



PRODUCT CATALOGUE

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Rifle and Pistol Ammunition

CALIBER 5,56 x 45 mm



Caliber and type	5,56 x 45 mm BLANK M200 Rifle cartridge without bullet	5,56 x 45 mm BLANK M200A1 (Long) Rifle cartridge without bullet	5,56 x 45 mm (223 Remington) MATCH	5,56 x 45 mm (223 Remington) MATCH
Index	A-120	A-394	A-399	A-495
Usage	5,56 x 45 mm caliber weapons	5,56 x 45 mm caliber weapons such as machine guns and rifles	Sniper rifles with 1:9" or faster twist barrels	Sniper rifles with 1:9" or faster twist barrels
Standard	MIL-C-60616C	MIL-C-70724C	C.I.P SAAMI	C.I.P SAAMI
Bullet type			HP BT MATCH	HP BT MATCH
Bullet mass			4,47 g 69 gr	4,86 g 75 gr
Cartridge mass	6,9 g	7,2 g	12,5 g	12,9 g
Primer	Small rifle Non corrosive Non mercuric Boxer	Small rifle Non corrosive Non mercuric Boxer	Small rifle Non corrosive Non mercuric Boxer	Small rifle Non corrosive Non mercuric Boxer
Propellant	Special blank powder	Special blank powder	Double base powder	Double base powder
Average velocity			$V_{25} = 840^{+15}$ m/s	$V_{25} = 805^{+15}$ m/s
Temperature interval	-20°C +52°C	-20°C +52°C	-20°C +52°C	-20°C +52°C
Packing	1000 rds /M2A1/ 10,5 kg	1000 rds /M2A1/ 10,5 kg	1000 rds /cardboard case/ 14 kg	1000 rds /cardboard case/ 14,4 kg

CALIBER 7,62 x 39 mm



Caliber and type	7,62 x 39 mm BALL M67 Rifle cartridge with lead/antimony core bullet	7,62 x 39 mm BLANK Rifle cartridge without bullet	7,62 x 39 mm SUBSONIC M78 Rifle cartridge with lead/antimony core bullet
Index	A-639	A-393	A-043
Usage	7,62 x 39 mm caliber weapons	7,62 x 39 mm caliber weapons	7,62 x 39 mm caliber weapons
Bullet type	BALL		BALL
Bullet mass	8 g 123 gr		11,8 g 182 gr
Cartridge mass	17,4 g	9,7 g	20 g
Primer	Large rifle Non corrosive Non mercuric Berdan	Large rifle Non corrosive Non mercuric Boxer	Large rifle Non corrosive Non mercuric Berdan
Propellant	Single or double base powder	Single base powder	Single or double base powder
Average velocity	$V_{25} = 733$ m/s		$V_{25} = 290$ m/s
Temperature interval	-40°C +52°C	-20°C +52°C	-40°C +52°C
Packing	990 rds /M2A1/ 21,1 kg 500 rds /cardboard case/ 18,50 kg	1440 rds /carton box/ 15 kg	990 rds /M2A1/ 25 kg

CALIBER 7,62 x 51 mm



Caliber and type	7,62 x 51 mm NATO BALL M80 Rifle cartridge with lead/antimony core bullet	7,62 x 51 mm NATO TRACER M62 Rifle cartridge with lead/antimony core bullet	7,62 x 51 mm SUBSONIC Rifle cartridge with lead/antimony core bullet	7,62 x 51 mm NATO BLANK M82 Rifle cartridge without bullet
Index	A-009 or A-306	A-532 or A-412	A-568 or A-548	A-420 or A-445
Usage	7,62 x 51 mm caliber weapons	7,62 x 51 mm caliber weapons	7,62 x 51 mm caliber weapons with twist barrel 8"	7,62 x 51 mm caliber weapons
Standard	STANAG 2310 MIL-C-46931F	STANAG 2310 MIL-C-46281		MIL-C-46933 A
Bullet type	BALL	TRACER	BALL	
Bullet mass	9,4 g 145 gr	9,4 g 145 gr	12,96 g 200 gr	
Cartridge mass	24 g	24 g	24,8 g	12 g
Primer	Large rifle Non corrosive Non mercuric Berdan (A-009) Boxer (A-306)	Large rifle Non corrosive Non mercuric Berdan (A-532) Boxer (A-412)	Large rifle Non corrosive Non mercuric Berdan (A-568) Boxer (A-548)	Large rifle Non corrosive Non mercuric Berdan (A-445) Boxer (A-420)
Propellant	Double base powder	Single or double base powder	Single base powder	Single base powder
Average velocity	$V_{24} = 833^{+15} \text{ m/s}$	$V_{24} = 815^{+15} \text{ m/s}$	$V_0 = 320 \text{ m/s}$	
Temperature interval	-54°C +52°C	-54°C +52°C	-54°C +52°C	-20°C +52°C
Packing	600 rds /M2A1/ 17,5 kg 500 rds linked /M2A1/ 16,75 kg	600 rds /M2A1/ 17,5 kg	600 rds /M2A1/ 18,1 kg	640 rds /M2A1/ 10,7 kg 500 rds on links M13 /M2A1/ 11kg 1000 rds /cardboard case/ 13 kg

CALIBER 7,62 x 51 mm



Caliber and type	7,62 x 51 mm NATO MATCH M852 Rifle cartridge with lead/antimony core bullet	7,62 x 51 mm NATO SNIPER M118 Rifle cartridge with lead/antimony core bullet	7,62 x 51 mm (308 Winchester) MATCH	7,62 x 51 mm (308 Winchester) MATCH
Index	A-386 or A-525	A-387 or A-526	A-625	A-497
Usage	7,62 x 51 mm caliber weapons	7,62 x 51 mm caliber weapons	Sniper rifles with 9,5"-14" twist barrels	Sniper rifles with 9,5"-12" twist barrels
Standard	MIL-C-63450	MIL-C-46934	C.I.P SAAMI	C.I.P SAAMI
Bullet type	BALL	BALL	HP BT MATCH	HP BT MATCH
Bullet mass	10,9 g 168 gr	11,34 g 175 gr	10,1 g 155 gr	12,3 g 190 gr
Cartridge mass	25,5 g	25,8 g	24,5 g	27 g
Primer	Large rifle Non corrosive Non mercuric Berdan (A-525) Boxer (A-386)	Large rifle Non corrosive Non mercuric Berdan (A-526) Boxer (A-387)	Large rifle Non corrosive Non mercuric Boxer	Large rifle Non corrosive Non mercuric Boxer
Propellant	Single or double base powder	Single or double base powder	Double base powder	Double base powder
Average velocity	$V_{25} = 777$ m/s	$V_{25} = 777$ m/s	$V_{25} = 830^{+15}$ m/s	$V_{25} = 740^{+15}$ m/s
Temperature interval	-54°C +52°C	-54°C +52°C	-54°C +52°C	-20°C +52°C
Packing	600 rds /M2A1/ 18,6 kg	600 rds /M2A1/ 18,7 kg	500 rds /cardboard case/ 14 kg	500 rds /cardboard case/ 14,8 kg

CALIBER 7,62 x 54 mm



Caliber and type	7,62 x 54 mm BALL M30 (J) Rifle cartridge with lead/antimony core bullet	7,62 x 54 BALL M87 Rifle cartridge with steel core bullet	7,62 x 54 mm BLANK Rifle cartridge without bullet
Index	A-061	A-039	A-392 or A-422
Usage	7,62 x 54 mm caliber weapons	7,62 x 54 mm caliber weapons	7,62 x 54 mm caliber weapons
Bullet type	BALL	BALL	
Bullet mass	11,8 g 182 gr	9,6 g 148 gr	
Cartridge mass	24,9 g	22,7 g	13,2 g
Primer	Large rifle Non corrosive Non mercuric Berdan 6,55 DTN	Large rifle Non corrosive Non mercuric Berdan 6,55 DTN	Large rifle Non corrosive Non mercuric Berdan (A-422) Boxer (A-392)
Propellant	Single base powder	Single base powder	Single or double Base powder
Average velocity	$V_{25} = 785^{+15}$ m/s	$V_{25} = 830^{+10}$ m/s	
Temperature interval	-40°C +52°C	-40°C +52°C	-20°C +52°C
Packing	510 rds /M2A1/ 16 kg 750 rds /cardboard case/ 19,8 kg	510 rds /M2A1/ 16 kg 750 rds /cardboard case/ 18 kg	675 rds /cardboard case/ 9,7 kg

CALIBER 7,62 x 54 mm



Caliber and type	7,62 x 54 mm SNIPER M03 Rifle cartridge with lead/antimony core bullet	7,62 x 54 mm SNIPER Rifle cartridge with lead/antimony core bullet	7,62 x 54 mm MATCH Rifle cartridge with lead/antimony core bullet
Index	A-340	A-579	A-601
Usage	7,62 x 54 mm caliber weapons	7,62 x 54 mm caliber weapons	7,62 x 54 mm caliber weapons
Bullet type	SNIPER M03	SNIPER	303MK8 ¹
Bullet mass	11,8 g 182 gr	11,8 g 182 gr	12,3 g 190 gr
Cartridge mass	24,9 g	24,9 g	25,5 g
Primer	Large rifle Non corrosive Non mercuric Berdan 6,55 DTN	Large rifle Non corrosive Non mercuric Berdan 6,55 DTN	Large rifle Non corrosive Non mercuric Boxer
Propellant	Single base powder	Double base powder	Double base powder
Average velocity	$V_{25} = 785^{+3}$ m/s	$V_{25} = 785^{+8}$ m/s	$V_{25} = 765^{+10}$ m/s
Temperature interval	-40°C +52°C	-20°C +52°C	-20°C +52°C
Packing	510 rds /M2A1/ 16 kg 750 rds /cardboard case/ 19,8 kg	500 rds /cardboard case/ 19,8 kg	500 rds /cardboard case/ 20 kg

CALIBER 12,7 x 99 mm



Caliber and type	.50 BROWNING (12,7 x 99 mm) SNIPER	.50 BROWNING (12,7 x 99 mm) BALL M33	.50 BROWNING (12,7 x 99 mm) BLANK
Index	A-429	A-261	A-534
Usage	50 Browning sniper rifles	50 Browning machine guns	50 Browning machine guns
Standard	MOPI	MIL-C-10190D	MIL-C-48626
Bullet type	SOLID RM06-2	BALL Tombac jacket Core with lead/antimony+ steel core+lead coverage	
Bullet mass	47 g 725 gr	45,3 g 699 gr	
Cartridge mass	119 g	116 g	55 g
Primer	Large rifle 12,7 Non corrosive Non mercuric Boxer	Large rifle 12,7 Non corrosive Non mercuric Boxer	Large rifle 12,7 Non corrosive Non mercuric Boxer
Propellant	Double base powder	Double base powder	Double base powder
Average velocity	$V_{25}=860^{+10}$ m/s	$V_{25}=890^{+10}$ m/s	
Temperature interval	-54°C +52°C	-54°C +52°C	-20°C +52°C
Packing	120 rds /M2A1/ 17 kg	120 rds /M2A1/ 17 kg	100 rds linked /M2A1/ 6,1 kg

CALIBER 12,7 x 108 mm


Caliber and type	12,7 x 108 mm SNIPER M09	12,7 x 108 mm BALL	12,7 x 108 mm BALL
Index	A-342	A-341	A-663
Usage	12,7 x 108 mm Sniper rifles	12,7 x 108 mm Machine guns	12,7 x 108 mm Machine guns
Bullet type	SOLID M09	BALL Jacket: Tombac plated steel Core with aluminium on the top + core with lead/antimony	BALL Jacket: Tombac plated steel Core with lead/antimony
Bullet mass	51,3 g 792 gr	51,3 g 792 gr	51,3 g 792 gr
Cartridge mass	134 g	134 g	134g
Primer	Large rifle 12,7 DSK Berdan	Large rifle 12,7 DSK Berdan	Large rifle 12,7 DSK Berdan
Propellant	Single or double base powder	Single or double base powder	Single or double base powder
Average velocity	$V_{25} \approx 805^{+9}$ m/s	$V_{25} \approx 810-825$ m/s	$V_{25} \approx 810-825$ m/s
Temperature interval	-54°C +52°C	-54°C +52°C	-54°C +52°C
Packing	100 rds /12,7 DSK/ 16,5 kg	100 rds /12,7 DSK/ 16,5 kg	100 rds /12,7 DSK/ 16,5 kg

PISTOL SUBMACHINE GUN AND REVOLVER AMMUNITION



Caliber and type	9 x 19 mm BALL Pistol cartridge with lead/antimony core bullet	9 x 19 mm BALL Pistol cartridge with lead/antimony core bullet	9 x 19 mm SUBSONIC BALL Pistol cartridge with lead/antimony core bullet	9 x 19 mm BLANK Pistol cartridge with lead/antimony core bullet
Index	A-430	A-355	A-627	A-527
Usage	9 x 19 mm PARABELLUM caliber weapons	9 x 19 mm PARABELLUM caliber weapons	9 x 19 PARABELLUM caliber weapons capable for subsonic purpose	9 x 19 mm PARABELLUM caliber weapons with blank firing adopter
Standard	STANAG 4090	STANAG 4090		
Bullet type	BALL	BALL	BALL SUBSONIC	
Bullet mass	7,45 g 115 gr	8,0 g 124 gr	9,5 g 147 gr	
Cartridge mass	11,7 gr	12,1 g	13,7 g	5,4 g
Primer	Small pistol Non corrosive Non mercuric Boxer	Small pistol Non corrosive Non mercuric Boxer	Small pistol Non corrosive Non mercuric Boxer	Small pistol Non corrosive Non mercuric Boxer
Propellant	Single or double base powder	Single or double base powder	Single or double base powder	Single base powder
Average velocity	$V_{16} = 370^{+10} \text{ m/s}$	$V_{16} = 380^{+10} \text{ m/s}$	$V_{16} = 290^{+10} \text{ m/s}$	
Temperature interval	-54°C +52°C	-54°C +52°C	-30°C +52°C	-20°C +52°C
Packing	1350 rds /M2A1/ 19,5 kg	1350 rds /M2A1/ 20,3 kg	1350 rds /M2A1/ 22,5 kg	2000 rds /cardboard box/ 11,5 kg

Protective Ballistic Plates

AK PROTECTION

Hard ballistics insert AK is designed to withstand multiple hits with:
7.62 x 39 FMJ (lead core) ammunition, ultra-lightweight,
made of 100% UHMWPE (Ultra High Molecular Weight Polyethylene).



Size: 250 x 300 mm (10"x12")
Weight: 0.95 kg (2.1lb) - **Standard plate shape**
0.83 kg (1.85 lb) - **Polygonal plate shape**
Ammo: 7.62 x 39 FMJ
Lightest protection concept available!



BALLISTIC PLATE, PROTECTION LEVEL III+

The Level III ballistic panel provides protect against the types of ammunition listed in the table below, as well as protection against ammunition up to Level III+. In addition to the mentioned grains, the Level III+ panel provides protection against all types of common grain rifle ammunition, including 7,9 mm caliber. The finish can be in plastic or fabric. This plate, as all other MDP plates, are contoured to provide a comfortable fit on the front and back. The table below lists the panel's ballistic protection factors with respect to various types of ammunition within defined velocities.



Bullet type	Maximum velocity (m/s)
7,62 Nato Ball 150 Grain M-80 FMJ	853
7,62 Nato Ball 150 Grain M-80 (Steel Jacketed)	853
30.06 PSM 180 Grain	824
30 Carabine 110 Grain FMJ	595
12 Gauge Rifled Slug	473
7,62 x 39 Ball	732
7,62 x 51 Ball	838
5.56x45 SS109	930-945

Weight: 1780g±5%.

Panel dimensions: 250mm x 300mm

BALLISTIC PLATE, PROTECTION LEVEL IV

It provides protection against rifle ammunition with steel core, protection level IV according to NIJ 0101.04 Standard. It is produced in three configurations: curved, multi axial and flat. The flat plate is intended for back protection.

