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COMPONENTS MAINTENANCE MANUAL
HAFEX – HALON ALTERNATIVE FIRE EXTINGUISHER

CE579

**COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST**

26-24-01
REVISION 10

**HAFEX - HALON ALTERNATIVE FIRE
EXTINGUISHER**

P3APP003010D

P3APP003010E

P3APP003010F

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26-24-01

Rev. No.
Rev. Date
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10
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TITLE 1



COMPONENTS MAINTENANCE MANUAL
HAFEX – HALON ALTERNATIVE FIRE EXTINGUISHER

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HAFEX – HALON ALTERNATIVE FIRE EXTINGUISHER

HIGHLIGHTS

TO: HOLDERS OF COMPONENT MAINTENANCE MANUAL FOR HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER, ATA 26-24-01.

REVISION NO. 10

PAGE BLOCK	DESCRIPTION OF CHANGE
TITLE	TITLE 1. CMM number, revision number added. TITLE 2. Year updated.
DESCRIPTION AND OPERATION	Page 5 thru 10. Table 4 updated.
INSPECTION/CHECK	Page 5002. Procedure updated as per STE.
REPAIR	Page 6004. New procedure added. Page 6005 thru 6008. New figures added.
STORAGE	Page 15001. Note added.
ILLUSTRATED PARTS LIST	Page 10001A-0. Illustration updated. Page 10001A-1. IPL updated.



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RECORD OF REVISIONS

RE. NO.	ISSUE DATE	INSERTED		RE. NO.	ISSUE DATE	INSERTED	
		DATE	BY			DATE	BY
00	Jun 24/2016						
01	Oct 07/2016						
02	Nov 02/2016						
03	Feb 14/2017						
04	Jun 27/2017						
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Retain this record in the front of the manual.

On receipt of revisions, insert revised page in the manual and enter revision number, date and initials.



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LIST OF SERVICE BULLETINS

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INTRODUCTION

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-871-802-A01

Introduction

CAUTION: THIS MANUAL PROVIDES THE NECESSARY INFORMATION TO PERFORM THE REPAIR IN AN INTERMEDIATE LEVEL MAINTENANCE SHOP (I - LEVEL).

THE THIRD LEVEL OF MAINTENANCE (D - LEVEL) IS NOT APPLICABLE IN THIS MANUAL.

1. General

- A. This manual 26–24–01 (Internal number: - P3DOC001296) has been compiled entirely from a SGML source in accordance with the requirements set out in the specification ATA iSpec 2200. It provides data as necessary for an approved repairer to restore an unserviceable HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER to a serviceable condition.

2. Manufacturing

- A. The HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER is manufactured and product supported by:

umlaut engineering GmbH

(FSCM CE579)

Blohmstraße 12

21079 Hamburg

Germany

E-Mail: HAFEX@umlaut.com

Internet: www.umlaut.com

3. Layout of the manual

- A. This manual contains a general description and operation followed by data for testing, check and repair instructions of the HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER. An **ILLUSTRATED PARTS LIST** is also included.

4. Revision service

- A. This manual 26–24–01 (Internal number: - P3DOC001296) will be updated as required by revisions. Service Bulletins (SBs) can be issued separately. Their effect on the manual will, however, be evident by reissue of the SB as applicable.



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5. Validation of operations described in this manual

- A. The maintenance operations described in this manual have been checked in manufacturer's workshops by an exact carrying out of dismantling, reassembly, test and repair instructions which are detailed in this document.
These operations are those in use at the latest revision date of the document.

6. Warnings, Cautions, Notes

- A. **WARNING:** Warnings call attention to use of materials, processes, methods, procedures or limits which must be precisely adhered to in order to prevent injury or death of persons.
- B. **CAUTION:** Cautions call attention to use of materials, processes, methods, procedures or limits which must be precisely adhered to in order to prevent damage of equipment.
- C. **NOTE:** Notes call attention to methods, which make the job easier.

7. List of Abbreviations

—	A dash before an item number indicates the item
AR	As required
ASSY	Assembly
EFF	Effectivity
FIG	Figure
NO.	Number
NP	Not procurable
RF	Reference. Indicates those parts which have their requirements listed elsewhere in the parts list
UPA	Units per Assembly

List of Abbreviations
TABLE 1



COMPONENTS MAINTENANCE MANUAL
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DESCRIPTION AND OPERATION

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-870-801-A01

General

This manual provides overhaul and maintenance instructions for the HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER.

The inspection and maintenance instructions in this CMM are in line with NFPA10 “Standard for Portable Fire Extinguishers”.



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**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-870-802-A01

Description

WARNING: THE EXTINGUISHER IS A PRESSURIZED EQUIPMENT WITH A LIMITED LIFE- TIME AND LIABLE TO HAVE A SERIAL NUMBER. MONITOR SERIAL NUMBER TO MAKE SURE THAT THE CORRECT MAINTENANCE INTERVALS ARE FOLLOWED AND THE EXTINGUISHER IS REMOVED FROM SERVICE IN TIME.

1. The Halon-Alternative Fire Extinguisher (HAFEX) is an approved ETSO-article (EASA ETSO 2C515) and designed to fight fires of classes A, B and C as defined in UL711:
 - A. Class A: Fires that involve ordinary combustible materials such as wood, cloth, paper, rubber, and many plastics.
 - B. Class B: Fires that involve flammable liquids, petroleum greases, oil- based paints, solvents, lacquers, alcohols and flammable gases
 - C. Class C: Fire that involve energized electrical components.
2. The HAFEX achieved a rating of 5B:C and is certified for usage with these type of fires. Though it can be used to fight class A fires, it is too small to achieve a 1A- rating. More than 1 fire extinguisher can be required to extinguish a Class A fire.
3. The HAFEX passed the tests required by the Minimum Performance Standard DOT/FAA/AR-01/37.
4. The extinguisher is loaded with 1.6 kg (3.527 lbs.) of the clean agent Halotron BrX (Stabilized 2-bromo-3,3,3-trifluoro-propene). The article is pressurized with dry nitrogen. Actuation of the extinguisher is accomplished by a manual trigger action.
5. The cylinder of all variants of the HAFEX consists of a seamless aluminum cylindrical vessel. Each extinguisher is fitted with a head including an integrated nozzle. The valve head and actuation device are made of aluminum.
6. The standard color for all extinguishers is red (RAL3001).



