

NightFighter™ Heads-Up Display System

OPERATING AND MAINTENANCE INSTRUCTIONS

Receiver/Transmitter URC Assembly

WARNING

Read this manual carefully if you have or will have the responsibility for using or servicing the product. The NightFighter 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 installed, used and serviced in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions. Please read and observe the WARNINGS and CAUTIONS inside. For any additional information relative to use or repair, write or 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.

The Nightfighter Heads-Up Display System 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 and modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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



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DESCRIPTION

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NIOSH APPROVAL INFORMATION CAUTIONS AND LIMITATIONS

- I - Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.
- N - Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- S - Special or critical User's Instructions and/or specific use limitations apply. Refer to User's Instructions before donning.

Note: See NIOSH Approval Label, Inserted in the Users Instructions for complete list of CAUTIONS and LIMITATIONS for the Respirator.

S - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. When NightFighter Heads-Up Display System is used as a gauge (Not in conjunction with standard pneumatic gauge) continuous operation mode must be used to maintain NIOSH approval.
2. Do not alter this unit. Altering will void the Intrinsic-Safety rating and may affect the Intrinsic-Safety of the device.
3. Misuse or abuse of the NightFighter Heads-Up Display System, or the equipment to which it is attached, or using this equipment in a manner or situation not intended by the manufacturers, may result in damage to the NightFighter Heads-Up Display System, or equipment connected to the NightFighter Heads-Up Display System, may result in personal injury or death to user or persons dependent on the user.
4. Always inspect the NightFighter Heads-Up Display System for damage before use. If damage is found, immediately remove the device from service.

Note: The NightFighter Heads-Up Display System is for use with an Ultra Elite Facepiece. It cannot be used without the proper installation of the Receiver and Bracket and Transmitter Kit from MSA.

Note: The NightFighter Heads-Up Display System Transmitter may be replaced by an ICM Tx Unit which performs the same basic tasks as the NightFighter Heads-Up Display System Transmitter. Refer to the users

instructions for the ICM Tx Unit and NightFighter Heads-Up Display System Receiver (PN 10058881).

Note: The NightFighter Heads-Up Display System has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency and, if not installed in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

DESCRIPTION

1. The NightFighter Heads-Up Display System allows a user to clearly and easily see air cylinder content while wearing an SCBA equipped with the Ultra Elite Facepiece.

Note: The NightFighter Heads-Up Display can only be used with an Ultra Elite Facepiece.

2. The NightFighter Heads-Up Display consists of three (3) separate assemblies:
 - Bracket assembly attached to an Ultra Elite Facepiece.
 - Receiver mounted on the bracket assembly.
 - Transmitter assembled to the gauge line. (See Installation Instruction P/N 10035581).
3. The NightFighter Heads-Up Display System's Receiver shows the user the air cylinder content in one quarter cylinder increments, from a full cylinder to an empty cylinder, by an LED light pattern.

DESCRIPTION

4. The NightFighter Heads-Up Display System's Transmitter is assembled to the gauge line hose. The transmitter sends a signal to the receiver (on the facepiece) of the air cylinder content.
5. The NightFighter Heads-Up Display System's Receiver has seven (7) LED light patterns.
6. The NightFighter Heads-Up Display System's Receiver has a photo sensor for the LED lights to automatically adjust the brightness of the LED based on to the brightness as measured outside of the facepiece.
7. The NightFighter Heads-Up Display System's Receiver will indicate a low battery by an Yellow LED light for the receiver and transmitter.

The NightFighter Heads-Up Display System operates using two (2) standard AAA alkaline batteries in the transmitter and two (2) standard AAA alkaline batteries in the receiver. The NightFighter Heads-Up Display System notifies the user when the batteries need to be replaced.

- The FireHawk M7 HUD operates using three standard AAA alkaline batteries and notifies the user when the batteries need to be replaced.

Note: Only FireHawk M7 HUDs that are marked “interchangeable” on the bottom side are compatible with this system. For detailed instructions on how to use the FireHawk M7 HUD with your system, please reference your FireHawk M7 HUD - Quick Reference Guide.

WARNING

Use only Duracell MN 2400, Energizer E92, or Eveready A92 AAA alkaline batteries in the TRANSMITTER. Use of other batteries will void the Intrinsic Safety approval. Failure to follow this warning can result in serious personal injury or death.

WARNING

Use only Duracell MN2400, Energizer E92, or Eveready A92 AAA alkaline batteries in the RECEIVER. Use of other batteries, or a combination of batteries from different manufacturers will void the Intrinsic Safety approval. Failure to follow this warning can result in serious personal injury or death.