Dimensions: 250 x 300 mm. Weight: 3200 +/- 5



TEST BULLET DATA

Test Bullet	Bullet Weight	Reference (+30 ft/s)
7,62x51 M80 Nato Bali	9,72 g (150g)	838-853m/s (2750-2800ft/s)
7,62 x 54 R LPS Bali (Dragunov)	9,72 g (150g)	685-716m/s (2250-2350ft/s)
7,62 x 39 PS Bali (AK 47)	7,97 g (123g)	716-732m/s (2350-2400ft/s)
5,56x45 SS 109 (M 855)	4,08 g (63g)	930-945m/s (3050-3100ft/s)
5,56x45 SS 92 (M 193)	3,56 g (55g)	960-975m/s (3150-3200ft/s)

HARD ARMOR INSERTS

Protection:	III	III+	III++	IV
Size:	250 x 300 mm (10" x 12") 3D Multi Curve shape	250 x 300 mm (10" x 12") 3D Multi Curve shape	250 x 300 mm (10" x 12") 3D Multi Curve shape	250 x 300 mm (10" x 12")
	Data for STAND ALONE plates:	Data for STAND ALONE plates:	Data for IN CONJUNCTION WITH plates:	Data for STAND ALONE plates:
Weight:	1.5 kg (3.32 lb) Standard plate shape	1.85 kg (4.2 lb) - Standard plate shape	1.95 kg (4.3 lb) - Standard plate shape	2.85 kg (6.3 lb) - Standard plate shape
	1.3 kg (2.87 lb) Polygonal plate shape	1.75 kg (3.85 lb) - Polygonal plate shape	1.85 kg (4.2 lb) - Polygonal plate shape	2.75 kg (5.95 lb) - Polygonal plate shape
Ammo:	Multiple hits with 7.62x51 FMJ NATO	Multiple hits with 7.62x51 FMJ NATO; SS109	Multiple hits with 7.62x51 FMJ NATO; SS109; 7.62x39 MSC	7.62x63 AP; 7.62x54R B32
				

Small Arms and Light Weapons



PISTOL CZ999

Pistol CZ999 is a semi-automatic gun, functioning on the principle of short recoil of the barrel. Locking is achieved by vertical oscillation of the barrel, that comes into the hole on the slide.
Pistol is a modern weapon used as service gun and as self-defence gun. Due to excellent design, ergonomics, state-of-the-art technology methods in production, gun is distinguished by precision, accuracy and functionality.
The frame of the pistol is made of aluminium alloy, so a robust gun has small weight. Chrome plated barrel guarantees long service life and easy maintenance.

It functions as a single action or a double action pistol. Feeding is done from a double-row detachable magazine with the capacity of 10 or 15 rounds. All controls on the pistol are ambidextrous and they can be used either with the left or the right hand. The design of the pistols enables the controls to have several functions.
Loaded chamber indicator shows whether a round is in the barrel.
Sights are square, with white dots and they provide easier aiming when the visibility is low.

PISTOL EZ9

The basic design for pistol EZ9 is Pistol CZ999. Additional characteristics are a mounted rail, enabling the assembly of all optical and electronic devices corresponding to NATO standard and open-type hammer.

PISTOL EZ9 Compact

PISTOL EZ9 Compact is a version of standard pistol EZ 9 with the barrel that is shorter by 10mm. All other characteristics, except the ones regarding the barrel length (length of the slide and the pistol, weight) are identical to the characteristics of standard models.

Technical Characteristics

Model	C	MC	W	TL	BL	H
CZ 999	9 x 19	15 / 10	0.34	195	108	140
CZ 9	9 x 19	15 / 10	0.95	198	108	140
CZ 9 Compact	9 x 19	15 / 10	0.90	188	98	140

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon (kg), TL- Total length (mm),
BL- Barrel length (mm), H- Height (mm)

M21

5.56 x 45 mm



Base for optical devices



Optional

Assault Rifles

On customer's demand, underbarrel grenade launcher (BGP 40mm) can be included in the rifle set. Stock assembled rubber buffer, which is a part of the underbarrel launcher accessories, enables more comfortable shooting from the launcher.



ambidextrous
fire selector



Underbarrel grenade launcher (optional)

Model	C	MC	W	WM	TL	BL	TF	O	LS	RF
Submachine Gun M21	5.56 x 45	30	3.91	0.15 / 0.35	825 / 575	290	Semi&Auto	Gas	Rotating bolt	600 ± 50
Assault Rifle M21 S	5.56 x 45	30	4.07	0.15 / 0.35	915 / 666	375	Semi&Auto	Gas	Rotating bolt	600 ± 50
Assault Rifle M21 A	5.56 x 45	30	4.15	0.15 / 0.35	1000 / 750	460	Semi&Auto	Gas	Rotating bolt	600 ± 50

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon with metal magazine (kg), WM- Weight of polymer/metal magazine (kg), TL- Total length Weapon/Weapon with folded stock (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds./min)

| submachine gun M21 |



Submachine Guns
Light-weight and compact.

| assault rifle M21 S |



| submachine gun M21 BS |



| assault rifle M21 S BS |



underbarrel grenade launcher BGP-40x46 mm

BGP 40x46 mm is intended for annihilation of live forces, firearms, and unarmoured motor vehicles at the distances from 50 to 400 m by direct firing. It is intended to be assembled to submodels BS of M21 group and M05 rifles.

Main features:

- Assembled to the Picatinny rail placed on the lower side of the handguard
- Barrel interior is chrome plated
- Breech loaded
- Trigger mechanism is Double Action
- BGP can operate independently from the automatic rifle and then it is delivered with the stock, as an option when an order is placed.

| BGP-40x46 mm |



Technical Characteristics

Model	C	W	TL	BL	TF	SDD
BGP - 40x46 mm	40x46	1.6 / 2.4	315 / 655	235	Single shot	50-400

C- Calibre (mm), W- Weight of weapon, without stock/ with stock (kg), TL- Total length, without stock/ with stock (mm), BL- Barrel length (mm), TF- Type of fire, SDD- Sight division for direct aiming (m)

group 7.62 x 39mm[®]

[assault rifle M05 E1]

[assault rifle M05 E2]

[assault rifle M05 E3]

[submachine gun M92]

[assault rifle M70 83, A83]

[light machine gun M72]

A group of guns designed on the basis of Kalashnikov system, proven in numerous wars fought worldwide in the last sixty years.

Main Characteristics

- ergonomically designed with perfect balance
- excellently balanced weapon with low recoil ensures easy fire control
- functional in all environments
- light weight and compact
- the best raw materials contribute to extreme durability
- highly efficient and reliable locking system
- possibility for night aiming (tritium tubes)
- proven and safe type of trigger mechanism

Accessories

4 spare 30rds magazines
cleaning rod
cleaning kit
oil can
sling

Optional

Optical sight and mount can be included in the rifle set on customer's request (exception is model M05E1).



M05E 7.62 x 39mm

[assault rifle M05 E1]

[assault rifle M05 E2]

[assault rifle M05 E3]



Group M05E consists of new models of assault rifles in caliber 7.62x39 mm. All excellent characteristics of well known assault rifles M70 are kept in this model and many upgraded characteristics are result of modern tactic demands.

Common characteristics for all M05E models:

- Hammer forged barrel ensures excellent precision
- Mechanical and applied safety
- Automatic and semiautomatic mode
- 30 rds metal sheet or polymer magazine
- Muzzle brake also suppresses flash
- Iron sights with tritium tubes ensure aiming at night
- Two-piece polymer handguards with good thermal isolation ensure comfortable grip
- 12 o'clock and 6 o'clock Picatinny rails on the handguards

- Polymer stock with easy and reliable mechanism for right side folding

Differences between M05E models
M05E1 is basic model without possibility to attach optical sight mount to the receiver.

M05E2 has dovetail rail on the left side of the receiver to attach mount with Picatinny rail. Mount with Picatinny rail can be included in set of rifle on customer's request.
M05E3 has full length Picatinny rail on the receiver cover.

Options

Underbarrel grenade launcher BGP 40mm or BGP 40x46 mm



Technical Characteristics

Model	C	MC	W	WM	TL	BL	TF	O	LS	RF
Assault Rifle M05 E1	7,62 x 39	30	4,05	0,24 / 0,37	934 / 689	415	Semi&Auto	Gas	Rotating bolt	620 ± 60
Assault Rifle M05 E2	7,62 x 39	30	4,15	0,24 / 0,37	934 / 689	415	Semi&Auto	Gas	Rotating bolt	620 ± 60
Assault Rifle M05 E3	7,62 x 39	30	4,25	0,24 / 0,37	934 / 689	415	Semi&Auto	Gas	Rotating bolt	620 ± 60

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon with metal magazine (kg), WM- Weight of polymer/metal magazine (kg), TL- Total length Weapon/Weapon with folded stock (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds/min)



M05N

7.62x51N

|assault rifle M05N1|

|assault rifle M05N2|

|assault rifle M05N1|



Group M05N consists of new models of assault rifles in caliber 7.62x51 mm. All excellent characteristics of previous version M77 are kept in this model and many upgraded characteristics are result of modern tactic demands.

Common characteristics for all M05 N models:

- Hammer forged barrel ensures excellent precision
- Chromium plated barrel interior
- Gas flow regulator
- Mechanical and applied safety
- Automatic and semiautomatic mode
- 20 rds metal sheet magazine
- Flash hider
- Iron sights with tritium tubes ensure aiming at night
- Full length Picatinny rail on the receiver cover
- Two-piece polymer handguards with good thermal isolation ensure comfortable grip



|assault rifle M05N1|



- 12 o'clock and 6 o'clock Picatinny rails on the handguards
- Polymer stock with easy and reliable mechanism for right side folding

Differences between M05 N models

M05 N1 is basic model with fire selector on the right side of the receiver

M05 N2 is equipped with ambidextrous fire selector

|assault rifle M05N2FS|



*S in model name indicates the version with shorter barrel

*F in model name indicates the version with fixed stock

|assault rifle M05N1FS|



|assault rifle M05N2|



Technical Characteristics

Model	C	MC	W	WM	TL	BL	TF	O	LS	RF
Assault Rifle M05N1 & M05N2	7.62x51	20	4.45	0.25	1049/804	500	Semi&Auto	Gas	Rotating bolt	620 ± 60
Assault Rifle M05N1S & M05N2S			4.35		955/710	406				

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon (kg), WM- Weight of magazine (kg), TL-Total length Weapon/Weapon with folded stock (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds/min)

machine guns

| M84 |
| M86 |

| M87 |
| M87 NAVAL |
| M02 Coyote |
| M07 |

Each experienced infantryman knows that sustained machine gun fire is his best friend when coming from his own side, and his worst enemy when coming from the other. These machine guns are capable of delivering long range accurate fire in all weather and ground conditions, day and night. They also have a credit of a key weapon in many combats, capable of solving almost impossible tactical situations.

- gas flow regulator to cope with extreme weather and terrain conditions
- for cooling purposes and for longer service life of the weapon, the barrel can be detached or replaced in the matter of seconds
- front and rear mechanical sights (except MG M86)

Main Characteristics

- all metal parts made of high tensile steel
- hammer forged barrel
- chromium plated barrel interior
- machining of functional parts done on state-of-the-art CNC machinery
- all parts and subassemblies thoroughly controlled prior to final assembly
- after assembly, each machine gun tested and approved
- belt-fed, belts placed in appropriate ammo boxes



machine gun M84

| machine gun M84 |
| bipod |



Machine Gun M84

Intended for the realization of infantry units demands.

- can be delivered with or without tripod
- can be used on a folding bipod enabling shooting on different terrains
- stable tripod mount and mild recoil of the gun provide very accurate fire

- height of the mount can be adjusted to fit the size of the cover behind which it is placed
- the mount is equipped with an attachment that allows shooting at air targets

Technical Characteristics

Model	C	W	WOM	TL	BL	TF	O	LS	RF	MER
Light Machine Gun M84	7.62 x 54 R	8.8	-	1190	603	Automatic	Gas	Rotating Bolt	700-800	1000
Machine Gun M84	7.62 x 54 R	13.3	4.5	1190	603	Automatic	Gas	Rotating Bolt	700-800	1000
Machine Gun M86	7.62 x 54 R	11.6	-	1100	780	Automatic	Gas	Rotating Bolt	700-800	1000

C- Calibre (mm), W- Weight of weapon (kg), WOM- Weight of mount (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds/min), MER- Maximum effective range (m)

machine gun M07

machine gun M07

machine gun M02

machine gun M02 COYOTE

Machine Gun M07

Machine Gun M07 is formed when the Machine Gun M87 is set to a cradle fixed to a post on a vehicle. Spade grip with trigger mechanism is assembled to the machine gun. Area covered with fire from transport means can be limited, so as to provide maximum safety of the crew of the transport means.

Primary purpose of M02 Coyote and M07 is provision of efficient anti-aircraft protection for highly mobile, light mountain infantry units, but also provision of heavy, long-range accurate fire on ground targets.

Machine Gun M02 Coyote

Machine Gun M02 Coyote is formed when the Machine Gun M87 is set to the cradle fixed to a tripod. Pistol trigger mechanism and stock with buffer are assembled to the machine gun. These assemblies provide high mobility of the gun, with excellent control of fire.

Technical Characteristics

Model	C	W	WOM	TL	BL	TF	O	LS	RF	MER
Machine Gun M07	12.7 x 108	43.8	19	1760	1100	Automatic	Gas	Open bolt	700	1500
Machine Gun M02 Coyote	.50 Browning	48.8	24	1970	1100	Automatic	Gas	Open bolt	700	1500

C- Calibre (mm), W- Weight of weapon (kg), WOM- Weight of mount (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds/min), MER- Maximum effective range (m)

machine gun M87



belt feeding machine



ammunition boxes (60 rds)



Machine Gun M87

PURPOSE

M87 heavy machine gun uses design of the famous NSV, the best heavy machine gun ever designed. This design provides reliable, jam-proof operation in any ground or weather conditions.

- empty cases ejected forward
- spare barrel prolongs the service life of the weapon

- anti-aircraft machine gun on battle tanks and armoured vehicles
- providing efficient anti-aircraft protection for highly mobile, light mountain infantry units, but also providing heavy, long-range accurate fire on ground targets
- providing efficient fire against water-surface and coastal targets

Spare (including spare barrel), accessories, ammunition boxes (60 rds), cartridge belts and belt filler (as an option, on customer's demand) are delivered with each machine gun.

Depending on purpose and the type of combat means on which it is placed, the gun is used with appropriate mount.

Technical Characteristics

Model	C	W	WOS	TL	BL	TF	O	LS	RF	MER
Machine Gun M87	12.7 x 108 .50 Browning	24.8	9.3	1560	1100	Automatic	Gas	Open bolt	700	1500

C- Calibre (mm), W- Weight of weapon (kg), WOS- Weight of spare barrel (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, RF- Rate of fire (rds/min), MER- Maximum effective range (m)

sniper rifle M91

| sniper rifle M91 7.62x54R |



Semi-Automatic Sniper Rifle M91 is designed on the bases of well-known Kalashnikov system provided with possibility of propellant gas flow regulation.

Primary demand for this kind of product - high accuracy at large distances - is fulfilled and confirmed in hardest exploiting conditions. The best results are obtained at ranges up to 800m. The possibility of aiming with iron sight is 1000m.

Optical sight, (magnification 6x) included in the standard set of the weapon, additionally contributes to extraordinary accuracy and precision of the rifle. Bipod can be included in the rifle set on customer's request.

Technical Characteristics

Model	C	MC	W	WM	TL	BL	TF	O	LS	MER
Sniper Rifle M91	7.62 x 54 R	10	5.49	0.2	1200	620	Semi	Gas	Rotating bolt	1000

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon (M91 with optical sight) (kg), WM- Weight of magazine (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, MER- Maximum effective range (m)

sniper rifle M91N

| sniper rifle M91 7.62x51N |



Technical Characteristics

Model	C	MC	W	WM	TL	BL	TF	O	LS	MER
Sniper Rifle M91N	7.62 x 51	10	5.49	0.2	1200	620	Semi	Gas	Rotating bolt	1000

C- Calibre (mm), MC- Magazine capacity, W- Weight of weapon (M91 with optical sight) (kg), WM- Weight of magazine (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, MER- Maximum effective range (m)

sniper rifles

[sniper rifle M91]

[sniper rifle M07 AS]

[sniper rifle M07 AF]

Primary demand for this kind of product - high accuracy at large distances - is fulfilled and confirmed in hardest exploiting conditions. The best results are obtained at ranges up to 800m.

