OWNER'S SERVICE MANUAL

INSTALLATION, OPERATING & SERVICING INSTRUCTIONS

MANUAL PN 05614

300-350 CARTRIDGE OPERATED WHEELED EXTINGUISHERS
WHEELED MODELS 491, 492, 493

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:	AVAILABLE FROM:
NFPA 10 Portable Fire Extinguishers	National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471
CGA C-1 Methods for Pressure Testing Compressed Gas Cylinders	Compressed Gas Association, 14501 George Carter Way, Chantilly, VA 20151-2923
CGA C-6 Standard for Visual Inspection of Steel Compressed Gas Cylinders.	Compressed Gas Association, 14501 George Carter Way, Chantilly, VA 20151-2923
National Fire Code of Canada	National Research Council Canada, 1200 Montreal Road, Ottawa, ON K1A 0R6 Canada

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INTRODUCTION

THIS MANUAL IS ATTACHED TO EVERY NEW EXTINGUISHER SHIPPED FROM THE FACTORY. IT CONTAINS VALUABLE INFORMATION WHICH SHALL BE STUDIED BY EVERYONE WHO WILL USE OR SERVICE THE EXTINGUISHER. THE MANUAL SHALL BE STORED IN A CONVENIENT LOCATION FOR EASY REFERENCE.

PREPARING YOUR NEW WHEELED EXTINGUISHER FOR USE

1. REMOVE ALL SHIPPING STRAPS AND WRAPPINGS FROM UNIT. REMOVE ATTACHED MANUAL AND REVIEW FOR PROPER INSTALLATION AND USE OF YOUR EXTINGUISHER. THIS WHEELED EXTINGUISHER IS FILLED AT THE FACTORY.

2. EXAMINE THE EXTINGUISHER FOR SHIPPING DAMAGE. IF ANY DAMAGE IS NOTED, CONTACT DELIVERING CARRIER AND REQUEST INSPECTION BEFORE REMOVING FROM PALLET.

3. REMOVE EXTINGUISHER FROM PALLET.

4. DISCONNECT DISCHARGE HOSE ASSEMBLY FROM AGENT CYLINDER. MAKE SURE HOSE AND NOZZLE IS UNOBSTRUCTED. VERIFY MOISTURE SEAL IS UNDAMAGED AND PROPERLY SEATED ON THE AGENT CYLINDER DISCHARGE FITTING.

5. RECONNECT THE DISCHARGE HOSE TO THE AGENT CYLINDER AND WITH THE VALVE IN THE CLOSED (FORWARD) POSITION, PLACE IT IN THE HOLDER ON THE HOSE RACK.

6. REMOVE THE AGENT CYLINDER FILL CAP AND EXAMINE THE AGENT FOR PROPER TYPE AND CONDITION. REPLACE THE FILL CAP TIGHTLY.

7. REMOVE THE NITROGEN CYLINDER SHIPPING CAP. SAVE THE CAP AS IT MUST BE INSTALLED WHENEVER THE CYLINDER IS TRANSPORTED. CHECK THE CYLINDER PRESSURE. THE GAUGE SHALL READ APPROXIMATELY 2015 PSI (13.9 MPa) AT 70°F (21°C) AMBIENT TEMPERATURE. THE “T” HANDLE VALVE SHALL HAVE A PULL PIN AND TAMPER SEAL INSTALLED.

8. REMOVE AND SAVE THE SAFETY VENT PLUG INSTALLED ON OUTLET OF T-HANDLE GAS CYLINDER VALVE. CONNECT THE GAS SUPPLY HOSE FIRMLY INTO THE NITROGEN CYLINDER VALVE MAKING SURE HOSE IS KINK FREE.

9. RECORD THE DATE THE EXTINGUISHER IS PLACED INTO SERVICE ON THE INSPECTION TAG AND ATTACH IT TO THE EXTINGUISHER. REMOVE THE PREPARING YOUR NEW WHEELED EXTINGUISHER FOR USE INSTRUCTION TAG.

