

SPECIAL PRODUCTION PRODUCT CATALOGUE

- **Ammunition For Small Arms**
- **Ammunition For Medium Caliber Automatic Guns**
- **RPG-7 Rounds**
- **SPG-9 Rounds**
- **40x46mm Grenades**
- **Mortar Bombs**
- **Ammunition For Aviation Weapons**
- **Aviation Bombs**
- **Tank Ammunition**
- **Ammunition For Artillery Systems**
- **Training Aids**
- **Weapons**
- **Radiojammers**
- **Military Clothes**
- **Optical Devices**
- **Border Control & Surveillance Systems**
- **Explosive Detection Devices**
- **Spare parts**
- **Land Mines**
- **Marine Mines**

LIST OF MILITARY PRODUCTS:

AMMUNITION:

AMMUNITION FOR SMALL ARMS:



- 7.62x51mm (BALL) M80
- 12 gauge Shotgun Ammunition for Law Enforcement and Security Forces
- 7,62x39mm Cartridge
- 7,62x54mm Cartridge

AMMUNITION FOR MEDIUM CALIBER AUTOMATIC GUNS:



- 23x152mm HEI-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm API-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm Round with HEIT Inert Projectile for ZU-23-2 and ZSU-23-4 Gun Mounts
- 30x165mm Round with HEI Projectile for Automatic Guns 2A42, 2A38 and 2A72

RPG-7 ROUNDS:



- OG-7V High-Explosive Round
- PG-7V Heat Round
- GTB-7VS Thermobaric Round
- KO-7V Hollow-Charge Round
- OFG-7V High-Explosive Round
- PG-7VL Hollow-Charge Round
- PG-7VM Hollow-Charge Round
- PG-7VT Hollow-Charge Round With PG-7T Tandem Antitank Grenade



- PG-9V High-Explosive Round
- PG-9VN High-Explosive Round
- ATR-9 Hollow-Charge Round with ATG-9 Antitank Grenade
- TATR-9V Hollow-Charge Round with Tandem Antitank Grenade TATG-9
- TBFR-9 Round with Thermobaric and Fragmentation Grenade TBFG-9

40x46mm GRENADES:



- 30mm High-Explosive Round 10-30 (VOG-17) for Automatic Grenade Launcher AGS-17
- 40mm High-Explosive Grenade VOG-25 for Under-Barrel Grenade Launcher GP-25
- 40x46mm High-Explosive Bouncing Air Burst Grenade AR 466
- 40x46mm High-Explosive Grenade AR406
- 40x46mm Practice Grenade AR407 TP
- 40x46mm Anti-diver Grenade AR 476 "AZIMUTH"
- 40x46mm Round with Smoke Grenade
- 40x46mm Round with Sound&Flash Grenade
- 40x46mm Round for grenade launchers UBGL-M family, M 203 type

MORTAR BOMBS:



- 81mm Mortar Bomb
- 81mm Thermobaric Mortar Bomb
- 82mm High-Explosive Mortar Bomb
- 120mm High-Explosive Mortar Bomb
- 120mm Mortar Round with Thermobaric Warhead



- 23x115mm HEI Round with High-Explosive Incendiary Projectile for GSh-23 Aircraft Gun
- 30x165mm AP Rounds to GSh-30, GSh-301, GSh-30K and GSh-6-30 Guns
- 30x165mm TP-T Rounds to GSh-30, GSh-301, GSh-30K and GSh-6-30 Guns
- 57mm S-5KO PRACT Aviation Unguided Rocket
- 57mm S-5KO Aviation Unguided Rocket
- 57mm S-5KP PRACT Aviation Unguided Rocket
- 57mm S-5KP Aviation Unguided Rocket
- 80mm S-8KOM Aviation Unguided Rocket
- 80mm S-8KOM PRACT Aviation Unguided Rocket
- UAR 57-TB Aviation Unguided Rocket
- UAR-80 Unguided Aircraft Rocket With Heat/Fragmentation Warhead

AVIATION BOMBS:



- P-50-75N Practice Bomb
- OFAB 100-120 High-Explosive Fragmentation Bomb
- OFAB 100-120PF Pre-Fragmented Bomb
- OFAB 100-130M2000 Pre-Fragmented Bomb
- OFAB 250-270 Aerial General Purpose Bomb
- OFAB 250-270M03 Pre-Fragmented Bomb
- FAB 500M-62 High-Explosive Bomb
- BETAB 500 - Concrete-piercing Air Bomb
- FUZE AMV AE2
- FUZE AVU for air bombs OFAB 100-120, OFAB-250-270, FAB-500M
- FUZE AVU-ET for air bombs OFAB 100, OFAB-250, FAB-500M

TANK AMMUNITION:



- 100mm UOF-412 Round With OF-412 High-Explosive Projectile
- 100mm UBK4 Round With BK5 FIN Stabilized Shaped Charge Projectile
- 115mm 3UOF6 Round With 3OF18 High-Explosive Projectile with Increased Combat Range for U-5TS Tank Gun
- 125mm 3VOF22 Round With 3OF19 High-Explosive Projectile
- 125mm 3VOF36 Round With 3OF26 High-Explosive Projectile
- 125mm Round 3VBM-7ARMOR-PIERCING FIN-STABILIZED Discarding Sabot Tracer

ARTILLERY AMMUNITION:



- 122mm Rocket For BM-21 "GRAD" / RM-70
- 122mm Round With High-Explosive Shell For HOWITZER D-30 And Self-Propelled HOWITZER 2S1
- 130mm High-Explosive Round With Full Charge For M46 Gun
- 130mm High-Explosive Round With Reduced Charge For M46 Gun
- 152mm High-Explosive Round with Full Charge for D-20, ML-20
- 152mm High-Explosive Round with Reduced Charge for D-20, ML-20



- Complex Simulator For Firing Practice, Protection And Tactical Training USATS 2002
- Simulator System For Antitank Guided Missile Complexes "FAGOT" & "KONKURS"
- Anti-aircraft Missile Complex Training Simulator "IGLA" & "STRELA"
- SPM-100 Flare Parachute Target
- 3P10-B Air Target Imitator In Pursuit Engagements
- 23mm Auxiliary Barrels of NV Series
- 23mm NV-22 Self-Loading Auxiliary Barrel
- 122mm Flare Target Rocket M-21 ROM
- 122mm Flare Target Rocket M-21 SIM
- 122mm Round With VPVM-ZA Mobile Aerial Target
- 122mm Round With VPVM-ZRB Mobile Aerial Target
- 122mm Round With VPVM-ZRU Mobile Aerial Target
- PUS-7M Firing Practice Attachment
- PUS-9M Firing Practice Attachment
- Fire Control Calculator for BM-21 "Grad"

WEAPONS:

- 7,62mm Machine Gun PK
- 7,62mm Machine Gun RPK
- 7,62mm Tank Machine Gun PKT
- Hi-Power Semi-Automatic Pistol
- Military & Police Pistols
- ARMBLAST
- RPG-7 Portable AT Rocket Launcher
- RPG-22 "NETTO" Anti-tank Rocket Grenade
- SPG-9DNM Antitank Recoil-less Gun
- ROG-22
- 40mm Underbarrel Grenade Launcher GP-25 "KASTYOR"
- 40x46mm 40 SGL NATO Stand Alone Grenade Launcher
- 40x46mm 40 UBGL Underbarrel Grenade Launcher
- Anti-Aircraft Gun ZU-23-2
- 81mm Mortar
- 82mm Mortar
- 120mm Mortar
- Defensive Hand Grenade RGO-78
- Offensive Hand Grenade RGD-5
- Offensive Hand Grenade RGN-86
- Smoke Hand Grenade RDG-2



RADIOJAMMERS:



- Mobile Jammers
- IED Portable Jammers
- Backpack IED Jammer
- Jammers against illegal usage of mobile phones on prisons
- Artillery Radiojammers

MILITARY CLOTHES:



- Ballistic Helmet M97S / M97P
- Ballistic Shield 500 x 900 mm
- Ballistic Vest "M-MD"
- Protective Panel LEVEL IV
- Tactic Shoes
- Uniform DRAGON TACTICAL

OPTICAL DEVICES:



- Aviator Night Vision Goggles "Diana A"
- Dual Position Binocular "Diana M50"
- Single Tubes Night Vision Binoculars "DIANA" 3X, 5X, 6X, 10X
- Single Tube Night Vision Goggles "DIANA"
- Twin Tube Night Vision Goggles "DIANA TT"
- Wide Range Collimator Sight WRCS-28
- 1 OP 8 Optical Sight
- 2CL, 4CL
- 10P8
- K10 T Collimating Sight
- KVL-T Optical Collimator
- SUOM System for Mortar Fire Control (LaGo-system)
- Laser Range Finder
- MK-30 Collimating Sight
- MK-30 MP1 Collimating Sight
- MKP1, MKP3, MKP4
- MKP-2 Prismatic Collimating Sight
- MKP-3 Prismatic Collimating Sight
- MOCO-1
- MOSO Optical Sight
- MUKG-7
- MUM Standard Mortar Sight
- Optical Devices 4x24, 6x42, 4x32
- PGO-7V6M Grenade-launcher Optical Sight
- PGO-K9 Grenade Launcher Combined Optical Sight
- THP
- TVN-M2 Night Vision Device for driving of armored vehicles and tanks



BORDER CONTROL & SURVEILLANCE SYSTEMS:



- TERMA
- 3-Channel Vision System
- Mobile Universal System for Surveillance "MUSON"

EXPLOSIVE DETECTION DEVICES:



- SNIFFEX



FOR ARMoured VEHICLES:

- Tanks: T-55; T-62; T-72
- APC: BTR-60; BTR-80; BMP-1; BMP-2; MTLB; BRDM
- Self-propelled Howitzers: 2S1 "GVOZDIKA"; 2S3 "AKATSIYA"

FOR MILITARY TRUCKS:

- ZIL; KAMAZ; UAZ, MAZ

FOR SMALL ARMS:

- Assault Rifles: AK-47; AK-74;
- Machine guns: PK; PKT; RPK, NSV; NSVT; DShK;

FOR LIGHT AND HEAVY ANTI-TANK GRENADE LAUNCHERS:

- RPG-7; SPG-9



FOR ARTILLERY SYSTEMS:

- Anti-aircraft gun ZU-23-2; ZSU "SHILKA", S-60
- Towed guns & howitzers: MT-12; M-30; D-20; D-30; M-46

LAND MINES:

- Anti-Helicopter Mine 4AHM-100
- Anti-Helicopter Mine AHM-200-1
- Anti-Helicopter Mine AHM-200-2
- Anti-Tank Mine PTM-25
- Anti-Tank Mine with Explosive Formed Projectile DC/EFP-0.4
- Anti-transport Mine ATM-100
- Extraction Grenade EG-01
- Flash & Sound Hand Grenade LS-G-150
- Linear Shaped Charges
- Non-contact Fuse for Anti-tank Mines NV-PTM-C
- Non-contact Fuse for Anti-tank Mines NV-PTM-N
- Non-Contact Fuse NV-PTM2
- Remote Control Ignition System FC S-02
- Remote-controlled Fuse for Anti-Tank Mines NV-PTM-RC
- Shaped Charge Frame KR-500
- Target Explosive Device
- Tear-gas Grenade TGG-1
- Universal Remote-Controlled Fuse



MARINE MINES:

- Claymore-Type Effector
- Diver Recall System DRS-3
- Equipment for Arrangement of Independent Underwater Effectors - "OMAR-MC"
- Ground Mine PDM-120
- Ground Mine PDM-250
- Hydro-Acoustic System for Control





- Hydro-Acoustic Transmitter "PARROT"
- Hydro-Acoustic Underwater Fuse
- Independent Underwater Effector PDM-1B
- Independent Underwater Effector PDM-1M
- Independent Underwater Effector PDM-2B
- Independent Underwater Effector PDM-2I
- Independent Underwater Effector PDM-2M
- Magnetic Field Monitoring and Measuring Station KIMS-P
- Marine Explosive Part with Hydro-Acoustic Control MEP-2RC
- Marine Explosive Unit with Hydro-Acoustic Control MEP/8/-RC
- Multiple Underwater Response System MURS-6/25
- Naval Controlled Mine PDM-2C-2
- Naval Controlled Mine PDM-2C-3
- Naval Controlled Mine PDM-2H
- Naval Controlled Mine PDM-3
- "OMAR-C" Equipment
- Portable Sonar for Divers
- Side-Scan Sonar "KOSAT"
- Sonar for Circular Observation "SON-16/24"
- Sonar for Sector Observation "SON-5D"
- Underwater Demolition Charge MDM/5/
- Underwater Demolition Charge MDM/7/
- Underwater Demolition Charge MDM/7/-N
- Underwater Demolition Charge MDM/8/-EFP/0.4/-1
- Underwater Demolition Charge MDM/8/-EFP/0.4/-2
- Underwater Demolition Charge MDM/8/-EFP/0.4/-3
- Underwater Grenades UWG-0.5UWG-0.75UWG-1.0
- Underwater Time Delay Fuse with "NONEL" - PPZ-3M



AMMUNITION FOR SMALL ARMS:

- 7,62x51mm (BALL) M80
- 12 gauge Shotgun Ammunition for Law Enforcement and Security Forces
- 7,62x39mm Cartridge
- 7,62x54mm Cartridge

AMMUNITION FOR MEDIUM CALIBER AUTOMATIC GUNS:

- 23x152mm HEI-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm API-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm Round with HEIT Inert Projectile for ZU-23-2 and ZSU-23-4 Gun Mounts
- 30x165mm Round with HEI Projectile for Automatic Guns 2A42, 2A38 and 2A72

RPG-7 ROUNDS:

- OG-7V High-Explosive Round
- PG-7V HEAT Round
- GTB-7VS Thermobaric Round
- KO-7V Hollow-Charge Round
- OFG-7V High-Explosive Round
- PG-7VL Hollow-Charge Round
- PG-7VM Hollow-Charge Round
- PG-7VT Hollow-Charge Round With PG-7T Tandem Antitank Grenade

SPG-9 ROUNDS:

- OG-9VM High-Explosive Round
- PG-9V High-Explosive Round
- PG-9VN High-Explosive Round
- ATR-9 Hollow-Charge Round with ATG-9 Antitank Grenade

- TATR-9V Hollow-Charge Round with Tandem Antitank Grenade TATG-9
- TBFR-9 Round with Thermobaric and Fragmentation Grenade TBFG-9

40x46mm GRENADES:

- 30mm High-Explosive Round 10-30 (VOG-17) for Automatic Grenade Launcher AGS-17
- 40mm High-Explosive Grenade VOG-25 for Under-Barrel Grenade Launcher GP-25
- 40x46mm High-Explosive Bouncing Air Burst Grenade AR 466
- 40x46mm High-Explosive Grenade AR406
- 40x46mm Practice Grenade AR407 TP
- 40x46mm Anti-diver Grenade AR 476 "AZIMUTH"

MORTAR BOMBS:

- 81mm Mortar Bomb
- 81mm Thermobaric Mortar Bomb
- 82mm High-Explosive Mortar Bomb
- 120mm High-Explosive Mortar Bomb
- 120mm Mortar Round with Thermobaric Warhead

AMMUNITION FOR AVIATION WEAPONS:

- 23x115mm For Aircraft Gun GSh-23L and GSh-23LU
- 23x115mm HEI Round with High-Explosive Incendiary Projectile for GSH-23 Aircraft Gun

Guns

- 30x165mm TP-T Rounds to GSh-30, GSh-301, GSh-30K and GSh-6-30 Guns
- 57mm S-5KO PRACT Aviation Unguided Rocket
- 57mm S-5KO Aviation Unguided Rocket
- 57mm S-5KP PRACT Aviation Unguided Rocket
- 57mm S-5KP Aviation Unguided Rocket
- 80mm S-8KOM Aviation Unguided Rocket
- 80mm S-8KOM PRACT Aviation Unguided Rocket
- UAR 57-TB Aviation Unguided Rocket
- UAR-80 Unguided Aircraft Rocket With HEAT/Fragmentation Warhead

AVIATION BOMBS:

- P-50-75N Practice Bomb
- OFAB 100-120 High-Explosive Fragmentation Bomb
- OFAB 100-120PF Pre-Fragmented Bomb
- OFAB 100-130M2000 Pre-Fragmented Bomb
- OFAB 250-270 Aerial General Purpose Bomb
- OFAB 250-270M03 Pre-Fragmented Bomb
- FAB 500M-62 High-Explosive Bomb
- BETAB 500 - Concrete-piercing Air Bomb
- FUZE AMV AE2

- FUZE AVU-ET for air bombs OFAB 100, OFAB-250, FAB-500M

TANK AMMUNITION:

- 100mm UOF-412 Round With OF-412 High-Explosive Projectile
- 100mm UBK4 Round with BKS FIN Stabilized Shaped Charge Projectile
- 115mm 3UOF6 Round with 30F18 High-Explosive Projectile with Increased Combat Range for U-5TS Tank Gun
- 125mm 3VOF22 Round With 30F19 High-Explosive Projectile
- 125mm 3VOF36 Round With 30F26 High-Explosive Projectile
- 125mm Round 3VBM-7ARMOR-PIERCING FIN-STABILIZED Discarding Sabot Tracer

ARTILLERY AMMUNITION:

- 122mm Rocket For BM-21 "GRAD" / RM-70
- 122mm Round With High-Explosive Shell For HOWITZER D-30 And Self-Propelled HOWITZER 2S1
- 130mm High-Explosive Round With Full Charge For M46 Gun
- 130mm High-Explosive Round With Reduced Charge For M46 Gun
- 152mm High-Explosive Round with Full Charge for D-20, ML-20
- 152mm High-Explosive Round with Reduced Charge for D-20, ML-20

AMMUNITION FOR SMALL ARMS:

- 7,62x51mm (BALL) M80
- 12 gauge Shotgun Ammunition for Law Enforcement and Security Forces
- 7,62x39mm Cartridge
- 7,62x54mm Cartridge



7,62x51mm (BALL) M80



Technical Data:

Bullet Jacket: Tombac

Core - Lead Antimony

Weight (g): 9.40 g /145

Cartridge case: Brass, weight (g): 11.50

Propelling charge - NCD powder; weight (g): 2.85

Primer - Boxer non-corrosive; weight (g): 0.34

Cartridge weight (g): 24.00

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

Packing 20 rounds in cardboard box; x 10 cardboard boxes in PVC bag; x 5 PVC bags in wooden case

Used for Semi-automatic rifles 7.62mm: L1A1, G3, SP-3, PINDAD Automatic rifles 7.62mm: FAL, M77, SP-3, PINDAD

Light machine gun 7.62mm: M 53/77

Machine gun 7.62:18 - KAMPUR, MAG, LNA1, LNA2, M60, M52

12 gauge Shotgun Ammunition for Law Enforcement and Security Forces



Gauge/L shell/L met. head	Shell material	Primer Type	Powder Type	Shot		Crimp Type	Packing	
				pcs.	Type		Box pcs.	Cardboard box pcs.
PKS 12/70/10	P	G	SP	12	rubber shots ø7.4	•	10;25	250;500
PKS 12/70/10	P	G	SP	1	rubber bullet ø17.4	•	10;25	250;500
PKS 12/70/10	PL	G	SP	12	rubber shots ø7.4	•	10;25	250;500
PKSS 12/70/10	PL	G	SP	15	rubber shots ø7.4	•	10;25	250;500
PKK 12/70/10	PL	G	SP	1	rubber bullet ø17.4	•	10;25	250;500
PKKS 12/70/10	PL	G	SP	2	rubber bullet ø17.4	•	10;25	250;500

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

7,62x39mm Cartridge



Technical Data:

Bullet weight / type: 123.5 gr (8.00 g) Full Metal Jacket

Velocity (m/s): 720

Energy (J): 2073.6

Packing*:

20 rounds in carton box

Box dimensions (mm): 117x60x30

700 rounds in metal box

1400 round / 2 metal boxes/ in one case

Case dimensions (mm): 488x382x151

Crate gross weight (kg): 30

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

7,62mm Cartridge



No	Caliber [mm]	Case	Bullet (round) type	Bullet (projectile) weight [g]	Primer type	Bullet (projectile) speed V _(x) [m/s]	Chamber pressure [kg/cm ²]	Weapon	Cartridge name
1.	7.62 x 54	Bimetal	Bimetal jacket + steel core (FMJ/SC)	9.6	"Berdan"	V25 - 828	2900	SVD, SGM, MG, MG-M1 and modifications	7.62mm Rifle Cartridge with Steel Core Bullet
2.	7.62 x 54	Bimetal	Tracer T-46 (T)	9.65	"Berdan"	V25 - 828	2900	SVD, SGM, MG, MG-M1 and modifications	7.62mm Rifle Cartridge with Tracer Bullet T-46
3.	7.62 x 54	Bimetal	-	9.65	"Berdan"	-	-	SVD, SGM, MG, MG-M1 and modifications	7.62mm Blank Rifle Cartridge
4.	7.62 x 54	Bimetal	Bimetal jacket + lead core and lead pointed (SP)	11.5	"Berdan"	V25 - 750	2900	Hunting rifles	7.62mm Hunting and Match-Grade Cartridge, model 30 with Bimetal Cartridge Case and SP Bullet
5.	7.62 x 54	Bimetal	Bimetal jacket + lead core and hollow pointed (HP)	11.5	"Berdan"	V25 - 750	2900	Hunting rifles	7.62mm Hunting and Match-Grade Cartridge, model 30 with Bimetal Cartridge Case and HP Bullet

- FMJ – Full Metal Jacket
- SC – Steel Core
- T – Tracer
- SP – Soft Point
- HP – Hollow Point

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

- 23x152mm HEI-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm API-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun
- 23x152mm Round with HEIT Inert Projectile for ZU-23-2 and ZSU-23-4 Gun Mounts
- 30x165mm Round with HEI Projectile for Automatic Guns 2A42, 2A38 and 2A72



23x152mm HEI-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun



Technical Data:

Weight of round (g): 450
Length of round (mm): 235
Weight of projectile (g): 188.5
Length of projectile (mm): 108.2
Weight of cartridge case (g): 172
Length of cartridge case (mm): 151.5
Propellant charge mass (g): 77

Basic Characteristics:

Caliber (mm): 23x152
Fuze Arming Distance (m): 2.5 to 20
Self-Destruction Time (s): 5.4 to 12
Operational Temperature range (°C): -50
to +50
Shelf life: 15 years

Packing*:

84 rounds in three air-tight sealed metal boxes, inserted in a wooden case.
Dimensions (mm): 875x378x206
Volume (m³): 0.068
Gross Weight (kg): 55

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 23mm Round with High-Explosive Incendiary Tracer Projectile is intended to engage air and ground targets. The round is fitted with 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 23mm air-defense gun mounts ZU-23-2 / ZSU-23-4 "SHILKA" and their modifications.

Ballistic Data:

Muzzle Velocity (m/s): 960 to 980
Average P_{max} (kgf/cm²): 2925
Maximum Range (m): 2500
Maximum Altitude (m): 1500

Elements of Round:

Projectile: HEI-T
- Fuze: MG-25
- Explosive Filling: A-IX-2 (RDX)
Propellant: 5/7 CfI
Cartridge case: Steel
Percussion Primer: KV-3

23x152mm API-T Rounds for ZSU "SHILKA"/ZU-2 Anti-Aircraft Gun



Technical Data:

Weight of round (g): 450
Length of round (mm): 235
Weight of projectile (g): 190
Length of projectile (mm): 99.3
Weight of cartridge case (g): 172
Length of cartridge case (mm): 151.5
Propellant charge mass (g): 76

Shelf life: 15 years

Elements of Round:

Projectile: API-T
Incendiary Composition: DU-5
Propellant: 5/7 Cfl
Cartridge case: Steel
Percussion Primer: KV-3

Basic Characteristics:

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

Ballistic Data:

Muzzle Velocity (m/s): 955 to 985
Average P_{max} (kgf/cm²): 2925
Maximum Range (m): 2500
Maximum Altitude (m): 1500

Packing*:

84 rounds in three air-tight sealed metal boxes, inserted in a wooden case with:
Dimensions (mm): 875x378x206
Volume (m³): 0.068
Gross Weight (kg): 55

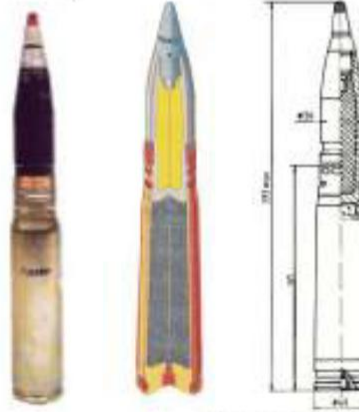
Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 23mm 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 23mm air-defense gun mounts ZU-23-2 / ZSU-23-4 "SCHILKA" and their modifications.

30x165mm Round with HEI Projectile for Automatic Guns 2A42, 2A38 and 2A72



Technical Data:

Length of Round (max) (mm): 293
Weight of Round (kg): 0.833
Weight of Projectile (kg): 0.389
Propellant Charge Mass (kg): 0.123
Caliber (mm): 30x165
Fuze Arming Distance (m): 20 - 100
Self-destruction Time (s): 7.5 - 14.5
Operational Temperature Range (°C): -50 to +50
Shelf Life: 15 years

Elements of Round:

Projectile: High-Explosive Incendiary
Fuze: A-670M
Explosive filling: A-IX-2 (RDX)
Propellant: 6/7 P-5BPfl

Ballistic Data:

Muzzle velocity (m/s): 950 – 970
Probable Deviation (m/s): 5
Average P_{max} (kgf/cm²): 3600

Packing*:

54 rounds in three air-tight sealed metal boxes in a wooden case
Case dimensions (mm): 860x380x220
Volume of the case (m³): 0.072
Gross weight (kg): 61

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 30x165mm 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 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-Defense Complex "Tunguska"
- Attack Helicopters Ka-50 and Mi-28 and modifications

RPG-7 ROUNDS:

- OG-7V High-Explosive Round
- PG-7V HEAT Round
- GTB-7VS Thermobaric Round
- KO-7V Hollow-Charge Round
- OFG-7V High-Explosive Round
- PG-7VL Hollow-Charge Round
- PG-7VM Hollow-Charge Round
- PG-7VT Hollow-Charge Round With PG-7T Tandem Antitank Grenade



OG-7V High-Explosive Round



Ballistic Data:

Direct fire range (m): 170
Max. range (m): 1000
Muzzle velocity (m/s): 152
Fire rate (shots/min): 4 ÷ 6

System:

RPG-7V hand anti-tank grenade launcher

Packing*:

18 rounds in a wooden case (18 grenades plus 18 charges)
Dimensions (mm): 830x430x275
Volume (m³): 0,100
Weight (kg): 50

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy troops in the open, in trenches, field shelters and different fortifications. It is equipped with the O-4M fuze.

