





HK KRUŠIK A.D.

In the armament world, HK Krušik has been a symbol of reputation, knowledge, quality and trust for more than 80 years of these items.

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VISITING TIME
07:00AM - 15:00PM



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ABOUT US

The Holding Corporation 'Krušik' a.d. is the name recognized worldwide among the users of the products of this sort. The Company has great tradition in manufacturing armament and military equipment. Krušik has sold more than 14mil items and exported to more than 70 countries of the world within past 80 years of its existence, therefore, it is ranked among leading armament manufacturers in this part of Europe. Throughout the years, Krušik has participating on more than 300 manifestations in the country and abroad. Strategic partners of Krušik are Ministry of Defence and members of the Defence Industry of Serbia.



FIELD OF ACTIVITY

- PRODUCTION OF ARMAMENT AND MILITARY EQUIPMENT
- OVERHAUL OF ARMAMENT AND MILITARY EQUIPMENT
- TECHNOLOGY TRANSFERS AND ERECTION OF PLANTS
- MARKET ORIENTED PROGRAMS
- SERVICES: DISASSEMBLING AND SAFE DESTRUCTION OF WAR DEVICES, SHELF-LIFE EXPIRED PRODUCTS, METAL MANUFACTURING, HEAT TREATMENTS, PROTECTIVE COATINGS



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MORTAR SHELLS



AIRCRAFT ROCKETS



MORTAR SHELLS
FOR DRONE



UNGUIDED ROCKETS



GUIDED ROCKETS

**MILITARY
PROGRAM**

MORTAR SHELLS





60 mm M73

HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 286 mm
Mass of mortar shell with fuze ----- 1350 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 250 g
Fuze ----- impact, superquick action, UT M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 650 mm:
- Maximum range----- 2500 m
Max. mean operating pressure in mortar ----- 392 bars
Killing range (1 penetration / m²) - radius ----- 10 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
12 cartons per wooden case
Dimensions of wooden case ----- 553 x 429 x 223 mm
Gross weight ----- 31,5kg
Volume of wooden case ----- 0,053 m³
UN No.-----0321
Hazard class-----1.2E

FUZE

UT, M68P1





60 mm M73PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 334 mm
Mass of mortar shell with fuze ----- 1525 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 250 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 650 mm:
- Maximum range----- 2500 m
Max. mean operating pressure in mortar ----- 392 bars
Killing range (1 penetration / m²) - radius ----- 10 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
12 cartons per wooden case
Dimensions of wooden case ----- 553 x 429 x 223 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,053 m³
UN No.-----0321
Hazard class-----1.2E

FUZE

MBU M18





60 mm M73P3

HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 301 mm
Mass of mortar shell with fuze ----- 1350 g
Explosive charge----- trotyl (TNT)
Mass of explosive charge ----- 250 g
Fuze ----- impact, superquick action UT, M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 650 mm:
- Maximum range----- 2500 m
Max. mean operating pressure in mortar ----- 392 bars
Killing range (1 penetration / m²) - radius ----- 10 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
12 cartons per wooden case
Dimensions of wooden case ----- 553 x 429 x 223 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,053 m³
UN No.-----0321
Hazard class-----1.2E

FUZE

UT, M88P1





60 mm Mk10

HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 410 mm
Mass of mortar shell with fuze ----- 2100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 380 g
Fuze ----- impact, superquick action UT, M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 1200 mm:
- Maximum range ----- 5035 m
Max. mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
8 cartons per wooden case
Dimensions of wooden case ----- 532 x 373 x 223 mm
Gross weight ----- 32 kg
Volume of wooden case ----- 0,044 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P1





60 mm Mk10PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 458 mm
Mass of mortar shell with fuze ----- 2275 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 380 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 1200 mm:
- Maximum range ----- 5035 m
Max. mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
8 cartons per wooden case
Dimensions of wooden case ----- 500 x 350 x 200 mm
Gross weight ----- 29 kg
Volume of wooden case ----- 0,036 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





60 mm Mk10P1 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 410 mm
Mass of mortar shell with fuze ----- 2100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 380 g
Fuze ----- impact , superquick, delay action UTU, M93-N
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 1200 mm:

- Maximum range ----- 5035 m
Max. mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
8 cartons per wooden case
Dimensions of wooden case ----- 532 x 373 x 223 mm
Gross weight ----- 32 kg
Volume of wooden case ----- 0,044 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU, M93-N





60 mm M73P1 **SMOKE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 286 mm
Mass of mortar shell with fuze ----- 1350 g
Weight of smoke charge ----- 220 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick action UT, M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 650 mm:

- Maximum range ----- 2500 m
Max. mean operating pressure in mortar ----- 392 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
12 cartons per wooden case
Dimensions of wooden case ----- 553 x 429 x 223 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,053 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M68P1





60 mm Mk10

SMOKE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 410 mm
Mass of mortar shell with fuze ----- 2100 g
Weight of smoke charge ----- 270 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick action UT, M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 1200 mm:
- Maximum range ----- 5035 m
Max. mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
8 cartons per wooden case
Dimensions of wooden case ----- 532 x 373 x 223 mm
Gross weight ----- 32 kg
Volume of wooden case ----- 0,044 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





60 mm M67

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 330 mm
Mass of mortar shell with fuze ----- 1270 g
Mass of illuminating candle ----- 165 g
Fuze ----- pyrotechnic, time, TP M67
Illuminating power ----- 180.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 2.5 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 650 mm:
- Maximum range ----- 2500 m
Max mean operating pressure in mortar ----- 392 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
12 cartons per wooden case
Dimensions of wooden case ----- 561 x 364 x 222 mm
Gross weight ----- 29 kg
Volume of wooden case ----- 0,045 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M67





60 mm Mk15

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 520 mm
Mass of mortar shell with fuze ----- 2100 g
Mass of illuminating candle ----- 300 g
Fuze ----- electronic, time, ETSQ M365
Illuminating power ----- 330.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 2.5 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 60 mm Mortar, barrel length 1200 mm:
- Maximum range ----- 4500 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
8 cartons per wooden case
Dimensions of wooden case ----- 595 x 355 x 203 mm
Gross weight ----- 29 kg
Volume of wooden case ----- 0,043 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

ETSQ, M365





81 mm M72 HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 387 mm
Mass of mortar shell with fuze ----- 3050 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- impact, superquick action UT, M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:

- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M68P1





81 mm M72PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 435 mm
Mass of mortar shell with fuze ----- 3225 g
Explosive charge----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 29 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





81 mm M72P4 HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 400 mm
Mass of mortar shell with fuze ----- 3050 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- impact, superquick action UT, M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P1





81 mm Mk11 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- impact, supprquick action, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P1





81 mm Mk11PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 526 mm
Mass of mortar shell with fuze ----- 4275 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





81 mm Mk11P1 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- impact, superquick, delay action, UTU M93-N
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:

- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
- Hazard class ----- 1.2E

FUZE

UTU, M93-N





81 mm M72P1 **SMOKE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 387 mm
Mass of mortar shell with fuze ----- 3050 g
Weight of smoke charge ----- 600 g
Type of smoke charge -----white phosphorus
Fuze ----- impact, superquick action, UT M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M68P1





81 mm Mk11

SMOKE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Weight of smoke charge (WP) ----- 700 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick action, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





81 mm M67

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 410 mm
Mass of mortar shell with fuze ----- 2950 g
Shell charge weight ----- 420 g
Fuze ----- pyrotechnic, time, TP M67
Illuminating power ----- 500.000 Cd for 40 s
Mean rate of parachute descent with candle ----- 2.4 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:
- Maximum range ----- 3400 m
Max mean operating pressure in mortar ----- 422 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 518 x 174 mm
Gross weight ----- 31.5 kg
Volume of wooden case ----- 0,055m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M67





