



ROMARM

NATIONAL COMPANY

ROMANIAN
DEFENSE
INDUSTRY



ABOUT US



We are one of the largest defense groups in Eastern Europe, specialized in manufacturing defense equipment, with focus on arms and ammunition.

With expertise and experience of more than 75 years, we are the leading Romanian military equipment manufacturer. Comprising 15 factories throughout the country, we are a state-owned company under the authority of the Ministry of Economy.

Our high quality products have made us a well known company all over the world, being a constant presence on over 50 markets in countries from Europe, North America, South America, Asia and Africa.

It is our strong desire to offer reliable products and to support the Customer at every stage of product life cycle by providing a wide range of comprehensive solutions.



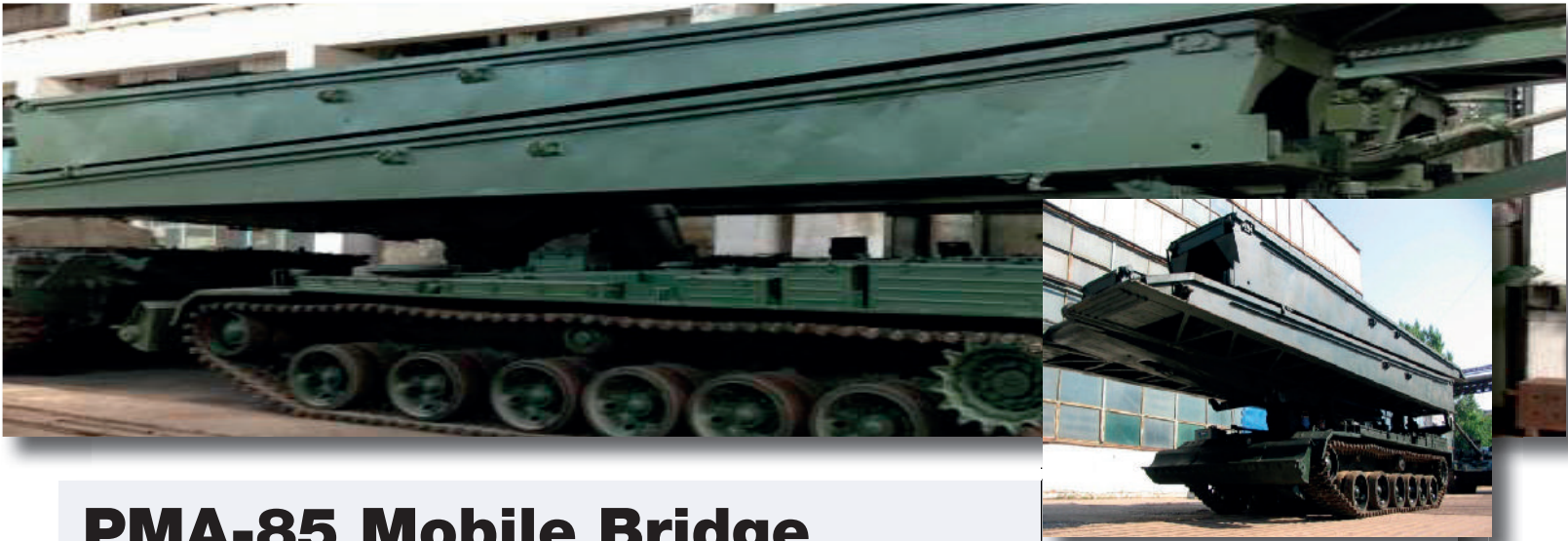
ARMORED VEHICLES





DMT-85-M1 Mine Dregger

Total weight	43 t	Max. load of the crane	6,5 t
Engine	Diesel, 8 cylinders, 860 CP	Weapon Systems:	
Travel speed	62 km/h	Fire remote control platform, equipped with thermal chamber	
Dredging depth	300 mm	Equipment:	
Dredging speed	7-12 km/h	-machine gun cal. 7,62mm or 12,7mm (EAST)	
Width of the dredged portion	3900 mm	-machine gun cal. 7,62 mm or 12,7 mm (NATO)	
Longitudinal gradient	32°	-device for the first cocking with electric control	
Cross slope	17 °	-installation for launching smoke shells	
Non-hazardous bend radius	65 m		
The width of the antitank crossed ditch	2,8 m		



PMA-85 Mobile Bridge

Combat weight	50 t	Launching conditions	0,875 daN/cm2
Crew	2 persons	LAUNCH TIME	
Weapon System	7,62 mm Coaxial Machine Gun	RETRIEVE TIME	
Engine	8 VS A2 T2 diesel, 8 cylinders, 4 stroke cycle, turbocharged	Height differences	between farbank and near bank up to ±1m
Engine Power	830 HP	Maximum speed	50 km/h
Transmission	hydro – mechanical	Forward Slope	26°45'
Bridge performance	scissoring type in two parts	Range (without supplementary barrel)	400 km
	GAP 22±0,04 m	Range ROAD	average 400 km
	WIDTH 3,5±0,02 m	CROSS-COUNTRY	average 200 km



TR-85-M1 Main Battle Tank

Combat weight	50 t
Crew	4 persons
Weapon system	
Main gun type	rifled bore
Main gun calibre	100 mm
Main gun rate of fire	4 - 7 rounds/min
Coaxial machine gun	7,62 mm
Anti-aircraft machine gun	12,7 mm
Engine	diesel, 8 cylinders, 4 stroke cycle, turbocharged
Engine power	860 HP
Transmission	hydro – mechanical
Power to Weight Ratio	17,2 HP/t
Average ground pressure	1 daN/cm ²
Maximum speed	60 km/h
Forward slope	32°
Range	400 km
Ammunition on Board	41 rounds - 100 mm; 500 rounds - 7,62 mm; 750 rounds - 12,7 mm
Aiming system	gun/turret electric drive in two planes, with integrated laser finder and computer control
Maximum thickness of armor	TURRET 320+20 mm with auxiliary armour CHASSIS 200 mm stratified
Measuring distance	200...5000 m STROKE DISTANCE WITH APFSD Round - 4000 m
FOREIGN SUB-ASSEMBLIES	turret bearing, generator, thermal imaging sight, fire suppression system, commander's sight, stabilization system, radio





AM 7.0 M Armored Anti-Riot Vehicle

Type	4x4, Armored Anti-riot vehicle		
Protection	Level 2 with in STANAG 4569, including windows and windshield		
Crew	14, including driver		
Crew access	2 sideways front doors for driver and commander 2 sideways middle doors for crew members 1 rear door for crew members 2 access hatches on ceiling		
Speed	Min. 100 km/h		
Gradient	Max. 20°		
Side slope	Max. 20°		
Range on the road	Min. 600 km		
Main dimensions	Length	6620 mm	
	Width	2510 mm	
	Height	3210 mm	
Filtering installation			
Fire extinguishing installation for tyre			
Dye cleaning installation for windshields			
Selfprotection installation with tear gas			
Independent air heater			
Tv and video system			
Communication system			





RN 94 - 6x6 Armored Personnel Carrier

Type	6x6, wheeled amphibious vehicle
Hull	Armored, sealed
Crew	10, including driver, commander and gunner
Speed	on road 100 km/h on water 10 km/h
Gradient	Max. 32°
Side slope	Max. 20°
Range on the road	Min. 700 km
Main dimensions	Length 6785 mm Width 2850 mm Height 2340 mm without turret Ground clearance 450 mm Wheel base 3400 mm Wheel track 2460 mm
Armament	Turret RCWS-RO 12,7 or 7,62 mm
G.V.W.	12800 kg





SAUR 2 – 8x8 Armored Personnel Carrier

Type	8x8, wheeled amphibious vehicle
Hull	Armored, sealed
Protection	LEVEL 2 by STANAG 4569
Crew access	Power operated ramp with emergency access door on the rear side of the vehicle
Speed	Access hatches 4, driver, commander and crew on road 100 km/h on water 10 km/h
Gradient	30°
Side slope	20°
Range on the road	Min. 600 km
Main dimensions	
Length	7960 mm
Width	3040 mm
Height	2340 mm
Ground clearance	without turret Min. 420 mm
G.V.W.	16000 kg
Power to weight ratio	Min. 20,3 hp/t
Armament	Turret RCWS-RO 12,7 or 7,62 mm
Crew protection systems	filtering installation automatically fire extinguishing installation fresh air intake system





SMALL ARMS AND AMMUNITION





Caliber 5,45mm



Caliber	Material			Length		Weight			Muzzle velocity V ₂₅ (m/s)	Maximum gas pressure (kgf/cm²)
	Bullet core	Bullet jacket	Cartridge case	Total (mm)	Bullet (mm)	Total (g)	Bullet (g)	Cartridge case (g)		
5.45x39mm Ball	Steel	Bimetal	Brass	56,0	23,4	11,8	4	6,5	810	3200
5.45x39 Blank	-	-	Steel	46,3	-	7,25	-	6	-	-
5.45x39mm FMJ	Lead	Bimetal	Steel	56,9	24,95	11,3	4	5,65	830	3100

5,45mm ROMARM ASSAULT RIFLE



Cartridge	5,45x39 mm	Muzzle velocity	800 m/s
Operation	gas, selective fire (optional, 3-rds burst facility)	Rate of fire	cyclic, 600 rounds/min
Locking	rotating bolt	Rifling	4 grooves rh, 1 turn in 195 mm
Feed	detachable box magazine	Weapon Length	fixed butt - 940 mm
Magazine capacity	30 rounds		lateral folding butt - 940/735
Sight	mechanical fore pillar rear, U notch calibrated from 100÷1000 m	Barrel Length	415 mm
		Line of sight	380 mm
		Weight without magazine	3,300 kg
		Weight of empty magazine	0,320 kg

5,45mm ROMARM SUBMACHINE GUN



Cartridge	5,45x39 mm	Muzzle velocity	910 m/s
Operation	gas, automatic	Rate of fire cyclic	600 rounds/min
Locking	rotating bolt	Rifling	4 grooves rh, 1 turn in 195 mm
Feed	detachable box magazine		
Magazine capacity	30 rounds	Weapon Length	805/605 mm
Sight	mechanical fore pillar rear, U notch calibrated from 100÷1000 m	Barrel Length	305 mm
		Line of sight	260 mm
		Weight without magazine	3,100 kg
		Weight of empty magazine	0,320 kg

5,45mm ROMARM LIGHT MACHINE GUN



Cartridge	5,45x39 mm	Muzzle velocity	910 m/s
Operation	gas, automatic	Rate of fire	cyclic, 600 rounds/min
Locking	rotating bolt	Rifling	4 grooves rh, 1 turn in 195 mm
Feed	detachable box magazine	Weapon Length	1080 mm
Magazine capacity	30 rounds	Barrel Length	590 mm
Sight	mechanical fore pillar rear, U notch calibrated from 100÷1000 m	Line of sight	560 mm
		Weight without magazine	5,200 kg
		Weight of empty magazine	0,320 kg



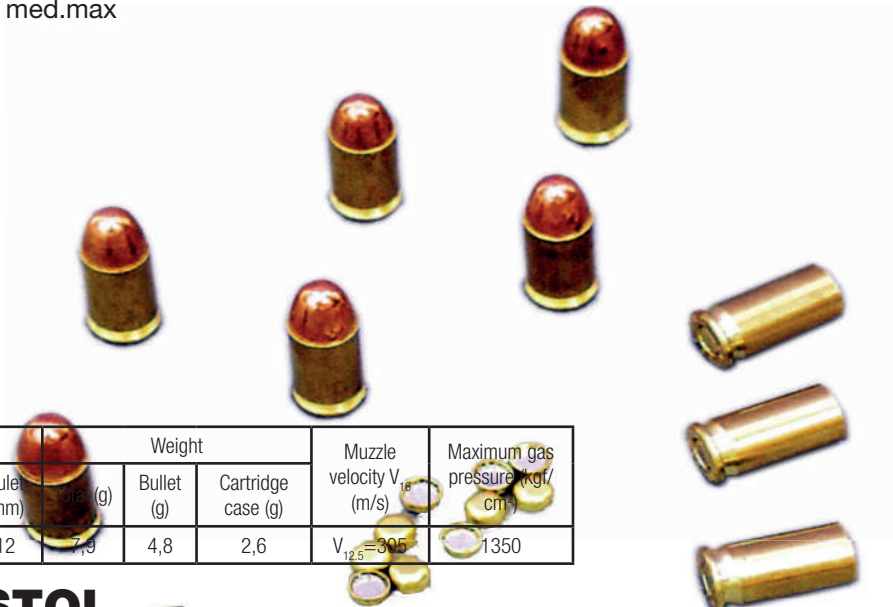
Caliber 5,56mm



Cartridge case made of 70/30 brass
Bullet of 4 g (61,5 gr) with:
bullet jacket made of 90/10 brass/bimetal
core made of steel and lead;
boxer type, non corrosive
double base type
Primer
Propellant
Medium velocity of the bullet at 24 m
V = 914 m/s ± 12 m/s
V = 3000 fps ± 40 fps
Mean case mouth max. pressure: P ≤380 MPa med.max
P ≤55000 psi med.max

Individ. max. case mouth pressure: P ≤420 MPa max.max
P ≤61000 psi max.max
Mean port pressure: P ≥ 106 Mpa med.max port
P ≥ 12700 psi med.max port
Accuracy: Standard deviation at 100 m
St. Dev. ≤ 3,6 cm
St. Dev. ≤ 1,42 inch
Identification: Unpainted

Caliber 7,65mm



Caliber	Material			Length		Weight		Muzzle velocity V ₁₅ (m/s)	Maximum gas pressure (kgf/cm ²)
	Bullet core	Bullet jacket	Cartridge case	Total (mm)	Bullet (mm)	Bullet (g)	Cartridge case (g)		
7,65x17mm	Lead	Tombak	Brass	25	12	4,8	2,6	V _{12,5} =305	1350

7,65mm ROMARM PISTOL

Cartridge Operation
7,65 mm (.32 ACP)
recoil, semi-automatic,
double-action
Feed
detachable box magazine
Magazine capacity
8 rounds
Sight
mechanical fore, blade
rear, U-notch
Weapon Length
168 mm
Barrel Length
91 mm
Line of sight
118 mm
Weight without magazine
0,500 kg
Weight of empty magazine
0,050 kg





Caliber 7,62mm

Caliber	Material			Length		Weight			Muzzle velocity V ₂₅ (m/s)	Maximum gas pressure (kgf/cm ²)
	Bullet core	Bullet jacket	Cartridge case	Total (mm)	Bulet (mm)	Total (g)	Bullet (g)	Cartridge case (g)		
7,62x51	Lead	Tombak	Brass	71,1	28,95	25,46	9,65	11,65	838	3875
7,62x39 Ball	Steel	Bimetal	Steel/Brass	56	26,8	16,8/17,5	8,05	6,8/7,5	710	2800
7,62x39 Tracer	-	Bimetal	Steel	56	28	16,5	7,7	6,8	710	2800
7,62x39 Blank	-	-	Steel	49,4	-	8,8	-	7,3	-	-
7,62x39 FMJ*	Lead	Bimetal	Steel	56	26,8	16,8	8,05	6,8	710	2800
7,62x54R Ball	Steel	Bimetal	Steel/Bimetal	76,91	32,3	23,2	9,75	8,65	820	2900
7,62x54R Tracer	Lead	Bimetal	Steel	76,91	35,4	23,1	9,65	8,65	790	2900
7,62x54R Blank	Steel	-	Steel/Bimetal	53,72	-	10,8	-	8,65	-	-
7,62x54R FMJ*	Lead	Bimetal	Steel	76,91	28,4	23,2	9,75	8,65	820	2900
7,92x57 FMJ*	Lead	Bimetal	Steel	77	28,95	24	11	9,7	750	3200

* Cartridges 7,62x39 mm FMJ, 7,62x54R mm FMJ and 7,92x57 mm FMJ are only for the civil market (hunting cartridges).

