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MAINTENANCE PROCEDURE

FOR STORED PRESSURE EXTINGUISHERS FROM THE LITH-EX RANGE

LITH EX



Li Batteries

CONTENTS

		Page
1.	Safety	3
2.	Product Information	3
3.	Inspection by the User	4
4.	Basic Service	4
5.	Maintenance Intervals & Lifetime of the Extinguishers	5
6.	Exploded Views	6
7.	Components	7
8.	Annual Servicing Procedures	8
9.	Five Year Discharge Testing	9
10.	Annexes	12
11.	Environmental Compliance	13



1. SAFETY

This procedure has been compiled for your safety, please read the instructions thoroughly and ensure that they are followed.

Fire extinguishers are pressure vessels and must be treated with respect and handled with care.





All maintenance operations must be carried out by certified trained personnel, wearing the relevant PPE (goggles, gloves, etc.) and carrying the tools and materials required to ensure safety and proper functioning of the extinguisher. If a suitably trained service engineer is not available please contact your supplier.

The user must ensure that portable extinguishers are checked and serviced.



2. PRODUCT INFORMATION

For LITH-EX Fire Extinguishers listed below:

Type	Lith-Ex 1 Litre RMVDL-1L	Lith-Ex 2 Litre RMVDL-2L	Lith-Ex 6 Litre RMVDL-6L	Lith-Ex 9 Litre RMVDL-9L
Extinguishing Agent	AVD			
Pressure	15 Bar	15 Bar	15 Bar	15 Bar
Load	1 Litre (1120 g)	2 Litre (2240 g)	6 Litre (6720 g)	9 Litre (10080 g)
Tolerance	Min. 1064 g Max. 1120 g	Min. 2128 g Max. 2240 g	Min. 6384 g Max. 6720 g	Min. 9576 g Max. 10080 g
Torque	30 - 55 ±0.5 Nm			
				

- Designed and manufactured in accordance with Pressure Equipment Directive 2014/68/EU-PED and Certified to EN3.
- These extinguishers have passed the “35 kV Dielectric Test”.
- Propellant: Nitrogen with helium tracer.
- Test pressure: 29 bar. Maximum service pressure: 17.7 bar. Operating pressure at 20°C: 15 bar.
- Operating temperature: +5°C to +60°C. Do not use outside specified temperature range.

THIS EXTINGUISHER SHOULD BE INSTALLED AND SERVICED ACCORDING TO LOCAL REGULATIONS, FOR EXAMPLE IN THE UK TO BS5306 PART 3 AND 8.

3. INSPECTION BY THE USER

After installation, it is recommended that the user or their representative inspects their portable extinguishers at regular intervals, at least quarterly and preferably monthly, to ensure for each extinguisher that:

- It is located in the designated area.
- It is accessible, clearly visible and/or clearly marked, with instructions on the outside.
- It is equipped with legible instructions.
- It is not visibly damaged.
- The needle of its pressure indicator is in the green zone.
- Its safety seals are neither damaged nor missing.

The unit should be withdrawn from service if the tamper seal is missing, if the extinguisher is under weight, or if the pressure indicator enters the red section.

MAINTENANCE SHOULD BE CONDUCTED BY A COMPETENT PERSON

4. BASIC SERVICE

- This extinguisher should be serviced at least annually according to local regulations by a trained and competent person.
- After any use, the extinguisher must be depressurised and refilled by a competent person.
- This extinguisher is a pressurised vessel and must not be pierced, dented, or subjected to external damage, fire or disposed of in a fire.
- The 6 and 9 litre units should not be operated with the discharge hose removed.
- Only use genuine components and replacement parts in conformity with the manufacturer’s instructions.

- The “Service Label” affixed to the unit must always be completed by a qualified person.

In the event of a non-conformity, the qualified person must write a warning label and affix it to the unit stating **“UNIT OUT OF SERVICE”**.

This warning must be clearly visible and include the date and the qualified person’s identification mark.

The qualified person must write a report, at the latest, at the end of the site visit, to make users aware of any portable extinguisher requiring corrective action.

The qualified person must check that the portable extinguisher conforms to current regulations.

The qualified person must affix a ‘CHECKED’ label on every portable extinguisher. After checking and, if any necessary repairs can be completed immediately, then the unit can be deemed “Checked and Functional.”