WARNING

Use only Rayovac 824 LR03, Rayovac Ultrapro LR03, Energizer E92, Energizer Industrial EN92, Duracell MN2400, or Duracell Procell PC2400 alkaline batteries in the FireHawk M7 HUD. Use of other batteries, or a combination of batteries from different manufacturers, will affect the performance of unit and void the Intrinsic Safety Approval.

Intrinsically-Safe Rating

The NightFighter Heads-Up Display System is certified Intrinsically-Safe in the United States for use in Class 1, Div. 1, Groups A, B, C, D, and hazardous locations, Temperature T1.

Note: The intrinsically-safe level of any system which uses the NightFighter Heads-Up Display System is that of the lowest intrinsically-safe rating of any single component in the system.

CAUTION

Substitution of components may eliminate or compromise intrinsic safety.

NOTES

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SYSTEM OPERATIONS

PREPARATION FOR USE

Assembly of Receiver to Bracket

1. Lay the facepiece on its side.
2. Turn receiver so the thumbscrew is at the bottom of receiver and MSA logo of the receiver is to the right.
3. Align the receiver's two slots with the bracket's guide rails.
4. Slide the receiver's slots onto the bracket guide rail.
5. The thumbscrew of the receiver should align with the thumbscrew hole in the bracket.
6. Thread the thumbscrew into the bracket finger-tight.

SYSTEM OPERATIONS

CAUTION

The receiver and transmitter must be within approximately 12 to 15 inches of each other for the receiver's LED lights to work properly.

WARNING

Always test the NightFighter Heads-Up Display System for damage and be sure the system operates properly before entering any hazardous atmosphere. Do NOT use this device unless it passes all inspection and operational tests. Failure to follow this caution can result in serious personal injury or death.

- Don the SCBA following the Instructions supplied with the SCBA. (See Donning Procedures).

- Looking through the facepiece lens at the LED panel, they should be illuminated at the top of the receiver when SCBA cylinder valve is fully opened to pressurize the apparatus.

Note: The NightFighter Heads-Up Display System Receiver will go through a start-up sequence of flashing LEDs when the system is pressurized. The FireHawk M7 HUD Receiver does not display the start-up sequence on pressurization and will display pressure data. To verify LED functionality via the start-up sequence, remove and replace the battery on the FireHawk M7 HUD Receiver.

Note: With system pressurized, quick press of the Operation Button on the transmitter will show current pressure for ONLY 10 seconds.

- The LED lights in the receiver will automatically adjust for the brightness outside of the facepiece.
- The receiver will indicate a yellow LED light, after going through the start-up sequence, if a low battery is detected in the receiver or transmitter. (See Low Battery Warnings).

