

## RIFLED 120 MM SYSTEMS

- Rifled, Recoiled, Mounted Mortar (2R2M)
- Rifled Towed mortar (120RT)



# THE RIFLED TOWED 120 MM MORTAR

## Decisive advantages

To meet all the requirements of the modern battle, TDA ARMEMENTS SAS has developed a 120 mm mortar system the rifled tube of which allows to reach military effects quite similar to those of the Artillery shells

### THE RIFLED TUBE: A SPECIFICITY OF TDA ARMEMENTS SAS



#### I THOMSON BRANDT ARMEMENTS (TBA) conception

- Synonym for robustness and rustic character
- Guarantee for operational efficiency

#### I Rifled tube engendering an extremely fast autorotation of the projectile

- A particularity in the mortars' domain
- A TDA ARMEMENTS SAS' specificity

#### I Precision enhanced through spin stabilised projectile

- Mortar projectile having the same behavior than an Artillery shell
- Better concentration of the effects

#### I Tube compatible of smooth munitions

- Possibility to use the former stocks
- Guarantee of interoperability with the Allies

### FUNCTIONING OF THE MUNITION

#### I Projectile consisting of two parts: rifled projectile and Tail Charge Assembly (TCA)

- Separation of the projectile and of the TCA by blow
- TCA automatically ejected by the tube after release of the projectile

#### I Simplicity of loading and high rates of fire

#### I Gyrostabilization of the projectile on trajectory identical to this of an Artillery shell

- Very effective spin effect
- TDA ARMEMENTS SAS projectiles three times more precise than the smooth ammunitions

#### I Explosive: payload capacity of 4,2 kg (the double of a 120 mm smooth munition)

- Increased quantity and better distribution of the shrapnel thanks to the shape and to the material of the projectile
- Enhanced military effect

#### I TDA ARMEMENTS SAS' High Explosive (HE) munition lethality:

- Double as this of a 105 mm munition
- Equivalent to this of a 155 mm munition

#### I Cost-effectiveness ratio reduced by three thanks to the optimization of the couple precision/lethality

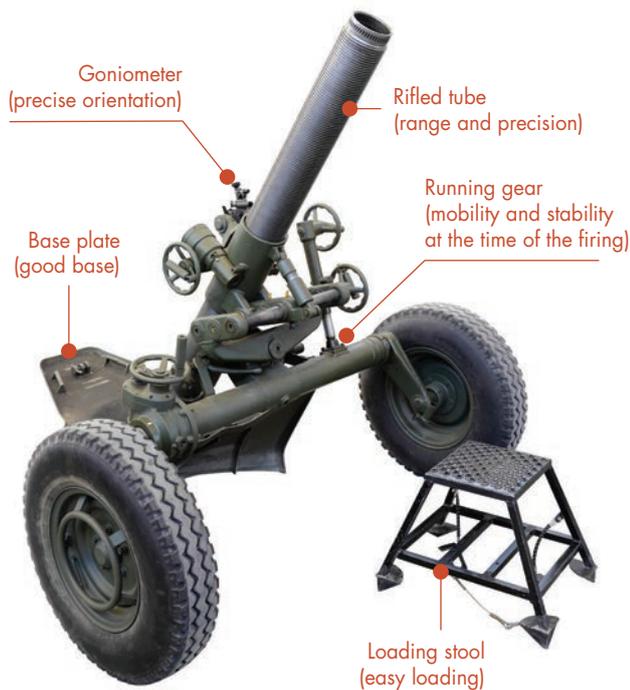


# RIFLED TOWED MORTAR (120RT)

## 'Battle Proven'

... And its ammunition are guaranteed for robustness, precision, efficiency and fast projection on different type of terrains

### MO 120 MM RIFLED TOWED (120RT)



#### I A worldwide proven technology

- A system in service in 24 countries...
- ... Among them, 5 NATO member Nations
- In service in the U.S. Marine Corps (U.S.M.C)