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**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-870-803-A01

Technical data

1. Life time

- A. Fire extinguisher (Non- rechargeable) — 12 Years (from date of manufacturing)
- B. Decommissioning (End of Lifetime)

WARNING: DO NOT RELEASE IN CLOSED, UNVENTILATED SPACES. EMPTY EXTINGUISHERS MUST BE DISCARDED IN ACCORDANCE WITH THE LOCAL REGULATIONS.

- 2. Charged extinguishers, which are removed from service due to end of lifetime or damage must be discharged and then discarded in accordance with the local regulations.

WARNING: BEFORE INSTALLATION OF A FIRE EXTINGUISHER, THE RESPONSIBLE ORGANIZATION MUST ENSURE AND DOCUMENT THAT THE PHYSICAL PROPERTIES (VOLUME OF PROTECTED SPACES, VENTILATION RATES OF SAME, CERTAINLY OF OPENING WINDOWS IF APPLICABLE, ETC.) OF ANY AIRPLANE OR HELICOPTER WHERE A UNIT MIGHT TO BE INSTALLED COMPLIES WITH THE LIMITATIONS DESCRIBED IN THE GUIDANCE PAPER “SETTING ACUTE EXPOSURE LIMITS FOR THE HALOTRON BRX (2-BROMO-3,3,3-TRIFLUOROPROPENE) CLEAN AGENT ONBOARD AIRCRAFT USING PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING, “ JULY 30, 2018 (AMERICAN PACIFIC), CONSIDERATIONS AS APPLICABLE OF STRATIFICATION DESCRIBED IN US DOT/ FAA/TC-14/50 “STRATIFICATION AND LOCALIZATION OF HALON 1211 DISCHARGED IN OCCUPIED AIRCRAFT COMPARTMENTS”, FEBRUARY 2016, GUIDANCE IN FAA AC 20-42D, “HAND FIRE EXTINGUISHERS FOR USE IN AIRCRAFT” AND ANY OTHER APPLICABLE US FAA GUIDANCE.



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3. Particulars

	Standards	P3APP003010D P3APP003010E P3APP003010F
Fire rating	UL 711	5B:C
Operating pressure (ps)	N/A	9 bar (130 psi)
Test pressure (pT)	N/A	27 bar (392 psi)
Burst pressure (pr)	N/A	≥ 55 bar (798 psi)
Operating temperature range	RTCA DO-160, sec.4, cat.A2	-40 °C ≤ T ≤ +70 °C (-40 °F ≤ T ≤ +158 °F)
	UL 2129	-40 °C ≤ T ≤ +49 °C (-40 °F ≤ T ≤ +120°F)
Survival temperature range	RTCA DO-160, sec.4, cat A2	-55°C ≤ T ≤ +85°C (-67°F ≤ T ≤ +185°F)
	UL 2129	-40 °C ≤ T ≤ +49 °C (-40 °F ≤ T ≤ +120°F)
Altitude rating	RTCA DO-160, sec.4, cat A2	40,000 ft. (12,192 m)
Discharge time	UL 2129	9 - 10 seconds

Properties
TABLE 2



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4. Configurations, Components and Dimensions

PART NUMBER	GROSS WEIGHT (MIN/MAX)	COLOR CODING (refer to Figure 1)	CONFIGURATION
P3APP003010D	2.163 KG (4.768 LBS) 2.270 KG (5.004 LBS)	Red	Standard
P3APP003010E	2.163 KG (4.768 LBS) 2.270 KG (5.004 LBS)	Red with yellow band	AUS standard
P3APP003010F	2.163 KG (4.768 LBS) 2.270 KG (5.004 LBS)	Red with green band	UK standard

Configurations and weights
TABLE 3

Extinguisher must be installed with one of the following brackets:

PART NUMBER	GROSS WEIGHT (MIN/MAX)	COLOR CODING	CONFIGURATION
P3APP003020A	0.169 KG (0.373 LBS)	Light grey	2-strap design, polymeric body
P3APP003020B	0.174 KG (0.384 LBS)	Light grey	Standard 2-strap design, polymeric body
P3APP003020C	0.200 KG (0.441 LBS)	Signal red	Customized 1-strap design, metallic body
P3APP003020D	0.213 KG (0.469 LBS)	Blank metal	Customized 1-strap design, metallic body, not included in ETSoapproval
P3APP003020E	0.174 KG (0.384 LBS)	Light grey	Customized 2-strap design, polymeric body
P3APP003020F	0.186 KG (0.410 LBS)	Signal red	Customized 1-strap design, metallic body
P3APP003020G	0.174 KG (0.384 LBS)	Light grey	Customized 2-strap design, polymeric body
P3APP003020H	0.197 KG (0.434 LBS)	Signal red	Customized 1-strap design, metallic body