This group was designed after long and careful study of combat tactics and experience of military and police special forces world wide.

Main Characteristics

- ergonomically designed with perfect balance
- easily controlled
- easy handling and maintenance
- possibility of mounting of different types of optical devices
- possibility to install a silencer
- possibility of adjusting to different types of fields for easier aiming



sniper rifle M07

[sniper rifle M07 AF]

[sniper rifle M07 AS]

Technical Characteristics												
Model	C	MC	W	WOB	WM	TL	BL	TF	D	LS	MEB	
sniper rifle M07 AF	723 x 648	3/5	5.42	5.91	6.1	1143/940	670	Single	Box action	Retaining bolt	1000	
sniper rifle M07 AS	742 x 71		5.22	5.71		1112						

C - Calibre (mm), MC - Magazine capacity (rounds), W - Weight of rifle with empty magazine (kg), WOB - Weight of rifle with empty mag., optical sight and blood fig., WM - Weight of magazine (kg), TL - Total length (mm), BL - Barrel length (mm), TF - Type of fire, D - Ejection, LS - Locking system, MEB - Maximum effective range (m).

long range rifle

M12 black spear

A long range anti-material rifle is a bolt action weapon capable of destroying various targets at large distances and in different climate and terrain conditions.



Main Characteristics

- locking - Mauser system
- bolt guided along the whole length of its movement in the receiver
- heavy barrel ensures accurate and precise path of fired projectile of large energetic potential
- chromium plated barrel interior
- adjustable trigger pull
- Picatinny rail is made together with the receiver from one block of steel
- muzzle brake reduces the recoil and facilitates shooting
- adjustable aluminium stock has built-in buffer, which significantly reduces the effect of recoil
- butt spike, adjustable in height
- adjustable folding bipod
- standard catch for the bipod assembly enables the assembly of other types of bipods, of user's choice
- optical sight 4-16x56 is included in set of rifle



[long range rifle M12 cal. 308 Browning]



[long range rifle M12 cal. 12.7x109]



Technical Characteristics

Model	C	MC	W	WM	TL	BL	TP	O	LS	MEER
Long range rifle M12	12.7 x 109	5	1340	0.78	1700	1007	Single	Bolt action	Rotating bolt	1000
Long range rifle M12	30 Browning	5	1235	0.78	1531	842	Single	Bolt action	Rotating bolt	1400

C - Calibre (mm), MC - Magazine capacity, W - Weight of weapon (without optical sight) (kg), WM - Weight of magazine (kg), TL - Total length (mm), BL - Barrel length (mm), TP - Type of fire, O - Operation, LS - Locking system, MEER - Maximum effective range (m)



[long range rifle M12 12.7 x 10.9 mm]



[long range rifle M12 30 Browning]



long range rifle

M12 black arrow

underbarrel grenade launcher BGP-40x46 mm

BGP 40x46 mm is intended for annihilation of live forces, firearms, and unarmoured motor vehicles at the distances from 50 to 400 m by direct firing. It is intended to be assembled to submodels BS of M21 group and M05 rifles.

[BGP-40 x46 mm]

Main features:

- Assembled to the Picatinny rail placed on the lower side of the handguard
- Barrel interior is chrome plated
- Breech loaded
- Trigger mechanism is Double Action
- BGP can operate independently from the automatic rifle and then it is delivered with the stock, as an option when an order is placed.



Technical Characteristics

Model	C	W	TL	BL	TF	SDD
BGP - 40x46 mm	40x46	1.6 / 2.4	315 / 655	235	Single shot	50-400

C- Calibre (mm), W- Weight of weapon, without stock/ with stock (kg), TL- Total length, without stock/ with stock (mm), BL- Barrel length (mm), TF- Type of fire, SDD- Sight division for direct aiming (m)

automatic grenade launcher®

| M93 30 mm |

Automatic Grenade Launcher M93 is an infantry weapon intended for destruction of uncovered and covered live force at distances up to 1700 m, as well as for destruction of light armoured vehicles at distances up to 1000 m.

The interior of the barrel is chrome plated. Automatic Grenade Launcher M93 can only fire bursts, and the rate of fire can be changed.

Automatic Grenade Launcher M93 is loaded from a belt that is placed in the drum. The drum has the capacity of 29 grenades.

It uses 30 mm HE, HEAT, practice and practice - marker grenades.

The design of tripod enables quick change from marching to combat position and vice versa.

Complete set of the weapon includes sighting device NSBG-1, that enables direct, semi-direct and indirect aiming and aiming when the visibility is low.

Automatic Grenade Launcher M93 set includes: 30 mm Grenade Launcher, mount, sighting device NSBG-1, ammunition boxes with belts (30 links).



As option, at customer's request in set can be included belt filler and rectification sight DR - 30.

At customer's request and depending on tactical purpose, Automatic Grenade Launcher M93 is assembled to combat vehicles and helicopters.



Technical Characteristics

Model	C	DC	W	WT	TL	BL	TF	O	LS	MER
Automatic Grenade Launcher 30 mm	30	29	38	14	1305	300	Automatic	Blowback	Inertial	1700

C- Calibre (mm), DC- Drum capacity, W- Weight of weapon with drum (kg), WT- Weight of tripod (kg), TL- Total length (mm), BL- Barrel length (mm), TF- Type of fire, O- Operation, LS- Locking system, MER- Maximum effective range (m)

Granades and Medium Caliber Ammunition

RIFLE GRENADES FAMILY

Rifle grenades represent an effective way of firepower extension for standard infantryman soldier. By using special adapter, mounted on standard assault rifle, infantry soldier will be in the position to engage greater scope of targets at longer ranges without compromising its original mission.

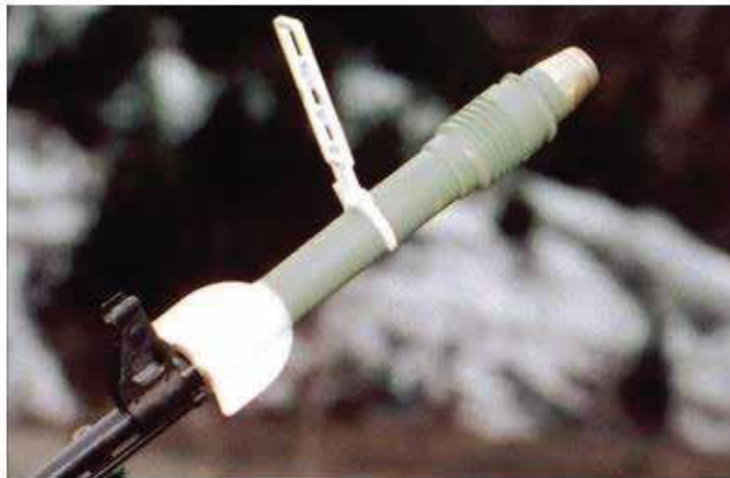
Rifle grenade family is comprised of:

- Rifle Grenade, Antitank M60,
- Rifle Grenade, Fragmentation M60P1,
- Rifle Grenade, Illuminating M62,
- Rifle Grenade, Smoke M62,
- Rifle Grenade, Antitank AT-54 (BT) With Bullet Trap,
- Rifle Grenade, Fragmentation AP-30 BT with Bullet Trap,
- Rifle Grenade, Smoke - 40 BT with Bullet Trap,
- Rifle Grenade, Illuminating ILL-40 (BT) with Bullet Trap,
- Rifle Grenade, Smoke, Special, CS,
- Rifle Grenade, Smoke, Special, CS, Blast-dispersion,
- Practice Antitank Rifle Grenade M68 and Expendable Items,
- Rifle Grenade HE - M91 P1 with Bullet Trap,
- Rifle Grenade HE-M99 with Bullet Trap, Fuze with Self-destruction Capability;



RIFLE GRENADE HE, BT - M02 WITH BULLET TRAP

The HE BT-M02 rifle grenade have been developed by combining of bullet-trap rifle grenade components with components of 40 mm grenades for underbarrel grenade launchers (fragmentation case and SQ, SD fuze)



GRENADE 40mm x 46 HEPD-SD M99 (Point Detonating)

Use:

The 40mm x 46 HEPD-SD M99 (Point Detonating) cartridge is a high explosive round designed to inflict personnel casualties from ground burst effect.



The main technical data

NATO DESIGNATION	HE-SD	HE
Caliber (mm)	40	40
Weight of round (g)	245	245
Weight of grenade (g)	192	192
Weight of explosive (RDX) (g)	48	48
Length of round (mm)	104.5 max	104.5 max
Muzzle velocity (m/s)	78	78
Fuze arming distance (m)	8 - 30	8 - 30
Fuze self-destruct time (s)	12 - 20	/

Precision on height target,
at the distance of 100 m (m)

$V_v \leq 0.30$
 $V_p \leq 0.20$

Max range (m) 400 400
Lethal radius (m) $5 \leq 5$ i više
TIU (OC) $-42C^{\circ} + 63C^{\circ}$

The bullet is paced in hermetically sealed plastic containers.

GRENADE 40mm x 46 HEDP-SD M99 (Dual Purpose)

Use:

The GRENADE 40mm x 46 HEDP-SD M99 (Dual Purpose) cartridge is a dual purpose impact type round which is designed to penetrate at least 60mm of steel armour and inflict personnel casualties in the target area



The main technical data

Caliber (mm)	40
Weight of round (g)	252
Weight of grenade (g)	200
Weight of explosive (RDX) (g)	45
Length of round (mm)	106.5 max
Muzzle velocity (m/s)	78
Fuze arming distance (m)	8 - 30
Precision on height target, at the distance of 100 m (m)	$V_v < 0.30$ $V_p < 0.20$
Max range (m)	400
Penetration (mm)	60 mm steel plate
Lethal radius (m)	< 5

GRENADE 40mm x 46 ILLUMINATING WITH PARACHUTE - M04

Use:

The GRENADE 40mm x 46 ILLUMINATING WITH PARACHUTE - M04 round is used for illumination and signals and is lighter and more accurate than comparable handheld signal rounds. This is a training standard item used in both training and combat.

The main technical data

Caliber (mm)	40
Weight of round (g)	250
Weight of grenade (g)	195
Length of round (mm)	134
Delay time (s)	2.5 - 3.5
Burning time of star (s)	30
Light intensity of star (cd)	80 000
Middle wave length (nm)	587 +/- 5
Height fired at 850 (m)	182 +/- 30
TIU (CO)	-30 +50

GRENADE 40mm x 46 RED STAR WITH PARACHUTE - M04

Use:

The GRENADE 40mm x 46 RED STAR WITH PARACHUTE - M04 round is used for illumination and signals and is lighter and more accurate than comparable handheld signal rounds. This is a training standard item used in both training and combat.

The main technical data

CALIBER (mm)	40
COMPLETE GRENADE LENGTH (mm)	114
MASS OF GRENADE (g)	250
PROJECTILE LENGTH (mm)	82
MASS OF PROJECTILE (g)	200
MUZZLE VELOCITY (m/s)	78
DELAY TIME (s)	2 to 3
BURNING TIME OF STAR (s)	min 15
LIGHT INTENSITY OF STAR (cd)	min 10000
THE HIGH OF PARACHUTE OPENING DURING	min 150
FIRING AT THE ANGLE OF 45° (DEGREES) (m)	
FLARE TYPE	green, blue, yellow

GRENADE 40mm x 46 SMOKE - M99

The GRENADE 40mm x 46 SMOKE - M99 round is used for accurately marking the position of a man or unit located beneath moderately thick foliage for aerial observation. The cartridge has the advantage of less weight and bulk and greater accuracy than comparable existing signals..

GRENADE 40mm x 46 BUCKSHOT - M04

The GRENADE 40mm x 46 BUCKSHOT - M04 is intended for use in counter-insurgency and conventional operations in jungle or similar environments, particularly during periods of poor visibility where personnel targets appear at short distances without warning and are vulnerably exposed only fleetingly

GRENADE 40mm x 46 IMPULS - M05

These minimum lethality munitions can be utilised for a variety of police, tactical, and correctional response team applications including: crowd control conditions, hostile inmate clearing from yard areas, and in a variety of other riot control situations.

The main technical data

Caliber (mm)	40
Weight of round (g)	236
Weight of grenade (g)	186
Length of round (mm)	106
Delay time (s)	2- 3
Smoke time (s)	30
Muzzle velocity (m/s)	76
Firing range (m)	50 - 400
Smoke type	White,red,green,yellow
TIU (C0)	-42 +63

The main technical data

CALIBER (mm)	40
COMPLETE GRENADE LENGTH (mm)	106
MASS OF GRENADE (g)	250
PROJECTILE LENGTH (mm)	76
MASS OF PROJECTILE (g)	190
MUZZLE VELOCITY (m/s)	50
FIRING RANGE (m)	30
NUMBER OF PELLETS	min 24
PELLET DIAMETER (mm)	8

The main technical data

Caliber (mm)	40
Weight of round (g)	115
Weight of grenade (g)	65
Length of round (mm)	108
Firing range (m)	20 - 50
Precision on height target,	Vp < 0.15
at the distance of 20 m (m)	Vv , 0.15
Kin.energ. na rastojanju 20m	~ 120 J



GRENADE 40mm x 46 SOUND AND FLASH WITH DELAY FUSE

Use:

GRENADE 40mm x 46 SOUND AND FLASH WITH DELAY FUSE containing blinding flashes and near deafening sounds temporarily neutralise and disorient persons.

The Sound & Flash Grenade contains two extremely effective Sound & Flash effects. On initiation the effects are ejected from the canister, in close succession, temporarily neutralising and disorienting persons in the near vicinity, providing an opportunity for authorities to implement recovery plans or diffuse dangerous situations. This grenade does not cause permanent physiological damage. The size and weight of this grenade make it ideally suited to counter terrorist operations, where speed of action and some penetrative capabilities are required.

The main technical data

Caliber (mm)	40
Weight of round (g)	115
Weight of grenade (g)	72
Length of round (mm)	87
Delay time (s)	1- 1.5
Sound intensity (db)	120
TIU (C0)	-42 +63

GRENADE 40mm x 46 SOUND AND FLASH WITH IMPACT FUSE

Use:

GRENADE 40mm x 46 SOUND AND FLASH WITH IMPACT FUSE containing blinding flashes and near deafening sounds temporarily neutralise and disorient persons.

The Sound & Flash Grenade contains two extremely effective Sound & Flash effects. On initiation the effects are ejected from the canister, in close succession, temporarily neutralising and disorienting persons in the near vicinity, providing an opportunity for authorities to implement recovery plans or diffuse dangerous situations. This grenade does not cause permanent physiological damage. The size and weight of this grenade make it ideally suited to counter terrorist operations, where speed of action and some penetrative capabilities are required.

The main technical data

Caliber (mm)	40
Weight of round (g)	235
Weight of grenade (g)	185
Length of round (mm)	111
Sound intensity (db)	120
Fuze arming distance (m)	8 - 35
Muzzle velocity (m/s)	78
Firing range (m)	50 - 400
TIU (C0)	-42 / +63

GRENADE 40mm x 46 STUN- M99

Use:

Law enforcement agencies use sound&flash stun grenades as a diversionary tactic to temporarily distract and disorient criminals. Classic applications include hostage rescue operations during bank robberies or aircraft hijacking; they are also useful in suppressing prison riots and in a counterterrorism role.

Furthermore, such grenades can be used by crisis reaction forces and frontier guards during peacekeeping and peace-enforcement missions.

