



# 3 Mini-CAF

Hand-Held CAF System



**Operations, Training and Maintenance Manual**

November 1, 2008

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# CHAPTER 1

## INTRODUCTION

### **1-1. MANUFACTURER:**

- a. The TRI-MAX 3 Mini-CAF is manufactured by:

Kingsway Sales and Marketing, LLC.  
6680 Lockheed Dr Ste B  
Redding, CA 96002

Phone: (530) 722-0272  
Fax: (530)722-0450  
E-mail: dmahrttrimax@aol.com  
Website: www.trimax.us

- b. The manufacturer is totally committed to supporting the owners and operators of the TRI-MAX 3 system. Don't hesitate to contact the factory either by telephone, E-Mail, FAX, or the Website if you have a problem that you can't solve or have a product improvement idea. The TRI-MAX website has a Comment/Assistance Page for obtaining product information, providing customer feedback, and soliciting technical assistance.

### **1-2. TESTING AND CERTIFICATION:** The Tri-Max 3 has been tested and certified by the Southwest Research Institute to meet the UL Standard 711 sections 5.2 and 6.2. It was rated as a 2A and 10B system when used in conjunction with a UL 162 rated Class A or B foam.

### **1-3. WARRANTY:** The Tri-Max 3 has a 2-year limited warranty to be free from defects in material and workmanship beginning on the date of delivery. The manufacturer's liability is limited solely to the repair or replacement of the defective part and does not include labor. The warranty card that accompanies the unit should be returned to the manufacturer. The manufacturer shall in no way be liable for any incidental or consequential damages which may result from any defects in material or workmanship or from the breach of any express or implied warranty. The manufacturer does not warranty the performance of the system impacted by environmental conditions, abuse and end user competence. If the optional protective cover is purchased with and used on the system, the Limited 2-Year Warranty shall be extended to a 5 year period. Individuals with a warranty claim should contact the manufacturer and provide the Serial Number for the system which can be found on the data plate on the foam tank.

- 1-4. WARNINGS, CAUTIONS, & NOTES:** Are used to emphasize the important and critical instructions and are used for the following conditions:

**WARNING:** An operating procedure, practice, etc., which if not correctly followed could result in personal injury or loss of life.

**CAUTION:** An operating procedure, practice, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment.

**NOTE:** An operating procedure, condition, etc., which is essential to highlight.

**1.5. MANUAL CHANGES AND REPRODUCTION:**

**A. MANUAL CHANGES:**

- (1) The manufacturer will provide equipment update changes to this manual. Each summary sheet should be filed in the front section of the manual prior to the Table of Contents.
- (2) This manual and the associated updates will be posted on the TRI-MAX web site.
- (3) Users can help improve this manual by providing any errors or inconsistencies to the manufacturer. All recommendations submitted should reference the appropriate chapter or paragraph (if applicable) and the name and contact (phone, e-mail, fax, etc) for the person submitting the information.
- (4) This manual supersedes all previous Operating Instructions for the Tri-Max 3 system.

