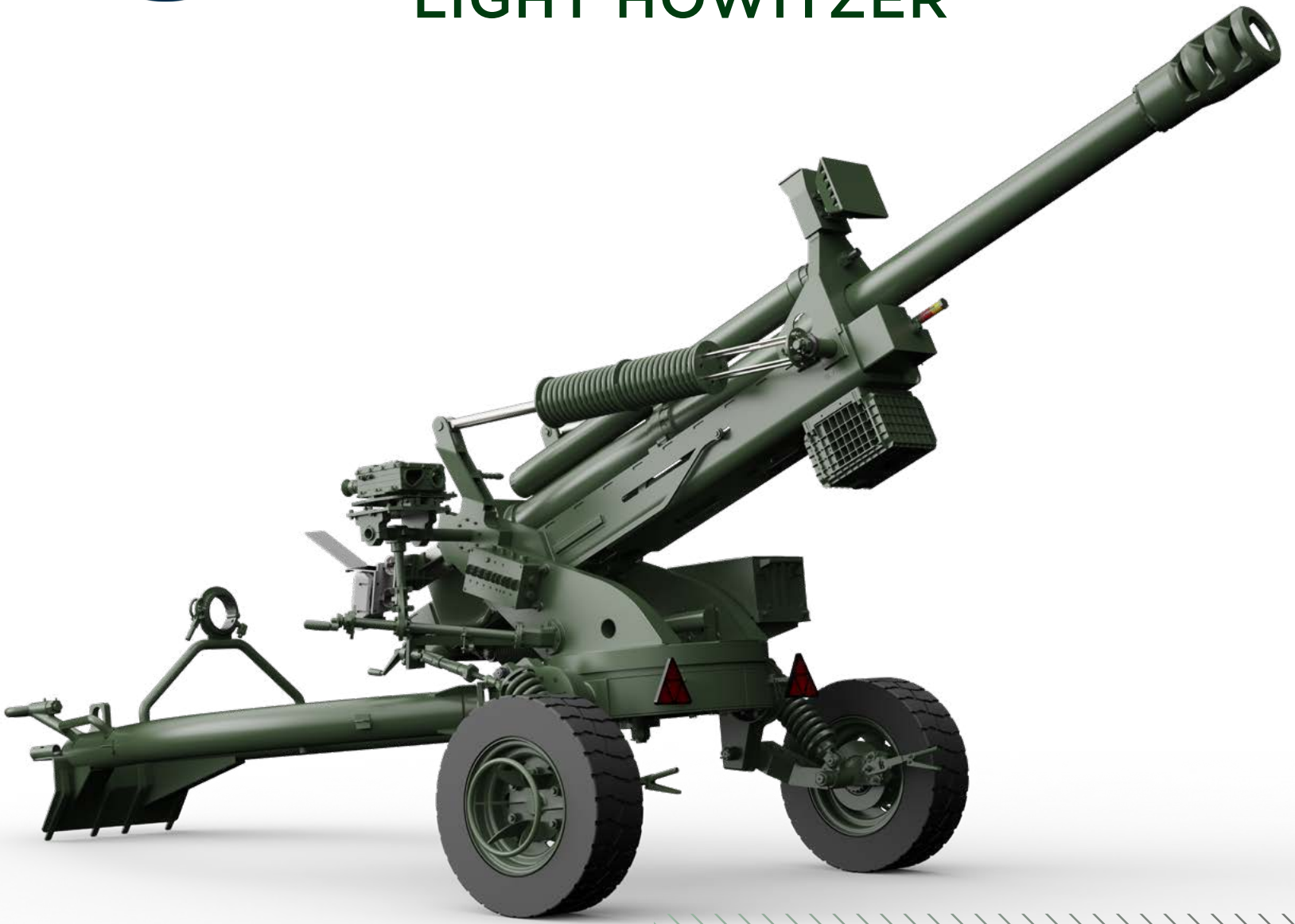
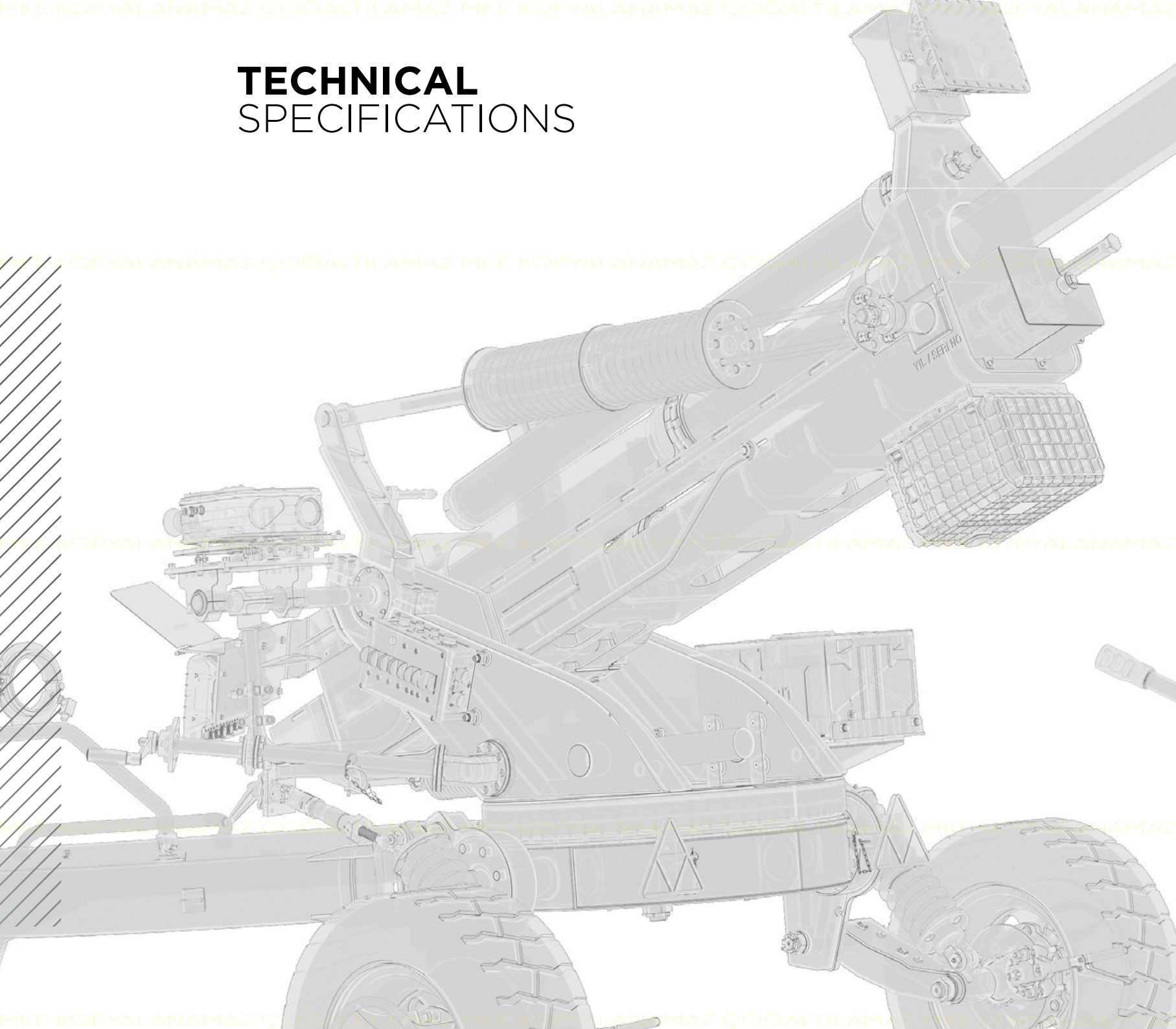
105 MM
BORAN
AIR PORTABLE
LIGHT HOWITZER



