A Textron Company

TECHNICAL BULLETIN

407-22-138
18 May 2022

MODEL AFFECTED: **407**

SUBJECT: **HALON FREE CABIN FIRE EXTINGUISHER, INTRODUCTION OF.**

HELICOPTERS AFFECTED: **53000 through 53900, 53911 through 53999, 54000 through 54166, 54300 through 54800, 54805 through 54999, and 56300 through 56999.**

COMPLIANCE: At customer's option.

DESCRIPTION:

Bell is introducing a new cabin fire extinguisher for the model 407 which contains HFC-236fa halocarbon clean agent fire extinguishant as an alternate to the Halon 1211. The 429107 Clean Guard fire extinguisher has a UL 2B:C rating and meets the Transport Canada Civil Aviation (TCCA) Advisory Circular 500-030 and the Federal Aviation Administration (FAA) AC20-42D toxicity level threshold based on the 407 cabin volume.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 8.0 man-hours are required to complete this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:
The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center. Order fire extinguisher **CT-407-22-138** kit that consists of the following parts:

Part Number	Nomenclature	Qty (Note)
429107	Fire Extinguisher	1
429-899-007-123	Shield	1
407-070-052-121	Bracket	1
407-070-052-123	Lug	1
MS20426AD4-5	Rivet	2
MS20427M4-4-5	Rivet	1
NAS1149CN532R	Washer	1
120-225C3T08P	Screw	4
120-225C3T11P	Screw	2
80-005-2-12	Insert	6

Consumable Material:
The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Supply Center.

Part Number	Nomenclature	Qty (Note)	Reference *
2100-00350-00	Corrosion Preventive Compound	2.5 OZ (1)	C-104
2000-00245-01	Adhesive	1 PT (1)	C-317
2010-05988-00	Sealant	2.5 oz (1)	C-251
2000-01003-00	4508 Black 1.75" WIDE	1 Roll (1)(2)	C-468
2110-00010-00	Aliphatic Naphtha	1 GAL	C-305
Commercial	Isopropyl Alcohol	A/R	C-285
Commercial	Cheesecloth, Cotton	A/R	C-486

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTES:

1. Quantity indicated is the format the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less than what has been delivered.
2. The 4508 Black 1.75” WIDE tape is a product of 3M and is commercially available.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

The first line removes basic fire extinguisher weight figures from the basic aircraft empty weight calculations.

The second line adds replacement fire extinguisher weight figures to the basic aircraft empty weight calculations.

	Longitudinal		Lateral*	
Weight	**Arm**	**Moment**	**Arm**	**Moment**
-2.2 pounds -1 Kgs	75 inch 1905 Mm	-165 inch-pounds -1905 kg x mm/100	-1.1 inch -27.9 Mm	2.4 inch-pounds 27.9 kg x mm/100
+5.7 pounds +2.6 Kgs	48.1 inch 1221.7 Mm	274.2 inch-pounds 3176.4 kg x mm/100	13.9 inch 353 Mm	79.2 inch-pounds 917.8 kg x mm/100

* In lateral calculations, - is left and + is right.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-ALL-SPM, Standard Practices Manual, Chapter 6
407-MM Maintenance Manual

PUBLICATIONS AFFECTED:

407-MM Maintenance Manual, Chapter 26
BHT-407-IPB, Illustrated Parts Breakdown, Chapter 26

ACCOMPLISHMENT INSTRUCTIONS:

1. Prepare the helicopter for maintenance.

2. Gain access to the cabin fire extinguisher (DMC-407-A-26-20-00-01A-042A-A).

3. Remove the existing cabin fire extinguisher and bracket (DMC-407-A-25-10-00-03A-520A-A). Plug holes by re-installing screws and washers previously removed.

Prepare Pilot Floor to Receive Inserts.

-NOTE-

Safeguard carpet and/or floor protectors removed, as an eventual revision to this Technical Bulletin will provide instructions to make installations of these possible.

1. Remove carpets / floor protectors on pilot side of the cabin.

2. Locate RBL 7.12 and STA 45.50 (Figure 1).

   a. From STA 45.50 locate bracket center line 2.6 inches (66.0 mm) aft at STA 48.10.

   b. From RBL 7.12 locate first inboard row of inserts 4.45 inches (113.0 mm) to the right at RBL 11.57. Draw a line at the intersection.

   c. From RBL 11.57, locate the second, third, and fourth row of inserts at 2.63, 4.63, and 5.90 inches (66.8, 117.6, and 149.9 mm) respectively. Draw lines at the intersections.

   d. Locate each insert position to mark exact insert location (Figure 1).

   e. Verify with fire extinguisher bracket as a guide for the proper placement of inserts to be localized. Ensure bracket mounting holes line up and properly situated on the floor.

