



*Sustaining Global  
Defence Productions*



**Sustaining  
Defence Production,  
and  
enhancing transfer  
of technology.**

**Ammunition,  
Mortar Shells,  
Aircraft Rockets & Bombs**





**Provide the best of  
DICON D7G Company  
Arms Industry,  
Stocks and Production**



# Military Program

upfront  
program



# Military Program

CALIBER		BULLET TYPE	BULLET MASS	CARTRIDGE MASS	PRIMER	TEMPERATURE INTERVAL
5,56 x 45 mm NATO BALL SS 109	Rifle cartridge with steel core bullet	BALL	4 g 62 gr	12,1 g	Small rifle, Non corrosive, Non mercuric, Boxer	-54oC +52oC
5,56 x 45 mm BALL M855	Rifle cartridge with steel core bullet	BALL	4 g 62 gr	12,1 g	Small rifle, Non corrosive, Non mercuric, Boxer	-54oC +52oC
5,56 x 45 mm BALL M193	Rifle cartridge with lead-antimony bullet	BALL	3,56 g 55 gr	11,8 g	Small rifle, Non corrosive, Non mercuric, Boxer	-54oC +52oC
5,56 x 45 mm TRACER M856	Rifle cartridge with tracer bullet	BALL	4,1 g 63,3 gr	12,1 g	Small rifle, Non corrosive, Non mercuric, Boxer	-54oC +52oC
5,56 x 45 mm NATO TRACER L110	Rifle cartridge with tracer bullet	BALL	4 g 62 gr	12,1 g	Small rifle, Non corrosive, Non mercuric, Boxer	-54oC +52oC
5,56 x 45 mm BLANK M200	Rifle cartridge without bullet			6,9 g	Small rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
5,56 x 45 mm BLANK M200A1 (Long)	Rifle cartridge without bullet			7,2 g	Small rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
5,56 x 45 mm 223 Remington MATCH		HP BT MATCH	4,47 g 69 gr	12,5 g	Small rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
5,56 x 45 mm 223 Remington MATCH		HP BT MATCH	4,86 g 75 gr	12,9 g	Small rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
7,62 x 51 mm NATO BALL M80	Rifle cartridge with lead/antimony core bullet	BALL	9,4 g 145 gr	24 g	Large rifle, Non corrosive, Non mercuric Berdan (A-009), Boxer (A-306)	-54°C +52°C
7,62 x 51 mm NATO TRACER M42	Rifle cartridge with lead/antimony core bullet	TRACER	9,4 g 145 gr	24 g	Large rifle, Non corrosive, Non mercuric Berdan (A-532), Boxer (A-412)	-54°C +52°C
7,62 x 51 mm SUBSONIC	Rifle cartridge with lead/antimony core bullet	BALL	12,96 g 200 gr	24,8 g	Large rifle, Non corrosive, Non mercuric Berdan (A-568), Boxer (A-548)	-54°C +52°C
7,62 x 51 mm NATO BLANK M82	Rifle cartridge without bullet			12 g	Large rifle, Non corrosive, Non mercuric Berdan (A-445), Boxer (A-420)	-20°C +52°C
7,62 x 51 mm NATO MATCH M852	Rifle cartridge with lead/antimony core bullet	BALL	10,9 g 168 gr	25,5 g	Large rifle, Non corrosive, Non mercuric Berdan (A-525), Boxer (A-386)	-54°C +52°C
7,62 x 51 mm NATO SNIPER M118	Rifle cartridge with lead/antimony core bullet	BALL	11,34 g 175 gr	25,8 g	Large rifle, Non corrosive, Non mercuric Berdan (A-526), Boxer (A-387)	-54°C +52°C
7,62 x 51 mm 308 Winchester MATCH		HP BT MATCH	10,1 g 155 gr	24,5 g	Large rifle, Non corrosive, Non mercuric, Boxer	-54°C +52°C
7,62 x 51 mm 308 Winchester MATCH		HP BT MATCH	12,3 g 190 gr	27 g	Large rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
7,62 x 39 mm BALL M67	Rifle cartridge with lead/antimony core bullet	BALL	8 g 123 gr	17,4 g	Large rifle, Non corrosive, Non mercuric, Boxer	-40°C +52°C
7,62 x 39 mm BLANK	Rifle cartridge without bullet			9,7 g	Large rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
7,62 x 39 mm SUBSONIC M78	Rifle cartridge with lead/antimony core bullet	BALL	11,8 g 182 gr	20 g	Large rifle, Non corrosive, Non mercuric, Boxer	-40°C +52°C



# Military Program

CALIBER		BULLET TYPE	BULLET MASS	CARTRIDGE MASS	PRIMER	TEMPERATURE INTERVAL
7,62 x 54 mm BALL M30 (J)	Rifle cartridge with lead/antimony core bullet	BALL	11,8 g 182 gr	24,9 g	Large rifle, Non corrosive, Non mercuric, Berdan 6,55 DTN	-40°C +52°C
7,62 x 54 BALL M87	Rifle cartridge with steel core bullet	BALL	9,6 g 148 gr	22,7 g	Large rifle, Non corrosive, Non mercuric, Berdan 6,55 DTN	-40°C +52°C
7,62 x 54 BALL BLANK	Rifle cartridge without bullet			22,7 g	Large rifle, Non corrosive, Non mercuric, Berdan (A-422), Boxer (A-392)	-20°C +52°C
7,62 x 54 mm SNIPER M03	Rifle cartridge with lead/antimony core bullet	SNIPER M03	11,8 g 182 gr	24,9 g	Large rifle, Non corrosive, Non mercuric, Berdan 6,55 DTN	-40°C +52°C
7,62 x 54 mm SNIPER	Rifle cartridge with lead/antimony core bullet	SNIPER	11,8 g 182 gr	24,9 g	Large rifle, Non corrosive, Non mercuric, Berdan 6,55 DTN	-20°C +52°C
7,62 x 54 mm MATCH	Rifle cartridge with lead/antimony core bullet	303MK8 <sup>+</sup>	12,3 g 190 gr	25,5 g	Large rifle, Non corrosive, Non mercuric, Boxer	-20°C +52°C
338 Lapua Magnum (8,60 x 70 mm)	Rifle cartridge with lead/antimony core bullet	BALL	16,2 g 250 gr	44 g	Large rifle magnum, Non corrosive, Non mercuric, Boxer	-54°C +52°C
338 Lapua Magnum (8,60 x 70 mm)		HP BT	16,2 g 250 gr	44 g	Large rifle magnum, Non corrosive, Non mercuric, Boxer	-54°C +52°C
.50 BROWNING (12,7 x 99 mm) SNIPER		SOLID RM06-2	47 g 725 gr	119 g	Large rifle 12,7, Non corrosive, Non mercuric, Boxer	-54°C +52°C
.50 BROWNING (12,7 x 99 mm) SNIPER BALL M33		BALL, Tombac jacket, Core with lead/antimony+ steel core+lead coverage	45,3 g 699 gr	116 g	Large rifle 12,7, Non corrosive, Non mercuric, Boxer	-54°C +52°C
.50 BROWNING (12,7 x 99 mm) BLANK				55 g	Large rifle 12,7, Non corrosive, Non mercuric, Boxer	-20°C +52°C
12,7 x 108 mm SNIPER M09		SOLID M09	51,3 g 792 gr	134 g	Large rifle 12,7, DSK Berdan	-54°C +52°C
12,7 x 108 mm BALL		BALL, Jacket: Tombac plated steel Core with aluminium on the top + core with lead/antimony	51,3 g 792 gr	134 g	Large rifle 12,7, DSK Berdan	-54°C +52°C
12,7 x 108 mm BALL		BALL, Jacket: Tombac plated steel Core with lead/antimony	51,3 g 792 gr	134 g	Large rifle 12,7, DSK Berdan	-54°C +52°C

## Pistol Submachine gun and Revolver ammunition

9 x 19 mm	Pistol cartridge With lead/antimony core bullet	BALL	7,45 g 115 gr	11,7 g	Small pistol, Non corrosive Non mercuric, Boxer	-54°C +52°C
9 x 19 mm	Pistol cartridge With lead/antimony core bullet	BALL	8,0 g 124 gr	12,1 g	Small pistol, Non corrosive Non mercuric, Boxer	-54°C +52°C
9 x 19 mm	Pistol cartridge With lead/antimony core bullet	SUBSONIC BALL	9,5 g 147 gr	13,7 g	Small pistol, Non corrosive Non mercuric, Boxer	-30°C +52°C
9 x 19 mm	Pistol cartridge With lead/antimony core bullet	BLANK		5,4 g	Small pistol, Non corrosive Non mercuric, Boxer	-20°C +52°C





Rifle Ammunition / Submachine Gun ammunition / Light Machine Gun Ammunition / Machine Gun Ammunition / Pistol Ammunition / Anticraft Machine Gun Ammunition



Prvi Partizan is modern company, one of the largest of this kind in the world. Company produces over 400 types of rifle, pistol, revolver and small arms ammunition. The beginning of 21st century is especially important for technological development of Prvi Partizan. The excellent quality of our products is achieved through the consistent application of our Quality management.

## Standard Rifle Ammunition

CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
22 HORNET	SP	2.90 g	50 / 2000	16.80 kg
222 REMINGTON	SP/FMJ BT	3.24 g	50 / 2000	12.40 kg
22-250 REMINGTON	SP/FMJ BT	3.24 g	50 / 2000	12.70 kg
243 WINCHESTER	SP	5.80 g	50 / 2000	13 kg
25-06 REMINGTON	HP/PSP	5.80 g	50 / 2000	13.40 kg
264 WINCHESTER MAGNUM	PSP	9.10 g	50 / 2000	16.20 kg
270 WINCHESTER	SP	8.40 g	50 / 2000	13.40 kg
30 CARBINE	SPRN/FMJRN	7.10 g	50 / 2000	6.80 kg
308 WINCHESTER	FMJ BT/SP/PSP BT/HP BT GROM	8 g	50 / 2000	2.50 kg
30-30 WINCHESTER	FSP	9.70 g	50 / 2000	11.80 kg
30-06 SPRINGFIELD	SP/PSP BT/HP BT/ FMJ/GROM/Z-GROM	8 g	50 / 2000	12.90 kg
300 WINCHESTER MAGNUM	SP/SPBT/SP SPBT/FMJ BT	9.40 g	50 / 2000	16.10 kg
300 WINCHESTER MAGNUM	SPBT/FMJ BT	9.70 g	50 / 2000	13.20 kg
338 LAPUA MAGNUM	FMJBT/HP BT	16.20 g	50 / 2000	19.50 kg
375 H&H MAGNUM	SPRN/FMJ	19.50 g	50 / 2000	18 30 kg
45-70 GOVERNMENT	SJFP	26.25 g	50 / 2000	20 kg
7 mm REMINGTON MAGNUM	PSP BT/GROM/HP/ SP/Z-GROM/FMJ BT	7.80 g	50 / 2000	15.60 kg
6 mm REMINGTON	SP	5.80 g	50 / 2000	13.10 kg
6.5 mm GRENDL	FMJ BT/HP BT/SP	7.10 g	50 / 2000	10 kg
7.62 x 51 M80	FMJ BT	10 g	50 / 2000	12.60 kg

## Metric Rifle Ammunition

CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
6.5 x 52 CARCANO	SP/SP BT/ FMJ BT/SP RN	8 g	20 / 500	11.40 kg
6.5 x 55 SWEDISH	HP BT/SP/SP BT/FMJ BT/SP RN	7.80 g	20 / 500	12.50 kg
6.5 x 54 MANN-SCHOENAUER	SP RN	10.10 g	20 / 500	13 kg
6.5 x 57 MAUSER	SP/SP BT/ FMJ BT/SP RN	8 g	20 / 500	12.50 kg
7 mm - 08 REMINGTON	HP/PSP BT	7.80 g	20 / 500	12.50 kg
7 mm MAUSER	SP/GROM/Z-GROM/	9 g	20 / 500	13.30 kg
7 x 57 R	SP/GROM/	9 g	20 / 500	13.30 kg
7.5 x 54 FRENCH	Z-GROM/FMJ BT	9 g	20 / 500	17.20 kg
7.5 x 55 SWISS	FMJ	11.30 g	20 / 500	12.90 kg
7.62 x 39	FMJ BT/SP	8 g	20 / 500	18.50 kg
7.62 x 54 R	PSP/SP RN/FMJ	9.70 g	20 / 500	12.60 kg
7 x 64	SP BT/FMJ BT	9 g	20 / 500	13.80 kg
7.65 x 53 ARGENTINE	SP BT/FMJ BT/SP BT	9.7 g	20 / 500	13.30 kg
7.9 x 33 KURZ	FMJ BT	8 g	20 / 500	17 kg
8 mm MAUSER	SP/HP BT/PSP BT/GROM/ Z-GROM/FMJ BT	9 g	20 / 500	15 kg
8 x 57 IRS	SP/FMJ BT	12.7 g	20 / 500	16 kg
8 x 50 R LEBEL	FMJ BT	12.69 g	20 / 500	17 kg
8 x 56 RS MANNLICHER	SP/FMJ BT	13.5 g	20 / 500	16.50 kg
9.3 x 62	SP/ Solid HP	18.5 g	20 / 500	19 kg
9.3 x 74 R	SP/ Solid HP	18.5 g	20 / 500	19 kg

CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
308 WINCHESTER	FMJ/FMJ BT/SP/PSP BT/ GROM/HP BT	8 g	20 / 500	12.50 kg
30-06 SPRINGFIELD	FSP	9.70 g	20 / 500	11.80 kg
300 WINCHESTER MAGNUM	SP/FMJ BT/PSP BT/HP BT/ GROM/Z-GROM	9.40 g	20 / 500	16.10 kg
7 mm MAUSER	SP/GROM/Z-GROM	9 g	20 / 500	13.70 kg
7 mm REMINGTON MAGNUM	HP/PSP BT/SP/GROM/ Z-GROM/HP BT	7.80 g	20 / 500	15.60 kg
8 mm MAUSER	SP/HP BT/PSP BT/GROM/Z- GROM/FMJ BT	9 g	20 / 500	13.50 kg

CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
223 REMINGTON MATCH	SP	4.47 g	50 / 2000	13.20 kg
308 WINCHESTER MATCH	HP BT/FMJ BT/MATCH Solid	10.9 g	20 / 500	14.80 kg
6.5x55 SWEDISH MATCH	HP BT/FMJ BT/SP/SP BT/ SP RN	7.80 g	20 / 500	12.70 kg
7.62x54 R MATCH	FMJ BT	11.80 g	20 / 500	14 kg
8 mm MAUSER MATCH	SP/HP BT/PSP BT/GROM Z-GROM/FMJ BT	12.96 g	20 / 500	15 kg

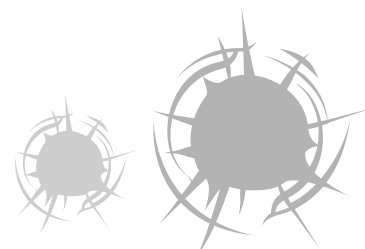
CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
5.56x45 mm	FMJ BT	3.56 g	20 / 1000	12.70 kg
223 REMINGTON	SP/FMJ BT/HP BT	4.01 g	20 / 1000	13.20 kg



CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
6.8 REMINGTON SPC	FMJ BT/HP BT	7.45 g	20 / 500	12.50 kg



CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
300 AAC BLACKOUT	FMJ/HP BT	8 g	20 / 500	12.60 kg



Thunder Ammunition

Match Ammunition

5.6/223 Remington

6.8 Remington SPC

300 AAC Blackout




CALIBER	BULLET TYPE	BULLET WEIGHT	ROUNDS BOX / CASE	GROSS WEIGHT
22 REMINGTON JET	SP	2.9 g	50 / 1000	9.40 kg
25 AUTO	FMJ	3.25 g	50 / 1000	5.60 kg
32 AUTO	FMJ/JHP	4.6 g	50 / 1000	8.50 kg
32 SMITH & WESSON LONG	LRN/WC	6.35 g	50 / 1000	5.20 kg
380 AUTO	FMJ/JHP	6.1 g	50 / 1000	10.10 kg
38 SPECIAL	FMJ/FMS/FPJ/SJFP/SJHP/ LRN/SWC/SWC HP/ WC	8.4 g	50 / 1000	7.20 kg
38 SMITH & WESSON	LRN	9.4 g	50 / 1000	14.50 kg
357 MAGNUM	FMS/FPJ/SJHP/SJFP	10.2 g	50 / 1000	8.60 kg
357 SIG	FPJ	8.1 g	50 / 1000	14 kg
38 SUPER AUTO +P	FMJ	8.4 g	50 / 1000	7.30 kg
40 SMITH & WESSON	FPJ/TMJ/JHP	10.7 g	50 / 1000	8.20 kg
44 REMINGTON MAGNUM	FPJ/JHP/JHP/SJHP/SJFP	11.7 g	50 / 1000	11 kg
45 AUTO	SJHP/FMJ/ TMJ/LRN	12 g	50 / 1000	9.40 kg
7.63 MAUSER	FMJ	5.5 g	50 / 1000	6 kg
7.62x25 TOKAREV	FMJ/JHP	5.5 g	50 / 1000	6 k9
7.62 NAGANT	FPJ	6.35 g	50 / 1000	6.50 kg
7.65 PARABELLUM	FMJ	6 g	50 / 1000	11.20 kg
9x18 MAKAROV	FMJ/JHP	6 g	50 / 1000	10.50 g
9 mm LUGER	FMJ/SJFP/TMJ/ JHP/ LRN/SJSP/FPJ	6.15 g	50 / 1000	11.30 g
9x21	FMJ/LRN	8 g	50 / 1000	13.10 g
9 mm BROWING LONG	FMJ	7 g	50 / 1000	11.70 g
10 mm AUTO	FPJ/JHP	11 g	50 / 1000	8.60 g




## Blank Ammunition

CALIBER	LOAD
30-06 SPRINGFIELD BLANK	PP-3.5
303 BRITISH BLANK	PP-3.7
5.56 M200	PP-5.1
5.56 M200 A1	PP-5.0
7.62x39 BLANK	PP-31
7.9 BLANK	PP-7.9
45 AUTO BLANK	PP-R4.32
308 WINCHESTER BLANK	PP-3.20
7.62x54 R BLANK	PP-7.6
9 mm LUGER BLANK	PP-R9.3
9 mm PA BLANK	PP-R9.6



 HANDGUN AMMUNITION CALIBER	
FMJ	FULL METAL JACKET
SP	SOFT-POINT
JHP	JACKETED HOLLOW POINT
FMS	FULL METAL SPITZ
FPJ	FLAT POINT JACKET
SJFP	SEMI-JACKED FLAT POINT
SJHP	SEMI-JACKED HOLLOW POINT
SJSP	SEMI-JACKED SOFT POINT
WC	WAD CUTTER
SWC	SEMI-WAD CUTTER
SWC HP	SEMI-WAD CUTTER HOLLOW POINT
TMJ	TOTAL METAL JACKET
LRN	LEAD ROUND NOSE

## Bullet Abbreviations

 RIFLE AMMUNITION CALIBER	
FMJ	FULL METAL JACKET
FMJ BT	FULL METAL JACKET BOAT TAIL
FMJ RN	FULL METAL JACKET ROUND NOSE
SP	SOFT-POINT
PSP	POINTED SOFT-POINT
SP BT	SOFT-POINT BOAT TAIL
PSP BT	POINTED SOFT-POINT BOAT TAIL
SP RN	SOFT-POINT ROUND NOSE
FSP	FLAT SOFT-POINT
HSP	HOLLOW SOFT-POINT
HP	HOLLOW POINT
HP BT	HOLLOW POINT BOAT TAIL



# Ammunition



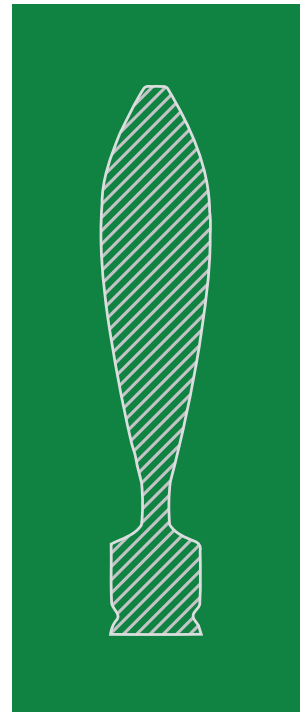
Mortar Shells  
Aircraft rockets

Air bombs  
Artillery Shells

Anti-tank Mines  
Hand Grenades

Fuzes  
Anti-tank guided rockets

# Mortar Shells



Modern solutions have been applied in developing II generation of shells. Masking of friendly troops movement as well as blinding of enemy observers, fire support artillery and anti-tank weapon crews is achieved by use of modern, low-drag and highly efficient white phosphorus-based smoke shells. With use of illuminating mortar shells, mortars provide night battlefield illumination, as well as blinding of enemy crews and observers.



## Mortar Shells 60mm



DESIGNATION	HE	HE	HE	HE
<b>60 mm</b>				
DESCRIPTION / MODEL	M73	M73 P3	M73 P4	M73 P5
LENGTH WITH FUZE (mm)	291	301	291	301
MASS WITH FUZE (g)	1350	1350	1350	1350
EXPLOSIVE CHARGE TYPE	TNT	TNT	TNT	TNT
EXPLOSIVE CHARGE MASS (g)	220	220	220	220
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C
KILLING RANGE RADIUS	10 m	10 m	10 m	10 m
MAX RANGE (m)	2550	2550	2550	2550
MIN RANGE (m)	94	94	94	94
FUZE TYPE	UT M68 P1	UT M68 P1	UT M88 P1	UTU M93-N
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	12	1	29 kg	

DESIGNATION	HE	HE	HE	HE
<b>60 mm</b>				
DESCRIPTION / MODEL	M08	M08 P1	MK10	MK10 P1
LENGTH WITH FUZE (mm)	301	301	410	410
MASS WITH FUZE (g)	1350	1350	2100	2100
EXPLOSIVE CHARGE TYPE	TNT	TNT	TNT	TNT
EXPLOSIVE CHARGE MASS (g)	220	220	400	400
TEMPERATURE ENVIRONMENT	-46°C to 60°C	46°C to 60°C	46°C to 60°C	46°C to 60°C
KILLING RANGE RADIUS	10 m	10 m	14 m	14
MAX RANGE (m)	2550	2550	5100	5100
MIN RANGE (m)	94	94	90	90
FUZE TYPE	UT M88 P1	UTU M93-N	UT M88 P1	UTU M93
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	12	1	29 kg	

DESIGNATION	ILLUMINATING	ILLUMINATING	ILLUMINATING	ILLUMINATING
<b>60 mm</b>				
DESCRIPTION / MODEL	M67	M67 P2	M08	M91
LENGTH WITH FUZE (mm)	330	330	330	495
MASS WITH FUZE (g)	1270	1270	1270	2100
EXPLOSIVE CHARGE TYPE	180.000 Cd / 35 s	180.000 Cd / 35 s	180.000 Cd / 35 s	350.000 Cd / 30 s
EXPLOSIVE CHARGE MASS (g)	200	200	200	300
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C
KILLING RANGE RADIUS	/	/	/	/
MAX RANGE (m)	2450	2450	2450	4000
MIN RANGE (m)	400	400	400	400
FUZE TYPE	TP M67	TP M67	TP M67	TP M67
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	12	1	27 kg	

## Mortar Shells 60mm



DESIGNATION	ILLUMINATING	SMOKE	SMOKE	SMOKE
<b>60 mm</b>				
DESCRIPTION / MODEL	MK10	M73	M73 P2	M08
LENGTH WITH FUZE (mm)	495	286	286	
MASS WITH FUZE (g)	2100	1350	1350	1350
EXPLOSIVE CHARGE TYPE	350.000 Cd / 30 s	/	/	/
EXPLOSIVE CHARGE MASS (g)	300	/	/	/
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C	-46°C TO 63°C
KILLING RANGE RADIUS	/	/	/	/
MAX RANGE (m)	4000	2550	2550	2550
MIN RANGE (m)	400	94	94	94
FUZE TYPE	TP M67	UT M68 P1	UT M68 P1	UT M88 P1
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	12	1	27 kg	



## Mortar Shells 60mm



## Mortar Shells 60mm

# Aircraft Rockets & Bombs





DESIGNATION	SMOKE	SMOKE	SMOKE	SMOKE
120 mm				
DESCRIPTION / MODEL	M64 P2	M64 P3	MK12	M89
LENGTH WITH FUZE (mm)	600	606	800	670
MASS WITH FUZE (g)	12.6	12.6	14.8	11.25
SMOKE TIME	min 210 s	min 210 s	min 210 s	min 210 s
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-46°C to 63°C	-30°C to 50°C
SMOKE CHARGE WEIGHT (kg)	2.45	2.45	2.45	1.65
KILLING RANGE RADIUS	/	/	/	/
MAX RANGE (m)	6500	6500	7400	6000
MIN RANGE (m)	255	255	255	400
FUZE TYPE	UT M68 P1	UT M88 P1	UT M88 P1	TP M87
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	2	1	44 kg	



Mortar Shells 120 mm

Mortar Shells 120 mm



DESIGNATION	ILLUMINATION	ILLUMINATION	
120 mm			
DESCRIPTION / MODEL	M87 P1	M01	
LENGTH WITH FUZE (mm)	670	752	
MASS WITH FUZE (g)	10.7	11.5	
ILLUMINATING POWER / TIME	1.000.000 Cd / 60 s	1.000.000 Cd / 60 s	
ILLUMINATING CHARGE MASS (kg)	1.2	1.2	
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	
KILLING RANGE RADIUS	/	/	
MAX RANGE (m)	6000	6600	
MIN RANGE (m)	400	400	
FUZE TYPE	TP M87	TP M87P1	
ELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS
OXES IN WOODEN CASE	2	1	37 kg



DESCRIPTION / MODEL	BR-1-57	BR-2-57	BR-20-57
LENGTH WITH FUZE (mm)	882	824	1200
MASS (g)	3.8	3.64	4.5
EXPLOSIVE CHARGE MASS (g)	285	290	320
MAXIMUM SPEED	673 to 617 m/s	563 to 620 m/s	/
1 KM FLYING TIME	1.89 to 2.19 s	2.46 to 2.17 s	/
PRESSURE IN THE ROCKET CHAMBER	380 kg/cm <sup>2</sup>	375 kg/cm <sup>2</sup>	/
FUZE TYPE	UTI-1	UTI-2	UTI-2
ROCKET PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS
WOODEN CASE	2	1	37 kg



