YOUR RELIABLE PARTNER IN THE WORLD OF DEFENCE

ROCKET ARTILLERY
WEAPONS AND MUNITIONS

CATALOGUE
Scientists and engineers of 31 Ukroboronprom design bureaus make remarkable contributions to scientific and technological progress of the country. Near 80000 of highly trained employees both in production and engineering are working for Ukroboronprom in 5 major defence industry sectors. 40%+ high-level specialists with degrees in engineering, applied math, physics, etc. The top management understands the need to attract skilled and educated professionals to move forward, that is why we expand long-term cooperation with the best universities of Ukraine.

Ukroboronprom was established in 2011 for improving coordination and performance of the military-industrial complex of Ukraine. Ukroboronprom is the largest state defence holding company in Ukraine, uniting 130+ enterprises, some of which have more than 70 years of experience in the field of defence and security.

WHO WE ARE

OUR MISSION:
HELP OUR CUSTOMERS SOLVE COMPLEX TASKS USING ADVANCED TECHNOLOGIES AND INNOVATIVE APPROACH

OUR VISION:
TO BE A RELIABLE PARTNER IN THE WORLD OF DEFENCE

OUR VALUES:
- We value and protect human life as a main priority
- We are constantly searching for new ideas to ensure peace and security
- We put quality as the basis of our production
- We enhance Ukraine’s defence capability, preventing new threats

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UkrOboronProm management has developed a promising model of industry-specific clusters with clear specialization. We are proud that Ukraine is one of the few countries in the world that has great technological knowledge in the industry and a full production cycle.
GOVERNMENT-AUTHORIZED EXPORTERS TO CARRY OUT EXPORT AND IMPORT OF MILITARY AND DOUBLE-USE PRODUCTS WITH 20+ YEARS OF EXPERIENCE IN 90+ COUNTRIES WORLDWIDE:

- weapons and ammunition
- military and special purpose equipment
- dual-use materials and technologies
- maintenance of military and dual-purpose products

Being the part of Ukroboronprom, exporters ensure and facilitate trade of military and double-use products across the border, acting as intermediate agents for Ministry of Defence, Armed Forces, Emergency Situations Service, as well as other companies in Ukraine, specialized in development, production, maintenance and repair for defense/military purposes.
ROCKET ARTILLERY WEAPONS AND MUNITIONS

RIGHT ON TARGET

We have a long history of successful cooperation with our Partners, offering affordable and highly tested missiles and missile systems. Our reputation is based on exceptional contractual performance and successful partnerships.

WE DO:
- customized designing and development, meeting specific customers’ needs
- production of missiles, rockets, ammunitions
- high-precision guided weapons
- various caliber artillery systems
- propelling charges, explosives, powder and blast initiation means
- development of ammunitions
- maintenance and recharging, shelf life prolongation and recycling of ammunitions
The DCM battalion officer’s crawler vehicle is a mobile battalion command post intended for use in the advanced battalion Automated Control System (ACS) that is part of MT&A tactical control system. Remote control gadget that is part of UCM provides a functional backup of DCM processing, control and communication equipment in the event of their failure and operation from a remote command post.

**DIVISION COMMANDER MACHINE**

The DCM battalion officer’s crawler vehicle is a mobile battalion command post intended for use in the advanced battalion Automated Control System (ACS) that is part of MT&A tactical control system. Remote control gadget that is part of UCM provides a functional backup of DCM processing, control and communication equipment in the event of their failure and operation from a remote command post.

**CHIEF STAFF OF THE DIVISION MACHINE**

The car of the Chief of Staff of the Division CSDM is designed to accommodate the headquarters of the division, which, in conjunction with commander cars DCM -1, DCM -2 and cars of senior officers of batteries CSDM provides control of combat operations of the division. The car can be produced both on a wheel (for a trailer artillery) and on a crawler (for self-propelled artillery) chassis.

**UPGRADED SURFACE-TO-AIR MISSILE (SAM) SYSTEM**

Upgraded SAM System S-125-2D efficiently destroys low-flying and low-sized targets in conditions of heavy jamming and interference. S-125-2D system has service life of 15 years, increased target engagement envelope, increased efficiency and mobility, improved operation in conditions of heavy jamming.

### Main Specifications:

- **Channel capacity, targets:** 2,5 – 3.0
- **Channel capacity, launchers:** Up to 4
- **Target engagement time, s:** Up to 12
- **System start-up time, min:** Up to 2
- **Mean Repair Time, min:**
  - **Channels capacity:** 3
  - **Target:** 12

### Armament:

- **Maximum target detection range, bomber type, at altitude 7 km:** not less than 100 km
- **Maximum target speed closing in:** 800 m/s, in pursuit - 300 m/s
- **Detection and stable tracking of targets with RCS of 0.1 sqm:** 21 km
- **Methods of guidance:** Three point, half lead, optimal dynamic control
- **Number of simultaneously connected launchers:** Three point, half lead, optimal dynamic control

**Upgrade to 2K12M1-2D**

Surface-To-Air (SAM) System (KVADRAT-2D) features improved performance and extended functional capabilities due to new algorithms of data processing and displaying, digital signal processing with software based MTI and automatic data read out and processing. 2K12M1-2D is offered as the upgraded follow-on to 2K12M1.