81 mm Mk11

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 530 mm
Mass of mortar shell with fuze ----- 4200 g
Shell charge weight ----- 700 g
Fuze ----- pyrotechnic, time, TP M67P2
Illuminating power ----- 750.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 3.0 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- 30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 5480 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 630 x 565 x 154 mm
Gross weight ----- 37 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M67P2





81 mm Mk15

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 575 mm
Mass of mortar shell with fuze ----- 4200 g
Shell charge weight ----- 700 g
Fuze ----- electronic, time, ETSQ M365
Illuminating power ----- 750.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 3.0 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -40°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 5480 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 686 x 557 x 154 mm
Gross weight ----- 38kg
Volume of wooden case ----- 0,059m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

ETSQ, M365





82 mm M74 HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 375 mm
Mass of mortar shell with fuze ----- 3050 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- impact, superquick action, UT M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1150 mm:

- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M68P1





82 mm M74PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 423 mm
Mass of mortar shell with fuze ----- 3225 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 29 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





82 mm M72P4 HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 400 mm
Mass of mortar shell with fuze ----- 3050 g
Explosive charge ----- trotyl (TNT)
Mass of explosive charge ----- 650 g
Fuze ----- impact, superquick action UT, M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 14 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P1





82 mm Mk11 HE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- impact, superquick action, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C do +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1450 mm:

- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P1





82 mm Mk11PX

HE MORTAR SHELL with proximity fuze

TECHNICAL DATA

Length of shell with fuze ----- 526 mm
Mass of mortar shell with fuze ----- 4275 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C do +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1450 mm:
- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





82 mm Mk11P1 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 900 g
Fuze ----- impact , superquick, delay action UTU, M93-N
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:

- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars
Killing range (1 penetration / m²) - radius ----- 18 m



The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU, M93-N





82 mm M74P1

SMOKE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 375 mm
Mass of mortar shell with fuze ----- 3050 g
Weight of smoke charge ----- 600 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick action UT, M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1150 mm:
- Maximum range ----- 4900 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 480 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,051 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M68P1





82 mm Mk11

SMOKE MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 478 mm
Mass of mortar shell with fuze ----- 4100 g
Weight of smoke charge ----- 700 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick action, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -46°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 81mm Mortar, barrel length 1450 mm:
- Maximum range ----- 6500 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 582 x 557 x 154 mm
Gross weight ----- 34 kg
Volume of wooden case ----- 0,050 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





82 mm M67

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 410 mm
Mass of mortar shell with fuze ----- 2950 g
Shell charge weight ----- 420 g
Fuze ----- pyrotechnic, time, TP M67
Illuminating power ----- 500.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 2.4 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1150 mm:
- Maximum range ----- 3400 m
Max mean operating pressure in mortar ----- 422 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 607 x 518 x 174 mm
Gross weight ----- 31,5 kg
Volume of wooden case ----- 0,055m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M67





82 mm Mk11

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 530 mm
Mass of mortar shell with fuze ----- 4200 g
Shell charge weight ----- 700 g
Fuze ----- pyrotechnic, time, TP M67 P2
Illuminating power ----- 750.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 3.0 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1450 mm:
- Maximum range ----- 5480 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 630 x 565 x 154 mm
Gross weight ----- 37 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M67 P2





82 mm Mk15

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 575 mm
Mass of mortar shell with fuze ----- 4200 g
Shell charge weight ----- 700 g
Fuze ----- electronic, time, ETSQ M365
Illuminating power ----- 750.000 Cd for 30 s
Mean rate of parachute descent with candle ----- 3.0 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -40°C to +63°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 82mm Mortar, barrel length 1450 mm:
- Maximum range ----- 5480 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
5 cartons per wooden case
Dimensions of wooden case ----- 686 x 557 x 154 mm
Gross weight ----- 38kg
Volume of wooden case ----- 0,059 m³
UN No.----- 0171
Hazard class ----- 1.2G

FUZE

ETSQ, M365





120 mm M62P8 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 606 mm
Mass of mortar shell with fuze ----- 12600 g
Explosive charge ----- TNT
Mass of explosive charge ----- 2400 g
Fuze ----- impact , superquick, delay action, UTU M93 P1
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- 922 bars
Killing range (1 penetration/m²) radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU, M93 P1





120 mm M62P9 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 606 mm
Mass of mortar shell with fuze ----- 12600 g
Explosive charge ----- TNT
Mass of explosive charge ----- 2400 g
Fuze ----- impact, superquick, UT M88 P2
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- 922 bars
Killing range (1 penetration/m²) radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88 P2





120 mm M62P10 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 593 mm
Mass of mortar shell with fuze ----- 12600 g
Explosive charge ----- TNT
Mass of explosive charge ----- 2400 g
Fuze ----- impact, superquick, UT M68 P1
Muzzle safety at lowest initial velocity ----- 8 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:

- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- 922 bars
Killing range (1 penetration/m²) radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M68P1





120 mm M62P11 **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 626 mm
Mass of mortar shell with fuze ----- 12600 g
Explosive charge ----- TNT
Mass of explosive charge ----- 2400 g
Fuze ----- impact, superquick, UT M88 P2
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:

- Maximum range ----- 7100 m
Max mean operating pressure in mortar ----- 1000 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P2





120 mm M62P8TB **MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 626 mm
Mass of mortar shell with fuze ----- 12600 g
Explosive charge ----- THERMOBARIC
Mass of explosive charge ----- 2400 g
Fuze ----- impact, superquick delay action UTU, M93 P1
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- < 922bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU, M93P1





120 mm Mk12-L TB **MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 807 mm
Mass of mortar shell with fuze ----- 14800 g
Explosive charge ----- THERMOBARIC
Mass of explosive charge ----- 3100 g
Fuze ----- impact, superquick delay action, UTU M93 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1900 mm:
- Maximum range ----- 9100 m
Max mean operating pressure in mortar ----- 1400 bars
Killing range (1 penetration/m²) radius ----- 24 m

When fired from the launcher with barrel length of 1500 mm and maximum pressure of 922 bars achieves the range of 7400 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 50 kg
Volume of wooden case ----- 0,071 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU M93 P1





120 mm M62PX **HE MORTAR SHELL with proximity fuze**

TECHNICAL DATA

Length of shell with fuze ----- 641 mm
Mass of mortar shell with fuze ----- 12775 g
Explosive charge ----- TNT
Mass of explosive charge ----- 2400 g
Fuze ----- proximity, MBU M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- 922 bars
Killing range (1 penetration/m²) radius ----- 18 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 211 mm
Gross weight ----- 38 kg
Volume of wooden case ----- 0,055 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





120 mm Mk12-L **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 807 mm
Mass of mortar shell with fuze ----- 14800 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 3100 g
Fuze ----- impact, superquick action, UT M88 P2
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1900 mm:
- Maximum range ----- 9100 m
Max mean operating pressure in mortar ----- 1400 bars
Killing range (1 penetration/m²) radius ----- 24 m

When fired from the launcher with barrel length of 1500 mm and maximum pressure of 922 bars achieves the range of 7400 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 50 kg
Volume of wooden case ----- 0,071 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88P2





120 mm Mk12PX-L **HE MORTAR SHELL with proximity fuze**

TECHNICAL DATA

Length of shell with fuze ----- 855 mm
Mass of mortar shell with fuze ----- 14975 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 3100 g
Fuze ----- proximity, UMB M18
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1900 mm:
- Maximum range ----- 9100 m
Max mean operating pressure in mortar ----- 1400 bars
Killing range (1 penetration/m²) radius ----- 24 m