TECHNICAL
SPECIFICATIONS

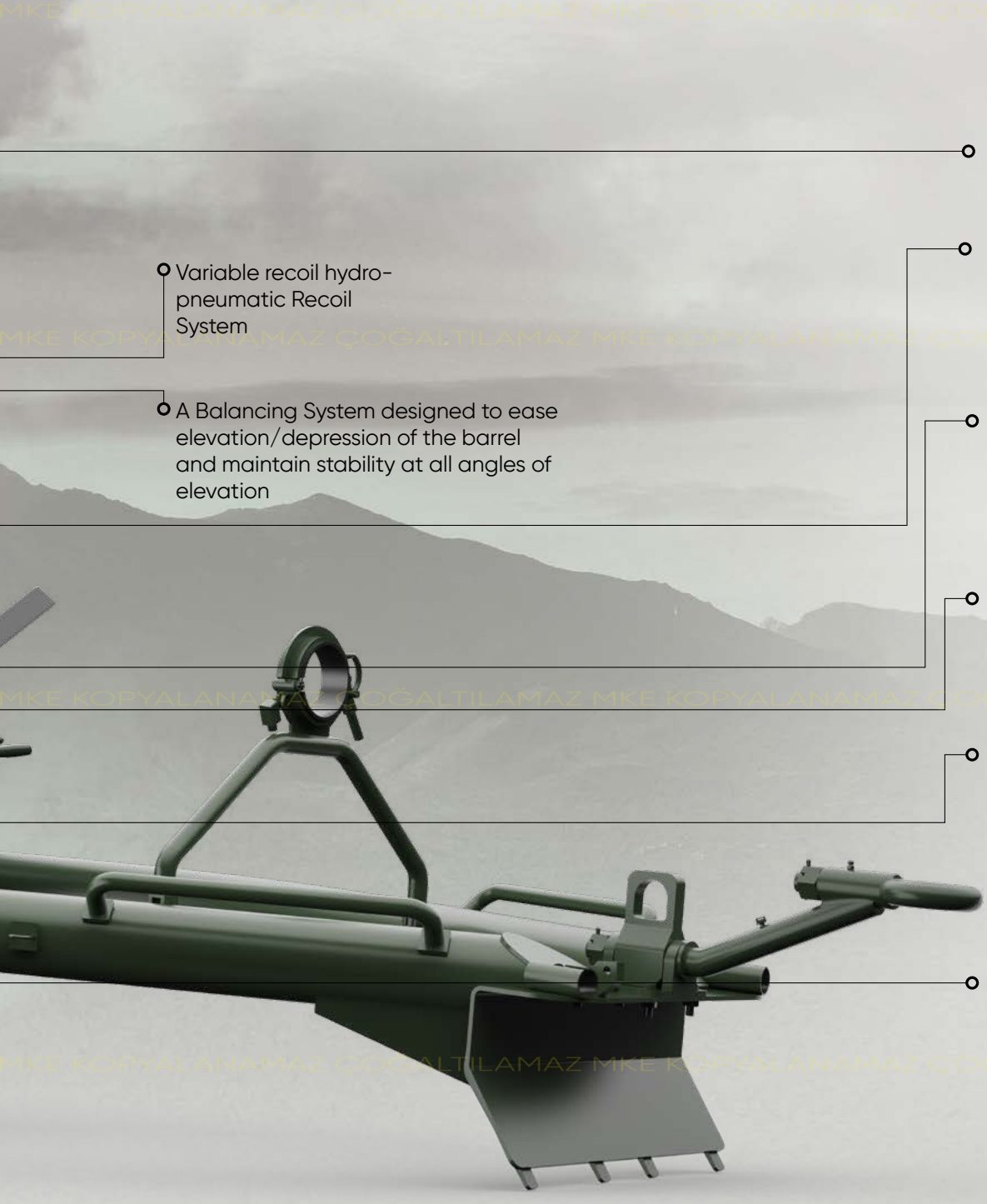


Barrel Diameter	105 MM
Caliber	30
Barrel Life	7000 shots (Long-Range 2 B.H.)
Muzzle Velocity	M1 TD (7th B.H) 504 m/s Long-Range Ammunition (2 B.H.) 703 m/s
Maximum Range	17.000 m. (at 12,750 m: PER ≤ 63.8 m, PED ≤ 38.3 m)
Rate of Fire (Maximum)	12 shots/minute
Rate of Fire (Continuous)	4 shots/minute
Maximum Elevation	+ 70° (1244 artillery mil)
Maximum Depression	- 3° (53 artillery mil)
Travers	16.9° Right and Left (300 artillery mils)
Equilibrator Type	Spring
Weight	1700 kg.
Maneuver Speed	60 Km/Hour- OFF ROAD | 100Km/ Hour- ON ROAD
Emplacement Time	26 Seconds
Number of Complement	5
Trailer Vehicle	4X4 2,5 Tons Vehicle

