**MAIN ACTIVITIES**

- Research, development and production of the ballistic equipment for testing of the cartridges for hunting, sport or military weapons
- Testing of small arms and cannons at standard or worsening conditions.
- Testing of the protective materials

**BUSINESS OFFER**

- Testing protective material in accordance with the standards NIJ, STANAG and AEP
- Producing of ballistic equipment for testing of the protection materials (FSP).
- Testing of weapons and ammunition.
- Development and production of the prototypes of weapons.

**CERTIFICATION**

- Prototypa-ZM, s.r.o. is a holder of the quality management system certificate EN ISO 9001:2009 and AQAP 2110 (research, development and production in the area of weapons, ammunition and engineering equipment) as well as a holder of NATO codification supplier code 0461G.
TD-2014 Tumbler Drum

DESCRIPTION

The TD-2014 Tumbler Drum is designed for executing the flexible armor conditioning protocol according Ballistic Resistance of Body Armor NIJ Standard-0101.06. TD-2014 is placed inside climatic chamber WEISS WK3-1000/0.

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>926 mm</td>
</tr>
<tr>
<td>Length</td>
<td>960 mm</td>
</tr>
<tr>
<td>Width</td>
<td>850 mm</td>
</tr>
<tr>
<td>Total mass</td>
<td>150 kg</td>
</tr>
<tr>
<td>Tumbler drum inside diameter</td>
<td>832 ± 6 mm</td>
</tr>
<tr>
<td>Tumbler drum internal depth</td>
<td>651 ± 6 mm</td>
</tr>
<tr>
<td>Tumbler drum fins height</td>
<td>114 ± 3 mm</td>
</tr>
<tr>
<td>Test temperature</td>
<td>65 ± 2 °C</td>
</tr>
<tr>
<td>Test relative humidity</td>
<td>80 ± 5 %</td>
</tr>
<tr>
<td>Tumbler drum rotation</td>
<td>5 ± 1 rpm</td>
</tr>
<tr>
<td>Power supply</td>
<td>230V / 50-60 Hz</td>
</tr>
<tr>
<td>Power</td>
<td>800 W</td>
</tr>
</tbody>
</table>

Speed, temperature and humidity control by PC

Climatic chamber WEISS WK3-1000/0

TD-2014 Tumbler Drum - Side view

TD-2014 Tumbler Drum - Back view

Electronic box, computer and software
Backin Material Fixture
Backin Material Holder

DESCRIPTION
The backing material fixture is designed for executing of ballistic tests of resistance body armor against gunfire according NIJ Standard-0101.06 Ballistic Resistance of Body Armor. The backing material holder is determinate for mounting of backing material fixture on target table.

TECHNICAL PARAMETERS

**Backin Material Fixture**
- Inside dimensions: 610 x 610 x 140 mm
- Outside dimensions: 640 x 640 x 160 mm
- Total mass: 102 kg
- Backing material: Roma Plastilina No.1

**Backin Material Holder**
- Dimensions: 350 x 700 x 850 mm
- Total mass: 35 kg
HADT-1
HARD ARMOR DROP TESTER

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>1575 mm</td>
</tr>
<tr>
<td>Width</td>
<td>500 mm</td>
</tr>
<tr>
<td>Length</td>
<td>500 mm</td>
</tr>
<tr>
<td>Total mass</td>
<td>130 kg</td>
</tr>
</tbody>
</table>

DESCRIPTION

The HADT-1 Hard Armor Drop Tester is designed for executing of stress test fragmentation for ballistic plates according NIJ 0101.06 Ballistic Resistance of Body Armor.
DESCRIPTION

The Drop Test validation equipment (DTVE) stand is a special device designed for backing material consistency validation of conditioned backing material in accordance with NIJ Standard-0101.06.

The main designed features are the following:
- Conducting validation drops into the backing material;
- Fully adjustable drop height;
- Easy aiming;
- Easy handling.
- Mobile

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>2685 mm</td>
</tr>
<tr>
<td>Length</td>
<td>2180 mm</td>
</tr>
<tr>
<td>Width</td>
<td>730 mm</td>
</tr>
<tr>
<td>Drop height</td>
<td>2000 mm ± 15 mm</td>
</tr>
<tr>
<td>Sphere weight</td>
<td>1043 g ± 5 g</td>
</tr>
<tr>
<td>Sphere dimension</td>
<td>Ø 63.5 mm ± 0.05 mm</td>
</tr>
<tr>
<td>Fixture head weight</td>
<td>100 kg</td>
</tr>
<tr>
<td>Total Weight</td>
<td>160 kg</td>
</tr>
</tbody>
</table>
The Anti Stab tester stand is a special device designed for realizing drop test according to NIJ Standard 0115.00, VPAM. The main designed features are the following:
- Conducting drop test
- Adjustable drop height
- Easy maintenance
- Sturdy construction
- Velocity measurement system

**TECHNICAL PARAMETERS**

- Height: 6900 mm
- Length: 2200 mm
- Width: 1600 mm
- Drop height: 5000 mm
- Missile weight: 2100 g ± 100g
- Impact energy: 10 - 80 J

**DESCRIPTION**
The Anti Stab tester stand is a special device designed for realizing drop test according to NIJ Standard 0115.00, VPAM. The main designed features are the following:

- Conducting drop test
- Adjustable drop height
- Easy maintenance
- Sturdy construction
- Velocity measurement system
HF1
Head Form

DESCRIPTION

The HF1 head form is designed for executing of ballistic tests penetration for ballistic helmets according NIJ 0106.01 Standard for Ballistic Helmets.

