



**SERVICE MANUAL
NO. 14425
for
AMEREX
HALOTRON I
HAND PORTABLE
"CLEAN AGENT" FIRE EXTINGUISHERS

(FOR NON-RESIDENTIAL APPLICATIONS)**

*** * * HAVE EXTINGUISHERS RECHARGED IMMEDIATELY AFTER ANY USE * * ***

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

When maintenance is indicated it should 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 are incorrectly labeled as UL component parts, some are advertised as Amerex type. None of these meet UL requirements and all of them voids the Amerex extinguisher warranty and UL listing. **DO NOT SUBSTITUTE.**

REFERENCES IN THIS MANUAL:

NFPA-10 Portable Fire Extinguishers

CGA C-1 Methods for Hydrostatic Testing of Compressed Gas Cylinders

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

AVAILABLE FROM:

National Fire Protection Association
1 Batterymarch Park, P. O, Box 9101
Quincy, MA 02269-9101

Compressed Gas Association, Inc.
4221 Walney Road, 5th Floor
Chantilly, VA 20151-2923

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INTRODUCTION

This manual covers specific instructions for the Amerex Halotron I hand portable extinguishers. Special maintenance and recharge instructions contained in this manual apply to these extinguishers only. Halotron I "Clean Agent" extinguishers are designed for Class A, B, and C hazards formerly protected with Halon 1211 extinguishers. They contain dichlorotrifluoroethane (R-123), which is designated for streaming fire extinguisher applications. Halotron I is listed in the U.S. Environmental Protection Agency (EPA) "Significant New Alternative Policy" (SNAP) as acceptable for nonresidential applications. Halotron I has acceptable toxicity and cardiac sensitization levels for use in occupied spaces when used according to the instructions on the nameplate and rules of the EPA SNAP Program.

PHYSICAL PROPERTIES OF HALOTRON I

Primary Component	Dichlorotrifluoroethane (R-123) or (HCFC-123)
Boiling Point	80.6°F [27°C]
Liquid Density	92.3 lb./ft ³ (1.48 kg / liter)
Gas Density	0.385 lb./ft ³ (6.17 kg / m ³)
Molecular Weight	150.68
Physical State	Pressurized Liquid
Vapor Pressure @ 68°F [20°C] (liquid alone)	11.2 psi [77 kPa]
Pressure of mixture in Container @ 68°F [20°]	95 psig in bulk container

AMEREX CORPORATION DOES NOT SERVICE, MAINTAIN OR RECHARGE FIRE EXTINGUISHERS. THIS MANUAL IS PUBLISHED AS A GUIDE TO ASSIST SERVICE PERSONNEL IN THE INSPECTION, MAINTENANCE AND RECHARGE OF AMEREX FIRE EXTINGUISHERS ONLY. NO INSTRUCTION MANUAL CAN ANTICIPATE ALL POSSIBLE MALFUNCTIONS THAT MAY BE ENCOUNTERED IN THE SERVICE OF FIRE EXTINGUISHERS. AMEREX ASSUMES NO LIABILITY FOR SERVICE, MAINTENANCE OR RECHARGE OF FIRE EXTINGUISHERS BY PUBLISHING THIS MANUAL.

INSTALLATION

THIS MANUAL SHOULD BE CAREFULLY STUDIED BY ALL WHO MIGHT USE OR SERVICE THE EXTINGUISHER. STORE IT IN A CONVENIENT PLACE FOR EASY REFERENCE.

