HISTORY

JULY 20, 1922  COMPANY’S ESTABLISHMENT UNDER THE NAME OF “THE FACTORY OF MACHINES AND
FOUNDRY - DUMITRU VOINEA”
1922-1936  ACTIVITIES OF OVERHAULING FOR ROLLING STOCK ARE INITIATED
1936-1944  CASTING FOUNDRY, HOT-PRESSING, FORGING SHOPS AND CARDBOARDS ARE
1944-1948  DEVELOPED
A FEW CAPACITIES ARE USED FOR REPAIRING AND MANUFACTURING SOME
1948-1952  AGRICULTURAL EQUIPMENTS AND TOOLS
1952-1965  THE FITTINGS PRODUCTION AND KITCHEN FURNITURE ARE INITIATED
1965-1988  THE FITTINGS PRODUCTION, GAS METERS AND ENGINES FOR BIKES ARE DEVELOPED
THE MANUFACTURING PROFILE IS DIVERSIFIED BY CARBURETORS PRODUCTION,
FILTERS, PUMPS,PRESSES, TEST STANDS AND SPECIAL MACHINES-TOOLS...

VIEWPOINT

TAKING INTO CONSIDERATION THE IMPORTANCE OF THE MARKET BY UNDERSTANDING THE
CUSTOMER’S NEEDS, WE TRY TO FIND POSSIBILITIES IN ORDER TO IMPROVE AND TO DIVERSIFY
PERMANENTLY OUR ACTIVITY, TO ASSURE AN ATMOSPHERE OF CONFIDENCE, FAVORABLE TO
COMMUNICATE WITH OUR CUSTOMERS

THE HUMAN QUALITY AND THE PROFESSIONAL ABNEGATION OF THE EMPLOYERS, HAVE A DECISIVE
ROLE IN THE PROGRESS OF THE ORGANIZATION

THE MANAGEMENT TEAM IS CONTINUOUSLY INTERESTED IN SELECTING A COMPETENT YOUNG AND
STRONG STAFF, HAVING THE ADEQUATE TRAINING AND A GREAT INTELLECTUAL MOBILITY.
NATO

COMPATIBLES MILITARY PRODUCTS

60 mm mortar, COMMANDO type Model 2001
• 60 mm mortar, standard type 2001 Model
• 60 mm A60 mortar, standard type 1988 Model
• 81 mm mortar Model 1999
• 81 mm mortar Model 1977
• 60 mm round with smoke steel bomb, for COMMANDO Mortar
• 60 mm round with explosive bomb, with steel body
• 60 mm round with steel explosive bomb-heavy duty
• 81 mm round with parachute and illuminating mine

81 mm round with explosive bomb of enhanced range and effect for the mortar
• 81 mm round with steel iron explosive bomb, for the mortar model 1977
• 81 mm round with smoke bomb, for the 1977 model mortar
SISTEM CAL. 60MM
COMANDO
2001 MODEL
60 MM MORTAR COMMANDO TYPE
DESTINATION:
- it is an individual means of fire;
- it is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for subunits of navy, air force, national guards as well as for intervention units;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the command-observation posts, warehouses of weapon and ammunition, fuel and lubricants and radio electronic means of enemy, local fights.

MAIN TECHNICAL DATA:
- caliber .................................................................................................................. 60 mm
- length of normal barrel ....................................................................................... 735 mm
- length of short barrel ......................................................................................... 640 mm
- firing range: maximum range with normal barrel ............................................... 1,900 m
  maximum range with short barrel ....................................................................... 1,100 m
  minimum ............................................................................................................... 200 m
- vertical firing field
  for curved trajectory .......................................................................................... 45° - 85°
  for direct trajectory (100 - 500 m) ...................................................................... 0 - 6°
- horizontal firing field: ........................................................................................ ± 25°
- rate of fire in the first minute (without remake of the aiming) ............................. about 12 rounds/min
- weight of mortar ready for battle ....................................................................... 8 kgs

DELIVERY:
60 mm mortar, commando type 1988 model, together with the kit of spare parts, tools and accessories is delivered in his wooden packing case.
Kits for middle and capital repairs can be delivered on customer's request.
1 mortar + 1 individual kit are packed in wooden case:
  dimension of case .............................................................................................. 1010x280x280 mm
  gross weight .................................................................................................... 30 kgs
  net weight ........................................................................................................ 22 kgs
STEEL BOMB ROUND
60 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 60 mm
Total length .......................................................... 296 mm
Net weight (round fully equipped) .................................. 1,500 Kg
Fuze ................................................................. M6R-M
Propelling charge:
  with "Standard" mortar ................. 1 cartridge + 3 extra charges
  with "Commando" mortar ......... 1 cartridge + 2 extra charges
Maximum medium pressure ...................................... ≤ 360 Kgf/cm²
Maximum range .................................................. 3000 m
Precision:
  \( A_p^f/X \leq 1/90 \)
  \( A_p^d/X \leq 1/190 \)