Aircraft Rocket 57 mm

Air Bombs – FAB



DESCRIPTION / MODEL	FAB-100 M80 HE	FAB-100 M80 HE RETARDED	FAB-250 M79 HE	RAB-250 M91
LENGTH WITH FUZE (mm)	1490	1617	2015	2085
MASS WITHOUT FUZE (kg)	117	128	240	252
EXPLOSIVE CHARGE MASS (g)	39	39	105	70
DIAMETER (mm)	230	230	325	320
HOOK SPACING (mm)	255 / 355.6	255 / 355.6	255 / 355.6	355.6 / 250
TEMPERATURE ENVIRONMENT	-40 to +50C	-40 to +50C	-40 to +50C	-40 to +60C
FUZE TYPE	AUV-E / AUFK	AUFK	AUV-E / AUFK	UPB M91
BOMBS PACKING	BOMBS IN CRATE	FINS		
CRATE	3	12		

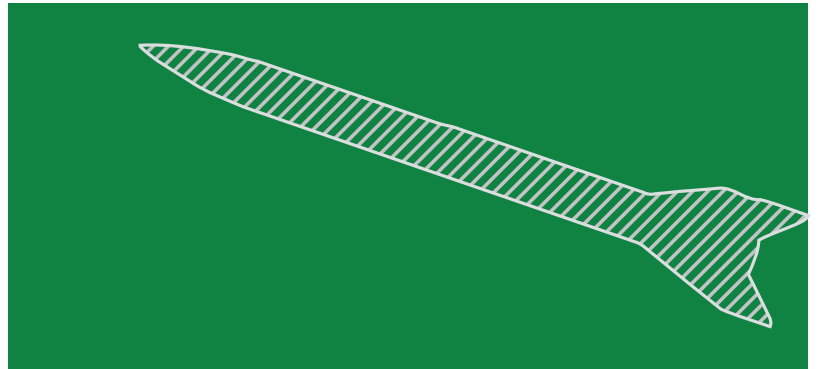




# Unguided Rockets



Unguided rockets for multi-tube launchers intended for impact, and quick fire assaults on surface targets in the depth of the enemy. It is efficient against all types of the targets: personnel, unshielded and armored vehicles.

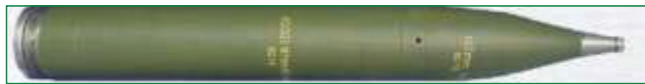




"GRAD" is self-propelled multi-tube missile launcher intended for impact, sudden and quick fire assaults on the surface targets in the depth of the enemy. It is efficient against all types of targets: personnel, non-armoured and armoured vehicles.

System "GRAD" fires three types of missiles: GRAD, GRAD-M and GRAD 2000. The launcher is carried on the vehicle TAM 150 T11 BV 6x6. It is possible to mount it on other vehicles of the similar characteristics.

# 107 mm



## M06 – Extended Unguided Artillery Rocket

DESCRIPTION / MODEL		
CALIBER (mm)	107	
LENGTH WITH FUZE (mm)	825	
MASS WITH FUZE (kg)	17.6	
WARHEAD EXPLOSIVE WEIGHT (kg)	1.25	
MAXIMUM RANGE (km)	11.5	
OPERATING TEMPERATURE RANGE	-32°C to +60°C	
FUZE TYPE	UTI M84	
ROCKET PACKING	BOXES IN CASE	GROSS MASS
WOODEN CASE	2	49 kg



## Unguided Rocket 122 mm Grad/Grad – M/Grad 2000



# 122 mm



DESCRIPTION / MODEL	GRAD	GRAD - M	GRAD 2000
CALIBER (mm)	122	122	122
LENGTH WITH FUZE (mm)	2875	2875	2925
MASS WITH FUZE (kg)	67.3	69.3	68.3
WARHEAD EXPLOSIVE WEIGHT (kg)	19.1	19.1	19.1
MAXIMUM RANGE (km)	27.8	27.8	40
OPERATING TEMPERATURE RANGE	-30°C to +50°C	-30°C to +50°C	-30°C to +50°C
ROCKET PACKING	BOXES IN CASE	GROSS MASS	
WOODEN CASE	2	67 kg	

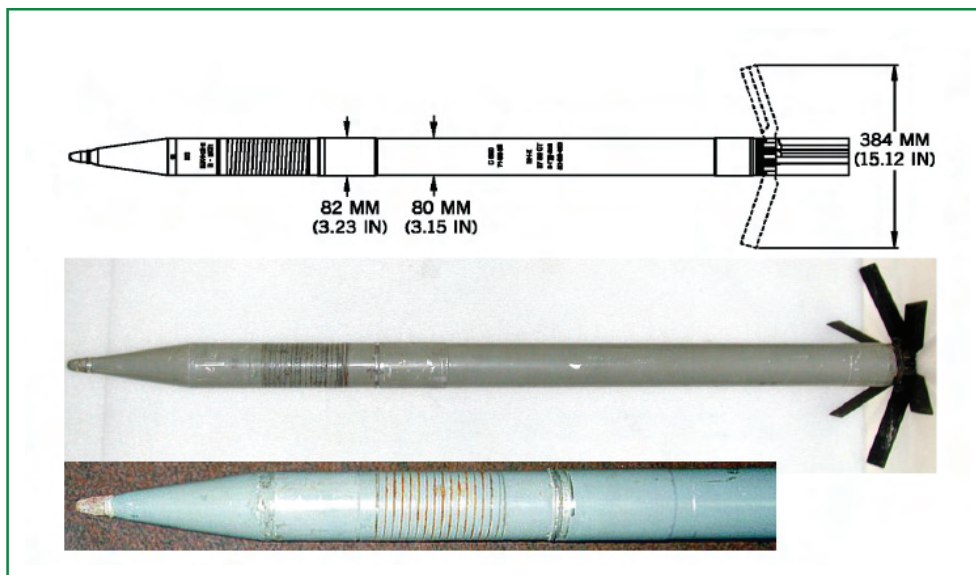
# Rockets S5 and S8

## Rocket S5



This is the Bulgarian 57mm S5, a high explosive fin-stabilised, solid propellant, air-to-ground-rocket. The S5 series of conventional unguided rockets comprises a warhead, a solid-propellant rocket motor and flip-out tails fins for stability.

The S5 is a 55mm calibre unguided rocket fired from a 57mm calibre tube.



## Rocket S8



This is the Bulgarian 80mm S8, a high explosive fragmentation, fin-stabilised, air-to-ground-rocket, with a cross-cut diamond pattern fragmentation sleeve.

The S8 is a conventional 80mm calibre unguided electrically fired rocket with a solid-propellant rocket motor.





OGANJ C is self-propelled multi-tube missile launcher intended for impact, sudden and quick fire assaults on surface targets in the depth of the enemy. It is efficient against all types of the targets: personnel, unshielded and armoured vehicles.

OGANJ C, for firing from multi-tube missile launcher, uses point-detonating-demolition missile M77 (OGANJ M77). The launcher is loaded on the vehicle TAM 150 T11 BV6x6.

It is possible to mount it on other vehicles of similar characteristics (FAP 1417, for example). The system is modularly designed in such a way as to permit mounting of the "PLAMEN" launching device with 32 tubes, put on the universal upper carriage.

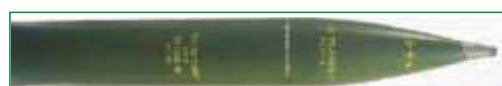
The launcher design meets all the ergonomic requirements providing comfortable and safe work. Mechanism drive is manual. On the user's request, it can be modified to semi-automatic operation.

The launcher deployment time is 30 seconds. Time, needed for firing position leave, is 30 seconds. Masses distribution provides proper center of gravity position during transportation with FULL/EMPTY combination while the launching device has been turned over to the original position by 180°.

## Unguided Rocket 128 mm – PLAMEN



# 128 mm



DESCRIPTION / MODEL	PLAMEN A	PLAMEN D
CALIBER (mm)	128	128
LENGTH WITH FUZE (mm)	837	971
MASS WITH FUZE (kg)	23.1	25.5
WARHEAD EXPLOSIVE WEIGHT (kg)	2.6	3.3
MAXIMUM RANGE (km)	8.6	12.6
OPERATING TEMPERATURE RANGE	-30°C to +50°C	-30°C to +50°C
ROCKET PACKING	BOXES IN CASE	
WOODEN CASE	1	

# 128 mm



## Unguided Rocket M-77 128mm – OGANJ

DESCRIPTION / MODEL		
CALIBER (mm)	128	
LENGTH WITH FUZE (mm)	2600	
MASS WITH FUZE (kg)	67	
WARHEAD EXPLOSIVE WEIGHT (kg)	19.5	
MAXIMUM RANGE (km)	21.5	
OPERATING TEMPERATURE RANGE	-32°C to +60°C	
FUZE TYPE	UTU, M77	
ROCKET PACKING	BOXES IN CASE	GROSS MASS
WOODEN CASE	1	75 kg

100 mm  
105 mm  
125 mm  
130 mm  
52 mm  
155 mm



## Artillery Shells



100 mm

125 mm

152 mm

105 mm

130 mm

155 mm



These calibers are used for completion of artillery missiles, as well as fuses and gun primers. We perform completion of artillery missiles. We are also equipped for all types of acceptance control tests done prior to including the device into the armament of an army.



## 40 mm Ammunition



Designed to be used against live force, in both open and sheltered space. It is from grenade launcher GP-25 mounted under the barrel of the Klashnikov machinegun [AK-74, AKS-74, AKM, AK-101] as well as new M21 rifles produced by "Zastava" Kragujevac. This bullets can be fired directly [holding the device on the shoulder] to the range 50 to 400m, and indirectly [curved trajectory] to the range of 200 to 350m.

## 40 mm



DESIGNATION	BLASTING	BLASTING	CUMULATIVE	HE
DESCRIPTION / MODEL	M02	M04	M04	M04
LENGTH (mm)	105	125	108	103
MASS (g)	260	300	260	190
EXPLOSIVE CHARGE MASS (g)	49	40	32	/
SELF DESTRUCTION TIME (s)	15	15	15	15
TEMPERATURE ENVIRONMENT	-53°C to 71°C	-53°C to 71°C	-53°C to 71°C	-53°C to 71°C
PENETRATION (mm)	/	/	50	/
MAX RANGE (m)	400	400	400	400
MIN RANGE (m)	/	/	/	/
FUZE TYPE	UT, M02 SP	UT, M07	UT, M02 SP	UT, M04
SHELL PACKING	CONTAINERS	BOX DIMENSION		GROSS MASS
PLASTIC CONTAINERS IN WOODEN BOX	40	59,6 x 36,6 x 19,6 cm		23.5 kg

## 40 mm



DESIGNATION	INCENDIARY	SMOKE	PRACTICE
DESCRIPTION / MODEL	M04	M04	M04
LENGTH (mm)	105	108	105
MASS (g)	260	260	260
SMOKE MIXTURE MASS (g)	/	100	/
SELF DESTRUCTION TIME (s)	15	15	15
TEMPERATURE ENVIRONMENT	-53°C to 71°C	-53°C to 71°C	-53°C to 71°C
INCIDENTARY MIXTURE MASS (g)	80	/	80
MAX RANGE (m)	400	400	400
MIN RANGE (m)	/	/	/
FUZE TYPE	UT, M02 SP	UT, M02 SP	UT, M02 SP
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS
CARDBOARD BOXES IN WOODEN CASE	40	59,6 x 36,6 x 19,6 cm	23.5 kg





# Hand Grenades

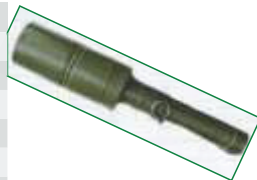
DESCRIPTION / MODEL	HAND GRENADE M-84	
MASS (g)	82	
DIMENSIONS (mm)	60x115	
EXPLOSIVE CHARGE MASS (g)	95	
STEEL BALLS DIAMETER (mm)	2.3	
SAFETY RING PULLING FORCE (n)	110	
FUZE DELAY TIME (s)	3-5.7	
PACKING	BOXES IN WOODEN CASE	CASE GROSS WEIGHT
PLASTIC BOX IN WOODEN CASE	24	23.5 kg



DESCRIPTION / MODEL	HAND GRENADE M-75	
MASS (g)	355	
DIMENSIONS (mm)	57x89	
EXPLOSIVE CHARGE MASS (g)	36	
STEEL BALLS DIAMETER (mm)	2.5-2.9	
SAFETY RING PULLING FORCE (n)	7-18	
FUZE DELAY TIME (s)	3-4.4	
PACKING	BOXES IN WOODEN CASE	CASE GROSS WEIGHT
PLASTIC BOX IN WOODEN CASE	36	23



DESCRIPTION / MODEL	CHAPED-CHARGE HAND GRENADE (BRK)	
MASS (g)	1000	
LENGTH (mm)	399	
EXPLOSIVE CHARGE MASS (g)	340	
WARHEAD DIAMETER (mm)	74.5	
STEEL PLATE PENETRATION (mm)	280	
SERVICE TEMPERATURE RANGE	-30°C to +50°C	
PACKING	BOXES IN WOODEN CASE	
PLASTIC BOX IN WOODEN CASE	12	



