACH SLING (5) THROUGH SPINDLE HOLES (6) OF FACEPLATE (2). TAKE UP SLACK IN SLING. USE LIFTING DEVICE. HAVE HELPER ASSIST.

24. REMOVE FACEPLATE (2) FROM ROTOR (7).
   a. Remove 12 screws (8) and washers (9) from faceplate (2).
   b. Install three screws (8) in jacking holes (10) in faceplate (2).
   c. Tighten three screws (8) alternately and remove faceplate (2) from rotor (7).
   d. Remove three screws (8) from faceplate (2).
25. LIFT FACEPLATE (1) AND PLACE ON WORKBENCH. USE LIFTING DEVICE. HAVE HELPER ASSIST.

26. REMOVE SLING (2) FROM SPINDLE HOLES (3) OF FACEPLATE (1). HAVE HELPER ASSIST.

27. REMOVE BRACKET (4) FROM FACEPLATE (1).
   a. Remove four screws (5), washers (6), and mount (4) from faceplate (1).
28. INSTALL BRACKET (1) ON NEW FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of four screws (4).
   b. Apply sealing compound (Item 20) to threads of four screws (4).
   c. Install bracket (1), four washers (3), and screws (4) on faceplate (2).
   d. TORQUE FOUR SCREWS (4) TO 73-79 IN-LB (84-91 CMKG).

29. ATTACH SLING (5) THROUGH SPINDLE HOLES (6) OF FACEPLATE (2). HAVE HELPER ASSIST.
30. LIFT AND POSITION FACEPLATE (1) ON ROTOR (2). USE LIFTING DEVICE. HAVE HELPER ASSIST.

31. INSTALL FACEPLATE (1) ON ROTOR (2).
   a. Apply sealing compound (Item 21) to threads of 12 screws (3).
   b. Apply sealing compound (Item 20) to threads of 12 screws (3).
   c. Install faceplate (1), 12 washers (4), and screws (3) on rotor (2).
   d. TORQUE 12 SCREWS (3) TO 384-408 IN-LB (442-470 CMKG).

32. REMOVE SLING (5) FROM SPINDLE HOLES (6) OF FACEPLATE (1). HAVE HELPER ASSIST.
33. INSTALL GROUND CABLE (1) ON FACEPLATE (2).
   a. Install ground cable (1) on faceplate (2) with two new lock washers (3) and screw (4).

34. PUSH PLUG 2W306P7 (5) AND CABLE 2W306 (6) THROUGH FACEPLATE (2) INTO TURRET.
35. INSTALL BRACKET (1) ON FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of three screws (3).
   b. Apply sealing compound (Item 20) to threads of three screws (3).
   c. Install bracket (1), three washers (4), and screws (3) on faceplate (2).
   d. TORQUE THREE SCREWS (3) TO 73-79 IN-LB (84-91 CMKG).

36. INSTALL CABLE 2W306 (5) IN TWO CLAMPS (6).
   a. Install cable 2W306 (5) in two clamps (6).
   b. Install two clamps (6), washers (7), and screws (8) on faceplate (2).

37. TORQUE TWO SCREWS (8) IN CLAMPS (6) ON FACEPLATE (2) TO 73-79 IN-LB (84-91 CMKG).
38. PULL CABLE 2W306 (1) INTO TURRET.
   a. Pull cable 2W306 (1) through rotor (2).
   b. Loop cable 2W306 (1) to right side of rotor (2).
   c. Pull cable 2W306 (1) over rear spoke of mount (3) into turret.


40. INSTALL CABLE 2W306 (1) IN FOUR CLAMPS (4).
   a. Install cable 2W306 (1) in four clamps (4).
   b. Install four clamps (4) and screws (5) in weldnuts (6) on turret.
1. PUSH CABLE 2W306 (1) OUT OF TURRET INTO SQUAD AREA.

42. INSTALL PLUG 2W306P7 (2) ON JACK 2A200J7 (3) ON ELECTRONIC CONTROL ASSEMBLY (4).

43. INSTALL CABLE 2W306 (1) IN TWO CLAMPS (5).
   a. Install cable 2W306 (1) in two clamps (5).
   b. Install two clamps (5) and screws (6) in weldnuts (7) on turret.

44. INSTALL 25MM AMMO GUARD GUN MOUNT. See task: REPLACE 25MM AMMO GUARD GUN MOUNT, page 26-4.


47. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.


49. INSTALL TOW LAUNCHER ARMOR. See task: REPLACE TOW LAUNCHER ARMOR, page 20-25.


51. INSTALL INSTRUCTION PLATE. See task: REPLACE TOW ROTOR FACEPLATE INSTRUCTION PLATE, page 20-59.

52. INSTALL ISU. See task: REMOVE/INSTALL INTEGRATED SIGHT UNIT, page 22-39.

WARNING
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

53. ATTACH SLING (1) TO TOW LAUNCHER (2).
   a. Attach sling (1) around TOW launcher (2) between support bracket (3) and upper bracket (4) and forward of stow pin (5).
   b. Take up slack in sling (1) to support TOW launcher (2). Use lifting device.

54. ADJUST TOW LIFT UPPER POSITION SWITCH. See page 19-65.

55. ADJUST TOW LIFT LOWER POSITION SWITCH. See page 19-73.

56. BORESIGHT TOW LAUNCHER. See page 20-88.

END OF TASK
REPLACE FRONT ARMOR BRACKET

DESCRIPTION

This task covers: Remove (page 20–57). Install (page 20–58).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Front armor bracket

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

WARNING
TOW missile in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE ROD END BEARING (1) FROM BRACKET (2).
   a. Remove screw (3), rod end bearing (1), and washer (4) from bracket (2).

GO TO NEXT PAGE
2. REMOVE BRACKET (1) FROM FACEPLATE (2).
   a. Remove four screws (3), washers (4), and bracket (1) from faceplate (2).

3. INSTALL NEW BRACKET (1) ON FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install bracket (1), four washers (4), and screws (3) on faceplate (2). Tighten four screws finger tight.
   d. TORQUE FOUR SCREWS (3) TO 73–79 IN-LB (84–91 CMKG).

4. INSTALL ROD END BEARING (5) ON BRACKET (1).
   a. Apply sealing compound (Item 21) to threads of screw (6).
   b. Apply sealing compound (Item 20) to threads of screw (6).
   c. Install washer (7), rod end bearing (5), and screw (6) on bracket (1). Tighten screw finger tight.
   d. TORQUE SCREW (6) TO 54-59 FT-LB (8 MKG).

5. CHECK OPERATION OF TOW LAUNCHER.
   See TM 9-2350-252-10-2.

END OF TASK
REPLACE TOW ROTOR FACEPLATE INSTRUCTION PLATE

INITIAL SETUP

Tools:
  Turret mechanic's tool kit (Item 31, App F)

References:
  TM 9-2350-252-10-1
  TM 9-2350-252-10-2

Materials/Parts:
  Sealing compound (Item 17, App C)
  Instruction plate

Equipment Conditions:
  Engine stopped (TM 9-2350-252-10-1)
  Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
  ITV/IFV/CFV Trt Mech 45T10

REMOVE

WARNING
TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE INSTRUCTION PLATE (1) FROM FACEPLATE (2). DISCARD INSTRUCTION PLATE.

INSTALL

2. INSTALL NEW INSTRUCTION PLATE (1) ON FACEPLATE (2).
   a. Apply sealing compound to rear of instruction plate (1).
   b. Install instruction plate (1) on faceplate (2).

END OF TASK
ADJUST/REPLACE TOW ROTOR SWITCH ASSEMBLY

DESCRIPTION


INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 800 lb (363 kg)
- Nylon sling, 25 ft (Item 9, App C)
- Multimeter (Item 15, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Nonelectrical wire (Item 16, App C)
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Sensitive switch

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


6. REMOVE TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.

8. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.

**WARNING**
Unsupported TOW launcher can fall and injure soldiers. Do not work under unsupported TOW launcher.

9. ATTACH SLING (1) TO ARMOR (2).
   a. Attach sling (1) to armor (2) as shown. Take up slack in sling. Use lifting device. Have helper assist.

10. MANUALLY TRAVERSE TURRET TO 3600 MILS. See TM 9-2350-252-10-2.

11. REMOVE CABLE 2W306 (3) FROM TWO CLAMPS (4).
   a. Remove two screws (5) and clamps (4) from weldnuts (6) on turret.
   b. Remove cable 2W306 (3) from two clamps (4).

GO TO NEXT PAGE
12. REMOVE PLUG 2W306P7 (1) FROM JACK 2A200J7 (2) ON ELECTRONIC CONTROL ASSEMBLY (3).

13. PULL CABLE 2W306 (4) INTO TURRET.
14. REMOVE CABLE 2W306 (1) FROM FOUR CLAMPS (2).
   a. Remove four screws (3) from clamps (2) on weldnut (4) on turret.
   b. Remove cable 2W306 (1) from four clamps (2).


16. REMOVE CABLE 2W306 (1) FROM FACEPLATE (5).
   a. Remove two screws (6), washers (7), and clamps (8) with cable 2W306 (1) from faceplate (5).
17. REMOVE BRACKET (1) FROM FACEPLATE (2).
   a. Remove three screws (3), washers (4), and bracket (1) from faceplate (2).

18. REMOVE CABLE 2W306 (5) FROM TURRET.
   a. Pull cable 2W306 (5) and plug 2W306P7 (6) out of turret through faceplate (2).

**WARNING**

Faceplate and armor can suddenly shift and injure you. Stay clear of faceplate and armor when last bolt is removed.

19. REMOVE FACEPLATE (2) WITH ARMOR (7) FROM ROTOR (8).
   a. Remove 12 screws (9) and washers (10) from faceplate (2).
   b. Install three screws (9) in jacking holes (11) on faceplate (2).
   c. Alternately tighten three screws (9), and remove faceplate (2) with armor (7) from rotor (8). Use lifting device. Have helper assist.
   d. Remove three screws (9) from faceplate (2).
20. REMOVE PLUG 2A30P1 (1) FROM JACK 2W6J1 (2).

21. REMOVE LEAD 2A30P1 (3) FROM THREE CLAMPS (4).
   a. Remove three screws (5) from clamps (4) on weldnuts (6) on turret.
   b. Remove lead 2A30P1 (3) from three clamps (4).

22. MOVE TOW ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

23. TURN HANDWHEEL (7) TO POSITION ROLLER (8) IN CAM SADDLE (9).
24. REMOVE SWITCH (1) FROM BRACKET (2).
   a. Cut and discard safety wire (3).
   b. Remove lockring (4) from roller guide (5).
   c. Remove roller guide (5), lower nut (6), and lock washer (7), from switch (1). Discard lock washer.
   d. Remove switch (1) with upper nut (8) and key washer (9) from bracket (2).

25. INSTALL NEW SWITCH (1) IN BRACKET (2).
   a. Position switch (1) with upper nut (8) and key washer (9) in bracket (2).
   b. Install new lock washer (7), lower nut (6), and roller guide (5) on switch (1), finger tight. Position one hole of roller guide over switch slot (10).
   c. Adjust upper nut (8) until roller (11) just touches cam saddle (12).
   d. Install lockring (4) on roller guide (5) with lockring pin (13) in roller guide hole (14) and switch slot (10).

NOTE
Switch must be installed with roller parallel to groove in rotor surface and cable toward rear of turret.
NOTE
For the switch to be adjusted correctly, continuity must exist when roller is out of cam saddle.

26. CHECK ADJUSTMENT OF SWITCH (1).
USE MULTIMETER.
   a. Connect multimeter probes to pins A (2) and B (3) in plug 2A30P1 (4).
   b. If multimeter reads 0 ohms, go to steps 27 and 28.
   c. If multimeter does not read 0 ohms, go to step 31.

27. TURN HANDWHEEL (5) UNTIL ROLLER (6) IS OUT OF CAM SADDLE (7).

28. CHECK ADJUSTMENT OF SWITCH (1).
USE MULTIMETER.
   a. Connect multimeter probes to pins A (2) and B (3) in plug 2A30P1 (4).
   b. If multimeter reads 0 ohms, go to step 31.
   c. If multimeter does not read 0 ohms, do steps 29 and 30.
29. TURN HANDWHEEL (1) TO POSITION ROLLER (2) IN CAM SADDLE (3).

30. ADJUST SWITCH (4).
   a. Alternately loosen and tighten lower nut (5) and upper nut (6) until roller (2) just touches cam saddle (3).

31. TIGHTEN LOWER NUT (5) ON SWITCH (4). DO NOT MOVE UPPER NUT (6).

32. INSTALL NEW SAFETY WIRE (7) ON LOWER NUT (5) AND UPPER NUT (6).
33. INSTALL LEAD 2A30P1 (1) IN THREE CLAMPS (2).
   a. Insert lead 2A30P1 (1) under rear spoke and over top spoke of mount (3).
   b. Install lead 2A30P1 (1) in three clamps (2).
   c. Install three screws (4) in clamps (2) on weldnuts (5) on turret.

34. INSTALL PLUG 2A30P1 (3) ON JACK 2W6J1 (6).
35. INSTALL FACEPLATE (1) WITH ARMOR (2) ON ROTOR (3).
   a. Lift and position faceplate (1) with armor (2) on dowel pin (4) of rotor (3). Use lifting device. Have helper assist.
   b. Apply sealing compound (Item 21) to threads of 12 screws (5).
   c. Apply sealing compound (Item 20) to threads of 12 screws (5).
   d. Install 12 washers (6) and screws (5) on faceplate (1).

36. TORQUE 12 SCREWS (5) to 32-34 FT-LB (4-5 MKG).

37. INSTALL CABLE 2W306 (7) IN TURRET.
   a. Insert plug 2W306P7 (8) and cable 2W306 (7) into turret through faceplate (1).
38. PULL CABLE 2W306 (1) INTO TURRET.
   a. Loop cable 2W306 (1) to right side of rotor (2).
   b. Pull plug 2W306P7 (3) and cable 2W306 (1) over rear spoke of mount (4) and into turret.

39. INSTALL BRACKET (5) ON FACEPLATE (6).
   a. Apply sealing compound (Item 21) to threads of three screws (7).
   b. Apply sealing compound (Item 20) to threads of three screws (7).
   c. Install bracket (5), three washers (8), and screws (7) on faceplate (6).
   d. TORQUE THREE SCREWS (7) TO 73-79 IN-LB (84-91 CMKG).
40. INSTALL CABLE 2W306 (1) ON FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of two screws (3).
   b. Apply sealing compound (Item 20) to threads of two screws (3).
   c. Install two clamps (4) with cable 2W306 (1), two washers (5), and screws (3) on faceplate (2).
   d. TORQUE TWO SCREWS (3) TO 73-79 IN-LB (84-91 CMKG).

   NOTE
   Do not install ISU in step 41. Install ISU in step 54.

41. INSTALL CABLE 2W104 (2W134). See task: REPLACE CABLE 2W104 (2W134), page 20-96.

42. REMOVE SLING (6) FROM TOW ARMOR (7).

43. MANUALLY TRAVERSE TURRET TO 3600 MILS. See TM 9-2350-252-10-2.
44. INSTALL CABLE 2W306 (1) IN FOUR CLAMPS (2).
   a. Install cable 2W306 (1) in four clamps (2).
   b. Install four clamps (2) and screws (3) on weldnuts (4) on turret.

45. ROUTE CABLE 2W306 (1) THROUGH TURRET TO ELECTRONIC CONTROL ASSEMBLY (5).

46. INSTALL PLUG 2W306P7 (6) ON JACK 2A200J7 (7) ON ELECTRONIC CONTROL ASSEMBLY (5).
47. INSTALL CABLE 2W306 (1) IN TWO CLAMPS (2).
   a. Install cable 2W306 (1) in two clamps (2).
   b. Install two clamps (2) and screws (3) in weldnuts (4) on turret.

51. INSTALL TOW LAUNCHER FRONT ARMOR PLATE. See task: REPLACE TOW LAUNCHER FRONT ARMOR PLATE, page 20-78.

52. INSTALL TOW LAUNCHER DUST COVER. See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.


55. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
REPAIR TOW LAUNCHER COVER HINGE ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required (cont):
- Helper (H)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Cotter pin (2)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR


2. MANUALLY TRAVERSE TURRET TO 1650 MILS. See TM 9-2350-252-10-2.

WARNING
Unhinged cover could fall and injure soldiers. Remove and repair one hinge at a time.

3. CLOSE COVER (1). HAVE HELPER ASSIST.
NOTE
Both hinges are removed and repaired the same way. Remove and repair one hinge at a time.

Check for other shims when removing hinges. If other shims were used, save them for installation.

4. REMOVE HINGE (1) AND LEAF (2) FROM COVER (3) AND ARMOR (4).
   a. Remove two screws (5), washers (6), and hinge (1) from cover (3).
   b. Remove two screws (7), washers (8), leaf (2), and shims (9), if any, from armor (4).

5. REMOVE HINGE (1) FROM LEAF (2).
   a. Remove cotter pin (10), washer (11), pin (12), and hinge (1) from leaf (2). Discard cotter pin.

6. INSTALL HINGE (1) ON LEAF (2).
   a. Install hinge (1), pin (12), washer (11), and new cotter pin (10) on leaf (2).
NOTE
Both hinges are installed the same way. Install shims, as needed, for correct fit of cover. Install one hinge at a time.

7. INSTALL LEAF (1) ON ARMOR (2).
   a. Apply sealing compound (Item 21) to threads of two screws (3).
   b. Apply sealing compound (Item 20) to threads of two screws (3).
   c. Install shim(s) (4), if any, leaf (1), two washers (5), and screws (3) on armor (2).

8. TORQUE TWO SCREWS (3) TO 264-288 IN-LB (304-332 CMKG).

9. INSTALL HINGE (6) ON COVER (7).
   a. Apply sealing compound (Item 21) to threads of two screws (8).
   b. Apply sealing compound (Item 20) to threads of two screws (8).
   c. Install hinge (6), two washers (9), and screws (8) on cover (7).

10. TORQUE TWO SCREWS (8) TO 264-288 IN-LB (304-332 CMKG).

11. OPEN COVER (7). HAVE HELPER ASSIST.


END OF TASK
REPLACE TOW LAUNCHER FRONT ARMOR PLATE

DESCRIPTION

This task covers: Remove (page 20-78). Install (page 20-79).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Front armor plate

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

WARNING
TOW missile left in TOW launcher during PMCS could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE LINK ADJUSTER (1) FROM ARMOR (2).
   a. Remove screw (3) from rod end bearing (4) to remove link adjuster (1) from armor (2). Rotate link adjuster clear of armor.
2. REMOVE ARMOR (1) FROM LAUNCHER ARMOR (2).
   a. Remove screw (3), washer (4), and armor (1) from launcher armor (2).

3. INSTALL NEW ARMOR (1) ON LAUNCHER ARMOR (2).
   a. Apply sealing compound (Item 21) to threads of screw (3).
   b. Apply sealing compound (Item 20) to threads of screw (3).
   c. Install armor (1), washer (4), and screw (3) on launcher armor (2).
   d. TORQUE SCREW (3) TO 54-59 FT-LB (8 MKG).

4. INSTALL LINK ADJUSTER (5) ON ARMOR (1).
   a. Apply sealing compound (Item 21) to threads of screw (6).
   b. Apply sealing compound (Item 20) to threads of screw (6).
   c. Place link adjuster (5) on armor (1), and install screw (6) in rod end bearing (7).
   d. TORQUE SCREW (6) TO 54-59 FT-LB (8 MKG).

5. MAKE SURE ARMOR (1) COMPLETELY COVERS MISSILE TUBES WITH TOW LAUNCHER (2) IN STOWED POSITION.
   a. If armor (1) completely covers missile tubes, go to step 7.
   b. If armor (1) does not cover missile tubes, go to step 6.
6. TURN TIE ROD (1) UNTIL ARMOR (2) COMPLETELY COVERS MISSILE TUBES.
   a. Loosen two jam nuts (3).
   b. Turn tie rod (1) until armor (2) completely covers missile tubes.
   c. Hold tie rod (1) and tighten two jam nuts (3) against two rod end bearings (4) finger tight.

7. CHECK OPERATION OF TOW LAUNCHER.
   See TM 9-2350-252-10-2.

8. MAKE SURE ARMOR (2) COMPLETELY COVERS MISSILE TUBES WHEN TOW LAUNCHER (5) IS IN STOWED POSITION.
   a. If armor (2) covers missile tubes, go to step 9.
   b. If armor (2) does not cover missile tubes, go to step 6.

9. HOLD TIE ROD (1) AND TIGHTEN TWO JAM NUTS (3) AGAINST ROD END BEARINGS (4).

END OF TASK
REPLACE TOW LAUNCHER COVER ARMOR

DESCRIPTION
This task covers: Remove (page 20–81). Install (page 20–82).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of 170 lb (77 kg)
- Nylon sling (Item 9, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade A (Item 20, App C)
- Cover armor

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.

2. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.


5. ATTACH SLING (1) TO HANDLE (2) ON COVER (3). TAKE UP SLACK IN SLING. USE LIFTING DEVICE.

GO TO NEXT PAGE
NOTE
Check for shims when removing hinges. If shims were used, save them for installation.

6. REMOVE COVER (1) FROM ARMOR (2).
   a. Remove four screws (3), washers (4), and cover (1) from armor (2). Use lifting device. Have helper assist.

7. REMOVE SLING (5) FROM HANDLE (6).

8. ATTACH SLING (5) TO HANDLE (6) ON COVER (1).
NOTE
If shims were found when removing hinges in step 6, install same shims in step 9.

9. INSTALL COVER (1) ON ARMOR (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install cover (1), four washers (4), and screws (3) on armor (2). Tighten screws finger tight. Use lifting device. Have helper assist.
   d. TORQUE FOUR SCREWS TO 264–288 IN-LB (304–332 CMKG).

10. REMOVE SLING (5) FROM HANDLE (6). HAVE HELPER ASSIST.

11. CHECK ALINEMENT OF COVER (1) ON ARMOR (2).
   a. Close cover (1). Have helper assist.
   b. If rear mounting holes (7) in cover (1) and armor (2) are alined, go to step 13.
   c. If rear mounting holes (7) in cover (1) and armor (2) are not alined, go to step 12.

GO TO NEXT PAGE
NOTE

Check for shims when removing hinges. If shims were used, save them for installation.

6. REMOVE COVER (1) FROM ARMOR (2).
   a. Remove four screws (3), washers (4), and cover (1) from armor (2). Use lifting device. Have helper assist.

7. REMOVE SLING (5) FROM HANDLE (6).

8. ATTACH SLING (5) TO HANDLE (6) ON COVER (1).
NOTE
If shims were found when removing hinges in step 6, install same shims in step 9.

9. INSTALL COVER (1) ON ARMOR (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install cover (1), four washers (4), and screws (3) on armor (2). Tighten screws finger tight. Use lifting device. Have helper assist.
   d. TORQUE FOUR SCREWS TO 264–288 IN-LB (304–332 CMKG).

10. REMOVE SLING (5) FROM HANDLE (6). HAVE HELPER ASSIST.

11. CHECK ALINEMENT OF COVER (1) ON ARMOR (2).
    a. Close cover (1). Have helper assist.
    b. If rear mounting holes (7) in cover (1) and armor (2) are alined, go to step 13.
    c. If rear mounting holes (7) in cover (1) and armor (2) are not alined, go to step 12.
NOTE
Screws must be loosened and torqued from inside box. Cover must not be opened.

12. ALINE COVER (1) ON ARMOR (2).
   a. Loosen four screws (3) on armor (2).
   b. Aline rear mounting holes (4) in cover (1) and armor (2).
   c. TORQUE FOUR SCREWS (3) TO 264–288 IN–LB (304–332 CMKG). HAVE HELPER READ GAGE THROUGH BOTTOM OF ARMOR.

13. OPEN COVER (1). HAVE HELPER ASSIST.


15. INSTALL TOW LAUNCHER DUST COVER. See task: REPLACE TOW LAUNCHER DUST COVER, page 20–8.


END OF TASK
REPLACE TOW LAUNCHER DUST COVER PILE FASTENERS

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Acid swabbing brush (Item 1, App C)
- Cleaning solvent (Item 8, App C)
- Sealing compound (Item 17, App C)
- Wiping rag (Item 29, App C)
- Pile fastener (2)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

WARNING
TOW missile left in TOW launcher could kill or injure soldiers. Make sure TOW launcher is not loaded before you start this task.

1. REMOVE TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

2. REMOVE TWO FASTENERS (1) FROM LAUNCHER (2).

3. CLEAN MATING SURFACE OF LAUNCHER ARMOR. USE CLEANING SOLVENT AND WIPING RAG.

4. CUT TWO PIECES OF PILE FASTENER TAPE 7 TO 8 INCHES LONG.

INSTALL

5. INSTALL TWO NEW FASTENERS (1) ON LAUNCHER ARMOR (2).
   a. Apply sealing compound to mating surface of launcher armor (2) and fasteners (1).
   b. Press fasteners (1) onto launcher armor (2).

6. INSTALL TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

END OF TASK
## Section III. MAINTENANCE OF TOW LAUNCHER AND CABLE ASSEMBLY

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1. BORESIGHT TOW LAUNCHER. See TM 9-2350-252-10-2.

2. OBSERVE TARGET (1) THROUGH BORESIGHT TELESCOPE (2).

3. ALINE AZIMUTH CROSSHAIR (3) ON TARGET (1).
   a. Loosen eight screws (4) on baseplate (5).
   b. Move TOW launcher (6) inside armor (7) until azimuth crosshair (3) is aligned on target (1).
   c. TIGHTEN AND TORQUE EIGHT SCREWS (4) TO 25-27 FT-LB (3-4 MKG).
4. OBSERVE TARGET (1) THROUGH BORESIGHT TELESCOPE (2).

5. CHECK ALIGNMENT OF ELEVATION CROSSHAIR (3) ON TARGET (1).
   a. If elevation crosshair (3) is aligned on target (1), go to step 7.
   b. If elevation crosshair (3) is not aligned on target (1), go to step 6.

6. ALINE ELEVATION CROSSHAIR (3) IN TOW RETICLE (4) ON AIMING POINT (5) OF TARGET (1).
   a. Turn TOW boresight adjustment screw (6) until elevation crosshair (3) in TOW reticle (4) is aligned on aiming point (5) of target (1).
   b. If aiming point (5) of target (1) moves up or down from elevation crosshair (3), notify direct support. If aiming point does not move from elevation crosshair, go to step 7.
7. REMOVE BORESIGHT TELESCOPE (1) FROM TOW LAUNCHER (2).
   a. Pull boresight telescope (1) gently from TOW launcher (2).
   b. Remove red streamer (3) from boresight telescope (1).

8. LOWER TOW LAUNCHER.
   See TM 9-2350-252-10-2.

9. MOVE TURRET DRIVE SYSTEM SWITCH (4) TO OFF.

END OF TASK
REMOVE/INSTALL TOW LAUNCHER ASSEMBLY

DESCRIPTION

This task covers: Remove (page 20–91). Install (page 20–93).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 138 lb (61.6 kg)
- Launcher handling device (Item 41, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Self-locking screw (4)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10–1)
- Turret shut down (TM 9-2350-252-10–2)

REMOVE


2. LOWER TRIM VANE. See TM 9-2350-252-10-2.

3. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

4. REMOVE TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20–8.

   NOTE
   Some vehicles may have flat washers and/or lock wires.

5. REMOVE PLUG 2W104P1 (1) FROM JACK 3J01 (2).
   a. Remove two lock wires (3) from four screws (4) and washers (5). Discard lock wires.
   b. Remove four screws (4), washers (5), and plug 2W104P1 (1) from jack 3J01 (2). Discard screws.

GO TO NEXT PAGE
6. REMOVE TOW SUPPORT PIN (1) FROM BASE PLATE (2).

7. OPEN COVER (3).
   a. Remove two screws (4) and washers (5) from cover (3).
   b. Open cover (3). Have helper assist.

8. REMOVE REAR LOWER SHIELD (6) FROM ARMOR (7).
   a. Remove four screws (8), washers (9), and rear lower shield (6) from armor (7).
9. REMOVE SCREWS (1) AND WASHERS (2) FROM BASE PLATE (3).
   a. Remove four screws (1.1) and washers (2) from base plate (3).
   b. Remove two screws (1.2) and washers (2) from base plate (3).

   NOTE
   Do step 9.1 for launcher assembly PN 12295800 or 12295800-1 only.

9.1. REMOVE TWO SCREWS (1.3) AND WASHERS (2) FROM BASE PLATE (3).

10. MANUALLY TRAVERSE TURRET TO 2450 MILS. See TM 9-2350-252-10-2.

11. REMOVE LAUNCHER (4) FROM ARMOR (5). HAVE HELPER ASSIST.
   a. Slide launcher (4) far enough out of armor (5) to attach launcher handling device (6).
   b. Attach launcher handling device (6) to launcher (4) and lifting device (7). Take up slack.
   c. Remove launcher (4) from armor (5).
   d. Remove launcher handling device (6) from launcher (4) and lifting device (7).

INSTALL

12. INSTALL LAUNCHER (4) IN ARMOR (5). HAVE HELPER ASSIST.
   a. Attach launcher handling device (6) to launcher (4) and lifting device (7). Take up slack.
   b. install launcher (4) in armor (5).
   c. Remove launcher handling device (6) from launcher (4) and lifting device (7).
   d. Slide launcher (4) fully into armor (5).

13. MANUALLY TRAVERSE TURRET TO 1650 MILS. See TM 9-2350-252-10-2.
14. INSTALL TOW SUPPORT PIN (1.1) ON BASE PLATE (1.2). HAND TIGHTEN TOW SUPPORT PIN.

15. INSTALL WASHERS (1) AND SCREWS (2) IN BASE PLATE (3). TIGHTEN SCREWS FINGER TIGHT.
   a. Install four washers (1) and screws (2.1) in base plate (3).
   b. Install two washers (1) and screws (2.2) in base plate (3).

NOTE
Do step 15.1 for launcher assembly PN 12295800 or 12295800-1 only.

15.1. INSTALL TWO WASHERS (1) AND SCREWS (2.3) IN BASE PLATE (3).

16. TORQUE TOW SUPPORT PIN (4) TO 130–143 FT-LB (18–20 MKG).

17. TORQUE EIGHT SCREWS (2) TO 300–324 IN-LB (346–373 CMKG).

NOTE
Do step 17.1 for launcher assembly PN 12295910 only.

17.1. TORQUE SIX SCREWS (2.1, 2.2) TO 300–324 IN-LB (346–373 CMKG).

18. INSTALL REAR LOWER SHIELD (5) ON ARMOR (6).
   a. Apply sealing compound (Item 21) to threads of screws (7).
   b. Apply sealing compound (Item 20) to threads of screws (7).
   c. Install rear lower shield (5), four washers (8), and screws (7) on armor (6).
   d. TORQUE FOUR SCREWS (7) TO 300–324 IN-LB (346–373 CMKG).

19. CLOSE COVER (9).
   a. Close cover (9). Have helper assist.
   b. Apply sealing compound (Item 21) to threads of two screws (10).
   c. Apply sealing compound (Item 20) to threads of two screws (10).
   d. Install two washers (11) and screws (10) on cover (9).
   e. TORQUE TWO SCREWS (10) TO 54–59 FT-LB (7–8 MKG).
NOTE
Plug 2W104P1 is installed with four washers and self-locking screws, regardless of its original installation. No lock wires are required.

20. INSTALL PLUG 2W104P1 (1) ON JACK 3J01 (2).
   a. Install plug 2W104P1 (1) on jack 3J01 (2) with four washers (3) and new self-locking screws (4).


22. INSTALL TOW LAUNCHER DUST COVER.
   See task: REPLACE TOW LAUNCHER DUST COVER, page 20-8.

23. RAISE TRIM VANE. See TM 9-2350-252-10-2.

24. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

END OF TASK
REPLACE CABLE 2W104 (2W134)

DESCRIPTION

This task covers: Remove (page 20-96). Install (page 20-102).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Nylon sling, 25 ft (Item 9, App C) (2)
- Lifting device with rated lift capability of at least 724 lb (330.5 kg)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Launcher cable assembly
- Lock washer (2)
- Nylon strap(s) (as required)
- Self-locking nut
- Self-locking screw (4)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. MANUALLY TRAVERSE TURRET TO 6200 MILS. See TM 9-2350-252-10-2.

3. MANUALLY RAISE TOW LAUNCHER TO FIRING POSITION. See TM 9-2350-252-10-2.

NOTE

Note number of straps removed for installation.

4. REMOVE WIRE SHIELD (1) FROM SEAT TRACK (2).
   a. Remove two screws (3), lock washers (4), washers (5), and wire shield (1) from seat track (2). Discard lock washers.
   b. Remove strap(s) (6) from cable bundle (7). Discard strap(s).

**NOTE**
Do step 6 for M2 and M3 only.

Note number of straps removed for installation.

6. REMOVE CABLE 2W104 (1) FROM THREE CLAMPS (2, 3).
   a. Remove two screws (4) and clamps (2) from weldnuts (5) on turret.
   b. Remove locknut (6), screw (7), and clamp (3) from turret. Discard locknut.
   c. Remove strap(s) (8) from cable bundle (9). Discard strap(s).
   d. Remove cable 2W104 (1) from three clamps (2, 3).

**NOTE**
Do step 7 for M2A1 and M3A1 only.

Note number of straps removed for installation.

7. REMOVE STRAPS (1) FROM CABLE 2W134 (11) AND CABLES (12). DISCARD STRAPS.

GO TO NEXT PAGE
NOTE
Do step 8 for M2 and M3 only.

8. REMOVE PLUG 2W104P2 (1) FROM JACK 2A1012J03 (2) ON COMMAND GUIDANCE ELECTRONICS (3).

NOTE
Do step 9 for M2A1 and M3A1 only.

9. REMOVE PLUG 2W134P2 (4) FROM JACK 2A1012J03 (5) ON DIGITAL COMMAND GUIDANCE ELECTRONICS (3).
10. REMOVE CABLE 2W104 (2W134) (1) FROM UNDER TURRET FLOOR.

a. Pull cable 2W104 (2W134) (1) and plug 2W104P2 (2W134P2) (2) through grommet (3) on turret to remove cable 2W104 (2W134) from under turret floor.

NOTE

Note number of straps removed for installation.

11. REMOVE CABLE 2W104 (2W134) (1) FROM SIX CLAMPS (4).

a. Remove six screws (5) and clamps (4) from weldnuts (6) on turret.

b. Remove cable 2W104 (2W134) (1) from six clamps (4).

c. Remove strap(s) (7) from cable bundle (8). Discard straps.
12. PULL CABLE 2W104 (2W134) (1) AND PLUG 2W104P2 (2W134P2) (2) INTO TURRET THROUGH OPENING BEHIND GUNNER'S SEAT BACK CUSHION (3).

13. MANUALLY TRAVERSE TURRET TO 4800 MILS. See TM 9-2350-252-10-2.

14. ATTACH TWO SLINGS (4) TO TOW LAUNCHER (5). HAVE HELPER ASSIST.
   a. Attach two slings (4) around TOW launcher, one between support bracket (6) and upper bracket and one forward of electrical mechanical post (7).
   b. Take up slack in slings (4) to support TOW launchers (5). Use lifting device.
15. REMOVE CABLE 2W104 (1) FROM FOUR CLAMPS (2) OR CABLE 2W134 (1) FROM FIVE CLAMPS (2).
   a. Remove four screws (3), washers (4), and clamps (2) from faceplate (5) and baseplate (6).
   b. Remove screw (7), washer (8), clamp (2), and spacer (9) from faceplate (5).
   c. Remove cable 2W104 (1) from four clamps (2) or cable 2W134 from five clamps (2).

NOTE
Some vehicles do not have lock wire.

16. REMOVE PLUG 2W104P1 (2W134P1) (10) FROM JACK 2A1033J01 (11).
   a. Remove lock wire (12) from four screws (13). Discard lock wire.
   b. Remove four screws (13), washers (14), and plug 2W104P1 (2W134P1) (10) from jack 2A1033J01 (11). Discard screws.

18. REMOVE BRACKET (1) FROM FACEPLATE (2).
   a. Remove three screws (3), washers (4), and bracket (1) from faceplate (2).

