OZM-72 anti-personnel fragmentation mine

Compiled by Vanja Jokic using original Russian military sources, 2011

Main characteristics

Type	Bounding fragmentation mine with all-round lethal capability
Total weight	5.0 kg
Weight of main charge (TNT)	0.66 kg
Weight of propelling charge (black powder)	7 g
Diameter	108 mm
Height (without fuse)	172 mm
Number of fragments (shrapnel)	2400 pcs
Lethal radius	25 m
Range of casualty-producing fragments	up to 50 m
Height of explosion above ground level	0.6-0.9 m
Temperature range	-40 — +50° C

Components of OZM-72 mine kit are shown on figure 1:

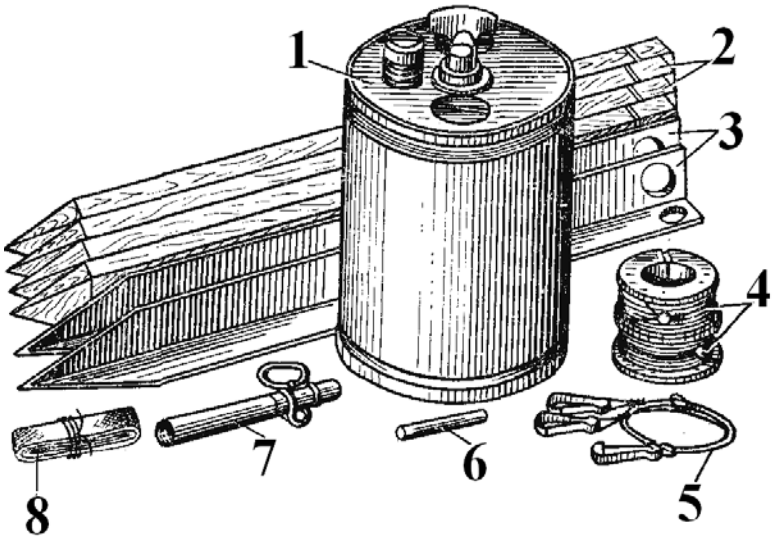


Fig. 1 Components of OZM-72 mine kit:
1 – mine; 2 – wooden stakes; 3 – metal stakes; 4 – rolls with trip wires; 5 – anchor wire with snap link; 6 –No8-A blasting cap; 7 –MUV-3 fuse; 8 – nylon tape

Description

OZM-72 mine is partly armed (fig. 2) and consists of outer container, body, main charge, propelling charge and firing mechanism.

Body of mine *1* is a steel cylindrical box made with cylinders which are encapsulated with polyethylene. The body is closed by upper and bottom steel covers *8* and *17*, which are fixed with central sleeve *13* and tube *2*. Collar *20* with the igniter KV-11 closed with the cap *19*, is fixed on the upper cover. The No8-A blasting cap is inserted into the mine through the central hole, which is closed with the plug *18*.

The main charge *16* is made of cast TNT with additional detonator (booster) *14* (23 g of Tetryl).

Propelling charge *3* of black powder in a pre-fabricated bag is placed in the tube *2*.

The firing mechanism consists of the collar *20*, the safety cap *19*, and the striker *11* with the main spring *10*, striker's heel *6* and the collar *12* with primer igniter. The second end of the anchor wire *7* is attached to the striker's heel. The other end of anchor wire is secured in the outer container.