Your layout and particular hazards dictate the placement of fire extinguishers. NFPA-10 (1-6.9) recommends that hand portable extinguishers with a gross weight less than 40 lbs. be hung with the top of the extinguisher **not more** than 5 ft. (1.53 m) above the floor. Extinguishers having a gross weight greater than 40 lbs. (18.14 kg) should be installed so that the top of the extinguisher is **not more** than 3 ½ ft. (1.07 m) above the floor. All extinguishers should be in an accessible location and near an exit. **Never install the extinguisher in a location where a potential hazard would prevent easy access.**

The operational temperature range is -40°F to +120°F (-40°C to +60°C). The extinguisher must be protected if temperatures outside of these ranges are anticipated. **Never throw an extinguisher into a fire because rapid heat buildup could cause pressure expansion and exceed the limitations of the cylinder.**

MOUNTING INSTRUCTIONS

Your extinguisher should be mounted in a clean, dry area accessible to the fire hazards and preferably near an exit. Hang it so that the top is from 3½ to 5 feet above the floor and out of the reach of small children. Use the mounting bracket furnished with the extinguisher. Fasten to a solid surface using strong screws or fasteners (not included). Follow the Mounting Instructions below.

MOUNTING INSTRUCTIONS

U/L specifies that the hanging device must withstand a vertical force of five times the weight of the charged extinguisher but not less than 100 pounds. The extinguisher bracket should be mounted as follows:

WALLS WHERE 2 X 4 STUDS CAN BE FOUND Mount wall hanger bracket securely to stud using two No. 10 x 1 $\frac{1}{4}$ inch long wood screws through the diagonal smaller holes in the bracket.

SHEET ROCK Mount a $\frac{3}{4}$ inch thick board to wall using 3/16 inch toggle bolts. Board should extend a minimum of two inches beyond all sides of the extinguisher profile (excluding hose and wand). Mount hanger racket to board using two No. 10 x 1 inch long wood screws as above.

CINDER BLOCK OR CEMENT Mount wall hanger bracket using one $\frac{1}{4}$ inch toggle bolt or masonry lead screw expansion anchor through center hole in wall bracket.

CONCRETE OR TILE WALLS Mount wall hanger bracket using one $\frac{1}{4}$ inch masonry lead screw expansion anchor through center hole in wall bracket. FOR TILE WALLS - locate in joint.

STEEL POSTS OR BEAMS Special tools and fasteners are required - have extinguisher mounted by a professional fire extinguisher service company.

OPERATION

WARNING: PERSONS EXPECTED TO USE THIS EXTINGUISHER SHOULD BE MADE AWARE OF THE CONFINED SPACE LIMITATIONS AND TRAINED IN INITIATING ITS OPERATION AND PROPER FIRE FIGHTING TECHNIQUE. THE CONCENTRATED AGENT CAN PRODUCE TOXIC BY-PRODUCTS. AVOID INHALATION OF THESE MATERIALS BY EVACUATING THE CONFINED SPACE. DO NOT USE IN CONFINED SPACES SMALLER THAN THE MINIMUM STATED ON THE EXTINGUISHER LABEL.

1. Remove extinguisher from wall hanger bracket.
2. Hold extinguisher upright, twist and pull ring (safety) pin.
3. Start back a minimum of 8 feet from the fire. Aim the nozzle at the base of the fire nearest you.
4. Keeping the extinguisher upright, squeeze the lever to discharge. Sweep the agent stream from side to side.
5. Evacuate and ventilate the area immediately after extinguishing the fire. The fumes and smoke from any fire may be hazardous and can be deadly.

WARNING: SYMPTOMS OF OVER-EXPOSURE TO PURE Halotron I MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, DROWSINESS, ANESTHESIA, OR UNCONSCIOUSNESS. PERSONS SUFFERING FROM OVER-EXPOSURE SHOULD BE IMMEDIATELY REMOVED TO AREA WITH FRESH AIR. APPLY ARTIFICIAL RESPIRATION IF NECESSARY. CONTACT A PHYSICIAN.

INSPECTION

Extinguishers should be INSPECTED when initially placed in service and at regular intervals (monthly or more often if circumstances dictate) to insure they are ready for use. Inspections may be accomplished manually or, in some cases, by electronic monitoring.

INSPECTION [NFPA-10] 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. Inspections may be accomplished manually, or in some cases by electronic means.

PERIODIC INSPECTION PROCEDURES (monthly or more often if circumstances dictate)

This extinguisher should be inspected at regular intervals (monthly or more often if circumstances dictate) to insure that it is ready for use.

