ZU 23-2
TWIN BARREL
ANTI -AIRCRAFT GUN

GENERAL INFORMATION

DESIGNATION AND FIRING PROPERTIES OF INSTALLATION

The 23 mm double installation ZU-23 is a powerful means for shooting at flying target to a distance of 2500 and a height of 1500 m; it is designed for antiaircraft defense by flying and landing forces.

The installations constructive characteristics allow it to be used for shooting at ground light armored targets and fire nests to a distance of 2000 m furthermore. The installation can be used for destroying a consternated living force, in open air or behind light concealments of a field type.

The installation has military and high tactical characteristics and specifications necessary for striking the unexpectedly emerging and fast moving targets.

For firing at flying and ground targets are using cartridges with common incendiary tracer/CIT/ and armor piercing incendiary tracer/APIT/.

Belt loading:

–For 3 cartridges with CIT

–One cartridge with APT.

The feeding of sub machine guns is done with metal belts (Each containing 50 cartridges)

The under cartridge gives a possibility to transport the installation by the truck on the asphalt road with a speed of 70 km/hr , and by a jeep with a speed of 40 km/hr.

When setting installation in a firing position its wheels are turned upwards and one sideward and so the installation is found on the ground by the platforms jacks.

The trained mounting personnel can set it from field to firing position for 15-20 sec and from firing to field position for 35-40sec.

The staff consists of 5 persons - commander, gunner, supplier and two persons for loading (right and left)

TACTICAL CHARACTERISTICS AND SPECIFICATION ZU 23-2

Caliber of barrel .....23 mm
Number of cute 10
Length of barrel without fire shield 1880mm
Length of barrel with fire shield .....2010 mm
Length of machine –gun without fire shield ..... 2425 mm
Length of machine –gun with fire shield.....2555 mm
The greatest pressure in barrels slot ..... 3100 kg/cm^2
Initially velocity of shell 970m/sec
Maximum vertical distance 1500m
Maximum inclined distance.....2500m
Maximum horizontal distance.....2000m
Weight of cartridge.....450 g
Weight of shell/APIT.....190g
Weight of cartridge shell/CIT/.....188.5 g
Tempo of shooting /with both machine guns/.....1600-2000 shots per min.
Firing rate (with both machine guns) .....to 400 shots per min.
Horizontal fire /.....360°
Vertical fire /.....from -10 to +90°
Vertical fire above the wheel ..... from -30 to +90°

Directing velocity of fly-wheel at two revolutions per second:

Along horizontal line of first velocity 30/sec
Along horizontal line of second velocity/.....60/sec
Along vertical line /.....40/sec
Height of fire line/.....620m
Clearance /.....360mm
Width of running gear /.....1670mm

Overall dimensions of in firing position:

length/.....4570 mm
width/.....2880mm
Height /.....1220mm

Overall dimensions of in field position:

length/.....4570mm
width/.....1830mm
Height/.....1870mm

Weight of in field position with

Cases and complete set of cartridge boxes..... 950 kg
Time for setting the installation from field to firing position.....15-20sec

Time for adjusting the installation from firing

To field position.....35-40 sec
Time for changing the overheated barrel .....15-20 sec
Time for changing the cartridge box.....5-10 sec

7.62X54 MM SNIPER RIFLE

The 7.62x54 mm Sniper Rifle was designed as a squad support weapon. The long-range engagement ability was lost to ordinary troops when submachine guns were adapted. The rifle is a semi - automatic, gas-operated with 10 round magazine. It can be used with various optical and night - vision sights

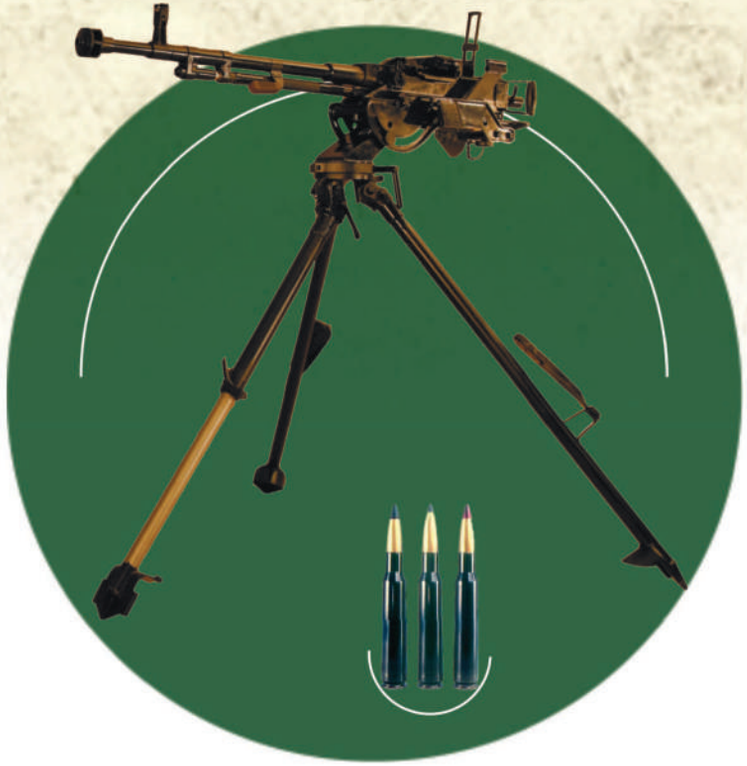
TECHNICAL SPECIFICATIONS

Caliber	7.62 x 54 mm
Length	1220 mm
Weight, without Optical Sight	3.8 kg
Barrel Length	620 mm
Effective Range, with Telescopic Sight	1300 m
Muzzle velocity	830 m/s
Rate of fire	30-40 rds. /min
Magazine capacity	10 rds.
Operation mechanism	Short-stroke, gas piston system