7,62mm ROMARM ASSAULT RIFLE

Cartridge	7,62x39 mm	Rate of fire	cyclic, 600 rounds/min
Operation	gas, selective fire	Rifling	4 grooves rh, 1 turn in 240 mm
Locking	rotating bolt		
Feed	detachable box magazine	Weapon Length	870 mm
Magazine capacity	30 rounds	Barrel Length	415 mm
Sight	mechanical fore pillar rear, U notch calibrated from 100÷1000 m	Sight radius	384 mm
		Weight	- without magazine 3,300 kg
Muzzle velocity	715 m/s		- of empty magazine 0,350 kg



7,62mm ROMARM ASSAULT RIFLE - FOLDING BUTT

Cartridge	7,62x39 mm	Rate of fire	cyclic, 600 rounds/min
Operation	gas, automatic	Rifling	4 grooves rh, 1 turn in 240mm
Locking	rotating bolt		
Feed	detachable box magazine	Weapon Length	805/605 mm
Magazine capacity	30 rounds	Barrel Length	305 mm
Sight	mechanical fore pillar rear, U notch calibrated from 100÷500 m	Sight radius	260mm
		Weight	- without magazine 3,100 kg
Muzzle velocity	680 m/s		- of empty magazine 0,350 kg





7,62mm ROMARM LIGHT MACHINE GUN

Cartridge	7,62x39 mm	Muzzle velocity	730 m/s
Operation	gas, automatic	Rate of fire	cyclic, 600 rounds/min
Locking	rotating bolt	Rifling	4 grooves rh, 1 turn in 240mm
Feed	detachable box magazine	Weapon Length	1035 mm
Magazine capacity	30 rounds, optional drum magazine 75 rounds	Barrel Length	590 mm
Sight	mechanical fore pillar rear, U notch calibrated from 100÷1000 m	Sight radius	560 mm
		Weight	
		- without magazine	4,680 kg
		- of empty magazine	0,320 kg

7,62mm ROMARM SNIPER RIFLE

Cartridge	7,62x54R mm	Muzzle velocity	830 m/s
Operation	gas, semiautomatic	Barrel	4 grooves rh, 1 turn in 320 mm
Locking	rotating bolt	Weapon Length	1150 mm
Feed	detachable box magazine	Barrel Length	620 mm
Magazine capacity	10 rounds	Line of sight	590 mm
Sight	- mechanical fore pillar; rear, U Notch calibrated from 100÷1200 m - optical 4×6° telescope, calibrated from 100÷1300 m	Weight	
		- without magazine	4,060 kg
		- of empty magazine	0,210 kg



7,62mm ROMARM HEAVY MACHINE GUN

Cartridge	7,62x54R mm	Rifling	4 grooves rh, 1 turn in 240 mm
Operation	gas, automatic	Weapon Length	
Locking	rotating bolt	shoulder closed	1196 mm
Feed	belt, 200 rounds	Barrel Length	
Sight	mechanical fore, pillar; rear, U notch calibrated from 100÷1500 m	- without suppressor	605 mm
		- with suppressor	658 mm
Rate of fire	cyclic, 600-650 rds/min	Sight radius	660 mm
Muzzle velocity	825 m/s	Weapon weight (with bipod)	7,500 kg
		Barrel weight	2,400 kg



7,62mm ROMARM COMMANDO MACHINE GUN

Cartridge	7,62x54R mm	Muzzle velocity	800 m/s
Operation	gas automatic	Barrel	4 grooves rh, 1 turn in 240 mm
Locking	rotating bolt	Weapon Length	1100/810 mm
Feed	belt, 100 rounds	Barrel Length	510 mm
Sight	mechanical fore, pillar; rear, U notch	Line of sight	570 mm
		Weapon weight	8,250 kg





Caliber 9mm

Caliber	Material			Length		Weight			Muzzle velocity V ₁₆ (m/s)	Maximum gas pres- sure (kgf/cm²)
	Bullet core	Bullet jacket	Cartridge case	Total (mm)	Bulet (mm)	Total (g)	Bullet (g)	Cartridge case (g)		
9x18mm MAKAROV	Lead or Steel	Bimetal	Brass	24,95	12,3	10,65/10,2	6,45/6,0	3,85	V _{12,5} 350	1800
9X19mm PARABELLUM	Lead	Bimetal	Brass	29,6	15,2	12,6/12,0	8/7,45	4,2	385/370	2345
9X19mm SAFETY	-	-	Brass	29,6	16	10,1	5,45	4,2	435	2345
9X19mm BLANK	-	-	Brass	28	-	5	-	4,4	-	-
9X19mm SUBSONIC	Lead	Bimetal	Brass	29,6	16	12,5	8	4,2	305	min. 1350
9X19mm LUGER	Lead	Bimetal	Brass	29,6	15,65	12,2	7,45	4,2	380	2345



9mm ROMARM SUBMACHINE GUN

Specification	LP 7	LP 7C*
Caliber	9x19 mm Parabellum	9x19 mm Parabellum
Operation	blowback	blowback
Feed	from magazine, 30 round capacity	from magazine, 30 round capacity
Firing mode	single shot, automatic fire	semi-automatic shot by shot
Sights	rear: adjustable for 50 m; 100 m front: front sight	rear: adjustable for 50 m; 100 m front: adjustable front sight
Effective range	100 m	100 m
Maximum range	1800 m	1800 m
Weapon length	stock extended: 650 mm stock folded: 427 mm	427 mm
Weight of weapon without magazine	2,7 kg	2,7 kg

* LP7C submachine gun is designed for the civil market



9mm ROMARM PISTOL

Caliber	9 × 19 mm Parabellum
Operation system	short recoil operation
Trigger system	double/single action
Magazine capacity	15 rounds
Frame	steel
Grip	polymer
Length between sights	152 mm
Overall length	206,5 mm
Height	139 mm
Width	36 mm
Barrel length	112 mm
Barrel rifling	6 grooves
Weight without magazine	900 g
Weight of empty magazine	90 g
Effective range	50 m
Maximum range	1500 m
Standard set	PISTOL cal. 9 x 19 mm with magazine



Caliber 12,7mm
12,7x99mm AMMUNITION

Type	Use	Bullet weight (g)	Accuracy at 300m (cm)	Specific info	Muzzle velocity at 24m (m/s)
Ball	For use in all 12,7x99mm machine guns, such as: .50 Z03 M.G., .50 Browning M2, Browning M85, etc.	42	$R_{50} \leq 19$	Bullet jacket made of brass (CuZn10) plated steel Core made of mild steel	$V=886 \pm 9$
Armor Piercing (AP)		45	$R_{50} \leq 19$	Armor piercing capacity through 20mm thick armor at 100 m: 90%	$V=886 \pm 9$
Tracer Incendiary (IT)		42	$R_{50} \leq 19$	Tracer capacity at 1500 m: 80% Incendiary capacity of gasoline behind 15 mm thick armor at 70 m: 80%	$V=886 \pm 9$
Tracer (T)		42	$R_{50} \leq 19$	Tracer capacity at 1500 m: 80%	$V=886 \pm 9$
Armor Piercing Incendiary (API)		45	$R_{50} \leq 19$	Armor piercing capacity through 20 mm thick armor at 100 m: 90% Incendiary capacity of gasoline behind 15 mm thick armor at 70 m: 80%	$V=886 \pm 9$
Armor Piercing Incendiary Tracer (APIT)		42	$R_{50} \leq 19$	Armor piercing capacity through 20 mm thick armor at 100 m: 90% Incendiary capacity of gasoline behind 15 mm thick armor at 70 m: 80% Tracer capacity at 1500 m: 80%	$V=886 \pm 9$



12,7x99mm ROMARM MACHINE GUN

Cartridge:	12,7 x 99 mm
Operation:	gas operated
Feed:	belt, "KRAB" type; 5 times reused
Firing mode:	single shot, automatic fire
Sights:	rear: folding leaf front: front sight
Effective range:	1800 m
Maximum range:	6700 m
Weapon length:	1630 mm
Barrel length:	1003 mm
Rate of fire:	520-600 rds/min
Weight of weapon:	32,5 kg
Mean expected barrel life:	7000 rds





12,7x108mm AMMUNITION

Type	Use	Bullet weight (g)	Rim diameter (mm)	Round length (mm)	Muzzle velocity at 25m (m/s)
Cartridge with B106 Ball Bullet	For use in all 12,7x108 mm machine guns, such as: DShKM, NSV, KORD, IAKB	48	13,9	147	$V_{25}=810\sim825$
Armor Piercing (AP)		48	13,9	147	$V_{25}=810\sim825$
Armor Piercing Tracer (APT)		44	13,9	147	$V_{25}=810\sim825$
Tracer (T)		44	13,9	147	$V_{25}=810\sim825$
Armor Piercing Incendiary (API)		48	13,9	147	$V_{25}=810\sim825$
Armor Piercing Incendiary Tracer (APIT)		44	13,9	147	$V_{25}=810\sim825$
Blank	Designed to be fired from the DShKM-type machine gun, with recoil hardener system and a special feeding device	-	14,05	110	-



12,7x108mm ROMARM MACHINE GUN



- Cartridge:

Operation:

Feed:

Firing mode:

Sights:
- Effective range

Maximum range

Weapon length

Barrel length:

Rate of fire:

Weight of weapon:

Mean expected barrel life:

Weight of tripod:
- 12,7 × 108 mm

gas operated

belt

automatic fire

rear: folding leaf

front: front sight

2000 m

7000 m

1590 mm

1065 mm

520 to 600 rds/min

33 kg

7000 rds

60 kg
- PACKING:

Machine gun, Tripod and Accessories:

Wooden Box:

Net/Gross Weight:

Pallet for 6 products:

Dimensions:

Net/Gross Weight:
- 1650 × 560 × 430 mm

130/168 kg

1650 × 1120 × 1410 mm

780/1038 kg



Caliber 14,5mm

Type	Use	Bullet weight (g)	Rim diameter (mm)	Round length (mm)	Muzzle velocity at 25m (m/s)
BALL	For use in all 14,5x114 mm machine guns, such as: KPV, KPVT, ZU2 and MR4	64	16,55	156	$V_{25}=980m/s\div995m/s$
ARMOUR PIERCING (AP)		64	16,55	156	$V_{25}=980m/s\div995m/s$
ARMOUR PIERCING TRACER (APT)		59	16,55	156	$V_{25}=995m/s\div1015m/s$
TRACER (T)		59	16,55	156	$V_{25}=995m/s\div1015m/s$
ARMOUR PIERCING INCENDIARY (API)		64	16,55	156	$V_{25}=980m/s\div995m/s$
ARMOUR PIERCING INCENDIARY TRACER (APIT)		59	16,63	156	$V_{25}=995m/s\div1015m/s$



14,5mm ROMARM MACHINE GUN

The 14,5 mm Machine Gun is a powerful automatic weapon both mobile and stationary, fitted to the armoured vehicles. It comes on MULTIFUNCTION and UNIVERSAL MOUNTS or Anti-Aircraft twin-barreled gun and quadruple gun. It is designed for combat against the light armored targets, enemy's weapon systems or troops. It fires all types of cartridges: API, APIT, BALL, AP, T, APT, HC-API.

Effective range	3000 m		
Maximum range	8000 m		
Armour piercing capacity	20 mm armor plate at 20 obliquity at 300 m		
Sights	mechanical		
Cartridge	14,5 x 114 mm		
Operation	short recoil operation	Firing mode	automatic fire
Feed system	belt feed (right, left)	Belt capacity	10 rounds
Muzzle velocity	995 m/s	Weapon length	1980 mm
Barrel length	1342 mm	Rate of fire	450÷600 rds/min
Weight of weapon	50,2 kg		
PACKING			
Wooden box dimensions	1860 x 750 x 670 mm		
Net/Gross weight	210/240 kg		

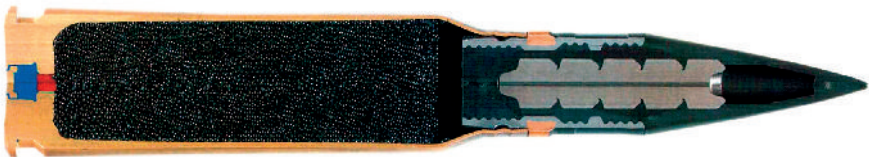


Caliber 20mm



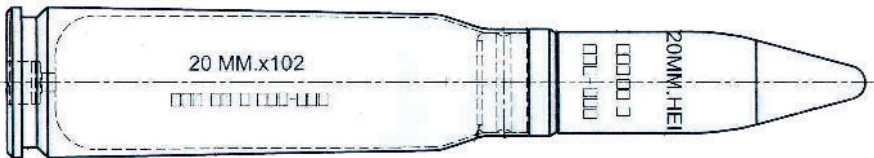
x102mm FAP PROJECTILE

The total length of the round	max.168,2 mm	Muzzle velocity of the projectile	1050 ±20 m/s
Weight of the complete round	approx. 260 ±2 g	The mean pressure, max	≤ 4 550 kgp/sqcm
FAP Projectile weight	102 ±3 g	Range of the temperatures of use	- 54° ÷ +71°C
Penetrator weight	60 g	Optimum range	3 000 m
Penetrator material	tungsten alloy	(the distance of straight fire)	
Diameter of the projectile	max. 19,96 mm;	Packing	metal boxes
Diameter of the projectile ring	21,03-0,10 mm;		
Powder	spherical		



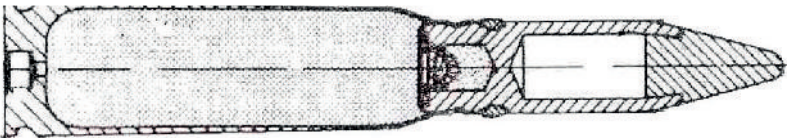
x102mm HEI PROJECTILE

The total length of the round	168,02 mm.	The maximum pressure	4 254,57 kg/cm2
Weight of the complete round	approx. 258 g	Range of the temperatures of use	- 30° ÷ +51°C
HEI Projectile weight	101,4±3 g;	Optimum range	3 000 m
Diameter of the projectile	19,96 mm;	(the distance of straight fire)	
Diameter of the ring	21,03-0,10 mm	Packing	metal boxes
Powder	spherical		
Muzzle velocity of the projectile	1030 ±15 m/s		



x102mm TP-T PROJECTILE

The total length of the round	max.168,02 mm	Range of the temperatures of use	- 54° ÷ +60°C
Weight of the complete round	approx. 254 g	Optimum range	3 000 m
TP-T Projectile weight	95 ±3 g	(the distance of straight fire)	
Diameter of the projectile	max. 19,96 mm	Tracer performance	min. 1,9 sec
Powder	spherical	Packing	metal boxes
Muzzle velocity of the projectile	1030 ±15 m/s		
The maximum pressure	4254 kgp/sqcm		





Caliber 23mm

Gun type:		Aircraft Gun GSh-23 and GSh-23L		
Type of projectile	Measuring Unit	EXPLOSIVE INCENDIARY OFZ HE-I	ARMOUR PIERCING INCENDIARY BZA AP-I	TRACER FOR TRAINING TP - T
Muzzle velocity	m/s	720	720	720
Average maximum pressure	kgf/ cm ²	3000	3000	3000
Total length	mm	200,53	200,66	200,53
Cartridge case		115	115	115
Projectile		102,5	98,5	105,8
Total weight	kg	0,329	0,331	0,329
Cartridge case with propelling charge		0,155	0,157	0,155
Projectile (without fuze)		0,174	0,174	0,174
Fuze type	-	B-23A	-	DUMMY
Blasting charge	-	A-IX-2	DU-5	-
Propelling charge	-	4/7Tgr 0,037	4/7Tgr 0,037	4/7Tgr 0,037
Tracer burning time	s	-	-	Min. 4



ROMARM AIR TO AIR CANNON

The two-barrel cal. 23 x 115 mm air to air cannon is designed to be mounted on an aircraft fighter. It is intended for air defense and against ground targets.