19. REMOVE CABLE 2W104 (2W134) (5) FROM TURRET.
   a. Pull cable 2W104 (2W134) (5) and plug 2W104P2 (2W134P2) (6) out of turret through faceplate (2).

20. INSTALL NEW CABLE 2W104 (2W134) (5) IN TURRET.
   a. Push plug 2W104P2 (2W134P2) (6) and cable 2W104 (2W134) (5) through faceplate (2) and rotor (7).
   b. Loop cable 2W104 (2W134) (5) to right side of rotor (7).
   c. Pull plug 2W104P2 (2W134P2) (6) and cable 2W104 (2W134) (5) over rear spoke of mount (8) into turret.
21. INSTALL BRACKET (1) ON FACEPLATE (2).
   a. Apply sealing compound (Item 21) to threads of three screws (3).
   b. Apply sealing compound (Item 20) to threads of three screws (3).
   c. Install bracket (1), three washers (4), and screws (3) on faceplate (2).
   d. TORQUE THREE SCREWS (3) TO 73-79 IN-LB (64-91 CMKG).


23. INSTALL PLUG 2W104P1 (2W134P1) (5), four washers (7) and new self-locking screws (8) on jack 2A1033J01 (6).
24. INSTALL CABLE 2W104 (1) IN FOUR CLAMPS (2) OR CABLE 2W134 (1) IN FIVE CLAMPS.
   a. Apply sealing compound (Item 21) to threads of screws (3, 9).
   b. Apply sealing compound (Item 20) to threads of screws (3, 9).
   c. Install cable 2W104 (1) in four clamps (2) or cable 2W134 (1) in five clamps (2).
   d. Install four clamps (2), washers (4), and screws (3) on baseplate (5) and faceplate (6).
   e. Install clamp (2), spacer (7), washer (8), and screws (9) on faceplate (6).

25. TORQUE FOUR SCREWS (3) ON FOUR CLAMPS (2) TO 73–79 IN-LB (84–91 CMKG).


27. PUSH CABLE 2W104 (2W134) (1) OUT OF TURRET.
   a. Place cable 2W104 (2W134) (1) along turret on left side of gunner’s station.
   b. Push plug 2W104P2 (2W134P2) (10) and cable 2W104 (2W134) (1) down through opening behind gunner’s seat back cushion (11) and out of turret.
28. INSTALL CABLE 2W104 (2W134) (1) UNDER TURRET FLOOR.
   a. Push plug 2W104P2 (2W134P2) (2) and cable 2W104 (2W134) (1) through grommet (3) on turret.
   b. Pull cable 2W104 (2W134) (1) under turret floor.

NOTE
Do step 29 for M2 and M3 only.

29. INSTALL PLUG 2W104P2 (2) ON JACK 2A1012J03 (4) ON COMMAND GUIDANCE ELECTRONICS (5).
NOTE

Do step 30 for M2A1 and M3A1 only.

30. INSTALL PLUG 2W134P2 (1) ON JACK 2A1012J03 (2) ON DIGITAL COMMAND GUIDANCE ELECTRONICS (3).

31. INSTALL CABLE 2W104 (2W134) (4) IN SIX CLAMPS (5).
   a. Install cable 2W104 (2W134) (4) in six clamps (5).
   b. Install six clamps (5) and screws (6) on weldnuts (7) on turret.
   c. Install new strap(s) (8) on cable bundle (9).
Do step 32 for M2 and M3 only.

Additional straps may be required to secure cables to adjacent cables and/or turret. Use straps as required.

32. INSTALL CABLE 2W104 (2W134) (1) IN THREE CLAMPS (2, 3).
   a. Install cable 2W104 (2W134) (1) in three clamps (2, 3).
   b. Install two clamps (2) and screws (4) on weldnuts (5) on turret.
   c. Install clamp (3), screw (6), and new locknut (7) on turret.
   d. Install new strap(s) (8) on cable bundle (9).

Do step 33 for M2A1 and M3A1 only.

Additional straps may be required to secure cables to adjacent cables and/or turret. Use straps as required.

33. INSTALL NEW STRAPS (10) ON CABLES (11) AND CABLE 2W134 (12), AS REQUIRED.
34. INSTALL CENTER, LEFT FRONT, AND STEP TURRET FLOOR PLATES. See task: REPLACE TURRET FLOOR PLATES, page 4-26.

NOTE
Additional straps may be required to secure cables to adjacent cables and/or turret. Use straps as required.

35. INSTALL WIRE SHIELD (1) ON SEAT TRACK (2).
   a. Install new strap(s) (3) on cable bundle (4).
   b. Install wire shield (1), two washers (5), new lock washers (6), and screws (7) on seat track (2).


37. CHECK OPERATION OF TOW LAUNCHER. See TM 9-2350-252-10-2.

38. MANUALLY LOWER TOW LAUNCHER TO STOW POSITION. See TM 9-2350-252-10-2.

39. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

END OF TASK
REPLACE LAUNCHER HANDLE  
(LAUNCHER ASSEMBLY PN 12295910 ONLY)

DESCRIPTION

This task covers: Remove (page 20–109). Install (page 20–113).

INITIAL SETUP

Tools:  
Turret mechanic’s tool kit (Item 31, App F)  

References:  
TM 9–2350–252–10–1  
TM 9–2350–252–10–2  

Materials/Parts:  
Handle  
Cotter pin (2)  
Sealing compound (Item 18, App C)  

Equipment Conditions:  
Engine stopped (TM 9–2350–252–10–1)  
Turret shut down (TM 9–2350–252–10–2)  
Tow launcher raised to firing position (TM 9–2350–252–10–2)  

Personnel Required:  
ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. SLIDE TOW LAUNCHER SIX INCHES OUT OF ARMOR TO GAIN ACCESS TO HANDLE MECHANISM. See task: REMOVE/INSTALL TOW LAUNCHER ASSEMBLY, page 20–91.
2. LOWER HANDLE (1).
   a. Push latch (2) and lower handle (1).

3. REMOVE COTTER PIN (3) FROM HEADED STRAIGHT PIN (4).
   a. Remove cotter pin (3) from headed straight pin (4). Discard cotter pin.
   b. Remove flat washer (5) from headed straight pin (4).
WARNING
Handle is heavy and can cause injury if dropped. Hold handle when removing straight pin.

4. REMOVE STRAIGHT PIN (1) FROM LAUNCHER HOUSING (2).
   a. Remove two setscrews (3) from launcher housing (2).
   b. Remove straight pin (1) from launcher housing (2).

NOTE
It may be necessary to rotate handle and actuator couplers to remove headed straight pin.

5. REMOVE HANDLE (4) FROM LAUNCHER HOUSING (2).
   a. Push handle (4) and actuator couplers (5) toward launcher housing (2).
   b. Slide headed straight pin (6) from handle (4).
   c. Remove handle (4) from launcher housing (2).

GO TO NEXT PAGE
6. REMOVE SHOULDER SCREW (1), THREE FLAT WASHERS (2), AND SPRING (3) FROM HANDLE (4).

7. REMOVE LATCH (5) FROM HANDLE (4).
   a. Remove cotter pin (6) from headed straight pin (7). Discard cotter pin.
   b. Remove flat washer (8), headed straight pin (7), and latch (5) from handle (4).
8. INSTALL LATCH (1) ON HANDLE (2).
   a. Place latch (1) on new handle (2) and install headed straight pin (3).
   b. Install flat washer (4) and new cotter pin (5) on headed straight pin (3).

9. INSTALL SPRING (6), THREE FLAT WASHERS (7), AND SHOULDER SCREW (8) ON HANDLE (2).
   a. Apply thin coat of sealing compound to threads of shoulder screw (8).
   b. Install spring (6), three flat washers (7), and shoulder screw (8) on handle (2).
   c. TORQUE SHOULDER SCREW (8) TO 15-18 IN-LB (18-20 CMKG).
NOTE
It may be necessary to rotate handle and actuator couplers to install headed straight pin.

10. ATTACH HANDLE (1) TO TWO ACTUATOR COUPLERS (2).
   a. Place handle (1) on two actuator couplers (2) and install headed straight pin (3).
   b. Position handle (1) on launcher housing (4) by raising and pulling handle (1).

11. INSTALL HANDLE (1) ON LAUNCHER HOUSING (4).
   a. Apply thin coat of sealing compound to threads of two setscrews (5).
   b. Place handle (1) on launcher housing (4) and install straight pin (6). Ensure that flat surface of straight pin is facing setscrew holes.
   c. Install two setscrews (5).
   d. TORQUE TWO SETSCREWS (5) TO 60–65 IN-LB (70–75 CMKG).
12. INSTALL NEW COTTER PIN (1) ON HEADED STRAIGHT PIN (2).
   a. Install flat washer (3) and cotter pin (1) on headed straight pin (2).

13. RAISE HANDLE (4) INTO LOCKED POSITION.
   a. Raise handle (4) until latch (5) locks into latch bracket (6).


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**CHAPTER 21**

**MAINTENANCE OF TOW CONTROL BOX**
REPLACE TOW CONTROL BOX

DESCRIPTION

This task covers: Remove (page 21-2). Install (page 21-3).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Self-locking nut (4)
- TOW control box

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE ANNUNCIATOR. See task: REPLACE ANNUNCIATOR, page 5-20.1.
2. REMOVE BOX (1) WITH BRACKET (2) FROM SUPPORT (3).
   a. Remove two screws (4), washers (5), and box (1) and bracket (2) from support (3).

21-2 Change 4
3. REMOVE PLUG 2W5P2 (2W35P2) (1) FROM JACK 2A5J1 (2).

4. REMOVE BRACKET (3) FROM BOX (4).
   a. Remove four locknuts (5), washers (6), and bracket (3) from box (4). Discard locknuts.

5. REMOVE FOUR MOUNTS (7) FROM BOX (4).

6. INSTALL FOUR MOUNTS (7) ON NEW BOX (4).

GO TO NEXT PAGE
7. INSTALL BRACKET (1) ON BOX (2).
   a. Place bracket (1) on box (2).
   b. Install four washers (4) and new locknuts (5) on mounts (3).

8. INSTALL PLUG 2W5P2 (2W35P2) (6) IN JACK 2A5J1 (7).

9. INSTALL BOX (2) WITH BRACKET (1) ON SUPPORT (8).
   a. Apply sealing compound (Item 21) to threads of two screws (9).
   b. Apply sealing compound (Item 20) to threads of two screws (9).
   c. Install box (2) with bracket (1), two washers (10) and screws (9) on support (8).


11. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK

21-4  Change 4
REPLACE TOW CONTROL BOX INDICATOR PANEL

INITIAL SETUP

Tools:
Turret mechanic’s tool kit (Item 31, App F)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Materials/Parts:
Panel

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
There are two kinds of indicator panels. Removal and installation for both are the same. M2 indicator panel is shown.

1. REMOVE PANEL (1) FROM CONTROL BOX (2).
   a. Remove six screws (3) and panel (1) from control box (2).

INSTALL

2. INSTALL NEW PANEL (1) ON CONTROL BOX (2).
   a. Install panel (1) and six screws (3) on control box (2).

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REPLACE COMMANDER’S RELAY MOUNTING BRACKET

DESCRIPTION

This task covers: Remove (page 22-2). Install (page 22-3).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Angle bracket

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE BRACKET (1) FROM RELAY (2).
   a. Remove four screws (3), washers (4), and bracket (1) from relay (2).
3. REMOVE BRACKET (1) FROM TURRET.
   a. Remove two screws (2), washers (3), and bracket (1) from turret.

4. INSTALL NEW BRACKET (1) ON TURRET.
   a. Install bracket (1), two washers (3), and screws (2) on turret, finger tight.

5. INSTALL BRACKET (1) ON RELAY (4).
   a. Install bracket (1), four washers (5), and screws (6) on relay (4).

6. TIGHTEN SIX SCREWS (2, 6) ON BRACKET (1).


END OF TASK
SERVICE INTEGRATED SIGHT UNIT

DESCRIPTION

This task covers: Hook-up purging kit (page 22-4).
Leak test purging kit (page 22-10).
Leak test machine screw (page 22-13).
Leak test lamp window collar assembly (page 22-15).
Leak test lampholder assembly cover — M2, M3 only (page 22-17).
Leak test valve assembly (page 22-18).
Remove purging kit (page 22-21).

INITIAL SETUP

Tools:
Boresight target spanner (Item 27, App F)
Turret mechanic's tool kit (Item 31, App F)
Purging kit (Item 18, App F)
Repair tool, pneumatic tire valve
(Item 20, App F)

Materials/Parts:
Leak test compound (Item 30, App C)
Sealing compound (Item 6, App C)
Sealing compound (Item 21, App C)
Lubricant (Item 28, App C)
Technical nitrogen (Item 25, App C)
Machine screw (bleed)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9–2350–252–10–1
TM 9–2350–252–10–2

Equipment Conditions:
Engine stopped (TM 9–2350–252–10–1)
Turret shut down (TM 9–2350–252–10–2)

HOOK–UP PURGING KIT

WARNING
Dropping cylinder of compressed nitrogen gas in enclosed areas can cause suffocation. Use extreme care not to drop cylinder.

CAUTION
Compressed cylinder must have two black bands on upper part of cylinder. Do not use cylinder without two black bands.

2. IF REGULATOR IS INSTALLED ON COMPRESSED CYLINDER, GO TO STEP 7. IF NOT, GO TO STEP 3.

3. REMOVE COVER (1) FROM COMPRESSED CYLINDER (2).

4. REMOVE CAP (3) FROM COMPRESSED CYLINDER (2).

5. SLOWLY TURN CYLINDER VALVE (4) LEFT UNTIL NITROGEN LEAVES CYLINDER, LEAVE CYLINDER VALVE OPEN FOR ONE TO TWO SECONDS, THEN TURN CYLINDER VALVE RIGHT TO CLOSE.
6. INSTALL REGULATOR (1) ON COMPRESSED CYLINDER (2).

7. INSTALL HOSE (3) ON REGULATOR (1).

8. CHECK PRESSURE IN COMPRESSED CYLINDER (2).
   a. Turn regulator valve (4) left to close.
   b. Turn cylinder valve (5) left until maximum cylinder pressure shows on high pressure gage (6).
   c. If cylinder pressure is less than 100 psi, replace compressed cylinder.
   d. If cylinder pressure is greater than 100 psi, go to step 9.
CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

9. CHECK HOSE (1) FOR BLOCKING.
   a. Turn regulator valve (2) right until 4 psi shows on low pressure gage (3).
   b. Check hose (1) for blocking.
   c. If flow of nitrogen cannot be heard, replace hose (1).
   d. Turn regulator valve (2) left to close.

10. REMOVE MACHINE SCREW (4) FROM PERISCOPE HEAD ASSEMBLY (5). DISCARD MACHINE SCREW.
Valve stem may be located on lower portion of main housing.

11. REMOVE VALVE CAP (1) FROM VALVE STEM (2).


13. INSTALL HOSE (3) ON VALVE STEM (2) OF ISU (4).
CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

14. PURGE ISU.
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2). Allow gas to purge through ISU 10 minutes or until all visible traces of moisture are gone.

15. INSTALL NEW MACHINE SCREW (3) ON PERISCOPE HEAD ASSEMBLY (4).
   a. Apply thin coat of lubricant (Item 28) to threads of machine screw (3).
   b. Install machine screw (3) on periscope head assembly (4).
   c. TORQUE MACHINE SCREW (3) TO 24-28 IN-LB (28–32 CMKG).
   d. Wait 10 minutes and go to step 53.
CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

16. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).
   b. Apply leak detecting fluid to connections between regulator (3), hose (4), and valve stem (5). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak detecting fluid. Go to step 24.
   d. If there are bubbles, go to step 17.

17. TURN REGULATOR VALVE (1) LEFT TO CLOSE.
NOTE
If connection between hose and regulator does not show bubbles, go to step 21.

18. CHECK CONNECTION BETWEEN HOSE (1) AND REGULATOR (2).
   a. Remove hose (1) from regulator (2).
   b. Inspect hose (1) and regulator (2) for dirt or damage. Replace as necessary.
   c. Install hose (1) on regulator (2).

CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

19. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (3) right until 4 psi shows on low pressure gage (4).
   b. Apply leak test compound to connections between regulator (2), hose (1), and valve stem (5). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 53.
   d. If there are bubbles, go to step 20.

GO TO NEXT PAGE
20. TURN REGULATOR VALVE (1) LEFT TO CLOSE.

NOTE
If connection between hose and valve stem does not show bubbles, go to step 18.

21. CHECK CONNECTION BETWEEN HOSE (2) AND VALVE STEM (3).
   a. Remove hose (2) from valve stem (3).
   b. Inspect hose (2) and valve stem (3) for dirt or damage. Replace as necessary.
   c. Install hose (2) on valve stem (3).
CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

22. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).
   b. Apply leak test compound to connections between regulator (3), hose (4), and valve stem (5). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 53.
   d. If there are bubbles, go to step 17.

LEAK TEST MACHINE SCREW

CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

23. PRESSURIZE REGULATOR (3).
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).

GO TO NEXT PAGE
24. CHECK MACHINE SCREW (1) FOR LEAKS.
   a. Apply leak test compound to machine screw (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound.
      Go to step 31.
   c. If there are bubbles go to step 25.

25. TORQUE MACHINE SCREW (1) TO 24–28 IN-LB (28–32 CMKG).

26. CHECK MACHINE SCREW (1) FOR LEAKS.
   a. Apply leak test compound to machine screw (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound.
      Go to step 53.
   c. If there are bubbles, go to step 27.

27. TURN REGULATOR VALVE (2) LEFT TO CLOSE.

22-14 Change 2
28. REMOVE MACHINE SCREW (1) FROM PERISCOPE HEAD ASSEMBLY (2). DISCARD MACHINE SCREW.

29. INSTALL NEW MACHINE SCREW (1) ON PERISCOPE HEAD ASSEMBLY (2).
   a. Apply thin coat of lubricant (Item 28) to threads of machine screw (1).
   b. Install machine screw (1) on periscope head assembly (2).
   c. TORQUE MACHINE SCREW (1) TO 24–28 IN-LB (28–32 CMKG).
   d. Go to step 23.

**LEAK TEST LAMP WINDOW COLLAR ASSEMBLY**

CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

30. PRESSURIZE REGULATOR (3).
   a. Turn regulator valve (4) right until 4 psi shows on low pressure gage (5).
31. CHECK LAMP WINDOW COLLAR ASSEMBLY (1) FOR LEAKS.
   a. Apply leak test compound to lamp window collar assembly (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 38.
   c. If there are bubbles, go to step 32.

32. TORQUE LAMP WINDOW COLLAR ASSEMBLY (1) TO 10–12 IN-LB (12-14 CMKG). USE BORESIGHT TARGET SPANNER (2).

33. CHECK LAMP WINDOW COLLAR ASSEMBLY (1) FOR LEAKS.
   a. Apply leak test compound to lamp window collar assembly (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 53.
   c. If there are bubbles, go to step 34.

34. TURN REGULATOR VALVE (3) LEFT TO CLOSE.


36. GO TO STEP 30.
CAUTION
ISU seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

37. PRESSURIZE REGULATOR (1).
   a. Turn regulator valve (2) right until 4 psi shows on low pressure gage (3).

38. CHECK LAMPHOLDER ASSEMBLY COVER (4) FOR LEAKS.
   a. Apply leak test compound to lampholder assembly cover (4) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 42.
   c. If there are bubbles, go to step 39.
39. TURN REGULATOR VALVE ASSEMBLY (1) LEFT TO CLOSE.

40. REPLACE LAMPHOLDER ASSEMBLY COVER. See page 22-63.

41. GO TO STEP 37.

42. TURN REGULATOR VALVE (1) LEFT TO CLOSE.

**NOTE**
Valve stem may be located on lower portion of main housing.

43. REMOVE HOSE (2) FROM VALVE ASSEMBLY (3).

44. CHECK VALVE ASSEMBLY (3) FOR LEAKS.
   a. Apply leak test compound around bottom of valve assembly (3).
   b. Check for bubbles around bottom of valve stem (4) and around valve core (5).
   c. If there are no bubbles after 10 minutes, go to step 52.
   d. If there are bubbles around bottom of valve stem (4), go to step 45.
   e. If there are bubbles from valve core (5), do steps 46 and 47. Go to step 49.
   f. If there are no bubbles within 10 minutes after replacing valve stem (4) or valve core (5), go to step 52.
NOTE
Valve stem may be located on lower portion of main housing assembly.

45. REMOVE VALVE STEM (1) FROM ISU (2).
   a. Remove valve stem (1) and strap (3) from ISU (2).
   b. Inspect valve stem (1) for damage. If damaged, replace valve stem.

46. REMOVE VALVE CORE (4) FROM VALVE STEM (1). USE TIRE VALVE REPAIR TOOL.

47. INSTALL NEW VALVE CORE (4) IN VALVE STEM (1). USE TIRE VALVE REPAIR TOOL.

48. INSTALL VALVE STEM (1) ON ISU (2).
   a. Apply sealing compound (Item 21) to threads of valve stem (1).
   b. Apply sealing compound (Item 6) to threads of valve stem (1).
   c. Install strap (3) and valve stem (1) on ISU (2).
   d. TORQUE VALVE STEM (1) TO 70–80 IN-LB (81–92 CMKG).

GO TO NEXT PAGE
49. INSTALL HOSE (1) ON VALVE STEM (2).

50. PRESSURIZE ISU.
   a. Turn regulator valve (3) right until 4 psi shows on low pressure gage (4).

51. GO TO STEP 42.

52. DO STEPS 49 AND 50 OF THIS TASK, THEN GO TO STEP 53.

53. CHECK FOR CHANGE IN PRESSURE READING ON LOW PRESSURE GAGE (4).
   a. Turn regulator valve (3) left to close.
   b. Note pressure reading on low pressure gage (4) and wait 30 minutes.
   c. If there is no change in pressure reading, go to step 55.
   d. If there is a change in pressure reading, go to step 54.1.

54. LEAK TEST ALL PARTS OF PURGING KIT AND ISU. See page 22–10. IF ISU CANNOT HOLD PRESSURE, NOTIFY DIRECT SUPPORT MAINTENANCE.
NOTE
Do step 54.1 for M2A1 and M3A1 only.
Do not remove hose from ISU in the next step.

54.1 LOWER NITROGEN PRESSURE WITHIN
ISU (1) FROM 4 PSI TO APPROXIMATELY 1.5 PSI. HAVEHelper
ASSIST.

a. Slowly unscrew hose (2) from valve
stem (3) on ISU (1) until flow of
nitrogen can be heard.
b. Monitor low pressure gage (4) as ni-
trogen is released until it reads one
division (approximately 1.5 psi).
c. Screw hose (2) back onto valve
stem (3) until tight and nitrogen is
not longer escaping.

55. REMOVE HOSE (2) FROM VALVE STEM
(3) ON ISU (1).

a. Turn cylinder valve (5) right to close.
b. Remove hose (2) from valve stem (3)
on ISU (1).
56. DEPRESSURIZE REGULATOR (1).
   a. Turn regulator valve (2) right until pressure gages (3) read zero.
   b. Turn regulator valve (2) left to close.

57. CLOSE SIGHT SHIELD ASSEMBLY. See task: OPEN/CLOSE SIGHT SHIELD ASSEMBLY, page 24-3.

58. INSTALL VALVE CAP (4) ON VALVE STEM (5).

59. REMOVE HOSE (6) FROM REGULATOR (1).
60. REMOVE REGULATOR (1) FROM COMPRESSED CYLINDER (2).

61. INSTALL CAP (3) ON COMPRESSED CYLINDER (2).

62. INSTALL COVER (4) ON COMPRESSED CYLINDER (2).


END OF TASK
SERVICE COMMANDER’S RELAY ASSEMBLY

DESCRIPTION

This task covers:  
- Hook-up purging kit (page 22–24).  
- Leak test purging kit (page 22–29).  
- Leak test machine screw (page 22–32).  
- Leak test valve assembly (page 22–35).  
- Remove purging kit (page 22–37).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)  
- Purging kit (Item 18, App F)  
- Repair tool, pneumatic tire valve (Item 20, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Leak test compound (Item 30, App C)  
- Sealing compound (Item 6, App C)  
- Sealing compound (Item 21, App C)  
- Lubricant (Item 28, App C)  
- Technical nitrogen (Item 25, App C)  
- Machine screw

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)  
- Turret shut down (TM 9–2350–252–10–2)

HOOK–UP PURGING KIT

WARNING

Dropping cylinder of compressed nitrogen gas in enclosed areas can cause suffocation. Use extreme care not to drop cylinder.

CAUTION

Compressed cylinder must have two black bands on upper part of cylinder. Do not use cylinder without two black bands.

1. IF REGULATOR IS INSTALLED ON COMPRESSED CYLINDER, GO TO STEP 6. IF NOT, TO GO STEP 2.

2. REMOVE COVER (1) FROM COMPRESSED CYLINDER (2).
1. SLOWLY TURN CYLINDER VALVE (3) LEFT UNTIL NITROGEN LEAVES CYLINDER. LEAVE CYLINDER VALVE OPEN FOR ONE TO TWO SECONDS, THEN TURN CYLINDER VALVE RIGHT TO CLOSE.

3. REMOVE CAP (1) FROM COMPRESSED CYLINDER (2).

5. INSTALL REGULATOR (4) ON COMPRESSED CYLINDER (2).

6. INSTALL HOSE (5) ON REGULATOR (6).

GO TO NEXT PAGE
7. CHECK PRESSURE IN COMPRESSED CYLINDER (1).
   a. Turn regulator valve (2) left to close.
   b. Turn cylinder valve (3) left until maximum cylinder pressure shows on high pressure gage (4).
   c. If cylinder pressure is less than 100 psi, replace compressed cylinder.
   d. If cylinder pressure is greater than 100 psi, go to step 8.

CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

8. CHECK HOSE (5) FOR BLOCKING.
   a. Turn regulator valve (2) right until 4 psi shows on low pressure gage (6).
   b. Check hose (5) for blocking.
   c. If flow of nitrogen cannot be heard, replace hose (5).
   d. Turn regulator valve (2) left to close.
9. REMOVE 25MM GUARD (1) FROM SUPPORT (2).
   a. Turn handle (3) and open 25mm guard (1).
   b. Remove 25mm guard (1) from support (2).

10. REMOVE MACHINE SCREW (4) FROM COMMANDER'S RELAY ASSEMBLY (5).
    DISCARD MACHINE SCREW.

11. REMOVE VALVE CAP (6) FROM VALVE STEM (7).

13. INSTALL HOSE (1) ON VALVE STEM (2) OF COMMANDER'S RELAY ASSEMBLY.

CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

14. PURGE COMMANDER'S RELAY ASSEMBLY.
   a. Turn regulator valve (3) right until 4 psi shows on low pressure gage (4). Allow gas to purge through commander's relay assembly 3–5 minutes or until all visible traces of moisture are gone.
15. INSTALL NEW MACHINE SCREW (1) ON COMMANDER'S RELAY ASSEMBLY (2).
   a. Apply thin coat of lubricant to threads of machine screw (1).
   b. Install machine screw (1) on commander's relay assembly (2).
   c. TORQUE MACHINE SCREW (1) TO 10–12 IN-LB (12–14 CMKG).
   d. Wait 10 minutes and go to step 40.

LEAK TEST PURGING KIT

CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

16. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (3) right until 4 psi shows on low pressure gage (4).
   b. Apply leak test compound to connections between regulator (5), hose (6), and valve stem (7). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 23.
   d. If there are bubbles, go to step 17.

GO TO NEXT PAGE
17. TURN REGULATOR VALVE (1) LEFT TO CLOSE.

NOTE
If connection between valve stem and hose does not show bubbles, go to step 20.

18. CHECK CONNECTION BETWEEN VALVE STEM (2) AND HOSE (3).
   a. Remove hose (3) from valve stem (2).
   b. Inspect valve stem (2) and hose (3) for dirt or damage. Replace as necessary.
   c. Install hose (3) on valve stem (2).
CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

19. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).
   b. Apply leak test compound to connections between regulator (3), hose (4), and valve stem (5). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 40.
   d. If there are bubbles, go to step 17.

20. CHECK CONNECTION BETWEEN HOSE (4) AND REGULATOR (3).
   a. Remove hose (4) from regulator (3).
   b. Inspect hose (4) and regulator (3) for dirt or damage. Replace as necessary.
   c. Install hose (4) on regulator (3).

GO TO NEXT PAGE
CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

21. CHECK PURGING KIT FOR LEAKS.
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).
   b. Apply leak test compound to connections between regulator (3), hose (4), and valve stem (5). Check for bubbles.
   c. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 40.
   d. If there are bubbles, go to step 17.

LEAK TEST MACHINE SCREW

CAUTION
Commander's relay assembly seals could rupture if pressure is too high. Never let low pressure gage get higher than 4 psi.

22. PRESSURIZE REGULATOR (3).
   a. Turn regulator valve (1) right until 4 psi shows on low pressure gage (2).
23. CHECK MACHINE SCREW (1) FOR LEAKS.
   a. Apply leak test compound to machine screw (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 29.
   c. If there are bubbles, go to step 24.

24. TORQUE MACHINE SCREW (1) TO 10-12 IN-LB (12-14 CMKG).

25. CHECK MACHINE SCREW (1) FOR LEAKS.
   a. Apply leak test compound to machine screw (1) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 40.
   c. If there are bubbles, go to step 26.

26. TURN REGULATOR VALVE (2) LEFT TO CLOSE.

GO TO NEXT PAGE
27. REMOVE MACHINE SCREW (1) FROM COMMANDER'S RELAY ASSEMBLY (2). DISCARD MACHINE SCREW.

28. INSTALL NEW MACHINE SCREW (1) ON COMMANDER'S RELAY ASSEMBLY (2).
   a. Apply thin coat of lubricant to threads of machine screw (1).
   b. Install machine screw (1) on commander's relay assembly (2).
   c. TORQUE MACHINE SCREW (1) TO 10–12 IN-LB (12–14 CMKG).
   d. Go to step 22.

29. TURN REGULATOR VALVE (3) LEFT TO CLOSE.

30. REMOVE HOSE (4) FROM VALVE STEM (5).
31. CHECK VALVE ASSEMBLY (1) FOR LEAKS.
   a. Apply leak test compound to valve stem (2) and valve core (3) and check for bubbles.
   b. If there are no bubbles within 10 minutes, wipe off leak test compound. Go to step 39.
   c. If there are bubbles between valve core (3) and valve stem (2), do steps 33 and 34. Go to step 36.
   d. If there are bubbles between valve stem (2) and commander's relay assembly (4), go to step 32.

32. REMOVE VALVE STEM (2) FROM COMMANDER'S RELAY ASSEMBLY (4).
   a. Remove valve stem (2) and strap (5) from commander's relay assembly (4).
   b. Inspect valve stem (2) for damage. If damaged, replace valve stem.

33. REMOVE VALVE CORE (3) FROM VALVE STEM (2). USE TIRE VALVE REPAIR TOOL.

34. INSTALL VALVE CORE (3) ON VALVE STEM (2). USE TIRE VALVE REPAIR TOOL.

35. INSTALL VALVE STEM (2) ON COMMANDER'S RELAY ASSEMBLY (4).
   a. Apply thin coat of sealing compound (Item 21) to threads of valve stem (2).
   b. Apply thin coat of sealing compound (Item 6) to threads of valve stem (2).
   c. Install strap (5) and valve stem (2) on commander's relay assembly (4).
   d. TORQUE VALVE STEM (2) TO 70–80 IN-LB (81–92 CMKG).

NOTE
If valve stem has been replaced, go to step 35.

GO TO NEXT PAGE
36. INSTALL HOSE (1) ON VALVE STEM (2) OF COMMANDER’S RELAY ASSEMBLY (3).

37. PRESSURIZE COMMANDER’S RELAY ASSEMBLY.
   a. Turn regulator valve (4) right until 4 psi shows on low pressure gage (5). Wait 10 minutes.

38. GO TO STEP 29.

39. DO STEPS 36 AND 37 OF THIS TASK, THEN GO TO STEP 40.

40. CHECK FOR CHANGE IN PRESSURE READING ON LOW PRESSURE GAGE (5).
   a. Turn regulator valve (4) left to close.
   b. Note pressure reading on low pressure gage (5) and wait 10 minutes.
   c. If there is no change in pressure reading, go to step 42.
   d. If there is a change in pressure reading, go to step 41.

41. LEAK TEST ALL PARTS OF PURGING KIT AND COMMANDER’S RELAY ASSEMBLY. SEE PAGE 22-24. IF COMMANDER’S RELAY ASSEMBLY CANNOT HOLD PRESSURE, NOTIFY DIRECT SUPPORT MAINTENANCE.
42. TURN TANK VALVE (1) RIGHT TO CLOSE.

43. REMOVE HOSE (2) FROM VALVE STEM (3) ON COMMANDER'S RELAY ASSEMBLY (4).

44. INSTALL VALVE CAP (5) ON VALVE STEM (3).

45. DEPRESSURIZE REGULATOR (6).  
   a. Turn regulator valve (7) right until pressure gages (8) read zero.  
   b. Turn regulator valve (7) left to close.

46. CLOSE AND SECURE GUNNER'S HATCH COVER. See TM 9-2350-252-10-2.

47. INSTALL 25MM GUARD (9) ON SUPPORT (10).  
   a. Place 25mm guard (9) on support (10).  
   b. Turn handle (11) to lock 25mm guard (9).
48. REMOVE HOSE (1) FROM REGULATOR (2).

49. REMOVE REGULATOR (2) FROM COMPRESSED CYLINDER (3).

50. INSTALL CAP (4) ON COMPRESSED CYLINDER (3).

51. INSTALL COVER (5) ON COMPRESSED CYLINDER (3).

END OF TASK
REMOVE/INSTALL INTEGRATED SIGHT UNIT

DESCRIPTION

This task covers: Remove (page 22-39). Install (page 22-42).

INITIAL SETUP

Tools:

- Turret mechanic's tool kit (Item 31, App F)
- Lifting device with rated lift capability of at least 260 lbs. (118 kg)
- ISU installation device (Item 10, App F)

Personnel Required:

- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:

- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:

- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- Sealing compound (Item 24, App C)
- Silicone compound (Item 28, App C)

Equipment Conditions:

- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. REMOVE GUNNER'S HEADREST (1) FROM SUPPORT (2).
   a. Remove quick release pin (3) and gunner's headrest (1) from support (2).

GO TO NEXT PAGE

4. REMOVE GUN GUARD STOP (1) FROM TURRET.
   a. Remove two screws (2), washers (3), and gun guard stop (1) from turret.

5. REMOVE COMMANDER’S RELAY ASSEMBLY (4) FROM TURRET.
   a. Loosen three captive screws (5) on commander’s relay assembly (4).
   b. Remove four screws (6) and washers (7) from commander’s relay assembly (4) and bracket (8).
   c. Remove commander’s relay assembly (4) from ISU (10) and turret.
   d. Loosen two screws (9) on bracket (8).
6. REMOVE FOUR PLUGS (1) FROM FOUR JACKS (2) ON ISU (3) AS FOLLOWS:

- 2W101P1 FROM 1J01
- 2W103P3 FROM 1J02
- 2W103P4 FROM 1J03
- 2W201P1 FROM 1J04.

TAG PLUGS.

7. REMOVE 12 SCREWS (4) AND WASHERS (5) FROM ISU (3).

8. INSTALL INSTALLATION DEVICE (6) ON ISU (3).
   a. Attach Installation device (6) on ISU (3) with three shoulder bolts (7).
CAUTION
ISU can be damaged if bumped against turret. Remove ISU carefully.

NOTE
ISU must be placed on a suitable surface with controls facing up.

ISU should be tilted forward before lifting.

9. REMOVE ISU (1) FROM TURRET. USE LIFTING DEVICE. HAVE HELPER ASSIST.
   a. Have helper sit in gunner's seat and guide ISU (1) out of turret.

10. CLEAN ISU MOUNTING SURFACE (2).

11. CLEAN TURRET MOUNTING SURFACE (3).

CAUTION
ISU can be damaged if bumped against turret. Install ISU carefully.

12. INSTALL ISU (1) INTO TURRET. USE LIFTING DEVICE. HAVE HELPER ASSIST.
   a. Have helper sit in gunner's seat and guide ISU (1) into turret.
13. REMOVE INSTALLATION DEVICE (1) FROM ISU (2).
   a. Remove three shoulder bolts (3) and installation device (1) from ISU (2).