When fired from the launcher with barrel length of 1500 mm and maximum pressure of 922 bars achieves the range of 7400 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 571kg
Volume of wooden case ----- 0,063 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

MBU M18





120 mm Mk12P1-L **HE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 807 mm
Mass of mortar shell with fuze ----- 14800 g
Explosive charge ----- hexolite (RDX/ TNT) or trotyl (TNT)
Mass of explosive charge ----- 3100 g
Fuze ----- impact , superquick, delay action, UTU M93 P1
Muzzle safety at lowest initial velocity ----- 50 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1900 mm:

- Maximum range ----- 9100 m
Max mean operating pressure in mortar ----- 1400 bars
Killing range (1 penetration/m²) radius ----- 24 m

When fired from the launcher with barrel length of 1500 mm and maximum pressure of 922 bars achieves the range of 7400 m

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 50 kg
Volume of wooden case ----- 0,071 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UTU, M93 P1





120 mm M64P3 **SMOKE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 606 mm
Mass of mortar shell with fuze ----- 12600 g
Weight of smoke charge ----- 2350 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120mm Mortar, barrel length 1500 mm:
- Maximum range ----- 6555 m
Max mean operating pressure in mortar ----- 922 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 50 kg
Volume of wooden case ----- 0,071 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





120 mm M64P5 **SMOKE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 626 mm
Mass of mortar shell with fuze ----- 12600 g
Weight of smoke charge ----- 2350 g
Type of smoke charge ----- white phosphorus
Fuze ----- impact, superquick, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120mm Mortar, barrel length 1500 mm:
- Maximum range ----- 7000 m
Max mean operating pressure in mortar ----- 922 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 50 kg
Volume of wooden case ----- 0,071 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





120 mm Mk12-L **SMOKE MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 807 mm
Mass of mortar shell with fuze ----- 14800 g
Weight of smoke charge ----- 2800 g
Fuze ----- impact, superquick, UT M88 P1
Muzzle safety at lowest initial velocity ----- 70 m
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120mm Mortar M75, barrel length 1900 mm:
- Maximum range ----- 9100 m
Max mean operating pressure in mortar ----- ≤1350 bars

Killing range (1 penetration/m²) radius ----- 24 m

When fired from the launcher with barrel length of 1500 mm and maximum pressure of 922 bars achieves the range of 7400 m
The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 738 x 352 x 171 mm
Gross weight ----- 38 kg
Volume of wooden case ----- 0,044 m³
UN No. ----- 0246
Hazard class ----- 1.3H

FUZE

UT, M88P1





120 mm M87P1 **ILLUMINATING MORTAR SHELL**

TECHNICAL DATA

Length of shell with fuze ----- 672 mm
Mass of mortar shell with fuze ----- 10800 g
Fuze ----- pyrotechnic, time, TP M87
Illuminating power ----- 1 000.000 Cd for 60 s
Mean rate of parachute descent with candle ----- 3 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range ----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 5900 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden case
Dimensions of wooden case ----- 808 x 352 x 211 mm
Gross weight ----- 41,5 kg
Volume of wooden case ----- 0,049 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

TP, M87





120 mm Mk15

ILLUMINATING MORTAR SHELL

TECHNICAL DATA

Length of shell with fuze ----- 725 mm
Mass of mortar shell with fuze ----- 10800 g
Fuze ----- electronic, time, ETSQ M365
Illuminating power ----- 1 000.000 Cd for 60 s
Mean rate of parachute descent with candle ----- 3 m/s
Shell is completed with ignition cartridge and increment charges.
Safe operational temperature range----- -30°C to +50°C
High safety during transportation, handling and parachuting.

BALLISTIC DATA

When using 120 mm Mortar, barrel length 1500 mm:
- Maximum range ----- 5900 m
Max mean operating pressure in mortar ----- 618 bars

The mortar shells can be fired from smooth bore mortar launchers.

PACKING

1 complete shell per carton
2 cartons per wooden box
Box dimensions ----- 855 x 352 x 211 mm
Gross weight ----- 36 kg
Volume of wooden case ----- 36 m³
UN No. ----- 0171
Hazard class ----- 1.2G

FUZE

ETSQ, M365



MORTAR SHELLS FOR DRONE





60 mm M73-D HE MORTAR SHELL FOR DRONE **(with point detonating fuze)**

TECHNICAL DATA

Length of shell with fuze ----- 297 mm
Mass of mortar shell with fuze ----- 1500 g
Explosive charge ----- TNT
Mass of explosive charge ----- 250 g
Fuze ----- point detonating for drone UT M88-D
Reliability of mortar shell with fuze ----- min 92%



PACKING

8 pcs / wooden case

Dimensions of wooden case ----- 968 x 352 x 211 mm
Gross weight ----- 27 kg
Volume of wooden case ----- 0,072 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88-D





60 mm M73PX-D HE MORTAR SHELL FOR DRONE **(with proximity fuze)**

TECHNICAL DATA

Length of shell with fuze	317 mm
Mass of mortar shell with fuze	1530 g
Explosive charge	TNT
Mass of explosive charge	250 g
Fuze	proximity MBU M18-D
Reliability of mortar shell with fuze	min 92%



PACKING

8 pcs / wooden case

Dimensions of wooden case	968 x 352 x 211 mm
Gross weight	27 kg
Volume of wooden case	0,072 m ³
UN No.	0321
Hazard class	1.2E

FUZE

MBU M18-D





81 mm M72-D HE MORTAR SHELL FOR DRONE **(with point detonating fuze)**

TECHNICAL DATA

Length of shell with fuze -----	400 mm
Mass of mortar shell with fuze -----	3150 g
Explosive charge -----	TNT
Mass of explosive charge -----	650 g
Fuze -----	point detonating for drone UT M88-D
Reliability of mortar shell with fuze -----	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case -----	968x352x211mm
Gross weight -----	31 kg
Volume of wooden case -----	0,072 m ³
UN No.-----	0321
Hazard class -----	1.2E

FUZE

UT, M88-D





81 mm M72PX-D HE MORTAR SHELL FOR DRONE **(with proximity fuze)**

TECHNICAL DATA

Length of shell with fuze -----	418 mm
Mass of mortar shell with fuze -----	3200 g
Explosive charge -----	TNT
Mass of explosive charge -----	650 g
Fuze -----	proximity MBU M18-D
Reliability of mortar shell with fuze -----	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case -----	968x352x211mm
Gross weight -----	31 kg
Volume of wooden case -----	0,072 m ³
UN No.-----	0321
Hazard class -----	1.2E

FUZE

MBU M18-D





82 mm M74-D HE MORTAR SHELL FOR DRONE **(with point detonating fuze)**

TECHNICAL DATA

Length of shell with fuze ----- 418 mm
Mass of mortar shell with fuze ----- 3200 g
Explosive charge ----- TNT
Mass of explosive charge ----- 650 g
Fuze ----- point detonating for drone UT M88-D
Reliability of mortar shell with fuze ----- min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case ----- 968x352x211mm
Gross weight ----- 31 kg
Volume of wooden case ----- 0,072 m³
UN No. ----- 0321
Hazard class ----- 1.2E

FUZE

UT, M88-D





82 mm M74PX-D HE MORTAR SHELL FOR DRONE **(with proximity fuze)**

TECHNICAL DATA

Length of shell with fuze	418 mm
Mass of mortar shell with fuze	3150 g
Explosive charge	TNT
Mass of explosive charge	650 g
Fuze	proximity MBU M18-D
Reliability of mortar shell with fuze	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case	968x352x211mm
Gross weight	31 kg
Volume of wooden case	0,072 m ³
UN No.	0321
Hazard class	1.2E

