

# OWNER'S SERVICE MANUAL

## INSTALLATION, OPERATING & SERVICING INSTRUCTIONS



**MANUAL PN 05608**

**125/150-LB. STORED-PRESSURE WHEELED EXTINGUISHERS  
MODELS 488, 489, 490**

All fire extinguishers shall be installed, inspected, and maintained in accordance with the National Fire Protection Association standard titled "Portable Fire Extinguishers", NFPA 10, or the National Fire Code of Canada and the requirements of local authorities having jurisdiction.

When maintenance is indicated, it shall be performed by trained persons having proper equipment. Fire extinguishers are pressure vessels and must be treated with respect and handled with care. They are mechanical devices and require periodic maintenance to be sure that they are ready to operate properly and safely. Amerex strongly recommends that the maintenance of portable fire extinguishers be done by a trained professional – your local authorized Amerex Distributor.

Amerex Corporation makes original factory parts available to insure proper maintenance – USE OF SUBSTITUTE PARTS RELEASES AMEREX OF ITS WARRANTY OBLIGATIONS. Amerex parts have machined surfaces and threads that are manufactured to exacting tolerances. o-rings, hoses, nozzles, and all metal parts meet precise specifications and are subjected to multiple in-house inspections and tests for acceptability. There are substitute parts available that may be incorrectly labeled as UL component parts, some are advertised as Amerex type. None of these meet UL requirements, and all of them void the Amerex extinguisher warranty and UL listing. DO NOT SUBSTITUTE.

### **RECHARGE FIRE EXTINGUISHERS IMMEDIATELY AFTER ANY USE**

REFERENCES IN THIS MAUNUAL:

**NFPA 10** Portable Fire Extinguishers

**CGA C-1** Methods for Pressure Testing Compressed Gas Cylinders

**CGA C-6** Standard for Visual Inspection of Steel Compressed Gas Cylinders.

**National Fire Code of Canada**

AVAILABLE FROM:

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471

Compressed Gas Association, 14501 George Carter Way, Chantilly, VA 20151-2923

Compressed Gas Association, 14501 George Carter Way, Chantilly, VA 20151-2923

National Research Council Canada, 1200 Montreal Road, Building M-58 Ottawa, ON K1A 0R6 Canada

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**FOR REPLACEMENT PARTS SEE THE AMEREX PORTABLE AND WHEELED PARTS BOOK PN 27277 AVAILABLE AT <http://www.amerex-fire.com> UNDER MANUALS OF THE RESOURCE SELECTION.**

## **INTRODUCTION**

The Amerex Models 488 (ABC), 489 (Regular) and 490 (Purple K) Stored-Pressure Wheeled Dry Chemical fire extinguishers are designed to provide larger volumes of dry chemical fire-fighting agent than hand-portable types for industrial applications. These wheeled extinguishers can easily be transported and operated by one person. The cage-type carriage provides protection for the operating valve, cylinder, and hose assembly. Easy rolling 16-inch semi-pneumatic rubber tires assure minimum effort to quickly transport them through narrow spaces to a fire scene.

Maximum protection from severe corrosive environment is afforded by the Amerex corrosion-resistant metal preparation and paint finish. The operating valve, handle, gauge guard, fill cap, hose couplings, and ball-type shutoff are brass, or brass chrome plated, for years of trouble-free use. These models carry an Amerex warranty of 6 years.

Field recharging is possible utilizing maintenance/recharge equipment available through your Amerex Distributor. To provide optimum extinguisher reliability, recharging shall be performed by persons trained in fire extinguisher maintenance and servicing. This manual shall be used as a guide for installing, operating, and servicing this extinguisher. The best place to have your extinguisher serviced and recharged is your Authorized Amerex Distributor, who has the professional experience and equipment to do it properly.

