

ALTEK

Grenade Launcher Type **RBG** 40 mm/6 M11



40x46 mm

The 40x46 mm RBG 40 mm/6 M11 launcher is a lightweight semi-automatic, shoulder fired grenade launcher for infantry use. It fires the widely used 40 mm, low velocity family of grenades.

The weapon is based on the revolver principle with a spring-driven gas operated cylinder. The 40x46 mm Grenade Launcher is fitted with an Occluded Eye Gun sight, which means that the weapon is fired with both eyes open. One eye looks into the sight, and the other eye then has an unimpeded view of the target. The sight is operational in poor light conditions as long as the target can be seen. The sight is calibrated in 25 metre increments, from zero to 375 meters.

Grenade Launcher Type **RBG** 40 mm/6 M11

Caliber	40x46 mm
Effective range	375 m
Maximum range	400 m
Barrel length	300 mm
Chamber length	140 mm
Muzzle velocity	76 m/s
Basic weight without ammunition and sight	5,9 kg
Overall length with folded butt	725 mm
Overall length with open butt	800 mm
Operation	semi-automatic, single shot



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Gurza **One** Tactical intelligence patrol vehicle



Anittepe Mahallesi Gazi Mustafa Kemal Bulvarı No : 149/C
ÇANKAYA/ANKARA

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Gurza One Tactical intelligence patrol vehicle



- Base of the Toyota Hilux 12 4x4 model
 - D-4D 114 P.S Diesel engine / 5 MT
 - Crew 5 + 2
 - Payload ability at 2500 kg
 - Increased ground clearance / offroad wheels
 - Safety frame / strengthened dumper
 - Electrical tow (Max. 5500 kg)
 - Anatomic seats by Recaro
 - Additional water and fuel cans
 - 2 fire-extinguishers
 - Additional halogen lights
-
- Basic machine-gun / NSV 12.7 (12.7x108 mm) on the device with 360 degree,
 - Traverse 360°. Elevation 10-45°
 - 12.7mm / 6 boxes 300 cartridges
 - 2 side machine guns/ PKM & HP (7.62x54 mm)
 - Traverse 45°. Elevation 10-45°
 - 7.62 mm / 12 boxes 3000 cartridges
 - KN-A collimator and SPP-M optical sight

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Gurza2 Tactical intelligence patrol vehicle



+SARP

SARP Stabilized Advanced Remote Weapon Platform
Depending on the operational requirements, SARP can be equipped with 12.7mm machine gun, 40mm automatic grenade launcher or 7.62mm machine gun.

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Gurza2 Tactical intelligence patrol vehicle



- Base of the Toyota Hilux 12 4x4 model
- D-4D 114 P.S Diesel engine / 5 MT
- Crew 4
- Payload ability at 2500 kg
- Increased ground clearance / offroad wheels
- Safety frame / strengthened dumper
- Electrical tow (Max. 5500 kg)
- Anatomic seats by Recaro
- Additional water and fuel cans
- 2 fire-extinguishers
- Additional halogen lights
- 2 side machine guns/ PKM & HP (7.62x54 mm)
- KN-A collimator and SPP optical sight

SARP

- Fire-on-the-move capability
- Day and night imaging
- Automatic target tracking
- Laser Range Finder for accurate ballistics
- Last round warning
- High ammunition storage capability
 - 400 rounds (12.7mm)
 - 1000 rounds for (7.62mm)
 - 96 rounds (40mm)
- Low silhouette and lightweight
- Unlimited rotation in azimuth and -30° to +60° in elevation
- Integration interface for external sensors and command & control systems

107 mm Multiple Launch Rocket System Mobile Complex

107 mm



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107 mm Multiple Launch Rocket System Mobile Complex



- Base of Ford F450 XLT 6X6 model
- Engine: 6700sm3
- Transmission: 6-speed automatic
- Aiming speed: 6 degrees per second
- Minimum fire angle over cabin: 27 degrees
- Aiming accuracy: 1,0 mil (3,6 min)
- Optical system: 63-107HPJ
- Navigation system, GPS, autonomous navigation system
- System overall weight: 1300 kg (loaded with 24 rockets), 870 kg (without any rockets)
- Rate of fire: 2 per second
- Maximum projectile range: 8000-11000 m (depending on a rocket type)
- Ammunition: 24 rockets (18 kg each)
- Fire guidance: Remote and on board automatic guidance
- System rotation angles:
 - In a horizontal plane:
 - 90° degrees (right angles),
 - 110° degrees (left angle)
 - In a vertical plane: 0-60° degrees

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7.62x54 mm **HP** 7,62 LMG (Light machine Gun)



The 7,62x54 mm HP-7,62 machine gun is a powerful weapon for use against enemy troops, firing points and light air targets.

7,62x54 mm

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7.62x54 mm HP 7,62 LMG (Light machine Gun)



The HP-7,62 is a lightweight advanced machine gun. The HP-7,62 is very reliable under adverse and extreme environmental conditions. The machine gun operates in automatic fire mode. The weapon fires 7,62x54R mm cartridges. A 100 or 200 round link metal belt, held in metal box, feed cartridge in.

- HP-7,62 can be fired from a variety of mounts, special helicopter airborne mount, vehicle or seacraft mounts
- The HP-7,62 is equipped with picatinny rails for optical devices
- The HP-7,62 bipod is extremely robust and durable
- The HP-7,62 has a gas regulator for rate adjustment
- The HP-7,62 can be quickly dismantled on the field for maintenance

Specifications

Ammunition - 7,62x54 mm

Operation - Open bolt, gas impact on piston head, rotating bolt

Firing mode - continuous

Rate of fire - 650 rounds/min

Practical rate - 250 rounds/min

Muzzle velocity - 820 m/s

Effective firing range - 1000 m

Ammunition box capacity - 100/200 rounds

Barrel length - 517 mm

Overall length:

Buttstock folded - 980 mm

Buttstock open - 1080 mm

Weight without ammunition box - 8,2 kg

System life - 25000 rounds

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UP 7.62 Machine Gun

7,62x54 mm



The 7.62 mm Machine gun UP-7.62 is a powerful automatic weapon designed for use against enemy troops, firing points and light air targets. The design is specially intended and allows operation of the weapon in heavy climatic conditions, which are typical for the regions of Middle East, south-east Asia and Africa.

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UP 7.62 Machine Gun



The Machine Gun operates in automatic fire mode. It fires 7.62x54 mm cartridges with ordinary bullets, armour-piercing incendiary and tracer bullets. A 100 and 200 round link metal belt, held in a metal box feed cartridges in.
Option: Rail for sighting devices.

Caliber	7.62
Cartridge	7.62x54
Fire mode	Automatic
Rate of fire, rounds/min	650
Practical rate, rounds/min	250
Muzzle velocity, m/s	825
Maximum effective firing range, m	3800
Sighting range, m	1500
Ammunition box capacity, rounds	100, 200
Barrel length, mm	605
Sight radius, mm	663

Overall length, mm	1160
Weight without ammunition box, kg	7.5
Weight of loaded ammunition box - with loaded 100 round metal belt, kg - with loaded 200 round metal belt, kg	3.9 6.5
System life, rounds	25 000
Principle of function	Gas operated
Cartridges	7.62x54 mm Ordinary bullets, Armour Piercing-Incendiary (API) and Tracer bullets.



12.7 mm anti-materiel rifle characteristics ensure its efficient use against:

- thin-skinned vehicles armored personnel carriers, infantry fighting vehicles (IFV), parked aircraft;
- engineering ammunition (mines) from the safe distance;
- command, control, communication & intelligence systems, gantries, space communications means, artillery and rocket systems, tank exterior equipment etc;
- enemy manpower both exposed, disguised under thin field cover.

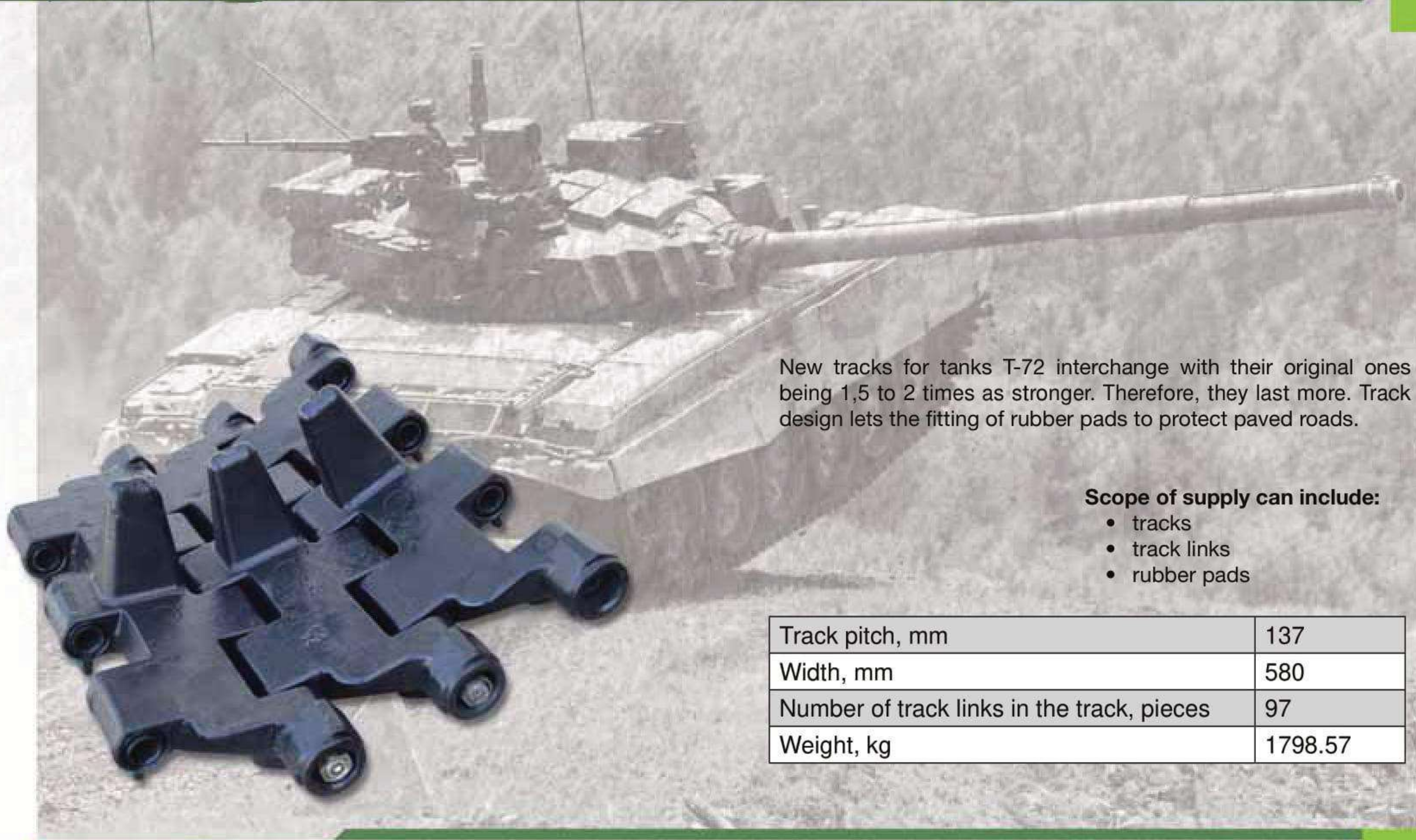
The 12,7 mm rifle is a safe border & water basin guard from small ships.

IST 12,7 Anti-Materiel Rifle

- 12,7x108 mm calibre offers enhanced target effect against materiel targets
- Magazine-fed, automatic gas operation, offers rapid follow-up shots with simplicity and reliability
- Precision, man-portable, long range anti-materiel weapon
- Provides for efficient, reliable & safe operation & servicing in the following environment:
 - Ambient temperature range, from -50°C to +50°C
 - Relative air humidity: 93-97% at +25°C
 - At rain, snow, sand and dust impact

Feed System	7 round box type magazine
Bolt	Semi-automatic with 3 locking lugs
Cartridges	12,7x108 mm Armour Piercing-Incendiary(API), Armour Piercing-Incendiary-Tracer (API-T) and HE Incendiary bullets.
Armour-piercing action (penetration probability 90%) range	100 m
Perpendicular armour plate	20 mm with B-32 (API)
Mountings	Adjustable, bipod and adjustable mono-pod at rear

Caliber, mm	12,7 mm
Cartridge	12,7x108 mm
System of operation	Gas operated
Weight, (gun and scope, unloaded)	16 kg
Muzzle velocity	845 m/s
Sighting range	2 000 m
Overall length	1 800 mm
Barrel length	1 100 mm
Number of riflings	8 p/c
Rifling pitch	381 mm
Sighting	6-24x56 Telescopic Sight with dioptic adjustment and reticle illuminating system



New tracks for tanks T-72 interchange with their original ones being 1,5 to 2 times as stronger. Therefore, they last more. Track design lets the fitting of rubber pads to protect paved roads.

Scope of supply can include:

- tracks
- track links
- rubber pads

Track pitch, mm	137
Width, mm	580
Number of track links in the track, pieces	97
Weight, kg	1798.57

Tracks for BMP-2 Infantry Fighting Vehicles

New tracks for BMP-2 infantry fighting vehicles fit in place of the original tracks and have high technical characteristics. Track design enables rubber pads to be installed so that the road surface can be protected.

Scope of supply can include:

- Track
- Track links
- Rubber pads

Track pitch, mm	140 (94+46)
Width, mm	300
Number of track links in the track, pieces	84
Weight, kg	653.31

12 mm Cartridge with **Rubber Shot & Rubber Bullet**



12 mm cartridge with less-than-lethal rubber shot & rubber bullet is designed for chambering 12 mm smooth bore weapon and is an effective antiriot and personal defence means.

Rubber Shot

Effective range of fire, m	3,5÷15
Rubber shot mass, g	7,8±0,4
Cartridge length, mm	65±1,8
Operating temperature range	from -15 to +40 °C

Rubber Bullet

Bullet mass, g	7,8±0,4
Cartridge length, mm	65±1,8
Operating temperature range,	from -15 to +40 °C
Effective range of fire, m	12÷35

12 & 16 Cal. Hunting Cartridges



The hunting cartridges, manufactured in compliance with military standards are ideal for professional and hobby hunting. The reliability and performance of the cartridges meet the levels of the best foreign samples.

Caliber	Case		Wad	Shot size, mm	Shot weight	Muzzle velocity, V ₁₀ , m/s	Max pressure, Bar (kg/sm ²)
	Type	Length, mm (inch)					
12	Plastic	70 (2.756)	Plastic	2,21- 3,63	30-36	320	740 (755)
16	Plastic	70 (2.756)	Plastic	2,21- 3,63	30-36		780 (795)

5.45 mm Cartridge with **Enhanced Penetrating Action Bullet** (Designation 7N10)



This cartridge is designed to engage unsheltered targets at ranges of up to 1.200 m, flak vest-clad manpower at ranges of up to 100 m, personnel located behind lightly armored barriers at ranges of up to 1.000 m and aerial targets at up to 900 m. It is used for firing all types of organic weapons chambered for the 5.45 mm cartridge. The bullet is not painted.

Specifications

Caliber, mm	5.45x39
Weight, g:	
cartridge	10.7
bullet	3.62
powder charge	1.44
Cartridge length, mm	57 _{-0,8}
Grade powder	SSNf-30/3.69
Muzzle velocity, V _{25'} , m/s	870 - 890
Max powder gas pressure, MPa (kg/sm ²)	≤ 294.2 (3000)
Fire consistency at 100-m range (R ₅₀), sm, max	3.5
Effective penetration distance, m:	
St3 steel plate, 16 mm thick	300
armor plate, 5 mm thick	150
6Zh85T armor vest	200
Cartridge case material	steel

5.45 mm Cartridge with a **Tracer Bullet** (Designation 7T2)



The cartridge is used for target designation and arbitrary correction. Compatible with the AK74, AKS74, AKS74U assault rifles and RPK74, RPKS74 light machine guns.

The tip of the bullet is painted green

Specifications

Caliber, mm	5.45x39
Weight, g:	
cartridge	10.3
bullet	3.23
powder charge	1.44
Cartridge length, mm	57 _{-0,8}
Grade powder	SSNf-30/3.69
Muzzle velocity, V_{25} , m/s	883
Max powder gas pressure, MPa (kg/sm ²)	≤ 294.2 (3000)
Fire consistency at 300-m range (R_{50}), sm, max	14
Tracer action distance, m	800
Cartridge case material	steel



This cartridge is designed to engage hostile manpower and fire weapons at a range of up to 800 m when firing the assault rifle and 1,000 m when firing the light machine gun. It is fired from **AKM** and **AKMS** assault rifles as well as RPK and RPKS light machine guns. The bullet is not painted.

Specifications

Caliber, mm	7.62x39
Weight, g:	
cartridge	15.8 ...16.8
bullet	7.75 ... 8.05
powder charge	1.56
Cartridge length, mm	56 ₋₁
Grade powder	SSNf-30/3.97
Muzzle velocity, V _{25'} , m/s	710 – 725
Max mean powder gas pressure, MPa (kg/cm ²)	≤274.6 (2800)
Fire consistency at	
300-m range (R _{50'}), sm, max	7.5
Effective penetration range, m:	
steel helmet	1.000
St3 steel plate, 6 mm thick	300
6Zh85T flak vest	60
Cartridge case material	steel

7.62 mm Cartridge, Model 1943, with a **Tracer Bullet** (Designation 57-N-231P)



The cartridge is used for target designation and arbitrary correction. Compatible with the **AKM, AKMS** assault rifles and RPK, RPKS light machine guns.

The tip of the bullet is painted green.

Specifications

Caliber, mm	7.62x39
Weight, g:	
cartridge	16.1
bullet	7.57
powder charge	1.56
Cartridge length, mm	56 ₁
Grade powder	SSNf-30/3.97
Muzzle velocity, V ₂₅ , m/s	718
Max mean powder gas pressure, MPa (kg/cm ²)	≤274.6 (2800)
Fire consistency at 300-m range (R ₅₀), sm, max	14
Tracer action distance, m	800
Cartridge case material	steel

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7.62 mm Cartridge with **Low Velocity Bullet** (Designation 57-N-231U)



The cartridge is designed for engagement of unsheltered manpower at firing ranges of up to 400 m in special operations. It is fired from the **AKM (AKMS)** assault rifle fitted with the PBS-1 device. The bullet point is painted black and green.

