

MURER®



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E-extinguishing lance®

Operating instructions

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English

EN

E-extinguishing lance®..... 2

Safety instructions 5

Intended use 6

Operating instructions 8

Earthing and equipotential bonding 10

E-spacers 12

Assembly..... 13

MURER® E-pressure reducer 14

Assembly..... 14

E-Rhino 15

Assembly..... 16

Use with the fork arm 17

Use with a sand/excavator bucket on a corresponding
carrier vehicle (wheel loader) 18

Operation..... 20

Technical data..... 22

Device testing..... 24

Warranty extension 25

Product registration 26



E-extinguishing lance®

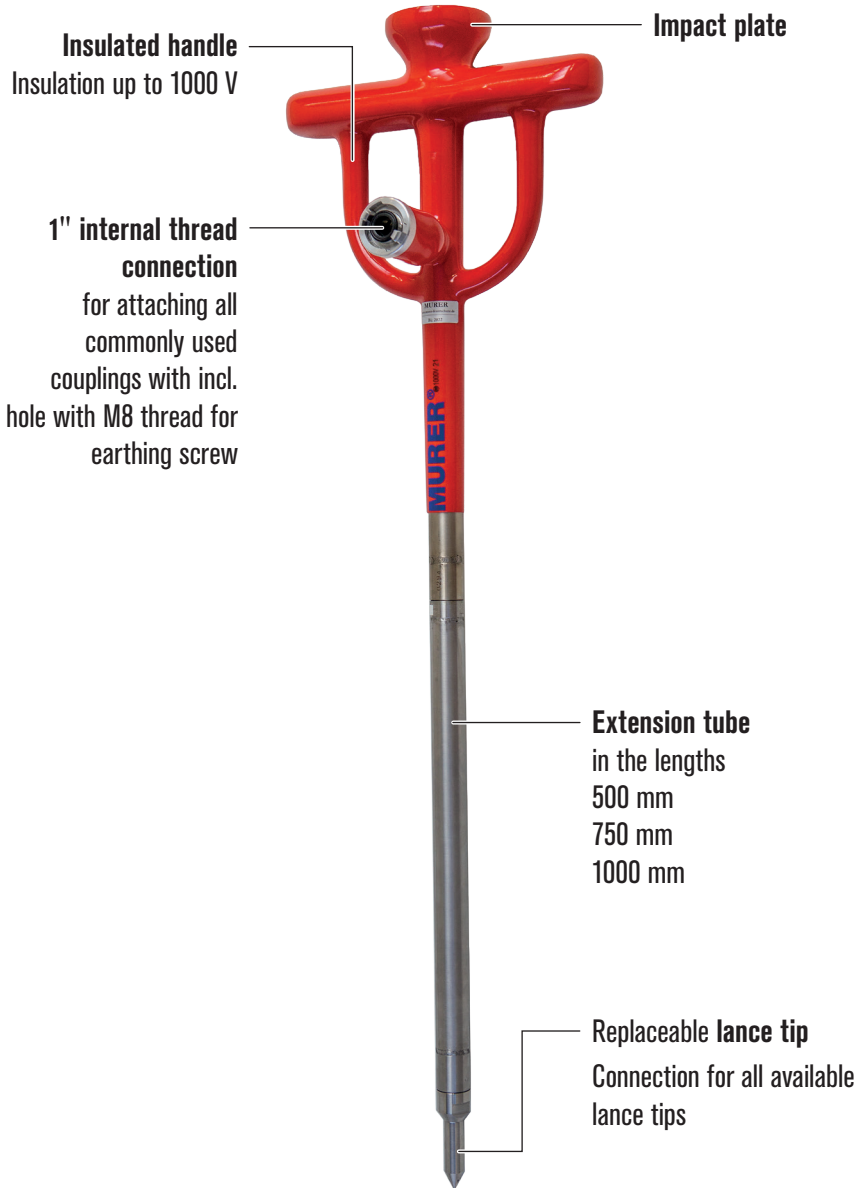


The MURER® E-extinguishing lance® is used to extinguish fires in traction batteries quickly and efficiently.

The E-extinguishing lance® consists of the following

- A stainless steel tube with a handle area insulated for a voltage of 1000 V,
- Impact plate positioned at the top centre,
- A D-hose connection located on the side at the top
- As well as extension tubes that can be used separately
- and the specially designed lance tip attached to the lower end, which contains holes from which the extinguishing agent emerges (see figure 1).