## **PREPARING YOUR NEW EXTINGUISHER FOR USE**

1. Examine the extinguisher for evidence of shipping damage. Notify the delivering carrier immediately if any damage is discovered.
2. Remove all wrappings, straps, and pallet retaining bolts.
3. Check to insure that the hose connection to the operating valve and shutoff nozzle to the hose are tight.
4. Check to insure that the shutoff nozzle is in the closed position. The pull pin shall be installed in the operating valve and the tamper seal intact.
5. Check to make sure that the cap is on the "bleeder valve" (located on the side of the extinguisher operating valve). The pressure seal is in the cap, and it must be in place to prevent leakage.
6. This extinguisher is shipped from the factory fully charged. Visually inspect the pressure gauge – the pressure shall be in the green zone (240 psi ± approx. 10 psi range). The most accurate method to determine if the extinguisher is filled with the proper amount of chemical is to weigh the unit. The gross weight is indicated on the nameplate (label).

**NOTE:** Slight pressure variances in the gauge reading may be found if the extinguisher has been subjected to extremes of heat or cold. High temperatures can cause high gauge readings and low temperatures, low readings. When in doubt, condition the extinguisher to 70°F (21°C) for several hours to obtain more accurate pressure gauge readings.

7. Record the date the unit is being placed into service on the inspection tag, and attach it to the extinguisher.

## INSTALLATION

Do not place this extinguisher close to a potential fire hazard. Amerex recommends location no less than a 50-foot (15 m) distance from the hazard while leaving an unobstructed access. Avoid placing it in an extremely hot or cold place. The operational temperature range for this extinguisher is -65° to +120°F (-54° to +49°C). The extinguisher shall be adequately protected if temperatures outside of this range are anticipated. Keep the extinguisher clean and free from dirt, ice, chemicals, and any contaminants, that may interfere with its proper operation. Do not functionally test this fire extinguisher. (Testing or any use may cause the extinguisher to gradually lose pressure and become ineffective.)

## OPERATION

**NOTE: Persons expected to use this extinguisher shall be trained in initiating its operation and in the proper fire-fighting technique. Familiarize all personnel with this information before an emergency occurs.**

- 1 Move the extinguisher to within approximately 50 foot (15 m) of the fire site. Keep the extinguisher upright.

**CAUTION: THIS EXTINGUISHER MUST BE OPERATED IN AN UPRIGHT POSITION. IF EQUIPPED WITH AN OPTIONAL TOW LOOP AND VEHICLE TOWED TO THE FIRE SCENE, REMOVE FROM TOW HITCH, AND OPERATE IN A VERTICAL POSITION.**

2. Twist and pull the pull pin. Open cylinder discharge valve by rotating (pulling) the handle valve lever toward the hose. The hose is now pressurized with chemical.
3. Pull nozzle, with lever in the closed position, from the mount and extend the hose from the storage rack.
4. Stand back 30 foot (10 m) from the fire, and aim the nozzle at the base of flames nearest you. Open nozzle by pulling handle toward you (be prepared for a discharge recoil by holding the nozzle firmly).
5. Sweep side to side across the base of the fire and past both edges. Progressively follow up until the fire is extinguished. Work the fire away from you while being alert for flashbacks. Move closer as the fire is extinguished but not so close as to scatter or splash the burning materials.
6. When the fire is out, push the hose (discharge) lever forward to the closed position. Stand by, and watch for possible reignition.
7. Evacuate and ventilate the area immediately after extinguishing the fire. The fumes and smoke from any fire may be hazardous and can be deadly.

**DISCHARGE TIME – 488 – 49 Seconds**

489 – 60 Seconds

490 – 52 Seconds

**EFFECTIVE RANGE OF AGENT THROW — 30 TO 40 FEET (10 TO 12 METERS)**

**HOSE LENGTH – 50 FEET (15.24 METERS)**

## SHUTDOWN

**CAUTION: BEFORE PERFORMING THE SHUTDOWN PROCEDURE AND PREPARING TO MOVE THE EXTINGUISHER TO THE RECHARGE LOCATION, DETERMINATION MUST BE MADE THAT THE FIRE IS COMPLETELY EXTINGUISHED AND THERE IS NO DANGER OF A FLASHBACK.**

1. Tip the extinguisher to the horizontal position (resting on the carriage handle), and slowly rotate the cylinder discharge valve lever to the open position. Slowly push the hose (discharge) nozzle lever to the open position and be prepared for some chemical discharge.
2. When all pressure has been evacuated from the extinguisher, return the hose (discharge) nozzle lever and cylinder discharge valve lever to the closed position.