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................. 35 Kg
Case overall dimensions ......................................... 380x364x305 mm
STEEL BOMB ROUND WITH ENHANCED RANGE AND SEALING RING

60 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 60 mm
Total length .......................................................... 340 mm
Net weight (round fully equipped) .................................. 2,200 Kg
Fuze ................................................................. M6-R/B
Propelling charge: .................................................. 1 cartridge + 4 extra charges
Maximum medium pressure ........................................... ≤ 500 Kg/cm²
Maximum range ..................................................... 4500 m
Precision: - $A_n'/X \leq 1/80$
- $A_n''/X \leq 1/80$

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................... 40 Kg
Case overall dimensions ........................................... 450x365x305 mm
60 MM SMOKE STEEL BOMB
TECHNICAL CHARACTERISTICS

Caliber .................................................................................................................. 60 mm
Total length ......................................................................................................... 340 mm
Net weight (round fully equipped) ...................................................................... 1,900 Kg
Fuze ...................................................................................................................... M6-R
Propelling charge:
  with “Commando” mortar ........................................................................ 1 cartridge + 2 extra charges
Maximum medium pressure .................................................................................. ≤ 300 Kg/cm²
Maximum range ................................................................................................... 1400 m
Precision:  
  - $A_x / X \leq 1/80$
  - $A_y / X \leq 1/175$

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................................................................. 40 Kg
Case overall dimensions ...................................................................................... 450x365x305 mm
SISTEM CAL. 60MM
STANDARD
1988 MODEL
60 MM MORTAR STANDARD TYPE
DESTINATION:
- it is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for fire support of infantry subunits, parachute landing force and other subunits;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the commando-observation posts, to set on fire the warehouse, to make passages through the mine fields, to destroy the defense works of company.

MAIN TECHNICAL DATA
- caliber: .......................................................... 60 mm
- length of the barrel: ........................................... 1.060 mm
- firing range: maximum: .................................... 3.000 m
  minimum: ......................................................... 100 m
- medium max. pressure of muzzle: .......................... ≤360 kgf/cm²
- vertical firing field: ........................................... 45° 85°
- horizontal firing field: without moving the bipod: ....... ± 3°
  moving the bipod: ............................................... ± 360°
- rate of fire in the first minute (without remake the aiming): about 20 rounds/min.
- weight of mortar ready for battle: ................................ about 20 kgs
  of which: barrel with breechblock: ......................... about 7,5 kgs
  base plate: ........................................................ about 4,7 kgs
  sight mechanism: .............................................. 0,8 kgs

DELIVERY:
60 mm mortar, standard type 1988 model, with the individual kit of spare parts, tools and accessories is delivered in its wooden packing case.
Kits for middle and capital repairs can be delivered on customer's request.
1 mortar + 1 individual kit are packed in wooden case:
  dimension of case: ........................................... 1280x375x440 mm
  gross weight: ................................................... 75 kgs
  net weight: ...................................................... about 50 kgs
60 MM MORTAR STANDARD TYPE
DESTINATION:
- It is a mortar with smooth barrel, for firing with curved trajectory;
- It is designed for fire support of infantry subunits, parachute landing force and other subunits;
- It has the following main missions: to destroy the personnel and the sheltered or unshielded means of fire, the commando-observation posts, to set on fire the warehouse, to make passages through the mine fields, to destroy the defense works of company.

MAIN TECHNICAL DATA:
- Caliber: .................................................. 60 mm
- Length of the barrel: .................................................. 1,800 mm
- Firing range: maximum .................................................. 4,500 m
- Minimum .................................................. 100 m
- Vertical firing field: .................................................. 45° ÷ 85°
- Horizontal firing field: without moving the bipod .................................................. ± 3°
- Moving the bipod .................................................. ± 360°
- Rate of fire in the first minute (without remake the aiming) .................................................. about 20 rounds/min.
- Weight of mortar ready for battle: .................................................. about 30 kgs
- Of which: barrel with breechblock .................................................. about 11 kgs
- Bipod .................................................. about 10 kgs
- Base plate .................................................. about 9 kgs
- Sight mechanism .................................................. 0,8 kgs

DELIVERY:
60 mm mortar, standard type 2001 model, with the individual kit of spare parts, tools and accessories is delivered in its wooden packing case.
Kits for middle and capital repairs can be delivered on customer's request.
1 mortar + 1 individual kit are packed in wooden case:
- Dimension of case .................................................. 1,550x490x450 mm
- Gross weight .................................................. about 90 kgs
- Net weight .................................................. about 62 kgs
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 60 mm
Total length .......................................................... 296 mm
Net weight (round fully equipped) .................................. 1,500 Kg
Fuze ................................................................. M6R-M
Propelling charge:
  with "Standard" mortar .................. 1 cartridge + 3 extra charges
  with "Commando" mortar .......... 1 cartridge + 2 extra charges
Maximum medium pressure ........................................... ≤ 360 Kgf/cm²
Maximum range ...................................................... 3000 m
Precision: \[ \frac{A_p'}{X} \leq \frac{1}{90} \]
\[ \frac{A_p^d}{X} \leq \frac{1}{190} \]