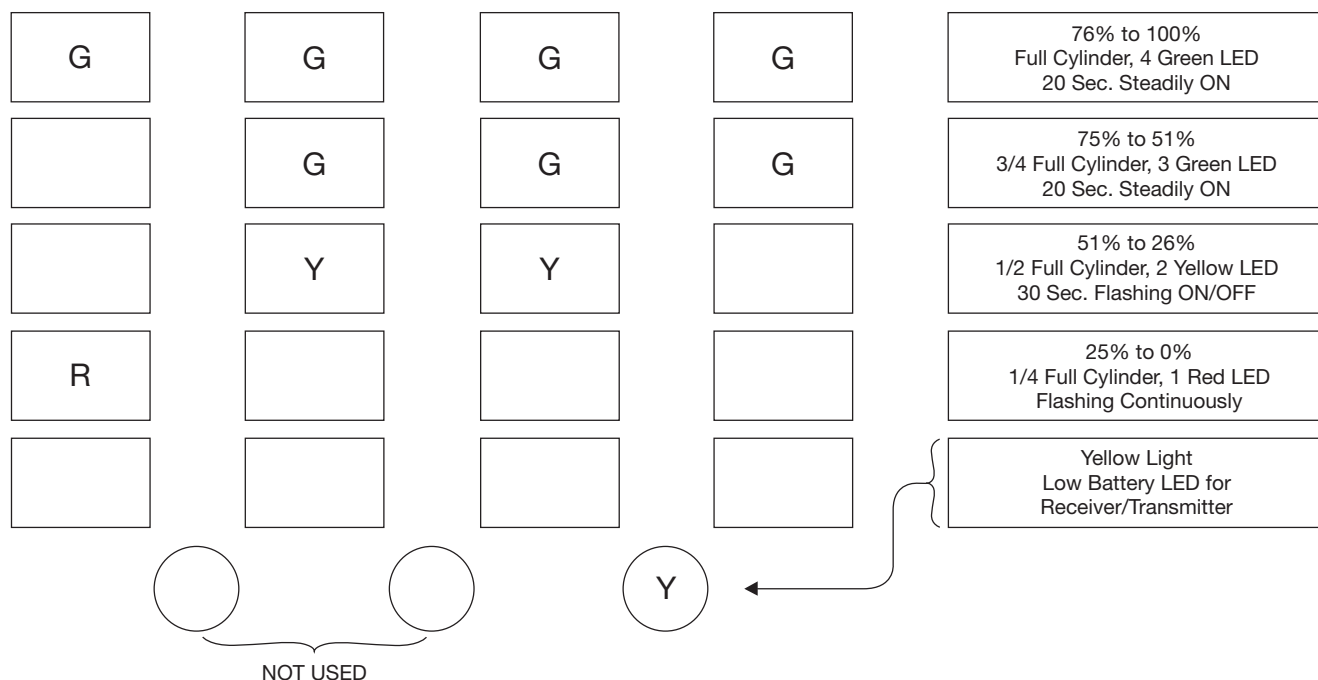
Low Battery Warnings

Note: There are different low battery warnings.

- If there is a low battery in the receiver, one short Yellow LED flash.
- If there is a low battery in the transmitter, double short Yellow LED flashes.

NightFighter Heads-Up Display System Chart

The receiver will show air cylinder content in 25% tank increments from full to empty.



SYSTEM OPERATIONS

- If there are low batteries in the receiver and transmitter, the Yellow LED will alternate single and double flashes.

CONTINUOUS OPERATIONS MODE

Note: Continuous Operations Mode can only be used when system is pressurized.

- Push the Operation Button on the transmitter and hold button in for 3 seconds. Once LED's lights come on release button.
- The receiver will show the last air cylinder content reading. The LED lights will stay on to show air cylinder content drop.

CAUTION

In the Continuous Operations Mode, the LIFE of the batteries will be shortened.

Turning Continuous Operations Mode OFF

- The Continuous Operations Mode will deactivate if low battery is present.
- Push Operation Button on the transmitter the second time, holding the button in for 3 seconds. Release the button once the LED lights go off.
- The receiver will show last air cylinder content reading. LED lights will go to Automatic Mode showing only air cylinder content drop in the percentage mode.

Note: The NightFighter Heads-Up Display System will automatically turn itself OFF, approximately 60 seconds after the apparatus is depressurized. (The single red LED light will flash at this time).

CLEANING AND MAINTENANCE

CLEANING AND DISINFECTING

1. Prepare a cleaning solution by adding Confidence Plus® Cleaning Solution (P/N 10009971) to water, following the instructions on the Confidence Plus Cleaning Solution container.
2. Cleaning by wiping with a damp sponge or cloth containing Confidence Plus Cleaning Solution from MSA. Follow the directions on the Confidence Plus Cleaning Solution container for mixing directions and recommended times.

CLEANING AND MAINTENANCE

The NightFighter Heads-Up Display System should be cleaned and disinfected after each use. Follow an established cleaning and disinfecting program. Failure to follow this procedure can damage the Nightfighter Heads-Up Display System.

Remove the Receiver from the Apparatus

Unthread the thumbscrew of NightFighter Heads-Up Display System Receiver and slide the receiver from the facepiece bracket.

Note: If a low battery is present in the receiver or transmitter, the LED Yellow light will flash when the system is in use (see "Low Battery Warnings" in the "During Use" section of this manual).

INSPECTION

1. Inspect the receiver module. Look for cracks or other signs of damage, which could allow contaminants to enter the module housing. Check that the battery compartment is clear of moisture or debris.
2. Reassemble the receiver module on the Ultra Elite Facepiece.
3. Function Check

Note: If a low battery is in the receiver or transmitter, the LED Yellow light will flash after going through the start-up sequence, (see Low Battery Warnings).

STORAGE

To store the NightFighter Heads-Up Display System components, be sure that the unit is in the OFF (LED is not illuminated) position. For prolonged storage, remove the batteries to prevent battery corrosion. Store units in a cool, dry place.

INSTALLING THE BATTERIES

In continuous service, battery life will vary depending on user conditions. The battery is not rechargeable.

Transmitter

WARNING

Use only Duracell MN 2400, Energizer E92, or Eveready A92 AAA alkaline batteries in the TRANSMITTER. Use of other batteries will void the Intrinsic Safety approval. Failure to follow this warning can result in serious personal injury or death.