FUZE

MBU M18-D





120 mm M62-D HE **MORTAR SHELL FOR DRONE (with point detonating fuze)**

TECHNICAL DATA

Length of shell with fuze	593 mm
Mass of mortar shell with fuze	11300 g
Explosive charge	TNT
Mass of explosive charge	2400 g
Fuze	point detonating, UT M88-D
Reliability of mortar shell with fuze	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case	968x352x211mm
Gross weight	42 kg
Volume of wooden case	0,072 m ³
UN No.	0321
Hazard class	1.2E

FUZE

UT M88-D





120 mm M62PX-D **MORTAR SHELL for drone (with proximity fuze)**

TECHNICAL DATA

Length of shell with fuze	633 mm
Mass of mortar shell with fuze	11500 g
Explosive charge	TNT
Mass of explosive charge	2400 g
Fuze	proximity MBU M18-D
Reliability of mortar shell with fuze	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case	968x352x211mm
Gross weight	42 kg
Volume of wooden case	0,072 m ³
UN No.	0321
Hazard class	1.2E

FUZE

MBU, M18-D





120 mm TB-D **MORTAR SHELL for drone (with point detonating fuze)**

TECHNICAL DATA

Max. length of shell with fuze -----	634 mm
Mass of mortar shell with fuze -----	12,2 kg
Type of explosive -----	TBSX
Mass of explosive -----	3,60 kg
Type of fuze: -----	point detonating UT M88-D



PACKING

2 pcs/wooden case

Dimensions of wooden case -----	968x352x211mm
Gross weight -----	37 kg
Volume of wooden case -----	0,072 m ³
UN No. -----	0,294
Hazard class -----	1.2E

FUZE

UT M88-D





82 mm M74PX-D HE MORTAR SHELL FOR DRONE **(with proximity fuze)**

TECHNICAL DATA

Length of shell with fuze	418 mm
Mass of mortar shell with fuze	3150 g
Explosive charge	TNT
Mass of explosive charge	650 g
Fuze	proximity MBU M18-D
Reliability of mortar shell with fuze	min 92%



PACKING

5 pcs/wooden case

Dimensions of wooden case	968x352x211mm
Gross weight	31 kg
Volume of wooden case	0,072 m ³
UN No.	0321
Hazard class	1.2E

FUZE

MBU M18-D



AIRCRAFT UNGUIDED ROCKETS





57 mm BR-1-57 (S-5M) AIRCRAFT ROCKET

BR-1-57 rocket projectile is Rocket is used for with the high explosive effect, 57 mm calibre and impact fuze. Purpose of this rocket is destruction of air targets at the altitudes up to 30.000 m it is the modern aircraft amament.

BR-1-57 rocket can be also used for the ground targets destruction (aircraft, cars, warehouses and similar military objects).

BR-1-57 rocket is fired from the tube launchers (with rear part open), which are placed in the honeycomb launchers L-57.

TECHNICAL DATA

Rocket caliber	57 mm
Rocket length with fuze	868 mm
Rocket mass	3,96 kg
Warhead mass (without fuze)	0,815 kg
Explosive charge mass	0.285 kg
Temperature range of use	- 60°C to + 50°C
Fuze	impact, superquick, inertia action UTI-1
Launching range	max 3000 m

PACKING

12 rockets in a wooden case

Case dimension	1069 x 395 x 285 mm
Case gross weight	72 kg
Case volume	0,2 m ³
UN no.	0295
Hazard class	1.2F



FUZE
UTI-1

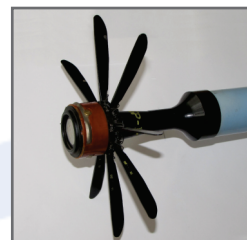


BR-1-57



INITIATION BY MEANS
OF PLUG

BR-1-57 P1



INITIATION BY MEANS OF AUTOMATIC
SWITCHING ON THE CIRCUIT



57 mm BR-2-57 (S-5K) **AIRCRAFT ROCKET**

Rocket BR-2-57 is of the hollow charge effect. Its is 57 mm calibre assembled with the impact inertial fuze.

The rocket is used to destroy armoured ground targets, tanks, self-propelled artillery, armoured vehicles, armoured personnel carriers etc. It serves as the rocket armament of modern jet airplanes.

Rocket BR-2-57 is launched with the fuze from the launcher tube (with the opened rear ends) which are placed in the honeycomb launchers L-57.

TECHNICAL DATA

Caliber	57 mm
Rocket length with fuze	853 mm
Rocket mass	3,64kg
Thickness of penetrating armor at rocket strike under the angle 30° from the vertical line	130 mm
Temperature range of use	- 60°C to + 50°C
Launching range	max 3000 m

PACKING

12 rockets in a wooden case

Case dimension	1069 x 935 x 285 mm
Case gross weight	69 kg
Case volume	0,12 m ³
UN no.	0295
Hazard class	1.2F



FUZE

UTI-2

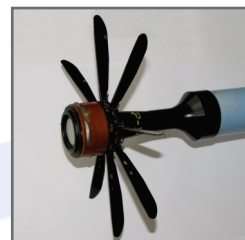


BR-2-57



INITIATION BY MEANS
OF PLUG

BR-2-57 P1



INITIATION BY MEANS OF AUTOMATIC
SWITCHING ON THE CIRCUIT



57 mm BR-20-57 (S-5KO) **AIRCRAFT ROCKET**

The aircraft rocket BR- 20- 57 is a rocket of combined hollow-charge and fragmentation effect, therefore, with multiple employment advantages, completed with the impact fuze with supequick-inertia action. Rocket BR-2-57 is launched with the fuze from the launcher tube (with the opened rear ends) which are placed in the honeycomb launchers L-57

TECHNICAL DATA

Rocket caliber	57 mm
Rocket mass	4.5 kg
Rocket length with fuze	991 mm
Explosive charge mass	0.32 kg
Penetration	160mm
Temperature range of use	- 60°C to + 50°C
Launching range	max 3000 m

PACKING

8 rockets in a wooden case

Case dimension	1100 x 443 x 250 mm
Case gross weight	64 kg
Case volume	0,12m ³
UN no.	0180
Hazard class	1.1F



FUZE

UTI-2P1

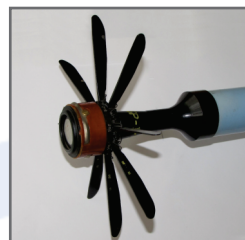


BR-20-57



**INITIATION BY MEANS
OF PLUG**

BR-20-57 P1



**INITIATION BY MEANS OF AUTOMATIC
SWITCHING ON THE CIRCUIT**



80 mm, M16 (S-8 KOM) **UNGUIDED AIRCRAFT ROCKET**

The VZ 80mm, M16 (S-8 KOM) unguided aircraft rocket is with hollow-charge fragmentation warhead and designed for destruction of ground armored and unarmored targets, such as tanks, missile launchers as well as enemy troops. Rockets are launched individually or in burst from twenty-tube honeycomb launchers suspended under a plane wings (Launcher B-8M1) or armament carrier of helicopters (Launcher B-8V20-A).

TECHNICAL DATA

Caliber ----- 80 mm
Warhead explosive mass ----- 1,1 kg
Rocket mass ----- 11,1 kg
Rocket length ----- 1537 mm
Rocket penetration under the angle of 30° to the normal - min.350 mm
Temperature range of use ----- - 60°C to + 60°C
Fuze - impact, superquick, inertia type - piezoelectric
upper PIEZO GENERATOR ПГ, M16
lower UTI-PE M15
Launching range ----- 1300-4000 m

PACKING

4 rockets in a wooden case

Case dimension ----- -1805 x 312 x 294 mm
Case gross weight ----- 72 kg
Case volume ----- 0,17m³
UN no. ----- 0180
Hazard class ----- 1.1F

FUZE

PIEZO GENERATOR



FUZE

UTI-PE M15





128 mm, M15 **UNGUIDED AIRCRAFT ROCKET**

Unguided aircraft rocket 128 mm M15 is with hollow-charge fragmentation warhead and designed for destruction of ground armored and unarmored targets, such as tanks, missile launchers as well as enemy troops. Rockets can be launched from launcher L-128-04.