12.7 X 108 MM MACHINE GUN

Technical Specification

Caliber	**12,7x108 mm**
Number of Rifling Grooves Rate of	**8**
Fire Muzzle Velocity Max. Effective	**550-600 rds,/mln**
Range Max. Range	**830 m/s 2000 m**
For firing aircraft target	1600 m
For firing ground target	3300 m
Height of firing line	
Ground	320 mm
Anti aircraft	1250 mm
Angle of fire, up and down	
Ground	15 to 25
Anti aircraft	15 to 80
Angle of fire traverse	
Ground	120
Anti aircraft	360
Total weight in (in firing state)	39 kg
Weight of gun bo dp	18.5 kg
Weight of gun mount	18.5 kg
Weight of Anti - aircraft sight	1 kg
Weight of Ammunition box (with a 50 round charged linked belt)	4 kg
Length of whole gun (in ground firing state)	1995 mm
Width o f whole gun (in ground firmg state)	1222 mm
Length of gun body	
Opening the shoulder stock	1755.9 mm
Folding back the shoulder stock	1502.3 mm
Service Life for two barrels	**7000 rounds**

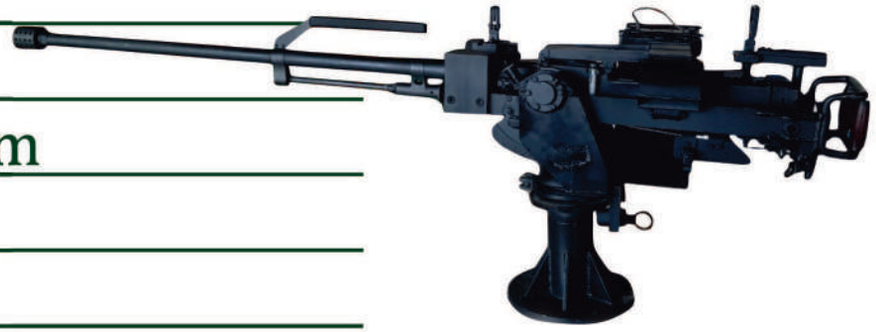


14.5 MM
SINGLE BARREL MACHINE GUN

The 14.5 mm is a towed or self-propelled anti-aircraft single barrel semi-out cannon.
It was designed to engage low-flying targets as a range of 2 km and desired for direct defence of troops and strategic locations against air defence assault which conducted by helicopters an low-flying airplanes

TECHNICAL SPECIFICATION

Caliber	14.5 mm
Operation	Indirect gas
Effective range	2000 m
Weight, overall	100 kg
Rate of fire	550 rds/m
Muzzle velocity	960 m/s
Traverse	360°
Elevation in anti-air role	-15° to 40°



AK-103 ASSAULT RIFLE

7,62 X 39 MM

Technical Specification

Properties	Parameters
Caliber, mm	7,62x39
Overall Length, mm:	
-adjustable buttstock folded	710
-adjustable buttstock open	945
Barrel length, mm	415
Weight, kg	3,7±0,2
Effective range, mm	1000
Initial velocity of bullet, m/sec	720±40
Rounds Per Minute (RPM), rounds/min	550
Magazine capacity, rounds	30

12.7 X 108 MM SNIPER RIFLE

TECHNICAL SPECIFICATIONS

Caliber	12.7x108 mm
Magazine capacity	5 rounds
Overall length	1746 mm
Barrel length	1000 mm
Muzzle Device	muzzle brake and flash suppressor
Muzzle velocity	820 m/s
Number of rifles	8, right hand
Weight without ammunition	12.9 kg
Max. height on bipod	431 mm
Effective range	1800 m
Operation mechanism	Semi-automatic, indirect, gas-operator
Service Life	2500 Shots

AGS-17 AUTOMATIC GRENADE LAUNCHER

TECHNICAL SPECICATIONS

Caliber	30 mm
Rate of Fire	420 rds/min
Weight with a mount and sight	31 kg
Empty Weight	18 kg
Sighting range	1700 m

60 MM MORTAR BOMB

The 60 mm High-Explosive Mortar Bomb is intended for engagement of troops in open or in light shelters.
The ammunition is designed for use with the 60 mm smooth-bore mortars meeting NATO standards, including:

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

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

BASIC CHARACTERISTICS

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

ELEMENTS OF MORTAR BOMB

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

TECHNICAL DATA

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

BALLISTIC DATA

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

60 MM MORTAR

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

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

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

Long range weapon for the infantry platoon and company.
Can be used in all types of terrain. Operated by one or two men.

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

Specifications

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

120 MM MORTAR

TECHNICAL SPECICATIONS

Caliber	120 mm
Range of firing, km	
max	7.1
min	0.5
Rate of fire, rpm	15
Elevation, deg	-45...80
Traverse, deg	+5
Fire consistency:	
range, vr/max	1/250
side v,m	12.8
Mass of mortar, kg	305
Mass without wheels, kg	215
Crew	3 person

81/82 MM MORTAR BOMB

The 81/82 mm High-Explosive Mortar Bomb is intended to engage troops, shelters and light-armoured targets. The ammunition is intended for use with 81/82 mm smooth-bore mortars, including:

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

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

Caliber	81/82 mm
Maximum range: with increment charges with long range charge	 3 000 m 4 500 m
Operating Temperature Range	-50°C to +50°C
Shelf Life	10

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

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

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

81/82 MM MORTAR

- Ammunition:81/82 mm frag, smoke, illuminating and tar get practice mortar bomb
- Optical sight providing airming in elevation or traverse
- Crew of 4 persons
- High rate of fire: 24 rounds per minute
- Stripping into man-pack components, easy to carry on crossed terrain
- Low weight: 47 kg
- Stripping into light man-pack components, easy to carry on crossed terrain by crew of 4 people
- Optional safety mechanizm preventing from double loading