14. SECURE ISU (2) IN TURRET.
   a. Apply sealing compound (Item 24) to threads of 12 screws (4).
   b. Install 12 washers (5) and screws (4) on ISU (2).
   c. TORQUE 12 SCREWS (4) TO 22-24 FT-LB (3-4 MKG). Use cross torque method as shown.

15. INSTALL FOUR PLUGS (6) ON FOUR JACKS (7) ON ISU (2) AS FOLLOWS:

   2W201P1 ON 1J04
   2W103P4 ON 1J03
   2W103P3 ON 1J02
   2W101P1 ON 1J01.

GO TO NEXT PAGE
16. APPLY THIN COAT OF SILICONE COMPOUND TO PREFORMED PACKING (1) ON ISU (2).

17. INSTALL COMMANDER’S RELAY ASSEMBLY (3) ON ISU (2).
   a. Install commander’s relay assembly (3) and three captive screws (4) on ISU (2). Tighten screws finger tight.

18. INSTALL COMMANDER’S RELAY ASSEMBLY (3) ON TURRET.
   a. Install four washers (5) and screws (6) on commander’s relay assembly (3).
   b. TORQUE THREE CAPTIVE SCREWS (4) TO 24-28 IN-LB (27-32 CMKG).
   c. Tighten four screws (6) on bracket (7).
   d. Tighten two screws (8) on bracket (7).
19. INSTALL GUN GUARD STOP (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of two screws (2).
   b. Apply sealing compound (Item 20) to threads of two screws (2).
   c. Install gun guard stop (1) two washers (3), and screws (2) on turret.


21. INSTALL GUNNER'S HEADREST (4) ON SUPPORT (5).
   a. Install gunner's headrest (4) and quick release pin (6) in support (5).

22. CLOSE SIGHT SHIELD ASSEMBLY. See task: OPEN/CLOSE SIGHT SHIELD ASSEMBLY, page 24-3.

END OF TASK
REPLACE FOCUS/SENSOR SELECT KNOBS

DESCRIPTION


INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 17, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

FOCUS KNOB

REMOVE

1. REMOVE FOCUS KNOB (1) FROM SHOULDERED SHAFT (2).
   a. Loosen two setscrews (3).
   b. Remove focus knob (1) from shouldered shaft (2).
2. INSTALL NEW FOCUS KNOB (1) ON SHOULDERED SHAFT (2).
   a. Apply thin coat of sealing compound to threads of two setscrews (3).
   b. Install focus knob (1) on shouldered shaft (2) with setscrews (3) and shouldered shaft detents (4) aligned.
   c. Tighten two setscrews (3).
   d. DELETED.

SENSOR SELECT KNOB

3. REMOVE SENSOR SELECT KNOB (5) FROM SENSOR SELECT SHAFT (6).
   a. Move SENSOR SELECT knob (5) to NEUTRAL.
   b. Loosen two setscrews (7).
   c. Remove SENSOR SELECT knob (5) from SENSOR SELECT shaft (6).
4. INSTALL NEW SENSOR SELECT KNOB (1) ON SENSOR SELECT SHAFT (2).
   
a. Apply thin coat of sealing compound to threads of two setscrews (3).
   
b. Place SENSOR SELECT knob (1) on SENSOR SELECT shaft (2) so that SENSOR SELECT knob is pointing to NEUTRAL.
   
c. Tighten two setscrews (3).
   
d. DELETED.

END OF TASK
REPLACE GUNNER–PLUG EYE–CUP

INITIAL SETUP

Tools:
- Turret mechanics tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 18, App C)
- Gunner–plug eyecup

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

NOTE
Gunner–plug eyecup comes in two pieces. Remove and install them together.

There are two gunner–plug eyecups. One is on the commander's relay assembly and one is on the ISU. Both are replaced the same way. ISU gunner–plug eyecup is shown.

REMOVE

1. REMOVE GUNNER–PLUG EYECUP (1, 2) FROM ISU (3).
   a. Remove gunner–plug eyecup (1) from eyepiece assembly (4).
   b. Remove screw (5), screw sleeve (6), washer (7), and gunner–plug eyecup (1, 2) from ISU (3).

INSTALL

2. INSTALL NEW GUNNER–PLUG EYECUP (1, 2) ON ISU (3).
   a. Apply thin coat of sealing compound to threads of screw (5).
   b. Install gunner–plug eyecup (1, 2), washer (7), screw sleeve (6), and screw (5) on ISU (3).
   c. TORQUE SCREW (5) to 5–7 IN–LB (6–8 CMKG).
   d. Install gunner–plug eyecup (1) on gunner's eyepiece assembly (4).

END OF TASK

Change 4 22–48.1/(22–48.2 blank)
REPLACE EYESHIELD

DESCRIPTION

This task covers: Remove (page 22-49). Install (page 22-50).

INITIAL SETUP

Materials/Parts:
- Optical instrument eyeshield

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350–252–10–1
- TM 9-2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9-2350–252–10–1)
- Turret shut down (TM 9-2350–252–10–2)

REMOVE

WARNING
ISU contains thorium fluoride coated eyepieces. Read warning on front page of this manual.

NOTE
There are two eyeshields. Both are removed the same way. Gunner's eyeshield is shown.

1. REMOVE HEADREST (1) FROM SUPPORT (2).
   a. Remove quick release pin (3) and headrest (1) from support (2).

GO TO NEXT PAGE
2. REMOVE EYESHIELD (1) FROM EYEPIECE (2).
   a. Stretch and pull large end of eyeshield (1) off eyepiece (2).

3. INSTALL NEW EYESHIELD (1) ON EYEPIECE (2).
   a. Aline groove of eyeshield (1) with groove of eyepiece (2).
   b. Push eyeshield (1) on eyepiece (2).

NOTE
There are two eyeshields. Both eyeshields are installed the same way. Gunner's eyeshield is shown.
4. INSTALL HEADREST (1) ON SUPPORT (2).

   a. Install headrest (1) and quick release pin (3) on support (2).

END OF TASK
REPLACE EYECUP

DESCRIPTION

This task covers:  Remove (page 22–50.2).  Install (page 22–51).

INITIAL SETUP

Materials/Parts:

- Eyecup

Personnel Required:

- ITV/IFV/CFV Trt Mech 45T10

References:

- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:

- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

WARNING

ISU contains thorium fluoride coated eyepieces. Read warning on front page of this manual.

NOTE

There are two eyecups. Both eyecups are removed the same way. Gunner's eyecup is shown.

1. REMOVE HEADREST (1) FROM SUPPORT (2).
   a. Remove quick release pin (3) and headrest (1) from support (2).

2. REMOVE GUNNER–PLUG EYECUP (4) FROM EYEPIECE ASSEMBLY (5).
3. REMOVE EYECUP (1) FROM EYEPIECE ASSEMBLY (2).
   a. Stretch and pull eyecup (1) off eyepiece assembly (2).

4. INSTALL NEW EYECUP (1) ON EYEPIECE ASSEMBLY (2).
   a. Aline groove of gunner eyecup (1) with groove of eyepiece assembly (2).
   b. Push eyecup (1) onto eyepiece assembly (2).

5. INSTALL GUNNER-PLUG EYECUP (3) ON EYEPIECE ASSEMBLY (2).

6. INSTALL HEADREST (4) ON SUPPORT (5).
   a. Install headrest (5) and quick release pin (6) on support (5).
REPAIR MAIN HOUSING ASSEMBLY

DESCRIPTION

This task covers: Gun boresight access door assembly: Remove (page 22-52). Install (page 22-53).
Boresight elevation knob: Remove (page 22-53). Install (page 22-54).
Plate spacer: Remove (page 22-56). Install: (page 22-56).
Valve stem: Remove (page 22-59). Install: (page 22-60).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Repair tool, pneumatic tire valve (Item 20, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2352–252–10–1
- TM 9–2350–252–10–2

Materials/Parts:
- Sealing compound (Item 6, App C)
- Sealing compound (Item 18, App C)
- Sealing compound (Item 21, App C)

Equipment Conditions:
- Engine stopped (TM 9–2352–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

GUN BORESIGHT ACCESS DOOR ASSEMBLY

REMOVE

1. REMOVE GUN BORESIGHT ACCESS DOOR (1) FROM ISU (2).
   a. Lift access door (1).
   b. Remove two screws (3), lock washers (4), flat washers (5), and access door (1) from ISU (2). Discard lock washers.
2. INSTALL ACCESS DOOR (1) ON ISU (2).
   a. Apply thin coat of sealing compound (Item 18) to threads of two screws (3).
   b. Install access door (1), two flat washers (4), new lock washers (5), and screws (3) on ISU (2).
   c. TORQUE TWO SCREWS (3) TO 3–4 IN-LB (4–5 CMKG).
   d. Lower access door (1).

BORESIGHT ELEVATION KNOB

REMOVE

3. LIFT ACCESS DOOR (1).
4. REMOVE KNOB (1) FROM ISU (2).
   a. Loosen two setscrews (3) on knob (1).
   b. Remove knob (1) from knob shaft (4) on ISU (2).

5. INSTALL KNOB (1) ON ISU (2).
   a. Apply thin coat of sealing compound (Item 18) to threads of two setscrews (3).
   b. Install knob (1) on knob shaft (4) on ISU (2).
   b. Tighten two setscrews (3) on knob (1).

6. LOWER ACCESS DOOR (5).
7. REMOVE ACCESS DOOR (1) FROM ISU (2).
   a. Remove two screws (3), lock washers (4), flat washers (5), and access door (1) from ISU (2). Discard lock washers.

8. INSTALL ACCESS DOOR (1) ON ISU (2).
   a. Apply thin coat of sealing compound (Item 18) to threads of two screws (3).
   b. Install access door (1), two flat washers (5), new lock washers (4), and screws (3) on ISU (2).
   c. TORQUE TWO SCREWS (3) TO 5-7 IN-LB (6-8 CMKG).
9. DO STEP 7 OF THIS TASK.

10. REMOVE PLATE SPACER (1) FROM ISU (2).
   a. Remove two screws (3), lock washers (4), flat washers (5), and plate spacer (1) from ISU (2). Discard lock washers.

11. INSTALL PLATE SPACER (1) ON ISU (2).
   a. Apply thin coat of sealing compound (Item 18) to threads of two screws (3).
   b. Install plate spacer (1), two flat washers (5), new lock washers (4), and screws (3) on ISU (2).
   c. TORQUE TWO SCREWS TO 5-7 IN-LB (6-8 CMKG).

12. DO STEP 8 OF THIS TASK.

**CAUTION**

ISU may be damaged. Make sure that turret is shut down before removal of lampholder assembly.

**NOTE**

Some lampholder assemblies have sealing compound on the two captive screws (3). Careful application of direct heat will loosen the sealing compound and allow easier removal of captive screws.

There are two lampholder assemblies. Steps 14 and 15 apply to both lampholder assemblies.

14. REMOVE LAMPHOLDER ASSEMBLY (1) FROM ISU (2).
   a. Loosen two captive screws (3).
   b. Remove lampholder assembly (1) from ISU (2).

15. REMOVE LAMP (4) FROM LAMPHOLDER ASSEMBLY (1).
   a. Carefully push lamp (4) down into lampholder assembly (1) and turn left.
   b. Remove lamp (4) from lampholder assembly (1).
NOTE
There are two lampholder assemblies. Steps 16 and 17 apply to both lampholder assemblies.

16. INSTALL NEW LAMP (1) IN LAMPHOLDER ASSEMBLY (2).
   a. Carefully insert lamp (1) in lampholder assembly (2).
   b. Press down lamp (1) and turn right to install.

17. INSTALL LAMPHOLDER ASSEMBLY (2) ON ISU (3).
   a. Install lampholder assembly (2) on ISU (3).
   b. Tighten two captive screws (4).
   c. TORQUE TWO CAPTIVE SCREWS (4) TO 2–3 IN-LB (3–4 CMKG).


19. GO TO STEP 28.
Valve stem may be located on lower portion of main housing assembly.

20. REMOVE VALVE CAP (1) FROM VALVE STEM (2).

21. REMOVE VALVE CAP (1) FROM STRAP (3).

NOTE

Once valve stem is removed, charge will be lost.

22. REMOVE VALVE STEM (2) AND STRAP (3) FROM ISU (4).
23. REMOVE VALVE CORE (1) FROM VALVE STEM (2). USE TIRE VALVE REPAIR TOOL.

24. INSTALL VALVE CORE (1) IN VALVE STEM (2). USE TIRE VALVE REPAIR TOOL.

25. INSTALL STRAP (3) AND VALVE STEM (2) ON ISU (4).
   a. Apply thin coat of sealing compound (Item 21) to threads of valve stem (2).
   b. Apply thin coat of sealing compound (Item 6) to threads of valve stem (2).
   c. Install strap (3) and valve stem (2) on ISU (4).
   d. TORQUE VALVE STEM (2) TO 70–80 IN-LB (81–92 CMKG).
26. INSTALL VALVE CAP (1) ON STRAP (2).

27. INSTALL VALVE CAP (1) ON VALVE STEM (3).


### PROTECTIVE COVER

**REMOVE**

**NOTE**

Protective cover may not be located on main housing assembly.

29. REMOVE PROTECTIVE COVER (4) FROM ISU (5).
   a. Remove screw (6), lock washer (7), and flat washer (8) from chain of cover (4). Discard lock washer.
   b. Remove protective cover (4) from ISU (5).
30. INSTALL PROTECTIVE COVER (1) ON ISU (2).
   a. Apply thin coat of sealing compound (Item 18) to threads of one screw (3).
   b. Position protective cover (1) on ISU (2).
   c. Install chain of cover (1), flat washer (4), new lock washer (5), and screw (3) on ISU (2).
   d. TORQUE SCREW (3) TO 10–12 IN-LB (12–14 CMKG).

31. REMOVE EYECOVER LOCK SCREW (6) AND SCREW SLEEVE (7).

32. INSTALL EYECOVER LOCK SCREW (6) AND SCREW SLEEVE (7).
   a. Apply thin coat of sealing compound (Item 18) to threads of eyecover lock screw (6).
   b. Install eyecover lock screw (6) and screw sleeve (7).
   c. TORQUE EYECOVER LOCK SCREW (6) TO 5–7 IN-LB (6–8 CMKG).

END OF TASK

22-62 Change 2
REPLACE LAMPHOLDER ASSEMBLY COVER — M2, M3

DESCRIPTION

This task covers: Remove (page 22–63). Install (page 22–64).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Lubricant (Item 28, App C)
- Preformed packing

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
Lampholder assembly cover is located on bottom of ISU. It may be necessary to gently tap lampholder assembly cover.

1. REMOVE LAMPHOLDER ASSEMBLY COVER (1) FROM ISU (2).
   a. Press and turn lampholder assembly cover (1) until free of ISU (2).

GO TO NEXT PAGE
3. APPLY THIN COAT OF LUBRICANT TO NEW PREFORMED PACKING (1).

4. INSTALL PREFORMED PACKING (1) INTO LAMPHOLDER ASSEMBLY COVER (2).

5. INSTALL LAMPHOLDER ASSEMBLY COVER (2) ON ISU (3).
   a. Apply thin coat of lubricant to threads (4) of lampholder assembly cover.
   b. Position lampholder assembly cover (2) on ISU (3).
   c. Press lampholder assembly cover (2) and turn until lampholder assembly cover is in place.


END OF TASK
REPLACE MAGNIFICATION KNOB

DESCRIPTION

This task covers: Remove (page 22-65). Install (page 22-66).

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
Sealing compound (Item 17, App C)
Self-locking screw
Knob

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. MOVE MAGNIFICATION KNOB (1) ON ISU (2) TO LOW.

2. REMOVE MAGNIFICATION KNOB (1) FROM MAGNIFICATION SHAFT (3).
   b. Pull magnification knob (1) from magnification shaft (3).
3. INSTALL NEW MAGNIFICATION KNOB (1) ON MAGNIFICATION SHAFT (2) IN LOW POSITION.

a. Position magnification knob (1) on magnification shaft (2) so that magnification knob is in LOW position.

b. Apply thin coat of sealing compound to threads of new self-locking screw (3).

c. Install self-locking screw (3) in magnification knob (1).

d. TORQUE SELF-LOCKING SCREW (3) TO 10-12 IN-LB (12-14 CMKG).

END OF TASK
REPLACE AZIMUTH KNOB ASSEMBLY

DESCRIPTION

This task covers: Remove (page 22-67). Install (page 22-68).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 18, App C)
- Knob assembly

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

If azimuth knob assembly is secured with spring pin, notify intermediate direct support maintenance.

1. REMOVE GUNNER'S HEADREST (1) FROM GUNNER'S BROWPAD SUPPORT (2).
   a. Remove quick release pin (3).
   b. Pull gunner's headrest (1) from gunner's browpad support (2).

GO TO NEXT PAGE
2. REMOVE KNOB ASSEMBLY (1) FROM BORESIGHT SHAFT (2).
   a. Loosen two setscrews (3).
   b. Pull knob assembly (1) from boresight shaft (2).

3. INSTALL NEW KNOB ASSEMBLY (1) ON BORESIGHT SHAFT (2).
   a. Apply thin coat of sealing compound to threads of two setscrews (3).
   b. Install knob assembly (1) on boresight shaft (2).
   c. Tighten two setscrews (3).
   d. DELETED.
4. INSTALL GUNNER’S HEADREST (1) IN GUNNER’S BROWPAD SUPPORT (2).
   a. Place gunner’s headrest (1) in gunner’s browpad support (2).
   b. Install quick release pin (3).

5. BORESIGHT WEAPONS. See TM 9-2350-252-10-2.

END OF TASK
REPLACE UNITY COVER ASSEMBLY KNOBS

DESCRIPTION

This task covers:
- Reticle brightness knob: Remove (22-70). Install (22-71).
- Night vision control knob: Remove (22-71). Install (22-72).
- Range knob assembly: Remove (22-72). Install (22-73).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound (Item 18, App C)

Equipment conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

RETICLE BRIGHTNESS KNOB

REMOVE

1. REMOVE RETICLE BRIGHTNESS KNOB (1) FROM VARIABLE RESISTOR SHAFT (2).
   a. Loosen two setscrews (3).
   b. Pull reticle brightness knob (1) from variable resistor shaft (2).
2. INSTALL NEW RETICLE BRIGHTNESS KNOB (1) ON VARIABLE RESISTOR SHAFT (2).
   a. Apply thin coat of sealing compound to threads of two setscrews (3).
   b. Place reticle brightness knob (1) on variable resistor shaft (2).
   c. Tighten two setscrews (3).

NOTE
There are two night vision control knobs. The procedure shown is the same for both.

3. REMOVE NIGHT VISION CONTROL KNOB (4) FROM NIGHT VISION CONTROL RESISTOR SHAFT (5).
   a. Loosen two setscrews (6).
   b. Remove night vision control knob (4) from night vision control resistor shaft (5).

GO TO NEXT PAGE
NOTE
There are two night vision control knobs. The procedure shown is the same for both.

4. INSTALL NEW NIGHT VISION CONTROL KNOB (1) ON NIGHT VISION CONTROL RESISTOR SHAFT (2).
   a. Apply thin coat of sealing compound to threads of two setscrews (3).
   b. Place night vision control knob (1) on night vision control resistor shaft (2).
   c. Tighten two setscrews (3).

RANGE KNOB ASSEMBLY

REMOVE

5. REMOVE RANGE KNOB ASSEMBLY (4) FROM ROTARY SWITCH SHAFT (5).
   a. Turn range knob assembly (4) to 12.
   b. Loosen two setscrews (6).
   c. Remove range knob assembly (4) from rotary switch shaft (5).
6. REMOVE TEFLON SEAL (1) FROM UNITY COVER ASSEMBLY (2).

7. INSTALL TEFLON SEAL (1) ON UNITY COVER ASSEMBLY (2).

8. INSTALL NEW RANGE KNOB ASSEMBLY (3) ON ROTARY SWITCH SHAFT (4).
   a. Apply thin coat of sealing compound to threads of two setscrews (5).
   b. Place range knob assembly (3) on rotary switch shaft (4) so that range knob assembly is set on 12.
   c. Tighten two setscrews (5).

END OF TASK
REPLACE BORESIGHT TARGET WINDOW COLLAR

DESCRIPTION

This task covers: Remove (page 22-74). Install (page 22-76).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Boresight target spanner (Item 27, App F)

Materials/Parts:
- Lubricant (Item 28, App C)
- Preformed packing

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. OPEN RIGHT COVER (1).
   a. Pull right handle (2) down to open right cover (1).
WARNING
ISU contains thorium fluoride coated windows. Read warning on front page of this manual.

2. REMOVE WINDOW COLLAR ASSEMBLY
   (1) FROM PERISCOPE HEAD ASSEMBLY
   (2). USE BORESIGHT TARGET SPANNER (3).

3. REMOVE PREFORMED PACKING (4)
   FROM WINDOW COLLAR ASSEMBLY (1).
   DISCARD PREFORMED PACKING.
4. APPLY A THIN COAT OF LUBRICANT TO NEW PREFORMED PACKING (1).

5. INSTALL PREFORMED PACKING (1) ON WINDOW COLLAR ASSEMBLY (2).

6. INSTALL WINDOW COLLAR ASSEMBLY (2) IN PERISCOPE HEAD ASSEMBLY (3).
   a. Install window collar assembly (2) in periscope head assembly (3). Use boresight target spanner (4).
   b. TORQUE WINDOW COLLAR ASSEMBLY (2) TO 10–12 IN-LB (12–14 CMKG).
7. CLOSE RIGHT COVER (1).
   a. Push down on right cover (1) until latched.

8. SERVICE ISU. See task: SERVICE INTEGRATED SIGHT UNIT, page 22-4.

END OF TASK
REPLACE BORESIGHT TARGET LAMP

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Lamp extractor tool (Item 13, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Incandescent lamp

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE BORESIGHT TARGET WINDOW COLLAR. See task: REPLACE BORESIGHT TARGET WINDOW COLLAR, page 22-74.

2. REMOVE LAMP (1) FROM VISUAL BORESIGHT TARGET ASSEMBLY (2). USE LAMP EXTRACTOR TOOL. DISCARD LAMP.

INSTALL

3. INSTALL NEW LAMP (1) IN VISUAL BORESIGHT TARGET ASSEMBLY (2). USE LAMP EXTRACTOR TOOL.


END OF TASK
REPAIR COMMANDER'S RELAY ASSEMBLY

DESCRIPTION

This task covers: Valve stem: Remove (page 22-79). Install (page 22-80).
Bleed screw: Remove (page 22-81). Install (page 22-81).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Repair tool, pneumatic tire valve (Item 20, App F)

Materials/Parts:
- Sealing compound (Item 6, App C)
- Sealing compound (Item 21, App C)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

VALVE STEM

REMOVAL

1. REMOVE VALVE CAP (1) FROM VALVE STEM (2).

2. REMOVE VALVE CAP (1) FROM STRAP (3).

3. REMOVE VALVE STEM (2) AND STRAP (3) FROM COMMANDER'S RELAY ASSEMBLY (4).

GO TO NEXT PAGE
4. REMOVE VALVE CORE (1) FROM VALVE STEM (2). USE TIRE VALVE REPAIR TOOL.

5. INSTALL VALVE CORE (1) IN VALVE STEM (2).
   a. Install valve core (1) in valve stem (2). Use tire valve repair tool.

6. INSTALL STRAP (3) AND VALVE STEM (2) ON COMMANDER'S RELAY ASSEMBLY (4).
   a. Apply thin coat of sealing compound (Item 21) on threads of valve stem (2).
   b. Apply thin coat of sealing compound (Item 6) to threads of valve stem (2).
   c. Install strap (3) and valve stem (2) on commander's relay assembly (4).
   d. TORQUE VALVE STEM (2) TO 70-80 IN-LB (81-92 CMKG).
7. INSTALL VALVE CAP (1) ON STRAP (2).

8. INSTALL VALVE CAP (1) ON VALVE STEM (3).


**BLEED SCREW**

10. REMOVE MACHINE SCREW (4) FROM COMMANDER'S RELAY ASSEMBLY (5). DISCARD MACHINE SCREW.

**INSTALL**

*NOTE*
New machine screw will be installed during servicing of commander's relay assembly.

REPLACE NIGHT BORESIGHT KNOBS

DESCRIPTION

This task covers: Remove (page 22-82). Install (page 22-83).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound (Item 18, App C)
- Knob

Equipment conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
There are two night boresight knobs. The procedure shown is the same for both.

1. OPEN ACCESS DOOR ASSEMBLY (1).

2. REMOVE NIGHT BORESIGHT KNOB (2) FROM SHOULDERED SHAFT (3).
   a. Loosen two setscrews (4).
   b. Remove night boresight knob (2) from shouldered shaft (3).
3. INSTALL NEW NIGHT BORESIGHT KNOB (1) ON NIGHT BORESIGHT KNOB ASSEMBLY (2).

   a. Apply thin coat of sealing compound to threads of two setscrews (3).
   b. Place night boresight knob (1) on shouldered shaft (4) with knob setscrews (3) and shouldered shaft detents (5) aligned.
   c. Tighten two setscrews (3).
   d. DELETED

4. CLOSE ACCESS DOOR (6).

END OF TASK
REPLACE BLEED SCREW

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lubricant (Item 28, App C)
- Machine screw (bleed)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


2. REMOVE MACHINE SCREW (1) FROM PERISCOPE HEAD ASSEMBLY (2). DISCARD MACHINE SCREW.

INSTALL

NOTE
New machine screw will be installed during servicing of ISU.

3. SERVICE ISU. See task: SERVICE INTEGRATED SIGHT UNIT, page 22-4.

END OF TASK
ADJUST TOW RETICLE IN AZIMUTH — M2A1, M3A1

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

1. ADJUST TOW RETICLE IN AZIMUTH. See TM 9-2350-252-10-2.

END OF TASK

Change 4 22-85/(22-86 blank)(22-87 and 22-88 deleted)
Section II. MAINTENANCE OF COMMANDER’S/GUNNER’S HEADREST INSTALLATION

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REPAIR GUNNER’S HEADREST ASSEMBLY

INITIAL SETUP

Tools:
Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
Lock washer
Sealing compound (Item 18, App C)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REPAIR

WARNING
ISU contains thorium fluoride coated eyepiece. Read warning on front page of this manual.

1. REMOVE HEADREST (1) FROM SUPPORT (2).
   a. Remove quick release pin (3) and headrest (1) from support (2).

2. REMOVE CABLE (4) FROM SUPPORT (2).
   a. Remove screw (5), washer (6) and cable (4) from support (2). Discard washer.

3. REMOVE CABLE (4) FROM QUICK RELEASE PIN (3).
4. REMOVE PIN (1) FROM HEADREST (2).
   a. Remove two screws (3) and pin (1) from headrest (2).

5. INSTALL PIN (1) ON HEADREST (2).
   a. Apply sealing compound to threads of two screws (3).
   b. Install pin (1) on headrest (2) with two screws (3).
   c. TORQUE TWO SCREWS (3) TO 30–35 IN-LB (35–40 CMKG).

6. INSTALL CABLE (4) ON QUICK RELEASE PIN (5).

7. INSTALL CABLE (4) ON SUPPORT (6).
   a. Apply sealing compound to threads of screw (8).
   b. Install cable (4), new washer (7), and screw (8) on support (6).
   c. TORQUE SCREW (8) TO 10–12 IN-LB (12–14 CMKG).

8. INSTALL HEADREST (2) ON SUPPORT (6).
   a. Install headrest (2) and quick release pin (5) on support (6).

END OF TASK
REPAIR COMMANDER'S HEADREST ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade N (Item 21, App C)
- Sealing compound (Item 18, App C)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR


2. REMOVE HEADREST (1) FROM BRACKET (2).
   a. Remove quick release pin (3) and headrest (1) from bracket (2).
3. REMOVE SHAFT (1) FROM HEADREST (2).
   a. Remove two screws (3) and shaft (1) from headrest (2).
   b. Remove quick release pin (4) from cable hanger (5).
   c. Remove cable hanger (5) from shaft (1).

4. INSTALL SHAFT (1) ON HEADREST (2).
   a. Install cable hanger (5) on shaft (1).
   b. Install quick release pin (4) on cable hanger (5).
   c. Apply sealing compound (Item 21) to threads of two screws (3).
   d. Apply sealing compound (Item 18) to threads of two screws (3).
   e. Install shaft (1) on headrest (2) with two screws (3).

5. INSTALL HEADREST (2) ON BRACKET (6).
   a. Install headrest (2) and quick release pin (4) on bracket (6).


END OF TASK
REPLACE COMMANDER'S HEADREST MOUNTING BRACKET

DESCRIPTION

This task covers: Remove (page 22-94). Install (page 22-95).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Browpad bracket

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


2. REMOVE HEADREST (1) FROM BRACKET (2).
   a. Remove quick release pin (3) and headrest (1) from bracket (2).
3. REMOVE BRACKET (1) FROM TURRET.
   a. Remove two screws (2), washers (3), and bracket (1) from turret.

4. INSTALL NEW BRACKET (1) ON TURRET.
   a. Install bracket (1), two washers (3), and screws (2) on turret.

5. INSTALL HEADREST (4) ON BRACKET (1).
   a. Install headrest (4) and quick release pin (5) on bracket (1).


END OF TASK
## Section III. MAINTENANCE OF POWER CONVERTER

### TASK INDEX

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</table>
REPLACE POWER CONVERTER

DESCRIPTION

This task covers: Remove (page 22–98). Install (page 22–98.2).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Materials/Parts:
- Sealing compound (Item 21, App C)
- Sealing compound (Item 23, App C)

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


NOTE
For M2 and M3, do steps 1.1 thru 3. For M2A1 and M3A1, do steps 3.1 and 3.2.

1.1. REMOVE ELECTRICAL COVER (1) FROM JACK 2A104J3 (2).

2. REMOVE TWO PLUGS (3) FROM TWO JACKS (4) AS FOLLOWS:
   2W103P1 FROM 2A104J2
   2W101P5 FROM 2A104J1.
   TAG PLUGS.
3. REMOVE POWER CONVERTER (1) FROM THREE MOUNTS (2).
   a. Loosen three captive screws (3).
   b. Remove power converter (1) and six washers (4) from three mounts (2).

3.1. REMOVE PLUGS (5) FROM JACKS (6) AS FOLLOWS:
   2W133P6 FROM 2A104J3
   2W133P1 FROM 2A104J2
   2W133P8 FROM 2A104J1
   TAG PLUGS.

   **CAUTION**
   Heat sink may fall and become damaged. Use care when removing heat sink.

3.2. REMOVE POWER CONVERTER (1) AND HEAT SINK (7) FROM THREE MOUNTS (8).
   a. Loosen three captive screws (3).
   b. Remove power converter (1) and heat sink (7) from three mounts (8).
NOTE
For M2 and M3, do steps 4 thru 5.1 For M2A1 and M3A1, do steps 5.2 thru 6.

4. INSTALL POWER CONVERTER (1) ON THREE MOUNTS (2).
   a. Apply sealing compound (Item 21) to threads of three captive screws (3).
   b. Apply sealing compound (Item 23) to threads of three captive screws (3).
   c. Install six washers (4), power converter (1), and three captive screws (3) on mounts (2).
   d. Tighten three captive screws (3).
   e. TORQUE THREE CAPTIVE SCREWS (3) TO 73–79 IN-LB (84–90 CMKG).

5. INSTALL TWO PLUGS (5) ON TWO JACKS (6) AS FOLLOWS:
   2W101P5 ON 2A104J1
   2W103P1 ON 2A104J2.

5.1. INSTALL ELECTRICAL COVER (7) ON JACK 2A104J3 (8). GO TO STEP 6.
CAUTION
Heat sink may fall and become damaged. Use care when installing heat sink.

NOTE
If heat sink is cracked, replace with new heat sink.

5.2. INSTALL POWER CONVERTER (1) AND HEAT SINK (2) ON THREE MOUNTS (3).
   a. Apply sealing compound (Item 21) to threads of three captive screws (4).
   b. Apply sealing compound (Item 23) to threads of three captive screws (4).
   c. Install heat sink (2), power converter (1), and captive screws (4) on three mounts (3).
   d. TORQUE THREE SCREWS (4) TO 73–79 IN-LB (84–91 CMKG).

5.3. INSTALL PLUGS (5) ON JACKS (6) AS FOLLOWS:
   2W133P8 ON 2A104J1
   2W133P1 ON 2A104J2
   2W133P6 ON 2A104J3


END OF TASK
REPLACE POWER CONVERTER MOUNTS

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Flexible mounts (3)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE POWER CONVERTER. See task: REPLACE POWER CONVERTER, page 22-98.
2. REMOVE THREE MOUNTS (1) FROM TURRET. DISCARD MOUNTS.

INSTALL

3. INSTALL THREE NEW MOUNTS (1) ON TURRET.
   a. Apply sealing compound (Item 21) to external threads of mounts (1).
   b. Apply sealing compound (Item 20) to external threads of mounts (1).
   c. Install mounts (1) on turret.
4. INSTALL POWER CONVERTER. See task: REPLACE POWER CONVERTER, page 22-98.

END OF TASK
REPLACE POWER CONVERTER ELECTRICAL COVER — M2, M3

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
Electrical cover
Self-locking nut

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE CENTER TURRET FLOOR PLATE. See task: REPLACE TURRET FLOOR PLATES, page 4-26.

2. REMOVE ELECTRICAL COVER (1) FROM JACK 2A104J3 (2).
   a. Remove electrical cover (1) from jack 2A104J3 (2).
   b. Remove screw (3), electrical cover (1), washer (4), and self-locking nut (5) from turret structure (6). Discard self-locking nut.

INSTALL

3. INSTALL NEW ELECTRICAL COVER (1) ON JACK 2A104J3 (2).
   a. Install screw (3), electrical cover (1), washer (4), and new self-locking nut (5) on turret structure (6).
   b. Install electrical cover (1) on jack 2A104J3 (2).


END OF TASK

Change 1 22-101 (22-102 blank)
# CHAPTER 23
MAINTENANCE OF 25MM WEAPON RESOLVER

## Section I. MAINTENANCE OF 25MM RESOLVER DRIVE

## TASK INDEX

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ADJUST 25MM GUN RESOLVER

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- STE-M1/FVS test set (Item 30, App F)
- Turret drive level (Item 14, App F)
- Level support (Item 29, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFVICFV Trt Mech 45T10
- Helper (H)

ADJUST

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.


5. MOVE GUN ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

6. MOVE TRAVERSE DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

7. MOVE TOW ELEVATION DRIVE SELECT LEVER TO POWER POSITION. See TM 9-2350-252-10-2.

8. INSTALL LEVEL (1) ON ISU MOUNTING PLATE (2).
   a. Loosen thumbscrew (3) below 0° level (4).
   b. Position level (1) on ISU mounting plate (2).
   c. Rotate knob (5) on level (1) until 0° level (4) bubble centers.
   d. Tighten thumbscrew (3) below 0° level (4).
9. INSTALL SUPPORT (1) IN END OF GUN MOUNT (2).
   a. Install support (1) in end of gun mount (2) as shown.
   b. Tighten three thumbscrews (3) on support (1).

10. INSTALL LEVEL (4) ON SUPPORT (1).
    a. Position magnetic surface of level (4) on support (1) as shown.
    b. Turn handwheel (5) to elevate or depress 25mm gun rotor until 0° level (6) bubble centers. Have helper assist.


12. REMOVE LEVEL (4) AND SUPPORT (1) FROM GUN MOUNT (2).
    a. Remove level (4) from support (1).
    b. Loosen three thumbscrews (3) and remove support (1) from gun mount (2).

GO TO NEXT PAGE

14. INSTALL ISU. See task:


17. INSTALL 25MM GUN BARREL. See TM 9-2350-252-10-2.


END OF TASK
REPAIR GUN RESOLVER DRIVE ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Dry cleaning solvent (Item 8, App C)
- Wiping rag (Item 29, App C)
- Lock washer (2)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFVICFV Trt Mech 45T10

REPAIR


2. REMOVE THREE CLEATS (1) FROM HOUSING (2).
   a. Remove three screws (3) and cleats (1) from housing (2).

3. REMOVE HOUSING (2) FROM BOLT RETAINER (4).
   a. Remove two screws (5), lock washers (6), and housing (2) from bolt retainer (4). Discard lock washers.
4. REMOVE COUPLING (1) FROM SHAFT (2).
   a. Remove two setscrews (3) from coupling (1).
   b. Remove coupling (1) from shaft (2).