INSTALLATION

WARNING: DO NOT PLACE THIS EXTINGUISHER CLOSE TO A POTENTIAL FIRE

Do not place this extinguisher close to a potential fire hazard. Amerex recommends location no less than a 50 foot 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°F to +120°F (-54°C 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 over a period of time and make the extinguisher 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 feet of the fire site and keep extinguisher upright. Remove pull pin and pull "T" handle to open cylinder valve. This will pressurize the extinguisher.
2. Remove nozzle from the mount, and with the nozzle lever in the closed position, pull hose from rack.
3. Start back 30 feet from the fire and aim at base of fire nearest you.
4. Hold hose and nozzle firmly and be prepared for discharge recoil. Open nozzle by pulling the handle fully toward you. Slowly sweep side to side across the base of the fire and past both edges. Progressively follow up until the fire is extinguished.

CAUTION: USE OF DRY CHEMICAL AGENT EXTINGUISHERS ON FIRES ON DELICATE ELECTRONIC EQUIPMENT IS NOT RECOMMENDED. IT MAY SUCCESSFULLY EXTINGUISH THE FIRE BUT MAY DAMAGE THE EQUIPMENT BEYOND REPAIR. (Consult your Amerex Distributor for more details.)

Discharge Time (approx.):	**60 - 67 seconds**
Effective Range of the agent throw is:	**30 - 40 feet (9 - 12 meters)**
Hose Length:	**50 feet (15.24 meters)**

SHUTDOWN

1. After making sure that the fire has been completely extinguished, close the nozzle valve and then close the "T" handle nitrogen valve. Tip over until it rests on both wheels and handle (in this position much of the remaining chemical will stay in the cylinder). Open the nozzle valve slowly to clear the hose of any remaining pressure and chemical (be prepared for recoil and discharge of agent).

WARNING: MAKE SURE THAT ALL PRESSSURE HAS ESCAPED BEFORE ANY FURTHER DISASSEMBLY.

3. Stand unit upright after complete depressurization.

NOTE: Nitrogen pressure in the agent cylinder cannot escape through a disconnected nitrogen hose assembly due to a check valve in the system. Always be careful when removing the fill cap.

4. Coil the extinguisher hose onto the storage rack and position the nozzle onto the mount in preparation for transport to the recharge location.

CAUTION: DO NOT TRANSPORT A NITROGEN CYLINDER WITH ANY REMAINING PRESSURE WITHOUT INSTALLING THE PROTECTIVE SHIPPING CAP.

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.

MAINTENANCE

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.

NOTE: Several universal wheeled extinguisher service kits are commercially available so that NFPA 10 required maintenance functions can be performed.

MAINTENANCE – SERVICE PROCEDURE

WARNING: BEFORE SERVICING BE SURE THE EXTINGUISHER AGENT CYLINDER IS NOT PRESSURIZED. THIS PROCEDURE IS 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 nameplate is securely fastened and legible. Inspect the cylinders for corrosion, abrasion, dents or weld damage. If any damage is found, hydrostatically test in accordance with instructions in CGA C-1 and C-6 and NFPA 10.
2. Inspect the extinguisher for damaged, missing or substitute parts. A careful inspection shall be made of the safety relief to make sure that it has not ruptured, corroded or been tampered with. ONLY FACTORY REPLACEMENT PARTS ARE APPROVED FOR USE ON AMEREX FIRE EXTINGUISHERS.
3. Check the date of manufacture printed on the extinguisher label (nameplate) or on the agent cylinder dome. The agent cylinder, the discharge hose assembly and nitrogen supply hose must be hydrostatically tested every 12 years.