Configurations and weights (contd.)
TABLE 4



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HAFEX – HALON ALTERNATIVE FIRE EXTINGUISHER

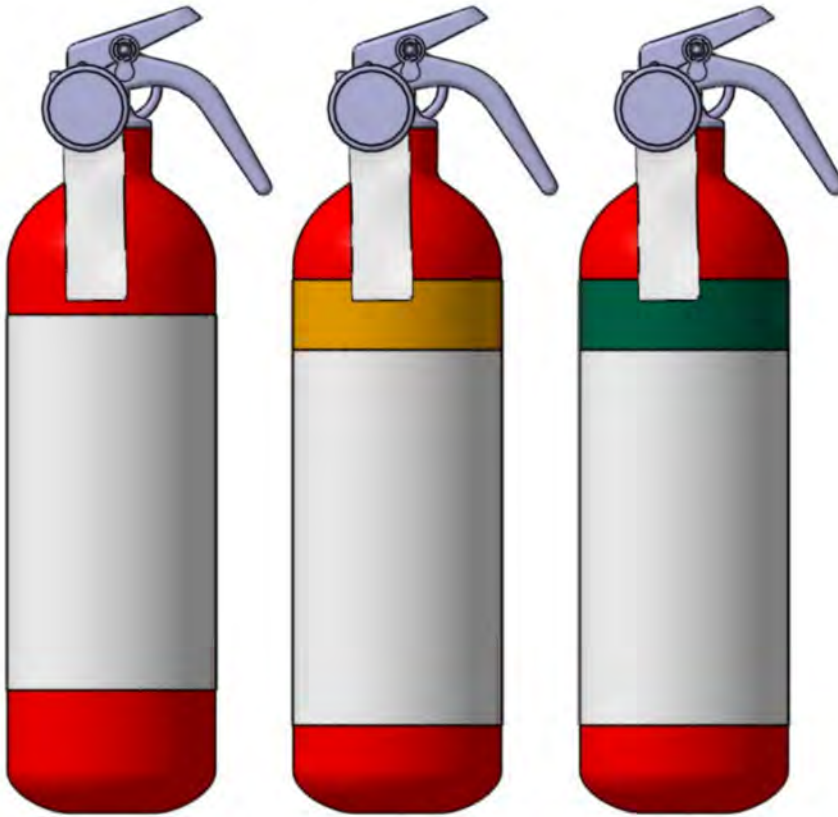
PART NUMBER	GROSS WEIGHT (MIN/MAX)	COLOR CODING	CONFIGURATION
P3APP003020J	0.213 KG (0.469 LBS)	Jet black	Customized 1-strap design, metallic body, not included in ETSO-approval
P3APP003020K	0.144 KG (0.317 LBS)	Signal red	Customized 1-strap design, metallic body, not included in ETSO-approval

Configurations and weights
TABLE 4

See CMM 26-24-03 (internal number: P3DOC003242) for details on the brackets and Interface Control Document UM-ABC01-DWG-1000 for installation of ETSO-articles.



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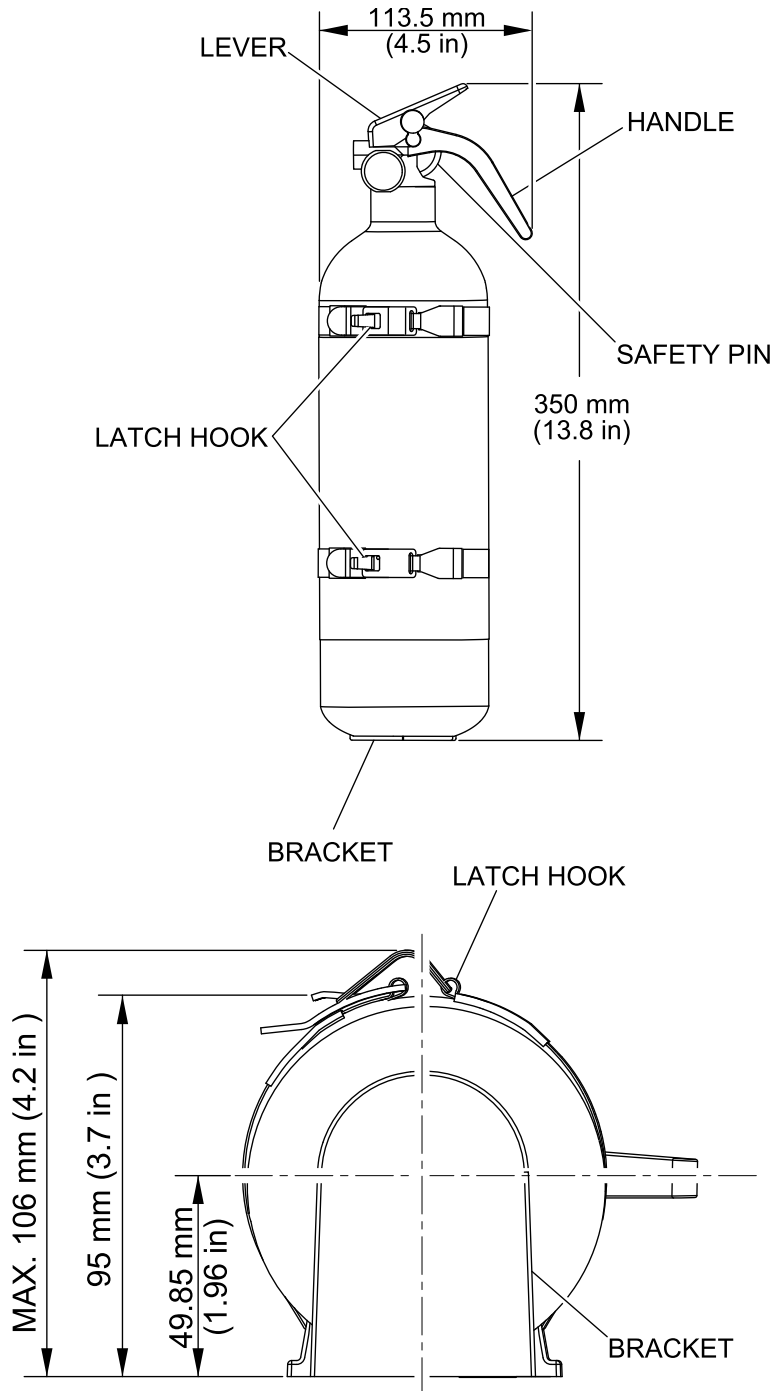
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COLOR CODING
FIGURE 1/GRAPHIC 26-24-01-991-001-A01



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COMPONENTS – HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER
FIGURE 2/GRAPHIC 26-24-01-991-002-A01



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HAFEX – HALON ALTERNATIVE FIRE EXTINGUISHER

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-870-804-A01

Operation

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

1. Operation of HAFEX Installed in 1-Strap Bracket

WARNING: OPERATING TIME: APPROX. 9 -10 SECONDS. IF THE EXTINGUISHER IS USED IN CONFINED, UNVENTILATED SPACES WITH LESS THAN 24M³ (847.55 FT³), THE USAGE OF PROTECTIVE BREATHING EQUIPMENT IS RECOMMENDED.