**B. REPRODUCTION:** Reproduction of all information, illustrations, and checklists in this manual is authorized.

## CHAPTER 2

### SYSTEM DESCRIPTION

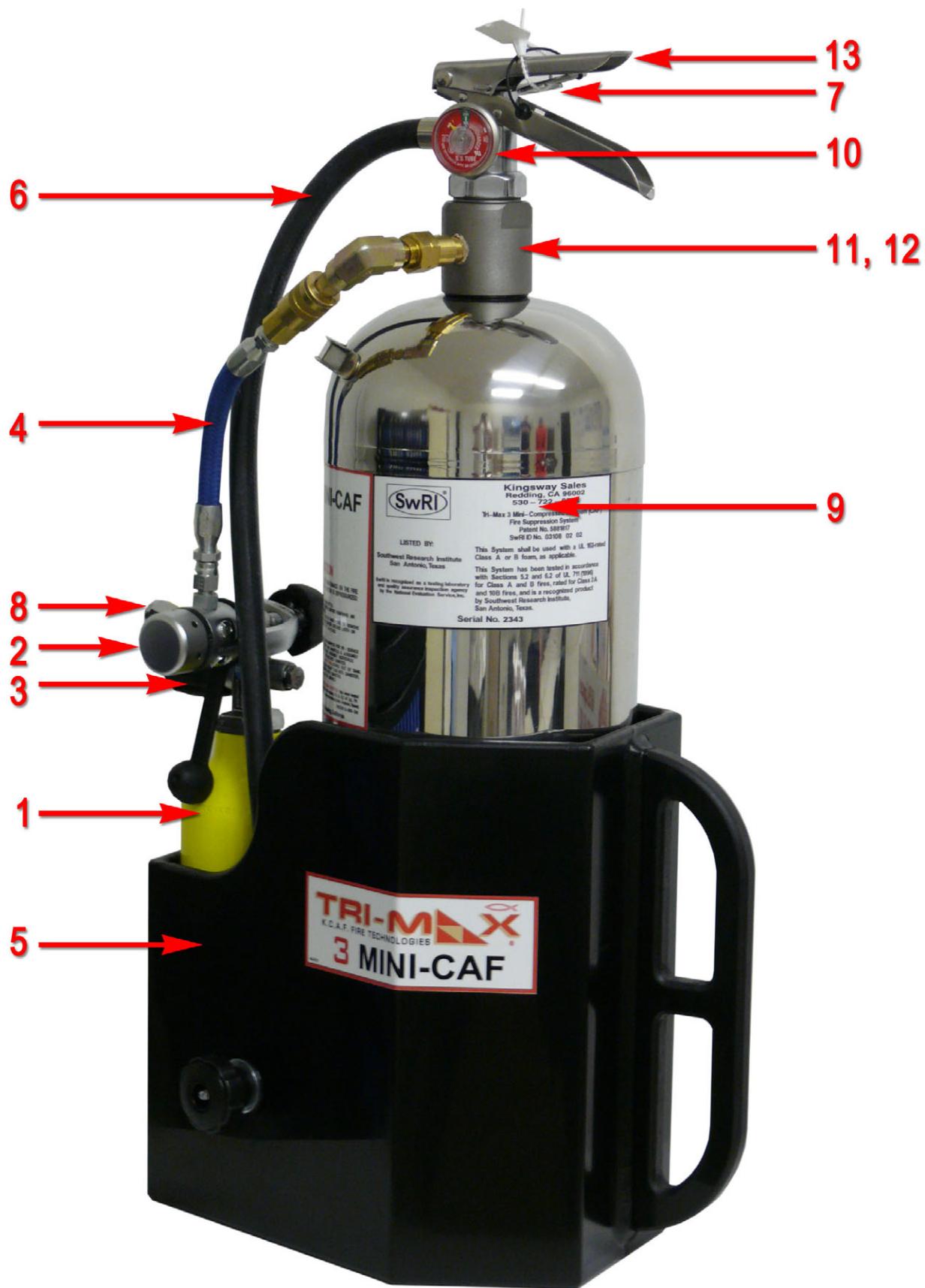
- 2-1. GENERAL INFORMATION:** The Tri-Max 3 Compressed Air Foam fire suppression system uses compressed air to propel fire fighting foam. Thousands of tight radius bubbles quickly cool and smother a fire by providing a thick vapor-sealing blanket of foam that virtually eliminates re-ignition. The foam will adhere to horizontal and vertical surfaces. This system allows the operator to seal a fuel spill with foam thus reducing or eliminating a potential fire. The 3 gallon system produces approximately 60 gallons of finished foam product with a flow rate of 90 gpm. Duration time is approximately 40 to 80 seconds depending on the discharge rate. Foam coverage is 400 sq. ft. with a discharge distance of 35 feet or more. The system can be easily recharged by the operator.
- 2-2. MODEL CONFIGURATION:** The Tri-Max 3 consists of a stainless steel Premix Tank which holds 3 gallons of pre-mixed foam agent with a large removable cap to facilitate easy foam and water filling. A 6 CF 3000 psi Scuba air tank is attached to the Premix Tank. Additional components include, a 3000 psi Scuba regulator matched to the discharge flow rating, a  $\frac{1}{4}$  inch 3000 psi air pressure hose, and a  $\frac{1}{2} \times 20$  inch rubber discharge hose. A squeeze type discharge valve allows the operator to adjust the foam flow. A handle is included on the component mounting bracket on later models for carrying the unit.
- 2-3. SPECIFICATIONS:**
- a. Height: 26 inches    Width: 9  $\frac{1}{2}$  inches    Weight loaded: 36 lbs.
  - b. Tank capacity: 3 gallons
  - c. Finished foam capacity: 60 gallons (400 Square feet)
  - d. Discharge flow rate: 90 gal/minute
  - e. Foam discharge distance: 35-40 feet in a no wind condition
  - f. Air Cylinder (Scuba): One 6 cu.ft. 3000 psi
  - g. Scuba Regulator: One 3000 psi
  - h. Dispensing hose:  $\frac{1}{2} \times 20$  inches hard rubber.
  - i. Air pressure hose: Aeroquip  $\frac{1}{4}$  3000 psi
  - j. Recharge time: 2-4 minutes
  - k. Variable foam expansion: 5-40:1
- 2-4. TRANSPORTING:** The Tri-Max 3 should be thoroughly secured when transporting in trailers and vehicles. An optional vehicle mount is available from the manufacturer.

