

ICM[®] Tx and TxR Units

INSTALLATION INSTRUCTIONS FOR MMR AIR MASKS

WARNING

This instruction sheet must be read carefully by all persons who have or will have the responsibility for using or servicing the product. Like any complex piece of equipment, this kit from MSA will perform as designed only if it is used and serviced according to the instructions. Otherwise, it 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 installed, used, and serviced in accordance with the instructions in this instruction sheet. Please read and observe the WARNINGS and CAUTIONS inside. 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.



For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com



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ICM TX AND TXR UNIT

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DESCRIPTION

This kit supplies the parts required to install the ICM Tx and TxR Units on MMR SCBA from MSA. You can install this kit if the SCBA is an MMR. For a full description of the ICM Tx and TxR Units, please refer to the ICM Tx and TxR Units and Nightfighter Heads-Up Display User's Instructions, P/N 10058881(P/N 10068930 for ICM TxR Unit)

The ICM Tx and TxR Units functions as a PASS Device, pressure gauge, and as the transmitter for the NightFighter Heads-Up Display System.

⚠ WARNING

An SCBA cannot be upgraded until the following inspection and all required changes have been completed. Failure to follow this warning can result in serious personal injury or death.

NFPA-1500:1997 COMPLIANCE INSPECTION

Inspect the entire SCBA after it is cleaned and sanitized. NFPA-1500, as well as ANSI Standards Z88.2 and Z88.5, describe three levels of inspection procedures which are to be performed. Refer to these documents, or to an inspection program prepared by a health professional in establishing an inspection program.

⚠ WARNING

Do not inspect the apparatus before cleaning if there is danger of contacting hazardous contaminants. Clean and disinfect first, then inspect. Failure to follow this warning can cause inhalation or skin absorption of the contaminant and result in serious personal injury or death.

Prior to installation of the ICM Tx or TxR Units, the SCBA must be upgraded to be compliant with the 2002 edition of the NFPA-1981 standard. This standard requires the use of the NightFighter Heads-Up-Display receiver with either the NightFighter Transmitter or the ICM Tx or TxR Units. The components must be in good working order, free of damage and significant wear. (See SCBA Inspection Instructions). This standard requires the SCBA to have a URC fitting located within 4 inches of the cylinder valve.

KIT CONTENTS

This kit contains:

- ICM Tx or TxR Units
- Replacement O-ring — P/N 638167
- Replacement back-up ring — P/N 635277
- Four AA batteries (installed)
- Tether — P/N 10016029

REQUIRED TOOLS

- 5/8" wrenches (2)
- 9/16" wrench
- O-ring removal tool (MSA Special Tool, P/N 636060)
- Inch-pound torque wrench (must be capable of measuring the specified torques)
- 5/8" Crowsfoot
- Flat-blade screwdriver
- Christo-Lube Lubricant (P/N 604070)

⚠ WARNING

Only MSA-Certified Technicians are authorized to install the ICM Kit. Failure to follow this warning can result in serious personal injury or death.

INSTALLATION

If the MMR has the shoulder mounted quick-fill option, do not use the quick-fill adapter or Nightfighter Transmitter with the ICM Tx or TxR Units. To retain the shoulder mounted quick-fill option, order the replacement adapter kit (P/N 10020515).

⚠ WARNING

Close the cylinder valve fully and release all pressure from the system. Open the bypass valve to release any trapped air. Removing the pressure gauge with the system pressurized can result in serious personal injury or death.

MMR SCBA

1. Using the 5/8" and 9/16" wrenches, loosen and remove the pressure gauge, redundant alarm, ICM 2000, Nightfighter Transmitter, or any thread adapters from the pressure gauge hose.
2. Using the O-ring removal tool, remove the O-ring and back-up ring from the end of the hose.
3. Apply a thin film of Christo-Lube Lubricant to the O-ring and back-up ring from the kit, then install the back-up ring and then O-ring on the hose fitting.
4. Make sure that the protective guard or boot is installed around the ICM Tx or TxR Units.

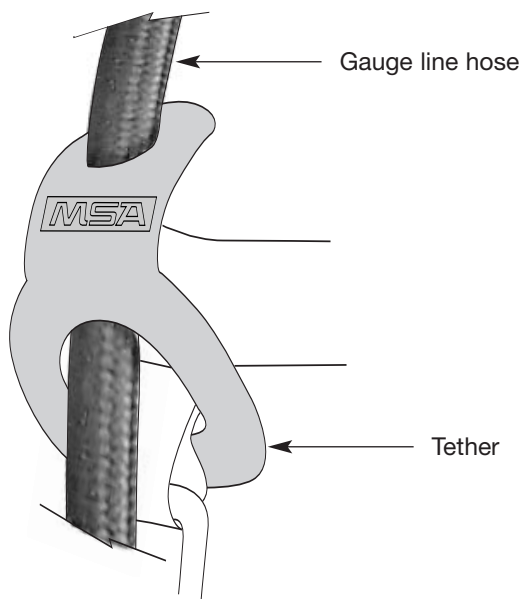
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5. Unthread the right adjusting strap from the right shoulder strap buckle.