TECHNICAL DATA

Caliber ----- 128 mm
Rocket mass ----- 44 kg
Rocket length ----- 1835 mm
Temperature range of use ----- - 40°C to + 50°C
Fuze ----- upper impact
mechanical with point detonating and delay action (MRV-U)
Launching range ----- max 4000 m

PACKING

1 rocket in a wooden case

Case dimension ----- 2030 x 295 x 255 mm
Case gross weight ----- 74 kg
Case volume ----- 0,153m³
UN no. ----- 0,295
Hazard class ----- 1.2F

FUZE

MRV-U



UNGUIDED ROCKETS FOR LAUNCHERS





LRV-107 mm



LRSVM OGANJ M18



LRSV M63/94 PLAMEN
128 mm



MSVLR TAMNAVA 122 mm

MULTIPLE ROCKET LAUNCHER SYSTEMS



107 mm M15 **ARTILLERY ROCKET**

The unguided artillery rocket 107mm M15 is designed to incapacitate or destroy enemy troops, equipment, enemy forces at meeting places, enemy convoys, prevent assaults by parachute troops and invasions from the sea, neutralize enemy command posts and communication centers. Rocket is launched from different types of multi-tubes and modular launchers: LRV, M63, M94, SAKR RI812, etc



TECHNICAL DATA

Caliber	107 mm
Rocket length with UTI M84 fuze	827 mm
Rocket mass	18,6 kg
Fuze mass	0,35 kg
Explosive mass	1,25 kg
Maximum range	8,5 km
Temperature range of use	- 30°C to + 50°C
Fuze - impact, superquick, inertia action	UTI M84

The rocket can be fired from smooth bore mortar launchers.

PACKING

2 rockets in a wooden case	
Case dimension	950 x 370 x 235 mm
Case gross weight	51 kg
Case volume	0.07m ³
UN no.	0295
Hazard class	1.2F

FUZE

UTI, M84





107 mm M06 **ARTILLERY ROCKET**

The unguided extended range artillery rocket 107 M06 is designed to incapacitate or destroy enemy troops, equipment, enemy forces at meeting places, enemy convoys, prevent assaults by parachute troops and invasions from the sea, neutralize enemy command posts and communication centers. Rocket is launched from different types of multi-tubes and modular launchers: LRV, M63, M94, RI812, etc.



TECHNICAL DATA

Caliber	107 mm
Rocket length with UTI M84 fuze	825 mm
Rocket mass	17,6 kg
Fuze mass	0,35 kg
Explosive mass	1,25 kg
Maximum range	11,5 km
Temperature range of use	- 30 to + 50°C
Fuze - impact, supequick, inertia type	UTI M84

PACKING

2 rockets in a wooden case	
Case dimension	1081 x 370 x 215 mm
Case gross weight	51 kg
Case volume	0.08 m ³
UN no.	0180
Hazard class	1.1F

FUZE

UTI, M84





122 mm GRAD-S **ARTILLERY ROCKET**

The artillery rocket intended for fire support against fortified, light armored or non-armoured targets. It is designed to incapacitate enemy troops and to neutralize enemy command posts and communication centers.

Rocket is launched from different types of multi-tubes launchers:
MLRS BM-21, MSVLR TAMNAVA 122 mm, MLRS RM-70, etc.

TECHNICAL DATA

Caliber	122 mm
Length	2875 mm
Total mass	67 kg
Mass of warhead with fuze	19,1 kg
Charge mass	20,60 kg
Motor total impulse	39700 Ns
Temperature range of use	- 30 °C to + 50°C
Optimal angle of elevation	48°
Range	19,9 km

Rocket can be completed with two fuzes types: upper impact mechanical with point detonating and delay action (MRV-U) or with proximity fuze (URBE).

PACKING

1 rocket in a wooden case	
Case dimension	2900 x 285 x 225 mm
Case gross weight	101 kg
Case volume	0.21 m ³
UN no.	0295
Hazard class	1.2F

FUZE

MRV-U

URBE





122 mm GRAD-2000 **ARTILLERY ROCKET**

The artillery rocket intended for impact, sudden and quick fire assaults on the surface targets or below the ground level. It has great efficiency against all types of targets: motor cars, non-armored and armored vehicles. Rocket is launched from different types of multi-tubes launchers: MLRS BM-21, MSVLR TAMNAVA 122 mm, MLRS RM-70, etc.

TECHNICAL DATA

Caliber	122 mm
Length	2875 mm
Total mass	69 kg
Mass of warhead with fuze	19,1 kg
Charge mass	20,15 kg
Motor total impulse	62250 Ns
Motor specific impulse	2280 Ns
Temperature range of use	- 30°C to + 50°C
Optimal angle of elevation	55°
Range	40 km

Rocket can be completed with two fuzes types: upper impact mechanical with point detonating and delay action (MRV-U) or with proximity fuze (URBE).

PACKING

1 rocket in a wooden case	
Case dimension	2900 x 285 x 225 mm
Case gross weight	101kg
Case volume	0.21 m ³
UN no.	0295
Hazard class	1.2F

FUZE

MRV-U

URBE





128 mm OGANJ M18 **ARTILLERY ROCKET**

The unguided rocket cal.128mm, OGANJ M18 is artillery rocket for fire support against fortified and non-fortified points, light armored and non-armoured targets and enemy manpower, as much as destruction of command posts and communication centers. Rocket is launched from different types of multi-tubes launchers: LRSVM M-18 OGANJ, M-77 OGANJ, etc.

TECHNICAL DATA

Rocket caliber ----- 128 mm
Warhead caliber ----- 128 mm
Rocket length ----- 2785 mm
Rocket mass ----- 64 kg
Warhead mass ----- 19,5 kg
Warhead effective action radius ----- 40 m
Maximum range ----- 22 km
Temperature range of use ----- - 30°C to +50°C
Rocket can be completed with two fuzes types:
point detonating with delay action (UTU M12) or with proximity fuze (UB M21).

PACKING

1 rocket in a wooden case
Case dimension ----- 2900 x 285 x 225 mm
Case gross weight ----- 90 kg
Case volume ----- 0.21 m³
UN no. ----- 1.2F
Hazard class ----- 0295

FUZES

UTU M12

UB M21





128 mm OGANJ M19 **ARTILLERY ROCKET**

Unguided rocket 128mm, OGANJ M19 is intended for neutralization of area targets, enemy manpower, fortified and non-fortified points as much as light armoured and non-armoured vehicles.

Rocket is launched from different types of multi-tubes launchers: LRSVM M-18 OGANJ, M-77 OGANJ, etc.

TECHNICAL DATA

Caliber ----- 128 mm
Length ----- 2800 mm
Mass ----- 68 kg
Warhead mass ----- 20 kg
Temperature range ----- -30°C to +50°C
Rocket range ----- 40km

Rocket can be completed with two fuzes types:
point detonating with delay action (UTU M12) or with proximity fuzes (UB M21).

PACKING

1 rocket in a wooden case
Case dimension ----- 2900 x 285 x 225 mm
Case gross weight ----- 90 kg
Case volume ----- 0.21 m³
UN no. ----- 1.2F
Hazard class ----- 0295

FUZES

UTU M12

UB M21





128 mm OGANJ M20 **ARTILLERY ROCKET**

Unguided rocket cal.128mm, OGANJ M20 is intended for neutralization of area targets, enemy manpower, as much as destruction of command posts and communication centers.

