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HAND PORTABLE
AIRCRAFT FIRE EXTINGUISHERS

3.0 lb. Halon 1211 Part No. 30H673

2.5 lb. Halon 1211 Part No. 25N69953

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
1	14 Apr 2014	14 Apr 2014	CASP
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1) DESCRIPTION

a) Part numbers 30H673 and 25N69953 are portable hand held Halon 1211 fire extinguishers for use in aircraft occupied spaces. Part numbers B722538 and 818S are the brackets intended for use with these extinguishers when installed in aircraft. The brackets are not supplied with the fire extinguishers and must be ordered separately. Bracket part number B722538 has the same mounting hole pattern as Flag Fire Bracket P/N 200-9770, in order to facilitate the replacement of obsolete Flag Fire part number 100-9750 and 100-9750N extinguishers.

b) These extinguishers are Underwriters Laboratories (UL) listed and US Coast Guard (USCG) approved. They meet the requirements of 49 CFR 173.309 and the provisions of FAA Advisory Circular AC 20-42D which specifies a minimum UL 5B:C fire rating for extinguishers used in aircraft occupied spaces.

c) The fire extinguishers consist of a steel cylinder, a pressure gauge and a machined aluminum valve assembly with a chrome steel handle. Extinguisher 30H673 is fitted with a discharge hose assembly, and extinguisher 25N69953 is fitted with a discharge nozzle only. A pull-out pin and nylon tamper seal are fitted to the valve handle to prevent the fire extinguisher from being operated accidentally.

d) The extinguisher cylinders are filled with a liquid fire-extinguishing agent, Halon 1211 (Bromochlorodifluoromethane [$CBrClF_2$]), 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.

e) 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 pull-out 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.

2) 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 locking pin to break the nylon tamper seal. Ensure the pull pin is completely disengaged from the valve handle.

b) Stand back from the fire the minimum distance stated o the nameplate 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 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.

f) Recharge the extinguisher immediately after use, regardless of the amount of extinguishing agent was used.

NOTE: Whenever possible, protective clothing and breathing equipment should be used when fighting a fire.

At all times, care should be taken not to damage the operating labels installed on the extinguishers. These labels are serialized UL listed products that are not procurable as replacement parts. If the labels are damaged to the extent that they become illegible, the extinguisher must be removed from service.

3) SPECIFIED DATA

Extinguishing agent	Bromochlorodifluoromethane (Halon 1211)
Operating pressure P/N 30H673	195 psi @ 70˚F (1344 kPa @ 21˚C)
Operating pressure P/N 25N69953	125 psi @ 70˚F (862 kPa @ 21˚C)
Test pressure	585 psi (4035 kPa)
Ambient temperature range	-65˚ to + 120˚F (-54˚ to +49˚C)
Applicable Standards	Tested to ANSI/UL 711 and ANSI/UL 1093 Conforms to UL 299 & 49CFR173.309
Water capacity of cylinder	71 cu.in. (min)/76 cu.in. (max)
Cylinder material	Mild steel, copper brazed
Cylinder finish	Red powder coat finish
Valve construction	Machined anodized aluminum
Weight data	See Section 5)d)(3)
Agent weight P/N 30H673	3.0 lb (1.361 kg) ± 0.12 lb (0.05 kg)
Agent weight P/N 25N69953	2.5 lb (1.134 kg) ± 0.12 lb (0.05 kg)
Discharge time P/N 30H673	12 sec
Discharge time P/N 25N69953	10 sec
Range	9-15 ft
Fire rating	UL 5:BC
Bracket	Part No. B722538 or 818S

4) RELATED PUBLICATIONS

a) The latest revisions of the following publications are considered part of this manual and specify the regulatory requirements for the maintenance, testing, inspection and handling of these extinguishers.

Compressed Gas Association (CGA) Pamphlets C-1 and C-6

The National Fire Protection Association (NFPA) Standard for Portable Fire Extinguishers – NFPA-10

5) INSPECTION & MAINTENANCE

a) The year of manufacture can be found in the bottom right corner of the nameplate. The extinguisher maintenance schedule shall be based on the manufacturing date specified on the nameplate

NOTE: These extinguishers are manufactured to Underwriters Laboratories Standard UL 1093. The requirement for date markings in UL 1093, Section 63.3, Marking states the following: "The year of manufacture, or the last two digits of the calendar year, and the factory test pressure in pounds per square inch shall be permanently marked on the extinguisher. Extinguishers manufactured in the last 3 months of a calendar year are capable of being marked with the following year as the date of manufacture and extinguishers manufactured in the first 3 months of a calendar year are capable of being marked with the previous year as the date of manufacture."