Note: All procedures are performed with the MSA logo on the tether facing out and the large “D” hole at the bottom.

6. Insert the right shoulder strap buckle through the “D” hole of the tether.
7. Insert the gauge line hose through the small tether hole, under the MSA logo on the tether.

Note: The MSA logo must show.



8. Rethread the adjusting strap through the right shoulder strap buckle.
9. Insert the hose fitting into the ICM Tx or TxR Units until it is hand-tight, then back off 1/4 turn. Using the crowfoot on the inch-pound torque wrench, tighten the ICM jam nut on the hose fitting to 175-200 in. lbs.

Note: Make sure the ICM Tx or TxR Units and hose end can swivel after tightening.

LEAK TESTING

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 warning can result in serious personal injury or death.

3. Open the cylinder valve fully. The ICM Tx or TxR Units display should indicate the pressure in the cylinder.
4. Close the cylinder valve and watch the display on the ICM Tx or TxR Units. There should be no drop pressure if the apparatus is leak tight. If the display shows a change in pressure, check the fitting connections for leaks using leak detection solution, following the Leak Test Procedures in the SCBA Maintenance Manual. Correct any leaks before proceeding.
5. Be sure the cylinder valve is fully closed.
6. Open the bypass valve to relieve all pressure from the system.
7. After all pressure is relieved from the system, close the bypass valve completely.
8. The air mask is now ready for service.

TESTING AND USING THE INTEGRATED CONTROL MODULE

1. To test the ICM Tx or TxR Units, press and hold the alarm button. The full PASS alarm should sound.
 - a. Reset the alarm by pushing the side (reset) button twice.
 - b. Turn the unit off by pressing the side (reset) button twice more.
2. Before placing this device into service, the entire SCBA must be tested according to the ICM Tx or TxR Units and Nightfighter Heads-Up Display User's Instructions.

⚠ WARNING

If the low-battery alarm sounds (one beep every 5 seconds), replace the batteries immediately. Use only battery type Duracell MN1500 or Energizer E91 AA battery. Use of other batteries will void the intrinsic safety approval. A low-battery condition could cause the alarm to fail in use, resulting in serious personal injury or death.

Testing the ICM Tx or TxR Units and Nightfighter Receiver Functionality

Note: To conduct this test the cylinder must be full.

1. Close the bypass valve fully and open the cylinder valve.
2. Look through the facepiece lens at the LED panel. The LEDs should illuminate through the start-up sequence

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as the SCBA is pressurized. The start-up sequence follows:

- a. One Red LED ON/OFF
 - b. One Orange LED ON/OFF
 - c. One Yellow LED ON/OFF
 - d. Four Green LEDs ON/OFF
 - e. Three Green LEDs ON/OFF
 - f. Two Yellow LEDs ON/OFF
 - g. One Red LED ON/OFF
3. Verify that the green light on the ICM Tx or TxR Units are slowly flashing.
 4. Close the cylinder valve fully.
 5. Crack the bypass valve slowly to bleed off pressure until the ICM Tx or TxR Units pressure matches the following setpoints. Stop at each setpoint pressure to verify the correct receiver display.
 - a. 4500 psi cylinders
 - 4500psi – 4 green LEDs
 - 3375psi – 3 green LEDs
 - 2250psi – 2 amber flashing LEDs
 - 1125psi – 1 red flashing LED
 - b. 3000 psi cylinders
 - 3000psi – 4 green LEDs
 - 2250psi – 3 green LEDs
 - 1500psi – 2 amber flashing LEDs
 - 750psi – 1 red flashing LED
 - c. 2216 psi cylinders
 - 2216psi – 4 green LEDs
 - 1662psi – 3 green LEDs
 - 1108psi – 2 amber flashing LEDs
 - 530psi – 1 red flashing LED
 6. If the ICM Tx or TxR Units and Nightfighter Receiver pass the functional check, complete all remaining SCBA donning steps in the SCBA user's instructions manual.
 7. When the pressure falls below 200psig, turn the alarm off (sleep mode) by pressing the reset button two times in rapid succession.