The main technical data

CALIBER (mm)	40
COMPLETE GRENADE LENGTH	106
MASS OF GRENADE (g)	230
PROJECTILE LENGTH (mm)	76
MASS OF PROJECTILE (g)	180
MUZZLE VELOCITY (m/s)	78
DELAY TIME (s)	2 to 3
FIRING RANGE (m)	50 to 400
SOUND INTENSITY (db)	120

GRENADE 40mm x 46 SMOKE CS - M99

Use:

Though it is a multipurpose round, the GRENADE 40mm x 46 SMOKE CS - M99 is most effective for riot control and in military operations on urbanized terrain (MOUT). This chemical round is used to drive the enemy from bunkers or enclosed positions in built-up areas. It produces a white cloud of CS gas on impact

The main technical data

Caliber (mm)	40
Weight of round (g)	210
Weight of grenade (g)	158
Length of round (mm)	106
Delay time (s)	2- 3
Smoke time (s)	20
Muzzle velocity (m/s)	76
Firing range (m)	50 - 400
TIU (C0)	-42 +63

ROUND 23 mm x 152B HE

Calibre (mm)	23
Round mass (g)	441 ± 7
Projectile mass (g)	182 ± 3
Explosive mass (g)	19.6
Propellant mass (g)	78
Round length (mm)	235.32 ÷ 237.29
Muzzle velocity (m/s)	970 ± 10
Mean max pressure of powder gases for group of rounds (bar)	3000
Fuze arming distance (m)	100
Fuze self-destruct time (s)	5.6 ÷ 11.2
Operating temperature (°C)	-30 ÷ +50
Weapon compatibility	antiaircraft guns 23 mm ZSU-2 and ZSU-4



ROUND 23 mm x 152B HEI		
Calibre (mm)	23	
Round mass (g)	441 ± 7	
Projectile mass (g)	182 ± 3	
Explosive mass (g)	19.6	
Propellant mass (g)	78	
Round length (mm)	235.32 ÷ 237.29	
Muzzle velocity (m/s)	970 ± 10	
Mean max pressure of powder gases for group of rounds (bar)	3000	
Fuze arming distance (m)	100	
Fuze self-destruct time (s)	5.6 ÷ 11.2	
Operating temperature (°C)	-30 ÷ +50	
Weapon compatibility	antiaircraft guns 23 mm ZSU-2 and ZSU-4	

ROUND 23 mm x 152B TP-T		
Calibre (mm)	23	
Round mass (g)	449 ± 8	
Projectile mass (g)	191 ± 3	
Propellant mass (g)	78	
Round length (mm)	235.32 ÷ 237.29	
Muzzle velocity (m/s)	970 ± 10	
Mean max pressure of powder gases for group of rounds (bar)	3000	
Tracer burning time (s)	3.5	
Operating temperature (°C)	-30 ÷ +50	
Weapon compatibility	antiaircraft guns 23 mm ZSU-2 and ZSU-4	

ROUND 23 mm x 152B API-T		
Calibre (mm)	23	
Round mass (g)	447 ± 8	
Projectile mass (g)	189 ± 3	
Explosive mass (g)	5	
Propellant mass (g)	78	
Round length (mm)	234.34 ÷ 237.16	
Muzzle velocity (m/s)	970 ± 10	
Mean max pressure of powder gases for group of rounds (bar)	3000	
Tracer burning time (s)	3.5	
Operating temperature (°C)	-30 ÷ +50	
Weapon compatibility	antiaircraft guns 23 mm ZSU-2 and ZSU-4	

AMMUNITION 30mm x 165 ANTI-AIRCRAFT GUN 30mm 2A72, 2A42 AND 2A38M



This family of ammunition was designed within new generation medium-calibre cannon-based weapon systems used in IFVs/APCs, self-propelled AD systems, as well as in attack helicopters.

2A42 cannon is a part of armament system of Russian BMP-2, BMD-3 IFVs and Ka-50 and Mi-28 attack helicopters.

2A72 cannon is a part of armament system of Russian highly advanced BMP-3 IFV, as well as a part of armament system of the KLIVER turret, designed for mounting on the old-design IFVs and APCs.

2A38 cannon is a part of armament system of self propelled, advanced AD gun/missile weapon systems 2S6/2S6M TUNGUSKA and PANTSYR-S1.



These weapon/ammunition systems are capable of engaging the following targets:

- Low-flying aerial targets (fixed and rotary wing aircraft, UAV's, cruise missiles, stand-off weapons)
- Lightly armoured targets (APC's, IFV's)
- Wide range of ground targets - field fortifications, dismounted infantry etc.
- Wide range of targets in urban warfare

Basic features:

- Advanced propellant charge design, providing for high ballistic performances of the projectile, low weight and small dimensions of the cartridge case, as well as for small cannon dimensions and weight and high weapon system ammunition capacity.
- Highly reliable mechanical gun primer
- Advanced steel cartridge case manufacturing technology, providing for high mechanical stress resistance and extremely high rate of fire weapon capabilities
- Modern HE projectile design, providing extremely high interior and exterior ballistic performance and terminal efficiency against wide range of aerial and ground targets
- Highly effective explosive charge (RDX or RDX / Al mixture)
- Effective range against aerial targets at more than 3000 m
- Effective range against ground targets at more than 4000 m
- Advanced impact fuzes with highly reliable self-destruction device
- Highly reliable tracers with long burning time, enabling visual control of projectile's flight
- High flexibility of tactical use
- Target practice/target practice with tracer rounds for training purposes



The main technical data								
NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP	AP-T	TP-T	TP
WEIGHT								
projectile (g)	389	389	386	386	400	400	385	389
propellant (g)	121	121	121	121	126	126	121	121
explosive (g)	49	49	11.5	11.5	none	none	none	none
complete round (g)	833	833	832	832	853	853	835	839
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none
LENGTH (mm) complete round	291	291	291	291	292	292	292	292
MUZZLE VELOCITY (m/s)	890	890	890	890	890	890	890	890
SELF-DESTRUCTION TIME (s)	13-19	13-19	13-19	13-19	none	none	none	none
TRACER BURNING TIME (s)	none	none	10	10	none	3.5	10	none

PACKING:

30 rounds in wooden case

Case gross mass: 37kg

W/C dimensions: 576mm x 338mm x 218mm

Case volume: 0,042m3

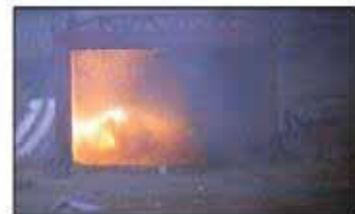
AMMUNITION 30mm x 165 FOR ANTI-AIRCRAFT GUN 30mm AK-630/AO 18



Having in mind complexity of defending ships in modern combat environment against sophisticated air attack means, the perfect solution for shipboard air-defence was found in combining missile and gun armament. This cannon design provided optimal combination of projectile terminal efficiency, rate of fire, weapon system's ammunition carrying capacity, compactness, simplicity and reliability in use.

Families of 30x165mm AD ammunition was developed within the framework of developing of world famous, advanced, whole new generation of medium-calibre cannon based weapon systems for ship borne AD weapon system, for modern combat aircraft, for many types of IFVs/APCs, self-propelled AD systems, as well as for attack helicopters.

The main differences between ammunition families for ship borne, aircraft and vehicle-mounted cannons is in implemented type of gun primer, type of cartridge case surface coating and fuzes type, has been developed for new generation of medium calibre cannon-based weapon systems for modern combat aircraft and ship borne AD weapon system.



These weapon/ammunition systems are capable of engaging following targets:

- Anti-ship missiles which have penetrated outer layers of ship borne air defence
- Low flying aerial targets (fixed and rotary wing aircraft, UAV's, cruise missiles, stand-of weapons)
- Lightly armoured sea and land targets
- Wide range of coastal fortification
- Floating sea-mines

Basic features:

- advanced propellant charge design, providing the high ballistics performances of projectile, with low-weight and small-dimension of cartridge case and small cannon dimensions and weight and high weapon system ammunition carrying capacity
- advanced electrical riming system
- advanced cartridge case manufacturing and surface coating technology, providing high mechanical stress resistance, extremely high rate of fire weapon capabilities, as well as high reliability of weapon's function
- modern HE projectile design, providing extremely high interior and exterior ballistics performance and terminal efficiency against wide range of aerial and ground targets
- high effective explosive charge (RDX+Al), providing for secondary incendiary effect
- effective range against aerial targets more than 3000 m
- effective range against ground targets more than 4000 m
- high reliable self destruction device
- high reliable tracers for enabling the visual control of projectile's flight
- broad range of targets engaged
- high reliability , according to long experience in ammunition mass production
- practice rounds for training purposes
- low price and high cost/efficiency ratio



The main technical data								
NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP	AP-T	TP-T	TP
WEIGHT								
projectile (g)	389	389	386	386	400	400	386	389
propellant (g)	121	121	121	121	126	126	121	121
explosive (g)	49	49	11.5	11.5	none	none	none	none
complete round (g)	833	833	830	830	853	845	830	833
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none
LENGHT (mm) complete round	292,1	292,1	291,1	291,1	292	292,3	291,1	292,1
MUZZLE VELOCITY (m/s)	890	890	890	890	890	890	890	890
SELF-DESTRUCTION TIME (s)	13-19	13-19	13-19	13-19	none	none	none	none
TRACER BURNING TIME (s)	none	none	10	10	none	3.5	10	none

PACKING:

30 rounds in wooden case

Case gross mass: 37kg

W/C dimensions: 576mm x 338mm x 218mm

3 Case volume: 0,042m

105 MM HOWITZER AMMUNITION FAMILY

A 105mm artillery system is still important and effective weapon in modern and future conflicts. Its advantages are compactness, low weight and simple procedure of disassembling. It is easily transportable to hilly, mountainous and other hard terrain areas, inaccessible to other large caliber artillery systems. These features also provide high air transportability (including helicopter transport) and, therefore, high strategic and operational mobility, making it a good fire support weapon for rapid deployment forces. Although it can not match 120mm mortars in respect of weapon weight and shell fragmentation effect, its range and possibility of direct firing at wide range of point and area targets, especially in mountainous and intersected terrain, make this weapon system practically unreplaceable fire-support weapon in modern armed conflicts, especially in low-intensity conflicts and anti-guerilla warfare.

Serbian designers' knowledge, experience and creativity were combined to produce ammunition family with the following features:

- low barrel wear (due to physical and chemical properties of powder charges)
- high max. range of projectiles - in the terms of range, our ammunition is among the best in the world, providing important
- tactical advantages
- high terminal efficiency is obtained by modern shell body design, material and manufacturing technology, use of modern explosives and impact, superquick and delay action fuzes and proximity fuzes
- possibility of using both Western and Eastern - origin type of fuzes, due to application of simple screw-type fuze adapter
- high durable brass cartridge case
- high reliability and safety under various environmental conditions
- long shelf life

105mm ammunition is intended for:

- destruction of war materiel (including armour materiel)
- annihilation of personnel on the opened terrain and in the field fortification and shelters
- neutralization of fortified and nonfortified point and area targets
- smoke screening of the battlefield

Serbian 105mm ammunition, besides Serbian howitzer M56, is ballistically matched with following artillery systems: M2A1, M4, M18/61 and Italian mountain howitzer M56.

The fact that we have fully mastered manufacturing of 105mm ammunition enables us to offer technology transfer to our potential partners, either the whole production line or separate component separately.



ROUND 122mm HE Shell TF-462A1, SEPARATED LOADED FOR HOWITZER D-30, D30J AND SP 2S1

Serbian has been using the howitzer D-30 since the middle of 70's, and during this time our experts have meticulously studied the howitzer and all of its subsystems, including the ammunition. Because of needs for greater range and enhanced terminal efficiency, modernization program was started for upgradation of both ordnance and ammunition. In that way, Serbia was one of the first countries to start upgrade program of D-30, and as a result reliable artillery systems has been created. Its designation became D-30J (J standing for Yugoslavia). The part of that upgrade program was developing of new ammunition, where by technical modifications range was enhanced from 15,2 to 17,5km. Quality and reliability of these advanced solutions were proven in armed conflicts worldwide. By these ambitious programs, Serbia has become one of the leaders in the area of 122mm, both in artillery systems and ammunition.

Serbian designers' knowledge, experience and creativity were combined to produce ammunition family with the following features. low barrel wear (due to physical and chemical properties of powder charges) high max. range of projectiles - in the terms of range, our ammunition is among the best in the world, providing important tactical advantages high terminal efficiency is obtained by modern shell body design, material and manufacturing technology, use of modern explosives and impact, superquick and delay action fuzes and proximity fuzes possibility of using both Western and Eastern -origin type of fuzes, due to application of simple screw-type fuze adapter high durable brass cartridge case high reliability and safety under various environmental conditions long shelf life 122mm ammunition is intended for: destruction of war materiel (including armour materiel) annihilation of personnel on the opened terrain and in the field fortification and shelters neutralization of fortified and non-fortified point and area targets As smoke screening of the battlefield

The main technical data	
NATO DESIGNATION	HE Shell TF-462A1
WEIGHT	
projectile (kg)	21,88
explosive (kg)	3,60
propelling charge (kg)	3,80 full charge
cartridge case (kg)	3,66
EXPLOSIVE TYPE	TNT
LENGTH (mm)	
projectile	561
cartridge case	447
MUZZLE VELOCITY (m/s)	690
MAXIMUM RANGE (m)	15300
FUZE: impact, superquick and delay action	UTIU, M72 B1 UTIU, M02 UTIU, M03

PACKING:

2 rounds in wooden case W/C dimension: 980mm x 500mm x 230mm Case gross mass: 80kg Case volume 0,1m3



130 mm, SEPARATE LOADED FOR GUN 130 mm M46

Calibre (mm)	130	
Projectile designation	HE SHELL M79 A1	HE ER BB SHELL M93
Projectile mass with fuze (kg)	33.4	36.95
Explosive mass (kg)	≈ 3.6	≈ 3.6
Propelling charge mass (kg)	≈ 13.6 (full variable charge M92)	≈ 12.6 (full propelling charge M93A)
Cartridge case mass (kg)	≈ 11.35	≈ 11.35
Explosive type	TNT	TNT
Length of projectile with fuze (mm)	≈ 655	≈ 756
Cartridge case length (mm)	≈ 846	≈ 846
Muzzle velocity (m/s)	930	885
Maximum range (m)	26400	31500
Fuze type	UTIU, M72 B1; UTIU, M02	UTIU, M72 B1; UTIU, M02
Firing	- 40 to 52	- 40 to 52
Storage	- 40 to 60	- 40 to 60
Dispersion at max range (m)	Range ≤ 150	≤ 250
	Lateral ≤ 20	≤ 55
Max average pressure (bar)	3080	3080
Weapon compatibility	gun 130 mm M46	

PACKING :

2 rounds in a wooden case



	DIMENSION (mm)	VOLUME (m3)	GROSS MASS (kg)
Case	996 x 490 x 268	0,13	82 (for HE SHELL M79 A1) 85 (for HE ER BB SHELL M 93)



155 mm HE M107 ARTILLERY PROJECTILE

Main combat tasks:

- neutralization of sheltered and unsheltered enemy war materiel (including armour materiel)
- neutralization of enemy manpower
- neutralization of fortified and non-fortified point and area targets

Weapons: M109A5series (USA), M198(USA), M114/39(USA/Netherlands), FH77B (Sweden), FH70 (UK, Germany, Italy), M139(Netherlands), M46/84(Serbia YU), NORA B52 (Serbia), etc...



MORTARS AND MORTAR SHELLS

60 mm M70 Commando mortar

60 mm M70 Commando mortar is very efficient mortar weapon system, combining lightweight and compact design with firepower and portability. Because of these features it is primarily destined for special forces units or rapid deployment forces, i.e. units tasked with rapid target engagement with swift exit from combat area.

60 mm M70 Commando mortar is capable of effective engagement of close, uncovered or sheltered manpower and weapons, especially on rear slopes and in ditches. Baring in mind modern battlefield requirements, especially those concerning MOUT (Military Operations in Urban Terrain) 60 mm Commando mortar is highly suitable weapon for engaging enemy manpower hidden behind building or on building roofs. Because of its low weight and compact design, it can be easily transported using light vehicles as one of weapons to be used in contingencies operations.

On the other side, 60 mm M70 Commando mortar can be effectively used with special forces units, particularly for "first entry" units, where sudden and effective attack is one of main prerequisites.





