

Anti-Tank Mines PTMi-D1M

DESCRIPTION OF FUNCTION

The mine functions can be divided into two stages.

The first stage includes the mine ejection from the container when on the projectile path. Air impact opens the braking parachute. The braking parachute pulls a wire on the safety device and thus releases a slide which the compressed spring shifts into the unlocked position. At that moment the power source is connected and the powder train is activated. This is now the electronic circuits are activated and preprogrammed functions (count down, capacitor charging) start. At that time the mine cannot be detonated.

The second stage starts after elapsing of time t_1 , from the moment when the power source is connected and when the mine is on the ground. At that moment the positioner is activated and sets the mine in the ready position. After the elapsing of t_1 interval the electronic block starts to count time t_2 during which the mine is armed, i.e. after elapsing of the t_2 interval the mine is in the ready position and armed.

With this status the mine can be detonated in three ways:

- A tank passes over a mine and the magnetic sensor and closed optical bridge sends signal to detonate the mine
- A tank track wits the mine which is immediately detonated through a contact cable. If a mine is not compression detonated, it is self-detonated at a pre-set time.

TACTICAL AND TECHNICAL PARAMETERS

Mine weight (kg)	with a parachute	2.65
	without a parachute	2.45
Dimensions (mm)	maximum diameter	115.8
	maximum height	169.0
	height over terrain	125.0

Mine destructive effect – penetration of a homogenous armour up to 110 mm thickness with a perpendicular impact at the distance of 300 to 500 mm of the charge face from the armour.

- Armour strength of 900 MPa
- Time for activation of the positioner from the moment when the power source is connected with: $t = 51 \text{ s} \pm 2 \text{ s}$
- Time for the ready position from the moment when the positioner is put into operation: $t = 50 \text{ s} \pm 2 \text{ s}$
- Nominal feeding voltage of a mine source: $u = 3.5 \text{ v}$
- Powder pulse: epz-s electric squib with antistatic seal
- Repeatable set self-detonation intervals:
 $t = 3 \text{ hrs.}, 12 \text{ hrs.}, 24 \text{ hrs.}, 48 \text{ hrs.}$
- Accuracy of self-detonation generated time:
 $\pm 1\%$ of the set interval