105MM HOWITZER AMMUNITION TABLE

TYPE	MODEL	BODY	PLUG TOP-BOTTOM	PLUG MEK.İH	PLUG VT
EXPLOSIVE	M1	PLUGGED	M51	M500	M513
ANTI-TANK	M67 HEAT	PLUGGED	M62	-	-
	M327 HEP	PLUGGED	M51	-	-
FOG	M60 WP	PLUGGED	M51	-	-
	M84 HC	PLUGGED	M54	-	-
GAS	M60 HD	PLUGGED	M51	-	-
	M360 GB	PLUGGED	M508	-	-
PROPAGANDA	M84	PLUGGED	M501	İH.	-
EXERCISE	M67	BLANK	M59-M54	EMPTY	-


Three-Channel Muzzle Brake Reducing the Force of Recoil
Top Carriage Designed to Rotate 360 Degrees for Howitzer's Travel Position and Firing Position
The barrel is made of forged steel and subjected to a mechanical autofrettage process with 36 grooves and lands
The cradle is designed according to the barrel depression/elevation mechanism and recoil system's operating principle
The breech is made of barrel steel in a prismatic shape and operates vertically
Manually operated breech for the initial loading
Automatic post-fire breech opening mechanism
Automatic post-fire shell extractor mechanism
A suspension system designed to reduce the recoil effect during firing and withstand the forces the howitzer will be subjected to during movement on the road
Special design carriage handles that ease the emplacement
The colour can be customize



Fire Control System

MVR
Muzzle Velocity Radar measures the muzzle velocity of the shell

INS
Inertial Navigation System calculates its position and orientation using inertial sensors and provides the user with position, velocity, and orientation information (INS)

CDU
Control and Display Unit displays and guides the gunner with the required barrel traverse and elevation values during the firing mission (CDU)

DFSS
Direct Fire Sight System with a thermal camera and laser rangefinder, performing target detection and distance measurement operations (DFSS)

PCU
Power Control Unit enables the system units to be turned on/off based on the mission

SDU
Signal Distribution Unit provides the interface for interconnecting the units of the BORAN Fire Control System

Variable recoil hydro-pneumatic Recoil System

A Balancing System designed to ease elevation/depression of the barrel and maintain stability at all angles of elevation

BARREL SYSTEM:

Breech Ring
Breech Ring made of forged barrel steel and attached onto the barrel with screw

Elevation Movement Mechanism
Elevation movement mechanism that is operated mechanically

Traverse Movement Mechanism
Traverse movement mechanism that is operated mechanically

Panoramic Artillery Binoculars
Panoramic Artillery Binoculars designed for conventional firing with four levels of magnification and a 180 Artillery Mil field of view

BOTTOM CARRIAGE
Bottom Carriage designed to combine Top Carriage, Carriage Handles and Wheel Sets

WHEEL
Wheel resisting to 60 km velocity

WHEEL DRUM
Wheel Drum designed to airlift

BRAKE
Mechanical brake system

ELECTRICAL SYSTEM

BATTERY
Battery that provides power to the units of the Power Distribution Unit

BATTERY CHARGE UNIT
Battery Charge Unit that converts and regulates the AC voltage supplied by the generator to charge the system batteries

GENERATOR
Generator that provides 220V/50Hz AC voltage

COMMAND SYSTEM

CDU
Control and Display Unit (CDU) that provides the user with an interface for the performance offering missions and functions related to the firing control system

MAKİNA VE KİMYA ENDÜSTRİSİ A.Ş.