-CAUTION-

Use a drill stop on the drill to prevent damage to components and structure.

-CAUTION-

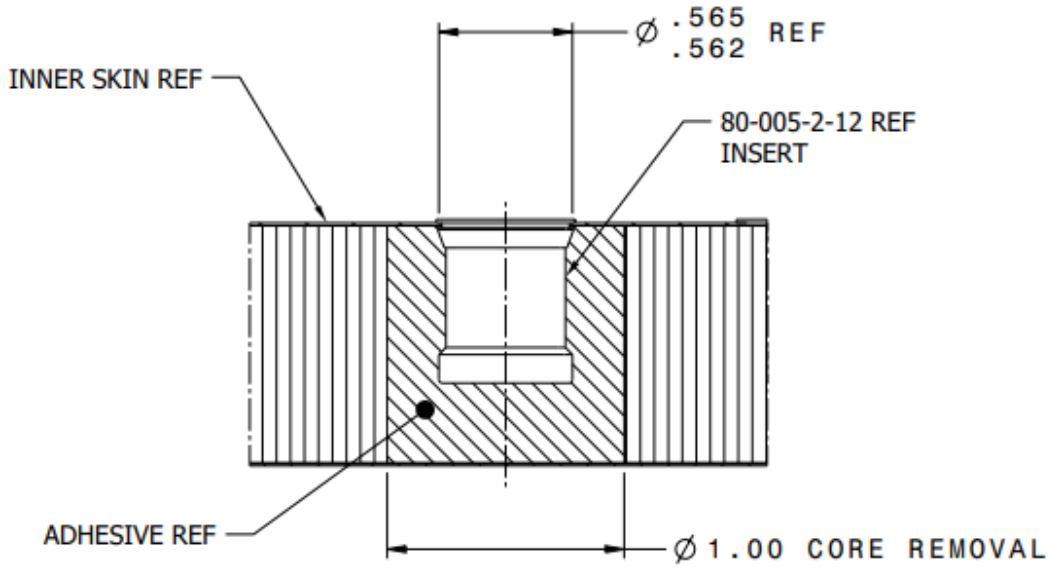
Do not overheat skin surface(s) during drilling operation. Overheating may cause separation of skin(s) from the core.

-NOTE-

Cure adhesive (C-317) for twenty-four (24) hours at room temperature. Accelerate curing using suitable heat source and cure 60 to 90 minutes at 170° to 190° F (77° to 88° C).

3. Drill the six (6) holes 0.562 to 0.565 inch (14.27 to 14.35 mm) diameter through skin and core where marked to receive inserts. Undercut the core out to 1.0 inch (25.4 mm) in diameter.

4. Install the six (6) inserts using adhesive (C-317), as shown.



Prepare, Assemble, Install Shield, Bracket, Clamp, and Fire Extinguisher.

1. Remove the clamp (3, Figure 2) from the original bracket (4) that comes with the new cabin fire extinguisher (5) and attach it to the new bracket (6) as follows:

   a. Remove the clamp (3) from its original bracket, hand form as necessary to create a flat surface that will mate with the new bracket (6).

      (1) If excessive forming was necessary to remove large bends in clamp, locally penetrant inspect the formed areas of the clamp (3) per ASTM E1417, Type I, Method A or C, sensitivity level 2 or greater (BHT-ALL-SPM, Chapter 6).

         (a) If there are linear indications that are confirmed to be cracks, seams, tears, bursts, etc., reject the clamp (3). Replacement bracket 24610 may be available from Johnson Controls Fire Protection LP, Fort Worth Texas or a replacement fire extinguisher will need to be purchased.

   b. Prepare clamp (3) for installation. The rivet head must be on the outboard side of the bracket and the washer must be on the clamp side (Figure 2).

c. Prepare pilot hole in bracket (6) to receive countersunk rivet (7). Wipe the faying surfaces of the clamp (3) and bracket (6) with cheesecloth (C-486) wetted with aliphatic naphtha (C-305), and then apply sealant (C-251) to the faying surfaces.

d. Orient clamp (3) latching mechanism per image (Figure 2), wet install the rivet (7) and washer (8) using sealant (C-251).

