

# Product Information News

May 30, 2003

## AUDI-LARM™ AUDIBLE ALARM TESTING

### New Flow Test and Audi-Larm Maintenance Requirements

MSA is announcing several changes to the instructions for the MMR Firehawk, MMR 1/4 Turn, and BMR Air Masks as they relate to the air mask flow test frequency and the maintenance of the Audi-Larm Audible Alarm. The major changes are as follows:

- The flow test frequency for all air masks is changed to every year in accordance with the NFPA 1852 requirement for an annual flow test.
- A new Audi-Larm Tester was developed and must be used to evaluate the Audi-Larm at each flow test.
- Prior to testing the Audi-Larm, all actions required by previously issued field notices must be verified as completed.
- A new Audi-Larm overhaul kit was developed.

The instruction manuals and sections affected by the changes are as follows:

- **Operation and Instruction Manuals**
  - o Flow test and overhaul requirements (revised)
- **Certified Maintenance Instruction Manuals**
  - o Audi-Larm test requirements (new)
  - o Audi-Larm Audible Alarm Tester (new)
  - o Audi-Larm Disassembly and Repair (revised)
  - o Troubleshooting the Audi-Larm (new)

The attached pages include the above sections and changes indicated. They must be used in place of the existing instructions for the applicable sections. For your convenience, you may place copies of the attached pages in your instruction manual binders and remove the appropriate existing pages.



For More Information: Call (1-800-MSA-2222) or Visit Our Website at ([www.MSAnet.com](http://www.MSAnet.com))



Be Sure.  
Choose MSA.

MINE SAFETY APPLIANCES COMPANY  
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230

# FLOW TEST AND OVERHAUL REQUIREMENTS

## FLOW TEST AND OVERHAUL REQUIREMENTS

Your SCBA Regulator and Audi-Larm Alarm Assembly must be flow tested and overhauled at specific time intervals. These Maintenance Procedures must be performed by a trained repairperson or at a Certified Service Center. Contact your MSA sales representative or call the MSA Customer Service Center at 1-877-MSA-3473. They will supply the information you need to meet these requirements.

The required replacement/overhaul schedule for self-contained breathing apparatus from MSA is based on apparatus usage on an individual basis. The frequency required for SCBA overhaul depends upon how often the apparatus is used. MSA breathing apparatus must be overhauled based on the actual level of usage of the SCBA, rather than on time alone.

Overhaul is covered in the Regulator and Audi-Larm Disassembly and Repair sections and includes installation of the Regulator and Audi-Larm overhaul kits.

MSA breathing apparatus must be flow tested every year using an MSA approved flow test device.

The following table summarizes MSA's required frequency for overhaul and flow testing:

Average SCBA Usage*	Required Overhaul Frequency	Required Flow Test Frequency
1 cylinder per day or greater	Every 3 years	Every year
1 cylinder every other day	Every 8 years	Every year
1 cylinder per week or less	Every 15 years	Every year

A decision to retire apparatus should be based on a SCBA's performance data and whether that data meets the specified level of performance as defined in maintenance requirements from MSA.

\*The unit of SCBA use is defined as the consumption of one 30 min. cylinder of air. Example: If three cylinders of air are used, the SCBA would be considered to have been used three times.

If an assessment of the SCBA's usage can not be estimated or determined, then the SCBA shall be overhauled every three years.

# AUDI-LARM TEST REQUIREMENTS

## AUDI-LARM TEST REQUIREMENTS

Verify that the following actions have been performed in response to the applicable field safety notices issued by MSA:

### 1. July 19, 1995 Notice

**Affected Units:** The following items purchased from April 1993 through July 1995:

- o Custom 4500 Air Masks (MMR & BMR).
- o Ultralite Air Masks (MMR & BMR) using a 3000 psig cylinder.
- o Ultralite Air Masks (MMR & BMR) with the Quick-Fill System.
- o Replacement Audi-Larm Assemblies.
- o Replacement Audi-Larm overhaul kits.
- o Replacement Audi-Larm o-rings.

Also affected are any Audi-Larms overhauled between April 1993 and July 1995.

#### **Action Specified in Notice:**

- o Install Audi-Larm overhaul kit (P/N 814874).