Caliber	81/82 mm
Maximum range of fire	5400 m
Minimum range of fire	91 m
Muzzle velocity	220 m/s
Mortar weight in combat position	47,0 kg
Barrel length	1100 mm
Elevation range	45 to 85 deg
Traverse angle	6 deg.
Bomb weight	3,1 kg
Charge	0, 1, 2, 3 and 4
Crew	4 persons

120 MM MORTAR BOMB

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

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

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

BASIC CHARACTERISTICS

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

TECHNICAL DATA

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

ELEMENTS OF MORTAR BOMB

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

BALLISTIC DATA

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

BASIC CHARACTERISTICS

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

TECHNICAL DATA

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

ELEMENTS OF MORTAR BOMB

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

BALLISTIC DATA

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

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

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

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

40 MM ANTI-TANK LAUNCHER
RPG-7

RPG-7

GENERAL INFORMATION

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

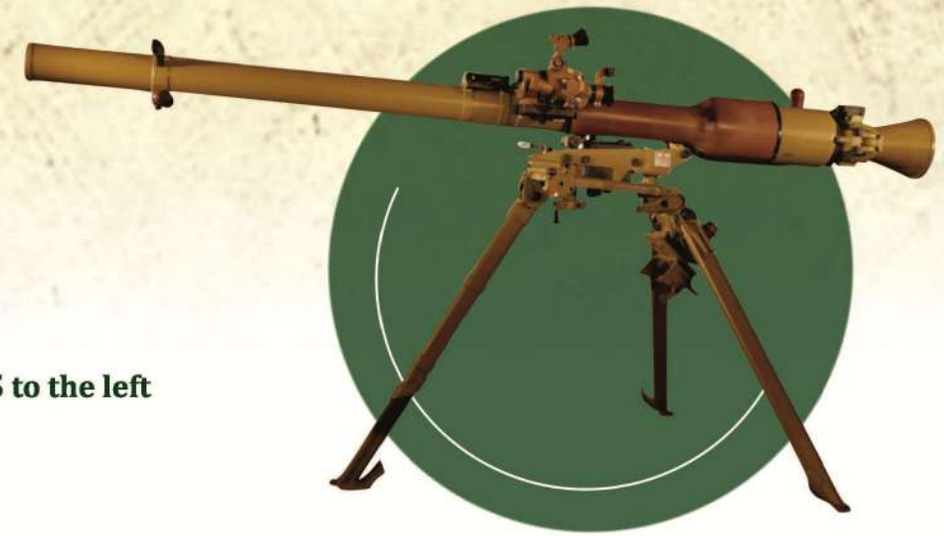
Caliber	40 mm
Ammunition	PG-7V, PG-7VM, PG-7VS, PG-7VS1, PG-7VLVS, PG-7VR, OG-7V, TBG-7V
Optical sight	GON-1 with mechanical sight NG-7V
Length	950 mm
Weight of the grenade launcher with optical sight	6,85 kg
Effective range	depending on the round type
Firing rate	4 – 6 rounds/min
Portable combat set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

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

SPG-9 ANTI-TANK LAUNCHER

The SPG-9 is a recoilless, anti-tank and anti-personnel weapon highly accurate in comparison with the guns of the same type. This weapon is capable of delivery of direct and indirect fire. It fires fin-stabilized, rocket-asissted HE and HEAT projectiles. The SPG-9 is light, and is normally transported by vehicle, and carried into position by its two crews. It has to be mounted on vehicles or boat.

Technical Specification



Caliber	73 mm
Effective range of anti-tank and antipersonnel rocket	1300 m
Max. range	6500 m
Practical rate of fire	2-4 round/min
Traverse	15 to the right, 15 to the left
Elevation	-3 to +7
Type of Ammunition	HE, HEAT
Rear danger area	30 m
Service Life	500 shots
Weight of weapon with tripod	58 kg
Length of weapon	211 cm
Sighting device	Mechanical and optical

RPG-29 105 MM

TECHNICAL SPECICATIONS

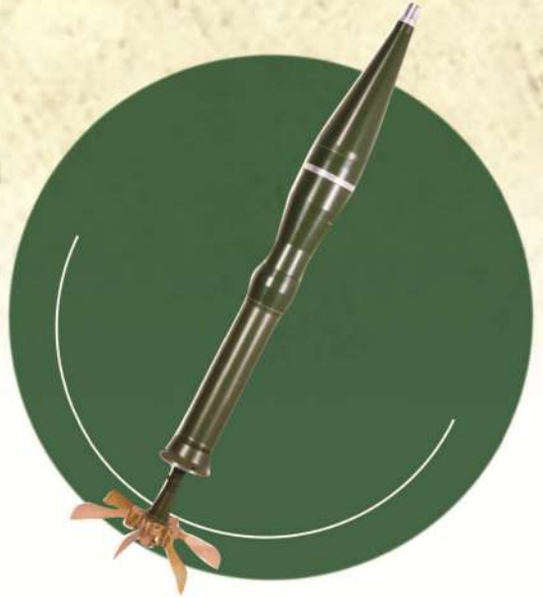
Caliber	105 mm
Effective range	500 m
Effective range with tripod	800 m
Launcher's weight (without telescope sight)	11.5 kg
Weight of launcher's composite section	3.7 kg
Weight of launcher's steel section with belt	6.7 kg
Launcher's length (ready for launching)	1850 mm
Rate of fire	2 rockets/min
Penetration (RHA steel)	750 mm
Penetration (ERA)	600 mm
Rocket Weight	6.9 mm
Operating temperature	-33 C to +52 C
Sighting systems	Mechanical sighting device,telescope sight& night vision sight
Firing mechanism voltage	24 V
Service life	200 rockets
Type of Ammunition	HE,HEAT,HEAT-TA,TB