All the maintenance data must be recorded in a register.

5. MAINTENANCE INTERVALS & LIFETIME OF THE EXTINGUISHERS

Please refer to local guidelines for the applicable intervals.

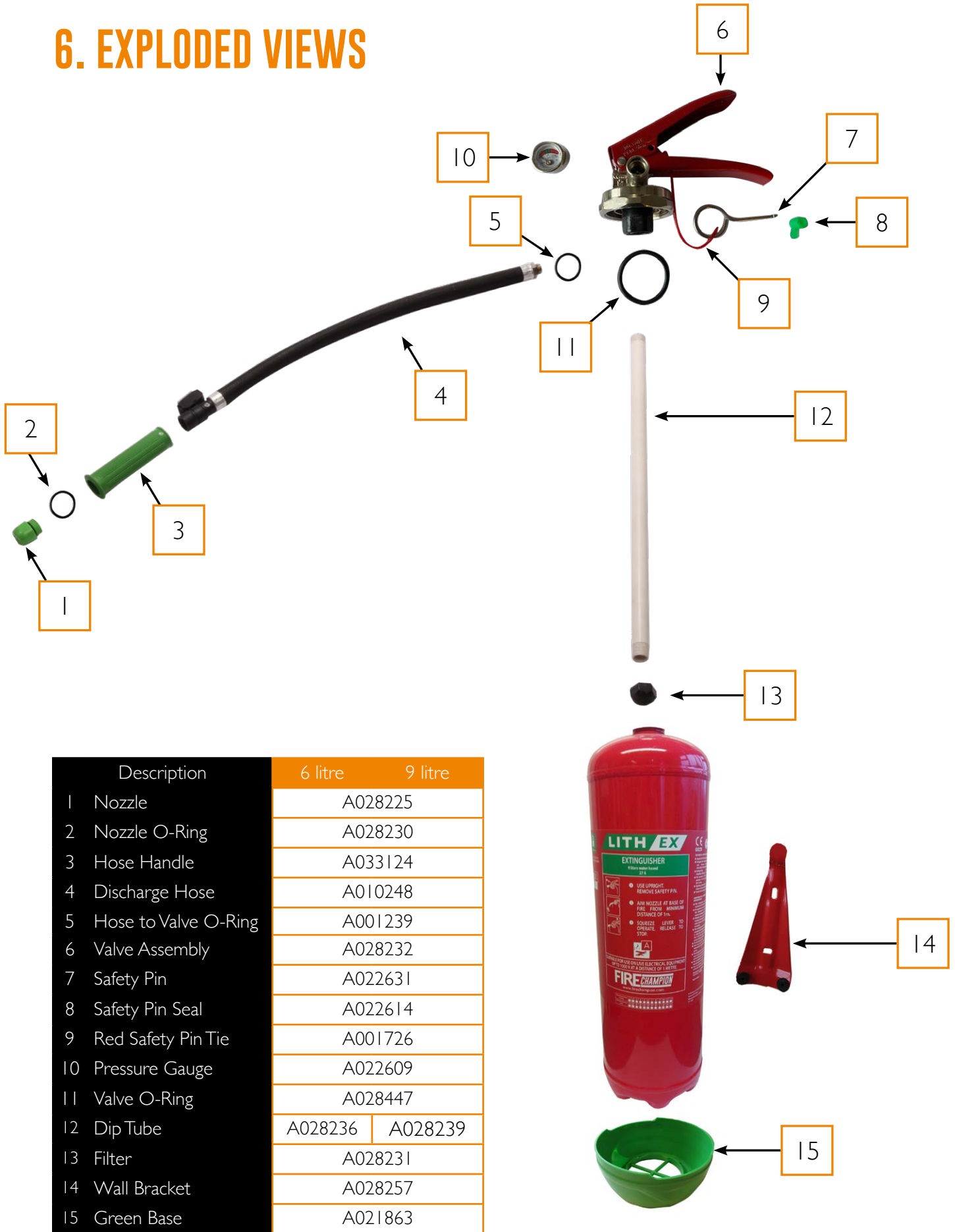
Type of Portable Fire Extinguishers	Extended Service and Agent Recharge	Workshop Overhaul and Agent Recharge	Extended Service and Agent Recharge	Expected Lifetime of a Portable Fire Extinguisher
“Lith-Ex” Containing AVD	At year 5	At year 10	At year 15	20 years

These intervals run from the date of installation of the portable fire extinguisher.