5. REMOVE BEARING RETAINER (4), BEARING (5), AND BOLT RETAINER (6) FROM SHAFT (2).
   a. Remove four screws (7), bearing retainer (4), bearing (5), and bolt retainer (6) from shaft (2).

6. REMOVE COVER (8) FROM SHAFT (2).

7. INSTALL COVER (8) ON SHAFT (2).
NOTE
Bearing retainer should be installed with countersunk center hole toward shaft and bearing.

8. INSTALL BOLT RETAINER (1), BEARING (2), AND BEARING RETAINER (3) ON SHAFT (4).
   a. Install bolt retainer (1), bearing (2), bearing retainer (3), and four screws (5) on shaft (4).

9. CLEAN AND DRY SHAFT (4). USE CLEANING SOLVENT AND WIPING RAG.

10. INSTALL COUPLING (6) ON SHAFT (4).
    a. Install two setscrews (7) in coupling (6). Do not tighten setscrews.
    b. Make a mark 1/4 inch from end of shaft (4).
    c. Insert coupling (6) on shaft (4) up to mark.
11. INSTALL HOUSING (1) ON BOLT RETAINER (2).
   a. Install housing (1), two new lock washers (3), and screws (4) on bolt retainer (2).

12. INSTALL THREE CLEATS (5) ON HOUSING (1).
   a. Install three cleats (5) and screws (6) on housing (1).


END OF TASK
Section II. MAINTENANCE OF ELECTRICAL RESOLVER

REPLACE GUN RESOLVER

DESCRIPTION

This task covers: Remove (page 23-9). Install (page 23-12).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Nonelectrical wire (Item 15, App C)
- Resolver assembly
- Lock washer (2)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE


4. REMOVE FIVE CLAMPS (1) FROM TURRET.
   a. Remove five screws (2) and clamps (1) from weldnuts (3) on turret.

GO TO NEXT PAGE
5. REMOVE PLUG 2W101P3 (1) FROM JACK 2A33J1 (2).

6. REMOVE JACK 2A33J1 (2) FROM BRACKET (3).
   a. Remove lock wire (4) from nut (5). Discard lock wire.
   b. Remove nut (5) and jack 2A33J1 (2) from bracket (3).

7. REMOVE LEAD 2A33J1 (6) FROM FIVE CLAMPS (7).
8. REMOVE SHAFT (1) FROM RETAINER (2).
   a. Remove two screws (3), lock washers (4), and shaft (1) from retainer (2).
      Discard lock washers.

9. REMOVE DRIVE ASSEMBLY (5) FROM TURRET.
   a. Remove two screws (6), washers (7), drive assembly (5) with lead 2A33J1 (8) and bolt retainer (9) from turret.
   b. Remove bolt retainer (9) from lead 2A33J1 (8).
   c. Place drive assembly (5) on suitable work surface.

CAUTION
Coupling is easily damaged. Do not turn resolver.

10. LOOSEN COUPLING (10) FROM RESOLVER (11).
    a. Turn housing (12) to gain access to two setscrews (13) in coupling (10).
    b. Loosen two setscrews (13).
11. REMOVE RESOLVER (1) FROM HOUSING (2).
   a. Loosen three screws (3).
   b. Move three cleats (4) from resolver (1).
   c. Remove resolver (1) from housing (2).

12. INSTALL NEW RESOLVER (1) IN HOUSING (2).
   a. Install resolver (1) in housing (2).
   b. Position three cleats (4) on resolver (1).
   c. Alternately tighten three screws (3).

**NOTE**
Resolver should slide into coupling when installed in housing.
CAUTION
Coupling is easily damaged. Do not turn resolver.

13. TIGHTEN COUPLING (1) ON RESOLVER (2).
   a. Turn housing (3) to gain access to two setscrews (4) in coupling (1).
   b. Tighten two setscrews (4).

CAUTION
Smooth side of bolt retainer should face drive assembly when installed in turret.

14. INSTALL DRIVE ASSEMBLY (5) ON TURRET.
   a. Install bolt retainer (6) on lead 2A33J1 (7).
   b. Install bolt retainer (6), drive assembly (5) with lead 2A33J1 (7), two washers (8), and screws (9) on turret.
NOTE
Some M2, M3 vehicles may have a pin on retainer. It may be necessary to remove the pin in order to install the shaft. If pin is removed, discard pin.

15. INSTALL SHAFT (1) ON RETAINER (2).
   a. Install shaft (1), two new lock washers (4), and screws (3) on retainer (2).
   b. TORQUE TWO SCREWS (3) TO 432–456 IN-LB (498–526 CMKG).

16. ROUTE LEAD 2A33J1 (5) THROUGH FIVE CLAMPS (6).
17. INSTALL JACK 2A33J1 (1) ON BRACKET (2).
   a. Install jack 2A33J1 (1) and nut (3) on bracket (2).
   b. Install new lock wire (4) on nut (3).

18. INSTALL PLUG 2W101P3 (5) IN JACK 2A33J1 (1).

19. INSTALL FIVE CLAMPS (6) ON TURRET.
   a. Install five clamps (6) and screws (7) in weldnuts (8) on turret.


END OF TASK
#CHAPTER 24
MAINTENANCE OF BALLISTIC SIGHT COVER

##Section I. MAINTENANCE OF BALLISTIC SIGHT COVER

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REPLACE SIGHT SHIELD HINGES

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Cotter pin
- Hinge

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
There are two hinges. Replacement of both hinges is the same.

1. REMOVE HINGE (1) FROM TURRET.
   a. Remove screw (2) and washer (3) from hinge (1).
   b. Remove cotter pin (4) and washer (5) from straight pin (6). Discard cotter pin.
   c. Remove straight pin (6) from two lugs (7).
   d. Remove hinge (1) from turret.

INSTALL

2. INSTALL NEW HINGE (1) ON TURRET.
   a. Install hinge (1), washer (3), and screw (2) on turret. Do not tighten screw.
   b. Install straight pin (6) in two lugs (7).
   c. Tighten screw (2).
   d. Install washer (5) and new cotter pin (4) on straight pin (6).

END OF TASK
OPEN/CLOSE SIGHT SHIELD ASSEMBLY

DESCRIPTION

This task covers: Open (page 24-3). Close (page 24-5).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

OPEN

1. OPEN GUNNER'S HATCH. See TM 9-2350-252-10-2.

1.1. REMOVE TWO HANDLES (1) FROM CABLES (2).
   a. Remove four screws (3), washers (4), two retainers (5), and two handles (1) from cables (2).

GO TO NEXT PAGE
CAUTION
Ballistic sight cover door may open when control cable is removed from slot. Be sure the cover remains closed.

2. REMOVE LEFT AND RIGHT CABLES (1, 2) FROM TURRET.
   a. Pull left and right cables (1, 2) from holes (3, 4) in turret.
   b. Remove left cable (1) from slot in shield (5).

3. REMOVE PLUG 2W16P2 (6) FROM JACK 2W17J1 (7).

4. REMOVE THREE SCREWS (8) AND WASHERS (9) FROM SHIELD (5).
WARNING
ISU contains thorium fluoride coated windows. Read warning on front page of this manual.

Shield is heavy. Dropping shield can cause injury. Have helper assist.

CAUTION
Shield cables can snag when raising shield. Do not damage cables.

5. SWING SHIELD (1) FORWARD. HAVE HELPER ASSIST.

GO TO NEXT PAGE
8. SECURE SHIELD (1) TO TURRET.
   a. Install three washers (2) and screws (3) on shield (1).

9. INSTALL LEFT AND RIGHT CABLES (4, 5) THROUGH HOLES (6, 7) IN TURRET.

10. INSTALL PLUG 2W16P2 (8) ON JACK 2W17J1 (9).
11. INSTALL TWO HANDLES (1) ON CABLES (2).
   a. Install two handles (1), retainer (3), four washers (4), and screws (5) on cables (2).


END OF TASK
REPLACE SIGHT SHIELD CONTROL CABLE ASSEMBLY

DESCRIPTION

This task covers: Remove (page 24–8). Install (page 24–9).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Control cable

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


NOTE
Removal of right and left cables is the same.

2. REMOVE CABLE (1) FROM SIGHT SHIELD (2).
   a. Cut ferrule (3) from cable (1).
   b. Remove setscrew (4).
   c. Remove cable (1) from pin (5) on shield (2).
   d. Remove pin (5) from latch (6).
NOTE
Installation of right and left cables is the same.

3. INSTALL NEW CABLE (1) ON SIGHT SHIELD (2).
   a. Install pin (3) on latch (3.1).
   b. Insert end of cable (1) through hole in pin (3).
   c. Install and tighten setscrew (4).

4. CLOSE SIGHT SHIELD ASSEMBLY. See task: OPEN/CLOSE SIGHT SHIELD ASSEMBLY, page 24-3.

5. CHECK OPERATION OF COVER (5).
   a. Pull handle (6) to open cover (5).
   b. If shaft (7) of handle (6) does not come out of hole (8) in turret before cover (5) opens, go to step 10.
   c. If shaft (7) of handle (6) comes out of hole (8) in turret before cover (5) opens, go to step 6.

6. OPEN COVER (5).
   a. Pull handle (6) until cover (5) opens.
7. ADJUST LENGTH OF CABLE (1).
   a. Loosen setscrew (2).
   b. Pull cable (1) until shaft (3) of handle (4) is seated in hole (5) in turret.
   c. Tighten setscrew (2).

8. CLOSE COVER (6).
   a. Push cover (6) down until latched.

9. CHECK OPERATION OF COVER (6).
   a. Go to step 5.

10. ADJUSTMENT IS CORRECT.

11. INSTALL FERRULE (7) ON CABLE (1).
    a. Slide ferrule (7) on cable (1).
    b. Crimp ferrule (7) on end of cable (1).

12. CLOSE COVER (6).

END OF TASK
REPLACE FLAGSTAFF HOLDER

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Flagstaff holder

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE HOLDER (1) FROM SHIELD (2).
   a. Remove two screws (3), washers (4), and holder (1) from shield (2).

INSTALL

2. INSTALL NEW HOLDER (1) ON SHIELD (2).
   a. Install holder (1), two washers (4), and screws (3) on shield (2).

END OF TASK
REPLACE PLATE STIFFENER

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Plate stiffener

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE PLATE STIFFENER (1) FROM TURRET.
   a. Remove two screws (2), washers (3), and plate stiffener (1) from turret.

INSTALL

2. INSTALL NEW PLATE STIFFENER (1) ON TURRET.
   a. Install plate stiffener (1), two washers (3), and screws (2) on turret.

END OF TASK
## Section II. MAINTENANCE OF BALLISTIC SIGHT SHIELD ASSEMBLY

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REMOVE/INSTALL SIGHT SHIELD ASSEMBLY

DESCRIPTION

This task covers: Remove (page 24-14). Install (page 24-15).

INITIAL SETUP

Tools:  
- Turret mechanic's tool kit (Item 31, App F)  
- Lifting device with rated lift capability of at least 155 lb (70 kg)  
- Nylon sling (Item 9, App C)

Personnel Required:  
- ITV/IFV/CFV Trt Mech 45T10  
- Helper (H)

Materials/Parts:  
- Cotter pin (2)

Equipment Conditions:  
- Engine stopped (TM 9-2350-252-10-1)  
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. ATTACH SLING (1) TO SHIELD (2).  
   a. Wrap sling (1) around shield (2).  
   b. Attach sling (1) to lifting device and take up slack.

CAUTION  
ISU can be damaged. Avoid hitting ISU when lifting shield from turret.

3. REMOVE SHIELD (2) FROM TURRET.  
   a. Remove two cotter pins (3) and two washers (4) from two pins (5). Discard cotter pins.  
   b. Remove two pins (5) from hinges (6) on shield (2).  
   c. Remove shield (2) from turret.
INSTALL

CAUTION
ISU can be damaged. Insure that the ISU mirror control knob is in the UNLOCKED position (operational mode).

4. ATTACH SLING (1) TO SHIELD (2).
   a. Wrap sling (1) around shield (2).
   b. Attach sling (1) to lifting device and take up slack.

CAUTION
ISU can be damaged. Avoid hitting ISU when lifting shield onto turret.

5. INSTALL SHIELD (2) ON TURRET.
   a. Lift shield (2) and place on turret. Use lifting device. Have helper assist.
   b. Install two pins (3) on hinges (4) on shield (2).
   c. Install two washers (5) and new cotter pins (6) on pins (3).
   d. Remove sling (1) from shield (2).


END OF TASK
REPAIR SIGHT SHIELD COVER ACTUATING MECHANISM

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Wood block

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

1. MANUALLY DEPRESS GUN TO MAXIMUM DEPRESSION. See TM 9-2350-252-10-2.


   WARNING
Covers can spring open and injure you. Stand clear before you open covers.

3. TILT SHIELD (1) BACKWARD AND PULL CONTROL CABLES (2) TO OPEN BOTH BALLISTIC COVER DOORS.

4. TILT SHIELD (1) FORWARD TO REST ON WOOD BLOCK (3).
5. REMOVE CYLINDER (1) FROM CRANK (2).
   a. Remove clip (3) from cylinder (1).
   b. Remove cylinder (1) from stud (4) on crank (2).

NOTE
Right and left cylinders are removed the same way.

6. REMOVE CRANK (2) FROM BRACKET (5).
   a. Remove ring (6) from bracket (5). Use screwdriver.
   b. Remove crank (2) from bracket (5).

NOTE
Right and left cranks are removed the same way.
7. INSTALL CRANK (1) ON BRACKET (2).
   a. Install crank (1) on bracket (2).
   b. Install ring (3) in groove on bracket (2).

NOTE
Right and left cranks are installed the same way.

8. INSTALL CYLINDER (4) ON CRANK (1).
   a. Install cylinder (4) on stud (5) of crank (1).
   b. Install clip (6) in hole in cylinder (4) and snap clip around base of cylinder.

NOTE
Right and left cylinders are installed the same way.


10. CLOSE BALLISTIC SIGHT COVER DOORS. See TM 9-2350-252-10-2.

11. MANUALLY ELEVATE GUN TO 0 MILS. See TM 9-2350-252-10-2.

END OF TASK
REPLACE SIGHT SHIELD BRACKET SUPPORTS

DESCRIPTION

This task covers: Remove (page 24-19). Install (page 24-22).

INITIAL SETUP

Tools:  
Turret mechanic's tool kit (Item 31, App F)

Personnel Required (cont):  
Helper (H)

Materials/Parts:  
Bracket support
Retaining ring
Wood block

References:  
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Personnel Required:  
ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:  
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. MANUALLY DEPRESS GUN TO MAXIMUM DEPRESSION. See TM 9-2350-252-10-2.


   WARNING
   Covers spring open when released. You could be hurt. Stand clear of covers.

3. TILT SHIELD (1) BACKWARD AND PULL BALLISTIC DOOR CONTROL CABLES (2) TO OPEN BOTH DOORS.

4. TILT SHIELD (1) FORWARD TO REST ON WOOD BLOCK (3).

GO TO NEXT PAGE
NOTE
Steps 5 thru 7 should only be done if rear bracket is being removed. Steps 8 and 9 should only be done if front bracket is being removed.
Right and left cylinders are removed the same way.

5. REMOVE CYLINDER (1) FROM REAR BRACKET (2).
   a. Remove clip (3) from cylinder (1).
   b. Remove cylinder (1) and stud (4) on rear bracket (2).

6. REMOVE REAR BRACKET (2) FROM SHIELD (5).
   a. Remove four screws (6), washers (7), and rear bracket (2) from shield (5).

7. REMOVE STUD (4) FROM REAR BRACKET (2).
NOTE
Right and left cylinders are removed the same way.

8. REMOVE CYLINDER (1) FROM CRANK (2).
   a. Remove clip (3) from cylinder (1).
   b. Remove cylinder (1) from stud (4) on crank (2).

9. REMOVE FRONT BRACKET (5) FROM SHIELD (6).
   b. Remove crank (2) from front bracket (5).
   c. Remove four screws (8), washers (9), and front bracket (5) from shield (6) and pin (10).

GO TO NEXT PAGE
NOTE
Steps 10 and 11 should only be done if front bracket is being installed. Steps 12 thru 14 should only be done if rear bracket is being installed.

10. INSTALL FRONT BRACKET (1) ON SHIELD (2).
   a. Install front bracket (1) on shield (2) and pin (3) with four washers (4) and screws (5).
   b. Install crank (6) on front bracket (1).
   c. Install new retaining ring (7) in groove in front bracket (1).

11. INSTALL CYLINDER (8) ON CRANK (6).
   a. Install cylinder (8) on stud (9) on crank (6).
   b. Install clip (10) in hole in cylinder (8), and snap clip around base of cylinder.

12. INSTALL STUD (11) ON REAR BRACKET (12).

NOTE
Right and left cylinders are installed the same way.
13. INSTALL REAR BRACKET (1) ON SHIELD (2).
   a. Install rear bracket (1) on shield (2) with four washers (3) and screws (4).

NOTE
Right and left cylinders are installed the same way.

14. INSTALL CYLINDER (5) ON REAR BRACKET (1).
   a. Install cylinder (5) on stud (6) on rear bracket (1).
   b. Install clip (7) in hole in cylinder (5), and snap clip around base of cylinder.

15. CLOSE SIGHT SHIELD ASSEMBLY. See task: OPEN/CLOSE SHIELD ASSEMBLY, page 24-3.

16. CLOSE BALLISTIC SIGHT COVER DOORS. See TM 9-2350-252-10-2.

17. MANUALLY ELEVATE GUN TO 0 MILS. See TM 9-2350-252-10-2.

END OF TASK
REPLACE SIGHT SHIELD PROTECTIVE SIGHT COVER

DESCRIPTION

This task covers: Remove (page 24-24). Install (page 24-28).

INITIAL SETUP

Tools:

- Turret mechanic’s tool kit (Item 31, App F)

Personnel Required:

- Helper (H)

Materials / Parts:

- Lock washer (2)
- Retaining ring
- Sight cover
- Wood block

References:

- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:

- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

NOTE

Procedure for removal of both covers is the same.

1. MANUALLY DEPRESS GUN TO MAXIMUM DEPRESSION. See TM 9-2350-252-10-2.


WARNING

You could be injured when covers spring open. Stand clear of covers.

3. TILT SHIELD (1) BACKWARD AND PULL CONTROL CABLES (2) TO OPEN BOTH BALLISTIC COVER DOORS.

4. TILT SHIELD (1) FORWARD TO REST ON WOOD BLOCKS (3).
5. REMOVE CYLINDER (1) FROM CRANK (2).
   a. Remove clip (3) from cylinder (1).
   b. Remove cylinder (1) from stud (4) on crank (2).

6. REMOVE FRONT BRACKET (5) FROM SHIELD (6).
   a. Remove retaining ring (7) from front bracket (5). Use screwdriver (8). Discard ring.
   b. Remove crank (2) from front bracket (5).
   c. Remove four screws (9), washers (10), and front bracket (5) from shield (6) and pin (11).
7. REMOVE COVER (1) WITH PIN (2) FROM SHIELD (3).
   a. Slide pin (2) out of bracket (4). Have helper support cover.
   b. Remove cover (1) and pin (2) from shield (3).

8. REMOVE PIN (2) AND FOUR SPRINGS (5) FROM COVER (1).
   a. Remove two washers (6) from pin (2).
   b. Remove pin (2) and four springs (5) from cover (1).
   c. Remove bearings (7) from lugs (8). Replace bearings as necessary.
NOTE
Notice position of bolt at removal so bolt can be installed in same position.

9. REMOVE BOLT (1) FROM COVER (2).
   a. Remove two nuts (3), lock washers (4), and bolt (1) from cover (2). Discard lock washers.

NOTE
If bracket is damaged, steps 10 and 11 must be done. If bracket is not damaged, go to step 12.

10. REMOVE BRACKET (5) FROM SHIELD (6).
   a. Swing shield (6) closed. Have helper assist.
   b. Remove two screws (7), washers (8), bracket (5), and shim(s) (9), if any, from shield (6).

GO TO NEXT PAGE
Procedure for installation of both covers is the same.

11. INSTALL BRACKET (1) ON SHIELD (2).
   a. Install shim(s) (3), if any, and bracket (1) on shield (2) with two washers (4) and screws (5).
   b. Swing shield (2) to open position. Have helper assist.

12. INSTALL BOLT (6) ON COVER (7).
   a. Install bolt (6) on cover (7) with two new lock washers (8) and nuts (9). Tighten nuts finger tight.
NOTE

New bearings are not included with new cover. Bearings come separately and must be installed in lugs.

Day sight cover has two lugs. Night sight cover has three lugs. Night sight cover shown.

13. INSTALL PIN (1) AND FOUR SPRINGS (2) ON COVER (3).
   a. Install bearings (4) in lug (5) and lug (6).
   b. Insert pin (1) in lug (5) and push pin (1) toward lug (6).
   c. Install four springs (2) on pin (1) as pin slides toward lug (6), then slide pin through lug.

14. INSTALL COVER (3) WITH PIN (1) ON SHIELD (7).
   a. Install two washers (8) on each end of pin (1).
   b. Put cover (3) into position on shield (7) and slide pin (1) into bracket (9).

GO TO NEXT PAGE
15. INSTALL FRONT BRACKET (1) ON SHIELD (2).
   a. Install front bracket (1) on shield (2) and pin (3) with four washers (4) and screws (5).
   b. Install crank (6) on front bracket (1).
   c. Install new retaining ring (7) in groove (8) in front bracket (1).

16. INSTALL CYLINDER (9) ON CRANK (6).
   a. Install cylinder (9) on stud (10) on crank (6).
   b. Install clip (11) in hole in cylinder (9) and snap clip around base of cylinder (9).
17. CLOSE SIGHT SHIELD ASSEMBLY. See task: OPEN/CLOSE SIGHT SHIELD ASSEMBLY, page 24-3.

18. ADJUST BOLT (1).
   a. Close cover (2).
   b. Adjust bolt (1) so that bolt engages latch (3).
   c. Tighten two nuts (4).

19. CLOSE BALLISTIC SIGHT COVER DOORS. See TM 9-2350-252-10-2.

20. MANUALLY ELEVATE GUN TO 0 MILS. See TM 9-2350-252-10-2.

END OF TASK
REPAIR SIGHT SHIELD COVER LOCKS

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Self-locking nut
- Plastic washer
- Wood block

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

NOTE
Both sight shield cover locks are repaired the same way.


   WARNING
Covers spring open if released. You could be hurt. Stand clear of covers.

2. BLOCK COVERS (1) CLOSED.
   a. Tilt shield backwards slightly.
   b. Place wood block (2) between cover (1) and turret (3).
   c. Tilt shield forward so that doors (1) rest on block (2).
3. REMOVE SIGHT SHIELD CABLE ASSEMBLY. See task: REPLACE SIGHT SHIELD CONTROL CABLE ASSEMBLY, page 24-8.

4. REMOVE LATCH (1) FROM SHIELD (2).
   a. Remove screw with nut (3) and spring (4) from shield (2).
   b. Remove screw with nut (3) from spring (4).
   c. Remove two screws (5), washers (6), and latch (1) from shield (2).
   d. Remove spring (4) from link (7).

5. REMOVE LINK (7) FROM LATCH (1).
   a. Remove locknut (8), screw (9), washer (10), link (7), and plastic washer (11) from latch (1). Discard locknut and plastic washer.

6. INSTALL LINK (7) ON LATCH (1).
   a. Install new plastic washer (11), link (7), washer (10), screw (9), and new locknut (8), on latch (1).

GO TO NEXT PAGE
7. INSTALL LATCH (1) ON SHIELD (2).
   a. Install spring (3) on link (4).
   b. Install latch (1) on shield (2) with two washers (5) and screws (6) finger tight.
   c. Install screw with nut (7) on spring (3).
   d. Install spring (3) on screw with nut (7) on shield (2).

8. ADJUST LATCH (1) TO ENGAGE BOLT (8) ON COVER (9).
   a. Close cover (9).
   b. Adjust latch (1) until link (4) engages bolt (8) on cover (9).
   c. Tighten two screws (6).

Section III. MAINTENANCE OF DEFOGGER

REPLACE SIGHT SHIELD DEFOGGER TUBULAR FAN HEATER

DESCRIPTION

This task covers: Remove page (24–35). Install (page 24–36).

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
Tubular fin heater

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9–2350–252–10–1
TM 9–2350–252–10–2

Equipment Conditions:
Engine stopped (TM 9–2350–252–10–1)
Turret shut down (TM 9–2350–252–10–2)

REMOVE


3. REMOVE HEATER (1) FROM PLENUM (2).
   a. Remove two nuts (3), copper washers (3.1), and steel washers (4) from heater (1).
   b. Remove three screws (5), washers (6), and retainer (7) from plenum (2).
   c. Remove heater (1) from plenum (2).

GO TO NEXT PAGE
4. INSTALL NEW HEATER (1) ON PLENUM (2).
   a. Install heater (1) and retainer (3) on plenum (2).
   b. Install retainer (3), three washers (4), and screws (5) on plenum (2).
   c. Install two steel washers (6), copper washers (7), and nuts (8) on heater (1).


END OF TASK
Section IV. MAINTENANCE OF WIRING HARNESS 2W16

REPAIR/REPLACE WIRING HARNESS 2W16

DESCRIPTION

This task covers: Remove (page 24-37). Repair (page 24-40). Install (page 24-40).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Crimping tool (Item 3, App F)
- Contact removal socket (Item 25, App F)
- Contact insertion tool (Item 32, App F)
- Crimping tool die (Item 35, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Adhesive sealant tape (Item 5, App C)
- Abrasive cloth (Item 32, App C)
- Self-locking nut

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. REMOVE HOSE (1) FROM ADAPTER (2) AND PLENUM (3).
   a. Loosen two clamps (4) and remove hose (1) from adapter (2) and plenum (3).

3. REMOVE PLUG 2A38P1 (5) FROM PLUG 2W16P1 (6).

GO TO NEXT PAGE
4. REMOVE WIRING HARNESS 2W16 (1) FROM TWO CLAMPS (2).
   a. Remove two screws (3), washers (4), and clamps (2) with wiring harness 2W16 (1) from sight shield (5).
   b. Remove wiring harness 2W16 (1) from two clamps (2).

5. REMOVE PLENUM (6) FROM SIGHT SHIELD (5).
   a. Remove 10 screws (7), washers (8), four clamps (9) with wiring harness 2W16 (1), and plenum (6) from sight shield (5).
   b. Remove wiring harness 2W16 (1) from four clamps (9).
6. REMOVE LEADS 2W16E1 (1) AND 2W16E2 (2) FROM HEATER (3).
   a. Remove two nuts (4), lead 2W16E1 (1), and lead 2W16E2 (2) from two screws (5) on heater (3).

7. REMOVE LEAD 2W16S2 (6) FROM CLAMP (7).
   a. Remove locknut (8), washer (9), screw (10), and clamp (7) with lead 2W16S2 (6) from plenum (11). Discard locknut.
   b. Remove lead 2W16S2 (6) from clamp (7).
8. REMOVE WIRING HARNESS 2W16 (1) FROM PLENUM (2).
   a. Remove two screws (3), thermostat (4), and wiring harness 2W16 (1) from plenum (2).

9. REPAIR JACK 2W16P1. See task: REPAIR MULTIPIN PLUG/JACK, RUBBER TYPE, page 4-12. USE CONTACT REMOVAL SOCKET, CONTACT INSERTION TOOL, CRIMPING TOOL, ADHESIVE SEALANT, AND ABRASIVE CLOTH.

10. REPAIR LEAD 2W16E1 OR LEAD 2W16E2 AS REQUIRED. See task: REPAIR LEAD, page 4-4. USE CRIMPING TOOL DIE.

11. INSTALL WIRING HARNESS 2W16 (1) ON PLENUM (2).
   a. Install wiring harness 2W16 (1), thermostat (4), and two screws (3) on plenum (2).
12. INSTALL LEAD 2W16S2 (1) IN CLAMP (2).
   a. Install lead 2W16S2 (1) in clamp (2).
   b. Install clamp (2) with lead 2W16S2 (1), screw (3), washer (4), and new locknut (5) on plenum (6).

13. INSTALL LEADS 2W16E1 (7) AND 2W16E2 (8) ON HEATER (9).
   a. Install lead 2W16E1 (7), lead 2W16E2 (8), and two nuts (10) on two screws (11) on heater (9).

GO TO NEXT PAGE
14. INSTALL PLENUM (1) ON SIGHT SHIELD (2).

a. Install wiring harness 2W16 (3) in four clamps (4).

b. Install plenum (1), four clamps (4) with wiring harness 2W16 (3), 10 washers (5), and screws (6) on sight shield (2).

15. INSTALL PLUG 2A38P1 (7) ON PLUG 2W16P1 (8).
16. INSTALL WIRING HARNESS 2W16 (1) IN TWO CLAMPS (2).
   a. Install wiring harness 2W16 (1) in two clamps (2).
   b. Install two clamps (2) with wiring harness 2W16 (1), two washers (3), and screws (4) on sight shield (5).

17. INSTALL HOSE (6) ON ADAPTER (7) AND PLENUM (8).
   a. Install hose (6) on adapter (7) and plenum (8). Tighten two clamps (9).


19. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK
Section V. MAINTENANCE OF VANEAXIAL FAN

REPAIR/REPLACE SIGHT DEFOGGER FAN/PLUG 2A38P1

DESCRIPTION

This task covers: Remove (page 24-45). Repair (page 24-45). Install (page 24-47).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Crimping tool (Item 3, App F)
- Removal tool (Item 19, App F)
- Insertion tool (Item 32, App F)

Materials/Parts:
- Adhesive sealant tape (Item 5, App C)
- Abrasive cloth (Item 32, App C)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

NOTE
To repair plug 2A38P1, do steps 1 thru 3 and 12 thru 14.
To replace fan, do steps 1, 2, and 4 thru 14.


2. REMOVE PLUG 2A38P1 (1) FROM PLUG 2W16P1 (2).
   a. Remove screw (3), washer (4), and clamp (5) from plenum (6).
   b. Remove plug 2A38P1 (1) from plug 2W16P1 (2).

REPAIR

3. REPAIR PLUG 2A38P1. See task: REPAIR MULTIPIN PLUG/JACK, RUBBER TYPE, page 4-12. USE REMOVAL, INSERTION, CRIMPING TOOLS, ABRASIVE CLOTH, AND ADHESIVE SEALANT TAPE.
4. REMOVE HOSE (1) FROM ADAPTER (2).
   a. Loosen clamp (3) and remove hose (1) and clamp (3) from adapter (2).

5. REMOVE ADAPTER (2) FROM FAN (4).
   a. Loosen clamp (5) and remove adapter (2) and clamp (5) from fan (4).

6. REMOVE GUARD (6) FROM SHIELD (7).
   a. Remove five screws (8), washers (9), and guard (6) from shield (7).
7. REMOVE FAN (1) FROM SHIELD (2).
   a. Hold fan (1), and remove four screws (3), washers (4), retainer (5), two spacers (6), and fan (1) from shield (2).

---

NOTE
Lip on retainer fits over fan.

8. INSTALL FAN (1) ON SHIELD (2).
   a. Install fan (1), two spacers (6), retainer (5), four washers (4), and screws (3) on shield (2).
9. INSTALL GUARD (1) ON SHIELD (2).
   a. Install guard (1), five washers (3), and screws (4) on shield (2).

10. INSTALL ADAPTER (5) ON FAN (6).
    a. Install adapter (5) and clamp (7) on fan (6). Tighten clamp.

11. INSTALL HOSE (8) ON ADAPTER (5).
    a. Install hose (8) and clamp (9) on adapter (5). Tighten clamp.
12. INSTALL PLUG 2A38P1 (1) ON PLUG 2W16P1 (2).
   a. Install plug 2A38P1 (1) on plug 2W16P1 (2).
   b. Install clamp (3), washer (4), and screw (5) on plenum (6).


14. CHECK OPERATION OF DEFOGGER FAN.

END OF TASK
## TASK INDEX

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ADJUST GUN ROTOR DECK CLEARANCE SWITCH AND CAM

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Multimeter (Item 15, App F)

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Materials/Parts:
- Nonelectrical wire (Item 15, App C)

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

ADJUST


5. CHECK CAM (1) FOR DAMAGE.
   a. If cam (1) is okay, go to step 6.
   b. If cam is broken or missing, replace cam. See task: REPLACE GUN ROTOR DECK CLEARANCE CAM, page 25–5.

7. CHECK THAT SWITCH ROLLER (1) MAKES CONTACT WITH CAM (2).
   a. If roller makes contact, go to step 9.
   b. If roller does not make contact, go to step 8.

8. MOVE SWITCH (3) UNTIL ROLLER (1) MAKES CONTACT WITH CAM (2).
   a. Remove lock wire (4) from front jam nut (5) and rear jam nut (6). Discard lock wire.
   b. Loosen front jam nut (5) and rear jam nut (6).
   c. Move switch (3) until roller (1) makes contact with cam (2).
   d. Tighten front jam nut (5) and rear jam nut (6).

9. REMOVE PLUG 2A29P1 (7) FROM JACK 2W6J2 (8).

10. LOOSEN TWO SCREWS (9) AND WASHERS (10) SECURING CAM (2) AND SPACER (11) TO ROTOR (12).

11. ADJUST GUN ROTOR DECK CLEARANCE CAM (2).
   a. Place probes on pins A (13) and B (14) on plug 2A29P1 (7). Use multimeter.
   b. Adjust cam (2) until 0 ohms is reached for elevation greater than -26.5 mils ± 8 mils.
   c. Place probes on pins A (13) and C (15) on plug 2A29P1 (7). Use multimeter.
   d. Adjust cam (2) until 0 ohms is reached for elevation less than -26.5 mils ± 8 mils.
   e. Tighten two screws (9) and washers (10) securing cam (2) and spacers (11) to rotor (12).
12. INSTALL NEW LOCK WIRE (1) ON FRONT JAM NUT (2) AND REAR JAM NUT (3).

13. INSTALL PLUG 2A29P1 (4) ON JACK 2W6J2 (5).

14. MANUALLY ELEVATE GUN TO 0 MILS. See TM 9-2350-252-10-2.


18. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK
REPLACE GUN ROTOR DECK CLEARANCE CAM

DESCRIPTION

This task covers: Remove (page 25-5). Install (page 25-6).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Clearance cam

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV / IFVICFV Trt Mech 45T10

REMOVE


4. MANUALLY ELEVATE 25MM GUN TO 90 MILS. See TM 9-2350-252-10-2.

5. REMOVE CAM (1) AND SPACER (2) FROM ROTOR (3).
   a. Remove two screws (4), washers (5), cam (1), and spacer (2) from rotor (3).

GO TO NEXT PAGE
INSTALL

6. INSTALL SPACER (1) AND NEW CAM (2) ON ROTOR (3).
   a. Apply sealing compound (Item 21) to threads of two screws (4).
   b. Apply sealing compound (Item 20) to threads of two screws (4).
   c. Install spacer (1), cam (2), two washers (5), and screws (4) on rotor (3).

7. ADJUST GUN ROTOR DECK CLEARANCE SWITCH. See page 25-2.

8. MANUALLY DEPRESS 25MM GUN TO 0 MILS. See TM 9-2350-252-10-2.


12. CHECK DECK CLEARANCE SYSTEM. See TM 9-2350-252-10-2.

END OF TASK
REPLACE DECK CLEARANCE SWITCH

DESCRIPTION
This task covers: Remove (page 25-7). Install (page 25-9).

INITIAL SETUP
Tools:
Turret mechanic's tool kit (Item 31, App F)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Materials/Parts:
Sensitive switch
Nonelectrical wire (Item 15, App C)

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE


5. REMOVE PLUG 2A29P1 (1) FROM JACK 2W6J3 (2).

GO TO NEXT PAGE
6. REMOVE CABLE (1) FROM SEVEN CLAMPS (2).
   a. Remove seven screws (3) and clamps (2) from weldnuts (4) on turret.
   b. Remove cable (1) from seven clamps (2).