- A. Pull the latch hook and open the strap.
- B. Remove the extinguisher from the bracket.
- C. Hold the extinguisher upright with one hand and remove the safety pin in a straight pull along its axis with the other hand.
- D. Aim the nozzle of the fire extinguisher at the base of the fire. The optimal distance to the fire-base is between 1.5 – 2 m (5 – 7 ft).
- E. Push the lever of the fire extinguisher. This will immediately start the flow of agent. Releasing the lever will interrupt the flow.
- F. Sweep the agent stream from side to side, until the fire is extinguished.
- G. Ventilate the area after usage.

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

1. Operation of HAFEX Installed in 2-Strap Bracket

WARNING: OPERATING TIME: APPROX. 9 -10 SECONDS. IF THE EXTINGUISHER IS USED IN CONFINED, UNVENTILATED SPACES WITH LESS THAN 24M³ (847.55 FT³), THE USAGE OF PROTECTIVE BREATHING EQUIPMENT IS RECOMMENDED.

- A. Pull the first latch hook and open the strap.
- B. Secure the extinguisher with one hand.
- C. Open the second latch hook.
- D. Remove the extinguisher from the bracket.
- E. Hold the extinguisher upright with one hand and remove the safety pin in a straight pull along its axis with the other hand.
- F. Aim the nozzle of the fire extinguisher at the base of the fire. The optimal distance to the fire-base is between 1.5 – 2 m (5 – 7 ft).
- G. Push the lever of the fire extinguisher. This will immediately start the flow of agent. Releasing the lever will interrupt the flow.
- H. Sweep the agent stream from side to side, until the fire is extinguished.
- I. Ventilate the area after usage.



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TESTING AND FAULT ISOLATION

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CLEANING

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-100-801-A01

Cleaning

1. General

- A. To remove grease and dust from the fire extinguisher, a cotton wiper (damp if necessary) is sufficient. Wipe off any residues of the cleaning agent from the lens of the pressure gauge.

NOTE Usage of cleaning agents is restricted to Isopropyl Alcohol and mild liquid detergents.

NOTE Make sure extinguishing agent outlet is clean and free from foreign objects.



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INSPECTION/CHECK

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-200-801-A01

Inspection and Check of the HAFEX

1. General
 - A. Self-explanatory
2. Procedure

Subtask 26-24-01-200-001-A01

- A. Monthly Inspection

WARNING: THE EXTINGUISHER IS A PRESSURIZED EQUIPMENT WITH A LIMITED LIFE- TIME AND LIABLE TO HAVE A SERIAL NUMBER. MONITOR SERIAL NUMBER TO MAKE SURE THAT THE CORRECT MAINTENANCE INTERVALS ARE FOLLOWED AND THE EXTINGUISHER IS REMOVED FROM SERVICE IN TIME.

CAUTION: PERIOD BETWEEN CHECKS MUST NOT BE LONGER THAN 31 DAYS. IF AN EXTRAORDINARY INCIDENT OCCURS, CHECK EXTINGUISHER.

CAUTION: EXTINGUISHERS THAT DO NOT MEET INSPECTION REQUIREMENTS MUST BE REPLACED OR REPAIRED.

NOTE: The stored extinguishers only have to be checked before their installation.

(1) Make sure that on the halon alternative fire extinguisher (HAFEX):

- the safety pin is in position and the struts of the safety seal (tamper indicator) are not damaged, refer to Figure 5003.

CAUTION: IF IN DOUBT, THE EXTINGUISHER HAS BEEN USED, DO NOT REPLACE THE PARTS. INSTEAD, REMOVE THE EXTINGUISHER FROM SERVICE AND SCRAP IT.

CAUTION: BE VERY CAREFUL WHEN YOU DO WORK ON THE FIRE EXTINGUISHER, DO NOT APPLY TOO MUCH FORCE ON THE SAFETY SEAL AS IT BREAKS EASILY.

NOTE: A damaged safety pin or safety seal can be replaced, if it is ensured, that the extinguisher was not used. See chapter **REPAIR**.

- the label is readable. If not and the damage is permanent, discard the extinguisher.
- the nozzle is unobstructed and undamaged. If the nozzle is obstructed, clean it. If it is damaged, discard the extinguisher.
- there are no visual damages of extinguisher which could impair functionality or safety. If the damages are not repairable, discard the damaged part.
- there is no corrosion and wear of extinguisher which could impair functionality or safety. If the corrosion or wear might affect functionality or safety, discard the part.
- the extinguisher is not empty by estimating the weight by hefting (or weighing).



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- if the pressure is in the green (operable) area.

NOTE: The pressure depends on the temperature and therefore varies in the green area and the pressure gauge has tolerances:

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

Reference points	Pressure
-40°C (-40°F)	6.6 bar (95 psi)
+21°C (70°F)	9 bar (130 psi)
+49°C (120°F)	10.5 bar (152 psi)

