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MAINTENANCE PROCEDURE

25 - 50L MOBILE EXTINGUISHER

FROM THE LITH-EX RANGE

LITH EX

CONTENTS

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 mobile extinguishers are checked and serviced.

2. PRODUCT INFORMATION

For Lith-Ex mobile fire extinguishers listed below:

Type	AVD 25 Litre RMVDL-25L	AVD 50 Litre RMVDL-50L
Extinguishing Agent	AVD	
Operational Pressure	8 bar	8 bar
Nominal Charge	28 kg / 25 Litre	56 kg / 50 Litre
Tolerance	Min.: 26.6 kg Max.: 28 kg	Min.: 53.2 kg Max.: 56 kg
Certification	EN1866	EN1866
Torque	25 Nm	
		

Lith-Ex mobile extinguisher reservoir:

- Designed and manufactured in accordance with Pressure Equipment Directive 2014/68/EU-PED and Certified to EN1866.
- These mobile extinguishers have passed the "35 kV Dielectric Test".
- Propellant: Nitrogen with helium tracer.
- Test pressure: 23 bar. Maximum service pressure 16 bar. Operating pressure at 20 °C 8 bar.
- Operating temperature: +5°C to +60°C. Do not use outside specified temperature range.

Lith-Ex mobile extinguisher auxiliary cylinder.

- Designed and manufactured in accordance with Pressure Equipment Directive 2014/68/EU-PED.
- Propellant nitrogen with helium tracer.
- Test pressure: 250 bar. Working pressure: 160 bar.

THIS MOBILE EXTINGUISHER SHOULD BE INSTALLED AND SERVICED ACCORDING TO LOCAL REGULATIONS, FOR EXAMPLE IN THE UK TO ISOTS 11602

3. INSPECTION BY THE USER

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

- It is located in the designated area.
- It is accessible, clearly visible and/or clearly marked, with legible instructions on the outside.
- It is not visibly damaged.
- The needle of its pressure indicator is at 155 ±5 bar.
- The tamper seal is neither damaged nor missing.
- The mobile extinguisher is not under weight.

The unit should be withdrawn from service if the tamper seal is missing, if the mobile extinguisher is under weight, or if the pressure indicator is not indicating the correct pressure defined above.

4. BASIC SERVICE

MAINTENANCE SHOULD BE CONDUCTED BY A COMPETENT PERSON

- This mobile extinguisher should be serviced at least annually according to local regulations by a trained and competent person.
- After any use, the mobile extinguisher reservoir must be depressurised and refilled by a competent person.

- After any use the auxiliary cylinder must be re-pressurised.
    - THIS WORK SHOULD ONLY BE UNDERTAKEN BY PROFESSIONAL COMPANIES WITH THE APPROPRIATE EQUIPMENT, COMPETENCE AND CERTIFICATION FOR HIGH PRESSURE WORK
- This mobile extinguisher is a pressurised vessel and must not be pierced, dented, or subjected to external damage, fire or disposed of in a fire.
- The 25 and 50 litre mobile 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 mobile extinguisher requiring corrective action.

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

The qualified person must affix a 'CHECKED' label on every mobile 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 MOBILE EXTINGUISHERS

Please refer to local guidelines for the applicable intervals.

Type of Mobile Fire Extinguishers	Extended Service and Agent Recharge	Workshop Overhaul and Agent Recharge	Extended Service and Agent Recharge	Expected Lifetime of a Mobile 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 mobile fire extinguisher.