73 MM ANTI-TANK ROCKET PG-9V

Anti-Armor Rockets (PG-9V) is equipped with tandem shaped charge warhead designed to destroy all types of tanks, personnel carriers and armored vehicles

Technical Specification

Length (mm)	**1110**
Weight (g)	**4390**
Warhead Caliber (mm)	**73**
Point- Blank Range (m)	**800**
Max. Sighting Range (m)	**1300**
Warhead Penetration	**300 in RHAmm**
Fuze type	**Piezoelectric**



107 MM 12 BARREL ROCKET LAUNCHER

TECHNICAL SPECICATIONS

Caliber	107 mm
No. of Barrels	12
Firing rate	11-12 sec
Max. range	8500m
Elevation range	0 to 60
Traverse range	15 to the right, 15 to the left
Overall dimensions	1400 x 930x 810 mm
Type of Ammunition	HE, HEI
Firing mode	single shot
Power supply	12V-AC from generator, 12V-DC from battery
Weight with wheeled carriage	380 kg
Operating conditions	Temprature -32C to +52C, Humidity 98%
Service life	1000 rounds. each barrel

73 MM ANTI-PERSON ROCKET OG-9VM

The Anti-Personnel Rocket (OG-9VM) is equipped with fragmentation warhead designed to incapacitate soft skinned targets, including infantries situated in open and closed areas, trenches, shelters, brick-wall buildings and lightly armored vehicles

Technical Specification

Length (mm)	**1060**
Weight (g)	**5500**
Warhead Caliber (mm)	**73**
Point- Blank Range (m)	**345**
Max. Sighting Range (m)	**1300**
Max. Range using Fire control Quadrant (m)	**4500**
Lethal Radius (m)	**9**
Fuze type	**Piezoelectric**

AZKON ANTI-TANK GUIDED MISSILE LAUNCHER 9P163

After firing the missile, the launcher system tracks and guides the missile. The system enjoys some advantages such as light-weight, low-elevations, good maneuvering and man-portable specifications. These caused the system to be considered as an effective warfare on the battle field.

Technical Specification

Guidance System	**SACLOS (Laser Beam Rider)**
Operating Temperature	**-20°C to +60°C**
Weight	**27 kg**
Rate of Fire	**1-2 Rounds per minute**
Loading Time	**Max. 30s**
Thermal camera installation time on Launcher	**Max. 1 minute**
Max. Firing Altitude	**Max. 4500m**
Max. Range for target detection with Thermal Camera	**3000m for UN-Cold thermal camera and other ranges depend of the type of camera**
<u>Guidance Angles (Launcher Rotation Freedom)</u>	
Horizontal State	**360 degree**
Vertical State	**From -5 to +20 Degree**
<u>Day vision specifications</u>	
Magnifying Scale	**10X & 16X**
Field of View	**5 Degree (with magnifying scale of 10X)**

AZKON ANTI-TANK GUIDED MISSILE
9M133

The missile is considered as one of the most sophisticated anti-armor missiles, developed to destroy a wide variety of modern tanks equipped with the reactive armors. The missile uses laser-beam riding guidance system which is resistant against different kinds of enemy jamming.
Heavy destructive, long range and light weight, low height and man portable launcher caused missile system to be a recognized as an effective anti-tank weapon in the battle field

Technical Specification

Penetration Depth	**1000-1200 m**
Min&Max Ranges	**100-5000 Meter**
Guidance	**SACLOS (Laser Beam Rider)**
Warhead	**Tandem heat or Thermobaric (Optional)**
Warhead Weight	**6.8 kg**
Precursor Warhead Weight	**560 kg**
Missile Weight	**22.7 kg**
Missile Weight in case	**29 kg**
Missile Length in case	**120 Cm**
Missile Diameter	**152 mm**
Time of Flight	**25 s (Max. Range)**
Max. Velocity	**260 m/s**
Operating temperature	**-20°C +60° C**

122 mm Ammunition HE

122 mm ammunition series are semi-fixed and widely used all over the world since World War II as reliable artilleries in military services. High Explosive of-462 intended for use with D-30 Gun

Technical Specification

Type	**HE**
Projectile length fused (mm)	**571.8**
Projectile weight fused (kg)	**21.760**
Propellant charge (kg)	**Full-3.8 , Reduced-2.5**
Filling material (kg)	**4.05 TNT**
Primer	**MC22/30**
Fuze	**Fuze PD M557 or PD M572 or B429**
Muzzle velocity (m/s)	**Full Charge 690, Reduced Charge 565**
Maximum range (m)	**Full Charge 15300 Reduced Charge 12840**
Maximum chamber pressure (bar)	**Full Charge 2500 Reduced Charge 2300**
Armament (mm)	**122 HOW D30**

122 mm Rocket (Standard and Long Range)

The 122 mm standard range rocket has a range of 21 km is equipped with high explosive fragmentation warhead having high destructive power. It is used to defend or attack against targets such as infantries positioned in open terrain or in trenches and shelters, as well as light armored vehicles, mortar and artillery sites, commanding posts, garrisons, single and collective trenches, and similar targets.

