

Leak Testing:

FireHawk® M7 Air Mask

FireHawk® M7XT Air Mask

FireHawk® M7 Responder® Air Mask

MAINTENANCE AND REPAIR



For More Information, call 1-877-673-3473 (FIRE) or Visit Our Website at www.MSAafety.com

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FIREHAWK M7, FIREHAWK M7XT, AND FIREHAWK RESPONDER AIR MASK

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NOTE: Leak testing procedures are the same for all components of the FireHawk M7 Air Mask, FireHawk M7XT Air Mask, and FireHawk M7 Responder Air Mask, except the Responder second stage regulator. See **Firehawk Responder Second Stage Regulator** section of this manual for instructions.

Perform leak testing when the air mask fails any inspection step, following reassembly, or as part of scheduled maintenance. The air mask must hold system pressure without leaks to provide adequate protection.

Leak Testing quickly identifies components in need of repair or replacement. Use Snoop Leak Detector (P/N 600920).

NOTE: Do not use soapy water for leak testing.

▲ WARNING

DO NOT tighten fittings or connectors when the system is pressurized. Close the cylinder valve. Be sure nothing blocks the regulator outlet. Relieve pressure from the system by slowly opening the bypass valve. Failure to follow this warning may cause fittings or connectors to fail, resulting in serious personal injury or death.

Cylinder

1. Apply leak test solution to the cylinder neck.



- a. If bubbles appear, replace the cylinder valve sealing o-ring and test again. (See **FireHawk M7 and FireHawk M7XT Cylinder and Valve Maintenance and Repair**, P/N 10093083, for instructions.)

Cylinder Valve

1. Turn the cylinder valve handwheel clockwise to ensure that the cylinder valve is completely closed.



2. Draw a bubble of leak test solution across the outlet port and the two bleed holes on the thread.

- a. If the bubble expands, there is an air leak through the valve. Repair or replace the valve and test again. (See **FireHawk M7 and FireHawk M7XT Cylinder and Valve Maintenance and Repair**, P/N 10093083, for instructions.)

Pressure Gauge

1. Remove the gauge guard.



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2. Apply leak test solution to the pressure gauge stem, cover, and bezel.



3. If bubbles appear, replace the pressure gauge and test again. (See **FireHawk M7 and FireHawk M7XT Cylinder and Valve Maintenance and Repair, P/N 10093083**, for instructions.)

NOTE: On 4500 psi gauges, apply leak test solution to the vent plug or tape.

4. If bubbles appear, replace the pressure gauge and test again. (See **FireHawk M7 and FireHawk M7XT Cylinder and Valve Maintenance and Repair, P/N 10093083**, for instructions.)

Handwheel and Safety Plug

1. Apply leak test solution to the cylinder valve handwheel and safety plug.



- a. If bubbles appear, repair or replace the cylinder valve and/or safety plug and test again. (See **FireHawk M7 and FireHawk M7XT Cylinder and Valve Maintenance and Repair, P/N 10093083**, for instructions.)

Audi-Larm® Audible Alarm

1. Pressurize the system.
 - a. Connect the coupling nut to the cylinder and hand tighten.
 - b. Ensure that the Firehawk Second Stage Regulator is off.
 - c. Ensure that the bypass is closed.
 - d. Slowly open the cylinder valve all the way.

Relief Valve

1. Inspect the relief valve.



- a. Check for a loose or missing label.
- b. Check that the label is not perforated and that the relief valve ports are not visible.

NOTE: If the label is perforated or the relief valve ports are visible replace the relief valve and test for leaks.

2. Apply leak test solution to relief valve body and thread.

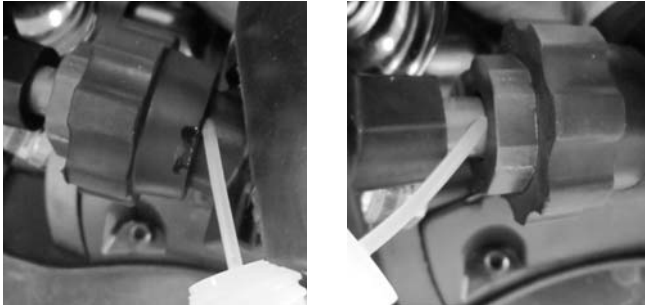


- a. If bubbles appear, relieve system pressure by closing the cylinder valve and opening the bypass valve.
3. Replace the relief valve and test again. (See **FireHawk M7XT Audi-Larm Alarm Maintenance and Repair, P/N 10093084**, or **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10147452**, for instructions.)

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Coupling Nut

1. Apply leak test solution to both sides of the coupling nut.



- a. If bubbles appear, close the cylinder valve and open the bypass valve to relieve pressure.
- b. Tighten the coupling nut and test again.

NOTE: If tightening the coupling nut doesn't correct the leak, replace the nipple o-ring and test again. (See **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10093084**, or **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10147452**, for instructions.)