A "quick check" should be made of the extinguisher for the following:

1. Location in designated place
2. No obstruction to access or visibility
3. Operating instructions on nameplate legible and facing outward
4. Safety Seals and tamper indicators not broken or missing
5. Determine fullness by weighing or "hefting"
6. Examination for obvious physical damage, corrosion, leakage, or clogged nozzle
7. Pressure gauge reading in the operable range

MAINTENANCE

Extinguishers should be subjected to maintenance at intervals of not more than 1 year, at the time of hydrostatic test, or when specifically indicated by an inspection or by electronic notification. Maintenance procedures include a thorough examination of the basic elements of a fire extinguisher:

1. **Mechanical parts**
2. **Extinguishing agent of cartridge operated extinguishers, pump tanks and certain types of stored pressure extinguishers**
3. **Expelling means**

NOTE: Stored pressure Halotron I extinguishers do not require an internal examination of the cylinder or examination of the agent during annual maintenance, but shall receive a thorough external examination.

Maintenance [NFPA 10] Maintenance is a thorough examination of the fire 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 the need for hydrostatic testing.

MAINTENANCE/SERVICE PROCEDURE

1. Clean extinguisher to remove dirt, grease or foreign material. Check to make sure that the instruction nameplate and UL manifest are securely fastened and legible. Inspect the cylinder for corrosion, abrasion, and 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, using the proof pressure method in accordance with CGA C-1 and NFPA 10.

NOTE: 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 extinguisher and compare with weight printed in the Maintenance section on the nameplate. Recharge extinguisher if weight is not within indicated allowable tolerances.
4. Check the date of manufacture on the extinguisher nameplate. Cylinder must be hydrostatically (proof pressure) tested every 12 years to the test pressure indicated on the nameplate. Check the last date complete maintenance was performed. Per NFPA 10 these extinguishers shall be emptied and subject to complete maintenance every six years. All maintenance/service and recharge procedures shall be done at that time.
5. Visually inspect the pressure gauge:
 - a. if bent, damaged or improper gauge, depressurize and replace.
 - b. If pressure is low, check for leaks
 - c. if pressure is low or high and temperature/pressure relationship has been ruled out:
 1. Low pressure - check for leaks. Follow procedure for reclaiming Halotron I agent, install necessary part(s) to repair leak and recharge according to instructions.
 2. High pressure (over pressurized or over charged) - depressurize and recharge extinguisher following instructions in Recharge section.
6. Remove nozzle or hose and nozzle assembly and inspect for damage. Blow air through nozzle or hose and nozzle to insure that passage is clear of foreign material. Replace component parts with proper Amerex part as necessary.
7. Check ring pin for freedom of movement by breaking the seal and removing the pin. Replace the ring pin if bent or if removal is difficult.
8. Inspect discharge lever for dirt or corrosion that might impair freedom of movement. Inspect carrying handle for proper installation. If lever, handle or rivets are damaged or distorted, replace with proper Amerex part(s).
9. Inspect 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 Recharge Procedure.
10. Install nozzle or hose and nozzle assembly.
11. Install new tamper seal and record service data on the extinguisher inspection tag.
12. Rehang the extinguisher on the wall hanger bracket making sure that it fits the hanger bracket properly - replace the bracket if necessary.

RECHARGE

Recharging [NFPA-10]. The replacement of the extinguishing agent and also includes the expellant for this type of extinguisher.

WARNING

- a. Halotron service should be performed only in a well ventilated room by a properly trained service technician wearing proper eye protection and rubber gloves.
- b. Before attempting to recharge be sure this extinguisher is completely depressurized by slowly and carefully depressing the operating lever and discharging the extinguisher into a proper collection area.

- c. Use a regulated pressurizing source using ARGON ONLY. Set the regulator to no more than 25 psi higher than the extinguisher gauge operating pressure.
- d. Check and calibrate regulator gauge at frequent intervals. The regulator gauge should be used to determine when the intended charging pressure has been reached. DO NOT USE THE EXTINGUISHER GAUGE FOR THIS PURPOSE.
- e. 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.