Specifications

Caliber, mm	7.62x39
Weight, g:	
cartridge	20.2
bullet	12.55
powder charge	1.0
Cartridge length, mm	56 ₋₁
Grade powder	P-45
Muzzle velocity, V ₂₅ , m/s	293
Max mean powder gas pressure, kg/sm ²	2000
Fire consistency at 100-m range (R ₅₀), sm, max	3.5
Cartridge case material	steel

7.62x51 mm Nato Cartridge with **Lead Core Bullet**



The cartridge is designed for firing weapons chambered for the 7.62 mm NATO cartridge.
The bullet is not painted

Specifications

Caliber, mm	7.62x51
Weight, g:	
cartridge	23.8
bullet	9.46
Cartridge length, mm	71
Muzzle velocity, m/s	840
Max mean powder gas pressure, kg/sm ²	2900
Fire consistency at 300-m range (R ₁₀₀), sm	8 max
Penetration range for St3 steel plate, 6 mm thick,	
m	400
Cartridge case material	brass



This cartridge is used to imitate the sound of shooting. Compatible with all operational 7.62x39 mm weapons. Firing blank cartridges requires a special plug screwed onto the muzzle to ensure gas pressure sufficient to power gas-operated weapons and disintegrate the dummy bullet.

Specifications

Caliber, mm	7.62x39
Cartridge weight, g	10.8
Powder charge weight, g	0.77
Cartridge length, mm	57 _{-0,8}
Grade powder	P-125
Cartridge case material	steel

5.45x39 mm **Blank Cartridge** with A Dummy Bullet (Designation 7Kh3)



This cartridge is designed to produce the sound effect of firing. It is used in firing all types of organic, weapons chambered for the 5.45 mm cartridge. Firing blank cartridges requires a special plug screwed onto the muzzle to ensure gas pressure sufficient to power gas-operated weapons and disintegrate the dummy bullet. The dummy bullet is painted white.

Specifications

Caliber, mm	5.45x39
Weight, g:	
cartridge	6.6
bullet	0.24
powder charge	1.0
Cartridge length, mm	57 _{-0,8}
Grade powder	Sf 033fl
Cartridge case material	steel

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7.62x54R mm Rifle Cartridge with **Steel Core Bullet**
(Designation 57-N-323S)



The cartridge is designed to engage hostile manpower and fire weapons. It is fired from **PK, PKM, PKMS, PKMB, PKT, SGM** and **GShG-7,62** machine guns, as well as SVD and SVDS snipers rifles. The bullet is not painted.

Specifications

Caliber, mm	7.62x54
Weight, g:	
cartridge	21.8
bullet	9.6
powder charge	3.1
Cartridge length, mm	76.5
Grade powder	VT
Muzzle velocity, m/s	825 – 855
Max mean powder gas pressure, kg/cm ² (MPa)	275 (2800)
Fire consistency at 300-m range (R ₅₀), sm	9 max
Effective penetration distance, m:	
St3 steel plate, 6 mm thick	520
6Zh85T flak vest	110
Cartridge case material	brass or steel

7.62x54R mm Rifle Cartridge with T-46 Tracer Bullet



This cartridge is designed to designate targets and adjust fire. It is fired from UP-7,62, HP-7,62, PK (PKM), PKS (PKMS), PKMB, PKT, GShG-7,62 machine guns as well as SVD and SVDS snipers rifles. The tip of the bullet is painted green.

Specifications

Caliber, mm	7.62x54
Weight, g	
Cartridge	22
Bullet	9.65
Powder charge	3.2
Cartridge length, mm	77,1
Grade powder	VT or .308 Win
Muzzle velocity V25, m/s	798 – 825
Max mean powder gas pressure, MPa	284,4
Fire consistency at 300-m range (R50), sm	15 max
Tracer burning time, s	3
Cartridge case material	steel or bimetallic

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Belts & Boxes for 7,62x54 mm Rifle Cartridges



Metal 7,62 x54 mm rifle cartridge belt string is designed for universal and tank machine guns.

The belt consists of separate metal links interconnected with special springs. Depending on type of application the belts are produced in several capacities: 25 (index 6L7M) 100 (index 6L5M) and 200 (index 6L6M). The belt fractions are joined with a cartridge.

The belts are fed with cartridges by using a special machine or manually. The life time of a cartridge belt ensures its no less than 40 times passing through the weapon's automatic system.

The belts are designed for 7,62x54 **Kalashnikov (PK, PKM, PKT)** as well as **SGM** and **RP-46** machine guns. They are packed in boxes with capacity of 100, 200 and 250 cartridges. The armored personnel carriers (**BTR, BRDM**) use special boxes with capacity of 250 (**BTR, BRDM**) and 1000 (**BMP-1, BMP-2** and **etc.**) cartridges.

7.62 mm **Blank Rifle Cartridge** (Designation 57-Kh-340)



This cartridge is used to imitate the sound of shooting. Compatible with all operational 7.62x54-mm weapons. Firing blank cartridges requires a special plug screwed onto the muzzle to ensure gas pressure sufficient to power gas-operated weapons and disintegrate the dummy bullet, and other special devices according to relevant regulations.

Specifications

Caliber, mm	7.62x54R
Cartridge weight, g	10.8
Powder charge weight	1.6
Cartridge length, mm	53.7
Grade powder	Xqr
Cartridge case material	steel

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9x18 mm Pistol Cartridge with **Steel Core Bullet**

(Designation 57-N-181S)

This cartridge is designed to engage manpower at a range of up to 50 m. It is fired from the **PM Makarov** pistol and submachine guns.

The bullet is not painted.

Specifications

Caliber, mm	9x18
Weight, g:	
cartridge	9.26 ... 10.07
bullet	5.75 ... 6.15
powder charge	0.25
Cartridge length, mm	25 _{-0.52}
Grade powder	P-125
Muzzle velocity, V_{10} , m/s	290 – 315
Max mean powder gas pressure, MPa (kg/cm ²)	≤117.7 (1200)
Fire consistency at 25-m range (R_{50}), sm (max)	3.2
Penetration range St3 steel plate, 1.3 mm thick, m	20
Cartridge case material	steel

9x18 mm

9 mm pistol cartridge is designed for chambering special weapons.

It is an effective antiriot and personal defence means with a rubber less-than-lethal bullet.

Specifications

Cartridge mass, g	9x18
Bullet mass, g	4.2
Cartridge length, mm	23±1.0
Effective range of fire, m	510
Operating temperature range, °C	from -15° to +40°C

9x18 mm

This cartridge is used to imitate the sound of shooting.
It is fired from the 9x18 mm pistol.

Specifications

Caliber, mm	9x18
Cartridge weight, g	4.2
Cartridge length, mm	23±1.0
Cartridge case material	steel
Operating temperature range	-15° to +40°C



9x18 mm

9x19 mm **Pistol Cartridge** (Parabellum)



9x19 mm

The cartridge is designed to engage manpower at ranges of up to 50 – 150 m. Cartridge can be used in pistols, submachine guns and carbines. The bullet is unpainted.

Specifications

Caliber, mm	9x19
Weight, g:	
cartridge	12.0 ± 0,4
bullet	7.9 ± 0,1
powder charge	0.34
Cartridge length, mm	29,7 _{-0,52}
Case length, mm	19,15
Muzzle velocity, V ₁₀ , m/s	350 ± 10
Max mean powder gas pressure, MPa	≤215
Fire consistency at	
25 m range (R ₅₀), cm (max)	3,0
Cartridge case material	steel

12.7x108 mm Cartridge with the B-32 Armor-Piercing Incendiary Bullet (Designation 57-bz-542)



The cartridge is designed to engage lightly armored ground targets (armored personnel carriers) weapon emplacements and targets behind light barriers at ranges of up to 1.000 m, concentrated infantry and motor transport at ranges of up to 1.500 m and low flying targets at altitudes of up to 1.500 m. It ignites the B-70 gasoline. It is fired from NSV-12.7, NSVT-12.7 and **DShKM** machine guns. The bullet point is painted black with the red tip.

Specifications

Caliber, mm	12.7x108
Muzzle velocity, V_{25} , m/s	810 ... 825
Fire consistency at 300 m range (R_{50}), max	18
Max mean gas powder pressure, MPa (kg/cm^2)	≤ 303.8 (3100)
Bullet weight, g	47.4 ... 49
Cartridge weight, g	130 ... 137
Powder Charge weight, g	17
Cartridge length, mm	147 ^{-1.5}
Grade powder	4/7
Cartridge case material	brass
Armor-piercing action	
(penetration probability 90%) range, m	100
perpendicular armour plate, mm	20

14.5 mm **Blank Cartridge** (Designation 57-Kh-561)



This cartridge is used to imitate the sound of shooting. Compatible with all operational 14.5x114-mm weapons. Firing blank cartridges requires a muzzle plug and special liners put into the receiver, and adjusted cartridge extractors.

Specifications

Caliber, mm	14.5x114
Cartridge weight, g	114.5
Powder Charge weight, g	18
Length, mm	
cartridge	117.2
cartridge case	114
Grade powder	VTJ
Cartridge case material	steel

12.7x108 mm Cartridge with the BZT-44 Armor-Piercing/Incendiary/Tracer Bullet (Designation 57-BZT-542)



The cartridge is used for target designation and arbitrary correction and ignition of flammable targets. Compatible with heavy machine guns. The bullet effectively penetrates 15-mm perpendicular armor at up to 100 m and ignites the B-70 petrol. Compatible with the NSV-12.7, NSVT-12.7, **DShKM, A-12,7** machine guns. The tip of the bullet is painted red and violet.

Specifications

Caliber, mm	12.7x108
Muzzle velocity, V_{25} , m/s	818
Fire consistency at 300 m range (R_{50}), max	18
Max mean gas powder pressure, MPa (kg/cm ²)	≤ 303.8 (3100)
Bullet weight, g	44
Cartridge weight, g	128
Powder Charge weight, g	17
Cartridge length, mm	147 ^{-1.5}
Grade powder	4/7
Tracer action time, sec.	minimum 2,9
Cartridge case material	brass

12.7 mm **Blank Cartridge** (Designation 7Kh1)



The cartridge is used for target designation and arbitrary correction and ignition of flammable targets. Compatible with heavy machine guns.

The bullet effectively penetrates 15-mm perpendicular armor at up to 100 m and ignites the B-70 petrol. Compatible with the **NSV-12.7**, **NSVT-12.7**, **DShKM**, **A-12.7** machine guns.

The tip of the bullet is painted red and violet.

Specifications

Caliber, mm	12.7x108
Muzzle velocity, V_{25} , m/s	818
Fire consistency at 300 m range (R_{50}), max	18
Max mean gas powder pressure, MPa (kg/cm ²)	≤ 303.8 (3100)
Bullet weight, g	44
Cartridge weight, g	128
Powder Charge weight, g	17
Cartridge length, mm	147 ^{-1.5}
Grade powder	4/7
Tracer action time, sec.	minimum 2,9
Cartridge case material	brass

14.5x114 mm Cartridge with The BZT Armor-Piercing/Incendiary/Tracer Bullet (Designation 57-BZT-561S)



The cartridge is used for target designation and arbitrary correction and ignition of flammable targets. Compatible with heavy machine guns. Compatible with the **Vladimirov heavy machine gun (KPVT)**, the 14,5-mm PKP, SKP heavy machine guns, the ZPU-1, ZPU-2, ZU-2, and ZPU-4 anti-aircraft machine guns and IST-14.5 anti-materiel rifle. Effectively ignites the B-70 petrol. The tip of the bullet is painted red and violet.

Specifications

Caliber, mm	14.5x114
Muzzle velocity, V_{25} , m/s	995 ... 1005
Fire consistency at 300 m range (R_{50}), max	20
Max mean gas powder pressure, MPa (kg/cm ²)	≤323.6 (3300)
Bullet weight, g	60,5
Powder Charge weight, g	31
Grade powder	5/7
Effective tracer distance, m	2200
Effective armor penetration distance (20-mm armor plate set at 20°), m	100
Cartridge weight, g	185
Cartridge length, mm	156 _{-1,5}
Cartridge case material	brass or steel

14.5x114 mm Cartridge with the B-32 **Armor-Piercing** Incendiary Tracer Bullet

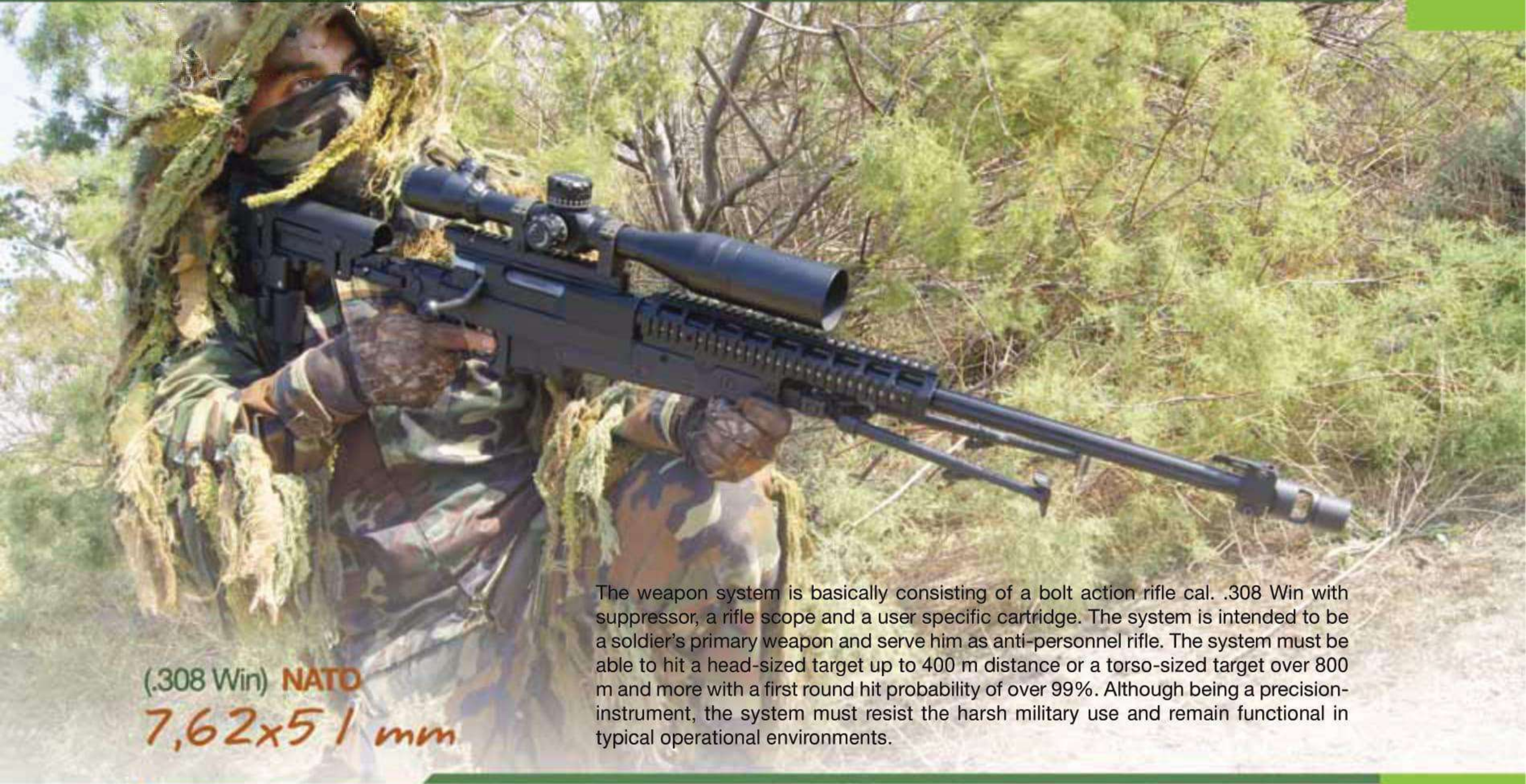


The cartridge is used for target designation and arbitrary correction and ignition of flammable targets. Compatible with heavy machine guns. Compatible with the Vladimirov heavy machine gun **KPV (KPVT)**, the 14,5-mm PKP, SKP heavy machine guns, the ZPU-1, ZPU-2, ZU-2, and ZPU-4 anti-aircraft machine guns and IST-14.5 «ISTIQLAL» anti-materiel rifle. Effectively ignites the B-70 petrol. The tip of the bullet is painted red and violet.

Specifications

Caliber, mm	14.5x114
Muzzle velocity, V25, m/s	995 ... 1005
Fire consistency at 300 m range (R50), max	20
Max mean gas powder pressure, MPa (kgf/cm ²)	≤323.6 (3300)
Bullet weight, g	60,5
Powder Charge weight, g	31
Grade powder	5/7
Effective tracer distance, m	2200
Effective armor penetration distance (20-mm armor plate set at 20°), m	100
Cartridge weight, g	185
Cartridge length, mm	156 _{-1.5}
Cartridge case material	steel

Yalquzaq **Snayper Rifle System** cal. 7,62x51 NATO (.308 Win)



(.308 Win) **NATO**
7,62x51 mm

The weapon system is basically consisting of a bolt action rifle cal. .308 Win with suppressor, a rifle scope and a user specific cartridge. The system is intended to be a soldier's primary weapon and serve him as anti-personnel rifle. The system must be able to hit a head-sized target up to 400 m distance or a torso-sized target over 800 m and more with a first round hit probability of over 99%. Although being a precision-instrument, the system must resist the harsh military use and remain functional in typical operational environments.

