

METAL BURNING ITEM (MBI)

Safe Fire-1

— used in humanitarian demining operations, and also designed for burning through carbon steels, alloy steels, non-ferrous metals, and cast iron. It is primarily intended for use in situations where external power sources are unavailable, in emergency conditions, or during field repairs.

The MBI SF-1 (size S, M, L) together with other components (mounts, electric igniter, operating manual, and product passport) is packed in a box, making it convenient for transportation and use.

Features of the SFM SF-1 (size S, M, L):

- Weight, g: 83 / 175 / 335
- Burning time (deflagration), s: 7 / 15 / 20
- Metal penetration depth, mm: up to 10 / 20 / 25
- Safe for transportation; can be transported by any means, including air transport
- No need to obtain special permits
- Igniter (electric match) activated by blasting machine or battery
- Safe to use
- Cannot be converted into a weapon

Sizes:

- **S:** length **100** mm, diameter **24** mm
- **M:** length **200** mm, diameter **24** mm
- **L:** length **250** mm, diameter **31** mm

The SFM SF-1 kit (size S, M, L) includes:

- The device: consists of a cylindrical combustible shell containing a compressed exothermic substance, which is a mixture of powders of various components, mainly oxidizers. During combustion, these generate high temperatures.
- Parameters: ignition temperature – 800 °C, combustion temperature – 2800 °C, burning time – up to 7 / 15 / 20 seconds respectively.
- Igniter (electric match)
- Mounting
(the delivery package may include various mounting options, depending on the Customer's needs)

Shelf life: 12 months.

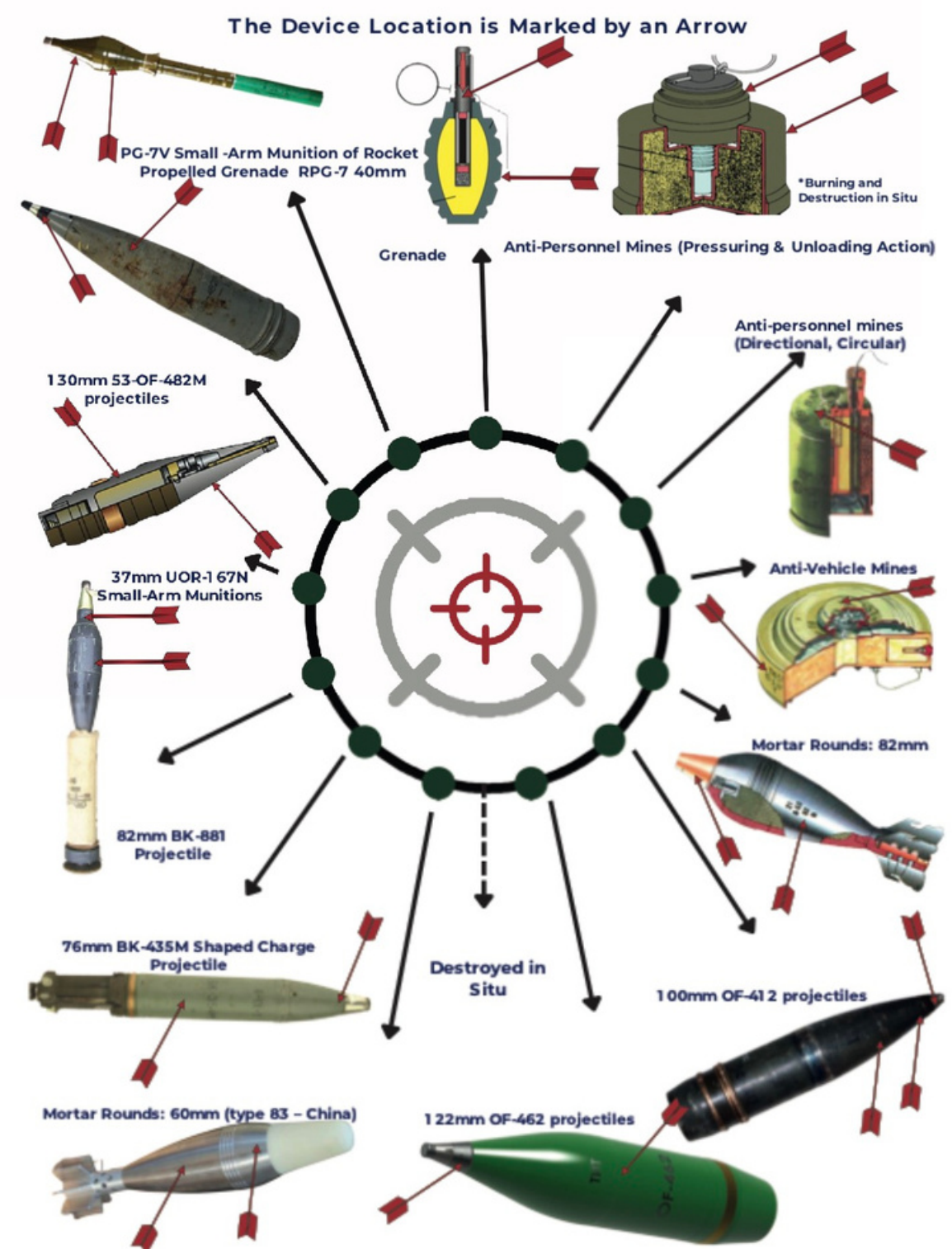
MBI SF-1 (size S, M, L) is permitted for import/export without restrictions by any type of commercial transportation. UOS has received state authorization for the production and sale of these products in accordance with TU.TUU20.5-21552117-001:2022 (technical specifications/requirements). In addition, SF-1 L has successfully passed underwater testing (the speed and intensity of combustion under water only increase).