DESCRIPTION / MODEL	HAND SHOCK BOMB	
MASS (g)	454	
TIME INTERVAL BETWEEN SOUND EFFECTS (s)	1.5	
SOUND EFFECT INTENSITY	130 db to 15 m	
SERVICE LIFE	5 years	
SERVICE TEMPERATURE RANGE	-30°C to +50°C	
PACKING	BOXES IN WOODEN CASE	
PLASTIC BOX IN WOODEN CASE	12	







# Anti-Tank Mines

MASS (g)	7.2
DIMENSIONS (mm)	290x132
EXPLOSIVE CHARGE MASS (g)	5.1
EXPLOSIVE CHARGE TYPE	CAST TNT
STEPPING-ON AREA	200 mm (314 cm <sup>2</sup> )
ACTIVATION FORCE	1.3 – 1.7 daN



PACKING	MINES IN BOX	BOX GROSS WEIGHT
BOX	4	43 kg



AntiMagnetic  
Antitank Mine – 6(TMA-6)

AntiMagnetic  
Antitank Mine – 4(TMA-4)



MASS (g)	6.3
DIMENSIONS (mm)	285x110
EXPLOSIVE CHARGE MASS (g)	5.5
EXPLOSIVE CHARGE TYPE	CAST TNT
STEPPING-ON AREA	200 mm (314 cm <sup>2</sup> )
ACTIVATION FORCE	100 – 200 daN



PACKING	MINES IN BARREL	BARREL GROSS WEIGHT
BARREL	4	28 kg



DESIGNATION	SMOKE	SMOKE	SMOKE	PRACTICE
60 mm				
DESCRIPTION / MODEL	MK10	M93	M08	M62
LENGTH WITH FUZE (mm)	410	330	330	202 (no fuze)
MASS WITH FUZE (g)	2100	1400	1400	1080 (no fuze)
EXPLOSIVE CHARGE TYPE	/	/	/	/
SMOKE CHARGE MASS (g)	230	450	450	/
TEMPERATURE ENVIRONMENT	-46°C to 63°C	-30°C to 50°C	-30°C to 50°C	-46°C to 63°C
KILLING RANGE RADIUS	/	/	/	/
MAX RANGE (m)	5100	2400	2400	50
MIN RANGE (m)	90	300	300	50
FUZE TYPE	UT M88 P1	TP M67	TP M67	/
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	12	1	28 kg	



Mortar Shells 60mm

Mortar Shells 81/82mm



DESIGNATION	HE	HE	HE	HE
81/82 mm				
DESCRIPTION / MODEL	M72 / 74	M72 P3 / M74 P3	M72 P4 / M74 P4	M09
LENGTH WITH FUZE (mm)	375	400	400	400
MASS WITH FUZE (g)	3050	3180	3180	3180
EXPLOSIVE CHARGE TYPE	TNT	TNT	TNT	TNT
EXPLOSIVE CHARGE MASS (g)	680	680	680	680
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C	-46°C to 63°C
KILLING RANGE RADIUS	14 m	14 m	14 m	14 m
MAX RANGE (m)	5070	5070	5070	5070
MIN RANGE (m)	91	91	91	91
FUZE TYPE	UT M68P1	UTU M93-N	UT M88 P1	UT M88 P1
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	5	1	29 kg	

81/82 mm



DESIGNATION	HE	HE	HE	HE
81/82 mm				
DESCRIPTION / MODEL	M09 P1	M91	M91 P1	MK11
LENGTH WITH FUZE (mm)	400	480	480	480
MASS WITH FUZE (g)	3180	4100	4100	4100
EXPLOSIVE CHARGE TYPE	TNT	RDX / TNT	RDX / TNT	RDX / TNT
EXPLOSIVE CHARGE MASS (g)	680	850	850	850
TEMPERATURE ENVIRONMENT	-46°C to 63°C	-30°C to 50°C	-30°C to 50°C	-46°C to 60°C
KILLING RANGE RADIUS	14 m	18 m	18 m	14 m
MAX RANGE (m)	5070	6500	6500	6500
MIN RANGE (m)	91	100	100	100
FUZE TYPE	UTU M93-N	UT M88 P1	UTU M93-N	UT M88 P1
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	5	1	34 kg	



Mortar Shells 81/82mm

Mortar Shells 81/82mm



DESIGNATION	HE	ILLUMINATION	ILLUMINATION	ILLUMINATION
81/82 mm				
DESCRIPTION / MODEL	MK11 P1	M67	M67 P2	M09
LENGTH WITH FUZE (mm)				
MASS WITH FUZE (g)	4100	2950	2950	2950
ILLUMINATING POWER / TIME	/	500.000 Cd / 40 s	500.000 Cd / 35 s	500.000 Cd / 30 s
EXPLOSIVE CHARGE MASS (g)	850	/	/	/
TEMPERATURE ENVIRONMENT	-46°C to 63°C	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C
KILLING RANGE RADIUS	18 m	/	/	/
MAX RANGE (m)	6500	3650	3650	3650
MIN RANGE (m)	100	250	250	250
FUZE TYPE	UTU M93-N	TP M67	TP M67	TP M67
CARDBOARD BOXES IN WOODEN CASE	5	1	27 kg	



## 81/82 mm



DESIGNATION	SMOKE	HIGH-SMOKE	HIGH-SMOKE	HIGH-SMOKE
DESCRIPTION / MODEL	MK11	M88	M88 P1	M95
LENGTH WITH FUZE (mm)	478	410	410	480
MASS WITH FUZE (g)	4100	2950	2950	4250
SMOKE TIME	min 120 s	min 120 s	min 120 s	min 120 s
SMOKE CHARGE WEIGHT (g)	700	850	850	850
TEMPERATURE ENVIRONMENT	-46°C to 63°C	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C
KILLING RANGE RADIUS	/	/	/	/
MAX RANGE (m)	6500	3400	3400	5480
MIN RANGE (m)	90	300	300	300
FUZE TYPE	UT M88 P1	TP M67	TP M67	TP M67P2
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	5	1	35 kg	

DESIGNATION	ILLUMINATION	ILLUMINATION	SMOKE	SMOKE
DESCRIPTION / MODEL	M95	MK11	M72 / M74	M72 P3 / M74 P3
LENGTH WITH FUZE (mm)	530	530	375	400
MASS WITH FUZE (g)	4250	4250	3050	3180
ILLUMINATING POWER / TIME	750.000 Cd / 40 s	750.000 Cd / 40 s	/	/
ILLUMINATING CHARGE MASS (g)	700	700	/	/
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-30°C to 50°C	-30°C to 50°C	-46°C TO 63°C
SMOKE CHARGE WEIGHT (g)	/	/	550	550
MAX RANGE (m)	5480	5480	5070	5070
MIN RANGE (m)	300	300	91	91
FUZE TYPE	TP M67P2	TP M67P2	UT M68 P1	UT M88P1
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	5	1	28 kg	



## 120 mm



DESIGNATION	HE	HE	HE	PRACTICE
DESCRIPTION / MODEL	M62 P8	MK12 P1	MK12 P1-L	M63 P2
LENGTH WITH FUZE (mm)	606	606	606	508 (no fuze)
MASS WITH FUZE (g)	12.6	14.8	14.8	11.6 (no fuze)
EXPLOSIVE CHARGE TYPE	RDX / TNT	TNT	TNT	/
EXPLOSIVE CHARGE MASS (g)	2.45	2.45	2.45	/
TEMPERATURE ENVIRONMENT	-30°C to 50°C	-46°C to 63°C	-46°C to 63°C	/
KILLING RANGE RADIUS	20 m	24 m	24 m	/
MAX RANGE (m)	6500	7400	9400	500
MIN RANGE (m)	255	255	275	50
FUZE TYPE	UTU M93 P1 SQ/D	UTU M93P1 SQ/D	UTU M93P1 SQ/D	/
SHELL PACKING	BOXES IN CASE	SHELLS IN CARDBOARD	GROSS MASS	
CARDBOARD BOXES IN WOODEN CASE	2	1	44 kg	



# FUZES

## FUZE TP - M67 P1



**PURPOSE** The fuze is intended for Illuminating mortar shell and Long-smoking shells, Cal. 60 mm

**DESCRIPTION** TP - M 67 P1 is time - pyrotechnic fuze on zirconium basis

## FUZE TP - M67 P1



**PURPOSE** The fuze is intended for Illuminating mortar shell and Long-smoking shells, Cal. 81/82 mm

**DESCRIPTION** TP - M 87 is time - pyrotechnic fuze on zirconium basis

## FUZE TP - M87



**PURPOSE** The fuze is intended for Illuminating mortar shell and Long-smoking shells, Cal. 60 mm

**DESCRIPTION** TP - M 87 is time - pyrotechnic fuze on zirconium basis

## FUZE ETU - M365



**PURPOSE** Electronic Time Fuze ETU, M365 is intended for assembling of Illuminating and Smoke Mortar shells of 60mm, 81/82mm and 120mm calibers

**DESCRIPTION** The Fuze ETU, M365 is based on modern microprocessor technology. Time recording is performed by means of time setter. The set fuze time is stored for 20 minutes, thereafter being automatically erased in order to save battery power

## FUZE UT - M68 P1



**PURPOSE** The fuze is intended for assembling of HE mortar shells and SMOKE mortar shells of all calibers with bearings that are compatible with connecting measures or can be assembled with appropriate adaptors

**DESCRIPTION** UT-M68P1 is mechanical, point- detonating, impact fuze of superquick action

## FUZE UT - M88 P1



**PURPOSE** The fuze is intended for assembling of HE and SMOKE mortar shells of all calibers with bearings that are compatible with connecting measures or can be assembled with appropriate adaptors

**DESCRIPTION** UT - M88 is mechanical, point-detonating, impact fuze of superquick action equipped with hard trans-port safety element including an ancillary safety mechanism

## FUZE UT - M88 P2



**PURPOSE** The fuze is intended for assembling of HE and SMOKE mortar shells of all calibers with bearings that are compatible with connecting measures or can be assembled with appropriate adaptors

**DESCRIPTION** UT - M88 P2 is mechanical, point-detonating, impact fuze of superquick action equipped with hard transport safety element including an ancillary safety mechanism

## FUZE PD UTU - M93-N



**PURPOSE** The fuze is intended for assembling of HE mortar shells of all calibers with bearings that are compatible with connecting measures or can be assembled with appropriate adaptors

**DESCRIPTION** PD UTU, M93 is mechanical, point-detonating, impact fuze of superquick and delay action adjustable by a mode selector (superquick "T" or delay "U"). It is equipped with hard transport safety element including an ancillary safety mechanism

## FUZE PD UTU - M93 P1



**PURPOSE** The fuze is intended for assembling of HE mortar shells of all calibers with bearings that are compatible with connecting measures or can be assembled with appropriate adaptors.

**DESCRIPTION** PD UTU, M93 is mechanical, point-detonating, impact fuze of superquick and delay action adjustable by a mode selector (superquick "T" or delay "U"). It is equipped with hard transport safety element including an ancillary safety mechanism

## FUZE UTU - M78 (AU-29)



**PURPOSE** The fuze is intended for HE mortar shells of superquick action, Cal. 120 mm.

**DESCRIPTION** UTU - M78 is point - detonating, mechanical fuze of superquick and delay action adjustable by sleeve turning. It is equipped with transport safety element for handling, transportation and parachuting



## FUZE UTU - M77



- PURPOSE** The fuze is intended for "OGANJ" HE warhead, Cal. 128 mm
- DESCRIPTION** UTU - M77 is point - detonating, mechanical, impact fuze of superquick and delay action adjustable by a mode selector (superquick "T" or delay "U")

## FUZE UTI - 1



- PURPOSE** The fuze is intended to initiate the explosion of HEAT warhead of the 57 mm missile when fired from honeycomb L - 57 type launchers having the tube rear part open
- DESCRIPTION** UTI - 1 is point - detonating, mechanical, impact fuze with remote arming and self - destruction devices

## FUZE UTI - 2



- PURPOSE** The fuze is intended to initiate the explosion of HEAT warhead of the 57 mm missile when fired from honeycomb L - 57 type launchers having the tube rear part open
- DESCRIPTION** The fuze is intended for "MUNJA" HEAT warhead, Cal. 128 mm

## FUZE UTI - M84



- PURPOSE** The fuze is intended for M63, M87 and PLAMEN-D missiles, Cal. 128 mm equipped with superquick blast warhead as well as for missile with smoke warhead of same caliber
- DESCRIPTION** UTI - M84 is point - detonating, mechanical, impact fuze of superquick and inertia action

## FUZE UTI - M84 P1



- PURPOSE** The fuze is intended for M15 rocket, Cal.107mm equipped with superquick blast warhead as well as for missile with smoke warhead of same caliber
- DESCRIPTION** UTI - M84 P1 is point - detonating, mechanical, impact fuze of superquick and inertia action

## FUZE UTIU - M72 B1 (AU - 18)



- PURPOSE** UTIU - M72 B1 is point - detonating, mechanical fuze of superquick, inertia and delay action adjustable by sleeve turning and cap removing
- DESCRIPTION** The fuze is intended for HE grenades , Cal. 85, 100, 122, 130 and 152 mm

## FUZE UTIU- M85 (AU - 20E)



- PURPOSE** UTIU - M72 B1 is point - detonating, mechanical fuze of superquick, inertia and delay action adjustable by sleeve turning and cap removing
- DESCRIPTION** The fuze is intended for HE grenades , Cal. 85, 100, 122, 130 and 152 mm

## FUZE UTIU, M15



- PURPOSE** The fuze is intended for HE projectile, Cal. 155 mm M107
- DESCRIPTION** UTIU, M15 is point-detonating, mechanical fuze of superquick, inertia and delay action adjustable by sleeve turning.