	Ranges	Max	Min
1	HE mortar shell (O+2) M73	1630 m	94 m
2	Smoke mortar shell (O+2) M73	1600 m	94 m
3	Illuminating mortar shell (O+2) M67	1600 m	200 m
4	Practice mortar shell M62	280 m	50 m

The main technical data	
Caliber, mm	60.75
Barrel length mm	805
Barrel length with breechring, mm	651
Weapon weight in combat position, kg	7.5
Weight of SPTA kit, kg	1.3
Field of action, degs	
- azimuth	360
- elevation	-5 to +85
Number of increment charges	0+2
Maximum pressure, bar	240
Rate of fire, rds/min	20
Crew	2

Mortar 60mm M11

60mm light long range mortar features high combat versatility and tactical flexibility, due to:

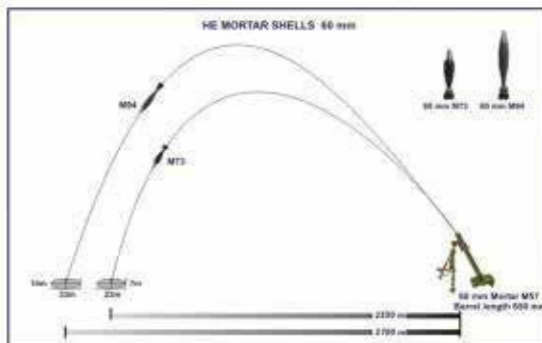
- high firepower,
- favorable portability,
- short in-action / out-of-action time,
- high accuracy.

It is also used for destruction of wire obstacles, for blinding of observation posts, firing points and for battlefield illumination. The mortar is well suited for assault and special forces.

Transportation

Men carried over shorter distances.

Over longer distances, animal-pack loaded, two mortars together with ammunition.



81mm M69B(K) and M69B(D) Light Mortar family

General data

Light mortars 81 mm type M69B(K) and M69B(D) are light-weight infantry supporting weapons. They are designed for destruction of manpower and firing positions in open field and in defilades. Mortars are well suited to engage targets in gullies and shell craters. They can be used to breach wire obstacles and to blind enemy observation posts. Illuminating ammunition is also available. Light mortar 81 mm is characterized by low mass of 45 kg, by simple and reliable construction, considerable range and other features not available on mortars of earlier designs. It can be fired in all kinds of terrain and it uses all types of 81 mm mortar shells. Transporting is on soldiers' back or by animal pack. The mortar is dismantled in three sections: barrel with breech piece, bipod and base plate. There are three carriers for man pack and one carrier for ammunition.

The weapon is rapidly and simply set in firing position. It is operated by the crew of three. Azimuth and elevation devices are of screwed type.

Sighting device NSB-3 uses collimator and division of 1/6400 or 1/6000. For night-time firing, it is fitted with illuminated aiming point. Graduation and bubble levels are coated with tritium and clearly visible at night.

Bipod contains mechanisms for coarse and fine barrel aiming.



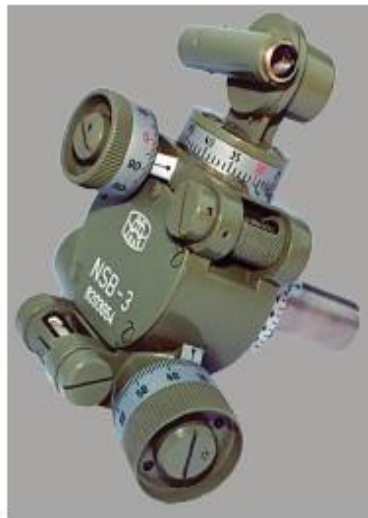
The mortar is made of the highest quality materials and uses a number of light alloy components. A number of parts are interchangeable.

Technical data

Radius of the shell lethal effect is 18 m, for targets in standing position 30 m.

Firing modes (with full charge)

Maximum duration of fire	Number of shells
3 (minutes)	45
5 (minutes)	60
10 (minutes)	90
20 (minutes)	120
30 (minutes)	150
60 (minutes)	180
each following hour	100



The main technical data		
	M69B(K)	M69B(D)
Range:	6300	6700
Barrel caliber	81.4mm	81.4mm
Field of action in elevation	45° to 85°	
Field of action in azimuth: - 2-48 with fixed bipod - with displacement of bipod	(1/6000) 360°	
Masses and lengths	M69B(K)	M69B(D)
Barrel with breech ring	14.50kg	16.60kg
Base plate	13.50kg	13.50kg
Bipod	16.00kg	16.00kg
Sighting device (w/o case)	0.70kg	0.70kg
Weapon set	45.00kg	47.10kg
Weapon set of spares, tools and accessories	5.00kg	5.00kg
Mortar overall length	1450mm	1750mm
Barrel length	1150mm	1450mm
Barrel man pack carrier	4.40kg	4.40kg
Bipod man pack carrier	2.25kg	2.25kg
Base plate man pack carrier	2.00kg	2.00kg
Ammunition box man pack carrier	2.10kg	2.10kg
Rate of fire: without correction of firing elements with correction of firing elements	20-25 shells/min.	20 shells/min.
Number of crew	4(2!, if necessary)	

120mm Mortar M74

Light mortar 120 mm M74 is a light-weight weapon of infantry close support, designed for annihilation of manpower and for destroying of firing points by short fire engagements. It is particularly effective on intersected and hilly terrains, where the enemy may be hidden by a rear slope. The mortar can effectively open breaches in wire barriers or mine fields, demolish lighter fortifications and remove top soil covers over heavy bunkers. The mortar is also well suited for combat against mechanized units, by destroying their infantry. It is also suitable for making of smoke screens and for target illumination at night. The mortar is particularly suited for the mountaineer, special and airborne units, as well as for territorial defence units.



Rates of single fire:

- in 1 minute
- in 3 minutes
- in 5 minutes
- in 10 minutes
- in 60 minutes
- Maximum rate of fire 12 shells/minute
- Transition time from firing position to traveling position 30 seconds
- Number of crew 4

Means of transport

Mortar M74 may be transported:

- towed by motor vehicle
- towed by single animal using proper harness
- by animal pack with three animals
- by helicopter, without additional accessories
- parachuted by cargo parachute with pallet
- man-carried, dismantled to sections and using
- man pack carriers, over short distances
- in snow or in the mountains, dismantled to sections and moved by sleds
- loaded on motor vehicles for long distances
- transported by rail or sea.



Top target / mortar class		
Barrel caliber	120 mm	
Ranges	Max.	Min.
with rocket-assisted shell and connected motor	9056 m	
with rocket-assisted shell and disconnected	5313 m	271 m
with light HE shell	6213 m	267 m
with heavy HE shell	5374 m	300 m
Maximum barrel elevation	85°	
Minimum barrel elevation ,	45°	
Horizontal field of action with fixed bipod	3° left/right	
Horizontal field of action with displacement of bipod	360°	
Mortar mass in travelling position	208 kg	
Mortar mass in firing position	120 kg	
Barrel mass, incl. breech ring	45 kg	
Base plate mass	49 kg	
Bipod mass	25 kg	
Mass of complete carriage	86 kg	
Weapon set of spares, tools and accessories,	mass9.5 kg	
Barrel length	1690 mm	
Mortar height at 45° elevation	1375 mm	
Mortar height at 85° elevation		
- with base plate unburied	1800 mm	
- with base plate buried	1580 mm	
Mortar length in travelling position	2165 mm	
Mortar height in travelling position	930 mm	
Mortar width in travelling position	1450 mm	
Wheel track	1280 mm	
Road clearance	260 mm	
Tyre size	5.20 x 12	
Tyre air pressure	0.9 bar	
Sighting device NSB-4B of optical-mechanical type		
9 shells 18 shells 25 shells 35 shells 70 shells		

60mm MORTAR SHELLS FAMILY

Mortar Shells family is consisting of:

- HE MORTAR SHELL M73P3
- HE MORTAR SHELL M91
- HE MORTAR SHELL M94
- SMOKE MORTAR SHELL M73P3
- SMOKE MORTAR SHELL M91
- HIGH-SMOKE MORTAR SHELL M93
- ILLUMINATING MORTAR SHELL M67P2
- ILLUMINATING MORTAR SHELL M91
- PRACTICE MORTAR SHELL M62

Modern solutions have been applied in developing II generation shells.

These include:

- optimised aero – dynamic shape securing improved external ballistic characteristics, accuracy and precision at all ranges;
- Advanced shell body casting technology, together with the TNT/RDX explosive charge provides optimum efficiency at target.
- Accuracy and precision at all ranges,
- Advanced shell casting technology resulting with great number of fragments,
- Base propellant charge is filled with double-base NGB powder (ballistite) fitted into a cardboard bushing

Masking of friendly troops movement as well as blinding of enemy observers, fire support artillery and anti-tank weapon crews is achieved by use of modern, low-drag and highly efficient white phosphorusbased smoke shells.

The shells are completed with fuzes which are also indigenously produced: point detonation, superquick/delay fuzes, time pyrotechnical fuzes.

The propellant charge consists of base and increment propellant charges.

The base propellant charge is filled with double-base NGB powder (ballistite) fitted into a cardboard bushing. The increment propellant charge is also filled with NGB powder fitted in 6 reinforced celluloid shells resulting in a good distribution of the projectile initial velocities and good range overlapping.



60 mm HE MORTAR SHELL M73P3

The main technical data	M73 P3
Lenght of shell with fuze	301 mm
Mass of mortar shell with fuze	1350 g
Explosive charge is	trotyl (TNT)
Mass of explosive charge	220 g
Shell is assembled with impact fuze	UTU M88P1
Muzzle safety at lovest initial speed is	70 m
Killing range (1 penetration / m ²) - radius	10 m
Shell is completed with ignition cartridge and four increment charges (0+4).	
Ignition cartridge M98	waterproof
Reliable function of shell is obtained at temperature range of	-30°C to 50°C.
High safety during transportation, handling and parachuting.	
BALISTIC DATA	
When using 60 mm Mortar M57, barrel length 650 mm:	
Maximum range (0+4)	2550 m
Minimum range (0)	94 m
Max. mean operating pressure in mortar	414 bars

PACKING

- 1 complete shell per carton
- Box dimensions 52 x 40 x 20 cm
- Total volume 0,042 m³
- 12 carton per wooden box
- Total mass 29 kg

60 mm HE MORTAR SHELL M91

The main technical data	M91
Lenght of shell with fuze	410 mm
Mass of mortar shell with fuze	2100 g
Explosive charge is	(RDX/ TNT) or trotyl (TNT)
Mass of explosive charge	400 g
Shell is assembled with impact fuze UTU M93 superquick - delay action fuze.	
Muzzle safety at lovest initial speed is	70 m
Killing range (1 penetration / m ²) - radius	14 m
Shell is completed with ignition cartridge and six increment charges (0+6).	
Ignition cartridge M94	waterproof
Reliable function of shell is obtained at temperature range of	-30°C to 50°C.
High safety during transportation, handling and parachuting.	
BALISTIC DATA	
When using 60 mm Mortar M95, barrel length 1200 mm:	
Maximum range (0+6)	5100 m
Minimum range (0)	90 m
Max. mean operating pressure in mortar	647 bars

PACKING

- 1 complete shell per carton
- Box dimensions 50 x 35 x 20 cm
- Total volume 0,035 m³
- 8 carton per wooden box
- Total mass 28 kg



60 mm HE MORTAR SHELL M94

The main technical data	M90
Length of shell with fuze	395 mm
Mass of mortar shell with fuze	2100 g
Explosive charge is hexolite (RDX/ TNT) OR trotyl (TNT)	
Mass of explosive charge	400 g
Shell is assembled with UTU M93 superquick - delay action fuze.	
Muzzle safety at lowest initial speed is	50 m
Shell is completed with ignition cartridge and for increment charges (0+6).	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.	
High safety during transportation, handling and parachuting.	
BALISTIC DATA	
When using 60 mm mortar M90:	
Maximum range (0+6)	5200 m
Maximum range when using 60mm M70 Commando mortar	2550 m
Minimum range (0)	90 m
Killing range (1 penetration / m ²) - radius	16 m

PACKING

1 complete shell per carton	8 carton per wooden box
Box dimensions 49x35x20 cm	Total mass 30 kg
Total volume 0,034 m ³	

60 mm ILLUMINATING MORTAR SHELL M91, M67P2

The main technical data	M91	M67P2
Shell lenght, with screwed - on fuze	495 mm	330 mm
Shell mass, with screwed - on fuze	2100 g	1270 g
Mass of illuminating candle	300 g	200 g
Shell is completed with TP M67 pyrotechnic time fuze		
Illuminating power	350000 Cd for 30 s	180.000 Cd for 35 s
Spedd of candle descent	3 m/s	2.5 m/s
Shell is completed with ignition cartridge and six increment charges (0+6).		
Ignition cartridge M94	waterproof	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When using 60 mm Mortar M95, barrel length 1200 mm:		
Maximum range (0+6)	4000 m	2450 m
Minimum range (0+1))	400 m	400 m
Max mean operating presure in mortar	647 bars	414 bars

PACKING M91

- 1 complete shell per carton
- 8 carton per wooden box
- Box dimensions 50 x 35 x 20 cm
- Total mass 27 kg
- Total volume 0,035 m³

PACKING M67P2

- 1 complete shell per carton
- 12 carton per wooden box
- Box dimensions 52 x 40 x 20 cm
- Total mass 27 kg
- Total volume 0,042 m³



60mm SMOKE MORTAR SHELL M73P3, SMOKE MORTAR SHELL M91, HIGH-SMOKE MORTAR SHELL M93

The main technical data	M73P3	M91	M93
Lenght of shell with fuze	286 mm	410 mm	330 mm
Mass of mortar shell with fuze	1350 g	2100 g	1,4 kg
Weight of smoke charge	190 g	300 g	0,45 kg
Fuze: Impact, superquick action	UT M88 P1	UT M88 P1	TP M67
Muzzle safety at lowest initial speed is	70 m		
Shell is completed with ignition cartridge and four increment charges (0+4).			
Ignition cartridge M98	waterproof		
Reliable function of shell is obtained at temperature range of -30°C to 50°C.			
High safety during transportation, handling and parachuting.			
BALISTIC DATA			
When using 60 mm Mortar M57, barrel length 650 mm:			
- Maximum range (0+4)	2550 m	5100 m	2400 m
- Minimum range (0)	94 m	90 m	300 m
- Max. mean operating pressure in mortar	414 bars	647 bars	414 bars



PACKING M73P3

- 1 complete shell per carton
- 12 carton per wooden box
- Box dimensions 52 x 40 x 20 cm
- Total mass 29 kg
- Total volume 0,042 m³

PACKING M91

- 1 complete shell per carton
- 12 carton per wooden box
- Box dimensions 52 x 40 x 20 cm
- Total mass 29 kg
- Total volume 0,042 m³

PACKING M93

- 1 complete shell per carton
- 12 carton per wooden box
- Box dimensions 52 x 40 x 20 cm
- Total mass 30 kg
- Total volume 0,042 m³

60 mm PRACTICE MORTAR SHELL M62

The main technical data	
Length of mortar shell - launcher	202 mm
Projectile length	193 mm
Mass of mortar shell - launcher	1080 g
Mass of projectile	235 g
BALISTIC DATA	
When using 60 mm Mortar M5, barrel length 650 mm and Commando M70, barrel length 650 mm:	
Maximum range	280 m
Minimum range	50 m

PACKING

- 1 complete shell per carton
- 12 carton per wooden box
- Box dimensions 52 x 33 x 19 cm
- Total mass 18 kg



81mm MORTAR SHELLS FAMILY

Mortar Shells family is consisting of:

- HE MORTAR SHELL M72P3
- HE MORTAR SHELL M72P4
- HE MORTAR SHELL M91
- HE MORTAR SHELL M91P1
- SMOKE MORTAR SHELL M72P3
- SMOKE MORTAR SHELL M91
- HIGH-SMOKE MORTAR SHELL M88
- HIGH-SMOKE MORTAR SHELL M95
- ILLUMINATING MORTAR SHELL M67
- ILLUMINATING MORTAR SHELL M95
- ANTISABOTAGE SHELL M82 " PLISKA"
- ANTISABOTAGE SHELL M89 " PLISKA"
- PRACTICE MORTAR SHELL M62

Modern solutions have been applied in developing II generation shells. These include: optimised aero-dynamic shape securing external ballistic characteristics, accuracy and precision at all ranges; appliance of advanced shell body manufacturing technology which provides forming of a great number of fragments, has been applied in production of the shell body; this technology, together with the TNT/RDX explosive charge provides optimum efficiency at target. The new generation shell weight corresponds to the heavy shell weights of the previous generation and importantly increased their range, precision and terminal efficiency.