### Main Specifications:

- **Capability to detect and destroy low-flying targets including VLO (“Stealth”).**
- **Improved operation in jamming conditions, in presence of reflections from underlying surface.**
- **Automation of control from Command Post, automation of detection and tracking, prelaunch preparation and launch of missiles, crew training.**
- **Increase of kill area and kill probability due to optimization of signal processing, increased detection and tracking range of low-flying targets.**
- **Reduced response time and firing cycle.**
**SKIF**

**MAN PORTABLE ANTI-TANK MISSILE SYSTEM**

“Skif” man portable antitank missile system is intended to destroy man power, stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as pinpoint targets, like weapon emplacements, light armoured objects and helicopters.

The system's can guide the missile at a target from closed emplacements and shelters, reducing the risk of the gunner destruction by reply fire attack of the enemy. The system is equipped with 130mm and 152mm missiles in transport and launching containers with tandem hollow-charge (RK-2S, RK-2M-K) and high-explosive fragmentation (RK-2OF, RK-2M-OF) warheads.

**Main Specifications:**

- **Guidance system:** by laser beam with target tracking in automatic mode
- **Operating temperature range:** -40°C to +60°C
- **Maximum firing range:** 5 km
- **Weight, launcher, kg:**
  - RK-2S: 29.5
  - RK-2M: 38
- **Weight, missile in container, kg:**
  - RK-2S: 130
  - RK-2M: 152
- **Weight, remote control, kg:** 8
- **Thermal imager:**
  - Rough weight, thermal imager, kg: 113
  - Weight, remote control, kg: 40

**ROCKET ARTILLERY WEAPONS AND MUNITIONS**

**CORSAR**

**LIGHT PORTABLE MISSILE SYSTEM**

“Corsar” light portable missile system is intended to destroy stationary and moving modern armoured targets and other objects with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as pinpoint targets such as weapon emplacements, light-armoured objects and helicopters. Firing can be carried out from the mount as well as from a trench parapet.

Firing can be carried out from the mount as well as from a trench parapet.

**Main Specifications:**

- **Guidance system:** automatic by laser beam
- **Weight, mount, kg:**
  - RK-2S: 9.2
  - RK-2M: 11.1
- **Weight, missile in container, kg:**
  - RK-2S: 107
  - RK-2M: 113
- **Operating temperature range:** -40°C to +60°C
- **Maximum firing range:** 5.5 km
**BAR'ER**

**VEHICLE-CARRIED ANTITANK MISSILE SYSTEM**

"BAR'ER" Vehicle-Carried Antitank Missile System is mounted on a turret of a fighting vehicle (like ICV or APC) and is designed to destroy stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as pinpoint targets such as weapon emplacements, light-armoured objects and helicopters.

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**STUGNA**

**ROUND COMPRISING ANTITANK GUIDED MISSILE**

Round Comprising Antitank Guided Missile is intended to destroy, while firing from the tank T-55 or antitank artillery gun MT-12, stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as against pinpoint targets like weapon emplacements, tank in a trench, light-armoured objects and helicopters.

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**KVITNYK-E**

**GUIDED ARTILLERY PROJECTILE WITH LASER SEMI-ACTIVE SELFGUIDANCE TYPE**

"KVITNYK-E" is intended for effective defeating of:
- tanks;
- IFVs;
- armored vehicles;
- multiple rocket launchers;
- self-propelled artillery systems;
- artillery pieces, both on the move and stationary, located in the open or in pits;
- command, control, communications centers;
- bridges, crossings, defensive fortifications;
- surface targets (combat, landing or transport vessels), etc. With a high probability of hitting with one shot.

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**GUIDED ARTILLERY PROJECTILES WITH LASER SEMI-ACTIVE SELFGUIDANCE TYPE**

"Karasuk" provides an effective defeat of tanks; Armored infantry vehicles; Armored vehicles; Missile launchers; Self-propelled artillery systems; Artillery pieces, stationary and moving, located openly or in shelters; Command, control centers, communications, computer and intelligence centers; Bridges, crossings, defensive fortifications; Surface targets (combat, landing or transport vessels), etc. With a high probability of hitting with one shot.
**KONUS**

**Round Comprising Antitank Guided Missile**

Round comprising antitank guided missile is intended for firing from tanks T-84-120, T-72-120, against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like weapon emplacements, a tank in a trench, light-armoured objects and helicopters.

**Main Specifications:**

- Warhead: tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 760
- Round length, mm: 1,074
- Round weight, kg: 28

**FALARICK 90**

**Round Comprising Antitank Guided Missile**

Round Comprising Antitank Guided Missile is intended for firing from the LCTS90 weapon system gun against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like weapon emplacements, a tank in a trench, light-armoured objects and helicopters.

**Main Specifications:**

- Warhead: tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 977
- Round weight, kg: 20

**KOMBAT**

**Round Comprising Antitank Guided Missile**

Round Comprising Antitank Guided Missile is intended for firing from tanks T-80UD, T-84, T-72, upgraded T-84 against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like weapon emplacements, a tank in a trench, light-armoured objects and helicopters.

**Main Specifications:**

- Warhead: tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 750
- Main part length, mm: 675
- Tail part length: 408
- Round weight, kg: not more than 30.45

**FALARICK 105**

**Round Comprising Antitank Guided Missile**

Round Comprising Antitank Guided Missile is intended for firing from the CT-CVTM weapon system gun against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like weapon emplacements, a tank in a trench, light-armoured objects and helicopters.