**NOTE: These steps will allow easy depressurization of the extinguisher and clear the hose assembly with a minimal loss of remaining chemical.**

3. Return the extinguisher to the upright position. Coil the hose onto the storage rack, and position the nozzle into the mount in preparation for transport to the recharge location.

## **INSPECTING THE EXTINGUISHER**

**This extinguisher must be inspected at regular intervals (monthly or more often if circumstances dictate) to insure that it is ready for use. Inspection is a "quick check" that a fire extinguisher is available and is in operating condition. It is intended to give reasonable assurance that the fire extinguisher is fully charged. This is done by verifying that it is in its designated place, that it has not been actuated or tampered with, and that there is no obvious physical damage or condition to prevent its operation.**

### **PERIODIC INSPECTION PROCEDURES (Monthly or more often if circumstances dictate)**

NFPA 10 Periodic inspection of fire extinguishers shall include a check of at least the following items:

1. Located in designated place.
2. No obstruction to access or visibility.
3. Pressure gauge reading or indicator in the operable range or position.
4. Operating instructions on nameplate and facing outward.
5. Tamper seal not broken or missing.
6. Examination for obvious physical damage, corrosion, leakage, or clogged nozzle.
7. Determine fullness by weighing.
8. Wheels rotate freely.

## **MAINTENANCE**

**NFPA 10 At least once a year, or more frequently if circumstances require, maintenance shall be performed. Maintenance is a "thorough check" of the extinguisher. It is intended to give maximum assurance that a fire extinguisher will operate effectively and safely. It includes a thorough examination for physical damage or condition to prevent its operation and any necessary repair or replacement. It will normally reveal if hydrostatic testing or internal maintenance is required.**

### **MAINTENANCE – SERVICE PROCEDURE**

**NOTE: This procedure will be best accomplished with the extinguisher in an upright position and on a level surface.**

1. Clean extinguisher to remove dirt, grease, or foreign material. Check to make sure that the instruction pictogram is securely fastened and legible. Inspect the cylinder for corrosion, abrasion, dents, or weld damage. If any damage is found, hydrostatically test to factory test pressure 500 psi (3448 kPa), using the proof-pressure method, in accordance with instructions in CGA C-1 and C-6 and NFPA 10. See proper method of depressurizing and reclaiming chemical in Recharge procedures.

**CAUTION: WHEN CLEANING, AVOID USE OF SOLVENTS AROUND THE PRESSURE GAUGE. THEY COULD SERIOUSLY DAMAGE THE PLASTIC GAUGE FACE.**

2. Inspect the extinguisher for damaged, missing, or substitute parts. Only factory-replacement parts are approved for use on Amerex fire extinguishers.
3. Weigh the extinguisher, and compare with weight printed in the "Weight Block" section on the nameplate (label). Recharge extinguisher if weight is not within indicated allowable tolerances.

4. Check the date of manufacture printed on the extinguisher label (nameplate) or on the agent cylinder dome. The agent cylinder must be hydrostatically tested in accordance with DOT requirements to the test pressure indicated on the nameplate 500 psi (3448 kPa).
5. Visually inspect the pressure gauge:
  - a. If bent, damaged, or improper gauge, depressurize and replace.
  - b. If pressure is low, check for leaks.
6. Remove pull pin checking for freedom of movement. Replace if bent or if removal appears difficult.
7. Visually inspect, without removing, the agent fill cap for damage or distortion. Replace as necessary only after proper depressurization procedures have been performed (see complete Maintenance – Six-Year Teardown instructions).