Recharge Service

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

6. EXPLODED VIEW - 25 LITRE UNIT

No.	Qty	Description	Article No.
1	1	25 L AVD Cylinder	A025337
2	1	Hand Truck	A024678
3	1	Assembled Head	A020072
4	1	Auxiliary Cylinder Clamp	A024769
5	1	Nut DIN 934 (M10)	A025364
6	2	Cap Ø25	A001266
7	2	Wheel Ø300	A001747
8	2	Red Wheel Stopper	A024652
9	8	Nut	A001683
10	1	Auxiliary Cylinder	A028812
11	1	Connector	A012246
12	1	Discharge hose 5m	A000929
13	1	Auxiliary Cylinder Hose	A028813
14	1	Pressure regulator 8 bar	A028821

6. EXPLODED VIEW - 50 LITRE UNIT

No.	Qty	Description	Article No.
1	1	50 L AVD Cylinder	A025336
2	1	Hand Truck	A024678
3	1	Assembled Head	A012292
4	1	Auxiliary Cylinder Clamp	A024769
5	1	Nut DIN 934 (M10)	A025364
6	2	Cap Ø25	A001266
7	2	Wheel Ø300	A001747
8	2	Red Wheel Stopper	A024652
9	8	Nut	A001683
10	1	Auxiliary Cylinder	A028812
11	1	Connector	A012246
12	1	Discharge hose 5m	A000929
13	1	Auxiliary Cylinder Hose	A028813
14	1	Pressure regulator 8 bar	A028821

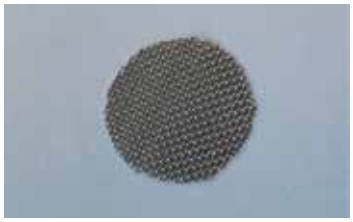
7. SPARE PARTS FOR AUXILIARY PRESSURE CYLINDER

No.	Qty	Description	Article No.
			25 / 50 LithEx
1	1	Cylinder	A023560
2	1	Pressure Gauge	A028834
3	1	Seal	A022641
4	1	Valve HP – Eurofeu	A017888
5	1	Security Pin	A029652

8. ANNUAL SERVICE PROCEDURE

1	Conduct a visual check on the mobile extinguisher components (external damage, external marking, corrosion).	
2	Ensure that there is no internal pressure in the reservoir by pressing the mobile extinguisher trigger (put a clean rag on the spray nozzle to prevent any residual charge being sprayed unintentionally). Unscrew the spray nozzle and check that it is not obstructed.	 
3	Remove the reservoir cap by unscrewing the 4 nuts and remove the hose. Check the head seal.	
4	Place a clean rag on the reservoir orifice to ensure that neither objects nor contamination can fall inside.	