## FUZE MRV-U (AU - 32)



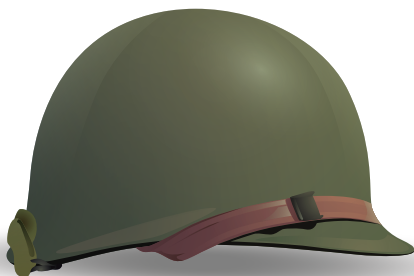
- PURPOSE** The fuze is intended for "GRAD" HE warhead, Cal. 122 mm
- DESCRIPTION** MRV-U - M 85 is point-detonating, mechanical fuze of superquick and delay action. Action selecting by turning of sleeve

## FUZE AUFK - M91



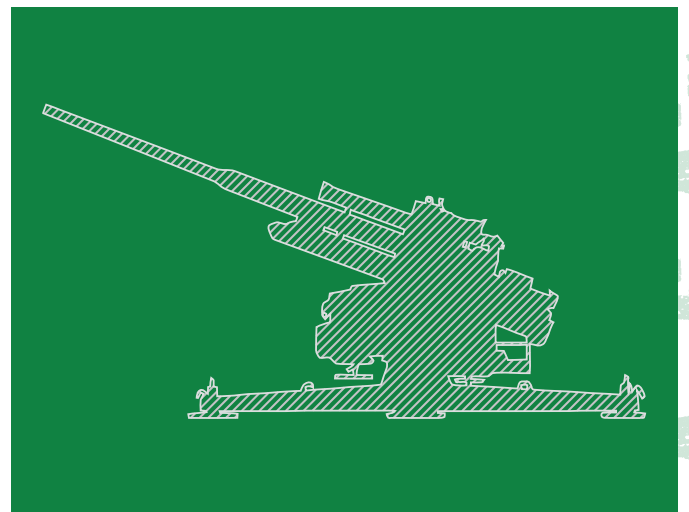
- PURPOSE** The fuze is intended for high-explosive aircraft bombs with or without drag chute
- DESCRIPTION** AUFK - M 91 is impact ,inertia-type of an electric - mechanical fuze for aircraft bombs with superquick (T) and delay action (U) adjustable by mode selector

# Ammunition



Small Caliber Ammunition  
Large Caliber Ammunition  
Artillery Ammunition  
Rocket weapons  
Police Program

# Anti-Aircraft Ammunition



Anti-aircraft guns are weapons designed to attack aircraft. Such weapons commonly have a high rate of fire and are able to fire shells designed to damage aircraft. They also are capable of firing at high angles, but are also usually able to hit ground targets as well in a direct fire role.





## 23mm x 115 for AA MK GUN GSH-23L and GSH-23LU



### 23 mm

WEIGHT (g)					
PROJECTILE (g)	174	174	174	168	174
PROPELLANT (g)	37	37	37	37	37
EXPLOSIVE (g)	16.3	16.3	none	none	none
COMPLETE ROUND (g)	329	329	331	321	331
EXPLOSIVE TYPE	RDX	RDX+AL	none	none	none
LENGTH (COMPLETE ROUND)	197.9	197.9	197.9	197.8	197.8
MUZZLE VELOCITY (m/s)	720	720	720	720	720
TRACER BURNING TIME (s)	none	none	none	3.5	none

PACKING	ROUNDS IN CASE	DIMENSIONS	GROSS MASS
WOODEN CASE	100	705 x 250 x 202 mm	42 kg

NATO DESIGNATION	HE	HEI	HE-T	HEI-T	API-T	API	TP-T	TP

### 23 mm

WEIGHT (g)								
PROJECTILE (g)	182	182	190	190	190	190	190	182
PROPELLANT (g)	78	78	78	78	78	78	78	78
EXPLOSIVE (g)	19.6	19.6	16.3	16.3	5	5	none	none
COMPLETE ROUND (g)	440	440	450	450	450	450	450	440
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	EDX+AL	none	none	none	none
LENGTH (COMPLETE ROUND)	236	236	236	236	236	236	236	236
MUZZLE VELOCITY (m/s)	970	970	970	970	970	970	970	970
SELF-DESTRUCTION TIME (s)	5.6-11.2	5.6-11.2	5.6-11.2	5.6-11.2	5.6-11.2	5.6-11.2	5.6-11.2	5.6-11.2
TRACER BURNING TIME (s)	none	none	3.5	3.5	3.5	/	3.5	/

PACKING	ROUNDS IN CASE	DIMENSIONS	GROSS MASS
WOODEN CASE	80	688 x 286 x 229 mm	44 kg



## 23mm x 115B for AA GUN ZU-2 and ZSU-4

## 20mm x 110 for AA Gun M55, HS 404 and HS 804 "HISPANO"



### 20 mm

WEIGHT (g)										
PROJECTILE (g)	122	122	122	122	142	142	142	122	122	min 70
PROPELLANT (g)	29	29	29	29	32	32	32	29	29	29
EXPLOSIVE (g)	12.1	12.1	6.1	6.1	none	none	none	none	none	none
COMPLETE ROUND (g)	246	246	246	246	265	265	265	246	246	195
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none	none	none
LENGTH (COMPLETE ROUND)	184	184	184	184	182	182	182	184	184	184
MUZZLE VELOCITY (m/s)	845	845	845	845	844	844	844	845	845	none
SELF-DESTRUCTION TIME (s)	4.5-8	4.5-8	4.5-8	4.5-8	none	none	none	none	none	none
TRACER BURNING TIME (s)	/	/	3.5	3.5	3.5	3.5	/	3.5	/	/

PACKING	ROUNDS IN CASE	DIMENSIONS	GROSS MASS
WOODEN CASE	100	660 x 232 x 200 mm	34 kg

NATO DESIGNATION	HE	HEI	HE-T	HEI-T	API-T	API	AP-T	TP-T	TP	BLANK

### 20 mm

WEIGHT (g)										
PROJECTILE (g)	119	119	122	122	142	142	142	122	119	min 70
PROPELLANT (g)	29	29	29	29	32	32	32	29	29	29
EXPLOSIVE (g)	12.1	12.1	6.1	6.1	none	none	none	none	none	none
COMPLETE ROUND (g)	246	246	246	246	265	265	265	246	246	195
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none	none	none
LENGTH (COMPLETE ROUND)	184	184	184	184	182	182	182	182	184	184
MUZZLE VELOCITY (m/s)	845	845	845	845	844	844	844	845	845	none
SELF-DESTRUCTION TIME (s)	4.5-9	4.5-9	4.5-9	4.5-9	none	none	none	none	none	none
TRACER BURNING TIME (s)	/	/	3.5	3.5	3.5	/	3.5	3.5	/	/

PACKING	ROUNDS IN CASE	DIMENSIONS	GROSS MASS
WOODEN CASE	100	660 x 232 x 200 mm	34 kg



## 20mm x 110 RB for AA MK- IV "OERLIKON"

# 30mm x 165 RB for AA GUN 30mm GSH 301








## 30 mm

NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP	AP-T	TP-T	TP
WEIGHT (g)								
PROJECTILE (g)	389	389	385	385	400	400	385	389
PROPELLANT (g)	121	121	121	121	126	126	121	121
EXPLOSIVE (g)	49	49	11.5	11.5	none	none	none	none
COMPLETE ROUND (g)	839	839	835	835	853	853	835	839
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none
LENGTH (COMPLETE ROUND)	291	291	291	291	292	292	292	292
MUZZLE VELOCITY (m/s)	890	890	890	890	890	890	890	890
SELF-DESTRUCTION TIME (s)	13-19	13-19	13-19	13-19	none	none	none	none
TRACER BURNING TIME (s)	none	none	10	10	none	3.5	10	none
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS	
WOODEN CASE	30				576 x 338 x 218 mm		37 kg	

## 30 mm



30 mm

NATO DESIGNATION	HE	HEI	AP	AP-T	TP	
						
WEIGHT (g)						
PROJECTILE (g)	389	389	400	400	389	
PROPELLANT (g)	121	121	126	126	121	
EXPLOSIVE (g)	49	49	none	none	none	
COMPLETE ROUND (g)	840	840	850	850	840	
EXPLOSIVE TYPE	RDX	RDX+AL	none	none	none	
LENGTH (COMPLETE ROUND)	290	290	292	292	290	
MUZZLE VELOCITY (m/s)	860	860	860	860	860	
SELF-DESTRUCTION TIME (s)	none	none	none	3.5	none	
TRACER BURNING TIME (s)	none	none	none	3.5	none	
PACKING	ROUNDS IN CASE				DIMENSIONS	GROSS MASS
WOODEN CASE	30				576 x 338 x 218 mm	37 kg

## 30 mm



NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP	AP-T	TP-T	TP
WEIGHT (g)								
PROJECTILE (g)	385	389	385	385	400	400	385	389
PROPELLANT (g)	121	121	121	121	126	126	121	121
EXPLOSIVE (g)	49	49	11.5	11.5	none	none	none	none
COMPLETE ROUND (g)	833	833	835	835	853	853	835	833
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none
LENGTH (COMPLETE ROUND)	292	292	291	291	292	292	291	291
MUZZLE VELOCITY (m/s)	960	960	960	960	970	970	960	960
SELF-DESTRUCTION TIME (s)	7.5-14.5	7.5-14.5	7.5-14.5	7.5-14.5	none	none	none	none
TRACER BURNING TIME (s)	none	none	10	10	none	3.5	10	none
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS	
WOODEN CASE	30				576 x 338 x 218 mm		37 kg	

## 30 mm



NATO DESIGNATION	HE	AP-T	TP	HEI	HEI-T	TP-T	BLANK
WEIGHT (g)							
PROJECTILE (g)	356	350	356	435	435	435	min 250
PROPELLANT (g)	190	190	190	195	195	195	195
EXPLOSIVE (g)	31.1	none	none	40.8	35.7	none	none
COMPLETE ROUND (g)	1066	1050	1066	1140	1140	1140	min 960
EXPLOSIVE TYPE	RDX+AL	none	none	RDX+AL	RDX+AL	none	none
LENGTH (COMPLETE ROUND)	304	304	304	331	331	331	331
MUZZLE VELOCITY (m/s)	1060	1095	1060	997	997	997	/
SELF-DESTRUCTION TIME (s)	12-7	none	none	9-13	9-13	none	none
TRACER BURNING TIME (s)	none	min 2	none	none	4	4	none
PACKING	ROUNDS IN CASE			DIMENSIONS		GROSS MASS	
AK-230	WOODEN CASE 37 / 40			576 x 338 x 218 mm		37 kg	
M53, 53/59	WOODEN CASE 40			642 x 355 x 176 mm		61 kg	

# 30mm x 210B for AA GUN 30mm AK-230

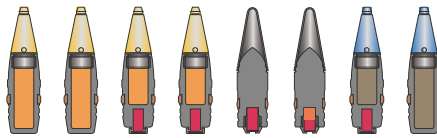
# 30mm x 165 for AA GUN 30mm 2A72, 2A42 and 2A38M

# 30mm x 165 for AA GUN 30mm A018

# 30mm x 220 for AA GUN 30/2 M53, 53/59 (CS)

NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP-T	API-T	TP-T	TP
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37 mm



30mm x 252 for AA GUN  
37mm M39 [SU]



WEIGHT (g)								
PROJECTILE (g)	732	732	732	732	760	732	732	732
PROPELLANT (g)	200	200	200	200	200	200	200	200
EXPLOSIVE (g)	40	40	38	38	none	none	none	none
COMPLETE ROUND (g)	1480	1480	1480	1480	1480	1480	1480	1480
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none	none
LENGTH (COMPLETE ROUND)	385	385	385	385	385	385	385	385
MUZZLE VELOCITY (m/s)	850	850	850	850	850	850	850	850
SELF-DESTRUCTION TIME (s)	7-14	7-14	7-14	7-14	7-14	none	none	none
TRACER BURNING TIME (s)	none	none	6	6	6	6	6	none
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS	

40mm x 311 for AA GUN  
40mm L/60



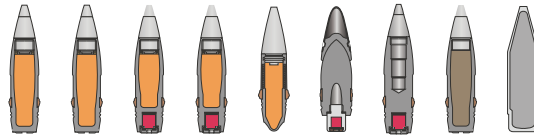
NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP-T	TP-T	TP	BLANK
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40 mm

WEIGHT (g)								
PROJECTILE (g)	910	910	910	910	900	910	910	800
PROPELLANT (g)	310	310	310	310	320	310	310	310
EXPLOSIVE (g)	78	78	78	78	none	78	none	none
COMPLETE ROUND (g)	2100	2100	2100	2100	2120	2100	2100	1900
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	EDX+AL	none	none	none	none
LENGTH (COMPLETE ROUND)	447	447	447	447	447	447	447	447
MUZZLE VELOCITY (m/s)	880	880	880	880	880	880	880	none
SELF-DESTRUCTION TIME (s)	8-12	8-12	8-12	8-12	none	8-12	8-12	none
	none	none	5	5	3.5	5	none	none
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS	
WOODEN CASE	16				564 x 343 x 318 mm		46 kg	

