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HAND PORTABLE AIRCRAFT FIRE EXTINGUISHERS

3.75 lb. Halotron BrX Part No. 375H673
3.75 lb. Halotron BrX Part No. 375N69953
1.92 lb. Halotron BrX Part No. 192N69953TS
1.79 lb. Halotron BrX Part No. 179N69953TS
12.5 lb. Halotron BrX Part No. 125H673TS
3.55 lb. Halotron BrX Part No. 355N69953TS

COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST



COMPONENT MAINTENANCE MANUAL
375H673, 375N69953, 192N69953TS, 179N69953TS, 125H673TS & 355N69953TS

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.

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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) **AMEREX OMM 27192** Halotron BRX® Portable Extinguishers, Models 337, 347, 349 and 351
- e) **AC No: 20-42D** Hand Fire Extinguishers for use in Aircraft

3. DESCRIPTION

- a) Part numbers 375H673, 375N69953, 192N69953TS, 179N69953TS, 125H673 and 355N69953TS are portable handheld Halotron BrX fire extinguishers, for use in aircraft occupied spaces. Bracket part number BR325 and 25261 are specifically designed for compatibility with 375H673 or 375N69953, whereas part number 27293 is intended for use with 192N69953TS and 179N69953TS, part number 12932 is intended for use with 125H673, and part number 27804 is intended for use with 355N69953, when installed in aircraft. Please note that the BR325 and 25261 brackets are not included with the fire extinguishers and must be ordered separately. Similarly, bracket part number 12932 is not included with fire extinguisher part number 125H673. On the other hand, the brackets with part number 27393 and 27804 are supplied together with the fire extinguisher.
- 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 [$\text{CF}_3\text{CBr} = \text{CH}_2$ (stabilized with proprietary additives)]), pressurized with nitrogen (N_2). 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 to break the nylon tamper seal. 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 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 ARTIFICIAL RESPIRATION IF NECESSARY. CONTACT A PHYSICIAN.

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



COMPONENT MAINTENANCE MANUAL

375H673, 375N69953, 192N69953TS, 179N69953TS, 125H673TS & 355N69953TS

5. SPECIFIED DATA

Part No.	125H673	375H673, 375N69953	355N69953TS	192N69953TS	179N69953TS
Bracket Part No.	12932	BR325 or 25261	27804	27293	
Agent Capacity	12.5 lb (5.67 kg)	3.75 lb (1.7 kg)	3.55 lb (1.6 kg)	1.92 lb (0.87 kg)	1.79 lb (0.81 kg)
Charged Weight	19.88 lb (9.02 kg)	6 lb (2.72 kg)	5.1 lb (2.31 lb)	3.18 lb (1.44 kg)	3.04 lb (1.38 kg)
Discharged Time	16 seconds	9 seconds	8 seconds	9 seconds	
FAA approved	DOT/FAA/AR-01/37			N/A for 2B:C Rating	
Certified	ANSI/UL2129, CAN/ULC-S566 and RTCA D0-160G				
UL/ULC Rating	2A:10B:C	5B:C		2B:C	
Dimensions					
Height	20.25 in. (514.3 mm)	17.59 in. (446.9 mm)	13.69 in. (347.66 mm)	11.25 in. (285.75 mm) 4 in. (101.6 mm) 3.25 in. (82.6 mm)	
Width	8.5 in. (215.3 mm)	6.5 in. (165.1 mm)	3.5 in. (88.9 mm)		
Depth	5 in. (127 mm)	3.25 in. (82.6 mm)	4.13 in. (104.78 mm)		
Extinguishing Agent	2-bromo-3,3,3-trifluoro-1-propene (Halotron BrX, BTP, 2-BTP, or HBFO-1233xfB)				
Operating Pressure	150 psig (1034 kPa)	100 psig (689 kPa)		90 psig (621 psig)	
Range	15-17 ft (4.57-5.18m)	10-12 ft (3.05-3.66m)	11-12 ft (3.35-3.66m)	7-8 ft (2.13-2.44m)	



COMPONENT MAINTENANCE MANUAL

375H673, 375N69953, 192N69953TS, 179N69953TS, 125H673TS & 355N69953TS

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. Remove the extinguisher from service if gauge is damaged and/or if the pressure falls outside operational limits.