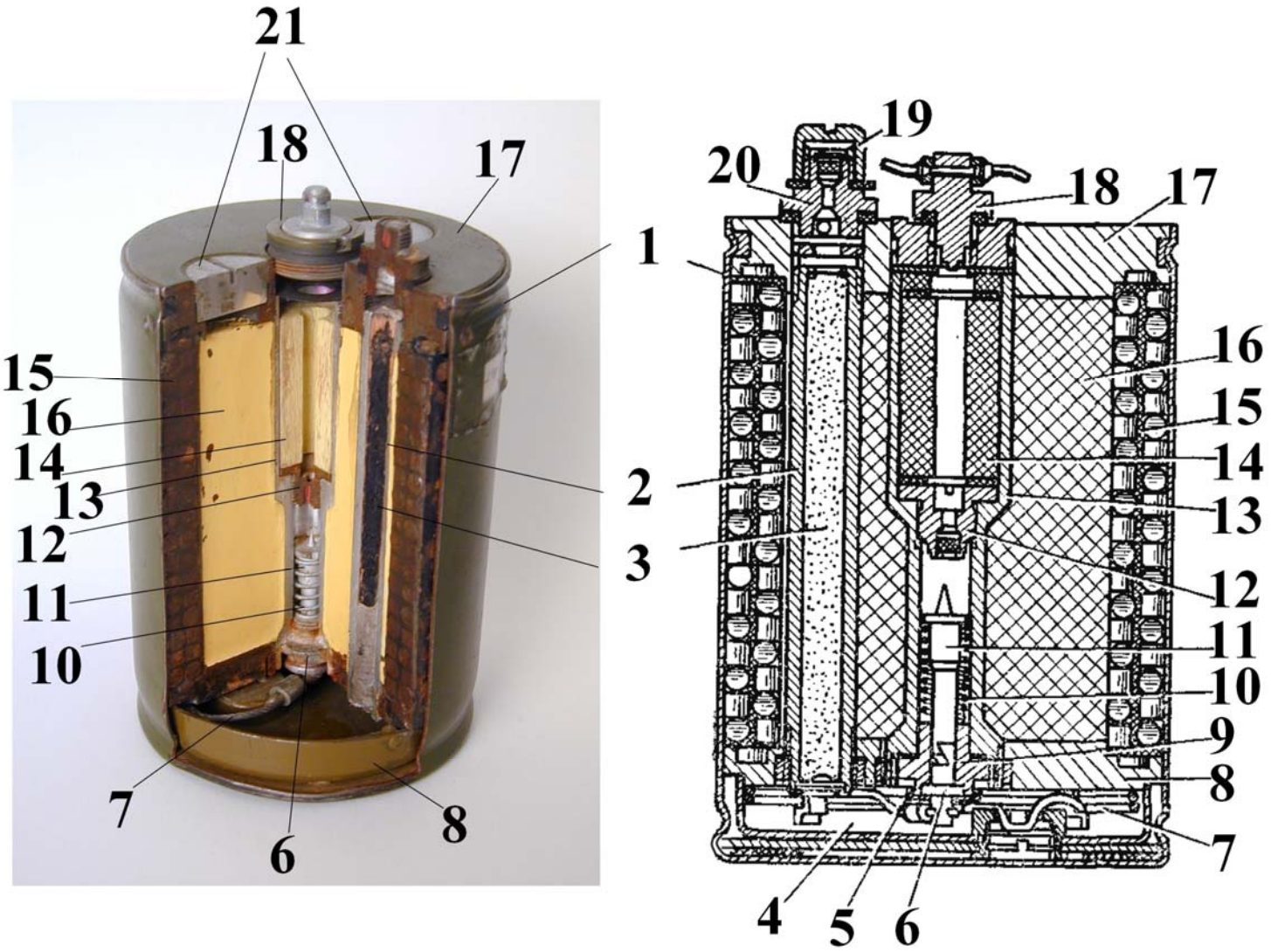
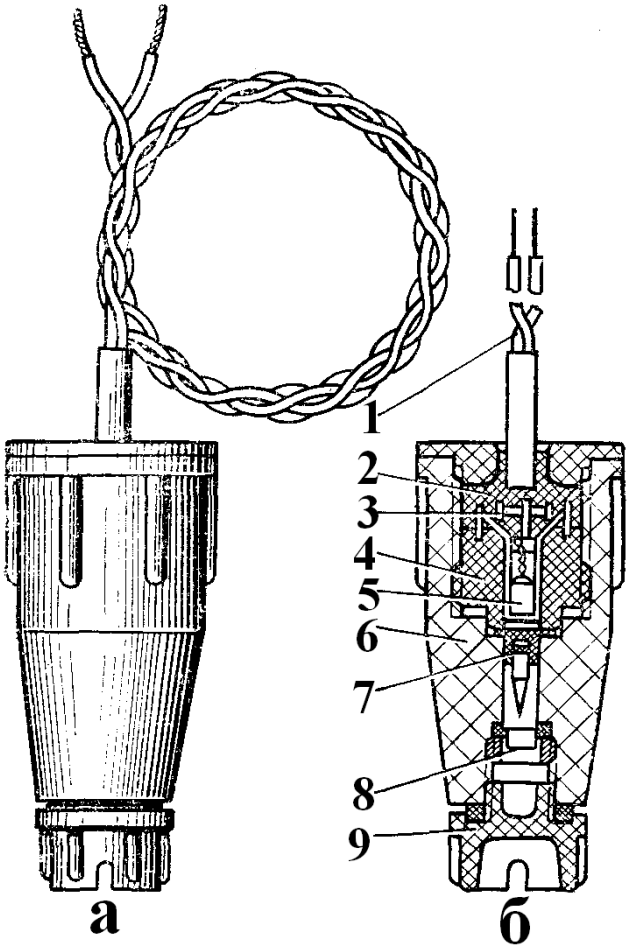