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ...................................................... 35 Kg
Case overall dimensions ......................................... 380x364x305 mm
STEEL BOMB ROUND WITH ENHANCED RANGE AND SEALING RING

60 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ............................................................ 60 mm
Total length ..................................................... 340 mm
Net weight (round fully equipped) ................................ 2,200 Kg
Fuze ................................................................. M6-R/B
Propelling charge: ........................................... 1 cartridge + 4 extra charges
Maximum medium pressure .................................. ≤ 500 Kgf/cm²
Maximum range ................................................. 4500 m
Precision:  
- $A_n/X \leq 1/80$
- $A_n/d/X \leq 1/80$

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................. 40 Kg
Case overall dimensions ...................................... 450x365x305 mm
STEEL BOMB ROUND FOR THE "COMMANDO" 2001 MODEL MORTAR

60 MM SMOKE STEEL BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 60 mm
Total length .......................................................... 340 mm
Net weight (round fully equipped) .................................. 1,900 Kg
Fuze ................................................................. M6-R
Propelling charge:
    with "Commando" mortar .......................... 1 cartridge + 2 extra charges
Maximum medium pressure ........................................... ≤ 300 Kgf/cm²
Maximum range ....................................................... 1400 m
Precision:
    - $A_p/X \leq 1/80$
    - $A_p^d/X \leq 1/175$

PACKING

Wooden case containing 12 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ....................................................... 40 Kg
Case overall dimensions ............................................. 450x365x305 mm

BOMB ROUND FOR THE "COMMANDO" 2001 MODEL MORTAR
60 MM SMOKE STEEL BOMB
SISTEM CAL. 81 MM
DESTINATION:
- it is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for fire support of infantry subunits and other subunits;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed wire net, to separate infantry from tanks, for illuminating and to camouflage by smoke screen the objectives (ground).

MAIN TECHNICAL DATA
- caliber .................................................................................. 81.4 mm
- length of barrel ....................................................................... 1220 mm
- firing range: maximum range with explosive bomb .................. 4.460 m
  minimum range ....................................................................... 100 m
- vertical firing field .................................................................... 45° to 85°
- horizontal firing field, without moving the bipod ................. ± 3°
  moving the bipod, without moving the base plate .................. ± 360°
- rate of fire in the first minute (without remake the aiming). ....... 20 rounds/min
- weight of mortar ready for battle .......................................... 43.5 kgs
  of which: barrel with breechblock ...................................... 16.5 kgs
    bipod ........................................................................... 11 kgs
    base plate ...................................................................... 15 kgs
    optical sight ................................................................... 0.8 kgs

DELIVERY:
81 mm mortar, 1977 model, together with the kit of spare parts, tools and accessories is delivered in its wooden packing case.
Kits for middle and capital repairs can be delivered on customer's request.
1 mortar + 1 individual kit are packed in wooden case:
dimension of case ............................................................... 1450x560x400 mm
gross weight ................................................................. 118 kgs
net weight ....................................................................... 77 kgs
MODEL 1999
81 MM MORTAR
DESTINATION:
- it is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for fire support of infantry subunits and other subunits;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed wire net, to separate infantry from tanks, to destroy the defense works, to destroy or damage the communication ways, for illuminating and to camouflage by smoke-screen the objectives (ground).

MAIN TECHNICAL DATA
- caliber .................................................................................. 61.4 mm
- length of barrel ................................................................. 1440 mm
- firing range: maximum range with explosive bomb ................................................. 6,000 m
  minimum range ........................................................................ 200 m
- vertical firing field ............................................................ 45° ± 65°
- horizontal firing field: without moving the bipod, with barrel at 45° ..................................... ± 5°
  moving the bipod, without moving the base plate ......................................................... ± 360°
- rate of fire in the first minute (without remake the aiming) ........................................ 15 rounds/min
- weight of mortar ready for battle ............................................................ 51 kgs
  of which: barrel with breechblock ............................................... 21 kgs
  bipod ...................................................................................... 15 kgs
  base plate ................................................................................ 14 kgs
  optical sight ................................................................................ 0.8 kgs

DELIVERY:
81 mm mortar, 1999 model, together with the kit of spare parts, tools and accessories is delivered in its wooden packing case.
Kits for middle and capital repairs can be delivered on customer’s request.
1 mortar + 1 individual kit are packed in wooden case:
  dimension of case .......................................................... 1680x600x400 mm
  gross weight ................................................................. 130 kgs
  net weight .......................................................................... 92 kgs
STEEL BOMB WITH ENHANCED RANGE AND EFFECT - "BIG"
81 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 61 mm
Total length .......................................................... 51.5 mm
Net weight (round fully equipped) ................................ 4,600 Kg
Fuze ................................................................. M6-R/A
Propelling charge ...................................................... 1 cartridge + 6 extra charges
Maximum medium pressure ...................................... \( \leq 880 \text{ Kgf/cm}^2 \)
Maximum range:
  with long barrel ...................................................... 6500 m
  with short barrel .................................................... 5600 m
Precision: 
  \(- \frac{A_p}{X} \leq 1/100\)
  \(- \frac{A_p}{X} \leq 1/200\)