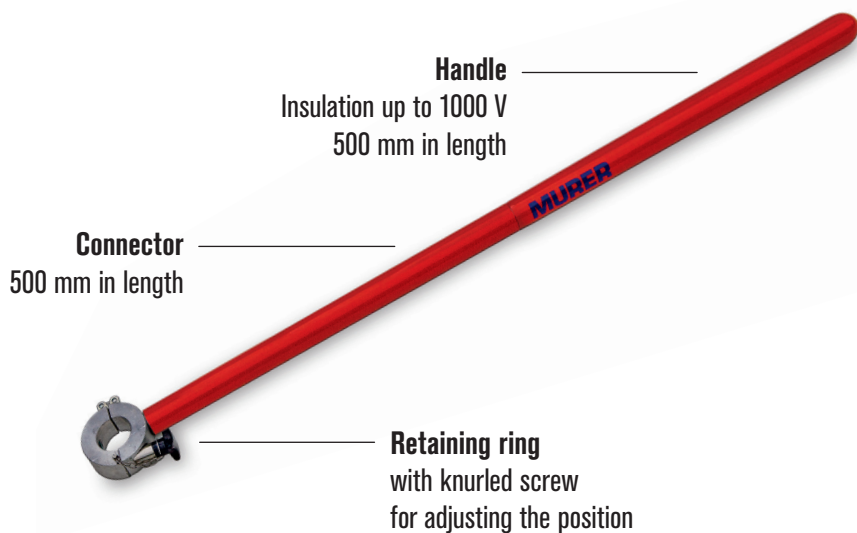
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I Figure 1 E-extinguishing lance®



A spacer, attached to the upper area of the extinguishing lance, increases safety when the E-extinguishing lance® is inserted and is used to maintain a minimum distance (see figure 2).



I Figure 2 Spacer



Safety information



Use the E-extinguishing lance® exclusively for extinguishing fires in traction batteries with a voltage of less than 1000 V.



Insert the E-extinguishing lance® only in accordance with the specifications in these operating instructions. **Note:** Improper use of the E-extinguishing lance® may result in personal injury and/or damage to property!

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Insert the E-extinguishing lance® only if an exothermic reaction (hissing, smoke development, extreme fire pattern) is recognisable on the traction battery.
It must not be used prophylactically.



The E-extinguishing lance® must only be used by trained personnel.



Wear full PPE while using the E-extinguishing lance® in accordance with the appropriate regulations.



Intended use

The E-extinguishing lance® is intended for extinguishing fires in traction batteries in hybrid and electric vehicles.



Any unauthorised conversions, modifications or unauthorised use shall exclude the manufacturer from any liability for any resultant damage.