**CARE TECHNICIAN ACTION:** If the above action was not completed in accordance with the July 19, 1995 Notice, do not complete it now. Instead, install the new Audi-Larm overhaul kit (P/N 10045831) before testing the Audi-Larm.

### 2. December 19, 2000 Notice

**Affected Units:** The following items purchased from April 1997 through May 1998:

- o All Air Masks.
- o All Audi-Larms used on supplied-air respirator systems.
- o Replacement Audi-Larm Assemblies.
- o Replacement Audi-Larm overhaul kits.
- o Replacement valve pellets.

#### **Action Specified in Notice:**

- o Perform functional test as described in the Operation and Instructions Manual.
- o Install a new overhaul kit (P/N 814874) in any Audi-Larm not functioning properly.
- o Return for replacement any unused Audi-Larm overhaul kits (P/N 814874) or valve pellets (P/N85051).

**CARE TECHNICIAN ACTION:** If the above action was not completed in accordance with the December 19, 2000 Notice, it must be completed; however, rather than installing the kit indicated above, install the new Audi-Larm overhaul kit (P/N 10045831) before testing the Audi-Larm.

### 3. July 23, 2002 Notice

**Affected Units:** All purchase dates apply:

- o All Air Masks.
- o All Audi-Larms used on supplied-air respirator systems.
- o Replacement Audi-Larm Assemblies.

#### **Action Specified in Notice:**

- o Single screw Audi-Larm bell: Install upgrade bell attachment kit (P/N 10040817). Refer to Product Information News (P/N 10041212).
- o Dual screw Audi-Larm bell: Inspect the Audi-Larm to ensure that the bell is tight. If the bell can be turned or tilted to any degree by hand, remove and reattach the bell. Refer to Product Information News (P/N 10041213, Rev. 1).

**CARE TECHNICIAN ACTION:** If the above action was not completed in accordance with the July 23, 2002 Notice, it must be completed before testing the Audi-Larm.

For additional information on the above field safety notices or Product Information News (PIN) articles, contact MSA Customer Service toll-free at 1-877-MSA-3473.

**Prior to testing the Audi-Larm, verify that the actions**

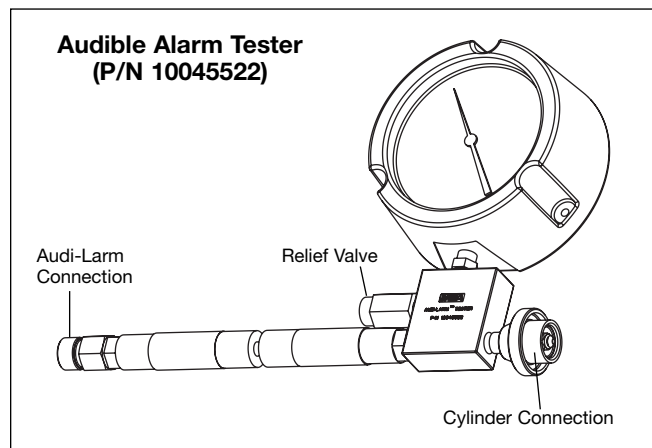
#### **⚠ WARNING**

**specified in the above referenced notices were completed, or take the Care Technician Action. This maintenance must be completed before testing the Audi-Larm. Failure to follow this warning can cause Audi-Larm malfunction, resulting in serious personal injury or death.**

# AUDI-LARM AUDIBLE ALARM TESTER

## AUDI-LARM AUDIBLE ALARM TESTER

The Audi-Larm Audible Alarm must be tested as part of the annual SCBA flow test. The Audi-Larm test must be performed using an Audi-Larm Audible Alarm Tester P/N 10045522. No other alarm test device is acceptable.



## PORTABLE AIR-SUPPLY AND AIR-LINE AUDI-LARMS

An adapter for the tester will be available in the future to enable Certified Repair Technicians to test Audi-Larms used on air-line cascade respirator systems. Additionally, MSA is preparing a special procedure for testing a PortAire® Aire® System. A separate *Product Information News* will be issued to cover this information. Until then, refer all requests for testing of these types of Audi-Larms to MSA Customer Service at 1-877-MSA-3473.

## AUDI-LARM DISASSEMBLY AND REPAIR

MSA is changing the Audi-Larm Disassembly and Repair section to include new requirements for installation of the overhaul kit.

In addition, the procedure for setting the alarm ring point is now covered in the Audi-Larm Audible Alarm Tester Instructions.