Yalquzaq **Snayper Rifle System** cal. 7,62x51 NATO (.308 Win)

System: Bolt action rifle, manually operated
Caliber: .308 Win (7.62x51 NATO)
Rifling: 4 grooves, right hand twist 1:11"
Barrel Length: 660 mm
Effective Range: 1000 m
Accuracy: < 15 mm (standard deviation at 100 m)

Overall Length:
Buttstock folded 906 mm
Buttstock open 1139 mm (+ 75 mm buttstock extended)
Width (w/o bolt) Buttstock folded 85 mm
Buttstock open 48 mm
Sight radius: 727 mm
Weight (weapon only): 7.01 kg
Magazine Capacity: 10 rds, detachable
Trigger Pull: 1.5 kg - 2.5 kg (fully adjustable w/o disassembly)
Bolt configuration: 3 locking lugs, 60° opening angle

Operational Condition Data of Rifle

Shock resistance: 500 shocks of 15 g / 6 ms₁
Vibration resistance: 10 Hz to 500 Hz at 1.04 g for 2 h, at 4.8 g for 30 min,
Drop resistance: 1.5 m without accidental discharge,
Operational temperature: - 30°C / +65°C₁
Storage temperature: - 30°C / +65°C (and 95% rel. humidity) for 72 h
Barrel lifetime: > 6000 rounds₂
Permissible Maximum Pressure: 4773 bar



The cartridge is designed for law enforcement applications for defusing protest marches and disturbances and has a less lethal effect.

The cartridge is fired from 37 mm Launcher type gun.

Specifications

Caliber mm	37/38
Cartridge case cap diameter, mm	43
Cartridge case bottom diameter, mm	39,5
Cartridge length, mm	123
Shot mass, g	2,2
Cartridge mass, g	130
Number of shots, pcs	24
Effective range, m	20÷30
Safe operating distance, m	20
Shelf life, y	5

Tear Gas Smoke Cartridge "38P-CSS"



The cartridge is designed for law enforcement applications for defusing protest marches and disturbances. It works by irritating mucous membranes in the eyes, nose and etc.

The product has a lachrymatory and irascible effect. The cartridge is fired from 37 mm Launcher type gun.

Specifications

Caliber, mm	37/38
Cartridge case cap diameter, mm	43
Cartridge case bottom diameter, mm	39,5
Cartridge length, mm	156
Cartridge mass, g	182
Tear gas composition mass, g	60
Gas propagation time, sec	15÷30
Effective range, m	80÷130
Tear gas /smoke affected area, m ²	400
Safe operating distance, m	80
Shelf life, y	5

ALTEK

Low Temperature **Protective Suit**



The suit is intended to keep the wearer warm (at -40°C) in cold mountainous terrain.

Anıttepe Mahallesi Gazi Mustafa Kemal Bulvarı No : 149/C
ÇANKAYA/ANKARA

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+90 312 232 00 60 +90 532 517 77 81 +90 532 796 90 53

Chemical & Bacteriological **Protective Suit**



The chemical protective clothing is intended to shield or isolate individuals from the chemical, radioactive and biological hazards encountered during hazardous material operations, e.g. examination and reconnaissance of enemy deactivation means captured in the contaminated area as well deactivation of contaminated areas.

The suits are rated for operation in the ambient temperature range from -30°C to $+50^{\circ}\text{C}$.



26 mm

26 mm signal cartridges are designed for illumination of an area and located in the vicinity objects. The cartridges are manufactured in red, green and yellow monochromatic colors and are used to provide communication between different army units.

The cartridges are intended for firing from 26 mm SPSH and SP-81 signal pistols.

Specifications

26 mm Illumination Cartridges

Firing angle	45-50°
Firing range	120 m
Illumination time	7 s
Illumination radius	100 m
Diameter	26.6 mm
Height	80 mm
Mass	51 g

26 mm Signal Cartridges

Firing angle	85-90°
Firing range	90 m
Illumination time	6-7 s
Visibility range	10 km
Illumination intensity	50000 cd
Diameter	26.6 mm
Height	80 mm
Mass	45 g

30 mm Signal Cartridges



30 mm signal cartridges are designed to provide visual communication between different army units as well as identification of disaster points.

Specifications

Overall dimensions:

Diameter 32 mm

Height 80 mm

Visual range

Day 2 km

Night 10 km

Illumination time 9 s

Colour yellow, red, white



The 23x152 Round with Armour-Piercing Incendiary Tracer Projectile is intended to engage air and ground targets.

The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The ammunition is designed for use with guns **2A14, 2A14M, 2A7** and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.

BASIC CHARACTERISTICS

Caliber	23x152 mm
Armour Penetration (at angle of hit 30° and range of 1200 m)	10 mm armour plate
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	955 - 985 m/s
Average Pmax	2925 kg/cm ²
Maximum range	2500 m
Maximum altitude	1500 m

ELEMENTS OF ROUND

Projectile	Armour-Piercing Incendiary Tracer
Incendiary Composition	DU-5
Propellant	5/7 Cfl
Cartridge case	Steel
Percussion Primer	KV №3

TECHNICAL DATA

Length of Round	234.36 – 237.16 mm
Weight of Round	0.450 kg
Weight of Projectile	0.190 kg
Length of Projectile	99.3 mm
Weight of cartridge case	0.172 kg
Length of cartridge case	151.5 mm
Propellant Charge Mass	0.077 kg

23x152 mm Round with Practice API-T Projectile

The 23x152 Round with Practice Armour-Piercing Incendiary Tracer Projectile is intended for drill firing and gun ballistic tests. The Round has the same ballistic characteristics as the API-T Rounds and is intended to replace them in target-practice firing.

The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The ammunition is designed for use with guns 2A14, **2A14M**, 2A7 and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**

BASIC CHARACTERISTICS

Caliber	23x152 mm
Operating Temperature Range	-50°C to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	955 - 985 m/s
Average Pmax	2925 kg/cm ²
Maximum range	2500 m
Maximum altitude	1500 m

ELEMENTS OF ROUND

Projectile	Practice Armour-Piercing Incendiary Tracer
Propellant	5/7 Cfl
Cartridge case	Steel
Percussion Primer	KV №3

TECHNICAL DATA

Length of Round	234.36 – 237.16 mm
Weight of Round	0.450 kg
Weight of Projectile	0.190 kg
Length of Projectile	99.3 mm
Weight of cartridge case	0.172 kg
Length of cartridge case	151.5 mm
Propellant Charge Mass	0.077 kg

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.



23x152 mm

The 23x152 Round with High Explosive Incendiary Projectile is intended to engage air and ground targets. The round is fitted with distance-armed, delayed action, self-destruct fuze.

The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The ammunition is designed for use with guns **2A14**, **2A14M**, **2A7** and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**

BASIC CHARACTERISTICS

Caliber	23x152 mm
Fuze Arming Distance	3 to 80 m
Self-destruction time	5 to 8 sec
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	2925 kg/cm ²

ELEMENTS OF ROUND

Projectile	High Explosive Incendiary
Fuze	MG-25, FDSD1, V-19UK, FDSD4
Explosive filling	A-IX-2 (RDX)
Propellant	5/7 Cfl
Cartridge case	Steel
Primer	KV №3

TECHNICAL DATA

Length of Round (max)	234.28 – 237.12 mm
Weight of Round	0,435 kg
Weight of Projectile	0.183 kg
Propellant Charge Mass	0,077 kg

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.

23x152 mm

23x152 mm Round with HEI-T Projectile



The 23x152 Round with High Explosive Incendiary Tracer Projectile is intended to engage air and ground targets.

The round is fitted with distance-armed, delayed action, self-destruct fuze.

The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The ammunition is designed for use with guns **2A14, 2A14M, 2A7** and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**

BASIC CHARACTERISTICS

Caliber	23x152 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	970±10 m/s
Probable Deviation	8 m/s
Average Pmax	2925 kg/cm ²

ELEMENTS OF ROUND

Projectile	High Explosive Incendiary Tracer
Fuze	MG-25, FDSD1,V-19UK, FDSD4
Explosive filing	A-IX-2 (RDX)
Propellant	5/7 Cfl
Cartridge case	Steel
Primer	KV №3

TECHNICAL DATA

Length of Round (max)	234.28 – 237.12 mm
Weight of Round	0,450 kg
Weight of Projectile	0.1885 kg
Propellant Charge Mass	0,077 kg

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.

The 23x152 Round with Practice High Explosive Incendiary Tracer Projectile is intended for drill firing and gun ballistic tests. The Round has the same ballistic characteristics as the HEI-T Rounds and is intended to replace them in target-practice firing. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions. The ammunition is designed for use with guns **2A14**, **2A14M**, **2A7** and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**



23x152 mm

BASIC CHARACTERISTICS

Caliber	23x152 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	970±10 m/s
Probable Deviation	8 m/s
Average Pmax	2925 kg/cm ²

ELEMENTS OF ROUND

Projectile	Practice High Explosive Incendiary Tracer
Propellant	5/7 Cfl
Cartridge case	Steel
Primer	KV №3

TECHNICAL DATA

Length of Round (max)	234.28 – 237.12 mm
Weight of Round	0,450 kg
Weight of Projectile	0.1885 kg
Propellant Charge Mass	0,077 kg

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.

23x152 mm Round with Practice HEI Projectile



The 23x152 Round with Practice High Explosive Incendiary Projectile is intended for drill firing and gun ballistic tests. The Round has the same ballistic characteristics as the HEI Rounds and is intended to replace them in target-practice firing. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions. The ammunition is designed for use with guns **2A14, 2A14M, 2A7** and **2A7M** of the following 23 mm air-defence gun mounts and their modifications:

- **ZU-23-2**
- **ZSU-23-4 SHILKA**

BASIC CHARACTERISTICS

Caliber	23x152 mm
Operating Temperature Range	-50°C to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	2925 kg/cm ²

ELEMENTS OF ROUND

Projectile	Practice High Explosive Incendiary
Fuze	Dummy
Propellant	5/7 Cfl
Cartridge case	Steel
Primer	KV №3

TECHNICAL DATA

Length of Round (max)	234.28 – 237.12 mm
Weight of Round	0,435 kg
Weight of Projectile	0.183 kg
Propellant Charge Mass	0,077 kg

PACKING

84 rounds in three air-tight sealed metal boxes in a wooden case with dimensions 875x378x206 mm, Gross weight: 55 kg.

ALTEK

Belts & Boxes for 14.5x114 mm Ammunition

14.5x114 mm



Metal 14,5x114 mm rifle cartridge belt string is designed for universal and tank machine guns.

The belt (index 56-L-562) consists 10 interconnected metal links. The belt fractions are joined with a cartridge.

The belts are fed with cartridges by using a special machine.

The life time of a cartridge belt ensures its no less than 25 times passing through the weapon's automatic system.

The belts are designed for Vladimirov heavy machine gun (**KPVT**) the 14,5-mm PKP, SKP heavy machine guns, the ZPU-1, ZPU-2, ZU-2, and ZPU-4 anti-aircraft machine guns.

The armored personnel carriers (**BTR, BRDM**) use special boxes with capacity of 50 cartridges.

Belts & Boxes for 12,7x108 mm Cartridges



12,7x108 mm

Metal 12,7x108 mm cartridge belt string is designed for large caliber machine guns. The belt (index 56-JL-542M) designed for **DSHKM** machine guns consists of 10 or 50 interconnected metal links of “crab” type.

The belt fractions are joined with a cartridge. The belt (index 6L19) designed for **NSV-12,7 (NSVT-12,7)** machine gun consists of 10 interconnected metal links of “crab” type. The belt fractions are joined with a cartridge. The cartridge belts are not interchangeable. The belts are fed with cartridges by using a special machine (index 6429) or manually. The life time of a cartridge belt ensures its no less than 25 times passing through the weapon’s automatic system.

The belts are packed in boxes with capacity of 50 and 70 cartridges. Boxes for 50 cartridges (index 56-JL-542M) are designed for large caliber 12.7x108mm **DSHK (DSHKM)** and **NSV-12,7 (NSVT-12,7)** machine guns. Boxes for 70 cartridges are intended for NSVU-12,7 machine guns.

The 30x29 mm Training Practice Grenade VOG-17M IN designed to be used for training of the army units, ensuring simulation of real combat firing. The VOG-17M IN round with overall dimensions, ballistic and weight characteristics corresponds to VOG-17M rounds.

The ammunition is intended to be fired from Automatic Grenade Launchers of following types:

- AGS-17;
- AG-17A;
- AGS-30;
- ARCUS-17 AGL.



30x29 mm

BASIC CHARACTERISTICS

Caliber	30x29 mm
Maximum Firing Range	1700 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Round	132 mm
Weight of Round Grenade	0,35 kg

BALLISTIC DATA

Muzzle velocity	185 m/s
Probable Deviation	2.5 m/s
Average Pressure (max)	1200 kg/cm ² (122.5 MPa)

ELEMENTS OF GRENADE

Fuze	Ballistik plug
Explosive Filling	inert
Cartridge case	steel
Propellant	NBpl 14-10
Primer	KVM-3

30x29 mm Grenade VOG-17M



The 30x29 mm High Explosive Round VOG-17M provides effective action against enemy troops in open terrain or in light shelters at distance of up to 1700 m. The round is fitted with distance-armed, self-destruct fuze. The ammunition is designed for use with automatic grenade launchers:

- **AGS-17;**
- **AG-17A;**
- **AGS-30;**
- **ARCUS-17 AGL.**

The round is safe in storage, handling and operation and ensures the reliable performance of the grenade launchers in all weather conditions.

BASIC CHARACTERISTICS

Caliber	30x29 mm
Maximum Firing Range	1700 m
Radius of Defeat	not less than 6 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Round (max)	132 mm
Weight of Round Grenade	0,35 kg
Weight of Explosive Charge	0,032 kg

FUZE

Type	Point Detonating, SQ action, Distance-Armed, Self-Destruct
Arming Distance	10 to 60 m
Self-destruction Time	28 to 36 sec

BALLISTIC DATA

Muzzle velocity	185 m/s
Probable Deviation	2.5 m/s
Average Pressure, max	1200 kg/cm ² (122.5 MPa)

ELEMENTS OF GRENADE

Projectile	High Explosive
Fuze	VMG-M
Explosive Filling	A-IX-1 (RDX)
Cartridge case	steel
Propellant	NBpl 14-10
Primer	KVM-3

30x29 mm



Metal 30x29 mm ammunition belt string is designed for automatic grenade launcher **AGS-17 (AGS-30)**.

The belt (index 6L12) consists of 10 interconnected metal links of "crab" type. The belt fractions are joined with a cartridge.

The belts are fed with cartridges by using a special machine (index 6YU13) or manually.

The life time of a cartridge belt ensures its no less than 16 times passing through the weapon's automatic system.

The belts are packed in boxes with capacity of 29 (30) grenades.

30x29 mm **Dummy Training Round** VUS-17

With the VUS-17:

- the trajectory flight and the target point are the same as with combat grenades fired one by one or in bursts from standard grenade launchers using standard sighting assets and manuals;
- higher visibility of the target point compared to the combat fragmentation grenade is ensured in poor conditions (snow, fog, hard terrain etc.), thanks to the red-orange smoke cloud;

- high training safety is ensured (the grenade includes no explosives);
- reliable operation against various types of obstacles including water and snow is ensured (the grenade carries the standard fuse);
- high degree of propelling charge, materials, and coatings unification with the combat grenade is ensured to provide no-flame firing, broad operating temperatures range, and extensive service life.

The 30x29 mm VUS-17 dummy training round is used for training of operators of the automatic grenade launchers. The ammunition is designed for use with the following grenade launchers:

- **AGS-17;**
- **AG-17A;**
- **AGS-30;**
- **ARCUS-17 AGL**

BASIC CHARACTERISTICS

Caliber	30x29 mm
Maximum Firing Range	1700 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Grenade	132 mm
Weight of Grenade	0,35 kg

BALLISTIC DATA

Muzzle velocity	185 m/s
Probable Deviation	2.5 m/s
Average Pressure, max	1200 kg/cm ² (122.5 MPa)

ELEMENTS OF GRENADE

Fuze	VMG-M
Grenade Body	Steel
Propellant	NBpl 14-10
Primer	KVM-3

ALTEK

IST-14,5 T **Anti-Materiel Rifle**



- 14,5 mm calibre offers enhanced target effect against materiel targets
- Unique recoil management system is extremely user friendly
- Magazine-fed, semi-automatic operation, offers rapid follow-up shots with simplicity and reliability
- Precision, man-portable, long range anti-materiel weapon
- Provides for efficient, reliable & safe operation & servicing in the following environment:
 - Ambient temperature range, from -50°C to +50°C
 - Relative air humidity: 93-97% at +25°C
 - At rain, snow, sand and dust impact
- When transported the rifle is dismantled into two separate parts, carried by the crew in packs

IST-14,5 T Anti-Materiel Rifle

14.5 mm ANTI-MATERIEL RIFLE CHARACTERISTICS ENSURE ITS EFFICIENT USE AGAINST:

- thin-skinned vehicles armored personnel carriers, infantry fighting vehicles (IFV), parked aircraft;
- engineering ammunition (mines) from the safe distance;
- command, control, communication & intelligence systems, gantries, space communications means, artillery and rocket systems, tank exterior equipment etc;
- enemy manpower both exposed, disguised under thin field cover.