#### **2.5 SYSTEM COMPONENTS:**

1. **AIR CYLINDER** is a 6 CF SCUBA cylinder operating at 3000 psi.
2. **AIR CYLINDER REGULATOR** is a 3000 psi Scuba regulator which has a 5000 psi. gauge and a preset pressure of 120-140 psi.
3. **AIR CYLINDER VALVE** located above the Air Cylinder has a turn handle to pressurize the system.
4. **AIR PRESSURE HOSE** is  $\frac{1}{4}$  x  $7\frac{1}{2}$  inch high pressure rated at 3000 psi, with a quick release connector.
5. **COMPONENT HOLDER** secures the Premix Tank and the Air Cylinder. The latest model has a hand carrying grip. The Component Holder utilizes a knob to control the plates that secure the Air Cylinder and Premix Tank inside the Holder.
6. **FOAM DISCHARGE HOSE** is  $\frac{1}{2}$  x 20 inch rubber.
7. **FOAM DISCHARGE VALVE** is a squeeze type with variable flow control and a hole for the safety pin.
8. **REGULATOR HIGH PRESSURE GUAGE** is located on the side of the Regulator, and shows the Air Cylinder pressure.
9. **PREMIX TANK** is a 3 gallon stainless steel unit which has a working pressure of 100-140 psi.
10. **PREMIX TANK PRESSURE GAUGE** has recharge, normal (Green), and overcharged ranges. Note: When the Pre-Mix Tank is pressurized, it is normal for the PREMIX TANK PRESSURE GUAGE to read just over normal. This is due to the 140 psi operating pressure of the tank.
11. **PREMIX TANK MANIFOLD** threads on and off the Premix Tank for filling.
12. **PRESSURE RELIEF VALVE** is located on the side of the MANIFOLD behind the Pressure Gauge and activates at 175 psi.
13. **SAFETY PIN** located in the squeeze grip prevents inadvertent activation of the system. A tamper seal may be used in this location as pictured.