1. Loosen the screws to open the battery doors in the transmitter.
2. Insert two AAA batteries according to the battery orientation noted inside the transmitter compartment.
3. Close the battery door and tighten the screws.

Receiver

WARNING

Use only Duracell MN2400, Energizer E92, or Eveready A92 AAA alkaline batteries in the RECEIVER. Use of other batteries, or a combination of batteries from different manufacturers will void the Intrinsic Safety approval. Failure to follow this warning can result in serious personal injury or death.

1. Loosen the screws to open the battery doors in the receiver.
2. Insert two AA batteries according to the battery orientation noted inside the receiver compartment.
3. Close the battery door and tighten the screws.

Replacing the Batteries in the FireHawk M7 HUD

WARNING

Replace the batteries in the FireHawk M7 HUD when the low battery LED flashes. Use only recommended battery types. Change the batteries in a non-hazardous area only. Failure to follow this warning can result in serious personal injury or death.

1. Unthread the battery cap (counter-clockwise) on the FireHawk M7 HUD battery tube.
2. Remove the battery cartridge from the FireHawk M7 HUD.
3. Remove the batteries and discard.
4. Inspect the battery cartridge for signs of damage such as corrosion on the battery terminals or cracks in the cartridge. If the battery cartridge is damaged, replace the cartridge immediately.

CLEANING AND MAINTENANCE

5. Insert three AAA alkaline batteries in the appropriate locations on the cartridge. Follow the notations on the cartridge to ensure proper battery orientation.
6. Insert the battery cartridge into the battery tube on the FireHawk M7 HUD.
7. Before installing the battery cap, verify that the o-ring is in place and free of damage and debris. If the o-ring is missing or damaged, replace o-ring. Failure to do so may allow moisture or contaminants into the battery tube and cause the device to not function properly.
8. Thread the battery cap on to the battery tube of the FireHawk M7 HUD (clockwise). Hand-tighten cap until snug. Do not over-tighten battery cap.
9. As the battery cap makes contact with the battery cartridge, verify that the FireHawk M7 HUD display turns on and goes through its start up sequence before turning off. The yellow LED should not be flashing.

Battery Disposal/Recycling

Dispose of or recycle batteries in accordance with all applicable federal, state, and local regulations.

⚠ WARNING

Do not dispose of the battery in fire. It may explode. Failure to follow this warning can result in serious personal injury or death.

QUICK-FILL SYSTEM OPERATION

QUICK-FILL SYSTEM OPERATION

The Quick-Fill System may be used for transfill operations as described in this manual. Standard operating procedures should be developed for use of the Quick-Fill System, unless using a 3000psi URC Assembly. The 3000psi URC Assembly cannot be used with Quick-Fill system.

WARNING

The 3000psi Operating System is **NOT** compatible with a 2216psi SCBA Cylinder. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

Do not use the Quick-Fill System with 3000psig cylinders. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

An air mask using the 3000psig URC Assembly without Quick-Fill System can receive (be a Receiver) cylinder pressure through the 3000psig URC Assembly. Do not use air mask with Quick-Fill System and 3000psig URC Assembly on the same air mask. Air mask with Quick-Fill System and 3000psig URC Assembly on same air mask will not allow the relief valve in the 3000psig URC Assembly to open as designed. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

The Quick-Fill System is not to be used as a "Buddy Breather" such that two (2) users are sharing the air supplied by one (1) approved SCBA cylinder simultaneously; doing so will void NIOSH approval. Failure to follow the above warnings may result in serious personal injury or death.

The Quick-Fill System must be used only by qualified, trained personnel who have carefully read and understood these instructions, cautions, and warnings. NIOSH approvals of SCBA from MSA are maintained while transfilling air **ONLY** if appropriate Quick-Fill System hose assemblies from MSA are used. Quick-Fill System hose assemblies and fittings are rated for a maximum working pressure of 4500psig.

NIOSH approval is maintained only when using the following hose assemblies: 485331, 802687, 802688, 802689, 802690, and 48332, for filling cylinders in IDLH atmospheres.