7. REMOVE SWITCH (5) FROM BRACKET (6).
   a. Remove lockring (7) and roller guide (8) from switch (5).
   b. Remove lock wire (9) from two jam nuts (10, 11). Discard lock wire.
   c. Remove jam nut (10), washer (12), tab washer (13), and switch (5) from bracket (6).
8. INSTALL NEW SWITCH (1) ON BRACKET (2).
   a. Install tab washer (3), washer (4), switch (1), and jam nut (5) on bracket (2).
   b. Install new lock wire (6) on two jam nuts (5).
   c. Install roller guide (7) and lockring (8) on switch (1).


10. INSTALL CABLE (9) IN SEVEN CLAMPS (10).
    a. Install cable (9) in seven clamps (10).
    b. Install seven clamps (10) and screws (11) in weldnuts (12) on turret.

GO TO NEXT PAGE
11. INSTALL PLUG 2A29P1 (1) ON JACK 2W6J3 (2).


15. CHECK DECK CLEARANCE SYSTEM. See TM 9-2350-252-10-2.

END OF TASK
# CHAPTER 26
MAINTENANCE OF 25MM FEED SYSTEM

## Section 1. MAINTENANCE OF FEED SYSTEM

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REPLACE 25MM AMMO CAN ACCESS DOORS

DESCRIPTION

This task covers: Remove (page 26–2). Install (page 26–3).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Access door
- Helical torsion spring

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

NOTE

Removal of both doors is the same.

1. REMOVE DOOR (1 OR 2) FROM AMMO CAN (3).
   a. Turn handle (4 or 5) and lift door (1 or 2) from ammo can (3).

2. IF YOU HAVE DOOR (1), DISCARD DOOR, AND GO TO STEP 6.

3. IF YOU HAVE DOOR (2), GO TO STEP 4.
4. REMOVE HANDLE (1) FROM DOOR (2).
   a. Remove screw (3), washer (4), handle (1), and spring (5) from pin (6). Discard spring and door.

5. INSTALL HANDLE (1) ON NEW DOOR (2).
   a. Install long end of new spring (5) into handle (1).
   b. Install handle (1) with spring (5), washer (4), and screw (3) on pin (6).
   c. Go to step 7.

6. INSTALL NEW HANDLE (7) ON NEW DOOR (2).
   a. Install long end of new spring (5) into handle (7).
   b. Install handle (7) with spring (5), new washer (4), and new screw (3) on pin (6).

7. INSTALL DOOR (2) ON AMMO CAN (8).
   a. Place door (2) in bracket (9) on ammo can (8) with handle (1 or 7) in open position.
   b. Turn handle (1 or 7) to lock door (2).

END OF TASK
TM 9-2350-252-20-2-3

REPLACE 25MM AMMO GUARD GUN MOUNT

DESCRIPTION

This task covers: Remove (page 26-4). Install (page 26-5).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Ammunition chute guard

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE


4. REMOVE CLAMP (1) FROM TURRET.
   a. Remove screw (2) and clamp (1) from turret.
   b. Move cables (3) to access guard (4).

5. REMOVE GUARD (4) FROM TURRET.
   a. Remove three screws (5), washers (6), and guard (4) from turret.
INSTALL

6. INSTALL NEW GUARD (1) IN TURRET.
   a. Apply sealing compound (Item 21) to threads of three screws (2).
   b. Apply sealing compound (Item 20) to threads of three screws (2).
   c. Install guard (1), three washers (3), and screws (2) in turret.

7. INSTALL CLAMP (4) ON TURRET.
   a. Install clamp (4) and screw (5) on turret.


END OF TASK
REPAIR 25MM AMMO CAN DOOR LATCH

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Plastic washer
- Latch handle
- Ball plunger
- Helical torsion spring

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REPAIR

NOTE
Removal of four handles is the same. For AP ammo door, start with step 1. For HE ammo door, start with step 2. For ammo can access doors, start with step 3. Parts are not interchangeable between latches.

1. MANUALLY TRAVERSE TURRET TO AP LOAD. See TM 9-2350-252-10-2.

2. MANUALLY TRAVERSE TURRET TO HE LOAD. See TM 9-2350-252-10-2.

3. REMOVE DOOR (1 OR 2) FROM AMMO CAN (3).
   a. Turn handle (4 or 5) and lift door (1 or 2) from ammo can (3).

4. IF YOU HAVE DOOR (2), GO TO STEP 6.

5. IF YOU HAVE DOOR (1), GO TO STEP 7.
6. REMOVE HANDLE (1) FROM DOOR (2).
   a. Remove plunger (3) from plate (4). Discard plunger.
   b. Remove screw (5), washer (6), handle (1), and plastic washer (7) from pin (8). Discard plastic washer.
   c. Go to step 8.

7. REMOVE HANDLE (9) FROM DOOR (10).
   a. Remove screw (11), washer (12), handle (9) and spring (13) from pin (14). Discard handle and spring.
   b. Go to step 9.

**NOTE**
Installation of four handles is the same.

8. INSTALL NEW HANDLE (1) ON DOOR (2).
   a. Install new plastic washer (7), handle (1), washer (6), and screw (5) on pin (8).
   b. Install new plunger (3) in plate (4).
   c. Turn handle (1) to locked position.
   d. Adjust plunger (3) so that tip of plunger fits in slot in handle (1).
   e. Go to step 10.
NOTE

Installation of four handles is the same.

9. INSTALL NEW HANDLE (1) ON DOOR (2).
   a. Insert long end of new spring (5) into handle (1).
   b. Install handle (1) with spring (5), washer (4), and screw (3) on pin (6).

10. INSTALL DOOR (2 OR 7) ON AMMO CAN (8).
    a. Place door (2 or 7) in bracket (9) on ammo can (8) with handle (1 or 10) in open position.
    b. Turn handle (1 or 10) to lock door (2 or 7).

11. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.
REPAIR 25MM AMMO RETAINER

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Personnel Required (cont):
Helper (H)

Materials/Parts:
Sealing compound, grade A (Item 20, App C)
Sealing compound, grade N (Item 21, App C)
Spring pin
Wood block

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REPAIR


WARNING
Spring tension may cause cover to spin and injure you. Hold cover firmly when you remove it.

2. REMOVE COVER (1) AND RETAINER (2) FROM MOUNT (3).
   a. Remove three screws (4), cover (1), and retainer (2) from mount (3).

3. REMOVE ROLLER (5) FROM RETAINER (2).
   a. Remove screw (6), washer (7), and roller (5) from retainer (2).
4. REMOVE RETAINER (1), SPRING (2), AND PIN (3) FROM COVER (4).
   a. Remove ring (5) from pin (3). Use screwdriver (6).
   b. Remove retainer (1) and spring (2) from pin (3).
   c. Remove pin (3) from cover (4).

5. REMOVE PLUNGER (7) AND SPRING (8) FROM COVER (4).
   a. Place wood block (9) against plunger (7).
   b. Remove pin (10) from plunger (7). Discard pin.
   c. Remove plunger (7) and spring (8) from cover (4). Have helper assist.

WARNING
Plunger can spring out and injure you. Place wood block against plunger when you remove pin.

NOTE
Steps 6 thru 9 should be done only if stop assembly must be replaced.
Stop assembly is not the same in all vehicles.
If stop assembly consists of screw and roller arm stop, do steps 6 and 7, then go to step 10.
If stop assembly consists of screw and nut, go to steps 8 and 9.

6. REMOVE ROLLER ARM STOP (11) FROM MOUNT (12).
   a. Remove screw (13) and roller arm stop (11) from mount (12).
7. INSTALL ROLLER ARM STOP (1) ON MOUNT (2).
   a. Apply sealing compound (Item 21) to threads of screw (3).
   b. Apply sealing compound (Item 20) to threads of screw (3).
   c. Install roller arm stop (1) and screw (3) on mount (2).

8. REMOVE SCREW (3) AND NUT (4) FROM MOUNT (2).
   a. Loosen nut (4).
   b. Remove screw (3) and nut (4) from mount (2).
   c. Remove nut (4) from screw (3).

9. INSTALL SCREW (3) AND NUT (4) ON MOUNT (2).
   a. Install nut (4) on screw (3).
   b. Install screw (3) and nut (4) on mount (2).
      Do not tighten nut.

10. INSTALL SPRING (5) AND PLUNGER (6) IN COVER (7).
    a. Position spring (5) and plunger (6) in cover (7).
    b. Place wood block (8) against plunger (6).
    c. Install new pin (9) in plunger (6).

WARNING
Plunger can spring out and injure you. Place wood block against plunger when you install pin.
NOTE
Do step 11 only if stop assembly consists of screw and nut.

11. ADJUST SCREW (1).
   a. Turn screw (1) in or out until space (2) between bottom of roller (3) and rail (4) is 1.12-1.38 inches (28.4-35mm).
   b. Tighten nut (5) against mount (6).

12. INSTALL PIN (7), SPRING (8), AND RETAINER (9) ON COVER (10).
   a. Insert pin (7) in cover (10).
   b. Install spring (8) and retainer (9) on pin (7).
   c. Insert ring (11) on pin (7).
13. INSTALL ROLLER (1) ON RETAINER (2).
   a. Apply sealing compound (Item 21) to threads of screw (3).
   b. Apply sealing compound (Item 20) to threads of screw (3).
   c. Install roller (1), washer (4), and screw (3) on retainer (2).

14. PRELOAD RETAINER (2) ON COVER (5).
   a. Turn retainer (2) right until it locks into place on cover (5).

15. INSTALL RETAINER (2) AND COVER (5) ON MOUNT (6).
   a. Apply sealing compound (Item 21) to threads of three screws (7).
   b. Apply sealing compound (Item 20) to threads of three screws (7).
   c. Install retainer (2), cover (5), and three screws (7) on mount (6).

REPAIR 25MM HE AMMO CAN DOOR

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Reflector
- Locknut

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2305-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE ACCESS DOOR (1) FROM 25MM AMMO CAN (2).
   a. Turn handle (3) and lift door (1) from ammo can (2).
2. REMOVE REFLECTOR (1) FROM ACCESS DOOR (2).
   a. Remove locknut (3), two washers (4), screw (5), and reflector (1) from door (2). Discard reflector and locknut.

3. INSTALL NEW REFLECTOR (1) ON ACCESS DOOR (2).
   a. Place screw (5) and one washer (4) on door (2).
   b. Place reflector (1) through opening (6) on screw (5).
   c. Install other washer (4) and new locknut (3) on reflector (1).

4. INSTALL ACCESS DOOR (2) ON AMMO CAN (7).
   a. Place door (2) in bracket (8) on ammo can (7) with handle (9) in open position.
   b. Turn handle (9) to lock door (2).

END OF TASK
REPLACE 25MM AMMO CAN ASSEMBLY/ROLLER

DESCRIPTION

This task covers: Remove (page 26–16.1). Install (page 26–16.7).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound (Item 20, App C)
- Sealing compound (Item 21, App C)
- 25MM ammo can assembly
- Lock washer (10)
- Lock washer (2) (Composite turret basket)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Personnel Required (cont):
- Helper (H)

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2
- TM 9–2350–252–24P–1

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE


3. FOR M3, REMOVE SQUAD SEATS 4, 5 AND JUMP SEAT. See


5. REMOVE 25MM GUN GUARD. See task: REPAIR/REPLACE 25MM GUN GUARD,
   page 14–7.

6. REMOVE 25MM AP AMMO CHUTE. See task: REPLACE 25MM AP AMMO CHUTE,
   page 26–24.

7. REMOVE 25MM HE AMMO CHUTE, See task: REPLACE 25MM HE AMMO

8. REMOVE LEFT, CENTER, AND RIGHT TURRET FLOOR PLATE. See task:

   NOTE
   Be sure to secure all cables before rotating the turret.

9. REMOVE POWER CONVERTER. See task: REPLACE POWER CONVERTER,
   page 22–98.

10. REMOVE COMMAND GUIDANCE ELECTRONICS. See task: REMOVE/INSTALL COMMAND
    GUIDANCE ELECTRONICS, page 18–2.

11. REMOVE AP PHOTOELECTRIC CONTROL. See task: REPAIR/REPLACE
    AP PHOTOELECTRIC CONTROL, page 5–424.

GO TO NEXT PAGE
12. REMOVE ELECTRONIC CONTROL ASSEMBLY. See task: REPLACE ELECTRONIC CONTROL ASSEMBLY. page 7–130.

**NOTE**
Be sure to secure cables after removing ammo selectors toggle switch assemblies.


15. REMOVE DOOR (1) FROM HE AMMO CAN (2).
   a. Turn latch (3) and lift door (1) up and out of HE ammo can (2).

16. REMOVE TURRET SHIELD CENTER ANGLE BRACKET (4) FROM TURRET.
   a. Remove three screws (5), lock washers (6) and washers (7) from angle bracket (4). Discard lock washers.
   b. Remove bottom screw (8), lock washer (9) and washer (10) from angle bracket (4) on floor plate (11). Discard lock washer.
17. REMOVE LOWER TURRET DOOR TRACK (1).
   a. Remove six screws (2) and washers (3) from track (1).
   b. Remove lower track (1) from turret.

18. REMOVE CABLE HANGER (4) FROM HE AMMO CAN (5).
   a. Remove two screws (6) and washers (7) from HE ammo can (5) and cable hanger (4).
   b. Remove three screws (8), washers (9), and cable hanger (4) from HE ammo can (5).
19. MANUALLY TRAVERSE TURRET TO 2500 MILS. See TM 9-2350-252-10-2.

20. REMOVE CLAMP (1) FROM WELDNU (2) ON TURRET.
   a. Remove screw (3) and clamp (1) from weldnut (2) on turret.

21. REMOVE TWO SCREWS (4) AND WASHERS (5) FROM BOTTOM OF SUPPORT (6) AND AMMO CAN (7).

22. MANUALLY TRAVERSE TURRET TO 3650 MILS. See TM 9-2350-252-10-2.

23. REMOVE TWO SCREWS (8) AND WASHERS (9) FROM AMMO CAN (7) AND BOTTOM OF SUPPORT (6).
24. REMOVE INTERCOM SWITCH (1) FROM TURRET BASKET (2).
   a. Remove two screws (3), washers (4) and intercom switch (1) from turret basket (2).


If vehicle has welded turret basket, do substeps a and b. If vehicle has composite turret basket, do substeps a and c.

26. REMOVE FOUR SCREWS (5, 6) AND WASHERS (7, 8) FROM AMMO CAN AND TWO BRACKETS (9, 10) ON TURRET BASKET (2).
   a. Remove two screws (5) and washers (7) from ammo can and bracket (9) on left side of turret basket (2).
   b. Remove two screws (6) and washers (8) from ammo can and bracket (10).
   c. Remove two screws (6), washers (8), lockwashers (8.1), and DCGE ground strap (8.2) from ammo can and bracket (10). Discard lockwashers.
27. REMOVE SIX SCREWS (1) AND WASHERS (2) FROM AMMO CAN AND RIGHT SIDE OF TURRET BASKET (3). HAVE HELPER HOLD AMMO CAN IN PLACE.

**NOTE**
Ensure that all squad seats are in stowed position before removing ammo can assembly from turret.

28. REMOVE AMMO CAN ASSEMBLY FROM TURRET. HAVE HELPER ASSIST.

**NOTE**
If the ammo can is to be replaced, do steps 29 thru 41. If the ammo can assembly is to be replaced, go to step 42. If 25mm ammo can roller is to be replaced, do steps 32 thru 38.


32. REMOVE COTTER PIN (4) AND WASHER (5) FROM STRAIGHT PIN (6). DISCARD COTTER PIN.
33. REMOVE STRAIGHT PIN (1) FROM AMMO CAN (2) AND ROLLER (3).

34. REMOVE ROLLER (3) FROM AMMO CAN (2).

INSTALL

35. POSITION NEW ROLLER (3) IN AMMO CAN (2).

36. INSERT STRAIGHT PIN (1) THROUGH AMMO CAN (2) AND ROLLER (3).

GO TO NEXT PAGE
37. INSTALL WASHER (1) AND NEW COTTER PIN (2) ON STRAIGHT PIN (3).

38. CHECK THAT ROLLER MOVES FREELY.


41. INSTALL 25MM AMMO CAN DOORS. See task: REPLACE 25MM AMMO CAN ACCESS DOORS, page 26–32.

**NOTE**
Ensure that all squad seats are in stowed position before placing new ammo can assembly in turret.

42. POSITION NEW AMMO CAN ASSEMBLY IN TURRET. HAVE HELPER ASSIST.

43. INSTALL SIX WASHERS (4) AND SCREWS (5) IN RIGHT SIDE OF TURRET BASKET (6) AND AMMO CAN.
   a. Apply sealing compound (Item 21) on the threads of six screws (5).
   b. Apply sealing compound (Item 20) on the threads of six screws (5).
   c. Install six washers (4) and screws (5) in right side of turret basket (6) and ammo can. Have helper hold ammo can in place.
NOTE

If vehicle has welded turret basket, do substeps a thru d. If vehicle has composite turret basket, do substeps a, b, c, and e.

44. INSTALL FOUR WASHERS (1, 2) AND SCREWS (3, 4) ON TWO BRACKETS (5, 6) OF TURRET BASKET (7) AND INTO AMMO CAN.

   a. Apply sealing compound (Item 21) to the threads of four screws (3, 4).
   
   b. Apply sealing compound (Item 20) to the threads of four screws (3, 4).
   
   c. Install two washers (1) and screws (3) on bracket (5) on left side of turret basket (7) and into ammo can.
   
   d. Install two washers (2) and screws (4) on bracket (6) and into ammo can.
   
   e. Install two washers (2), new lockwashers (2.1), DCGE ground strap (2.2), and screws (4) on bracket (6) and into ammo can.

45. INSTALL INTERCOM SWITCH (8) ON TURRET BASKET (7).

   a. Install intercom switch (8), two washers (9), and screws (10) on turret basket (7).


GO TO NEXT PAGE
47. INSTALL TWO WASHERS (1) AND SCREWS (2) ON BOTTOM OF SUPPORT (3) AND AMMO CAN (4).
   a. Apply sealing compound (Item 20) to threads of two screws (2).
   b. Install two washers (1) and screws (2) on bottom of support (3) and ammo can (4).


50. INSTALL TWO WASHERS (1) AND SCREWS (2) ON BOTTOM OF SUPPORT (3) AND AMMO CAN (4).
   a. Apply sealing compound (Item 20) to threads of two screws (2).
   b. Install two washers (1) and screws (2) on bottom of support (3) and ammo can (4).

51. INSTALL CLAMP (5) ON WELDNUT (6) ON TURRET.
   a. Install clamp (5) and screw (7) in weldnut (6) on turret.

52. INSTALL AMMO SELECTOR TOGGLE SWITCH ASSEMBLY. See task: REPLACE AMMO SELECTOR TOGGLE SWITCH ASSEMBLY, page 5–17.
CAUTION
Cable will be damaged if cable is not routed through notch in cable hanger. Be sure to route cable through notch in cable hanger.

53. INSTALL CABLE HANGER (1) ON HE AMMO CAN (2).
   a. Route cable 2A22 (3) through notch (4) in cable hanger (1).
   b. Install cable hanger (1), three washers (5), and screws (6) on HE ammo can (2).
   c. Install two washers (7) and screws (8) in HE ammo can (2) and cable hanger (1).
   d. Install plug 2A22P1 (9) on jack 2W9J2 (2W39J2) (10).

54. INSTALL DOOR (11) ON HE AMMO CAN (2).
   a. Position bottom of door (11) in hanger.
   b. Close door (11) and turn latch (12) up.
NOTE
New lock washers are listed in TM 9-2350-252-24P-1.

55. INSTALL LOWER TURRET DOOR TRACK (1).
   a. Position lower turret door track (1) around bottom of turret.
   b. Install six washers (2) and screws (3) in track (1) and turret.

NOTE
New lock washers are listed in TM 9-2350-252-24P-1.

56. INSTALL TURRET SHIELD CENTER ANGLE BRACKET (4) TO LOWER TURRET DOOR TRACK (1).
   a. Install three new lock washers (5), washers (6) and screws (7) on angle bracket (4) on lower turret door track (1).
   b. Install flat washer (8), lock washer (9) and screw (10) on angle bracket (4) on turret floor plate (11).
57. INSTALL ELECTRONIC CONTROL ASSEMBLY. See task: REPLACE ELECTRONIC CONTROL ASSEMBLY, page 7-130.

58. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

59. INSTALL AP PHOTOELECTRIC CONTROL. See task: REPAIR/REPLACE AP PHOTOELECTRIC CONTROL, page 5-424.

60. INSTALL COMMAND GUIDANCE ELECTRONICS. See task: REMOVE/INSTALL COMMAND GUIDANCE ELECTRONICS, page 18-2.

61. INSTALL POWER CONVERTER. See task: REPLACE POWER CONVERTER, page 22-98.


66. INSTALL ALL SEATS REMOVED IN EITHER STEPS 1 THRU 4. See TM 9-2350-252-24P-1.

END OF TASK
## Section II. MAINTENANCE OF AMMO FORWARDER

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REPLACE 25MM AMMO FORWARDER

DESCRIPTION

This task covers: Remove (page 26-18). Install (page 26-19).

INITIAL SETUP

Tools: Turret mechanic's tool kit (Item 31, App F)

References: TM 9-2350-252-10-1
            TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Forwarder

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE

Procedure for removing AP and HE forwarders is the same.

1. REMOVE FORWARDER (1) FROM CHUTE (2).
   a. Remove four screws (3) and forwarder (1) from chute (2).
INSTALL

NOTE
Install AP forwarder with handle facing toward gunner’s seat. Go to step 3 for installation of HE forwarder.

2. INSTALL NEW AP FORWARDER (1) ON CHUTE (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install forwarder (1) and four screws (3) on chute (2).

NOTE
Install HE forwarder with shaft facing gunner’s seat.

Install screws on forwarder beginning with upper right position.

3. INSTALL NEW HE FORWARDER (1) ON CHUTE (2).
   a. Apply sealing compound (Item 21) to threads of four screws (3).
   b. Apply sealing compound (Item 20) to threads of four screws (3).
   c. Install forwarder (1) and screw (3) on chute (2).
   d. Install three screws (3) on chute (2).

END OF TASK
REPAIR 25MM AMMO FORWARDER

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Spring pin
- Helical spring

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

Procedure for removing AP and HE forwarders is the same.

1. REMOVE FORWARDER (1) FROM CHUTE (2).
   a. Remove four screws (3) and forwarder (1) from chute (2).
2. REMOVE SPROCKET (1) FROM FORWARDER (2).
   a. Remove pin (3) from sprocket (1). Discard pin.
   b. Turn handle (4).
   c. Remove shaft (5) and sprocket (1) from forwarder (2).

3. REMOVE SPRING (6) FROM FORWARDER (2).
   a. Turn handle (4) and remove spring (6) from forwarder (2). Discard spring.

4. REMOVE PAWL (7) FROM FORWARDER (2).
   a. Remove pin (8) from handle (4). Discard pin.
   b. Remove handle (4) from pawl (7).
   c. Remove pawl (7) from forwarder (2).

5. INSTALL PAWL (7) IN FORWARDER (2).
   a. Install pawl (7) in forwarder (2).
   b. Install handle (4) on pawl (7).
   c. Install new pin (8) in handle (4).
6. INSTALL NEW SPRING (1) IN FORWARDER (2).
   a. Install spring (1) in forwarder (2), and turn handle (3) until pawl (4) engages spring (1).

7. INSTALL SPROCKET (5) IN FORWARDER (2).
   a. Install sprocket (5) in forwarder (2).
   b. Turn handle (3) and install shaft (6) in forwarder (2).
   c. Install new pin (7) through sprocket (5) and hole in shaft (6).

NOTE
AP forwarder is installed with handle facing toward gunner's seat. HE forwarder is installed with handle facing away from gunner's seat.

8. INSTALL FORWARDER (2) ON CHUTE (8).
   a. Apply sealing compound (Item 21) to threads of four screws (9).
   b. Apply sealing compound (Item 20) to threads of four screws (9).
   c. Install forwarder (2) and four screws (9) on chute (8).

END OF TASK
## Section III. MAINTENANCE OF 25MM CHUTE ASSEMBLY

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REPLACE 25MM AP AMMO CHUTE

DESCRIPTION

This task covers: Remove (page 26–24). Install (page 26–26).

INITIAL SETUP

Materials/Parts:
- 25mm AP chute assembly

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.


NOTE

Access to chute cover is behind ISU and through gun rotor.

5. OPEN CHUTE COVER (1).
   a. Unzip top zipper (2), and side zipper (3) on chute cover (1).
6. REMOVE CHUTE (1) FROM AP AMMO CAN EXIT (2).
   a. Squeeze two latches (3) and pull chute (1) up and out of AP ammo can exit (2).

7. (H) REMOVE CHUTE (1) FROM TURRET.

GO TO NEXT PAGE
8. INSTALL NEW CHUTE (1) IN TURRET.
   a. Push latch end of chute (1) through chute cover (4). Have helper guide chute through chute cover.

9. INSTALL CHUTE (1) ON AP AMMO CAN EXIT (2).
   a. Aline chute (1) with AP ammo can exit (2).
   b. Push down on chute (1) until it locks in place. Then pull up on chute (1) to make sure two latches (3) are locked.
NOTE
Access to chute cover is behind ISU and through gun rotor.

10. CLOSE CHUTE COVER (1).
   a. Zip side zipper (2) and top zipper (3) on chute cover (1).

11. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.


END OF TASK

Change 2 26–26.1 (26–26.2 blank)
REPAIR 25MM AP AMMO CHUTE

Tools:
Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
ITV/IFV/CFV TRT Mech 45T10

References:
TM 9–2350–252–10–1
TM 9–2350–252–10–2

Equipment Conditions:
Engine stopped (TM 9–2350–252–10–1)
Turret shut down (TM 9–2350 252–10–2)

REPAIR


NOTE
If entrance end fitting needs replacing, do steps 8 thru 11.
If exit end fitting needs replacing, do steps 6, 7, 12, and 13.
When performing steps 6 and 7 to remove damaged exit end fitting, damaged link is exit end fitting.
All links of AP ammo chute are replaced the same way.

6. BEND UP FOUR FOLDING TABS (1) OF DAMAGED LINK (2). USE FLAT-TIP SCREWDRIVER (3).
   a. Bend up two folding tabs (1) of damaged link (2).
   b. Turn chute (4) over, and bend up two more folding tabs (1) of damaged link (2).

GO TO NEXT PAGE
7. SEPARATE CHUTE (1) AT DAMAGED LINK (2).
   a. Bend chute (1), and remove four folding tabs (3) of damaged link (2) from four tabholders (4). Pry with flat-tip screwdriver (5) to remove folding tabs from tabholders.
   b. Separate chute (1) at damaged link (2).

NOTE
When performing steps 8 and 9 to remove damaged entrance end fitting, damaged link is entrance end fitting.

8. BEND UP FOUR FOLDING TABS (3) OF LINK (6) NEXT TO DAMAGED LINK (2). USE FLAT-TIP SCREWDRIVER (5).
   a. Bend up two folding tabs (3) of link (6) next to damaged link (2).
   b. Turn chute (1) over, and bend up two more folding tabs (3) of link (6) next to damaged link (2).

9. REMOVE DAMAGED LINK (2) FROM CHUTE (1).
   a. Bend chute (1), and remove four folding tabs (3) from four tabholders (4) of damaged link (2). Pry with flat-tip screwdriver (5) to remove folding tabs from tabholders.
   b. Remove damaged link (2) from chute (1).
NOTE
When performing steps 10 and 11 to install new entrance end fitting, new link is the entrance end fitting.

10. INSTALL NEW LINK (1) ON CHUTE (2).
   a. Aline six straight tabs (3) of last link (4) on chute (2), with six slots (5) in new link (1).
   b. Bend chute (2), and insert two folding tabs (6) in two tab holders (7) of new link (1). Insert six straight tabs (3) into six slots (5) in new link.
   c. Turn chute (2) over. Bend chute, and insert two folding tabs (6) in two tab holders (7) of new link (1).
   d. Push up on folding tabs (6), and pull out on links (1, 4) to ensure proper installation.

11. PINCH TIGHT FOUR FOLDING TABS (6) ON LAST LINK (4).

NOTE
When performing steps 12 and 13 to install new exit end fitting, new link is exit end fitting.

12. JOIN CHUTE (2) AT NEW LINK (1).
   a. Aline six straight tabs (8) of new link (1) with slots (9) in other last link (10) of chute (2).
   b. Bend chute (2), and insert two folding tabs (11) in two tab holders (12) of other last link (10). Insert six straight tabs (8) into six slots (9) in other last link.
   c. Turn chute (2) over. Bend chute, and insert two folding tabs (11) in two tab holders (12) of other last link (10).
   d. Push up on folding tabs (11) and pull out on links (1, 10) to ensure proper installation.

13. PINCH TIGHT FOUR FOLDING TABS (11) ON NEW LINK (1).


15. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.


END OF TASK
REPLACE 25MM HE AMMO CHUTE

DESCRIPTION

This task covers: Remove (page 26-28). Install (page 26-29).

INITIAL SETUP

Materials / Parts:
- 25mm HE chute assembly

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.


4. MANUALLY TRAVERSE TURRET TO AP LOAD. See TM 9-2350-252-10-2.


6. REMOVE CHUTE (1) FROM HE AMMO CAN EXIT (2).
   a. Squeeze two latches (3) and pull chute (1) up and out of HE ammo can exit (2).
7. (H) REMOVE CHUTE (1) FROM TURRET.

**INSTALL**

**NOTE**
Gap in chute must be faced toward turret ceiling during installation and latch end installed first.

8. INSTALL NEW CHUTE (1) IN TURRET.
   a. Push latch end of chute (1) through chute cover (2). Have helper guide chute through chute cover.
9. INSTALL CHUTE (1) ON HE AMMO CAN EXIT (2). HAVE HELPER ASSIST.
   a. Aline chute (1) with HE ammo can exit (2).
   b. Push down on chute (1) until it locks in place. Pull up to make sure latches (3) are locked.


11. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.


END OF TASK

END OF TASK
REPAIR 25MM HE AMMO CHUTE

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
ITV/IFV/CFV TRT Mech 45T10

References:
TM 9–2350–252–10–1
TM 9–2350–252–10–2

Equipment Conditions:
Engine stopped (TM 9–2350–252–10–1)
Turret shut down (TM 9–2350–252–10–2)

REPAIR


NOTE
If entrance end fitting needs replacing, do steps 9 thru 12.

If exit end fitting needs replacing, do steps 7, 8, 13, and 14.

When performing steps 7 and 8 to remove damaged exit end fitting, damaged link is exit end fitting.

All links of HE ammo chute are replaced the same way.

7. BEND UP FOUR FOLDING TABS (1) OF DAMAGED LINK (2). USE FLAT-TIP SCREWDRIVER (3).

   a. Bend up two folding tabs (1) of damaged link (2).

   b. Turn chute (4) over, and bend up two more folding tabs (1) of damaged link (2).
8. SEPARATE CHUTE (1) AT DAMAGED LINK (2).
   a. Bend chute (1), and remove four folding tabs (3) of damaged link (2) from four tabholders (4). Pry with flat-tip screwdriver (5) to remove folding tabs from tabholders.
   b. Separate chute (1) at damaged link (2).

NOTE
When performing steps 9 and 10 to remove damaged entrance end fitting, damaged link is entrance end fitting.

9. BEND UP FOUR FOLDING TABS (3) OF LINK (6) NEXT TO DAMAGED LINK (2). USE FLAT-TIP SCREWDRIVER (5).
   a. Bend up two folding tabs (3) of link (6) next to damaged link (2).
   b. Turn chute (1) over, and bend up two more folding tabs (3) of link (6) next to damaged link (2).

10. REMOVE DAMAGED LINK (2) FROM CHUTE (1).
   a. Bend chute (1), and remove four folding tabs (3) from four tabholders (4) of damaged link (2). Pry with flat-tip screwdriver (5) to remove folding tabs from tabholders.
   b. Remove damaged link (2) from chute (1).
NOTE
When performing steps 11 and 12 to install new entrance end fitting, new link is the entrance end fitting.

11. INSTALL NEW LINK (1) ON CHUTE (2).
   a. Aline six straight tabs (3) of last link (4) on chute (2) with six slots (5) in new link (1).
   b. Bend chute (2), and insert two folding tabs (6) in two tabholders (7) of new link (1). Insert six straight tabs (3) into six slots (5) in new link.
   c. Turn chute (2) over. Bend chute, and insert two folding tabs (6) in two tabholders (7) of new link (1).
   d. Push up on folding tabs (6), and pull out on links (1, 4) to ensure proper installation.

12. PINCH TIGHT FOUR FOLDING TABS (6) ON LAST LINK (4).

NOTE
When performing steps 13 and 14 to install new exit end fitting, new link is exit end fitting.

13. JOIN CHUTE (2) AT NEW LINK (1).
   a. Aline six straight tabs (3) of new link (1) with slots (5) in other last link (4) of chute (2).
   b. Bend chute (2), and insert two folding tabs (6) in two tabholders (7) of other last link (4). Insert six straight tabs (3) into six slots (5) in other last link.
   c. Turn chute (2) over. Bend chute, and insert two folding tabs (6) in two tabholders (7) of other last link (4).
   d. Push up on folding tabs (6), and pull out on links (1, 4) to ensure proper installation.

14. PINCH TIGHT FOUR FOLDING TABS (6) ON NEW LINK (1).


END OF TASK
REPAIR 25MM AP/HE AMMO CHUTE LATCH

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Machinist's vise (Item 33, App F)

References (cont):
- TM 9–2350–252–10–2

Personnel Required:
- ITV/IFV/CFV TRT Mech 45T10

Materials/Parts:
- Latch kit

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

References:
- TM 9–2350–252–10–1

REPAIR


5. NOTE: AP and HE ammo chute latches are repaired the same way. If repairing AP ammo chute latch, do step 5. If repairing HE ammo chute latch, go to step 6.

5. REMOVE 25MM AP AMMO CHUTE. See

6. REMOVE 25MM HE AMMO CHUTE. See
**REMOVE**

CAUTION
Ammo chute can be damaged. Do not tighten chute too tightly in vise.

7. PLACE LATCH END OF AMMO CHUTE IN VISE AND TIGHTEN CAREFULLY.

8. REMOVE TWO HANDLES (1) AND BOLTS (2) FROM AMMO CHUTE LATCH (3).
   a. Aline backside of two handles (1) and bolts (2) with holes in ammo chute latch (3).
   b. Remove two handles (1) from bolts (2). Discard handles.
   c. Remove two bolts (2) from ammo chute latch (3). Discard bolts.

9. REMOVE SPRING (4) FROM AMMO CHUTE LATCH (3). DISCARD SPRING.

**INSTALL**

10. INSTALL NEW BOLT (2) AND NEW HANDLE (1) INTO RIGHT END OF AMMO CHUTE LATCH (3).
    a. Install new bolt (2) into right end of ammo chute latch (3).
    b. Align hole in new bolt (2) with hole in right end of ammo chute latch (3).
    c. Install handle (1) into bolt (2).

11. INSERT NEW SPRING (4) INTO AMMO CHUTE LATCH (3) AND INSTALL ON BOLT (2).

12. INSTALL NEW BOLT (2) AND NEW HANDLE (1) INTO LEFT END OF AMMO CHUTE LATCH (3).
    a. Install new bolt (2) into left end of ammo chute latch (3) onto spring (4).
    b. Align hole in bolt (2) with hole in left end of ammo chute latch (3).
    c. Install new handle (1) into bolt (2).

**GO TO NEXT PAGE**
NOTE
AP and HE ammo chute latches are repaired the same way. If repairing AP ammo chute latch, do step 13. If repairing HE ammo chute latch, go to step 14.


END OF TASK
REPLACE 25MM AP/HE AMMO CAN ACCESS DOOR

DESCRIPTION

This task covers: Remove (page 26–31). Install (page 26–32).

INITIAL SETUP

Tools:  
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:  
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:  
- Instruction plate
- Helical torsion spring
- Access door

References:  
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:  
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

NOTE

AP and HE ammo can doors are removed the same way. For AP ammo can door, start with step 1. For HE ammo can door, start with step 2. The AP ammo can door is shown here.