Caliber	23 mm	Barrel inner diameter	
Rate of fire (normal conditions)	3000÷3400 rds/min	On gaps	23,7+0,1 mm
Muzzle velocity	715 ±15 m/s	On full	23+0,1 mm
Mass		Triggering	electric
- cal. 23 x 115mm Cannon	49,2 kg	Cocking	manual pyro-cartridge
- cal. 23 x 115 mm Cannon with localizers	50 kg	Guaranteed number of rounds to be fired (with the use of the pertaining set of spare parts)	minimum 4000 rounds/min (to this number there are allowed max. 200 pyrotechnic cockings from which 80 without ammunition)
Length		Packing	1 wooden box with 1 piece
cal. 23 x 115mm Cannon	1387 mm	Wooden box dimensions (Llxhxx)	1673 x 345 x 319 mm
cal. 23 x 115 mm Cannon with localizers	1537 mm	Net/Gross weight:	58,5/81,5 kg
Breadth	165 mm		
Height 1	168 mm		
- barrel length	1000 mm		
- number of threads	10		
- threads pitch	575 mm		
- threads breadth	4,8 mm		



Caliber 25mm



APFSDS-T x137mm

Armour Piercing Fin Stabilised Discarding Sabot with Tracer

Total length round	223 mm
Mass of round	437 g
Mass of projectile	130 g
Propellant	NC single base
Muzzle velocity	1445 m/s
Cartridge case	Steel
Temperature range (functional)	-30°C to +50°C
Time of flight	1000 m 0,75 s 2000 m 1,57 s

MAIN FEATURES

Performance

- Firing mode
- Safety
- Environment
- Transport/Storage
- Gun/System
- Packing

Short time of flight
Defeats armour at low impact angles at extended ranges
Single shot and automatic mode
Intensive munition (no HE)
No toxic elements (no DU)
UN Classification 1.4C
Incl. KBA, M242, M811 sealed metal boxes.

FAPDS-T x137mm

Frangible Armour-Piercing Discarding Sabot Shell with Tracer

Total length round	223 mm
Mass of round	440 g
Mass of projectile	150 g
Propellant	NC single base
Muzzle velocity	1310 m/s
Cartridge case	Steel
Temperature range (functional)	-30°C to +50°C
Time of flight	1000 m 0,82 s 2000 m 1,78 s
Tracer distance	< 2500 m

MAIN FEATURES

Performance

- Firing mode
- Safety
- Environment
- Transport/Storage
- Packing

Excellent against soft and semiarmored targets
Single shot and automatic mode
No ricochet, no duds (no HE)
No pyrochemical substances
UN Classification analogous TP-T
sealed metal boxes.

TPDS-T x137mm

Target Practice Discarding Sabot Shell with Tracer

Total length round	223 mm
Mass of round	425 g
Mass of projectile	121 g
Propellant	NC single base
Muzzle velocity	1445 m/s
Cartridge case	Steel
Temperature range (functional)	-30°C to +50°C
Time of flight	1000 m 0,82 s 2000 m 2,03 s
Tracer time	1,8 s

MAIN FEATURES

Performance

- Firing mode
- Safety
- Environment
- Transport/Storage
- Gun/System
- Packing

Warshot trajectory match to tactical ranges
Single shot and automatic mode
Intensive munition (no HE)
No toxic elements
UN Classification 1.4C
Incl. KBA, M242, GAU12, M811 sealed metal boxes.



Caliber 30mm

Gun type	Unit	NAVAL GUN NN-30 AND AK-230			NAVAL GUN AK-306 AND AK-630				TOWED GUN AA 2X30 Md. 80	
Type of projectile		(OF-83) HE	(F-83) HE	(BR-83) T	(OF-84) HE	(OR-84) HE-T	TP	TP - T	(OR-83R) HE-T	(BZR-83R) API-T
Maximum range	m	3500	3500	3500	3500	3500	3500	3500	3500	3500
Muzzle velocity	m/s	1050	1050	1050	890	890	890	890	1050	1050
Average max pressure	kgf/ cm2	3100	3100	3100	3200	3200	3200	3200	3100	3100
Total length	mm	304	304	305	292	292	292	292	305	304
Cartridge case		210	210	210	165	165	165	165	210	210
Projectile		129	131	120	127	127	127	127	135	119
Total weight	kg	1,061	1,066	1,061	0,837	0,833	0,837	0,833	1,076	1,073
Cartridge case with propelling charge		0,705	0,706	0,704	0,447	0,446	0,447	0,446	0,716	0,713
Projectile		0,356	0,360	0,357	0,390	0,387	0,390	0,387	0,360	0,360
Fuze type	-	MG-30	MD-30	-	FC-30	FC-30	DUMMY	DUMMY	MG-30	-
Blasting charge	-	A-IX-2	A-IX-2	-	A-IX-2	A-IX-2	-	-	A-IX-2	DU-5
Propelling charge	-	6/7 BPgr	6/7 BPgr	6/7 BPgr	6/7 FL-M	6/7 FL-M	6/7 FL-M	6/7 FL-M	6/7 BPgr	6/7 BPgr
Self-destruction time	s	12-17	12-18	-	11÷19	11÷19	-	-	12-17	-
Tracer burning time	s	-	-	min. 8	-	min. 10	-	min. 10	min. 9	min. 4



Caliber 35mm

HEI - HIGH EXPLOSIVE INCENDIARY

Main Characteristics:
Round total weight - 1572 g
Projectile weight - 550 g
Muzzle velocity - 1174 m/s



TP-T - TARGET PRACTICE WITH TRACER

Main Characteristics:
Mass of round - 1572 g
Mass of projectile - 550 g
Muzzle velocity - 1174 m/s





7,62mm/5,45mm ROMARM SEMI-AUTOMATIC RIFLE

Cartridge: 7,62 x 39 mm / 5.45x39 mm
 Variants: DS - box magazine with cartridges on two rows

Operation: SS - box magazine with cartridges on a row
 Locking: gas, semiautomatic
 Feed: rotating bolt
 Magazine capacity: detachable box magazine
 - optional: 5 or 10 rounds box magazine

Sight : mechanical; fore, pillar; rear, U-notch
 - rail for mounting optical sighting devices

Weapon length: 870 mm
 Barrel length: 415 mm
 Sight radius: 384 mm
 Weight without magazine: 3,300 Kg
 Weight of empty magazine: 0,350 Kg



7,62mm ROMARM SEMI-AUTOMATIC PISTOL

Cartridge: 7,62 x 39 mm
 Operation: gas, semiautomatic
 Locking: rotating bolt
 Feed: detachable box magazine
 Magazine capacity: 30-rounds magazine
 - optional: 5 or 10 rounds box magazine

Sight : mechanical; fore, pillar; rear, U-notch

Models: S / X-S / XX-S
 Weapon length: 520 mm / 415 mm / 370 mm
 Barrel length: 295 mm / 194 mm / 150 mm

Sight radius: 260 mm / 160 mm / 255 mm
 Weight without magazine: 3,100 Kg/2,300 Kg/ 2,150 Kg
 Weight of empty magazine: 0,350 Kg



7,62mm ROMARM SEMI-AUTOMATIC SNIPER RIFLE

Cartridge: 7,62x54R mm
 Operation: gas, semiautomatic
 Locking: rotating bolt
 Feed: detachable box magazine
 Magazine capacity: 10 rds.
 Sight: - mechanical: fore, pillar ; rear, U-notch
 - optional: 4x6° telescope

Weapon length: 1150 mm
 Barrel length: 620 mm
 Line of sight: 590 mm
 Weight without magazine: 4,100 Kg
 Weight of empty magazine: 0,210 Kg
 Weight of telescope : 0,600 Kg



7,62mm ROMARM PUMP ACTION RIFLE

Cartridge: 7,62 x 39 mm
 Operation: hand operated
 Locking: rotating bolt
 Feed: detachable box magazine
 Magazine capacity: optional: 5 or 10 rounds box magazine
 Sight : mechanical; fore, pillar; rear, U-notch

Rail for mounting optical sighting devices
 Weapon length: 910 mm
 Barrel length: 415 mm
 Sight radius: 425 mm
 Weight without magazine: 3,300 Kg
 Weight of empty magazine: 0,200 Kg



7,62mm ROMARM SEMI-AUTOMATIC RIFLE

Cartridge: 7,62 x 39 mm
 Operation: gas, semiautomatic
 Locking: rotating bolt
 Feed: detachable box magazine with cartridges on a row
 Magazine capacity: 10 rounds box magazine
 Sight : mechanical; fore, pillar; rear, U-notch

Rail for mounting optical sighting devices
 Weapon length: 870 mm
 Barrel length: 415 mm
 Sight radius: 260 mm
 Weight without magazine: 3,300 Kg
 Weight of empty magazine: 0,200 Kg



7,62mm ROMARM SEMI-AUTOMATIC RIFLE

Cartridge: 7,62 x 39 mm
 Operation: gas, semiautomatic
 Locking: rotating bolt
 Feed: detachable box magazine
 Magazine capacity: optional: 5 or 10 rounds box magazine

Sight : mechanical; fore, pillar; rear, U-notch

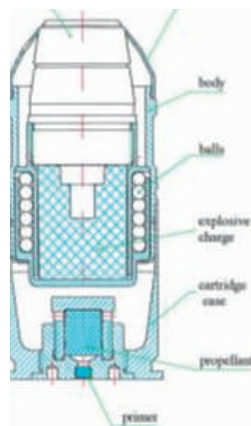




Grenades for under-barrel launchers

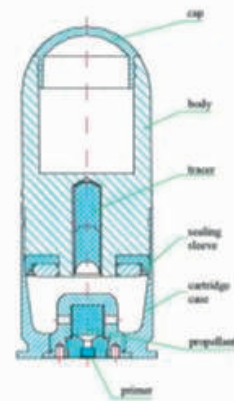
40x46mm HE Grenade

Type	HE
Lenght	94,5 mm
Weight	235 ± 10 g
Filler and weight	Comp. B, 21 g
Fuze	AR 706
Maximum range	400 m
Number of balls	144 pcs
Number of splinters having mass over 0,2 gram	min. 200 pcs
Muzzle velocity	80 ± 2 m/s
Temperature range for firing	-50 °C to +50 °C
Temperature range for storage	-50 °C to +50 °C
Shelf live	10 years
Packing	Metal box, T46 - 72 pcs or wooden box - 72 pcs
IMDG code	1.1F
U.N. Number	0321
Launcher use:	M203, M79, L123A2 UGL UK, GLG40, MZP-1, HK79, HK79A1, GL/40/90



40x46mm TP-T Grenade

Type	TP-T
Lenght	101,5 mm
Weight	230 ± 10 g
Maximum range	400 m
Muzzle velocity	80 ± 2 m/s
Time burning tracer	min. 15 s
Temperature range for firing	-50 °C to +50 °C
Temperature range for storage	-50 °C to +50 °C
Packing	Metal box, T46 - 72 pcs or wooden box - 72 pcs
IMDG code	1.2C
U.N. Number	0328
Launcher use:	M203, M79, L123A2 UGL UK, GLG 40, MZP-1, HK79, HK79A1, GL/40/90



40x47mm Explosive Grenade

Type	Explosive
Operational abbreviation	GETZ 40 mm
Length	105 mm
Cartridge length	47 mm
Weight blow	260 ± 10 g
Weight explosive grenade	200 ± 10 g
Mass load of flinging	0,6 g
Load mass explosion	35 g
Fuze	PD SD-40-1TH
Muzzle velocity	77 ± 2 m/s
Operating temperature	-40 °C to +52 °C
Storage temperature	-40 °C to +52 °C
Method of initiation	Percussion
Ballistic data	Lethal effects on living within a radius of 5 m
IMDG code	1.1F
For Romanian grenade launcher caliber 40 mm model 1977 adapted to submachine gun caliber 7,62 mm model 1963.	



40x47mm Inert Grenade

Type	Target practice tracer
Operational abbreviation	GITZ 40 mm
Length	105 mm
Cartridge length	47 mm
Weight blow	260 ± 10 g
Weight explosive grenade	200 ± 10 g
Launching charge weight	0,5 g
Operating temperature	-40 °C to +52 °C
Storage temperature	-40 °C to +52 °C
Method of initiation	Percussion
Ballistic data	Lethal effects on living only at their impact with the grenade
IMDG code	1.2C





Plastic Explosive HITEX-M

HITEX-M is an explosive composition based on RDX, with inert plastic binder, designed for producing the explosive charges for demolition or for processing or for nonconventional technologies using explosives. The product is marked with marker p-MNT.

General characteristics:	
Shape	parallelepiped block
Malleability	plasticized body, easy malleable;
Weight of block	1000±5g (500g)
Dimension of block	~ 182x61x59 mm;
Content	85-90%RDX, 10-15% inert plastic binder, 0,5-0,6% marking agent
Operating and storage temp.	-20° to +50°C;
Detonating velocity	min. 7000 m/sec;
Hess shattering	min. 20 mm;
Volume of excavation Trauz	~ min. 330cmc;
Explosive heat	1100-1500 kcal/kg;
Specific volume	900-950l/kg;
Chemical stability at vacuum	≤1cmc/g;
Temperature sensitivity	Self-ignition >200oC;
Impact sensitivity KAST (5kg)	H50>0,25m;
Initiating capacity	electrical caps, non electrical caps, pyrotechnical caps, detonator cord.
Shelf live	5 years
Risk class:	1.1D
Transport number:	0457
Packing:	Each block of 1kg is packed into transparent plastic bag, vacuumed, and into labeled cardboard box. Every identified wooden box contains 20 cardboard boxes (20kg).



RDX

Hexogen is used to fill the fuse caps and for the manufacturing of detonating cords, detonators and mines. Civil and military destination.