Test pressure:

   a. Agent Cylinder – 500 psi (3447 kPa)
   b. Hose Assembly – 300 psi (2068 kPa)
   c. Nitrogen Supply Hose – 3000 psi (20,682 kPa)

4. Check the hydrostatic test date on the crown of the nitrogen cylinder. The nitrogen cylinder must be retested in accordance with DOT regulations.

5. Check the hydrostatic test date on the crown of the nitrogen cylinder. The nitrogen cylinder must be retested in accordance with DOT regulations.
6. Check the gauge on the nitrogen cylinder. If the pressure is below 1700 psi (11.7 mPa) repressurize the cylinder to 2015 psi (13.9 mPa) or replace it. A low gauge pressure may indicate leakage. Check for leaks. A low gauge reading may also result from low temperature. See the temperature/pressure relationship chart in the Troubleshooting Guide. Check the tamper seal on the nitrogen valve and replace if necessary.
7. Inspect the wheels to insure they rotate freely. Lubricate as required.

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

8. Disconnect the discharge hose from the agent cylinder. Check the couplings, hose and hose gaskets for damage or deterioration – replace as necessary.
9. To perform an operational integrity check on the discharge hose and nozzle combination:
    a. Connect the test kit hose adapter to the female end of the discharge hose.
    b. Close the discharge nozzle shut-off lever and properly secure it.
    c. Connect a properly regulated and verified nitrogen pressure source, set to the extinguisher operating pressure (235-245 psi) to the test kit hose adapter.
    d. Slowly pressurize the discharge hose/nozzle assembly to the extinguisher operating pressure and check for leaks or distortion.
    e. Operate the nozzle lever to ensure proper operation and to clear the hose of any obstructions. If hose is obstructed - refer to Troubleshooting Guide.
    f. Close the nitrogen pressure source and slowly relieve remaining pressure by fully operating the nozzle lever.
10. Remove the agent cylinder cap and examine it closely for any signs of damage, cracks or thread wear. Clean the agent cylinder fill cap threads and thread vent port on the cap with a stiff bristle nylon brush. Remove the fill cap gasket and check for wear, cracks or tears – replace if necessary. Lightly lubricate the gasket with V-711 and reinstall.
11. Examine the dry chemical agent for proper type and condition. Replace chemical that is contaminated, caked or other than the type indicated on the nameplate (label) do not trust the height of the chemical in the cylinder when determining agent fill. Dry chemical settles and the only true indication of agent fill is to weigh the extinguisher and compare with the weight indicated on the nameplate (label).
12. Place the service kit Vent Spacer on top of the agent cylinder fill opening collar. Check again to see that the fill cap thread vent is clean and that the agent fill cap gasket is in place. Install the agent fill cap securely over the vent spacer.

CAUTION: (STEP 12) The agent cylinder cap threads must be clear and the cap securely installed onto the vent spacer and agent cylinder to allow pressure to slowly vent after performing the siphon tube clearing and gas tube integrity checks.

12. To perform a siphon tube clearing and gas tube integrity check:
    a. Remove the service kit Agent Hose Adapter from the discharge hose assembly and install it securely onto the agent cylinder siphon tube outlet.
    b. Using a regulated nitrogen pressure source set to the extinguisher operating pressure, slowly and briefly pressurize the agent cylinder (the siphon tube shall be clear within a couple of seconds and the agent cylinder pressure slowly vent from the fill cap thread vent). Pressure and/or dry chemical agent leaks from the gas tube inlet port (where the hose connects) will indicate a defective gas tube and will require that the agent cylinder be emptied and the gas tube replaced.
    c. Close the nitrogen pressure source and allow all pressure to slowly vent from the thread vent port on the fill cap.
    d. AFTER ALL PRESSURE HAS BEEN RELIEVED, SLOWLY OPEN THE FILL CAP AND REMOVE THE TEST KIT VENT SPACER.
    e. Re-examine the dry chemical agent to determine if any obstructions were cleared from the siphon tube and have risen to the liquid surface.
    f. Clean the fill cap and agent cylinder thread surfaces. Install the fill cap gasket and securely install fill cap.
13. Disconnect the high pressure hose from the nitrogen cylinder valve. Securely install the service kit Nitrogen Cylinder Pressure Check Gauge Assembly to the nitrogen cylinder valve outlet and verify the indicated cylinder gauge pressure. Nitrogen pressure shall conform to the temperature correction chart provided in the Troubleshooting section of this manual. Close the nitrogen cylinder valve and disconnect the Pressure Check Gauge Assembly.