1. MANUALLY TRAVERSE TURRET TO AP LOAD. See TM 9-2350-252-10-2.

2. MANUALLY TRAVERSE TURRET TO HE LOAD. See TM 9-2350-252-10-2.

3. REMOVE DOOR (1 OR 2) FROM AMMO CAN (3).
   a. Turn handle (4 or 5), and lift door (1 or 2) from ammo can (3).

4. IF YOU HAVE DOOR (1), GO TO STEP 6.

5. IF YOU HAVE DOOR (2), DISCARD DOOR AND GO TO STEP 8.

GO TO NEXT PAGE
7. INSTALL HANDLE (1) ON NEW DOOR (2).
   a. Install long end of new spring (5) into handle (1).
   b. Install handle (1) with spring (5), washer (4), and screw (3) on pin (6).
   c. Go to step 9.

8. INSTALL NEW HANDLE (7) ON NEW DOOR (2).
   a. Install long end of new spring (5) into handle (7).
   b. Install handle (7) with spring (5), new washer (4), and new screw (3) on pin (6).


NOTE
AP and HE ammo can doors are installed the same way. The AP ammo can door is shown here.

10. INSTALL DOOR (2) ON AMMO CAN (8).
   a. Place door (2) in bracket (9) on ammo can (8) with handle (1 or 7) in open position.
   b. Turn handle (1 or 7) to lock door (2).

11. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.
REPLACE 25MM AMMO DOOR RETROREFLECTOR

DESCRIPTION

This task covers: Remove (page 26-33). Install (page 26-34).

INITIAL SETUP

Tools: 
- Turret mechanism's tool kit (Item 31, App F)

Materials/Parts:
- Blind rivet (2)
- Retroreflector

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. MANUALLY TRAVERSE TURRET TO AP LOAD. See TM 9-2350-252-10-2.

2. REMOVE DOOR (1) FROM AP AMMO CAN (2).
   a. Turn handle (3) and lift door (1) from AP ammo can (2).

GO TO NEXT PAGE
3. REMOVE TWO RETAINERS (1) AND RETROREFLECTOR (2) FROM DOOR (3).
   a. Chip heads off two rivets (4).
   b. Remove two rivets (4), retainers (1), and retroreflector (2) from door (3). Discard rivets and retroreflector.

NOTE
Reflecting side of retroreflector must point into ammo can.

4. INSTALL NEW RETROREFLECTOR (2) AND TWO RETAINERS (1) ON DOOR (3).
   a. Install retroreflector (2) and two retainers (1) on door (3) with two new rivets (4).
5. INSTALL DOOR (1) ON AP AMMO CAN (2).
   a. Place door (1) in bracket (3) on AP ammo can (2) with handle (4) in open position.
   b. Turn handle (4) to lock door (1).

6. MANUALLY TRAVERSE TURRET TO 6400 MILS. See TM 9-2350-252-10-2.

END OF TASK
CHAPTER 27
MAINTENANCE OF 7.62MM FEED SYSTEM

Section I. MAINTENANCE OF FEED SYSTEM

REPLACE AMMO CHUTE BRACKET

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Bracket

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

   NOTE
   Access to bracket is through opening under right front armor.

2. REMOVE BRACKET (1) FROM TURRET AND FLEX CHUTE (2).
   a. Remove two screws (3), washers (4), and bracket (1) from turret.
   b. Remove bracket (1) from flex chute (2).

INSTALL

3. INSTALL NEW BRACKET (1) ON TURRET AND FLEX CHUTE (2).
   a. Install bracket (1) on flex chute (2).
   b. Install bracket (1) on turret with two washers (4) and screws (3).

4. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
# Section II. MAINTENANCE OF 7.62MM AMMO BOX ASSEMBLY

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REPLACE 7.62MM AMMO BOX ASSEMBLY

DESCRIPTION

This task covers: Remove (page 27-4). Install (page 27-6).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Ammo feeder box

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE SIX SCREWS (1) AND WASHERS (2) FROM BOX (3).
2. OPEN COAX MACHINE GUN ACCESS DOORS. See TM 9-2350-252-10-2.

3. REMOVE FLEX CHUTE (1) FROM BOX CHUTE (2).
   a. Squeeze two latches (3), and remove flex chute (1) from box chute (2).


5. REMOVE BOX (4) FROM TURRET.
   a. Slide box (4) back and remove from shelf (5).
   b. Remove box (4) from turret.
6. INSTALL NEW BOX (1) IN TURRET.
   a. Place box (1) in turret.
   b. Slide box (1) forward and install in shelf (2).


8. INSTALL FLEX CHUTE (3) IN BOX CHUTE (4).
   a. Squeeze two latches (5) and install flex chute (3) in box chute (4).

9. CLOSE COAX MACHINE GUN ACCESS DOORS. See TM 9-2350-252-10-2.

10. INSTALL SIX WASHERS (6) AND SCREWS (7) IN BOX (1).
    a. Apply sealing compound (Item 21) to threads of six screws (7).
    b. Apply sealing compound (Item 20) to threads of six screws (7).
    c. Install six washers (6) and screws (7) in box (1) finger tight.
    d. Tighten six screws (7).
REPAIR 7.62MM AMMO BOX ACCESS DOOR

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Self-locking nut

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR


2. REMOVE DOOR (1) FROM CHUTE (2).
   a. Remove lock nut (3) and washer (4) from screw (5). Discard lock nut.
   b. Squeeze latches (6) and open door (1).
   c. Remove screw (5) from chute (2).
   d. Remove two bushings (7), springs (8), and door (1) from chute (2).

GO TO NEXT PAGE
3. POSITION TWO SPRINGS (1) AND BUSHINGS (2) IN DOOR (3).
   a. Insert two bushings (2) in springs (1).
   b. Position and hold two bushings (2) and springs (1) on door (3) with straight ends (4) of springs in slots (5) in door.

4. INSTALL DOOR (3) ON CHUTE (6).
   a. Install door (3) with springs (1) and bushings (2) on chute (6) with bent ends (7) of springs in slots (8) of chute.
   b. Install screw (9) through chute (6), springs (1), bushings (2), and door (3).
   c. Close door (3).
   d. Install washer (10) and new lock nut (11) on screw (9).
5. CHECK OPERATION OF DOOR (1).
   a. Squeeze latches (2) and open and close door (1).
   b. If door (1) opens and closes freely, go to step 6.
   c. If door (1) does not open and close freely, repeat steps 2 thru 5.


END OF TASK
REPLACE 7.62MM AMMO BOX RETROREFLECTOR

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
Blind rivet (2)
Retroreflector

Personnel Required:
ITV/IFVICFV Trt Mech 45T10

REFERENCES:

TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REMOVE


2. REMOVE TWO RETAINERS (1) AND RETROREFLECTOR (2) FROM AMMO BOX (3).
   b. Remove two rivets (4), retainers (1), and retroreflector (2) from ammo box (3). Discard rivets and retroreflector.

INSTALL

3. INSTALL NEW RETROREFLECTOR (2) AND TWO RETAINERS (1) ON AMMO BOX (3).
   a. Install retroreflector (2) and two retainers (1) on ammo box (3) with two new rivets (4).


END OF TASK
REPAIR 7.62MM AMMO BOX FORWARDER ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Spring pin
- Spring pin

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

1. REMOVE 7.62MM AMMO BOX ASSEMBLY.

2. REMOVE FORWARDER ASSEMBLY (1) FROM CHUTE (2).
   a. Remove pin (3) from knob (4). Discard pin.
   b. Aline pin (5) with hole (6) behind sprocket (7).
   c. Remove pin (5) from sprocket (7). Discard pin.
   d. Remove shaft (8), knob (4), and sprocket (7) from chute (2). Have helper assist.

GO TO NEXT PAGE
NOTE
Sprocket side with larger teeth must be installed away from knob.

3. INSTALL FORWARDER ASSEMBLY IN CHUTE (1).
   a. Install sprocket (2), shaft (3), and new pin (4) in chute (1).
   b. Install knob (5) and new pin (6) on shaft (3).

4. CHECK OPERATION OF FORWARDER ASSEMBLY.
   a. Turn knob (5).
   b. If knob (5) turns freely, go to step 5.
   c. If knob (5) does not turn freely, repeat steps 2 thru 4.

5. INSTALL 7.62MM AMMO BOX ASSEMBLY.

END OF TASK
### Section III. MAINTENANCE OF FLEX CHUTE ASSEMBLY

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REPLACE 7.62MM AMMO FLEX CHUTE ASSEMBLY

DESCRIPTION

This task covers: Remove (page 27-14). Install (page 27-15).

INITIAL SETUP

Materials/Parts:
- Flex chute assembly

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE AMMO CHUTE BRACKET. See task: REPLACE AMMO CHUTE BRACKET, page 27-1.

   NOTE
   Access to ammo flex chute is through opening under right front armor.

3. REMOVE FLEX CHUTE (1) FROM CHUTE (2).
   a. Squeeze two latches (3) and remove flex chute (1) from chute (2).
4. REMOVE FLEX CHUTE (1) FROM AMMO BOX (2).
   a. Squeeze two latches (3) and remove flex chute (1) from ammo box (2).

5. INSTALL NEW FLEX CHUTE (1) IN AMMO BOX (2).
   a. Squeeze two latches (3), and insert flex chute (1) in ammo box (2) until locked.

6. INSTALL FLEX CHUTE (4) IN CHUTE (5).
   a. Squeeze two latches (6), and insert flex chute (4) in chute (5) until unlocked.

7. INSTALL AMMO CHUTE BRACKET. See task: REPLACE AMMO CHUTE BRACKET, page 27-1.

8. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPAIR 7.62MM AMMO FLEX CHUTE ASSEMBLY

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Materials/Parts
Link

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REPAIR

NOTE
All links and end fittings are removed and installed the same way.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE AMMO CHUTE BRACKET. See task: REPLACE AMMO CHUTE BRACKET, page 27–1.


4. SEPARATE CHUTE (1) AT DAMAGED LINK (2).
   a. Push damaged link (2) and link (3) together to expose catches (4) on damaged link.
   b. Release catches (4) through holes on top and bottom of link (3). Use pin punch (5).
   c. Separate damaged link (2) from link (3).
5. REMOVE DAMAGED LINK (1) FROM CHUTE (2).
   a. Push damaged link (1) and link (3) together to expose catches (4) on link (3).
   b. Release catches (4) through holes on top and bottom of damaged link (1). Use pin punch (5).
   c. Remove damaged link (1) from link (3).

6. INSTALL NEW LINK (1) ON CHUTE (2).
   a. Aline tabs (6) of link (3) with slots (7) of link (1).
   b. Push link (1) onto link (3) until catch (4) on top and bottom of link (3) locks.
   c. Pull on link (1) and link (3) to make sure they are locked together.
7. JOIN CHUTE (1) AT LINK (2).
   a. Aline tabs (3) of link (2) with slots (4) of link (5).
   b. Push link (5) onto link (2) until catch (6) on top and bottom of link (2) locks.
   c. Pull on link (5) and link (2) to make sure they are locked together.

8. INSTALL 7.62MM AMMO FLEX CHUTE.


10. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

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ADJUST COAX MACHINE GUN SOLENOID LINKAGE (MOUNTED ON ROTOR)

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Material/Parts:
- Nonelectrical wire (Item 16, App C)

Personnel Required:
- ITVI/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

ADJUST

NOTE
This task is performed only on vehicles where the firing solenoid mechanism is mounted on the machine gun rotor.

1. CHECK CLEARANCE BETWEEN TRIGGER (1) AND TRIGGER ARM (2). IF CLEARANCE IS GREATER THAN 0.04 IN OR LESS THAN .004 IN, ADJUST LINKAGE.

2. REMOVE LOCKWIRE (3) FROM TWO NUTS (4) AND ROD (5).

3. LOOSEN TWO NUTS (4).

4. TURN ROD (5) UNTIL CORRECT CLEARANCE IS OBTAINED.

5. TIGHTEN TWO NUTS (4).

6. REPEAT STEP 1.

7. INSTALL NEW LOCKWIRE (3) ON TWO NUTS (4) AND ROD (5).

END OF TASK
SERVICE REAR COAX BORESIGHT CONTROL MECHANISM

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Acid swabbing brush (Item 1, App C)
- Dry cleaning solvent (Item 8, App C)
- Wiping rag (Item 29, App C)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

SERVICE

1. REMOVE AND DISASSEMBLE REAR COAX BORESIGHT CONTROL MECHANISM. See task: REPAIR REAR COAX BORESIGHT CONTROL MECHANISM, page 28-3.

WARNING
Solvent fumes can burn and could poison you. Read warning on front page of this manual.

2. CLEAN ALL PARTS OF REAR COAX BORESIGHT CONTROL MECHANISM. USE ACID SWABBING BRUSH AND DRY CLEANING SOLVENT. WIPE OFF EXCESS SOLVENT WITH WIPING RAG.


END OF TASK
REPAIR REAR COAX BORESIGHT CONTROL MECHANISM

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade A (Item 20, App C)
- Spring pin
- Self-locking nut (2)
- Lockwasher

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REPAIR


4. REMOVE KNOB (1) AND CLIP (2) FROM ELEVATION PIN (3) ON ROTOR (4).
   a. Remove locknut (5), washer (6), knob (1), spacer (7), key (8), and clip (2) from elevation pin (3) on rotor (4). Discard locknut.


6. UNSCREW AND REMOVE ELEVATION PIN (3) AND BORESIGHT CONTROL (9) FROM ROTOR (4).

GO TO NEXT PAGE
7. REMOVE ANGLE BRACKET (1) FROM CLAMP (2).
   a. Remove screw (3), washer (4), and angle bracket (1) from clamp (2).

8. REMOVE CLAMP (2) FROM HOUSING (5).
   a. Remove locknut (6), washer (7), knob (8), spacer (9), clip (10), and key (11) from shouldered shaft (12). Discard locknut.
   b. Remove clamp (2) with shouldered shaft (12) from housing (5).

9. REMOVE SHOULDERED SHAFT (12) FROM CLAMP (2).
   a. Put shouldered shaft (12) with clamp (2) in vise.
   b. Remove shouldered shaft (12) from clamp (2).

10. REMOVE QUICK RELEASE PIN (13) FROM CLAMP (2).
    a. Remove screw (14), lockwasher (15), washer (16), and lanyard (17) from clamp (2). Discard lockwasher.
    b. Remove quick release pin (13) from clamp (2).
11. Deleted.

12. Deleted.

13. INSTALL QUICK RELEASE PIN (1) ON CLAMP (2).
   a. Install lanyard (3), washer (4), new lockwasher (5), and screw (6) on clamp (2).
   b. Install quick release pin (1) on clamp (2).

14. INSTALL SHOULDERED SHAFT (7) ON CLAMP (2).
NOTE
Knob must turn on shouldered shaft and catch on clip.

15. INSTALL CLAMP (1) ON HOUSING (2).
   a. Install clamp (1) with shouldered shaft (3) on housing (2).
   b. Install key (4), clip (5), spacer (6), knob (7), washer (8), and new locknut (9) on shouldered shaft (3).
   c. Adjust locknut (9) so knob (7) turns on shouldered shaft (3) and catches on clip (5).

16. INSTALL ANGLE BRACKET (10) ON CLAMP (1).
   a. Apply sealing compound (Item 21) to threads of screw (11).
   b. Apply sealing compound (Item 20) to threads of screw (11).
   c. Install angle bracket (10), washer (12), and screw (11) on clamp (1).
17. INSTALL BORESIGHT CONTROL (1) AND ELEVATION PIN (2) ON ROTOR (3).


NOTE
Knob must turn on elevation pin and catch on clip.

19. INSTALL CLIP (4) AND KNOB (5) ON ELEVATION PIN (2) ON ROTOR (3).
   a. Install key (6), clip (4), spacer (7), knob (5), washer (8), and new locknut (9) on elevation pin (2).
   b. Adjust locknut (9) so knob (5) turns on elevation pin (2) and catches on clip (4).


END OF TASK
REPLACE COAX MACHINE GUN MOUNT GUARD

DESCRIPTION

This task covers: Remove (page 28-8). Install (page 28-9).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Gun mount guard

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Personnel Required (cont):
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

   NOTE
   Access to guard is through opening under right front armor.

2. REMOVE FLEX CHUTE (1) FROM CHUTE (2).
   a. Squeeze two locking latches (3), and remove flex chute (1) from chute (2).
3. (H) MOVE GUN ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.

NOTE
Some turrets may have washer(s) installed under guard.

4. REMOVE GUARD (1) FROM TURRET.
   a. (H) Turn handwheel (2) to move coax rotor (3) as needed to gain access to four screws (4).
   b. Remove four screws (4), three washers (5), guard (1), and washer(s) (6) (if installed) from turret.

5. INSTALL NEW GUARD (1) ON TURRET.
   a. (H) Turn handwheel (2) to move coax rotor (3) as needed to gain access to four screw holes (7).
   b. Install screw (8), and guard (1) on turret. Tighten finger tight.
   c. Install three screws (4) and washers (9), through guard (1) into turret. Tighten four screws (4) and (8).

6. CHECK ROTOR (3) FOR CLEARANCE.
   a. (H) Turn handwheel (2) to move coax rotor (3) to full depression and elevation.
   b. Check for minimum gap of .03 inch between rotor (3) and guard (1) throughout full travel of rotor (1).
   c. If clearance is .03 inch or more, go to step 8.
   d. If clearance is less than .03 inch, go to step 7.

GO TO NEXT PAGE
7. ADJUST ROTOR (1) CLEARANCE.
   a. Remove three screws (2) and washers (3).
   b. Loosen screw (4).
   c. Install washer(s) (5) as required to obtain .03 inch minimum gap between rotor (1) and guard (6).
   d. GO TO STEP 6.

NOTE
Screws should be removed individually to apply sealing compound (Item 20) and (Item 21) for correct installation of guard.

8. APPLY SEALING COMPOUND (Item 20) AND (Item 21) TO FOUR SCREWS (7).
   a. (H) Turn handwheel (8) to move coax rotor (1) as needed to gain access to four screw holes (9).
   b. Apply sealing compound (Item 21) to threads of four screws (7).
   c. Apply sealing compound (Item 20) to threads of four screws (7).
   d. Install three washers (10) and four screws (7) on turret.

9. TORQUE FOUR SCREWS (7) TO 264-288 IN-LB (304-331 CMKG).

10. (H) MANUALLY ELEVATE OR DEPRESS 25MM GUN TO 0 MILS. See TM 9-2350-252-10-2.

11. INSTALL FLEX CHUTE (11) ON CHUTE (12).
   a. Squeeze two locking latches (13), and install flex chute (11) on chute (12).

12. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPLACE 7.62MM LINK/CARTRIDGE DEFLECTOR

DESCRIPTION

This task covers: Remove (page 28-11). Install (page 28-12).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Link/cartridge deflector

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

   NOTE
   Access to deflector is through opening under right front armor.

2. REMOVE DEFLECTOR (1) FROM HOUSING (2).
   a. Remove two screws (3), washers (4), and deflector (1) from housing (2).

GO TO NEXT PAGE
3. INSTALL NEW DEFLECTOR (1) ON HOUSING (2).
   a. Apply sealing compound (Item 21) to threads of two screws (3).
   b. Apply sealing compound (Item 20) to threads of two screws (3).
   c. Install deflector (1), two washers (4), and screws (3) on housing (2). Tighten screws finger tight.
   d. TORQUE TWO SCREWS (3) TO 83-91 IN-LB (96-105 CMKG).

4. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPLACE COAX MACHINE GUN ROTOR SHIELD

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Shield

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE SHIELD (1) FROM TURRET.
   a. Remove three screws (2), washers (3), and shield (1) from turret.

INSTALL

2. INSTALL NEW SHIELD (1) ON TURRET.
   a. Apply sealing compound (Item 21) to threads of three screws (2).
   b. Apply sealing compound (Item 20) to threads of three screws (2).
   c. Install shield (1), three washers (3), and screws (2) on turret.
   d. TORQUE THREE SCREWS (2) TO 264-288 IN-LB (304-332 CMKG).

END OF TASK
REPLACE COAX MACHINE GUN AMMO CHUTE

DESCRIPTION

This task covers: Remove (page 28-14). Install (page 28-15).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Vise machinist, 4 inch jaw (Item 33, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Self-locking nut
- Ammunition chute

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

   NOTE
   Access to chute is through opening under right front armor.

2. REMOVE FLEX CHUTE (1) FROM CHUTE (2).
   a. Squeeze two locking latches (3), and remove flex chute (1) from chute (2).
3. REMOVE CRADLE (1) WITH CHUTE (2) FROM MOUNT (3).
   a. Remove locknut (4), washer (5), and cradle (1) with chute (2) from mount (3). Discard locknut.

4. REMOVE CHUTE (2) FROM CRADLE (1).
   a. Install cradle (1) with chute (2) in vise as shown.
   b. Remove two screws (6) and chute (2) from cradle (1).

5. INSTALL NEW CHUTE (2) ON CRADLE (1).
   a. Apply sealing compound (Item 21) to threads of two screws (6).
   b. Apply sealing compound (Item 20) to threads of two screws (6).
   c. Install chute (2) and two screws (6) on cradle (1).
   d. Remove cradle (1) with chute (2) from vise.

GO TO NEXT PAGE
6. INSTALL CRADLE (1) WITH CHUTE (2) ON MOUNT (3).
   a. Install cradle (1) with chute (2), washer (4), and new locknut (5) on mount (3).

7. INSTALL FLEX CHUTE (6) ON CHUTE (2).
   a. Squeeze two locking latches (7) and install flex chute (6) on chute (2).

8. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR)

DESCRIPTION

This task covers: Remove (page 28–17). Install (page 28–18).

INITIAL SETUP

Tools:

- Turret mechanic’s tool kit (Item 31, App F)

Materials/Parts:

- Cotter pin
- Nonelectrical wire (Item 16, App C)
- Solenoid

Equipment Conditions:

- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

Personnel Required:

- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE

This task is performed only on vehicles where the firing solenoid mechanism is mounted on the rotor. If it is mounted on machine gun, see page 28–56.


2. REMOVE PLUG 2A14P1 (1) FROM JACK 2W12J4 (2).

3. REMOVE COTTER PIN (3), RETAINING PIN (4), AND CLEVIS (5) FROM FIRING SOLENOID (6). DISCARD COTTER PIN.
4. REMOVE FIRING SOLENOID (1) FROM MOUNT (2).
   a. Remove lockwire (3) from two screws (4). Discard lockwire.
   b. Remove two screws (4), washers (5), and firing solenoid (1) from mount (2).

5. INSTALL NEW FIRING SOLENOID (1) ON MOUNT (2).
   a. Install solenoid (1), two washers (5), and screws (4) on mount (2).
   b. Install new lockwire (3) on two screws (4).
7. INSTALL CLEVIS (1), RETAINING PIN (2), AND NEW COTTER PIN (3) ON FIRING SOLENOID (4).

8. INSTALL PLUG 2A14P1 (5) ON JACK 2W12J4 (6).


END OF TASK
REPLACE COAX MACHINE GUN QUICK RELEASE PIN

DESCRIPTION

This task covers: Remove (page 28–20). Install (page 28–21).

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

References:
TM 9–2350–252–10–1
TM 9–2350–252–10–2

Materials/Parts:
Quick release pin

Equipment Conditions:
Engine stopped (TM 9–2350–252–10–1)
Turret shut down (TM 9–2350–252–10–2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE QUICK RELEASE PIN (1) FROM GUN (2) AND GUN ROTOR (3). DISCARD QUICK RELEASE PIN.
2. INSTALL NEW QUICK RELEASE PIN (1) ON GUN ROTOR (2) AND GUN (3).

END OF TASK
REPLACE COAX MACHINE GUN SOLENOID MOUNTING BRACKET

DESCRIPTION

This task covers: Remove (page 28-22). Install (page 28-23).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Nonelectrical wire (Item 16, App C)
- Bracket

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE SOLENOID. See task: REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR), page 28-17.

3. REMOVE SPRING (1) FROM SOLENOID MOUNTING BRACKET (2).
4. REMOVE LOCK WIRE (1) FROM TWO SCREWS (2). DISCARD LOCK WIRE.

5. REMOVE TWO SCREWS (2), AND MOUNTING BRACKET (3) FROM ROTOR (4). DISCARD MOUNTING BRACKET.

6. INSTALL NEW MOUNTING BRACKET (3), AND SCREWS (2) ON ROTOR (4).

7. INSTALL NEW LOCK WIRE (1) ON TWO SCREWS (2).
8. INSTALL SPRING (1) ON SOLENOID MOUNTING BRACKET (2).

9. INSTALL SOLENOID. See task: REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR), page 28-17.

10. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPAIR COAX MACHINE GUN SOLENOID LINKAGE
(MOUNTED ON ROTOR)

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Cotter pin (2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

NOTE
This task is performed only on configurations where the firing solenoid mechanism is mounted on the machine gun rotor.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE LOCKWIRE (1) FROM TWO NUTS (2) AND ROD (3). DISCARD LOCKWIRE.

3. REMOVE SOLENOID LINKAGE (4) FROM SOLENOID (5) AND TRIGGER ARM (6).
   a. Remove cotter pin (7) and retaining pin (8) from clevis (9). Discard cotter pin.
   b. Remove cotter pin (10) and retaining pin (11) from clevis (12). Discard cotter pin.
   c. Remove solenoid linkage (4) from solenoid (5) and trigger arm (6).

GO TO NEXT PAGE
NOTE
Before removing clevises, note depth to which they are threaded onto the rod.

4. REMOVE TWO CLEVISES (1, 2) FROM ROD (3).

5. REMOVE TWO NUTS (4) FROM ROD (3).

INSTALL

6. INSTALL TWO NUTS (4) ON ROD (3).

NOTE
Clevises should be threaded onto the rod to the depth noted during removal.

7. INSTALL TWO CLEVISES (1, 2) ON ROD (3).
8. INSTALL SOLENOID LINKAGE (1) ON SOLENOID (2) AND TRIGGER ARM (3).
   a. Install larger clevis (4), retaining pin (5), and new cotter pin (6) on trigger arm (3).
   b. Install smaller clevis (7), retaining pin (8), and new cotter pin (9) on solenoid (2).


END OF TASK
REPLACE COAX MACHINE GUN ROTOR

DESCRIPTION

This task covers: Remove (page 28-28). Install (page 28-33).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Nylon sling, 25 ft (Item 9, App C)
- Lifting device with rated lift capability of at least 104 lb (47 kg)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Sealing compound, grade N (Item 21, App C)
- Sealing compound, grade A (Item 20, App C)
- Self-locking nut
- Rotor

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.

2. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

3. REMOVE AMMO CHUTE BRACKET. See task: REPLACE AMMO CHUTE BRACKET, page 27-1.


5. REMOVE CRADLE (1) FROM COAX ROTOR (2).
   a. Remove locknut (3), washer (4), and cradle (1) from mount (5) on coax rotor (2). Discard locknut.
6. MOVE GUN ELEVATION DRIVE SELECT LEVER TO MANUAL POSITION. See TM 9-2350-252-10-2.


**NOTE**
In some turrets, bracket is welded and non-removable. If bracket is welded, go to step 9. If bracket has two screws, go to step 8.

8. REMOVE BRACKET (1) AND CABLE 2W12 (2) FROM COAX ROTOR (3).
   a. Remove two screws (4), washers (5), and bracket (1) with jack 2W12J4 (6) from coax rotor (3).
   b. Remove two screws (7) and clamps (8) with cable 2W12 (2) from coax rotor (3).
   c. Go to step 17.

9. REMOVE CABLE 2W12 (2) FROM BRACKET (9).
   a. Remove lockwire (10) from jam nut (11) on bracket (9). Discard lockwire.
   b. Remove jam nut (11) and cable 2W12 (2) from bracket (9).
   c. Remove two screws (7) and clamps (8) with cable 2W12 (2) from coax rotor (3).

**GO TO NEXT PAGE**
10. REMOVE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR). See task: REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR), page 28-17.

11. REMOVE COAX MACHINE GUN SOLENOID MOUNTING BRACKET. See task: REPLACE COAX MACHINE GUN SOLENOID MOUNTING BRACKET, page 28-22.

12. REMOVE RETURN SPRING (1) FROM TRIGGER ARM (2).

13. REMOVE COTTER PIN (3), RETAINING PIN (4), AND TRIGGER CABLE ASSEMBLY (5) FROM TRIGGER ARM (2). DISCARD COTTER PIN.

14. REMOVE COTTER PIN (6), RETAINING PIN (7), AND CLEVIS (8) FROM TRIGGER ARM (2). DISCARD COTTER PIN.

15. REMOVE COTTER PIN (9), RETAINING PIN (10), AND TRIGGER ARM (11) FROM TRIGGER ARM MOUNTING BRACKET (12). DISCARD COTTER PIN.
NOTE
If the trigger arm mounting bracket is to be removed, do step 16.

16. REMOVE TRIGGER ARM MOUNTING BRACKET (1) FROM GUN MOUNT (2).
   a. Remove lockwire (3) from two screws (4).
   b. Remove two screws (4) and trigger arm mounting bracket (1) from gun mount (2).


21. ATTACH SLING (5) TO COAX ROTOR (6) AS SHOWN.

GO TO NEXT PAGE
CAUTION
Fan can get damaged if coax rotor hits fan. 
Take care when you remove rotor.

22. REMOVE COAX ROTOR (1) FROM TURRET.
   a. Remove five screws (2) from coax rotor (1).
   b. Lift coax rotor (1) until front of coax rotor is clear of turret. Turn coax rotor to right until mount (3) will clear turret. Lift coax rotor from turret. Use lifting device. Have helper assist.
   c. Place coax rotor (1) on side of workbench with mount (3) up. Use lifting device. Have helper assist.

23. REMOVE SLING (4) FROM COAX ROTOR (1).
24. REMOVE BORESIGHT CONTROL (1) FROM COAX ROTOR (2).
   a. Remove locknut (3), washer (4), knob (5), bracket (6), and key (7) from elevation pin (8). Discard locknut.
   b. Remove elevation pin (8) and boresight control (1) from mount (9) on coax rotor (2).

   INSTALL

   NOTE
   Knob must turn on elevation pin, catching on bracket.

25. INSTALL BORESIGHT CONTROL (1) ON NEW COAX ROTOR (2).
   a. Place coax rotor (2) on side with mount (9) up.
   b. Install boresight control (1) and elevation pin (8) on mount (9) on coax rotor (2).
   c. Install key (7), bracket (6), knob (5), washer (4), and new locknut (3) on elevation pin (8).
   d. Adjust locknut (3) so knob (5) turns on elevation pin (8) and catches on bracket (6).

26. TORQUE LOCKNUT (3) to 300-324 IN-LB (346-373 CMKG).

GO TO NEXT PAGE
27. ATTACH SLING (1) TO COAX ROTOR (2) AS SHOWN.

CAUTION
Fan can get damaged if coax rotor hits fan. Take care when you install rotor.

28. INSTALL COAX ROTOR (2) IN TURRET.
   b. Apply sealing compound (Item 21) to threads of five screws (4).
   c. Apply sealing compound (Item 20) to threads of five screws (4).
   d. Install coax rotor (2) and five screws (4) on turret.

29. TORQUE FIVE SCREWS (4) ON ROTOR (2) TO 300-324 IN-LB (346-373 CMKG).
30. REMOVE SLING (1) FROM COAX ROTOR (2).

31. CHECK OPERATION OF COAX ROTOR (2).
   a. Turn handwheel (3) to fully depress and elevate coax rotor (2).
   b. If coax rotor (2) binds, repeat steps 28 thru 31. If coax rotor does not bind, go to step 32.

32. MANUALLY DEPRESS 25MM GUN TO 0 MILS. See TM 9-2350-252-10-2.


36. INSTALL COAX MACHINE GUN MOUNT GUARD ON TURRET. See task: REPLACE COAX MACHINE GUN MOUNT GUARD, page 28-8.

37. INSTALL CRADLE (4) ON COAX ROTOR (5).
   a. Install cradle (4), washer (6), and new locknut (7) on mount (8) on coax rotor (5).
NOTE

If bracket was welded on turret, go to step 39. If bracket has two screws, go to step 38.

38. INSTALL BRACKET (1) AND CABLE 2W12 (2) ON COAX ROTOR (3).

a. Install two clamps (4) with cable 2W12 (3) and two screws (5) on coax rotor (6).

b. Install bracket (1) with jack 2W12J4 (6), two washers (7), and screws (8) on coax rotor (3).

c. Go to step 48.

39. INSTALL CABLE 2W12 (2) ON BRACKET (9).

a. Install jam nut (10) on cable 2W12 (2) on bracket (1).

b. Install lockwire (11) on jam nut (10) and bracket (1).

c. Install two clamps (4) with cable 2W12 (2) and two screws (5) on coax rotor (3).
40. INSTALL COAX MACHINE GUN SOLENOID MOUNTING BRACKET. See task: REPLACE COAX MACHINE GUN SOLENOID MOUNTING BRACKET, page 28-22.

41. INSTALL COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR). See task: REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON ROTOR), page 28-17.

42. INSTALL TRIGGER ARM MOUNTING BRACKET (1) ON GUN MOUNT (2).
   
a. Install trigger arm mounting bracket (1) and two screws (3) on gun mount (2).

   b. Install lockwire (4) on two screws (3).

43. INSTALL TRIGGER ARM (5), RETAINING PIN (6), AND NEW COTTER PIN (7) ON TRIGGER ARM MOUNTING BRACKET (1).

44. INSTALL CLEVIS (8), RETAINING PIN (9), AND NEW COTTER PIN (10) ON TRIGGER ARM (5).
45. INSTALL TRIGGER CABLE ASSEMBLY (1), RETAINING PIN (2), AND NEW COTTER PIN (3) ON TRIGGER ARM (4).

46. INSTALL RETURN SPRING (5) ON TRIGGER ARM (4).


49. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

50. INSTALL 25MM GUN BARREL. See TM 9-2350-252-10-2.

END OF TASK
**Section II. MAINTENANCE OF CRADLE ASSEMBLY**

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REPLACE COAX MACHINE GUN CRADLE ASSEMBLY

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Materials/Parts:
Machine gun cradle

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.


3. REMOVE CRADLE (1) FROM VISE.

INSTALL

4. INSTALL NEW CRADLE (1) IN VISE.


END OF TASK
REPAIR COAX MACHINE GUN CRADLE ASSEMBLY

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.


3. REMOVE BRACKET (1) FROM CRADLE (2).
   a. Place cradle (2) in vise with pad (3) up.
   b. Remove pin (4), spring (5), and bracket (1) from cradle (2).
   c. Remove cradle (2) from vise.

GO TO NEXT PAGE
4. INSTALL BRACKET (1) ON CRADLE (2).
   a. Place cradle (2) in vise as shown.
   b. Install bracket (1), spring (3), and pin (4) on cradle (2). Have helper assist.

5. PLACE CRADLE (2) IN VISE WITH PAD (5) DOWN.


7. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPAIR COAX MACHINE GUN TRIGGER ARM, BRACKET, AND SPRING

DESCRIPTION

This task covers: Remove (page 28–43). Install (page 28–45).

INITIAL SETUP

Tools: Turret mechanic’s tool kit (Item 31, App F)

Personnel Required: ITV/IFV/CFV Trt Mech 45T10

Materials / Parts:
Nonelectrical wire (Item 16, App C)
Cotter pin
Cotter pin
Cotter pin

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REMOVE

NOTE
This task is performed only on configurations where the firing solenoid mechanism is mounted on the machine gun rotor.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE RETURN SPRING (1) FROM SOLENOID MOUNTING BRACKET (2) AND TRIGGER ARM (3).

3. REMOVE COTTER PIN (4), RETAINING PIN (5), AND TRIGGER CABLE ASSEMBLY (6) FROM TRIGGER ARM (3). DISCARD COTTER PIN.

GO TO NEXT PAGE
4. REMOVE COTTER PIN (1), RETAINING PIN (2), AND CLEVIS (3) FROM TRIGGER ARM (4). DISCARD COTTER PIN.

5. REMOVE COTTER PIN (5), RETAINING PIN (6), AND TRIGGER ARM (7) FROM TRIGGER ARM MOUNTING BRACKET (8). DISCARD COTTER PIN.

NOTE
If the trigger arm mounting bracket is to be removed, do step 6.

