

## TECHNICAL SPECIFICATIONS AND BASIC CHARACTERISTICS

### 122 mm TUBE ROCKET LAUNCHER

#### 122 mm TRL

**Main Characteristics:** 122 mm TRL is the light portable rocket weapon system without recoil impact. System itself is complementary artillery weapon which contributes with his operational capabilities in to the current scale of artillery weapons in operational use. 122 mm TRL is designed for single round firing with no necessity for firing position preparation in advance. Firing is performed by wire connected control firing box from firing position in the trench.

System is designed for direct and indirect firing of standard 122mm rockets GRAD (9M22U 122mm JROF/M21OF, 122mm HE-FRAG).

**Indirect firing** in the range of 20 000 m and in elevation in degrees of 0 – 45° and angles of switch  $\pm 12^\circ$ .

**Direct firing** in the total range up to 3 000 m in angles of switch  $\pm 12^\circ$  and in elevation in degrees of 0 – 15°.

The complete system comprises a standard rocket launching monotube which is reloaded and used again, a standard-long high-explosive fragmentation rocket and a fire control panel. This system has been adopted in recent years by various African and Middle-east countries.

The system is light-weight, highly mobile, carried by 2 soldiers with possibility for fast change of firing position after shot. Can be mounted on the pick-ups and other lightly armoured military or paramilitary vehicles. The rocket launcher is loaded from the rear part and is very easy and simple for operation and maintenance. 122 mm TRL is designed for direct as well as indirect fire against point or surface targets. The system is very reliable and is controlled by wire connected Fire control panel to avoid jeopardy for the operator.

122 mm TRL is simple to operate and to handle with minimal malfunctioning potential because of its low technical complexity and ease of operation, utilizing the individual components of the weapon assembly that are essential for timely and accurate shooting.



#### GRAD-PL Portable Rocket Launcher Basic Tactical-Technical Characteristics

<b>Field launcher Type</b>	Man-portable Tripod-mounted Rocket Launcher/Reactive weapon
<b>Field weapon Producer</b>	Compel Industries – Slovakia (European Union)
<b>Caliber/Cartridge</b>	122mm smoothbore (9M22U standard-long Grad rocket HE)
<b>Weight of weapon</b>	62,0 kg (without tripod), 94,0 kg (with tripod)
<b>Weapon Length</b>	3 010 mm
<b>Weapon height</b>	1,6 m (3,1 m width allowing full weapon traverse)
<b>Weapon crew</b>	2 (1 gunner and 1 loader) – manually loaded from the bottom side
<b>Rate of Fire</b>	4 – 5 rounds/min (theoretical), 2 – 3 rounds/min (practical)
<b>Muzzle velocity</b>	680 – 690 m/s
<b>Max. effective range</b>	5.000 – 20.000 m (for indirect firing), 5.000 m (for direct firing)

### Standard Weapon Equipment & Accessories:

- Rocket launcher - mono-tube with ignition system
- 1 pc of Movable adjustable weapon support
- 1 pc of Adjustable folding carriage tripod
- 1 pc of Electric ignition device – Fire control panel
- 1 pc of Optical sight 2-OMG-122 firing aiming device
- 1 pc of Artillery quadrant KO – for indirect firing
- 1 pc of Barrel protective caps set
- 1 pc of cleaning-kit and tool-kit Carrying bag
- 1 pc of Small spare parts and tools maintenance kit
- 1 pc of Standard cleaning kit incl. cleaning rod, brush, oilcan and rag



- 1pc of User's manual and Service handbook



Electric ignition device  
(Fire control panel)

Optical sight 2-OMG-122  
(firing aiming device)

Artillery quadrant KO 1  
(indirect firing)