WARNING

For transfilling operations using the Quick-Fill System, do not use any transfilling hose assembly or fittings other than those supplied by MSA specifically for the Quick-Fill System. Use of any other transfilling hose assembly and/or fitting may result in serious personal injury or death, and will void NIOSH approval. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

Do not Transfill (be a Donor) using a 3000psi URC Assembly. The 3000psi URC Assembly has a Check Valve that does not allow cylinders to Transfill (be a Donor). Using the 3000psi URC Assembly to fill cylinders, the cylinder can only be filled to 2216psig. If the pressure exceeds 2216psig a relief valve in the URC Assembly will vent at approximately 2525psig or as low as 2400psig. A 3000psig cylinder can only be filled to 3000psig by using a secondary air source; the 3000psi URC Assembly cannot be used for filling a 3000psig Cylinder. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

Do not lubricate the Quick-Fill fittings. Do not permit oil, grease, or other contaminants to come in contact with the Quick-Fill fittings. The Quick-Fill hose assemblies and fittings are designed to be used with Quality Verification Level (Grade) D or better air as defined by ANSI/CGA G7.1. **TRANSFILLING AIR FROM A SECONDARY AIR SOURCE.** Failure to follow the above warnings may result in serious personal injury or death.

A secondary air source stores compressed breathing air until needed to refill SCBA air cylinders. Secondary air source pressure must be greater than air mask cylinder pressure. Examples of air sources include: cascade air cylinder refilling systems; high pressure compressor systems with a fixed reservoir; and an SCBA air cylinder which is not installed on an SCBA.

WARNING

Do not connect a Quick-Fill System equipped Low Pressure SCBA to an unregulated secondary air source with a pressure greater than 2216psig. The Quick-Fill System equipped low pressure air mask is rated for a maximum working pressure of 2216psig. As an additional safety feature, the SCBA has a pressure relief valve which automatically vents at 2525psig. Failure to follow the above warnings may result in serious personal injury or death.

QUICK-FILL SYSTEM OPERATION

⚠ WARNING

Do not connect a High Pressure SCBA to a secondary air source with a pressure greater than 4500psig. The high pressure air mask is rated for a maximum working pressure of 4500psig. Failure to follow the above warnings may result in serious personal injury or death.

PRECAUTIONS FOR USING QUICK-FILL SYSTEM

1. The Quick-Fill System can only be used to fill approved SCBA cylinders.
2. The Quick-Fill System is not to be used as a "Buddy Breather" such that two (2) users are sharing the air supplied by one (1) SCBA cylinder simultaneously doing so will void NIOSH approval.
3. The user is responsible for the air source, which must meet the requirements of Compressed Gas Association Specification ANSI/G-7.1, Quality Verification Level (Grade) D Gaseous Air or better, with a moisture dew point of not greater than -65°F (24ppm water vapor, normal). Pressures at the inlet of the Quick-Fill System hose must not exceed that of the SCBA (2216psig or 4500psig).
4. Using the 3000psi URC Assembly to fill cylinders, the cylinder can only be filled to 2216psig. If the pressure exceeds 2216psig a relief valve in the URC Assembly will vent at approximately 2525psig or as low as 2400psig. A 3000psig cylinder can only be filled to 3000psig by using a secondary air source; the 3000psi URC Assembly cannot be used for filling a 3000psig cylinder.
5. The user also is responsible for connecting the Quick-Fill hose to an appropriate secondary air source.
6. The cylinder must be inspected for damage before charging.
7. If filling cylinders in fresh air using the Quick-Fill System topping off the cylinder is recommended after the cylinder has cooled from initial fill. Topping off a cylinder after it has cooled will ensure proper service time.

FILLING INSTRUCTIONS FOR QUICK-FILL SYSTEM

1. To connect the Quick-Fill System hose.
 - a. Push the female fitting on the male fitting until it snaps in place. Pull on the hose to be sure the fitting snapped into place.
 - b. Turn the air source on.

⚠ CAUTION

If there are leaks from either female fitting, or along the hose, depressurize the hose and correct the problem. Such leakage can result in increased fill time.

2. To attach the Quick-Fill System hose to the SCBA.
 - c. Remove the rubber dust cap from the male inlet fit-

ting on the SCBA. Be sure that the cylinder valve is fully opened.

- d. Remove the rubber dust cap from the female fitting on the Quick-Fill System hose.
- e. Push the female fitting on the male fitting until it snaps in place. Pull on the hose to be sure the fitting snapped into place. Transfiling begins when the female fitting is snapped on the SCBA male fitting.

Note: If the secondary air source does not have a sufficient volume of air, the SCBA cylinder will not reach full service pressure. After approximately 45-60 seconds, pressure between the secondary air source and the SCBA cylinder will be equal.

⚠ CAUTION

Cylinder temperature will increase by approximately 45°F. The pressure gauge may show FULL immediately after transfilling, but cylinder pressure may decrease by as much as 190psig after the cylinder cools to room temperature. Actual service time may be reduced accordingly.