Masking of friendly troops movement as well as blinding of enemy observers, fire support artillery and anti-tank weapon crews is achieved by use of modern, low-drag and highly efficient white phosphorus - based smoke shells.

With use of illuminating mortar shells, mortars provide night battlefield illumination, as well as blinding of enemy crews and observers.

Antisabotage underwater - operating HE mortar shells, developed in 81/82mm caliber, with special point-detonating, superquick and delay-action fuses significantly expand the tactical use of mortars - providing antisabotage underwater operation through the shock wave action against saboteurs-diving commandoes, clearing of underwater mine fields - with the purpose of initiating a particular type of mine sensor in underwater mine-field through the action of shock-wave, as well as antilanding operation - by fragmentation effect on the water-sea surface or land, with the purpose of annihilating personnel and unarmoured vehicles and equipment. The antisabotage mortar shells characterize fuze delay time from 0.09 to 0.19s, depth of underwater burst from 4 to 10m and shock wave intensity in the water of 16 x1003Pa at the distance of burst site of 20 m and 10x 103Pa at the distance of burst site of 30 m.

The shells are completed with fuzes which are also indigenously produced: point detonation, superquick/delay fuzes, time pyrotechnical fuzes, time electronic digital fuzes with permanent memory and non-contact timing, and proximity, radar-doppler fuzes.

The propellant charge consists of base and increment propellant charges. The base propellant charge is filled with double-base NGB powder (ballistite) fitted into a cardboard bushing. The increment propellant charge is also filled with NGB powder fitted in 6 reinforced celluloid shells resulting in a good distribution of the projectile initial velocities and good range overlapping.



HE MORTAR SHELL M72P3/ M72P4

The main technical data	M72P4	M72P3
Lenght of shell with fuze	375 mm	375 mm
Mass of mortar shell with fuze	3050 g	3050 g
Explosive charge is hexolite trotyl (TNT)		
Mass of explosive charge	680 g	680 g
Shell is assembled with impact fuze	UT M88P1 SQ	UTU M93-N SQ/D
Muzzle safety at lovest initial speed is	70 m	50 m
Killing range (1 penetration / m ²) - radius	14 m	14 m
Shell is completed with ignition cartridge and six increment charges (0+6).		
Ignition cartridge M06	waterproof	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When firing in mortar of 1150 mm to 1200 mm barrel length:		
Maximum range (0+6)	4876 m*	4876 m*
Minimum range (0)	85 m	85 m
Max mean operating presure in mortar	647 bars	647 bars

* When firing in mortar of 1450 mm barrel length, Xmax = 5070 m.

PACKING

- 1 complete shell per carton	- Box dimensions	54x44x16 cm
- 5 carton per wooden box	- Total mass	29 kg
	- Total volume	0,038 m ³

HE MORTAR SHELL M91/ M91P1

The main technical data	M91P1	M91
Lenght of shell with fuze	480 mm	480 mm
Mass of mortar shell with fuze	4100 g	4100 g
Explosive charge is hexolite (RDX/ TNT)		
Mass of explosive charge	850 g	850 g
Shell is assembled with impact fuze	UTU M93-N SQ/D	UT M88P1 SQ
Muzzle safety at lowest initial speed is	50 m	70 m
Killing range (1 penetration / m ²) - radius	18 m	18 m
Shell is completed with ignition cartridge and six increment charges (0+6).		
Ignition cartridge M94	waterproof	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When firing in mortar of 1150 mm to 1200 mm barrel length:		
Maximum range (0+6)	6300 m	6300 m*
Minimum range (0)	90 m	70 m
Max mean operating presure in mortar	647 bars	647 bars

* When firing in mortar of 1450 mm barrel length, Xmax = 6600 m.

PACKING

- 1 complete shell per carton	- Total mass	34 kg
- 5 carton per wooden box	- Total volume	0,051 m ³
- Box dimensions	58x55x16 cm	



ILLUMINATING MORTAR SHELL M67 /M95

The main technical data	M67	M95
Length of shell with fuze	410 mm	545 mm
Mass of mortar shell with fuze	2950 g	4250 g
Mass of illuminating candle	400 g	650 g
Shell is completed with TP M67 pyrotechnic time fuze.		TP M67P2
Illuminating power for 40 s	500.000 Cd	750.000 Cd
Mean rate of parachute descent with candle	2,5 m/s	3 m/s.
Shell is completed with ignition cartridge and four increment charges (0+4).	waterproof	
Ignition cartridge M45P3		
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When firing in mortar of 1150 mm to 1200 mm barrel length:		
Maximum range (0+6)		5200 m*
Maximum range (0+4)	3380 m*	300 m
Minimum range (0+1)	250 m	647 bars
Max mean operating pressure in mortar	422 bars	
* When firing in mortar of 1450 mm barrel length, Xmax = 3650 m.		

PACKING

- 1 complete shell per carton
- 5 carton per wooden box

M67

- Box dimensions 54x48x16 cm
- Total mass 29 kg
- Total volume 0,042m³

M95

- Box dimensions 61x54x16 cm
- Total mass 35 kg
- Total volume 0,053m³



ANTISABOTAGE SHELL M82/M89 " PLISKA "

The main technical data	M82	M89
Lenght of shell with fuze	375 mm	480 mm
Mass of mortar shell with fuze	3050 g	4100 g
Explosive charge is hexolite trotyl (TNT)		
Mass of explosive charge	680 g	850 g
Shell is assembled with impact fuze UTU M93P3 SQ/D with delay time 0,09-0,11 s		
Muzzle safety at lovest initial speed is	50 m	50 m
Shock-wave overpressure in the water for the distance from the burst site of		
20 m	1.7 MPa	2.2 MPa
30 m	1 MPa	1.4 MPa
Killing range (1 penetration / m ²) - radius	14 m	18 m
Shell is completed with ignition cartridge and six increment charges (0+6).		
Ignition cartridge M06	waterproof	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When firing in mortar of 1150 mm to 1200 mm barrel length:		
Maximum range (0+6)	4876 m *	6300 m *
Minimum range (0)	85 m	90 m
Max mean operating presure in mortar	647 bars	647 bars
* When firing in mortar of 1450 mm barrel length, Xmax = 5070 m.		

PACKING

- 1 complete shell per carton
- 5 carton per wooden box

M82

- Box dimensions 54x44x16 cm
- Total mass 29 kg
- Total volume 0,038 m³

M89

- Box dimensions 58x55x16 cm
- Total mass 34 kg
- Total volume 0,051 m³



120mm MORTAR AMMUNITION

- HE MORTAR SHELL M62P8
- HE MORTAR SHELL M95
- HE MORTAR SHELL M95P1
- HE MORTAR SHELL M95P1
- ILLUMINATING MORTAR SHELL M01
- ILLUMINATING MORTAR SHELL M87P1
- SMOKE MORTAR SHELL M62P3
- HIGH-SMOKE MORTAR SHELL M89
- SMOKE MORTAR SHELL M95
- PRACTICE MORTAR SHELL M63P2

Modern solutions have been applied in developing II generation shells. These include: optimised aero-dynamic shape securing external ballistic characteristics, accuracy and precision at all ranges; appliance of advanced shell body casting technology which provides forming of a great number of fragments, has been applied in production of the shell body; this technology, together with the TNT/RDX explosive charge provides optimum efficiency at target. The new generation shell weight corresponds to the heavy shell weights of the previous generation and importantly increased their range, precision and terminal efficiency.

A masking of movements of friendly troops, as well as blinding of enemy observers and fire support and anti-tank weapon crews is achieved by use of modern, low-drag and highly efficient white phosphorus - based smoke shells.

With use of illuminating mortar shells, mortars provide night battlefield illumination, as well as blinding of enemy crews and observers.

Employment of radar - doppler type, proximity fuse used with HE shells importantly increases the shells terminal efficiency.

The shells are completed with fuzes which are also indigenously produced: point detonation, superquick/delay fuzes, time pyrotechnical fuzes, time electronic digital fuzes with permanent memory and non-contact timing, and proximity fuzes, radar-doppler type.

The development of cargo-type mortar shells, with dual-effect (shaped charge and fragmentation) bomblets and electronic, digital, permanent memory, contactless timing, time fuses, as well as terminal guided mortar shells with IR dual-color homing head, will dramatically improve mortar capability.



•HE MORTAR SHELL M62P8

The main technical data	M62P8
Length of shell with fuze	610 mm
Mass of mortar shell with fuze	12,6 kg
Explosive charge is hexolite (RDX/ TNT) OR trotyl (TNT)	
Mass of explosive charge	2,5 kg
Shell is assembled with impact fuze UTU M93P1 SQ/D	
Muzzle safety at lowest initial speed is	50 m
Killing range (1 penetration / m ²) - radius	20 m
Shell is completed with ignition cartridge and six increment charges (0+6).	
Ignition cartridge M74	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.	
High safety during transportation, handling and parachuting.	
BALISTIC DATA	
When using 120 mm Mortar M75, barrel length 1500 mm:	
Maximum range (0+6)	6500 m
Minimum range (0+1)	255 m
Max mean operating pressure in mortar	961 bars

PACKING

1 complete shell per carton	Box dimensions	71x35x18 cm
2 carton per wooden box	Total mass	38 kg
	Total volume	0,045 m ³

•HE MORTAR SHELL M95 /M95P1

The main technical data	M95	M95P1
Length of shell with fuze	800 mm	800 mm
Mass of mortar shell with fuze	14,8 kg	14,8 kg
Explosive charge is hexolite (RDX/ TNT) OR trotyl (TNT)		
Mass of explosive charge	2,9 kg	2,9 kg
Shell is assembled with impact fuze UTU M93P1 SQ/D		UTU M88
Muzzle safety at lowest initial speed is	50 m	50 m
Killing range (1 penetration / m ²) - radius	24 m	24 m
Shell is completed with ignition cartridge and eight increment charges (0+8).		
Ignition cartridge M95	waterproof	waterproof
Reliable function of shell is obtained at temperature range of -30°C to 50°C.		
High safety during transportation, handling and parachuting.		
BALISTIC DATA		
When using 120 mm Mortar M75, barrel length 1500 mm:		
Maximum range (0+8)	7400 m	9200 m
Minimum range (0+1)	255 m	275 m
Max mean operating pressure in mortar	961 bars	1300 bars

PACKING

1 complete shell per carton	Box dimensions	93x35x18 cm
2 carton per wooden box	Total mass	44 kg
	Total volume	0,058 m ³



• HIGH-SMOKE MORTAR SHELL M89

The main technical data	M89
Lenght of shell with fuze	670 mm
Mass of mortar shell with fuze	11,25 kg
Mass of smoke pot (HC compozition)	1,65 kg
Shell is completed with TP M87 pyrotechnic time fuze	
Shell is completed with ignition cartridge and five increment charges (0+5).	
Ignition cartridge M74	
Reliable function of shell is obtained at temperature range of -30°C to 50°C.	
High safety during transportation, handling and parachuting.	
BALISTIC DATA	
When using 120 mm Mortar M75, barrel length 1500 mm:	
Maximum range (0+5)	6000 m
Minimum range (0+1)	400 m
Max mean operating presure in mortar	620 bars

PACKING

1 complete shell per carton	Box dimensions	78x35x18 cm
2 carton per wooden box	Total mass	36 kg
	Total volume	0,049 m ³

• PRACTICE MORTAR SHELL M63P2

The main technical data	M63P2
Lenght of mortar shell - launcher	508 mm
Projectile lenght	280 mm
Mass of mortar shell - launcher	11600 g
Mass of projectile	400 g
BALISTIC DATA	
Maximum range	500 m
Minimum range	50 m

PACKING

1 complete shell per carton	Box dimensions	71x35x18 cm
2 carton per wooden box	Total mass	32 kg
	Total volume	0,045 m ³



"G-2000" MLRS GRAD 122MM ARTILLERY ROCKET



Rocket G-2000 is currently the longest range rocket on the market within its caliber. This rocket motor has a completely new state of the art design. Warhead with fuse, the rocket guide and contact cover are identical to the original rocket GRAD.

Rocket "G-2000" is fully compatible with the mobile multi tube rocket launchers such as BM-21 and RM-70, or similar existing launchers.

Propellant grain is a single cylindrically shaped piece, which is inhibited along the outer surface and front end. It contains two types of propellant, which differ in burning rate.

has resulted in a high level loading factor, almost neutral burning and minimization of the silver being used.

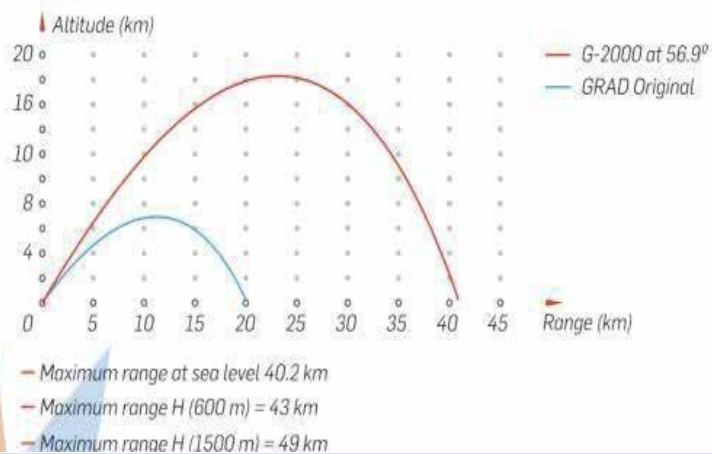
Rocket propellant used for grain production is a modern thermoplastic composite propellant with a high percentage of aluminium, with burning temperatures exceeding 3000K and with a high value of specific impulse.

The steel nozzle with abounded ablative materials has one graphite throat.

Comparative technical characteristics of the G-2000 rocket regarding original GRAD rocket:

TECHNICAL CHARACTERISTICS	"GRAD ORIGINAL"	G-2000	UNITS
Caliber	122	122	mm
Length	2875	2875	mm
Temperature range	-30 – +50	-30 – +50	°C
Total mass	66	69.0	kg
Warhead mass with fuse	19.1	19.1	kg
Propellant mass	20.45	27.3	kg
Burning time	2.0	2.7	s
Total motor impulse	39700	62800	Ns
Specific motor impulse	1941	2300	Ns/kg
Max. Velocity at Xe.	690.6	1100	m/s
Top of the Trajectory at Xe.	7100	17800	m
Time of Flight at Xe.	76	126	s
Elevation	50.0	56.9	°
Range (Xe.)	20.3	40.2	km
CEP at max. range	1.27	0.96	%

Altitude and range charts



107 mm M06 - Extended range 107 mm artillery rocket



Unguided extended range 107 mm artillery rocket (with designation 107mm M06)
With UTI fuse makes a part of the 107 mm self-propelled multi-launcher rocket system
and standard 107 mm rocket launchers

Unguided extended range 107 mm rocket is designed to:

- incapacitate enemy troops and equipment,
- incapacitate or destroy enemy forces at meeting places,
- incapacitate or block enemy convoys,
- prevent assaults by parachute troops and invasions from the sea
- neutralize or destroy enemy command posts and communication centers inside range area

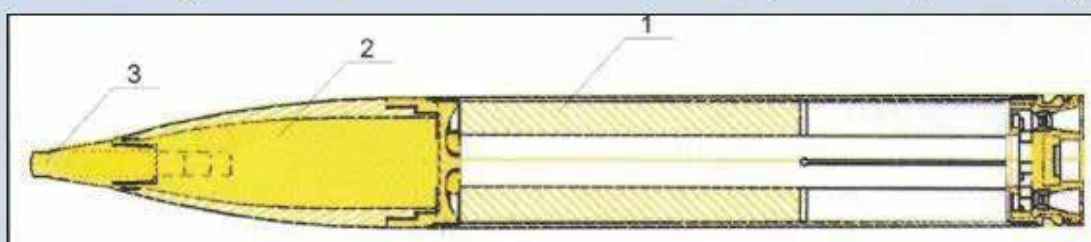
The rocket head has the HE warhead

Technical characteristics

The main technical data:

- rocket caliber.....107 mm
- rocket length with UTI M84 fuse.....825,0 mm
- rocket weight.....17,6 kg
- UTI M84 fuse weight.....0,35 kg
- warhead explosive weight.....1,250 kg
- maximum range.....11,5 km
- total motor impulse.....9500 Ns
- operating temperature range.....-32°C to +60°C
- set weight (2 rocket in a wooden case).....49 kg
- set weight (24 rockets in a composite pod,
with 24 launching barrels in a woden case).....650 to 700 kg
- the rocket can be transported by all transportation means

Extended range 107 mm rocket consists of a rocket motor (1), warhead (2) and fuse (3).