RECHARGE

Note: The following procedure is for an EMPTY Halotron I extinguisher. If you are recharging an extinguisher, which has been partially discharged (with agent remaining in the cylinder) or has been recharged and the pressure leaked, follow the instructions contained in the Recharging Instructions packaged with the Amerex Recharge Kit (P/N 14538) or with Getz Halotron recovery equipment.

1. Complete items 1 through 9 in Maintenance Service Procedure above.
2. **Verify that there is no pressure remaining in the extinguisher.**
3. Remove the valve assembly by turning it counter clockwise. Disassemble by removing downtube assembly (use a wrench on the downtube retainer, not the tube), spring and valve stem from the valve assembly.
4. **REMOVE AND DISCARD THE COLLAR O-RING AND VALVE STEM ASSEMBLY.** Inspect and clean the spring with a clean, dry cloth - replace if worn or damaged. Clean internal valve body surfaces and threads with a soft bristle brush making sure that the valve stem seating area is not scratched. Install a new (green) collar o-ring and valve stem assembly (green seal). Lightly lubricate the collar o-ring and small o-ring on the valve stem with Visilox V-711 (do not lubricate the valve stem seal). Inspect the downtube. If it is damaged replace with proper downtube (see Parts List). Install downtube securely.

NOTE: Valve assemblies are not indexed. Keep original valve assembly/cylinder combinations together while performing maintenance or recharge to assure proper nameplate orientation.

5. Inspect the interior of the cylinder following CGA Visual Inspection Standard, C-6.
6. Install the valve assembly to the cylinder in a clockwise direction. Install the proper Amerex recharge adapter and draw a vacuum of 27" of mercury (adjusted for altitude variations - see your vacuum pump manual for detailed instructions). Place the extinguisher on a scale and tare weight prior to filling.
7. Connect the extinguisher to a Halotron I supply cylinder using the Amerex P/N 14538 Halotron I Recharge Kit or equivalent.

NOTE: The Halotron I supply cylinder **MUST** be pressurized to approximately 100 psi with **ARGON** at all times.

8. Depress the operating lever and fill extinguisher with the amount of agent specified on the nameplate USING ONLY CLEAN, UNCONTAMINATED HALOTRON I AGENT. (See detailed instructions on your recharging system).

CAUTION: AVOID LIQUID HALOTRON I CONTACT WITH EXTINGUISHER CYLINDER. WIPE DRY IMMEDIATELY WITH A CLEAN CLOTH.

9. Pressurize to the extinguisher operating pressure with **ARGON** only. Repeatedly rock the extinguisher to thoroughly mix the **ARGON** pressurizing gas until proper pressure is reached. Add additional **ARGON** as necessary until the pressure stabilizes.

10. Check for leaks at the gauge, valve outlet and valve/cylinder connection using a halogen type leak detector or leak detection fluid. **DO NOT USE SOAPY WATER!** Thoroughly remove all leak detection fluid residue from the valve assembly and cylinder. Remove recharge adapter.

CAUTION: IF YOU USE A HALOGEN TYPE LEAK DETECTOR A RESIDUAL AMOUNT OF HALOTRON I WILL REMAIN IN THE VALVE BODY UNTIL THE LIQUID EVAPORATES. TO PROPERLY LEAK TEST USING THE HALOGEN LEAK DETECTOR IT IS RECOMMENDED THAT THE EXTINGUISHER BE SET ASIDE A MINIMUM OF 24 HOURS AFTER RECHARGING, THEN LEAK TESTING.

11. Place nozzle or hose and nozzle on scale with extinguisher. Weigh and confirm that the total weight is within the allowable tolerances indicated in the maintenance section of the extinguisher nameplate.
12. Install nozzle or hose and nozzle assembly.
13. Install ring pin with ring facing front of the extinguisher. Install new tamper seal. Record recharge date and attached new recharge tag.