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 service.

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 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;
 - 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 or nozzle from the valve body by turning them counterclockwise and inspect for damage or obstruction. Inspect the hose O-ring for damage. Replace damaged parts as required.
9. Inspect the valve assembly for corrosion or damage to the hose/nozzle thread connection. Extinguishers with damaged or corroded valves must be removed from service and discarded.

10. Re-install the hose assembly or nozzle, the ring pin and a new tamper seal.
11. Replace extinguisher in its bracket.

c) **Service Life:** 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
6	375H673-301	● -ID LABEL	A	1
7	375N69953-301	● -ID LABEL	B	

* ANY SIMILAR UL LISTED FIRE EXTINGUISHER TAMPER SEAL IS AN ACCEPTABLE ALTERNATE FOR P/N 01387. COLOR IS NOT CRITICAL.

- ITEM NOT SHOWN

Table 1. 375H673 & 375N69953 Parts list

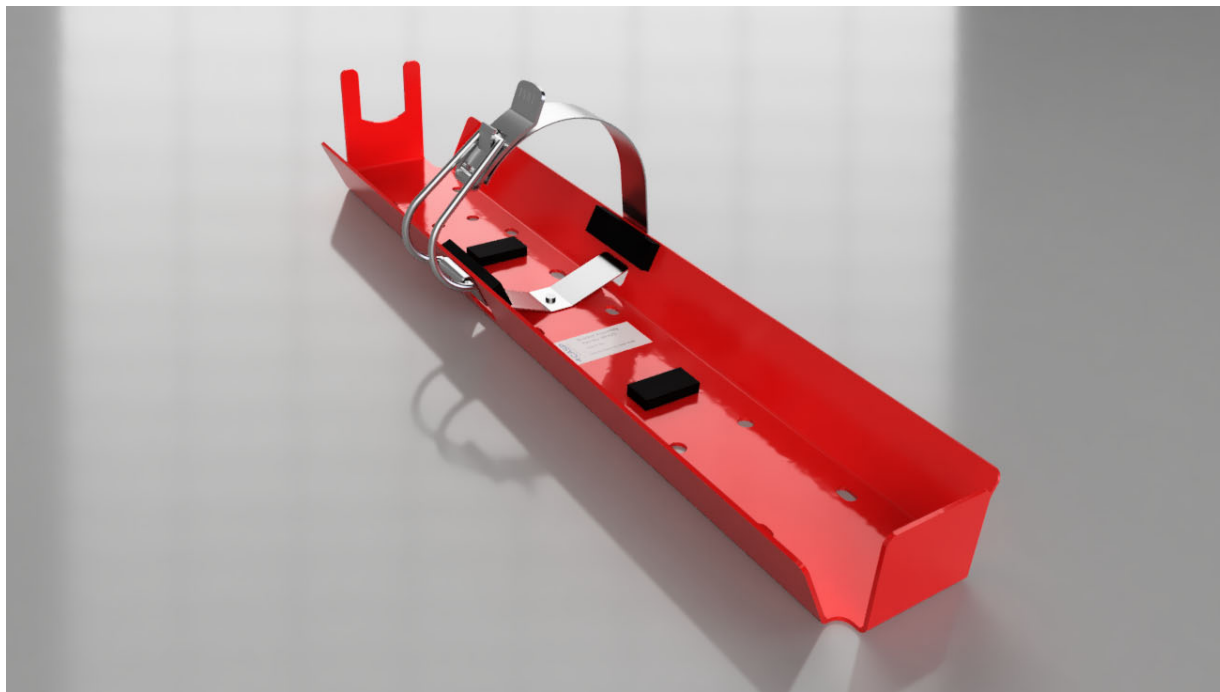


Figure 2. BR325 Bracket assembly



Figure 3. 25261 Bracket Assembly Model 898

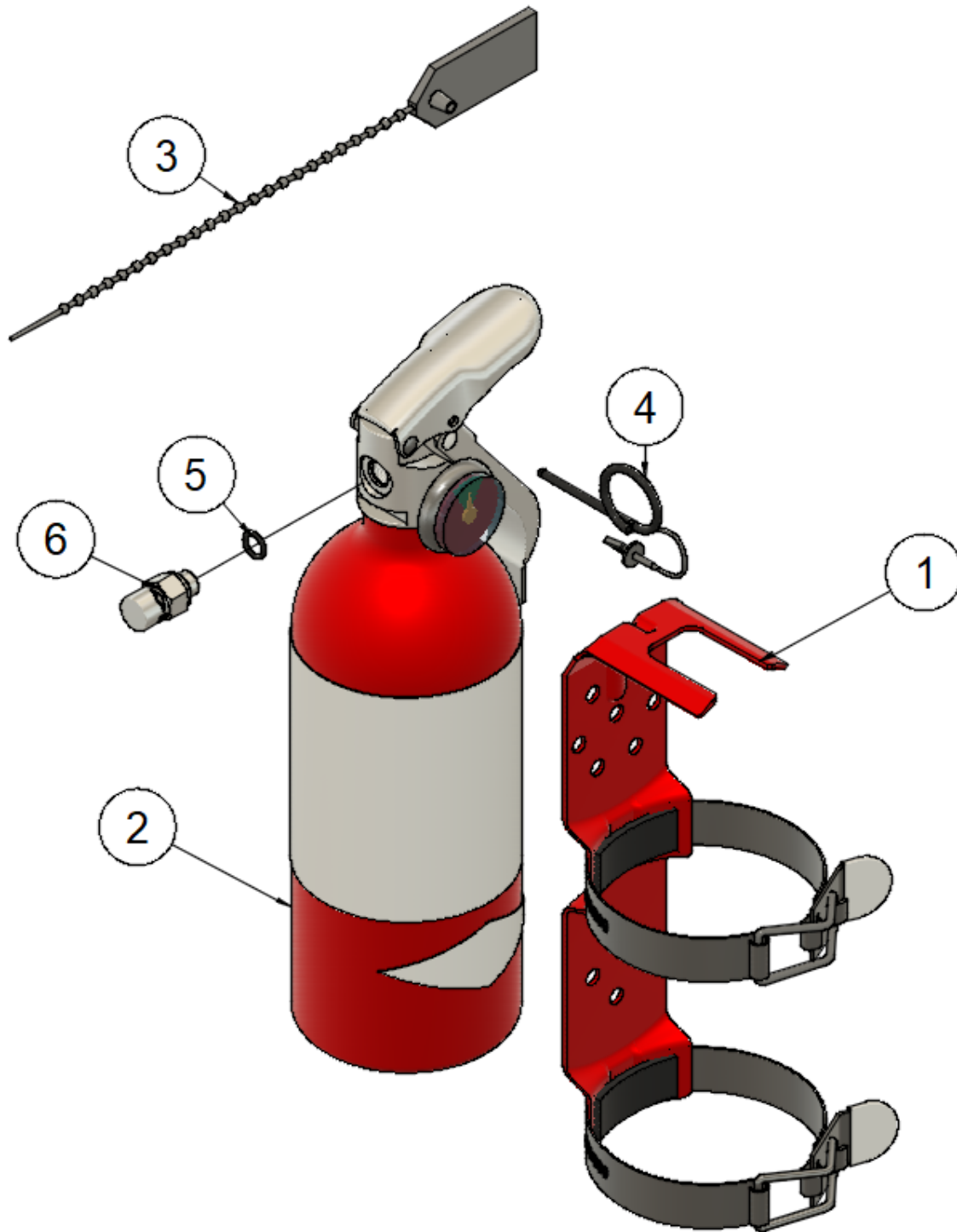


Figure 4. 192N69953TS & 179N69953TS Fire Extinguisher Assembly

FIG. ITEM	PART NUMBER	NOMENCLATURE	EFF CODE	UNITS/ ASSY
4-	192N69953TS	FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 1.92 LBS WITH BRACKET	A	
	179N69953TS	FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 1.79 LBS WITH BRACKET	B	
1	27293	● BRACKET ASSY 899 BTP RD		1
2	192N69953	● FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 1.92 LBS	A	1
2A	179N69953	● FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 1.79 LBS	B	1
3	02700	●● *TAMPER SEAL		1
4	16354	●● PULL PIN & CHAIN (NYLON) ASSY		1
5	01532	●● O-RING, NOZZLE END		1
6	27440	●● NOZZLE		1
7	192N69953-301	●● -ID LABEL	A	1
7A	179N69953-301	●● -ID LABEL	B	1

* ANY SIMILAR UL LISTED FIRE EXTINGUISHER TAMPER SEAL IS AN ACCEPTABLE ALTERNATE FOR P/N 01387. COLOR IS NOT CRITICAL.