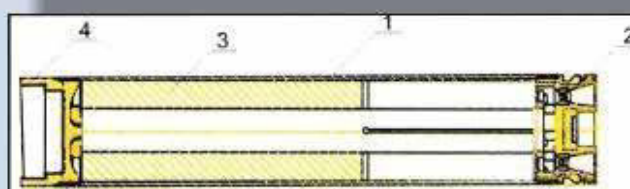


Main parts of extended range 107 mm rockets



Fuse UTI M84

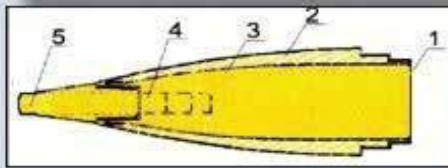
Fuse UTI M84 SQ/delay action point
detonation for extended range 107 mm
rocket, safe at distances up to 40m.



Main parts of 107 mm rocket motor

Rocket motor consists of:

- rocket motor chamber (1),
- nozzle assembly (2),
- rocket propellant (3)
- front base with ignition subassembly (4).



Warhead of 107 mm rocket motor

Rocket propellant is the modern thermoplastic composite propellant made according to the original technology.

Warhead consists of steel implant (1), shell body (2) explosive charge (3). Detonation cups (4) are mounted behind the fuse (5).

Shell body (2) is ogivally shaped. It is forged and made of steel. Thickness is not uniform across the body and that allows maximum fragmentary efficiency against the target.

Packing of extended range 107 mm rocket (107mm M06)
with fuse UTI M84

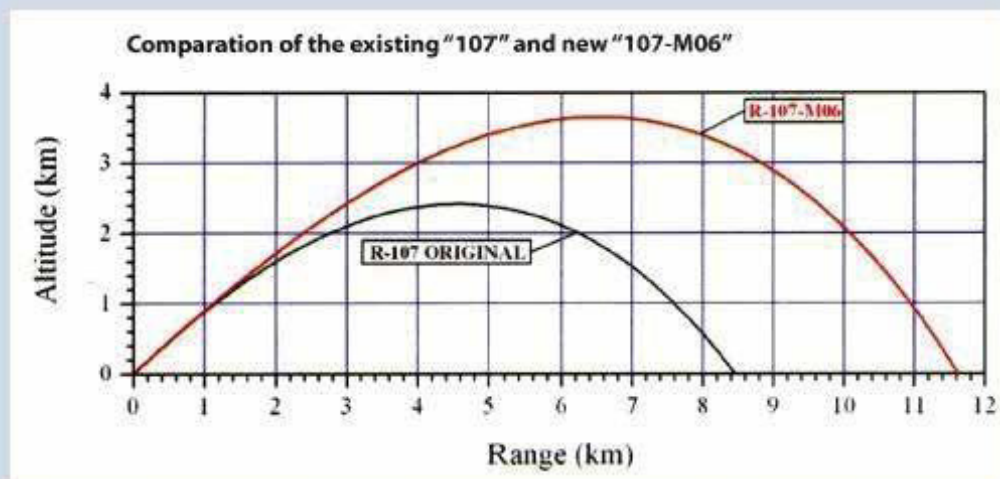
2 rounds in a wooden case

W/C dimension: 1081 x 360 x 203 (kg)

Case gross mass with two rounds: 49 kg



Package-Bottom and corners are hardened



In order to prove the quality of our rockets and accentuation of their advantages we are ready to perform flight tests on your or our flight-test facilities

REVOLVER GRENADE LAUNCHER RBG 40mm/6 M11

RBG 40mm/6 M11 Revolver-type Grenade Launchers 40 mm represents modern infantry light fire support weapon. It features 6-round drum, drum revolving by means of helical spring which is wound prior to firing, resp. during drum loading, while cocking of triggering mechanism and firing employs the principle of double-action revolver. The weapon is manufactured by investment casting, forging and cutting. Materials used are aluminum alloy and steel used for the mechanisms. Weapon barrel employs rifled bore. Launcher weight is 5.4 kg, length with folded stock is 600 mm, with extended stock overall length is 825 mm. Weapon is featuring with an advanced



sighting system based on "Piccatinny" mounting rail and reflex "red dot" sight enabling high precision and fast two-eye open shooting at effective direct fire ranges of 50 m to 375 m. Effective range envelope by indirect fire covers 200 m to 400 m. The SG-07 40 mm weapon/ammunition system ensures precision firing (hitting of house window - size target) at direct ranges up to 150-200 m, and hitting of area targets up to weapon's maximum range.

Family of 40x46 mm rounds, comprising broad variety of models: round with fragmentation projectile, prefragmented, causing dispersion of fragments in horizontal plane with lethal



radius achieving more than 10 m; its original, indigenously developed fuze has very high sensitivity and superquick action; another round is shaped charge type enabling 50 mm RHA penetration, with secondary formidable fragmentation effect; there is also



practice projectile with shell case filled with "flash-bang" mixture, as well as three "flash-bang" non-lethal (less than lethal) versions, two with impact and one with pyrotechnic time delay action fuze; white smoke projectile as well as projectile with CS mixture with pyrotechnic time delay action fuze; illuminating projectile; buchshoot projectile, based on steel balls with time delay-fuzed pyrotechnical expulsion charge, as well as fleshette projectile with similar concept (in development), as well as target practice projectile.



MAIN TECHNICAL CHARACTERISTICS

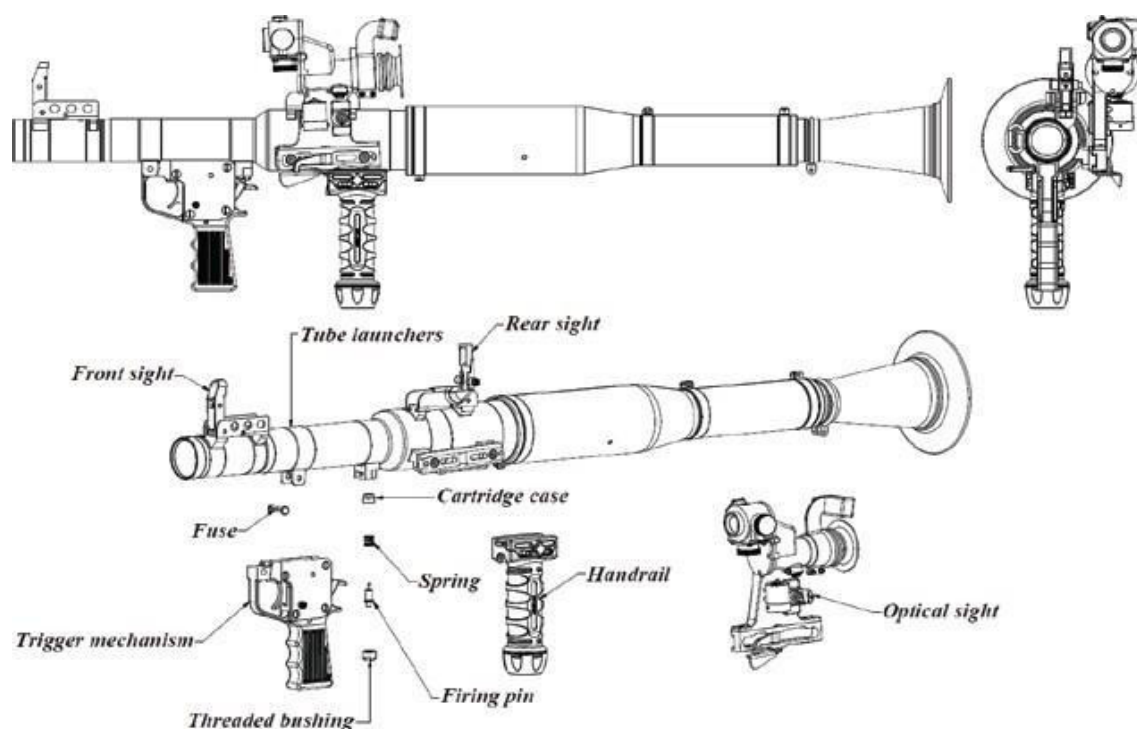
Caliber	40 mm
No. of grooves in the barrel	6
Groove pitch	Progressive
Barrel length	300 mm
Drum capacity	6 rounds
Drum length	140 mm
Type of fire	single
Triggering mechanism	Double-action
Grenade muzzle velocity	≥76m/s
Weight without ammunition	≤ 6.0 kg (without sighting device)
Length with extended stock	800 mm
Length with insterted stock	725 mm
Height	335 mm
Width	160 mm
Type of ammunition	40x46mm (NATO-standard)
Rate of fire	≥12 grenade/min
Sighting device	Reflective type
Sight scaling	50m to 350m

HAND ROCKET LAUNCHER RBR7 7G-0-00

Hand grenade launcher RBR7 (Fig.1. and Fig.2.) is intended for destruction or neutralization tanks, self-propelled artillery weapons and other fortifications and bunkers, as well as destruction enemy live force.



Technical data	
Type RBR7	one barrel
Caliber of weapon	40 mm
Length of weapon RBR7	960 mm
Caliber of shells	40 mm
Length grenades charging	925 mm / 940 mm
Initial grenades velocity	120 m/s / 140 m/s
Maximum grenades speed	300 m/s
Rate of fire	4-6 mine/min
Effective range	500 m
Weight without ammunition	to 7 kg

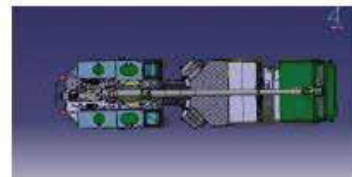


NORA Artillery System and Armoured Vehicles

NORA B-52K1 155mm/52cal Self Propelled Gun Howitzer

Main mission:

- Neutralisation of enemy towed or SP artillery weapons, MLRSs and mortars
- Neutralisation of AD missile and gun systems and forward deployed AD radars
- Neutralisation of supply bases and lines; logistic areas and concentration of transport vehicles;
- Neutralisation of enemy's sheltered or unsheltered manpower;
- Neutralisation of concentration of enemy armoured combat vehicles
- Demolition of field fortifications (strongholds), points of resistance;
- Neutralisation of communication centres and command posts,



Main technical characteristics:

• Calibre (mm)	155
• Weapon weight in travelling and combat positions (kg)	~28500
Weapon dimensions in marching position (m):	
• Length (mm)	~10645
• Width (mm)	~2665
• Height (mm)	~3720
• Clearance (mm)	~385
• Trace of wheels (mm)	~2050
• Motion /drive autonomy (km)	~750km
• Field of action in elevation - Main sector (°)	-5 to +65
• Field of action in traverse - Main sector (°)	60 (-30 to +30)
• Field of action in elevation- Emergency sector (°)	+20 to+65
• Field of action in traverse- Emergency sector (°)	50 (-25 to +25)
• Max. Rate of fire – first round in the barrel (rounds/min):	4
• Combat set (rounds)	36
• Transition time from marching into combat position (s)	≤60
• Transition from combat into marching position (s)	≤60
• Crew	5

Main ballistic characteristics

Maximum weapon ranges (m):

With HE ERFB-BB projectile 41200

With HE ERFB-BT projectile 32300

Minimum weapon range with,

HE M107 projectile, without ricochet 5000



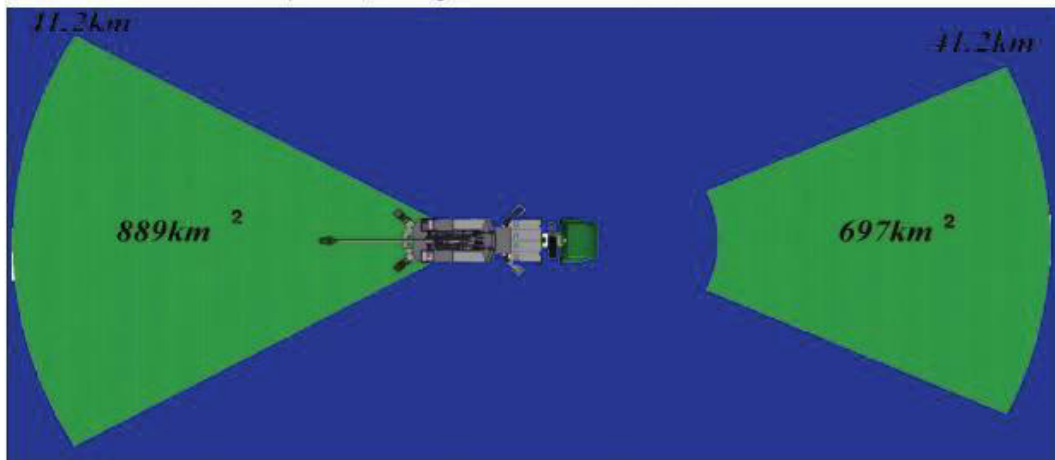
Combat load consists of:

- Advanced 155 mm HE ERFB-BB projectile used with combustible, MC Zone 10 combustible charge • mono-block powder
- Advanced 155 mm HE ERFB-BT projectile which can be used with MC mono-block powder charge, • Zone 10 as well with MC - Zone 9 and Zone 8
- All standard 155 mm M107 projectile with MC Zone 8 and M4A2 - Zones 3 to 7 with bag powder • charges (only with manual loading of the charges)
- Guided projectile by a laser beam at the terminal phase of projectile flight - (Optional)

The NORA-B52 K1 truck-mounted artillery system is upgraded version of basic weapon NORA-B52 KE featuring:

- More advanced FCS with hardware and software improvements providing better battlefield navigation, gun barrel laying in traverse and elevation and fully automatic firing data calculation;
- Redesigned and reinforced cabin meets requests for armouring and provision basics for ballistic protection
- More advanced truck chassis, providing better mobility both on road and off road

Main armament 155 mm barrel length of 52 calibres, fitted with semi automatic breech block and an advanced solution of powder chamber self-optimating system. Gun-ammunition system is fully compatible with 155mm NATO Agreement requirements. The main armament is fitted on the vehicle platform, enabling it to have two fields of action:

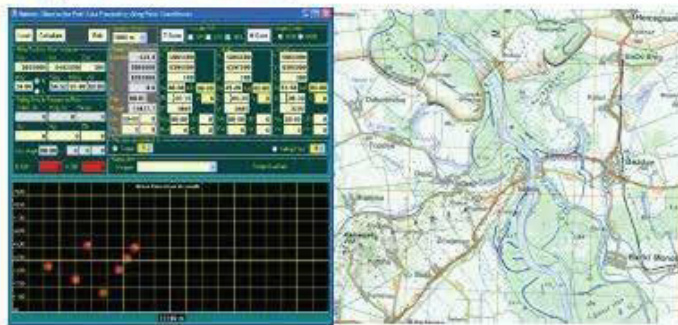


- Main field of action - firing sector, directed opposite to the vehicle cabin;
 - Emergency field of action - firing sector directed above the vehicle cabin.
 - During transport/travelling of the weapon, its armament is turned forward, above the vehicle cabin, with the barrel being fixed by barrel holder.
 - Automatic loader consists of two cassettes containing 12 projectiles and 12 propellant charges, projectile and charge feeder and chain rammer controlled by PLC thus increasing firing rate and minimizing crew effort. Loader can be refilled from the container on the deck of the vehicle. Container has 8 removable cassettes each containing 6 housings (4 in the middle for storage of projectiles and 2+2 on the left and right side for propellant charges). This makes total combat set 36 rounds.
- M03 SPGH is fully integrated into AFCCS for battlefield observation, target acquisition, data transfer, ballistic computation and fire command instructions transfer.