Rocket is launched from
different types of multi-tubes launchers:
LRSVM M-18 OGANJ, M-77 OGANJ, etc.

TECHNICAL DATA

Caliber ----- 128 mm
Length ----- 3600 mm
Mass ----- 82 kg
Warhead mass ----- 19 kg
Rocket range ----- 50 km
Temperature range ----- -30°C to +50°C
Rocket can be completed with two fuzes types:
point detonating with delay action (UTU M12) or with proximity fuze (UB M18).

PACKING

1 rocket in a wooden case
Case dimension ----- 2900 x 285 x 225 mm
Case gross weight ----- 90 kg
Case volume ----- 0.21 m³
UN no. ----- 1.2F
Hazard class ----- 0295

FUZES

UTU M12

UB M18






128 mm OGANJ M22 **ARTILLERY ROCKET**

Unguided rocket cal.128mm, OGANJ M20 is intended for neutralization of area targets, enemy manpower, as much as destruction of command posts and communication centers.

Rocket is launched from different types of multi-tubes launchers: LRSVM M-18 OGANJ, M-77 OGANJ, etc.

TECHNICAL DATA



Caliber	128 mm
Length	2785 mm
Mass	64 kg
Rocket range	22 km
Temperature range	-30°C to +50°C

Rocket can be completed with two fuzes types:
point detonating with delay action (UTI M12) or with proximity fuze (UB M21).

PACKING

1 rocket in a wooden case	
Case dimension	2900 x 285 x 225 mm
Case gross weight	90 kg
Case volume	0.21 m ³
UN no.	1.2F
Hazard class	0295

FUZES

UTU M12

UB M21





128 mm PLAMEN A M63 **ARTILLERY ROCKET**

The unguided rocket PLAMEN A' is designed to inflict operational and powerful strikes on manpower, lightly armored enemy vehicles, to destruct command posts, communication centers, airports and military industrial infrastructure. Rockets can be launched from launcher VBR 128 mm M63, LRSV 128 mm M63/94, etc

TECHNICAL DATA

Maximum range -----	8600 m
Caliber -----	128 mm
Rocket length with the fuze -----	837 mm
Rocket mass -----	23,34 kg
Explosive charge mass -----	2,35 kg
Fuze - impact, superquick, inertia type -----	UTI M84
Temperature range of use -----	- 30°C to + 50°C

PACKING

2 rockets in a wooden case	
Case dimension -----	1070 x 370 x 215 mm
Case gross weight -----	59 kg
Case volume -----	0.09 m ³
UN no. -----	0295
Hazard class -----	1.2F



FUZE

UTI, M84





128 mm PLAMEN D M08 **ARTILLERY ROCKET**

The unguided rocket PLAMEN D M08 is designed to inflict operational and powerful strikes on manpower, lightly armored enemy vehicles, to destruct command posts, communication centers, airports and military industrial infrastructure. Rockets can be launched from launcher LRSV 128 mm M63/94, etc

TECHNICAL DATA

Maximum range-----	12700 m
Caliber-----	128 mm
Length-----	975 mm
Rocket mass-----	25,67 kg
Explosive charge mass-----	2,95 kg
Fuze - impact, superquick, inertia type-----	UTI M84
Temperature range of use-----	- 30°C to + 50°C



PACKING

2 rockets in a wooden case	
Case dimension -----	1081 x 370 x 215 mm
Case gross weight -----	69 kg
Case volume -----	0.08m ³
UN no. -----	0295
Hazard class -----	1.2F

FUZE

UTI, M84



GUIDED ROCKETS





MALYUTKA 9M14P1-2T **ANTITANK MISSILE**

The wire guided antitank missile with semiautomatic guidance system (SACLOS) 9M14P1 (and improved 9M14PB1) is an effective antitank combat weapon with ranges up to 3000m, high hit probability.



TECHNICAL DATA

Maximum firing distance	3000 m
Minimum firing distance	500 m
Penetration of warhead after ERA	750 mm
Mean flight velocity	120 m/s
Caliber	125 mm
Length	985 mm
Wing span	393 mm
Transverse dimensions of missile with folded wings	185 x185 mm
Rocket mass	12,6 kg
Temperature range	- 30°C to + 50°C
Guiding system	manually with POLK 9K11(hit probability ≥ 60%) and semi-automatically with POL M83 (hit probability ≥ 80%)

PACKING

1 set in a wooden case	
Case dimension	1051 x 340 x 350 mm
Case gross weight	30 kg
Case volume	0.13m ³
UN no.	0287
Hazard class	1.1D



MALYUTKA 9M14P1-2F **ANTITANK MISSILE**

The wire guided antitank missile with semiautomatic guidance system (SACLOS) 9M14P1 (and improved 9M14PB1) is an effective antitank combat weapon with ranges up to 3000m, high hit probability.



TECHNICAL DATA

Maximum firing distance	3000 m
Minimum firing distance	500 m
Overpressure of warhead at 7m open space	≥0,3 bar
Mean flight velocity	120 m/s
Caliber	125 mm
Length	866 mm
Wing span	393 mm
Transverse dimensions of missile with folded wings	185 x185 mm
Rocket mass	12,6g
Temperature range	-30°C to + 50°C
Guiding system	manually with POLK 9K11(hit probability ≥ 60%) and semi-automatically with POL M83 (hit probability ≥ 80%)

PACKING

1 set in a wooden case	
Case dimension	1051 x 340 x 350 mm
Case gross weight	30 kg
Case volume	0.13m ³
UN no.	0287
Hazard class	1.1D



MALYUTKA SYSTEM

Malyutka system consists of the following elements:

- Malyutka rocket
- Launching box
- Control panel

LAUNCHING BOX 9P111-2

Launching box 9P111-2 is intended for storage of the following items:

- rocket 9M14P1,
- warhead with the fuze,
- launching rail for launching the rocket,
- 16 m of 4-fiber cable which on one end has a 4-pole plug for attaching to the control panel

9S415M for launching and guiding the rocket and on the other end has a 6- pole connector which is attached to the rocket plug and launching rail,

- coil for winding the cable,
- 2 belts for fixing the launching box to the ground.

Launching box is anticipated for maximum 10 firings after which it is returned to the manufacturer for inspection and overhaul (possible damage due to products of combustion of powder gases of the rocket motor). A new warranty period for 10 new firings is provided after performed overhaul.

CONTROL PANEL 9S415M

Control panel contains a battery 11RV4J which serves for supplying the panel with the voltage of 12V, a spyglass 9Š16, a joystick for guiding the rocket.

A button for launching the rocket is located on the top of the panel, as well as the switch for the selection of one of the four rockets that can be launched and guided individually to the target. On the front side of the panel, there are four 4-pole connectors to which maximum 4 rockets can be attached. Inside the panel there are 2 electronic boards that serve for processing a signal coming from the rocket's gyroscope and sending a command signal for guiding towards the rocket.

This panel, unlike the Russian panel, is much more modern and modernized- instead of 11 electronic module as there are in the Russian model, our panel has only 2 plates with electronics.

OTHER MILITARY PROGRAM





TMA-4

ANTIMAGNETIC ANTI-TANK MINE

The antitank destructive piercing mine- 6 is intended for incapacitating and demolition of enemy armored and other combat and transport vehicles. It has a destructive and penetrating effect.