#### I Exceptional life expectancy, so much of the tube than of the base plate

- Constant improvements...
- ... Benefiting to the equipment in service too

#### I Operational any time and in any place

- Airlift and Airborne capability
- Compatible of the Artillery raids, by transportation by sling under helicopter or dismantled into three parts in the cabin
- Towable by all the vehicle types

#### I Operating efficiency very superior to that of a 105 mm piece of ordnance

### TECHNICAL DATA

- NATO Standard: STANdard AGreement (STANAG) 4110. 'Battle Proven' and 'NATO Battle Proven' on numerous theatres of operations
- Calibre: 120 mm
- Tube: 120 mm Rifled
- Tube length: 2 m
- Loading: By the muzzle
- Maximal range:
  - 8,200 m with standard projectiles
  - 13,000 m with the Rocket Assisted Projectile (RAP)
  - 15,000 m with the Mortar Guided Munition (MGM)
- Rate of fire: Up to 18 rounds per minute
- Shooting mode: Automatic or manual
- Deployment: Within less than 3 minutes
- Mass: 622 kg
  - Tube: 133 kg (With the caravan hitch coupling)
  - Base plate: 204 kg
  - Mortar carriage: 285 kg
- Pointing apparatus: Compatible with the shooting phase
- Munitions: Interoperability with 24 Nations equipped with the 120RT, notably with the Expeditionary Fire Support System (EFSS) Compatible with the firing of 120 mm smooth munitions
- Fuses: Compliant with STANAG 4187
- Coupling: Behind every vehicle equipped with an adapted hitch coupling
- Fire management: The Mo 120RT may be integrated into diverse digital fire management systems, which reduces appreciably the loop sensor/shooter
- Mortar team: Four crew members recommended

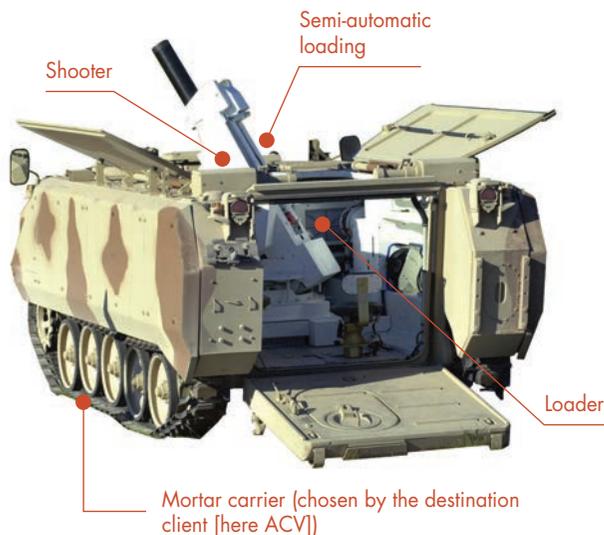
# RIFLED, RECOILED, MOUNTED MORTAR

## Enhanced mobility, precision and protection

The 2R2M may be easily integrated into all the armored vehicles of a class superior to 10 tons, without modification of structure. It offers an excellent compromise for the support by fire of troops in contact of an armored or mechanized force, both in the phases of attack and defense

### RIFLED, RECOILED, MOUNTED MORTAR (2R2M)

#### I Automatic aiming



#### I System benefiting from the technological advantages of the 120RT

- In service in four countries, among them one NATO member Nation
- Battle Proven in sever climatic conditions
- Two times more accurate than the 120RT
- System shooting all munitions of the catalogue

#### I Easy projection and deployment

- Quick battery set-up, automatic aiming and semi-automatic loading
- Crew reduced to four members (mortar leader, shooter, loader, driver)
- Reduced training
- Unmarked vehicle during the movements

### 2R2M INTEGRATION KIT

#### I Fire management system



#### I Electric and hydraulic group

#### I Easy integration

- No impact on the mobility of the vehicle (reduced mass and volume)
- Integration into the fire management systems

