98 Columbus Avenue, Pointe Claire, QC, Canada H9R 4K4
info@caspaerospace.com www.caspaerospace.com
T: 514.630.7777 F: 514.630.9999

HAND PORTABLE

AIRCRAFT FIRE EXTINGUISHERS

3.75 lb. Halotron BrX Part No. 375H673

3.75 lb. Halotron BrX Part No. 375N69953

COMPONENT MAINTENANCE MANUAL

WITH

ILLUSTRATED PARTS LIST

RECORD OF REVISIONS

Keep this page in the front of the manual. When you get a revision, put the revised pages in the manual, and record the revision number, the dates, and your initials in the areas below.

Revision Number	Revision Date	Date Incorporated	By
Orig	23-Jun-2022	23-Jun-2022	CASP
1	22-Sep-2022	22-Sep-2022	CASP
2	27-Feb-2023	27-Feb-2023	CASP

LIST OF EFFECTIVE PAGES

Page	Rev.	Date
1	2	27-Feb-2023
2	2	27-Feb-2023
3	2	27-Feb-2023
4	2	27-Feb-2023
5	2	27-Feb-2023
6	2	27-Feb-2023
7	2	27-Feb-2023
8	2	27-Feb-2023
9	2	27-Feb-2023
10	2	27-Feb-2023
11	2	27-Feb-2023
12	2	27-Feb-2023
13	2	27-Feb-2023
14	2	27-Feb-2023
15	2	27-Feb-2023
16	2	27-Feb-2023

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INSTRUCTION

a) The CMM gives all the procedures from the manufacturer for the use, repair, and complete overhaul of the component

b) The manual gives all the procedures necessary to let a person do tests, disassemble, clean, check and assemble a unit which has been rejected from serviceable use

c) Only approved personnel can perform maintenance on the component.

d) This manual contains:
- Technical data
- Maintenance and repair procedures
- Illustrated Parts Lists (IPL)

2. REFERENCES IN THIS MANUAL

a) **NFPA-10** Portable Fire Extinguishers

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

c) **CGA C-6.3** Standard for Visual Inspection of Low Pressure Aluminum Alloy Compressed Gas Cylinders

d) http://www.halotron.com/brx_technical_info.php

3. DESCRIPTION

a) Part numbers 375H673 & 375N69953 are portable handheld Halotron BrX fire extinguishers, for use in aircraft occupied spaces. Part number BR325 is the bracket intended for use with these extinguishers when installed in aircraft. The brackets are not supplied with the fire extinguishers and must be ordered separately.

b) The fire extinguishers consist of an aluminum pressure vessel, a pressure gauge, and a machined aluminum valve assembly with a chrome steel handle. The extinguishers are fitted with a discharge hose assembly or a discharge nozzle. A pull-out pin and nylon tamper seal are fitted to the valve handle to prevent the fire extinguisher from being operated accidentally.

c) The extinguisher cylinders are filled with a liquid fire-extinguishing agent, Halotron BrX (2-bromo-3,3,3-trifluoro-1-propene [CF3CBr = CH2 (stabilized with proprietary additives)]), pressurized with nitrogen (N2). A valve assembly is attached to the cylinder neck, and a pressure gauge is attached to the valve body and continuously monitors the pressure inside the cylinder. The valve body provides a method to connect a recharge line to the fire extinguisher as well as to discharge the extinguishing agent. The hose assembly or nozzle, as applicable, are attached to the valve body.

d) The pressurized extinguishing agent is held inside the cylinder by the valve assembly until the lever is manually operated. When the valve is activated by removing the tamper seal and the ring pin and squeezing the lever, the valve stem assembly inside the valve is pushed down and the nitrogen forces the extinguishing agent up the siphon tube, around the stem assembly, through the valve assembly and out the hose or nozzle.

4. OPERATING INSTRUCTIONS

NOTE: The following instructions are general in nature and meant to familiarize the user with the basic operating techniques. The extinguisher nameplate must be consulted for specific procedures and starting distances.

a) To operate, hold the extinguisher upright and pull on the ring pin (item 2) to break the nylon tamper seal (item 1). Ensure the ring pin is completely disengaged from the valve handle.

b) Stand back a minimum of 8 feet from the fire and aim the discharge hose or nozzle at the base of the fire nearest you.

c) Hold and keep the extinguisher upright and firmly squeeze the handles together to discharge the extinguishing agent. Spray the agent using a sweeping side to side motion aimed at the near base of the fire. Move closer as the fire is extinguished, but not so close as to scatter the burning material or liquid.

d) After the fire is out, step back and watch for possible re-ignition.

e) Evacuate and ventilate the area to the extent possible immediately after use. The fumes and smoke from any fire may be hazardous and can be deadly.

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

f) Remove from service and replace fire extinguishers immediately after any use.