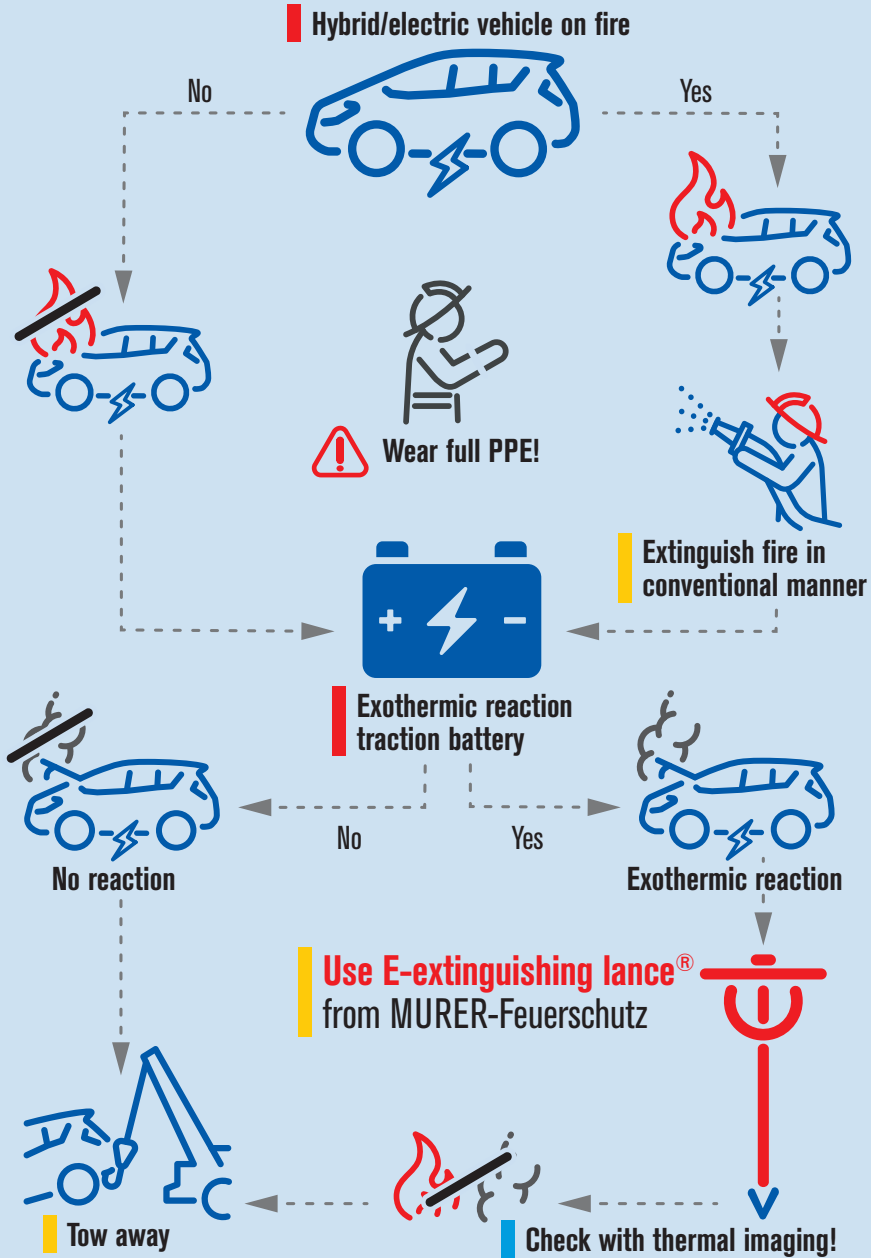


The targeted introduction of extinguishing water into a lithium-ion battery (LIB) must only be carried out if the following indicators indicate that a fire is present in the lithium-ion battery!

Indicators that the lithium-ion battery is involved in the fire can be, for example (see figure 3):

- ▶ Smoke or vapour development from the lithium-ion battery,
- ▶ Noise development (hissing, whistling and popping, this indicates the opening of the overpressure valves in the battery modules),
- ▶ Flying sparks and flash fire from the area of the lithium-ion battery,
- ▶ Abnormal aromatic odour,
- ▶ Temperature increase of the battery housing over a longer period of time, e.g. by observation with a thermal imaging camera. If the external temperature of a LIB housing exceeds 80 °C, a critical condition must be assumed,
- ▶ Corresponding textual information from the vehicle information system (e.g. on the display in the cockpit).

Source: FBFHB-024, as of 29 November 2023,
"Instructions for firefighting lithium-ion batteries in vehicle fires",
Author: Dipl. Biol. Tim Pelzl, publisher: Deutsche Gesetzliche Unfallversicherung e.V. (DGUV)



I Figure 3 Tactical map: Use of the E-extinguishing lance®



Operating instructions

By introducing the extinguishing agent directly via the E-extinguishing lance® into the traction battery, a fire can be extinguished quickly and efficiently!

Assembly

- ▶ If necessary, replace the lance tip or the extension tube using a standard SW 27 open-ended spanner.

Operation



Traction batteries that are partially or fully open due to an incident must be extinguished using a hollow jet tube. Maintain a minimum distance between the hollow jet nozzles!

- ▶ Check whether the high-voltage system is deactivated according to the rescue data sheet for the respective vehicle type. If not, deactivate it according to the manufacturer's instructions.

For vehicles currently being charged, disconnect the charging cable in accordance with the rescue data sheet for the respective vehicle type.

- ▶ Prepare the E-extinguishing lance® if there are signs of a battery fire (exothermic reaction identified).
- ▶ Select the correct impact location for the E-extinguishing lance® on the vehicle according to the rescue data sheet for the respective vehicle type.

In the event of a fire where the vehicle is lying on its roof or side, it is possible to extinguish the traction battery through the wheel housing.

- ▶ Depending on the position of use, fit the suitable extension tube to the E-extinguishing lance®.
- ▶ Connect a hose line with your country-specific coupling to the E-extinguishing lance® with your country-specific coupling.



