

NightFighter™

INSTALLATION INSTRUCTIONS

BRACKET AND TRANSMITTER KIT

WARNING!

Read this manual carefully if you have or will have the responsibility for using or servicing the product. The ClearCommand™ Communications System from MSA will perform as designed only if used and serviced according to the instructions. Otherwise, the product could fail to perform as designed, and persons who rely on this product could sustain serious personal injury or death.

The warranties made by MSA with respect to the product are voided if the product is not used according to the instructions in this manual. We encourage our customers to write or call for a demonstration of this equipment prior to use, or for any additional information relative to use or repairs. Call 1-800-MSA-2222 during regular working hours.

NIOSH and NFPA certified as an accessory for the Ultra Elite facepiece for use with the MSA MMR, MMR with Slide Connection and BMR breathing apparatus only.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

DESCRIPTION / INSTALLATION

TABLE OF CONTENTS

DESCRIPTION	2
PREPARING FOR USE.....	2

DESCRIPTION

1. The NightFighter Bracket and Transmitter Kit is designed to attach to an MSA Ultra Elite facepiece to allow the easy attachment and removal of the NightFighter.

ULTRA-ELITE FACEPIECE

Removing the Component Housing Cover for MMR

1. Remove the two component housing cover screws and spacers. Remove the neckstrap.
2. Remove the locking ring.
3. Lift up on the cover release hook, located forward of the adapter assembly opening. Once the release is lifted, you can remove the cover by pulling it away from the housing. You must tilt the cover and work it over one adapter bayonet at a time.

Removing the Component Housing Cover for MMR with Slide Connection

1. Remove the two component housing cover screws. Remove the neckstrap.
2. Lift up on the cover. You can remove the cover by pulling it away from the housing. You can tilt the cover and work it over adapter.
3. Unthread and remove the adapter assembly.

Removing the Component Housing cover for BMR

1. Unthread and remove the adapter assembly.
2. Remove the two component housing cover screws and the neckstrap.
3. Lift up on the cover release hook, located forward of the adapter assembly opening. Once the release is lifted, you can remove the cover by pulling it away from the housing.

CAUTION!

Be careful that you do not damage internal parts of the component housing assembly (exhalation valve, spring, retainer, or speaking diaphragm) once the cover is removed.
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Note: The following procedures are for MMR, MMR with Slide Connection and BMR facepieces:

INSTALLATION OF BRACKET

Install the Mounting Bracket to the Facepiece

1. Using a Phillips screwdriver, loosen and remove the screw from right side of the facepiece lens retaining ring. (Be sure not to lose the nut if applicable).
2. Position the metal tab of the mounting bracket on top of the lens rings, and reinstall the screw. Tighten firmly.
3. Using a small Phillips screwdriver, remove the component housing ring screw.
4. Position mounting bracket over component housing. Ensure the alignment of metal tab over component housing insert and the alignment of mounting bracket screw hole over component housing ring hole.
5. Insert longer screw (supplied with kit) through mounting bracket into component housing ring hole. Tighten firmly.

Replace the Component Housing Cover for MMR, MMR with Slide Connection and BMR Ultra Elite Facepiece.

CAUTION!
Be careful that you do not damage internal parts of the component housing assembly (exhalation valve, spring, retainer, or speaking diaphragm) once the cover is removed.

Installing the Adapter Assembly for MMR

1. Holding the adapter assembly in your hand, rotate the slip nut so that the octagon flange on the slip nut lines up with the octagon flange on the adapter.
2. Thread the adapter assembly into the facepiece. Using the spanner wrench, torque the adapter to 12-27 in-lbs. If necessary, continue to torque until the top flat on the octagon is horizontal.
3. The bayonets must be in a horizontal orientation.
4. If the bayonets are not horizontal, remove the adapter assembly and turn the slip nut.
Reinstall the adapter assembly so that the bayonets are horizontal when the adapter assembly is torqued 12-27 in-lbs.

Installing the Adapter Assembly for MMR with Slide Connection

1. Thread the adapter assembly into the facepiece. If necessary, use component housing cover to continue to tighten until the top flat on the octagon is horizontal.