Nipple

1. Apply leak test solution to the pipe thread where the nipple enters the Audi-Larm body.



- a. If bubbles appear, replace the nipple and test again. (See **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10093084**, or **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10147452**, for instructions.)

Alarm Adjusting Nut

1. Apply leak test solution to the adjusting nut.



- a. If bubbles appear, replace piston o-rings and test again. (See **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10093084**, or **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10147452**, for instructions.)

High Pressure Hose

1. Apply leak test solution where the high pressure hose connects to the Audi-Larm body.



- a. If bubbles appear, replace the high pressure hose and test again. (See **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10093084**, or **FireHawk M7 Audi-Larm Alarm Maintenance and Repair, P/N 10147452**, for instructions.)

PR14™ First Stage Regulator

NOTE: The FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator cannot be leak tested while assembled to the mounting bracket because the seat is inaccessible. To avoid unnecessary disassembly eliminate all other leaks before testing the PR14 Regulator.

1. If necessary, remove the cylinder and uninstall the regulator from the mounting bracket. (See **FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator Maintenance and Repair, P/N 10093085** for instructions.)
2. Reinstall the cylinder and reconnect the Audi-Larm Audible Alarm.

3. Ensure that the u-clips are securely installed. For added safety, use the PR14 Test Bracket (P/N 10069386) to secure the u-clips.



4. Pressurize the system.

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5. Apply leak test solution where the high pressure hose connects to the PR14 First Stage Regulator.



- a. If bubbles appear, replace the high pressure hose back-up ring and o-ring, and test again. If the leak persists, replace the high pressure hose. (See **FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator Maintenance and Repair** for instructions.)

Pressure Relief Valve

1. Apply leak test solution to the pressure relief valve where it inserts into the regulator body.



- a. If bubbles appear, replace the relief valve o-ring, and test again. (See **FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator Maintenance and Repair** for instructions.)

Seat

1. Apply leak test solution to the seat.



- a. If bubbles appear, replace the seat o-rings and test again. (See **FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator Maintenance and Repair** for instructions.)

Regulator Cap

1. Apply leak test solution to the joint between the body and the regulator cap.



- a. If bubbles appear, replace the:
 - regulator cap o-ring
 - piston o-rings
 - seal ring
- b. Test for leaks after replacing the o-rings and seal ring.

Intermediate Pressure and Harness Gauge Hoses

1. Apply leak test solution to the connections between the intermediate pressure and harness gauge hoses and the PR14 First Stage Regulator block.

Intermediate Pressure Hose



- a. If bubbles appear at the intermediate pressure hose, replace the o-ring and test again. (See **FireHawk M7 and FireHawk M7XT PR14 First Stage Regulator Maintenance and Repair** for instructions.)
- b. If bubbles appear at the harness gauge hose, replace the back-up ring and o-ring as needed, and test again. (See **FireHawk M7 Carrier and Harness Assembly Maintenance and Repair / Installing the Right Shoulder Strap, P/N 10093081, or FireHawk M7XT Carrier and Harness Assembly Maintenance and Repair / Installing the Left Shoulder Strap, P/N 10147420, for instructions.**)

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2. Apply leak test solution to the connections between the hose, adapter, swivel, and jam nut.



- a. If bubbles appear, replace the back-up ring and ring as needed, and test again. (See **FireHawk M7 and FireHawk M7XT Control Module Maintenance and Repair**, P/N 10093088, for instructions.)

FireHawk M7 or FireHawk M7XT Second Stage Regulator

1. Apply leak test solution to the connection between the hose union and nipple.



- a. If bubbles appear, replace the o-ring and test again. (See **FireHawk Second Stage Regulator Fire Service Maintenance and Repair**, P/N 10147454, for instructions.)

2. If applicable, apply leak test solution between threaded connection of hoses.



3. Apply leak test solution to the bypass body as shown.



- a. If bubbles appear, replace the bypass assembly o-rings and test again. (See **FireHawk Second Stage Regulator Fire Service Maintenance and Repair**, P/N 10147454, for instructions.)

FireHawk Responder Second Stage Regulator

1. Apply leak test solution to the connection between the hose union and nipple.



- a. If bubbles appear, replace the o-ring and test again. (See **FireHawk Responder Second Stage Regulator Maintenance and Repair**, P/N 10096394, for instructions.)



2. Apply leak test solution to the bypass body as shown.
 - a. If bubbles appear, replace the bypass assembly o-rings and test again. (See **FireHawk Responder Second Stage Regulator Maintenance and Repair**, P/N 10096394, for instructions.)

3. Apply leak test solution to the nipple.



- a. If bubbles appear, replace the bypass assembly and stem o-rings and test again. (See **FireHawk Responder Second Stage Regulator Maintenance and Repair**, P/N 10096394, for instructions.)