**Main Specifications:**

- Warhead: tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 1,015
- Round weight, kg: 24
The bomb is designed for destruction of the ground-based targets like railway bridges, concrete constructions, runways, radar stations, positions of operative and tactical missiles, antiaircraft missile systems as well as water-surface targets during the carrier’s level flight, diving and pitch-up. It is equipped with the MIG and Su aircraft weapon systems.

R-27
AIR-TO-AIR MISSILES

The R-27 is a medium range, guided air-to-air missile. It is designed to intercept and destroy hostile piloted aircraft, drone targets and cruise missiles in long-range and close-in manoeuvrable air fight. It features a three-modular construction that incorporates the equipment and guidance section with a homing head, warhead, solid-propellant rocket motor and three hardpoints. It is compatible with the MiG and Su aircraft weapon systems.

Main Specifications

<table>
<thead>
<tr>
<th>Type of missile</th>
<th>R-27ER1</th>
<th>R-27R1</th>
<th>R-27ET1</th>
<th>R-27T1</th>
<th>R-27ET1</th>
<th>R-27PID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch weight, kg</td>
<td>350</td>
<td>253</td>
<td>343</td>
<td>245</td>
<td>346</td>
<td>248</td>
</tr>
<tr>
<td>Launch altitude, km</td>
<td>to 27</td>
<td>to 25</td>
<td>to 27</td>
<td>to 25</td>
<td>to 20</td>
<td>to 20</td>
</tr>
<tr>
<td>Maximum launch range, km head-on aspect / tail aspect</td>
<td>95 / 26</td>
<td>60 / 18</td>
<td>84 / 20</td>
<td>50 / 15</td>
<td>110 / 70</td>
<td>78 / 70</td>
</tr>
<tr>
<td>Guidance</td>
<td>Semi-active radar seeker with command updates</td>
<td>IR seeker</td>
<td>Passive guidance on radar and jammer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BAR'ER-V
HELICOPTER ANTITANK MISSILE SYSTEM

“BAR'ER-V” helicopter antitank missile system is intended for modernization of Mi-24 helicopters, consists of an antitank guided missile in transport and launching container, laser control channel in optical and aiming station. The system is designed to destroy stationary and moving modern armored targets with combined, carried or monolithic armor, including ERA (explosive reactive armor) as well as pinpoint targets such as weapon emplacements, tanks in a trench, light-armoured objects and helicopters.

Main Specifications

| Weight of missile in container, kg | 47 |
| Armour penetration behind ERA, mm | not less than 800 |
| Container length, mm | 1917 |
| Container outer diameter, mm | 140 |

RS-80KO
UNGUIDED ROCKET WEAPON

Air-launched unguided rocket weapon RS-80KO with shapedcharge/fragmentation warhead. It is intended to hit modern tanks, light-armed and armored military equipment and manpower.

Main Specifications

<table>
<thead>
<tr>
<th>Main Specifications</th>
<th>Length, mm</th>
<th>Rocket weight, kg</th>
<th>Warhead weight, kg</th>
<th>Weight of explosive, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocket speed</td>
<td>1600</td>
<td>13</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Diameter, mm</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caliber, mm</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of suspension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launch range, m</td>
<td>1300 - 1400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight of missile in container, kg</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Container length, mm</td>
<td>1917</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container outer diameter, mm</td>
<td>140</td>
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</tr>
</tbody>
</table>

CORRECTED AIR BOMB

The bomb is designed for destruction of the ground-based targets like railway bridges, concrete constructions, runways, radar stations, positions of operative and tactical missiles, antiaircraft missile systems as well as water-surface targets during the carrier’s level flight, diving and pitch-up. It is equipped with a television seeker which ensures the targets locking-on under the aircraft and automatic target seeking in autonomous flight.

Main Specifications

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<th>Type of missile</th>
<th>R-27ER1</th>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Main Specifications

<table>
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<tr>
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<th>Diameter, mm</th>
<th>Weight, kg</th>
<th>Warhead weight, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliber, mm</td>
<td>450</td>
<td>850</td>
<td>650</td>
</tr>
<tr>
<td>Weight of explosive, kg</td>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of suspension</td>
<td>AKO-58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operational range

- from the altitude of 0.5 km up to 8 km
- from the altitude of 5 km up to 20 km
**Guided Missiles and Systems**

**ZRN-01 Missile System**

The system is designed to protect military facilities and concentration of forces from unmanned aerial vehicles and to assist the Land Forces in:

- Detection and destruction of ground targets such as: infantry, light armored vehicles, command posts, fuel and ammunition depots.
- Detection and destruction of helicopters and light flying targets with low effective dispersion surface – mainly unmanned aerial vehicles.

**Main Specifications:**

- Maximum firing range, m: 1,500 – 20,000
- Flight time at maximum range, s: 5.5
- SAGM caliber, mm: 25 – 10,000
- Warhead tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 1,180
- Round weight, kg: 21.6

**Surface to Air Guided Missile (SAGM)**

Surface to Air Guided Missile (SAGM) is designed to destroy with high-explosive fragmentation action manned and unmanned means of air attack that are flying at both subsonic and supersonic speeds on the collision and pursuit courses. SAGM defeats targets by day and by night, under any aspect angle at front and at hemisphere of a target, under ordinary and adverse weather conditions, under manoeuvrable counteraction of the enemy.