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ...................................................... 60 Kg
Case overall dimensions .......................................... 745x622x260 mm

STEEL BOMB WITH ENHANCED RANGE AND EFFECT - "BIG"
81 MM HIGH EXPLOSIVE BOMB
STEEL BOMB ROUND FOR THE 1977 MODEL MORTAR

81 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber .................................................................................. 81 mm
Total length ........................................................................... 380,16 mm
Net weight (round fully equipped) ........................................ 3,100 Kg
Fuze ......................................................................................... M6-R/A
Propelling charge ................................................................. 1 cartridge + 5 extra charges
Maximum medium pressure .............................................. ≤ 650 Kgf/cm²
Maximum range ...................................................................... 4500 m
Precision:  
- $A_p/X \leq 1/100$
- $A_p^d/X \leq 1/200$

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ..................................................................... 50 Kg
Case overall dimensions ........................................................ 550x450x285 mm
CAST IRON BOMB ROUND FOR THE 1977 MODEL MORTAR

81 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 81 mm
Total length ............................................................ 360,16 mm
Net weight (round fully equipped) ................................... 3,100 Kg
Fuze ................................................................. MG-R
Propelling charge .................................................... 1 cartridge + 5 extra charges
Maximum medium pressure ........................................... ≤ 650 Kgf/cm²
Maximum range ...................................................... 4500 m
Precision: - \( A_p'/X \leq 1/100 \)
- \( A_p''/X \leq 1/200 \)

PACKING

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

Full case weight .......................................................... 50 Kg
Case overall dimensions .............................................. 550x450x285 mm
CAST IRON BOMB ROUND FOR THE 1977 MODEL MORTAR
81 MM HIGH EXPLOSIVE BOMB
SL TYPE
TECHNICAL CHARACTERISTICS

Caliber ................................................................. .81 mm
Total length ............................................................. 360.16 mm
Net weight (round fully equipped) ................................. 3.100 Kg
Fuze ........................................................................... M6-R
Propelling charge ......................................................... 1 cartridge + 5 extra charges
Maximum medium pressure ........................................... ≤ 650 Kg/cm²
Maximum range ............................................................. 5000 m
Precision: - $A_p/X \leq 1/100$
- $A_\Delta/X \leq 1/200$

PACKING

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

Full case weight .......................................................... 50 Kg
Case overall dimensions ................................................. 550x450x285 mm
ILLUMINATING BOMB ROUND
81 MM ILLUMINATING BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................................. 81 mm
Total length ........................................................................... 363.6 mm
Net weight (round fully equipped) ........................................... 8,490 Kg
Fuze ......................................................................................... T1
Fuze time setting range ......................................................... 0.45 - 46.1 s
Propelling charge ................................................................. 1 cartridge + 3 extra charges
Maximum medium pressure ................................................. ≤ 450 Kg/cm²
Maximum range: ................................................................. 2670 m
Precision:  
- $A_p / X \leq 1/90$
- $A_p' / X \leq 1/200$

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ..................................................................... 50 Kg
Case overall dimensions ....................................................... 520x500x282 mm
STEEL BOMB ROUND FOR THE 1977 MODEL MORTAR

81 MM SMOKE STEEL BOMB
TECHNICAL CHARACTERISTICS
Caliber .......................................................... 81 mm
Total length .................................................... 360,73 mm
Net weight (round fully equipped) ....................... 3,280 Kg
Fuze .................................................................... M6-R
Propelling charge .............................................. 1 cartridge + 5 extra charges
Maximum medium pressure .................................. ≤ 650 Kgf/cm²
Maximum range: ................................................ 4300 m
Precision:  
- $A_{n}/X \leq 1/100$
- $A_{n,9}/X \leq 1/200$

PACKING
Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................. 53 Kg
Case overall dimensions ...................................... 550x450x285 mm
MODEL 1977
82 MM MORTAR
DESTINATION:
- It is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for fire support of infantry subunits and other subunits;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed wire net, to separate infantry from tanks, for illuminating and to camouflage by smoke screen the objectives (ground).