PG-7V HEAT Round



Technical Data:

Type: 40mm HEAT round designed for the RPG-7 light antitank rocket launcher
Armour penetration (mm): 260

Direct fire range (m): 350
Max. range (m): 500 or better
Muzzle velocity (m/sec): 120
Quantity: 3 000 rounds

Packing*:

40mm HEAT round: 6 rounds are packed in a wooden case (6 rockets + 6 charges are packed separately).
Case dimensions (mm): 808x452x238
Cross weight of the case (kg): 33
Volume of the case (m³): 0,092

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

GTB-7VS Thermobaric Round



Technical Data:

Weight of Loaded Magazine (kg): 4.4
Overall Length (mm): 902
Muzzle Velocity (m/s): 70
Max Range (m): 1000
Fire Rate (rounds/min): 4 - 6

Packing*:

4pcs in Wooden Case
Weight of each Wooden Case (kg): 37
Volume of each Wooden Case (cm³): 0.125
Dimensions of each Wooden Case (mm): 760x445x370

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

Intended for destroying the enemy emplacements (battlefield fortifications, reinforced buildings, stone, brick or concrete fortifications), light armoured vehicles and automobiles and enemy troops in the open or in shelters.

KO-7V Hollow-Charge Round



Technical Data:

Caliber (mm): 40
Warhead caliber (mm): 57
Weight of round (kg): 2,960
Direct fire range (m): 250
Sighting range at armored materiel (m): 400
Armor penetration of steel homogeneous armor (mm): 260

Muzzle velocity (m/s): 98
TNT equivalent of bursting charge (kg): 0.6
Maximum range of fire (mm): 2000
Number of fragments 1.5÷2 g in weight: 270
Effective burst radius:
- At enemy personnel in the open (m): 45
- At unarmored materiel (m): 12
Operational temperature range (°C): -40 ÷ +50

System:

RPG-7V portable anti-tank grenade launcher equipped with the combination optico-mechanical sight or mechanical sight.

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges, packed separately)
Dimensions (mm): 880x450x270
Volume (m³): 0.10
Weight (kg): 36

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is intended for destroying tanks, self-propelled guns and other armored and motorized, mechanized vehicles as well as for destroying the enemy troops in the open, in trenches, light shellproof shelters and brick fortifications of the urban type.

The grenade warhead is a combination of a bursting fragmentation hollow charge and prefragmented steel rings. The warhead is completed with the VP-22M nose-base piezoelectric fuse with an inertial self-destroyer for firing at a distance up to 2000m.

The round is completed with a propelling charge of strip ballistic powder.

OFG-7V High-Explosive Round



Technical Data:

Caliber (mm): 40
Warhead caliber (mm): 57
Weight of round (depending on the charge) (kg): 2,950
Direct fire range (m): 250
Direct sighting range (m): 400
Muzzle velocity (m/s) 99
TNT equivalent of bursting charge (depending on the charge) (kg): 0,5÷0,9

Max. range of fire (m): 2000
Number of fragments 1,5÷2 g in weight: 360
Operational temperature range (°C): -40 ÷ +50
Effective burst radius:
- at enemy personnel in the open (m): 45
- at unarmoured materiel (m): 12

System:

The RPG-7V hand anti-tank grenade launcher equipped with the combination optico-mechanical sight or the mechanical sight attachment.

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges)
Dimensions (mm): 880x450x270
Volume (m³): 0,10
Weight (kg): 36

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is intended for use against enemy personnel in the open, in trenches, light shellproof shelters as well as against hostile unarmoured motorized and mechanized vehicles. The grenade is equipped with a warhead containing prefragmented steel rings and bursting charge of explosive or explosive mixture of powerful high-explosive or high-explosive incendiary action (at the Customer's request). The round is completed with the GO-2 impact fuze and propelling charge of strip ballistic powder.

PG-7VL Hollow-Charge Round



Technical Data:

Caliber (mm): 40

Warhead caliber (mm): 93

Weight of round (kg): 2,600

Armor penetration (mm): 500

Direct fire range (m): 250

Max. range (m): 300

Muzzle velocity (m/s): 112

Fire rate (shots/min): 4÷6

Operational temperature range (°C): -40 ÷ +50

System:

RPG-7V portable anti-tank grenade launcher equipped with the combination optico-mechanical sight or the mechanical sight.

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges, packed separately)

Dimensions (mm): 899x498x294

Volume (m³): 0,128

Weight (kg): 39

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying tanks, self-propelled guns and other armored vehicles. It can also be used against enemy troops in field shelters and different fortifications. It is equipped with the VP-22 fuze.

PG-7VM Hollow-Charge Round



Technical Data:

Armour penetration (mm): 300
Direct fire range (m): 300

Max. range (m): 500

Muzzle velocity (m/s): 140

Firing rate (shots/min): 4÷6

System:

RPG-7V hand antitank grenade launcher

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges, packed separately)

Dimensions (mm): 830x430x255

Volume (m³): 0,091

Weight (kg): 28

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

PG-7VT Hollow-Charge Round With PG-7T Tandem Antitank Grenade



Technical Data:

Grenade:

Launcher Caliber (mm): 40
Main Charge Caliber (mm): 93
Weight (kg): 3.310
Length (m): 1.130
Direct fire range (m): 220
Max. Range (m): 300
Muzzle velocity (m/s): 90
Operational temperature range (°C): -40 – +50

Firing rate (rounds/min): 4÷6

Wing span (mm): 320

Fuze (contact fuze): VP-22

Warhead:

Warhead: tandem, shaped-charge

Penetration:

- 550mm of rolled homogeneous armor + behind armor effect
- 500mm beyond one layer of ERA

System:

RPG-7V Portable rocket launcher

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

Intended for destroying tanks (including those with Explosive Reactive Armor - ERA), self-propelled guns and other armored vehicles. It can also be used for suppressing infantry and firing posts in brick and reinforced concrete buildings and log-and-earth shelters.

SPG-9 ROUNDS:

- OG-9VM High-Explosive Round
- PG-9V High-Explosive Round
- PG-9VN High-Explosive Round
- ATR-9 Hollow-Charge Round with ATG-9 Antitank Grenade
- TATR-9V Hollow-Charge Round with Tandem Antitank Grenade TATG-9
- TBFR-9 Round with Thermobaric and Fragmentation Grenade TBFG-9



OG-9VM High-Explosive Round



Technical Data:

Max. range (m): 4500

Muzzle velocity (m/s): 316

Fire rate (shots/min): up to 6

System:

SPG-9M heavy anti-tank grenade launcher

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges packed separately)

Dimensions (mm): 1080x520x294

Volume (m³): 0,165

Weight (kg): 60

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy troops in the open, in trenches, in hasty field shelters or brick-wall fortifications. It is equipped with the GO-2 fuze.

PG-9V High-Explosive Round



Technical Data:

Armour penetration (mm): 300
Direct fire range (m): 800
Max. range (m): 1300
Muzzle velocity (m/s): 435
Firing rate (shots/min): up to 6

System:

SPG-9M heavy anti-tank grenade launcher

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges packed separately)
Dimensions (mm): 1080x520x294
Volume (m³): 0,165
Weight (kg): 59

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying tanks, self-propelled guns and other armoured vehicles. It can be used for destroying manpower of the enemy in hasty field shelters and brick-wall fortifications. It is equipped with the VP-9 fuze.

PG-9VN High-Explosive Round



Technical Data:

Armour penetration (mm): 400
Direct fire range (m): 800
Max. range (m): 1300
Muzzle velocity (m/s): 435
Firing rate (shots/min): up to 6

System:

SPG-9M heavy anti-tank grenade launcher

Packing*:

6 rounds in a wooden case (6 grenades plus 6 charges packed separately)
Dimensions (mm): 1080x520x294
Volume (m³): 0,165
Weight (kg): 59

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying tanks, self-propelled guns and other armoured vehicles. It can be used for destroying manpower of the enemy in hasty field shelters and brick-wall fortifications. It is equipped with the VP-9 fuze.

ATR-9 Hollow-Charge Round with ATG-9V Antitank Grenade



Technical Data:

Armour penetration (mm): 450
Direct fire range (m): 800
Max. range (m): 1000
Muzzle velocity (m/s): 420
Firing rate (shots/min): up to 6

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

It is designed for destroying tanks and self-propelled guns and other armoured vehicles. It can also be used against enemy troops in field shelters and different fortifications. It is equipped with the VP-9 fuze.

ATR-9 Hollow-Charge Round with ATG-9V Antitank Grenade



Technical Data:

Armour penetration (mm): 450
Direct fire range (m): 800
Max. range (m): 1000
Muzzle velocity (m/s): 420
Firing rate (shots/min): up to 6

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

It is designed for destroying tanks and self-propelled guns and other armoured vehicles. It can also be used against enemy troops in field shelters and different fortifications. It is equipped with the VP-9 fuze.

TBFR-9 Round with Thermobaric and Fragmentation Grenade TBFG-9



Technical Data:

Caliber (mm): 73

Length (mm): 902

Weight (kg): 4,4

Weight TBK (kg): 0,8

Direct fire range (m): 800

Max. range (m): 4500

Muzzle velocity (m/s): 316

Fragmentation (pcs): up to 400

Fuze: GO-2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

Intended for destroying the enemy emplacements (battlefield fortifications, reinforced buildings, stone, brick or concrete fortifications), light armoured vehicles and automobiles and enemy troops in the open and in shelters.

40x46mm GRENADES:

- 30mm High-Explosive Round 10-30 (VOG-17) for Automatic Grenade Launcher AGS-17
- 40mm High-Explosive Grenade VOG-25 for Under-Barrel Grenade Launcher GP-25
- 40x46mm High-Explosive Bouncing Air Burst Grenade AR 466
- 40x46mm High-Explosive Grenade AR406
- 40x46mm Practice Grenade AR407 TP
- 40x46mm Anti-diver Grenade AR 476 "AZIMUTH"
- 40x46mm Round with Smoke Grenade
- 40x46mm Round with Sound&Flash Grenade
- 40x46mm Round for grenade launchers UBGL-M family, M 203 type



30mm High-Explosive Round 10-30 (VOG-17) for Automatic Grenade Launcher AGS-17



Basic Characteristics:

Caliber (mm): 30
Maximum Effective Range (m): 1700
Radius of defeat (m): not less than 6
Operational Temperature Range (°C): -50
- +50
Shelf Life: 10 years

Elements of Round:

Projectile: High-Explosive
Fuze: VMG-M-L, VMG-M-H
Explosive Filling: A-IX-1 (RDX)
Propellant: NBPI-14-10
Primer: KVM-3

Packing*:

108 rounds in three air-tight sealed metal boxes packed in a wooden case
Wooden case dimensions (mm): 860x380x220
Gross weight (kg): 55
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 30mm High-Explosive Round 10-30 provides effective action against enemy troops in open terrain or in light shelters at distance of up to 1700m. 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

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

40mm High-Explosive Grenade VOG-25 for Under-Barrel Grenade Launcher GP-25



Basic Characteristics:

Caliber (mm): 40
Maximum Effective Range (m): 400
Radius of Defeat (m): not less than 6

Operational Temperature Range (°C): -50
- +50
Shelf Life: 10 years

Packing*:

120 rounds in three air-tight sealed metal boxes packed in a wooden case
Wooden case dimensions (mm): 860x380x220
Gross weight (kg): 47
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40mm High-Explosive Grenade VOG-25 provides effective action against enemy troops in open terrain or in light shelters at distance of up to 400m. 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 AK-47 and AK-74 assault rifles
- GP-95 under-barrel grenade launcher mounted on 9A-91 compact assault rifle
- RG-6 and "AVALANCHE" revolver grenade launchers

VOG-25 is safe in storage, handling and operation and ensures the reliable performance of the grenade launchers in all weather conditions.

40mm High-Explosive Grenade VOG-25 for Under-Barrel Grenade Launcher GP-25



Basic Characteristics:

Caliber (mm): 40
Maximum Effective Range (m): 400
Radius of Defeat (m): not less than 6

Operational Temperature Range (°C): -50
- +50

Shelf Life: 10 years

Packing*:

120 rounds in three air-tight sealed metal boxes packed in a wooden case
Wooden case dimensions (mm): 860x380x220
Gross weight (kg): 47
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40mm High-Explosive Grenade VOG-25 provides effective action against enemy troops in open terrain or in light shelters at distance of up to 400m. 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 AK-47 and AK-74 assault rifles
- GP-95 under-barrel grenade launcher mounted on 9A-91 compact assault rifle
- RG-6 and "AVALANCHE" revolver grenade launchers

VOG-25 is safe in storage, handling and operation and ensures the reliable performance of the grenade launchers in all weather conditions.

40x46mm High-Explosive Grenade AR406



Technical Data:

Caliber (mm): 40x46
Maximum Effective Range (m): 400
Radius of Defeat (m): not less than 6
Operational Temperature Range (°C): -50 to +50
Shelf Life: 10 years
Length of Grenade (max) (mm): 102,5
Weight of Grenade (kg): 0.25
Weight of Explosive Charge (kg): 0,042
Fuze: VMG-K
Type: Point Detonating, SQ action, Distance-Armed, Self-Destruct
Arming Distance (m): 0 - 40

Self-destruction Time (s): 14 – 19

Ballistic Data:

Muzzle Velocity (m/s): 75
Probable Deviation (m/s): 1.5
Average Pressure (max) (kgf/cm²): 250

Elements of Round:

Projectile: High-Explosive
Fuze: VMG-K
Explosive Filling: A-IX-1 (RDX)
Cartridge Case: Aluminum
Propellant: NBPI-10-10
Primer: KVM-3

Packing*:

120 rounds in three air-tight sealed metal boxes packed in a wooden case
Wooden case dimensions (mm): 860x380x220
Gross weight (kg): 47
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

40x46mm Practice Grenade AR407 TP



Technical Data:

Caliber (mm): 40x46
Maximum Effective Range (m): 400
Operational Temperature Range (°C): -50 to +50
Shelf Life: 10 years
Length of Grenade (max) (mm): 102,5
Weight of Grenade (kg): 0.25

Ballistic data

Muzzle Velocity (m/s): 75

Probable Deviation (m/s): 1.5
Average Pressure (max) (kgf/cm²): 250

Elements of Round:

Projectile: Target Practice
Fuze: Dummy
Explosive Filling: inert sulfur mixture
Cartridge Case: Aluminum
Propellant: NBPI-10-10
Primer: KVM-3

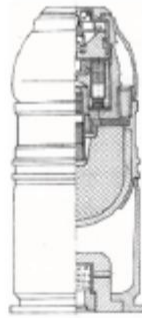
Packing*:

84 rounds in three air-tight sealed metal boxes packed in a wooden case.
Wooden case dimensions (mm): 860x380x220
Gross weight (kg): 38
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

40x46mm Anti-diver Grenade AR 476 "AZIMUTH"



Technical Data:

Caliber (mm): 40x46
Maximum Effective Range (m): 400
Arming distance (m): 10 to 40
Delayed action: 3 +/- 0.5 sec. after impact

Radius of Defeat in water: not less than 10m
Self-destruction time (s): 17 to 22
Operational Temperature Range (°C): -50 to +50
Shelf Life: 10 years

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 40x46mm Anti-diver Grenade provides effective action against enemy divers in water at depth of up to 22m and within projected range of up to 400m.

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

- M203 under-barrel grenade launcher
- HK 69A1 under-barrel grenade launcher
- ARCUS 40 UBGL under-barrel grenade launcher
- ARCUS 40 SGL standalone grenade launcher
- M79 grenade launcher
- HK79 grenade pistol

The grenade has distant armed delayed action fuze VMG AZIMUTH, featuring self-destruction. It arms within 10-40m from muzzle under set back and rotational forces.

At impact in water the fuze delays its action for 3+/- 0.5sec, and initiates the grenade at depth from 5 to 12m. The explosion of powerful RDX composition creates overpressure ensuring lethal effect within the radius of 10m. If no explosion after impact occurs the fuze ensures grenade self-destruction within 17 to 22 seconds from firing.

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

40x46mm Round with Smoke Grenade



Technical Data:

Type: 40x46mm Low Velocity, smoke
Overall length (mm): max 103
Weight of the round (kg): max 0,225
Weight of the grenade (kg): 0,175
Payload: Red phosphorous pyrotechnic composition
Grenade body material: aluminum alloy
Cartridge case material: aluminum alloy
Primer type: Percussion
Powder type: double base
Fuze, type: AF49-Igniting Fuze, point detonating with delay action, distance armed and self-destruction

Average Muzzle velocity (m/s): 76
Maximal firing distance (m): 400
Smoke color: White
Time of intensive smoke emission (s): not less than 20
Arming distance (m): 10 – 40
Self-destruction time (s): 14 – 19
Operational Temperature Range (°C): -43 – +52
Class of explosion hazard: 1.4G; UN 0303

Packing*:

3 metal airtight boxes (40 pcs. in each box), placed in a wooden case (120 pcs. in each case)
Wooden case dimensions (mm): 875x398x206
Case weight (kg): 45
Volume (m³): 0.072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40x46mm Round RLV-SMK-2 is intended to be fired at distance up to 400m in order to place a smoke-screen or to mark targets.

The rounds are designed to be fired from:

- Underbarrel Grenade Launchers: UBGL-M6, UBGL-M8, UBGL-M7, UBGL-M16; M203; HK 69; etc.;
- Stand-alone Grenade Launchers: UGGL-M1, HK 69A1; M 79; STAR FN SCAR; M320; etc.;
- Multi-shot Grenade Launchers: Milkor MGL; M32 MGL; MSGL; etc.

40x46mm Round with Sound&Flash Grenade



Technical Data:

Type: 40x46 mm Low Velocity, sound and flash

Overall length (max) (mm): 104

Weight of the Round (kg): 0,160

Filling: pyrotechnical composition creating sound and flash effect

Grenade body material: plastic

Cartridge case material: aluminum alloy

Primer type: Percussion, Boxer type

Powder Type: double base

Fuze: Pyrotechnical, delay

Time of delay (s): 1,3 – 2,7

Muzzle Velocity (m/s): 80

Maximum Firing Distance (m): 100

Effective radius of shock effect (m): 10

Intensity of the sound (dB): 160

Operation Temperature Range (°C): -43 – 52

Class of explosion hazard: 1.4F; UN 0348

Packing*:

3 metal airtight boxes (40 pcs. in each box), placed in a wooden case, totally 120 pcs.

Wooden case dimensions (mm): 875x398x206

Gross weight (kg): 36

Volume (m³): 0,072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40x46mm Round RLV-S&F is intended to be used at the time of counter terrorist operations, as well as for catching of criminals and hostage release. The Grenade stuns and immobilizes the persons in the near vicinity by means of loud, temporarily paralyzing noise and blinding flash.

The rounds are designed to be fired from:

- Underbarrel Grenade Launchers: UBGL-M6, UBGL-M7, UBGL-M16; M203; HK 69; etc.;
- Stand-alone Grenade Launchers: UGGL-M1, HK 69A1; M 79; STAR FN SCAR; M320; etc.;
- Multi-shot Grenade Launchers: Milkor MGL; M32 MGL; MSGL; etc.

40x46mm HEF Round for grenade launchers UBGL-M family, M 203 type



Technical Data:

Type: 40x46 Low-Velocity, High Explosive Fragmentation

Overall length (max) (mm): 102,5

Weight of the Round (kg): 0,250

Weight of the Grenade (kg): 0,192

Explosive Filling: A-IX-1 (RDX)

Weight of the explosive charge (kg): 0,04

Primer type: Percussion, Boxer type

Powder Type: double base

Cartridge case material: aluminum alloy

Jump height (m): 0,5 – 2,5

Fuze: AF41 - point detonating, time and super quick with check action and self-destruction

Arming Distance (m): 10 – 40

Self-destruction time (s): 14 –19

Details of arming function: 3 steps of safety

Muzzle Velocity (m/s): 76

Maximum Firing Distance (m): 400

Radius of Defeat (m): 6

Operation Temperature Range (°C): -43 – 52

Class of explosion hazard: 1.1E, UN 0006

Packing*:

3 metal airtight boxes (40 pcs. in each box), placed in a wooden case (120 pcs. in each case)

Wooden case dimensions (mm): 875x398x206

Gross weight (kg): 47

Volume (m³): 0,072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40x46mm Round RLV-HEF is intended to destroy enemy's personnel, transport means and light armoured materials at distance up to 400m.

The 40x46mm Round RLV-P with Practice Grenade is intended for training of the army units with firing.

The rounds are designed to be fired from:

- Underbarrel Grenade Launchers: UBGL-M6, UBGL-M7, UBGL-M16; M203; HK 69; etc.;
- Stand-alone Grenade Launchers: UGGL-M1, HK 69A1; M 79; STAR FN SCAR; M320; etc.;
- Multi-shot Grenade Launchers: Milkor MGL; M32 MGL; MSGL; etc.



MORTAR BOMBS:

- 81mm Mortar Bomb
- 81mm Thermobaric Mortar Bomb
- 82mm High-Explosive Mortar Bomb
- 120mm High-Explosive Mortar Bomb
- 120mm Mortar Round with Thermobaric Warhead



81mm High-Explosive Mortar Bomb



Technical Data:

Body material: Cast Iron
Weight (kg): 4.15
Weight of explosive charge (kg): 0.75
Overall length (mm): 490
Number of fragments (average) pcs: 1400
Max. gas pressure (bar): 900

Efficiency of fragments (frag/m²): 1
(distance of 23 m)

Max. range (m):

- 1365 mm barrel: 6670

- 1165 mm barrel: 5770

Fuze: Impact SQ, FPDSQ2, M6-N, M52-B3

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 81mm Mortar bomb is one of the most up-to-date High-Explosive bombs of 81mm caliber. Its performance - especially range, and effect - is the best possible for any tactical purpose.

The mortar bomb is destined for fighting uncovered living targets, as well as unarmored means of transportation.

The optimum fragmentation effect of approximately 1400 effective fragments is achieved by the use of spheroidal graphite cast iron with predominately ferritic structure.

The mortar bomb had been designed as suitable ammunition for an 81mm caliber Mortars, with a barrel length not less than 165mm (M1, M29, L16 A1/A2, M8-522, M081-61C, Tampella, ECIA IN etc.). Optimum effect obtains by barrel length 1365mm (M8-221, M081-61L, Tampella, ECIA LL etc.)

81mm High-Explosive Mortar Bomb Range Table (Barrel length 1365 mm)

Charge No.	Muzzle velocity (m/s)	Max. Pressure (bar)	Range (m)
0	81	100	220-635
1	143	160	625-1820
2	185	250	970-2820
3	222	350	1300-3790
4	254	450	1600-4650
5	285	650	1900-5490
6	312	800	2145-6200
7	337	900	2315-6670

81mm Thermobaric Mortar Bomb



Technical Data:

Caliber Length Weight (m): 81
Length (mm): 635
Weight (kg): 3,9
Explosive: TB/A-IX-2
Explosive weight (kg): 1,1
Mortar: L16A1, USM1, M8-111
Fuze: M734A1 PDF or other fuze MO type

Ballistic data:

Muzzle velocity (m/s): 311
Range (m): Min 5400
Precision in range E_{pr} (m): 30
Side deflection E_{pd} (m): 15
Number of charges: Up to 6 increments
(celluloid, felted fiber)
Max pressure (bar): 900 (with 6 increments)

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The round with 81mm mortar bomb fitted with thermobaric warhead for L16A1, US MI and M8-111 mortars is intended for defeating the enemy manpower in the open, in urban built-up areas, in fortifications, bad country and vehicles. It causes heavy damage and impossibility to deliver combat thus minimizing civilian casualties.

At burst, the mortar bomb creates a peak of overpressure of 50 kPa in a radius of minimum 5 m from the hit point in an open ground or a closed room with a volume of 60 m³.

The blast wave is propagated copying the surface contour. In the burst zone, oxygen "ignites" and the temperature goes up beyond the limit of 800 °C.

82mm High-Explosive Mortar Bomb



Technical Data:

Length of Mortar Bomb (fuzed) (mm): 330
Weight of Mortar Bomb (fuzed) (kg): 3.1
Weight of Explosive Charge (kg): 0.40

Basic Characteristics:

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

Ballistic data:

Muzzle Velocity (max) (m/s): 211

Maximum Pressure (kgf/cm²): 450

Elements of Mortar Bomb:

Fuze: M-6, AR-MD
Body: Cast Iron
Explosive Filling: TNT
Number of Charges: 1+ 3 Increment Charges

Fuze:

The mortar bomb can be fitted with the following fuzes:

M-6: Point Detonating Fuze
AR-MD: Point Detonating, Distance-Armed Fuze

Packing*:

10 mortar bombs in a wooden box with dimensions (mm): 538x535x282
Gross weight (kg): 45
Volume (m³): 0.081
Fuzes and increment charges packed separately.

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

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

- Mod 1937; 1941; 1943
- 2B9 "VASILEK"
- 2B14 "PODNOS"
- M82

120mm High-Explosive Mortar Bomb



Technical Data:

Caliber (mm): 120

Mortar bomb weight (kg): 16.0

Mortar bomb without fuze, ignition cartridge and increment charges weight (kg): 15.5

Explosive filling weight (TD-50) (kg): 1.36

Fuze weight (kg): 0.53

Overall length (mm): 674

Unfuzed length (mm): 600

Max. gas pressure, (crusher) Mpa (kgf/cm²): 101 (1030)

Maximum firing range (m): 5850

Muzzle velocity at 6th charge (m/s): 274

Body: cast iron

Charge: changeable propellant (0+6)

Fuse: M-12

Packing*:

Rounds:

2 pcs Mortar bombs in a wooden case

Case dimensions (mm): 952x350x243

Case weight (kg): 45

Case Volume (m³): 0.08

Fuzes:

Number of fuzes in four air-tighten metal boxes (each one containing 12 fuzes), packed in a wooden case

Wooden case dimension (mm): 520x490x160

Wooden case weight (kg): 40

Wooden case volume (m³): 0.04

Propellant Charges:

100 sets in a metal air-tight can, packed in a wooden case

Wooden case dimension (mm): 725x526x526

Wooden case weight (kg): 70

Wooden case volume (m³): 0.2

Class of explosion hazard: 1,1F, UN 0167

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

120mm Mortar Round with Thermobaric Warhead



Technical Data:

Caliber (mm): 120
Length (mm): 827
Weight (kg): 14,4
Explosive: HMI/HAI
Explosive weight: 7.4 kg TNT equivalent
Fuze: AR-MDH, M734A1 or other fuze
PDMO type
Mortar: US M120 or other 120mm single

Basic Characteristics:

Muzzle velocity (m/s): 315
Max Range: 5750 up to 7200 depending on the mortar system
Precision in range (Epr) (m): 80
Side deflection (Epd) (m): 50
Number of charges: 6 charge increments
Max pressure (bar): up to 2000, depending on the weapon system

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

120mm mortar round with thermobaric warhead for US M120 mortar is intended for defeating the enemy manpower in open and urban built-up areas, in fortification and bad country, bunkers and vehicles. The round can be fired from all 120mm mortars. At burst the round deflagrates, rather than exploding. By the explosion the munition sprays its gel out in the form of a fine mist, and ignites it. The resulting expanding fireball uses up all the available oxygen. The burning assumes all the oxygen hasn't already been sucked out of one's lungs. The detonation creates over-ressure, the blast wave is propagated copying the surface contour eliminating protection like walls and armored vests.