8. ANNUAL SERVICE PROCEDURE - CONTINUED

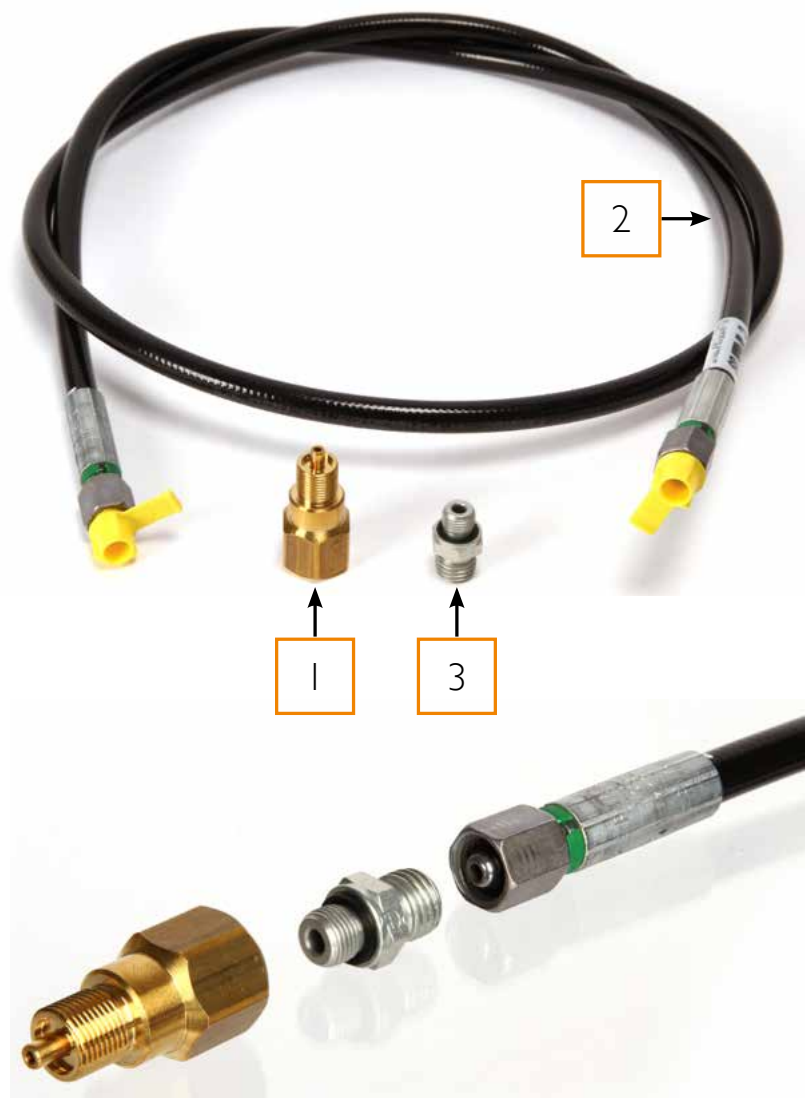
5	Check that the dip tube is clear and there are no obstructions which might block the nozzle.	
6	If available use an air line to blow through the nozzle, the hose and the dip tube to ensure there is no possibility of a blockage. Check inside the reservoir for any signs of corrosion or damage to the lining using a powerful torch. There is an in-line filter positioned between the hose and the trigger; ensure that a cleaning charge of water and air is blown from both directions in order to ensure that this filter remains clean.	 
7	Remove and replace the reservoir 'O' ring.	 
	• Check that the safety valve is intact. • If water appears on the surface of the AVD lightly agitate it using a suitable device. • Replace the reservoir seal and re-fit the cover. • Lubricate the nuts and tighten them progressively down to a torque setting of 25 Nm. • Check that the wheels are in good working condition and the trolley can easily be moved.	

8. ANNUAL SERVICE PROCEDURE - CONTINUED

1	Check fixing system between N_2 cartridge and hand truck.	
2	Check N_2 cartridge pressure gauge (pressure must be 155 ±5 bar)	
3	Ensure that the safety pin is in place and undamaged. Break the tamper seal and replace it with the correct new seal.	
4	• Fill in the maintenance sticker on the reservoir body and record the correct date. • Record the maintenance in the appropriate security logbook.	

9. FILLING PROCEDURE FOR THE AUXILIARY PRESSURE CYLINDER

IN ORDER TO COMPLETE THIS TASK YOU WILL REQUIRE THE "AUXILIARY REFILL KIT" WHICH INCLUDES THE NECESSARY HOSE AND CONNECTORS. THIS CAN BE PURCHASED FROM AVD FIRE. SEE ILLUSTRATION.



No.	Qty	Description	Article No.
			25 / 50 LithEx
1	1	Filling Adaptor M12 x 1mm	F005000
2	1	Pilot Hose Length - 1500mm	F1040023
3	2	Pilot Hose Adaptor for G1/8"	F1010000

9. FILLING PROCEDURE FOR THE AUXILIARY PRESSURE CYLINDER - CONTINUED

THIS WORK SHOULD ONLY BE UNDERTAKEN BY PROFESSIONAL COMPANIES WITH THE APPROPRIATE EQUIPMENT COMPETENCE AND CERTIFICATION FOR HIGH PRESSURE WORK

1	Closed valve is horizontal	
2	Check the valve is in the closed position as shown above.	
3	Remove the pressure gauge revealing the INTERNAL thread	
4	Connect the adaptor and hose to this thread	

9. FILLING PROCEDURE FOR THE AUXILIARY PRESSURE CYLINDER - CONTINUED

THIS WORK SHOULD ONLY BE UNDERTAKEN BY PROFESSIONAL COMPANIES WITH THE APPROPRIATE EQUIPMENT COMPETENCE AND CERTIFICATION FOR HIGH PRESSURE WORK

5	Connect adaptor directly into the (M 12 x 1) thread inside the valve body.	
6	Auxillary Refil Kit comes complete with 2 connectors and an adaptor to connect to the main regulator with a G 1/8" thread.	
7	Hose connects to the above adaptor with a G 1/8" thread.	
8	Connect the other end to the regulator on the Nitrogen supply cylinder.	