PRESSURE GAUGE TOLERANCES
TABLE 5

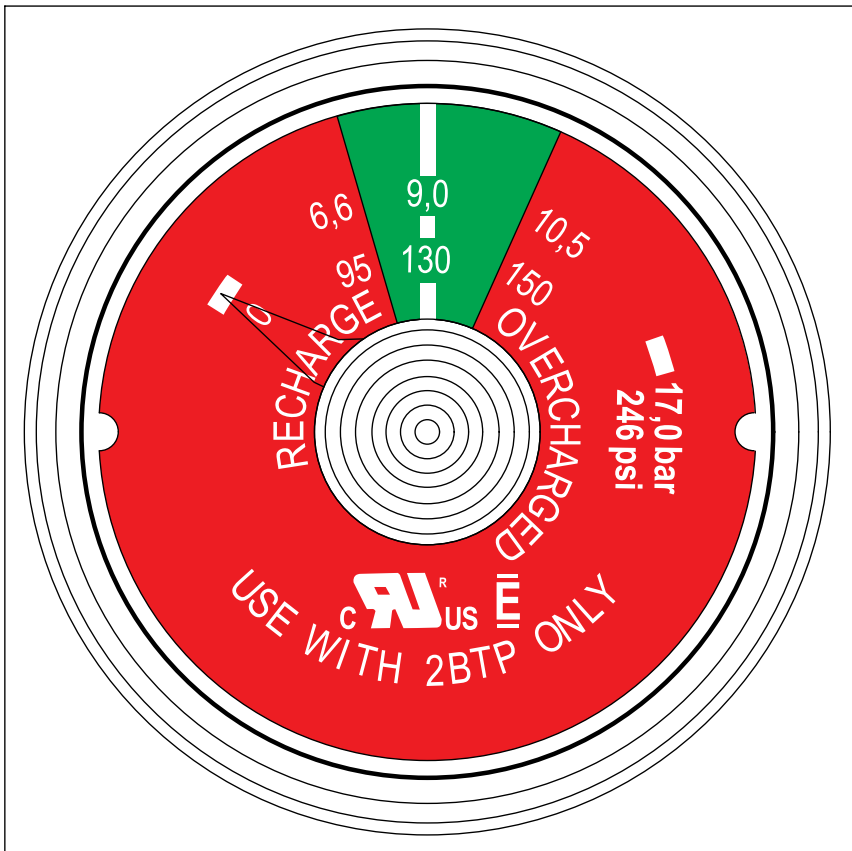
B. Recurring Inspection

- (1) In addition to the inspection procedure described in chapter 1, the extinguisher has to be weighed with a calibrated scale once every 24 month. If the weight falls below the minimum gross weight (see **TABLE 3**), discard the extinguisher. The measured weight and date of weighing have to be noted on an applicable placard, which is in accordance with your national regulations.



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** FOR PNs P3APP003010D P3APP003010E P3APP003010F



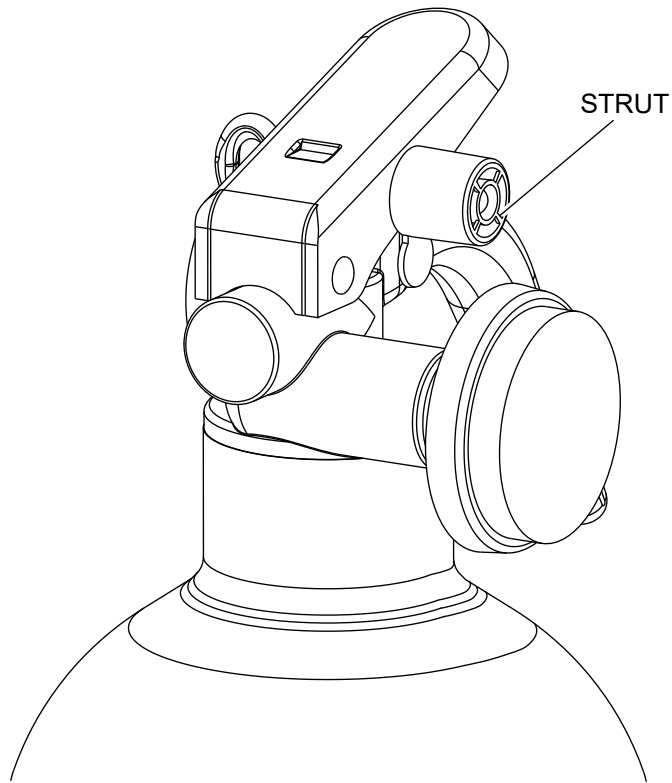
2624015002

PRESSURE GAUGE
FIGURE 5002/GRAPHIC 26-24-01-991-012-A01



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2624015003

SAFETY SEAL
FIGURE 5003/GRAPHIC 26-24-01-991-013-A01



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REPAIR

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-300-801-A01

1. General

A. Parts that do not meet inspection requirements must be replaced.

NOTE: Prior to starting repair operations, personnel must read carefully all instructions and study the illustration applicable to the equipment undergoing repair.

2. Procedure

Subtask 26-24-01-300-001-A01

A. Replacement of Safety Pin and Seal

CAUTION: MAKE SURE NOT TO ACTUATE THE EXTINGUISHER DURING THE REPLACEMENT PROCEDURE.

(1) Removal of safety pin and seal

(a) Remove the extinguisher, see chapter **REMOVAL**.

(b) Pull the safety pin in the line of its axis and remove it from the lever. This also removes the safety seal.

NOTE: If some parts of the pin or seal are broken and cannot be removed without increased force, use a wire cutter to cut the safety pin.

(2) Installation of safety pin and seal

NOTE: Make sure to not brake the seal during the installation.

(a) Insert the new safety pin into the holes of the lever from the opposite side of the pressure gauge.

(b) Install the new safety seal on the safety pin by inserting the end of the safety pin into the center hole of the seal.

NOTE: Make sure that the latch of the safety seal is on the inner side, facing the lever.

(c) Assemble seal and pin by pushing with a finger on the center of the seal until it locks onto the pin.

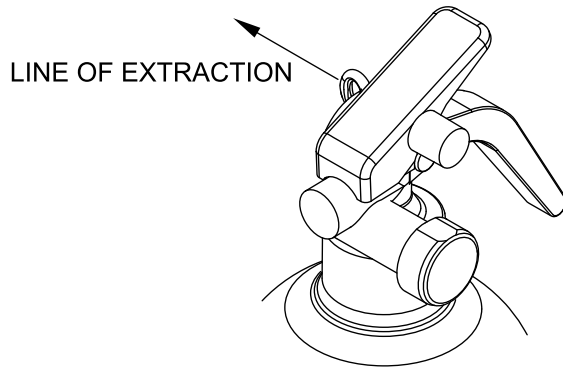
NOTE: Make sure that your finger is fully on the front of the safety seal to apply the force equally. Examine the struts of the safety seal for signs of damage.