3. Compare the SCBA pressure gauge or ICM Unit reading to the secondary air source pressure gauge reading. If the readings are the same, pressure is equal.
4. To disconnect the Quick-Fill System hose after transfilling, pull the gray sleeve back. The hose fitting and the male fitting will separate. A hiss or pop may be heard as the fittings separate and the high pressure air is sealed off.
5. Immediately install the dust cover on the male fitting.
6. The SCBA cylinder is ready for service if the cylinder pressure gauge is on the corresponding color band.

QUICK-FILL SYSTEM EMERGENCY OPERATIONS

1. If you are transfilling in fresh air and the dust cover will not stay on the male fitting because air is leaking, correct the condition before using the SCBA.
2. If you are transfilling in a contaminated atmosphere and the dust cover will not stay on the male fitting because air is leaking:
 - a. Immediately reconnect the Quick-Fill System hose to seal off the leak and return to fresh air.
 - b. If you cannot reconnect the hose, reach behind and close the cylinder valve. Air pressure in the regulator will drop and the leak will slow down.
 - c. Quickly replace the protective dust cap on the male fitting. This will form a redundant seal.
 - d. Open the cylinder valve and return to fresh air immediately. The dust cover prevents dirt, water, CAUTION
 - e. and debris from entering the fitting and acts as a redundant seal.

QUICK-FILL SYSTEM OPERATION

TRANSFILLING BETWEEN SCBA FROM MSA (EMERGENCY BREATHING SYSTEM)

Note: The SCBA with the higher pressure reading is the donor. The SCBA with the lower pressure is the receiver. Transfilling between users of SCBA should be performed only during life-threatening emergencies or simulated training exercises. Both donor and receiver must return to fresh air immediately following the procedure.

WARNING

Do not transfill if the donor's audible alarm is ringing or NightFighter Heads-Up Display System/ ICM Unit Gauge are flashing. Failure to follow this warning may result in shorter escape time to return to fresh air, causing serious personal injury or death.

The audible alarm begins ringing and NightFighter Heads-Up Display System begins flashing to indicate that the pressure in the cylinder has been reduced to 25% of its rated working pressure. Remaining service time must be used for escape to fresh air. If the **donor's** audible alarm begins ringing or NightFighter Heads-Up Display/ICM Unit Gauge begins flashing during transfilling, the **donor** should disconnect and preserve his escape time.

1. If the donor's alarm is not ringing or NightFighter Heads-Up Display System/ICM Unit Gauge are not flashing and you have sufficient air to transfill air to a receiver, (greater than 1000psig for Low Pressure SCBA and greater than 2000psig for High Pressure SCBA), follow these steps.
 - a. Remove the 3 foot emergency transfill hose from its protective pouch.
 - b. Remove the rubber dust cover from both female fittings on the Quick-Fill System hose assembly.
 - c. Remove the rubber dust cover from the male Quick-Fill System fitting.
 - d. Push the female fittings on to the male fittings until they click in place. Pull on the hose to be sure it snapped in place.

WARNING

If serious leakage is noticed from either of the two female fittings, or anywhere along the hose, disconnect the female fittings and return to fresh air immediately. Failure to follow this warning may result in serious personal injury or death.

- e. After approximately 30-60 seconds, pressure between the SCBA cylinders will be equal.
- f. Disconnect the Quick-Fill System hose from the SCBA by pulling the gray sleeve back on both ends. A hiss or pop may be heard as the fittings separate and the high pressure air is sealed off.
- g. Immediately install the dust cover on the Quick-Fill System male fitting. The dust cover prevents dirt, water, and debris from entering the fitting and acts as a redundant seal.

QUICK-FILL SYSTEM EMERGENCY OPERATIONS

1. If the dust cover will not stay on the male fitting because air is leaking:
 - a. Immediately reconnect the Quick-Fill System hose to seal off the leak and return to fresh air.
 - b. If you cannot reconnect the hose, reach behind and close the cylinder valve. Air pressure in the regulator will drop and the leak will slow down.
 - c. Quickly replace the protective dust cap on the male fitting. This will form a redundant seal.
 - d. Open the cylinder valve and return to fresh air immediately.
2. Preparing the Quick-Fill System for Storage:
 - a. Press in on the center of the quick-disconnect dust cap to release any pressure in the Quick-Fill System hose.
 - b. Roll up the hose and place it in its protective pouch.

Note: Only persons trained in MSA Maintenance are authorized to repair or disassemble the Quick-Fill System. If repairs are required, contact your nearest MSA office. Call 1-800-MSA-2222.