6. REMOVE TRIGGER ARM MOUNTING BRACKET (8) FROM GUN MOUNT (9).
   a. Remove lockwire (10) from two screws (11).
   b. Remove two screws (11) and trigger arm mounting bracket (8) from gun mount (9).
If the trigger arm mounting bracket is to be installed, do step 7.

7. INSTALL TRIGGER ARM MOUNTING BRACKET (1) ON GUN MOUNT (2).
   a. Install trigger arm mounting bracket (1) and two screws (3) on gun mount (2).
   b. Install lockwire (4) on two screws (3).

8. INSTALL TRIGGER ARM (5), RETAINING PIN (6), AND NEW COTTER PIN (7) ON TRIGGER ARM MOUNTING BRACKET (1).

9. INSTALL CLEVIS (8), RETAINING PIN (9), AND NEW COTTER PIN (10) ON TRIGGER ARM (5).
10. INSTALL TRIGGER CABLE ASSEMBLY (1), RETAINING PIN (2), AND NEW COTTER PIN (3) ON TRIGGER ARM (4).

11. INSTALL RETURN SPRING (5) ON SOLENOID MOUNTING BRACKET (6) AND TRIGGER ARM (4).

12. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.


END OF TASK
Section III. MAINTENANCE OF COAX MACHINE GUN SOLENOID

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</table>
DESCRIPTION

This task covers: Remove (page 28–48). Install (page 28–49).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Cotter pin
- Trigger cable assembly

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE COTTER PIN (1), RETAINING PIN (2), AND TRIGGER CABLE ASSEMBLY (3) FROM TRIGGER ARM (4). Discard cotter pin.

3. REMOVE TWO SCREWS (5), WASHERS (6), AND TRIGGER CABLE ASSEMBLY (7) FROM GUN MOUNT (8). Discard cable assembly.
4. INSTALL NEW TRIGGER CABLE ASSEMBLY (1), TWO WASHERS (2), AND SCREWS (3) ON GUN MOUNT (4).

5. INSTALL TRIGGER CABLE ASSEMBLY (5), RETAINING PIN (6), AND NEW COTTER PIN (7) ON TRIGGER ARM (8).


END OF TASK
REPAIR COAX MACHINE GUN FIRING SOLENOID MECHANISM
(MOUNTED ON MACHINE GUN)

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Machinist's vise, 4 in jaw (Item 33, App F)

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Cotter pin
- Spring pin

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

NOTE
This task is performed only on vehicles where the firing solenoid mechanism is mounted on the coax machine gun.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE SOLENOID (1) WITH EYEBOLT ASSEMBLY (2) FROM CLEVIS (3) AND SUPPORT (4).
   a. Remove cotter pin (5) and washer (6) from solenoid clevis (3). Discard cotter pin.
   b. Remove two screws (7) and solenoid (1) with eyebolt assembly (2) from solenoid clevis (3) and support (4).
3. REMOVE SOLENOID CLEVIS (1) FROM TWO PINS (2).

4. REMOVE ROD END CLEVIS (3) WITH EYEBOLT (4) FROM SOLENOID (5).
   a. Install solenoid (5) in vise.
   b. Remove spring pin (6) and rod end clevis (3) with eyebolt (4) from solenoid (5). Discard spring pin.

5. REMOVE EYEBOLT (4) WITH JAM NUT (7) FROM ROD END CLEVIS (3).
   a. Remove rod end clevis (3) with eyebolt (4) from vise.
   b. Remove eyebolt (4) with jam nut (7) from rod end clevis (3).
   c. Remove jam nut (7) from eyebolt (4).

6. REMOVE SUPPORT (8) FROM TRIGGER HOUSING (9).
   a. Remove screw (10), support (8), and bushing (11) from trigger housing (9).

7. PULL CABLE (12) FROM GUIDE (13).
8. INSTALL CABLE (1) THROUGH GUIDE (2).

9. INSTALL SUPPORT (3) IN TRIGGER HOUSING (4).
   a. Apply sealing compound (Item 21) to threads of screw (5).
   b. Apply sealing compound (Item 20) to threads of screw (5).
   c. Install bushing (6), support (3), and screw (5) in trigger housing (4).
   d. TORQUE SCREW TO 300-324 IN-LB (346-373 CMKG).

10. INSTALL EYEBOLT (7) WITH JAM NUT (8) ON ROD END CLEVIS (9).
    a. Install jam nut (8) on eyebolt (7).
    b. Install eyebolt (7) with jam nut (8) on rod end clevis (9).

11. INSTALL EYEBOLT ASSEMBLY (7) ON SOLENOID (10).
    a. Install eyebolt assembly (7) and new spring pin (11) on solenoid (10).
    b. Remove solenoid (10) from vise.
12. INSTALL SOLENOID CLEVIS (1) ON TWO PINS (2).

13. INSTALL SOLENOID (3) WITH EYEBOLT ASSEMBLY (4) ON SOLENOID CLEVIS (1) AND SUPPORT (5).
   a. Apply sealing compound (Item 21) to threads of two screws (6).
   b. Apply sealing compound (Item 20) to threads of two screws (6).
   c. Install solenoid (3) with eyebolt assembly (4) and two screws (6) on solenoid clevis (1) and support (5).
   d. Install washer (7) and new cotter pin (8) on solenoid clevis (1).
   e. TORQUE TWO SCREWS (6) TO 83-91 IN-LB (97-104 CMKG).

14. ADJUST COAX MACHINE GUN FIRING SOLENOID MECHANISM. See page 28-54.

15. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
ADJUST COAX MACHINE GUN FIRING SOLENOID MECHANISM
(MOUNTED ON MACHINE GUN)

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

ADJUST

NOTE
This task is performed only on configurations where the firing solenoid mechanism is mounted on the coax machine gun.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. CHECK CLEARANCE BETWEEN TRIGGER (1) AND SOLENOID CLEVIS (2).
   a. If clearance is between 0.01-0.06 inch (0.3-1.6 mm), go to step 5. If not, do step 3 to adjust clearance between trigger (1) and solenoid clevis (2).

3. ADJUST CLEARANCE BETWEEN TRIGGER (1) AND SOLENOID CLEVIS (2).
   a. Loosen jam nut (3) on l-bolt (4).
   b. Turn rod end clevis (5) until clearance between trigger (1) and solenoid clevis (2) is 0.01-0.06 inch (0.3-1.6 mm).
   c. Tighten jam nut (3) against rod end clevis (5).

4. CHECK CLEARANCE BETWEEN TRIGGER (1) AND SOLENOID CLEVIS (2).
   a. If clearance is between 0.01-0.06 inch (0.3-1.6 mm), go to step 5. If not, repeat step 3 to adjust clearance between trigger (1) and solenoid clevis (2).

5. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPLACE COAX MACHINE GUN PIVOT PIN AND POST

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Nonelectrical wire (Item 15, App C)
- Pivot pin, female
- Electrical-mechanical post

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE
This task is performed only on configurations where the firing solenoid mechanism is mounted on the coax machine gun.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE PIN (1) AND POST (2) FROM GUN (3).
   a. Remove lock wire (4) from pin (1) and post (2). Discard lock wire.
   b. Remove pin (1) and post (2) from gun (3). Discard pin and post.

INSTALL

3. INSTALL NEW PIN (1) AND NEW POST (2) ON GUN (3).
   a. Install new pin (1) and new post (2) in gun (3).
   b. Install new lock wire (4) on pin (1) and post (2).

4. INSTALL COAX MACHINE GUN. See TM 9-2350-252-10-2.

END OF TASK
REPLACE COAX MACHINE GUN FIRING SOLENOID (MOUNTED ON MACHINE GUN)

DESCRIPTION

This task covers: Remove (page 28-56). Install (page 28-57).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Sealing compound, grade A (Item 20, App C)
- Sealing compound, grade N (Item 21, App C)
- Cotter pin
- Spring pin

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

NOTE
This task is performed only on vehicles where the firing solenoid mechanism is mounted on machine gun. If it is mounted on the rotor, see page 28-17.

1. REMOVE COAX MACHINE GUN. See TM 9-2350-252-10-2.

2. REMOVE SOLENOID (1) WITH EYEBOLT (2) FROM CLEVIS (3) AND SUPPORT (4).
   a. Remove cotter pin (5) and washer (6) from clevis (3). Discard cotter pin.
   b. Remove two screws (7) and solenoid (1) with eyebolt (2) from clevis (3) and support (4).
3. REMOVE CLEVIS (1) WITH EYEBOLT (2) FROM SOLENOID (3).
   a. Install clevis (1) with eyebolt (2) in vise.
   b. Remove spring pin (4) and clevis (1) with eyebolt (2) from solenoid (3). Discard spring pin.

INSTALL

4. INSTALL CLEVIS (1) WITH EYEBOLT (2) ON SOLENOID (3).
   a. Install clevis (1) with eyebolt (2) in vise.
   b. Install clevis (1) with eyebolt (2) and new spring pin (4) on solenoid (3).
   c. Remove clevis (1) with eyebolt (2) from vise.

5. INSTALL SOLENOID (3) WITH EYEBOLT (2) ON CLEVIS (5) AND SUPPORT (6).
   a. Apply sealing compound (Item 21) to threads of two screws (7).
   b. Apply sealing compound (Item 20) to threads of two screws (7).
   c. Install solenoid (3) with eyebolt (2) and two screws (7) on clevis (5) and support (6).
   d. Install washer (8) and new cotter pin (9) on clevis (5).
   e. TORQUE TWO SCREWS (7) TO 83–91 IN-LB (97–104 CMKG).


END OF TASK
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SERVICE BACKUP SIGHT

DESCRIPTION

This task covers: Purge (page 29-2). Charge (page 29-3).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Purging kit (Item 18, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2
- TM 750-116

Materials/Parts:
- Technical nitrogen

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFVICFV Trt Mech 45T10

PURGE


2. MOVE BACKUP SIGHT TO GUNNER’S POSITION. See TM 9-2350-252-10-2.

3. INSTALL PURGING KIT HOSE (1) ON VALVE STEM (2) ON EYEPiece HOUSING ASSEMBLY (3).
   a. Remove cap (4) from valve stem (2) on eyepiece housing assembly (3).
   b. Install purging kit hose (1) on valve stem (2) on eyepiece housing assembly (3).

NOTE
Nitrogen tank should be replaced if tank pressure is less than 100 psi (7.03 kg/sq meter).
Valve stem should be turned only three turns when being opened for purge.

5. PURGE BACKUP SIGHT.
   a. Close pressure regulator valve (1) on nitrogen tank (2).
   b. Open tank valve (3) on nitrogen tank (2).
   c. Open pressure regulator valve (1) until low pressure gage (4) reads 5 psi (0.35 kg/sq meter).
   d. Open valve stem (5) on outer head assembly (6).
   e. Purge backup sight for 5 minutes or until all visible moisture has been removed.

6. CHARGE BACKUP SIGHT TO 5 PSI (0.35 KG/SQ METER).
   a. Close valve stem (5) on outer head assembly (6).
   b. When low pressure gage (4) reads 5 psi (0.35 kg/sq meter), close pressure regulator valve (1) on nitrogen tank (2).
   c. Close tank valve (3) on nitrogen tank (2).
7. CLOSE AND SECURE COMMANDER’S HATCH COVER. See TM 9-2350-252-10-2.

8. REMOVE PURGING KIT HOSE (1) FROM VALVE STEM (2) ON EYEPiece HOUSING ASSEMBLY (3).
   a. Remove purging kit hose (1) from valve stem (2) on eyepiece housing assembly (3).
   b. Install cap (4) on valve stem (2) on eyepiece housing assembly (3).


END OF TASK
REPLACE BACKUP SIGHT

DESCRIPTION

This task covers: Remove (page 29-5). Install (page 29-7).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Boresight kit (Item 1, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10
- Helper (H)

Materials/Parts:
- Adhesive (Item 3, App C)
- Backup sight
- Spring pin

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE SPRING (1) FROM HOOK (2) AND BACKUP SIGHT CRANK (3).

GO TO NEXT PAGE
2. REMOVE BACKUP SIGHT CRANK (1) FROM BACKUP SIGHT HUB (2).
   a. Loosen two thumbscrews (3) on crank (1).
   b. Loosen locknut (4) on screw (5).
   c. Remove crank (1) from hub (2).

3. REMOVE BACKUP SIGHT HUB (2) FROM SHAFT (6).
   a. Remove spring pin (7) from hub (2) and shaft (6). Discard spring pin.
   b. Remove hub (2) from shaft (6).

4. MOVE EYEPiece HOUSING ASSEMBLY (8) TO DOWNWARD POSITION.
   a. Press lock lever (9) toward eyepiece housing assembly (8).
   b. Move eyepiece housing assembly (8) to downward position.
   c. Release lock lever (9).
CAUTION
Backup sight head window and eyepiece can be damaged. Use care when removing backup sight.

NOTE
Waterproof sealing compound will make backup sight difficult to remove.

5. REMOVE BACKUP SIGHT (1) FROM TURRET.
   a. Remove three screws (2) and washers (3) from backup sight (1).
   b. Pry under lug (4). Lift backup sight (1) from turret. Have helper guide backup sight through turret.

INSTALL

CAUTION
Backup sight head window and eyepiece can be damaged. Use care when installing backup sight.

6. INSTALL NEW BACKUP SIGHT (1) IN TURRET.
   a. Lower backup sight (1) into turret and onto guide pins (5). Have helper guide backup sight through turret.
   b. Install three washers (3) and screws (2).
   c. TORQUE THREE SCREWS (2) 22-24 FT-LB (3 MKG).
   d. Apply adhesive between backup sight (1) and turret.

GO TO NEXT PAGE
7. LOCK EYEPIECE HOUSING ASSEMBLY (1) IN GUNNER'S OR COMMANDER'S POSITION.
   a. Move eyepiece housing assembly (1) upward to left or right.
   b. Check that lock lever (2) is in locked position.

8. INSTALL BACKUP SIGHT HUB (3) ON SHAFT (4).
   a. Position hub (3) on shaft (4). Align spring pin hole (5) on hub (3) with spring pin hole (6) in shaft (4).
   b. Install new spring pin (7) in hub (3) and shaft (4).

9. INSTALL BACKUP SIGHT CRANK (8) ON BACKUP SIGHT HUB (3).
   a. Position backup sight crank (8) on backup sight hub (3).
   b. Tighten locknut (9) on screw (10).
   c. Tighten two thumbscrews (11) on crank (8).
10. INSTALL SPRING (1) ON HOOK (2) AND BACKUP SIGHT CRANK (3).


END OF TASK
REPLACE OPERATOR EYECUP

INITIAL SETUP

Materials/Parts:

Eyecup

References:

TM 9-2350-252-10-2

Personnel Required:

ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:

Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE EYECUP (1) FROM EYEPIECE HOUSING ASSEMBLY (2).
   a. Turn eyecup (1) left one-quarter turn.
   b. Pull eyecup (1) from eyepiece housing assembly (2).

INSTALL

2. INSTALL NEW EYECUP (1) ON EYEPIECE HOUSING ASSEMBLY (2).
   a. Aline tabs (3) on eyecup (1) with slots (4) on eyepiece housing assembly (2).
   b. Push eyecup (1) onto eyepiece housing assembly (2).
   c. Turn eyecup (1) right one-quarter turn to lock in place.

END OF TASK
REPAIR BACKUP SIGHT RIGID CONNECTING LINK

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Alinement pin (Item 17, App F)
- Boresight kit (Item 1, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Silicone compound (Item 28, App C)
- Self-locking nut (2)
- Self-locking nut

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REPAIR

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.


4. REMOVE COMMANDER'S RELAY (1) FROM TURRET.
   a. Loosen three captive screws (2) on commander's relay (1).
   b. Remove four screws (3), washers (4), and commander's relay (1) from bracket (5).
   c. Remove commander's relay (1) from turret.

GO TO NEXT PAGE
5. REMOVE SPRING (1) FROM HOOK (2) AND CRANK (3).

6. REMOVE CONNECTING LINK (4) FROM CRANK (3).
   a. Remove locknut (5), spacer (6), bolt (7), and connecting link (4) from crank (3). Discard locknut.

7. REMOVE CONNECTING LINK (4) FROM LINK ARM (8).
   a. Remove locknut (9), bolt (10), and connecting link (4) from link arm (8). Discard locknut.
8. REMOVE TWO BEARINGS (1) FROM CONNECTING LINK (2).
   a. Loosen two jam nuts (3).
   b. Remove two bearings (1) from connecting link (2). Discard connecting link.
   c. Remove two jam nuts (3) from two bearings (1).

CAUTION
Backup sight can be damaged if correct installation procedure is not used. Make sure you perform the following installation steps correctly.

9. INSTALL TWO BEARINGS (1) ON CONNECTING LINK (2).
   a. Install two jam nuts (3) on two bearings (1).
   b. Install two bearings (1) on connecting link (2). Do not tighten jam nuts (3).

10. REMOVE CRANK (4) FROM HUB (5).
    a. Remove locknut (6) and screw (7) from crank (4). Discard locknut.
    b. Loosen two thumbscrews (8) on crank (4).
    c. Remove crank (4) from hub (5).
11. INSTALL ALINEMENT PIN (1) ON HUB (2).

12. ADJUST CONNECTING LINK (3) ON ALINEMENT PIN (1) AND SHAFT (4).
   a. Place bearing (5) on alinement pin (1).
   b. Screw bearing (6) in or out until bearing can be placed on shaft (4).
   c. Tighten two jam nuts (7, 8) on bearings (5, 6).
13. REMOVE CONNECTING LINK (1) FROM ALIGNMENT PIN (2) AND SHAFT (3).

14. REMOVE ALIGNMENT PIN (2) FROM HUB (4).

15. INSTALL CRANK (5) ON HUB (4).
   a. Slide crank (5) on hub (4). Aline ear (6) of hub between two thumbscrews (7). Do not tighten thumbscrews.
   b. Install screw (8) and new locknut (9) on crank (5). Do not tighten locknut.

17. INSTALL CONNECTING LINK (1) ON LINK ARM (2).
   a. Install connecting link (1), bolt (3), and new locknut (4) on link arm (2).

18. INSTALL CONNECTING LINK (1) ON CRANK (5).
   a. Install bolt (6), connecting link (1), spacer (7), and new locknut (8) on crank (5).

19. TIGHTEN LOCKNUT (9) AND TWO THUMBSCREWS (10) ON CRANK (5).
20. MANUALLY ELEVATE 25MM GUN TO 0 MILS. See TM 9-2350-252-10-2.

21. INSTALL SPRING (1) ON HOOK (2) AND CRANK (3).

22. INSTALL COMMANDER’S RELAY (4) ON TURRET.
   a. Apply thin coat of silicone compound to O-ring (5) on ISU (6).
   b. Install commander’s relay (4), four washers (7), and screws (8) on bracket (9). Tighten screws finger tight.
   c. Install commander’s relay (4) and three captive screws (10) on ISU (6).
   d. Tighten four screws (8) on commander’s relay (4) and bracket (9).


END OF TASK
REPLACE SPRING HOOK

DESCRIPTION

This task covers: Remove (page 29–18). Install (page 29–19).

INITIAL SETUP

Tools:

- Turret mechanic's tool kit (Item 31, App F)

References:

- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:

- Spring hook

Equipment Conditions:

- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:

- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE SPRING (1) FROM HOOK (2) AND CRANK (3). DISCARD HOOK.
2. REMOVE HOOK (1) FROM TURRET.
   a. Remove two screws (2) and hook (1) from turret.

3. INSTALL NEW HOOK (1) ON TURRET.
   a. Install hook (1) and two screws (2) on turret.

4. INSTALL SPRING (3) ON CRANK (4) AND HOOK (1).

END OF TASK
REPLACE BACKUP SIGHT CRANK

DESCRIPTION

This task covers: Remove (page 29-20). Install (page 29-21).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Boresight kit (Item 1, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Crank
- Self-locking nut
- Self-locking nut

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE SPRING (1) FROM HOOK (2) AND CRANK (3).
2. REMOVE CONNECTING LINK (1) FROM CRANK (2).
   a. Remove locknut (3), spacer (4), bolt (5), and connecting link (1) from crank (2). Discard locknut.

3. REMOVE CRANK (2) FROM HUB (6).
   a. Remove locknut (7) and screw (8) from crank (2). Discard locknut.
   b. Remove two thumbscrews (9) from crank (2).
   c. Remove crank (2) from hub (6). Discard crank.

INSTALL

4. INSTALL NEW CRANK (2) ON HUB (6).
   a. Install two thumbscrews (9) on crank (2). Do not tighten thumbscrews.
   b. Slide crank (2) on hub (6). Aline ear (10) of hub between thumbscrews (9).
   c. Install screw (8) and new locknut (7) on crank (2).
   d. Tighten two thumbscrews (9) on crank (2).
5. INSTALL CONNECTING LINK (1) ON CRANK (2).
   a. Install bolt (3), connecting link (1), spacer (4), and new locknut (5) on crank (2).

6. INSTALL SPRING (6) ON CRANK (2) AND HOOK (7).

7. BORESIGHT BACKUP SIGHT. See TM 9-2350-252-10-2. Use boresight kit.

END OF TASK
REPLACE BACKUP SIGHT HUB

DESCRIPTION

This task covers: Remove (page 29–23). Install (page 29–24).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Boresight kit (Item 1, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Self-locking nut
- Self-locking nut
- Spring pin
- Hub

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE SPRING (1) FROM HOOK (2) AND CRANK (3).

GO TO NEXT PAGE
2. REMOVE CONNECTING LINK (1) FROM CRANK (2).
   a. Remove locknut (3), spacer (4), bolt (5), and connecting link (1) from crank (2). Discard locknut.

3. REMOVE CRANK (2) FROM HUB (6).
   a. Remove locknut (7), and screw (8) from crank (2). Discard locknut.
   b. Loosen two thumbscrews (9) on crank (2).
   c. Remove crank (2) from hub (6).

4. REMOVE HUB (6) FROM SHAFT (10).
   a. Remove spring pin (11) from hub (6) and shaft (10). Discard spring pin.
   b. Remove hub (6) from shaft (10). Discard hub.

5. INSTALL NEW HUB (6) ON SHAFT (10).
   a. Position hub (6) on shaft (10). Align spring pin hole (12) in hub with spring pin hole (13) in shaft.
   b. Install new spring pin (11) on hub (6).
6. INSTALL CRANK (1) ON HUB (2).
   a. Slide crank (1) on hub (2). Align ear (3) of hub between two thumbscrews (4).
   b. Install screw (5) and new locknut (6) on crank (1).
   c. Tighten two thumbscrews (4).

7. INSTALL CONNECTING LINK (7) ON CRANK (1).
   a. Install connecting link (7), spacer (8), bolt (9), and new locknut (10) on crank (1).

8. INSTALL SPRING (11) ON CRANK (1) AND HOOK (12).


END OF TASK
REPLACE FOLLOR ARM

DESCRIPTION

This task covers:  Remove (page 29-26).  Install (page 29-28).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Machinist’s vise, 4 in jaw (Item 33, App F)

Personnel Required:  ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Follower arm
- Retaining ring
- Self-locking nut
- Self-locking nut
- Spring pin
- Spring washer

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE LINK ARM FROM SHAFT. See task: REPLACE LINK ARM, page 29-33.

2. REMOVE TWO BEARINGS (1, 2) FROM HOUSING (3).
   a. Remove retaining ring (4) from housing (3). Discard retaining ring.
   b. Place housing (3) in vise with shaft (5) down.
   c. Tap dowel pin (6) until two bearings (1, 2) are free of housing (3).
   d. Remove spring washer (7) from housing (3). Discard spring washer.
   e. Remove housing (3) from vise.
CAUTION
Bearings may be damaged if tapped during removal. Do not tap bearings to remove them. Use mechanical puller if necessary.

3. REMOVE TWO BEARINGS (1, 2) FROM SHAFT (3).
   a. Remove outer bearing (1) from shaft (3).
   b. Remove shaft (3) from housing (4).
   c. Remove inner bearing (2) from shaft (3).

4. REMOVE SHAFT (3) FROM FOLLOWER ARM (5).
   a. Place follower arm (5) in vise.
   b. Tap spring pin (6) from follower arm (5) and shaft (3). Discard spring pin.
   c. Remove locknut (7) and screw (8) from follower arm (5). Discard locknut.
   d. Remove shaft (3) from follower arm (5).
   e. Remove follower arm (5) from vise.

GO TO NEXT PAGE
5. REMOVE FOLLOWER (1) FROM FOLLOWER ARM (2).
   a. Place follower arm (2) in vise.
   b. Remove locknut (3), washer (4), and follower (1) from follower arm (2). Discard locknut.
   c. Remove follower arm (2) from vise.

6. INSTALL FOLLOWER (1) ON NEW FOLLOWER ARM (2).
   a. Place follower arm (2) in vise.
   b. Install follower (1), washer (4), and new locknut (3) on follower arm (2).
   c. Remove follower arm (2) from vise.

7. INSTALL SHAFT (5) IN FOLLOWER ARM (2).
   a. Place follower arm (2) in vise.
   b. Position shaft (5) in follower arm (2) with pin holes aligned.
   c. Install new spring pin (6) in follower arm (2) and shaft (5).
   d. Install screw (7) and new locknut (8) on follower arm (2).
   e. Remove follower arm (2) from vise.
CAUTION
Bearings should be easily installed by hand. If necessary, gently tap bearings onto shaft. Bearings may be damaged if tapped with too much force.

8. INSTALL BEARINGS (1, 2) ON SHAFT (3).
   a. Install inner bearing (2) on shaft (3).
   b. Position shaft (3) in housing (4).
   c. Install outer bearing (1) on shaft (3).

CAUTION
Outer bearing should be easily installed by hand. If necessary, gently tap outer bearing into housing. Bearing may be damaged if tapped with too much force.

9. INSTALL BEARING (1, 2) IN HOUSING (4).
   a. Place housing (4) on vise.
   b. Install new spring washer (5) in housing (4).
   c. Tap shaft (3) until inner bearing (2) is seated in housing (4).
   d. Press outer bearing (1) into housing (4) until fully seated. Tap gently if necessary.
   e. Install new retaining ring (6) in housing (4).

10. INSTALL LINK ARM ON SHAFT. See task: REPLACE LINK ARM, page 29-33.

END OF TASK
REPLACE HOUSING BEARINGS

DESCRIPTION

This task covers: Remove (page 29–30). Install (page 29–31).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Machinist vise, 4 inch jaw (Item 33, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

Materials/Parts:
- Retaining ring
- Spring washer
- Bearing (2)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. **REMOVE LINK ARM FROM SHAFT.** See task: REPLACE LINK ARM, page 29–33.

2. **REMOVE BEARINGS (1, 2) FROM HOUSING (3).**
   a. Remove retaining ring (4) from housing (3). Discard retaining ring.
   b. Place housing (3) in vise with shaft (5) down.
   c. Tap dowel pin (6) until bearings (1, 2) are free of housing (3).
   d. Remove spring washer (7) from housing (3). Discard spring washer.
   e. Remove housing (3) from vise.
3. REMOVE BEARINGS (1, 2) FROM SHAFT (3).
   a. Remove outer bearing (1) from shaft (3). Discard bearing.
   b. Remove shaft (3) from housing (4).
   c. Remove inner bearing (2) from shaft (3). Discard bearing.

INSTALL

CAUTION
Bearings should be easily installed by hand. If necessary, gently tap bearings onto shaft. Bearings may be damaged if tapped with too much force.

4. INSTALL NEW BEARINGS (1, 2) ON SHAFT (3).
   a. Install inner bearing (2) on shaft (3).
   b. Position shaft (3) in housing (4).
   c. Install outer bearing (1) on shaft (3).
CAUTION
Outer bearing should be easily installed by hand. If necessary, gently tap outer bearing into housing. Bearing may be damaged if tapped with too much force.

5. INSTALL BEARINGS (1, 2) IN HOUSING (3).
   a. Place housing (3) in vise.
   b. Install new spring washer (4) in housing (3).
   c. Tap shaft (5) until inner bearing (2) is seated in housing (3).
   d. Press outer bearing (1) into housing (3) until fully seated. Tap gently, if necessary.
   e. Install new retaining ring (6) in housing (3).

6. INSTALL LINK ARM ON SHAFT. See task: REPLACE LINK ARM, page 29-33.

END OF TASK
REPLACE LINK ARM

DESCRIPTION

This task covers: Remove (page 29-33). Install (page 29-34).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Machinist’s vise, 4 inch jaw (Item 33, App F)

Materials/Parts:
- Spring pin
- Self-locking nut
- Self-locking nut
- Link arm

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

REMOVE

1. REMOVE 25MM GUN BARREL. See TM 9-2350-252-10-2.


4. REMOVE SPRING (1) FROM HOOK (2) AND CRANK (3).

GO TO NEXT PAGE
5. REMOVE CONNECTING LINK (1) FROM LINK ARM (2).
   a. Remove locknut (3), bolt (4), and connecting link (1) from link arm (2). Discard locknut.

6. REMOVE HOUSING (5) FROM TURRET.
   a. Remove three screws (6), washers (7), and housing (5) from turret.

7. REMOVE LINK ARM (2) FROM SHAFT (8).
   a. Place housing (5) in vise.
   b. Remove spring pin (9) from link arm (2) and shaft (8). Discard spring pin.
   c. Remove locknut (10) and screw (11) from link arm (2). Discard locknut.
   d. Remove link arm (2) from shaft (8). Discard link arm.

8. INSTALL NEW LINK ARM (2) ON SHAFT (8).
   a. Position link arm (2) on shaft (8). Align spring pin hole (12) in link arm with spring pin hole (13) in shaft.
   b. Install new spring pin (9) on link arm (2) and shaft (8).
   c. Install screw (11) and new locknut (10) on link arm (2).
   d. Remove housing (5) from vise.
9. INSTALL HOUSING (1) ON TURRET.
   a. Install housing (1), three washers (2), and screws (3) on turret.

10. INSTALL CONNECTING LINK (4) ON LINK ARM (5).
   a. Align connecting link (4) with link arm (5).
   b. Install bolt (6), connecting link (4), and new locknut (7) on link arm (5).

11. INSTALL SPRING (8) ON HOOK (9) AND CRANK (10).


END OF TASK
CHAPTER 30
MAINTENANCE OF HULL GYRO ASSEMBLY

REPLACE HULL GYRO

DESCRIPTION

This task covers: Remove (page 30-1). Install (page 30-2).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Gyro
- Lock screws

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE PLUG 2W309P1 (1) FROM JACK 2A209J1 (2).

2. REMOVE GYRO (3) FROM HOUSING (4).
   a. Remove four lock screws (5), washers (6), and gyro (3) from housing (4) in this order: (7), (8), (9), (10). Discard lock screws.

GO TO NEXT PAGE
3. INSTALL NEW GYRO (1) ON HOUSING (2).
   a. Install gyro (1), four washers (3), and new lock screws (4) on housing (2) in this order: (5), (6), (7), (8).
   b. TORQUE FOUR SCREWS TO 73-79 IN-LB (84-91 CMKG).

4. INSTALL PLUG 2W309P1 (9) ON JACK 2A209J1 (10).

5. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
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REPLACE HEATER — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 31-2). Install (Page 31–5).

INITIAL SETUP

Tools:
- Turret mechanic’s tool kit (Item 31, App F)
- Machinist’s vise, 4 inch (Item 33, App F)
- Open end wrench, 1 3/8–1 1/2 inch (Item 36, App F)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Materials/Parts:
- Electric air heater
- Lock washer (4)

Equipment Conditions:
- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

NOTE

The turret has two heaters. Each heater has a controller mounted remotely. All heaters are replaced as a complete assembly (heater and controller). Do not intermix heaters and controllers supplied by different vendors. If replacing heater, controller should also be replaced (page 31–13).

Both gunner’s and commander’s heaters are removed and installed the same way. Gunner’s heater is shown.

1. REMOVE RADIO MOUNTINGS. See task: REMOVE/INSTALL RADIO MOUNTINGS, page 4–47.

2. REMOVE SEAT BACK CUSHION (1) FROM PLATE (2).
   a. Remove six screws (3), washers (4), and seat back cushion (1) from plate (2).

NOTE

Gunner’s seat back cushion has six screws. Commander’s seat back cushion has five screws. Gunner’s seat back cushion is shown.
3. REMOVE HEATER CONTROL LEAD PLUG (1) FROM HEATER LEAD PLUG (2) AND CONTROL BOX THERMISTOR LEAD PLUG (3) FROM HEATER THERMISTOR LEAD PLUG (4). TAG LEADS.

4. REMOVE INLET HOSE (5) FROM ADAPTER (6).
   a. Loosen clamp (7) and remove inlet hose (5) from adapter (6).
   b. Remove clamp (7) from inlet hose (5).
5. REMOVE OUTLET HOSE (1) FROM ADAPTER (2).
   a. Loosen clamp (3) and remove outlet hose (1) from adapter (2).
   b. Remove clamp (3) from outlet hose (1).

6. REMOVE HEATER (4) FROM BRACKET (5).
   a. Remove four screws (6), lock washers (7), and heater (4) from bracket (5). Discard lock washers.

CAUTION
Heater may be damaged by vise. Be sure to install heater carefully in vise.

NOTE
Heater has two adapters. Both adapters are removed the same way. Art shows only right adapter being removed.

7. REMOVE TWO ADAPTERS (8, 9) FROM HEATER (4).
   a. Place left side of heater (4) in vise.
   b. Remove right adapter (8) from heater (4). Use open end wrench.
   c. Place right side of heater (4) in vise.
   d. Remove left adapter (9) from heater (4). Use open end wrench.
NOTE
Heater has two plugs. Both plugs are removed the same way. Art shows right plug being removed.

8. REMOVE TWO PLUGS (1, 2) FROM HEATER (3).
   a. Remove left plug (1) from heater (3).
   b. Place left side of heater (3) in vise.
   c. Remove right plug (2) from heater (3).
   d. Remove heater (3) from vise.

INSTALL

CAUTION
Heater may be damaged by vise. Be sure to install heater carefully in vise.

NOTE
Both commander's and gunner's heaters are installed the same way. Gunner's heater is shown.

Heater has two plugs. Both plugs are installed the same way. Art shows right plug being installed.

9. INSTALL TWO PLUGS (1, 2) IN NEW HEATER (3).
   a. Place left side of heater (3) in vise.
   b. Install right plug (2) in heater (3).
   c. Place right side of heater (3) in vise.
   d. Install left plug (1) in heater (3).

GO TO NEXT PAGE
NOTE

Heater has two adapters. Both adapters are installed the same way. Art shows right adapter being installed.

10. INSTALL TWO ADAPTERS (1, 2) IN HEATER (3).
   a. Install left adapter (1) in heater (3).
      Use open end wrench.
   b. Place left side of heater (3) in vise.
   c. Install right adapter (2) in heater (3).
      Use open end wrench.
   d. Remove heater (3) from vise.

11. INSTALL HEATER (3) ON BRACKET (4).
   a. Install heater (3), four new lock washers (5), and screws (6) on bracket (4).

12. INSTALL OUTLET HOSE (7) ON ADAPTER (8).
   a. Install clamp (9) on outlet hose (7).
   b. Install outlet hose (7) on adapter (8).
      Tighten clamp (9).
13. INSTALL INLET HOSE (1) ON ADAPTER (2).
   a. Install clamp (3) on inlet hose (1).
   b. Install inlet hose (1) on adapter (2).
      Tighten clamp (3).

14. INSTALL HEATER CONTROL LEAD PLUG (4) ON HEATER LEAD PLUG (5) AND CONTROL BOX THERMISTOR LEAD PLUG (6) ON HEATER THERMISTOR LEAD PLUG (7).

NOTE
Gunner’s seat back cushion has six screws. Commander’s seat back cushion has five screws. Gunner’s seat back is shown.

15. INSTALL SEAT BACK CUSHION (8) ON PLATE (9).
   a. Install seat back cushion (8), six washers (10), and screws (11) on plate (9).

16. INSTALL RADIO MOUNTINGS. See task: REMOVE/INSTALL RADIO MOUNTINGS, page 4–47.

17. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULTS FOUND.