AMMUNITION FOR AVIATION WEAPONS:

- 23x115mm For Aircraft Gun GSh-23L and GSh-23LU
- 23x115mm HEI Round with High-Explosive Incendiary Projectile for GSH-23 Aircraft Gun
- 30x165mm AP Rounds to GSh-30, GSh-301,GSh-30K and GSh-6-30 Guns
- 30x165mm TP-T Rounds to GSh-30, GSh-301,GSh-30K and GSh-6-30 Guns
- 57mm S-5KO PRACT Aviation Unguided Rocket
- 57mm S-5KO Aviation Unguided Rocket
- 57mm S-5KP PRACT Aviation Unguided Rocket
- 57mm S-5KP Aviation Unguided Rocket
- 80mm S-8KOM Aviation Unguided Rocket
- 80mm S-8KOM PRACT Aviation Unguided Rocket
- UAR 57-TB Aviation Unguided Rocket
- UAR-80 Unguided Aircraft Rocket With HEAT/Fragmentation Warhead



23x115mm for Aircraft Gun GSh-23L and GSh-23LU



TP

Technical Details:

Projectile weight (g): 174
Propellant weight (g): 37
Explosive weight (g): none
Complete round weight (g): 331

Ballistic Data:

Explosive type: none
Complete round length (mm): 197.9
Muzzle velocity (m/s): 720
Tracer burning time (s): none

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

TP-T

Technical Details:

Projectile weight (g): 174
Propellant weight (g): 37
Explosive weight (g): none
Complete round weight (g): 331

Ballistic Data:

Explosive type: none
Complete round length (mm): 197.8
Muzzle velocity (m/s): 720
Tracer burning time (s): 3.5

23x115mm HEI Round with High-Explosive Incendiary Projectile for GSH-23 Aircraft Gun



Technical Data:

Round Weight (kg): 0.329
Round Length (mm): 199
Projectile Weight (kg): 0.174
Projectile Length (mm): 102.4
Cartridge Case: brass
Cartridge Case Weight (kg): 0.118
Cartridge Case Length (mm): 115
Powder Charge: powder 4/7 CGR
Powder Charge Weight (kg): 0.037
Primer Sleeve: KV-3

Primer Sleeve Weight (kg): 0.012
Projectile fuze: B-23
Projectile body: steel
Projectile bursting charge: AIX-2
Projectile driving band: copper

Ballistic Data:

Velocity (m/s): 690
Maximum Pressure (Pa): $3000 \cdot 10^5$
Range (m): 2000

Packing*:

132 rounds in 3 airtight boxes are packed in a wooden case.
Case dimensions (mm): 875x378x206
Volume of the case (m³): 0.068
Gross weight (kg): 62

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 23mm rounds with high-explosive incendiary shells are intended to be fired on targets by means of 23 mm aviation guns AM-23 and GSH-23. The nose of the shell is painted red.

30x165mm AP Rounds to GSh-30, GSh-301, GSh-30K and GSh-6-30 Guns



Technical Data:

Caliber (mm): 30x165
Operational Temperature Range (°C): -60 to +80
Weight of Projectile (kg): 0.397 (approx.)
Shelf Life: 15 years in original air-tight packing

Elements of Round:

Projectile: AP
Propellant brand: 6/7 fl (or equivalent)
Cartridge case material: steel
Primer: EKV-30M (or equivalent)

Ballistic Data:

Muzzle velocity (m/s): 880 ± 10
Average P_{max} (kgf/cm²): 3200
Tracer: inert

Packing*:

54 rounds in three air-tight sealed metal boxes in a wooden case
Dimensions (mm): 875x389x220
Gross weight (kg): 60
Volume (m³): 0.077

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 30x165mm Round with Armour-Piercing Projectile is intended to engage light armoured 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 GSh-6-30, GSh-30, GSh-30K, GSh-301 and their modifications are mounted on the following carriers:

- MiG-29, Su-27, Su-30, Su-33 and Su-35 Fighter Aircraft
- Su-25 and Su-39 Close-Support Aircraft
- MiG-27, Su-32 and Su-34 Strike Aircraft
- Yak-41 VSTOL Fighter
- Mi-24P Helicopter

30x165mm TP-T Rounds to GSh-30, GSh-301, GSh-30K and GSh-6-30 Guns



Technical Data:

Weight of Projectile (kg): 0.390 (approx.)

Elements of Round:

Projectile: TP

Propellant brand: 6/7 fl (or equivalent)

Primer: EKV-30M

Fuze type: ballistic bush

Explosive brand: inert

Cartridge case material: steel

Basic Characteristics:

Caliber (mm): 30x165

Operational Temperature Range (°C): -60 to +80

Shelf Life: 15 years in original air-tight packing

Muzzle velocity (m/s): 880± 10

Average P_{max} (kgf/cm²): 3200

Arming distance (m): 20 - 200

Packing*:

54 rounds in three air-tight sealed metal boxes in a wooden case

Dimensions (mm): 875x389x220

Gross weight (kg): 60

Volume (m³): 0.077

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

57mm S-5KO PRACT Aviation Unguided Rocket



Technical Data:

Caliber (mm): 57
Max. velocity (m/s): 586
Operational temperature range (C°): -60 to +50

Completing Units:

Fuze V-5K

Packing*:

8 rockets in a wooden case
Dimensions (mm): 1140x368x251
Volume (m³): 0,105
Weight (kg): 53

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The rocket is designed for training purposes. It is designed for training the personnel using the S-5KO rocket. There is no hollow-charge effect, and the high-explosive and fragmentation effect is reduced about 12 times. Hits are marked by flash and smoke.

System:

UB-16-57UM launcher pods /16 pcs. each/
or UB-32 /32 pcs. each/ with open rear
part or modified launcher pods of the
same type carried on aircraft and
helicopters.

57mm S-5KO Aviation Unguided Rocket

**Technical Data:**

Caliber (mm): 57
Armour penetration (mm): 172
Max. velocity (m/s): 586
Operational temperature range (C°): -60 to +50

System:

UB-16-57UM launcher pods /16 pcs. each/
or UB-32 /32 pcs. each/ with open rear
part or modified launcher pods of the
same type carried on aircraft and
helicopters.

Completing Units:

Fuze V-5K

Packing*:

8 rockets in a wooden case
Dimensions (mm): 1140x368x251
Volume (m³): 0,105
Weight (kg): 53

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

System:

The rocket is with a hollow-charge fragmentation effect. It is designed for destroying ground armoured targets as well as manpower of the enemy.

57mm S-5KP PRACT Aviation Unguided Rocket



Technical Data:

Caliber (mm): 57
Max. velocity (m/s): 500
Operational temperature range (°C): -60 to +50

Completing Units:

Fuze V-5K

Packing*:

8 rockets in a wooden case
Dimensions (mm): 1187x368x246
Volume (m³): 0,107
Weight (kg): 55

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The rocket is designed for training purposes. It is designed for training the personnel of the units using the S-5KP, S-5KPB, S-5KO, S-5MO rockets. There is no hollow-charge effect, and the high-explosive and fragmentation effect is reduced about 12 times. Hits are marked by flash and smoke.

System:

UB-16-57UM launcher pods /16 pcs. each/
or UB-32 /32 pcs. each/ with open rear part or modified launcher pods of the same type carried on aircraft and helicopters.

57mm S-5KP Aviation Unguided Rocket

**Technical Data:**

Caliber (mm): 57
Armour Penetration (mm): 250
Max. velocity (m/s): 500
Operational temperature range (C°): -60 to +50

System:

UB-16-57UM launcher pods /16 pcs. each/
or UB-32 /32 pcs. each/ with open rear
part or modified launcher pods of the
same type carried on aircraft and
helicopters.

Completing Units:

Fuze V-5KP

Packing*:

8 rockets in a wooden case
Dimensions (mm): 1187x368x246
Volume (m³): 0,107
Weight (kg): 55

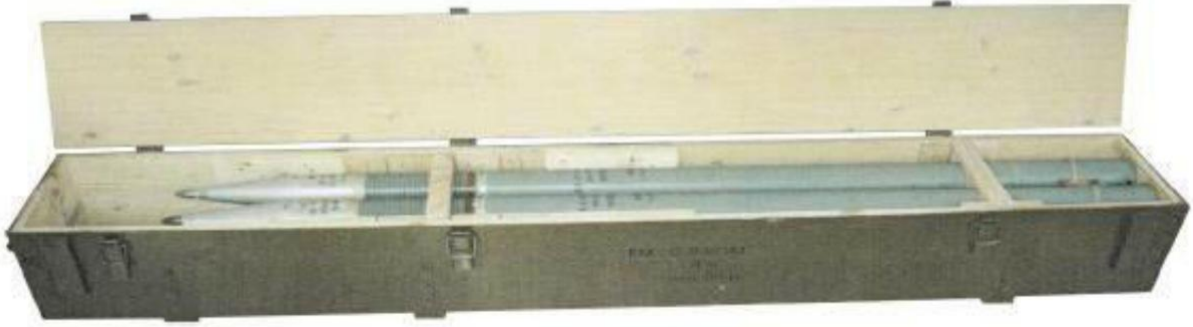
Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The rocket is with a hollow-charge fragmentation effect.
It is designed for destroying ground armoured targets as well as manpower of the enemy.

80mm S-8KOM Aviation Unguided Rocket



Basic Characteristics:

Caliber (mm): 80
Length (mm): 1535
Armour penetration (mm): 400
Maximum velocity (m/sec): 610
Maximum range (m): 1300-4000

System:

Launcher pods of B-8M1 and B8V20 types (20 pcs. Each)

Completing Units:

Fuze: V-5KP1 (piezoelectric, contact)

Packing*:

4 rockets in a wooden case
Case dimensions (mm): 1795x330x350
Volume (m³): 0,207
Weight (kg): 68

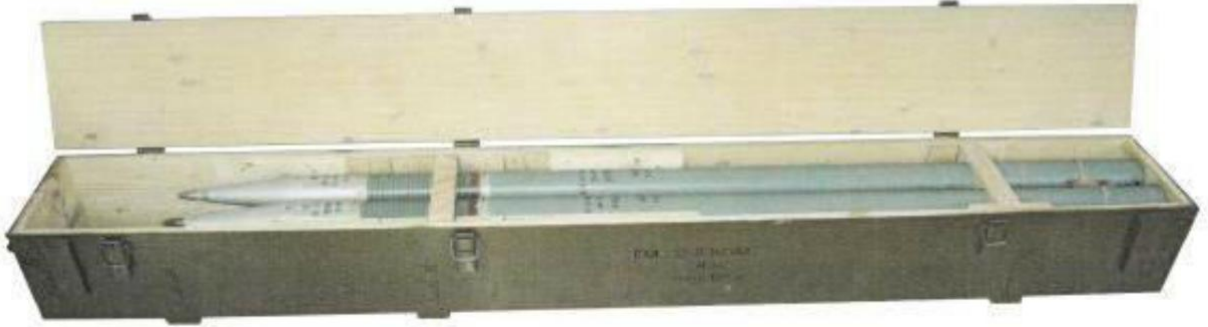
Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The S-8KOM rocket has a shaped fragmentation effect. It is designed for destruction of ground armoured targets and enemy personnel.

80mm S-8KOM PRACT Aviation Unguided Rocket



Basic Characteristics:

Caliber (mm): 80
Length (mm): 1550
Maximum velocity (m/sec): 650
Maximum range (m): 1200-1400

System:

Launcher pods of B-8M1 and B8V20 types
(20 pcs. Each)

Completing Units:

Fuze: V-5KP1 (piezoelectric, contact)

Packing*:

4 rockets in a wooden case
Case dimensions (mm): 1795x330x350
Volume (m³): 0.207
Weight (kg): 68

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The S-8 KOM PRACT UAR is designed for training by firing from a helicopter/aircraft. The indexation of hits is characterized by glitter and smoke. When using S-8 KOM PRACT UAR, cumulative effect is absent and the HE-fragmentation effect is reduced to a condition permitting the preservation of training grounds facilities, reducing the probability of occurrence of fires and increasing safety during training and demonstration firing.

UAR 57-TB Aviation Unguided Rocket



Technical Data:

Caliber (mm): 57
Max. velocity (m/s): 580
Thermobaric suspension (kg): 0,8
TNT Equivalent (kg): 1,5..2
Operational temperature range (C°): -60 to +50

Completing Units:

Fuze V-5K

System:

UB-16-57U launcher pods /16 pcs. each/
or UB-32 /32 pcs. each/ with open rear
part or modified launcher pods of the
same type carried on aircraft and
helicopters.

Packing*:

8 rockets in a wooden case
Dimensions (mm): 1187x368x246
Volume (m³): 0,107
Weight (kg): 55

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The rocket is equipped with thermobaric warhead. It is suitable for destroying ground stationed enemy manpower located in open-air, in entrenchments, in field shelters, in caves, in canyons, stone, brick or concrete buildings, light armoured and unarmoured machinery or shelters.

UAR-80 Unguided Aircraft Rocket With HEAT/Fragmentation Warhead



Basic description of UAR-80 Unguided Aircraft Rocket:

The UAR-80 unguided aircraft rocket with a shaped charge fragmentation warhead is designed for destruction of ground armoured targets (tanks, armoured carriers, etc.), unarmoured ground targets (rockets, launchers, radars, etc.), the enemy manpower.

The UAR -80 unguided aircraft rocket is a part of unguided aircraft armament of aircraft and helicopters of front-line and army aviation as well as of ship-based aircraft and helicopters. Fire with the UAR -80 rockets is delivered from B8, B8M, B81, B80, B8S7 aircraft launcher pods, B8V20A and B8V7 helicopter launcher pods and their modifications.

Technical Data:

Performance specifications of UAR-80 are the same as these of the S-8KOM rocket

Caliber (mm): 80

Length of rocket in traveling configuration (mm): max 1542

Fins span (m): 252

Length of rocket (in flight with fins unfolded) (mm): 1435

Weight of rocket (kg/fuzed): 11.3

Launch weight of rocket (without cup) (kg): 10,75

Passive weight of rocket (kg): 8,2

Weight of warhead (fuzed) (kg): 3.6

Weight of explosive (kg): 1.0

Weight of solid propellant: 3.1

Resistance of electric circuit of electric squib (Q): 1.5-2.5

Minimum firing current ensuring electric squib's reliable function (A): 2.0

Maximum allowable test current used for checking the electric squib circuit (A): 0.05 (for 5 min.)

Permissible temperature range for firing propellant charge (°C): -60 to +60

Ground launch ballistic data at propellant charge firing in the temperature range

(°C): -60°C to +60°C

Maximum inherent speed of rocket (m/s): 600

Length of powered flight (m): 200-350

Probable deviation of circular dispersion, mil of distance: no more than 8

Armour penetration (mm): 400

Number of 3 g fragments formed at rocket burst (pcs.): 400 min

Angle of dispersion of fragments: 47°

Probable deviation of technical circular dispersion in plane of projection when fired:

- from aircraft at a speed of 600 up to 1200 km/h (mil of distance) : 3

- from helicopter at a speed of 200 up to 300 km/h (mil of distance) : 10

Packing*:

Number of rockets in one case: 4
Weight of case with rockets (kg): 73
Weight of case without rockets (kg): 29
Overall dimensions of packing (mm): 1795x330x350

NOTE:

Not all the performance specifications are subject to checking through testing. The specific performance specifications to be checked will be specified and agreed in an Acceptance Test Procedure after signing a Contract.

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

V-5KP1 Fuze:

The V-5KP1 fuze is designed for detonation of the warhead of a rocket on impact with the target and serves to ensure safety in handling and on firing. This is an impact boresafe fuze with distant arming.

Fuze Specifications:

The fuze allows delivering safe and failure-free fire under all the conditions of combat operation in the temperature range of minus 60°C up to plus 60°C. The V-5KP1 fuze as fitted to the rocket is safe in handling and during transportation.

Weight (g):

- piezogenerator: 40
- safe and actuating mechanism: 130

Minimum acceleration required for fuze arming (m/s²): 250

Angles of fuze action: of 0° up to 75° from normal

Distant arming time (s): 1.1 - 1.7

Action time (µs): 20 - 30

Structure and Action Principle:

The V-5KP1 fuze consists of a piezogenerator and a safe and actuating mechanism, electrically connected. The piezogenerator serves the purpose of sensor converting the mechanical impact energy generated on impact of a rocket with the target into electric energy. The safe and actuating mechanism serves to ensure the fuze safety in handling, on firing and along the trajectory until arming occurs.

AVIATION BOMBS:

- P-50-75N Practice Bomb
- OFAB 100-120 High-Explosive Fragmentation Bomb
- OFAB 100-120PF Pre-Fragmented Bomb
- OFAB 100-130M2000 Pre-Fragmented Bomb
- OFAB 250-270 Aerial General Purpose Bomb
- OFAB 250-270M03 Pre-Fragmented Bomb
- FAB 500M-62 High-Explosive Bomb
- BETAB 500 - Concrete-piercing Air Bomb
- FUZE AMV AE2
- FUZE AVU for air bombs OFAB 100-120, OFAB-250-270, FAB-500M
- FUZE AVU-ET for air bombs OFAB 100, OFAB-250, FAB-500M



P-50-75N Practice Bomb



Technical Data:

Caliber (kg): 50
Length (mm): 1065
Diameter (mm): \varnothing 203
Stabilizer span (mm): 245
Characteristic time (s): 21,55
Light intensity (cd): not less than 200 000
Light duration time (s): not less than 15
Weight (kg): 63 +/-3
Fuze: AMV-AE2; AM-A with MDV-2
Corpus: P-50-75N: concrete

Packing*:

Bombs:

12 pcs on a wooden pallet
Pallet dimensions (mm): 800x840x1065
Volume (m³): 0,72
Gross weight (kg): 930

Fuzes:

(AMV-AE2) - 96 pcs in a wooden case
Case dimensions (mm): 658x598x191
Volume (m³): 0,075
Gross weight (kg): 36

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

OFAB 100-120 High-Explosive Fragmentation Bomb



Technical Data:

Caliber (kg): 100

Length (mm): 1065

Diameter (mm): \varnothing 273

Stabilizer span (mm): 345

Characteristic time (s): 21, 10/6

Weight of charge (kg): 46

Weight (kg): 123

Fuze: AVU-ETM; AVU-ET; AMV-AE2; AVU-E

One suspension point

* Suspension scheme can be done according to client's requirement as well

Packing*:

Bombs: 1 pc in a wooden lattice case.

Case dimensions (mm): 1290x \varnothing 525

Volume (m³): 0,28

Gross weight (kg): 150

Fuzes (AVU-ETM): 16 pcs in a wooden case.

Case dimensions (mm): 660x590x180

Volume (m³): 0,07

Gross weight (kg): 52

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

OFAB 100-120PF Pre-Fragmented Bomb



Technical Data:

Caliber (kg): 100
Length (mm): 1 065
Body Diameter (mm): $\varnothing 273$
Tail fin span (mm): 345
Characteristic time (s): 21,10/6
Explosive weight (kg): 26
Number of balls: 15 000/6 900
Ball diameter (mm): $\varnothing 8,75/\varnothing 11,9$
Bomb weight (kg): 123
Fuze: AVU-ET(M): AMV-AE2
Suspension: Single/250 mm/14"

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

This aircraft bomb is effective against personnel in open terrain and motorized infantry at the reserves concentration base, on the march or in battle array. It is filled with fragments and powerful explosive compositions on the base of TNT/RDX. The bomb design provides for better fragments distribution in the fragments flight area and high fragmentation zone density within the lethal range, as compared to general-purpose ammunitions. The bomb can be carried on aircrafts with one-point suspension bomb rack or on 14" NATO standard suspension systems, using the corresponding fuze type.

OFAB 100-130M2000 Pre-Fragmented Bomb



Technical Data:

Caliber (kg): 100
Length (mm): 1165
Body Diameter (mm): $\varnothing 273$
Tail fin span (mm): 345
Characteristic time (s): 20,70
Explosive weight (kg): 27
Number of balls: 19 200
Ball diameter (mm): $\varnothing 8,75$
Bomb weight (kg): 130
Fuze: AVU- ETMA; AVU-ETM; AMV-AE2
Suspension: Single

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

This aircraft bomb is effective against personnel in open terrain and motorized infantry at the reserves concentration base either on the march or in battle array. It is filled with fragments and powerful explosive compositions on the base of TNT/RDX.

Fitted with a tubular detonator to ensure fragments high capacity for damage on personnel. The bomb design produces optimal fragments distribution in the fragments flight area and high density of the fragmentation zone within the lethal range as compared to general-purpose ammunitions.

OFAB 250-270 Aerial General Purpose Bomb



Technical Data:

Caliber (kg): 250
Length (mm): 1 456
Body Diameter (mm): \varnothing 325
Tail fin span (mm): 410
Characteristic time (s): 20,92/12
Explosive weight (kg): 92
Bomb weight (kg): 268
Distance between the two lugs (mm): 250
Fuze: AVU-ETM; AVU-ET

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

OFAB 250-270. Aerial General Purpose Bomb 250-270 is intended for destruction of military-industrial sites, railway junctions, field facilities and personnel in open terrain as well as in light armoured vehicles and trucks on the march or during attack within the main concentration perimeter.

OFAB 250-270M03 Pre-Fragmented Bomb



Technical Data:

Caliber (kg): 250
Length (mm): 1 445
Body Diameter (mm): $\varnothing 325$
Tail fin span (mm): 410
Characteristic time (s): 20,92/12
Distance between the two lugs (mm): 250
Explosive weight (kg): 50
Number of balls: 15 700/14 200
Ball diameter (mm): $\varnothing 11,9/\varnothing 12,4$
Bomb weight (kg): 267
Fuze: AVU-ETAM; AVU-ETM

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

This aircraft bomb is effective against personnel in open terrain and motorized infantry at the reserves concentration base either on the march or in battle array. It is filled with fragments and powerful explosive compositions on the base of TNT/RDX. Fitted with a tubular detonator to ensure high lethal effectiveness of fragments to personnel with individual protection means, and destruction of personnel in vehicles.

FAB 500M-62 High-Explosive Bomb



Technical Data:

Caliber (kg): 500
Length (mm): 2416
Body Diameter (mm): \varnothing 400
Tail fin span (mm): 515

Characteristic time (s): 20,38/12,20,44/24
Explosive weight (kg): 207
Bomb weight (kg): 520
Fuze: AVU-ETM; AVU-ET; AVU

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

FAB 500-M62 High-Explosive Bomb is intended for destruction of military-industrial sites, railway junctions, field facilities, personnel in open terrain as well as in light armoured vehicles and trucks on the march or during attack within the main concentration perimeter.

BETAB 500 - Concrete-piercing Air Bomb



Technical Data:

Caliber (kg): 500
Length (mm): 2225
Body diameter (mm): Ø350
Tail fin span (mm): 450
Characteristic time (s): 20.6/2
Explosive weight (kg): 88
Bomb weight (kg): 475
Fuze: AVU-ETM, AVU-ET

Packing*:

Bombs 1 pc in a wooden lattice case
Case dimensions (mm): 2415xØ700
Volume (m³): 0.93
Gross weight (kg): 580
Fuze (AVU-ETM): 16 pcs. in a wooden case.
Case dimensions (mm): 660x590x180
Volume (m³): 0.07
Gross weight (kg): 52

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

FUZE AMV AE2



Technical Data:

Fuze weight (g): 320

Detonator weight (g): 2

Overall dimensions (mm): 69x47,5

Super Quick function

Arming time (s): 1,8...3

Height of assembled fuze (without the electrical arming device) (mm): 40

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

Mechanical impact fuze with electrical initiating device for aviation ammunitions.

FUZE AVU for air bombs OFAB 100-120, OFAB-250-270, FAB-500M



Technical Data:

Arming: mechanical
Action: PD, delayed
Operational Temperature Range: -60 to +150°C
Maximum allowed exposure at 150°C: 90 minutes
Shelf Life: 12.5 years

Packing*:

16 units in four air-tight metal boxes packed in a wooden case.
Dimensions (mm): 658x598x191
Gross weight (kg): 57
Volume (m³): 0.075
Total length (mm): 210
Weight:
- Without additional ring (g): 1837
- With additional ring (g): 1887
Method of arming: mechanical device

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

Fuze AVU completes the following types of air bombs:
- OFAB-100-120
- OFAB-250-270
- FAB-500M-62

Universal air heat resistant fuze AVU with mechanical starting device is intended for high-explosive, fragmentation high-explosive, high-explosive incendiary, incendiary air-bombs and incendiary containers. The fuze is fitted into nose or base fuze threaded filling holes. The fuze provides point detonating and inertia action, ignition SQ and two delay modes.

FUZE AVU-ET for air bombs OFAB 100, OFAB-250, FAB-500M



Technical Data:

Arming: electric
Action: PD, delayed
Operational Temperature Range: -60 to +150°C
Maximum allowed exposure at 150°C: 90 minutes
Shelf Life: 12.5 years

Packing*:

16 units in four air-tight metal boxes packed in a wooden case
Dimensions (mm): 658x598x191
Gross weight (kg): 57
Volume (m³): 0.075
Total length (mm): 210
Weight:
- Without additional ring (g): 1806
- With additional ring (g): 1856
Method of arming: electric
Electric starting device Voltage (V): 27

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

Fuze AVU-ET completes the following types of air bombs:

- OFAB-100-120
- OFAB-250-270
- FAB-500M-62

Universal air heat resistant fuze AVU-ET with electrical starting devices is intended for high-explosive, fragmentation high-explosive, high-explosive incendiary, incendiary air-bombs and incendiary containers. The fuze is fitted into nose or base fuze threaded filling holes. The fuze provides point detonating and inertia action, ignition SQ and two delay modes. The fuze is safe in storage, handling and operation and ensures the safe and reliable function of the ammunition in all weather conditions.

TANK AMMUNITION:

- 100mm UOF-412 Round With OF-412 High-Explosive Projectile
- 100mm UBK4 Round With BK5 FIN Stabilized Shaped Charge Projectile
- 115mm 3UOF6 Round With 3OF18 High-Explosive Projectile with Increased Combat Range for U-5TS Tank Gun
- 125mm 3VOF22 Round With 3OF19 High-Explosive Projectile
- 125mm 3VOF36 Round With 3OF26 High-Explosive Projectile
- 125mm Round 3VBM-7ARMOR-PIERCING FIN-STABILIZED Discarding Sabot Tracer



100mm UOF-412 Round With OF-412 High-Explosive Projectile



Technical Data:

Round Weight (kg): 30,2
Projectile Weight (kg): 15,6
Percussion Primer: KVV
Fuze: V-429

Ballistic Data:

Muzzle velocity (m/s): 900
Maximum pressure (kg/cm³): 3000
Maximum range (m): 16 000

System:

100mm D-10S, D-10T2S and BS-3 Anti-Tank and Tank Guns

Packing*:

2 rounds in a wooden case
Case dimensions (mm): 1206x444x264
Volume of the case (m³): 0,1414
Total weight (kg): 84

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

100mm UBK4 Round with BK5 FIN Stabilized Shaped Charge Projectile



Technical Data:

Round Weight (kg): 25
Projectile Weight (kg): 12,2
Bursting Charge: A-IX-1
Percussion Primer: KVV

Ballistic Data:

Maximum pressure (kg/cm³): 2400
Fuze: GPV-2

System:

100mm D-10S, D-10T2S and BS-3 Anti-Tank and Tank Guns

Packing*:

2 rounds in a wooden case
Case dimensions (mm): 1206x444x264
Volume of the case (m³): 0,1414
Total weight (kg): 75

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

115mm 3UOF6 Round with 30F18 High-Explosive Projectile with Increased Combat Range for U-5TS Tank Gun



Technical Data:

Muzzle velocity (m/sec): 800

Maximum pressure (Pa): $2250 \cdot 10^5$

Maximum range (m): 9500

Element	Material indication	Weight (kg)	Length (mm)
Projectile	Fuze	V-429E	0.435
	Body	Steel	14.64
	Driving band	Copper	0.400
	Charge	TNT	2.788
Cartridge case	4G9 (steel)	7.95	730
	4G10A (brass)	8.45	730
Combat load	Powder	4.65	-
Primer sleeve	KVU	0.09	24

Packing*:

2 rounds in a wooden case

Case dimensions (mm): 1190x500x280

Gross weight of the case (kg): 92

Volume of the case (m³): 0.166

Weight of projectile (kg): 30.745

Length of projectile (mm): 1069

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The product is intended to be fired from 115mm U-5TS tank gun for destroying enemy manpower and fire arms in the open or in field-type shelters, also intended for fighting artillery, mortars, missile launchers and light armoured vehicles and equipment. Inert training rounds are produced.