NOTES

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URC ASSEMBLY OPERATION

URC ASSEMBLY OPERATION

All NFPA 1981-2002 approved SCBA are equipped with a URC Assembly (Universal Rescue Connection) fitting. The URC Assembly is a male quick-fill inlet for use by Rapid Intervention Crews for emergency filling operations. The system also includes an automatically resetting pressure relief valve. The SCBA can also be equipped with a shoulder-mounted Quick-Fill System, unless using a 3000psi URC Assembly, the 3000psi URC Assembly cannot be used with Quick-Fill System.

WARNING

The URC Assembly is not to be used as a "Buddy Breather" such that two (2) users are sharing the air supplied by one (1) approved SCBA cylinder simultaneously; doing so will void NIOSH approval. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

The URC Assembly must be used by trained Rapid Intervention Crews only using procedures developed for rapid intervention. Improper use can result in serious personal injury or death.

Note: The URC Assembly may be used for transfill operations as described in this manual. Standard operating procedures should be developed for use of the URC Assembly or Quick-Fill System.

WARNING

An air mask using the 3000psig URC Assembly without Quick-Fill System can receive (be a Receiver) cylinder pressure through the 3000psig URC Assembly. Do not use air mask with Quick-Fill System and 3000psig URC Assembly on the same air mask. Air mask with Quick-Fill System and 3000psig URC Assembly on same air mask will not allow the relief valve in the 3000psig URC Assembly to open as designed. Failure to follow the above warnings may result in serious personal injury or death.

The URC Assembly must be used only by qualified, trained personnel who have carefully read and understood these instructions, cautions, and warnings. NIOSH approvals of SCBA from MSA are maintained while transfilling air ONLY if appropriate Quick-Fill hose assemblies from MSA are used. URC Assembly or Quick-Fill hose assemblies and fittings are rated for a maximum working pressure of 4500psig.

NIOSH approval is maintained only when using the following hose assemblies: 485331, 802687, 802688, 802689, 802690, and 48332, for filling cylinders in IDLH atmospheres.

WARNING

Do not Transfill (be a Donor) using a 3000psi URC Assembly. The 3000psi URC Assembly has a check valve that does not allow cylinders to Transfill (be a Donor). Using the 3000psi URC Assembly to fill cylinders, the cylinder can only be filled to 2216psig. If the pressure exceeds 2216psig a relief valve in the URC Assembly will vent at approximately 2525psig or as low as 2400psig. A 3000psig cylinder can only be filled to 3000psig by using a secondary air source; the 3000psi URC Assembly cannot be used for filling a 3000psig cylinder. Failure to follow the above warnings may result in serious personal injury or death.

WARNING

For filling operations using the URC Assembly, do not use any transfilling hose assembly or fittings other than those supplied by MSA specifically for the URC Assembly or Quick-Fill System. Use of any other transfilling hose assembly, fitting, or cylinder may result in serious personal injury or death, and will void NIOSH approval. Failure to follow the above warning may result in serious personal injury or death.

WARNING

Do not lubricate the URC Assembly fittings. Do not permit oil, grease, or other contaminants to come in contact with the Quick-Fill fittings. The Quick-Fill hose assemblies and fittings are designed to be used with Quality Verification Level (Grade) D or better air as defined by ANSI/CGA G-7.1. TRANSFILLING AIR FROM A SECONDARY AIR SOURCE. Failure to follow the above warnings may result in serious personal injury or death.

A secondary air source stores compressed breathing air until needed to refill SCBA air cylinders. Secondary air source pressure must be greater than air mask cylinder pressure. Examples of air sources include: cascade air cylinder refilling systems; high pressure compressor systems with a fixed reservoir; and an SCBA air cylinder which is not installed on an SCBA.

WARNING

Do not connect a High Pressure SCBA to a secondary air source with a pressure greater than 4500psig. The high pressure air mask is rated for a maximum working pressure of 4500psig. Failure to follow the above warnings may result in serious personal injury or death.