Dimensions	Ø 285 x 110 mm
Mass	6.3 kg
Explosive charge	Cast TNT
Explosive charge mass	5.5 kg
Initiation	Through the fuze
Activation force	100 - 200 daN
Step-on area	Ø 200 mm (314 cm ²)
Safe operational temperature range	- 30°C to + 60°C
Mine laying operation	- Manual - Minelayer
Transport	any
Stability on mine field	6 months (the worst conditions)

PACKING

4 pcs per packing set

The set is packed in a barrel.

Dimensions	Ø 330 x 370 mm
Volume	0.032 m ³
UN number	0137
Hazard class	1.1D



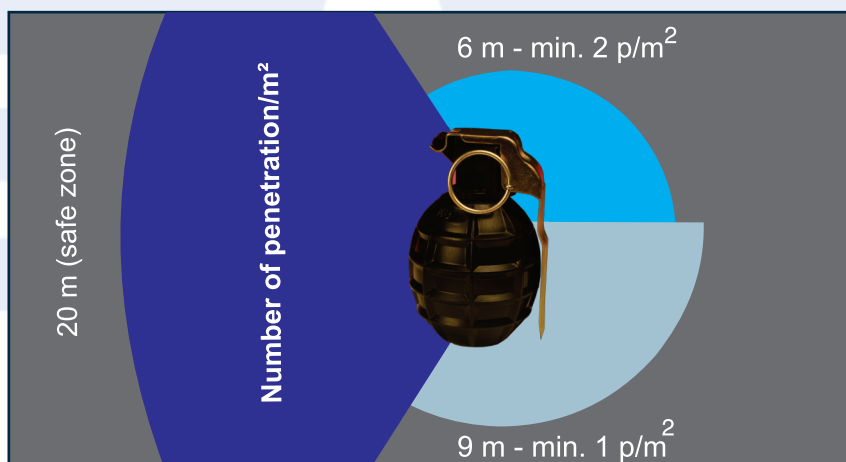
M-75 HAND GRENADE

The hand grenade M-75 is intended for destruction of enemy troops located in different types of shelters and open areas.

TECHNICAL DATA



Mass	355 g
Dimensions	Ø 57 x 89 mm
Explosive charge – plastic explosive	36 g
Grenade body – plastic with steel balls	Ø 2 – 2,9 mm
Safety element pulling force	68 – 177 N
Lever deflection safety angle	min 35°
Delay time	3-4,4 s
Proper function within temperature range	-30° to + 60°C
Convenient for any kind of transportation	



PACKING

1 complete grenade per plastic box	
36 pcs. per wooden case	
Wooden case dimensions	607 x 480 x 174mm
Case gross weight	23kg
Case volume	0.038m³
UN No.	0293
Hazard class	1.2F



M-84

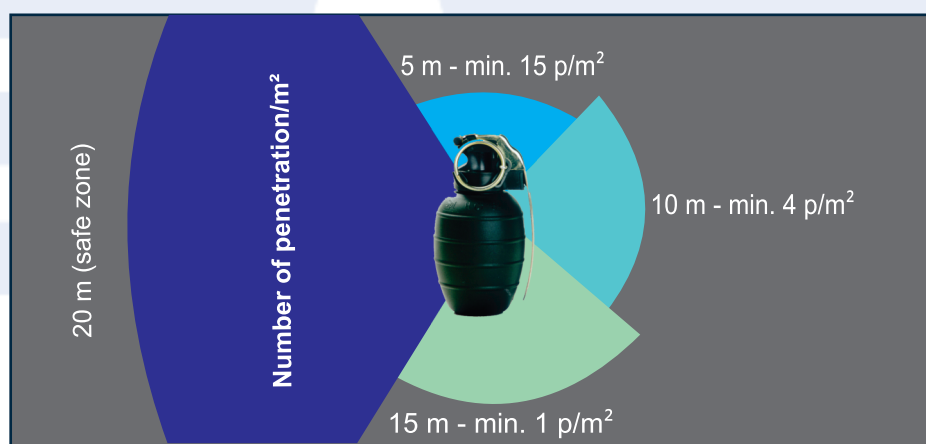
HAND GRENADE

The hand grenade M-84 is intended for destruction of enemy troops located in different types of shelters and open areas.

TECHNICAL DATA



Mass	480 ± 20 g
Dimensions	Ø 60 x 115 mm
Explosive charge – plastic explosive	95 ± 5 g
Grenade body – plastic with steel balls	Ø 2 – 2,3 mm
Safety element pulling force	70 do 150 N
Lever deflection safety angle	min 50°
Delay time	4 s
Proper function within temperature range	-30°C to + 60°C



PACKING

1 complete grenade per plastic box	
24 psc per wooden case	
Wooden case dimensions	553 x 429 x 223 mm
Case gross weight	23.5 kg
Case volume	0.040 m³
UN No.	0293
Hazard class	1.2F



40 mm **BULLET WITH CUMULATIVE PROJECTILE**

It is intended for use against light armored combat and non-combat vehicles at distances up to 150m. Beside the primary cumulative effect, there is also the secondary fragmentation effect on enemy live force. The bullet is fired from under-barrel grenade launcher GP-25.

TECHNICAL DATA



Caliber	40 mm
Round mass	260 g
Round length	119 mm
Explosive charge	32 g
Muzzle velocity	73 m/s
Powder charge mass	0,6 g
Max. pressure of powder gases	800 bars

Penetration through steel plate HP-4
under the angle of 90° min.40 mm

Vertical target accuracy at 100 m
- per height $V_{vt} < 0,6$ m
- per direction $V_{pt} < 0,6$ m

Max. range 400 m

Accuracy at max. range
- per distance $V_{dt} < 16,8$ m
- per direction $V_{pt} < 8,4$ m



Fuze	UT,M02 SP
Casualty radius	min. 3 m
Muzzle safety	min. 15 m
Safe activation distance	50 m
Burning time of self-destructing device	15 s
The fuze has interrupted initiating train.	
Bullet and fuze	waterproof
Temperature range of use	-53° C to +71° C

PACKING

Box dimensions	596 x 366 x 196 mm
Total mass	23,5 kg
Total volume	0,043 m ³
Hazard class	1.1 F

The bullet is packed in hermetically sealed plastic container
40 containers are packed in wooden boxes



40 mm

BULLET WITH SMOKE PROJECTILE

Intended for marking ground targets as well as blinding live force. The cloud made by inflamed smoke mixture is compact with diameter of min. 3m. The cloud can last from 15 to 30s. In normal weather conditions, it is visible at distance of 2-3km.

The bullet is fired from under-barrel grenade launcher GP-25.



TECHNICAL DATA

Caliber	40 mm
Round mass	260 g
Round length	111 mm
Smoke mixture mass	80 g
Muzzle velocity	73 m/s
Powder charge mass	0,6 g
Max. pressure of powder gases	800 bars

Vertical target accuracy at 100 m

- per height $V_{vt} < 0,6$ m
- per direction $V_{pt} < 0,6$ m

Max. range 400 m

Accuracy at max range

- per distance $V_{dt} < 16,8$ m
- per direction $V_{pt} < 8,4$ m



Fuze	UT, M02 SP P1
Muzzle safety	min. 15 m
Safe activation distance	50 m
Burning time of self-destructing device	15 s
The fuze has interrupted initiating train.	
- Bullet and fuze	waterproof
- Temperature range of use	-53°C to +71°C

PACKING

- Box dimensions 596 x 366 x 196 mm
- Total mass 23,5 kg
- Total volume 0,043 m³
- UN no. 0016
- Hazard class 1.4G
- The bullet is packed in hermetically sealed plastic container
- 40 containers are packed in wooden boxes



FAB-100 M80 **HE FREE - FALL BOMB**

FAB - 100 M80 HE Bomb is intended for attack against targets of medium fortification level, such as industrial facilities, railroad junctions, roads, command posts, bridges or personnel.