AFCCS main functions are:

- Battlefield observation and target identification;
- Topographic calculations;
- Building of target data base
- Fire planning, execution and control
- At the battery level, AFCCS equipment is located on three emplacements of the battlefield:
 - Observation post equipment;
 - Command post equipment; and
 - Equipment on each M03 Weapon.



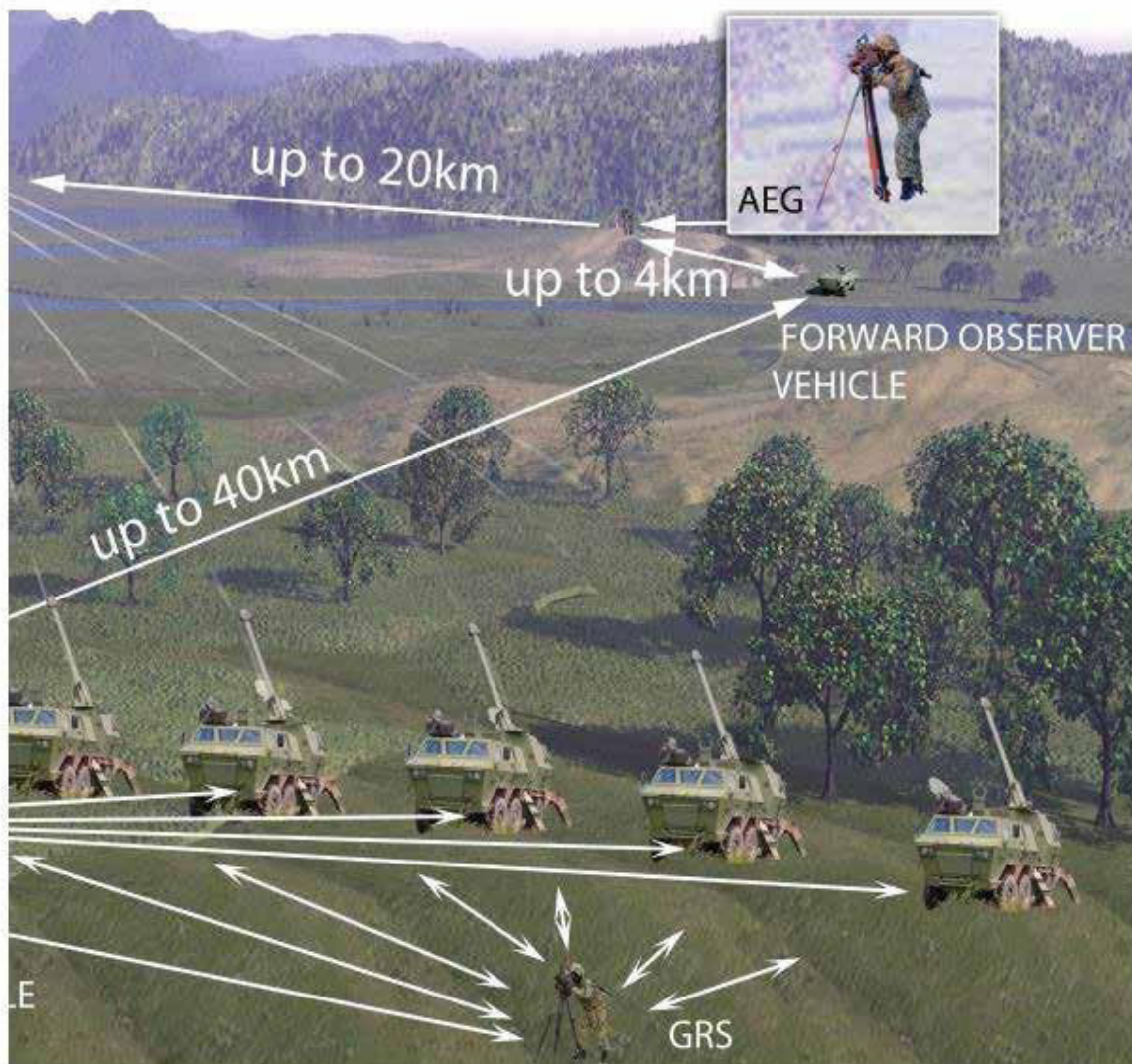
Firing instructions are then sent to selected guns, where they will be displayed on ruggedized computer. Initial firing elements calculation also takes into account other limitations, such as: hazard zones, position of allied troops, crests...

Data transfer between all elements of the system are realized by use of radio and/or wire lines, with appropriate cryptography protection.

Beside calculation of initial firing elements, AvtFCS also provides:

- fire correction, as per measured position of impact point (acquired by AEG), or by appraisal and
- fire transfer to other targets.

AvtFCS also support different firing regimes, in accordance with tactical situation. AvtFCS support use of different types of 105 mm ammunition, providing that necessary data (firing tables) are provided.



LAZAR II 8x8 MRAV/MRAP Multi-Purpose Armored Vehicle

LAZAR II 8x8 MRAV/MRAP Multi-Purpose Armored Vehicle 8x8 is designed following modern world trends in development of a wheeled armored vehicles families intended for carrying out of a number of tactical tasks in different armed conflicts.

The concept and technical solutions of the vehicle are especially adjusted to the requirements of modern infantry units and special units engaged in carrying out of the tasks of assymmetric warfare, antiterrorist and peace keeping actions, as well as wide range of medium level armed conflicts. Special accent is made on vehicle actions in urban conditions, inhabited areas and highly intersected terrain, against enemy extensively using ambushes, anti-tank (AT) mines, improvised explosives devices (IED), etc. LAZAR II is also enabling effective engagement of bunkers, armored fighting vehicles, as well as MBTs.

The vehicle concept is merging of most important features of MRAV (Multi Role Armored Vehicle), and MRAP (Mine Resistant Ambush Protected Vehicle) armored vehicle concepts, featuring with very high all-terrain/all climate conditions mobility, high fire power, high all-round ballistic protection, high AT mines/IED protection as well as possibility of battlefield observation and target engagement by embarked crew personal weapons. Vehicle concept provides these unique combination of basic characteristics of the two classes of modern wheeled armored vehicles exceptionally important in the world today.

The hull is designed to provide comfortable space to 2+10 crew with personal equipment and weapons. The space is designed in accordance with MIL-STD 1472



WEAPON SYSTEM

RCWS WITH 30 mm CANNON AND ATGW LAUNCHER

Armament:

- Automatic cannon 30 mm M86 with double-feed mechanism
- Coaxial machinegun 7.62 mm M86
- Smoke pot launchers with 4-6 tubes
- ATGW

Characteristics of the electric drive:

- In azimuth $\pm 360^\circ$, max. speed 550 per second
- In elevation -100° to 600° , max. speed 300 per second
- Accuracy of laying - less than 0.5 mils

Sensor head coupled with armament:

- wide-angle CCD camera
- day sight subsystem with 12x magnification
- thermal imager
- eye-safe laser range-finder

30 mm AUTOMATIC GUN M86

30 mm cannon has been designed for engagement of ground targets (manpower and lightly armoured targets) and aerial targets (helicopters and low flying aircraft).

Technical Characteristics of 30 mm M86 Automatic Gun:

- Caliber 30 mm
- Operation Gas operated
- Fire mode Single shot and bursts
- Rate of fire 550 to 650 rds/min
- Gun length 2995 mm
- Gun weight 198 kg
- Field of action in elevation -7° to 65°

FCS COMPONENTS

Weapon control, sighting and firing via control handle and computer with fire control system software

Sighting devices:

- Day channel: Telescopic sight with CCD TV camera
- High resolution CCD TV camera
- Night channel Thermal imaging camera
- Laser channel Eyesafe laser rangefinder
- Computer unit Ruggedized tablet PC
- Control unit
- Power supply unit

SEMI-AUTOMATIC GUIDANCE AND CONTROL UNIT FOR AT MISSILES

System provides for SACLOS guidance for the upgraded antitank missile MALYUTKA (-2T and -2F). The guidance system consists of:

- Optoelectronic unit,
- Guidance electronics,
- Launcher interface,
- Elevation tracking servo system,
- Power supply.



ARMoured MULTI-PURPOSE COMBAT VEHICLE 4x4 - BOV M16 MILOSH



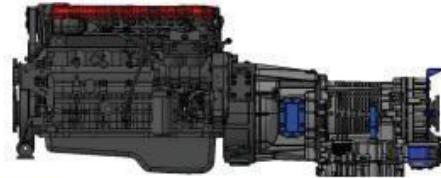
The armoured multi-purpose combat vehicle, with 4x4 drive – Milosh belongs to the category of modern armoured vehicles intended for the performance of wide range of missions in the activities of police and armed forces. The main concept of the vehicle is based on a self-supporting hull, modern drive and transmission assemblies and an independent suspension system which ensures high mobility in any terrain and weather conditions with the maximum combat weight exceeding 14 tons.

The vehicle can be used for: patrol missions, reconnaissance missions, as a command vehicle, for transportation and support to the units for special operations, in anti-guerrilla, anti-terrorism and anti-tank operations, for the border and territory control, etc.



ENGINE

- Type: CUMMINS ISB 300
- Volume: 6.91
- Power: 221 kW (300 HP)
- Rpm: 2500
- Torque: 1100 Nm (1200-1800 rpm)
- Communication: CAN



GEARBOX

- Type: ALLISON 3500SP Automatic transmission
- Gears: 6+1
- Retarder: DA
- Communication: CAN

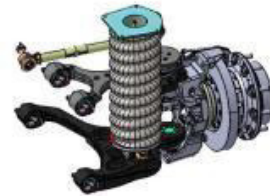


TRANSMISSION

- Formula: 4x4
- Transfer case: GHM RTC 60-420 two gears with differential
- Differentials: inter-wheel and inter-wheel

SUSPENSION

- - Independent
- - helical spring + hydraulic shock absorber



WHEELS

- Type: 14.00 R20
- Wheel support: Aluminum, two-piece – Tyron International
- RUN FLAT: Tyron International



BRAKING SYSTEM

- Pneumatic, with disks on all wheels
- ABS system: 4 ABS sensors + 4 ABS valves
- Brake wear sensor
- Hydraulic parking brake mounted on the transfer case



ARMAMENT

- RCWS 12.7 mm



PERFORMANCES

- Maximum speed: 110 km/h
- Slope: 60%
- Side slope: 30%
- Vertical obstacle: 0.5m
- Trenching: 0.8 m
- Fording: 1m
- Turn radius: 8m

DIMENSIONS

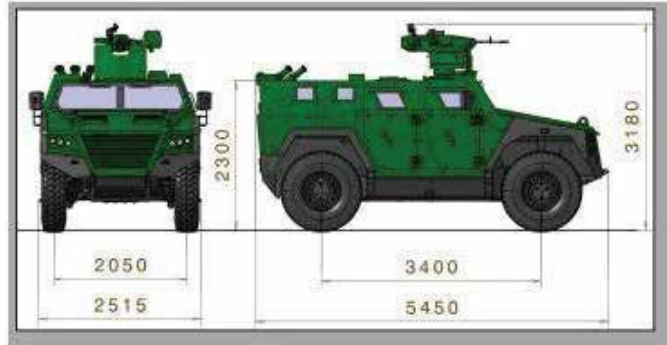
- Length: 5.45 m
- Height: 2.30 m
- Width: 2.51 m
- Wheelbase: 2.05 m

WEIGHT

- Empty vehicle: 12 t
- Maximum weight: 14 t

VOLUME

- Passenger space: 6.5 m³



The vehicle is available in the following versions:

- Command vehicle of the joint tactical unit
- Vehicle for the artillery joint tactical units
- Vehicle for anti-tank operations
- Artillery reconnaissance – command vehicle with the integrated artillery electronic direction finder and other optoelectronic systems for surveillance and fire control
- Ambulance vehicle, etc.

300 HP CUMMINS ISB 300 diesel engine is installed in the front part of the vehicle which gives the vehicle a specific appearance. The engine, automatic transmission Allison 3500SP and other power transmission components ensure the maximum speed of the vehicle which exceeds 110 km/h. The hull which is made of armoured sheet steel in its basic version ensures a very high level of ballistic protection (Level III on the front side and Level II on the other sides as per the NATO standard Stanag 4569), as well as a high level of anti-mine protection (Levels IIa and IIb as per STANAG 4569). The vehicle is intended for the performance of numerous tactical missions and for that purpose it can be equipped with different types of weapons and specialized equipment: day and night remote control weapon station equipped with 12.7mm machine gun, different types of manually controlled armoured turrets equipped with machine guns and grenade launchers, long-range anti-tank guided missile systems (5 to 8.5 km), AD rocket systems, as well as optoelectronic thermal imaging and TV and radar systems for the border control and surveillance which are mounted on telescopic masts of different heights.

The vehicle has 5 loopholes for firing with personal armament during anti-ambush operations, observation holes with ballistic protection, air-conditioning and NBC protection systems, modern communication equipment, Command Information System, and night vision and driving cameras.

The wheels with "Run Flat" inserts ensure the mobility of the vehicle up to 50 km in case the tires are seriously damaged, and they also feature the central tire inflation system. Owing to the wheels with 20 inch aluminum rims, the vehicle has a robust appearance and features high mobility and off-road capability. The clearance of the vehicle is 420mm and the maximum weight is 14 tons.

Additional ballistic protection is modular, and its design provides fast replacement of the damaged plates of the additional armor in field conditions and achieving different levels of protection by combining the ballistic plates of the additional armor depending on its purpose.

The standard version of the combat vehicle accommodates 8 member crew, out of which 4 members are located in the rear part of the vehicle with the possibility of fast disembarking and embarking by means of the rear hydraulic ramp or the rear door, while 4 members in the front part of the vehicle disembark and embark the vehicle by means of four standard side doors.

Six 82 mm smoke pot launchers are mounted on the hull roof.



MULTIROLE FAST COMBAT BOAT



The Multirole Combat Boat is a high-performance craft designed for a wide range of police and internal security activities, including anti-terrorist, anti-guerilla and anti-piracy tasks, and for a number of military operations such as special forces' landing missions, transport of divers etc.

Depending on the weapon arrangement, the boat can carry a crew of 6 to 8 men, and transport 4 to 8 divers, i.e. a total of 12 men.

The boat displacement varies, depending on the tactical assignment, from 7.5 to 10.5 tons, and can develop a speed of 40 to 45 knots.

The boat is made of marine grade aluminum. The hull with the stiffeners is a structure made of marine grade aluminum 5083, using TIG and MIG welding techniques.

MAIN CHARACTERISTICS

• Length Overall	11.98 m
• Length on Waterline	10.05 m
• Beam Maximum	3.34 m
• Beam on Waterline	3.00 m
• Static draft	0.7 m (sea version 1 m)
• Height from keel	1.6 m
• Displacement (dry weight/max)	6500/ 10500 Kg
• Fuel capacity	900 Liters
• Maximum speed	40-45 Knots
• Range – Top speed (hours/nautical miles)	5 h / 200 nm



30 mm M93 Automatic Grenade Launcher

This is a modern weapon with a unique design that can be effectively used against targets at long ranges, in different terrain and climate conditions, with a significant lethal radius.

The weapon is primarily used against sheltered and unsheltered targets at up to 1,700 m and against lightly armored vehicles at up to 1,000 m.

7.62 x 54R mm M84 light machine gun

Light machine gun 7.62 x 54R mm M84 is the Serbian equivalent of the famous Russian PKMS weapon. It is designed as a highly reliable weapon, especially in terms of the barrel material and technology. The weapon has more than 20,000 rounds barrel life, it is capable of firing 250 - 500 rounds in a single burst, and of operating in harsh environment conditions (snow, sand, mud) without maintenance.

MANUALLY-OPERATED 12.7 mm HMG

The M09 naval mount consists of a cradle-mounted manually-operated 12.7 x 108 mm HMG and a fire control system, mounted on the boat deck rotating upper carriage with a seat for the operator. The weapon is designed to be used on light patrol boats and larger-size vessels, enabling effective, accurate and rapid engagement of various surface and air threats, including fast-moving boats, UAVs, helicopters, etc. at ranges of up to 2,000 m.