- ▶ Fit the e-spacer to achieve the best possible distance from the point of impact.
 >> See chapter: *E-spacer* Page 12
- ▶ Before you introduce the E-extinguishing lance® into the traction battery, pressurise it with extinguishing agent. The optimum pressure is 3 bar at the E-extinguishing lance®.

We recommend using the E-pressure reducer.

>> See chapter: *MURER® E-pressure reducer* Page 14

EN



CAUTION! Always use the E-extinguishing lance® under extinguishing water flow.



Always open and close the water shut-off slowly. The water pressure may cause a recoil!

- ▶ Introduce the lance tip of the E-extinguishing lance® into the battery box by having a second operator hit the striking surface of the E-extinguishing lance® using a sledgehammer.
- ▶ The lance tip with the extinguishing nozzles must be securely inserted into the battery case.

If the E-extinguishing lance® slips or is positioned too deeply, it must be repositioned.

The extinguishing effect becomes apparent after just a few moments.

- ▶ Allow the extinguishing water to flow without interruption until the battery components have cooled down sufficiently after the battery fire has been extinguished.
- ▶ Check the temperature using the thermal imaging camera.

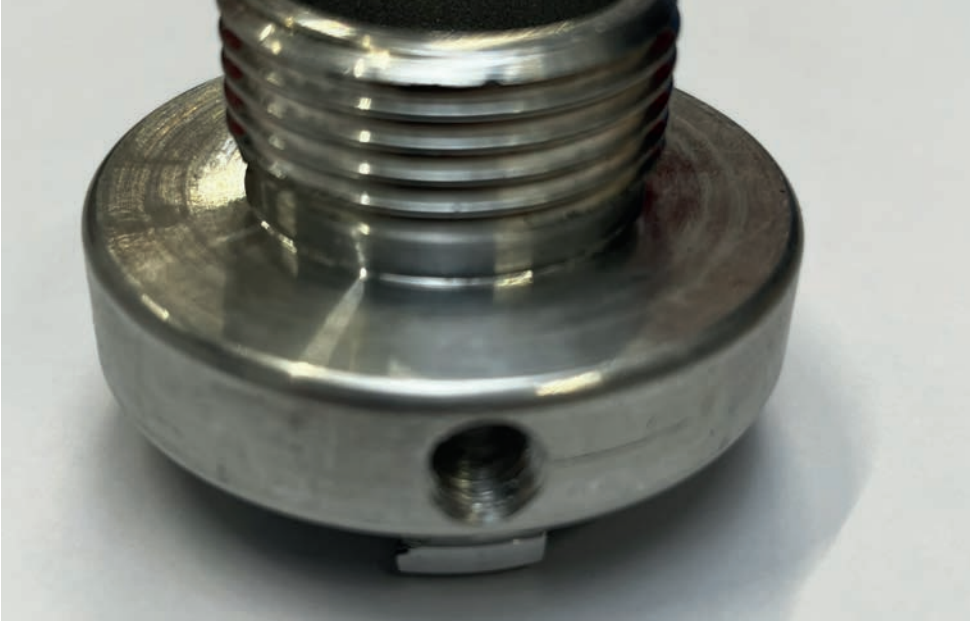


Earthing and equipotential bonding

To ensure personal protection, the E-extinguishing lance® is designed with insulation for a voltage of $< 1000\text{ V}$ in the handle area. It is also possible to establish a conductive connection via the existing M8 threaded hole on the coupling (see figures 4 and 5).



Important! Only use earthing material that is approved for the fire service, e.g. “Material for discharging electrostatic charges and for earthing” for the fire-fighting equipment of the hazardous goods equipment vehicle (GW-G) in accordance with DIN 14555-12:2023-03. This allows the discharging connection to be established safely, quickly and clearly.



I Figure 4 Threaded coupling



I Figure 5 Threaded coupling



E-spacer

The e-spacer is designed to hold the E-extinguishing lance® and to ensure a sufficient distance from the point of impact into the traction battery.

With the e-spacer consisting of a handle and connector, you can achieve a distance of up to one metre from the point of impact (see figure 6).



Any unauthorised conversions, modifications or unauthorised use of the E-extinguishing lance® as well as the other components shall exclude any liability on the part of the manufacturer for any resulting damage.



Figure shows retaining ring, handle and connector

Handle

Insulation up to 1000 V
500 mm in length

Connector

500 mm in length



Retaining ring

with knurled screw
for adjusting the position



Assembly

- ▶ Fit the retaining ring between the coupling connection and the handle of the E-extinguishing lance[®] using the knurled screw.