125mm 3VOF22 Round With 3OF19 High-Explosive Projectile



Technical Data:

Cartridge Case Weight (kg): 3.840
Cartridge Case Length (mm): 387
Combat Load (kg): 5.885
Primer sleeve (kg): 0.09
Primer sleeve Length (mm): 24

Ballistic Data:

Muzzle velocity (m/s): 850
Maximum pressure (Pa): $3500 \cdot 10^5$
Maximum range (m): 10 000

Packing*:

1 round in a wooden case
Case dimensions (mm): 816x541x272
Gross weight of the case (kg): 60
Volume of the case (m³): 0.12
Weight of round (kg): 33
Length of projectile (mm): 677
Weight of cartridge case with charge (kg): 9.5
Length of cartridge case with charge (mm): 408

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The product is intended to be fired from 125mm 2A-46 tank gun for destroying enemy manpower and fire arms in the open and in field-type shelters, also for fighting artillery, mortars, missile launchers and vehicles and light armored vehicles and equipment. Inert training rounds are produced.

125mm 3VOF36 Round With 3OF26 High-Explosive Projectile



Technical Data:

Cartridge Case Weight (kg): 3.840
Cartridge Case Length (mm): 387
Combat Load (kg): 5.885
Primer sleeve (kg): 0.09
Primer sleeve Length (mm): 24

Ballistic Data:

Muzzle velocity (m/s): 850
Maximum pressure (Pa): $3500 \cdot 10^5$
Maximum range (m): 10000

Packing*:

1 round in a wooden case
Case dimensions (mm): 816x541x272
Gross weight of the case (kg): 60
Volume of the case (m³): 0.12
Weight of round (kg): 33
Length of projectile (mm): 677
Weight of cartridge case with charge (kg): 9.5
Length of cartridge case with charge (mm): 408

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The product is intended to be fired from 125mm 2A-46 tank gun for destroying enemy manpower and fire arms in the open and in field-type shelters, also for fighting artillery, mortars, missile launchers and vehicles and light armored vehicles and equipment. Inert training rounds are produced.

125mm Round 3VBM-7 ARMOR-PIERCING FIN-STABILIZED Discarding Sabot Tracer



Technical Data:

Material of the body of the active part of the projectile: Martensitic steel
Material of the core: Tungsten carbide
Material of the driving unit: Steel
Powder of the additional charge: 15/1 tabular

Weight of the round (kg): 20
Weight of the active part of the projectile with the driving unit (kg): 5.9
Weight of the active part of the projectile without the driving unit (kg): 3.9
Weight of the driving unit (kg): 2.02
Length of the active part of the projectile (mm): 548

Packing*:

The round components are packed in hermetically sealed metal cylindrical cases.
Wooden case dimensions (mm): 816x541x272
Gross weight (kg): 54
Volume (m³): 0.12

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Length of the core (mm): 71

Diameter of the core (mm): 20

Standard penetration at 2000m at 0°/60° (mm): 310/120

Average penetration at 2000m at 0° (mm): 340

Ballistic Data:

Muzzle velocity (m/s): 1 785

Maximum pressure (Pa): 5015.10⁵

Direct fire range (m):

- Height of the target 2m (m): 2120

- Height of the target 2.7m (m): 2410

ARTILLERY AMMUNITION:

- 122mm Rocket For BM-21 "GRAD" / RM-70
- 122mm Round With High-Explosive Shell For HOWITZER D-30 And Self-Propelled HOWITZER 2S1
- 130mm High-Explosive Round With Full Charge For M46 Gun
- 130mm High-Explosive Round With Reduced Charge For M46 Gun
- 152mm High-Explosive Round with Full Charge for D-20,ML-20
- 152mm High-Explosive Round with Reduced Charge for D-20, ML-20



122mm Rocket For BM-21 "GRAD" / RM-70



Basic Characteristics:

Caliber (mm): 122

Maximum velocity (m/sec): 690 to 699

Maximum range (m): 20 127

System:

Combat vehicle: BM-21 "GRAD" or RM-70

Completing Units:

Fuze: MRVU

Distance ballistic rings: small and big

Packing*:

1 rocket in a wooden case

Case dimensions (mm): 2950x255x185

Volume (m³): 0.14

Weight (kg): 105

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy manpower in the open or in field shelters, for fighting the artillery and for destroying armoured vehicles. It can also be used for making passages through mine fields and defense wirings.

122mm Round With High-Explosive Shell For HOWITZER D-30 And Self-Propelled HOWITZER 2S1



Technical Data:

Caliber (mm): 122

Projectile weight (kg): 21,76

Muzzle velocity:

- with adjustable charge (m/s): 565

- with full charge (m/s): 680

Fuze: RGM-2 or RGM-2M

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

122mm round with a High-Explosive shell for howitzer D-30 and self-propelled howitzer 2S1. It is designed to suppress and destroy the enemy's tactical means of assault, artillery and mortar batteries, personnel, fire means and vehicles on the march, during attack or when concentrated within a particular area, and also for destruction of base stations, defense field facilities and observation posts.

130mm High-Explosive Round With Full Charge For M46 Gun



Technical Data:

Type of charge: full
Muzzle velocity (m/s): 930
Max. range (m): 27490
Loading: separate

System:

M-46 gun

Completing

Units: Fuze:

V-429

Packing*:

1 rounds in a wooden case

Dimensions (mm): 956x495x285

Volume (m³): 0,135

Weight (kg): 85

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy manpower in the open or in field shelters, for demolishing long-term shelters and log fire emplacements, for fighting the artillery and destroying armoured vehicles. It can also be used for making passages in mine fields and defense wirings.

130mm High-Explosive Round With Reduced Charge For M46 Gun



Technical Data:

Type of charge: reduced
Muzzle velocity (m/s): 705
Max. range (m): 19130
Loading: separate

System:

M-46 gun

Completing Units:

Fuze: V-429

Packing*:

1 rounds in a wooden case
Dimensions (mm): 956x495x285
Volume (m³): 0,135
Weight (kg): 78

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy manpower in the open or in field shelters, for demolishing long-term shelters and log fire emplacements, for fighting the artillery and destroying armoured vehicles. It can also be used for making passages in mine fields and defense wirings.

152mm High-Explosive Round with Full Charge for D-20, ML-20



Technical Data:

Type of charge: full
Muzzle velocity (m/s): 655
Max. range (m): 17420
Loading: separate
System: D-20 gun-howitzer and ML-20 howitzer-gun

Packing*:

1 Round in a wooden case
Case dimensions (mm): 830x410x260
Weight (kg): 81
Volume (m³): 0.0885

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy manpower in the open or in field shelters, for demolishing long-term shelters and fortified emplacements, for fighting the artillery and destroying armoured vehicles. It can also be used for making passages in mine fields and defense wirings.

152mm High-Explosive Round with Reduced Charge for D-20, ML-20



Technical Data:

Type of charge: reduced
Muzzle velocity (m/s): 511
Max. range (m): 15850
Loading: separate
System: D-20 gun-howitzer and ML-20 howitzer-gun

Completing Units:

Fuze: RGM-2, RGM-2M D-1U, V-90

Packing*:

1 Round in a wooden case
Case dimensions (mm): 830x410x260
Weight (kg): 77
Volume (m³): 0.0885

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

It is designed for destroying the enemy manpower in the open or in field shelters, for demolishing long-term shelters and fortified emplacements, for fighting the artillery and destroying armoured vehicles. It can also be used for making passages in mine fields and defense wirings.

152mm High-Explosive Round with Reduced Charge for D-20, ML-20



Technical Data:

Type of charge: reduced
Muzzle velocity (m/s): 511
Max. range (m): 15850
Loading: separate
System: D-20 gun-howitzer and ML-20 howitzer-gun

Completing Units:

Fuze: RGM-2, RGM-2M D-1U, V-90

Packing*:

1 Round in a wooden case
Case dimensions (mm): 830x410x260
Weight (kg): 77
Volume (m³): 0.0885

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

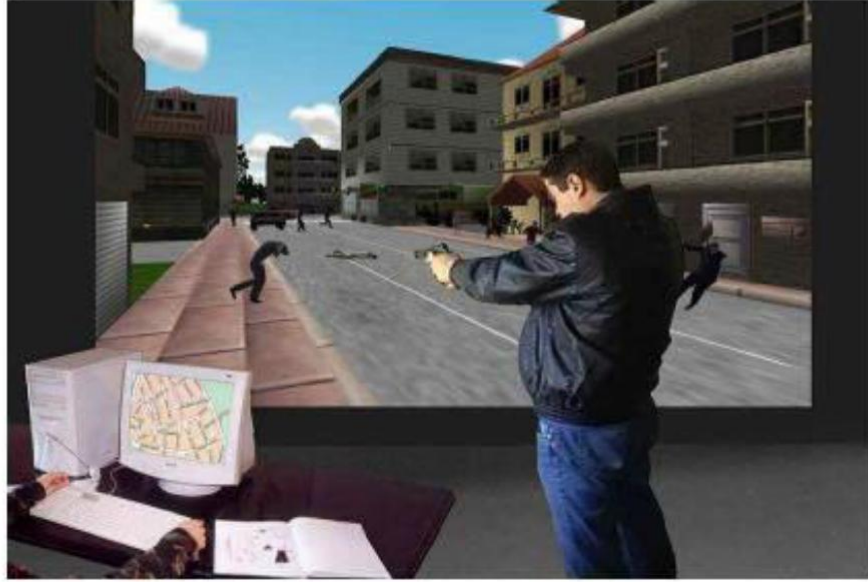
It is designed for destroying the enemy manpower in the open or in field shelters, for demolishing long-term shelters and fortified emplacements, for fighting the artillery and destroying armoured vehicles. It can also be used for making passages in mine fields and defense wirings.

TRAINING AIDS:

- Complex Simulator For Firing Practice, Protection And Tactical Training USATS 2002
- Simulator System For Antitank Guided Missile Complexes "FAGOT" & "KONKURS"
- Anti-aircraft Missile Complex Training Simulator "IGLA" & "STRELA"
- SPM-100 Flare Parachute Target
- 3P10-B Air Target Imitator In Pursuit Engagements
- 23mm Auxiliary Barrels of NV Series
- 23mm NV-22 Self-Loading Auxiliary Barrel
- 122mm Flare Target Rocket M-21 ROM
- 122mm Flare Target Rocket M-21 SIM
- 122mm Round With VPVM-ZA Mobile Aerial Target
- 122mm Round With VPVM-ZRB Mobile Aerial Target
- 122mm Round With VPVM-ZRU Mobile Aerial Target
- PUS-7M Firing Practice Attachment
- PUS-9M Firing Practice Attachment
- Fire Control Calculator for BM-21 "Grad"



Complex Simulator For Firing Practice, Protection And Tactical Training USATS 2002



Introduction:

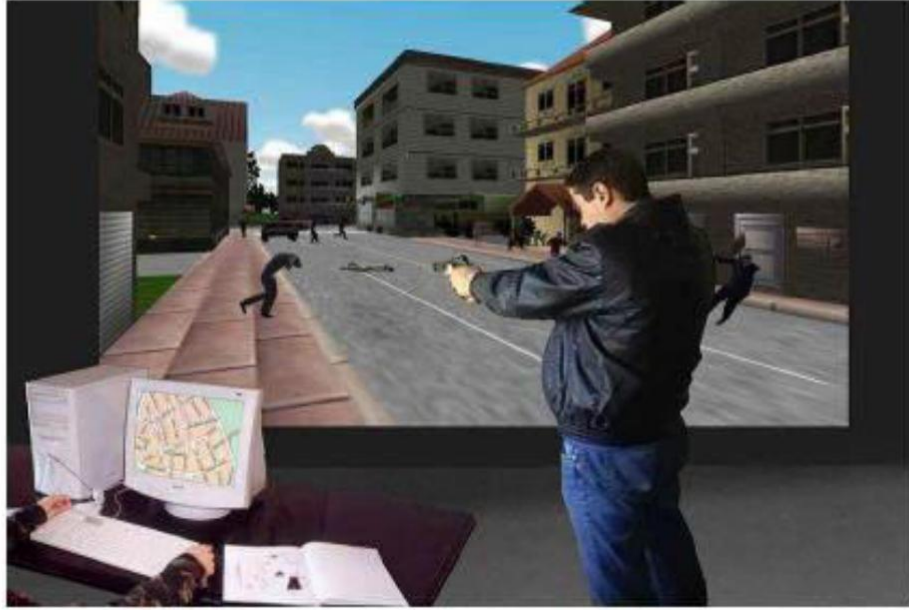
The USATS 2002 is intended to meet the weapon training needs at basic and advanced tactical as well as operational levels. The system comprises of a state-of-the-art computer based simulator capable of handling a big variety of weapons and training programs. The system flexibility enables you to precisely match your training needs, facilities, budget, manpower and capacity requirements with a completely customized solution.

The simulator delivers all the hard edges and uncertainty of real operational situations as judgment calls, potentially deadly mistakes, indecision, sudden fear, partial understanding, blindside surprise, eye-blink. It offers superb training that conditions the mind and the body for survival.

System Highlights:

- Hi-precision laser beam aiming technology
- Realistic behavior of the virtual enemy
- Various meteorological conditions
- Flexible and easy creating of new scenaria
- Independent/team marksmanship training in separate lanes
- 3D virtual reality
- Realistic recoil simulation
- Hi-resolution DLP video technology
- Wireless weapon status control
- Self-test and diagnostic

Complex Simulator For Firing Practice, Protection And Tactical Training USATS 2002



Introduction:

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- Realistic recoil simulation
- Hi-resolution DLP video technology
- Wireless weapon status control
- Self-test and diagnostic

Simulator System For Antitank Guided Missile Complexes "FAGOT" & "KONKURS"



Introduction:

The tactical simulator is intended for training with guided missiles firing to provide practical education of soldiers upon combating against enemy's forces. The simulator provides imitated visual and audio conditions for firing controlled missiles.

System Highlights:

- 3D realistically synthesized terrains with topographic relief suitable for training
- Various meteorological conditions
- Day and night visualization
- Flexible and easy creating new scenaria
- Various types of immobile and mobile targets, moving under various routes at up to 80 km/h linear speed at distance up to 5500 m
- Up to 15 simultaneously visible targets on the screen
- Complete 360° simulated view
- Precise simulation of the influence from various IR-emitting sources
- Self-testing capabilities
- UPS buffered power supply

Simulator system:

- State-of-the-art computer
- Modern 3D video accelerator
- Hi-tech audio-visual system

- Basic and advanced levels of training
- Large screen
- Day and night visualization
- Collecting/printing training info

Targets:

- 3D moving targets
- Realistic textures
- Various types
- Flexibly setting of the target's routes

Relief synthesis:

- Initial 3D model with realistic textures
- Mathematical synthesis
- Hills, plains, trees, houses, roads
- View scope - full 360°

Scenario editor:

- Easy creating and editing realistic scenaria
- User-friendly interface
- Selection of firing position and starting orientation for firing
- Various difficulty levels of training
- Detailed topographic map

Artificially created perturbation:

- Decoys - shot by mobile targets
- Smoke-balls - shot by mobile targets
- IR-lights influencing the missile guidance

Meteorological interferences:

- Wind speed and direction
- Air temperature
- Sun, clouds
- Rain, flashes
- Snow
- Fog

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Anti-aircraft Missile Complex Training Simulator "IGLA" & "STRELA"



Introduction:

The simulator is intended for training with anti-aircraft missile complexes "IGLA" and "STRELA" (9K32M; 9K34; 9K310 and 9K38). The system is based on a high efficient computer audio-visual system connected with original launching tube with supplementary sensors incorporated.

The trainee is situated in the middle of a state-of-the-art multimedia theater with high quality digital picture, big screen action and realistic stereo sound environment.

The training simulator delivers all the hard edges and uncertainty of combating against enemy forces by realizing a complete and adequate "realtime" imitation of real battle conditions. This way the trainees build durable habits to manipulate the anti-aircraft missile complex as well as to improve practical skills for independent combat action.

System Highlights:

- Realistic terrains suitable for training
- State-of-the-art computer
- Various meteorological conditions
- Flexible and easy creating new training tasks
- Various types of airborne targets and routes
- Accurate simulation of the influence from different IR-emitting sources

- Full audio stereo environment simulation

Simulator system:

- Basic and advanced levels of training
- State-of-the-art computer
- Original launching tube with supplementary sensors incorporated
- Modern 3D video accelerator
- Hi-tech audio-visual system
- Big screen

Audio simulation:

- Full stereo simulation of the sounds of the airborne targets
- Full stereo simulation of the sounds of the missile
- Full stereo simulation of the launching mechanism sounds
- Digital audio synthesizers

Scenario editor:

- Easy creating and editing of realistic scenarios
- User-friendly interface

Airborne targets:

- Simulated three-dimensional virtual reality
- Realistic size, form and color range
- Helicopters, fighters, intelligencers
- Velocity and trajectory corresponding to the technical and physical properties of the target

Artificially created perturbations:

- Thermal decoys - shot by the airborne targets
- Environmental objects with thermal emission like sun and clouds
- Influence over the missile flight

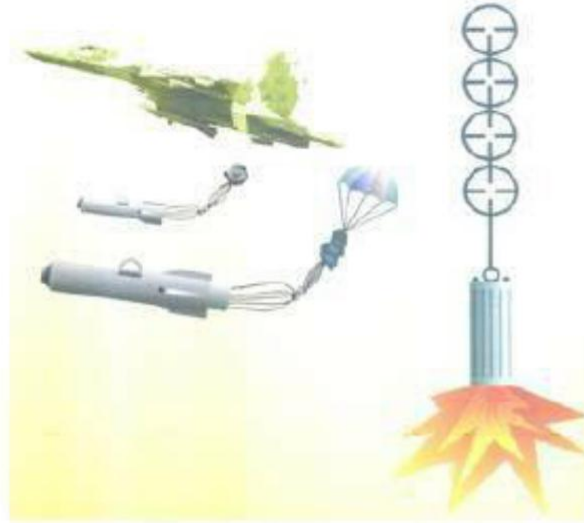
Meteorological interferences:

- Sunlight and clouds
- Rain and snow
- Fog

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

SPM-100 Flare Parachute Target



Basic Characteristics:

Dimensions:

Body diameter (mm): 280

Fin span (mm): 345

Body length (mm): 1060 ±5

Target weight (kg): 110

Main parachute area (m²): 36

Reflector efficient area (m²): 5

Minimum glow force of torch system (cd):
900 000

Combustion minimum time of torch system

9 (min): 7,5

Characteristic time (sec): 20,2-22

Maximum permissible high of bomb
dropping (m): 10000

Maximum permissible speed of bomb
falling (km/h): 700

Maximum permissible overload: 5g
(49m/s²)

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Illuminated parachute target SPM-100 is designed for firing practices in aircraft with "air-to-air" missiles equipped with radiolocation laying system or system for aiming by infrared radiation range.

By only one target, firing practices on three aircrafts - interceptors could be made consecutively at intervals of 2,0 ... 2,5 min.

3P10-B Air Target Imitator In Pursuit Engagements



Basic Characteristics:

Caliber (mm): 131
Length (mm): 1505
Range of flight speed alternation (m/s):
from 280 down to 180
Maximum flight altitude (m): up to 4800
Maximum speed in the Crossing point
(m/s): 208
IR radiation source: 6 flares Imitating IR
radiation mounted in flare-holders fitted to
the imitator's stabilizer fin

Packing*:

2 pcs of ATI in a wooden case
Case dimensions (mm): 1800x545x320
Weight (kg): 126

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The Air Target Imitators (ATIs) represents target imitating the flight of a piston-engined or jet-propelled air target and emitting energy in the infrared wave band. To ensure interception of the air target imitator by the rocket in pursuit engagements, flare holders with flares are attached to its stabilizer fin.

Visibility of flares (km): ensures
interception of ATI
Warhead: dummy

System:

BM-13 combat vehicle

Completing Units:

9X44 Flare: 6 pcs.

23mm Auxiliary Barrels of NV Series



Technical Data:

Assembly time (min): 15
Rate of fire (rds/min): 3 – 5
Length: equal to the barrel length

Completing Units:

Auxiliary barrel
Counterbalance
Spare parts and tools
Technical description and operating manual
Packing case

Advantages Of The Auxiliary Barrels Of NV Series:

Reduced dispersion in fire
Ease of the case extraction
Easier assembly of the auxiliary barrel in the tank or artillery system barrel
Reduced counterbalance weight

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 23mm Auxiliary Barrels have been intended for performance of direct laying firing practice with the following tank and artillery systems:

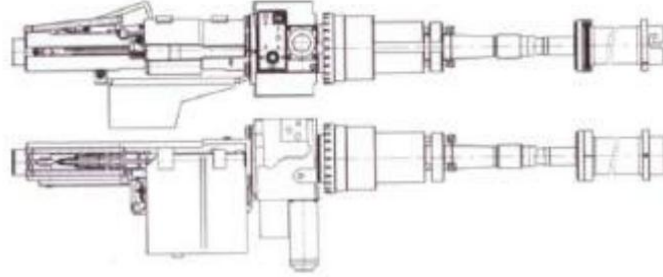
NV 20 100mm	D-10 T2S tank gun on T-55 tank
NV 21 115mm	2A20 tank gun on T-62 tank
NV 23 100mm	MT-12 anti-tank gun
NV 24 122mm	2S1 self-propelled howitzer
NV 25 152mm	2S3 self-propelled howitzer
NV 26 130mm	M-46 gun
NV 27 122mm	D-30 howitzer

The operations being performed by the gunner when firing with an auxiliary barrel are the same as those when firing with standard rounds.

23mm APIT cartridges are used for firing.

When using the auxiliary barrel, a far-reaching effect will be produced because of the difference in the values of the standard ammunition and 23mm rounds, and the service life (as regards the shots) of the tank or artillery system remains the same.

23mm NV-22 Self-Loading Auxiliary Barrel



Technical Data:

Caliber (mm): 23

Projectile muzzle velocity (m/sec): 980

Accuracy at 800m distance:

$B_B \leq 0.6m$

$B_C \leq 0.5m$

Magazine capacity (rds): 5

Firing rate with a loaded magazine (rds/min): 5

Magazine loading time (min): 1

Assembly time (min): 20

Disassembly time (min): 20

Supply voltage (V): 27 +2/-5

Max consumption current (A): 30

Temperature range (°C): -10 – +50

Packing*:

Overall dimensions of the case for:

Barrel with protective tube (m): 1.93x0.35x0.26

Automatic equipment (m): 1.87x0.46x0.29

Weight (kg): 200

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Completing Units:

23mm SLAB is packed in 2 cases.

Case 1 consists of:

- 23mm auxiliary barrel finished completely
- Protective tube
- Set of assembling and cleaning accessories
- Operating documentation

Case 2 consists of:

- Breechblock wedge with motor reducer and control panel

- Breechblock tube with breechblock, magazine, follower and trigger-and-firing mechanism Supply cables;
- Set of spare parts

Additional Info:

The 23mm Self-Loading Auxiliary Barrel /SLAB/ has been intended for performance of firing practice with the 125mm 2A46 tank gun on T-72 tank. When using it, a far-reaching economic effect will be produced because of the difference in the value of the tank standard rounds, as well as the ballistic durability of the tank gun barrel will be increased. The gun mechanisms and counter recoil mechanisms will be preserved.

At the firing practice distances (800-1200m), the 23mm projectile trajectory is very close to the 125mm standard projectile trajectory, thus producing a high training effect. The SLAB enables the crew to perform all operations and to meet any requirement as those when firing a real projectile, namely:

- Preparation of the tank systems for firing
- Observation of the battlefield and aiming
- Firing from position or when underway
- 23mm standard APIT rounds arc used for firing



122mm Flare Target Rocket M-21 ROM

Technical Data:

Caliber (mm): 122

Target weight (kg): 66.4

Target length (m): 3.29

Average effective radio reflecting surface (m²):

- for radar range "S": Not less than 0.5

- for radar range "H": Not less than 1

- for radar range "K": Not less than 2.5

Operation of the jet engine after launching (s): from 1.7 to 1.9

Average trajectory speed (m/s): 380

Maximum height of the trajectory (m): 6000

Time of flight (s): 60

Maximum distance of flight (m): 19 000

Launching device: Rocket system for collective fire MRLS BM-21 "Grad"

Temperature operating range (°C): -40 to +50

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 122mm target rocket M-21 SIM simulates the flight of low flying aerial target. The target is designated to train crews of antiaircraft guided missile systems (ZRK) and AA artillery to operate optical devices and thermal imaging equipment of the ZRK in "Without combat launch" mode and to destroy targets under conditions similar to the combat ones in "Combat Launch" mode. The mode of emitting light energy allows keeping the firing parameter, pursuit (dog) fire and head-on fire.

122mm Flare Target Rocket M-21 SIM

Technical Data:

Caliber (mm): 122
Target weight (kg): 66.3
Target length (m): 2.88
Operation of the jet engine after launching (s): from 1.7 to 1.9
Average trajectory speed (m/s): 400
Maximum height of the trajectory (m): from 3000 to 4000
Availability of sound simulation: Yes
Time of illumination (s): Not less than 50
Time of flight (s): 53
Maximum distance of flight (m): 19 000
Launching device: Rocket system for collective fire MRLS BM-21 "Grad"
Temperature operating range (°C): -40 to +50

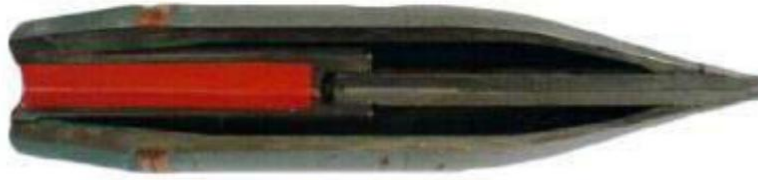
Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 122mm target rocket M-21 SIM simulates the flight of low flying aerial target. The target is designated to train crews of anti-aircraft guided missile systems (ZRK) and AA artillery to operate optical devices and thermal imaging equipment of the ZRK in "Without combat launch" mode and to destroy targets under conditions similar to the combat ones in "Combat Launch" mode. The mode of emitting light energy allows keeping the firing parameter, pursuit (dog) fire and head-on fire.