**WARNING: ALWAYS OPEN THE SHUTOFF NOZZLE HANDLE SLOWLY. ANY EVIDENCE OF AGENT IN THE NOZZLE INDICATES THAT THE UNIT MAY HAVE BEEN USED AND THE USE NOT REPORTED. BE PREPARED FOR A POSSIBLE DISCHARGE AND NOZZLE RECOIL.**

8. Check the nozzle shutoff lever for freedom of movement (open and close several times). If the operation is impeded, disassemble the nozzle, replace parts, and/or properly lubricate as necessary. Make sure that the nozzle tip is clear and unobstructed.
9. After making sure that there is no residual pressure in the discharge hose, disconnect it from the operating valve. Blow air through the hose and nozzle assemblies to insure that the passage is clear of foreign material. Check the couplings, hose, and hose gasket for damage or deterioration – replace as necessary.
10. Inspect the valve assembly for corrosion or damage to hose thread connection. Replace valve assembly or component parts as necessary following the proper depressurization and recharge procedures. If valve removal is necessary, complete all steps in the Complete Maintenance Procedure.
11. Reconnect the hose to the agent cylinder. Properly coil the hose on the rack, and install the nozzle (with the lever in a closed position) on the mount.

**NOTE: When assembling the hose to the agent cylinder or nozzle to the hose, tighten the coupling ¼ turn after contacting the hose gasket.**

12. Inspect the wheels to insure they rotate freely. Lubricate as necessary.
13. Check carriage assembly for loose nuts, bolts, frame distortion, or damage. Check welds for damage or corrosion. Replace damaged parts, or make repairs as necessary.
14. Install new tamper seal, and record service data on the extinguisher inspection tag.
15. If the extinguisher has been moved to perform service, make sure that it is returned to its proper location.

## **COMPLETE MAINTENANCE – SIX-YEAR TEARDOWN**

**NFPA 10 Every 6 years, stored-pressure extinguishers shall be emptied and subjected to the applicable maintenance procedures. When the applicable maintenance procedures are performed during periodic recharging or hydrostatic testing, the six-year requirement shall begin from that date.**

**NFPA 10 requires a "verification of service" external collar tag be installed on the extinguisher whenever a Six-Year Maintenance is performed. The "verification of service" tag can only be installed if the operating valve has been removed.**

1. Discharge chemical and pressure into a "closed" dry chemical recovery system (several are commercially available). **Make sure that the extinguisher is completely empty and depressurized.**

**NOTE: These extinguishers operate at 240 psi. Some recovery systems may require that the pressure be reduced to safely discharge the chemical and pressure into the system. Use the pressure bleeder valve on the extinguisher valve to reduce the pressure to a point registering just below the green operable area on the pressure gauge. Discharge extinguisher into recovery system. Repressurize the extinguisher (to no more than 200 psi) to exhaust any chemical remaining in the extinguisher.**

**NOTE: A "closed recovery system" is designed to prevent loss of the chemical "fines" Loss of the "fines" could result in reduced extinguisher efficiency.**

2. Clean extinguisher to remove dirt, grease, or foreign material. Check to make sure that the instruction nameplate is securely fastened and legible. Inspect the cylinder for corrosion, abrasion, dents, or weld damage. If any of these conditions are found and you doubt the integrity of the cylinder, hydrostatically test to factory test pressure marked on the nameplate (label) in accordance with CGA C-1 and NFPA 10 and DOT regulations.