MAIN TECHNICAL DATA
- caliber................................................................................................................................. 82 mm
- length of barrel .................................................................................................................... 1220 mm
- firing range: maximum range with explosive bomb............................................................... 4,460 m
  minimum range ..................................................................................................................... 100 m
- vertical firing field .............................................................................................................. 45° - 85°
- horizontal firing field: without moving the bipod ................................................................. ± 3°
  moving the bipod, without moving the base plate ......................................................... ± 360°
- rate of fire in the first minute (without remake the aiming) ................................................... 20 rounds/min
- weight of mortar ready for battle ..................................................................................... 43,5 kgs
  of which: barrel with breechblock .................................................................................. 16,5 kgs
  bipod .................................................................................................................................. 11 kgs
  base plate ........................................................................................................................... 15 kgs
  optical sight ....................................................................................................................... 0,8 kgs

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

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

1 mortar + 1 individual kit are packed in wooden case:
  dimension of case ................................................. 1450x560x400 mm
  gross weight .......................................................... 118 kgs
  net weight ............................................................. 77 kgs
MODEL 1999
82 MM MORTAR
DESTINATION:
- it is a mortar with smooth barrel, for firing with curved trajectory;
- it is designed for fire support of infantry subunits and other subunits;
- it has the following main missions: to destroy the personnel and the sheltered or unsheltered means of fire, the command-observation posts, to make passages through the mine fields and barbed wire net, to separate infantry from tanks, to destroy the defense works, to destroy or damage the communication ways, for illuminating and to camouflage by smoke-screen the objectives (ground).

MAIN TECHNICAL DATA:
- caliber...................................................................................................................... 82 mm
- length of barrel ........................................................................................................ 1440 mm
- firing range: maximum range with explosive bomb.................................................... 6,000 m
  minimum range........................................................................................................... 200 m
- vertical firing field..................................................................................................... 45° - 85°
- horizontal firing field: without moving the bipod, with barrel at 45°.......................... ± 5°
  moving the bipod, without moving the base plate..................................................... ± 360°
- rate of fire in the first minute (without remake the aiming)........................................ 15 rounds/min
- weight of mortar ready for battle ............................................................................ 51 kgs
  of which: barrel with breechblock........................................................................... 21 kgs
  bipod ....................................................................................................................... 15 kgs
  base plate............................................................................................................. 14 kgs
  optical sight ......................................................................................................... 0,8 kgs

DELIVERY:
82 mm mortar, 1999 model, together with the kit of spare parts, tools and accessories is delivered in its wooden packing case. Kits for middle and capital repairs can be delivered on customer's request.
1 mortar + 1 individual kit are packed in wooden case:
  dimension of case ................................................................................................. 1680x600x400 mm
  gross weight....................................................................................................... 136 kgs
  net weight.......................................................................................................... 92 kgs
STEEL BOMB ROUND WITH ENHANCED RANGE AND EFFECT - "BIG"

82 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber .......................................................... 82 mm
Total length ......................................................... 515 mm
Net weight (round fully equipped) .................................. 4,600 Kg
Fuze ................................................................. M6-R/A
Propelling charge ........................................... 1 cartridge + 6 extra charges
Maximum medium pressure ...................................... ≤ 880 Kgf/cm²
Maximum range:
  with long barrel ........................................... 6500 m
  with short barrel ........................................... 5600 m
Precision:  
  - $A_p/X \leq 1/100$  
  - $A_p/X \leq 1/200$

PACKING

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

Full case weight .................................................. 60 Kg
Case overall dimensions ...................................... 745x622x260 mm
STEEL BOMB ROUND FOR THE 1977 MODEL MORTAR

82 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 82 mm
Total length ....................................................... 360,16 mm
Net weight (round fully equipped) ................................ 3,100 Kg
Fuze ................................................................. M6-R/A
Propelling charge ................................................ 1 cartridge + 5 extra charges
Maximum medium pressure ..................................... \leq 650 Kgf/cm²
Maximum range .................................................... 4500 m
Precision: - $A_p/X \leq 1/100$
- $A_p^9/X \leq 1/200$

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight ..................................................... 50 Kg
Case overall dimensions .......................................... 550x450x285 mm
STEEL CAST IRON BOMB ROUND FOR THE 1977 MODEL MORTAR

82 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................................................................. 82 mm
Total length ........................................................................................................ 380.16 mm
Net weight (round fully equipped) ................................................................. 3.100 Kg
Fuze ...................................................................................................................... MG-R
Propelling charge ............................................................................................ 1 cartridge + 5 extra charges
Maximum medium pressure .......................................................................... \( \leq 650 \text{ Kgf/cm}^2 \)
Maximum range ............................................................................................... 4500 m
Precision: 
- \( A_p/X \leq 1/100 \)
- \( A_{p^d}/X \leq 1/200 \)

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .................................................................................................. 50 Kg
Case overall dimensions .................................................................................... 550x450x285 mm

STEEL CAST IRON BOMB ROUND FOR THE 1977 MODEL MORTAR

82 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ........................................................................................................... 82 mm
Total length ................................................................................................. 363.6 mm
Net weight (round fully equipped) ............................................................ 3,490 Kg
Fuze .............................................................................................................. T1
Fuze time setting range ............................................................................... 0.45 - 46.1 s
Propelling charge ....................................................................................... 1 cartridge + 3 extra charges
Maximum medium pressure ....................................................................... \( \leq 450 \text{ Kgf/cm}^2 \)
Maximum range ........................................................................................ 2670 m
Precision: 
- \( A_p^s/X \leq 1/90 \)
- \( A_p^d/X \leq 1/200 \)