122mm Round With VPVM-ZA Mobile Aerial Target



Technical Data:

	VPVM-ZA1 for M-30	PVM-ZA2 for D-30 (2S1)
Muzzle velocity (m/s)	345	358
Height of trajectory (m)	3930	4020
Flare and tracer light time (s)	60	60
Range (m)	5350	5550

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

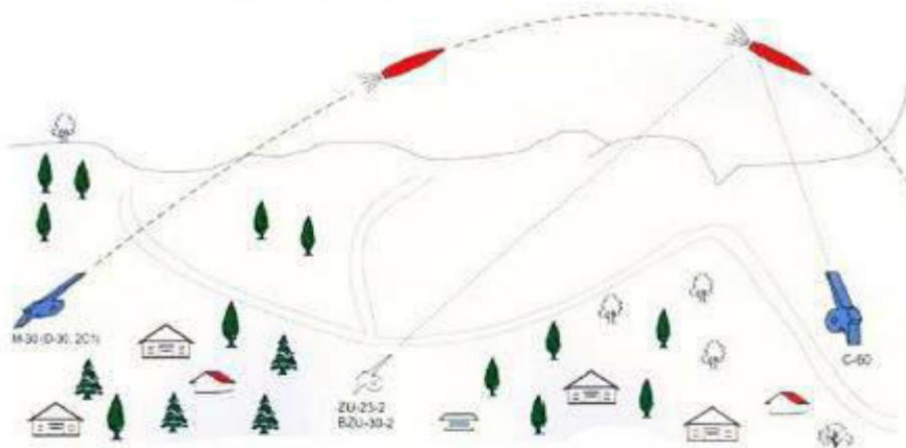
Additional Info:

The 122mm round with VPVM-ZA Mobile Aerial Target is used for firing practice of anti-aircraft artillery crews.

The complete round consists of the Target-projectile PVM-ZA, cases for M-30 howitzer or for D-30 and 2S1 howitzers and charges No.3, No.4, No.5 and No.6 for M-30 howitzer or No. 3 and No.4 for D-30 and 2S1

Target Components: Body, Clamping Element, Tracer Block.

122 mm PVM-ZA PROJECTILE-TARGET DURING FIRING PRACTICE



122mm Round With VPVM-ZRB Mobile Aerial Target



Technical Data:

	VPVM-ZR1B for M-30	PVM-ZR2B for D-30 (2S1)
Muzzle velocity (m/s)	269	275
Height of trajectory (m)	1500	1560
Flare and tracer light time (s)	42	42
Range (m)	5350	5550

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 122mm round with VPVM-ZRB Mobile Aerial Target is used for training and firing practice of the crews of man-portable anti-aircraft rocket launchers (AARL) and anti-aircraft artillery (AAA) gunners with missile launching.

The complete round consists of the Target-projectile PVM-ZRB, cases for M-30 howitzer or for D-30 and 2S1 howitzers and charges No.5 for M-30 and No.4 for D-30 and 2S1.

Target Components: Dummy fuze, Body, Flare, Tracer chamber and Main tracer.

122 mm PVM-ZRB PROJECTILE-TARGET DURING FIRING PRACTICE



122mm Round With VPVM-ZRU Mobile Aerial Target



Technical Data:

	VPVM-ZRU for M-30	PVM-ZR2U for D-30 (2S1)
Muzzle velocity (m/s)	269	275
Height of trajectory (m)	1500	1560
Flare and tracer light time (s)	42	42
Number of thermal traps	6	6
Thermal traps ejection interval (s)	4...6	4...6
Range (m)	5350	5550

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 122mm round with VPVM-ZRU Mobile Aerial Target is used for training and firing practice of the crews of man-portable anti-aircraft rocket launchers (AARL) and anti-aircraft artillery (AAA) gunners without missile launching.

The complete round consists of the Target-projectile PVM-ZRU, cases for M-30 howitzer or for D-30 and 2S1 howitzers and charges No.5 for M-30 howitzer and No.4 for D-30 and 2S1 Target Components: Dummy fuze, Body, Flare, Tracer chamber and Thermal traps.



PUS-7M Firing Practice Attachment



Technical Data:

Barrel caliber (mm): 7.62
Range with an RPG-7 sight (m): 400
Bullet velocity (m/sec): 500
Weight (kg): 2.650

Completing Units:

PG-7 grenade simulator (pcs): 3
Booster simulator (pcs): 3
Plastic box for the booster (pcs): 3
Individual set of spares, tools and accessories (pcs): 1
Bag for 3 grenades (pcs): 1
Sight adapter (pcs): 1
Technical description and technical-and-operation data card (pcs): 1
Case for 2 pcs of PUS-7M (pcs): 1

Packing*:

Weight of the case with the attachment (kg): 41
Case overall dimensions (mm): 840x465x300
Combined cartridge in a package (pcs): 120
Package weight (kg): 4.700
Simulating cartridge in a package (pcs): 80
Package weight (kg): 1.800

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The PUS-7M Firing Practice Attachment has been intended for performance of firing practice with the RPG-7 Light Anti-Tank Grenade Launcher without cross wind correction.

The following ammunitions are fired from the attachment:

- 7.62mm combined ammunition with a tracer bullet
- 12 hunting caliber simulating cartridge

The PUS-7M attachment allows all firing exercises to be done when executing fire at a distance from 300 to 400m.

The use of a simulating cartridge allows the trainees to get accustomed to the noise of a real shot.

PUS-9M Firing Practice Attachment



Technical Data:

Grenade simulator weight (kg): 3,100

Initiating charge simulator weight (kg): 2

Caliber (mm): 73

Length with the initiating charge simulator (mm): 1100

Weight of the case with the attachment (kg): 38

Case overall dimensions (mm): 1000x510x280

Range with an SPG-9 sight (m): 1000

Bullet velocity (m/sec): 860

Hit accuracy at R50 (mm): 50

Radius of MPI when rotating the attachment at 1800 in the grenade launcher barrel at 100m distance (mm): 80

Weight of the special sound charge (gr): 18

Completing Units:

PG-9 grenade simulator (pcs): 3

Sound charge simulator in a box (pcs): 3

Protective tube (pcs): 1

Individual set of spares, tools and accessories (pcs): 1

Bag for 3 grenades (pcs): 1

Box for 8 charges of BN-00 type (pcs): 2

Technical description and technical-and-operation data card (pcs): 1

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The PUS-9M Firing Practice Attachment has been intended for performance of firing practice with the SPG-9 Heavy Anti-Tank Grenade Launcher with a hollow charge grenade.

7.62x54mm cartridge with a tracer bullet and a special sound chaise of BN-00 type are used when firing with the attachment.

The standard electrical firing mechanism of SPG-9 is used for firing with the PUS-9M.

When using the PUS-9M for firing with the SPG-9 Grenade Launcher, all operations are performed and requirements are met as those related to the live grenade in real time, namely:

- Preparation of the grenade launcher
- Preparation of the round for firing

- Loading the grenade launcher
- Observation of the battlefield
- Shooting
- Ceasing the fire

The attachment is delivered to the firing position in a case similar to the standard case. The PUS-9M attachment allows all exercises described in the firing course for training of soldiers to be done when executing fire at moving and stationary targets at a distance from 600 to 1000m. The results from the fire are judged by the tracer. The round noise and effect simulation teaches the trainees to take up a safe position.

Fire Control Calculator for BM-21 "Grad"

The fire control calculator for BM-21 is designed to calculate commands for firing BM-21 rockets M-21OF with index 9M22U, 9M22U-1 and 9M22 with fuse MRV-U index 9E244, using with big / little or no range reduction ring. The calculator can detect the individual positions of the BM-21 vehicle and the forward observer, using coordinates from a topographic map or rangefinder.



1. Setting the fire position

New fire position is set by clicking on button "New Forward Observer/Fire position".

1.1. Using a topographic map

- Enter the Cartesian coordinates and the height (in meters) of the forward observer location in fields X, Y and Z/h of section "Forward Observer position".
- Enter the Cartesian coordinates and the height (in meters) of the BM-21 vehicle location in fields X, Y и Z/h of section "Fire/Vehicle position". The application will automatically calculate and fill in the polar coordinates towards the forward observer position.
- Enter the main fire direction angle in mils in field "Main fire direction angle".

Fire control calculator for BM-21 "Grad"
using M-21OF rockets, index 9M22U with fuse MRV-U, index 9E244

New Forward Observer/Fire position

Forward Observer position:		Environment temperature: <input type="text" value="15.9"/> °C
X: <input type="text" value="0"/> m	Y: <input type="text" value="0"/> m	Z/h: <input type="text" value="0"/> m
Fire/Vehicle position:		Atmospheric pressure: <input type="text" value="750"/> mm Hg
X: <input type="text" value="0"/> m	Y: <input type="text" value="0"/> m	Z/h: <input type="text" value="0"/> m
Azimuth: <input type="text" value="45"/> - <input type="text" value="00"/>	Elevation: <input type="text" value="00"/> - <input type="text" value="00"/>	Distance: <input type="text" value="1"/> m
<input type="button" value="Use GPS Coordinates"/>		Atmospheric pressure: <input type="text" value="999.92"/> hPa
Main fire direction angle:		Ground wind:
<input type="text" value="15"/> - <input type="text" value="00"/>		Wind rose: <input type="text" value="N"/> <input type="text" value="W"/>
		Azimuth: <input type="text" value="00"/> - <input type="text" value="00"/> Speed: <input type="text" value="0"/> m/s

1.2. Using a rangefinder

- Enter the measured azimuth, elevation (in mils) and distance (in meters) from the forward observer position to the BM-21 vehicle in fields Azimuth, Elevation and Distance of section "Fire/Vehicle position". The application will

automatically calculate and fill in the Cartesian coordinates towards the forward observer position.

The azimuth is measured towards the North, counter clockwise direction is positive.

b. Enter the main fire direction angle in mils in field "Main fire direction angle".

1.3. Using GPS coordinates

Click on button "Use GPS coordinates". Enter the GPS coordinates of the forward observer and the BM-21 vehicle in fields "Forward Observer position: Latitude / Longitude / Altitude" and "Fire/Vehicle Latitude / Longitude / Altitude". Latitude and longitude are entered in decimal degrees (format dd.mmmmm, in WGS84 Datum) and the altitude in meters. Click on button "Calculate" and the fields containing the polar and Cartesian coordinates of the BM-21 will be automatically calculated and filled.

Fire control calculator for BM-21 "Grad"
using M-210F rockets, Index 9M22U with fuse MRV-U, Index 9E244

New Forward Observer/Fire position

Forward Observer position: Environment temperature: 15.3 °C
X: 0 m Y: 0 m Z/h: 0 m

Fire/Vehicle position:
X: 0 m Y: 0 m Z/h: 0 m
Azimuth: 45 - 00 Elevation: 00 - 00 Distance: 1 m

Forward Observer position:
Latitude: 0 - 0 - 0 ° N
Longitude: 7 - 24 - 0 ° E
Elevation: 0 m

Atmospheric pressure: 750 mm Hg
999.92 hPa

Fire/Vehicle position:
Latitude: 0 - 0 - 0 ° N
Longitude: 7 - 24 - 0 ° E
Elevation: 0 m

Cancel Calculate

Main fire direction angle:
15 - 00

Winds:
Wind rose: N
Azimuth: 00 - 00 Speed: 0 m/s

New Target

2. Entering the environmental parameters

2.1. Enter the measured air temperature (in °C) in field "Environment temperature".

2.2. Enter the measured atmospheric pressure in (mm/Hg) in field "Atmospheric pressure".

automatically filled with the value converted in hPa. If the preferred measurement units are hPa, the atmospheric pressure should be entered in the field hPa and the calculator will automatically fill the field mm/Hg with the respective converted value.

2.3. Enter the direction and the wind speed.

The direction is selected from the dropdown list in field "Wind rose". After the selection, the field "Azimuth" will be automatically filled with the wind direction value in mils. You can also skip the wind rose field and enter the direction directly in mils.

The speed (in m/s) is entered in the field "Speed".

3. Entering new target

To enter a new target for the set firing position, click the button "New Target". A new section appears in which must be entered the parameters of the attacked target.

Target data:

X: m Y: m Z/h: m

Azimuth: - Elevation: - Distance: m

Small ring suggested

Ring type: Use base level

Wind at 1400 m

Wind rose:

Azimuth: - Speed: m/s

3.1. Enter the coordinates of the new target

a. Using a topographic map

Enter the Cartesian coordinates and the height (in meters) of the target location in fields X, Y и Z/h of section "Target data". The application will automatically calculate and fill in the polar coordinates towards the fire position.

b. Using a rangefinder

Enter the measured azimuth, elevation (in mils) and distance (in meters) to the target in fields Azimuth, Elevation and Distance of section "Target data". The application will automatically calculate and fill in the Cartesian coordinates towards the fire position.

3.2. Selection of range reduction ring

Once the target parameters are entered the calculator will display a message below the "Target data" section suggesting the type of rocket range reduction ring to be used.

The message can be one of the following:

- "Big ring suggested"
- "Small ring suggested"
- "No ring suggested"
- "Impossible with this ring!", "Shot impossible", "Can NOT calculate shot" – the target is not reachable at this distance or height difference with the already selected ring.

The next step is to select the type of the ring set on the rockets to be launched. Select the type of ring from the drop down section. If the shot is not possible with the selected type of range reduction ring, the message "impossible with this ring!" will be displayed.

3.3. Enter the ballistic wind of the active section of trajectory

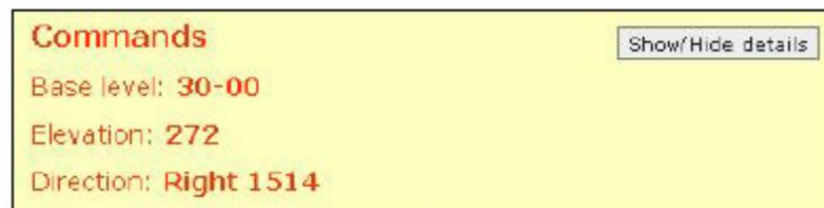
When the range reduction ring is selected the calculator will display a message for the height of the ballistic wind to be entered, for example "Wind at 1300 m". The wind data is taken from the meteorological bulletin and entered as azimuth (in mils) and speed (in m/s) in the fields "Wind rose" / "Azimuth" and "Speed" located under the message.

4. Calculation of the firing commands

Once all necessary target data are entered and the shot is possible, click on button "Calculate". The firing commands will appear on the right of the target data section, under the caption "Commands".

The values of "Elevation" and "Direction" are relayed to the vehicle crew.

If the field "Use base level" has been checked, the command for the base level will be calculated and also relayed as a command to the crew.



The commands section contains a button "Show / Hide details". Clicking on the button will show / hide the additional calculated data for the shot. These data are not necessary for the fire control and only provide additional detailed information on the shot conditions.

5. Fire corrections

Fire corrections can be calculated by clicking on button "Add correction". Section "Correction data - burst position #X" appears. The measured coordinates of the burst are entered in this section using one of the methods below.

Correction data - burst position #1										
ΔX :	<input type="text" value="20"/>	m	ΔY :	<input type="text" value="12"/>	m	ΔZ :	<input type="text" value="0"/>	m (from target)		
X:	<input type="text" value="255"/>	m	Y:	<input type="text" value="12337"/>	m	Z/h:	<input type="text" value="0"/>	m		
Azimuth:	<input type="text" value="59"/>	-	<input type="text" value="80"/>	Elevation:	<input type="text" value="00"/>	-	<input type="text" value="0"/>	Distance:	<input type="text" value="12340"/>	m
<input type="button" value="Calculate"/>		<input type="button" value="Add correction"/>								

When coordinates are entered using one of the methods, the application will automatically calculate and fill in the coordinates for the other two methods.

- By displacement – enter the distance from the burst to the target in fields ΔX , ΔY and ΔZ (meters).
- By topographic map – enter the map coordinates of the burst in fields X, Y and Z/h (in meters).
- By rangefinder – enter the measured burst coordinates in fields Azimuth, Elevation (in mils) and Distance (in meters) from the forward observer position.

After entering the coordinates of the burst click on button "Calculate" and the new correction commands will appear in the commands section on the right. You can enter as many corrections as necessary. The Elevation command will show the new value of the sight and the Direction command will show what deviation from the current direction must be set.

6. Necessary hardware equipment for BM-21:

- The fire control calculator /PC or laptop/
- Topographic map /if available/.
- Aiming circle PAB-2M.
- Rangefinder - up to 20 km.
- Radiostation.
- GPS portable.

Shooting tables were introduced in the software.

- 7,62mm Machine Gun PK
- 7,62mm Machine Gun RPK
- 7,62mm Tank Machine Gun PKT
- Hi-Power Semi-Automatic Pistol
- Military & Police Pistols
- ARMBLAST
- RPG-7 Portable AT Rocket Launcher
- RPG-22 "NETTO" Anti-tank Rocket Grenade
- SPG-9DNM Antitank Recoil-less Gun
- ROG-22
- 40mm Underbarrel Grenade Launcher GP-25 "KASTYOR"
- 40x46mm 40 SGL NATO Stand Alone Grenade Launcher
- 40x46mm 40 UBGL Underbarrel Grenade Launcher
- Anti-Aircraft Gun ZU-23-2
- 81mm Mortar
- 82mm Mortar
- 120mm Mortar
- Defensive Hand Grenade RGO-78
- Offensive Hand Grenade RGD-5
- Offensive Hand Grenade RGN-86
- Smoke Hand Grenade RDG-2



7,62mm Machine Gun PK



Technical Data:

Caliber (mm): 7.62
Cartridge (mm): 7.62x54
Fire mode: Continuous
Rate of fire (rounds/min): 600 - 700
Practical rate (rounds/min): 250
Muzzle velocity (m/s): 825
Sighting range (m): 1500
Maximum effective firing range (m): 3 800
Ammunition box capacity (rounds):
100/200
Barrel length (mm): 605

Sight radius (mm): 663
Overall length (mm): 1192
Weight without ammunition box (kg): 9.2
Weight of loaded ammunition box (kg):
– with loaded 100 round metal belt:
3,9
– with loaded 200 round metal belt:
6,5
System life (rounds): 25000
Principle of function: Gas operated

Packing*:

Number of machine guns in one wooden case: 2
Case dimensions (mm): 1330x525x350
Gross weight of the wooden case (kg): 72
Volume of the wooden case (m³): 0.25

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

7,62mm Machine Gun PK is a powerful individual automatic weapon intended for destroying manpower, lightly-armoured and air targets of the enemy by means of automatic fire. MG belongs to the automatic weapons operating by the principle of taking off an amount of powder gases through a special opening in the wall of an immovable barrel and their effect imposed on the breech block carrier piston. Feeding cartridges is done by a metallic cartridge belt, put in a box of capacity 100 or 200 cartridges.

Option: Blank fire adaptor, frame for blank's firing

7,62mm Machine Gun RPK



Technical Data:

Caliber (mm): 7,62

Cartridge (mm): 7.62x39

Fire mode: single, automatic

Rate of fire (rounds/min): 600

Practical rate of fire:

- automatic fire (rounds/min): 150
- single fire (rounds/min): 50

Muzzle velocity (m/s): 750

Sighting range (m): 1000

Max effective range (m): 1500

Magazine capacity: 30/40

Barrel length (mm): 590

Sight radius (mm): 550

Overall length (mm): 1060

Overall length with folded butt (mm): 805

Weight without magazine (kg): 4,7

Weight of loaded magazine (kg):

- metal: 0,85
- plastic: 0,77

System life (rounds): 25 000

Principle of function : gas operated automatic machine gun

Packing*:

6 rifles in one wooden box

Case dimensions (mm): 1190x650x400

Weight of the wooden case (kg):

- with metal magazine: 93
- with plastic magazine: 88

Volume of the wooden case (m³): 0,31

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

The M2300mm is a general automatic weapon designed to destroy enemy manpower and light weapon systems. The system automation operates on the driving force of propellant gases diverted through a vent in the barrel. Single-shot and automatic modes of fire are available. Bullet killing effect for manpower is preserved over a range of 1500m. The weapon fires 7,62x39 cartridges. Rounds are fed in by an arch-shaped 40-round magazine.

Option: blank fire adaptor (if desired)

7,62mm Tank Machine Gun PKT



Technical Data:

Caliber (mm): 7,62
Cartridge (mm): 7,62x51
Fire mode: Continuous
Rate of fire (rounds/min): 700 - 800
Practical rate (rounds/min): 250 max
Muzzle velocity (m/s): 855
Maximum effective firing range (m): 3800
Magazine capacity (rounds): 250
Barrel length (mm): 722
Sight radius (mm): 663
Overall length (mm): 1098
Weight without magazine (kg): 10,5
Weight of loaded magazine (kg):
– box with belt of 250: 9,4
System life (rounds): 25000
Principle of function: Gas operated automatic machine gun

Packing*:

Number of machine guns in one wooden case: 2
Case dimensions (mm): 1500x530x355
Gross weight of the wooden case (kg): 107
Volume of the wooden case (m³): 0,28

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The Tank Machine Gun PKT is a powerful automatic weapon designed to be mounted on tanks and fighting armoured vehicles. The system automation operates on the driving force of propellants gases diverted through a vent in a barrel. Automatic mode of fire is available. Rounds are fed in by a 250-round metal belt held in a metal box. An electrical triggering mechanism is provided enabling the use of optical sighting devices by the gunner.

Option: Blank fire adaptor, frame for blank's firing.

Hi-Power Semi-Automatic Pistols



Technical Data:

	94	94C
Caliber	9x19mm (9mm Parabellum)	9x19mm (9mm Parabellum)
Action	Single Action	Single Action
Capacity	13 rounds (optional 10 rounds)	13 rounds (optional 10 rounds)
Barrel Length	118.5 mm (4.66")	101.5 mm (4.00")
Overall Length	203 mm (7.99")	186 mm (7.32")
Height	129 mm (5.08")	130 mm (5.12")
Weight	970 g (34.2 oz)	920 g (32.4 oz)
Muzzle Velocity	Not less than 340 m/s	Not less than 340 m/s
Trigger pull range	30 to 60 N (7.88 to 13.05 lbs.)	30 to 60 N (7.88 to 13.05 lbs.)
Finish	Blue or Duo-tone	Blue or Duo-tone
Grips	Rubberized ergonomic, Black plastic or Walnut	Rubberized ergonomic, Black plastic or Walnut
Safety	Right-thumb Manual Safety, Half-cock Safety, Magazine Disconnect	Right-thumb Manual Safety, Half-cock Safety, Magazine Disconnect
Sights	Fixed Three-Dot Combat Style	Fixed Three-Dot Combat Style
Complete set	Pistol, 2 Magazines, Cleaning Rod and Manual in a box	2 Magazines, Cleaning Rod and a Gun Lock

Features:

- Single Action
- High capacity magazine
- Exceptional ergonomic design
- Three-dot Combat Style Sights
- Advanced Safety Features
- Available in blue or duo-tone finish
- Plastic, rubberized ergonomic or classic walnut grips

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 94 is a single action semi-automatic pistol. It integrates the proven reliability of the High Power pistols with the ergonomic design of modern pistol tendencies. The single action mechanism combined with the capacity of 13 rounds make the pistol both accurate and efficient for self-defense, training and competition shooting.

The 94C is a compact, single action semi-automatic pistol. It integrates the proven reliability of the High Power pistols with ergonomic design and compact dimensions. The compact size and single action mechanism combined with the capacity of 13 rounds make the pistol both accurate and efficient for self-defense, training and competition shooting.

Military & Police Pistols



Technical Data:

	98 DA	98 DAC
Caliber	9x19mm (9mm Parabellum)	9x19mm (9mm Parabellum)
Action	Double/Single Action	Double/Single Action
Capacity	15 rounds	13 rounds
Barrel Length	118.5 mm (4.66")	102.5 mm (4.0")
Overall Length	203 mm (7.99")	187 mm (7.32")
Height	139 mm (5.47")	130 mm (5.12")
Weight	970 g (2.15 lbs)	930 g (2.06 lbs)
Muzzle Velocity	Not less than 340 m/s	Not less than 340 m/s
Finish	Blue or Duo-tone	Blue or Duo-tone
Grips	Ergonomic Polymer Grips	Ergonomic Polymer Grips
Complete set	Pistol, 2 Magazines, Cleaning Rod and Manual in a box	Pistol, 2 Magazines, Cleaning Rod and Manual in a box

Features:

- All Metal, Time Proven Design
- Double / Single Action Trigger
- Provided with 2 high capacity magazines
- Luminous 3-dot combat style sights
- Polymer Ergonomic Grips
- Blue or Duo Tone Finish

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

9x19mm 98 DA/DAC are Military and Police pistols, which incorporate all metal, time proven classic design with advanced ergonomics and exceptional reliability in hardest environment. 98 Pistols are manufactured in Standard & Compact Versions

- 98 DA Military Pistol with Long Barrel and 15 Rounds Magazine
- 98 DAC Compact Police Pistol with Short Barrel and 13 Rounds Magazine

ARMBLAST



Technical Data:

Designation: ARMBLAST
Weight (kg): 4,6
Length (mm): 780
Deployment time (s): 8 ... 10
Front Sight: Reticle, calibrated for ranges 50, 100, 150, 200, 250, 300 and 350 meters (marked as 5, 10, 15, 20, 25, 30 and 35)
Rear Sight: Peep, adjustable to temperature change in two positions:
- for firing by temperature $0 \div -40^{\circ}\text{C}$
+ for firing by temperature $0 \div +50^{\circ}\text{C}$

Rocket Technical Data:

Caliber (mm): 72,5
Range sighting (m): 350
Direct fire range (m): ~100
Fire pattern:
Vertical target at the direct fire range (m):
- Vertical-deflection: 0,6
Aria Target:
- In range $E_{pr}/X_{max} \leq 1/50$
- In deflection E_{pd} (m): ≤ 5
- Lateral-deflection: 0,6

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

ARMBLAST is a personal single use disposable weapon with a reactive enhanced blast effect grenade.

The weapon is suitable for warfare operations, anti-terrorist missions in urban environment or/and cross country. It is intended for defeating enemy manpower in the open, in trenches, shelters, bunkers, urban buildings and fortifications, armored and unarmored vehicles.

The weapons characteristics result in the achievement of tactical goals with precise target hit, without threatening personnel and equipment not related to the conflict.

RPG-7 Portable AT Rocket Launcher



Technical Data:

Caliber:

- launcher tube (mm): 40
- hollow charge round (mm): 85

Effective range:

- moving targets (m): 300
- stationary targets (m): 150

Muzzle velocity (m/s): 120

Maximum velocity (m/s): 300

Grenade launcher weight (kg): 6,3

Weight of a 3-round carrying bag (kg): 9,3

Grenade launcher length (mm): 950

Completing Set:

PGO-7V optical sight, protection covers - 2 pcs., spares and accessories kit for 9 launchers, bag to carry grenades, sling.

Packing*:

9 grenade launchers in a wooden case.

Case dimensions (mm): 1250x570x540

Case gross weight (kg): 100

Case volume (m³): 0,385

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The RPG-7 man-portable antitank rocket launcher is an extremely reliable weapon to engage tanks and armoured fighting vehicles.

A bipod is provided for higher stability and accuracy ensuring perfect reliability of the launcher as a basic antitank weapon with the infantry squad.

Over caliber shaped charge rounds (PG-7V, PG-7VM, PG-7VN) and normal fragmentation ammunitions (GG-7V) are used for firing.

The grenade launcher assembly comprises a PGO-7 daylight optical sight with provision for fitting of a NSPU night optical sight.

RPG-22 "NETTO" Anti-tank Rocket Grenade



Technical Data:

Armour penetration (mm): 400
Direct Fire Range (m): 150
Muzzle velocity (m/s): 133
Deployment time (s): 8 - 10
Operational temperature range (°C): -60 to +50

Packing*:

8 rounds in a wooden case
Dimensions (mm): 860x688x364
Volume (m³): 0.204
Weight (kg): 48

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The RPG-22 antitank grenade is a disposable individual weapon. It is used against tanks, self-propelled guns and other armoured vehicles of the enemy, as well as against the enemy troops in bunkers, light field shelters and brick-wall fortifications.