## TM 3 COMPONENTS



# **CHAPTER 3**

## **OPERATING INSTRUCTIONS**

**3-1. INITIAL SETUP:** The Tri-Max 3 comes fully assembled and the Air Cylinder is charged unless it is shipped by air. Users should turn on the Air Cylinder and verify there is 2500-3000 psi pressure. Service the cylinder if the pressure gauge is in the recharge area. The 3 gallon agent storage tank must be filled prior to use. Liquid dish soap can be used in the Premix Tank if training is going to be conducted. The proper Aqueous Film Forming Foam (AFFF) solution should be selected based on operational ambient temperatures and type of anticipated fires prior to putting the unit in service.

**3-2. FOAM SOLUTION PRODUCTS:**

- a. The TRI-MAX 3 can use any available foam chemical solution. Recommended foam chemicals include Class A foam, Class B foam, and Freeze Protected Foam. All recommended foams are EPA, USDA, and OSHA approved.
- b. The standard AFFF foam can be mixed with water at a ratio of 1 quart (3%AFFF) or 2 quarts (6%AFFF) with 3 gallons of water in the agent storage tank if the sustained ambient temperature is above freezing (32 degrees F/ 0 degrees C).
- c. It is recommended that Freeze Protected Foam be used when positioning the units outside during extended subfreezing weather.

### **3-3. SYSTEM DEPRESSURIZATION**

#### **CAUTION**

**Ensure the system is depressurized before conducting  
any maintenance on the system**

- a. Close the Air Cylinder Valve.
- b. Depress the squeeze grip handle.

### **3.4. PREVENTATIVE MAINTENANCE CHECKS & SERVICES (PMCS)**

- a. Recommend the PMCS CHECKLIST be completed every month.
- b. Personnel conducting the PMCS should be thoroughly familiar with the Tri-Max 3 system and the information contained in this manual.

**TRI-MAX 3**  
**PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**  
**CHECKLIST**

**DATE COMPLETED** \_\_\_\_\_

**NAME** \_\_\_\_\_ **SIGNATURE** \_\_\_\_\_

- \_\_\_\_ 1. Conduct a visual inspection of the system for chaffing lines, loose lines, dirt, corrosion or damage.
- \_\_\_\_ 2. Check to ensure the tamper seal is installed on the Air Cylinder knob.

Check the Air Cylinder for normal operating pressure (2500-3000 psi.) if the tamper seal is broken.

The preferred method is to use the Pressure Tester Gauge. Remove the Air Regulator, connect the Pressure Tester Gauge to the Air Cylinder, turn the Air Cylinder on and note the air pressure.

The alternate method is to turn the Air Cylinder on and check the pressure on the small gauge on the Air Regulator; however, this method is not as accurate and will result in a small air loss since the Premix tank is also pressurized.

- (1) Conduct a leak check if the Air Cylinder pressure is below 2500 psi:
  - (a) Turn on Air Cylinder.
  - (b) Spray a light soap solution on all air lines and fittings to check for leaks.
  - (c) Tighten leaking fittings, replace O-rings, or replace defective components.
- (2) Remove, recharge and replace the Air Cylinder.
- (3) Replace the tamper seal.

- \_\_\_\_ 3. Check to ensure the safety pin is installed.

**(continued on following page)**

**TRI-MAX 3  
PMCS CHECKLIST  
(Continued)**

\_\_\_\_\_ 4. Note any other problems:

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### **3-5. NORMAL OPERATING INSTRUCTIONS**

#### **WARNING**

**Consult the foam manufacturer's MSDS for the proper precautions and treatments if the foam is sprayed into the facial area (eyes, nose, mouth).**

#### **NOTE**

**The Air Cylinders should normally be left in the closed position.**

- a. Charge the system by turning the Air Cylinder Valve counter clockwise.
- b. Remove safety pin.
- c. Extend the hose.
- d. Grasp the squeeze discharge valve with one hand while holding discharge hose with other hand.
- e. Aim the Foam Discharge Hose at the base of the fire and squeeze the Foam Discharge Hose.
- f. Shoot the system in 5 to 10 second bursts across the base of the fire or directly on objects that are on fire.