# AUDI-LARM DISASSEMBLY AND REPAIR

**Note:** Review the General Notes in the introduction before starting repairs.

## **⚠ WARNING**

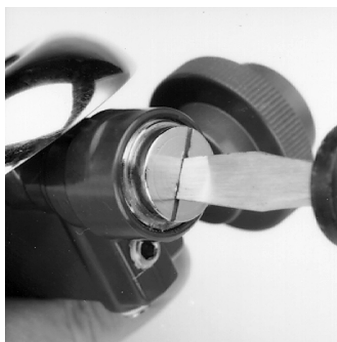
**Relieve all pressure from the system. Close the cylinder valve fully. Be sure that nothing blocks the regulator outlet. Open the bypass valve fully to release any trapped air. Failure to follow this precaution may result in serious personal injury or death.**

## DISASSEMBLING THE AUDI-LARM

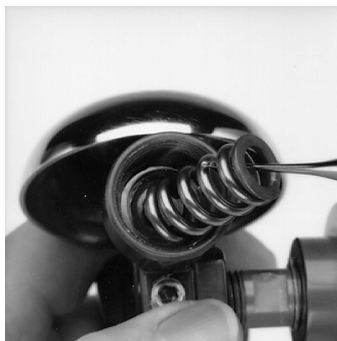
1. Remove the Alarm coupling nut from the cylinder valve.

**Note:** To remove the alarm from the high pressure refer to User Maintenance Manual.

2. Using a flat-blade screwdriver, remove the adjusting screw.



3. Lift out the spring.



4. Use retaining-ring pliers to remove the retaining ring. Discard the retaining ring.



5. Unscrew and remove the piston plug, and the O-ring.



6. Thread the extraction tool into the back of the piston.



## **⚠ CAUTION**

**Be careful not to damage the piston valve seat on the opposite end of the piston.**

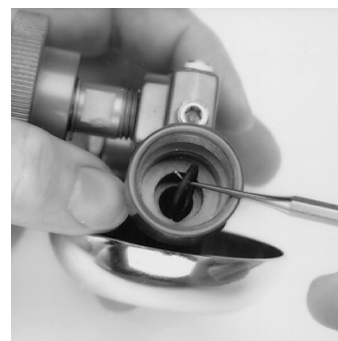
7. Gently rock the tool back and forth while pulling out to remove the piston.



8. Turn the Alarm over to remove the striker and spring from the alarm housing. Discard striker and valve pellet.

9. Remove the extraction tool.
10. Use the O-ring removal tool to remove the O-ring from beneath the shoulder of the alarm housing.

11. Push the small end of the tool down behind the O-ring, then twist to pull the O-ring out. Discard the O-ring.



THIS PAGE INTENTIONALLY LEFT BLANK

# AUDI-LARM DISASSEMBLY AND REPAIR

## REASSEMBLING THE AUDI-LARM

**Note:** All O-rings must be replaced with new O-rings supplied in the Audi-Larm Kit (P/N 10045831). DO NOT reuse O-rings.

1. Install a new striker and valve pellet assembly from the Audi-Larm Kit (P/N 10045831), making sure that it is clean and lint-free. Use only the factory produced striker and valve pellet assembly from this kit. Do not assemble or use any previously available strikers and valve pellets.
2. Apply a thin film of Christo-Lube Lubricant to the large O-ring, and install the O-ring under the shoulder inside the valve housing. Use the small plastic stick to push the O-ring into place.

3. Place the spring over the striker. Insert the spring and striker into the alarm housing, with the rubber valve pellet side facing you. Using the plastic stick, push on the striker to be sure that the tip of the striker extends through the hole so that it can touch the bell.



4. Using the O-ring removal tool remove the piston O-ring and the piston plug O-ring. Discard these o-rings.

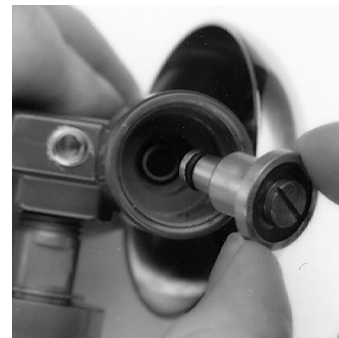


5. Apply a thin film of Christo-Lube lubricant to the new piston O-ring and piston plug O-ring and install them.
6. Insert the piston plug into the piston and tighten with a screwdriver.