URC ASSEMBLY OPERATION

PRECAUTIONS FOR USING URC ASSEMBLY

1. The URC Assembly can only be used to fill approved SCBA cylinders.
2. The URC Assembly is not to be used as a "Buddy Breather" such that two (2) users are sharing the air supplied by one (1) SCBA cylinder simultaneously doing so will void NIOSH approval.
3. The user is responsible for the air source, which must meet the requirements of Compressed Gas Association Specification ANSI/G-7.1, Quality Verification Level (Grade) D Gaseous Air or better, with a moisture dew point of not greater than -65°F (24ppm water vapor, normal). Pressures at the inlet of the Quick-Fill System hose must not exceed that of the SCBA (2216psig or 4500psig).
4. Using the 3000psi URC Assembly to fill cylinders, the cylinder can only be filled to 2216psig. If the pressure exceeds 2216psig a relief valve in the URC Assembly will vent at approximately 2525psig or as low as 2400psig. A 3000psig cylinder can only be filled to 3000psig by using a secondary air source; the 3000psi URC Assembly cannot be used for filling a 3000psig cylinder.
5. The user also is responsible for connecting the Quick-Fill hose to an appropriate secondary air source.
6. The cylinder must be inspected for damage before charging.
7. If filling cylinders in fresh air using the URC Assembly topping off the cylinder is recommended after the cylinder has cooled from initial fill. Topping off a cylinder after it has cooled will ensure proper service time.

FILLING INSTRUCTIONS FOR USING THE URC ASSEMBLY

For Rapid Intervention Crews:

Rapid Intervention Crews should use a separate air supply such as MSA's RescueAire™ portable air supply system to fill SCBA in a IDLH atmosphere.

1. To connect the URC Assembly to the Quick-Fill System hose (P/N 485391 URC Assembly or Quick-Fill System fitting installed on the air source):
 - a. Push the female fitting on the male fitting until it snaps in place. Pull on the hose to be sure the fitting snapped into place.
 - b. Turn the air source on.

⚠ CAUTION

If there are leaks from either female fitting, or along the hose, depressurize the hose and correct the problem. Such leakage can result in increased fill time.

2. To attach the Quick-Fill System hose to the URC Assembly:
 - a. Remove the rubber dust cap from the male inlet fit-

ting on the URC Assembly. Be sure that the cylinder valve is fully opened.

- b. Remove the rubber dust cap from the female fitting on the Quick-Fill System hose.
- c. Push the female fitting on the male fitting until it snaps in place.
- d. Pull on the hose to be sure the fitting snapped into place. Filling begins when the female fitting is snapped on the URC Assembly.

⚠ WARNING

If serious leakage is noticed from either of the two female fittings, or anywhere along the hose, disconnect the female fittings and return to fresh air immediately. Failure to follow this warning may result in serious personal injury or death.

Note: If the secondary air source does not have a sufficient volume of air, the SCBA cylinder will not reach full service pressure. After approximately 45-60 seconds, pressure between the secondary air source and the SCBA cylinder will be equal.

⚠ CAUTION

Cylinder temperature will increase by approximately 45°F. The pressure gauge may show FULL immediately after transfilling, but cylinder pressure may decrease by as much as 190psig after the cylinder cools to room temperature. Actual service time may be reduced accordingly.

3. Compare the SCBA pressure gauge or ICM Unit reading to the secondary air source pressure gauge reading. If the readings are the same, pressure is equal.
4. To disconnect the Quick-Fill System hose after transfilling, pull the gray sleeve back. The hose fitting and the URC Assembly will separate. A hiss or pop may be heard as the fittings separate and the high-pressure air is sealed off.
5. Immediately install the dust cover on the URC Assembly male fitting.
6. The SCBA cylinder is ready for service if the cylinder pressure gauge is on the corresponding color band.

URC ASSEMBLY OPERATION

URC ASSEMBLY EMERGENCY OPERATIONS

⚠ WARNING

NIOSH Does NOT approve the use of the URC Assembly to transfer air from the cylinder of one SCBA to another SCBA. Failure to follow the above warnings may result in serious personal injury or death.

1. If you are in fresh air and the dust cover will not stay on the URC Assembly because air is leaking, correct the condition before using the SCBA.
2. If you are filling the URC Assembly in a contaminated atmosphere and the dust cover will not stay on the URC Assembly because air is leaking:
 - a. Immediately reconnect the Quick-Fill System hose to seal off the leak and return to fresh air.
 - b. If you cannot reconnect the hose, reach behind and close the cylinder valve. Air pressure in the regulator will drop and the leak will slow down.

- c. Quickly replace the protective dust cap on the URC Assembly male regulator fitting. This will form a redundant seal.
- d. Open the cylinder valve and return to fresh air immediately. The dust cover prevents dirt, water, and debris from entering the fitting and acts as a redundant seal.

The audible alarm with URC Assembly begins ringing and NightFighter Heads-Up Display System begins flashing to indicate that the pressure in the cylinder has been reduced to 25% of its rated working pressure. Remaining service time must be used for escape to fresh air.

Note: Only persons trained in MSA Maintenance are authorized to repair or disassemble the URC Assembly. If repairs are required, contact your nearest MSA office. Call 1-800-MSA-2222.

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



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