Installing the Component Housing Cover for MMR

1. Place the component housing cover over the adapter assembly. Tilt and rotate the cover to work it over one bayonet at a time.
2. Insert the tab on the cover into the slot in the lens ring.
3. Press in on the front of the cover until the cover hook snaps into place.
4. Install the locking ring by sliding it into the groove on the adapter. (Do not slide it into the space between the slip nut flange and the adapter flange.)
5. Place the spacers and the neckstrap brackets in the cover sockets under the locking ring. Install the Phillips screws through the bracket, spacer, cover and metal top of bracket and tighten.
6. Verify each of the following features:
 - a. The adapter bayonets are locked into a horizontal position and can NOT be rotated.
 - b. The slip nut is threaded completely into the facepiece and locked securely. It can NOT be rotated.
 - c. The metal locking ring is locked into position and can NOT be rotated.
 - d. There is no loose play in the assembly of parts.
7. Don the facepiece and check the face-to-facepiece seal. Follow the Facepiece Fit Check procedures in the MMR Operations and Instructions Manual.

Installing the Component Housing Cover for MMR with Slide Connection

1. Place the component housing cover over the adapter assembly.
2. Insert the tab on the cover into the slot in the lens ring. Press in on the front of the cover until the cover hook snaps into place.
3. Line up the screw holes in the cover with the metal tab of mounting bracket and threaded inserts in the housing.
4. Place the neckstrap brackets into the cover sockets. Install the new Phillips screws and tighten.

5. Verify that there is no loose play in the assembly of parts.
6. Don the facepiece and check the face-to-facepiece seal. Follow the Facepiece Fit Check procedures in the MMR with Slide Connection Operation and Instructions Manual.

Installing the Component Housing Cover Adapter Assembly for BMR

1. Place the component housing cover over the housing.
2. Insert the tab on the top of the cover into the slot in the bottom of the lens ring.
3. Press in on the front of the cover until the cover hook snaps into place.
4. Line up the screw holes in the cover with the metal tab of mounting bracket and threaded inserts in the housing.
5. Place the neckstrap retaining brackets in the component housing cover sockets. Install the Phillips screws and tighten to secure the housing and neckstrap.
6. Insert the adapter assembly in the facepiece and hand-tighten.
7. Don the facepiece and check the face-to-facepiece seal. Follow the Facepiece Fit Check procedures in the BMR Operations and Instructions Manual.

INSTALLATION FOR MMR TRANSMITTER

INTRODUCTION

This kit supplies the parts necessary to add the NightFighter Transmitter to the following SCBA:

- MMR without a Quick-Fill Option
- MMR with an old-style (pipe thread) Quick-Fill Option installed
- MMR with a Redundant Alarm installed
- MMR with an ICM 2000/2000 Plus installed

You must be a Certified Repairperson to perform the installation procedures which follow.

COMMON PARTS

- 638166 O-ring
- 635277 Backup ring (3)
- 10003605 Spool

REQUIRED TOOLS

The tools contained in the Tool Kit supplied to Certified Repairpersons will be sufficient to install this kit.

WARNING!
Before starting the procedures below, be sure that the cylinder valve is completely closed. Be sure that nothing blocks the regulator outlet. Open the bypass valve to relieve any pressure in the system. Failure to follow this precaution can cause serious personal injury or death.

PREPARING AN MMR WITH NO QUICK-FILL OPTION INSTALLED

Note: If your SCBA does not have the Quick-Fill Option installed on the over-the-shoulder gauge line hose, you must remove the gauge from the MMR harness gauge hose.

1. Close the bypass valve fully.

WARNING!
Do not disconnect the alarm coupling nut when pressure is shown on the harness gauge. Always be sure that you have released all pressure from the regulator. Removing the coupling nut with the regulator pressurized may result in serious personal injury or death.

2. Unscrew the alarm coupling nut from the cylinder valve.

INSTALLATION FOR MMR

Removing the Gauge Adapter and Pressure Gauge

1. Using wrenches, unthread and remove the gauge adapter and the pressure gauge from the hose fitting.
2. Using the O-ring removal tool, remove the O-ring and backup ring from the end of the hose fitting. Discard the old O-ring and backup ring.
3. Go to Installing the Transmitter in the Adapter Block (below).

PREPARING AN MMR WITH AN OLD-STYLE (PIPE THREAD) QUICK-FILL OPTION INSTALLED

1. Using wrenches, unthread and remove the existing Quick-Fill block and pressure gauge from the gauge hose fitting.
2. Using the O-ring removal tool, remove the O-ring and backup ring from the end of the gauge hose fitting.