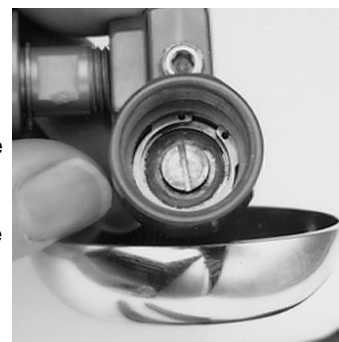
### **⚠ WARNING**

**Be careful not to damage the piston seat during installation. Damage to the piston seat may cause the Audi-Larm to malfunction.**

7. Insert the piston into the alarm housing and press it into place. The striker will extend through the forward hole toward the bell.



8. Using retaining-ring pliers, install a new retaining ring. Insert the ring with its flat side facing you. The ring must seat in the groove located about 1/16" above the piston.



THIS PAGE INTENTIONALLY LEFT BLANK



## AUDI-LARM DISASSEMBLY AND REPAIR

- Place a thin film of Christo-Lube lubricant on both ends of the spring.
- Insert the spring into the alarm housing.

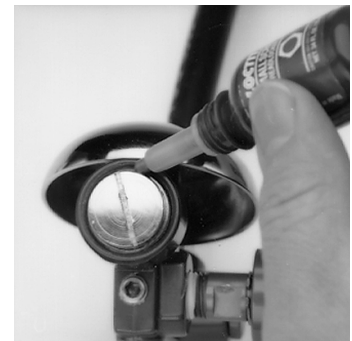
- Insert the adjusting screw into the alarm housing and tighten about 1-1/2 complete turns.



- Verify proper Audi-Larm operation by performing the required ring-up, set-point, and ring-down tests specified in the Audi-Larm Audible Alarm Tester Instructions.

**Note:** Upon completion of Audi-Larm assembly test procedures, perform the following step.

- Place one drop of Loctite #222 on the adjusting screw threads.



- Ensure cylinder valve is fully closed. Open the bypass valve to release air pressure, then remove the Audi-Larm Assembly from the Alarm Tester. When you have completed the Audi-Larm Assembly repair and adjustment procedure, check the alarm for air leaks. Refer to the Audi-Larm Leak-Testing section.

**Note:** Check that the alarm bell screws are secure (See Bell section).

THIS PAGE INTENTIONALLY LEFT BLANK

## AUDI-LARM TROUBLESHOOTING

Trouble	Probable Cause	Remedy
Audi-Larm does not ring when pressurized.	Audi-Larm bell is loose	Install new screws and washers. Refer to PIN P/N 10041212 (Single Screw) and PIN P/N 10041213 (Dual Screw)
	Dirt or foreign matter may have affected the o-ring seals inside the Audi-Larm or the proper operation of the Audi-Larm striker.	Overhaul Audi-Larm.
	Internal Leak	Overhaul Audi-Larm. Overhaul Audi-Larm and replace piston.
Audi-Larm leaks	Audi-Larm insert o-ring is leaking	Try to hand tighten coupling nut further onto the cylinder valve. If this is unsuccessful, the insert o-ring may need to be replaced.
	Leakage at the pipe thread fitting	Completely leak test all fittings on the Audi-Larm assembly. Relieve pressure, and then tighten if necessary.
Audi-Larm does not fully pressurize	Cylinder pressure too low	Replace cylinder with a fully pressurized cylinder.
	Internal leak	Overhaul Audi-Larm and replace piston.
	External leak	Replace Coupling- nut nipple O-ring.
Audi-Larm does not start to ring at required setting	Adjustment too high	Adjustment: Turn the adjusting screw counter clockwise (out) 1/8 turn. Retest the Audi-Larm.
	Adjustment too low	Adjustment: Turn the adjusting screw clockwise (in) 1/8 turn. Retest the Audi-Larm.
Audi-Larm does not ring continually all the way down to 200 psig. or lower.	Internal leak	Overhaul Audi-Larm.
		Overhaul Audi-Larm and replace piston.

**Note:** If after performing the *remedy*, the Audi-Larm still does not perform properly during the Audi-Larm test, it must be replaced.

THIS PAGE INTENTIONALLY LEFT BLANK