**Main Specifications:**

- Maximum speed, m/s: 850
- Maximum normal overload, g: 25
- Launch weight, kg: 140
- Detection, Tracking and Targeting System
  - Radar detecting targets with low effective dispersion surface of a distance up to 6 km integrated with the surveillance and aiming payload GS400
  - Dual sensor surveillance and aiming payload GS400, which incorporates daylight and infrared cameras as well as a laser range finder

**Fire Control System**

- Fire Control System TOPAZ – build in inertial navigation with function of missiles heads programming

**Communication System**

- Digital Internal Communications System FONET
- RADAROM COMPON H08 radio with vehicle amplifier

**Round Comprising Antitank Guided Missile**

Round Comprising Antitank Guided Missile is intended for firing from the armoured vehicle BMP-3 against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like weapon emplacements, tank in a trench, light-armoured targets and helicopters.

**Main Specifications:**

- Maximal firing range, m: 5,500
- Flight time at maximum range, s: 20
- Caliber, mm: 130/260
- Semi-automatic guidance system
- Warhead tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 1,180
- Round weight, kg: 100

**Surface-to-Air Guided Missile**

Surface to Air Guided Missile (SAGM) is designed to destroy with high-explosive fragmentation action manned and unmanned means of air attack that are flying at both subsonic and supersonic speeds on the collision and pursuit courses. SAGM defeats targets by day and by night, under any aspect angle at front and at hemisphere of a target, under ordinary and adverse weather conditions, under manoeuvrable counteraction of the enemy.

**Main Specifications:**

- Maximum speed, m/s: 850
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**Main Specifications:**

- Maximal firing range, m: 5,500
- Flight time at maximum range, s: 20
- Caliber, mm: 130/260
- Semi-automatic guidance system
- Warhead tandem hollow-charge
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 1,180
- Round weight, kg: 100
ZTM-1
AUTOMATIC GUN

Automatic gun ZTM1 is designed to destroy enemy’s lightly armoured targets at a range of up to 2000 m, anti-tank rocket launchers, non-armoured vehicles and enemy troops at a range of up to 4000 m, as well as airborne targets, flying at small heights up to 2000 m with subsonic speeds and inclined range up to 2500 m. The gun can fire both in single shots and in rounds.

Main Specifications:
- Number of rifles: 16
- Projectile muzzle velocity, m/sec: 960 (+30/-10)
- Gun length: max, mm: 3027
- Voltage supply of electro-startup from source of direct current, W: 27 (+2, -5)
- Electro-startup input current, not more than, A: 14.3

ZTM-2
AUTOMATIC GUN

Automatic gun ZTM2 is designed to destroy enemy’s lightly armoured targets at a range of up to 1500 m, anti-tank rocket launchers, non-armoured vehicles and enemy troops at a range of up to 4000 m as well as airborne targets, flying at small heights up to 2000 m with subsonic speeds and inclined range up to 2500 m. Shooting from a gun can be conducted single shots and turns with big and small rates.

Main Specifications:
- Number of rifles: 16
- Projectile muzzle velocity, m/sec: 960 (+30/-10)
- Gun length: max, mm: 3027
- Voltage supply of electro-startup from source of direct current, W: 27 (+2, -5)
- Electro-startup input current, not more than, A: 14.2

L-30, L-30-1
LINK

They are designed for formation of a cartridge belt, filled in it of cartridges of calibre 30 mm and used in the guns ZTM1, ZTM2, 2A42, 2A72.

Main Specifications:
- Caliber, mm: 30
- Shell initial velocity, m/s, not less: 960
- Weight of a barrel, kg, no more: 37
- Effort of cave-in of a cartridge in a link, kgs: 0.130
- Weight, kg, no more: 26

BARRELS
BARRELS OF AUTOMATIC GUN

Main Specifications:
- BARRELS KBA-02-01 for 30 mm automatic guns 2A72, ZTM1
- KBA.113 for 30 mm automatic guns 2A42, ZTM2
- 23 mm barrel KBA-AD for 2A-23-2

Main Specifications:
- Number of rifles: 16
- Caliber, mm: 30
- Step of rifling, mm: 715.5
- Length, mm: 2413
- Weight, kg: 38

BARRELS KBA-02-01 for 30 mm automatic guns 2A72, ZTM1

- Weight of a barrel, kg, no more: 36.5
- Armour penetration behind ERA, mm: not less than 550
- Round length, mm: 1015
- Round weight, kg: 24

Warhead tandem hollow-charge

Covering L-30:
- Weight of a barrel, kg, no more: 37
- Weight, kg, no more: 26

Covering L-30-1:
- Weight of a barrel, kg, no more: 37
- Weight, kg, no more: 26
MOBILE MORTAR COMPLEX

Mobile Mortar Complex (hereinafter - MMK) is designed to support the actions of mechanized (mobile, mountain infantry) battalion-level units (company, platoon) in course of combat with mobile terroristic units and subversive and reconnaissance groups of regular forces in conditions of lack of roads, hard-to-reach regions, open territory.

Main Specifications

- Crew: 3
- Deployment time: 35 s
- Time of folding down: 25 s
- Pre-aiming time after fire, not above: 8 s
- Maximum range of fire: 7200 m
- Fire speed: 12 rounds per minute
- Ammunition capacity: 60 mines
- Horizontal aiming angles: -60° to +60°
- Vertical aiming angles: +45° to +80°

Aiming system of one mortar - GIS (Geographic Information System)
Topographic referencing - Automatic, GPS

M120-15 MORTAR

Mortar M120-15 is a smoothbore rigid system, charging is carried out from muzzle. The fuse from double charging and rear sight MPM-44M are installed on the muzzle part. Assignment: for defeating of enemy troops and destroying fortifications by plunging fire.