END OF TASK
REPAIR HEATER ELECTRICAL LEADS — M2A1, M3A1

INITIAL SETUP

**Tools:**
- Turret mechanic's tool kit (Item 31, App F)

**References:**
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

**Materials/Parts:**
- Electrical connector plug

**Equipment Conditions:**
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

**Personnel Required:**
- ITV/IFV/CFV Trt Mech 45T10

REPAIR


   **NOTE**
   Leads have bands that are stamped as follows:

   **THERMISTOR LEAD:** 2 bands stamped 'T'.

   **HEATER LEAD:** 3 bands stamped 'H'.

2. REPAIR BROKEN PLUGS OR JACKS. See task: REPAIR SINGLE PIN PLUG OR JACK, page 4-7.


4. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
REPAIR/REPLACE OUTLET HOSE ASSEMBLY — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 31-9). Repair (page 31-11). Install (page 31-11).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

Materials/Parts:
- Lock washer (2)
- Hose

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

NOTE

Both gunner's and commander's outlet hose is removed and installed the same way. Commander's outlet hose is shown.

Gunner's seat back cushion has six screws and washers. Commander's seat back cushion has five screws and washers. All screws and washers are removed and installed the same way.

1. REMOVE SEAT BACK CUSHION (1) FROM PLATE (2).
   a. Remove screws (3), washers (4), and seat back cushion (1) from plate (2).

GO TO NEXT PAGE
2. REMOVE HOSE (1) FROM CONNECTOR (2) AND SPRING CLIP (3).

3. REMOVE CLAMP(S) (4) FROM HOSE (1) AND TURRET.
   a. Remove screw(s) (5), lock washer(s) (6), and clamp(s) (4) from turret. Discard lock washer(s).
   b. Remove clamp(s) (4) from hose (1).

4. REMOVE HOSE (1) FROM HEATER (7).
   a. Loosen clamp (8) and remove hose (1) from adapter (9).
   b. Pull hose (1) through shelf and remove from turret.

NOTE
Gunner's outlet hose has one clamp. Commander's outlet hose has two clamps. All clamps are removed and installed the same way.
5. REMOVE COUPLING (1) AND CLAMP (2) FROM HOSE (3). DISCARD CLAMP.

6. INSTALL COUPLING (1) AND NEW CLAMP (2) ON HOSE (3).

7. INSTALL NEW HOSE (3) ON HEATER (4).
   a. Push hose (3) through hole in shelf.
   b. Install clamp (5) on hose (3).
   c. Install hose (3) on adapter (6). Tighten clamp (5).

8. INSTALL CLAMP(S) (7) ON HOSE AND TURRET.
   a. Install clamp(s) (7) on hose (3).
   b. Install clamp(s) (7), new lock washer(s) (8), and screw(s) (9), on hose (3) on turret.

GO TO NEXT PAGE
9. INSTALL HOSE (1) ON CONNECTOR (2) AND SPRING CLIP (3).

10. INSTALL SEAT BACK CUSHION (4) ON PLATE (5).
   a. Install seat back cushion (4), washers (6), and screws (7) on plate (5).
REPLACE HEATER CONTROLLER — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 31-13). Install (page 31-14).

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Controller
- Lock washer (4)

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

NOTE

The turret has two heaters. Each heater has a controller mounted remotely. All heaters are replaced as a complete assembly (heater and controller). Do not intermix controllers and heaters supplied by different vendors. If replacing controller, heater should also be replaced (page 31-2).

Both commander's and gunner's heater controller are removed the same way. Removal of gunner's heater is shown.

Commander's controller power input lead is 2W18P2.

Gunner's controller power input lead is 2W18P3.

Heater controller input lead is marked with one “l” tab.

1. REMOVE POWER INPUT LEAD PLUG (1) FROM HEATER CONTROLLER POWER INPUT PLUG (2).
2. REMOVE HEATER CONTROLLER LEAD PLUG (1) FROM HEATER LEAD JACK (2).

3. REMOVE THERMISTER CONTROLLER LEAD PLUG (3) FROM HEATER LEAD JACK (4).

4. REMOVE HEATER CONTROLLER (5) FROM BRACKET (6).
   a. Remove four screws (7), lock washers (8), and heater controller (5) from bracket (6). Discard lock washers.

5. INSTALL NEW HEATER CONTROLLER (5) ON BRACKET (6).
   a. Install heater controller (5), four new lock washers (8), and screws (7) on bracket (6).
6. INSTALL HEATER CONTROLLER LEAD PLUG (1) ON HEATER LEAD JACK (2).

7. INSTALL THERMISTER CONTROLLER LEAD PLUG (3) ON HEATER LEAD JACK (4).

8. INSTALL POWER INPUT PLUG (5) ON CONTROLLER POWER INPUT PLUG (6).

End of task
REPAIR HEATER CONTROLLER ELECTRICAL LEADS — M2A1, M3A1

INITIAL SETUP

Tools:
Turret mechanic's tool kit (Item 31, App F)

Material/Parts:
Electrical connector plug

Personnel Required:
ITV/IFV/CFV Trt Mech 45T10

References:
TM 9-2350-252-10-1
TM 9-2350-252-10-2

Equipment Conditions:
Engine stopped (TM 9-2350-252-10-1)
Turret shut down (TM 9-2350-252-10-2)

REPAIR

NOTE
Leads have bands that are as follows:

INPUT POWER LEAD: 1 band

THERMISTOR LEAD: 2 bands

HEATER LEAD: 3 bands


2. REPAIR BROKEN PLUGS OR JACKS. See task: REPAIR SINGLE PIN PLUG OR JACK. See page 4–7.


4. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.

END OF TASK
REPLACE INLET HOSES/SLIP RING ADAPTER/SLIP RING PLUG — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 31-17). Install (page 31-21).

INITIAL SETUP

Tools:  
- Turret mechanic’s tool kit (Item 31, App F)  
- Open end wrench, 1 3/8-1 1/2 inch (Item 36, App F)

References:  
- TM 9-2350-252-10-1  
- TM 9-2350-252-10-2

Materials/Parts:  
- Nylon strap(s) (as required)  
- Lock washers (2)

Equipment Conditions:  
- Engine stopped (TM 9-2350-252-10-1)  
- Turret shut down (TM 9-2350-252-10-2)

Personnel Required:  
- ITV/IFV/CFV Trt Mech 45T10

REMOVE

1. REMOVE GUNNER'S SEAT BACK CUSHION (1) FROM PLATE (2).
   a. Remove six screws (3), washers (4), and gunner’s seat back cushion (1) from plate (2).

2. REMOVE COMMANDER'S SEAT BACK CUSHION (5) FROM PLATE (6).
   a. Remove five screws (7), washers (8), and commander’s seat back cushion (5) from plate (6).

NOTE

If replacing slip ring adapter or plug only, go to step 9.
3. REMOVE RADIOS. See task: REMOVE/INSTALL RADIOS, page 4-43.

4. REMOVE TWO HOSES (1) FROM TWO HEATER ADAPTERS (2).
   a. Loosen two clamps (3) and remove two hoses (1) from two heater adapters (2).
   b. Remove two clamps (3) from two hoses (1).

5. REMOVE STRAPS (4) FROM HOSE (1) AND CABLES (5). DISCARD STRAPS.

NOTE
Note number of straps removed for installation.

6. REMOVE TWO HOSES (6) AND TEE (7) FROM HOSE (1).
   a. Loosen three clamps (8) and remove two hoses (6) and tee (7) from hose (1).
   b. Pull two hoses (6), tee (7), and three clamps (8) through shelf.
7. REMOVE SHIELD (1) FROM SEAT TRACK (2).
   a. Remove two screws (3), lock washers (4), washers (5), and shield (1) from seat track (2). Discard lock washers.

   NOTE
   Note number of straps removed for installation.

8. REMOVE STRAPS (6) FROM CABLES (7) AND HOSE (8). DISCARD STRAPS.


10. REMOVE HOSE (8) FROM SLIP RING ADAPTER (9).
    a. Loosen clamp (10), and remove hose (8) from slip ring adapter (9).
    b. Remove clamp (10) from hose (8).
11. REMOVE ADAPTER (1) FROM SLIP RING ASSEMBLY (2). USE WRENCH.

12. REMOVE PLUG (3) FROM SLIP RING ASSEMBLY (2).

13. REMOVE HOSE (4) FROM VEHICLE.
   a. Remove two screws (5), locknuts (6), and clamps (7) from hose (4). Discard locknuts.
   b. Pull hose (4) through grommet (8) and remove from vehicle.
14. INSTALL HOSE (1) ON VEHICLE.
   a. Install hose (1) through grommet (2) on vehicle.

15. INSTALL PLUG (3) ON SLIP RING ASSEMBLY (4).

NOTE
   If installing slip ring plug only, do step 15, then go to step 17.

16. INSTALL ADAPTER (5) ON SLIP RING ASSEMBLY (4). USE WRENCH.

NOTE
   If only installing slip ring adapter or plug, do step 17, then go to step 22.

17. INSTALL HOSE (1) ON SLIP RING ADAPTER (5).
   a. Install clamp (6) on hose (1).
   b. Install hose (1) on slip ring adapter (5). Tighten clamp.
18. INSTALL HOSE (1) AND TWO CLAMPS (2) ON TURRET FLOOR.
   a. Install hose (1), two clamps (2), screws (3), and locknuts (4) on turret floor.

19. RUN HOSE (1) ALONG LEFT SIDE OF SEAT TRACK (5) AND PUSH INTO SHELF.

NOTE
Additional straps may be required to secure cables to hose and/or turret.

20. INSTALL NEW STRAPS (6) ON HOSE (1) AND CABLES (7).
21. INSTALL SHIELD (1) ON SEAT TRACK (2).
   a. Install shield (1), two washers (3), new lock washers (4), and screws (5) on seat track (2).

   **NOTE**
   If only installing slip ring adapter or plug, do step 22 only.


23. INSTALL TEE (6) AND TWO HOSES (7) ON HOSE (8).
   a. Install two clamps (9) on two hoses (7) and clamp (10) on hose (8).
   b. Install two hoses (7) on tee (6). Tighten clamps.
   c. Install tee (6) and two hoses (7) on hose (8). Tighten clamp (10).
24. INSTALL NEW STRAPS (1) ON HOSE (2) AND CABLES (3).

25. INSTALL TWO HOSES (2) ON TWO HEATER ADAPTERS (3).
   a. Install two clamps (4) on two hoses (2).
   b. Install two hoses (2) on two heater adapters (3).

27. INSTALL COMMANDER'S SEAT BACK CUSHION (1) ON PLATE (2).
   a. Install commander's seat back cushion (1), five washers (3), and screws (4) on plate (2).

28. INSTALL GUNNER'S SEAT BACK CUSHION (5) ON PLATE (6).
   a. Install gunner's seat back cushion (5), six washers (7), and screws (8) on plate (6).

29. RETURN TO ORIGINAL SYMPTOM. VERIFY NO FAULT.
REPLACE HEATER INDICATOR LIGHT — M2A1, M3A1

DESCRIPTION

This task covers: Remove (page 31–26). Install (page 31–27).

INITIAL SETUP

Materials/Parts:

- Indicator light

References:

- TM 9–2350–252–10–1
- TM 9–2350–252–10–2

Personnel Required:

ITV/IFV/CFV Trt Mech 45T10

Equipment Conditions:

- Engine stopped (TM 9–2350–252–10–1)
- Turret shut down (TM 9–2350–252–10–2)

REMOVE

There are two heater controllers in the turret. The heater indicator light is replaced the same way on both controllers.

The indicator light consists of a knurled, threaded receptacle with a green lens and incandescent lamp.

NOTE

REMOVE HEATER INDICATOR LIGHT (1) FROM HEATER CONTROLLER (2).

a. Remove indicator light (1) from controller (2).

INSTALL

INSTALL NEW INDICATOR LIGHT (1) ON CONTROLLER (2).

a. Install indicator light (1) on controller (2).

END OF TASK

31–26  Change 4
CHAPTER 32
MAINTENANCE OF SPECIAL TOOLS

REPAIR INSTALLATION DEVICE, ISU

INITIAL SETUP

Tools:
- Turret mechanic's tool kit (Item 31, App F)
- Machinist's vise, 4 inch jaw (Item 33, App F)
- Vise jaw caps (Item 2, App F)

Personnel Required:
- IFV/IFV/CFV Trt Mech 45T10

References:
- TM 9-2350-252-10-1
- TM 9-2350-252-10-2

Materials/Parts:
- Cotter pin (6)
- Spring pin (4)
- Retaining ring (3)
- Lock washer

Equipment Conditions:
- Engine stopped (TM 9-2350-252-10-1)
- Turret shut down (TM 9-2350-252-10-2)

1. REMOVE LOCK ARM (1) FROM FOLDING ARM (2).
   a. Remove nut (3), lock washer (4), shoulder screw (5), and lock arm (1). Discard lock washer.
   b. Remove shoulder screw (5) from lock arm (1).

GO TO NEXT PAGE
2. REMOVE TWO FOLDING ARMS (1) FROM HOIST BEAM (2).
   a. Remove four spring pins (3) from hoist beam (2). Discard spring pins.
   b. Remove two straight pins (4) and two folding arms (1) from hoist beam (2).

3. REMOVE THREE HOIST LEGS (5) FROM HOIST BEAM (2) AND TWO FOLDING ARMS (1).
   a. Remove cotter pin (6), straight pin (7), and hoist leg (5) from hoist beam (2). Discard cotter pin.
   b. Remove two cotter pins (6), straight pins (7), and hoist legs (5) from folding arms (1). Discard cotter pins.
4. REMOVE THREE RETAINERS (1) FROM HOIST LEGS (2).
   a. Remove three cotter pins (3) and straight pins (4) from hoist legs (2). Discard cotter pins.

5. REMOVE THREE SHOULDER SCREWS (5) FROM RETAINERS (1).
   a. Remove three retainer rings (6) and shoulder screws (5) from retainers (1). Discard retainer rings. Use vise and caps.

6. INSTALL THREE SHOULDER SCREWS (5) ON RETAINERS (1).
   a. Install three shoulder screws (5) and new retainer rings (6) on retainers (1). Use vise and caps.

7. INSTALL THREE RETAINERS (1) ON HOIST LEGS (2).
   a. Install three retainers (1), straight pins (4), and new cotter pins (3) on hoist legs (2).
8. INSTALL THREE HOIST LEGS (1) ON TWO FOLDING ARMS (2) AND HOIST BEAM (3).
   a. Install two hoist legs (1), straight pins (4), and new cotter pins (5) on folding arms (2).
   b. Install hoist leg (1), straight pin (4) and new cotter pin (5) on hoist beam (3).

9. INSTALL TWO FOLDING ARMS (2) ON HOIST BEAM (3).
   a. Install two folding arms (2) and straight pins (6) on hoist beam (3).
   b. Install four new spring pins (7) on hoist beam (3).
10. INSTALL LOCK ARM (1) ON FOLDING ARM (2).
   a. Install shoulder screw (3) on lock arm (1).
   b. Install lock arm (1), shoulder screw (3), new lock washer (4), and nut (5) on folding arm (2).

END OF TASK
APPENDIX A
REFERENCES

SCOPE

This appendix lists all forms, field manuals, technical manuals, technical bulletins, and miscellaneous publications referenced in this manual.

FORMS

Report of Discrepancy (ROD) .......................................................... SF364
Quality of Deficiency Report ........................................................ SF368
Equipment Inspection and Maintenance Worksheet ....................... DA Form 2404
Maintenance Request ............................................................... DA Form 2407
Weapon Record Data ............................................................... DA Form 2408–4

FIELD MANUALS

First Aid for Soldiers ............................................................... FM 21–11
Fundamentals of Machine Tools .................................................. FM 9–24
Operation and Maintenance of Ordnance Material in Cold Weather .... FM 9–207

TECHNICAL MANUALS

Administrative Storage of Equipment ........................................ TM 740–90–1
Inspection, Care, and Maintenance of Antifriction Bearings ............ TM 9–214
Operator’s Manual for Fighting Vehicle, Infantry,
   M2 (2350–01–048–5920), M2A1 (2350–01–179–1027),
   and Fighting Vehicle, Cavalry, M3 (2350–01–049–2695)
Operator’s Manual for Fighting Vehicle, Infantry,
   and Fighting Vehicle, Cavalry, M3 (2350–01–049–2695)
Operator’s Manual: Machine Gun, 7.62mm,
   M240 (1005–01–025–8095) and Machine Gun,
   7.62mm, M240C (1005–01–085–4758) ....................................... TM 9–1005–313–10
Operator’s Unit, Intermediate Direct Support, and
   Intermediate General Support Maintenance Repair
Parts and Special Tools List (Including Depot
   Maintenance Repair Parts and Special Tools)
Unit Maintenance Manual including Repair Parts
   and Special Tools list, Gun Automatic,
TECHNICAL MANUALS (cont)

Unit Maintenance for Fighting Vehicle, Infantry,
M2 (2350-01-048-5920), M2A1 (2350-01-179-1027),
and Fighting Vehicle Cavalry, M3 (2350-01-049-2695),
M3A1 (2350-01-179-1028), Turret .................................................. TM 9-2350-252-20-1

Organizational and Direct Support Maintenance Manual,
Machine Gun, 7.62mm, M240 (1005-01-025-8095) and
Machine Gun, 7.62mm, M240C (1005-01-085-4758)............................. TM 9-1005-313-23

Unit, Intermediate Direct Support, and
Intermediate General Support Maintenance Repair Parts
and Special Tools List for Fighting Vehicle, Infantry,
M2 (2350-01-048-5920), M2A1 (2350-01-179-1027)

Painting Instructions for Field Use (CARC) ...................................... TM 43-0139

Procedures for Destruction of Conventional Ammunition and
Improved Conventional Munitions to Prevent Enemy Use............... TM 750-244-5-1

Procedures for Destruction of Electronics
Material to Prevent Enemy Use.................................................. TM 750-244-2

Procedures for Destruction of Tank-Automotive
Equipment to Prevent Enemy Use.............................................. TM 750-244-6

Procedures for Destruction of Equipment in Federal
Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030,
1055, 1090, 1095, to Prevent Enemy Use .................................... TM 750-244-7

Storage Batteries, Lead-Acid Type ............................................. TM 9-6140-200-14

Transportability Guidance, Fighting Vehicle, Infantry,
M2 (2350-01-048-5920), and Fighting Vehicle,
Cavalry, M3 (2350-01-049-2695)..................................................... TM 55-2350-252-14

MISCELLANEOUS PUBLICATIONS

Expendable Items (Except Medical, Class V,
Repair Parts, and Heraldic Items).............................................. CTA 50-970

The Army Maintenance Management System (TAMMS).................. DA PAM 738-750

Ionizing Radiation Protection (Licensing, Control,
Transportation, Disposal, and Radiation Safety).......................... AR 385-11
APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

GENERAL

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on the IFV and CFV. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. Adjust. To maintain or regulate within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of the equipment or system.
h. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3rd position code of the SMR code.

i. **Repair.** The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. **Overhaul.** That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

**EXPLANATION OF COLUMNS IN THE MAC, Section II**

a. **Column 1, Group Code.** Column 1 lists functional group codes, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.

b. **Column 2, Component/Assembly.** Column 2 contains the names of components, assemblies, and modules for which maintenance is authorized.

c. **Column 3, Maintenance Function.** Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see Maintenance Functions paragraph).

d. **Column 4, Maintenance Category.** Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time) troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

```
C ........................ Operator or crew.
O ............................ Unit maintenance.
F ............................ Intermediate direct support maintenance.
H ............................ Intermediate general support maintenance.
D ............................ Depot maintenance.
```
e. **Column 5, Tools and Equipment.** Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

**EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, Section III**

a. **Column 1, Reference Code.** The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. **Column 2, Maintenance Category.** The lowest category of maintenance authorized to use the tool or test equipment.

c. **Column 3, Nomenclature.** Name or identification of the tool or test equipment.

d. **Column 4, National Stock Number.** The National Stock Number of the tool or test equipment.

e. **Column 5, Tool Number.** The manufacturer's part number.
## SECTION II. MAINTENANCE ALLOCATION CHART FOR IFV AND CFV, TURRET

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Change 4 B-11
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## Maintenance Allocation Chart for IFV and CFV, Turret (cont)

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**Notes:**
- REM: Repair, Replace, Inspect, Adjust, Test, Service.
- Tools and Equip: 0059, 0168, 0202, 0179, 0202, 0206, 0207.
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**TM 9-2350-252-20-2-3**

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### Section III. TOOL AND EQUIPMENT REQUIREMENT FOR IFV AND CFV, TURRET

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### TOOL AND EQUIPMENT REQUIREMENT FOR IFV AND CFV, TURRET (cont)

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APPENDIX C
UNIT MAINTENANCE
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section 1. INTRODUCTION

SCOPE

This appendix lists expendable/durable supplies and materials you will need to maintain the turret of the IFV and CFV. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

EXPLANATION OF COLUMNS

a. Column 1 — Item Number. This number is assigned to the entry in the listing and is referenced in the Materials/Parts section of the task to identify the material (e.g., "Automotive grease (Item 7, App C)").

b. Column 2 — Level. This column identifies the lowest level of maintenance that requires the listed item.

0 — Unit Maintenance

c. Column 3 — National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4 — Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGE) in parentheses followed by the part number.

e. Column 5 — Unit of Measure (UIM). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.
### Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

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Change 4 C-3/(C-4 blank)
APPENDIX D
MARKERS AND DECALS

This appendix gives the location of markers and decals in the turret of the IFV and CFV. To remove or install markers and decals, see task: REPLACE MARKERS OR DECALS, page 4-3.

Markers and decals are identical in the IFV and CFV turret.

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DANGER
POISONOUS GAS

CAUTION
BEFORE REMOVING 7.62 MACHINE GUN DISCONNECT ELECTRICAL CONNECTOR

CAUTION
TURN OFF POWER BEFORE CONNECTING OR DISCONNECTING ELECTRICAL PLUGS. FAILURE TO DO SO COULD DAMAGE EQUIPMENT

WARNING
ENGAGE TRAVEL LOCK BEFORE LEAVING TURRET. IF TURRET MOVES WHEN A MAN IS IN OPENING HE COULD BE KILLED!

PAMPHLET BAG

7.62 AMMO LOADING
WARNING
EQUILIBRATOR CAN SWING OPEN AND HIT YOU DURING REMOVAL. IT IS SPRING LOADED. REMOVE WIRE ROPE FROM ROTOR BEFORE YOU TRY TO REMOVE EQUILIBRATOR.
WARNING
TURRET MOVEMENT CAN CRUSH YOU. TELL COMMANDER AND GUNNER BEFORE REACHING INTO TURRET.

TURRET ACCESS DOOR, M2/M3

WARNING
TURRET MOVEMENT CAN CRUSH YOU. WHEN LIGHT IS ON, TELL COMMANDER AND GUNNER BEFORE REACHING INTO TURRET.

TURRET ACCESS DOOR, M2A1/M3A1
WARNING
TURRET MOVEMENT CAN CRUSH YOU. TELL COMMANDER AND GUNNER BEFORE REACHING INTO AMMO CAN OR TURRET OPENING.
APPENDIX E

PIN AND SOCKET ARRANGEMENTS FOR PLUGS AND JACKS

Section I. Introduction

SCOPE

This appendix is to be used as support in performing troubleshooting tasks involving plugs and jacks utilized in the turret of the M2, M2A1, M3, and M3A1. Section II contains an index of the plugs and jacks and the name of their corresponding diagrams in this appendix. Section III contains the diagrams of the pin arrangements and the socket arrangements for the plugs and jacks.

EXPLANATION OF SECTION II

Section II contains the index of Plugs and Jacks. The first column of the index is a listing of the plugs and jacks listed in numerical sequence. The second column of the Index indicates the diagram name corresponding to each listing.

EXPLANATION OF SECTION III

Section III contains the diagrams of the pin and socket arrangements for the plugs and jacks referenced in troubleshooting tasks. On the left side of the page is a diagram of the pin arrangement of a plug or jack. To the left of each pin arrangement diagram is a list of the plugs and jacks in the hull which have that pin arrangement. On the right side of the page is a diagram of the socket arrangement of a plug or a jack. To the right of each socket arrangement diagram is a list of the plugs and jacks in the hull which have that socket arrangement.
## Section II. INDEX OF JACKS AND PLUGS

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| 2W1P1      | 2W308P9        |             |

| **Pin 5**  | **Socket 5**   |             |
| 2A1J1      | 2W1P2          |             |

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|           |                 | 2W32P2       |
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| 2W6P1      | 2W303P4         | 2W310P6      |
| 2W101P4    | 2A1J13          | 2W6P2        |
| 2W105P1    | 2A155 (A0)      | 2W235P6      |
| 2W35P6     | 2W101P5         | 2W131P5      |
| 2W103J1    | 2W235P4         | 2W302P1      |
| 2W133P4    | 2W302P6         | 2W302P6      |
| 2W133P5    | 2W311P4         | 2W4P3        |
| 2A205J1 (GHS)|             |             |
| 2A206J1 (GHS)|             |             |
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DIAGRAMS OF JACK AND PLUG CONFIGURATIONS (cont)

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<td>2A19P1</td>
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Socket 23

Socket 24

Pin 24

Socket 24

2A40J1
2A46J1

2W17P1
2W32P3
2W2P3
### DIAGRAMS OF JACK AND PLUG CONFIGURATIONS (cont)

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| Pin 26     | Socket 26       |             |
| 2A201J1 (TDA) | 2W302P2        |             |
| 2A203J2 (TED) | 2W302P5        |             |
| 2A202J3 (GED) | 2W307P3        |             |
| 2A201J3 (TDA) | 2W307P1        |             |
| 2A204J3 (TLM) | 2W306P3        |             |
| 2W18P1     | 2W310P2        |             |
|            | 2W310P5        |             |
|            | 2A27J4 (RYA)   |             |

<p>| Pin 27     | Socket 27       |             |
| 2A204J2 (TLM) | 2W306P2        |             |
| 2A204J4 (TLM) | 2W306P4        |             |</p>
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<td>Pin 31</td>
<td>Socket 31</td>
<td>2A1J8</td>
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DIAGRAMS OF JACK AND PLUG CONFIGURATIONS (cont)

ITEM NAMES | DIAGRAM NUMBERS | CONNECTIONS
---|---|---

**Pin 32**

- 2W10P2

**Socket 33**

- 2W16P1
- 2W9J1
- 2W9J2
- 2W9J3
- 2W32P5
- 2W32P6
- 2W39J1
- 2W39J2
- 2W39J3

**Pin 34**

- 2W201P1
- 2W231P1
- 2A100J1 (ISU)
- 2A100J2 (ISU)
- 2A100J3 (ISU)
- 2A100J4 (ISU)

**Socket 34**

- 2W101P1
- 2W103P3
- 2W131P1
- 2W133P7
- 2W133P9

**Pin 35**

- 2W301P4
- 2A200J1 (ECA)
- 2A200J3 (ECA)

**Socket 35**

- 2A1J4 (TDB)
- 2W301P1
- 2W303P3
- 2W311P3
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<th>ITEM NAMES</th>
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APPENDIX F
UNIT MAINTENANCE
COMMON TOOLS AND SUPPLEMENTS
AND SPECIAL TOOLS/FIXTURES LIST

Section I. INTRODUCTION

SCOPE

This appendix lists all common tools and supplements and special tools/fixtures needed to maintain the IFV and CFV turret.

EXPLANATION OF COLUMNS

a. Column 1 — Item Number. This number is assigned to the entry in the listing and is referenced in the Initial Setup to identify the item (e.g., “Purging Kit (Item 18, App F”).

b. Column 2 — Name. This column lists the item by noun nomenclature and other descriptive features (e.g., “Gage, belt tension”).

c. Column 3 — National Stock Number. This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

d. Column 4 — Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

e. Column 5 — Reference. This column identifies the authorizing Supply Catalog (SC) or Repair Parts and Special Tools List (RPSTL) for items listed in this appendix.
## Section II. COMMON TOOLS AND SUPPLEMENTS AND SPECIAL TOOLS/FIXTURES LIST

<table>
<thead>
<tr>
<th>(1) ITEM NUMBER</th>
<th>(2) ITEM NAME</th>
<th>(3) NATIONAL STOCK NUMBER</th>
<th>(4) PART NUMBER</th>
<th>(5) REFERENCE</th>
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<tbody>
<tr>
<td>1.</td>
<td>BORESIGHT KIT</td>
<td>4933-00-930-1957</td>
<td>11686583 (BILL)</td>
<td>TM 9-2350-252-10-2</td>
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<tr>
<td>2.</td>
<td>CAPS, VISE JAWS</td>
<td>5120-00-221-1506</td>
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<td>3.</td>
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<td>SOCKET WRENCH ATTACHMENT, 9/64 INCH</td>
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<td>12.</td>
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<td>13.</td>
<td>LAMP, EXTRACTOR</td>
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<td>15.</td>
<td>MULTIMETER, DIGITAL AN/PSM-45</td>
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<td>16.</td>
<td>NUT, PLAIN, HEXAGON</td>
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<td>PIN, ALIGNMENT</td>
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<td>18.</td>
<td>PURGING KIT</td>
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<td>20.</td>
<td>REPR TOOL, PNEU TIRE VALVE</td>
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<td>21.</td>
<td>SCREW, CAP, HEX HEAD</td>
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<td>TOOL, INSERTION, CONTACT</td>
<td>5120-01-142-3121</td>
<td>356-258</td>
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<td>VISE, MCHST, 4 IN JAW</td>
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<td>WRENCH, RATCHET</td>
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<td>35.</td>
<td>DIE, CRIMPING TOOL</td>
<td>5120-00-126-0860</td>
<td>M22520/5-100</td>
<td>TM 9-2350-252-24P-2</td>
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<td>36.</td>
<td>WRENCH, OPEN END, 1 3/8 X 1 1/2 IN</td>
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GLOSSARY

Section I. ABBREVIATIONS

A ampere
ABS AP bin selector switch
ac alternating current
amp amperage/ampere
ammo ammunition
anp annunciator panel
APL AP low ammo sensor
app appendix
attn attention
az azimuth
aze azimuth encoder
bat36N turret battery, negative terminal
bat36P turret battery, positive terminal
bat37N turret battery, negative terminal
bat37P turret battery, positive terminal
brsit boresight
brt brightness
BH black/hot
BII basic issue items
°C degrees celsius
CBR chemical-biological-radiological
CFOS cargo hatch full open switch
CFV Cavalry Fighting Vehicle
CGE command guidance electronics
CHG charging
CHS commander's handstation
CHTR commander's heater
cm centimeter
cmd command
cmkg centimeter kilogram
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<td>Cargo hatch open switch</td>
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<td>CPI</td>
<td>Commander's position indicator</td>
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<td>CPS</td>
<td>Cargo hatch popped switch</td>
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<td>DA</td>
<td>Department of the Army</td>
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<td>DBA</td>
<td>Diagnostic breakout assembly</td>
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<td>dc</td>
<td>Direct current</td>
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<tr>
<td>DCA</td>
<td>Diagnostic cable assembly</td>
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<td>DCGE</td>
<td>Digital command guidance electronics</td>
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<td>deg</td>
<td>Degree</td>
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<td>DFS</td>
<td>Defogger switch</td>
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<td>DIP</td>
<td>Driver's instrument panel</td>
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<td>DISTR</td>
<td>Distribution</td>
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<td>dn</td>
<td>Down</td>
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<td>DOS</td>
<td>Driver's hatch open switch</td>
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<td>DPS</td>
<td>Driver's hatch popped switch</td>
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<td>DTP</td>
<td>Test panel indicator</td>
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<td>Direct support electrical system test sets</td>
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<td>Each</td>
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<td>ECA</td>
<td>Electronic control assembly</td>
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<td>Equipment Improvement Recommendations</td>
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<td>Elevation</td>
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<td>Electromechanical</td>
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<td>Defogger fan</td>
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<td>°F</td>
<td>Degrees Fahrenheit</td>
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<td>FSCM</td>
<td>Federal supply code for manufacturer</td>
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<td>ft-lb</td>
<td>Foot-pound</td>
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<td>FVS</td>
<td>Fighting Vehicle System</td>
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<tr>
<td>gbx</td>
<td>Gearbox</td>
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<td>GED</td>
<td>Gun elevation drive assembly</td>
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<td>GGY</td>
<td>Gun gyro</td>
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GLOSSARY (cont)

GHS    gunner's handstation
GHTR   gunner's heater
GPI    gunner's position indicator
GRL    -3 degrees elevation switch
GRR    25mm gun resolver
GUN    25mm gun
GUN    sear solenoid
GUN    ammo select solenoid
H      helper
HEL    HE low ammo sensor
HBS    HE bin selector switch
HGY    hull gyro
HOS    hatch override switch
Hz     hertz
IFV    Infantry Fighting Vehicle
in     inch
in-lb  inch-pound
ISU    integrated sight unit
lchr   launcher
LDI    left turret drive indicator
LGL    left smoke grenade launcher
lhr    launcher assembly
LOS    line of sight
LPS    lower position switch
LRU    line replaceable unit
MALF   malfunction
man    manual
MGL    7.62 low ammo sensor
MGS    7.62 coax machine gun firing solenoid
MISW   manual drive interlock switch
mkg    meter-kilogram
mm     millimeter
GLOSSARY (cont)

MTC  missile test container
NATO  North Atlantic Treaty Organization
NIIN  national item identification number
NSN  national stock number
org  organizational
PCU  power converter unit
PN  part number
pot  potentiometer
pwr  power
RAM  random access memory
RDI  right turret drive indicator
RGL  right smoke grenade launcher
RPSTL  Repair Parts and Special Tools List
rsa  resistor assembly
rtn  return
rya  relay assembly
sec  second
slr  slip ring assembly
stab  stabilization
start  starting
STE-M1/FVS  Simplified Test Equipment/Abrams Battle Tank/Fighting Vehicle System
sw  switch
sys  system
TCB  turret control box
TDA  traverse drive assembly
TDB  turret distribution box
TED  TOW elevation drive assembly
temp  temperature
TGY  turret gyro assembly
TLM  TOW lift mechanism
TM  technical manual
GLOSSARY (cont)

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<td>test, measurement, and diagnostic equipment</td>
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<td>TOE</td>
<td>Table of Organization and Equipment</td>
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<tr>
<td>TOW</td>
<td>tubr-launched, optically-tracked, wire-guided, antitank missile</td>
</tr>
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<td>TPI</td>
<td>turret position indicator</td>
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<td>trb</td>
<td>turret battery</td>
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<td>trig</td>
<td>trigger</td>
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<td>TRF</td>
<td>turret rotor fan</td>
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<td>TRL</td>
<td>-13 degrees elevation switch</td>
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<tr>
<td>TRR</td>
<td>TOW resolver</td>
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<tr>
<td>TWB</td>
<td>TOW control box</td>
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<tr>
<td>U/M</td>
<td>unit of measure</td>
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<td>upper position switch</td>
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<td>V</td>
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<td>VDB</td>
<td>vehicle distribution box</td>
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<td>Vdc</td>
<td>volt direct current</td>
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<tr>
<td>WCB</td>
<td>weapon control box</td>
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</table>
Section II. UNUSUAL TERMS

abrasive: harsh, rough
bur: a rough area remaining on metal after it has been cast, cut, or drilled
caucetic: corrode or dissolve by chemical action
chase: a groove cut
chunked: parts broken off, a damaged item
crocus: a variety of iron oxide, used in the form of an abrasive powder for polishing
hone: sharpen, enlarge, smooth out
race: a groovelike part in which a moving part slides or rolls
scored: grooved, scratched, notched
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Step 25. There are four clamps (8) and four straps (9) on wiring harness (1), not two. Please correct this step.

Step 28. The hole in this linkage arm (2) is in the wrong place. Please fix the illustration.

Step 31. The torque as shown is not correct. It should read "1.5-2.5 lb (1.2-2.3 CMKG). Please change the step."
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#### LINEAR MEASURE
- 1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
- 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 inches
- 1 Kilometer = 1000 Meters = 0.621 Miles

#### SQUARE MEASURE
- 1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
- 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
- 1 Sq Kilometer = 1,000,000 Sq Meters = 3.86 Sq Miles

#### CUBIC MEASURE
- 1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
- 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

#### TEMPERATURE
- $\frac{5}{9}(°F - 32) = °C$
- 212°F is equivalent to 100°C
- 90°F is equivalent to 32.2°C
- 32°F is equivalent to 0°C

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