(d) Place the extinguisher in the bracket with the face of the pressure gauge facing outwards.

(e) Install the repaired extinguisher. See chapter **INSTALLATION**.



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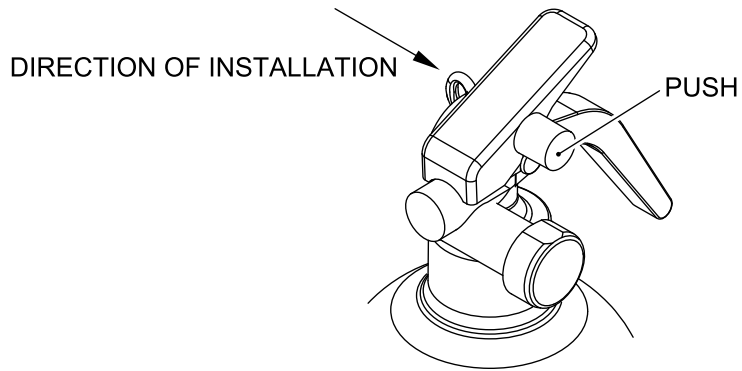


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LINE OF EXTRACTION
FIGURE 6001/GRAPHIC 26-24-01-991-015-A01



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2624016002

SAFETY PIN INSTALLATION
FIGURE 6002/GRAPHIC 26-24-01-991-016-A01



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SUBTASK 26-24-01-300-002-A01

B. Replacement of RFID Flag Tag on UL HAFEX

CAUTION: MAKE SURE NOT TO ACTUATE THE EXTINGUISHER DURING THE REPLACEMENT PROCEDURE.

1. Removal of RFID flag tag

- (a) Safely remove the old cable tie along with the RFID flag tag without damaging the surface of the UL HAFEX.

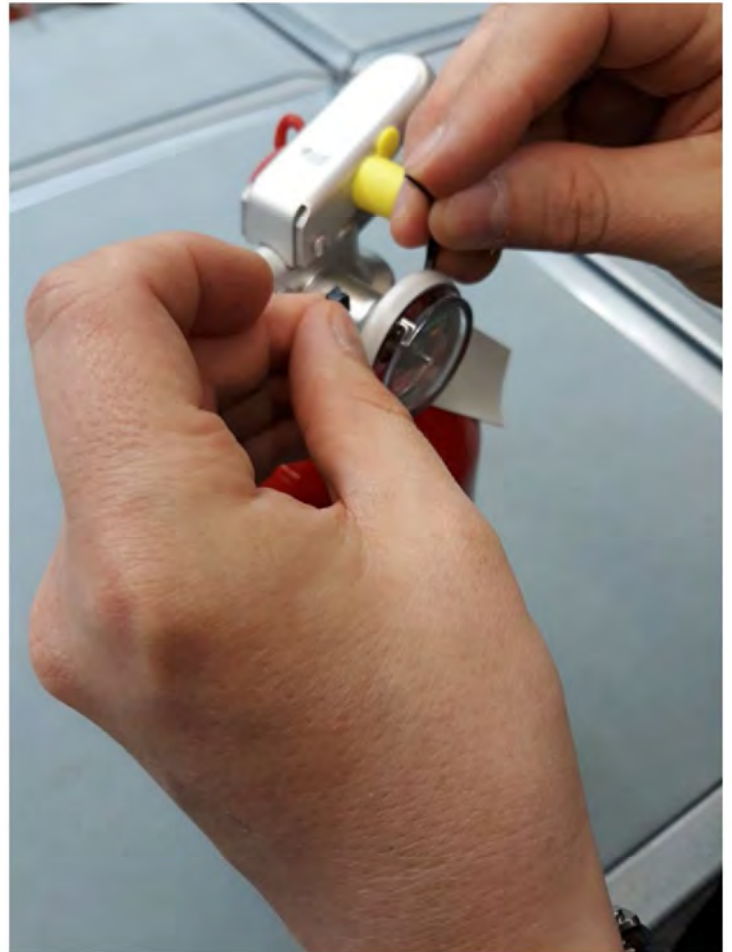
2. Installation of RFID flag tag.

NOTE: To make an order for the replacement parts (tag, cable tie), contact umlaut customer service (see chapter **INTRODUCTION**). Serial number is necessary.

- (a) Assemble the new cable tie along with the RFID flag tag and mount it on the rear side of the pressure gauge with the text facing outwards.
- (b) Make sure that the RFID flag tag rotates freely, when you tighten the cable tie.
- (c) After the installation of the cable tie, cut off the over length of the cable tie.
- (d) Weigh the extinguisher.
- (e) Record the weight in the re-writable field of the RFID flag tag.