Emniyet Mahallesi Dögol Cad. No: 2
Anadolu Meydanı 06560 Yenimahalle-ANKARA/TÜRKİYE
T: +90 312 296 10 00 • F: +90 312 296 16 99

milimetrikisler.com.tr

BARREL AND CARRIAGE SYSTEM

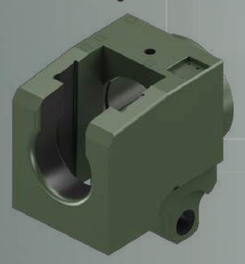
BARREL SYSTEM

BREECH MECHANISM

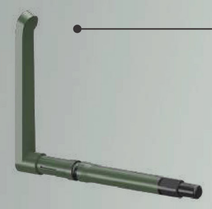
FIRING ASSEMBY

BARREL

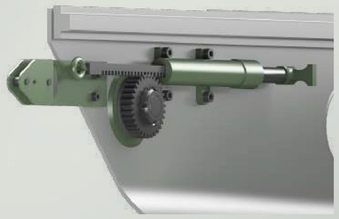
MUZZLE BRAKE



BREECH RING



FIRING TRIGGER ARM



FAIRLED TRIGGER MECHANISM

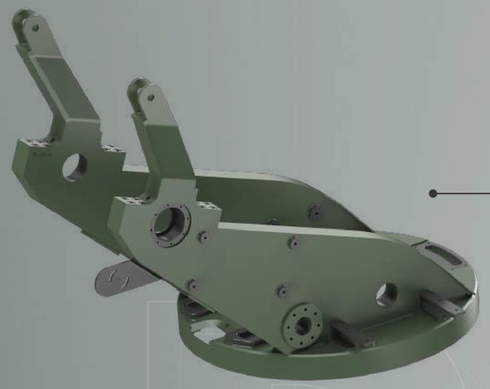
BACKUP ROUND NUT
(Big)

BACKUP ROUND NUT
(Small)

MANUEL OPERATING LEVER

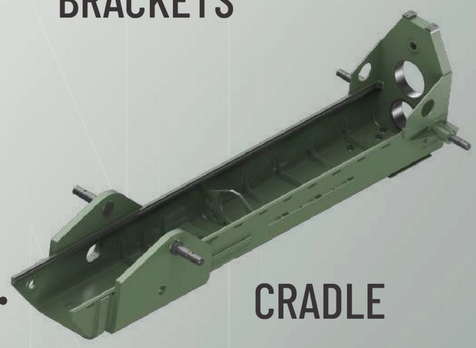
BARREL AND CARRIAGE SYSTEM

TOP CARIAGE

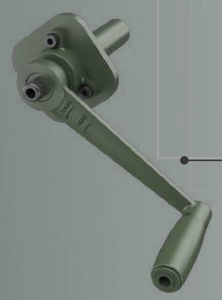


TOP CARRIAGE ASSEMBLY

TOP CARRIAGE BRACKETS



CRADLE

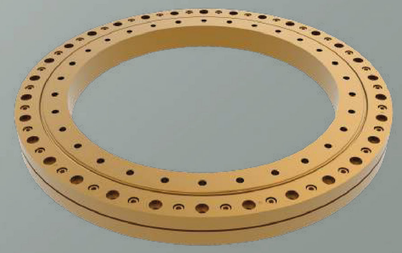


TRAVERS AND ELEVATING HANDWHEEL

ELEVATING MECHANISM

REDUCERS

TRAVERS ASSEMBY

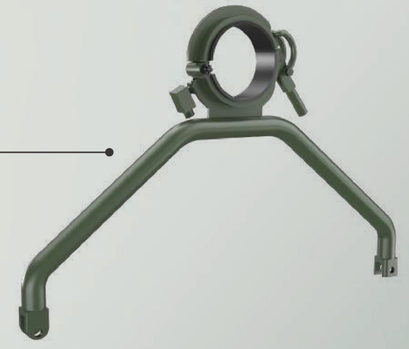


SLEWING BEARING

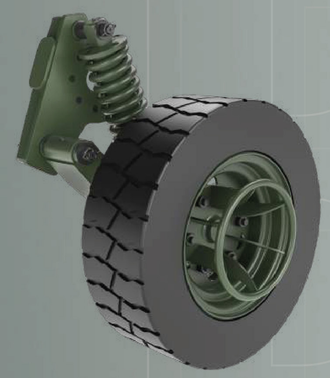
BARREL AND CARRIAGE SYSTEM

BOTTOM CARRIAGE

TRAVERS AND ELEVATING HANDWHEEL



BARREL TRAVELLING LOCK GROUP

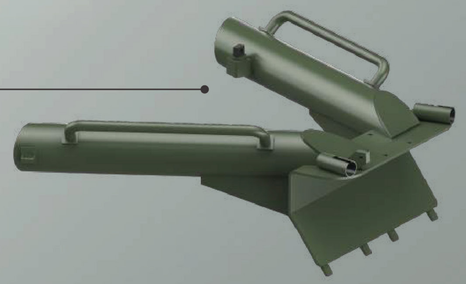


WHEEL ASSEMBLY
(WHEEL-ARM BRAKE-SUSPENSION)