The RPG-22 is a portable weapon carried by paratroopers and parachute regiments. It is equipped with the VP-16/VP-22 fuze.

SPG-9DNM Antitank Recoilless Gun



Technical Data:

Caliber (mm): 73
Muzzle velocity of fragmentation projectile (m/s): 435
Maximum velocity of fragmentation projectile (m/s): 700
Point-blank range at 2m high target for shaped charge projectile (m): 800

Sighting range:

– direct aiming (m): 1300
– indirect aiming (m/s): 4500
Length of launcher (mm): 2110
Width of launcher (mm): 990
Height of launcher (mm): 820
Launcher weight with tripod (kg): 47,5

Completing Set:

Tripod, PGOK-9 sight, PGN-9 sight, wheeled carriage, Spares and tools, bag to carry grenades - 2 pcs.

Packing*:

1 grenade launcher in a wooden case.
Case dimensions (mm): 2167x590x444
Case gross weight (kg): 150
Case volume (m³): 0,568

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The SPG-9DNM antitank carriage-mounted recoilless gun is a high performance weapon to engage tanks and armoured fighting vehicles at ranges up to 1300m as well as against troops in the open or under light cover out to 4500m.

A PGOK-9 daylight optical sight for the antitank and antipersonnel role is provided with an option for fitting of a PGN-9 night sight the system being a main antiarmour infantry battalion weapon.

Shaped charge rounds (PG-9V PG-9VN) and fragmentation grenades (OG-9VB, OG-9VM) are used for firing.

ROG-22



Ballistic Characteristics:

Number and weight of preformed fragments (pcs./g): 864/0.9

TNT equivalent (g): 700-800

Direct fire range (m): 90

Maximum range (m): 350

Muzzle velocity (m/s): 76

Time to prepare for action (s): 10

Length in action position (mm): 850

Length in travel position (mm): 765

Weight of round (g): 4050

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The ROG-22 rocket fragmentation grenade is an individual disposable weapon and is intended to defeat the enemy manpower located in the open, in trenches, in field - type shelters, stone, brick and concrete structures, light armoured and unarmoured vehicles or shelters. It destroys the targets by means of preformed fragments filled with powerful high explosive.

The ROG-22 grenade can be carried both by paratroopers and parachute means as well.

The recoilless effect is provided by the efflux of propellant gases.

40mm Underbarrel Grenade Launcher GP-25 "KASTYOR"



Technical Data:

Caliber (mm): 40

Ammunition: 40mm VOG-25, VOG-25P, VOG-25I

Muzzle velocity (m/s): 76

Practical rate of fire (rounds/min): 4, 5

Maximum range of fire (m): 400

Length (mm): 325

Weight (kg): 2,1

Resource with 1 assault rifle (round): 400

Recoil mechanism: Brush

Butt plate with sling : Set of group SPTA for 20 launchers

Bag for launcher: Bag for 10 grenades

Packing*:

20 Grenade launchers in 1 wooden case

Case dimensions (mm): 1260x517x375

Weight of the wooden case (kg): 87

Volume of the wooden case (m³): 0,244

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40mm Underbarrel Grenade Launcher GP-25 "KASTYOR" is powerful close support weapon, single-shot, add-on launcher intended for use with the following assault rifles versions for increasing its firepower and greater convenience:

- 7,62mm AK-47, AKS-47
- 7,62mm Assault Rifles AR, AR-F, AR-1, AR-1F

40x46mm 40 SGL NATO Stand Alone Grenade Launcher



Technical Data:

Caliber (mm): 40x46 NATO

Muzzle velocity (m/s): 76

Max. Effective Range (m): 400

Rate of fire (per minute): min. 6 shots

Length in ready to fire position (mm): 700

Deployment length (mm): 530

Width (mm): 68

Launcher weight (kg): 3,100

Launcher Type: Pump Action

Aiming Sight: for Direct and Ballistic Fire

Barrel life: min. 800 shots

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The 40 SGL is 40x46mm Compact Grenade Launcher, designed for use by Police units and Special Forces. The launcher is intended to fire 40x46mm low velocity grenades including all currently existing lethal and non-lethal types. 40 SGL has folding butt and folding sight that ensure the compact dimensions of launcher during deployment.

40X46mm 40 UBGL Underbarrel Grenade Launcher



Technical Data:

Caliber (mm): 40x46
Ammunition: Type M406 LV Grenades
Max. Muzzle velocity (m/s): 75
Effective Range (m): 400
Rate of fire (per minute): min. 5 shots

Launcher length (mm): 400
Launcher weight (kg): 1,65
Launcher Type: Pump Action
Aiming Device: for Direct and Ballistic Fire
Barrel life: min. 800 shots

Packing*:

10 Launchers in a wooden case
Case Dimensions (mm): 800x500x200
Gross Weight (kg): 37
Volume (m³): 0,080

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 40 UBGL is Underbarrel Grenade Launcher, mounted under AK-47 and AK-74 KALASHNIKOV assault rifles. The launcher is intended to fire 40x46mm M406 type LV grenades at ranges of up to 400m.

23mm Anti-Aircraft Gun ZU-23-2



Technical Data:

Number x caliber automatic guns (mm): 2x23
Overall dimensions (mm): 4570x2880x1250
Muzzle velocity (m/s): 970
Fire rate (rounds/minute): 1600-2000
Max effective fire range (m): 2500
Weight of the complete system (kg): 960

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The ADS air defense system is an efficient and reliable anti-aircraft weapon for fighting out to 2500m range and height up to 1500m, with a ground-to-ground capability for 2000m.

The ZU-23-2 design is centered around the pairing of two 2A14 series 23x152mm auto-cannons.

The excellent portability of the ZU-23-2 means that it cannot only be by a mover vehicle but also mounted onto a variety of vehicle types - particularly flatbed trucks (even improvised fighting vehicles known as "Technicals") and similar wheeled instruments capable of handling the weapon weight and recoil. This makes the ZU-23-2 a highly-mobile, low-cost gunnery platform solution with inherent tactical advantages. The ZU-23-2 was has also been fitted to armored fighting vehicles of several types to further expand the capabilities of the weapon.

81mm Mortar



Technical Data:

Caliber (mm): 81

Body length: 1455

Maximum range (m): 6270

Minimum range (m): 210

Rate of fire (rounds/min): up to 24

Elevation angle (°): 45 – 85

Traversing angle (°):

- without shifting the bipod: ± 3
- with bipod shifted: 360

Operation temperature (°C): -50 – +50

Operation temperature (°K): 223 – 323

Weight of the mortar in firing position (kg): 54,4

Weight of the barrel (kg): 18,5

Weight of the carriage-bipod (kg): 19

Weight of the support plate (kg): 16

Weight of the sight (kg): 0,9

Complete Set Includes:

MUM sight, set of spare parts and accessories

Packing*:

For long distance transportation on and continuous storage the mortar set is placed in a special packing case.

Case dimensions (mm): 1650x650x340

Gross weight of the case (kg): 120

Volume of the case (m³): 0,365

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 81mm mortar is a powerful weapon for small battle units, intended for destroying the manpower and firearms of the enemy, located in the open in hasty shelters and behind barriers. The mortar contributes to the higher effectiveness of firing, it is a reliable means for accompanying the infantry, and is successfully used in guerilla operations. The possibility of dismantling the mortar makes it easily portable by the crew, as well as allows its deployment and taking up a position in difficult terrains, It is equipped with an MPM-44R optical sight, that provides aiming in both horizontal and vertical planes. A special lighting facility is used in the nighttime or in case of poor visibility.

82mm Mortar



Technical Data:

Caliber (mm): 82
Body length: 1220
Maximum range (m): 3040
Maximum range with long range mortar shell (m): 4020
Minimum range (m): 85
Rate of fire (rounds/min): up to 24
Elevation angle (°): 45 – 85
Traversing angle (°):
– without shifting the bipod: ± 3

– with bipod shifted: ± 30
Operation temperature (°C): -50 – +50
Operation temperature (°K): 223 – 323
Weight of the mortar in firing position (kg): 59,7
Weight of the barrel (kg): 17,8
Weight of the carriage-bipod (kg): 19,2
Weight of the support plate (kg): 21,8
Weight of the sight (kg): 0,9

Complete Set Includes:

MUM or MPM-44M sight, set of spare parts and accessories.

Packing*:

For long distance transportation and continuous storage the mortar set is placed in a special wooden case.

Case dimensions (mm): 1660x730x470
Gross weight of the case (kg): 127
Volume of the case (m³): 0.570

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 82mm mortar is a powerful weapon for small battle units, intended for destroying the manpower and firearms of the enemy, located in the open in hasty shelters and behind barriers. The mortar contributes to the higher effectiveness of firing, it is a reliable means for accompanying the infantry, and is successfully used in guerilla operations. The possibility of dismantling the mortar makes it easily portable by the crew, as well as allows its deployment and taking up a position in difficult terrains. It is equipped with a MPM-44M optical sight, that provides aiming in both horizontal and vertical planes. A special lighting facility is used in the nighttime or in case of poor visibility.

120mm Mortar



Technical Data:

Caliber (mm): 120

Body length: 1500

Range (m):

- maximum: 7100
- minimum: 480

Rate of fire (rounds/min): up to 15

Elevation angle (°): 45 – 80

Traversing angles (°):

- without shifting the bipod: ± 5

- with bipod shifted: ± 26

Operation temperature (°C): -50 – +50

Operation temperature (°K): 223 – 323

Weight (kg):

- of the mortar in firing position: 210
- of the barrel: 72,6
- of the carriage-bipod: 54,7
- of the support plate: 78
- of the sight: 0,9

Complete Set:

MPM-44M sight set of spare parts, accessories and a wheel carrier

Packing*:

For long distance transportation and continuous storage the mortar set is placed in special 3 wooden cases.

- 1200x1100x550mm, 140
- 2000x400x580mm, 120
- 1700x670x590mm, 190

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

The 120mm Self-Propelled Mortar features a powerful antipersonnel weapon for the engagement of troops in the open or under light cover. The mortar can fire mounted on the base vehicle or from a fixed ground position.

A MPM-44M Sight is fitted to provide aiming in elevation and traverse. For operations at night or limited visibility conditions a lighting system is supplied.

Defensive Hand Grenade RGO-78



Technical Data:

Grenade type: Defensive

Function: Fragmentation

Igniter set: DVM

Principle of functioning of the igniter set: From distance

Weight of explosive charge (g): 80

Grenade weight complete with igniter set (g): 450

Delay (s): 3,2 – 4,0

Throwing distance (m): 30 – 35

Killing effect: Fragments

Effective radius (m): up to 25

Operation temperature range (°C): -50 – +50

Packing*:

20 pcs grenades in a wooden case

Size of wooden case (mm): 480x290x160

Gross weight (kg): 15

Volume (m³): 0,0222

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

For anti-personnel employment in close combat operations effective with pre-formed fragments.

Offensive Hand Grenade RGD-5



Technical Data:

Grenade type: Offensive
Combat effect: Fragmentation
Igniter set: UZRGM
Explosive charge: TNT
Weight of explosive charge (g): 110
Weight of grenade completed with fuze (g): 310

Time delay igniter set: UZRGM

Delay (s): 3,2 – 4,2

Throwing distance (m): 30 – 40

Effective radius (m): 25

Lethal area (m²): 42,8

Operation temperature range (°C): -50 – +50

Packing*:

20 grenades and 2 sealed metal boxes of 10 fuzes sets each held together in a wooden case

Size of metal box (mm): 100x120

Size of wooden case (mm): 480x290x150

Gross weight (kg): 14

Volume (m³): 0,0209

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Offensive Hand Grenade RGN-86



Technical Data:

Grenade type: Offensive
Function: Fragmentation
Igniter set: DVM
Principle of functioning of the igniter set:
From distance
Weight of explosive charge (g): 80

Grenade weight complete with igniter set (g): 265
Delay (s): 3,2 – 4,0
Throwing distance (m): 30 – 35
Killing effect: Fragments
Effective radius (m): up to 25
Operation temperature range (°C): -50 to +50

Packing*:

20 pcs grenades in a wooden case
Size of wooden case (mm): 480x290x160
Gross weight (kg): 12
Volume (m³): 0,0222

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

For offensive use in close combat operations with pre-formed fragments.

Smoke Hand Grenade RDG-2



Technical Data:

Body diameter (mm): 52
Height (mm): 210
Ignition time (s): 10
Intensive smoke discharge (s): 50-80
Weight (g): 350

Packing*:

84 smoke grenades are packed in a wooden case.
Case dimensions (mm): 590x350x350
Gross weight (kg): 45±2
Case volume (m³): 0,072

Remark:

* The packing information is approximate. The actual packing specifications will be provided upon request.

Additional Info:

RDG-2 is intended for setting up of smoke screens to conceal small force units as well as for blinding effect purposes against enemy manpower in trenches, fortifications, etc.



Wide Range Collimator Sight WRCS-28



Technical Data:

Magnification: 1x
Field of view: Unlimited
Entrance pupil diameter (mm): 28
Exit pupil diameter (mm): 28
Parallax free and unlimited exit pupil relief
Red dot size: $\leq 0-00,5$
Adjustment: 1 click = 10 mm at 100 m

Power supply - one 1,5V AA (R6) size alkaline or one 1,2V AA (R6) size accumulator or one 3,6V AA (R6) size lithium
Battery life - lithium/alkaline/accumulator (h): more than 26000/4200/2700
Weight (g): 450
Dimensions (LxWxH) (mm): 150x58x75
Operating temperature (°C): -50 - +50

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The "red dot" sight is an aiming system that provides an excellent performance in a compact design and is extremely suitable for quick aiming at moving targets. The sight can be used as a stand-alone device or in a conjunction with larger magnifying scopes, night vision, or thermal imaging optics.

Wide Range Collimator Sight WRCS-28 gives an opportunity for simultaneous view on the target and the aiming point. The human eye itself cannot focus on the target and the aiming point at the same time because the user's field of view is limited, especially at short distances.

Eye relief is critical, and shooter's eye position behind the scope affects how much and how clearly the object can be seen. When the target and the sight are in the same focal plane and the reticle is a bright red dot, the aiming is much easier and the shooting problems are decreased to a minimal level.

Wide Range Collimator Sight WRCS-28



Technical Data:

Magnification: 1x
Field of view: Unlimited
Entrance pupil diameter (mm): 28
Exit pupil diameter (mm): 28
Parallax free and unlimited exit pupil relief
Red dot size: $\leq 0-00,5$
Adjustment: 1 click = 10 mm at 100 m

Power supply - one 1,5V AA (R6) size alkaline or one 1,2V AA (R6) size accumulator or one 3,6V AA (R6) size lithium

Battery life - lithium/alkaline/accumulator (h): more than 26000/4200/2700

Weight (g): 450

Dimensions (LxWxH) (mm): 150x58x75

Operating temperature (°C): -50 - +50

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The "red dot" sight is an aiming system that provides an excellent performance in a compact design and is extremely suitable for quick aiming at moving targets. The sight can be used as a stand-alone device or in a conjunction with larger magnifying scopes, night vision, or thermal imaging optics.

Wide Range Collimator Sight WRCS-28 gives an opportunity for simultaneous view on the target and the aiming point. The human eye itself cannot focus on the target and the aiming point at the same time because the user's field of view is limited, especially at short distances.

Eye relief is critical, and shooter's eye position behind the scope affects how much and how clearly the object can be seen. When the target and the sight are in the same focal plane and the reticle is a bright red dot, the aiming is much easier and the shooting problems are decreased to a minimal level.

2CL, 4CL



Technical Data:

Laser emission spot sizes at a distance 25 m, (mm): <30

Horizontal and vertical deflection (°): 1,5

Power voltage (V): 3

Current (mA): <40

Laser emission power (mW): >3

Wave length (nm): 650

Operational temperature range (°C): -10 – + 65

Overall dimensions, mm no more than

- for pistols: 65x20x25
- for AKC - 74U: 55x50x40

Weight (g):

- for pistols: 80+-10
- for AKC-74U: 100

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

10P8



Technical Data:

Magnification (times): 3,5

Field of view (°): 4°30"

Exit pupil diameter (mm): 6

Exit pupil remoteness (mm): 72

Resolution: 17"

Overall dimensions (mm): 205x60x130

Weight (kg): 0,5

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

K10 T Collimating Sight



Technical Data:

Parallax of the reticule (°): no more than 4

Inclination of the reticule (°): ± 30

Swinging back-folding light filter (at 60mm distance from the rotating axis) (mm): no more than 0,3

Temperature range (°C): -60 – +55

Climbing sighting line from the horizontal plane (°C): $\pm 1x$

Weight (kg): 0,48

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

KVL-T Optical Collimator



Technical Data:

- Value of a scale division: 0,005
- Parallax, no more than: 0,001

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The optical collimator is used as a front sight in the sight ZAP-23 for laying the antiaircraft launchers at firing on anti-aircraft targets.

MK-30 Collimating Sight



Technical Data:

Light diameter (mm): 30

Magnification (times): $1 \pm 0,05$

The sign angle size (mrad): < 4

The sign color: red

The sign parallax (dpt): $0 - -0,02$

Automatic electronic control the sighting sign brightness in proportion to the background brightness

Power Supply:

- basic: 1 lithium element $\frac{1}{2}$ R6, 3.6 V
- further: 3 pieces of NiCd or Ag_2O

Operational temperature ($^{\circ}C$): $-50 - +50$

Weight in battle position (g): < 350

Overall dimensions (mm): $58,5 \times 124 \times 161,5$

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

MK-30 Collimating passive sight is designed for fast single aiming fire daytime, at dusk as well as at night on low illuminated targets with AK submachine guns and sporting guns.

MK-30 MP1 Collimating Sight



Technical Data:

Light diameter (mm): 30

Magnification (times): $1 \pm 0,05$

The sign angle size (mrad): $< 0,05$

The sign color: red

The sign parallax (dpt): $0 - -0,02$

Control the sighting sign brightness to the background brightness by hand

Power Supply:

– basic: 1 lithium element R6, 3.6 V, 1.8Ah

– further: 3 pieces of NiCd or Ag_2O

Operational temperature ($^{\circ}C$): $-55 - +55$

Weight/in battle position (g): < 390

Overall dimensions without attaching bracket (mm): $58,5 \times 106 \times 80$

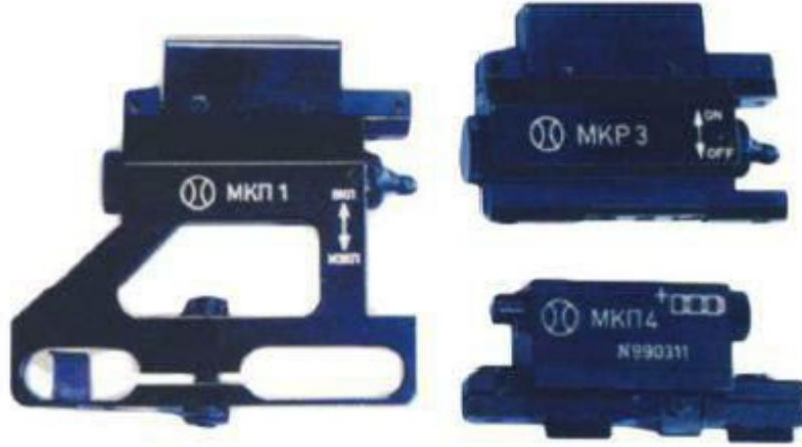
Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

MK-30MP1 Collimating passive sight is designed for fast single aiming fire daytime, at dusk as well as at night on low illuminated targets with AK submachine guns and sporting guns.

MKP1, MKP3, MKP4



Technical Data:

	MKP1	MKP3	MKP4
Magnification	1 0,05X	1 0,05X	1 0,05X
Sign shape	point	point	point
Color of sign	red	red	red
Angle diameter of sign (°)	1,8 (0,5 mrad)	1,8 (0,5 mrad)	1,8 (0,5 mrad)
Parallax of sign (dpt)	0,05	0,05	0,05
Distance from the eye to the sight (cm)	5 – ∞	5 – ∞	5 – ∞
Supply voltage (V)	1 Li battery ½ R6-3.6 or 3 cell SR44 (11,6x5,4 mm/1,5V)	1 Li battery ½ R6-3.6 or 3 cell SR44 (11,6x5,4 mm/1,5V)	3 cell SR44 (7,8x5,4 mm/1,5V)
Battery life (for Li battery LS 14250) (h)	more than 300	more than 300	more than 360
Current consumption (for illumination 100 Lx) (A)	less than 360	less than 360	less than 30
Dimensions BxLxH (mm)	23x105x103	23x80x56,5	27x80x26,5
Weight (kg)	0,230	0,175	0,095

The sight is made according to climatic and mechanical conditions of group H14 CT B C3B 065-81

Automatic adjustment sing intensity according environment illumination.

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.



MKP-2 Prismatic Collimating Sight



Technical Data:

Visual magnification (times): $1 \pm 0,05$

Sign height 0 – 0,1

Sign color: red

Automatic adjustment the sight sign brightness according to the intensity of the background illumination.

Parallax of the sign (dpt): no more than 0,05

Sight weight in battle position (g): 265

Overall dimensions without the attaching mechanism sizes (mm): 36,5x99x91

Time for changing from march to battle position (min): no more than 1

Supply voltage: 1 Li battery 1/2R6-3,6V

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

MKP 2 Prismatic collimating sight is designed for fast, single, aiming fire to the right shot distances with systems GALIL during the daytime, dusk and on the illuminated targets night time.

MKP2 sight is a collimating system coinciding the objects plane image with the sight sign image. The objects plane is observed by the two eyes.

The sight is mounting by standard way to the gun system.

MKP-3 Prismatic Collimating Sight



Technical Data:

Visual magnification (times): $1 \pm 0,05$

Sign height: 0 – 0,1

Sign color: red

Automatic adjustment the sight sign brightness according to the intensity of the background illumination.

Parallax of the sign (dpt): no more than 0,05

Sight weight in battle position (g): 175

Overall dimensions without the attaching mechanism sizes (mm): 23x80x56,5

Time for changing from march to battle position (min): no more than 1

Supply voltage: 1 Li battery 1/2R6-3,6V

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

MKP 3 Prismatic collimating sight is designed for fast aiming fire on distances to 300 meters with gun systems M16 during the daytime, dusk and to the illuminated targets night time.

MKP 3 sight is a collimating system combining the image of the target and the sight sign.

The target is observed by the two eyes.

The sight is mounting by standard way to the gun system.

MOCO-1



Technical Data:

Magnification (times): 4

Field of vision (°): 8

Exit pupil diameter (mm): 6,5

Exit pupil remoteness (mm): >35

Resolution (seconds): 13

Sight angles (m):

– for AK 47N: 100 – 800 with interval of 100m

– for PK: 300 – 1000 with interval of 100m

Limits of fixing the deflection corrections (thousandths):

– by the horizontal line: 0-04

– by the vertical line: 0-04

Overall dimensions (mm): 240x80x180

Weight (kg): 0,8

Supply voltage (V): 3,6

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

MOSO Optical Sight



Technical Data:

Magnification (times): 4
Field of view (°): 8
Exit pupil diameter (mm): 6,5
Exit pupil remoteness (mm): >35
Resolution (sec): 13
Overall dimensions (mm): 203x80,5x178
Weight (kg): 0,8

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

Unified sight MOSO is designed for firing with AK-74N, RPK 74N and PK MN machine guns at luminous and illuminated targets day and night time.

MUKG-7



Technical Data:

Magnification (times): 2,7

Field of view (°): 13

Exit diameter (mm): 4,5

Exit distance (mm): 27

Resolution (seconds): 28

Maximum measuring angle with mechanical scales (°): 30

Types of ammunition used in the optical scale: 4

Continuous illumination of the optical scale (h): 200

Overall dimensions (mm): 180x140x66

Weight (kg): 1

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

MUM Standard Mortar Sight



Technical Data:

Magnification (times): 2,5
Field of view (°): 9
Resolution (sec): 25
Exit pupil diameter (mm): 4
Exit pupil distance (mm): >26
Image parallax (min): 2
Scale graduation (mils): 1/6400
Elevation aiming range (mils): 700 – 1600
Horizontal aiming range (mils): 0 – 6400
Mechanical scale graduation:

- rough (mils): 100
- precise (mils): 1

Weight (kg): 1
Weight with metal box (kg): 1,9
Overall dimensions (mm): 190x100x108

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

It is used with 60mm, 81mm, 107mm and 120mm mortars for aiming at directly observable and hidden targets when using firing tablets with division value of 1/6400. For firing during the night is incorporated an illuminating system (b-light) no requiring supply. Option: The sight can be used also for 82mm and 120mm mortars with scale division value 1/6000 and different types of interface including Idove tail I.

Optical Devices 4x24, 6x42, 4x32



Technical Data:

Type of the sight	4x24	4x32	6x42
Magnification (times)	4	4	6
Optical system angle field (degrees)	6	6	4
Objective light diameter (mm)	24	32	42
Remoteness of the exit pupil diameter from the last surface of the ocular (mm)	80	76	76
Linear value of fields of view for 100 m distance (m)	10,4	10,4	7,0
Near limit of observation (m)	3,5	4,6	8,0
Resolution (angle sec)		15	10
Range of the ocular diopter adjusting (dpt)	3,5	3	3
Range of the aiming line adjusting for 100 m distance (m)		0,7	0,5
Accuracy of the aiming line adjusting for 100 m distance (cm)		4	2,5
Range of operational temperature (°C)	-50° - +50°	-50° - +50°	-50° - +50°
Attaching diameter of the sight cylindrical part (mm)	25,4	25,4	25,4
Length (mm) no more than	255	290	355
Weight (mm) no more than	0,3	0,4	0,5

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

PGO-7V6M Grenade-launcher Optical Sight



Technical Data:

Magnification (times): 2.7
Field of view (°): 13
Exit pupil diameter (mm): 4,5
Exit pupil distance (mm): 27
Resolution (°): 28
Parallax (°): <2
Range of elevation turning (°): >30
Overall dimensions (mm): 140x180x70
Operation temperature range (°C): -50 – +50
Weight (kg): 1,080

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

PGO-7V6M is designed for fire with hand held antitank grenade-launcher RPG-7 and its modifications.

PGO-7V6M provides accurate fire with grenades PG-7V, PG-7VL, PG-7VLT, PG-7VR with the help of the optical scale marks as well as with grenades KO-7V, OFG-7V, OG-7V (OG-7VM), OG-7VE with the help of graduated drum mechanical scale.

There are marks on the optical scale for deflection corrections on the left and on the right up to 0-50 with step 0-10.

The long range scale allows being determined distances to targets at base 2,7 meters

PGO-K9 Grenade Launcher Combined Optical Sight



Technical Data:

Characteristic	Sight (for Direct Laying)			Visor sight (for Indirect Laying)		
	Nominal Value	Allowed Deviation		Nominal Value	Allowed Deviation	
		min	max		min	max
Magnification (times)	4,2	4	no limited	2,5	2,37	2,74
Field of view (°)	10,5	10	no limited	9	8,55	no limited
Exit pupil diameter (mm)	4,2	4	no limited	4	3,8	no limited

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Grenade Launcher Combined Optical Sight PGO-K9 is intended to provide direct and indirect laying fire with Product 6G8.