Fig. 2 OZM-72 cross section:
1 – outer container; 2 – tube; 3 – propelling charge; 4 – chamber; 5 – anchor wire with snap link; 6 – striker's heel; 7 – anchor wire; 8 and 17 – covers; 9 – collar; 10 – main spring; 11 – striker; 12 – collar with primer igniter; 13 – central sleeve; 14 – additional detonator (booster); 15 – body with fragments; 16 – main charge; 18 – plug; 19 – cap; 20 – collar with igniter and ball; 21 – filling slots.



Percussion mechanism (fig. 3) is used with OZM-72 mine when it is installed in command detonated version. It is screwed plug *18* of mine. Weight of percussion mechanism is 45 g, diameter — 30 mm, length of its body — 67 mm.

Primary elements of percussion mechanism (PM) are electrical igniter NH-PCh, striker and other elements (fig. 3). PM is fully air-tightened; all its components are encapsulated with compound. Two conductors are taken out from PM for connection to electrical current source.

Electrical igniter NH-PCh is activated with electric impulse. Created gases pull the striker. Moving striker pierces mine's primer igniter.

OZM-72 may be used with MUV, MVE-72 and MVE-NS a) series of fuze.

Fig. 3 Percussion mechanism:
a – general view; б – cross section; 1 – electrical wires; 2 – compound; 3 – resistor; 4 – collar; 5 – electrical igniter NH-PCh; 6 – body; 7 – striker; 8 – membrane; 9 – plug.

Figure 4 shows the probability of defeat the target during explosion in dependence of range.

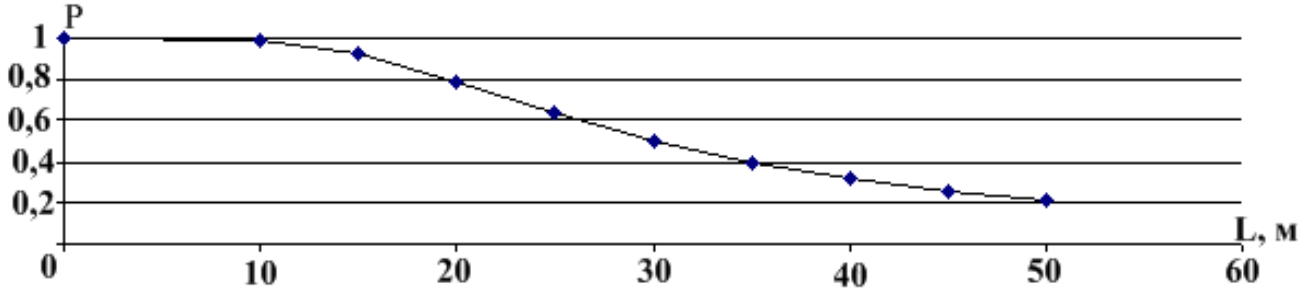


Fig. 4 Probability of defeat the target during explosion in dependence of range.