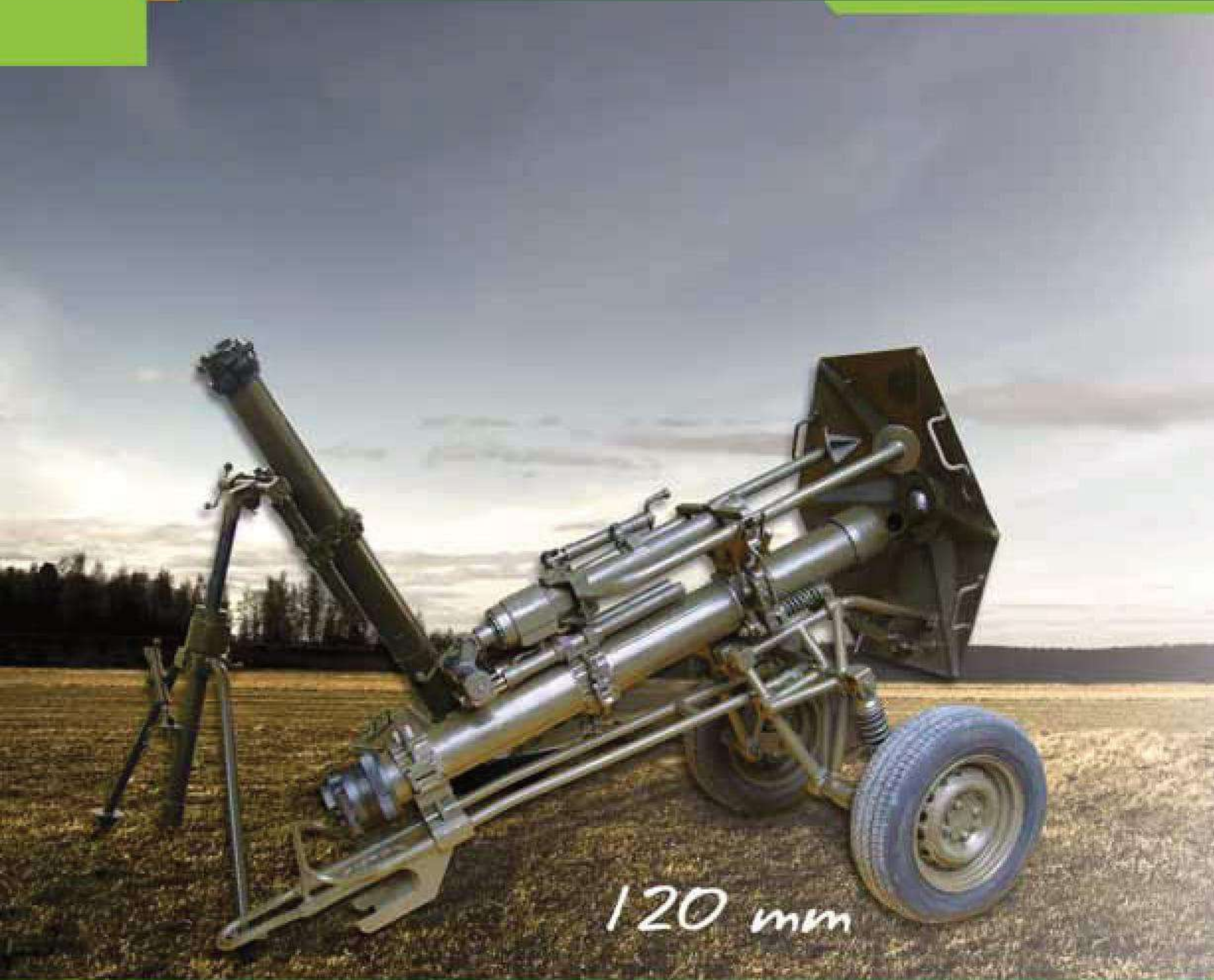
The efficient recoil management system reduces the high velocity recoil making the system very user-friendly without tactical restrictions.

Caliber, mm	14,5 mm
Cartridge	14,5x114 mm
System of operation	Short recoil
Weight, (gun and scope, unloaded)	28 kg
Muzzle velocity	945 – 990 m/s with B-32 (API) 63.9 g projectile 1015 m/s with MDZ (Incendiary) 58,5 g rojectile
Sighting range	2 000 m
Overall length	2 256 mm
Barrel length	1 300 mm
Recoil Management	High efficiency muzzle brake with barrel spring and special spring buffer
Sighting	POSP 8x42D (2000) Telescopic Sight with dioptric adjustment and reticle illuminating system
Feed System	5 round box type magazine
Cartridges	14,5x114 mm Armour Piercing- Incendiary(API), Armour Piercing-Incendiary-Tracer (API-T), Incendiary and HE Incendiary bullets
Mountings	Adjustable, bipod and adjustable mono-pod at rear
Portability	Weapon system transport and storage box
Backpacks	1x receiver man pack and 1x barrel assembly and accessories man pack

Multi Barrel Rocket Launcher (MBRL) is a lightweight and towed weapon system used by artillery and infantry support missions during day and night, and in all weather conditions. The system can be easily disassembled with basic hand tools and carried to mountainous regions.

Diameter	107 mm
Number of Tubes	12
Tube Length	880 mm
Ripple Fire Duration (12 rockets)	7 – 9 sec
Elevation	0 – 60.0 (0 – 1066 mils)
Deflection	±15.0 (±266 mils)
Weight:	
Unloaded	385 kg
Loaded with 12 rockets	620 kg
Gun Laying	With handwheels and panoramic telescope
Crew	4

120 mm **Wheeled** Mortar



An ideal means against enemy personnel and a battalion level support. The weapon is muzzle loaded and has a classic mortar design with a smooth barrel and a double loading safety device.

Caliber	120 mm
Range of firing, km max. (He mortar bomb) min	7.1 0.5
Rate of fire, rpm	15
Elevation, deg.	+45....80
Traverse, deg.	+ 5
Precision: vr/xmax side v,m	1/250 12.8
Mass of mortar, kg	305
Mass without wheels, kg	215
Crew	3 persons



The 30x165 Round with High Explosive Tracer Projectile is intended to engage air and ground targets. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	30x165 mm
Fuze Arming Distance	20 to 100 m
Self-destruction time	7.5 to 14.5 sec
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

ELEMENTS OF ROUND

Projectile	High Explosive Tracer
Fuze	A-670M
Explosive filing	A-IX-2 (RDX)
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

TECHNICAL DATA

Length of Round (max)	292 mm
Weight of Round	0.826 kg
Weight of Projectile	0.385 kg
Propellant Charge Mass	0.122 kg
Burning Time of Tracer	not less than 10 sec

PACKING

STANDARD: 54 rounds in three air-sealed metal boxes in a wooden case with dimensions 860x380x220 mm. Gross weight: 61 kg.
OPTIONAL: 25 linked rounds in one metal box with dimensions 420x245x340 mm, Gross weight: 37 kg.

30x165 mm Round with Practice HE-T Projectile

30x165 mm

The 30x165 Round with Practice High Explosive Tracer Projectile is intended for practice firing. The projectile is inert and contains no explosive. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions. The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	30x165 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

ELEMENTS OF ROUND

Projectile	Practice High Explosive Tracer
Fuze	Dummy
Explosive filing	Inert sulfur mixture
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

TECHNICAL DATA

Length of Round (max)	292 mm
Weight of Round	0.826 kg
Weight of Projectile	0.385 kg
Propellant Charge Mass	0.122 kg
Burning Time of Tracer	not less than 10 sec

PACKING

STANDARD: 54 rounds in three air-sealed metal boxes in a wooden case with dimensions 860x380x220 mm, Gross weight: 61 kg. OPTIONAL: 25 linked rounds in one metal box with dimensions 420x245x340 mm, Gross weight: 37 kg.



The 30x165 Round with Practice High Explosive Incendiary Projectile is intended for practice firing. The projectile is inert and contains no explosive.

The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	30x165 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

ELEMENTS OF ROUND

Projectile	Practice High Explosive Incendiary
Fuze	Dummy
Explosive filling	Sulfur Mixture
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

TECHNICAL DATA

Length of Round (max)	293 mm
Weight of Round	0,833 kg
Weight of Projectile	0.389 kg
Propellant Charge Mass	0,123 kg

30x165 mm Round with AP-T Projectile

30x165 mm



The 30x165 Round with Armour Piercing Tracer Projectile is intended to engage air and ground targets. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	
Armour Penetration (at angle of hit 60°) at range of 500 m at range of 1000 m at range of 1500 m	22 mm 18 mm 14 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

TECHNICAL DATA

Length of Round (max)	293 mm
Weight of Round	0.853 kg
Weight of Projectile	0.400 kg
Propellant Charge Mass	0.127 kg
Burning Time of Tracer	not less than 3.5 sec

BALLISTIC DATA

Muzzle Velocity (max)	960 - 980 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

ELEMENTS OF ROUND

Projectile	Armour-Piercing Tracer
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

PACKING

STANDARD: 54 rounds in three air-sealed metal boxes in a wooden case with dimensions 860x380x220 mm, Gross weight: 61 kg.

OPTIONAL: 25 linked rounds in one metal box with dimensions 420x245x340 mm, Gross weight: 37 kg.



The 30x165 Round with Practice Armour Piercing Tracer Projectile is intended for practice firing. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	30x165 mm
Operational Temperature Range	-50 to +50°C
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	960 - 980 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

ELEMENTS OF ROUND

Projectile	Practice Armour Piercing Tracer
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

TECHNICAL DATA

Length of Round (max)	293 mm
Weight of Round	0.853 kg
Weight of Projectile	0.400 kg
Propellant Charge Mass	0.127 kg
Burning Time of Tracer	not less than 3.5 sec

PACKING

STANDARD: 54 rounds in three air-sealed metal boxes in a wooden case with dimensions 860x380x220 mm, Gross weight: 61 kg. OPTIONAL: 25 linked rounds in one metal box with dimensions 420x245x340 mm, Gross weight: 37 kg.

30x165 mm Round with HEI Projectile



The 30x165 Round with High Explosive Incendiary Projectile is intended to engage air and ground targets. The ammunition is safe in transport, storage and handling and ensures the reliable performance of the gun systems in all weather conditions.

The automatic guns 2A42, **2A38**, 2A72 and modifications are mounted on the following carriers:

- Infantry Fighting Vehicles **BMP-2, BMP-3, BMD-2, BMD-3, BTR-80A** and their modifications
- Reconnaissance Vehicle "RIS"
- Air-Defence Complex "**Tunguska**"
- Attack Helicopters **Ka-50** and **Mi-28** and modifications

BASIC CHARACTERISTICS

Caliber	30x165 mm
Fuze Arming Distance	20 to 100 m
Self-destruction time	7.5 to 14.5 sec
Shelf Life	15 years

BALLISTIC DATA

Muzzle Velocity (max)	950 - 970 m/s
Probable Deviation	5 m/s
Average Pmax	3600 kg/cm ²

TECHNICAL DATA

Length of Round (max)	293 mm
Weight of Round	0,833 kg
Weight of Projectile	0.389 kg
Propellant Charge Mass	0,123 kg

ELEMENTS OF ROUND

Projectile	High Explosive Incendiary
Fuze	A-670M
Explosive filing	A-IX-2 (RDX)
Propellant	6/7 P-5BPfl
Cartridge case	Steel
Primer	KV-30, KV-3-1

PACKING

STANDARD: 54 rounds in three air-sealed metal boxes in a wooden case with dimensions 860x380x220 mm, Gross weight: 61 kg.

OPTIONAL: 25 linked rounds in one metal box with dimensions 420x245x340 mm, Gross weight: 37 kg.

ALTEK

60 mm Long Range Mortar 20N6MT

20N6MT
60 mm



Long range weapon for the infantry platoon and company.

Can be used in all types of terrain. Operated by one or two men.

Sighting system, enabling accurate alignment & elevation, incorporates firing range table. Fixed pin, causing firing immediately upon loading.

Specifications

Caliber	60 mm
Range	4000 m
Weight	18 kg
Total barrel length	940 mm
Elevation	45 to 85 deg
Bomb weight	1,8 kg
Charge	0, 1, 2, 4 and 6
Rate of fire	20 r.p.m.

60 mm Dual Purpose Mortar



The Mortar comprises a smooth bore barrel, the breech piece (with fix pin firing), the base plate and range indicator. Charges 0, 1 and 2 are required/ Charge "0" which is only the ignition cartridge for a range up to 380 m and charge 2 for maximum range 1600 m. The elevating scale has mils and meter scales, which enables to align the mortar without the need of range tables. The sight is of a bubble indicator type. Alignment is achieved using a white line painted over the barrel. Firing is achieved using drop action method on a fix firing pin.

- Ideal weapon for infantry platoon and squad level support
- Effective support for close range and urban warfare
- Two operation modes:
 - firing with bipod to get full range 2500 m.
 - firing in commando mode, without bipod to achieve range of 1600 m.
- Sight units elevation scales incorporate range tables there is no need for range tables
- Authorized ammunition: all types of qualified 60 mm in use worldwide

Caliber	60 mm
Range	150 – 2,550 m (Full range) 150 – 1,600 m (Commando mode)
Weight (sight excluded)	18,0 kg (Firing with bipod) 9,0 kg (Commando mode)
Barrel length	740 mm
Elevation	45 to 85 Deg
Bomb weight	1,6 kg
Charge	0, 1, 2, 3 and 4
Crew	1 to 2

ALTEK

60 mm **Commando** Mortar

The 60 mm Commando mortar is an ideal weapon for the infantry platoon, special forces and close support fire power. This simple design easy to operate system can be used in all types of terrain and has special advantages in jungle warfare.

Commando
60 mm

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60 mm **Commando** Mortar

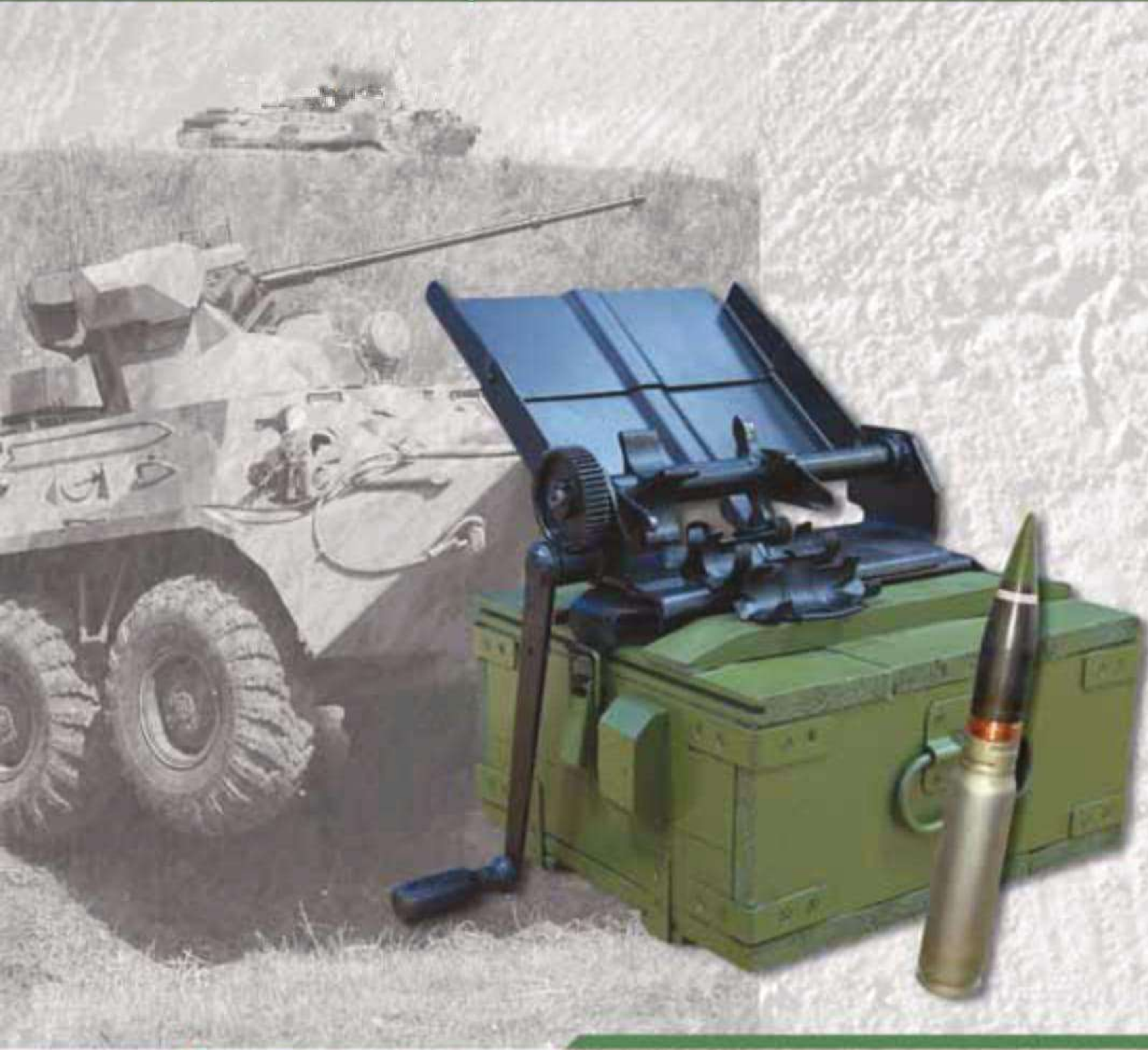


The Mortar comprises a smooth bore barrel, the breech piece (with fix pin firing), the base plate and range indicator. Charges 0, 1 and 2 are required. Charge "0" which is only the ignition cartridge for a range up to 380 m and charge 2 for maximum range 1600 m. The elevating scale has mils and meter scales, which enables to align the mortar without the need of range tables. The sight is of a bubble indicator type. Alignment is achieved using a white line painted over the barrel. Firing is achieved using drop action method on a fix firing pin.

Caliber	60 mm
Range	1600 m
Weight	8 kg
Total length	675 mm
Elevation	45 to 85 Deg
Bomb weight	1,6 kg
Charge	0,1 and 2
Rate of fire	20 R.P.M.

ALTEK

Linking Machines for 30x165 mm Ammunition



Manually operated Linking Machine is intended for linking 30x165 mm Cartridges for 2A42, 2A72 and **GSh-30** Automatic Guns. The machine may be mounted on its packing or on the table.

Specifications

Ammunition	30x165 mm Rounds
Used with systems	2A42, 2A38, 2A72, GSh-30, GSh-301 Automatic Guns
Operation	Manual
Output / cartridges per minute	50
Machine dimensions, mm	420x350x260
Packing	in Wooden case
Case dimensions, mm	430x350x230
Net weight, kg	6.3
Gross weight, kg	11.8

ALTEK

Linking Machines for 30x29 mm Ammunition



Manually operated Linking Machine is intended for linking 30x29 mm grenades for AGS-17, **AGS-30** and **ARCUS 17AGL**. The machine may be mounted on its packing or on the table.

Specifications

Ammunition 30x29 mm (VOG-17M, VUS-17) Grenades
Used with systems AGS-17, AGS-30, ARCUS 17
Automatic Grenade Launcher

Operation Manual

Output / cartridges per minutes 60

Machine dimensions, mm 540x360x500

Packing in Wooden case

Case dimensions, mm 540x320x270

Net weight, kg 9,5

Gross weight, kg 22



The 40x46 mm HE Round M99 are intended to destroy enemy's personnel, transport means and light armoured materiels at distance up to 400 m.