The sight can also be used for determination the distance to the target and observation the battlefield.

**Technical Data:**

Caliber (mm): 30, 16, 14 and more

Magnification (times): 5x

Field of view ($^{\circ}$): $7^{\circ}2'$

Angular value of minimum reticule division: 5'

Parallax: no more than 3'

Misalignment of mechanical and optical axes: no more than 3,6

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

LAND MINES:

- Anti-Helicopter Mine 4AHM-100
- Anti-Helicopter Mine AHM-200-1
- Anti-Helicopter Mine AHM-200-2
- Anti-Tank Mine PTM-25
- Anti-Tank Mine with Explosive Formed Projectile DC/EFP-0.4
- Anti-transport Mine ATM-100
- Extraction Grenade EG-01
- Flash & Sound Hand Grenade LS-G-150
- Linear Shaped Charges
- Non-contact Fuse for Anti-tank Mines NV-PTM-C
- Non-contact Fuse for Anti-tank Mines NV-PTM-N
- Non-Contact Fuse NV-PTM2
- Remote Control Ignition System FC S-02
- Remote-controlled Fuse for Anti-Tank Mines NV-PTM-RC
- Shaped Charge Frame KR-500
- Target Explosive Device
- Tear-gas Grenade TGG-1
- Universal Remote-Controlled Fuse



**Technical Data:**

Warhead with fuse:

Destroying range (m): 100

Safety time before setting into fighting state (min): 35

Fighting state maximum duration (days): 90

Dimensions (mm): D400xH150

Weight (kg): 30

Combined sensor:

Range - vertical cylinder with dimensions (m): D50xH100

Dimensions (mm): D220xH250

Weight (kg): 5

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Anti-helicopter mine 4AHM-100 is designed to destroy low flying helicopters.

The mine consists of 4 warheads situated in the form of square and a combined control sensor placed at the square center.

The warheads have built-in fuses which are activated simultaneously by the sensor through coded signals. The warheads are placed horizontally on the ground and the combined sensor - on a horizontal platform on the terrain level. All mine components can be camouflaged by adequate means.

The fuses are resistant to disturbances and have two levels of protection against accidental activation before setting the mine fighting state. The fuses can be activated or neutralized by signals from the sensor after expiration of the programmed safety time.

identify flying helicopters respectively by DSR analysis of the acoustic noise and by Dopler signal. On client's request the acoustic sensor can be "learned" to identify various types of helicopters. Signals processing, sending commands for explosion at helicopter appearance or for neutralization or self-destroying after programmed time expiration are fulfilled by a control system.

Sending commands for neutralization or explosion as well as additional functions - temporary neutralization and fighting condition test could be performed through coded signals by a control station, on request.

The mine cannot be activated by occasional noises, moving people, animals and ground military machines, or by sideway or high flying helicopters. It is protected against activation caused by bullets and fragments direct hit, storm, heavy rain and snow, sand storm and is efficient at any climatic conditions expect.

The mine power supply is provided by batteries fit directly before setting into fighting condition. The combined sensor can be equipped with batteries repeatedly.

Anti-Helicopter Mine AHM-200-1



Technical Data:

Acoustic sensor range (m): up to 500

Doppler SHF sensor range (m): up to 150

Safe time after setting in fighting condition (min): 35

Maximum period of fighting state (days): 30

Operation temperature range (°C): -20 – +50

Storage temperature (°C): -40° – +60

Storage without maintenance:

- in storehouse (years): 10
- under shed (years): 2

Time for setting from transport into fighting state (min): 15

Warhead:

Range of destruction (m): up to 100

Steel ball weight (kg): 17

Weight of mine in package (kg): 90

Destruction probability (%): 0,80

Height of warhead & stand (m): 0,85

Warhead dimensions (mm): D370xH235

Explosive type: TNT

Options (AHM-200-1 RC):

One-way radio remote control of the functions:

- activation
- neutralization
- explosion

Distance of the radio-control operation min 2 km (at direct visibility)

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The anti-helicopter mine AHM-200-1 is designed to destroy low flying helicopters within a range of 100m. The mine has two warheads - with steel balls and with explosive formed projectile.

The mine has a built-in unified fuse activated by a combined acoustic and Doppler SHF sensor identifying the helicopter by noise and Doppler signal. The mine cannot be activated by occasional noises, moving people, animals, ground military machines, etc.

The control system of the fuse is processing and analyzing the signals from the sensors, activating the mine when helicopters appear in its fighting range or deactivating it after expiration of the preset operating period. Neutralization or self-destruction of the mine at the end of the operation period can be chosen and are field programmable. The mine explodes also in case of attempts for moving or disassembling during the period of fighting state.

The mine is placed on a stand permitting orientation of the combined sensor in a definite direction.

In the optional variant with radio control the mine activation, neutralization or explosion can be initiated by radio-channel.

Anti-Helicopter Mine AHM-200-2



Technical Data:

Acoustic sensor range (m): up to 500

Doppler SHF sensor range (m): up to 150

Safe time after setting in fighting condition (min): 35

Maximum period of fighting state (days): 30

Operation temperature range (°C): -20 – +50

Storage temperature (°C): -40° – +60

Storage without maintenance:

- in storehouse (years): 10
- under shed (years): 2

Time for setting from transport into fighting state (min): 15

Warhead:

Range of destruction (m): up to 100

Steel ball weight (kg): 23,5

Weight of mine in package (kg): 90

Destruction probability (%): 0,85

Height of warhead & stand (m): 0,75

Warhead dimensions (mm): 700x315x200

Explosive type: TNT

Options (AHM-200-1 RC):

One-way radio remote control of the functions:

- activation
- neutralization
- explosion

Distance of the radio-control operation min 2 km (at direct visibility)

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The anti-helicopter mine AHM-200-2 is designed to destroy low flying helicopters within a range of 100m. The mine has two warheads - with cubic steel fragments and with explosive formed projectile.

The mine has a built-in unified fuse activated by a combined acoustic and Doppler SHF sensor identifying the helicopter by noise and Doppler signal. The mine cannot be activated by occasional noises, moving people, animals, ground military machines, etc.

The control system of the fuse is processing and analyzing the signals from the sensors, activating the mine when helicopters appear in its fighting range or deactivating it after expiration of the preset operating period. Neutralization or self-destruction of the mine at the end of the operation period can be chosen and are field programmable. The mine explodes also in case of attempts for moving or disassembling during the period of fighting state.

The mine is placed on a stand permitting orientation of the combined sensor in a definite direction.

In the optional variant with radio control the mine activation, neutralization or explosion can be initiated by radio-channel.

Anti-Tank Mine PTM-25



Technical Data:

Dimensions of mine with two warheads (mm): $\varnothing 364 \times 215$
Dimensions of a single warhead (mm): $\varnothing 364 \times 100$
Main charge (kg), TNT equivalent: 25 (2x12.5)
Type of explosive: 70% TNT, 30% RDX
Type and quantity of the intermediate charge (kg): RDX, 0.14
Total mass (with two warheads) (kg): 25
Fuze mass (kg): 1.4
Non-contact programmable fuze: two-channel

Activation System:

Programmer: PD/LC-25
Safety time (before transition to arming state) (min): 30
Maximal duration of arming state duration (days): 30
Step for setting the arming state (days): 1
Operation temperature ($^{\circ}\text{C}$): - 30 – +60
Storage without maintenance (years): 10
Storage under shelter (years): 2
Accessory: Trench charge

Trench Charge:

Mass of the shaped charge (kg): 1.52
Mass of the fougasse charge (kg): 0.84
Dimensions of the shaped charge (mm): 171
Dimensions of the shaped charge with support (mm): 360
Dimensions of the fougasse charge (mm): $\varnothing 60 \times 350$
Temperature range of operation ($^{\circ}\text{C}$): - 30 – +60

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Anti-Tank Mine PTM-25 is designed to inflict damages on light and heavy armor vehicles and other means for transportation. Depending on the expected target it may be supplied with one to three (usually two) warheads with single explosive mass 12.5kg TNT equivalent. The non-contact fuze is supplied with induction and seismic systems for detection and localization of the target and comprises a two-stage safety device.

The mine is hard detectable by regular demining means. The microprocessor system prevents from possible activation by electromagnetic trawls. The programmer PD/LC-25 carries out the following functions: testing the systems of the fuze before detonation, non-contact programming of arming state duration in the range from 1 to 30 days, and switching over the systems of sensitivity of seismic sensor. On elapsing the arming state time the mine is self-destroyed.

The mine is supplied with a trench charge.

Anti-Tank Mine with Explosive Formed Projectile DC/EFP-0.4



Technical Data:

Quantity of explosive (kg): 0,4
Type of explosive: RDX
Principle of operation: EFP
Piercing ability in steel (mm): 40
Attachment: permanent magnets
Force of attachment (kg): 160
Type of fuze: mechanical
Time delay (s): 20
Operating temperature (°C): - 40 - +60
Storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The mine is designed to inflict damages against light armor vehicles with armor thickness up to 40mm.

The mine is attached by means of a set of permanent magnets and is supplied with mechanical fuze with 20s time delay.

Anti-transport Mine ATM-100



Technical Data:

Arming state duration (days): up to 15

Temperature range of use (°C): - 40 – +50

Storage duration: 10 years

Warhead:

Explosive (kg): 14 TNT/H

Fragments: 55pc. x 110g

Overall dimensions:

- diameter (mm): 365
- length (mm): 210

Controller:

Distance from the war head and the sensors: up to 150m

In-built acoustic sensor for system activation

Possibility for programming the time of arming state - neutralization or self-destruction

Possibility for remote controlled explosion

Sensors:

- Microwave barrier:
 - o Area of operation (m): length 100, width 10
 - o Speed of motion (km/h): 2 – 100
- Magnetic sensor:
 - o Area of operation: circular, diameter 4m;
 - o Speed of motion (km/h): 2 – 100
- Seismic sensor:
 - o Selectively responses to moving objects, e.g. transport vehicles, people etc.
 - o Area of damage: circular, diameter up to 10m for vehicles

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The anti-transport mine ATM-100 is designed for damaging transport and light armor vehicles with armor thickness up to 10mm at 100m distance within a horizontal sector 20°.

The mine consists of:

- Warhead with fuse
- Controller
- Sensor set (MW barrier, magnetic sensor, seismic sensor)

Operation:

The sensor set is arranged within the mine area of damage. In case a vehicle enters that area the sensors emit signals to the controller, which after processing produces a command for detonation. The connection among the constituting parts of the mine is carried out over a radio channel.

Extraction Grenade EG-01



Technical Data:

Weight (g): 250

Height (mm): 150

Diameter (mm): 52

Activation manual: by standard fuse

Time delay (s): 4

Smoking time (s): 30 – 60

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The device is anti-terrorist tear-gas grenade of smoking type. It is intended for fast neutralization of the operation of aggressive and hostile elements in closed rooms, sites, etc., with capacity up to 300 m³.

The effect of the grenade use is the impossibility of efficient and coordinated actions of the hostile elements and finally leaving the room due to lack of protection means.

The active substance used is CS-gas.

Flash & Sound Hand Grenade LS-G-150



Technical Data:

Active substance weight (g): 100-200
Height (without fuse) (mm): 85 - 115
Diameter (mm): 45
Fuse: Standard
Flash source intensity (kd): 150.106
Flash spot diameter (mm): 750 - 1500
Sound effect (dB): 150-190
Activation time (s): 3-4
Temperature range of operation (°C): from -40 – +50
Storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The grenade is designed for use in special operations for catching of armed criminals and interrupting mass riots by temporary neutralization and disorientation through powerful flash and thunder.

The grenade is stunning and non-toxic, extremely suitable for missions for saving of hostages in closed and open premises, ships, airplanes and other vehicles.

The grenade is designed in 3 modifications.

Linear Shaped Charges



Technical Data:

Long shaped charge LSC-1 50-60:

Charge length (mm): 150

Charge height (mm): 32

Charge (g/m): 400

Penetration depths:

- Steel (mm): up to 20
- Concrete (mm): up to 120
- Brick wall (mm): up to 300

Long shaped charge LSC-150-25:

Charge length (mm): 150

Charge height (mm): 20

Charge (g/m): 165

Penetration depths:

- Steel (mm): up to 8
- Concrete (mm): up to 50
- Brick wall (mm): up to 150

Long shaped charge LSC-500-200:

Charge length (mm): 500

Charge height (mm): 32

Charge (g/m): 400

Penetration depths:

- Steel (mm): up to 20
- Concrete (mm): up to 120
- Brick wall (mm): up to 300

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The family of shaped charges is based on segment modules intended for driving holes in plates and walls made of steel, concrete, bricks, etc.

Initiation can be performed by:

- Electro-detonator;
- Capsule-detonator - igniter-cord;
- Detonation cord

The charges can be connected by:

- Detonation cord;
- Connection in network with electro-detonator;
- Joining of the segments by flexible connection.

Non-contact Fuse for Anti-tank mines NV-PTM-C



Technical Data:

Shaped charge (g): 290 pressed RDX

Sensor system range (m): 0.8

Camouflage earth layer (m): not more than 0,12

Safe time (since deployment) (min): minimum 30

Number of passages before activation of the mine (field programmable): 0-10

Period for fighting state (days): minimum 30

Step for setting fighting state period (day): 1

Resistance to neighbor mine explosion (m): 10

Power supply (V): 9

Dimensions:

- diameter (mm): 280

- height (mm): 140

Total weight (kg): 2,77

Temperature range of use (°C): -30 – +50

Storage without maintenance:

- in storehouse (years): 10

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The non-contact fuse NV-PTM-C is designed for the anti-tank mines TM-62M and TM-62P3. Using it, the mines are transformed from anti-track into contact-less mines.

The fuse is a state-of-art, high tech device incorporating the latest achievements of the technologies. It can be switched on automatically in case of machine laying of the mines or manually. The control system of the mine is activated after a time delay by mechanic and

electronic clock which allows entirely secure walking away when laying it in operational position.

The electronic circuit controls different types of sensors (some of them chosen as an option) and allows activation of the charge only when a tank passes over it. Other transport vehicles as well as passages of tanks near and close to the mine do not affect it. The activation of the fuse may happen after a chosen number of tank's passages over the mine between 0 and 10. This number is field programmable before laying of the mine.

The fuse is resistant to electromagnetic mine exploders and the other contemporary methods for mine-sweeping. It possesses also anti-lifting action against attempts for removal.

Non-contact Fuse for Anti-tank Mines NV-PTM-N



Technical Data:

- Shaped charge (g): 290 pressed RDX
- Sensor system range (m): 0,8
- Camouflage earth layer (m): not more than 0,12
- Safe time (since deployment) (min): minimum 30
- Period for fighting state (days): minimum 30
- Step for setting fighting state period (day): 1
- Resistance to neighbor mine explosion (m): 10
- Power supply (V): 9
- Dimensions:
 - diameter (mm): 280
 - height (mm): 140
- Total weight (kg): 2.77
- Temperature range of use (°C): -30 – +50
- Storage without maintenance (years):
 - in storehouse (years): 10
 - under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The non-contact fuse NV-PTM-N is designed for the anti-tank mines TM-62M and TM-62P3. Using it, the mines are transformed from anti-track into contact-less mines. The fuse is a state-of-art, high tech device incorporating the latest achievements of the technologies. It can be switched on automatically in case of machine laying of the mines or manually. The control system of the mine is activated after a time delay by mechanic and

electronic clocks which allow entirely secure walking away when laying it in operational position.

The electronic circuit controls different types of sensors (some of them chosen as an option) and allows activation of the charge only when a tank passes over it. Other transport vehicles as well as passages of tanks near and close to the mine do not affect it. The activation of the fuse may happen after a chosen number of tank's passages over the mine between 0 and 10. This number is field programmable before laying of the mine.

The fuse is resistant to electromagnetic mine exploders and the other contemporary methods for mine-sweeping. It possesses also anti-lifting action against attempts for removal.

When the fuse is activated it's EFP explodes forming a jet which penetrates into the vehicle bottom and simultaneously performs detonations of the main mine charge.

Non-Contact Fuse NV-PTM2



Technical Data:

Sensor system range (m): 0,8
Camouflage earth layer (m): no more than 0,12
Safe time (since deployment) (min): minimum 30
Maximum fighting condition time (day): minimum 30
Step of setting fighting condition (day): 1
Resistance to neighbor mine explosion (m): 10
Power (V): 7.2
Fuse diameter (mm): 120
Fuse height (mm): 100
Fuse weight (kg): 0,80
Temperature range of use (°C): -30 – +60
Storage in storehouse (years): 10
Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The non-contact fuse NV-PTM2 is designed for anti-tank mines TM-62M and TM-62P3 which results in their transformation from anti-track into anti-undercarriage ones.

The non-contact fuse NV-PTM2 is a modern, high tech detonator that incorporates in it the latest achievements of the electron technology and contains minimum metal components.

The fuse programming is performed by programming device.

The fuse is activated automatically or mechanically 30 min after placing the mine in site.

The fuse integral microprocessor system controls several independent sensors. The fuse is activated by passing over it vehicle provoking changes in the acoustic and magnetic fields in the range of its sensors.

After the pre-set fighting condition time expiration the electron block activates firing circuit for self-destruction of the mine.

The self-destruction time is pre-set in dependence of the conditions in each individual case.

Remote Control Ignition System FC S-02



Technical Data:

- Distance of radio control (km): up to 5
- Radio control frequency range (MHz): 150,05-155,5
- Quantity of controlled objects: 8 (maximum 99)
- Quantity of processed commands: 4
- Probability of reception command at BER $1 \cdot 10^{-2}$: 0.99
- Time for transmission of a command (s): < 0.3
- Time for stay in operating condition (h): 100
- Weight (with power supply device):
 - control unit (kg): 1,2 (max.)
 - multiple use fuse (kg): 1,4 (max.)

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The remote control ignition system is designed for activation of based on land charges with the purpose to defend certain areas or objects as well as to effect subversive acts in enemy rear.

The FC S-02 is a radio controlled initiating system intended to control, test and initiate explosive charge/charges. The system consists of one control unit, a set of remote firing units including at least five units and as optional up to five microwave barrier sensor or infrared sensors. The control unit is supposed to be linked with a bi-directional radio link to the remote firing units. The control unit is a portable type, multifunctional unit, operating in 2 basic modes:

- Transmitting messages to fuses and displaying their status.
- Programming the fuses.

The remote firing units are remotely controlled by radio channel. A confirmation message is transmitted back to the control unit. The radio channel is fixed at one of 80 available frequencies and optionally for remote firing units can be modified.

A special method is used providing high reliability and efficiency of the messages transmission even when the radio channel has extremely bad quality due to highly intensive jamming of natural or intentional character. The method also guarantees protection against spontaneous or deliberate imitation of a message.

The operation condition time is fixed at 100 hours. After expiration of this time the system turns into neutralization mode. The neutralized condition is clearly visualized.

The system is built on the base of modern high-techs and it is distinguished for its high intelligence and easy operation.

Remote-controlled Fuse for Anti-Tank Mines NV-PTM-RC



Technical Data:

Shaped charge (g): 290 pressed RDX

Sensor system range (m): 0,8

Camouflage earth layer (m): not more than 0,12

Safe time (since deployment) (min): 30

Period for fighting state (days): minimum 30

Step for setting fighting state period (day): 1

Resistance to neighbor mine explosion (m): 10

Operating distance of the remote control (km): 5

Frequency range of the remote control system (MHz): 135 - 175

Power supply (V): 9

Dimensions:

- diameter (mm): 280

- height (mm): 140

Total weight (kg): 2,77

Temperature range of use (°C): - 30 – +50

Storage without maintenance

- in storehouse (years): 10

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The non-contact fuse NV-PTM-RC is a remote-controlled fuse designed for the antitank mines TM-62M and TM-62P3. Using it, the mines are transformed from anti-track into contact-less mines.

The fuse is a state-of-art, high tech detonator incorporating the latest achievements of the technologies. It is equipped with a coded VHF remote control system allowing the fuse to be switched on and off from a distance up to three kilometers. The fuse can also be switched on automatically in case of machine laying of the mines or manually. The control system of the mine is activated after a time delay by mechanic and electronic clocks which allow entirely secure walking away when laying it in operational position.

The electronic circuit controls different types of sensors (some of them chosen as an option) and allows exploding of the charge only when a tank passes over it. Other transport vehicles as well as passages of tanks near and close to the mine do not affect it. The activation of the fuse may happen after a chosen number of tank's passages over the mine between 0 and 10. This number is field programmable before laying of the mine.

When the fuse is activated it's shaped charge explodes forming a jet which penetrates into the vehicle bottom and simultaneously performs detonations of the booster and main mine charges.

Shaped Charge Frame KR-500



Technical Data:

Length of the charge (m): 2.7

Height of the charge (m): 0.032

Weight of the charge (kg): 1

Piercing ability

- Steel (mm): up to 15
- Concrete (mm): up to 150
- Bricks (mm): up to 300

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Shaped Charge Frame KR-500 is designed to inflict damage in barrier walls of steel, concrete or bricks with dimensions of the hole about 500mm x 560mm. The frame consists of:

- Rectangular shaped charge 1pc.
- Electric detonator 2pc.
- Electric cable 20 m
- Power supply unit 1pc.
- Packing

Target Explosive Device

Technical Data:

Penetration depth (mm): up to 70 (in steel)

Operation temperature (°C): -35 - +60

Explosive weight (kg): 4 HBX

Weight (kg): 7

Storage period (years): 10

Overall dimensions (mm): ø230 x 220

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The Target Explosive Device resembles in shape a constituting part of the target to which it is attached. It is purposed to damage and destroy light and heavy armored machines as well as objects for storage or transportation of oil products or fluids under pressure and other substances.

The device is supplied with a safety fuse and a programmable detonator enabling to control the time before explosion from 20 minutes to 48 hours.



Tear-gas Grenade TGG-1



Technical Data:

Weight (g): 250

Height (mm): 150

Diameter (mm): 52

Activation: manual by standard fuse

Time delay (s): 4

Smoking time (min): 1,5 – 2,5

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The grenade is all-police device for control, correction or restraining of the fore-front of unorganized large human groups with minimum harmful effect on their health.

The active substance used is CS-gas.

Universal Remote-Controlled Fuse



Technical Data:

Charge: 70 g pressed TNT

Safe time (since deployment) (min): 30

Period for fighting state (days): minimum 30

Step for setting fighting state period (day): 1

Operating distance of the remote control (km): 3

Frequency range of the remote control system (MHz): 135 - 175

Power supply (V): 9

Dimensions:

- Diameter (mm): 130
- Height (mm): 70

Total weight (kg): 2,177

Temperature range of use (°C): -30 – +50

Storage without maintenance:

- in storehouse (years): 10
- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The remote controlled fuse DVM-S is a general purpose high-tech device which can be implemented to different types of land mines for protection of military sites and objects. Sensors of several types can be attached to the fuse allowing wide range of applications.

The fuse is equipped with a remote control system allowing commanding it by a hand-held control unit. The coded commands are transmitted by a preliminary chosen VHF channel within the frequency range of the system. They are intended for activation or neutralization of the mine within the period of operating state.

The commands can be performed only after the end of the "safe time period" following the laying of the mine, which begins after the switching (taking away) of its safety lock. This guarantees a secure walking away of the man staff laying the mine

Command for neutralization of the mine can be transmitted at any time during its active state. After the voltage of the batteries decreases below the working limit, the neutralization of mine is automatically carried out which is clearly visualized.

MARINE MINES:

- Claymore-Type Effector
- Diver Recall System DRS-3
- Equipment for Arrangement of Independent Underwater Effectors - "OMAR-MC"
- Ground Mine PDM-120
- Ground Mine PDM-250
- Hydro-Acoustic System for Control
- Hydro-Acoustic Transmitter "PARROT"
- Hydro-Acoustic Underwater Fuse
- Independent Underwater Effector PDM-1B
- Independent Underwater Effector PDM-1M
- Independent Underwater Effector PDM-2B
- Independent Underwater Effector PDM-2I
- Independent Underwater Effector PDM-2M
- Magnetic Field Monitoring and Measuring Station KIMS-P
- Marine Explosive Part with Hydro-Acoustic Control MEP-2RC
- Marine Explosive Unit with Hydro-Acoustic Control MEP/8/-RC
- Multiple Underwater Response System MURS-6/25
- Naval Controlled Mine PDM-2C-2
- Naval Controlled Mine PDM-2C-3
- Naval Controlled Mine PDM-2H
- Naval Controlled Mine PDM-3
- "OMAR-C" Equipment
- Portable Sonar for Divers
- Side-Scan Sonar "KOSAT"
- Sonar for Circular Observation "SON-16/24"
- Sonar for Sector Observation "SON-5D"
- Underwater Demolition Charge MDM/5/
- Underwater Demolition Charge MDM/7/
- Underwater Demolition Charge MDM/7/-N
- Underwater Demolition Charge MDM/8/-EFP/0.4/-1
- Underwater Demolition Charge MDM/8/-EFP/0.4/-2
- Underwater Demolition Charge MDM/8/-EFP/0.4/-3
- Underwater Grenades UWG-0.5UWG-0.75UWG-1.0
- Underwater Time Delay Fuse with "NONEL" - PPZ-3M



Claymore-Type Effector



Technical Data:

Hydro-acoustic sensor range (m): up to 1000
Doppler SHF sensor range (m): up to 350
Attack angle (°): 20
Safe time after setting in fighting condition (min): 35
Maximum period of fighting state (days): 30
Operation temperature range (°C): -20 – +50
Storage temperature (°C): -40 – +60

Storage without maintenance:

- in storehouse (years): 10
- under shed (years): 2

Time for setting from transport into fighting state (min): 15

Warhead characteristics:

Destruction range (m): 250
Steel fragment weight (kg): 23.5
Weight of mine in package (kg): 8
Destruction probability (%): 0,85
Height of warhead & stand (m): 0,75
Warhead dimensions (l/h/w) (mm): 700/300/200
Explosive type: TNT

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The effector is designed for protection of ports, terminals, etc. against attack boats, especially high-speed ones by means of directed ejecting of fragments,

The water areas protection tow effectors are fixed to an anchored platform. The warhead control is performed by a sensor unit containing radio channel and sensor for waking up, activation and deactivation. The effector is equipped with hydro-acoustic sensor, Doppler radar and processing electronics for control.

In non-active state the effector is laying down on the platform, at activation it stands upright.

Options:

Control (activation, neutralization and self-destruction) by:

- radio channel
- cable connection
- shock-sensor

Connection between 2 mines working in parallel.

Diver Recall System DRS-3



Technical Data:

Operating depth (m): 6

Content (type): pyrotechnic flash composition

Sound signals emitted: 1-3

Interval between the signals (s): 3

Storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The device is designed for underwater transmission of coded sound signals to divers or other applications.

The device activation is performed by the hydraulic pressure. After activation 1 to 3 acoustic signals at intervals of 3s can be emitted.

The device operates as follows: loading 1 to 3 signal cartridges, removing the mechanical safety lock, submerging by cord, activation at reaching of 6m depth due to the hydraulic pressure. In case of need the procedure can be repeated.