2. Prepare lug (12) for installation. The rivet head must be on the outboard side of the bracket (Figure 2).

   a. Prepare pilot holes in bracket (6) to receive countersunk rivets (11). Wipe the faying surfaces of the lug (12) and bracket (6) with cheesecloth (C-486) wetted with aliphatic naphtha (C-305). Install the rivets (11).

3. Using cheesecloth (C-486) wetted with isopropyl alcohol (C-285), wipe the faying surfaces on the bracket (6) that will contact the foam tape (C-468).

-NOTE-

To improve adhesion of foam tape (C-468) adhesive backing, it is acceptable to heat (warm to touch) the bracket areas prior to applying tape.

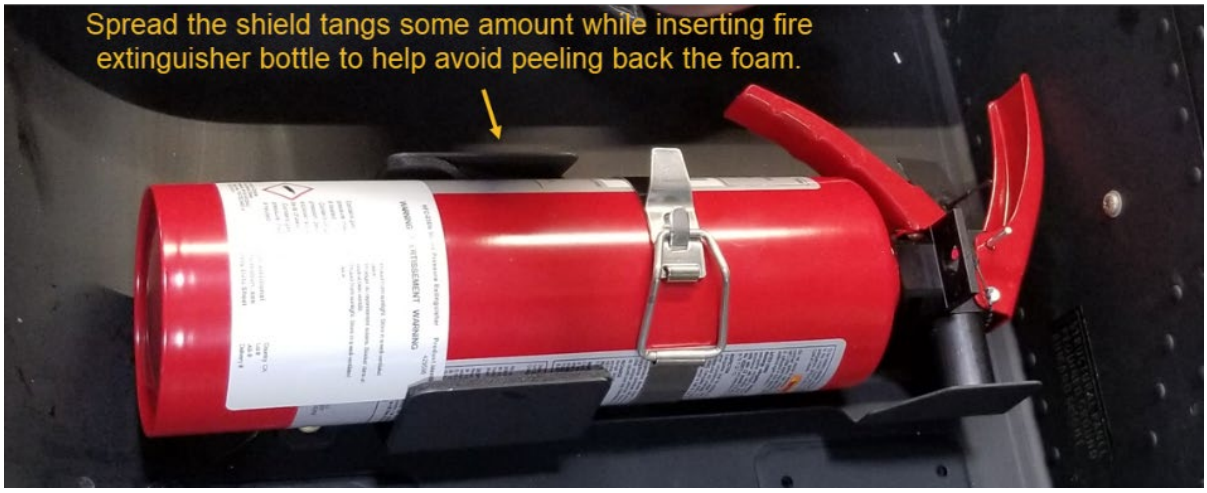
4. Trim and install the foam tape (C-468) in four locations on the bracket (6, Figure 2).

-NOTE-

Apply a coating of corrosion preventive compound (C-104) to all screw shanks prior to installation. Do not apply corrosion preventive compound to the threads.

5. Insert clamp (3) through the shield's lower window and install the bracket (6) and shield (2) with four screws (10) and two screws (9).

6. Carefully insert fire extinguisher (5) into shield holder. Slightly spread the shield tangs while inserting fire extinguisher bottle to avoid peeling back the foam tape (C-468).



7. Secure the fire extinguisher (5) on the bracket (6) with the clamp (3).

8. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.

9. Refer to **ANNEX I** of this bulletin for Instructions for Continued Airworthiness (ICA) including operation, maintenance, and repair procedures.