**NOTE: When cleaning, avoid use of solvents around the pressure gauge. They could seriously damage the plastic gauge face.**

3. Inspect the extinguisher for damaged, missing, or substitute parts. Only factory-replacement parts are approved for use on Amerex fire extinguishers.
4. Check the date of manufacture on the extinguisher dome. Cylinder must be hydrostatically (proof-pressure) tested every 12 years (first time), every 7 years thereafter, to the test pressure indicated on the nameplate (500 psi [3448 kPa]). Cylinder may be hydrostatically tested every 12 years using the water jacket method.
5. Visually inspect the pressure gauge – if bent, damaged, or improper gauge replace with the proper Amerex pressure gauge (see Parts List).
6. Check pull pin for freedom of movement. Replace if bent or if removal appears difficult.
7. **Verify that no pressure remains in the extinguisher.** (Operating valve and nozzle shutoff in open position and there is no discharge). Remove and inspect the agent fill cap for damage or distortion.
8. Check the nozzle shutoff lever for freedom of movement (open and close several times). If the operation is impeded, disassemble the nozzle, replace parts and/or properly lubricate as necessary. Make sure that the nozzle tip is clear and unobstructed.
9. Disconnect the discharge hose from the operating valve. Blow air through the hose and nozzle assemblies to insure that the passage is clear of foreign material. Check the couplings, hose and hose gasket for damage or deterioration – replace as necessary. The discharge hose shall be hydrostatically tested to 300 psi (2068 kPa) every twelve years.
10. Inspect the wheels to insure they rotate freely. Lubricate as required.
11. Check carriage assembly for loose nuts, bolts, frame distortion, or damage. Check welds for damage or corrosion. Replace damaged parts or make repairs as necessary.

**WARNING: VALVE REMOVAL AND/OR VALVE PART REPLACEMENT SHALL BE MADE ONLY AFTER COMPLETING THE DEPRESSURIZING PROCEDURES LISTED IN STEP 1 OF THE COMPLETE MAINTENANCE SECTION.**

12. Remove operating valve assembly. Inspect for corrosion or damage to hose thread connection.
13. Complete steps 2-14 of Recharge Procedure.

## RECHARGE

### WARNING:

- a. Before attempting to disassemble, be sure the extinguisher is completely depressurized.
- b. Never have any part of your body over the extinguisher while removing the valve assembly.
- c. Use a protective shield between you and the pressure gauge while charging an extinguisher. Do not stand in front of the gauge if a shield is not available.
- d. Use a regulated pressurizing source of dry nitrogen only with a minimum dew point of minus -70°F (-57°C). Set the regulator to no more than 265 psi (1827 kPa).
- e. Check and calibrate regulator gauge at frequent intervals. The regulator gauge shall be used to determine when the intended charging pressure has been reached. Do not use the extinguisher gauge for this purpose.
- f. Never leave an extinguisher connected to a regulator of a high-pressure source for an extended period of time. A defective regulator could cause the cylinder to rupture due to excessive pressure.
- g. Do not mix types of dry chemicals in extinguishers, recharge or recovery systems. Mixing ABC (acidic base) with Regular, Purple-K, Super-K, or Monnex (alkaline base) dry chemicals may result in a chemical reaction capable of developing a dangerous pressure buildup.

## RECHARGING PROCEDURE

1. Perform steps 1 through 12 of the "Complete Maintenance (Six-Year Teardown)" section.
2. Thoroughly clean all parts of the disassembled valve with a soft bristle brush or soft cloth. Blow the valve out with air or nitrogen. Inspect spring and downtube assembly, and replace parts if worn or damaged. Install a new valve stem and collar O-ring after lightly lubricating with V-711 (do not lubricate the valve stem seal).
3. Reassemble the valve assembly, including downtube and set aside.
4. Remove any chemical remaining in the cylinder and check the condition. Properly dispose of any chemical that is contaminated or caked.
5. Inspect the cylinder interior following CGA Visual Inspection Standard C-6.
6. Using an accurate scale, fill cylinder with the correct amount and type of dry chemical specified on the label (nameplate). Use Amerex chemical which has been kept free of moisture and contamination. See Warning (g) – **DO NOT MIX TYPES OF CHEMICALS**.
7. Clean cylinder collar O-ring seat and collar threads with a small brush, and wipe off surfaces with a clean cloth to remove dust. Lightly brush the collar O-ring seat with V-711.
8. Install "verification of service" external collar tag. Install discharge valve assembly and attach pressurizing adapter (PN 06160) to discharge port.
9. With the extinguisher properly secured in an upright position, connect your nitrogen pressurizing line with a quick connect to the nitrogen charging adapter. Rotate the extinguisher operating valve lever to the open position, and pressurize extinguisher with dry nitrogen to 240 psi. When the desired pressure has been reached, rotate the operating lever to the closed position. Shut off nitrogen supply, and remove the quick connect.