We recommend permanently attaching the retaining ring to the E-extinguishing lance[®].

The retaining ring has two mounting holes for the handle or for the handle with connector. This makes it possible to attach an e-spacer to the right and left of the E-extinguishing lance[®].

- ▶ Screw the handle or the handle with connector into the mounting hole.
- ▶ Slightly open the knurled screw to make a fine adjustment or change position.

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Figure 7



Figure 8



MURER® E-pressure reducer

Die E-extinguishing lance® and conventional firefighting can be operated from the same extinguishing water pump (outlet pressure approx. 8 bar). For this purpose, the MURER® E-pressure reducer (see figure 9) must be installed in order to reduce the pressure to approx. 3 bar for the E-extinguishing lance®.

Assembly

- We recommend coupling the MURER® E-pressure reducer directly to the distributor (special pipe, centre). Alternatively, couple the MURER® E-pressure reducer directly to the hose line.



There is no flow direction to observe with the E-pressure reducer.



I Figure 9 Pressure reducer



E-Rhino

for mounting an E-extinguishing lance®

The E-Rhino add-on module enables the use of the MURER® E-extinguishing lance® on higher positions by securing it to a carrier vehicle, e.g. for firefighting LIBs on the roof of an electric bus. The E-Rhino can, for example, be attached to a fork arm of a forklift truck, to an excavator bucket or ditching bucket of an excavator, as well as to a clearing bucket of a wheel loader. The E-Rhino is made of steel and powder-coated in red.

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The carrier vehicle must be suitable for pushing in the tool. Always observe the operating instructions for the forklift, excavator, wheel loader, etc.

The knurled screw enables quick and tool-free fastening. Carrying handles make handling easier. Several attachment points are available for redundant securing. Lifting gear is not included in the scope of delivery.

The E-extinguishing lance® can be secured to the front of the carrier vehicle without tools and pre-adjusted using the shaft bearing.

The penetration of the E-extinguishing lance® into the battery is achieved by lifting the boom in one movement.



A guide must be on-site during the penetration procedure.



Assembly

Installing the E-extinguishing lance® on the E-Rhino

- ▶ Undo the four knurled screws and secure the E-extinguishing lance® to the E-Rhino by securing the E-extinguishing lance® in a suspended position.

The D pressure clutch should point to the rear.

- ▶ Close the four knurled screws.



I Figure 10 Installing the E-Rhino



Use with the fork arm

- ▶ Adjust the fork arms to the width of the E-Rhino.
- ▶ Turn the four knurled screws all the way up and then slide the E-Rhino over the four handles onto the fork arm.
- ▶ Tighten the four knurled screws.



Figure 11 Use with a fork arm



- ▶ To secure the E-Rhino, attach the lashing straps (not supplied) to the four retaining eyes on the E-Rhino and guide the lashing strap back over the carrier vehicle.



I Figure 12 Securing for use with fork arm

Use with a sand/excavator bucket on a corresponding carrier vehicle (wheel loader)

- ▶ Turn the four knurled screws all the way up and then slide the E-Rhino over the four handles onto the excavator bucket.
- ▶ Tighten the four knurled screws.



I Figure 13 Use with sand/excavator bucket



- ▶ To secure the E-Rhino, attach the lashing straps (not supplied) to the four retaining eyes on the E-Rhino and guide the lashing strap back over the carrier vehicle.



I Figure 14 Securing when using a sand/excavator bucket



Operation

Connecting the pressure hose

For the water connection, we recommend a dimensionally stable D-hose for the first few metres..

- ▶ Connect the D pressure hose to the coupling of the E-extinguishing lance[®]

Positioning of the E-extinguishing lance[®] by means of a shaft bearing on the E-Rhino

- ▶ Remove the locking pins from the locking handles
- ▶ Pull the two handles on the right and left out of the holder.

You can now set the appropriate position (horizontal or vertical as well as 45° downwards and upwards).

- ▶ Secure the set position using the locking handles with the locking pins.



Figure 15 E-Rhino operation

The E-Rhino is now ready for use.



CAUTION: Always use the E-extinguishing lance® under extinguishing water flow.



Always open and close the water shut-off slowly. The water pressure may cause a recoil.