General characteristics:	
Appearance	fine white crystals
Melting point	min. 200° C
Ash	max. 0,05%
Acidity (as HNO3)	max. 0,05%
Granulation	

Thru US STD Sieve,%0	Class 1		Class 3		Class 4		Class 5	
	min.	max.	min.	max.	min.	max.	min.	max.
8								
12								
20	96	100						
35					0	40		
50	80	100	30	50				
100	30	90	10	30				
200	5	45	0	20				
325							97	-



Desensitized RDX

Desensitized RDX is used for various types of ammunition. Military destination.

General characteristics:			
Appearance	orange grains or crystals		
Desensitizer	5 ÷ 6,5%	Granulation:	
Humidity and volatile substances	max. 0,1%	over 1,0 mm	max. 1,0%
Acetone insoluble substances	max. 0,25%	0,75 ÷ 1,0 mm	max. 5,0%
Ash	max. 0,15%	0,50 ÷ 0,75 mm	10 ÷ 35%
Silicone dioxide	max. 0,04%	0,30 ÷ 0,50 mm	40 ÷ 60%
Acidity (as H2SO4)	max. 0,05%	0,10 ÷ 0,30 mm	15 ÷ 30%
Melting point	min. 201,5° C	less than 0,10 mm	max. 2,0%
Packing:	the product is packed in polyethylene bags containing 20 kg of 100% product stabilized with 15% water and overpacked in cardboard boxes of 450x310x290 mm.		
Gross weight of the packed product is about 25 kg.			



INFANTRY ARMS AND AMMUNITION





40mm WEAPON AND AMMUNITION SYSTEMS

ROMARM AG 7 DS

The 40mm antitank grenades and explosive bombs launcher is a means of fire landing force and submachine gunners squads in special missions. The launcher is designed for destroying the tanks, truck-borne cannons, any type of car and other armored mean of fire of the enemy, for neutralizing the living force and the fire means of enemy, existing in wooden and earth buildings, of light type or brick buildings.

MAIN TECHNICAL DATA:

Maximum range	
- with hollow round	500 m
- with 40mm explosive bomb	1000 m
- with 60mm explosive bomb	1500 m
Weight	
- without sight mechanism	6,5 kg
- with PGO7V sight mechanism	7,1 kg

Rate of fire	4÷6 rounds/min
Length	
- for firing	908 mm
- for transportation	610 mm
Dangerous area, behind the launcher	70° x 30 m
40 mm grenade launcher, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case.	
Kits for medium and capital repairs can be delivered on customer's order.	
5 pieces of 40 mm launchers with individual kits are packed in wooden case	
Dimensions of case	1240x640x440 mm
Gross weight	~ 100 kg
Net weight	~ 60 kg



ROMARM AG 7 S

The 40mm antitank grenades and explosive bombs launcher is a means of fire of infantry subunits and landing force. The launcher is designed for destroying tanks, truck-borne cannons, any type of car and other armored mean of fire. The launcher can also be used for neutralizing the personnel and the firing means of the enemy.

MAIN TECHNICAL DATA

Maximum range	
- with hollow round	500 m
- with explosive bomb 40 mm	1000 m
- with explosive bomb 60 mm	1500 m
Weight	
- without sight mechanism	6 kg
- with IOAG7S sight mechanism	7,1 kg
- magnification	x2.7
- field of view	13°
- range of elevation	0° ÷ 36°

Rate of fire	4÷6 rounds/min
Length of the launcher	908 mm
Dangerous area	70° x 30 m

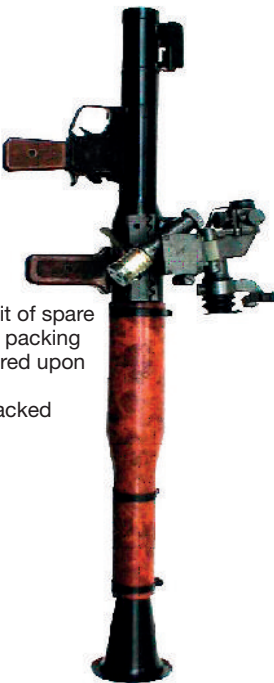
40 mm grenade launcher, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case. Kits for medium and capital repairs can be delivered upon customer's order.

5 pieces of 40 mm launchers with individual kits are packed in wooden case

Dimensions of case 1240x640x440 mm

Gross weight ~100 kg

Net weight ~ 60 kg



OG 7 - 40mm HIGH EXPLOSIVE STEEL ROUND WITH M6-R FUZE

It is used with the AG 7 Portable Antitank Grenade Launcher

TECHNICAL CHARACTERISTICS

Caliber	40 mm
Net weight (round fully equipped):	1,725 kg
Fuze:	M6-R
Propelling charge:	PG-7PM
Maximum medium pressure:	900 kgf/cm2
Maximum range:	1000 m

Precision	
- A pr/X:	≤1/50
- A pd/X:	≤1/200 PACKING
Packing:	
Wooden case	containing 12 fully equipped rounds
Full case weight:	34 kg
Case overall dimensions:	705x490x275 mm





PG 7 V - with 85mm CUMULATIVE ANTITANK GRENADE

The round is designed to be used with the 40 mm Portable Antitank Grenade Launcher. Also, it is used against all the modern types of the enemy's armored means.



Caliber of grenade	
on the guiding part in launcher	40 mm
on the grenade body	85 mm
Length	
grenade	640 mm
round	925 mm
Speed of grenade	
initial	120 m/s
maximum	300 m/s
Shooting distance	
for direct round when the height of the objective is 2 m	330 m
maximum from support	500 m
Shooting rate	4-6 rounds/min
Piercing capacity	260 mm armoured plate
Precision at 300 m	
in height	< 0,6 m
in direction	< 0,8 m
Exploitation temperature	-40°C to +50°C

PG 7 VM - with 70mm CUMULATIVE ANTITANK GRENADE

The round is designed to be used with the 40 mm Portable Antitank Grenade Launcher. Also, it is used against all the modern types of the enemy's armored means.



Caliber of grenade	
on the guiding part in launcher	40 mm
on the grenade body	70,5 mm
Length	
grenade	671 mm
round	959 mm
Speed of grenade	
initial	140 m/s
maximum	350 m/s
Shooting distance	
for direct round when the height of the objective is 2 m	330 m
maximum from support	500 m
Shooting rate	4-6 rounds/min
Piercing capacity	300 mm armoured plate
Precision at 300 m	
in height	< 0,5 m
in direction	< 0,6 m
Exploitation temperature	-40°C to +50°C

PG-7VLR HEAT FOR RPG-7 LAUNCHER

The round is designed for destroying all the modern types of tanks, self-propelled artillery units and other mechanized and armored means of the enemy.



Caliber of grenade	
on the guiding part in launcher	40 mm
on the grenade body	93 mm
Round length	996 mm
Round weight	2,75 kg
Fuze type	VP-7M

Direct firing range	250 m
Maximum range	300 m
Muzzle velocity	100 m/s
Shooting rate	4-6 rounds/min
Piercing capacity	500 mm
Accuracy	horizontal PE
	vertical PE
Exploitation temperature	-40°C to +50°C

Packing	6 rounds in a wooden box/ 6 grenades and 6 expelling charges packed separately
Size of the box	905x503x298 mm
Weight	40 kg
Class of explosion hazard	1.1F, UN 0180

OG-7 - with 60mm HIGH EXPLOSIVE STEEL BOMB

This active-reactive round is used with the AG 7 Portable Antitank Grenade Launcher.

TECHNICAL CHARACTERISTICS

Caliber:
Net weight (round fully equipped):
Fuze:
Propelling charge:
Maximum medium pressure:
Maximum range:

60 mm
2,300 kg
V5K-MD
PG-7PM
≤ 900 kgf/cm2
1500 m

Precision:

– Apr/X: ≤1/40
– ApdX: ≤1/280

PACKING

Wooden case 12 fully equipped rounds
Full case weight 40 kg
Case dimensions 895x490x280 mm





PG7 – EI - THERMOBARIC

This active-reactive round is designed to be used with the AG 7 Portable Antitank Grenade Launcher

Intended for destroying the enemy emplacements (battlefield fortifications, reinforced building, stone brick or concrete fortifications), vehicles, including light armored and troops.

ROUND CHARACTERISTICS

Caliber	40x105 mm
Weight	4,5 Kg
Length	940 mm

Pressure	≤ 900 Kg/cm²
Max. range	~800 m
Firing rate	4÷6 shots/min.
Precision	$A_{p\ r}/X: \leq 1/40$ $A_{p\ d}/X: \leq 1/250$
Packing	wooden case containing 3 rounds fully equipped and 3 propelling charges PG7-PM separately packed
Full case weight	30 kg
Case overall dimensions	850x470x225 mm



73mm Ammunition

PG-9V

The PG-9 hollow-charge round with the PG-9V antitank round rocket projectile is designed for :
- destroying tanks, self-propelled guns and other armored vehicles
- for neutralising and destroying the living forces of the enemy in field shelters and/or brick-wall fortifications.

Calibre of the rocket projectile	73 mm
Firing range	800 m
For direct round when the height of the target is of 2 m maximum according to the sight	

Weight	
- Rocket projectile	2,6 kg
- Round	4,4 kg
- Muzzle velocity	435 m/s
Precision for 800 m distance	
- on height	< 0,5 m
- on direction	< 0,5 m
Piercing capacity	armoured plate of 300 mm tickness



OG-9 - WITH 73MM HIGH EXPLOSIVE STEEL BOMB

TECHNICAL CHARACTERISTICS

Caliber:	73 mm
Total lenght	930,3 mm
Net weight (round fully equipped):	5,300 kg
Fuze:	UB-2M
Propelling charge:	PG-9P
Maximum medium pressure:	≤ 660 kgf/cm2
Maximum range:	5400 m

Precision:	
- $A_{p\ r}/X:$	≤1/140
- $A_{p\ d}/X:$	≤1/500
PACKING	
Wooden case containing	12 fully equipped rounds
Full case weight:	78 kg
Case overall dimensions:	1105x450x305 mm



OG-9 - WITH 73MM HIGH EXPLOSIVE STEEL BOMB

TECHNICAL CHARACTERISTICS

Caliber:	73 mm
Total lenght	806,37 mm
Net weight (round fully equipped):	4,950 kg
Fuze:	UB-2M
Propelling charge:	PG-9P
Maximum medium pressure:	≤ 600 kgf/cm2
Maximum range (at 25 C):	4500 m
Precision:	

- $A_{p\ r}/X:$	≤1/140
- $A_{p\ d}/X:$	≤1/500
PACKING	
Wooden case containing	6 fully equipped rounds with fuze on and 6 propelling charges fully equipped
Full case weight:	55 kg
Case overall dimensions:	800x420x302 mm
Boxes per pallet (full)	6
Pallet dimensions	1200x800x1100 mm
Gross pallet weight	350 kg



60mm MORTARS AND MORTAR BOMBS

ROMARM STANDARD MORTAR LAUNCHER

It has a smooth barrel and it is designed for firing with curved trajectory. It is also designed for fire support of infantry subunits, parachute landing forces and other subunits; It has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the commando observation posts, to set on fire the warehouses, to make passages through the mine fields, to destroy the defense works of enemies.

MAIN TECHNICAL DATA:

Caliber	60 mm
Length of barrel	1080 mm
Firing range:	maximum 3000 m
	minimum 100 m
Vertical firing field	45°÷85°
Horizontal firing field:	
- without moving the bipod	±3°
- moving the bipod	±360°

Rate of fire in the first minute

- without re-aiming

20 rounds/min

Weight of mortar ready for battle

max. 20 kg

out of which:

- barrel with breechblock

about 7,5 kg

- base plate

about 4,7 kg

- optical sight

0,8 kg

60 mm mortar launcher, standard type 1988 model, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case.

Kits for medium and capital repairs can be delivered on customer's order.

1 mortar + 1 individual kit is packed in wooden case:

Dimensions of case 1280x375x440 mm

Gross weight

~75 kg

Net weight

~50 kg

ROMARM LONG RANGE MORTAR LAUNCHER

It has a smooth barrel and it is designed for firing with curved trajectory. It is also designed for fire support of infantry subunits, parachute landing forces and other subunits; It has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the commando observation posts, to set on fire the warehouses, to make passages through the mine fields, to destroy the defense works of enemies.

MAIN TECHNICAL DATA:

Caliber	60 mm
Length of barrel	1300 mm
Firing range: maximum	4500 m
minimum range	100 m
Vertical firing field	45°÷85°
Horizontal firing field:	
- without moving the bipod	±3°
- moving the bipod	±360°

Rate of fire in the first minute

- without re-aiming)

~20 rds/min

Weight of mortar ready for battle

~30 kg

out of witch:

- barrel with breechblock

~11 kg

- bipod

~10 kg

- base plate

~9 kg

- optical sight

0,8 kg

60 mm mortar standard type 2001 model, with the individual kit of spare parts, tools and accessories is delivered in its wooden packing case.

Kits for medium and capital repairs can be delivered on customer's request.

1 mortar + 1 individual kit are packed in wooden case:

Dimension of case 1550x490x450 mm

Gross weight

~190 kg

Net weight

~62 kg

ROMARM COMMANDO MORTAR LAUNCHER

It is an individual means of fire;

It is a mortar with smooth barrel, for firing with curved trajectory; It is designed for subunits of navy, air force, as well as for intervention units;

It has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the commando observation posts, warehouses of weapon and ammunition, fuel and lubricants

MAIN TECHNICAL DATA:

Caliber	60 mm
Length of barrel	735 mm
Firing range: with explosive bomb	1900 m
Vertical firing field	45°÷85°

Rate of fire in the first minute

- without re-aiming

12 rds/min

Weight of mortar ready for battle

max. 8 kg

60 mm mortar, commando type 2001 model, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case.

Kits for medium and capital repairs can be delivered on customer's order.

1 mortar + 1 individual kit is packed in wooden case:

Dimensions of case 1010x280x280 mm

Gross weight

30 kg

Net weight

~22 kg

ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE T-1 - TH-MB-18

The 60 mm illuminating bomb is designed to illuminate the target at night or under low visibility conditions.

Length with fuze T-1 (without cuff protection)	359,66...365,2mm
Length without fuze:	293,76...298 mm
Weight (with fuze, w/out increments):	1,83 kg
Propulsion system:	1 prime charge
	+ 3 increments

Muzzle velocity:

220 ± 3 m/s (max.)

Fuze:

time fuze T-1

Maximum range

2800 m

Illum, intensity

min. 200 000 cd.

Illum, burn time

min 25 s

Stabilized descent speed

max. 4,5 m/s

PYROTECHNIC TIME FUZE T-1

Fuze length with cuff protection

Length of part mounted in ogive

Thread that is screwed into ogive

turns/inch

Weight (without cuff protection)

Way and performance at adjusting

-10÷125 divisions =time 3.5÷46.45 s

-UD - at impact

Packing is done in a wooden case containing 10 pieces of 60 mm illuminating bomb, fully equipped (with evacuation charges, variable propellant charges and time fuze T-1) TH-MB-18 placed in individual sealed package.

Case dimensions

618x438x296 mm

Code 1.2G, UN No 0171

77,43÷81,25 mm
11,57÷12,6 mm
Sp 36,14x10

0,160 kg





ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE ETF-1MT - TH-MB-28

The 60mm illuminating bomb is designed to illuminate the target at night or under low visibility conditions.