The requirement for hydrostatic testing of hand held fire extinguishers is specified in NFPA 10, which states: "At intervals not exceeding those specified in Table 7.2, fire extinguishers shall be hydrostatically retested. The hydrostatic retest shall be conducted within the calendar year of the specified test interval. In no case shall an extinguisher be recharged if it is beyond its specified retest date."

The hydrostatic test frequency does not take into consideration the month of manufacturing, but only the calendar year. There is no requirement for manufacturers to include the month of manufacture on the extinguisher. The year noted on the nameplate of handheld extinguishers should be used to determine the maintenance or hydro-test interval. UL, DOT and NFPA only specify the required maintenance intervals in years. The required maintenance interval is not tied to the exact day or month that the unit or parts of the unit were manufactured.

b) The extinguisher maintenance schedule shall be based on the original manufacturing date or if applicable, the date the last 6 year or 12 year maintenance was performed (see below). If the last maintenance was correctly performed, the date of the last maintenance and the type of maintenance that was carried out should be indicated on a label affixed to the extinguisher (see below). In the event there is no label indicating the date the last maintenance was carried out and the type of maintenance that was performed, the owner of the extinguisher should conclude that the maintenance was either not performed or not properly performed.

c) 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) 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.

(2) Examine the valve for loose or damaged components. Repair or replace missing, loose or damaged components as necessary.

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

(4) Verify valve to ensure all seals are intact, and that the pull pin is present and properly fitted. Replace or reattach as required.

(5) Verify fullness by weighing or “hefting”.

(6) 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 (-65˚F to +120˚F / -54˚ 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.

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

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

d) 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, remove the unit from service and have it hydrostatically tested to the

specified test pressure, using the proof pressure method specified in CGA-6 and NFPA 10.

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 removed from service for repair and recharge.

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 and forward to a repair facility for maintenance.

(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 pull pin for freedom of movement, Replace is it is bent or removal appears difficult.

(6) Visually inspect the pressure gauge. Remove the extinguisher from service and send to an approved facility for maintenance if:

a. If the gauge is bent, damaged or the incorrect gauge;

b. If the pressure is found to be low, and temperature/pressure relationship has been ruled out;

c. If the pressure is found to be high, and temperature/pressure relationship has been ruled out.

(7) Inspect the discharge 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, they must be replaced.

(8) Disassemble the hose assembly or nozzle from the valve body by turning them counterclockwise and inspect for damage or obstruction. Inspect the

nozzle/hose gasket (o-ring) 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 sent for maintenance.

(10) Re-install the hose or nozzle (see assembly), the pull pin and a new tamper seal.

(11) Replace extinguisher in its bracket.

e) Six Year Maintenance: Every six years, the extinguisher must be removed from service, emptied and subject to the six year maintenance requirements specified in NFPA-10. The six year maintenance shall be carried out in accordance with this manual and must include all items specified above for the annual inspection in addition to the following:

(1) Expelling of the extinguishing agent into a closed recovery system and disassembly of the extinguisher (refer to Disassembly below).

(2) Inspection of all mechanical parts to ensure they are functional.

(3) Internal inspection of the cylinder for corrosion.

(4) Replacement of plunger assembly and cylinder neck o-ring.

(5) Recharging with correct amount and type of extinguishing agent.

(6) Affixing a locally approved label to the extinguisher indicating the type of maintenance that was carried out (i.e. 6 or 12 year), the date of maintenance, as well as the name and location of the repair facility that performed the maintenance.

f) 12 Year Hydrostatic Test: Every twelve years the extinguisher must be removed from service for hydrostatic (proof pressure) testing and requalification of the cylinder. The six year maintenance described above must also be performed at this time. The equipment and procedures used for hydrostatic testing shall be in accordance with the requirements for proof pressure testing specified in CGA Pamphlet C-1.

NOTE: Hydrostatic testing and maintenance shall only be performed by trained and appropriately authorized personnel familiar with the required procedures and safeguards, and who have suitable testing equipment, facilities and regulatory approvals to reliably and legitimately carry out the work

g) Service Life: The extinguisher may remain in service indefinitely provided the required maintenance requirements are complied with and completed successfully.