Main Specifications

- Elevation angles, degrees: 45-65
- Crew: 3
- Wearable ammunition, rounds: 40
- Horizontal firing angles without bipod reinstalling, degrees: +/- 5

KBA48M1 82-MM MORTAR

Mortar is intended to defeat enemy’s manpower and battle weapon, located behind covers, in trenches, ravines and reverse sides of hills, to destroy fortifications.

Main Specifications

- Elevation angles, degrees: 45-65
- Crew: 3
- Wearable ammunition, rounds: 18
- Horizontal firing angles without bipod reinstalling, degrees: +/- 4

Rate of fire, shot / min:

- Caliber, mm: 120
- Weight in firing position, kg: 82
- Range of fire, m:

ROCKET ARTILLERY WEAPONS AND MUNITIONS

RANGE: 100 - 4000
}

Rate of fire, shot / min:

- Caliber, mm: 82
- Weight in firing position, kg: 48
KBA.118

60-MM MORTAR

Mortar is intended to defeat enemy’s manpower and weapon, located behind covers, in trenches, ravines and reverse sides of hills. It can be used for rapid deployment forces for special operations.

Main Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation angles, degrees</td>
<td>45-85</td>
</tr>
<tr>
<td>Muzzle velocity, m/s</td>
<td>148</td>
</tr>
<tr>
<td>Horizontal firing angles without bipod reinstalling, degrees</td>
<td>7</td>
</tr>
</tbody>
</table>

M60-16

MORTAR

Assignment: for arming the air assault infantry brigades and special operations teams. Represents smooth-bore system of recharge carried out from a barrel. The safety lock from double loading and the sight MPM 44M are established on a barrel.

Main Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation angles, degrees</td>
<td>40-65</td>
</tr>
<tr>
<td>Crew, persons</td>
<td>3</td>
</tr>
<tr>
<td>Wearable ammunition, rounds</td>
<td>20</td>
</tr>
<tr>
<td>Horizontal firing angles without bipod reinstalling, degrees</td>
<td>+/- 4</td>
</tr>
</tbody>
</table>

KBA.138

MORTAR

Mortar KBA.138 is intended to defeat enemy’s manpower and battle weapon, located behind covers, in trenches, ravines and reverse sides of hills. It can be used for rapid deployment forces for special operations.

Main Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation angles, degrees</td>
<td>45-85</td>
</tr>
<tr>
<td>Muzzle velocity, m/s</td>
<td>244</td>
</tr>
<tr>
<td>Horizontal firing angles without bipod reinstalling, degrees</td>
<td>+/- 4</td>
</tr>
</tbody>
</table>

M60

MORTAR

Represents smooth-bore system of recharge carried out from a barrel. On the barrel the electronic scope is mounted which shows the distance to the target, slope angle and wind correction.

Main Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation angles, degrees</td>
<td>40-65</td>
</tr>
<tr>
<td>Crew, persons</td>
<td>3</td>
</tr>
<tr>
<td>Wearable ammunition, rounds</td>
<td>20</td>
</tr>
<tr>
<td>Horizontal firing angles without bipod reinstalling, degrees</td>
<td>+/- 4</td>
</tr>
</tbody>
</table>

Rocket Artillery Weapons and Munitions
**INGUL**

**PORTABLE ROCKET GRENADE LAUNCHER**

Portable rocket grenade launcher is designed to destroy lightly-armored and unarmored equipment (launchers, radar, parked aircrafts, cars etc.), field-type constructions (permanent fire positions, earth-and-timber emplacements), as well as personnel located outdoor, in shelters, in stone, brick or concrete buildings and constructions.

**Main Specifications:**
- Warhead high-explosive fragmentation, armor penetration, mm: 50
- Warhead high-explosive fragmentation, number of fragments of less than 2 g weight, pcs.: 250
- Warhead high-explosive fragmentation, number of fragments of less than 2 g weight, max.: 20 (0.2)
- Weight, kg, launcher with sight: 8.2
- Weight, kg, grenades in container: 11.4

---

**RPG M7**

**MAN PORTABLE ANTITANK GRENADE LAUNCHER**

Assignment: fighting against enemy armored vehicle at average and near distance.

**Main Specifications:**
- Weight of grenades, kg: 2-4.5
- Crew, persons: 2
- Wearable ammunition, rounds: 5
- Barrel length, mm: 960
- Barrel weight, Kg: 6.3

---

**40MM UNDERBARREL GRENADE LAUNCHER**

This 40mm Underbarrel Grenade Launcher is a soldier’s individual antipersonnel weapon intended to destroy the enemy’s manpower in open terrain, entrenchments, foxholes, or on hill back slopes. Underbarrel grenade launcher is used as part of 5.45/7.62 mm Kalashnikov assault rifle (of AKM, AKMC, AK-74, AKC-74 model) or independently with using a telescopic butt-stock. This Grenade Launcher is able to fire BOF-25/BOF-25P grenades.

**Main Specifications:**
- Main bore length: 100 mm
- Barrel rifling: 12-groove
- Overall length: 280 mm
- Weight, kg: 1.55

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**KBA.117**

**AUTOMATIC GRENADE LAUNCHER**

Is designed to defeat enemy’s manpower and fire weapons, located in the open terrain or entrenched. KBA.117 is used in a combat module, mounted on lightly armoured vehicles (ICVs, APCs, etc.).