NATO DESIGNATION	HE	HEI	HE-T	HEI-T	PFHE	AP-T	TP-T	TP	BLANK
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40 mm



40mm x 365 for AA GUN  
40mm L/70 "BOFORS"



WEIGHT (g)									
PROJECTILE (g)	964	964	964	964	880	930	964	964	920
PROPELLANT (g)	480	480	480	480	480	480	480	480	480
EXPLOSIVE (g)	95	95	83	83	83	none	none	none	none
COMPLETE ROUND (g)	2500	2500	2500	2500	2420	2470	2500	2500	2450
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	RDX	none	none	none	none
LENGTH (COMPLETE ROUND)	535	535	535	535	534.5	497	535	535	535
MUZZLE VELOCITY (m/s)	1005	1005	1005	1005	1025	1025	1005	1005	none
SELF-DESTRUCTION TIME (s)	8-13	8-13	8-13	8-13	3.5-10	none	none	none	none
TRACER BURNING TIME (s)	/	/	4	4	/	4	/	/	/
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS		

57mm x 248 for Self-propelled  
AA Gun 57mm S/68 and S/60



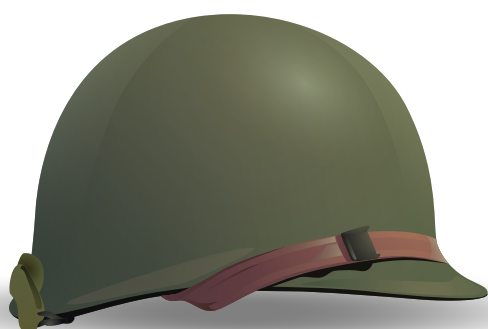
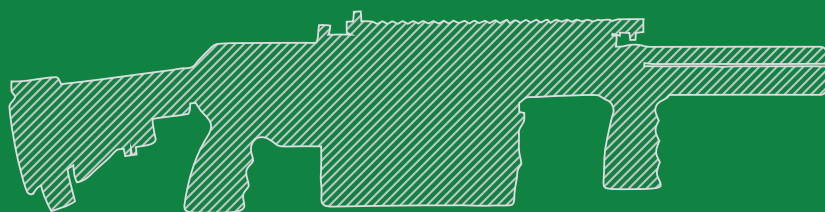
NATO DESIGNATION	HE	HEI	HE-T	HEI-T	AP-T	TP-T	TP
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57 mm



WEIGHT (g)							
PROJECTILE (g)	2850	2850	2850	2850	2850	2850	2850
PROPELLANT (g)	1180	1180	1180	1180	1180	1180	1180
EXPLOSIVE (g)	153	153	153	153	none	none	none
COMPLETE ROUND (g)	6350	6350	6350	6350	6350	6350	6350
EXPLOSIVE TYPE	RDX	RDX+AL	RDX	RDX+AL	none	none	none
LENGTH (COMPLETE ROUND)	max 536.61	max 536.61	max 536.61	max 536.61	max 536.61	max 536.61	max 536.61
MUZZLE VELOCITY (m/s)	1000	1000	1000	1000	1000	1000	1000
SELF-DESTRUCTION TIME (s)	13-17	13-17	13-17	13-17	none	none	none
TRACER BURNING TIME (s)	none	none	10	10	10	10	none
PACKING	ROUNDS IN CASE				DIMENSIONS		GROSS MASS
WOODEN CASE	20				650 x 393 x 363 mm		65 kg







# Grenades 30mm / 40mm






Grenades 30mm / 40mm

	30mm HE, M93 P1	30mm TP, M93	30mm PM, M93 P1
NATO DESIGNATION	HE	TP	PM
			

WEIGHT (g)			
MASS OF ROUND (g)	360	360	360
MASS OF PROJECTILE (g)	273	273	273
LENGTH (mm)	132	132	132
MUZZLE VELOCITY (m/s)	185	185	185
MAXIMUM RANGE (m)	1700	1700	1700
TYPE	UT M99 SD	TRAINING PRACTICE	UT M02 PM SD
SELF DESTRUCTION (s)	27	/	27
SAFETY DISTANCE	10 m in front of barrel	/	10 m in front of barrel

	M99	M99	M99	M03
NATO DESIGNATION	HEPD-SD	HEPD-SD (DUAL PURPOSE)	TPSFM	HE
				

WEIGHT (g)				
MASS OF ROUND (g)	104	104	104	106
MASS OF GRENADE (g)	250	250	233	360
PROJECTILE LENGTH (mm)	82	82	82	/
MASS OF EXPLOSIVE (RDX) (g)	48	35	/	/
MUZZLE VELOCITY (m/s)	78	78	76	76
ARMING DISTANCE OF FUZE (m)	8-30	8-30	8-25	50
MAXIMUM RANGE (m)	400	400	400	400
SELF DESTRUCTION (s)	15-20	15-20	15-20	15-20
PENETRATION (mm)	/	min 25 (armour steel plate)	/	/
SAFETY DISTANCE	/	/	/	15 m in front of barrel

	M04	M04	M01
NATO DESIGNATION	RED STAR WITH PARACHUTE	ILLUMINATING WITH PARACHUTE	ILLUMINATING
			

WEIGHT (g)			
COMPLETE GRENADE LENGTH (mm)	114	114	
MASS OF GRENADE (g)	250	250	265
PROJECTILE LENGTH (mm)	82	82	/
MASS OF PROJECTILE (g)	200	/	/
MUZZLE VELOCITY (m/s)	78	78	76
DELAY TIME (s)	2-3	2-3	/
BURNING TIME OF STAR (s)	min 15	min 15	min 20
LIGHT INTENSITY OF STAR (cd)	min 10 000	min 80 000	min 80 000
FLARE TYPE	green / blue / yellow / white	white	white

	M99	M99	M01 S	M99
NATO DESIGNATION	SMOKE WHITE	SMOKE CS	SMOKE	FLASH
				





WEIGHT (g)				
MASS OF ROUND (g)	106	106		106
MASS OF GRENADE (g)	230	220	250	230
PROJECTILE LENGTH (mm)	76	76	115	76
MASS OF EXPLOSIVE (RDX) (g)	180	170	/	180
MUZZLE VELOCITY (m/s)	78	78	75	78
SMOKE TIME (s)	min 20	min 20	60	/
FIRING RANGE (m)	50-400	50-400	max 400	50-400
DELAY TIME (s)	2-3	2-3	/	2-3
SOUND INTENSITY (db)	/	/	/	120
LIGHT INTENSITY (cd)	/	/	/	2 000 000
FLARE TYPE	white	white / red / green / yellow	/	/

	M04	M05
NATO DESIGNATION	BUCKSHOT	FLECHETTE
		

# 40 mm

WEIGHT (g)		
MASS (g)	290	290
LENGTH (mm)	106	106
MUZZLE VELOCITY (m/s)	50	200
MAXIMUM RANGE (m)	400	50-100
NUMBER OF PELLETS (pcs)	min 50	/
PELLET DIAMETER (mm)	8	/
NUMBER OF FLECHETTES (pcs)	/	min 50
FLECHETTE DIAMETER / LENGTH (mm)	/	50 / 2






RIFLE GRENADES	M40	M41	M42	M43 P1
NATO DESIGNATION	ANTI-TANK	SMOKE	ILLUMINATING	FRAGMENTATION
				

# 60 mm

WEIGHT (g)				
MASS (g)	670	475	460	820
LENGTH (mm)	390	390	390	307
PENETRATING (mm)	200 (at 100 m)	/	/	/
SMOKE TIME (s)	/	70-100	/	/
ILLUMINO TIME (s)	/	/	min 24	/



RIFLE GRENADES WITH BULLET TRAP	M71 P1	M77	M43
NATO DESIGNATION	HE	HE	HE DT
			

# 30 mm

WEIGHT (g)			
MASS (g)	655	655	460
LENGTH (mm)	315	315	270
TYPE	fragmentation	fragmentation	fragmentation
FUSE	Impact, superquick action	Impact, superquick action	Impact, superquick action
ACTION ON FRAGMENTS IN FIELD	100 m in dia	100 m in dia	100 m in dia
ARMING DISTANCE (m)	Grenade must act. upon cardboard 1mm thick, at the distance of 50 m	Grenade must act. upon cardboard 1mm thick, at the distance of 50 m	Grenade must act. upon cardboard 1mm thick, at the distance of 50 m
BREAKE EFFECT	Have 100 penetrations through a board 20 mm thick, at pen test D=10 m and 1,8m high	Have 380 penetrations through a board 20 mm thick, at pen test D=10 m and 1,8m high	Have 100 penetrations through a board 20mm thick, at pen test D=10 m and 1,8m high
SELF DESTRUCTION TIME (s)	15-20	15-20	15-20
SAFETY DISTANCE	Min. 20 m in front of barrel	Min.35 m in front of barrel	Min. 15 m in front of barrel



# Recoilless Launchers



A rocket is a self-propelled, unguided weapon system powered by a rocket motor. Rockets are used primarily as medium and long-range artillery systems, although historically they have also seen considerable use as air-to-ground, some use as air-to-air weapons, and even a few examples of surface-to-air devices.

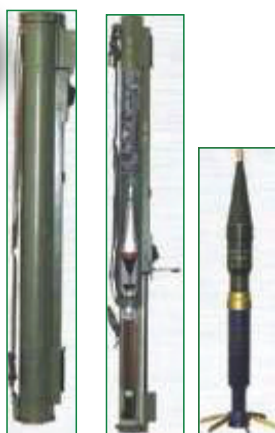


SPECIFICATION	
TYPE	HEAT
LENGTH (mm)	672
MASS (g)	3630
PENETRATION (mm)	> 450 (on homogeneous armour plate)
MUZZLE VELOCITY (m/s)	245
EFFECTIVE RANGE (m)	350
MAXIMUM RANGE (m)	1960
PACKAGE (UNITS)	3
PACKAGE WEIGHT (kg)	25.3
FUZE	Impact, superquick, piezoelectric with self destruction, (UT PE M80 SP)



## 90mm Hand Rocket Launcher - RBR M79

## 64mm Hand Anti Tank Rocket - RBR M80



SPECIFICATION	
TYPE	HEAT
LENGTH IN TRAVELING POSITION (mm)	800
LENGTH IN COMBAT POSITION (mm)	1200
MASS (g)	
PENETRATION (mm)	> 300 (on homogeneous armour plate)
MUZZLE VELOCITY (m/s)	
EFFECTIVE RANGE (m)	
MAXIMUM RANGE (m)	
PACKAGE (UNITS)	
PACKAGE WEIGHT (kg)	
FUZE	Impact, superquick, piezoelectric with self destruction, (UT PE M80 SP)



SPECIFICATION	
TYPE	HEAT
LENGTH (mm)	1350
MASS (kg)	13
PENETRATION (mm)	> 800 (on homogeneous armour plate)
MUZZLE VELOCITY (m/s)	205
EFFECTIVE RANGE (m)	250
MAXIMUM RANGE (m)	1960
PACKAGE (UNITS)	2
PACKAGE WEIGHT (kg)	56
FUZE	Impact, superquick, piezoelectric with self destruction, (UT PE M80 SP)



## 120mm Light Anti Tank Weapon - RBR M90

# Artillery Shells

Artillery Shells



A shell is a payload-carrying projectile that, as opposed to shot, contains an explosive or other filling, though modern usage sometimes include large solid projectiles properly termed shot. (not verified in body) Solid shot may contain a pyrotechnic compound if a tracer or spotting charge is used. Originally, it was called a "bombshell", but "shell" has come to be unambiguous in a military conext.