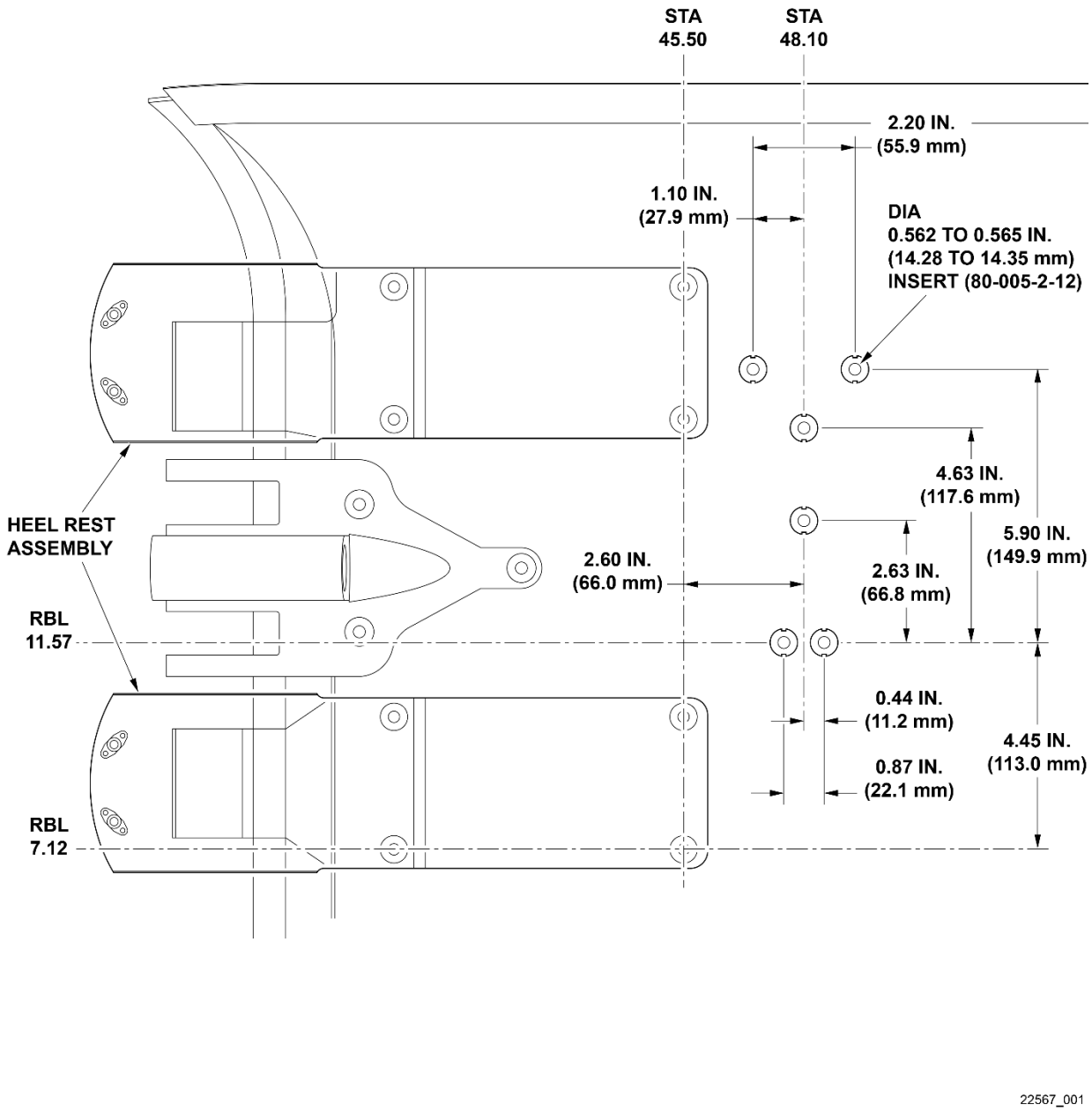
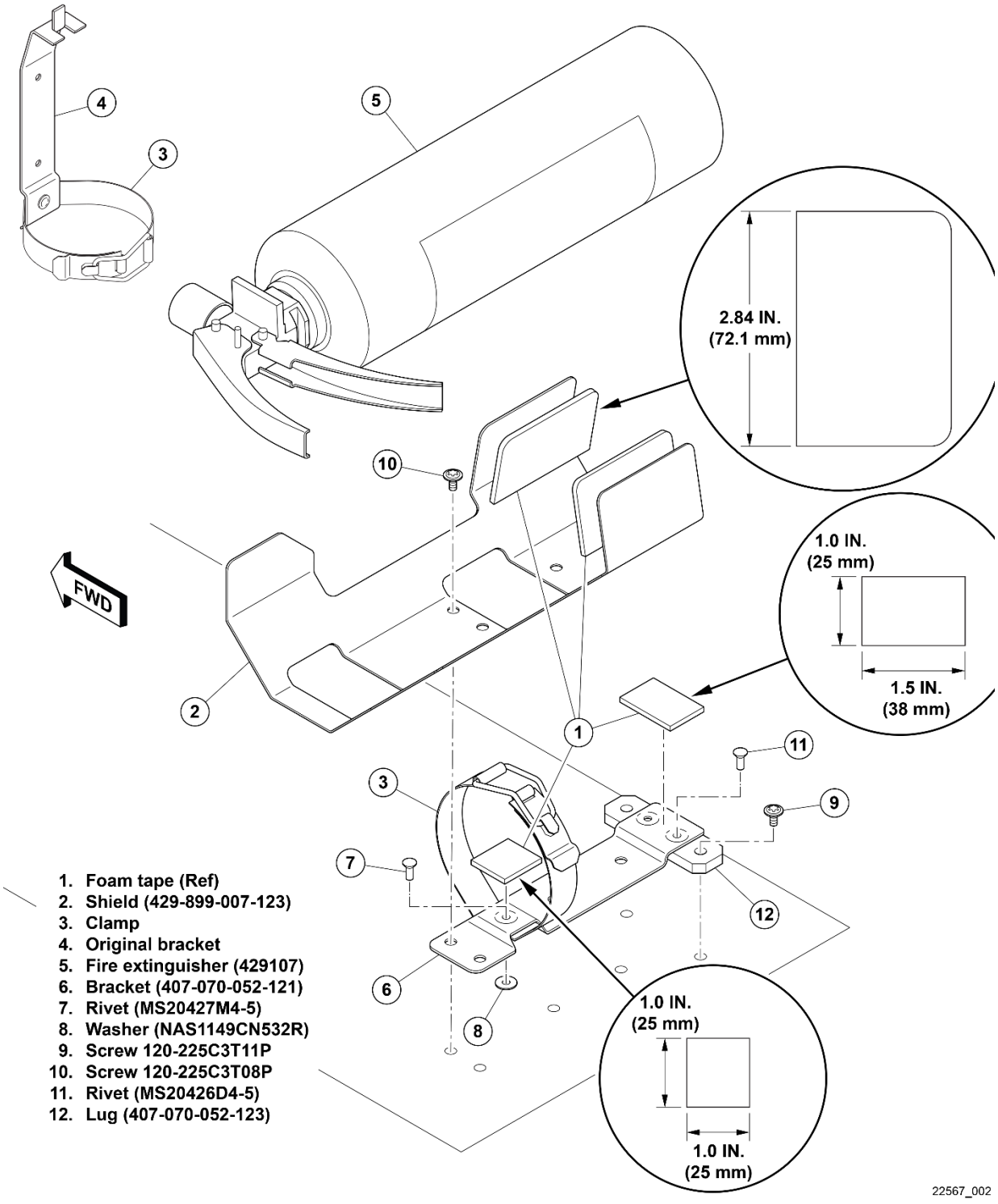