Recharge Service

This extended service should be performed whenever an extinguisher is (partially) used or has been found to have an incorrect mass during a basic service.

6. EXPLODED VIEWS



Description	6 litre	9 litre
1 Nozzle	A028225	
2 Nozzle O-Ring	A028230	
3 Hose Handle	A033124	
4 Discharge Hose	A010248	
5 Hose to Valve O-Ring	A001239	
6 Valve Assembly	A028232	
7 Safety Pin	A022631	
8 Safety Pin Seal	A022614	
9 Red Safety Pin Tie	A001726	
10 Pressure Gauge	A022609	
11 Valve O-Ring	A028447	
12 Dip Tube	A028236	A028239
13 Filter	A028231	
14 Wall Bracket	A028257	
15 Green Base	A021863	

7. COMPONENTS

1. Nozzle



6. Valve Assembly



7. Safety Pin



10. Pressure Gauge



11. Valve O-Ring







12. Dip Tube





13. Filter





8. ANNUAL SERVICE PROCEDURE





<p>1</p>	<ul style="list-style-type: none"> • Check the general condition of the assembly. • Check that it is located in the designated area. • Proceed with cleaning of the device. • Ensure that the body is free from corrosion, deep scratches or deformation. • The identification must be clear and unambiguous. • Check the legibility of the operating instructions printed on the label. • Check that all the components are present. 	
<p>2</p>	<p>Check the safety pin and the tamper seal are in place and undamaged.</p> <p>Check that the needle of the pressure gauge is in the green area.</p>	
<p>3</p>	<p>Check internal pressure by screwing in a test pressure gauge in the place of the existing one.</p>	
<p>4</p>	<ol style="list-style-type: none"> 1. Check the OEM pressure gauge needle returns to zero on removal. 2. Replace the OEM pressure gauge and check that the needle returns to the green zone. 	

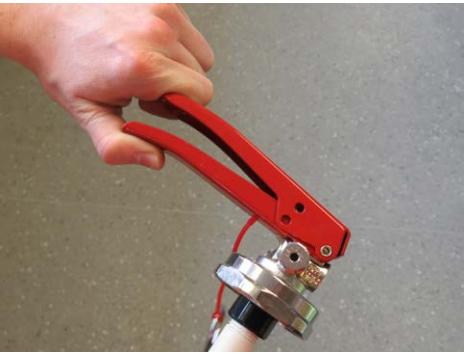


<p>5</p>	<ul style="list-style-type: none"> • Check that all elements function properly. • Check that all safety elements (lock, pin, or other operating elements, etc.) function properly. • Check the hose and the nozzle assembly with an air line. • Check the condition of the hose. In particular look for cracks, signs of heavy wear, or external damage. <p>All spare parts fitted must conform to the manufacturer's specifications.</p>	 <ul style="list-style-type: none"> Check safety pin & security tab Check hose with an air line Check nozzle
<p>6</p>	<ul style="list-style-type: none"> • Replace seal. • Fill in the control label fixed to the extinguisher. • Put the extinguisher back on its transport support or wall support. • Check the stability of the whole. <p>Record the completion of the procedure on the safety register, indicating the type of maintenance carried out.</p>	




9. FIVE YEAR DISCHARGE TESTING

This work should only be undertaken by suitably qualified personnel. Contact the main distributor for further information.

<p>1</p>	<p>Check that the unit functions correctly when operated. Remove the safety pin and discharge the unit by squeezing the handle according to the instructions on the label. Ensure that the media is directed into a suitable receptacle so that it can be collected and disposed of appropriately.</p>	
<p>2</p>	<ul style="list-style-type: none"> • Check the general condition. • Proceed with cleaning of the device. • Ensure that the body of the unit is free from corrosion, deep scratches or deformation. • Check the legibility of the operating instructions printed on the label. • All accessories must be present. 	