### **3-6. COLD WEATHER OPERATIONS**

- a. It is recommended that the Freeze Protected Foam be used when freezing is anticipated.
- b. There will be a degraded performance in extreme cold weather since the density of the foam is greater. The foam blanket will be wetter and the discharge distances will decrease due to the increased viscosity of the foam. Also, the foam will tend to skip a short distance on a frozen surface so the person employing the system should aim short of the intended target.

### **3-7. EMERGENCY PROCEDURES**

#### **a. NO FOAM DISCHARGE**

- (1) Be sure safety pin is removed.
- (2) Check to see if Air Cylinder is full.
- (3) Verify the Air Cylinder valve is turned completely on.
- (4) Check to see that steel braided air pressure hose is attached securely.
- (5) Check for obstruction in discharge hose.

**b. SHUT DOWN PROCEDURES**

- (1) Close the Air Cylinder Valve.
- (2) Replace safety pin.
- (3) Secure discharge hose.

**3-8. FUEL SPILL PROCEDURES**

- a. The hazard of fuel spills can be reduced by applying a blanket of foam on top of the fuel to seal the vapors and reduce the chance of combustion.
- b. Cover any personnel who have been drenched with fuel with foam to prevent combustion.
- c. Placing the thumb over the end of the dispersing hose may assist in foam dispersion.

**WARNING**

**Do not hit the fuel directly with an unrestricted flow of foam or with the Nozzle in the full open position. This could spread the fuel creating a greater hazard or cause injury to refuel personnel. Personnel exposed to foam should follow the instructions listed in the foam manufacturer's Material Safety Data Sheet (MSDS).**

# **CHAPTER 4**

## **TRAINING**

### **4-1. TRAINING PROGRAM**

- a. Training on the Tri-Max 3 should be conducted annually for all operators.
  - b. Maintainers should complete initial training and refresher training as required.
  - c. Trainers should be thoroughly familiar with the system, fire behavior, hazard identification, and basic firefighting techniques.
  - d. Operator training should be accomplished using a “hands-on” approach in a live fire scenario whenever possible. Live fire training can often be accomplished through coordination with a local fire department.
- 4-2. TRAINING AID:** Liquid dish soap can be mixed with water at a ratio of 1 quart per 3 gallon tank. Put the soap in last to maximize the volume of solution available.

### **4-3. TRAINING PROGRAM OF INSTRUCTION (POI):**

#### **a. OPERATORS & MAINTAINERS**

- (1) Component Identification (Pages 5-6)
- (2) PMCS (Pages 8-10)
- (3) Normal and Cold Weather Operating Instructions (Page 11)
- (4) Emergency Procedures (Page 12)
- (5) Fuel Spill Operations (Page 12)
- (6) Operation, preferably on a live fire scenario (Page 13)                                  Hands-On

#### **b. MAINTAINERS**

- (1) Instructions and Technical Assistance (Page 15)                                  General Maintenance
- (2) (Pages 15-16)    Special Tools and Repair Parts
- (3) Visual Tamper Seals (Page 17)
- (4) Foam Products (Page 7)
- (5) Maintenance Log (Pages 18-19)
- (6) Servicing Under Normal and Cold Conditions (Page 20-22)
- (7)    Scheduled Maintenance (Page 22)
- (8) Unscheduled Maintenance (Pages 22-23)
- (9) Troubleshooting Procedures (Page 24)
- (10) Storage and Protection (Page 24)

## **CHAPTER 5**

### **MAINTENANCE**

#### **5.1. GENERAL INSTRUCTIONS**

- a. The Tri-Max 3 was designed to be simple to operate and maintain. The system has few moving parts. However, it is a vital lifesaving piece of equipment that requires some minimal maintenance.
- b. It is highly recommended that the monthly Preventative Maintenance Checks and Services (PMCS) be accomplished.
- c. It is also recommended that responsible personnel be assigned the responsibility to service and maintain the system.
- d. The final important task is maintaining thorough documented records of the maintenance performed. These records should include copies of the completed PMCS Checklists, when the Premix Tank was filled and the type/mixture of foam in each unit, component changes, and any unusual problems encountered. A MSDS sheet should be maintained for the type of foam being utilized. Recommend a tag be affixed to each unit that lists the date and initials of the individual performing the PMCS, the foam type and mixture ratio (if any) in the Premix Tank, and the location of the MSDS.