Specifications

Calibre (mm)	40
Round mass (g)	245
Grenade mass (g)	192
Explosive mass (g)	48
Round length (mm)	max 104.5
Muzzle velocity (m/s)	78
Fuze arming distance (m)	14-27
Precision on vertical target at the distance of 100 m (m)	$V_p \leq 0.25$ $V_v \leq 0.35$
Max range (m)	400
Lethal radius	≥ 5
Operating temperature (°C)	-42 - +63
Weapon compatibility	M203, M79, MGL MK1, HK69A1, F2000 or other similar weapons

40x46 mm **Smoke** Round M99



The 40x46 mm SMOKE Round M99 is intended to be fired at distance up to 400 m in order to place a smoke-screen or to mark targets.

Specifications

Calibre (mm)	40
Round mass (g)	236
Grenade mass (g)	186
Round length (mm)	106
Delay time (s)	2-4
Smoke time (s)	30
Muzzle velocity (m/s)	76
Firing range (m)	50-400
Smoke type	white
Operating temperature range (°C)	-42 - +63
Weapon compatibility	M203, M79, MGL MK1, HK69A1, F2000 or other similar weapons



Tactical body armor is designed for maximum protection in high threat zones. This ballistic system benefits from

- A large area of ballistic and fragmentation protection including shoulders, collar, and throat
- A modular loading system allowing customisation with pouches and other modular equipment.
- Rifle plate pockets front and rear which can be upgraded using Hard Armour Plates
- Quick release blast belt

The system inside is made up of soft armour panels and a hard armour panel in front and rear. This enables the protection of the vest to include shots from such rifles as an AK47.

Specifications

The Tactical body armor is available in a range of colours, and sizes to suit individual requirements. Adjustments around the waist allows for a unique fit tailored to the users shape, providing outstanding comfort, improving wearability and usability.

Features

- NIJ level IIIA (3A) Soft Armour Panels
- Front, back, side, collar and shoulder protection
- Flexible and thin moulding to the bodies shape
- Lightweight material heat sealed in a water proof bag

Armored Jacket



The body armor vest is a personal protection wear. The set consists of:

- a) folding collar for the neck
- b) removable side safety elements

Specifications

The vests are produced in 3 sizes:
50-52, 52-56, 58-60 body, 170, 188, height.

Total weight of 2 armored plates, kg:

- 1. 10,0±0,5
- 2. 10,5±0,5
- 3. 11,0±0,5

Protection area of the armored plates, dm²

15

Protection area of the armored vests, dm²:

- 1. 44
- 2. 50
- 3. 56

5.45x39 mm
AK 74M

The AK74M Kalashnikov assault rifles are chambered for 5.45x39 mm round and have folding buttstocks. Forearm, magazine, buttstock and pistol grip are made of high strength plastic. Protective coatings ensure excellent corrosion resistance of metal parts. There is a dove-tail side rail for optical and night sights. The design of the AK74M makes it possible to attach an underbarrel grenade launcher or a knife-bayonet. Muzzle brake provides for cyclic fire accuracy and further reduces muzzle climb and burst recoil.

Specifications

Cartridge, mm	5.45x39
Muzzle velocity, m/s	900
Sighting range, m	1000
Cyclic rate of fire, rounds/min	650
Combat rate of fire, rounds/min single shot fire short burst fire	40 100
Fire control	Semi auto, full auto
Weight, kg rifle with loaded magazine rifle with empty magazine	3.9 3.6
Overall length, mm - with folded buttstock	943 705
Barrel length, mm	415
Magazine capacity, rounds	30

Silencer

7.62 mm

The device is a sound moderator and is intended for soundless and flameless firing from **AKM** machine gun by chambering low velocity 7.62x39 mm cartridges at ranges up to 400m.

Specifications

Sound level, Db, max	114
Length, mm	205
Diameter, mm	53
Service life of the device, shots	15 000
Service life of the obturator, shots	150
Weight, kg	0.7

82 mm

The 82 mm High-Explosive Mortar Bomb is intended to engage troops, shelters and light-armoured targets. The ammunition is intended for use with 82 mm smooth-bore mortars, including:

- Mod 1937; 1941; 1943
- 20N5
- 2B14 "PODNOS"
- 2B9 "VASILEK"

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

Caliber	82 mm
Maximum range: with increment charges with long range charge	3 000 m 4 500 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

Muzzle Velocity (max)	211 m/s
Maximum pressure	450 kg/cm ²

Length of Mortar Bomb (fuzed)	332.5 mm
Weight of Mortar Bomb (fuzed)	3.1 kg
Weight of Explosive Charge	0.454 kg

Fuze	M-6
Body	Cast iron
Explosive Filling	TNT or TD-42
Number of Charges	1+3 Increment or long range charges



82 mm Practice **Mortar Bomb**

82 mm

The 82 mm Practice Mortar Bomb is intended for training. The ammunition is designed for use with 82 mm smooth-bore mortars, including:

- **Mod 1937; 1941; 1943**
- **2B14 "PODNOS"**
- **2B9 "VASILEK"**

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	82 mm
Maximum range with increment charges	3 000 m
Maximum range with long range charge	4 500 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

TECHNICAL DATA

Length of Mortar Bomb	300 mm
Weight of Mortar Bomb	1.6±0,005 kg

ELEMENTS OF MORTAR BOMB

Fuze	Dummy
Body	Cast iron
Number of Charges	1+3 Increment or long range charges

BALLISTIC DATA

Muzzle Velocity (max)	211 m/s
Maximum pressure	450 kg/cm ²



60 mm

The 60 mm High-Explosive Mortar Bomb is intended for engagement of troops in open or in light shelters.

The ammunition is designed for use with the 60 mm smooth-bore mortars meeting NATO standards, including:

- M2
- M19
- M224
- Hirtenberger "Commando"
- C-08 and C-576

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	60 mm
Maximum range	3200 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10 years

ELEMENTS OF MORTAR BOMB

Fuze	M-6H or AZ111A2
Body	Cast iron
Explosive Filling	TNT
Number of Charges	1+4 Increment charges

TECHNICAL DATA

Length of Mortar Bomb (fuzed)	300 mm
Weight of Mortar Bomb (fuzed)	1.6±0,005 kg
Weight of Explosive Charge	0.2 kg

BALLISTIC DATA

Muzzle Velocity (max)	195±5 m/s
Maximum pressure	441kg/cm ²



The 60 mm Practice Mortar Bomb is intended for training. The ammunition is designed for use with the 60 mm smooth-bore mortars meeting NATO standards, including:

- M2
- M19
- M224
- Hirtenberger "Commando"
- C-08 and C-576

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	60 mm
Maximum range	3200 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

ELEMENTS OF MORTAR BOMB

Fuze	Dummy
Body	Cast iron
Number of Charges	1+4 Increment charges

TECHNICAL DATA

Length of Mortar Bomb	300 mm
Weight of Mortar Bomb	1.6±0,005 kg

BALLISTIC DATA

Muzzle Velocity (max)	195±5 m/s
Maximum pressure	441kg/cm ²

120 mm

The 120 mm High-Explosive Mortar Bomb is intended to engage troops, shelters and light-armoured targets. The ammunition is designed for use with 120 mm smoothbore mortars meeting NATO standards, including:

- **Mod. 1938**
- **Mod. 1943**
- **2S12 "SANI"**
- **2S9 "NONA"**

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	120 mm
Maximum range with increment charges	5 800 m
Maximum range with long range charge	7 100 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

TECHNICAL DATA

Length of Mortar Bomb (fuzed)	673 mm
Weight of Mortar Bomb (fuzed)	16.1 kg
Weight of Explosive Charge	1.36 kg

ELEMENTS OF MORTAR BOMB

Fuze	M-12
Body	Cast iron
Explosive Filling	TD-50
Number of Charges	1+6 Increment or long range charges

BALLISTIC DATA

Muzzle Velocity (max)	272 m/s
Maximum pressure	1300 kg/cm ²



The 120 mm Practice Mortar Bomb is intended for training. The ammunition is designed for use with 120 mm smoothbore mortars meeting NATO standards, including:

- **Mod. 1938**
- **Mod. 1943**
- **2S9 "NONA"**
- **2S12 "SANI"**

The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	
Maximum range with increment charges with long range charge	5 800 m 7 100 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

TECHNICAL DATA

Length of Mortar Bomb (fuzed)	673 mm
Weight of Mortar Bomb	16.1 kg

ELEMENTS OF MORTAR BOMB

Fuze	Dummy
Body	Cast iron
Number of Charges	1+6 Increment or long range charges

BALLISTIC DATA

Muzzle Velocity (max)	272 m/s
Maximum pressure	1030 kg/cm ²

ALTEK

9x19 mm Semiautomatic Pistols **ZAFAR P**



Caliber, mm	9x19
Sighting range, m	50
Magazine capacity, ctg	15, 17, 20
Safety System	Safety lever from both sides, blocks a firing pin & slide and decocks the hammer
Action	Semiautomatic, short recoil
Sights	Front & adjustable
Muzzle velocity, m/s	340±10
Mass with empty magazine, g	595
Overall dimensions:	
Length, mm	174
Height, mm	127
Width, mm	30
Barrel length, mm	102
Operating temperature range, °C	±50 oC

9x19 mm



Specifications

Caliber, mm	9x19
Sighting range, m	75
Magazine capacity, ctg	15, 20
Safety System	Safety lever from both sides, blocks a firing pin & slide and decocks the hammer
Action	Semiautomatic, short recoil
Sights	Front & adjustable
Muzzle velocity, m/s	350±10
Mass with empty magazine, g	950
Overall dimensions:	
Length, mm	204.5
Height, mm	139
Width, mm	37
Barrel length, mm	117
Operating temperature range, °C	±50 oC

ALTEK

9x19 mm Semiautomatic Pistols Inam

Specifications

Caliber, mm	9x19
Sighting range, m	50
Magazine capacity, ctg	15, 17, 20
Safety System	Safety lever from both sides, blocks a firing pin & slide and decocks the hammer
Action	Semiautomatic, short recoil
Sights	Front & non-adjustable
Muzzle velocity, m/s	340±10
Mass with empty magazine, g	860
Overall dimensions:	
Length, mm	191
Height, mm	140
Width, mm	33
Barrel length, mm	110
Operating temperature range, °C	±50 oC

9x19 mm



40 mm Light Anti-tank Grenade Launcher TƏG-7V2

RPG 7V2
40 mm



The TƏG-7V2 is a mighty reliable recoilless weapon for destroying tanks, self-propelled artillery units and other armoured vehicles of enemy, as well as the enemy's manpower in open and in armoured sheltets.

Specifications

Caliber	40 mm
Ammunition	PG-7V, PG-7VM, PG-7VS, PG-7VS1, PG-7VL, PG-7VR,OG-7V, TBG-7V
Optical sight	GON-1 with mechanical sight NG-7V
Length	950 mm
Weight of the grenade launcher with optical sight	6,85 kg
Effective range	depending on the round type
Firing rate	4 – 6 rounds/min
Portable combat set	5 rounds
System life	250 rounds



The 7.62x54 mm Tank Machine Gun is a powerful automatic weapon designed to be mounted on tanks and fighting armoured vehicles.

The system automation operates on the driving forces of propellant gases diverted through a vent in the barrel.

Caliber, mm	7.62
Cartridge	7.62x54
Fire mode	Automatic
Rate of fire, rounds/min	700 - 800
Practical rate, rounds/min	250 max
Muzzle velocity, m/s	825
Maximum effective firing range, m	3800
Sighting range, m	1500 - 2200
Ammunition box capacity, rounds	100, 200

Barrel length, mm	722
Overall length, mm	1098
Weight without ammunition box, kg	10.5
Weight of loaded ammunition box with loaded 250 round metal belt, kg	9.4
System life, rounds	25 000
Principle of function	Gas operated
Cartridges	7.62x54 mm Ordinary bullets, Armour Piercing-Incendiary (API) and Tracer bullets.

20N5 82 mm Mortar



- Ammunition: 82 mm frag, smoke, illuminating and target practice mortar bomb
- Optical sight providing airming in elevation or traverse
- Crew of 4 persons
- High rate of fire: 24 rounds per minute
- Stripping into man-pack components, easy to carry on crossed terrain
- Low weight: 47 kg
- Stripping into light man-pack components, easy to carry on crossed terrain by crew of 4 people
- Optional safety mechanism preventing from double loading

Caliber	82 mm
Maximum range of fire	5400 m
Minimum range of fire	91 m
Muzzle velocity	220 m/s
Mortar weight in combat position	47,0 kg
Barrel length	1100 mm
Elevation range	45 to 85 deg
Traverse angle	6 deg.
Bomb weight	3,1 kg
Charge	0, 1, 2, 3 and 4
Crew	4 persons

ALTEK

GFAB-100 High-Explosive /Fragmentation Bomb

100 Kg



Designed to destroy lightly armored and soft-skinned materiel and annihilate manpower.

Specifications

Calibre, kg	100
Total length, mm	1150
Maximum body diameter, mm	273
Weight, kg:	
bomb	125
explosive (TNT equivalent)	46
Reduced radius of killing zone /	
maximum killing radius, m:	
for soft-skinned materiel	25-45/100-160
for lightly armored materiel	10/47
Dropping height, m	2000

50 & 100 kg Practice Aircraft Bomb

50/100 Kg



Practice aircraft bomb TAB 50 / TAB 100 is designed for training the flight personnel bombing technique. The ammunition design ensures its practical use both in the daytime and at night. Appearing at the bomb impact a smoke cloud & a flash allow visual observation of the drop point.

Specifications

Calibre, kg	50 / 100
Maximum weight, kg	75 / 125
Total length, mm	1100 / 1180
Maximum body diameter, mm	203 / 273
Dropping height, m	2000 – 3000 / 2000
Drop time, s	21-25
Mass of smoke & illuminating substance, g	200



The Smoke-puff charge is designed for training soldiers in tracing detonation site of simulated artillery ammunition during military training.

Specifications

Actuation time, sec.	8,5±1
Range of audibility, km	2 (max)
Safe radius, m	10 (min)
Overall dimensions:	
diameter, mm	33-2
height, mm	70±2
Mass, g	54 ±2

Electric Smoke Puff Charge



The Smoke-puff charge is designed for training soldiers in tracing detonation site of simulated artillery ammunition during military training.

Specifications

Sonic bang altitude, m	45-65
Range of audibility, km	2 (max)
Safe radius, m	30
Overall dimensions:	
diameter, mm	64
height, mm	150 (max)
Mass, g	415 ±10



The Cartridges IM-82 are designed for training soldiers in tracing detonation site and effective sonic bang from detonation of simulated 82 mm mortar bombs during military training.

Effective sonic bang from
detonation of 82 mm mortar bomb
Safe range from detonation site, m 50 (min)

Overall dimensions:

diameter, mm 43
height, mm 82±2
Mass, g 140

İM-120 Simulation Cartridges

The Cartridges IM-120 are designed for training soldiers in tracing detonation site and effective sonic bang from detonation of simulated 120 mm mortar bombs during military training.

Effective sonic bang from
explosion of 120 mm mortar bomb
Safety range from explosion site, m 50 (min)

Overall dimensions:

diameter, mm 43
height, mm 140 ±1
Mass, g 236 ±3

“SHIRAS-M” Artillery Ammunition Explosion Simulation Cartridge



“SHIRAS-M” simulation cartridge is designed for training of air and artillery reconnaissance crew.

Specifications

Safety range from explosion site, m 25 (min)

Overall dimensions:

diameter, mm 43

height, mm 82±1

Mass, g 145 (max)

40 mm Round GG-7A with Fragmentation Grenade



Round GG-7A is designed for destroying the enemy manpower and weapon positions in the open, in trenches, in field shelters, in light-armoured vehicles, and in non-armoured materiel by direct fire on the embrasures of field fortifications and within urban areas.

Weapon Systems

40 mm RPG-7 Anti-Tank Grenade Launchers.

In combat operations, Rounds GG-7A are transported in the bag which is part of the Launcher's individual set of SPTA (spare parts, tools, accessories).

Round GG-7A

Maximum range	1000 m
Muzzle velocity at 15°C	152 m/s
Weight	1,5 kg
Operating temperature range	-40° to +50°C

Grenade GG-7

Caliber	40 mm
Length (fuzed)	318 mm
Weight	1,175 kg
Bursting charge, type	TNT
Bursting charge weight	0,295 kg
Point – detonation fuze with super-quick action	



Round GG-7A IN is intended for training.

Weapon Systems

40 mm RPG-7 Anti-Tank Grenade Launchers.

Rounds GG-7A IN are transported in the bag which is part of the Launcher's individual set of SPTA (spare parts, tools, accessories).

Round GG-7A IN

Maximum range	700 m
Muzzle velocity at 15°C	152 m/s
Weight	2 kg
Operating temperature range	-40° to +50°C

Grenade GG-7IN

Caliber	40 mm
Length	425 mm
Weight	1,175 kg
Filling	INERT



The RGN offensive hand grenade is designed for use against enemy personnel in offensive and defensive operations.

It is equipped with a time-and-percussion fuze. The RGO hand grenade is designed for use against enemy personnel in the defense. It contains a time-and-percussion fuze.

Specifications

Diameter (caliber)	60 mm
Weight	0,31 / 0,53 kg
Explosive Filling	A-IX-1 (RDX)
Weight of Explosive Charge	0,114 / 0,092 kg
Throw distance	35 / 30 m
Safe radius	24 m
Effective area	100 / 210 m ²
Delay arming time	1,0 – 1,8 s
Primer activation time after throwing	3,3 – 4,3 s

Hand Grenade



RGD-5 Hand grenade is anti-personnel fragmentation grenade of offensive and defensive type with killing effect at a short distance from the detonation site.

Specifications

Average throwing distance, m 40-50

Detonation mechanism actuation, s 3,2-4,2

Safe radius, m 25

40 mm
GP 25

The 40 mm Practice grenade VOG-25 IN is intended for practice firing at distance of up to 400 m. The projectile is inert and contains no explosive.

The ammunition is designed for use with the following grenade launchers:

- GP-25 and **GP-30** under-barrel grenade launchers mounted on AKM and AK74 assault rifles;
- **RG-6** and "**AVALANCHE**" (Arsenal) revolver grenade launchers.