PACKING

Wooden case containing 10 polyethylene cases, each polyethylene case containing one round fully equipped.
Full case weight .......................................................................................... 50 Kg
Case overall dimensions ........................................................................... 543x533x282 mm
82 MM SMOKE STEEL BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 62 mm
Total length .......................................................... 360.73 mm
Net weight (round fully equipped) ................................ 3,280 Kg
Fuze ................................................................. M6-R
Propelling charge ........................................... 1 cartridge + 5 extra charges
Maximum medium pressure ................................... ≤ 650 Kgf/cm²
Maximum range .................................................. 4300 m

Precision:  
- $A_p/X \leq 1/100$
- $A_r/X \leq 1/200$

PACKING

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

Full case weight .................................................... 53 Kg
Case overall dimensions ........................................ 550x450x285 mm
SISTEM CAL. 40 MM
DESTINATION:
The antitank grenades and explosive bombs launcher, 40 mm caliber, is a means of fire landing force and submachine gunners squads in special missions.

The launcher is designed for destroying the tanks, truck-borne cannons, any type of car and other armored means of fire of the enemy. For destroying the living force and the fire means of enemy, existing in wooden and earth buildings, of light type or brick buildings.

MAIN TECHNICAL DATA:
- caliber ................................................................................................................. 40 mm
- maximum range with hollow round ................................................................... 500 m
- maximum range with explosive bomb 40mm ....................................................... 1,000 m
  explosive bomb 60mm ......................................................................................... 1,500 m
- weight of the launcher: without sight mechanism ............................................... 6,5 kg
  equipped with PG07V sight mechanism .............................................................. 7,1 kg
  equipped with IOAG7V sight mechanism ........................................................... 7,6 kg
- rate of fire .............................................................................................................. 4 - 6 rounds/min
- length of the launcher: firing .............................................................................. 908 mm
  for transportation ............................................................................................... 610 mm
- dangerous area, behind the launcher ................................................................... 70° x 30 m

DELIVERY:
40 mm grenade launcher, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case. Kits for middle and capital repairs can be delivered on customer's order.
9. 40 mm launchers + 9 individual kits (partial) is packed in wooden case:
  - dimensions of case ............................................................................................ 1240x640x440 mm
  - gross weight ..................................................................................................... 100 kgs
  - net weight ......................................................................................................... 60 kgs

The bags of individual kit and the other part of individual kit are packed in wooden case:
  - dimensions of case ............................................................................................ 1500x640x340 mm
  - gross weight ..................................................................................................... 63 kgs
  - net weight ......................................................................................................... 33 kgs

9 sight mechanisms with individual kits are packed in wooden case:
  - dimensions of case ............................................................................................ 620x520x320 mm
  - gross weight ..................................................................................................... 15 kgs
  - net weight ......................................................................................................... 7 kgs
ANTITANK GRENADES AND EXPLOSIVE BOMBS LAUNCHER

40 MM LAUNCHER AG7S/RPG 7
DESTINATION:

The antitank grenades and explosive bombs launcher, 40 mm caliber, is a means of fire of infantry subunits and landing force.

The launcher is designed for destroying the tanks, truck-borne cannons, any type of car and other armored mean of fire of the enemy. Besides, the launcher can be used also for destroying the living force and the fire means of enemy, existing in wooden and earth buildings, of light type or brick buildings.

MAIN TECHNICAL DATA:

- caliber ................................................................. 40 mm
- maximum range with hollow round ........................................ 500 m
- maximum range with explosive bomb 40 mm .......................... 1,000 m
  explosive bomb 60 mm ............................................ 1,500 m
- weight of the launcher: without sight mechanism .............................. 6 kg
  equipped with PG07V sight mechanism ................................. 6,5 kgs
  equipped with IOAG7V sight mechanism ................................. 7,1 kgs
- rate of fire .............................................................. 4 - 6 rounds/min
- length of the launcher .................................................... 908 mm
- maximum pressure .................................................... 1080 Kgf/cm²
- dangerous area, behind the launcher ........................................ 70°x30 m

DELIVERY:

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

9 40 mm launchers + 9 individual kits (partial) are packed in wooden case:

- dimensions of case .................................................... 1240x640x440 mm
- gross weight ............................................................. 100 kgs
- net weight .............................................................. 60 kgs

The bags of individual kit and the other part of individual kit is packed in wooden case:

- dimensions of case .................................................... 1500x640x340 mm
- gross weight ............................................................. 68 kgs
- net weight .............................................................. 36 kgs

9 sight mechanisms with individual kits are packed in wooden case:

- dimensions of case .................................................... 620x320x320 mm
- gross weight ............................................................. 15 kgs
- net weight .............................................................. 7 kgs
PREFRAGMENTED BODY STEEL BOMB ROUND FOR THE RPG-7 PORTABLE LAUNCHER