3	<ul style="list-style-type: none"> • Before dismantling, ensure that the device isn't under pressure. • Unscrew the safety valve a maximum of two turns and allow the unit to depressurize for 3 to 5 minutes. 	
4	<ul style="list-style-type: none"> • Dismantle the hose by unscrewing the coupling at the valve. • Check the condition of the hose and nozzle and clean through it using an airline. Ensure that they are neither obstructed nor cracked worn or damaged. 	
5	<ul style="list-style-type: none"> • Check the internal condition of the cylinder. If possible use a wireless endoscope and look for potential corrosion, damage or deformation. • Check the thread on the top of the body. The thread should be free from corrosion or damage. 	
6	<ul style="list-style-type: none"> • Place a clean rag over the extinguisher opening in order to prevent any foreign objects from falling inside the unit. • Proceed to thoroughly clean and inspect all the different components. Where necessary use an air line to blow air through the valve assembly (dip tube, nozzle and filter). • Every time the valve assembly is removed or opened, the valve "O" ring (11) must be systematically replaced with a model in compliance with the manufacturer's specifications. 	

7	<ul style="list-style-type: none"> Check the trigger mechanism: squeeze the two parts of the trigger together and observe the opening of the valve at the base (with the dip tube removed). 	
8	<p>Cleaning</p> <ul style="list-style-type: none"> Only use demineralised water (de-ionised or distilled water) for cleaning <p>TAP WATER IN THIS CLEANING PROCESS MAY RESULT IN A CRITICAL BLOCKAGE OF THE UNIT</p> <ul style="list-style-type: none"> Rinse all equipment with demineralised water. Ensure that all equipment is thoroughly clean. <p>Handling</p> <ul style="list-style-type: none"> All equipment including pumps and transfer lines must be perfectly clean, it is recommended to have equipment dedicated to the handling of AVD. Even in case of minimum transfer, the line should be rinsed with AVD and the rest should be discarded. <p>Filling with AVD</p> <ul style="list-style-type: none"> Store AVD in its container with its original lid. Load the correct quantity of AVD into the extinguisher just before reassembly (see table). Pressurise with nitrogen only, do not use air or CO₂. <p>Re-cycling/disposal of used AVD</p> <ul style="list-style-type: none"> The use of recycled AVD in the extinguishers is not recommended. Follow local and national regulations for the recycling of AVD. 	
9	Tighten with a torque wrench (30 - 55 Nm).	

10	<ul style="list-style-type: none"> Set the nitrogen cylinder pressure to 15 bar. Connect the cylinder to the valve mechanism output. Press the handle and let the pressure build up to the value indicated by the pressure gauge on the extinguisher (see table). 	
11	<p>Look for potential leaks with a suitable leak detector.</p>	
12	<ul style="list-style-type: none"> Put the safety pin (6) back in place and add the safety pin seal (7). Replace the service seal. Fill in the test label fixed onto the extinguisher. Record the procedure in the safety register, stating the type of maintenance performed. 	

10. ANNEXES

Annex A - Load Tolerance

Extinguishers	Load	Tolerance	Min.	Max.
Lith-Ex 1	1 Litre	+0% -5%	1.064 kg	1.12 kg
Lith-Ex 2	2 Litre	+0% -5%	2.128 kg	2.24 kg
Lith-Ex 6	6 Litre	+0% -5%	6.384 kg	6.72 kg
Lith-Ex 9	9 Litre	+0% -5%	9.576 kg	10.08 kg

Annex B - Extinguishers Covered by the Maintenance Procedure

Technical Reference	Type	Mass or Volume	Pressurisation	Gas Type
Extinguisher 1L with AVD	Lith-Ex 1	1 Litre	15 bar	Nitrogen
Extinguisher 2L with AVD	Lith-Ex 2	2 Litre	15 bar	Nitrogen
Extinguisher 6L with AVD	Lith-Ex 6	6 Litre	15 bar	Nitrogen
Extinguisher 9L with AVD	Lith-Ex 9	9 Litre	15 bar	Nitrogen

11. ENVIRONMENTAL COMPLIANCE

Technicians Must:

Recover extinguishing agent and any soiled water during maintenance and proceed to recycling or disposal by an approved organisation as per current local legislation.

Inform the customer when their extinguishers have reached the end of their life, and arrange for an approved organisation to proceed to recycling or destruction.



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