**Main Specifications:**
- Length, mm: 840
- Grenade muzzle velocity, m/s: 185
- Weight without ammunition box, kg: 11
- Weight of ammunition box with 29 grenades, kg: 14.5
**M4 WAC-47**

**Automatic Rifle**

The WAC-47 is a variant of the M4 assault rifle designed to replace Soviet-designed 5.45/7.62mm AK weapons in Ukrainian service. The WAC-47 is a modular assault rifle in 5.56mm calibre and can quick conversions to 7.62mmx39. Additionally, it is possible to adapt to the latest types of ammunition: 458 SOCOM or 6.8 mm Remington Special Purpose Cartridges.

<table>
<thead>
<tr>
<th>Length of barrel, mm</th>
<th>Mounting weight, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>415</td>
<td>4.5</td>
</tr>
<tr>
<td>715</td>
<td></td>
</tr>
<tr>
<td>850</td>
<td>3.4</td>
</tr>
</tbody>
</table>

**Specifications**

- Length of the barrel: 415 mm
- Muzzle velocity: 900/715/940 m/s
- Effective range of fire: 500 m
- Magazine capacity: 30/45 rounds
- Weight: 4.5 kg

---

**Malyuk**

**Automatic Rifle**

The Malyuk rifle has a bullpup design. The weapon features three Picatinny-style rails for mounting a different variety of optical and mechanical devices. A quick-detachable suppressor is also available. The magazine is mounted within a dedicated shaft. The barrel is cooled by air convection, resulting in a longer barrel life, which is twice that of Kalashnikov rifle. The Malyuk automatic rifle is designed to be ambidextrous for both right-hand and left-hand shooters.

<table>
<thead>
<tr>
<th>Caliber/grenade launcher:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.62x39 / 40</td>
</tr>
<tr>
<td>5.45/76x39, 5.56x45</td>
</tr>
<tr>
<td>400</td>
</tr>
</tbody>
</table>

**Specifications**

- Main specifications:
  - Length of the barrel, mm: 415
  - Muzzle velocity, m/s: 900/715/940
  - Effective range of fire, m: 500
  - Magazine capacity, rounds: 30/45

---

**KM-7.62**

**Infantry Gun**

KM-7.62 machine gun is designed to defeat enemy personnel and technical resources, as well as to engage aerial targets. Assignment: equipment of military units, for special forces units to maintain the military operations.

<table>
<thead>
<tr>
<th>Caliber:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.62x54</td>
</tr>
</tbody>
</table>

**Specifications**

- Main specifications:
  - Muzzle velocity, m/s: 825
  - Firing: 4 right-handed
  - Length, mm: 1173
  - Mounting weight, kg: 4.5
  - Bullets: 5.45/76x39, 5.56x45
  - Magazine capacity, rounds: 30/45
The machine gun is intended for employment against aerial and ground-based targets. The machine gun is fed with ammunition by means of a belt loaded with 50 cartridges. The cartridge belts are placed into boxes. The live cartridges for firing from the DSHK-M machine gun are used with a B-32 armour-piercing incendiary bullet, as well as with a BZT armor-piercing incendiary tracking armour-piercing bullet.

Main Specifications:
- Length, mm: 1 588
- Feeding belt for 50 cartridges
- Cartridge 12.7x107
- Barrel length, mm: 1 070
- Muzzle velocity: 855 m/s
- Length: 1098 mm
- Barrel length: 722 mm
- Rate of fire, rds/min: 2 000
- Sight range of firing, m: 3 500
- Weight with empty magazine, kg: 10.5

The machine is intended for filling cartridge belts machine gun 7.62 mm, 12.7 mm, the ANC, NSV caliber guns and 23 mm and 30 mm.

Main Specifications:
- Length, mm: 32 33
- Feeding belt for 50 cartridges
- Cartridge 12.7x107
- Barrel length, mm: 1 070
- Muzzle velocity: 855 m/s
- Length: 1098 mm
- Barrel length: 722 mm
- Rate of fire, rds/min: 2 000
- Sight range of firing, m: 3 500
- Weight with empty magazine, kg: 10.5

Modernized tank gun – KTM-7.62 with Picatinny rail. Trigger switch and mechanical sight are mounted instead of electric trigger. Assignment: mounted on the armor objects as the additional tank armament, on the aircraft and other military technic.

Main Specifications:
- Muzzle velocity: 855 m/s
- Length: 1098 mm
- Barrel length: 722 mm
- Filling: 4 grooves (right-handed)
SGM-12.7
LARGE CALIBER SNIPER RIFLE

Assignment: arming of snipers for defeating manpower and lightly armored vehicles. The design of the rifle allows the installation of all types of sighting devices day and night vision, regardless of country of origin, as well as installation of various muzzle devices (muzzle brake compensator, devices reduce the sound level).

Main Specifications:
- Caliber: 12.7x108
- Length, mm: 1550
- Muzzle velocity, m/s: 2000
- Firing range, m: 1500
- Weight, kg: 12
- Magazine capacity, cartridges: 5

AKMS SB
UPGRADING OF AKM ASSAULT RIFLE (WITH SIDE-FOLDING BUTSTOCK)

AKMS Sb assault rifle 7.62 x 39 is designed for regular military and special forces units.

Main Specifications:
- Caliber: 7.62x39
- Rate of fire, rds/min: 600
- Firing range, m: 1000
- Weight, kg: 4.3
- Muzzle velocity, m/s: 715

HOPAK
MODERNIZATION OF AKM TACTICAL AND PORTABLE RIFLE

“Hopak” rifle is designed on the basis of the AKM. “Hopak” rifle is designed to conduct hidden aimed fire in urban settings. There are various modifications according to the tactical tasks. If necessary, it can be equipped with special silencer.