Operation

If the mine is used with MUV fuze, this fuze is activated by trip wire and initiate igniter. If the mine is used with MVE-72 or MVE-NS fuze, this fuze is activated by breaking wire and initiate igniter.

If the mine is installed in command detonated version, percussion mechanism is activated with electric impulse and initiate igniter.

Igniter fires the propelling charge. Influenced by propellant gases, the mine body is blown out of its outer container into the air. The anchor wire is unwound.

When the mine body reaches the limit of the anchor wire, the striker's heel is pulled out from the collar. Striker is released under the influence of the main spring and activates the primer igniter, which initiates the No8-A blasting cap, activating additional detonator (booster) and main charge.

Installation

OZM-72 mine is installed by hand into ground (in summer) and into the snow on the ground (in winter).

Figure 5 shows the installation of OZM-72 mine with MUV fuse into the ground. Figure 6 shows the installation of OZM-72 mine with MUV fuse into the snow on the ground.

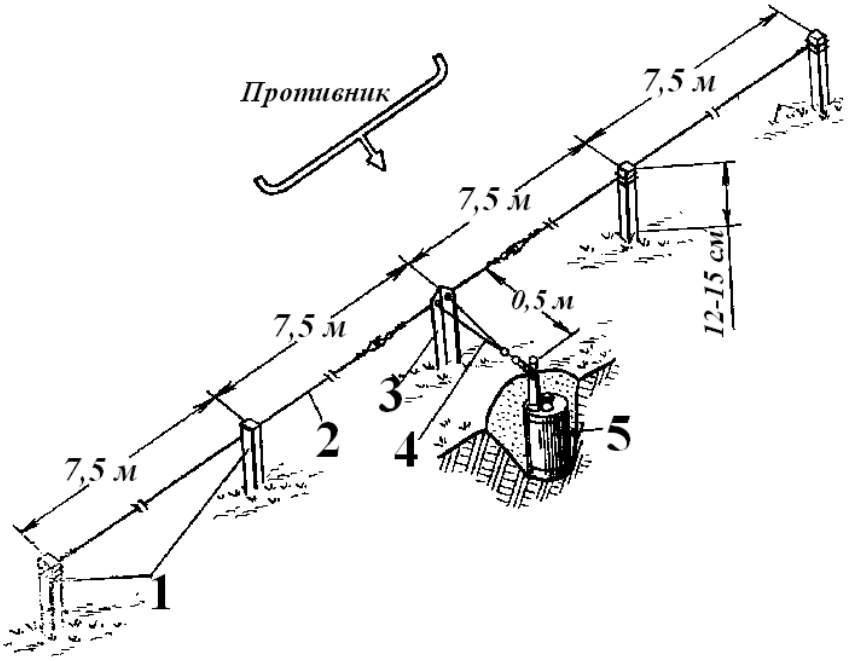


Fig. 5 Installation of OZM-72 mine into the ground:
1 – wooden stakes; 2 – trip wire; 3 – metal stake; 4 – rope with snap links; 5 – OZM-72 mine with MUV-3 (MUV-4) fuse.

Camouflage layer of the soil above the mine should not be over 2-3 centimeters.

If the mine is installed into the damp soil (swamp), the 15x15 cm piece of board with thickness no less than 2.5 cm should be laid under the mine body.

If the mine is installed into congealed soil in winter, it should be tied to knocked metal stake by nylon tape (fig. 6).