Figure 1- Pilot Side (Floor Area to Receive Inserts)



1. Foam tape (Ref)
2. Shield (429-899-007-123)
3. Clamp
4. Original bracket
5. Fire extinguisher (429107)
6. Bracket (407-070-052-121)
7. Rivet (MS20427M4-5)
8. Washer (NAS1149CN532R)
9. Screw 120-225C3T11P
10. Screw 120-225C3T08P
11. Rivet (MS20426D4-5)
12. Lug (407-070-052-123)

Figure 2 – Installation of Halon Free Cabin Fire Extinguisher

ANNEX I – INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICA)

1.0 OPERATION

Operate the fire extinguisher in accordance with the manufacturer's instructions found on the unit's label.

2.0 INSPECTIONS

NOTE

Additional inspections might be required per the aircraft operational requirements of the country in which the aircraft is being operated.

2.1 MAINTENANCE

WARNING

Do not install a fire extinguisher that has been previously discharged. Recharge or replace a fire extinguisher before returning unit to service.

a. Follow manufacturer's recommended instructions on fire extinguisher unit Label.

b. The unit should be visually inspected during routine aircraft operations and/or not to exceed 30 days to ensure the fire extinguisher is fully charged and operable.

c. To determine if the weight is within the limits indicated on the label, units should be weighed annually, or sooner if pressure gauge is not showing in green arc.

2.2 ANNUAL INSPECTION

a. Visually inspect the fire extinguisher for damage, corrosion, or pitting. Make sure that the nozzle is not blocked, the safety pin is secured, and the seal is not damaged.

b. Inspect the state of charge, ensure the pressure gauge indicator is in the green and weight exceeds minimum weight requirements indicated on label. Recharge or replace the fire extinguisher with a fully charged serviceable unit.

c. Visually inspect the mounting bracket for cracks, damage, and corrosion. Examine condition of fastener hardware.

d. Inspect the clamp assembly for:

(1) Cracks, damage, and corrosion to the strap, latch, and lever.
(2) Bent or broken hook.
(3) Loose or missing rivets.
(4) Correct operation of the quick-release latch mechanism.

e. Record the inspection date on the tag attached to the fire extinguisher. Per regulations or company policy manual (if applicable) ensure hydrostatic test requirement due date is respected.

2.3 SPECIAL AND CONDITIONAL INSPECTION

Perform an Annual Inspection in cases of known, or suspected of, a lightning strike or hard landing of the helicopter.

3.0 REPAIR

No repairs allowed.