The 122 mm LR (long range) rocket is equipped with the same warhead as the standard type, but has a maximum range of 40 km and is used to create huge fire over the above-mentioned targets. This type is also capable of destroying fortifications and similar targets

Technical Specification

Model	Standard	LR
Fuze type	Mechanical impact	
Warhead Caliber (mm)	122	122
Weight (mm)	65	66
Length (mm)	2850	2892
Max. Effective Range (km)	21	40
Lethal Radius (m)	20	20

130 MM AMMUNITION HE

130 mm gun ammunition is semi-fixed series of ammunition provided in various types as high explosive, extended range, smoke and illuminating. The range of HE type is 27000 m

Technical Specification

Type	**HE**
Projectile length fused (mm)	**670**
Projectile weight fused (kg)	**33.400**
Cartridge case length (mm)	**845.3**
Propellant case weight	**Full- 13.2, Reduced-6.75**
Cartridge case weight (kg (w/o charges))	**11.32**
Filling material	**3700 gr TNT**
Primer	**MC22/30**
Fuze	**PDM 572**
Muzzle velocity	**Full charge 930 m/s**
	Reduced charge 705 m/s
Maximum range	**Full charge 27500m**
	Reduced charge 19130m
Maximum chamber pressure	**Full charge 3500 bar**
	Reduced charge 2800 bar
Armament (mm)	**130 mm (M-46, Type 59-I) Gun**

105 MM ROCKET PG-29V

Anti-Armor Rocket (PG-29V) is equipped with a 105 mm caliber, tandem shaped charge warhead, and designed to destroy all types of tanks and armored vehicles equipped with Explosive Reactive Armor(ERA)

Technical Specification

Length (mm)	**1100**
Weight (g)	**6900**
Warhead Caliber (mm)	**105**
Point- Blank Range (m)	**300**
Warhead Penetration (m^3)	**500 mm in RHA after ERA**
Fuze Type	**Piezoelectric**

105 MM ROCKET TBG-29V

Thermobaric rocket (TBG-29V) is equipped with thermobaric warhead, designed to destroy trenches, tunnels, underground shelters, fuel and oil reservoirs and installations, brick-wall and concrete buildings and to incapacitate infantries inside them. The destructive power of warhead is so high that can incapacitate the living creatures inside a space of more than 150 m^3

Technical Specification

Length (mm)	820
Weight (g)	2650
Warhead Caliber (mm)	105
Point- Blank Range (m)	300
Max. Sighting Range (m)	1000
Warhead Penetration (m^3)	150
Fuze Type	Mechanical impact

107 MM ROCKET LR LONG RANGE

107 mm Rocket has been designed and produced to annihilate enemy's offensive and hidden forces in an ordinary trench. It can be also used to silent artillery battery fires and destroy platoons of tanks, armored vehicles, naval vessels and hostile technical equipment on the ground and sea. This rocket has a favourite capability to strike ground equipment, command posts and ordnance depots.

Technical Specification

Max. range	**8.3 km-10.5km**
Length	**838 mm**
Caliber	**107 mm**
Weight	**18 kg**
Warhead weight	**7.9 kg**
Packing Type	**Two rounds in a wooden box**
Warhead Type	**High Explosive**
Propellant Type	**Double base, solid**
Fuse Type	**Impact**
Shelflife	**15 years**

106 MM ANTI-PERSON SHELL HEAP

GENERAL SPECIFICATIONS (RR - HEAP)

This product is provided in two types as HEAT and HEAP. The HEAP type is applied against enemy's personnel. It is fired with Recoilless Rifles M40 or M40A1. The base of the projectile contains the PD M121A fuze and the fin assembly. The cartridge case has a steel perforated body and contains the propellant charge and fitted with a percussion primer at the base.

TECHNICAL SPECIFICATIONS

Type	HEAP
Total length, fused (mm)	922
Total weight, fused (kg)	About 17
Filling material (gr)	About 590 A4
Cartridge case length (mm)	610
Propellant charge (kg)	M26 double base seven perforated 3.
Cartridge case weight (kg)	About 5.8 (w/o charges) About 9 (with charges)
Fuze	PDM 121A
Primer	M57
Muzzle velocity (m/s)	485
Max. range (m)	About 6,000
Max. effective range (m)	-
Max. chamber pressure (bar)	874
Penetration	
Armament	M40 or M40A1 Recoilless Rifle

PACKING DATA

Type	HEAP
Quantity per Box	2 rds
Box Weight	52 kg
Box Dim.	1114x346x221 mm
Box P/Pallet	15
Pallet Weight	795 kg
Pallet Dimensions	1120 x 1050 x 1180 mm

106 MM ANTI-TANK SHELL
HEAT

GENERAL SPECIFICATIONS (HEAT M344A1)

This product is provided in two types as HEAT and HEAP. The HEAT type is applied against tanks and armour vehicles. It is fired with Recoilless Rifles M40 or M40A1. The base of the projectile of the HEAT type contains the PIBD M509A1 fuze and the fin assembly. The cartridge case has a steel perforated body and contains the propellant charge fitted with a percussion primer at the base.

TECHNICAL SPECIFICATIONS

Type	HEAT
Total length, fused (mm)	998
Total weight, fused (kg)	About 17
Filling material (gr)	1200 Comp.B
Cartridge case length (mm)	610
Propellant charge (kg)	M26 double base seven perforated 3.8
Cartridge case weight (kg)	About 5.8 (w/o charges) About 9 (with charges)
Fuze	PIBD M509A1 or M509A2
Primer	M57
Muzzle velocity (m/s)	503
Max. range (m)	
Max. effective range (m)	1350
Max. chamber pressure (bar)	874
Penetration	152mm RHA plate at 60°
Armament	M40 or M40A1 Recoilless Rifle