**5-2. TECHNICAL ASSISTANCE:** The manufacturer is totally committed to providing technical assistance whenever required. Maintainers should contact the manufacturer whenever a problem arises that cannot be solved using the information in this manual or when unusual situations are encountered.

**5-3. SPECIAL TOOLS:** There are no special tools required for the Tri-Max 3.

#### **5-4. REPAIR PARTS**

- a. The Tri-Max 3 repair parts are listed on Page 16. All parts can be obtained from the manufacturer by using a credit card or purchase order. Many of the parts can also be purchased at local dive shops or fire equipment dealers.
- b. Parts that fail due to defects in workmanship during the warranty period will be replaced by the manufacturer at no cost. A digital picture should be supplied to the Manufacturer to identify the defective part. Users should contact the manufacturer by phone, e-mail, or fax to receive replacement parts.



# TRI-MAX 3 REPAIR PARTS

<b>NOMENCLATURE</b>	<b>PART NO.</b>
AIRLINE, ¼ Inch	312 (900109-00)
BAND, Component w/Handle	140D (900114-00)
BRACKET, Vehicle	141 (900117-00)
BRACKET, Wall Mount	414 (900116-00)
CHECK VALVE, One Way	320
CYLINDER, Air w/Valve	301 (900101-00)
END, Hose	401
GAUGE, Pressure	415 (900119-00)
HOSE, Discharge	413 (900118-00)
INSERT, Hose	403
MANIFOLD	101-3 (900120-00)
MANUAL, Tri-Max 3	101-3 (900120-00)
O-RING, Manifold	417 (900171-00)
O-RING, Regulator	417 (900171-00)
PIN, Safety	144 (K66855)
QUICK CONNECT, Male	322 (900000-00)
QUICK CONNECT, Female	318 (900000-01)
REGULATOR	302 (900103-00)
SEAL, Tamper (Pkg. 12)	84 (300172-00)
TANK, Premix with Pressure Gauge, Hose, and Squeeze Grip Valve Assembly	305 (900102-00)
TESTER, Air Cylinder Pressure	76 (300135-00)
VALVE, Air Cylinder	418
VALVE, Pressure Relief	147 (200107-00)

## **5-5. VISUAL TAMPER SEAL**

A breakaway plastic or safety wire tamper seal should be installed by drilling a hole through the Air Cylinder knob (if one is not already there) and attaching a seal to the Regulator bracket as follows:

- (1) Drill two small holes in the rubber knob if not drilled at the factory (See photo). Remove the small red cap on the end of the Air Cylinder knob. Move inward from the outside edge of the rubber knob approximately 5/8 of an inch, then using a 5/32 drill bit, drill a hole in the rubber knob. This hole should be drilled at a 45 degree angle in one of the small grip slits. Care should be taken not to hit or damage the interior bolt that holds the rubber knob in place. Skip one small grip, slit and drill a second hole in the same manner.
- (2) Insert the tamper seal into one hole, loop it through the Air Regulator support frame and draw it back out the second hole. Replace the red end cap.