BASIC CHARACTERISTICS

Caliber	40 mm
Maximum Effective Range	400 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

ELEMENTS OF GRENADE

Muzzle velocity	76.5 m/s
Probable Deviation	1 m/s
Average Pressure, max	800 kg/cm ²

TECHNICAL DATA

Length of Grenade (max)	102.6 mm
Weight of Grenade	0,25 kg

BALLISTIC DATA

Fuze	Dummy
Filling	Inert sulfur mixture
Propellant	P-200
Primer	KVM-3

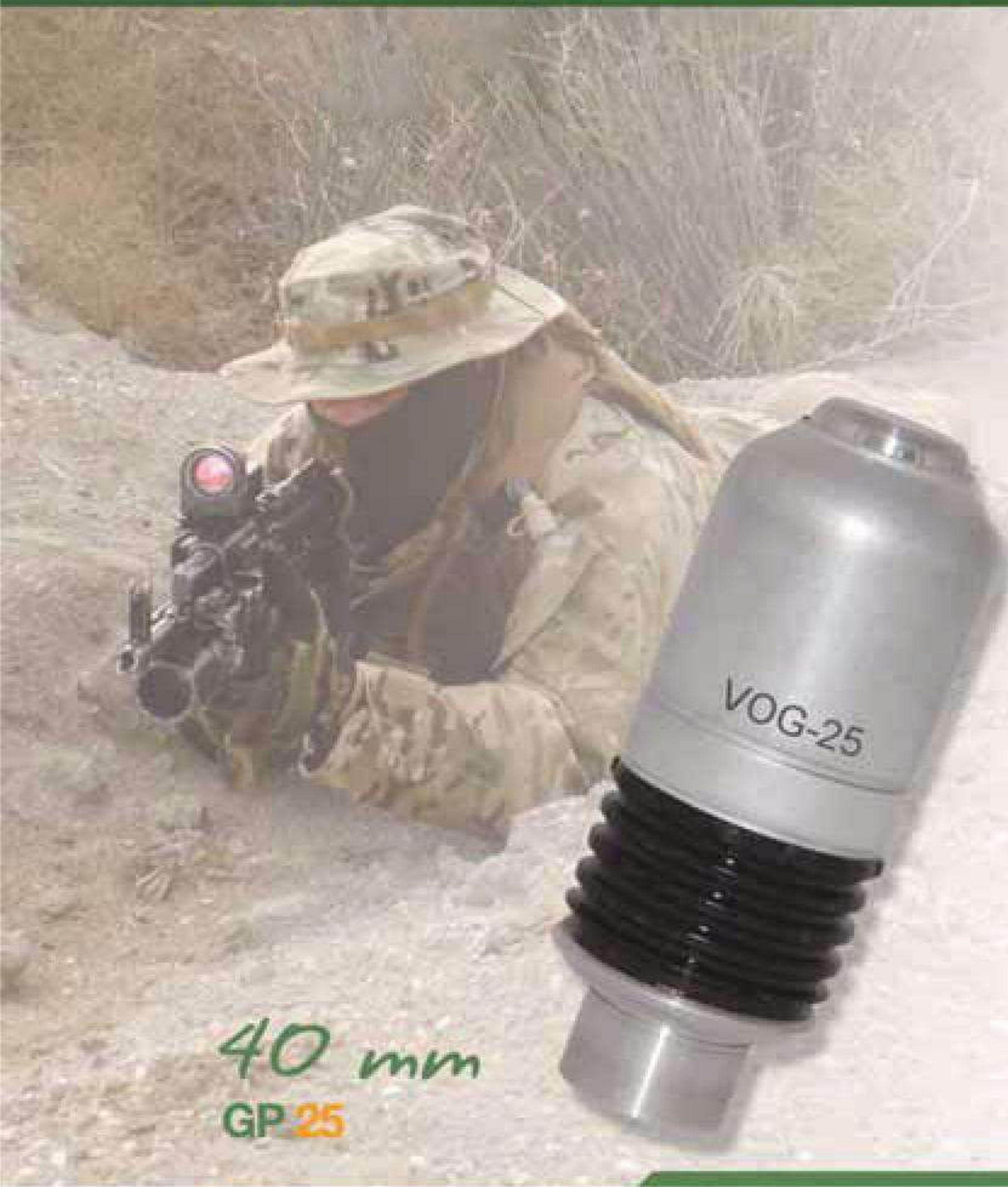
URQ-N (URQ) Training Simulation Hand Grenade



The grenade is intended for training soldiers in the methods of handling and throwing of hand grenades and the simulated sound and smoke effect of live hand grenades

Specifications

Actuation time of pyrotechnics, sec	3,2 - 4,2
Mass of a complete grenade, g	75 ± 1
Mass of a simulation component, g	26,5 ± 1
Mass of black powder g	2,4 ± 1



The 40 mm High Explosive Grenade VOG-25 provides effective action against enemy troops in open terrain or in light shelters at distance of up to 400 m. The grenade is self-contained type and is fitted with distance-armed, self-destruct fuze. The ammunition is designed for use with the following grenade launchers:

- **GP-25 and GP-30 under-barrel grenade launchers mounted on AKM and AK74 assault rifles;**
- **RG-6 and "AVALANCHE" (Arsenal) revolver grenade launchers.**

The round is safe in storage, handling and operation and ensures the reliable performance of the grenade launchers in all weather conditions.

BASIC CHARACTERISTICS

Caliber	40 mm
Maximum Firing Range	400 m
Radius of Defeat	not less than 6 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Grenade (max)	102.6 mm
Weight of Grenade	0,25 kg
Weight of Explosive Charge	0,048 kg

BALLISTIC DATA

Muzzle velocity	76.5 m/s
Probable Deviation	1 m/s
Average Pressure, max	800 kg/cm ²

ELEMENTS OF GRENADE

Fuze	VMG-K
Grenade Body	Steel
Explosive Filling	A-IX-1 (RDX)
Propellant	P-200
Primer	KVM-3

FUZE

Type	Point Detonating, SQ action, Distance-Armed, Self-Destruct
Arming Distance	10 to 40 m
Self-destruction Time	14 to 19 sec

40 mm Round with **Fragmentation Jump Grenade** VOG-25P

40 mm
GP 25



The 40 mm Round with Fragmentation Jump Grenade VOG-25P provides effective action against enemy troops in open terrain or in light shelters at distance of from 40 up to 400 m. The grenade is self-contained type and is fitted with distance-armed, self-destruct fuze.

The ammunition is designed for use with the following grenade launchers:

- GP-25 and **GP-30** under-barrel grenade launchers mounted on AKM and AK74 assault rifles;
- **RG-6** and "**AVALANCHE**" (Arsenal) revolver grenade launchers.

The round is safe in storage, handling and operation and ensures the reliable performance of the grenade launchers in all weather conditions.

BASIC CHARACTERISTICS

Caliber	40 mm
Maximum Firing Range	400 m
Radius of Defeat	not less than 6 m
Jump height	from 0.5 to 1.5 m
Operational Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Round (max)	112 mm
Weight of Round	0,272 kg
Weight of the Explosive Charge	0,044 kg

FUZE

Type	Point Detonating, SQ action, Distance-Armed, Self-Destruct
Arming Distance	10 to 40 m
Self-destruction Time	14 to 19 sec

BALLISTIC DATA

Muzzle velocity	75 m/s
Probable Deviation	1 m/s
Average Pressure, max	78.4 MPa

ELEMENTS OF GRENADE

Fuze	VMG-P
Grenade Body	Steel
Explosive Filling	A-IX-1 (RDX)
Propellant	P-200
Primer	KVM-3



Intended for laying the gun in azimuth in the absence of natural distant aiming points and in limited visibility conditions (night, fog, fire position obscured by smoke) and can be used with **MPM-44M (MON-44M)** mortar sight. The collimator is provided with a level for leveling, a reticle illumination light for operation in the dark and a tripod for ease of installation. Operation temperature range is from -50 to +50° C in all weather conditions.

Field of view, degree, min	12
Entrance pupil diameter, mm, min	48
Distance from panoramic telescope most suitable for operation, m	6-10
Number of marks on Collimator reticle along horizontal axis	76
Value of Collimator reticle	2.2 mills (7.8")
Sight reticle eccentricity, degree, max	15
Brightness gradation number, max	10"
Sight reticle inclination angle, minutes, max	20
Reticle scale value, angular minutes	1
Max deviation between collimator and gun sight lines, degree	45
Parallax, mm, max	0,02 (0,2 mm)
Supply voltage, V	3(CR 1/3t)
Overall dimensions, mm, max	180 x 135 x 85
Mass of collimator, kg, max	1,2
Mass of collimator case, kg, max	1,9
Mass of tripod, kg, max	3,6

Telescopic Sight For Grenade Launchers GON-1



The sight GON-1 is intended for hand grenade launcher targeting. The reticle of the device enables to conduct measurement of a distance to the standard target, taking into account the ballistics of different ammunition, and to perform elevation/azimuth adjustment in the position of the sighting line.

The reticle illumination is provided for operation under low illumination conditions.

The hermetically tight housing of the device is filled with dry nitrogen to avoid sweating of optical surfaces during quick change of temperature.

The sight can be equipped with a waist-belt bag, cover, light filters, power adapter, spare lamps and power sources.

The sight is mounted on **TƏG-7B2 (RPG-7V2)** antitank grenade launchers and its modifications.

Specifications

Visible magnification, ratio	2.7
Angular field of view, grad	13
Entrance pupil diameter, mm	24
Exit pupil diameter, mm	4.5
Eye relief, mm	27
Operation temperature range, °C	from - 50 to +50
Overall dimensions, mm	140x180x62
Mass, kg	0.57

B7x42 & 10x40 **Prismatic Binoculars** with Built In Compass

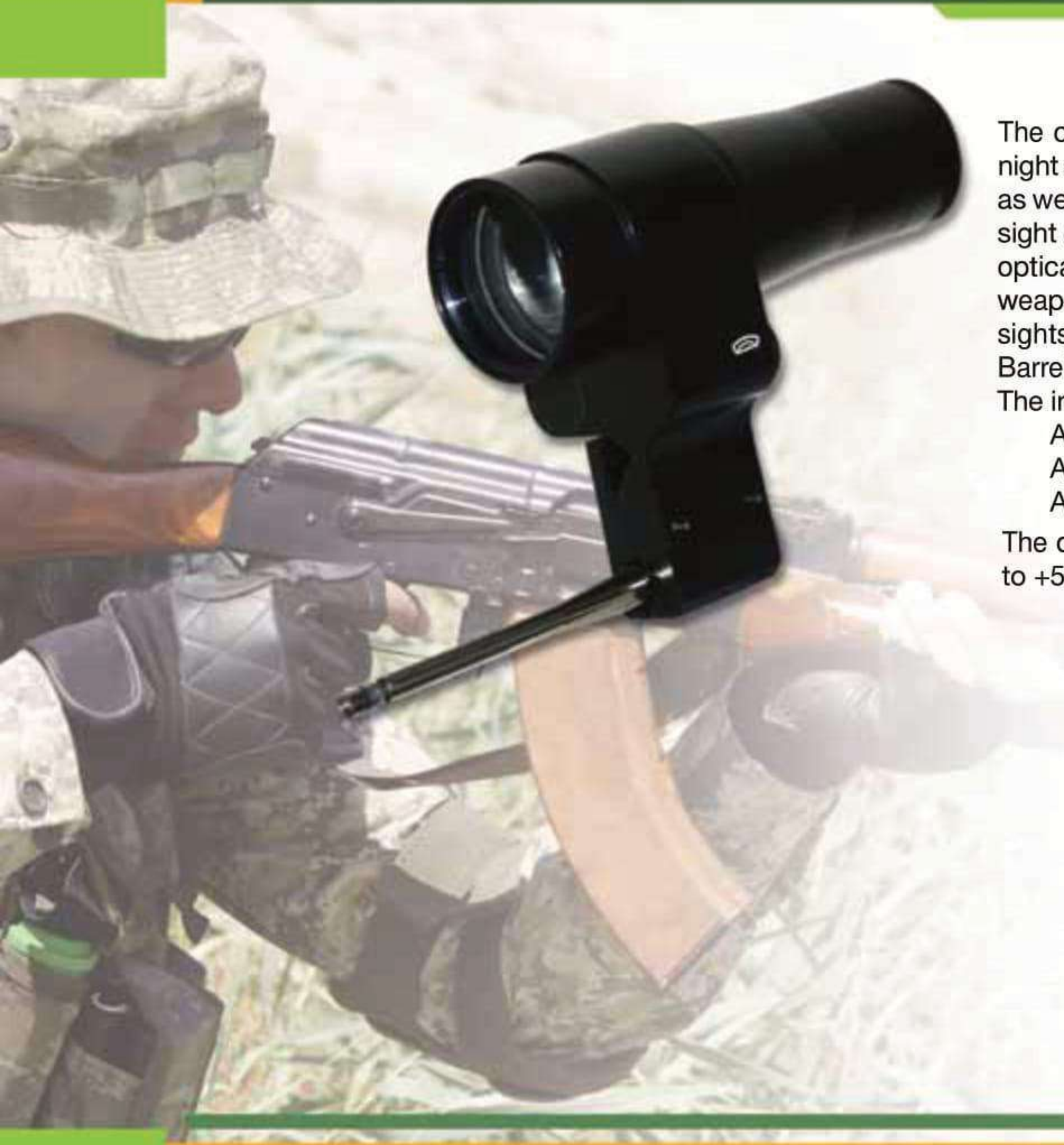
The binoculars are designed for spotting and surveillance of distant objects in day time, angle measurement between them and firing correction. Binoculars have separate focusing and a reticle in right eyepiece for measuring of vertical and horizontal angles and determination of distance to objects. Unique eyepiece gives a bright, high resolution image, clarity and edge-to-edge sharpness. The light filters ensure extend contrast image both in bad foggy weather and in the bright sun.

The binoculars are perfectly suitable for any climatic zones. The models are made in moisture & dust proof design, withstand humidity 95% at +25°C. Operating temperature range is from -40 up to +50°C.

Specifications

Magnification, x	7	10
Angular field of view, degree	7,3	6,5
Objective diameter, mm	42	40
Exit pupil diameter, mm, min	6	4
Reticle scale value:		
horizontal, mil	0-05 (±0-10)	
vertical, mil	0-08	0-06
Ocular adjustment range, dioptr	from -4 to +4	
Liquid compass with a scale, degree	1	
Overall dimensions, mm	165x190	
Mass, kg	1,1	

SAK Bore Sight Collimator



The collimator is designed for zeroing in the optical and optoelectronic day and night sights, being mounted on 5,45 and 7,62 cal. firearms of different modifications as well as for checking the sights after marches or prolonged storage. Use of bore sight collimators enables to save ammunition significantly. Bore sight collimator of optical sights is designed for alignment of optical, collimator or night sights on the weapon. The reticle illumination is being used for sighting and zeroing in of night sights under low illumination conditions.

Barrel inserts are designed for mounting of bore sight collimators on a weapon. The inserts are intended for the weapon of the following calibers:

- A1 - 5,33...6,85 mm (0,21"-0,27")
- A2 - 7,0...9,14 mm (0,276"-0,36")
- A3 - 8,89...11,43 mm (0,35"-0,45")

The device is rated for operation within the ambient temperature range from -10 to +50°C and the relative air humidity 100% at +35°C.

Specifications

Collimator focusing distance, m, max	200
Lens clear aperture, mm	35
Parallel misalignment, minutes of arc, max	1
Space between optical axis and barrel insert axes, mm	42; 68
Supply voltage of reticle illumination device, V	3(CR1/3N)
Overall dimensions, mm	130x47x111
Mass, kg	0,5

ALTEK

Collimator Sight for Automatic Small Arms KN-A

PK-A is a modern, lightweight and user friendly collimator sight intended for aiming fire at targets under different illumination conditions in the daytime/twilight, at night with decamouflaging signs of the target, and in complete darkness in combination with the night vision goggles. The basic benefit of the device is > 3 times decrease of the aiming time with the increase of the aiming accuracy twice as high. Brightness of the aiming mark is adjusted manually by a 10-position switch. The hermetically tight Al-alloy housing of the device is filled with nitrogen to avoid sweating of optical surfaces during quick temperature changes and is equipped with a bracket for mounting on a side strip of the weapon.

The sight can use CR123A or CR1/3N power sources. PK-A may be equipped with a bushing - blend, which prevents decamouflaging of the shooter, protective caps, waist-belt bag & spare power sources. Intended for mounting on AK assault rifles of all modifications, **PKMN** and other machine guns.

Specifications

Visible magnification, ratio	1
Visible size of the aiming mark, ang. min.	1' (3 cm/100m)
Brightness grade	8
Exit pupil diameter, mm	20
Elevation/azimuth adjustment range, ang.minutes	+/- 1°
Adjustment step	40" (2cm/100m)
Supply voltage, V	3 (CR123A or CR1/3N)
Operation time without battery change hours	150
Mounting seat	universal strip
Overall dimensions, mm	180x80x185
Operation temperature range, °C	from -40 to +50
Mass (without accessories), kg	0.26



Intended to lay the mortar for firing from indirect positions. The sight has deflection and an elevation mechanism with coarse and fine scales. For firing in the dark, the sight reticle and laying mechanism scales are illuminated. In the absence of natural distant aiming points, the sight can be used jointly with the K-1 gun collimator.

Specifications

Magnification, times	2
Field of view, degrees	9
Resolution, sec	25
Exit pupil diameter, mm	4
Exit pupil distance, mm	26
Scale graduation, mils	1/6000
Elevation angle, mils	0-00 to 10-00
Horizontal angle, mils	0-00 to 60-00
Mechanical scale graduation:	
- average, mils	1-00
- accurate, mils	0-01
Sight weight, kg	0.9
Weight (packed), kg	1.95



Ballistic helmets are available in a range of colors and styles with NIJ Level IIIa protection, and also offer the wearer some protection against improvised weapons. Helmet feature fragmentation protection, which is designed to stop the fragments scattered by an exploded bomb. Ballistic helmets are made from an aramid base bound in thermoplastic resin, and each features a fully adjustable internal suspension system. This makes them lightweight and durable, and also comfortable when worn for long periods of time, even in extreme environments.

Gas Mask



Purpose

The gas mask is designed for respiratory protection of face and eyes of wearers from toxic substances (TS), radioactive substances (RS), chemicals, reactive substances (RS) and hazardous biological agents (HBA), during the manufacturing process and the search&rescue operations.