Main Specifications:
- Caliber: 7.62-39
- Rate of fire, rds/min: 30
- Firing range, m: 1000
- Weight, kg: 4.7
- Muzzle velocity, m/s: 720

AKMS SN
UPGRADING OF AKM ASSAULT RIFLE (WITH DOWN-FOLDING BUTSTOCK)

AKMS Sn assault rifle 7.62 x 39 is designed for regular military and special forces units.

Main Specifications:
- Caliber: 7.62x39
- Rate of fire, rds/min: 600
- Firing range, m: 1000
- Weight, kg: 4.3
- Muzzle velocity, m/s: 715
**9B-1101K**

**INERTIAL SEMIACTIVE HOMING HEAD**

It is the list of air-launched missile equipment for air-to-air type Р-27, according to the American terminology (NATO AA-10 Alamo).

- It is dedicated to assure efficient bombing adjustment in order to hit the mark of the stationary, pinpoint and shield ground targets. It is in use of air bomb armament set for weapon yields 100, 250 and 500 kg.
- It can be made out of the Tactical Air Force aircrafts' external ejector racks.
- Adjusted bombing is provided by aerodynamic guidance assembly “ADROS” BAU-01KT installed into the main hub to the detonating fuse and to the ocean-bottom aviation impact detonated fuse.
- Implementation of the aerodynamic guidance assembly “ADROS” BAU-01KT enhances hit the mark likelihood at 1.5 - 3 times with decreasing of aerial bomb outgoings at 6 – 30 times, depending on mark type.

**Main Specifications:**
- **Material:** Sitall AC-418
- **Max. surface temperature:** up to 800 °C
- **Diameter:** 219 mm
- **Height:** 890 mm
- **Weight:** 14.3 kg

**ADROS BAU-01KT**

**AERODYNAMIC GUIDANCE ASSEMBLY**

Function: Packaging radiolocation head, comprises a guided missile of class “surface-to-air” 9М317, according to the American terminology (NATO SA-N-12 Grizzly).

- Target lock-on at the altitude range 0.02-25 km with maximum exceeding (reducing) 10 km subject to target speed up to 3500 km/h and g factor 8.
- Time of inertial targeting with radio correction under the maximum distance out of carrier up to 25 km – 30s.
- Operational readiness in 2 s elapsed since target lock-on by the control system of the carrier type МИГ-29, СУ-27.
- It is the list of air-launched missile equipment for air-to-air type Р-27, according to the American terminology (NATO AA-10 Alamo).

**Main Specifications:**
- **Material:** Sitall AC-418
- **Max. surface temperature:** up to 800 °C
- **Diameter:** 340 mm
- **Height:** 890 mm
- **Weight:** 14.3 kg
**SHELLS AND AMMUNITION**

**SHELLS AND AMMUNITION**

**PRT-27C, PRT-27С2**  
**HAND THERMOBARIC GRENADE**

Hand thermobaric grenade intended for combined destruction of enemy personnel in shelters of different types, in open terrain and to incapacitate vehicles and lightly armored material.

**Main Specifications**

- Weight of the thermobaric mixture: 300 g
- Weight of the bursting charge: 33 g
- Height of fire cloud: 2 m
- Width of the fire cloud: 2.8 m
- Fire cloud period: 4 s
- Approximate temperature in the explosion zone: 2500 – 3000 °C

**EQUIPPING OF VARIOUS TYPES OF AMMUNITION**

Equipping of various types of ammunition for the Ministry of Defense and for export:

- Tandem warhead anti-tank guided rockets caliber 125, 130 mm (“Combat”, RK-2S) by the unpressing briquettes of okfola in the body with a density of at least 1.74 g / cm³.
- Assembly of anti-tank guided rockets with tandem and high-explosive warheads parts FALARIK 90, FALARIK 105, “Combat”, “Stugna”, RK-2S, RK-2OF.
- Assembly of R-27-air-to-air class guided aviation missiles.

**HIGH EXPLOSIVE ARTILLERY SHELL**

A new high-explosive artillery shell is designed to destroy the living force, artillery and various enemy fire units, as well as to destroy the enemy’s fortifications and objects. It is intended for firing from the most long-range artillery systems that are armed with the Ukrainian Army, namely, howitzers and self-propelled artillery units of the “Hyacinth” type. These characteristics enable the Ukrainian Army carry out fire missions at the distance up to 30 km.

**Main Specifications**

- Calibration: 152
- Damage zone radius, m: 30
- Temperature range of operation, °C: -50 … +50
- Quantity of items in the box, pcs: 1
- Shell length, mm: 724
- Weight of explosive, kg: 6.4
- Shell weight, kg: 46
- Weight of the bursting charge, kg: 33
- Approximate temperature in the explosion zone, °C: 2500 – 3000
- Weight of the thermobaric mixture, kg: 300

**SMOKE (AEROSOL) GRENADE**

Smoke (aerosol) grenade GD-1 intended for rapid making aerosol curtain with the purpose of visual protection of armored technology and also protection of it in laser and IR ranges of waves lengths.
INITIATING MEANS FOR EXPLOSIVE CHARGES & AMMUNITION ELEMENTS

The main specialization of the State Enterprise “Shostka State Plant “Impulse” is the production of initiating means for explosive charges, pyrotechnics and ammunition elements, as well as supplies of initiating means for explosion to extractive enterprises for industrial explosive works. The management system is certified according to ISO 9001-2008. The main types of industrial products are certified according to European standards.