#### I Navigation, orientation and aiming system

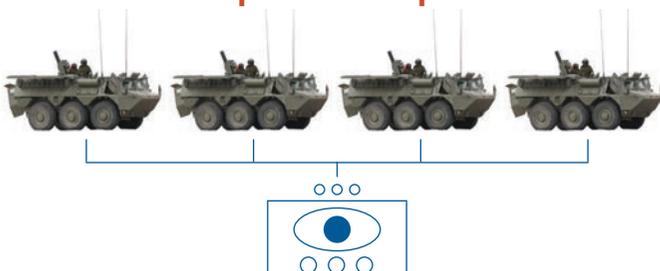
- Odometer
- Terrestrial navigator

#### I Automatic laying system



### POSSIBLE EMPLOYMENT OF THE 2R2M

#### I Grouped mortars platoon



#### I Autonomous mortar

- Integrated firing computer
- Liaison with the forward observer
- Autonomous firing without liaison with the system: support of an isolated troop in contact
- Firing to protect a convoy on the move or on the parking
- Shooting from a Forward Operating Base (FOB) or a sensitive point

# THE 120 MM RIFLED MUNITIONS

## A very complete catalogue

Particularly complete, TDA ARMEMENTS SAS' catalog of 120 mm rifled ammunitions allow to face all the operational scenarios which the troops in the contact can be brought to implement in a modern and tough battlespace

### HE



#### I Rifled High Explosive (HE) projectile

- Maximal range: 8,200 meters
- Very efficient against all types of targets

### RAP



#### I Rifled Rocket Assisted Projectile (RAP)

- Maximal range: 13 kilometres
- Efficiency equivalent to this of the HE projectile

### AAP



#### I Rifled Anti Armour Projectile (AAP)

- Neutralization of light armored vehicles

### SMK



#### I Rifled Smoke (SMK) projectile

- Operational marking of target
- Masking of own troops' movements
- Blinding of enemy troops

### PRAC



#### I Rifled PRACTice projectile

- Instruction of servants and observers
- Impact marking ammunition with extremely reduced collateral effects

### ILLUM



#### I Rifled ILLUMinating (ILLUM) projectile

- Production of visible lighting
- Illumination of the battlefield

### IR ILLUM



#### I Rifled InfraRed ILLUMinating (IR ILLUM) projectile

- Production of an infrared beam
- Illumination of the battlefield visible only with infrared optics

### IM



#### I Insensitive Munitions (IM)

- Renewal of the whole 120 mm ammunitions' catalog
- Improvement of the ballistic performances
- Insensitiveness of the explosive loads

### MGM



#### I TDA ARMEMENTS SAS also develops a Mortar Guided Munition (MGM)

- Semi-Active Laser (SAL) seeker
- Metric Precision up 15 kilometres

#### I Additional operational capability adapted to the new conflicts

#### I Optimized military charge with reduced collateral effects

#### I Man in the loop from start to finish

#### I Possible use in urban area

# 1915 / 20...

## **MORTARS**

### **More than a century in the service of our forces**

Commenced in 1915, in the trenches of the first world conflict,  
the saga of our mortars (caliber 60, 81 and 120 mm)  
continued until our days thanks to the pioneer and creative spirit  
of Edgar BRANDT and his successors

Rich in a long industrial and technological history,  
TDA ARMEMENTS SAS masters the manufacturing of mortars and embarked  
weapon systems, compatible of integration in various fire management systems

TDA's rifled 120 mm products establish a worldwide reference  
in terms of efficiency and intrinsic precision

Capable of firing the complete catalog of conventional ammunitions  
for the fire support of the troops in contact, these systems will be soon capable  
of handling punctual targets with a guided munition  
with metric precision



**ARMEMENTS SAS: excellence as ultimate horizon**



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