Features

- Ability to set filter canister from both right and left side;
- Stability of sight eye-glasses to the influences of mechanical, thermal and impacts;
- Anti-allergic mask with prolonged use;
- Quick and easy donning;
- Convenient and secure device for receiving water;
- Antistatic mask;

Specifications

Field of view, %, at least	70
Intelligibility of speech, %, at least	90
Guarantee period, years	14
Weight (packed), kg, no more than	0.580



Metal Detetector is designed for the searching and detection of the metal and metallic objects both underground and in water.

Maximum searching depth:	
- coin	20 cm
- can	40 cm
- big-scale metal products	70 cm
Searching regime:	
- minimum searching regime	
- maximum searching regime	
The product regulates avtomaticallu during the exploitation.	
Uninterrupted operation of the product from the power source	16-36 hours.
Consumption of the voltage from the power coorce	50 mA
Weight of the product with suitcase, no more than	6,2 kg
Weight of the product in the operation regime, no more than	2,2 kg

SM Signal Mine



The Signal mine is designed for issuing sound and light signals of white, green and red colors to warn on the enemy soldier entering the mine setting site.

Specifications

Actuation time of SM:	8-10 (min)
sound signal, sec	10-12 (max)
Flight altitude of signal stars, m	5-25
Audibility and visibility	
range of signals, m	500 (max)
Light signals color	white, green, red



Sleeping bag designed for extreme cold weather. Compression bag not included with the 2 piece system. Genuine Sleeping Bag System waterproof cover. Outer green patrol bag is designed to be used in temperatures down to 0°. Inner black bag is designed to be used in temperatures from 0° to -10°C.

Join both bags together by placing black bag inside green and closing all snaps together along each side of zipper. Together, they can be used for temperatures from -20° to -40°C. For added protection from rain, wind, and wet snow, the bivy cover may be attached to the outside of the outermost sleeping bag or can be used alone for warm climates.

Thermos TVN 12 & 36

12L / 36L



Thermos TVN is designed for storing and transportation of foodstuffs.

Capacity, L	12 / 36
Length, mm	344 / 492
Width, mm	240 / 393
Height, mm	423 / 670
Weight, kg	5.885 / 17

7 Kg

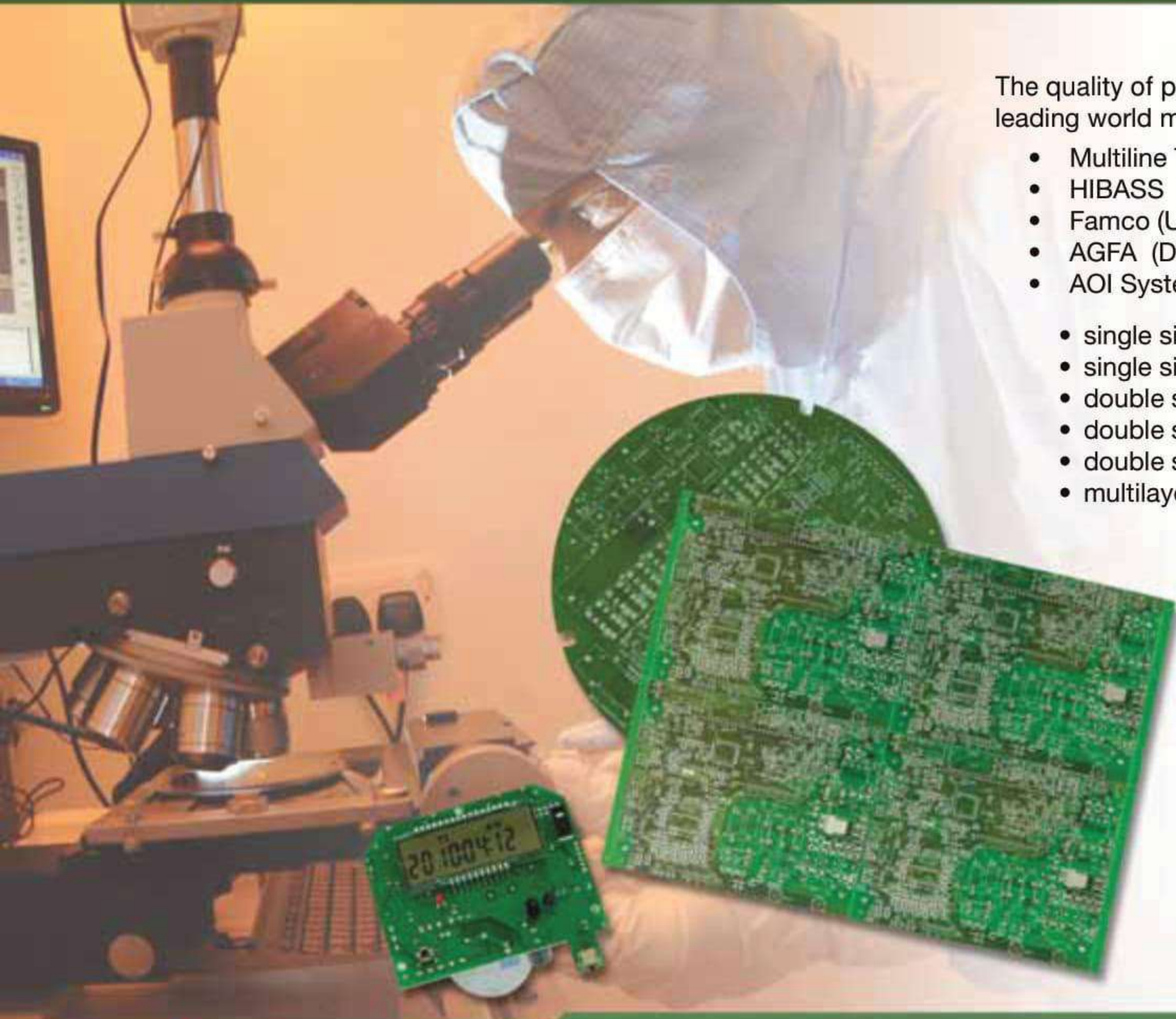


Practice aircraft bomb TAB-7 is designed for training the flight personnel bombing technique. The ammunition design ensures its practical use both in the daytime and at night. Appearing at the bomb impact a smoke cloud & a flash allow visual observation of the drop point.

Specifications

Maximum weight, kg	10
Total length, mm	65
Maximum body diameter, mm	150
Dropping height, m	2000 – 3000
Drop time, s	21-23
Mass of smoke & illuminating substance, g	200

Printed **Circuit Boards** (PCB)



The quality of production is insured by high-end process machinery of the leading world manufacturers:

- Multiline Technologies (USA)
 - HIBASS (England)
 - Famco (USA)
 - AGFA (Danmark)
 - AOI Systems (USA)
 - Pluritec (Italy)
 - Robotic Complex (USA)
 - Tubalex (France)
 - NUBAL (England)
 - Mania Technology (Italy)
- single sided printed circuit boards with masks
 - single sided printed circuit boards with masks & marking
 - double sided printed circuit boards
 - double sided printed circuit boards with masks
 - double sided printed circuit boards with masks & marking
 - multilayer – through 40 layers

Max. size of semi-finished product, mm	457x614
Max. number of layers, pcs	40
Resolution, max, dpi	10 000
Conductors/gap, μm : <ul style="list-style-type: none">• inner ply• facing ply	100 100
Via-hole, μm	100
Thickness of electroplated copper inside a hole, μm (subject to changes upon customer request)	25
Sn/Pb alloy thickness, μm	2-12 (hot air alloy leveling)

40x46 mm

40x46 mm High Explosive Dual Purpose Grenade with M99 (HEDP) is intended to defeat enemy troops and light armoured vehicles at distance up to 400 m. HEDP M99 features Dual Purpose Effects: Armour Penetration 60 mm against hardened steel plate (RHA), and Fragmentation Effect with 5 m Effective Defeat Radius.

Specifications

Calibre (mm)	40
Round mass (g)	252
Grenade mass (g)	200
Explosive mass (g)	42
Round length (mm)	max 106,5
Muzzle velocity (m/s)	78
Fuze arming distance (m)	8 ÷ 30
Precision on vertical target, at the distance of 100 m (m) :	$V_p \leq 0,25, V_v \leq 0,35$
Max range (m)	400
Penetration (mm of steel plate)	60
Lethal radius (m)	≥ 5
Delay time (s)	2.5 ... 3.5
Operating temperature (°C):	-42 ... +63
Weapon compability	RBG 40 mm/6M11; MSGL; M79; MK1; M203; HK69A1; F2000 or other similar weapons

Round 40x46 mm **illuminating** with parachute M04

40x46 mm



Specifications

Calibre (mm)	40 mm
Round mass (g)	250
Grenade mass (g)	200
134	134
Delay time (s)	2.5 ... 3.5
Burning time of star (s)	20
Light intensity of star (cd)	80 000
Middle wave length (mm)	587±5
Height fired at 85° (m)	182±30
Operating temperature (°C):	-30 ... +50
Weapon compability	RBG 40 mm/6M11; MSGL; M79; M203; HK69A1; F2000 or other similar weapons

It is designed to defeat armored and motorized equipment, as well as enemy troops in field shelters and fortifications.

Round Characteristics

Grenade launcher caliber, mm	40
Warhead caliber, mm	93
Round weight, kg	2,600
Grenade weight, kg	2,200
Propellant charge weight, kg	0,390
Muzzle velocity, m/s	112
Direct fire range, m	250
Direct sighting range, m	300
Armor penetration, mm	500
Safe operational temperature range, °C	-40 ... 50
Firing rate, shots/min	4 ... 6

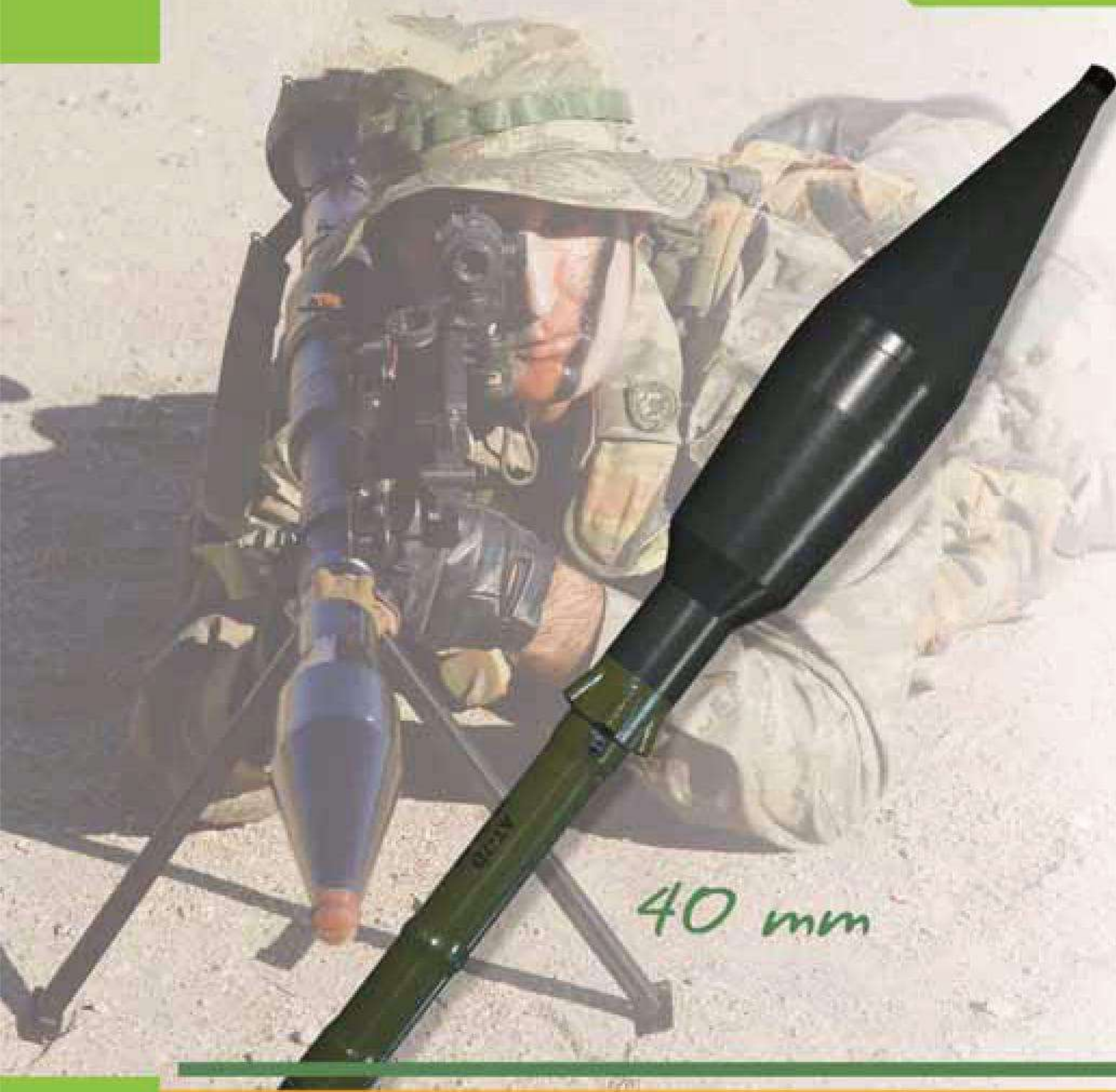
Weapon System

TƏG-7V2, RPG-7V portable antitank grenade launchers

Packing

Dimension, mm	899x498x294
6 rounds in wooden case	
Gross weight, kg	38

40 mm



Round AT-7V IN is intended for training.

Round Characteristics

Grenade launcher caliber, mm	40
Training warhead caliber, mm	93
Round weight, kg	2,600
Grenade weight, kg	2,200
Propellant charge weight, kg	0,390
Muzzle velocity, m/s	112
Safe operational temperature range, °C	-40 ...+50
Firing rate, shots/min	4...6

Weapon System

TƏG-7V2, RPG-7V portable antitank grenade launchers

Packing

Dimension, mm	899x498x294
6 rounds in wooden case	
Gross weight, kg	38



40 mm

It is designed to defeat armored vehicles including fitted with ERA, as well as motorized equipment and enemy troops in field shelters and fortifications.

Round Characteristics

Grenade launcher caliber, mm	40
HEAT warhead caliber, mm	93
Precursor warhead caliber, mm	50
Round weight, kg	3,290
Grenade weight, kg	2,900
Propellant charge weight, kg	0,390
Muzzle velocity, m/s	90
Direct fire range, m	220
Direct sighting range, m	250
Armor penetration after ERA, mm	>500
Safe operational temperature range, °C	-40 ... 50
Firing rate, shots/min	4 ... 6

Weapon System

TƏG-7V2, RPG-7V portable antitank grenade launchers

Packing

Dimension, mm	1136x474x307
6 rounds in wooden case	
Gross weight, kg	50



40 mm

The round APTB-7V is intended for destroying enemy troops in the open and in shelters, enemy emplacements, stone, concrete and brick fortifications, light armored and unarmored equipment.

Round Characteristics

Grenade launcher caliber, mm	40
Warhead caliber, mm	103
Round weight, kg	4,310
Grenade weight, kg	4,020
Propellant charge weight, kg	0,390
Muzzle velocity, m/s	70
Direct fire range, m	150
Max. range, m	1000
Safe operational temperature range, °C	-40 ... 50
Firing rate, shots/min	4 ... 6

Weapon System

TƏG-7V2, RPG-7V portable antitank grenade launchers

Packing

Dimension, mm	760x445x370
6 rounds in wooden case	
Gross weight, kg	48,5

ALTEK

Matador



Anıttepe Mahallesi Gazi Mustafa Kemal Bulvarı No : 149/C
ÇANKAYA/ANKARA

alteksavunma@hotmail.com

+90 312 232 00 60 +90 532 517 77 81 +90 532 796 90 53

Performance

Max Speed-Road (km/hr)	100-120 (tyre limited)
Turning Radius (m)	18
Road Range	700
Engine	MAN (176 kW AND 925 Nm)
Transmission	ZF 12 SPEED SEMI-AUTOMATIC
Transfer Box	MAN 3 SPEED
Diff Locks	Air Operated Front, Center and Rear
Brakes	Pneumatic Drum (ABS ready)
Tyres	1400 R 20
Air-conditioner	15 kW Standard
Electrical System	24 V
Protection-KE (Standard)	7.62x54 mm RB 32 API&.50 cal API (equivalent to STANAG 4569, level III)
Protection-Mine	Triple anti-tank mine (21 kg TNT under any wheel) without hull rupture or fatal occupant injuries. Double anti-tank mine (14 kg TNT under the hull), without hull rupture and fatal occupant injuries (Higher than STANG 4569 level 4)

Specifications

Crew	2+12
Combat Weight (kg)-GVM	15 000
Power-to-weight-Ratio@ GVM	11.7 kW/TON (16.3 kW/ton at Kerb Weight)
Kerb Weight (kg)	10 800
Payload (kg)	4 500
Ground Clearance (mm)	420 (365 under differential)
Wheel Base (mm)	4 170

Options

Central Tyre Inflation System (CTIS)
Run Flat Inserts (RFI)
ABS Brakes
BC Overpressure System
Auxiliary Power Unit

Radios and Intercom System
Long Range Fuel Tank
Winch (8 ton)
Various Weapon Stations

Marauder



Anıttepe Mahallesi Gazi Mustafa Kemal Bulvarı No : 149/C
ÇANKAYA/ANKARA

alteksavunma@hotmail.com

+90 312 232 00 60 +90 532 517 77 81 +90 532 796 90 53

Performance

Max Speed-Road (km/hr)	100-120 (tyre dependent)
Turning Radius (m)	16.5
Road Range	700
Engine	MAN (176 kW AND 925 Nm)
Transmission	ZF 12 Speed Semi-automatic
Transfer Box	MAN 3 Speed
Diff Locks	Air Operated Front, Center and Rear
Brakes	Pneumatic Drum (ABS ready)
Tyres	MICHELIN XZL 365/85 R20
Air-conditioner	15 kW Standard
Electrical System	24 V
Protection-KE (Standard)	7.62x54 mm RB 32 API&.50 cal API (equivalent to STANAG 4569, level III)
Protection-Mine	Double anti-tank mine (14 kg TNT under any wheel) without hull rupture or fatal occupant injuries. Single anti-tank mine (7 kg TNT under the hull), without hull rupture and fatal occupant injuries (STANG 4569 level 3b and 4a)