Length with fuze ETF-1MT 379,36...384,25mm
Length without fuze: 293,76...295,8 mm
Weight (with fuze, w/out increments): ~2,07 kg
Propulsion system: 1 prime charge + 3 increments
Muzzle velocity: 200 m/s (max.)
Fuze: electronic time fuze ETF-1MT

Maximum range 2800 m
Illum, intensity min. 200 000 cd.
Illum, burn time min. 25 s
Stabilized descent speed max. 4,5 m/s
Temp. limits, firing and storage -32° C to 49° C

ELECTRONIC TIME FUZE ETF-1MT

Fuze length: 98...100 mm
Length of part mounted in ogive: 11,57...12,6 mm
Thread of part buried in ogive: Sp 36,14x10 turns/inch
Weight: 0,285 kg
Power supply Air driven turbine
Adjustable setting time :
- 3.1 s ÷ 99.9 s, with thread 0.1 s, precision 0.05s
Programming is done with wired electronic Programmer.

Each ammunition 60 mm with illuminating bomb, fully equipped (with evacuation charges, variable propellant charges and ETF-1MT fuze) TH-MB-28 is placed in individual sealed package. 10 pieces ammunition 60 mm are placed in a wooden case with dimensions 618x438x296 mm.
Code 1.2 G. , UN No 0171



IR ILLUMINATING MORTAR BOMB - WITH FUZE T-1-TH-MB-20

The 60 mm IR illuminating bomb is designed to illuminate in IR.

Length with fuze T-1 (without cuff protection) 359,66...365,2mm
Length without fuze: 293,76...298 mm
Weight (with fuze, w/out increments): 1,83 kg
Propulsion system: 1 prime charge + 3 increments
Muzzle velocity: 220 ± 3 m/s (max.)
Fuze: time fuze T-1

Maximum range 2800 m
Radiation length 800 ÷ 1000 nm
Illum, burn time min 20 s
Stabilized descent speed max. 4,5 m/s
Temp. limits, firing and storage -40° C to 50° C

PYROTECHNIC TIME FUZE T-1

Fuze length with cuff protection 7,43÷81,25 mm
Length of part mounted in ogive 11,57÷12,6 mm
Thread that is screwed into ogive Sp 36,14x10 turns/inch
Weight (without cuff protection) 0,160 kg
Way of performance for adjusting
-10÷125 divisions =time 3.5÷46.45 s
-UD - at impact

Each ammunition 60 mm with illuminating bomb, fully equipped (with evacuation charges, variable propellant charges and ETF-1MT fuze) TH-MB-20 is placed in individual sealed package. 10 pieces ammunition 60 mm are placed in a wooden case with dimensions 634x444x296 mm.
Code 1.2 G. , UN No 0171



IR ILLUMINATING MORTAR BOMB - WITH FUZE ETF-1MT-TH-MB-30

The 60 mm IR illuminating bomb is designed to illuminate in IR.

Length with fuze ETF-1MT 379,36...384,25mm
Length without fuze: 293,76...295,8 mm
Weight (with fuze, w/out increments): 2,07 kg
Propulsion system: 1 prime charge + 3 increments
Muzzle velocity: 200 m/s (max.)
Fuze: electronic time fuze ETF-1MT

Maximum range 2800 m
Radiation length 800 ÷ 1000 nm
Illum, burn time min. 20 s
IR- Power (min) 150 W/Sr
Stabilized descent speed max. 4,5 m/s
Temp. limits, firing and storage -32° C to 49° C

ELECTRONIC TIME FUZE ETF-1MT

Fuze length: 98...100 mm
Length of part mounted in ogive: 11,57...12,6 mm
Thread of part buried in ogive: Sp 36,14x10 turns/inch
Weight: 0,285 kg
Power supply Air driven turbine
Operation mode Time
Impact (if time set higher than trajectory time)

Adjustable setting time :
- 3.1 s ÷ 99.9 s, with thread 0.1 s, precision 0.05s
Programming is done with wired electronic Programmer.
Each ammunition 60 mm with illuminating bomb, fully equipped (with evacuation charges, variable propellant charges and ETF-1MT fuze) TH-MB-30 is placed in individual sealed package. 10 pieces ammunition 60 mm are placed in a wooden case with dimensions 618x438x296 mm.
Code 1.2 G. , UN No 0171



SMOKE MORTAR STEEL BOMB

Caliber 60 mm
Total length 340 mm
Net weight (round fully equipped): 1,900 kg
Fuze: M6-R
Propelling charge: 1 cartridge + 3 extra charges
Maximum medium pressure: ≤ 360 kgf/cm2
Maximum range: ≈ 2200 m*

Precision:
- A_r/X: ≤1/80
- A_p/X: ≤1/175
*STANDARD TYPE LAUNCHER

Wooden case containing 12 cardboard cases, each case containing one round fully equipped.
Full case weight: 40 kg
Case overall dimensions: 475x330x300 mm



HIGH EXPLOSIVE MORTAR STEEL BOMB

Caliber 60 mm
Total length ≈ 298 mm
Net weight (round fully equipped): 1,500 kg
Fuze: M6R-M
Propelling charge:
- with "Standard" mortar: 1 cartridge + 3 extra charges
- with "Commando" mortar: 1 cartridge + 2 extra charges

Maximum medium pressure: ≤ 360 kgf/cm2
Maximum range: 3000 m
Precision:
- A_r/X: ≤1/90
- A_p/X: ≤1/190

Wooden case containing 12 cardboard cases, each case containing one round fully equipped.
Full case weight: 40kg
Case overall dimensions: 475x330x300 mm





81/82mm MORTARS AND MORTAR BOMBS

ROMARM MORTAR LAUNCHER

It is a mortar with smooth barrel, for firing with curved trajectory. It is designed for fire support of infantry units and/or other sub-units.

It has the following mission: to destroy the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed-wire net, to separate infantry from tanks, to destroy the defense works, to destroy or damage the communication ways, for illuminating and to camouflage by smoke-screen the objectives (ground).

Caliber	81 mm
Length of barrel	1220 mm
Firing range:	
- maximum range with explosive bomb	~4460 m
- minimum range	100 m
Vertical firing field	45°÷85°
Horizontal firing field:	
- without moving the bipod, with barrel at 45°	±3°
- moving the bipod, without moving the base plate	±360°

Rate of fire in the first minute	20 rds/min
- without re-aiming	
Weight of mortar ready for battle	43,5 kg
of which:	
- Barrel with breechblock	16,5 kg
- Bipod	11 kg
- Base plate	15 kg
- Optical sight	0,8 kg

81 mm mortar launcher, 1977 model, together with the kit of spare parts, tools and accessories is delivered in its wooden packing case.

Kits for medium and capital repairs can be delivered on customer's request.

1 mortar + 1 individual kit are packed in wooden case:

Dimension of case	1450x560x400 mm
Gross weight	118 kg
Net weight	77 kg

HIGH EXPLOSIVE MORTAR STEEL BOMB

Caliber:	81 mm
Total length	361 mm
Net weight (round fully equipped):	3,100 kg
Fuze:	M6R
Propelling charge:	1 cartridge
	+ 5 extra charges
Maximum medium pressure:	≤ 650 kgf/cm ²
Maximum range:	~4500 m

Precision:	
- A ¹ /X:	≤1/100
- A ^p /X:	≤1/200

Wooden case containing 10 cardboard cases, each case containing one fully equipped round.

Full case weight:	50 kg
Case overall dimensions:	550x450x285 mm

HE STEEL BOMB WITH ELECTRONIC FUZE

Caliber:	81/82 mm
Total length	~361 mm
Net weight (round fully equipped):	3,100 kg
Fuze:(electronic)	MEF-1
Propelling charge:	1 cartridge
	+ 5 extra charges
Maximum medium pressure:	≤ 650 kgf/cm ²
Maximum range:	~4500 m

Delay of self destruction for max range - after 10 sec.

Precision:	
- A ¹ /X:	≤1/100
- A ^p /X:	≤1/200

Wooden case containing 10 cardboard cases, each case containing one fully equipped round.

Full case weight:	50 kg
Case overall dimensions:	550x450x285 mm

SMOKE MORTAR STEEL BOMB

Caliber	81 mm
Weight	~3,3 Kg
Length	~360 mm
Type of fuse	M6R
Propelling charge	1 cartridge
	+5 extra charges
Pressure	≤ 650 Kgf/cm ²
Max. range	~4300 m

Precision	
- A ¹ /X:	≤1/100
- A ^p /X:	≤1/200

Wooden case containing 10 rounds completely equipped

Weight of full case	53 kg
Overall dimensions of case	550x450x285 mm

ROMARM MORTAR LAUNCHER

It is a mortar with smooth barrel, for firing with curved trajectory. It is designed for fire support of infantry subunits or other sub-units.

It has the following mission: to destroy the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed-wire net, to separate infantry from tanks, to destroy the defense works, to destroy or damage the communication means, for illuminating and to camouflage by smoke-screen the objectives (ground).

Caliber	82 mm
Length of barrel	1220 mm
Firing range:	
- maximum range with explosive bomb	~4460 m
- minimum range	100 m
Vertical firing field	45°÷85°
Horizontal firing field:	
- without moving the bipod, with barrel at 45°	±3°
- moving the bipod, without moving the base plate	±360°

Rate of fire in the first minute	20 rounds/min
- without re-aiming	
Weight of mortar ready for battle	43,5 kg
of which:	
- barrel with breechblock	16,5 kg
- bipod	11 kg
- base plate	15 kg
- optical sight	0,8 kg

82 mm mortar, 1977 model, together with the kit of spare parts, tools and accessories is delivered in its wooden packing case. Kits for medium and capital repairs can be delivered on customer's request.

1 mortar + 1 individual kit are packed in wooden case:

Dimension of case	1450x560x400 mm
Gross weight	118 kg
Net weight	77 kg





ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE ETF-1MT - TH-MB-2

The TH-MB-2 illuminating mortar bomb is designed to illuminate the target at night or under low visibility conditions.

Length with fuze ETF-1MT 377,8 ... 382,4 mm
Length without fuze: 291,8 ... 295 mm
Weight (with fuze, w/out increments): 3,49 kg
Propulsion system: 1 prime charge
+ 3 increments
Muzzle velocity: 199 m/s (max.)
Fuze: electronic time fuze ETF-1MT

PERFORMANCE

Maximum range: 2670 m
Minimum range: 220 m
Illum. intensity: min. 500 000 cd
Illum. burn time: min 35 sec.
Stabilized descent speed: max. 4,5 m/sec.
Temp. limits, firing & storage: -40 to + 50° C

Electronic time fuze ETF-1MT
Fuze length with protection case: 98...100 mm
Length of part mounted in ogive: 11,57...12,6 mm
Thread of part buried in ogive: Sp 36,14x10 turns/inch
Weight: 0,280 kg
Adjustable setting time : 3.1 s ÷ 99.9 s, with thread 0.1 s, precision 0.05 s

10 bombs are packed in a wooden crate.
Fuzes are separately packed in a metal box sealed, 24 pieces/box, and 4 boxes in a wooden case.
Hazard class 1, classification code 1.2 G, UN no.0171.
The number of programmers which can be delivered at a batch is determined by the customer.



ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE T-1 - TH-MB-1

The TH-MB-1 illuminating bomb is designed to illuminate the target at night or under low visibility conditions.

Caliber 82 mm
Length with fuze T-1 (with cuff protection) 357,7 ... 363,6 mm
Length without fuze: 291,8 ... 295 mm
Weight (with fuze, w/out increments): 3,49 kg
Propulsion system: 1 prime charge
+ 3 increments
Muzzle velocity: 199 m/s (max.)
Fuze: time fuze T-1

Maximum range: 2670 m
Minimum range: 220 m
Illum. intensity: min. 500 000 cd
Illum. burn time: min. 35 sec.
Stabilized descent speed: max. 4,5 m/sec.
Temp. limits, firing & storage: - 40 to + 50° C

Pyrotechnic time fuze T-1
Fuze length with cuff protection: 77,43...81,25 mm
Length of part mounted in ogive: 11,57...12,6 mm
Thread that is screwed into ogive: Sp 36,14x10 turns/inch
Weight (w/out cuff protection): 0,160 kg
Way of performance for adjustment: 10...125 divisions - time 3,5 ... 46,45 s
UD - at impact

T-1 fuzes are separately packed in a metal box sealed, 32 pieces/box, and 4 boxes in a wooden case.
Hazard class 1, classification code 1.2 G, UN no.0171.



HIGH EXPLOSIVE MORTAR STEEL BOMB

Caliber: 82 mm
Total length ≈ 361 mm
Net weight (round fully equipped): 3,100 kg
Fuze: M6R
Propelling charge: 1 cartridge
+ 5 extra charges
Maximum medium pressure: ≤ 650 kgf/cm²
Maximum range: ~4500 m

Precision:
- A_p^r/X: ≤1/100
- A_p^d/X: ≤1/200
Wooden case containing 10 cardboard cases, each case containing one round fully equipped.
Full case weight: 53 kg
Case overall dimensions: 605×425×285 mm



SMOKE MORTAR STEEL BOMB

Caliber 82 mm.
Weight ~3,3 Kg
Length ~360 mm
Type of fuse M6R
Propelling charge 1 cartridge
+5 extra charges
Pressure ≤ 650 Kg/cm²
Max. range ~4300 m

Precision
- A_p^r/X: ≤1/100
- A_p^d/X: ≤1/200
Weight of full case 53 kg
Overall dimensions of case 605×425×285 mm





120mm MORTAR BOMBS

ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE ETF-1MT - TH-MB-13

The TH-MB-13 illuminating bomb is designed to illuminate the target at night or under low visibility conditions.

Caliber: 120 mm
Length with fuze ETF-1MT: 673,3...755 mm
Length without fuze: 661,6... 667 mm
Total weight(with fuze, with charge): 16,7...17,62 kg
Propulsion system: 1 prime charge + 6 increments

Muzzle velocity: 275 m/s±3
Fuze: electronic time fuze ETF-1MT

Maximum range: 5500 m at impact
Minimum range: 1060 m
Illum. intensity: min. 900 000 cd
Illum. burn time: min. 45 sec.
Stabilized descent speed: max. 8 m/sec.
Temp. limits, firing & storage: -32° + 49°C / -32° + 49°C

ELECTRONIC TIME FUZE ETF-1MT

Fuze length: max. 100 mm
Length of part mounted in ogive: 11,57...12,6 mm
Thread that is screwed into ogive: Sp 36,14x10 turns/inch

Weight: 0,285 kg
Power supply: air driven turbine
Adjustable setting time: 3,1s ÷ 99,9s, with thread 0,1s, precision 0,05 s
Operation mode: time or impact
Time setting : it is possible through electronic wire programmer that ensures setting, resetting, and set time confirmation.
Operating temperature: -32° to + 49°C

2 evacuation charges and variable propellant charges formed by 2 prime charge and 12 propellant charges introduced in the same wooden case.

The evacuation charges and variable propellant charges are introduced in cardboard boxes and then sealed in polyethylene foil.