PACKING DATA

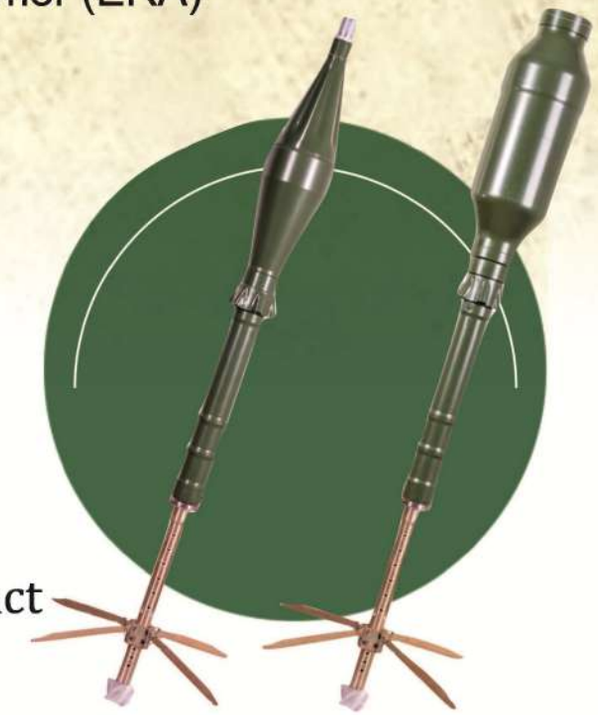
Type	HEAT
Quantity per Box	2 rds
Box Weight	52 kg
Box Dim.	1114x346x221 mm
Box P/Pallet	15
Pallet Weight	795 kg
Pallet Dimensions	1120 x 1050 x 1180 mm

PG-7V AND TBG-7V

Thermobaric rockets are equipped with a 105 mm caliber warhead, designed to destroy trenches, tunnels, underground shelters, fuel and oil reservoirs and installations, brick-wall and concrete buildings as well as incapacitation of i nfantries inside them. The destructive power of the warhead is so high that can incapacitate living creatures inside a space of 150 m^3 .Anti-Armor Rocket (PG-7V) is equipped with 105 mm caliber, tandem shaped charge warhead that is designed to destroy all types of tanks and armored vehicles equipped with explosive reactive armor (ERA)

TECHNICAL SPECICATIONS

Model	PG-7V	TBG-7V
Length (mm)	920	895
Weight (g)	2400	4450
Warhead Caliber (mm)	85	105
Point-Blank Range (m)	300	150
Max. Sighting Range (m)	500	200
Max. Range Using Fire Control Quadrant	-	150 m^3
Warhead Destructive Power	-	Mechanical impact
Lethal Radius (m)	-	-
Warhead Penetration (mm)	300 in RHA	-
Fuze type	Piezoelectric	Mechanical impact



JURAVL

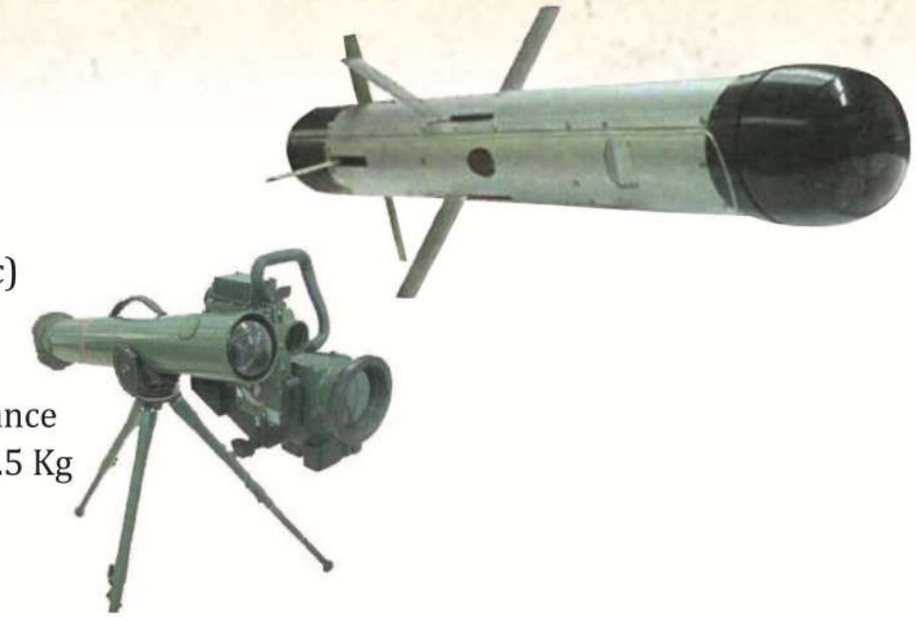
The Juravl family are new generation, man-portable and platform-adaptable advanced multipurpose weapon system. The Juravl system is specially designed for urban warfare, ground support and specially missions with maximum survivability.

Imaging seeker & fier-optical data link enable operator to observe & update during flight and provide the unique ability to:

- Switch targets after launch
- Attack concealed targets
- Achieve urban warfare precision
- Perform real-tie surveillance and damage assessment
- Achieve extended range and pinpoint accuracy
- Minimize collateral damage
- Abort missions after launch

TECHNICAL SPECICATIONS

Capability	Fire&forget- Fire, observe&update
Max. & Min. ranges	200-4000m
Warhead type	Tandem warhead (shaped charges/ thermo baric)
Penetration depth	Min. 600 mm
Launch platform	Light tripod
Guidance type	Visible image seeker- equipped double- point guidance
System weight	Missile round: 15 kg- Firing Post: 11.5 kg - Tripod: 3.5 Kg
Flight trajectory	Direct/ Lofted
Missile round length	1100mm
Missile round diameter	130 mm



152 MM HE AMMUNITION

TECHNICAL SPECIFICATIONS

Projectile length, fuzed	707.5 mm
Projectile weight, fuzed	43.560 kg
Cartridge case length	547 mm
Caliber	152.4 mm (6 inch)
Filling material	5860 gr TNT
Primer	MC22/30/52
Fuze	PD-B429, M557, M572
Muzzle velocity	full chrg. 655 m/s, reduced chrg. 282-511 m/s
Body	Forged Steel
Range	full chrg. 17400m , reduced chrg. 6710-13400m
Chamber pressure	full chrg. 2400 bar, reduced chrg 2100 bar
Armament	152 mm D-20 Gun