### **VISUAL TAMPER SEAL LOCATIONS**



**Safety Pin Location**



**Air Cylinder Knob Location**

**5-6     Maintenance Log**

**TRI-MAX 3 MAINTENANCE LOG**

**PREVENTATIVE MAINTENANCE CHECKS & SERVICES  
(PMCS)**

<b>SCHEDULED DATE</b>	<b>DATE COMPLETED</b>	<b>SIGNATURE</b>
_____	_____	_____
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**SCHEDULED MAINTENANCE**

<b>ACTION</b>	<b>DATE DUE</b>	<b>DATE COMPLETED</b>	<b>SIGNATURE</b>
Air Cylinder pressure check	(6 months)	_____	_____
Air Cylinder visual inspection & certification	(12 months)	_____	_____
Air Regulator inspection	(2 years)	_____	_____
Air Cylinder hydrostatic test	(5 years)	_____	_____
Pre-Mix Tank hydrostatic test	(5 years)	_____	_____

**TRI-MAX 3**  
**MAINTENANCE LOG**  
**(CONTINUED)**

**UNSCHEDULED MAINTENANCE**

<b>ACTION</b>	<b>DATE COMPLETED</b>	<b>SIGNATURE</b>
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**5-7. SERVICING UNDER NORMAL CONDITIONS**

## **a. SYSTEM PRESSURE CHECK**

- (1) Ensure the Air Regulator, Air Pressure Hose, and Premix Tank Manifold are secure.
- (2) Open the Air Cylinder valve and check the air pressure on the gauge for normal operating pressure of 2500-3000 psi.
- (3) Check the pressure gauge on the Premix Tank is in the normal operating range.  
Conduct a leak check if pressure is below 2500 psi or the Premix Tank operating pressure is not in the normal operating range
  - (a) Spray a light soap solution on all airlines/fittings.
  - (b) Tighten leaking fittings, replace O-rings, or replace defective components.
  - (c) If the regulator has an internal leak, it may be rebuilt at a local dive shop or if the Tri-Max 3 system is still under warranty contact the Manufacturer for further instruction.
  - (d) Remove, recharge, and reinstall Air Cylinder
  - (e) Install tamper seal.

## **b. CHANGING AND SERVICING AIR CYLINDER**

### **CAUTION**

**Ensure the system is depressurized before conducting any maintenance on the system. Do not fully drain the Air Cylinder completely as this will allow moisture to enter the system. Extreme care should be used when handling and transporting the Air Cylinders.**

- (1) Ensure the Air Cylinder Valve is closed.
- (2) Depressurize the system by depressing squeeze Discharge Valve.
- (3) Unscrew the Air Cylinder Regulator.
- (4) Place the rubber dust plug in the Regulator aperture.
- (5) Loosen the knob on component holder.
- (6) Lift out the Air Cylinder.  
Have the Air Cylinder filled to 3000 psi by a certified technician.
- (7)

### **NOTE**

**An annual visual inspection sticker may be required by the servicing facility prior to filling.**

- (8) Verify the Air Cylinder pressure (2500-3000 psi) using the pressure tester.
- (9) Replace the Air Cylinder in the mounting holder.

- (10) Remove the dust plug from the Regulator then replace the Air Cylinder Regulator. Ensure the O-ring is in place.
- (11) Turn on Air Cylinder and verify 2500-3000 psi pressure (if the pressure was not verified by using a pressure tester).

c. **REFILLING PREMIX TANK**

**CAUTION**

**Ensure the system is fully depressurized  
before conducting any maintenance on the system,**

**NOTE**

**The Premix Tank Manifold should be tightened by hand. Do not use any wrenches. Do not use any teflon tape on any of the Premix Tank fittings.**

- (1) Close the Air Cylinder Valve.
- (2) Disconnect steel air pressure hose.
- (3) Unscrew Premix tank manifold.
- (4) Add water until the Premix Tank is approximately 75% full.
- (5) Add appropriate amount of foam for operating in temperatures above freezing.
- (6) Fill tank to top of tank with water.

**5-8 SERVICING UNDER COLD CONDITIONS:** Fill the Premix Tank with Freeze protected Foam solutions whenever the existing temperatures are below 32 degrees F. The freeze protected foam should be used in the concentrate form and not diluted.