**CAUTION: PRESSURIZING THE EXTINGUISHER IN THIS MANNER WILL ALLOW FOR PROPER AERATION OF THE CHEMICAL THROUGH THE DOWNTUBE. DO NOT USE THE "BLEEDER" VALVE TO PRESSURIZE THE EXTINGUISHER.**

10. Check extinguisher for leaks by applying detecting fluid or a solution of soapy water to the nitrogen charging adapter orifice, around the collar O-ring sealing area, cylinder welds, and gauge. Remove the pressurizing adapter.
11. Reconnect the hose to the operating valve. Properly coil the hose on the rack, and install the nozzle (with the lever in a closed position) on the mount.

**NOTE: When assembling the hose to the agent cylinder or nozzle to the hose, tighten the coupling ¼ turn after contacting the hose gasket.**

12. Install pull pin and tamper seal. Record recharge date and attach new recharge tag.
13. Weigh assembled extinguisher, and confirm that the total weight is within the allowable tolerances indicated in the Maintenance section of the nameplate (label).
14. Return extinguisher to its proper location. Mountings for stationary extinguishers shall be properly secured.

## TROUBLESHOOTING GUIDE

**WARNING: Before attempting to correct any leakage problem, be sure that the agent cylinder and hose are completely depressurized. Check to determine the source of a leak before the extinguisher is depressurized. Leakage repairs will require depressurization and removal of the valve assembly. Depressurize by discharging into a Closed Recovery System or inverting the extinguisher. After depressurizing the extinguisher and correcting the problem, it will be necessary to clean all valve parts thoroughly.**

	PROBLEM	CORRECTIVE ACTION
1.	Leak at collar O-ring	Remove valve assembly, remove and discard O-ring, clean collar and lube lightly with V-711. Clean O-ring groove on valve, and install new collar O-ring. Lubricate with V-711.
2.	Leak at agent fill cap	Remove cap, clean threads thoroughly and install new O-ring. Lubricate O-ring with V-711.
3.	Leak through valve	Check valve stem seating area for scratches or foreign matter. Clean seating area with a tooth brush and soft cloth. Install new valve stem assembly.
4.	Leak at "bleeder" valve.	Remove and reinstall valve using Teflon tape on threads. Note: "Bleeder" valve <u>cap</u> must be installed to prevent leakage.
5.	Leak around gauge threads	Remove gauge*, clean threads, and reinstall using Teflon tape on the gauge threads.
6.	Defective gauge	Remove defective gauge*, and install the proper Amerex pressure gauge (PN 05225 240 psi) using Teflon tape on the gauge threads.
7.	Leak in the cylinder	Contact Amerex if under warranty, otherwise mark "REJECTED" and remove from service or return to owner.
	* Pressure gauge threads are coated with a special epoxy at the factory. For easy removal, soak the valve assembly in hot water (180°F) for two to four minutes. Remove gauge with a thin 7/16" open-end wrench.	



# Guide to Proper Installation of Hose on Wheeled or Stationary Dry Chemical Fire Extinguishers



**1**

Connect hose coupling to outlet on the extinguisher. Lay hose straight on ground to its full 50-foot (15.24 m) length. Start first regular loop counter-clockwise by placing between side brackets and over the top bracket.



**2**

The second loop is a REVERSE loop. Notice that the hose passes behind the loop on this reverse loop. **If instructions are followed, the hose will uncoil without kinks.**



**3**

The next loop is a regular "hose in front" loop. Succeeding loops are alternated: reverse, front, reverse, etc. for six full loops.



**4**

Adjust the loops so that the nozzle fits into the nozzle mount. Loops shall be approximately the same size.