OFAB 250-270 AIR BOMB

TECHNICAL SPECIFICATIONS

Type of Bomb	OFAB 250-270
Warhead type	Fragmentation
Length (mm)	1423±10
Diameter (mm)	325±5
Weight (kg)	268±10
Fin span (mm)	410
Lugs span (mm)	250
Explosive	TNT

OFAB-250-270

SHOULDER LAUNCHED AIR DEFENSE SYSTEM (PROTOYPE IGLA-1)

TECHNICAL SPECICATIONS

Target Altitude	30 m to 3500 m
Min. & Max. Range	500 m to 5000 m
Fuse Type	Contact & Proximity
Guidance Mode	Proportional navigation + TAG
Warhead Weight	1.42 kg
Missile Caliber	71 mm
Missile Length	1510 mm
System's Operational weight	16.48 kg
Proximity Fuse Range	All Fire: 1.0 m / No Fire: 3 m
Operating Temperature	-40 C to +60 C
Fuse Type	Contact
Missile Weight	18.3 kg

F-1 HAND GRENADE

TECHNICAL SPECICATIONS

600g – Weight of Granade
3.2 – 4.2s – Time Delay
20m – Lethal Radius
FIRE SPECIFICATIONS
Fuze Type UZRGM

SIZE AND WEIGHT
20pcs – in Wooden Case
18kg – weight of each Wooden Case
0.025cm3 – volume of each Wooden Case
490x303x168mm – dimensions of each Wooden Case

RGD 5 HAND GRENADE

TECHNICAL SPECICATIONS

Actuation time of pyrotechnics, sec	3.2-4.2
Mass of a complete grenade, g	75 ± 1
Mass of a Simulation component, g	26.5 ± 1
Mass of black powder, g	2.4 ± 1

VOG-25 GRENADE

TECHNICAL SPECICATIONS

Caliber	40 mm
Maximum Firing Range	400 m
Radius of Defeat	not less than 6m
Operational Temperature Range	-50 C to + 50 C
Shelf Life	10 years
Length of Grenade	102.6 mm
Weight Grenade	0.25 kg
Weight of Explosive Charge	0.048 kg
Muzzle velocity	76.5 m/s
Probable Deviation	1 m/s
Average Pressure, max	800 kgf/cm2
Fuze	VMG-K or UT MOO SP
Grenade Body	Steel
Explosive Filling	A-IX- (RDX)
Propellant	P-200
Primer	KVM-3
Arming Distance	10 to 40 m or 15 to 50 m
self-destruction Time	14 to 19 sec or 12 to 20 sec

155 MM PROJECTILE STANDART TYPE

GENERAL SPECIFICATIONS (HE, M107)

155mm HOW ammunition series are supplied in HE, M107, extended range with base bleed unit, as well as smoke and illuminating types. The range of HE type is 17 km..

TECHNICAL SPECIFICATIONS

Type	High Explosive, M107
Quantity per box Box	1
weight (kg)	47
Box dimensions (cm)	77 x 28 x 26 16 770
Box per pallet Pallet	115x77x 120
weight (kg)	
Pallet dimensions (cm)	

PACKING DATA

Type	High Explosive, M107
Projectile length fused (mm)	710.8
Projectile weight fused (kg)	43
Propellant charge (kg)	White Bag M4A2-6
Filling material (kg)	3.5 TNT
Primer	M82 or MK2A4
Fuze	PDM 557, PDM 572 or PDM 739
Muzzle velocity (m/s)	565.4
Max. range (km)	17
Max. chamber pressure (bar)	3040
Armament	155mm HOWM1A1.M1A2

155 MM PROJECTILE STANDART TYPE

GENERAL SPECIFICATIONS (HE- ERFB/BB)

155mm HOW ammunition ERFB/BB is equipped with base bleed unit resulting to an enhanced range of 30 km. The ammunition is fired with GHN45 GUN.

TECHNICAL SPECIFICATIONS

Type	HE- ERFB/BB
Quantity per box Box	1
weight (kg)	50
Box dimensions (cm)	77 x 28 x 26 16
Box per pallet Pallet	920
weight (kg)	115x76.5x120
Pallet dimensions (cm)	

PACKING DATA

Type	HE- ERFB/BB
Projectile length fused (mm)	710.8
Projectile weight fused (kg)	43.65
Propellant charge (kg)	zone 10-15.80 ,-16.30
Filling material (kg)	3.5 TNT
Primer	M82
Fuze	PDM 572 or M 557 686 30
Muzzle velocity (m/s)	686
Max. range (km)	30
Max. chamber pressure (bar)	3040
Armament	GHN45
Weight zone group	5

40 X 46 MM HE AMMUNITION

These are low velocity ammunition which can be fired by M79- MGL, M203 and HK 69 grenade launchers.
It has some kind of Ammo as HE which is used as anti-personnel against manpower or as anti-armor against light armor vehicles and engage against materiel

Technical Specification

Grenade type	HE
Fuze type	PD
Propellant	DB
Explosive material	A4
Muzzle velocity (m/s)	76
Safety distance (m)	18
Lethal radius (m)	5

12.7 X 99 MM AMMUNITION

This ammunition is manufactured to a higher level of precision and achieves for greater accuracy than most ammunition manufactured for use in Sniper rifle. This round has rimless brass bottlenecked and is berdan or boxer primed