40 MM HIGH EXPLOSIVE STEEL BOMB
TECHNICAL CHARACTERISTICS
Caliber ................................................................. 40 mm
Total length .......................................................... 635 mm
Net weight (round fully equipped) ......................... 1,750 Kg
Fuze ................................................................. V5K - MD
Propelling charge ...................................................... PG - 7PM
Maximum medium pressure ........................................ \( \leq 900 \text{ Kg/cm}^2 \)
Maximum range ......................................................... 1,000 m
Precision:                                     
- \( A_\circ / X \leq 1/50 \)
- \( A_{\circ}^9 / X \leq 1/200 \)

PACKING
Wooden case containing 12 round fully equipped.
Full case weight ......................................................... 30 Kg
Case overall dimensions ........................................... 600x495x275 mm
60 MM HIGH EXPLOSIVE STEEL BOMB
TECHNICAL CHARACTERISTICS

Caliber .................................................................................................................. 60 mm
Total length ............................................................................................................. 630 mm
Net weight (round fully equipped) ........................................................................ 2,300 Kg
Fuze ..................................................................................................................... V5K - MD
Reactive engine ..................................................................................................... PG - 7M
Propelling charge ................................................................................................. PG - 7PM
Maximum medium pressure .................................................................................. ≤ 900 Kgf/cm²
Maximum range .................................................................................................... 1,500 m
Precision:  
- $A_{r}/X \leq 1/40$
- $A_{r}^{d}/X \leq 1/280$

PACKING

Wooden case containing 12 round fully equipped.
Full case weight ...................................................................................................... 40 Kg
Case overall dimensions ...................................................................................... 895x490x290 mm
PG7 – E1 THERMOBARIC
ACTIVE – REACTIVE ROUND
PG7 – EI THERMOBARIC
ACTIVE – REACTIVE ROUND

Intended for destroying the enemy emplacements (battlefield fortifications, reinforced building, stone brick or concrete fortifications), light armoured vehicles and automobiles and enemy troops in the open and in shelters.

ROUND CHARACTERISTICS
Caliber ......................................40x105 mm.
Weight......................................4,5 Kg.
Length......................................940 mm.
Pressure..................................≤ 900 Kg.f/cm².
Max. range..............................≃800 m.
Precision.................................

Firing rate.................................4÷6 shots/min.

PACKING
Wooden case containing 3 rounds fully equipped and 3 propelling charges PG7-PM
separately packed
Brutto weight.............................30 Kg
Case overall dimensions 850x470x225 mm
SISTEM CAL. 73 MM
DESTINATION:
The antitank grenades and explosive bombs launcher, 73 mm caliber, is a strong means of fire of infantry subunits and landing force.

The launcher is designed for destroying the tanks, truck-borne cannons, any type of car and other armored means of fire of the enemy. Besides, the launcher can be used also for destroying the living force and the fire means of enemy, existing in wooden and earth buildings, of light type or brick buildings.

MAIN TECHNICAL DATA:
- caliber .................................................................................................................. 73 mm
- maximum range with hollow round ............................................................... 1,300 m
- maximum range with explosive bomb with iron cast body .................................. 4,500 m
- maximum range with explosive bomb with steel body ........................................... 5,400 m
- weight of the launcher AG-9M with sight mechanism ............................................. 52 ± 1,5 kg
- rate of fire .............................................................................................................. 4−6 rounds/min
- range of fire with launcher put on the ground:
  Vertical
  - from the elevating mechanism ................................................................. 7°40'
  - from mechanism and foot .............................................................. -3°÷+25° (0−50 ÷ 4−20)
  Horizontal
  - without moving the tripod ............................................................. 15° (±2−50)
  - moving the tripod ........................................................................... n x 360°
- length of the launcher ............................................................................................ 2110 mm
- maximum length of the launcher in fight position .................................................. 900 mm
- height of barrel shaft on tripod:
  - minimum ........................................................................................................... 399 mm
  - maximum .......................................................................................................... 850 mm
- dangerous area, behind the launcher ........................................................................ 90°x30 m

DELIVERY:
73 mm grenades and explosive bombs launcher, together with the individual kit of spare parts, tools, and accessories is delivered in its wooden packing case.

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

1 x73 mm grenade and explosive bombs launcher + 1 individual kit are packed in wooden case:
  dimension of case .................................................................................. 2167x445x450 mm
  gross weight .................................................................................................. 115 kgs
  net weight .................................................................................................... about 68 kgs
STEEL CAST IRON BOMB ROUND FOR THE SPG 9M LAUNCHER

73 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber .......................................................... 73 mm
Total length .......................................................... 806.37 mm
Net weight (round fully equipped) .............................. 4,630 Kg
Fuze ................................................................. UB-2M
Propelling charge .................................................. PG - 9P
Maximum medium pressure ...................................... ≤ 600 Kgf/cm²
Maximum range:
   at 42° .......................................................... 5420 m
   at 25° .......................................................... 4500 m

Precision:  
   - A_p/X ≤ 1/140
   - A_p/d/X ≤ 1/500

PACKING

1 wooden case containing 6 rounds with fuze on and 6 propelling charges packed in thin polyethylene cases.
Full case weight .................................................. 32 Kg
Case overall dimensions ...................................... 922x504x320 mm
STEEL BOMB ROUND FOR THE SPG 9M LAUNCHER