WARNING: IF THE NITROGEN CYLINDER VALVE HAS A "T" HANDLE QUICK OPENING OR A HANDWHEEL QUICK OPENING TRIP RELEASE, THE SAFETY VENT PLUG SHIPPED WITH THE EXTINGUISHER, OR THE TEST KIT SAFETY VENT PLUG PN 01560, MUST BE INSTALLED TO PROTECT SERVICE PERSONNEL FROM A HIGH VELOCITY DISCHARGE IN CASE THE LEVER IS ACCIDENTALLY OPENED.

14. Install a new Amerex PN 07411 Moisture Seal per instructions in the package. Securely connect the discharge hose to the extinguisher. When assembling the hose to the agent cylinder or nozzle to the hose, tighten the coupling ¼ turn after contacting the hose gasket.
15. Coil the hose on to the extinguisher hose rack using the Reverse Loop Procedure (see Page 7). Install nozzle with the lever in the Closed (forward) position into the nozzle mount.
16. Remove the safety vent plug from the nitrogen cylinder. Reconnect the high pressure hose securely to the nitrogen cylinder valve. Wipe the extinguisher clean. Record service data on the inspection tag according to NFPA 10 requirements and attach to extinguisher. Return extinguisher to its proper location.

RECHARGE

WARNING: BEFORE ATTEMPTING TO RECHARGE BE SURE THIS EXTINGUISHER IS COMPLETELY DEPRESSURIZED. THERE IS A CHECK VALVE IN THE SYSTEM WHICH PREVENTS NITROGEN PRESSURE FROM ESCAPING FROM THE AGENT CYLINDER WHEN THE NITROGEN HOSE IS DISCONNECTED. THE AGENT CYLINDER MAY BE PRESSURIZED EVEN THOUGH NO PRESSURE ESCAPES FROM THE CYLINDER NITROGEN CONNECTION.

NOTE: Proper procedure for recharging any dry chemical extinguisher includes the use of a "closed recovery system" (NFPA 10). Systems are commercially available and ideal for this application – they provide for the recovery of the remaining agent by direct discharge into the system, trapping the "fines" while allowing the nitrogen to escape and provides a more accurate fill of the extinguisher.

IF A "CLOSED RECOVERY SYSTEM" IS NOT AVAILABLE – PROCEED AS FOLLOWS:

RECHARGING PROCEDURE

1. To depressurize:
   a. Close the "T" handle on the nitrogen valve (or hand wheel valve if so equipped).
   b. Carefully tip extinguisher over until it rests on both wheels and handle. (In this position much of the agent will remain in the cylinder).
   c. Open nozzle valve slowly to clear hose of any remaining pressure and chemical (be prepared for a recoil and discharge of agent).
   d. Insure that all pressure has escaped before further disassembly.
   e. Stand extinguisher upright after complete depressurization.
2. Complete items 1 – 7 of Maintenance Procedures. Carefully remove the fill cap. While performing this procedure, all parts and seals shall be cleaned, inspected and replaced where necessary.
3. Remove shutoff nozzle assembly from discharge hose and clean thoroughly. Check to make sure that the valve is closed when the lever is in the forward position (toward the nozzle tip).
4. Detach the nitrogen hose from the nitrogen cylinder ("T" handle valve) and install pull pin), install the shipping cap, unscrew the wing nuts and remove the nitrogen cylinder from the extinguisher.
5. Remove the 50 ft discharge hose from the storage rack and disconnect the hose from the agent cylinder fitting. Blow out any dry chemical agent remaining in the hose. Clean hose, agent cylinder fitting and gaskets.
6. Remove the remainder of the ruptured moisture seal and moisture seal gasket from female hose coupling. Replace with a new PN 07411 Moisture Seal Assembly. **Carefully follow the installation instructions contained in the PN 07411 package including the installation of a new hose gasket in the female hose coupling**.
7. Remove agent fill cap and gasket. Clean, lubricate and set parts aside. Check the condition of remaining chemical (replace any dry chemical that is contaminated or caked). Fill extinguisher with the type and amount of dry chemical shown on the extinguisher label – verify gross weight. Install the fill cap securely.