TROUBLE SHOOTING GUIDE

WARNING: DETERMINE THE SOURCE OF A LEAK BEFORE THE EXTINGUISHER IS DEPRESSURIZED. THE EXTINGUISHER MUST BE COMPLETELY DEPRESSURIZED BEFORE ANY ATTEMPT IS MADE TO REMOVE THE VALVE ASSEMBLY AND CORRECT THE LEAKAGE PROBLEM. SEE INSTRUCTIONS PACKAGE WITH THE AMEREX HALOTRON I RECHARGE KIT P/N 14538 OR GETZ HALOTRON RECOVERY SYSTEM FOR THE PROPER METHOD OF DEPRESSURIZING THE EXTINGUISHER TO AVOID UNNECESSARY DISCHARGE AND MINIMUM AGENT LOSS.

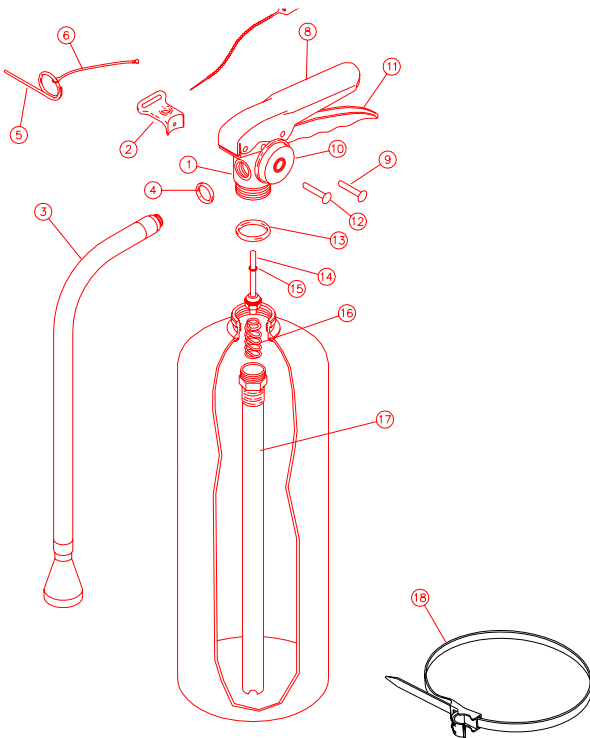
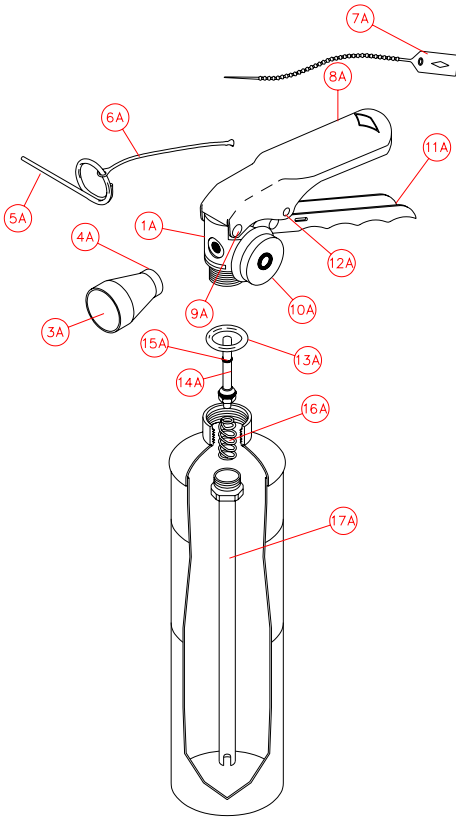
	PROBLEM	CORRECTIVE ACTION
1.	Leak at collar o-ring	Remove valve assembly, clean collar thoroughly and install new ring. (Optional)
2.	Leak through valve	Install new valve stem assembly. Check valve seat for scratches or foreign matter
3.	Leak around gauge threads	Remove gauge* and reinstall using Teflon tape on the gauge threads
4.	Defective gauge	Remove defective gauge* and install a new gauge using Teflon tape on the gauge threads.
6.	Leak in cylinder	Contact Amerex if under warranty, otherwise mark "REJECTED" and 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/82°C) for two to four minutes. Remove gauge with a 7/16" open end wrench.	