OPERATING INSTRUCTIONS

Recommended Places of MBI SF -1 (S/M/L) Installation

MBI SF-1S is designed for the destruction of EO/ERW anti-personnel and anti-tank mine;
MBI SF-1 M is designed for the destruction of EO/ERW up to caliber of 82mm;
MBI SF-1 L is designed for the destruction of EO/ERW from caliber of 82mm;



1. Check the serviceability of the switching equipment.
2. Check the integrity and serviceability of the electric ignition network, sectional and main lines (initiation device).



3. Remove the transportation packaging from the item and check for any physical damage.



4. Secure the item in the mount at the marked locations.



5. Insert the electric match into the ignition hole marked with a red label.



6. Secure the electric match.



8. Connect the circuit in the following sequence: electric match > sectional wire > main wire, and insulate the connections.



7. Position the item at a distance of 5 mm from the burning object at a right angle.



9. Perform a control check of the line.
10. Initiate the item from a safe distance.

PATENTS



MBI SF-1 IN WORK



COMPARATIVE TABLE OF METAL BURNING ITEMS

Metal burning item model (size)	UOS MBI SF-1 S*	UOS MBI SF-1 M**	UOS MBI SF-1 L***
Dimensions	Length – 100 mm, diameter – 24 mm;	Length – 200 mm, diameter – 24 mm;	Length – 250 mm, diameter – 31 mm;
Weight, g	83	175	335
Burning time, sec	7	15	20
Metal penetration depth, mm	up to 10	up to 20	up to 25
Safe for transportation (Yes/No)	Yes	Yes	Yes
Requirement for special permits (Yes/No)	No	No	No
Igniter activation method	The igniter (electric match) is activated by a blasting machine or a battery (1.5 – 9 V).	The igniter (electric match) is activated by a blasting machine or a battery (1.5 – 9 V).	The igniter (electric match) is activated by a blasting machine or a battery (1.5 – 9 V).
Atmospheric pressure	84.0 – 106.7 Pa (=630-800 mm Hg)	84.0 – 106.7 Pa (=630-800 mm Hg)	84.0 – 106.7 Pa (=630-800 mm Hg)
Possibility of conversion into a weapon (Yes/No)	No	No	No
Range of permissible temperatures required for product use	Від -20°C до +50°C	Від -20°C до +50°C	Від -20°C до +50°C
Ready for use (Yes/No)	No	No	No
Packaging in accordance with customer requirements (Yes/No)	No	No	No
Patents in Ukraine	- For the SF-1 kit for deflagration explosive ordnance (EO), patent number – 153058. - For the SF-1 destruction procedure, patent number – 152699.		

- *MBI SF-1 S is designed for the destruction of UXO/ERW, AP mines, and AT mines.*
- *MBI SF-1 M is designed for the destruction of UXO/ERW with calibers up to 82 mm.*
- *MBI SF-1 L is designed for the destruction of UXO/ERW with calibers above 82 mm.*