   WARNING: DO NOT OVERFILL THE EXTINGUISHER. THIS COULD CAUSE A MALFUNCTION OR PREMATURE RUPTURE OF THE SAETY DISC. DO NOT MIX TYPES OF AGENTS – THIS CAN CAUSE A DANGEROUS PRESSURE BUILD UP AND REDUCE EXTINGUISHER EFFECTIVENESS.
8. Install the 55 ft^3 nitrogen cylinder (pressurized to 2015 psi). Remove the shipping cap. Place nitrogen cylinder on the extinguisher, tighten nuts securely and attach the nitrogen hose.
9. Reattach the hose to the extinguisher (tighten hand tight plus a ¼ turn). Properly coil the hose onto the storage rack. Reattach the shutoff nozzle firmly to the hose and store it in the mount with the shutoff lever in the **closed** (forward) position.
10. Record the service date on the inspection tag and place the extinguisher in its proper location.

TROUBLESHOOTING GUIDE

WARNING: BEFORE ATTEMPTING TO CORRECT ANY LEAKAGE PROBLEM, BE SURE THAT THE AGENT CYLINDER IS COMPLETELY DEPRESSURIZED. Always use caution when opening the shutoff nozzle or any other connection as a leaking nitrogen cylinder valve seat may have pressurized the agent container refer to the recharge procedure for proper method of depressurization.

	PROBLEM	CORRECTIVE ACTION
1.	Nitrogen cylinder gauge reads low or high	Temperature may have affected the pressure reading Temperature (F) 35º 70º 120º Temperature (C) 2º 21º 49º Recommended Pressure psi 1880 2015 2200 mPa 13.0 13.9 15.2 Minimum Pressure psi 1590 1700 1900 mPa 11.0 11.7 13.1 NO CORRECTIVE ACTION IS REQUIRED IF THE PRESSURE IS WITHIN PARAMETERS STATED ABOVE.
2.	Nitrogen pressure is too low. Valve is closed. Tamper seal is intact. There is pressure in the agent and nitrogen cylinders.	Valve seat has leaked and has pressurized the agent cylinder. Follow Recharge Procedure for restoring the extinguisher to service.
3.	Nitrogen pressure is too low. Valve is closed. Tamper seal is intact. No pressure observed in the agent cylinder.	Leakage in the nitrogen valve at other than the valve seal. Replace with a properly charged nitrogen cylinder.
4.	Shutoff nozzle does not move freely.	Disassemble, clean and lubricate.
5.	Unable to remove the agent cylinder cap.	Agent cylinder may be pressurized. Make no further attempt to remove the cap until this is checked. See the Recharge Procedure for proper depressurization method.
6.	Nitrogen hose cut, cracked or abraded.	Replace hose assembly with PN 07292.
7.	Chemical agent and pressure leaking from the safety disc assembly.	Inspect safety outlet for tightness or damage. Tighten if necessary. NOTE: Only tighten the large hex nut of the assembly. The small round nut containing the holes is factory set to a specific torque value. Do not attempt to adjust. If damaged or ruptured, replace complete Amerex PN 03787 safety disc assembly.

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.

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 ft (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.