DRAWBAR GROUP

BOTTOM CARRIAGE ASSEMBLY

TRAIL CARRIAGE



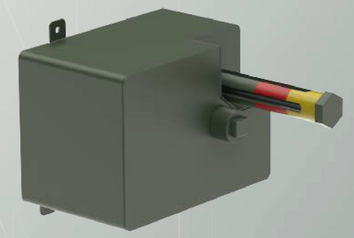
-MANUEL LIFTING
-LEVER SLOT
-SPADE

RECOIL ASSEMBLY

OIL PLUG (Front)

RECOIL CYLINDER

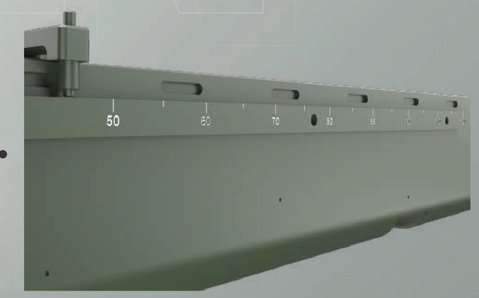
RECUPERATOR CYLINDER



COVER ASSEMBY

OIL PLUG (Back)

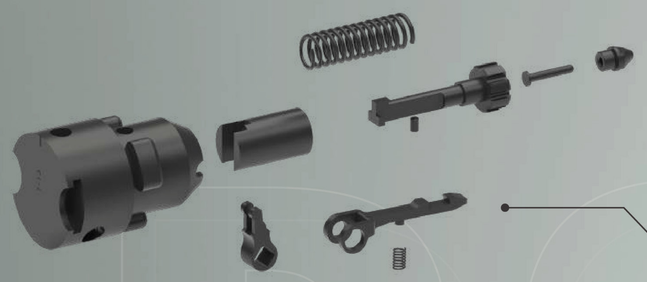
EQUILIBRATOR



RECOIL SCALE ASSEMBLY

TAP CHANGER AND PISTON ROD MECHNISM

BREECH ASSEMBLY

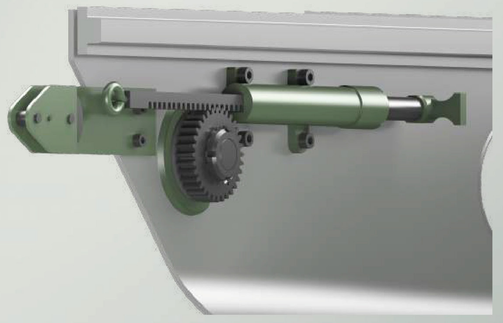


FIRING ASSEMBLY

BREECH MECHANISM

MANUEL OPERATING LEVER

FIRING TRIGGER ARM



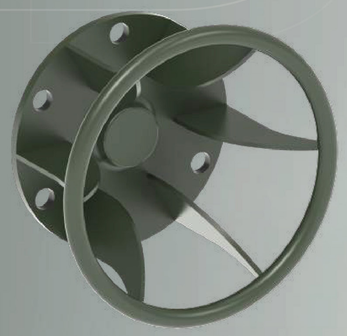
FAIRLED TRIGGER MECHANISM

AUTOMATIC BREECH
OPERATING HANDLE

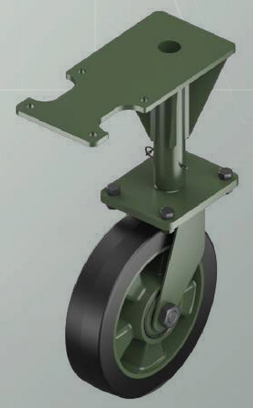
AIR PORTABLE SYSTEM

AIR PORTABLE ROPE SET

GROUND BAR



HUB WHEEL



CHINOOK CASTER