**5-9. SCHEDULED MAINTENANCE RECOMMENDATIONS**

a. **AIR CYLINDER:**

- (1) Check pressure at least every 6 months.
- (2) Visual inspection and certification be completed every 12 months.
- (3) Hydrostatic test be completed every 5 years.

b. **CLEANING:** Wash the unit with soap and water at least every 12 months.

c. **AIR REGULATOR:** Be checked by a certified technician every 2 years.

d. **PREMIX TANK :**

- (1) Pressurize and check for leaks every 12 months.

- (2) Hydrostatic test be completed every 5 years.
- e. **FOAM SOLUTION:** The quality testing recommendations of the manufacturer of the AFFF used should be followed.

**5-10. UNSCHEDULED MAINTENANCE:** Unscheduled maintenance will need to be performed as required. Users should contact the manufacturer if a malfunction cannot be corrected after employing good troubleshooting practices.

**a. REPLACE AIR REGULATOR**

- (1) Ensure the Air Cylinder Valve is closed.
- (2) Depressurize the system by depressing squeeze type discharge valve. Verify the air pressure gauge reads 0 psi.
- (3) Unscrew the Air Cylinder Regulator.
- (4) Pull air hose quick disconnect and remove regulator.
- (5) Install new regulator with air pressure hose by first attaching the air line quick disconnect to the manifold receptacle and then connect the Air Regulator to Air Cylinder ensuring O-ring is in place.
- (6) Charge system by opening Air Cylinder Valve, and check for leaks by squirting soap solution on connections.

**b. REPLACE PRESSURE RELIEF VALVE**

- (1) The Pressure Relief Valve is located just below the squeeze type discharge valve.
- (2) Remove defective Pressure Relief Valve and install new one.

**c. REPLACE PREMIX TANK MANIFOLD O-RING**

- (1) Ensure system is depressurized.
- (2) Remove Premix Tank manifold.
- (3) Remove and reinstall new O-ring using a water base lubricant, if available.

**d. REPLACE AIR TANK PRESSURE GAUGE**

- (1) Ensure system is depressurized.
- (2) Remove and replace Air Tank Pressure Gauge.

**e. REPLACE FOAM DISCHARGE HOSE**

- (1) Ensure system is depressurized.
- (2) Remove and replace the Foam Discharge Hose.

**5-11. TROUBLESHOOTING**

**a. NO PRESSURE ON GAUGES**

- (1) Air Cylinder Valve is not turned on.
- (2) Air Cylinders are empty.
- (3) Pressure gauge is inoperative.
- (4) Broken or blocked air line.
- (5) Air Regulator has malfunctioned.

**b. FOAM DOES NOT DISCHARGE FROM HOSE**

- (1) Premix Tank is empty.
- (2) Air Cylinder is empty.
- (3) Air Cylinder is not turned on.
- (4) Blockage in the dispensing hose.
- (5) Foam solution in Premix Tank is frozen.

**c. AIRLINE LEAK**

- (1) Air hose fitting is loose or broken.
- (2) Air line is pinched, cracked or broken.

**d. SYSTEM IS NOT FULLY DISCHARGING**

- (1) There is an insufficient volume of air in the Air Cylinder.
- (2) The Foam Discharge Nozzle is not fully opening.
- (3) The Foam Discharge Hose has a restriction.
- (4) The Air Regulator has malfunctioned or is not properly adjusted.
- (5) The solution is frozen or near freezing.

**5-12. STORAGE AND PROTECTION**

- a. The Tri-Max 3 does not have any special storage requirements if stored inside.
- b. A PMCS should be conducted if the system has been placed in storage prior to placing the unit in an operational status.
- c. Recommend a protective cover be used if the equipment is going to be stored outside in extreme weather conditions to reduce the impact of the sun rays damage to hoses and gauges.