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RFID FLAG TAG INSTALLATION
FIGURE 6003/GRAPHIC 26-24-01-991-017-A01

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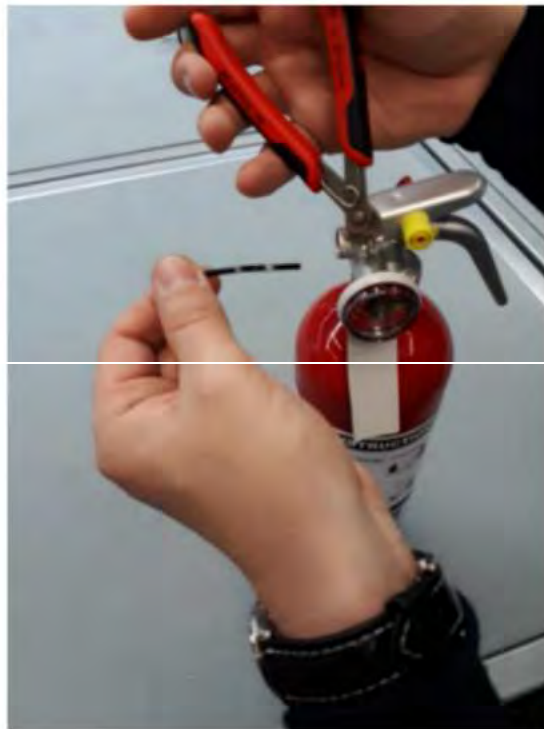
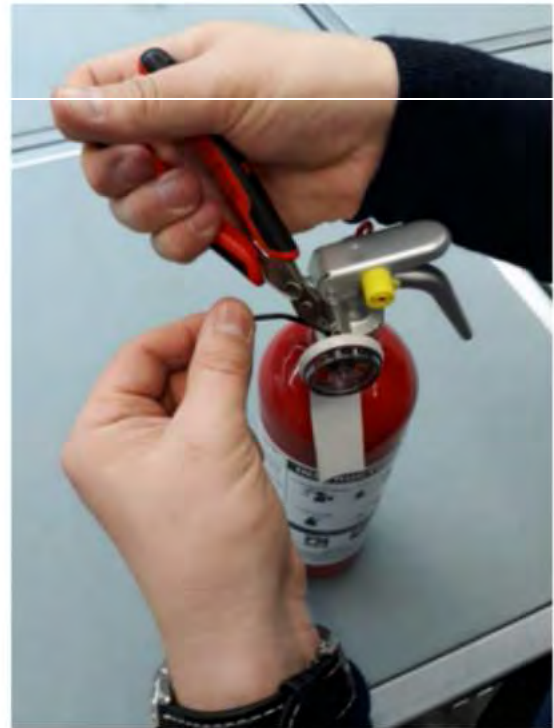


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RFID FLAG TAG TIGHTENING
FIGURE 6004/GRAPHIC 26-24-01-991-018-A01

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RFID FLAG TAG INSTALLATION
FIGURE 6005/GRAPHIC 26-24-01-991-019-A01



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ASSEMBLY

NOT APPLICABLE



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FITS AND CLEARANCES

NOT APPLICABLE



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SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES

NOT APPLICABLE



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SPECIAL PROCEDURES

NOT APPLICABLE



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REMOVAL

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

Removal of the HAFEX

1. General
 - A. Self-explanatory
2. Procedure
 - A. Removal of the Extinguisher from 1-Strap Brackets
 - (1) Remove the extinguisher from the bracket as follows:
 - (a) Pull the latch hook and open the strap.
 - (b) Remove the extinguisher from the bracket.
 - A. Removal of the Extinguisher from 2-Strap Brackets
 - (1) Remove the extinguisher from the bracket as follows:
 - (a) Pull the latch hook of the first strap.
 - (b) Secure the extinguisher with one hand.
 - (c) Open the second strap.
 - (d) Remove the extinguisher.



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INSTALLATION

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

Installation of the HAFEX

1. General
 - A. Self-explanatory
2. Procedure
 - A. Installation of the Extinguisher to 1-Strap Brackets
 - (1) Install the extinguisher on the bracket as follows:
 - (a) Place the extinguisher in the bracket with the face of the pressure gauge facing outwards.
 - (b) Align the position of the latch hook.
 - (c) Close the strap.
 - A. Installation of the Extinguisher to 2-Strap Brackets
 - (1) Install the extinguisher on the bracket as follows:
 - (a) Place the extinguisher in the bracket with the face of the pressure gauge facing outwards.
 - (b) Align the position of the latch hook of the upper strap and close it.
 - (c) Align the position of the latch hook of the lower strap and close it.



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SERVICING

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STORAGE INCLUDING TRANSPORTATION

**** FOR PNs P3APP003010D P3APP003010E P3APP003010F**

TASK 26-24-01-550-801-A01

Storage Data

1. General
 - A. Self-explanatory
2. Procedure
 - Subtask 26-24-01-550-001-A01
 - A. Storage

NOTE: Do not perform any inspection during storage. Do the INSPECTION/CHECK TASK [26-24-01-200-001-A01](#) before the installation of the fire extinguisher to make sure that it operates properly.

- (1) Extinguishers should be kept preferably in dry atmosphere in any attitude.
- (2) Permanent storage temperature: -40°C (-40°F) to +49°C (+120°F).
- (3) Decommissioning (End of lifetime)

WARNING: DO NOT RELEASE IN CLOSED, UNVENTILATED SPACES. EMPTY EXTINGUISHERS MUST BE DISCARDED IN ACCORDANCE WITH THE LOCAL REGULATIONS.

- (a) Charged extinguishers, which are removed from service due to end of lifetime or damage, must be discharged and discarded in accordance with the local regulations.



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REWORK

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ILLUSTRATED PARTS LIST

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IPL INTRODUCTION

1. General Information

- A. This ILLUSTRATED PARTS LIST (IPL) contains the complete listing of all replaceable major assemblies of the HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER

2. Organization

- A. The IPL is divided into the following sections:

(1) Introduction

The introduction contains all explanatory information for the individual sections as is necessary for using the IPL. The introduction further contains a list of manufacturer codes together with manufacturer names and addresses.

(2) Numerical Index

This section contains a listing of part numbers of all items listed in the detailed parts list in alphanumerical sequence with cross-reference to respective Fig./Item Nos. as well as units per assy.

The order of precedence in beginning the part number arrangement at the outmost left-hand (first) position is as follows:

- letters A through Z (except 'O' to be considered as zero)
- numerals 0 to 9.

For subsequent rows, the order is:

- letters A through Z (except 'O' to be considered as zero)
- numerals 0 to 9.

(3) Detailed Parts List

(a) Column “FIG. / ITEM”

The first number in the first line of a page indicates the number of the figure illustrating the part. The second number indicates the item number by which the part is identified on the illustration. A dash placed before the item number indicates that the part is not illustrated.

(b) Column “PART NUMBER”

The part number column contains the original manufacturers' part numbers. When standard part numbers are used, the standard part number is listed in this column.

(c) Column “AIRLINE STOCK NO.”

This column is left blank for airline internal use.