The bomb may be released
safe or armed at speed
up to 1000 km/h.



TECHNICAL DATA

Bomb type ----- FAB-100 M80
Diameter ----- 230 mm
Length ----- 1490 mm
Hook spacing (adaptable to A/C bomb rack) ---- 250 and 355.6 mm

Weights

Without fuzes ----- 117 kg
Main explosive charge (TNT) ----- 39 kg

Fuzes

Type AVU-ET ----- 1 or 2
Type AUFK M91 ----- 1 or 2

PACKING

12 bodies (4 x 3) ----- one crate
Case dimension ----- 1020 x 800 x 1600 mm
Case gross weight ----- 1450 kg
Case volume ----- 1.3 m³

12 Fins (24 hooks) ----- one crate
Case dimension ----- 1160 x 900 x 760 mm
Case gross weight ----- 170 kg
Case volume ----- 0.8 m³
UN no. ----- 0034
Hazard class ----- 1.1D



FAB-250 M79 **HE FREE - FALL BOMB**

FAB - 250 M79 HE Bomb is intended for attack against targets of medium fortification level, such as industrial facilities, railroad junctions, roads, command posts, bridges or personnel. The bomb may be released safe or armed at speed up to 1000 km/h.



TECHNICAL DATA

Bomb type ----- FAB-250 M79
Diameter ----- 325 mm
Length ----- 2015 mm
Hook spacing (adaptable to A/C bomb rack) ---- 250 and 355.6 mm

Weights

Without fuzes ----- 240 kg
Main explosive charge (TNT) ----- 105 kg

Fuzes

Type AVU-ET ----- 1 or 2
Type AUFK M91 ----- 1 or 2

PACKING

3 bodies ----- one crate
Case dimension ----- 1100 x 1300 x 500 mm
Case gross weight ----- 715 kg
Case volume ----- 0.72 m³

9 Fins ----- one crate
Case dimension ----- 1200 x 1200 x 1100 mm
Case gross weight ----- 180 kg
Case volume ----- 1.6 m³
UN no. ----- 0034
Hazard class ----- 1.1D



155 mm HE M107 ARTILLERY PROJECTILE Zone 7

MAIN COMBACT TASKS:

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

TECHNICAL DATA

Projectile mass (kg) ----- 43.1
Projectile length (with nose plug) (mm) ----- 684
Fuze ----- Impact, SQ and delay
UTIU, M15
Muzzle velocity (m/s) ----- 565 (Zone 7)
Maximum range (m) ----- 14.500 (Zone 7)
Powder Type ----- NCD 27 (Zone 7)
Powder mass (kg) ----- 6,3 (Zone 7)
Primer ----- TK M82 P2

PACKING

* Projectile ----- 8 pcs per pallet
Dimensions ----- 360 mm x 765 mm x 829 mm
Gross weight ----- 360 kg
Volume ----- 0,23m³
UN no. ----- 0242
Hazard class ----- 1.3C
* Primer ----- 1000 pcs per case
Dimensions ----- 572 mm x 375 mm x 262 mm
Gross weight ----- 50 kg
* Propelling charge ----- 20 pcs per box pallet
Dimensions ----- 1060 mm x 720 mm x 1000 mm
Gross weight ----- 308,4 kg
* Fuze ----- 8 pcs per metal box
Dimensions ----- 300 mm x 144.5 mm x 188 mm
Gross weight ----- 7,7 kg

FUZE

UTIU, M15





155 mm HE M107 ARTILLERY PROJECTILE Zone 8

MAIN COMBACT TASKS:

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

TECHNICAL DATA

Projectile mass (kg)	-----	43.1
Projectile length (with nose plug) (mm)	-----	684
Fuze	-----	Impact, SQ and delay UTIU, M15
Muzzle velocity (m/s)	-----	690 (Zone 8)
Maximum range (m)	-----	18.400 (Zone 8)
Powder Type	-----	NCD 26 (Zone 8)
Powder mass (kg)	-----	9,4 (Zone 8)
Primer	-----	TK M82 P2

PACKING

* Projectile	-----	8 pcs per pallet
Dimensions	-----	360 mm x 765 mm x 829 mm
Gross weight	-----	360 kg
Volume	-----	0,23m ³
UN no.	-----	0242
Hazard class	-----	1.3C
* Primer	-----	1000 pcs per case
Dimensions	-----	572 mm x 375 mm x 262 mm
Gross weight	-----	50 kg
* Propelling charge	-----	20 pcs per box pallet
Dimensions	-----	1060 mm x 720 mm x 1000 mm
Gross weight	-----	308,4 kg
* Fuze	-----	8 pcs per metal box
Dimensions	-----	300 mm x 144.5 mm x 188 mm
Gross weight	-----	7,7 kg

FUZE

UTIU, M15





CONTROL TECHNICAL INSPECTION

All assets produced in HK "Krušik" have their own specified warranty period and shelf life. It is usual to give a warranty period of 12 months for all assets. Shelf life is from 6 to 15 years, if they are stored in the prescribed storage conditions.

The shelf life mainly depends on the consistency of the chemical composition of materials subject to aging, which are an integral part of: rocket propellants, igniters, delay devices, tracers, warheads, fuze primers and other pyrotechnic parts.

After the expiration of shelf life, during the control- technical inspection, a sample of about 5% is taken from the batch where the shelf life was expired, on which disassembly is carried out to the level of assemblies and subassemblies.

Climate-mechanical and functional tests are performed on all subassemblies, and a sample of the material is sent for chemical stability testing.

In addition, tests of the assets performance are carried out at testing ground. After these activities, a conclusion is reached and it can be:

1. To extend the shelf life for a certain batch to depending on the results of the control and technical inspection;
2. To perform an overhaul of the batch for the subassemblies that are found defective;
3. To transform the items into the practise models for training;
4. To destroy the batch of items in a controlled manner (which is a rare case).

HK, "Krušik" has the ability to perform control- technical inspection of all types of mortar shells as well as the following rockets: Malyutka, Strela 2M and Strela 10M (from our assortment) and rockets of Russian production: Fagot, Igla, R60, R73 and R27.

For each asset in HK "Krušik", in the constructive documentation, there is an instruction for extending the shelf life as well as a prescribed term planned for the control- technical inspection.



OVERHAUL AND MODERNIZATION OF WEAPONS

The weapons in armies very quickly become obsolete and lose their effectiveness. One of the most rational and productive ways to reach a high technical level is the modernization of existing weapons and military equipment. Well-prepared and systematically implemented modernization, in reasonable and economically justified manner, increases the level of combat readiness and capability of combat assets and systems, and that is why it is being applied to an increasing extent all around the world.

As a development-oriented company, HK "Krušik" successfully implements the overhaul, modernization and improvement of assets from its own production. We especially emphasize the modernization of rocket assets, as well as mortar shells. In the previous period, there was active work on the realization of shells and the missiles of extended range, as well as on the realization of shells for use with modern combat systems - such as drones and unmanned aerial vehicles.

TECHNOLOGY TRANSFER

Given that many developing countries want to improve their military industries. HK "Krušik" got the opportunity to transfer the technology of certain lines for assembly or production of items to those countries. HK "Krušik" has a tradition longer than 80 years, and therefore a great experience in production, which is a good basis for technology transfer.

The range of technology transfer depends on customer requirements. One transfer usually includes: installation of production line, line for control of items, packaging of items, final control of items, Know-how documentation, delivery of items and equipment in a quantity sufficient for uninterrupted annual work, training of the customer's workers and professional staff on the items assembly, training of the customer's staff at the seller's headquarters, provision of technical assistance during production according to the needs and requirements of the customer.