6) DISASSEMBLY

a) Empty the extinguisher in accordance with the procedure specified below..

NOTE: Halon 1211 is a substance which harms public health and environment by destroying ozone in the upper atmosphere. As a result of the Montreal Protocol and environmental regulations, the release of Halons into the atmosphere during maintenance of fire extinguishers has been banned. The servicing of this equipment should only be performed by facilities equipped with a Halon closed recovery or recycling system. Recovered Halon 1211 shall not be reused unless it has been recycled and/or shown to meet the purity requirements of MIL-DTL-38741 and/or ISO 7201.

WARNING: Before attempting to remove the valve from the extinguisher, ensure that the extinguisher is completely depressurized. Never have any part of your body over the extinguisher while removing the valve assembly.

b) Refer to the illustrated parts list at the back of this manual when servicing these extinguishers.

c) Complete the steps specified above for annual inspection.

d) Remove the hose or nozzle and hose/nozzle o-ring from the valve, and attach an appropriate recharge adaptor to the extinguisher operating valve and empty the extinguisher of all pressure and Halon 1211 using an approved recovery/recharge system. Recharge adaptors and recovery/recharge systems are commercially available.

e) When the extinguisher is completely empty of all agent and pressure, remove the valve assembly from the cylinder by turning counterclockwise.

f) Remove and discard the cylinder neck o-ring, ensure the interior of the cylinder is dry, and plug or cover the cylinder opening in order prevent moisture from entering the cylinder. If moisture is detected inside the cylinder, dry well with warm air prior to covering the opening.

g) Unscrew the siphon tube from the valve body by turning it counterclockwise.

h) Remove the spring and valve stem assembly from the valve body. Discard the used valve stem assembly.

i) If required, turn the pressure gauge counterclockwise to remove it from the valve assembly. The pressure gauge threads are coated with a special epoxy by the manufacturer. For easy removal soak the valve assembly (less the siphon tube) in hot water (180˚F / 82˚C) for two to four minutes. Remove gauge with a 7/16” open end wrench.

j) Do not remove the nameplate labels from the extinguisher. These are serialized ULC listed products that are not procurable as replacement parts. Only the extinguisher manufacturer is authorized to install these labels.

7) REPAIR & CLEANING

a) Repair of the detail parts of the fire extinguisher is not permitted. Repairs are limited to replacing defective items.

b) Thoroughly clean all parts of the disassembled valve with a soft bristle brush or soft cloth. Blow the valve out with dry nitrogen.

c) Clean the o-ring seating groove in the cylinder neck. If any rust is evident, remove it by using a fine emery cloth (200 grit).

d) Inspect all parts for damage and examine all moving mechanical parts for a free and/or unobstructed fit.

e) Inspect the cylinder interior per CGA C-6 and current NFPA 10 guidelines.

f) Replace all damaged or unserviceable components. Do not reuse the cylinder neck o-ring or the plunger assembly, they must be replaced before reassembly.

TROUBLE SHOOTING GUIDE

Leak between valve and cylinder	Remove valve assembly, clean collar and o-ring seating surface and install a new collar o-ring
Leak through the valve	Remove valve stem and inspect valve seat for scratches or contamination. Install new stem, or replace valve if seating surface is damaged.
Leak around gauge threads	Remove gauge and reinstall a new gauge using Teflon tape on the gauge threads.
Defective gauge	Remove gauge and reinstall a new gauge using Teflon tape on the gauge threads.
Leak in cylinder	Replace the cylinder or scrap extinguisher.
Leak under operating lever during discharge	Replace the valve assembly or scrap extinguisher.
Gauge indicator high or low in the green operable area, no detectable leakage	Extinguisher may have been subject to extreme heat or cold. Condition the extinguisher to room temperature (70˚F / 21˚C) overnight and check gauge reading.

8) ASSEMBLY

a) Refer to the illustrated parts list at the back of this manual when servicing these extinguishers.

b) Ensure all parts are thoroughly clean and dry before reassembling the extinguisher.

c) Lightly lubricate the o-ring of a new plunger assembly with a thin film of good quality silicon based o-ring lubricant such as Dow Corning DC-55 or Visilox 711, and install the new valve stem into the valve body. Do not lubricate the valve stem seating surface.

d) Reassemble the spring and siphon tube to the valve assembly.

e) Apply a light coat of o-ring lubricant to a new collar o-ring and install onto the valve assembly.

f) Lightly apply a thin film of o-ring lubricant to the entire sealing area of the cylinder opening.