CM SIGNAL MINE

Signal mine CM is designed for mining areas for the purpose of warning his troops about the appearance of the enemy in the area or obstacles on approaches to protected objects, providing opportunities unit performing their assigned tasks. Signal mine can also be used to simulate during military exercises.

TRINITROTOLUENE MILITARY

GOST: B 7059 (CORRESPONDS TO MIL-DTL-248D, TYPE 1)

Use: Flaked trinitrotoluene military is used for large size ammunition.

Packaging / Transportation: Polypropylene bags with polyethylene inserts of no more than 40 kg, cardboard boxes with polyethylene insert on a tray, corrugated board boxes on a tray with packed bags of up to 40 kg.

Main Specifications:

<table>
<thead>
<tr>
<th>Quality indicators</th>
<th>MIL-DTL-248D</th>
<th>RPE «Zarya» Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solidification temperature, °C, min</td>
<td>80.2</td>
<td>80.2 - 80.4</td>
</tr>
<tr>
<td>Moisture and volatile content, %, max</td>
<td>0.07</td>
<td>0.04 - 0.06</td>
</tr>
<tr>
<td>Content of substances insoluble in organic solvent, % max</td>
<td>0.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Acidity in terms of H₂SO₄, % max</td>
<td>0.010</td>
<td>0.004 - 0.007</td>
</tr>
</tbody>
</table>

Signal mine CM is designed for mining areas for the purpose of warning his troops about the appearance of the enemy in the area or obstacles on approaches to protected objects, providing opportunities unit performing their assigned tasks. Signal mine can also be used to simulate during military exercises.

PYROXILINE POWDERS

Pyroxiline powders designed for manufacturing of propellants for ammunition and small-caliber weapons, close combat weapons, mortars, land and naval artillery.
**SKIF-UTS1.10**

**TRAINING SIMULATOR**

The Simulator is intended for training, formation and improvement of practical skills to work with the "SKIF" man portable antitank missile system in classroom conditions.

**Main Specifications:**
- Type of computing device: IBM compatible personal computer
- Operational system: WINDOWS 7
- Language of training: Ukrainian, Russian, English
- Operating temperature range: from +5 to +40 °C

**GURT-M**

**SYSTEM**

Upgraded “GURT-M” system ensures:
- Control and preparation for application of more than 50 various modifications of air missiles and corrected air bombs;
- Missile outgoing inspection at manufacturing plants;
- Failure diagnosis while missiles repairing;
- Forecast of missiles technical state while prolonging their service life.

“GURT-M” system advantages:
- Dimensions and weight of AKPA are reduced;
- Characteristics of operational reliability are improved;
- Up-to-date methods of visualization and documenting of the test results are introduced. The usage of the modern industrial computer allows to document the results in various languages and also to correct the check routines while in operation;
- Long-term storage of results of missiles testing for the whole operation period is secured that allows to forecast their technical state while prolonging their service life.

**CONTROL SYSTEMS AND SERVO ELECTRIC CONTROL SURFACE ACTUATORS**

Control systems can be single-channel, double-channel and three-channel. They have changeable adaptive structure and ensure high guidance accuracy.

Executive control elements:
- Aerodynamic,
- Gas-dynamic control surfaces
- Combined control elements

**Main Specifications:**
- Maximum torque on control surfaces: from 1.2 to 150.0 N•m
- Range of reproduced frequencies of control surfaces oscillations: up to 35 Hz
- Angular rate of turn of control surfaces: up to 2000 °/s
- Weight of electric control surface actuators units: from 1 to 25 kg
- Calibre (outer diameter): from 100 to 400 mm
- Range of action: not less than 6000 m
- Time of non-stop work: not less than 6 h
- Operating temperature range: from -40 to +60 °C

**KTK1**

**TRAINING AND CHECKING KIT**

KTK1 training and checking kit is intended for acquisition of professional skills by a gunner to aim guided missiles without ammunition use.
GOVERNMENT-AUTHORIZED EXPORTERS

UKRINMASH
tel.: +38044-461-92-75
fax: +38044-461-92-76
uim@uim.kiev.ua
www.ukrinmash.com
36, Dehtiarivska str., Kyiv, 04119, Ukraine

UKRSPECEXPORT
tel.: +38044-461-94-17
fax: +38044-461-97-59
aira@ukrspecexport.com
www.use.ua
36, Dehtiarivska str., Kyiv, 04119, Ukraine

SPETSTECHNOEXPORT
tel.: +38044-568-50-70
fax: +38044-568-50-68
office@ste.kiev.ua
www.spetstechnoexport.com
7, Stepan Bandera Avenue, Kyiv, 04073, Ukraine

PROMOBORONEXPORT
tel.: +38044-461-97-60
fax: +38044-489-82-76
info@poe.com.ua
www.poe.com.ua
36, Dehtiarivska str., Kyiv, 04119, Ukraine

UKROBORONSERVICE
tel.: +38044-566-52-00
fax: +38044-566-52-03
uos@uos.ua
www.uos.ua
3a, Rossoshanska str., P.B. 49, Kyiv, 02093, Ukraine

PROGRESS
tel.: +38044-568-51-98
fax: +38044-568-51-98
progress@progress.gov.ua
progress.gov.ua
2/10, Melnykova str., Kyiv, 04050, Ukraine