Note: You can salvage the Quick-Fill Coupling from the exiting block.

3. Place the Adapter block in a vise. Use protective sleeves to keep from damaging the block. Unthread the coupling from the block using a 1" deep-well socket. Set the adapter block aside.
4. Remove and discard the existing O-ring (P/N 635068) from the Quick-Fill coupling (P/N 485070). Use a plastic pick, a tooth pick or a bull nose dental pick.

PREPARING AN MMR WITH A REDUNDANT ALARM OR ICM INSTALLED

1. Using the 5/8" wrenches, loosen and remove the pressure gauge and redundant alarm from the pressure gauge hose. Set the gauge and alarm aside.
2. Using the O-ring removal tool, remove the O-ring and backup ring from the end of the hose.
3. Continue below.

INSTALLING THE COUPLING IN THE TRANSMITTER ADAPTER BLOCK

1. Place the Adapter block in a vise. Use protective sleeves to keep from damaging the block.
2. Insert the filter into the base of the block.
3. Wrap the coupling threads with transparent tape to prevent damage to the O-ring. Apply a thin film of Christo-Lube to the P/N 635068 coupling O-ring. Slide the new O-ring over the coupling threads. Remove the tape.
4. Thread the coupling into the block and tighten to 70-75 ft.-lbs. using a 1" deep-well socket.

INSTALLING THE TRANSMITTER ON THE GAUGE LINE

1. Apply a thin film of Christo-Lube to a **new** backup ring. Place the backup ring in the groove on the end of the hose fitting.
2. Apply a thin film of Christo-Lube lubricant to a **new** O-ring. Place the O-ring in the groove on the end of the hose fitting.
3. Insert the hose fitting into the Transmitter Adapter Block. Torque the adapter to 50-60 in.-lbs.

Note: If your apparatus is equipped with the Redundant Alarm or ICM, its pressure gauge will have the Spool included. Make sure that the spool stays with the gauge.

- Check that the spool is present in the gauge (Redundant Alarm or ICM) outlet.

Note: If the spool is not installed, you must first install an O-ring and backup ring on each end,

- Apply a thin film of Christo-Lube lubricant to two P/N 635277 backup rings. Place one backup ring in the groove on each end of the spool.
- Apply a thin film of Christo-Lube lubricant to two P/N 638167 O-rings. Place one O-ring in the groove on each end of the spool.

- Insert the spool into the pressure gauge Redundant Alarm, or ICM. The spool's larger-diameter hole must face **toward** the gauge.
- Thread the gauge (or Redundant Alarm) into the Transmitter Adapter Block. The gauge must screw in at least 6 1/2 turns with the jam nut firmly against the Transmitter Adapter Block.

Note: See Installation Instructions for ICM

CAUTION!
Do not tighten the gauge by hand. Use wrenches.

WARNING!
Do not try to screw the small-diameter (tapered thread) gauge (P/N 495764 or 495765) into the Transmitter Adapter. Use the larger-diameter gauge (P/N 10003610 or P/N 10003611) with a straight thread. Failure to follow this precaution can result in serious personal injury or death.

- If the gauge is not facing out (away from the shoulder pad), unthread the gauge **not more than one turn** to obtain this alignment. Hold the gauge to prevent turning. Tighten the jam nut against the adapter block to a torque of 200-225 in.-lbs.

WARNING!
Do not unthread the gauge more than one full turn. The gauge-adapter connection may leak, resulting in serious personal injury or death.

- Make sure the gauge guard (alarm boot on Redundant Alarm units) is in place around the gauge.
- Check that the dust cover is installed on the gauge hose above the Transmitter Adapter.

INSTALLATION MMR ICM 2000

REMOVING THE ICM

WARNING!

<p>Do not disconnect the alarm coupling nut when pressure is shown on the harness gauge. Always be sure that you have released all pressure from the regulator. Removing the coupling nut with the regulator pressurized may result in serious personal injury or death.</p>

Note: All repair procedures assume that the alarm assembly is disconnected from the apparatus cylinder.

1. Be sure the cylinder valve is completely closed.
2. Be sure that nothing blocks the regulator outlet. Open the bypass valve to relieve pressure in the system.