Fuzes are separately packed in sealed metal boxes 24 pieces /box, and 4 boxes in a wooden box with dimension 520x490x257 mm. The number of programmers which can be delivered at a batch is determined by the customer.

Hazard class 1, classification code 1.2 G. , UN No 0171



ILLUMINATING MORTAR BOMB

EQUIPPED WITH FUZE T-1 - TH-MB-12

The TH-MB-12 illuminating bomb is designed to illuminate the target at night or under low visibility conditions.

Caliber: 120 mm
Length with fuze T-1: 726,4 ... 735,6 mm
Length without fuze: 661,6 ... 667 mm
Weight (with fuze, w/out increments): 16,66 kg
Propulsion system: 1 prime charge +6 increments

Muzzle velocity: 275 m/s±3
Fuze: time fuze T-1
Maximum range: 5500 m
Minimum range: 1060 m
Illum. intensity: min. 900 000 cd
Illum. burn time: min. 45 sec.
Stabilized descent speed: max. 8 m/sec.
Temp. limits, firing & storage: -40° to + 50°C

PYROTECHNIC TIME FUZE T-1

Fuze length with cuff protection: 77,43...81,25 mm
Length of part mounted in ogive: 11,57...12,6 mm

Thread that is screwed into ogive: Sp 36,14x10 turns/inch
Weight (w/out cuff protection): 0,160 kg
Way of performance for adjustment: 10...125 divisions - time 3,5...46,45 s
UD - at impact

2 evacuation charges and variable propellant charges formed by 2 prime charges and 12 propellant charges introduced in the same wooden case.

The evacuation charges and variable propellant charges are introduced in cardboard boxes and then sealed in polyethylene foil.

Fuzes are separately packed in metal boxes sealed, 32 pieces / box, and 4 boxes in a wooden box with dimension 520x490x257 mm.

The number of programmers which be delivered at a batch is determined by the customer.

Hazard class 1, classification code 1.2 G. , UN No 0171



HIGH EXPLOSIVE LONG RANGE BOMB - WITH PROXIMITY FUZE

Caliber: 120 mm
Total length: ~ 725 mm
Net weight (round fully equipped): ~ 16 kg
Fuze: Proximity
Propelling charge: 1 cartridge + 8 extra charges
Maximum medium pressure: ≤ 1200 kgf/cm²
Maximum range: ~ 7000 m
Height of bursting: 1 ÷ 5 m

Works over any type of terrain: dry or wet soil, sand, snow, swamp, water surface, mountain rock
Packing

Full case weight:
Case overall dimensions:

Wooden case containing 2 rounds fully equipped in cardboard cases.
50 kg
950x360x240 mm

HIGH EXPLOSIVE MORTAR STEEL BOMB

Caliber: 120 mm
Total length: ~ 680 mm
Net weight (round fully equipped): 16 kg
Fuze: M6R
Propelling charge: 1 cartridge + 6 extra charges
Maximum medium pressure: ≤ 1030 kgf/cm²
Maximum range: ~ 6500 m

Precision:
- A_r/X: ≤1/125
- A_p/X: ≤1/250

Wooden case containing 2 rounds fully equipped in cardboard cases
Full case weight: 50 kg
Case overall dimensions: 950x360x240 mm





100mm ARTILLERY AMMUNITION

GUN TYPE		D-10 SERIES TANK GUNS; FIELD GUN BS-3 (MD 44, MD 53); AA KS-19; TOWED ANTI-TANK GUN M77; COAST GUN (YUGOSLAVIA); T59 (CHINA); SELFGUN		
TYPE OF PROJECTILE		HIGH EXPLOSIVE OF-412 HE	100 mm APFSDS-T	ARMOUR PIERCING TRACER BR-412B AP-T
PROPELLING CHARGE		FULL	SPECIALY	
MAXIMUM RANGE	m	19800	5000	4000
MUZZLE VELOCITY	m/s	900	1400	887
AVARAGE MAXIMUM PRESSURE	kgf/cm2	3000	3700	3000
TOTAL LENGHT		1095	1060	992
CARTRIDGE CASE	mm	695	695	
PROJECTILE	mm	429	584	
TOTAL WEIGHT	kg	30,32	21,3	30,6
CARTRIDGE CASE WITH PROPELLING CHARGE	kg	14,72	15,5	
PROJECTILE	kg	15,6	5,8	
FUZE TYPE		V-429	-	
BLASTING CHARGE		TNT	-	A-IX-2
PROPELLING CHARGE		NDT 3 18 / 1	M-30	NDT3 18/1
POWER OF PIERCING	mm	-	425 mm at 1000 m 90 °	
SELFDISTRUCTION TIME	s	-	-	
SELFDISTRUCTION RANGE	m	-	-	
PACKING		WOODEN CASE	FIBER CONTAINER IN WOODEN CASE	
NO. OF ROUNDS PER CASE	pcs	2	2	
CASE DIMENSIONS	mm	1200 x 445 x 265	1200 x 405 x 215	
GROSS WEIGHT	kg	85	70	



130mm ARTILLERY AMMUNITION

GUN TYPE		FIELD GUN M-46 ; TOWED GUN Md. 82	
TYPE OF PROJECTILE		HIGH EXPLOSIVE HE (OF-482M)	HIGH EXPLOSIVE HE (OF-482M)
PROPELLING CHARGE		FULL-VARIABLE	REDUCED-VARIABLE
MAXIMUM RANGE	m	26800	22000
MUZZLE VELOCITY	m/s	930 / 810	705 / 525
AVARAGE MAXIMUM PRESSURE	kgf/cm2	3150	2700 / 1100
TOTAL LENGHT		NON-COUPLED	NON-COUPLED
CARTRIDGE CASE	mm	846	846
PROJECTILE	mm	676	676
TOTAL WEIGHT	kg	59	52
CARTRIDGE CASE WITH PROPELLING CHARGE	kg	25,6	18,6
PROJECTILE	kg	33,4	33,4
FUZE TYPE		V-429	V-429
BLASTING CHARGE		TNT	TNT
PROPELLING CHARGE		NDT 3 23 / 1	9 / 7 + 12 / 1 TR



152mm ARTILLERY AMMUNITION

GUN TYPE		HOWITZER GUN Md. 37 AND HOWITZER Md. 81	
TYPE OF PROJECTILE		HIGH EXPLOSIVE (OF-540) HE	HIGH EXPLOSIVE (OF-540) HE
PROPELLING CHARGE		FULL-VARIABLE CHARGE	REDUCED-VARIABLE CHARGE
MAXIMUM RANGE	m	17000	13000
MUZZLE VELOCITY	m/s	655 / 462	425 / 282
AVARAGE MAXIMUM PRESSURE	kgf/cm2	2350 / 900	1800 / 750
TOTAL LENGHT		NON-COUPLED	NON-COUPLED
CARTRIDGE CASE	mm	547	547
PROJECTILE	mm	706	706
TOTAL WEIGHT	kg	59,28	54,26
CARTRIDGE CASE WITH PROPELLING CHARGE	kg	15,72	10,70
PROJECTILE	kg	43,56	43,56
FUZE TYPE		RGM-2	RGM-2
BLASTING CHARGE		TNT	TNT
PROPELLING CHARGE		NDT 3 16 / 1	4 / 1 V / A + 7 / 7





HAND GRENADES WITH VARIOUS EFFECTS

F-1 - DEFENSIVE HAND GRENADE

The defensive hand grenade is designed to destroy the enemy in unsheltered areas and in light camp works. The grenade is of explosive type and the effect is due to the iron cast body break as a result of charge explosion.

Grenade type	defensive
Function	fragmentation
Number of fragments	no less than 800 pcs
Diameter of the grenade	max. 56 mm

Weight of the grenade with fuse
Weight of the fuse
Weight of explosive charge
Length of the grenade with fuse
Delay time
Throwing distance

max. 0,566 kg
max. 0,055 kg
max. 0,060 Kg TNT
max. 100 mm
4-5,5 s
35-45 m



M92 - OFFENSIVE HAND GRENADE

The offensive hand grenade is designed to confuse the unsheltered living force of the enemy by noise, blast and light chips. The grenade is of explosive type and the effect is due to the body break and the breaking up of a steel sheet spiral cover as a result of charge explosion.

Calibre of the grenade	max. 61 mm
Weight of the grenade with fuse	max. 0,255 kg
Weight of the fuse	max. 0,055 kg
Length of the grenade	max. 86 mm

Length of the grenade with fuse
Delay time of the fuse
Hand-launching distance

max. 122 mm
4-5,5 s
35-45 m

GMM - MULTIFUNCTIONAL HAND GRENADE

The multifunctional hand-grenade is designed to eliminate the personnel from the fight, to punch the light armours and to destroy the light constructions.

The multifunctional hand-grenade can be used in the following variants:

- defensive hand-grenade;
- offensive hand-grenade;
- cumulative-explosive grenade.

The action of the grenade is produced by:

- blast;
- splinters;
- destroying of light constructions and armours.

a) Defensive hand-grenade:	
Number of splinters	1500 pieces
Operation radius of the splinters	max. 30 m
Weight with fuse	570 g
Fuse typ	FGM-1
Delay-time	3-4,5 sec.

b) Offensive hand-grenade:	
Number of splinters	200 pieces
Operation radius with lethal effect	5 m
Safety radius for the fighter	25 m
Weight with fuse	150 g

c) Cumulative - explosive grenade:	
Cumulative effect:	
-it punches steel-armours with a tickness of 30 mm	
Explosive effect :	
-it destroys light metallic profile constructions;	
- splinters;	

Fuse type	FGP-1
Delay - time	9,5-12 sec.



MULTIPLE CONSTERNATION GRENADE

The multiple consternation grenade allows surprising the opposition by creating multiple effects of consternation in the tactical field . It can be used in urban areas.

Total weight of the grenade (with fuse)	0,300±0,010 kg
Weight of the fuse FGM-T	0,054±0,005 kg
Weight of a load of consternation	0,015 kg
Diameter of grenade	40 mm
Height of grenade (without fuse)	122±2 mm
Delay time of the fuse	1±0,2 sec.

Number of loads of consternation	9
Delay time until the first load of consternation	2 sec.
Delay time between the other 8 loads of consternation	1,5÷2 sec.
Effect	consternation (sound and light flash)
Minimum throw distance (recommended)	3 m
Exploitation temperature	-25°C ÷ +50°C
If the grenades are coupled each 2 or 3, the delay time between the last effect of the initial consternation grenade up to the first effect of consternation for next grenade must be 3 seconds.	





GAL - EXPLOSIVE GRENADE WITH LIGHT-ACOUSTIC EFFECT

Explosive grenades with light-acoustic effect are used by:

- training;
- re-establishing public order;

Total weight of grenade	0,200 kg
Weight of detachable fuse	0,061 ± 0,005 kg
Weight of pyrotechnic load	0,090 kg
Grenade diameter	45 mm
Shape	cylindrical

Total delay time	1,2-1,8 sec
Time after which the fuse is detached	0,8-1,2 sec
Acoustic pressure at 1m distance	~0,34 bar
Sound level at 1m distance	130 dB
Light effect at 1m distance	2.000.000 cd
Operation temperature	-25°C .. + 50°C



GMAC - HAND GRENADE WITH ACOUSTIC EFFECT

Hand grenades with acoustic effect are used by officers against groups of people causing public disorder which may lead to uncertainty and a state of public fear
When using it does not cause body lesions.

Total weight of grenade	0,232 kg
Weight of detachable fuse	0,057 kg
Weight of charge	0,105 ± 0,001 Kg
Grenade diameter	72 mm
Shape	Spherical

Grenade material	Rubber
Total delay time	3 ÷ 4 sec
Time after which the fuse is detached	0,7 ÷ 1,1 sec
Sound level	120 ÷ 140 dB
Hand-launching distance	25 ÷ 30 m



GFLM-79 - SMOKE TEAR HAND GRENADE

Smoke hand grenades are used for hiding of elements placed on the action field or for signalling, and the smoke – tear effect is used by the authorities to stop aggressive actions of the persons or groups, according to the law.

Total weight of grenade	0,420±0,010 kg
Weight of fuse FGM-F	0,055±0,005 kg
Grenade diameter	55±1mm
Height of grenade (without fuse)	127±1mm

Total delay time of fuse	1,2÷2,2 sec.
Smoking time	min 30 sec.
Delay time	max 3 sec.
Effect	smoke respective tear-smoke
Safety distance	min 10 m
Exploitation temperature	-200C ÷ +500C



GMIL - HAND GRENADE WITH TEAR-IRRITATING EFFECT

Hand grenades with tear-irritating effect are used by officers against groups of people causing public disorder which may lead to uncertainty and a state of public fear, causing them a state of suffocation and tears
When using it does not cause body lesions and the effect disappears after 15-20 min.

Total weight of grenade	0,152 kg
Weight of detachable fuse	0,057 kg
Weight of tear charge	0,030 ± 0,001 Kg
Charged with (irritant gas)	CS ortho-chloro-benzal-malonitrile

Smoke version	white
Grenade diameter	72 mm
Shape	Spherical
Grenade material	Rubber
Total delay time	3-4 s (or 2-3 s)
Time after which the fuse is detached	0,7-1,1 s
Hand-launching distance	25-30 m
Surface on which the tear-irritating substance is spread	6 m²



SMOKE GRENADES WITH COLORED SMOKE

Hand grenades with colored smoke are pyrotechnical objects designed for execution of the signalization markings in the tactical field or special effects in the festive demonstrations.

Form of grenade	cylinder
Diameter of grenade	55 mm
Length of grenade	80 mm

Weight of grenade	0,195 Kg
Effect	column of smoke
Emission of different colors (red, yellow, green, orange, black, white)	
Emission time: min. 40 seconds where the smoke disperse and form a consistency curtain	
Temperature	-30°C ÷ +50°C





MISCELLANEOUS PRODUCTS

LAUNCH SYSTEM OF PYROTECHNIC LOADS WITH DIFFERENT SPECIAL EFFECTS

Is designed to launching multiple shells with different effects:

- shell with consternation effect-symbol LEC, that produce flash of light intensity at 1m distance ~1.800.000Cd; noise intensity: max 120dB at 1m distance; a pressure wave: max 0.25 bar at 1m distance.

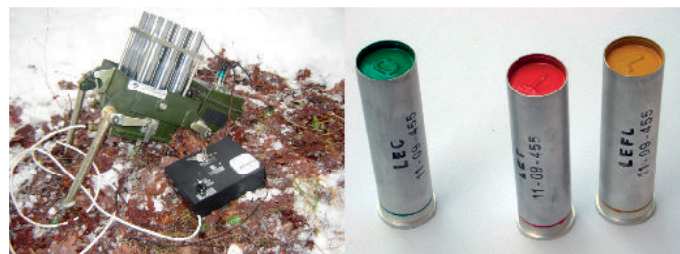
- shell with termitic effect-symbol LET, that produce outbreaks with temperatures around 2000° C;

- shell with smoke-tear effect-symbol LEFL, that produce curtains of tear-smoke for a period of at least 20 sec.

The shells, in any combination, can be launched at certain distances depending on the shooting angle which is adjustable. Launcher systems are used to combat terrorism, at tactical actions.