- ITEM NOT SHOWN

Table 2. 192N69953TS & 179N69953TS Parts list

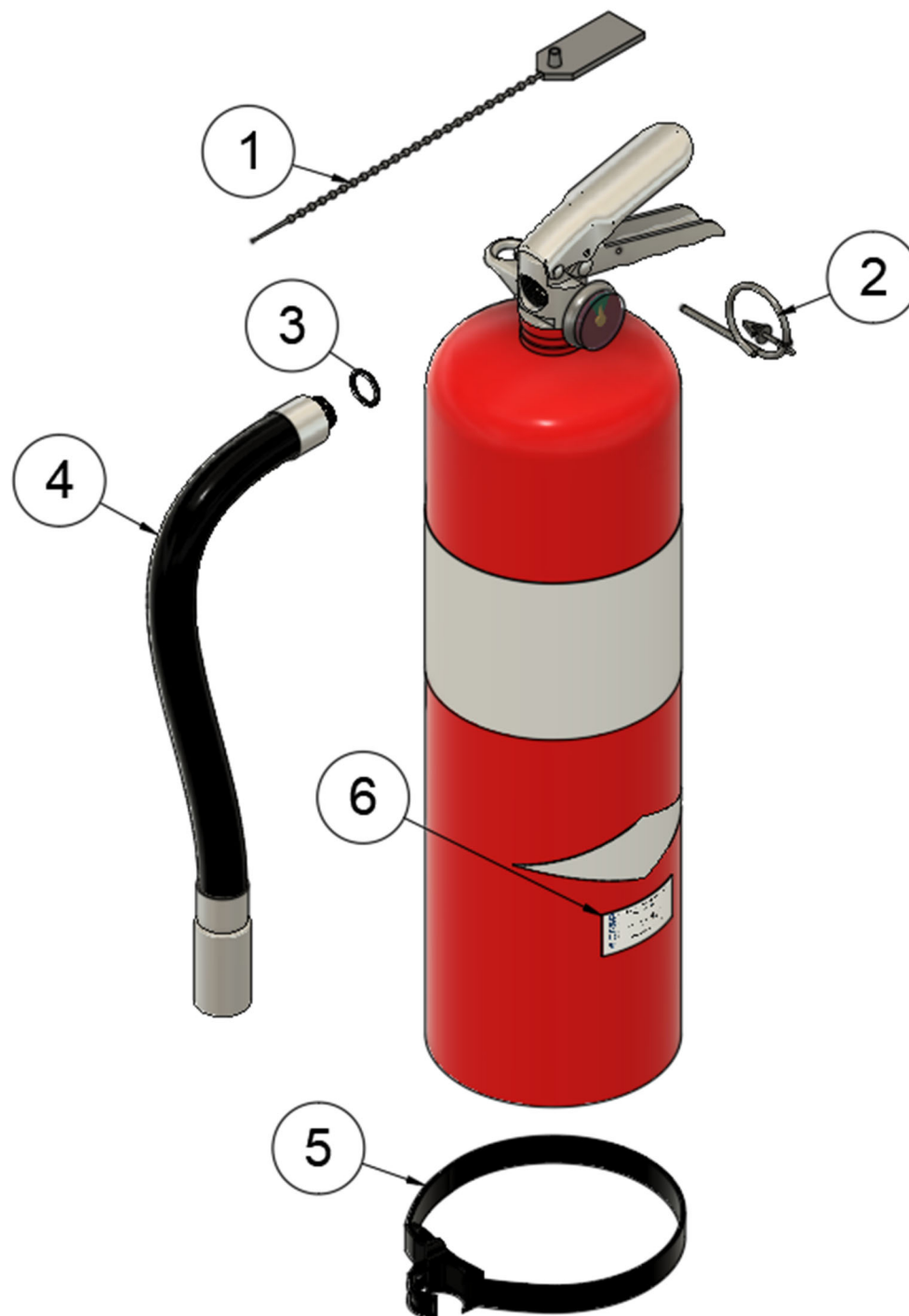


Figure 5. 125H673TS Fire Extinguisher Assembly

FIG. ITEM	PART NUMBER	NOMENCLATURE	EFF CODE	UNITS/ ASSY
5-	125H673	FIRE EXTINGUISHER ASSEMBLY, HOSE, 12.5 LBS		
1	02700	● *TAMPER SEAL		1
2	13888	● PULL PIN & CHAIN (NYLON) ASSY		1
3	06978	● O-RING, HOSE END		1
4	27289	● HOSE ASSY		1
5	14778	● STRAP, HOSE ASSY		1
6	125H673-301	● ID LABEL		1

* ANY SIMILAR UL LISTED FIRE EXTINGUISHER TAMPER SEAL IS AN ACCEPTABLE ALTERNATE FOR P/N 01387. COLOR IS NOT CRITICAL.