73 MM HIGH EXPLOSIVE STEEL BOMB
TECHNICAL CHARACTERISTICS
Caliber ................................................................. 73 mm
Total length ......................................................... 930,3 mm
Net weight (round fully equipped) ......................... 5,300 Kg
Fuze ....................................................................... UB - 2M
Propelling charge ................................................... PG - 9P
Maximum medium pressure .................................. ≤ 660 Kgf/cm²
Maximum range ..................................................... 5500 m
Precision: - $A_p / X \leq 1/140$
- $A_p'^{/} / X \leq 1/500$

PACKING
Wooden case containing 6 rounds with fuze and 6 propelling charges packed in thin polyethylene cases
Full case weight ....................................................... 45 Kg
Case overall dimensions ........................................ 1105 x 450 x 305 mm
120 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS
Caliber ................................................................. 120 mm
Total length .......................................................... 680 mm
Net weight (round fully equipped) ................................ 16 Kg
Fuze ................................................................. MF/SL
Propelling charge ................................................... 1 cartridge + 6 extra charges
Maximum medium pressure ...................................... $\leq 820$ Kgf/cm²
Maximum range ...................................................... 6500 m
Precision:
- $A_p/X \leq 1/125$
- $A_p^0/X \leq 1/250$

PACKING
1 wooden case containing 2 rounds fully equipped.
Full case weight ...................................................... 45 Kg
Case overall dimensions ........................................... 950x360x240 mm

STEEL BOMB ROUND FOR THE 42, 43 AND 82 MODEL MORTARS
120 MM HIGH EXPLOSIVE BOMB
STEEL BOMB ROUND FOR THE 42, 43 AND 82 MODEL MORTARS

120 MM HIGH EXPLOSIVE BOMB
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 120 mm
Total length .......................................................... 600 mm
Net weight (round fully equipped) ............................. 13 kg
Fuze ................................................................. MF/SL
Propelling charge .................................................. 1 cartridge + 6 extra charges
Maximum medium pressure .................................. ≤ 880 Kgf/cm²
Maximum range .................................................... 6500 m

Precision:
- \( \frac{A_p}{X} \leq 1/100 \)
- \( \frac{A_q}{X} \leq 1/260 \)

PACKING

1 wooden case containing 2 rounds fully equipped.
Full case weight .................................................. 42 kg
Case overall dimensions ...................................... 885x360x240 mm

STEEL BOMB ROUND FOR THE 42, 43 AND 82 MODEL MORTARS
120 MM HIGH EXPLOSIVE BOMB
PARACHUTE ILLUMINATING MINE ROUND FOR THE 42, 43 AND 82 MODEL MORTARS

120 MM ILLUMINATING MINE
TECHNICAL CHARACTERISTICS

Caliber ................................................................. 120 mm
Total length ........................................................... 735.6 mm
Net weight (round fully equipped) ............................ 16.189 Kg
Fuze ........................................................................ T1
Fuze time setting range ........................................... 0.45 ÷ 46.1 s
Propelling charge.................................................... 1 cartridge + 6 extra charges
Maximum medium pressure ..................................... ≤ 1030 Kgf/cm²
Maximum range ....................................................... 5300 m
Precision:
- $A_p^d/X \leq 1/70$
- $A_p^d/X \leq 1/180$

PACKING

Wooden case containing 2 rounds fully equipped.
Full case weight ....................................................... 46 Kg
Case overall dimensions ......................................... 952x361x216 mm
SMOKE STEEL BOMB ROUND

120 MM SMOKE BOMB
TECHNICAL CHARACTERISTICS

Caliber ............................................................... 120 mm
Total length ....................................................... 600.49 m
Net weight (round fully equipped) ................................ 13 Kg
Fuze ................................................................. M6-R
Propelling charge .............................................. 1 cartridge + 6 extra charges
Maximum medium pressure .................................... ≤ 880 Kgf/cm²
Maximum range .................................................. 6400 m
Precision: .........................................................
  - \( A_p/Y \leq 1/100 \)
  - \( A_p/Y \leq 1/260 \)

PACKING

Wooden case containing 2 rounds fully equipped.
Full case weight .................................................... 42 Kg
Case overall dimensions ....................................... 885x360x240 mm
ROUND CHARACTERISTICS

Caliber .................................................... 120 mm.
Weight ..................................................... ~25 Kg.
Length ..................................................... ~950 mm.
Type of fuze ............... M6-R/A (pyrotechnical).
Propelling charge ............. 1 cartridge + 6 relays.
Pressure ............................................. ≤ 1030 Kg.f/cm².
Max. range ........................................... ≈ 15000 m.

PACKING

Wooden case containing 1 rounds fully equipped, in vacuum polyethylene bags.

Weight of full case ......................... 50 kg
Brașov, str. Zizinului nr. 119

tel: +40 268 331347
Fax: +40 268 330527
E-mail carfil@rdsbv.ro

www.carfil.ro