g) Install the valve assembly into the cylinder and hand tighten firmly. Use a wrench to tighten an additional 10 to 20 degrees. Be careful not to rip, tear, or otherwise damage the neck seal o-ring while tightening the valve assembly. Do not over torque the valve assembly.

h) Squeeze the valve lever to ensure proper working action.

i) Connect the pressure gauge to a pressure source. Using a calibrated master gauge, apply the specified operating pressure. Ensure the pressure indicated by the pressure gauge corresponds to the applied pressure as indicated by the master gauge. Replace the pressure gauge if it does not correctly indicate the applied pressure.

j) Install the pressure gauge into the valve assembly gauge port. Apply a thin layer of thread seal tape to the threads of the pressure gauge prior to installation, and thread it into the valve body in a clockwise direction until hand tight. Tighten an additional 1 – 1 ½ turns. Do not over torque the gauge.

k) The extinguisher is ready to be recharged at this point, before assembling the hose assembly or nozzle. Refer to recharge instructions.

9) RECHARGE INSTRUCTIONS

a) The recharging of these extinguishers should be performed only by qualified, experienced personnel with access to an appropriate Halon 1211 recovery/recharge system. In order to prevent corrosion of the cylinder, ensure it is fully dry before recharging the extinguisher.

b) Check the extinguisher label for the correct weight of Halon 1211 agent and for the proper recharging pressure prior to recharging.

c) If the hose assembly or nozzle is attached to the extinguisher, they must be removed prior to recharging the unit.

d) Attach an appropriate charging adapter (commercially available) to the hose/nozzle port.

e) Use the recovery/recharge system to purge any residual air from the extinguisher cylinder

f) Place the extinguisher on a calibrated high resolution scale of sufficient size and capacity. Tare weight the extinguisher.

g) Follow all instructions for the recovery/recharge system being used to fill the unit with the required weight of Halon 1211 and pressurize to the specified pressure with dry nitrogen.

h) Lift and shake the extinguisher for at least 30 seconds to cause the nitrogen to be absorbed into the extinguishing agent and verify the pressure gauge to ensure it shows the correct operating pressure.

i) If required, repeat steps (g) and (f) until the nitrogen is absorbed and the cylinder pressure becomes stable.

j) Vent any line pressure before removing the recharge adaptor from the extinguisher valve and remove the adapter from the valve.

k) After recharge is complete, apply a liquid leak detection compound onto all possible leakage points (valve outlet, around the collar seal, at the gauge and at the cylinder welds) No leakage is permitted.

l) Dry and thoroughly clean the extinguisher using a clean cloth and clean compressed air, ensuring no leak detection compound remains on or in the valve.

m) Reinstall the hose/nozzle o-ring and the hose assembly or nozzle firmly hand tight and tighten very slightly (approx. 5 degrees) with a wrench. Do not over torque.

n) Install the pull pin through the holes in the handle, and secure the pull pin with the nylon tamper seal.

o) Weight the extinguisher to confirm that the total weight is within the tolerances indicated in the Maintenance section on the extinguisher.