Table 3. 125H673TS Parts list

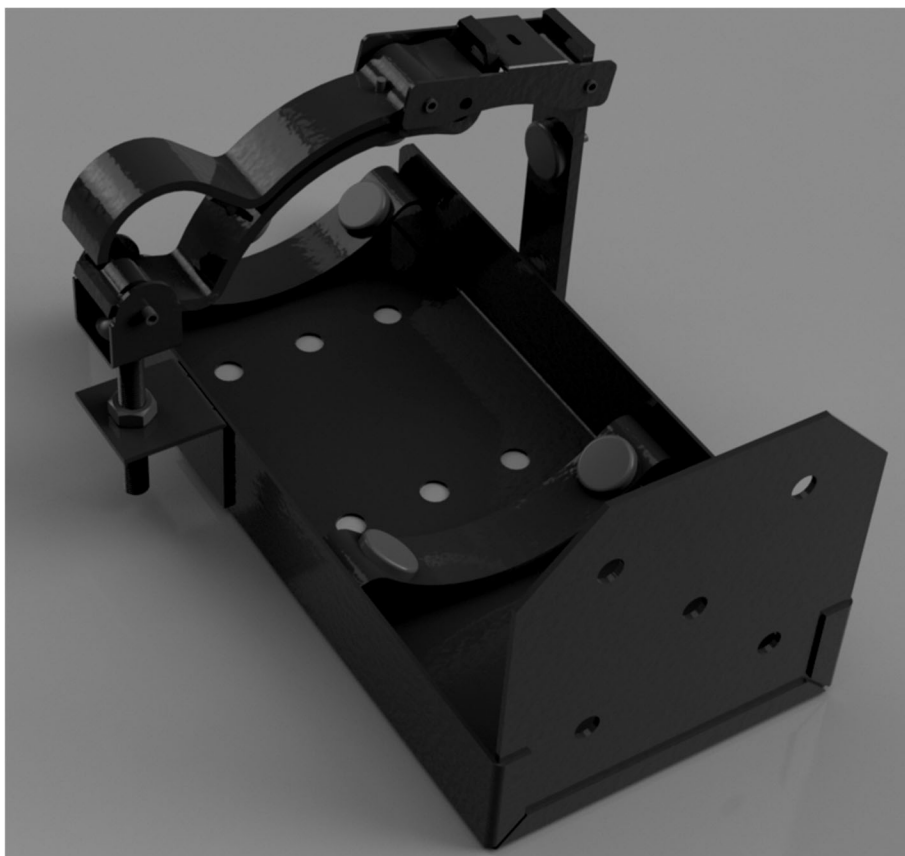


Figure 6. 12932 Bracket Assembly Model 809

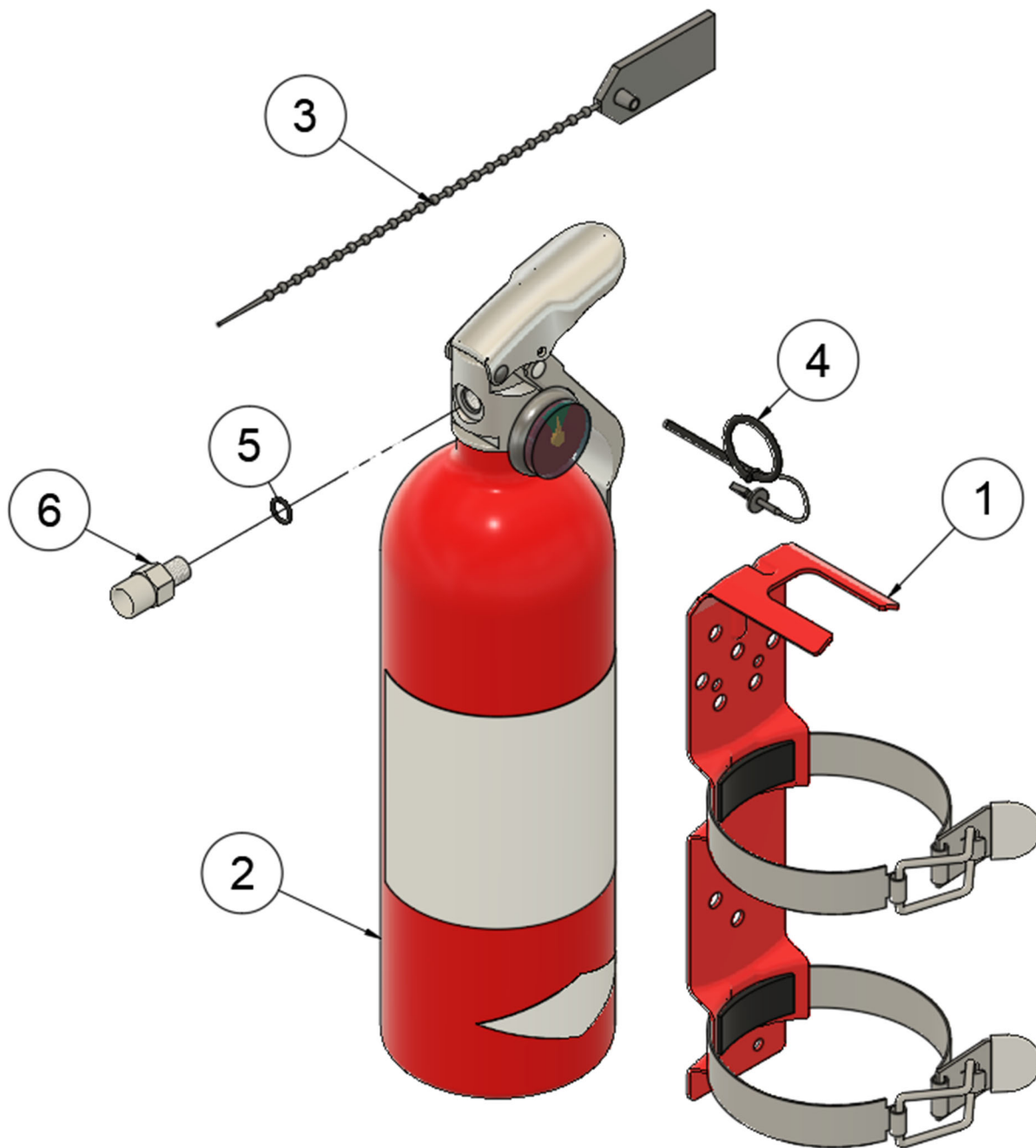


Figure 7. 355N69953TS Fire Extinguisher Assembly



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FIG. ITEM	PART NUMBER	NOMENCLATURE	EFF CODE	UNITS/ ASSY
7-	355N69953TS	FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 3.55 LBS WITH BRACKET		
1	27804	● BRACKET ASSY 893 BTP RD		1
2	355N69953	● FIRE EXTINGUISHER ASSEMBLY, NOZZLE, 3.55 LBS		1
3	02700	●● *TAMPER SEAL		1
4	16354	●● PULL PIN & CHAIN (NYLON) ASSY		1
5	01532	●● O-RING, NOZZLE END		1
6	28086	●● NOZZLE		1
7	355N69953-301	●● -ID LABEL		1

* ANY SIMILAR UL LISTED FIRE EXTINGUISHER TAMPER SEAL IS AN ACCEPTABLE ALTERNATE FOR P/N 01387. COLOR IS NOT CRITICAL.

- ITEM NOT SHOWN

Table 4. 355N69953TS Parts list