5. SPECIFIED DATA

Bracket Part No.	BR375
Agent Capacity	3.75 lb (1.7 kg)
Charged Weight	6 lb (2.72 kg)
Discharged Time	9 seconds
Listings/Approvals	UL/ULC/FAA/USCG
UL/ULC Rating	5B:C
Dimensions Height Width Depth	 17.59 in. (446.9 mm) 6.5 in. (165.1 mm) 3.25 in. (82.6 mm)
Extinguishing Agent	2-bromo-3,3,3-trifluoro-1-propene (Halotron BrX, BTP, 2-BTP, or HBFO-1233xfB)
Operating Pressure	100 psi (689.5 kPa)
Temperature Range	-40°F to +120°F / -40°C to +49°C
Cylinder Material	Aluminum
Cylinder Finish	Red Polyester Powder Paint
Valve Construction	Machined Anodized Aluminum

6. INSPECTION & MAINTENANCE

a) Monthly Inspection: Perform a visual inspection when the extinguisher is initially placed in service, and at monthly intervals thereafter (or more frequent if circumstances dictate) to ensure that the unit is in good operating condition and ready for use. This maintenance must be recorded, including the date of the inspection and the identity of the person performing the inspection. Inspection records shall be kept on a tag or label attached to the extinguisher, on an inspection checklist maintained on file, or by an electronic method that provides a permanent record. This inspection shall include:

1. Check the date of manufacture on the extinguisher nameplate. Extinguisher **must be replaced at 12 years as determined by the date of manufacture on the UL nameplate.**

2. Visually examine the cylinder for damage, dents, bulges, scratches, gouges, nicks, excessive corrosion, or evidence of repairs by soldering, welding, brazing or use of patching compounds. Cylinders that have bulges, dents, pitting or line corrosion, large amounts of general corrosion, evidence of fire damage or unauthorized repairs, or loss of wall thickness due to scratches, gouges, cuts, digs or nicks must be removed from service and forwarded to a service facility for maintenance or proper disposal.

3. Examine the valve for loose or damaged components. Repair or replace missing, loose, or damaged components, as necessary.

4. Visually examine the valve assembly for cracks or other damage. Extinguishers with damaged valves must be removed from service and repaired.

5. Verify valve to ensure all seals are intact, and that the ring pin is present and properly fitted. Replace or reattach as required

6. Verify fullness by weighing or “hefting”.

7. Visually examine the pressure gauge for damage and verify that the pressure indicated is within operational limits. Replace damaged gauge or repair and recharge extinguisher, as applicable.

   NOTE: Temperature variations may affect gauge readings. The gauge dial has been calibrated to reflect the tested extinguisher temperature extremes (-40°F to +120°F / -40° to +49°C). When in doubt about a gauge reading, place the extinguisher at room temperature (70°F /21°C) for several hours to obtain a true reading.

8. Visually examine the hose or nozzle (as applicable) for damage or blockage. Clean or replace a blocked or damaged hose or nozzle as required.

9. Ensure the operating instruction label is intact, legible, and facing outward when the extinguisher is installed in the bracket.

b) Annual Inspection: Once a year, the extinguisher must be subject to the following maintenance/service procedure.

1. Remove the extinguisher from its bracket.

2. Clean the extinguisher to remove dirt, grease, or foreign material. Check to ensure that the nameplate is securely fastened and fully legible. Inspect the cylinder for corrosion, abrasion, dents, or weld damage. If any of these conditions are found or there is any doubt about the integrity of the cylinder, discard the unit from service and replace with a new extinguisher.

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

3. Weigh the extinguisher using calibrated high-resolution scales to ensure the actual weight of the extinguisher (less bracket) is not below the minimum allowable weight specified on the instruction label. After the extinguisher is weighed, record the date the unit was weighed and the actual weight on a locally approved label or tag attached to the cylinder. Underweight units must be discarded and replaced.

NOTE: The only valid minimum allowable weight is the weight that is specified on the operating label affixed to the unit at the time of manufacture. Changes in the materials used for the manufacture of this extinguisher may result in changes to the empty weight of the extinguisher, which in turn may cause changes to the minimum allowable full weight. Only the minimum allowable weight specified on the original operating label correctly reflects the minimum weight requirements for a particular extinguisher.

If the weight is determined to be outside the allowable tolerance specified on the nameplate, remove the extinguisher from.

4. Visually inspect the extinguisher for damaged, missing, or incorrect parts. Only replacement parts approved by the manufacturer are approved for use on these extinguishers

5. Remove and check the ring pin (item 2) for freedom of movement, replace if bent or removal appears difficult.

6. Visually inspect the pressure gauge. Remove the extinguisher from service if:
   i. If the gauge is bent, damaged or the incorrect gauge (item 10);
   ii. If the pressure is found to be low, and temperature/pressure relationship has been ruled out;
   iii. If the pressure is found to be high, and temperature/pressure relationship has been ruled out.

7. Inspect the push lever for any dirt or corrosion that could impair freedom of movement. Inspect carrying handle for proper installation. If lever, handle, or rivets are damaged or distorted, replace complete unit.