- ▶ Bring the lance tip of the E-extinguishing lance® into the battery box using the lift of the carrier vehicle.
- ▶ The lance tip with the extinguishing nozzles must be securely inserted into the battery case.

If the E-extinguishing lance® slips or is positioned too deeply, it must be repositioned.

The extinguishing effect becomes apparent after just a few moments.

- ▶ Allow the extinguishing water to flow without interruption until the battery components have cooled down sufficiently after the battery fire has been extinguished.
- ▶ Check the temperature using the thermal imaging camera.



Technical data

E-extinguishing lance®

■ Material	Stainless steel
■ Length (incl. 500 mm extension tube)	1150 mm
■ Mass	
– E-extinguishing lance® complete (incl. handle, extension tube 500 mm, tip)	7.915 kg
– E-extinguishing lance® without extension (incl. handle, tip)	6.890 kg
– Lance tip	0.210 kg
– 500 mm extension tube	0.820 kg
– 750 mm extension tube	1.200 kg
– 1000 mm extension tube	1.910 kg
■ Storz coupling system	
– Nominal diameter DN 25	Size D
– Thread	1" external thread

E-spacer

■ Material	High-strength aluminium alloy
■ Handle	Insulated up to 1000 V
■ Length (handle + extension tube)	1000 mm
■ Weight	1.800 kg
■ Retaining ring with knurled screw (captive)	0.365 kg



MURER® E-pressure reducer

■ Storz coupling system	
– Nominal diameter DN 25	Size D
■ Pressure reduction	To 3 bar

E-Rhino

■ Material	The base body is made of high-strength steel. The carrying handles, the four knurled screws with retaining discs and the shaft bearing, including the locking handles, are made of stainless steel.
■ Mass	
– E-Rhino complete	45.000 kg
■ Dimensions	
– Height	450 mm
– Width	540 mm
– Depth	600 mm



Tool inspection

After each use, carry out a careful visual inspection of the E-extinguishing lance[®] and the attachments. If one of the following points cannot be answered with “Yes”, carry out appropriate maintenance work on the E-extinguishing lance[®]

CHECKLIST

Smooth operation given for

- ▶ Connection pipe of the E-extinguishing lance tip ☐
- ▶ Connection thread ☐
- ▶ Connection to the extinguishing water supply ☐

No visible wear recognisable on

- ▶ Extension pipe ☐
- ▶ Insulation ☐
- ▶ E-extinguishing lance tip ☐

Continuity

- ▶ of the extinguishing nozzles ☐

If components are severely damaged, MURER[®] is available for repairs.

Any adjacent components are subject to the relevant manufacturer equipment inspection conditions.



I Figure 16 Visual inspection – checking whether the E-extinguishing lance[®] tip is blocked



I Figure 17 Visual inspection – E-extinguishing lance® for wear

Warranty extension

If the E-extinguishing lance® is used correctly in accordance with our operating instructions, we grant a warranty extension of five years.

The lance tip is an exception to this.

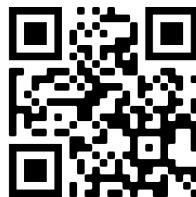


Product registration

Register your E-extinguishing lance® at:

info@e-loeschlanze.de

and provide your serial number to receive the latest information about your E-extinguishing lance®, including the latest operation instructions.



For your records, note the serial number of your E-extinguishing lance® here so that you always have it to hand.

Serial number: _____

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It is hereby certified that unitary effect has been registered in the Register for unitary patent protection for the European patent indicated below.

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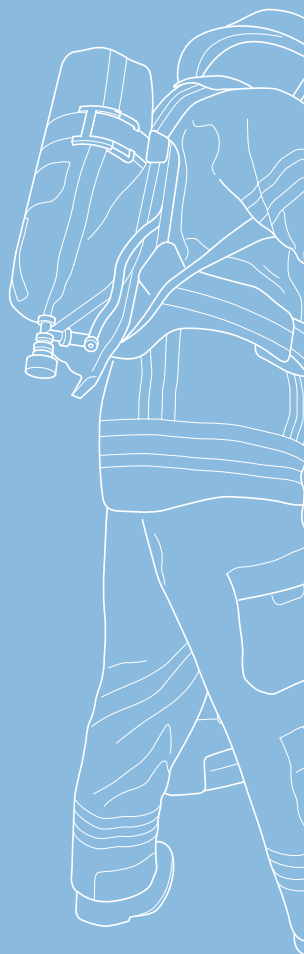
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