Ground Mine PDM-120



Technical Data:

Dimensions:

- height (mm): 380 (maximum)
- width (mm): 920 (maximum)

Weight:

- in air (kg): 175
- in water (kg): <100

Main charge weight (kg): 120

Main charge type: TNT

Targets: amphibious vehicles, small and medium surface ships

Programmable features: acoustic sensitivity, magnetic sensitivity, life, ship-counter, arming delay

Operational depth (m): 3 – 30

Operational temperature (°C): -4 – +35

Life in water (years): >2

Storage time under shed (years): >25

Storage temperature (°C): -40 – +60

Safety features:

Transportation safety lock: yes

Water soluble safety lock: yes

Hydrostatic pressure safety lock: yes

Programmable arming delay: yes

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

PDM-120 is a ground mine designed to be effective against landing and midtonnage vessels. The mine can be loaded on the board of various type of vessels. The unique flate shape and magnetic signature make the PDM-120 a very difficult to be detected. The fuse logic is based upon a state-of-the-art analysis of the target acoustic, magnetic and hydro acoustic influences.

The mine has camouflage coating on all its surface and when placed at the sea bottom it merges with the environment. That makes it hardly detectable.

Ground Mine PDM-250



Technical Data:

Depth of operation (m): 3 – 30

Main charge: type cast TNT

Weight of charge (kg): 250

Safety time (h): 6 – 254

Maximum fighting condition time (years): 1

Dimensions:

- Length (mm): 1300
- Width (mm): 600
- Height (mm): 400

Weight (kg): 320

Temperature range of use (°C): -4 – +35

Storehouse storage (years): 20

Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The ground mine PDM-250D is a new generation of mine designed for action against ships.

The mine possesses modern high-tech construction. It is charged with explosive substance of 250kg TNT equivalent. The mine can be laid on the bottom up to 50m depth.

The mine has camouflage coating on all its surface and when placed at the sea bottom it merges with the environment. That makes it hardly detectable. The armed condition duration of the mine is programmable by means of electronic timer within the range from 1 to 365 days.

The fuse is equipped with 2 sensors.

The fuse of the PDM-250D mine has two stage transportation safety devices (soluble safety device and electronic time delay). The electronic safety time of the fuse is programmable within the range from 6 to 254 hours.

The fuse has microprocessor ship-counter, i.e. accounts for the consecution of the object to be attacked (e.g. "third" ship). The detonator possesses also capability for neutralization on elapse of the programmed time.

The mine can be protected by a field built of marine explosive parts with hydro-acoustic control MER/8/-RC and MER-2RC.

Hydro-Acoustic Underwater Fuse



Technical Data:

Control of the operation devices at distances:

- in radius from 25 to 500m, in depth down to 2m
- in radius from 25 to 2000m, in depth from 2 to 10m

Number of possible digital code combinations: 19683

Setting of the code combinations in every operational device is performed immediately before use.

Operational frequency (kHz): within the range from 20 to 30

Power supply (V): 7,2, lithium battery

Consumption of the OD (mA): <15

Depth of operation (m): up to 50

Maximum fighting condition time (days): 15

Temperature range of use (°C): -4 – +35

Temperature range of storage (°C): -40 – +60

Storehouse storage (years): 10

Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The fuse is controlled through digital coded signals received by hydro-acoustic channel. The fuse is equipped with three safety devices (mechanical safety lock, soluble safety device and electronic time delay).

Specification:

Apparatus for monitoring and control (AMS)

Operational devices (fuses) (OD) - 3 models standard compatible with "None", Cap No 8 and 'Austin' (the quantity is by customer's request)

The fuse can be applied for detonating of any kind of explosive charge by modification of firing circuit (by customer's request).

Independent Underwater Effector PDM-1B



Technical Data:

Depth of operation (m): 0.8 – 1,5
Distance between two devices (m): >10.0
Main charge: casted TNT
Booster charge: pressed TNT
Induction fuse type: NV-SM
Remote control /options/ - hydro-acoustic communication system
Remote control system range (options) (meters): up to 1000
Sensor system range (m): 0.8
Safe time (since immersion) (min): 35,0
Maximum time of fighting condition (day): 15
Step for setting in fighting condition (day): 1
Resistance to sea waves (ball): 5
Power (V): 9
Device diameter (mm): 300,0 ±5.0
Device height (mm): 450,0 ±5.0
Device weight (kg): 85,0 ±5,0
Weight of warhead (kg): 15,0 ±5,0
Weight of main charge (kg): 12,0 ±5,0
Weight of sensor system (kg): 1,5 ±0,02
Weight of booster charge (g): 70,0 ±0,05
Temperature range of use (°C): -4 – +35
Storehouse storage (years): 10
Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

The independent underwater effector PDM-1B is a new generation of device designed for building defense barriers at depth of up to 2m in the waterside of a sea or a river as well as island waters (lakes, swamps, etc.).

The device contains a built-in unified non-contact induction fuse with three safety locks: transportation, electrochemical and electron.

After removing the first safety lock and lowering the device down into water the second safety lock is activated. Three minutes later the safety lock of a firing circuit is released and the third safety lock is activated counting 25 minutes and the sensor system is switched on.

The electron block controls autonomously the device condition according to a preset complex program (processing and analysis of the sensor system signals, performing the explosion, protection from eventual activation of the electron keys, protection of systems in case of battery capacity decrease, etc.) The sensor system possesses two programmable modes of eliminating the device fighting condition after elapsing the pre-set time: self-destruction and neutralization.

Neutralized condition is visualized by detaching the fuse and its floating up to the surface of the water.

Options:

A Remote Control System can be applied for control of the device from the coast or vessels.

The Remote Control System performs the following functions:

- activation:
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each sensor system has an individual coded access number, which allows sending of control signals to every individual device, to separate groups of devices or to all devices of the anti-landing barrier within the range of the control system.

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The device contains a built-in unified non-contact induction fuse with three safety locks: transportation, electrochemical and electron.

After removing the first safety lock and lowering the device down into water the second safety lock is activated. Three minutes later the safety lock of a firing circuit is released and the third safety lock is activated counting 25 minutes and the sensor system is switched on.

The electron block controls autonomously the device condition according to a preset complex program (processing and analysis of the sensor system signals, performing the explosion, protection from eventual activation of the electron keys, protection of systems in case of battery capacity decrease, etc.) The sensor system possesses two programmable modes of eliminating the device fighting condition after elapsing the pre-set time: self-destruction and neutralization.

Neutralized condition is visualized by detaching the fuse and its floating up to the surface of the water.

Options:

A Remote Control System can be applied for control of the device from the coast or vessels.

The Remote Control System performs the following functions:

- activation:
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each sensor system has an individual coded access number, which allows sending of control signals to every individual device, to separate groups of devices or to all devices of the anti-landing barrier within the range of the control system.



Independent Underwater Effector PDM-2B



Technical Data:

Depth of operation (m): 2.5 - 10
Distance between two devices (m): >20.0
Main charge: casted TNT
Booster charge: pressed TNT
Induction fuse type: NV-SM
Remote control /options/ - hydro-acoustic communication system
Remote control system range (options) (meters): up to 1000
Sensor system range (m): 0.8
Safe time (since immersion) (min): 35.0
Maximum time of fighting condition (day): 15
Step for setting in fighting condition (day): 1
Resistance to sea waves (ball): 5
Power (V): 9
Device diameter (mm): 360.0 ±5.0
Device height (mm): 600.0 ±5.0
Device weight (kg): 120.0 ±5.0
Weight of warhead (kg): 20.0 ±5.0
Weight of main charge (kg): 16.0 ±5.0
Weight of fuse (kg): 1.5 ±0.02
Weight of booster charge (g): 70.0 ±0.05
Temperature range of use (°C): -4 – +35
Storehouse storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

The independent underwater effector PDM-2B is a new generation of bottom device designed for building defense barriers from 2.5 to 10m depth in the waterside of a sea or a river.

The warhead construction provides its floating ability.

The effector possesses a built-in non-contact sensor system with three safety locks: transportation, electrochemical and electron.

After removing the first safety lock and lowering the device down into water the second safety lock is activated. Three minutes later the safety lock of a firing circuit is released and the third safety lock is activated counting 25 minutes and the sensor system is switched on.

The electron block controls autonomously the device condition according to a preset complex program (processing and analysis of the sensor system signals, performing the explosion, protection from eventual activation of the electron keys, protection of systems in case of battery capacity decrease, etc.).

The fuse possesses two programmable modes of eliminating the device fighting condition after elapsing the pre-set time: self-destruction and neutralization.

Neutralized condition is visualized by detaching the sensor system and its floating up to the surface of the water.

Options:

A Remote Control System can be applied for control of the device from the coast or vessels.

The Remote Control System performs the following functions:

- activation;
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each sensor system has an individual coded access number, which allows sending of control signals to every individual device, to separate groups of devices or to all devices of the antilanding barrier within the range of the control system.

Independent Underwater Effector PDM-2I



Technical Data:

Depth of operation (m): 2.5 - 20
Distance between two devices (m): >10
Main charge: casted TNT
Booster charge: pressed TNT
Contact fuse type: KF-2I
Remote control: hydro-acoustic communication system
Remote control system range (m): up to 1000
Safe time (since immersed) (min): 35
Maximum time of fighting condition (day): 60
Step for setting in fighting condition (day): 1
Resistance to sea waves (ball): 5
Power (V): 9
Warhead dimensions:

- diameter (mm): 340
- height (mm): 250

Total weight of the mine (kg): 110
Warhead weight (kg): 10
Weight of fuse (kg): 1.5
Booster charge weight (g): 70
Operating temperature range (°C): -4 – +35
Storehouse storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The independent underwater effector PDM-2I is a new generation of bottom device designed for building defense barriers against high-speed boats in watersides at depth from 2.5 to 25m.

The warhead construction provides its floating ability.

The effector a built-in contact sensor system with three safety locks: transportation, electrochemical and electron.

After removing the first safety lock and lowering the device down into water the second safety lock is activated Ten minutes later the safety lock of a firing circuit is released and the third safety lock is activated counting 25 minutes and the sensor system is switched on.

The electron block controls autonomously the device condition according to a preset complex program (initiating of explosion, protection from eventual activation of the electron keys, protection of systems in case of battery capacity decrease, etc.).

The fuse possesses two programmable modes of eliminating the device fighting condition after elapsing the pre-set time: self-destruction and neutralization.

Neutralized condition is visualized by detaching the sensor system and its floating up to the surface of the water.

Options:

A Remote Control System can be applied for control of the device from the coast or vessels.

The Remote Control System performs the following functions:

- activation;
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each sensor system has an individual coded access number, which allows sending of control signals to every individual device, to separate groups of devices or to all devices of the antilanding barrier within the range of the control system.



Independent Underwater Effector PDM-2M



Technical Data:

Modification with:	a high base	a low base
Total weight (kg)	135	100
Weight of the sensor system (kg)	15	15
Height (m)	2.1 to 2.7	1.4
Dimensions of the base (m)	2x2	2x2
Depth of operation (m)	2.4 to 3.8	1.5 to 2.4
Submerging. (distance from water surface to the rod) (m)	0.3 to 1.1	0.1 to 1.0
Force for activating (kg)	40-50	40-50
Minimum distance between two devices (m)	8	8
Resistance to rough sea (ball)	up to 5	up to 6
Self-destruction (days)	1-90	1-90

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The independent underwater effector PDM-2M is intended for building of barriers in shallow waters. It is capable to damage tanks, light armor vehicles, amphibians etc.

The device is designed in two modifications: arranged on a high and adjustable base as well as on a low base.

The device is supplied with a programmable mechanical sensor system, which works on a contact principle and enables the mine to self-destroy. The time until self-destruction may be programmed in the range from one to ninety days. The fuse is secured and may be activated by means of a water-soluble safety lock.

Multiple Underwater Response System MURS-6/25



Technical Data:

Main charge: 25 kg TNT equivalent

Fuse type: contact or contactless

Mine weight (kg): 25

Operating temperature range (°C) -4 – +40

Storage without maintenance

- in storehouse (years): 15
- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The multiple underwater response system is designed for building defense mine barriers in sea gulfs. It is intended to destroy ships, amphibians, assault barges, etc.

The main components of each charge are a cylindrical floatable body made of plastic material with 25 kg TNT equivalent and a controllable fuse.

The system is settled down on the bottom within the depth range up to 15 m. It consists of 6 charges placed in a metal basket and a control system.

The control system receives signals from control station located on the coast and transmits commands to the mines. Each fuse has an individual coded access number which allows controlling of every individual charge.

On receiving a signal for activation the charge raises from the bottom to 1 m depth where is moved by the existing steam in the gulf. If no target appears during the whole pre-set fighting state period, the control system initiates the firing circuit for self-destruction or self-neutralization.

Naval Controlled Mine PDM-2C-2



Technical Data:

Depth of operation (m): 5 - 20

Mine spacing (m): >25

Main charge: 50kg casted TNT

Booster charge: 0.2kg pressed TNT

Induction fuse type: NV-2C-2

Remote control /options/ - hydro-acoustic communication system

Remote control system range (m): up to 1000

Maximum period of fighting state (days): 180

Step of setting in fighting state (day): 1

Resistance to sea waves according to Beaufort and Swell scales: 5

Warhead dimensions:

- diameter (mm): 450

- height (mm): 800

Total Weight of the mine (kg): 240

Weight of fuse (kg): 7.5

Operating temperature range (°C): -4 – +40

Storage without maintenance:

- in storehouse (years): 10

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

The naval controlled mine PDM-2C-2 is designed for building of defense barriers against enemy's invasion and landing operations. It is intended to destroy big vessels (ships, amphibians, tanks, assault barges, etc.) in the 5-20 meters depth range.

It consists of separate anchor and a floatable warhead. In non-active state the mine lies on the sea bottom. After activation signal the warhead moves upwards and stops when reaching 3 m under the sea surface.

The mine is activated by a contactless fuse sensitive to ferrous metals objects, their motion and an acoustic sensor. Different types of sensors can be ordered in combination with the acoustic: magnetic (ferrosond), electromagnetic (induction). In order to avoid all possibilities for wrong activation before settling on fighting position, the fuse is fit with three safety locks: mechanical, chemical and electronic.

A Remote Control System is implemented for control of the mine from the coast or vessels. The Remote Control System performs the following functions:

- activation;
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each fuse has an individual coded access number, which allows sending of control signals to every individual mine, to separate groups of mines or to all mines of the antilanding barrier within the range of the control system.

Naval Controlled Mine PDM-2C-3



Technical Data:

Depth of operation (m): 5 - 20

Mine spacing (m): >25

Main charge: 50kg casted TNT

Booster charge: 0.2kg pressed TNT

Induction fuse type: NV-2C-3

Remote control /options/ - hydro-acoustic communication system

Remote control system range (m): up to 1000

Maximum period of fighting state (days): 180

Step of setting in fighting state (day): 1

Resistance to sea waves according to Beaufort and Swell scales: 5

Warhead dimensions:

- diameter (mm): 450

- height (mm): 800

Total Weight of the mine (kg): 240

Weight of fuse (kg): 7.5

Operating temperature range (°C): -4 - +40

Storage without maintenance:

- in storehouse (years): 10

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

The naval controlled mine PDM-2C-3 is designed for building of defense barriers against enemy's invasion and landing operations. It is intended to destroy big vessels (ships, amphibians, tanks, assault barges, etc.) in the 5-20 meters depth range.

It consists of separate anchor and a floatable warhead. In non-active state the mine lies on the sea bottom. After activation signal the warhead moves up-wards and stops when reaching 3 m under the sea surface. Ultrasonic signal from the mine to the control station gives information about the mine state.

The mine is activated by a contactless fuse sensitive to ferrous metals objects, their motion and an acoustic sensor. Different types of sensors can be ordered in combination with the acoustic: magnetic (ferosond), electromagnetic (induction). In order to avoid all possibilities for wrong activation before settling on fighting position, the fuse is fit with three safety locks: mechanical, chemical and electronic.

A Remote Control System is implemented for control of the mine from the coast or vessels. The Remote Control System performs the following functions:

- activation;
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each fuse has an individual coded access number, which allows sending of control signals to every individual mine, to separate groups of mines or to all mines of the antilanding barrier within the range of the control system.

Naval Controlled Mine PDM-2H



Technical Data:

Depth of operation (m): 5 - 20

Mine spacing (m): >25

Main charge: 50kg casted TNT

Booster charge: 0.2kg pressed TNT

Induction fuse type: NV-2H

Remote control: hydro-acoustic communication system

Remote control system range (m): up to 1000

Maximum period of fighting state (days): 180

Step of setting in fighting state (day): 1

Resistance to sea waves according to Beaufort and Swell scales: 5

Warhead dimensions:

- diameter (mm): 450

- height (mm): 800

Total Weight of the mine (kg): 240

Weight of fuse (kg): 7.5

Operating temperature range (°C): -4 – +40

Storage without maintenance:

- in storehouse (years): 10

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

The naval controlled mine PDM-2H is designed for building of defense barriers against enemy's invasion and landing operations. It is intended to destroy big vessels (ships, amphibians, tanks, assault barges, etc.) in the 5-20 meters depth range. The mine consists of separate anchor and a floatable warhead.

The mine is activated by a contactless fuse sensitive to ferrous metals objects, their motion and an acoustic sensor. Different types of sensors can be ordered in combination with the acoustic: magnetic (ferosond), electromagnetic (induction) or hydrodynamic. In order to avoid all possibilities for wrong activation before settling on fighting position, the fuse is fit with three safety locks, mechanical, chemical and electronic.

Two programmable modes for coming out of fighting state after elapsing of the pre-set active period of operation are available: self-destruction and neutralization. Remote Control System is implemented for control of the mine from the coast or vessels. The Remote Control System performs the following functions:

- activation;
- deactivation (neutralization or self-destruction).

The commands to the remote control system are transmitted from control station located on the coast or on a vessel. Each fuse has an individual coded access number, which allows sending of control signals to every individual mine, to separate groups of mines or to all mines of the antilanding barrier within the range of the control system.

Naval Controlled Mine PDM-3



Technical Data:

Depth of operation (m): 5 - 30

Distance between two devices (m): >30

Main charge: 75kg casted TNT

Booster charge: 0.2kg pressed TNT

Maximum period of fighting state (day): 270

Step of setting in fighting condition (day): 1

Resistance to sea waves according to Beaufort and Swell scales: 5

Warhead dimensions:

- diameter (mm): 530

- height (mm): 720

Total weight of the mine (kg): 250

Weight of fuse (kg): 7.5

Operating temperature range (°C): -4 – +40

Storage without maintenance, years

- in storehouse (years): 30

- under field conditions (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The naval controlled mine PDM-3 is designed for building of defense mine barriers against enemy's invasion and landing operations. It is intended to destroy big vessels (ships, assault barges, etc.) in the 5-30 meters depth range.

The mine consists of separate anchor and a floatable warhead. In non-active state the mine lies on the sea bottom. After activation signal the warhead moves upwards and stops when reaching the pre-programmed depth under the sea surface.

The mine is activated by a contactless fuse with three types of sensors - electromagnetic, acoustic and hydrodynamic. In order to avoid all possibilities for wrong activation before settling on fighting position, the fuse is fit with three safety locks: mechanical, chemical and electronic.

The mine is equipped with anti-dicersion mechanism which initiates the mine explosion in case of attempt to cut the rope.

Underwater Demolition Charge MDM/5/



Technical Data:

Connection to the vessel: by magnets, by adapting device
Operational depth (m): 0 to 95
Safe time (min): minimum 20
Maximum fighting condition time (hours): 48
Minimum fighting condition time (min): 30
Step of setting fighting condition (min): 1
Power supply (V): 7.2
Anti-subtracting mechanism: yes
Diameter (mm): 280
Height (mm): 90
Weight (kg): 5
Weight of charge (kg): 2
Temperature range of use (°C): -10 – +45
Storehouse storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The device is a new generation of underwater demolition charge sticking to the vessel bottom by magnets. It is equipped with an adapting device for fixing to nonmagnetic vessels.

The device has modern high-tech design with hemispheric shape and good hydrodynamic behavior. The main charge is placed in a plastic case.

The demolition charge is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical lock and an electronic lock with total safety time 20 min.

The fuse programming is performed by programming device.

A programmable electronic timer performs the activation. On explosion the mine effects a massive destruction of the vessel bottom.

Underwater Demolition Charge MDM/7I



Technical Data:

Connection to the vessel: by magnets, by adapting device
Operation depth (m): up to 95
Safe time, (min): minimum 20
Maximum fighting condition time (hours): 48
Minimum fighting condition time (min): 30
Step of setting fighting condition (min): 1
Power supply (V): 7.2
Anti-subtracting mechanism: yes
Diameter (mm): 365
Height (mm): 130
Weight (kg): 10
Weight of charge: 7 kg TNT equivalent
Temperature range of use (°C): -10 – +45
Storehouse storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The device is a new generation of underwater demolition charge sticking to the vessel bottom by magnets. It is equipped with an adapting device for fixing to nonmagnetic vessels.

The device has a modern high-tech design with hemispheric shape and good hydrodynamic behavior. The main charge of 7kg TNT equivalent is placed in a plastic case.

The sensor system is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical lock and an electronic lock with total safety time minimum 20 min.

A programmable electronic timer performs the device activation. The fuse programming is performed by programming device.

The device explosion causes a massive destruction of the vessel bottom.

Option:

Second anti-diversion system (photoelectric sensor) for activation at illuminating the device with torch light or other source of light.

Underwater Demolition Charge MDM/7/-N



Technical Data:

Connection to the vessel: by magnets, by adapting device
Operation depth (m): up to 95
Safe time, (min): minimum 20
Maximum fighting condition time (hours): 48
Minimum fighting condition time (min): 30
Step of setting fighting condition (min): 1
Power supply (V): 7.2
Anti-subtracting mechanism: yes
Diameter (mm): 365
Height (mm): 130
Weight (kg): 10
Weight of charge: 7 kg TNT equivalent
Temperature range of use (°C): -10 – +45
Storehouse storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The device is a new generation of underwater demolition charge sticking to the vessel bottom by magnets. It is equipped with an adapting device for fixing to nonmagnetic vessels.

The device has a modern high-tech design with hemispheric shape and good hydrodynamic behavior. The main charge of 7 kg TNT equivalent is placed in a plastic case.

The sensor system is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical lock and an electronic lock with total safety time minimum 20 min.

A programmable electronic timer performs the device activation. The fuse programming is performed by buttons under water.

The device explosion causes a massive destruction of the vessel bottom.

Underwater Demolition Charge MDM/8/-EFP/0.4/-1



Technical Data:

Connection to the vessel: by magnets, by adapting device

Safe time, (min): minimum 20

Maximum fighting condition time (hours): 48

Minimum fighting condition time (min): 20

Step of setting fighting condition (min): 1

Power supply (V): 7.2

Anti-subtracting mechanism: yes

Diameter (mm): 380

Height (mm): 165

Weight (kg): 10

Weight of charge: 8 kg TNT equivalent

Weight of charge for EFP (kg): 0.4

Temperature range of use (°C): -4 – +35

Storehouse storage (years): 10

Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The underwater demolition charge MDM/8/-EFP/0.4/-1 is a new generation high-tech device sticking to double-bottom vessels by magnets. It is equipped with an adapting device for fixing to non-magnetic vessels.

The device contains a main charge of 8 kg TNT equivalent and a shaped charge located in the center of the device.

The sensor system is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical part and an electronic one with total safety time 10 min. The electron lock includes an anti-diversion mechanism enabling to initiate the device in case of an attempt for being unstuck.

The time for activating varies from 20min to 48h and is defined by a programmable electronic timer. The time for initiating is programmed by a programmer with plug memory in a non-active state during preparation for placing the device.

On initiating the device first EFP penetrates the vessel's sheathing followed by the main TNT charge, which causes a massive destruction.

Underwater Demolition Charge MDM/8/-EFP/0.4/-2



Technical Data:

Connection to the vessel: by magnets, by adapting device

Safe time, (min): minimum 20

Maximum fighting condition time (hours): 48

Minimum fighting condition time (min): 10

Step of setting fighting condition (min): 1

Power supply (V): 7.2

Anti-subtracting mechanism: yes

Diameter (mm): 380

Height (mm): 165

Weight (kg): 10

Weight of charge: 8 kg TNT equivalent

Weight of charge for EFP (kg): 0.4

Temperature range of use (°C): -4 – +35

Storehouse storage (years): 10

Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The underwater demolition charge MDM/8/-EFP/0.4-2 is a new generation high-tech device sticking to vessel bottom by magnets. It is equipped with an adapting device for fixing to non-magnetic vessels.

The device contains a main charge of 8 kg TNT equivalent and a shaped charge located in the center of the mine.

The sensor system is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical part and an electronic one with total safety time 10 min. After that the device is self-initiating in case of an attempt for being unstuck.

during preparation for loading the device.

The time for activation varies from 20min to 48h and is defined by a programmable electronic timer.

On initiating the device first EFP penetrates the vessel's sheathing followed by the main TNT charge, which causes a massive destruction.

Underwater Demolition Charge MDM/8/-EFP/0.4/-3



Technical Data:

Connection to the vessel: by magnets, by adapting device

Safe time, (min): minimum 20

Maximum fighting condition time (hours): 48

Minimum fighting condition time (min): 10

Step of setting fighting condition (min): 1

Power supply (V): 7.2

Diameter (mm): 380

Height (mm): 165

Weight (kg): 10

Weight of charge: 8 kg TNT equivalent

Weight of charge for EFP (kg): 0.4

Temperature range of use (°C): -4 – +35

Storehouse storage (years): 10

Storage under shed (years): 2

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The underwater demolition charge MDM/8/-EFP/0.4-3 is a new generation high-tech device sticking to vessel bottom by magnets. It is equipped with an adapting device for fixing to non-magnetic vessels.

The device contains a main charge of 8 kg TNT equivalent and a shaped charge located in the center of the mine.

The sensor system is supplied with a two-stage cascade transportation lock consisting of a soluble mechanical part and an electronic one with total safety time 10 min. The electron

is equipped with the anti-arrangement systems for detaching the device after the safety time expiration under the following cases: at attempt to detach the mine from the target; at illuminating the mine with torch light or other source of light (by photoelectric sensor).

The time for activation varies from 20 min to 48 h and is defined by a programmable electronic timer. The time for initiating is programmed by a microprocessor device in a non-active state during preparation for locating the device.

On initiating the device first EFP penetrates the vessel's sheathing followed by the main TNT charge, which causes a massive destruction.

Underwater Grenades UWG-0.5UWG-0.75UWG-1.0



Technical Data:

Depth of activation (m): > 5
Explosive charge (kg): 0.075 TNT
Operation temperature range (°C): -30 to 60
Storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The grenade is designed for protection against diver's diversion.
The grenade activation is performed at reaching of 5-8 m depth due to the shock pressure.
The explosive charge quantity is sufficient for the diver's disabling in 20 to 200 m radius.

Underwater Time Delay Fuse with "NONEL" - PPZ-3M



Technical Data:

Compatibility : Cap No 8 "None!"
Timesetting (by buttons): from 20 min to 999 h
Display type: LCD
Waterproofness depth (m): up to 50
Operation temperature (°C): -30 – +60
Storage (years): 10

Packing:

Packing specifications vary depending on conditions for storage of goods or specific customer request.

Additional Info:

The underwater time delay fuse PPZ-3M is designed for explosion initiation of various in shape and mass charges under water.

The fuse is supplied with soluble transportation safety lock of the firing circuit which ensures safety during assembly and programming out and under the water.

It is possible the fuse electronic block to be placed in a separate floating device which allows the fuse to be used repeatedly