8. Disassemble the hose assembly (item 5) or nozzle (item 4) from the valve body by turning them counter clockwise and inspect for damage or obstruction. Inspect the hose O-ring (item 3) for damage. Replace damaged parts as required.

9. Inspect the valve assembly for corrosion or damage to the hose thread connection. Extinguishers with damaged or corroded valves must be removed from service and discarded.

10. Re-install the hose assembly (item 5) or nozzle (item 4) (see assembly), the ring pin (item 2) and a new tamper seal (item 1).

11. Replace extinguisher in its bracket.

c) <u>Service Life</u>: The overall life of the Fire Extinguisher is 12 years, during that period no hydrostatic testing is required.

TROUBLE SHOOTING GUIDE

	DISORDER	CORRECTIVE ACTION
1.	Leak at collar O-ring	Contact CASP Aerospace if under warranty; otherwise remove and replace extinguisher.
2.	Leak through valve	Contact CASP Aerospace if under warranty; otherwise remove and replace extinguisher.
3.	Defective gauge	Contact CASP Aerospace if under warranty; otherwise remove and replace extinguisher.
4.	Leak in cylinder	Contact CASP Aerospace if under warranty; otherwise remove and replace extinguisher.

Figure 1.375H673 & 375N69953 Fire Extinguisher Assembly

FIG. ITEM	PART NUMBER	NOMENCLATURE	EFF CODE	UNITS/ ASSY
1-	375H673	FIRE EXTINGUISHER ASSEMBLY, HOSE, 3.5 LBS	A	
	375N69953	FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 3.5 LBS	B	
1	01387	*TAMPER SEAL		1
2	16354	*PULL PIN & CHAIN (NYLON) ASSY		1
3	01532	*O-RING, NOZZLE END		1
4	25627	*NOZZLE	B	1
5	27189	*HOSE ASSY	A	1

Table 1. Parts list

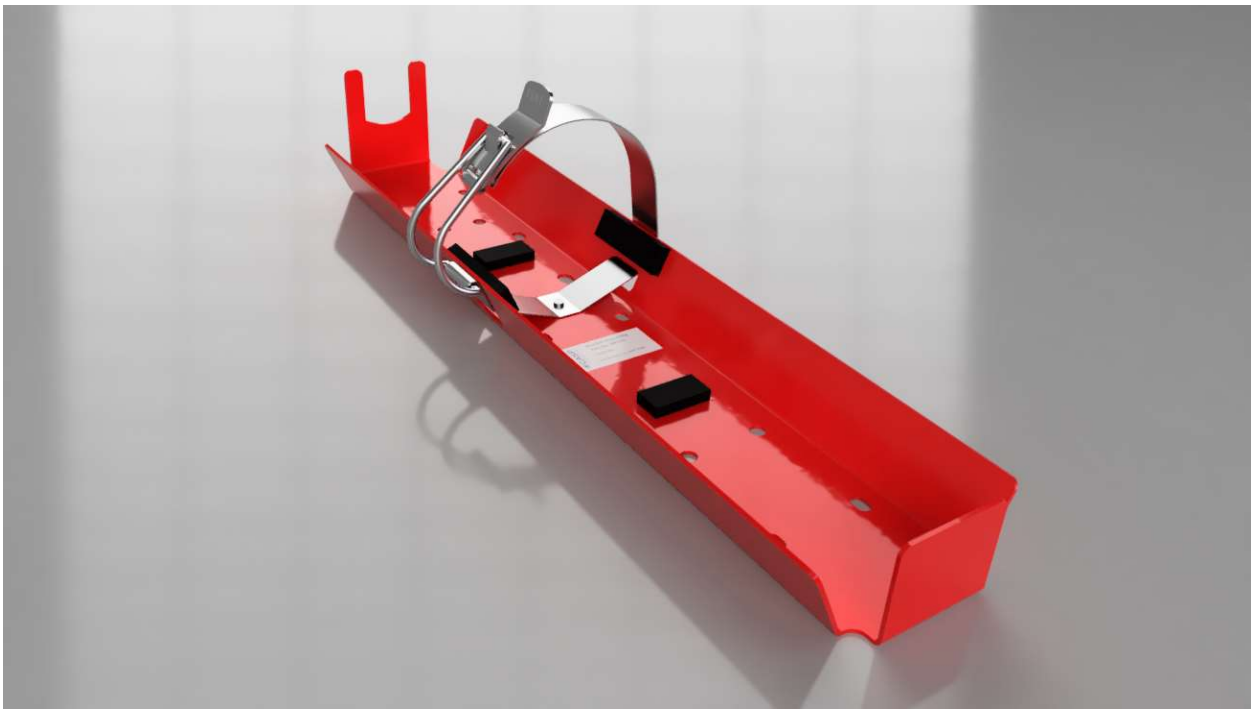

Figure 2. BR325 Bracket assembly