Technical Specification

Round length	**142 mm**
Case length	**99 mm**
Round weight	**111 gr**
Bullet weight	**43 gr**
Type of powder	**Spherical- Double base**
Type of primer	**Percussion**
Mean of Muzzle Velocity	**870 m/s**
Maximum gas pressure	**3800 kgf/cm^2**
Maximum range	**7000 m**
Dispersion	**(SDx +Sdy) 550 m≤ 175 mm**
Armament	**STYER-AM50**

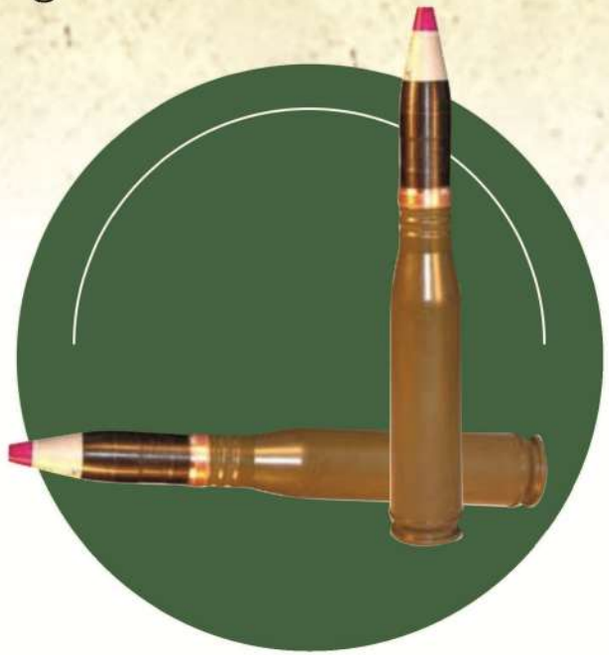
23 x 152 MM AMMUNITION

HEI

This round is another type of 23 mm anti-aircraft series fired by ZU-23 air defense gun. The projectile consists of a steel shell filled with explosive material and ignited by a PD MG-25 nose fuze and the round is equipped with self-destructive mechanism with duration of 5-11 seconds

HEIT

This round is the same as HEI type being fired by ZU-23 air defense gun but with tracer assembly burning for at least 5 seconds



Technical Specification

Type	HEI	HEIT
Self -destruction duration	5-11 s	5-11 s
Tracer Time	-	min 5s
Round length (mm)	237	237
Round weight (gr)	450	450
Length of projectile (mm)	108.8	108.8
Weight of projectile (gr)	182	188
Type of primer	Percussion	Percussion
Muzzle velocity (m/s)	965	965
Armament	ZU 23	ZU 23

14.5 MM AMMUNITION

TECHNICAL SPECICATIONS

14.5x114 mm ammunition	
Properties	**Parameters**
Caliber mm	14.5x114
Muzzle velocity m/s	995....1005
Fire consistency at 300 m range	≤20
Max mean gas powder pressure kg/cm2	≤323.6 (3300)
Bullet weight g	58.5....60.5
Powder Charge weight g	30
Grade powder	5/7 n/a
Effective traced distance m	2000
Effective armor penetration distance	100
Cartridge weight g	195±5
Cartridge length mm	156
Cartridge case material	steel

Type	AP
Round length (mm)	156
Case length (mm)	114
Round weight (gr)	197
Type of powder	64
Type of primer	Single base type, 5/7
Mean of muzzle velocity (m/s)	Percussion
Maximum gas pressure (kgf/cm2)	980
Maximum range (m)	Pmed . max ≤3300
Armament	4000
	KPV

12.7 X 108 MM AMMUNITION

TECHNICAL SPECICATIONS

Type	AP	APHEI	Sniper Ball
Round length (mm)	147	147	147
Case length (mm)	108	108	108
Round weight (gr)	134	134	134
Bullet weight (gr)	48	48	43
Type of powder	Spherical-Double base	Spherical-Double base	Single base cylinder
Type of primer	Percussion	Percussion	Percussion
Mean of muzzle velocity (m/s)	828	828	820-850
Maximum gas pressure (kgf/cm2)	3500	3500	3300
Maximum range (m)	7000	7000	2000
Penetration	-	20mm Armor in 0 at 100m	-
Fragmentation	-	Approx 10 effective Fragments After hitting 4mm-Mo40	-
Incendiary effect	-	Ignition of Gas/ Gasoline	-
Accuracy	-	R50 at 200m <12.5	(SDx+SDy) 550 m≤175 mm
Armament	NSV,OSV	NSV,T54	OSV96

7.62X39 MM AMMUNITION

TECHNICAL SPECICATIONS

7.62x39 mm Ball Bullet	
Properties	**Parameters**
Speed of the bullet V_{25} , m/s	710...725
The maximum pressure of gunpowder during firing, P_{max}	≤299,1 MPa (3050 kgQ/cm$^{2)}$
Density of fire per 100 m R_{50} , cm	≤4,5
Cartridge length, mm	56-1
Cartridge weight, g	15,8...16,8
Powder	ССНФ-30/3697 (Сунар 7662)
Powder weight, g	?1656
Fulminating detonator	КВ-24
Material of cartridge case	Steel
Material of cartridge core	Lead

VOG-17 GRENADE

Caliber	30x29 mm
Maximum Firing Range	1700 m
Radius of Defeat	not less than 6 m
Operational Temperature	-50 C to + 50 C
Shelf Life	10 years
Length of Round	132 mm
Weight of Round	0.35 kg
Weight of Explosive Charge	0.032 kg
Muzzle velocity	185 m/s
Probable Deviation	2.5 m/s
Average Pressure, max	1200 kg/cm2 (122.5 MPa)
Projectile	High Explosive
Fuze	VMG-M or UT M99 SP
Explosive Filling	A-IX-1 (RDX)
Cartridge case	steel
Propellant	Nbpl 14-10
Primer	KVM-3
Arming Distance	10 to 60 m
Self-destruction Time	28 to 36 sec