Vertical angle of shooting, from the ground
max.80°
Weight of the launcher (without module with the 9 pipes)
Weight module with the 9 pipes
Shooting distance by firing angle
m
Accuracy of the target

min.40° ÷
16,5 kg
10,8 kg
70 ÷ 140
± 10 m



Initiating of shells

Power supply autonomous from its own battery or lighter car

Battery type - BB BATTERY BP7-12 (12V, 7AH/20HR) Voltage

time to initiation LET & LEC after launch

time to initiation LEFL after launch

Launcher system

Launch opportunities:

Launch system :

Temperature range that can operate launcher

Electric

12 ± 2Vcc

6 ÷ 8 seconds

3 ÷ 4 seconds

module with 9 pipes

one by one; series of 3 shells;

series of 9 shells

double - with electronic programmer or sequential switch

-25° C ÷ +50° C

56mm CARTRIDGE WITH NONLETHAL CC56 KINETIC PROJECTILE

The cartridge caliber 56 with nonlethal kinetic projectile is designed to prevent and neutralize the aggressive actions of individuals or groups of individuals who seriously disturb the public order.

Compatible launcher: Individual launcher cal. 56 Cougar or Chouka model.

Cartridge diameter
Cartridge length
Round weight
Kinetic projectile weight
Propelling charge weight (TO-34)
Ignition cap by percussion
Initial velocity average
Kinetic energy 5m
Maximum effective range

Ø 56 mm
85 ± 0.5mm
0,160 ± 0,003 kg
0,082 kg
0,045 kg
E96
60 ± 3 m/sec
157 J
25 m

Cartridges dispersion at 25 m
Rate of fire
Operating temperature

50 pcs. cartridges individually protected in welded polyethylene sleeves are packed in cardboard boxes.

Box size

Weight

Class of explosion hazard

Rmed ≤ 30 cm

3 ÷ 5 shots/min

-30°C ÷ +50°C

330x330x180 mm

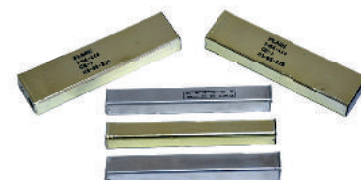
9 kg

1.4S, UN 0012



ELECTRONIC COUNTERMEASURE MUNITION FOR MIG – 21 LANCER, IAR – 99 SOIM, IAR – 330 H AIRCRAFT TYPE

GENERAL CHARACTERISTICS		MUNITION WITH		
		THERMAL DECOY (IR)		ELECTROMAGNETIC DECOY (RL)
		1"x1"x8"	1"x2"x8"	1"x1"x8"
TYPE MUNITION		1"x1"x8"	1"x2"x8"	1"x1"x8"
DIMENSIONS:	mm	206,5	206,5	206,5
		24,4	24,4	24,4
		24,4	52	24,4
TOTAL WEIGHT	kg	0,210	0,450	0,180
WORKING TEMPERATURE	°C	-40 ÷ +60	-40 ÷ +60	-40 ÷ +60
STORAGE TEMPERATURE	°C	-40 ÷ +60	-40 ÷ +60	-40 ÷ +60
NUMBER STROKES ON THE DISPERSION DEVICE	pcs	30	15	30
CHARGE COVERING BAND IR OR LR	µm	3 ÷ 5	3 ÷ 5 8 ÷ 16	cm dm
PRIMING MODE		ELECTRIC	ELECTRIC	ELECTRIC
TYPE OF ELECTRIC PRIMER CAP		CE - 1	CE - 1	CE - 1
CHARGING VOLTAGE	Vcc	27 ± 10%	27 ± 10%	27 ± 10%





26mm SIGNAL AND ILLUMINATION REACTIVE CARTRIDGE

The reactive cartridges for signaling and lighting are used for signaling and warning in conditions of night and day and to illuminate a ground area.

Products	Reactive cartridge for illuminating	Reactive cartridge for signal with one-star	Reactive cartridge for signal with two-stars	Reactive cartridge for signal with tree -stars
Colour star	white	red or greene	red or greene	red or greene
Dimensions -overall height, mm -outer diameter, mm	116 26,3	116 ÷ 118 26	118 ÷ 120 26	120 ÷ 122 26
Burning time, s	min 8	min 9	min 6	min 6
Star ascent height, m	min 350	min. 200	min. 150	min. 150
Visibility of the signal -in day-time, km -at night, km		min. 2 min. 10	min. 2 min. 10	min. 2 min. 10
Angle of cartridges firing - for signal,degrees - for illuminating, degrees	45 ± 5	80 ÷ 90	80 ÷ 90	80 ÷ 90
Exploitation temperature	-30°C ÷ +50°C	-30°C ÷ +50°C	-30°C ÷ +50°C	-30°C ÷ +50°C



ANTI HAIL SYSTEM

The anti-hailstone system is designed to fight against the hailstone falls. To ensure a fast and efficient intervention, the system is structured in several units of combating the hailstone falls, each unit covering an area of about 100,000 ha.

- The structural elements of each unit are as follows:
- command posts for conducting the anti-hailstone operations
 - launching posts for the anti-hailstone rockets, with launching installations and rockets storage
 - meteorological radars for discovering the hailstone clouds
 - rockets for spreading the cloud condensation agents and launching instalation
 - communications means

Through the actions conducted using the anti-hailstone equipment, it is ensured a protection level of at least 75%. The elements of the rocket structure are mainly biodegradable.

Caliber	82,5 mm	LARMA-1 Launcher
Length	1,4 m/1,1 m	Weight 600 kg
Weight	8,8 kg/6,6 kg	No of rails 8
Workload weight	0,66 kg	Op Mode manual/remote
Number of active cores	3x10 ¹⁵	Ignition mode electric 24Vcc
Maximum trajectory height	9300 m	
Maximum range	12000 m/7000 m	
Selfdistruct time	~ 45 sec	



7,62mm REMOTE CONTROL WEAPON STATION

Frame suprastructure	Steel
Weapon	7,62mm machine gun, PKML
Ammunition	250 rounds
Operation	electric and manual
Speed	
- minimum	max 1 mrad/s
- maximum	min 1 rad/s
Angular coverage	Nx360° azimuth
Elevation	-20° - +60°
Day channel: CCD color camera	
- field of view HxV	57,8°x43,3° / 1,7°x1,3° (36x optical zoom, continuos)
Night channel: uncooled thermal camera	
- wave lenght	8 - 14 μm
- field of view HxV (3x optical zoom)	12°x9° / 4°x3°
- ranges, for 2,3m NATO target	
- detection	min 6210 m
- recognition	min 2070 m
Display	8,4inch (21cm) color LCD, SVGA (800x600), touch scree
Power supply	18-32 Vcc/12A/25A peak current for 6 seconds
Operating temperature	-32°C to +49°C
Weight	
- above deck assembly	244 kg - with machine gun and 250 rounds
- in hull assembly	14 kg





PRN-80 AIR-TO-GROUND ROCKET

PRN-80 rocket is used on aircrafts and helicopters against ground targets: self-propelled artillery, infantry combat vehicles, armored personnel carriers, missile systems, radars, grounded aircrafts and helicopters, fuel warehouses, trains and personnel. The PRN-80 rocket is fully compatible with the aircrafts and helicopters using 20-tubes launchers.

Specifications:

Platform	MIG-29, MI-8/17, MI-28
Launching altitudes	300 - 1000 m
Optimal slant range	2000 m
Rocket weight	12 kg
Warhead weight	3,2 kg
Warhead type	Hollow charge - HE
Armour penetration	380 ÷ 400 mm RHA
Fragmentation	+500 pre-fragmented
Fuze type	impact
Caliber	80 mm
Length (before launch)	1566 mm
Fins span	374 m



INFRARED FLARE IRF-TH

Infrared flares are designed to achieve a drawn bright emission in the near infrared spectrum (N.I.R)

Technical characteristics:

Outer case	Steel
Max. gross weight	210 g
Mass composition	~ 119 g
Charged flare diameter	max. 25,4 mm
Flare length	max. 200,8 mm
Operational speed	Up to 400 Kts
Fuze head circuit resistance	1,25 ÷ 2,25 ohms
Circuit test current	max. 30 mA/10 sec
Min. firing current	1A/10 msec
Burning time	min. 60 sec
Output	min. 400W/sr in the 2,9 ÷ 5,5 microns bandwidth
Storage conditions	- stable temperature between -32° C ÷ +40° C - relative humidity less than 70%

Packing 50 pieces of IRF-Th are packed in a wooden box.



SMART TACTICAL ADVANCED ROCKET STAR-80L

The weapon is designed to combat small fixed and mobile ground targets as APC's, tactical vehicles, command points, shelters, other unarmoured and armoured means, resistance points and river boats. The missile can be delivered by grounded or heliborne weapon systems and guided until the target from launching platform or from an advanced designation team. Accuracy and controlled blast effects allows this weapon to be widely used in urban warfare and especially in anti-terror operations.

Technical characteristics:

Caliber	80 mm
Length	1800 mm
Weight	13,5 kg
Warhead weight	3 kg HEBF
Range	1000 ÷ 6000 m
Accuracy	1,5 m CEP

The launcher can be maintained in service for 20 years and the missiles for 10 years.

Primary platforms

- Attack and support helicopters
- Light APC's and unarmoured tactical vehicles
- Man-portable (detachable) firing post (optional)





122 mm REACTIVE AMMUNITION



	ER with MFF-2T fuze	ER with MRV-UBM fuze	with MRV-U fuze	with HE-TB warhead and MRV-U fuze	with MRV-U fuze and preformed elements
Ammunition					
- caliber	122 mm	122 mm	122 mm	122 mm	122 mm
- max. range	> 42 km	> 42 km	20,4 km	20,4 kg	20,4 km
- length (incl. fuze)	2860 mm	2810 mm	2875 mm	2875 mm	2875 mm
- weight (incl. fuze)	64,5 kg	64 kg	66 kg	62,5 kg	65,4 kg
- max. velocity	1230 m/s	1230 m/s	690 m/s	690 m/s	690 mm
- operating temperature	-40° C ÷ +50° C	-40° C ÷ +50° C	-32° C ÷ +50° C	-32° C ÷ +50° C	-32° C ÷ +50° C
Warhead					
- type	HE	HE	HE	HE-TB	HE
- weight	18,4 kg	18,4 kg	18,4 kg	18,4 kg	18,4 kg
- explosive charge weight	6,35 kg	6,35 kg	6,35 kg	3,25 kg	5,4 kg
Reactive motor					
- type	Composite powder	Composite powder	Composite powder	Double base	Composite powder
- weight	41,7 kg	41,7 kg	47,1 kg	47,1 kg	47,1 kg
- powder weight	24,8 kg	24,8 kg	20,65 kg	20,65 kg	20,65 kg
- burning time	3 sec. (at 20° C)	3 sec. (at 20° C)	2,2 sec. (at 20° C)	2,2 sec. (at 20° C)	2,2 sec. (at 20° C)
- initiation current	0,45 A	0,45 A	0,45 A	0,45 A	0,45 A
- stabilization	aerodynamic by rotation (4 folding wings)	aerodynamic by rotation (4 folding wings)	aerodynamic by rotation (4 folding wings)	aerodynamic by rotation (4 folding wings)	aerodynamic by rotation (4 folding wings)
Fuze					
- type	MFF-2T	MRV-UBM	MRV-U	MRV-U	MRV-U
- weight	1050 ± 30 g	750 g	710 g	710 g	710 g
- lenght	max. 245 mm	191,42÷195,04 mm	-	-	-
- safety distance from the muzzle	-	-	150 ÷ 400 m	150 ÷ 400 m	150 ÷ 400 m

TPDM-01 PARACHUTE TARGET

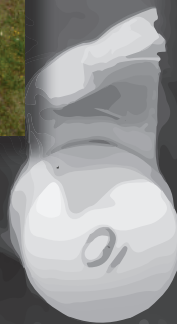
The TPDM-01M parachute target has been conceived to simulate a real aerial target radiating in IR and reflecting waves like a fighter-bomber aircraft. It is used for training and practice firing with IR and radar guided missiles air to air as well as surface to air. It can be also used for training proposes by the surveillance radar operators.

Main characteristics	
External diameter	280 mm
Total weight	4 kg
Maximum dropping altitude	10.000 m
Torch burning time	
- at ground level	3 min.
- at 10.000 ÷ 8.000 m	5 min.
Torch light intensity at ground level min.	900.000 Cd
Descending speed	
with burning torch and deployed reflector	
- at 10.000 ÷ 8.000 m	12 m/s
- at H<4.000 m	4 m/s





COMPONENTS AND PARTS



COMPONENTS AND PARTS



MRV-U FUZE

Outfitting of 122 mm HE Rocket Rounds , type M21 OF.

Fuze type Nose fuze , with impact functioning.
Adapter thread Sp.44,96x2 turns/inch
Outer diameter max.:Ø 64 mm
Length 191,42÷ 195,04 mm
Length of screwed area into the projectile 53,01÷54,39 mm
Mass 0,750 kg
Detonator RDx-tipA IX-1
Functioning temperature range -40°C÷+50°C
Safety distance from muzzle 150 ÷400 m
The fuze operates at impact.
Depending on the intended functioning purpose of the fuze, there are 3 ways of functioning :

"00"(0) instantaneous adjustment performed by manufacturer
"+" with long delay 0,007÷0,013 s
"0" with short delay 0,001÷0,005 s
Adjustments for "+" or "0" functioning are to be performed prior to firing by rotating the adjusting device with a special key.
SHELF LIFE
Min. 15years-if kept in original packing and observing the Storage Directions sent by manufacturer .
PACKING
The product is packed in tight packing:
-10pcs in a metal box
- 4 metal boxes in wooden case, sized 658x598x206 mm
Weight of case is 58 kg.



RGM-2 - POINT DETONATING FUZE

Outfitting of 76 mm, 122 mm and 152 mm HE round.
Nose fuze, with impact functioning.

Adapter thread: Sp 36,18x 10/inch
Outer diameter max. 40 mm
Total length max.105,7 mm
Length of screwed area into the projectile: 45,2÷46,8 mm
Mass: 0,430 kg
Safety distance from muzzle min. 5 ÷7 m

The fuze operates at impact: - D- instantaneous
- I - with delay (27÷56) ms

PACKING
The product is packed in tight packing:
-16 pcs. in metal box
- 4 pcs metal box in wooden case, sized 522x490x172 mm
Weight of case is 43 kg.



V-429 - POINT DETONATING FUZE

Outfitting of 76 mm, 85 mm, 100 mm, 122 mm, 130 mm si 152 mm HE round.
Nose fuze, with impact functioning.

Adapter theard: Sp 36,18x10/inch
Outer diameter max. 40 mm
Total length: max.105,7 mm
Length of screwed area into the projectile 45,2÷46,8 mm
Mass 0,430 kg
Safety distance from muzzle min. 5 ÷7 m

The fuze operates at impact - D -instantaneous
- I - with delay (27÷56) ms

PACKING
The product is packed in tight packing:
-16 pcs. in metal box
- 4 metal box in wooden case , sized 522x490x172 mm
Weight of case is 43 kg.