9. FILLING PROCEDURE FOR THE AUXILIARY PRESSURE CYLINDER - CONTINUED

THIS WORK SHOULD ONLY BE UNDERTAKEN BY PROFESSIONAL COMPANIES WITH THE APPROPRIATE EQUIPMENT COMPETENCE AND CERTIFICATION FOR HIGH PRESSURE WORK

9	Connection to Nitrogen supply cylinder and regulator	
10	The cylinders must be inside the safety cabinet before the unit is pressurised.	

9. FILLING PROCEDURE FOR THE AUXILIARY PRESSURE CYLINDER - CONTINUED

THIS WORK SHOULD ONLY BE UNDERTAKEN BY PROFESSIONAL COMPANIES WITH THE APPROPRIATE EQUIPMENT COMPETENCE AND CERTIFICATION FOR HIGH PRESSURE WORK

11	When all connections have been checked as secure, open the tap on the auxiliary cylinder valve as mentioned in section 1 (see above) and dependent on the system configuration the pressure on the main gauge of nitrogen supply cylinder regulator will rise until it reaches 160 bar. In this case the tolerance for the fill should be 159 bar (plus or minus 1 bar) at 20°C	
12	When the correct pressure has been reached close the auxiliary cylinder valve and the main supply reservoir valve and disconnect from the nitrogen supply cylinder. Reconnect the main regulator on the auxiliary cylinder and replace the unit into the housing on the trolley assembly. Note the pressure reading should be confirmed when the pressure gauge is refitted to the auxiliary cylinder.	

10. AVD HANDLING INSTRUCTIONS

Critical Points

AVD is highly refined, aqueous, mineral dispersion and hence it's quality will be spoilt by:

a) Soluble salts, including those naturally present in tap water, will destabilise the dispersion causing the mineral particles to flocculate even if it is not visually obvious.

b) Leaving the lid off the AVD storage container may lead to the partial evaporation of the water content of the AVD. This may lead to a dry film forming on the surface of the AVD, which in turn could lead to a blockage in the nozzle or pipe work on discharge.

c) Any form of contamination and especially large particles, may cause a blockage of the nozzle or pipe work on discharge.

d) Any form of contamination could lead to microbial growth even under anaerobic conditions.

For cleaning and transferring:

a) Only use de-mineralised (de-ionised or distilled) water for cleaning.

b) Flush all equipment with de-mineralised water.

c) Ensure all equipment is spotlessly clean.

d) Store stock AVD in its delivery container with the lid on.

Handling AVD:
All equipment including pumps and transfer lines should be spotlessly clean; it is advisable to have dedicated equipment for handling of the AVD. Cleaning should be with de-mineralised water only and, if possible the equipment should be thoroughly dried. As an absolute minimum the transfer lines should be flushed with de-mineralised water and the cleaning charge discarded.

a) Visually inspect the AVD for settling, thickening, microbial growth, etc.

b) Agitate the AVD, for example with an air lance, to ensure homogeneity.

c) Ideally check the viscosity is within specification.

d) Use only spotlessly clean transfer lines and vessels.

Replacing the AVD charge with a new batch:

a) Empty AVD into a clean holding container and flush the mobile extinguisher reservoir with de-mineralised water.

b) Thoroughly clean and dry the mobile extinguisher paying attention to the points above.

c) Perform the mobile extinguisher maintenance.

d) Charge the mobile extinguisher with the correct amount of a new batch of AVD just prior to re-assembly.

e) Do not re-use the AVD removed from the reservoir to re-charge the unit.

Post service AVD:

a) Dispose of used AVD in line with local and national regulations.

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