## Round 76 mm Seperate Loaded for Gun 76 mm M48 B1



## 76 mm

NATO DESIGNATION	HE	SMOKE
DESCRIPTION	SHELL M55	SHELL M60
PROJECTILE WEIGHT (kg)	6.2	5.9
EXPLOSIVE (kg)	0.43	0.45
CARTRIDGE CASE (kg)	1.55	1.55
EXPLOSIVE TYPE	TNT	WP
PROJECTILE LENGTH (mm)	347	347
MUZZLE VELOCITY (m/s)	398	398
MAXIMUM RANGE (m)	8750	8750
FUZE	UTI M68, UTIU M02, UTIU M03	
		UTI M68
PACKING	ROUNDS IN CASE	
WOODEN CASE	3	
		GROSS MASS
		39 kg

## ROUND 100 mm FIXED for GUN 100 mm on TANK T55, SPG 100 mm and COAST GUN 100 mm M87



NATO DESIGNATION	HE	HE	HE	HEAT-T
DESCRIPTION	SHELL M63	SHELL M63 P1	SHELL M63 P2	SHELL M69
PROJECTILE WEIGHT (kg)	15.6	15.6	15.6	12.2
EXPLOSIVE (kg)	1.41	1.48	1.58	1
CARTRIDGE CASE (kg)	695	695	695	695
EXPLOSIVE TYPE	TNT	TNT	RDX+AI	RDX
PROJECTILE LENGTH (mm)	492	492	492	638
MUZZLE VELOCITY (m/s)	900	900	900	900
MAXIMUM RANGE (m)	20618	20618	20618	3000 (combat range)
FUZE	UTIU M72 B1, UTIU M02, UTIU M03			UT - PE M69
PACKING	ROUNDS IN CASE			GROSS MASS
WOODEN CASE	2			21.8 kg



## Round 100 mm FIXED for GUN 100 mm on TANK T55, SPG 100 mm and COAST GUN 100 mm M87

## Round SEMI FIXED for HOWITZERS M56, M2A1, M4 SEMI FIXED for HOWITZERS M56, M02



NATO DESIGNATION	HE	SMOKE	HE ER
DESCRIPTION	SHELL M1A1	SHELL M60	SHELL M56
PROJECTILE WEIGHT (kg)	14.9	15	13
EXPLOSIVE (kg)	2.15	1.85	2.15
CARTRIDGE CASE (kg)	2.68	2.68	2.68
EXPLOSIVE TYPE	TNT	WP	TNT
PROJECTILE LENGTH (mm)	496	496	565
MUZZLE VELOCITY (m/s)	491	491	675
MAXIMUM RANGE (m)	11620	11620	14000
FUZE	UTIU M72 B1, UTIU M02, UTIU M03		UTIU M02, UTIU M03
PACKING	ROUNDS IN CASE		GROSS MASS
SHELL M1A1	WOODEN CASE		16.8 kg
SHELL M60	2		50 kg



## 105 mm

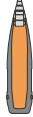



NATO DESIGNATION	HE ER	HE ER-BB
DESCRIPTION	SHELL M56/M02	SHELL M56/M02
PROJECTILE WEIGHT (kg)	13	14.070
EXPLOSIVE (kg)	2.15	2.15
CARTRIDGE CASE (kg)	2.68	2.68
EXPLOSIVE TYPE	TNT	TNT
PROJECTILE LENGTH (mm)	565	565
MUZZLE VELOCITY (m/s)	675	670
MAXIMUM RANGE (m)	14000	17000
FUZE	UTIU M02, UTIU M03	
		UTIU M02, UTIU M03
PACKING	ROUNDS IN CASE	
SHELL M56/M02	WOODEN CASE	
	2	
		GROSS MASS
		50 kg



## Round SEMI FIXED for HOWITZERS M56/33, M02



122 mm

NATO DESIGNATION	HE	HE	SMOKE	SMOKE
				
DESCRIPTION	SHELL TF-462A1	SHELL TF-462A1	M60	M60
PROJECTILE WEIGHT (kg)	21.88	21.88	21.76	21.76
EXPLOSIVE (kg)	3.60	3.60	3.60	3.73
CARTRIDGE CASE (kg)	3.66	3.66	3.66	3.66
EXPLOSIVE TYPE	TNT	TNT	WP	WP
PROJECTILE LENGTH (mm)	561	561	561	561
MUZZLE VELOCITY (m/s)	565	690	565	690
MAXIMUM RANGE (m)	12840	15300	12840	15300
FUZE	UTIU M72 B1, UTIU M02, UTIU M03		UTIU M72 B1	



Round 122 mm SEPERATE  
LOADED for HOWITZER  
D-30, D30J, SP 2S1

Round 122 mm  
SEPERATE LOADED  
for HOWITZER M38





NATO DESIGNATION

HE

SMOKE

122 mm

DESCRIPTION	SHELL TF-462A1	M60
PROJECTILE WEIGHT (kg)	21.88	21.88
EXPLOSIVE (kg)	3.60	3.60
CARTRIDGE CASE (kg)	2.94	2.94
EXPLOSIVE TYPE	TNT	WP
PROJECTILE LENGTH (mm)	561	561
MUZZLE VELOCITY (m/s)	515	515
MAXIMUM RANGE (m)	11800	11800
FUZE	UTIU M72 B1, UTIU M02, UTIU M03	UTIU M72 B1

PACKING

ROUNDS IN CASE

GROSS MASS

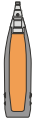


WOODEN CASE

2

18 kg

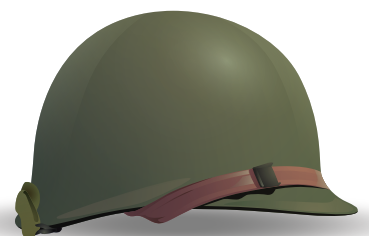


125 mm

NATO DESIGNATION	HE	HEAT-T	APFSDS-T
			
DESCRIPTION	SHELL M86 P1	SHELL M88	SHELL M88
PROJECTILE WEIGHT (kg)	23	19	3.66
EXPLOSIVE (kg)	3.35	1.76	/
CARTRIDGE CASE (kg)	138	138	/
EXPLOSIVE TYPE	TNT / RDX	HMX	/
PROJECTILE LENGTH (mm)	675	678	591
MUZZLE VELOCITY (m/s)	850	905	1800
MAXIMUM RANGE (m)	12220	1010	2120
FUZE	UTIU M85 P1	UT - PE M87 P1	/
PACKING	ROUNDS IN CASE		
WOODEN CASE	1		





Round 125 mm SEPERATE LOADED  
for TANK GUN D-81, TM (2A46)



Round 130 mm  
SEPERATE LOADED  
for GUN M-46


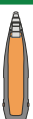


130 mm

NATO DESIGNATION	HE	HE
		
DESCRIPTION	SHELL M79	SHELL M79
PROJECTILE WEIGHT (kg)	33.40	33.40
EXPLOSIVE (kg)	3.64	3.64
CARTRIDGE CASE (kg)	11.35	6.75
EXPLOSIVE TYPE	TNT	TNT
PROJECTILE LENGTH (mm)	671	671
MUZZLE VELOCITY (m/s)	930	705
MAXIMUM RANGE (m)	27490	13310
FUZE	UTIU M72 B1, UTIU M02, UTIU M03	
PACKING	ROUNDS IN CASE	
WOODEN CASE	2	
	GROSS MASS	
	18 kg	

152 mm




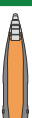

NATO DESIGNATION	HE	HE
		
DESCRIPTION	SHELL OF-540	SHELL OF-540
PROJECTILE WEIGHT (kg)	43	43
EXPLOSIVE (kg)	5.86	5.86
CARTRIDGE CASE (kg)	7.50	7.50
EXPLOSIVE TYPE	TNT	TNT
PROJECTILE LENGTH (mm)	700	700
MUZZLE VELOCITY (m/s)	655	511
MAXIMUM RANGE (m)	17400	13400
FUZE	UTIU M72 B1, UTIU M02, UTIU M03	
PACKING	ROUNDS IN CASE	
WOODEN CASE	2	
	GROSS MASS	
	18 kg	

Round 152 mm  
SEPERATE LOADED  
for GUN-HOWITZER D-20

Round 155 mm  
for HOWITZERS M198,  
FH70, FH77, M109 A2  
and GUN 45



155 mm

NATO DESIGNATION	ERFB/BB	ERFB	HE
			
DESCRIPTION			
PROJECTILE WEIGHT (kg)	47.6	45.54	42.6
EXPLOSIVE (kg)	8.71	8.71	8
CARTRIDGE CASE (kg)	/	/	/
EXPLOSIVE TYPE	TNT / RDX	TNT / RDX	TNT
PROJECTILE LENGTH (mm)	861	843	807
MUZZLE VELOCITY (m/s)	925 (52 cal.)	925 (52 cal.)	925 (52 cal.)
MAXIMUM RANGE (m)	41850 (52 cal.)	34000 (52 cal.)	32000 (52 cal.)
FUZE	UTIU M02, UTIU M03		





# Explosives





#### PENTHRITE (PETN)



Penthrite (PETN), one of the most powerful and most brisant explosive, is used in the manufacture of detonating fuse, detonators, industrial explosive slurries and plastic explosives. If phlegmatized with wax, it is used in various types of ammunition.

#### OCTOGEN (HMX)



Octagen (HMX) is used exclusively for military purposes to implode fissionable material in nuclear devices, as a component of plastic-bonded explosives, as a component rocket propellant, and as a high explosive buster charge.

#### TRINITROTOLUENE (TNT)



Military grade TNT is widely used as a bursting charge for high explosive shells, aircraft bombs, grenades, naval mines and etc. It is also used in boosters, detonators, demolition charges and as an ingredient in slurries and for mining industries.

#### HEXOGEN (RDX)



Hexogen (RDX) can be used alone as a base charge for detonators or mixed with another explosive such as TNT, which produce a bursting charge for aerial bombs, mines, and torpedoes or as an ingredient in plastic bonded explosives.

#### ANFO EXPLOSIVE



ANFO has a wide variety of applications in dry hole blasting conditions. It is one of the most cost effective blasting agents available for use in large hole diameter mining through to small hole diameter quarrying. ANFO provides excellent heave energy.

#### BOOSTERS



Boosters are made of cast TNT/RDX mixtures with an integrated primer charge of pressed tetryl or PETN which produces high velocity of detonation and detonating pressures, ensuring reliable initiation of bulk and cartridge explosives.





Frag grenades  
Smoke grenades  
Protective masks





## HAND THROWN GRENADE M2, CS



Hand thrown grenade M2, CS is designed for a special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminate area and temporary disable crowd. Causes hard irritation, teasing of eyes and mucous membrane, plenty tearing, cough, uneasiness breath and choking without injury.

## HAND THROWN GRENADE M1, CS



Hand thrown grenade M1, CS is designed for a special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminate area and temporary disable crowd. Provokes hard irritation, teasing of eyes and mucous membrane, plenty of tearing, cough, uneasiness breath and choking without injury.

## LONG RANGE NEUTRALIZING



Special hand thrown grenade M79 AF-1S is chemical explosive device designed for a special military and police units in anti riot control operations, for temporary incapacitating of unprotected crowd in open and closed area.

## CLUSTER (CASSETTE) HAND GRENADE CS



Cluster (cassette) hand grenade CS is chemical device designed for a special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area.

## HAND THROWN GRENADE THREE PART, CS



RBT-CS is designed for special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminate area and temporary disable crowd. Provokes hard irritation, teasing of eyes and mucous membranes, plenty of tearing, cough, uneasiness breath and choking without injury.

## LAUNCHING-HAND THROWN GRENADE M3, CS



Launching-hand thrown grenade M3, CS is designed for special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminate area and temporary disable crowd. Provokes hard irritation, teasing of eyes and mucous membranes, plenty of tearing, cough, uneasiness breath and choking without injury.

LAUNCHING-HAND THROWN  
THREE PART GRENADE M1, CS

Launching-hand thrown three part grenade M1, CS is designed for a special military and police units in anti riot control operations for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminate area and temporary disable crowd. It provokes hard irritation, teasing of eyes and mucous membranes, plenty of tearing, cough, uneasiness breath and choking without injury.

## RAPID SMOKE, CS



Rapid smoke, CS is designed for special military and police units in anti riot control operations, for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminates area and temporary disable crowd. It provokes hard irritation, teasing of eyes and mucous membrane, plenty of tearing, cough, uneasiness breath and choking without injury.

## HAND THROWN CARTON GRENADE, CS



Hand thrown carton grenade, CS is designed for a special military and police units in anti riot control operations, for temporary incapacitating of unprotected crowd in open and closed area. When thrown to a target, contaminates area and temporary disable crowd. It provokes hard irritation, teasing of eyes and mucous membranes, plenty of tearing, cough, uneasiness breath and choking without injury.

## SMOKE HAND GRENADE 1, COLOR BD-1



Smoke hand grenade 1, color BD-1 is designed as signaling and camouflage device, intended for day and night signalization for different applications, for marking of area for landing of planes, for jumping of parachutists, for determination of wind blowing, camouflaging of individuals and groups in one place or in movement, giving signals on land or sea, from floating objects or mountains. Can be used also in practice for handling with irritating devices or for simulation of variable activities at the site.

## SMOKE HAND GRENADE 2, COLOR BD-2



Smoke hand grenade 2, color BD-2 is designed as signaling and camouflage device, intended for day and night signalization for different applications, for marking of area for landing of planes, for jumping of parachutists, for determination of wind blowing, camouflaging of individuals and groups in one place or in movement. Can be used also in practice for handling with irritating devices or for simulation of variable activities at the site.

## FLAMABLE HAND THROWN GRENADE BRZ M90



Flamable hand thrown grenade BRZ M90 is designed for a special military and police units applications, in setting fire to technical and military equipment, light bunkers and storage made of wood and earth. Also is applicable in destroying enemy, situated in small and easy flammable bunkers and shelters.



**MASK M2**



The M2 protective mask is intended specifically for protection of the eyes, face and respiratory organs of the user against NBC contaminants in the form of gases, vapours, solid and liquid aerosols and dust particles as a result of the use of nuclear, chemical and biological weapons. The mask, together with appropriate filters, provides protection against contamination due to chemical accidents. The mask is used in the atmosphere containing at least 17% oxygen.

**MASK M2 F**



The M2 F protective mask complete with NBC M2 filter is intended specifically for efficient protection of eyes, face and respiratory organs against NBC contaminants in the state of gases, vapours, solid and liquid aerosols and dust particles.

**MASK M2 FV**



The M2 FV protective mask is intended for protection of the eyes, face and respiratory organs of the user against NBC contaminants in the form of gases, vapours, solid and liquid aerosols and dust particles as a result of the use of nuclear, chemical and biological weapons. The mask has a built-in water-drinking system, whose capacity for the free leaking of water into the mask is no less than 200 cm<sup>3</sup>/minute.