REMOVING ICM FROM THE QUICK-FILL ADAPTER BLOCK

1. Use a wrench to hold the Quick Fill Adapter Block or place Quick Fill Adapter Block in a vise using protective sleeves to keep from damaging the block.
2. Hold Quick-Fill Block with 5/8-inch wrench and slide the other wrench over Jam Nut and loosen Jam Nut counter clockwise.
3. Unthread ICM unit from Quick Fill Adapter Block.
4. Remove and discard the Jam Nut.

Note: Do not reuse the jam nut. Dispose of it immediately. Failure to follow this instruction could result in personal injury.

CLEANING

1. Apply alcohol to a Q-Tip applicator.
 - a. Wipe threads on ICM unit and wipe Jam Nut (Dull Surface Finish).
 - b. Wipe threads of ICM port of Quick-Fill Block.
2. Let alcohol dry for 15 seconds.

INSPECTION

1. Inspect the threads of ICM unit, Jam Nut, and Quick-Fill Block for any damage.

SPOOL

Note: If your apparatus is equipped with the Quick-Fill System and the ICM unit, it will have the Spool included. Make sure Spool is in the ICM unit.

1. Check that the spool is present in the ICM unit. If the spool is in the Quick-Fill Adapter Block, remove spool from Quick-Fill Block.
2. Inspect spool for damage. Replace O-Rings (P/N 638167) and Back-Up Rings (P/N 63527). Apply a thin film of Christo-Lube lubricant to O-Rings and Back-Up Rings.

CAUTION!
Only apply a thin film of lubricant to O-Rings and Back Up Rings. Not to spool.

3. Insert the spool into the ICM unit. The spool's larger-diameter hole must face toward the ICM unit.

REASSEMBLY

1. Apply Loctite 271 on two threads approximately a tenth (0.10) of an inch from the thread shoulder of ICM unit per view shown.
2. Thread the NEW jam nut (P/N 10003606 Dull Surface Finish) against the thread shoulder of the ICM unit. Apply Loctite 271 to three threads approximately one-sixteenth (0.060) of an inch from the end of the ICM unit.
3. Thread ICM unit into Transmitter Block until it stops. The Transmitter Block must be oriented with the coupling as shown in the figure below. To obtain this alignment. Unthread ICM unit not more than one full turn. Hold the ICM unit to prevent turning. Tighten the new jam nut against the Transmitter Adapter Block and torque to 200-225 in.-lbs. with a thin crowsfoot wrench.

LEAK TESTING

Checking for leaks and proper operation

1. Follow the User's Instructions supplied with the Air Masks to connect the alarm to a fully-charged cylinder.
2. Check that the bypass is closed.
3. Open the cylinder valve fully. The remote gauge should indicate the pressure in the cylinder.
4. Close the cylinder valve and watch the remote gauge. If the gauge needle drops more than 100 psi. in 10 seconds, check the Quick-Fill components for leaks using leak-detection solution. Correct any leaks before using this apparatus.
5. Be sure the cylinder valve is fully closed. Open the bypass valve to relieve all pressure from the system.
6. After all pressure is relieved from the system, close the bypass valve completely.
7. The Air Mask is now ready for service.

CHECKING FOR LEAKS AND PROPER OPERATION

1. Follow the User's Instructions supplied with the Air Mask to connect the Audi-Larm to a fully-charged cylinder.

2. Check that the MMR bypass is closed and the shut-off button is IN.

WARNING!

Do not try to connect a high-pressure (4500 psig) cylinder to a low-pressure apparatus. Even though the coupling nut will not thread all the way on the cylinder valve, and bleed holes in the cylinder valve will let the air escape and not enter the system, this is a dangerous condition. Failure to follow this precaution can result in serious personal injury or death.

3. Open the cylinder valve fully. The remote gauge should indicate the pressure in the cylinder.
4. Close the cylinder valve and watch the remote gauge. There should be no drop in pressure if the apparatus is leak-tight. If the gauge needle moves, check the components for leaks using leak-detection solution, following the Leak procedures in the SCBA Maintenance Manual. Correct any leaks before proceeding.
5. Be sure the cylinder valve is fully closed. Open the bypass valve to relieve all pressure from the system.
6. After all pressure is relieved from the system, close the bypass valve completely.
7. The Air Mask is now ready for service.
8. Read and be sure that you fully understand the instructions for operating the NightFighter System before use. These instructions are located in the NightFighter System Instruction Manual P/N 10035580.