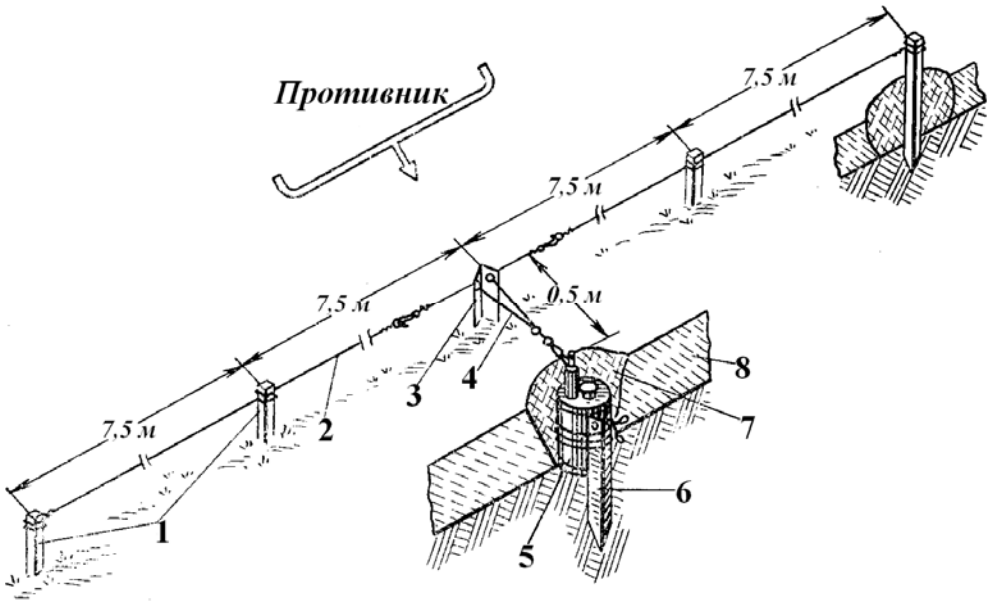


Fig. 6 Installation of OZM-72 mine in winter (into snow) on the ground:

1 – wooden stakes; 2 – trip wire; 3 and 6 – metal stakes; 4 – rope with snap links; 5 – OZM-72 mine with MUV-3 (MUV-4) fuse; 7 – puddled snow; 8 – snow.

Disarming and removal

Official manual permits disarming **only** command detonated OZM-72 mines.

For this purpose the following steps are necessary:

— disconnect the wires from electrical current source (blasting unit or control board).

— switch out the percussion mechanism from wire circuit.

— remove the camouflage layer and screw out percussion mechanism.

— screw the cap onto the collar with igniter.

— remove the mine.

During removal of command detonated OZM-72 mine, it should be considered that the mine may have anti-handling device — MS-3 surprise mine or ML-7/ML-8 booby-trap mine, which can be installed under the body of OZM-72 mine. Such anti-handling device is activated by release detonators when the OZM-72 is moved. Since ML-7 booby trap mine does not have enough main charge to activate OZM-72 mine, it is reinforced with additional explosive charge (400 gram or more).

If minefield documents are incomplete or unreliable, mines must be removed from the ground **ONLY** with grappling hook and from an appropriate cover. Hook should be picked at the grip pawl on the plug *18* (fig. 2).

If minefield with OZM-72 mines is disarmed by sweeping with grappling hook or by tank passage, MS-3 surprise mines (if they were installed) will detonate, because of weight of the outer container of OZM-72 mine is not enough to block of MS-3 mine's detonator.

If OZM-72 mine was installed together with ML-7/ML-8 booby-trap mine, the latter **may not explode**, because the outer container of OZM-72 mine has enough weight to block of ML-7/ML-8 mine's detonator. For this reason, even empty containers from exploded OZM-72 mine must be remove **only with grappling hook!** If the container is not removed from the ground, booby trap mine can stay ready to explode for a long time.

Disarming of mines with MUV, MVE-72 or MVE-NS fuses **is strictly prohibited**. They must be destroyed by sweeping with grappling hook or by tank passage. Casting and drawing of grappling hook should be made from a cover.

In **extraordinary circumstances**, OZM-72 mines, which are installed in non-command detonated version, may be disarmed and removal in accordance with requirements stated in instructions for appropriate fuse.