MFF-2T - MULTIPLE FUNCTION FUZE

Destination:
MFF-2T is designed for 122 mm reactive ammunition.
Fuze type:
Fuze with air drive generator and proximity, time and impact performance.
Operation selection mode is done using a cable programmer
- proximity action, average burst height 4 ÷ 30 m
- time function 5 to 199,9 sec (with 0,1 sec. increment)
- point detonation
Safety

mechanical min. 150m
electronic 5 seconds

MFF-2T fuze characteristics
- length (max) 245 mm
- weight (max) 1050 ± 30 g
- thread Sp 44,96x2 mm
- exterior diameter (max.) Ø 63,8_{-0,4} mm
- screwed length of the fuze in the projectile 53,01 ÷ 54,39 mm
- performance temperature -40° C ÷ +50° C
- storage temperature -40° C ÷ +50° C
- performance relative umidity max 95% (of +50° C)
Power supply air drive generator
Programmer supplied in a protective box
no of programmers which will be delivered at a batch is determined by the customer



Packing: each fuze is packed in a sealed individual packaging.
10 fuzes in sealed individual packagings are introduced in a wooden box with dimensions 520x491x251 mm and 26 kg weight.
Code 1.4B UN No 0257

BRASS CASE CUPS

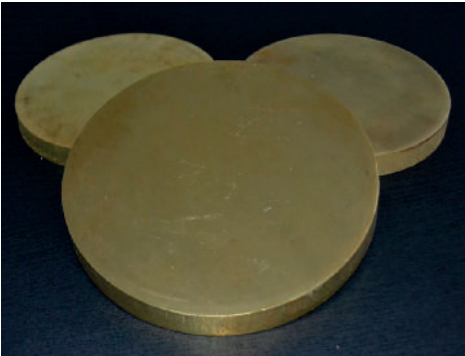
Product name	Caliber/dimension (mm)	Weight/pcs (g)	Material
Cartridge case	5,56 x 45 mm	8	Brass C26000 ASTM B19
Bullet jacket	5,56 x 45 mm	6	Brass C26000 ASTM B36
Cartridge case	5,45 x 39 mm	8	Brass C26000 ASTM B19
Cartridge case	7,62 x 51 mm	13	Brass C26000 ASTM B19
Bullet jacket	7,62 x 51 mm	3,26	Brass C26000 ASTM B36
Cartridge case	7,62 x 39 mm	9,40	Brass C26000 ASTM B19
Cartridge case	7,65 mm	3,2	Brass C26000 ASTM B19
Bullet jacket	7,65 mm	1,18	Brass C26000 ASTM B36
Cartridge case	9 mm	4,8	Brass C26000 ASTM B19
Cartridge case	12,7 mm	66,5	Brass C26000 ASTM B19
Bullet jacket	12,7 mm	18	Brass C26000 ASTM B36
Cartridge case	23 mm	133	Brass C26000 ASTM B19
Cartridge case	20 mm	141	Brass C26000 ASTM B19





BRASS PLATES FOR ARTILLERY ROUNDS

Product name	Caliber/dimension (mm)	Weight/pcs (kg)	Material
Brass plate	Ø 84,25 x 16,15 caliber 37 mm	0.5	OL
Brass plate	Ø 85 x 13 caliber 37 mm	0,63	Brass LK 75 GOST 16520
Brass plate	Ø 141 x 21,2 caliber 57 mm	2,9	Brass C26000 ASTM B19
Brass plate	Ø 141 x 24,7 caliber 57 mm	2,9	Brass C26000 ASTM B19
Brass plate	Ø 155 x 12,7 caliber 76 mm	1,98	Brass C26000 ASTM B19
Brass plate	Ø 204,22 x 19 caliber 85 mm	5,5	Brass C26000 ASTM B19
Brass plate	Ø 208 x 15 caliber 122 mm	4,74	Brass C26000 ASTM B19
Brass plate	Ø 212 x 15 caliber 85 mm	4,6	Brass C26000 ASTM B19
Brass plate	Ø 245 x 18,7 caliber 105 mm	7,5	Brass C26000 ASTM B19
Brass plate	Ø 261,32 x 21,6 caliber 100 mm	9,87	Brass C26000 ASTM B19
Brass plate	Ø 281,4 x 18,7 caliber 152 mm	9.92	Brass C26000 ASTM B19
Brass plate	Ø 296 x 23,5 caliber 130 mm	13,8	Brass C26000 ASTM B19
Brass plate	Ø 308 x 23,5 caliber 130 mm	14,9	Brass C26000 ASTM B19
Brass plate	Ø 31 x 6,5 mm	0,042	Brass C26000 ASTM B19



CASE AND COMPONENTS FOR 122mm ROCKETS

These parts are used as components for manufacture of 122mm rockets M-21 OF and M-21 OF S

Steel Fragmente Casing	2,1 kg
Steel Fragmente Casing	2,2 kg
Steel Semi-Finished Carcas	1,7 kg / 205-235 mm
Steel Projectile Body	7,7 kg
Steel Frn Case	9,35 kg / 980 mm



20-40 mm CARTRIDGE CASE FOR ARTILLERY AMMUNITION

DIMENSION (mm)	CALIBER											
	20 mm		23 mm		25 mm		30 mm		37 mm		40 mm	
MATERIAL												
	Brass	Brass	Steel	Brass	Steel	Brass	Steel		Brass	Steel	Aluminium	Aluminium
D	Ø 29,59	Ø 27	Ø 33,4	Ø 40	Ø 40	Ø 46	Ø 40	Ø 46	Ø 52	Ø 48,6	Ø 42	Ø 44
L	102	115	151,5	219	219	210	165	210	252	265	74,5	47
d	Ø 19,38	Ø 22,25	Ø 22,21	Ø 25,4	Ø 25,6	Ø 29,2	Ø 29,2		Ø 36	Ø 36,6	Ø 39,6	Ø 39,1
g	0,71	0,8	0,75	0,7	0,7	1,3	1,3		1	0,85	0,6	0,6



155 mm ARTILLERY AMMUNITION COMPONENTS

GUN TYPE		All 39 cal. Barrel such as FH 70, M 109, M 198, HOWITZER	
TYPE OF PROJECTILE		EXTENDED RANGE CARGO PROJECTILE M 396	HIGH EXPLOSIVE M 107
COMPONENTS MADE IN PLANT		PROJECTILE BODYS BLEEDER ADAPTERS BLEEDER BASES	PROJECTILE BODYS
CHARACTERISTICS OF DESIGNATE SHELL			
MUZZLE VELOCITY	m/s	Max. 825	Max. 830
MAXIMUM RANGE	m	28700	24000
WEIGHT OF PROJECTILE	kg	42,3	43,88
LENGHT OF PROJECTILE	mm	802	605
BLASTING CHARGE		49 bomblets M 85	TNT or COMP. B

NOTE: The projectiles can be fired as well as from 45 mm and 52 mm caliber barrels with higher propelling charges, thus significantly ncreasing the effective firing range.



AMMUNITION CALIBRE 122 MM WITH EXPLOSIVE PROJECTILE AND COMPLETE CHARGE WITH RGM-2 OR V-429 FUZE

Howitzer type	D-30	Average maximum pressure	2500 Kgf/cm2
Calibre	122 mm	Cartridge tube height	447 mm
Ammunition type	non - coupled	Fuze type	RGM-2
Maximum range	15 290 m	Operating mode fuze	point detonating
Type projectile	HE	Packaging projectile and charge	2 pieces ammunition in wooden case
Weight of explosion charge (TNT)	3,5 kg	~with maximum dimension:	1193 x 434 x 250 mm
Projectile weight with fuze	21,76 kg	Gross weight case of projectile and charge	83 Kg
Projectile height, with fuze max.	564,6 mm	Packaging fuzes	
Type propelling charge	complete	fuzes are delivered separately:	64 pieces in 4 metal boxes in wooden case with size: 522x500x171
Propelling charge weight	~3,8 kg	case mm.	
Muzzle velocity	690 m/s	Gross weight of fuze	43 kg



AMMUNITION CALIBRE 122 MM WITH EXPLOSIVE PROJECTILE AND VARIABLE REDUCED CHARGE

Howitzer type	D-30	Average maximum pressure	1950 Kgf/cm²
Calibre	122 mm	Cartridge tube height	447 mm
Ammunition type	non-coupled	Fuze type	point detonating
Maximum range	12 840 m	Packaging projectile and charge	2 pieces ammunition in wooden case ~with maximum dimension: 1193 x 434 x 250 mm
Type projectile	HE	Gross weight case of projectile and charge	80 Kg
Weight of explosion charge (TNT)	3,5 kg	Packaging fuzes:	fuzes are delivered separately: 64 pieces in 4 metal boxes in wooden case with size: 522x500x171mm.
Projectile weight with fuze	21,76 kg	Gross weight case of fuzes :	43 kg
Projectile height, with fuze max.	564,6 mm		
Type propelling charge	reduced		
Propelling charge weight	~2,43 kg		
Muzzle velocity	565 m/s		



COMPONENTS AND PARTS



MAGAZINES

No.	Type of Magazine		Loading capacity	Material	Weight (empty)	Magazine overall dimension (mm)		
			(no of rounds)		(g)	length	width	height
1	cal. 5,45x39 mm for AK74		30	steel	310	210	74	30
			40	steel	350	260	74	30
2	cal. 5,56 mm		5 rds. / 1 row	steel	155	90	74	30
			10 rds. / 1 row	steel	165	140	74	30
			5 rds. / 2 rows	steel	160	70	74	30
			10 rds. / 2 rows	steel	170	94	74	30
			30 rds. / 2 rows	steel	255	187	74	30
3	cal. 7,62x39 mm	AKM47	30	steel	340	230	74	30
		RPK	40	steel	380	280	74	30
4	cal. 9x19 mm for Pistols and cal. 9x19 mm for Submachine guns	LP5.04	15	steel	93	130	43	26
		LP7.06	30	steel	217	232	37	26



LINK BELTS

No.	TYPE	USE
1	7,62x54 link belt for 100, 200 and 250 rounds	7,62x54 mm cartridges in PKT and PKMS machine guns. Material: Hardened steel
2	Link belts for cartridges cal. 12,7x108 mm	12,7x108 mm cartridges in DShKM machine guns. Material: Hardened steel
3	Yakb desintegrating link belts for cartridges cal. 12,7x108 mm	12,7x108 mm cartridges in YAKB machine guns. Material: Hardened steel
4	Link belts for cartridges cal. 14,5x114 mm	14,5x114 mm cartridges in KPV and KPVТ machine guns. Material: Hardened steel
5	GS 23 desintegrating link belts for cartridges cal. 14,5x114 mm	23x114 mm cartridges in GS23 and GS23L cannons. Material: Hardened steel



LINKING DEVICES

No.	Type	Use	Dimensions	Weight
1	Hand linking device for cal. 12,7x108 mm and for .50 ammunition	Loading and straightening the 12,7x108 mm cartridges in 12,7x108 mm link belts for DSh-KM, NSV and KORD machine guns	300x230x290 mm	3,5 kg
2	Hand linking device for cal. 14,5x114 mm	Loading and straightening the 14,5x114 mm cartridges in the 14,5x114 mm link belts for KPV and KPVТ Heavy machine guns	300x230x290 mm	3,5 kg
3	Hand linking device for GS23 and GS23L	Loading and straightening the 23 mm cartridges in the 23 mm link belts for GS23 and GS23L air to air cannons	472x41x232 mm	1,7 kg
4	Linking device for cal. 12,7x108 mm YAKB belt	Intended to manually link cartridges cal. 12,7x108 mm in the YAKB belt	300x220x395 mm (handle in vertical position) 300x220x60 mm (handle folded for transport)	4,7 kg



TORSION BARS

Used for: trucks, tanks, fighting vehicles suspensions; Shock-absorber for special mechanism; Mechanical drive for industrial units;

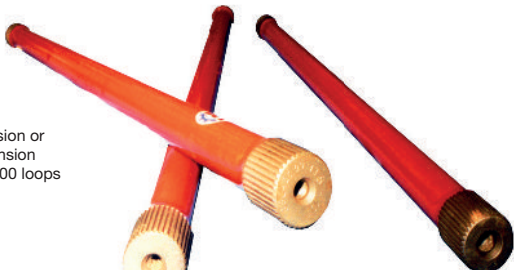
The torsion bars are produced from highly purified alloy steel

- Maximum length 2500 mm
- Diameter of the rod max 65 mm
- Coupling part with diameter max. 112 mm, special profiled according with customers request

- Maximum moment
- Construction

Operation : of solicitation depending on constructive type.

500 daNm
left pre-tension or
right pre-tension
up to 200.000 loops



CARDBOARD PACKAGING

Used for mortar bombs

Caliber 60mm			
Length	362 mm		
Diameter	72 mm		
Caliber 82mm		Caliber 120mm	
Length	380 mm	Length	720 mm
Diameter	100 mm	Diameter	136 mm





SERVICES





Having a long history in this field and employing specialists in every step of the defense equipment manufacturing process, we are able to offer our Customers the following services:

MAINTENANCE

We provide maintenance, repair, overhaul for various types of products and systems:

- armored vehicles on wheels and tracks;
- rockets;
- artillery systems;
- arms;
- ammunition caliber 5,45 – 155mm (replacing the charge, reloading, etc.)

DEMILITARISATION

We are closely working with Governments and organizations throughout the world in all aspects of demilitarization, disarmament, security of weapons and ammunition. We have special facilities for the disposal of conventional M.o.D. ammunitions (excluding biological or nuclear), various types of weapons of all calibers, combat armored vehicles on wheels and on tracks, anti-tank mines, projectiles and rockets of any caliber.

We can also provide:

- waste incineration;
- reverse engineering;
- sorting and salvage;
- disposal of ammunition, primarily propellant, primers and fuzes;
- open burning including cage burning;
- open detonation of ammunition and explosives (used only in specific circumstances).

CONVERSION

We can perform conversion of military grade infantry weapons for hunting, target practice or sport.

We can use weapons from our own production or from other sources.

RESEARCH AND DEVELOPMENT

The innovations and know-how of the Romanian Defence Industry in general and ROMARM in particular can play a pivotal role in promoting and fulfilling the ambitions of our partners at a time when the current global context is marked by geopolitical uncertainty and financial constraints.

A special attention is given to the requests/suggestions/proposal made by various customers about the presentation, technical and tactical characteristics of the products.

The R&D activity aims to ensure the compliance with the NATO military standards.

TRAINING AND CONSULTANCY

We offer education, preparation and training for the specialists/technicians for the ammunition/weapons manufacturing lines and operating systems. (For all categories of personnel)

Editing the user manuals for systems.

TABLE OF CONTENTS



ARMORED VEHICLES	3
On tracks	
On wheels	
SMALL ARMS AND AMMUNITION	9
Military	
Civilian	
EXPLOSIVES	24
INFANTRY ARMS AND AMMUNITION	25
Mortars and mortar bombs	
Launchers and anti-tank rockets	
Hand grenades	
Grenade launchers	
Kinetic projectiles	
Signaling cartridges	
ROCKETS AND MISSILES	39
COMPONENTS AND PARTS	41
Fuzes	
Cups and disks	
Projectile cases for artillery	
Links and linking devices	
Miscellaneous	
SERVICES	45
Maintenance	
Demilitarization	
Conversion for civil market	
Research and development	
Training and consultancy	



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