(d) Column “NOMENCLATURE”

- Indenture System



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The indenture system used in the Detailed Parts List shows the relationship of parts and assemblies to next higher assemblies as follows:

1234567

Assembly

Attaching Parts for Assembly

* * *

. Detail Parts for Assembly

. . Subassembly

. . Attaching Parts for Subassembly

* * *

. . . Detail Parts for Subassembly

. . . . Sub-Subassembly

. . . . Attaching Parts for Sub-Subassembly

* * *

. Detail Parts for Sub-Subassembly

– Attaching parts

The attaching parts are shown directly after the assembly or the part thereof. They are listed below the same indenture number as the item they attach, and are preceded by the words 'ATTACHING PARTS' and are followed by three asterisks.

– Vendor Codes

Parts manufactured by companies other than umlaut Engineering GmbH are identified by an applicable vendor code following the nomenclature.

Vendor codes are in accordance with current issues of U.S. Federal Supply Codes for Manufacturer Handbooks H4-1, H4-2 and H4-3 and/ or in accordance with applicable European regulations and are preceded by the letter 'V'. Standard parts such as AN, DIN, MS etc. are not identified by a vendor code. When there is no known vendor code, the abbreviated name of the vendor is listed in lieu of the vendor code.

(e) Column “EFF CODE”

Alpha variants A-Z (except I and O) can be assigned to an existing item number in the FIG-ITEM column to show configuration differences, optional parts, etc. Alpha variant items are not shown on the illustration when the appearance and location of the alpha variant are the same as the basic item. In the EFF CODE column, part



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applicability is indicated with respect to the top assemblies. A part shown with an effectivity code is only used in the top assembly variant which has the same effectivity code. The absence of a code indicates that the part is common to all variants of the top assembly.

(f) Column “UNITS PER ASSY”

This column contains the quantity of a specific catalog sequence numbered part required in the build sequence of only one (where more than one exists), next higher sub-sub-assembly, sub-assembly, assembly, or installation level as applicable. For bulk items, the letters 'AR' are inserted in the quantity column to indicate 'As Required'. Whenever items are listed for reference purposes, 'RF' is inserted.

3. How to use the IPL

A. If the part number is known

- (1) Find the part number in the numerical index and note figure and item number.
- (2) Turn to figure.
- (3) Locate the part on the illustration and in the parts list by item number.

B. If the part number is unknown

- (1) Please refer to Figure 1A and look for the figure item number of the part.
- (2) Note the figure item number.
- (3) Turn to the figure item list and find the corresponding part number.

C. umlaut engineering GmbH Part Numbering System

- (1) Each part, assembly and installation are assigned a "Part" number consisting of the basic engineering drawing number. Supplementary numbers appended to the engineering drawing number identify parts, assemblies or installations which are detailed.



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NUMERICAL INDEX

PART NUMBER	AIRLINE STOCK NUMBER	FIG.	ITEM	TTL REQ
P3APP003010D		1	001A	RF
P3APP003010E		1	001B	RF
P3APP003010F		1	001C	RF
P3PRT003090B		1	10	1
P3PRT003091B		1	20	1
PLT1M-M30		1	30	1
P3PRT000475B		1	40	1



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DETAILED PARTS LIST



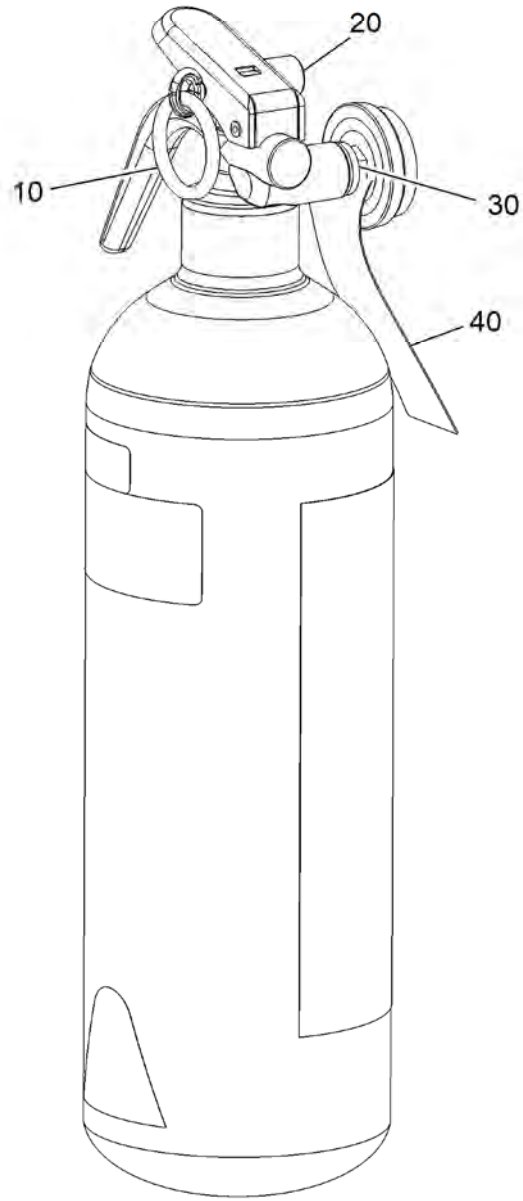
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HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER
FIGURE 1/GRAPHIC 26-24-01-950-006-A01



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FIG. ITEM	PART NUMBER	AIRL. STOCK NO.	NOMENCLATURE 1234567	EFF CODE	UPA
1					
- 001A	P3APP003010D		HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER —UL	A	RF
- 001B	P3APP003010E		HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER — UL YELLOW	B	RF
- 001C	P3APP003010F		HAFEX - HALON ALTERNATIVE FIRE EXTINGUISHER — UL GREEN	C	RF
10	P3PRT003090B		.PIN, REPLACEMENT SAFETY		1
20	P3PRT003091B		.SEAL, REPLACEMENT SAFETY		1
30	PLT1M-M30		.TIE, CABLE		1
40	P3PRT000475B		.TAG, RFID FLAG		1

- ITEM NOT ILLUSTRATED