Specifications

Crew	2+8
Combat Weight (kg)-GVM	15 000
Power-to-weight-Ratio@ GVM	11.7 kW/ton (17.8 kW/ton at Kerb Weight)
Kerb weight (kg)	9 900
Payload (kg)	5 100
Ground Clearance (mm)	420 (365 under differential)
Wheel Base (mm)	3 500

Options

Central Tyre Inflation System (CTIS)
Run Flat Inserts (RFI)
ABS Brakes
BC Overpressure System
Auxiliary Power Unit

Radios and Intercom System
Long Range Fuel Tank
Winch (8 ton)
Various Weapon Stations

ALTEK

Tactical scope 4-14x50



Specifications

Magnification	4 - 14x
Objective diameter (mm)	50
Field of view (degrees)	4.5 - 1.5
Exit pupil diameter (mm)	12.5 - 3.6
Eye relief (mm)	90
Diopter correction (dpt)	±4
Twilight factor	14.2 - 26.5
Transmission	90%
Focal plane Plan	II
Tub diameter (mm)	30/40
Click value / 100 m	1/4 MOA
Parallax adjustment	(Focus)
Length (mm)	385
Weight (g)	900/1050

ALTEK

Tactical scope 6 - 24x50



Specifications

Magnification	6 - 24x
Objective diameter (mm)	50
Field of view (degrees)	3 - 1.05
Exit pupil diameter (mm)	8.3 - 2.1
Eye relief (mm)	85
Diopter correction (dpt)	±4
Twilight factor	17.3 - 34.6
Transmission	90%
Focal plane Plan	II
Tub diameter (mm)	35
Click value / 100 m	1/4 MOA
Parallax adjustment	(Focus)
Length (mm)	415
Weight (g)	960



The 60 mm High-Explosive long range Mortar Bomb is intended for engagement of troops in open or in light shelters. The ammunition is designed for use with the 60 mm smooth-bore long range mortars meeting NATO standards, including: The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	60 mm
Maximum range	4000 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10 years

TECHNICAL DATA

Length of Mortar Bomb (fuzed)	351 mm
Weight of Mortar Bomb (fuzed)	1.84 kg
Weight of Explosive Charge	0.3 kg

ELEMENTS OF MORTAR BOMB

Fuze	M-6H or AZ111A2
Body	Cast iron
Explosive Filling	TNT
Number of Charges	1+6 Increment charges

BALLISTIC DATA

Muzzle Velocity (max)	172±7 m/s
Maximum pressure	611 kg/cm ²



The 60 mm Practice long range Mortar Bomb is intended for training. The ammunition is designed for use with the 60 mm smooth-bore long range mortars meeting NATO standards, including:
The ammunition is safe in storage and handling and ensures the reliable performance of the mortar system in all weather conditions.

BASIC CHARACTERISTICS

Caliber	60 mm
Maximum range	4000 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

ELEMENTS OF MORTAR BOMB

Fuze	Dummy
Body	Cast iron
Number of Charges	1+6 Increment charges

TECHNICAL DATA

Length of Mortar Bomb	351 mm
Weight of Mortar Bomb	1.84 kg

BALLISTIC DATA

Muzzle Velocity (max)	172±7 m/s
Maximum pressure	611 kg/cm ²

ALTEK

5.56 mm **Assault Rifles** EM-14

The EM-14 assault rifles are chambered for 5.56x39 mm round and have folding buttstocks. Forearm, magazine, buttstock and pistol grip are made of high strength plastic. Protective coatings ensure excellent corrosion resistance of metal parts. There is a dove-tail side rail for optical and night sights.



5.56x45 mm
EM14



5.56x45 mm
EM14

The design of the EM-14 makes it possible to attach an underbarrel grenade launcher or a knife-bayonet. Muzzle brake provides for cyclic fire accuracy and further reduces muzzle climb and burst recoil.

Specifications

Cartridge, mm	5.56x39
Muzzle velocity, m/s	860
Sighting range, m	1000
Cyclic rate of fire, rounds/min	660
Combat rate of fire, rounds/min single shot fire short burst fire	40 100
Fire control	Semi auto, full auto
Weight, kg rifle with loaded magazine rifle with empty magazine	3.9 3.6
Overall length, mm	945
Barrel length, mm	415
Magazine capacity, rounds	30

ALTEK

Linking Machines for 23x152B mm Ammunition



Manually operated Linking Machine is intended for linking 23x152B mm Cartridges for 2A7 and 2A14 Automatic Guns. The machine may be mounted on its packing or on the table.

Specifications

Ammunition	23x152B mm Rounds
Used with systems	2A7, 2A14 Automatic Guns
Operation	Manual
Output / cartridges per hour	1800x2400
Machine dimensions, mm	461x944x561
Packing	in Wooden case
Case dimensions, mm	470x800x266
Net weight, kg	8.3

ALTEK

Belt & Boxes for 23x152 mm Ammunition



23x152mm

Metal 23x152 mm ammunition belt string is designed for automatic cannon 2A7 and 2A14. The belt consists of metal links of “**crab**” type. The metal links are joined with a cartridge. The belts are fed with cartridges by using a special machine. The life time of a cartridge belt ensures its no less than 16 times passing through the weapon’s automatic system. The belts are packed in boxes with capacity of 50 cartridges.

12.7x99 mm
.50 BMG NATO

This cartridge is used against personnel and unarmored targets. The cartridge is designed for firing weapons chambered for the 12,7 mm NATO cartridge.

Specifications

Caliber, mm	12,7x99
Muzzle velocity, V_{25} , m/s	887
Fire consistency at 549 m range (R_{50}), mm	30,48
Max mean gas powder pressure, P_{max} , bar	3,791
Bullet weight, g	42,31
Cartridge weight, g	114
Powder charge weight, g	15,10 (NCD powder)
Cartridge length, mm	138,43



it is the can gives colored smoke and used for communication, signalling and demonstration. When drawing the pulling ring, colored smoke mixture is ignited by impact capsule.

Specifications

Weight	170 g
Burning time	min 60 sec
Smoke color	yellow, green, red, violet

ALTEK

Automatic **grenade launcher** AGK-30



30x29 mm

Automatic grenade launcher AGK-30 is an infantry weapon intended for annihilation of covered and uncovered live forces at distances up to 1700 m.

Reliability of its functioning in various climates and terrains was confirmed by strict testing methods, in accordance with military standards.

Complete set

- Automatic grenade launcher AGK-30
- Tripod
- Aiming device NSBG-1
- 6 ammunition belts
- 3 ammunition boxes
- Tripod sling
- Carrying bag
- Spare parts
- Tools and accessories
- Handling and maintenance manuals

AGK-30 can only fire bursts, but the rate of fire can be from 50 to 400 grenades per minute.

The interior of the barrel is chrome plated, which provides long service life and precision of the weapon.

The weapon is fed from a belt with the capacity of 29 grenades, placed in the ammunition box. The launcher can fire grenades with anti-personnel and training projectiles.

The design of the tripod enables quick change of combat position. Depending on tactical requirements and at the customer's request, the automatic grenade launcher can be mounted to various types of combat vehicles.

Optionally, at customer's request, the set can include:

- Belt filler; quantity as per customer's request or manufacturer's recommendation: 1 belt filler per 3 launchers
- Rectification sight; quantity as per customer's request or manufacturer's recommendation: 1 sight per 3 launchers

Caliber (mm)	30
Capacity of the ammunition box (rounds)	29
Barrel length (mm)	300
Total length (mm)	1.380
Weight (kg)	24
Weight of tripod (kg)	8.5
Rate of fire (rds/min)	50-400
Maximum effective range (m)	1700

ALTEK

YIRTICI **sniper rifle** system Cal. 7.62x54 R



Intended to engage appearing, moving, camouflaged and open single targets. The rifle is a gas-operated weapon. The barrel is locked by a rotating bolt. Cartridges are fed from spring-loaded box magazine.

7.62x54 R

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ALTEK

YIRTICI **sniper rifle** system Cal. 7.62x54 R

The gas regulator changes the recoil speed of the moving parts in case of their insufficient recoil thereby increasing the reliability. The rifle is fitted with a sniper optical sight. A night sight may be given to fire at night or in twilight.

To fire the rifle, special-purpose sniper cartridges with bullets of increased consistency are used. Standard cartridges can also be used.

Specifications

System	semi-automatic
Caliber	7,62x54 mm
Muzzle velocity	830 m/s
Barrel length	620 mm
Effective range	1000 m
Overall length: buttstock folded buttstock open	951 mm 1185 mm
Weight, kg	6,0 kg
Magazine capacity	10 rds, detachable
Operational temperature	±50°C

7.62x54 R

ALTEK

122 mm **Full / reduced** charge round with
HE Fragmentation projectile



The rounds are used against guns/mortars, stationary and maneuvering armored combat vehicles and personnel, fire assets, fortifications, and observation posts.

Specifications

Type of charge	reduced / full
Muzzle velocity, m/s:	565 / 690
Weight, kg: round projectile explosive	28,2 / 29,5 21,760 3,610
Maximal effective range, km	15,3
Operational temperature limits, °C	±40
System	D-30 howitzer, 2S1 self-propelled howitzer

122 mm **Full / reduced** charge round with Practice HE projectile



122 mm

Intended for practice firings to develop practical skills in accurate firing when there is no need for destructive and casualty effect of the projectile on the target.

Specifications

Type of charge	reduced / full
Muzzle velocity, m/s:	565 / 690
Weight, kg: round projectile	28,2 / 29,5 21,760
Maximal effective range, km	15,3
Operational temperature limits, °C	±40
System	D-30 howitzer, 2S1 self-propelled howitzer



Body with rotary (driving) band

Specifications

Calibre	152 mm
Mass	37,414 kg
Lenght	576,6-3,0 mm
System	D-20 gun-howitzer, 2S3M self-propelled howitzer

152 mm

152 mm Brass Cartridge Case for D-20 gun-howitzer

Weight	7,50 kg
Material	brass
Total height	547,5-1,2 mm
Flange dia.	Ø170,2-0,53 mm
Mouth internal dia.	Ø154+0,26 mm

152 mm Brass Cartridge Case for 2A36 gun

Weight	10,7 kg
Material	brass
Total height	857-3,5 mm
Flange dia.	Ø223 mm
Mouth internal dia.	Ø190 mm

152 mm



ALTEK

Polymer magazines (5.45x39 mm / 7.62x39 mm)



5.45x39 mm and 7.62x39 mm magazine bodies and followers are injection molded from strong, lightweight transparent polymer. The aggressive horizontal ridges provide increased gripping surface for insertion and extraction of the magazine in wet or muddy conditions.

The springs are precision wound using heat-treated chrome silicon wire. The result is quality, consistency, durability and reliability.

- Firearm Fit: AK 74/ RPK 74
- Caliber: 5.45x39 mm / 7.62x39mm
- Material: Transparent polymer
- Loading Style: Double Stacked

5.45x39 mm
7.62x39 mm



KV-16 primer is designated for use in 5,45x39 mm cartridges.

Mass: 0.22 g **Diameter:** 5.06-0.05 **Height:** 2.7-0.3

KV-26 primer is designated for use in 9x18 mm / 9x19 mm cartridges.

Mass: 0.21 g **Diameter:** 5.06-0.05 **Height:** 2.79-0.3

KV-24 primer is designated for use in 7,62x39 mm cartridges.

Mass: 0.24 g **Diameter:** 5.54-0.04 **Height:** 2.65-0.3

KV-27 primer is designated for use in 7,62x54R mm rifle cartridges.

Mass: 0.38 g **Diameter:** 6.54-0.04 **Height:** 2.92-0.35

KV-25 primer is designated for use in 12,7x108 mm / 14,5x114 mm cartridge

Mass: 1.18 g **Diameter:** 9.07-0.05 **Height:** 4.15-0.35

5,45x39 mm

7,62x39 mm / 7,62x54R

9x18 mm / 9x19 mm

12,7x108 mm

152 mm Full / reduced charge round with HE Fragmentation projectile

Type of charge	reduced / full
Muzzle velocity, m/s:	511 / 655
Weight, kg: round projectile explosive	60 / 56 43,56 5,93
Maximal firing range, km	17,4
Operational temperature limits, °C	±40
System	D-20 gun-howitzer, 2S3M self-propelled howitzer

152 mm Full / reduced charge round with Practice HE projectile

Type of charge	reduced / full
Muzzle velocity, m/s:	511 / 655
Weight, kg: round projectile	60 / 56 43,56
Maximal firing range, km	17,4
Operational temperature limits, °C	±40
System	D-20 gun-howitzer, 2S3M self-propelled howitzer

152 mm

125 mm Stub of Partially Combustible Case of Round for D-81 gun

Weight	3,4±0,15 kg
Material	steel
Total height	140 mm
Flange dia.	Ø171,96-0,53 mm
Mouth internal dia.	Ø156,1+0,70 mm



125 mm

100 mm Steel Cartridge Case For MT-12 Anti-Tank Gun

Weight	8,243±0,64 kg
Material	steel
Total height	913-2,2 mm
Flange dia.	Ø147,46-0,53 mm
Mouth internal dia.	Ø100+0,46 mm



100 mm

It ensures by 2 ...3 times more fast shooting at short and average distances. It is possible to conduct shooting at night in combination with the night vision goggles of the type NV/G-14, night vision monocular of the type NV/M-19. It is free from parallax. The aluminium tight case of the closed type is filled with nitrogen. It can be mounted on AK submachine guns of all modifications and other automatic small arms which has a guide strip of the type «Picatinny rail MIL-STD 1913» by means of a transition bracket. In view of small overall dimensions it is recommended to mount it on submachine guns of various modifications.

Specifications

Visible magnification, ratio	1
Aiming mark brightness gradation number	11
Elevation/azimuth adjustment range, ang. deg., min.	±1
Power source one lithium element of the type	CR2032
Rated voltage, V	3
Continuous operation time without replacement of the power source (at maximum brightness of the aiming mark), h, min.	
Overall dimensions, mm	72x76x55
Weight of the Sight including the power source, g. max.	180
Operating temperature range, °C	-40... + 55
High Gloss available	



R-SM

A100 Monocular Goggle

A100 Model Night Vision Monocular offers a high resolution image intensified night vision in a compact, lightweight and yet rugged design. It features a single tube and single-eyepiece configuration. The new concept of a single-eye format night vision monocular is based on independent use of each eye. One eye is equipped with a night vision device while the other eye remains free and uncovered.

A100 Monocular Goggle has a major advantage when compared to standard dual eye goggle for instant adaptation of the user to ambient light viewing after the goggle is removed from the eye. Because of the uncovered eye, the user never experiences the temporary night blindness problem. Moreover, during night time A100 can be used as a rifle scope while it is mounted together with day sight optics.

Specifications

Magnification	40°
Field of View	40°
Focus Range	25 cm to infinity
Eye Relief	25 mm
Weight (without battery)	Less than 350 g
Environmental Operating Temperature	-51°C to +55°C
Storage Temperature	-51°C to +71°C
Immersion 1 m for 30 minutes	
All tolerances are within $\pm 10\%$	

Optional Items:

- Daylight Training Filter / Sacrificial Filter
- Facemask Assembly
- Shipping/Storage Case
- Soft Carrying Case
- Eyecup
- Lens Cap, Objective
- Battery, AA Alkaline (2 ea.)
- Lens-Cleaning Kit
- Demist Shield
- Operator's Manual



100 mm Round with **M82 HE** Fragmentation Projectile



The 100 mm round with HE fragmentation projectile is a unitary round. Intended for use against manpower, field fortifications, field engineer constructions, fire position of artillery pieces, mortars, launchers and infantry fire weapons of the enemy.

Specifications

Weight, kg round projectile	28,9 16,7
Length of round, mm	1282
Muzzle velocity, m/s	700
Maximum firing range, km	8,2
Safe operating temperature range, °C	from -40 to +50

100 mm Round with M82 Practice HE Projectile

The 100 mm round with M82 HE Practice projectile is a unitary round. It is a live round with practice warhead and is used for training of personnel and live fire against targets where it leaves traces of impact. The practice round possesses the same dimensions, weight and ballistic characteristics as a live ammunition. The use of practice rounds preserves the practice targets at firing ranges, reduces the probability of starting a fire and increases the safety while conducting demonstrative and training firing.

100 mm Round with M88 Heat-T Projectile



The 100 mm round with M88 Heat-T projectile is a unitary round. Intended for use against armored targets, manpower, fortifications, engineer constructions, fire positions of artillery pieces, mortars and launchers.

Specifications

Weight, kg round projectile	23,1 9,5
Length of round, mm	1282
Muzzle velocity, m/s	975
Maximum firing range, km	5,95
Safe operating temperature range, °C	from -40 to +50

100 mm Round with M88 Practice Heat Projectile

The 100 mm round with M88 Heat practice projectile is a unitary round. It is a live round with practice warhead and is used for training of personnel and live fire against targets where it leaves traces of impact. The practice round possesses the same dimensions, weight and ballistic characteristics as a live ammunition. The use of practice rounds preserves the practice targets at firing ranges, reduces the probability of starting a fire and increases the safety while conducting demonstrative and training firing.



125 mm HEAT-T M88P1 round is with separate cartridge loading. It is designed for destroying the enemy manpower and equipment on open ground or in field shelters, fighting the artillery and anti-missile systems, destroying field defense and engineering equipment, making passages in mine fields and defense wirings.

Specifications

Weight, kg projectile charge explosive	23 10 3,28
Muzzle velocity, m/s	850
Maximum firing range, km	12,2
Safe operational temperature range, °C	from -30 to +50

125 mm HEAT-T Practice Round for Tank Guns T-72 and T-90



125 mm HEAT-T practice round is with separate cartridge loading. It is live round with practice warhead and is used for training of personnel and live fire against targets where it leaves traces of impact. The practice round possesses the same dimensions, weight and ballistic characteristics as a live ammunition. The use of practice rounds preserves the practice targets at firing ranges, reduces the probability of starting a fire and increases the safety while conducting demonstrative and training firing.

Specifications

Weight, kg projectile charge	23 10
Muzzle velocity, m/s	850
Maximum firing range, km	12,2
Safe operational temperature range, °C	from -30 to +50