**B2-G PANORAMA**



The B2-G Panorama mask, type: Class 2 according to the SRPS EN 136, together with the appropriate fitted filter (with a screw according to the SRPS EN 148-1) is intended for protection of respiratory organs, face and the eyes against harmful effects of toxic gases, vapours, dust particles and smoke. It is mainly intended for use in chemical industry, i.e. wherever there are harmful gases, vapours, and particles.

**MASK M2 F**



The M3 mask, complete set is intended for protection of the respiratory organs, face and eyes of the user against NBC contaminants in the form of gases, vapours, solid and liquid aerosols and dust particles. The mask, together with appropriate filters, provides protection against contamination due to chemical accidents. The complete set includes: the M3 facepiece, the M3 filter, the water bottle with a bag.



Single based powders

Double based rocket propellant charges

Spherical powders

Powder charges

Mono-block powder charges for 155 mm rocket




# Single based powders

## SINGLE BASED POWDERS

For all kinds of ammunition from 5.56 to 155 mm:


- hunting and sport ammunition
  - pistol ammunition
  - revolver ammunition
- small arms ammunition (from 5.45 mm cal. to 7.9 mm cal.)
- powders for aircraft and anti-aircraft systems (from 12,7 mm cal. to 57 mm cal.)
- all types of powders for artillery ammunition (from 76 mm cal. to 155 mm cal.)


NC-01	
	<b>APPLICATION:</b> Blank ammunition
	<b>CALIBER:</b> 5,56×45 mm 7,62×39 mm


NC-44, NC-16	
	<b>APPLICATION:</b> Powder charge
	<b>CALIBER:</b> 125 mm

NC-03	
	<b>APPLICATION:</b> "Browning"
	<b>CALIBER:</b> 7,62 x 25 mm 7,65 mm 9×19 mm


NC-04	
	<b>APPLICATION:</b> Shot shell hunting ammunition
	<b>CALIBER:</b> 12/70 12/76

NC-261	
	<b>APPLICATION:</b> Machine gun
	<b>CALIBER:</b> 14,5 x 114 mm


NC-08	
	<b>APPLICATION:</b> 7,62 x 39 mm


NCD-02	
	<b>APPLICATION:</b> Hunting ammunition
	<b>CALIBER:</b> 7,62 mm

NC-49	
	<b>APPLICATION:</b> 57 mm PAV M70 "Bofors"


NCD-06	
	<b>APPLICATION:</b> 12,7 x 99 mm "Browning" 20 x 110 mm "Hispano"

NC-26	
	<b>APPLICATION:</b> 12,7 x 108 mm "DŠK"

NC-27, NC-37	
	<b>APPLICATION:</b> Powder charges
	<b>CALIBER:</b> M78, 122 mm Ž546U, 152 mm

NC-48	
	<b>APPLICATION:</b> 2A42 2A72 Machine gun
	<b>CALIBER:</b> 30 x 165 mm

NC-45	
	<b>APPLICATION:</b> 40 mm L/70 "Bofors"

NCD-27	
	<b>APPLICATION:</b> Powder charge
	<b>CALIBER:</b> M4A2, 155 mm (ZONE 7)

NCD-191	
	<b>APPLICATION:</b> Powder charges
	<b>CALIBER:</b> M90, 152 mm M93, 152 mm, 105 mm, APFSDS M203, 155 mm (ZONE 9) MC, 155 mm (ZONE 9)

NCD-49, NCD-21	
	<b>APPLICATION:</b> Powder charges
	<b>CALIBER:</b> M67, M2A1 105 mm

NC-26	
	<b>APPLICATION:</b> Powder charges
	<b>CALIBER:</b> M119A2 155 mm M119A1 155 mm (ZONE 8) MC 155 mm (ZONE 8)

NCD-19	
	<b>APPLICATION:</b> Powder charges
	<b>CALIBER:</b> M92, 130 mm M90, 152 mm M11, 155 mm (ZONE 10) MC, 155 mm (ZONE 10)

# Double Based Rocket Propellant

## PROPELLANT CHARGE FOR 80 mm AIRCRAFT ROCKET „S-8KOM” AND „S-8KO”



**APPLICATION:** For anti-armour battle at distances up to 3000 m. Launched from a launching box or from the “POLO” vehicle, as well as from the “Gazela” helicopter. Rocket guidance is manual or semi-automatic. Rocket penetration is 560 mm behind an ERA.

MASS: 0.68 kg + 1.5 kg

EFFECTIVE (POINT BLANK) RANGE: 3.000 m

## PROPELLANT CHARGE FOR 57 mm AIRCRAFT ROCKETS (S-5M AND S-5K)



**APPLICATION:** The rocket is a part of the 57 mm multi-tube rocket launcher system, on aircrafts MiG-21, MiG-23 and MiG-27 and Mi-17 and Mi-24 helicopters, intended for neutralizing of enemy manpower and armoured vehicles.

MASS: 1.13 (0.88) kg

EFFECTIVE (POINT BLANK) RANGE: 3.000 to 4.000 m

## PROPELLANT CHARGE FOR 122 mm ROCKET „GRAD”



**APPLICATION:** The rocket is a part of the LRSV 122 mm „GRAD” multi-tube rocket launching system, intended for neutralizing of enemy manpower, weaponry and lightly armoured targets.

MASS: 20.3 kg

EFFECTIVE (POINT BLANK) RANGE: 20.500 m

## PROPELLANT CHARGE FOR 128 mm ROCKET, M63 „PLAMEN-A”



**APPLICATION:** The rocket is a part of the LRSV 128 mm multi-tube rocket launcher system and self-propelled, multi-tube rocket launcher LRSV 128 mm, M63/94, intended for neutralizing of enemy manpower, weaponry and lightly armoured targets.

MASS: 4.76 kg

EFFECTIVE (POINT BLANK) RANGE: 8.600 m

## PROPELLANT CHARGE FOR 128 mm ROCKET, M08 „PLAMEN-D”



**APPLICATION:** The rocket is a part of the LRSV 128 mm multi-tube rocket launcher system and self-propelled, multi-tube rocket launcher LRSV 128 mm, M63/94, intended for neutralizing of enemy manpower, weaponry and lightly armoured targets.

MASS: 8.23 kg

EFFECTIVE (POINT BLANK) RANGE: 12.700 m

## PROPELLANT CHARGE FOR 80 mm AIRCRAFT ROCKET „S-8KOM” AND „S-8KO”



**APPLICATION:** The rocket is a part of the LRSV 128 mm multi-tube rocket launcher system and self-propelled, multi-tube rocket launcher LRSV 128 mm, M63/94, intended for neutralizing of enemy manpower, weaponry and lightly armoured targets.

MASS: 8.23 kg

EFFECTIVE (POINT BLANK) RANGE: 12.700 m

## PROPELLANT CHARGE OF HAND ROCKET LAUNCHER 120 mm, M91 “POS-BD”



**APPLICATION:** The hand rocket launcher is an individual infantry means for anti-armour battle at close distances, penetration of 700 mm of armour steel.

MASS: 0.71 kg

EFFECTIVE (POINT BLANK) RANGE: 350 m

## PROPELLANT CHARGES FOR HEAT PROJECTILES „PG-7V”, „PG-7VM” AND „PG-9V”



**APPLICATION:** The hand grenade launcher is an individual infantry weapons for anti-armour battle at close distances, penetration of 330 mm to 500 mm of armour steel.

MASS: 0.14, 0.22, 0.47 kg

EFFECTIVE (POINT BLANK) RANGE: 900 m, 1.300 m

## PROPELLANT CHARGE FOR ANTI-HAIL ROCKETS „PP-6TS”, „PP-6TK”, „PP-6”, „PP-8”



**APPLICATION:** For timely and accurate introduction of reagent into hail-bearing clouds by which conditions are created for prevention of free formation of hail grains, where artificial crystallization cores are formed and instead of large hail grains crystals of small dimensions are created.

MASS: 1.70 (1.95) kg

EFFECTIVE (POINT BLANK) RANGE: 6.000 m and 8.000 m

## PROPELLANT CHARGE FOR 57 mm AIRCRAFT ROCKETS (S-5M AND S-5K)



**APPLICATION:** The hand rocket launcher is an individual infantry means for anti-armour battle at close distances, penetration of 300 mm of armour steel.

MASS: 0.130 kg

EFFECTIVE (POINT BLANK) RANGE: 250 m

## DOUBLE BASED ROCKET PROPELLANT AND PROPELLANT CHARGES


For all kinds of ammunition  
from 5.56 to 155 mm:

- Propellant charges of diameter up to 130 mm for rocket motors
- Propellant charges for pyro-charges for ejection of pilot seats
- Propellant charges for HEAT and artillery ammunition
- Rocket motor propellant charges for air target imitator
- Propellant charges for anti-hail systems


# Spherical Powders

## SPHERICAL POWDERS

Spherical powders has two energy components: nitrocellulose and nitroglycerine. It is used as a commercial powder (in hunting and hunting ammunition) for small arms and for aircraft and anti-aircraft ammunition. "Milan Blagojevic – Namenska" A.D. has the most modern process technology of spherical powder production. It is based on a continuous procedure which has significant advantage to a batch one.

	POWDER TYPE	POWDER PURPOSE
	SB 501	Shotshell & Hunting Ammunition Cal. 12/70 Cal. 12/76 50 g Magnum
	SB 502	
	SB 503	
	SB 504	
	SB 505	
	SB 506	

	POWDER TYPE	POWDER PURPOSE
	SB 416	BLANK POWDERS 5.56 x 45 mm BLANK 7.62 x 51 mm BLANK 7.62 x 39 mm BLANK 9 mm PA BLANK 9 x 17 mm killer CARTRIDGES AND INDUSTRIAL PURPOSES
	SB 420	

	POWDER TYPE	POWDER PURPOSE
	SB 510	5.56 x 45 mm
	SB 511	

	POWDER TYPE	POWDER PURPOSE
	SB 520	7.62 x 51 mm NATO

### ADVANTAGES

- Superior chemical stability
  - Uniformity of loading
- Decreased powder charge
- Increased projectile velocity
  - More uniform burning
- Improved barrel operation life
  - Lower flame temperature

### ADVANTAGES OF THE CONTINUOUS PROCESS:

#### FLEXIBILITY:


Powder production meets different ballistic requirements and more uniform distribution of grain size is achieved.


#### SAFETY:

Process is remote controlled and the biggest part of processing is performed under water.


#### LOW COSTS:


Smaller investment funds and lower production costs.

	POWDER TYPE	POWDER PURPOSE
	SB 440	22 Hornet, 223 Remington, 243 Winchester, 270 Winchester, 7 mm Remington Magnum, .308 Winchester, 30-06 Springfield, 300 Winchester Magnum, 7.62 x 39 mm, 338 Lapua Magnum
	SB 515	
	SB 530	
	SB 630	

	POWDER TYPE	POWDER PURPOSE
	SB 710	12.7 mm BROWNING

	POWDER TYPE	POWDER PURPOSE
	SB 508	Powder for grenades

	POWDER TYPE	POWDER PURPOSE
	SB 720	10 x 102 mm NATO VULCAN

	POWDER TYPE	POWDER PURPOSE
	SB 620	9 mm



# Powder Charges

## POWDER CHARGES

CONVENTIONAL IN CLOTH BAG FOR SYSTEMS FROM 105 mm TO 155 mm

105 mm: M2 M67



105 mm HOWITZER:  
M2A2, M101/M101A1, M102, M2A1, M18/61, M56

122 mm: M2 M78 FULL CHARGE



122 mm HOWITZER:  
D-30 Reduced charge

122 mm: M78 REDUCED CHARGE



FULL CHARGE  
122 mm Howitzer: D-30

130 mm: FULL VARIABLE CHARGE,  
REDUCED VARIABLE CHARGE



130 mm GUN:  
M46 Full & Reduced charge

152 mm: M93, M90, Ž-546U



152 MM HOWITZER:  
D-20

155 mm: M3A1, M4A2, M119A1, M119 A2 M203 M11



155 mm HOWITZER SYSTEMS:  
M1, M65, M198, GC-45, NORA(39 cal. / 45 cal. / 52 cal.)

## MONO-BLOCK POWDER CHARGES FOR 155 mm HOWITZER "NORA B52"

MC ZONE 8 FOR 155 mm (POWDER NCD -26)



TECHNICAL DATA:

- Projectile M107
- V0 ~680 m/s; Pm ~1700 bar;
- Range 18.400 m

MC ZONE 9 FOR 155 mm (POWDER NCD - 191)



TECHNICAL DATA:

- Projectile ERFB
- V0 ~820 m/s; Pm ~2600 bar;
- Range 26.630 m

BI-MODULAR POWDER CHARGES



FOR 155 mm HOWITZER SYSTEMS

MC ZONE 10 FOR 155 mm (POWDER NCD - 19)



TECHNICAL DATA:

- Projectile ERFB-BB
- V0 ~920 m/s; Pm ~ 3.250 bar;
- Range 41.100 m

COMBUSTIBLE COMPONENTS



CHEMICAL COMPOSITION:

- Nitrocellulose
- Trinitrotoluene



*Sustaining Global  
Defence Productions*



[info@dicond7g.ng](mailto:info@dicond7g.ng)

[info@d7g.com](mailto:info@d7g.com)



[www.d7g.ng](http://www.d7g.ng)



+234 80 3333 5533 +234 906 552 7916



NO 26 ALI AMODU CRESCENT, ASOKORO, FCT ABUJA