PARTS LIST

For

1.4, 2½, 5, 5½ 11 & 15½ HALOTRON I Clean Agent Stored Pressure Extinguishers
Models A384, A/B385, A/B386, B394 – Aluminum Valve
Models 387, 397 & 388, 398 – Brass Valve



Item No.	Part No.	Description	Std. Pkg.
1	14527	Vlv Asy-387/388, 397/398	
1A	14525	Vlv Asy-A384	
	14526	Vlv Asy-A/B385, A/B386	
	17051	Vlv Asy - B394	
2	16694	Hanger Loop & Screw-387/388, 397/398	
3	14436	Hose & Noz Asy-387/397 (247)	
	14449	Hose & Noz Asy-388/398 (295)	
3A	14407	Nozzle - A384 (.121)	
	14408	Nozzle - A/B385 (.166)	
	14409	Nozzle - A/B386, B394 (.277)	
4	06978	O-ring (hose) - 387/388, 397/398	
4A	01532	O-ring (nozzle) - A384, A/B385, A/B386, B394	
5	00160	Ring (safety) Pin SS - 387/388, 397/398	
5A	01412	Ring (safety) Pin AL - A384, A/B385, A/B386, B394	
6 & 6A	00532	Chain (Nylon) for Ring Pin - ALL	
7 & 7A	01387	Lock Wire Seal (yellow) - ALL	
8	07762	Lever & Rivet - 387/388, 397/398	
8A	06067	Lever & Rivet - A384	
	11825	Lever & Rivet - A/B385, A/B386	
	02625	Lever & Rivet - B394	
9	01563	Rivet only for Lever - 387/388, 397/398	
9A	01060	Rivet only for Lever - A384, A/B385, A/B386, B394	
10 & 10A	14418	Gauge 125 psi - 387/388, 397/398 & A384	
10A	14417	Gauge 100 psi - A/B385 & A/B386	
	16332	Gauge 150 psi - B394	
11	09020	Handle & Rivets - 387/388, 397/398	
11A	09001	Handle & Rivet - A384	
	11826	Handle & Rivet - A/B385 & A/B386	
	09002	Handle & Rivet - B394	
12	01564	Rivet only for handle (2 Req'd) 387/388, 397/398	
12A	01064	Rivet Only for Handle (2 Req'd) - A384, A/B385, A/B386, B394	
13	13305	Collar O-ring - 387/388, 397/398	
13A	14268	Collar O-ring - A384, A/B385, A/B386, B394	
14	13288	Vlv Stem Asy - 387/388, 397/398	
14A	14327	Vlv Stem Asy - A384, A/B385 A/B386 & B394	
15	05243	Vlv Stem O-ring - 387/388, 397/398	
15A	05235	Vlv Stem O-ring - A384, A/B385 & A/B386	
16	00383	Spring - 387/388, 397/398	
16A	01074	Spring - A384, A/B385 A/B386, B394	
17	15507	Dtube/Retainer Asy -397/398	
17A	14285	Dtube/Retainer Asy - 387/388	
17A	06069	Dtube/Retainer Asy - A384	
	01075	Dtube/Retainer Asy - A385	
	06212	Dtube/Retainer Asy - A/B386, B385, B394	
18	14778	Strap & Clip Asy (blk plastic) - 387/388, 397/398	
19	14568	Fill Adapter - 387/388, 397/398	
19A	14569	Fill Adapter - A384, A/B385 A/B386, B394	
20	03038	Hydrotest Adapter (1½" - 12UN2B) - 387/388, 397/398	
20A	03610	Hydrotest Adapter (1" - 12UN2B) - A384, A/B385, A/B386, B394	

NOTE: Replacement valve assemblies include new valve body, gauge, handle and lever.