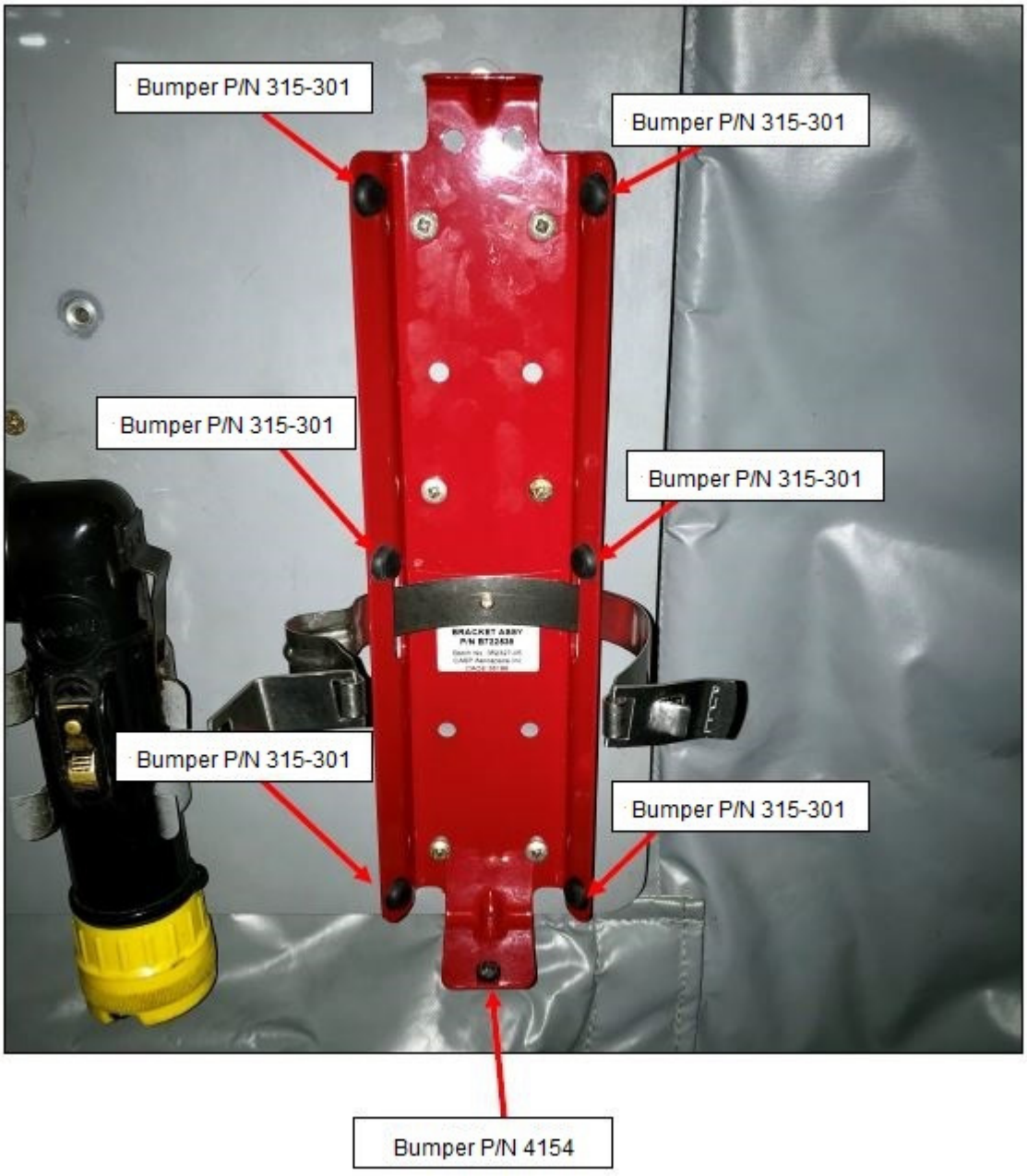
p) Attached a label to the extinguisher indicating the type of maintenance that was carried out (i.e. 6 or 12 year), the date of maintenance, as well as the name and location of the repair facility that performed the maintenance. Refer to NFPA 10 for guidelines regarding acceptable types of labels to be used for this purpose.

ILLUSTRATED PARTS LIST

ITEM	PART No.	DESCRIPTION	EFFECTIVE CODE	QTY. PER ASSY.
-	30H673	PORTABLE FIRE EXTINGUISHER, 3.0 LB	A	-
-	25N69953	PORTABLE FIRE EXTINGUISHER. 2.5 LB	B	-
1	11953	VALVE ASSEMBLY	A, B	1
2	07115	NOZZLE WITH O-RING	B	1
2A	01532	HOSE / NOZZLE O-RING	A, B	1
2C	06421	HOSE ASSEMBLY	A	1
3	16353	PULL PIN (SS BY 16268)	A,B	1
3	16268	PULL PIN	A,B	
3B	00532	CHAIN, NYLON	A, B	1
4	01387	*TAMPER SEAL, YELLOW	A, B	1
5	11825	LEVER & RIVET	A, B	1
5A	01060	RIVET (FOR LEVER)	A, B	1
6	03106	GAUGE, 195 PSI	A	1
*6A	03105	GAUGE, 125 PSI	B	1
7	11826	HANDLE & RIVET	A, B	1
7A	01064	RIVET (FOR HANDLE)	A, B	1
8	05241	O-RING, COLLAR	A, B	1
9	06092	VALVE STEM ASSEMBLY	A, B	1
10	01074	SPRING	A, B	1
11	01075	SIPHON TUBE/RETAINER ASSEMBLY	A, B	1
13	B722538	BRACKET ASSEMBLY (See next page)	A, B	1
-14	817S	BRACKET ASSEMBLY	A, 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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