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>300 mm</td>
</tr>
<tr>
<td>Width</td>
<td>250 mm</td>
</tr>
<tr>
<td>Length</td>
<td>250 mm</td>
</tr>
<tr>
<td>Total mass</td>
<td>19 kg</td>
</tr>
<tr>
<td>Helmets size</td>
<td>7 l/4”</td>
</tr>
</tbody>
</table>
SMJF SAMPLE HOLDER

DESCRIPTION

SMJF Sample holder is steel weldment with a range of interchangeable clamping frames and folding frame for witness plate. According to the size of samples clamped protective variants exists SMJF-500 (for samples 500x500 mm) and SMJF-400 (for samples 400x400 mm).

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SMJF-500</th>
<th>SMJF-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>720 / 761 mm</td>
<td>720 / 761 mm</td>
</tr>
<tr>
<td>Length</td>
<td>670 mm</td>
<td>670 mm</td>
</tr>
<tr>
<td>Width</td>
<td>640 mm</td>
<td>640 mm</td>
</tr>
<tr>
<td>Total mass</td>
<td>115 / 145 kg</td>
<td>115 / 145 kg</td>
</tr>
<tr>
<td>Size of clamped samples</td>
<td>500x500 mm</td>
<td>400x400 mm</td>
</tr>
<tr>
<td>Size of witness plate</td>
<td>0.5 x 545 x 600 mm</td>
<td>0.5 x 545 x 600 mm</td>
</tr>
<tr>
<td>Material of witness plate</td>
<td>2024-T3 or 2024-T4 aluminum alloy</td>
<td>2024-T3 or 2024-T4 aluminum alloy</td>
</tr>
</tbody>
</table>
### TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>700-1300 mm</td>
</tr>
<tr>
<td>Length</td>
<td>1400 mm</td>
</tr>
<tr>
<td>Width</td>
<td>2100 mm</td>
</tr>
<tr>
<td>Total mass</td>
<td>1310 kg</td>
</tr>
<tr>
<td>Revolving range / step</td>
<td>360° / 5°</td>
</tr>
<tr>
<td>Distance of transversal movement</td>
<td>± 300 mm</td>
</tr>
<tr>
<td>Maximum weight of target placed on table</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Maximum calibre</td>
<td>12.7 mm</td>
</tr>
<tr>
<td>Power</td>
<td>3x400 V, 5 A</td>
</tr>
</tbody>
</table>

### DESCRIPTION

The MDTT-2014 Motor driven Target Table is appointed for holding of equipment designed for executing of ballistic tests penetration such as HF1Head Form, SMJF Sample Holder or Backing material fixture. The decisive function, for those this device has been designed, are following:

- holding of special designated equipment during shooting tests
STZA 16M2
MOBILE FIRING REST

TECHNICAL PARAMETERS

- Height adjustable: 1000-1600 mm
- Length: 1400-1450 mm
- Width: 1055-1300 mm
- Total mass: 630 kg
- Transversal movement: ± 300 mm
- Vertical movement: ± 300 mm

DESCRIPTION

The Mobile firing rest STZA 16MA is appointed for working site the job of which is the testing of small arms, ballistic gauges and cartridges within the calibre up to 14,5 mm.
UZ-2002
UNIVERSAL BALLISTIC BREECH

DESCRIPTION

It serves for clamping of ballistic barrels for testing of ammunition for rifles, pistols, revolvers and shotguns, and for cartridges with rim fire and for bagged cartridges for expansion apparatus. UZ-2002 is capable of clamping ballistic barrels from various manufacturers.

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>200 mm</td>
</tr>
<tr>
<td>Length</td>
<td>960 mm</td>
</tr>
<tr>
<td>Width</td>
<td>230 mm</td>
</tr>
<tr>
<td>Mass</td>
<td>50 kg</td>
</tr>
<tr>
<td>Caliber range</td>
<td>12.7 mm</td>
</tr>
</tbody>
</table>

Pistol barrel

Rifle barrel

Remote and manual fire control
Action time measurement
Breech block for shotguns
UZ-2011 Universal Ballistic Breech

DESCRIPTION

UZ-2011 Universal ballistic breech works as a single-action manually operated weapon provided with a shift breech block used for testing of protection materials.

TECHNICAL PARAMETERS

- Height: 170 mm
- Length: 500 mm
- Width: 250 mm
- Total mass: 25 kg
- Caliber range (up to and including): 338 Lapua Mag.

- electronic remote fire control - electromagnetic
- optional: Recoil system, Support

Back side view

Electronic remote fire control box
The GM1 Moving Gun Table is appointed for holding of Universal ballistic breech UZ-2002 and its setting to the requested position in side, height and angle to shoot at the target from the requested direction.

TECHNICAL PARAMETERS

Size - transport position (L x W x H) 5000 x 2000 x 2000 mm
Size - working position (L x W x H) 5500 x 3000 x 4000 mm
Mass 3000 kg
Elevation range -30° ÷ 0°
Range of transversal movement 0 ... 4000 mm
Range of vertical movement 1000 ... 3500 mm
Maximum calibre 12,7 mm
Remote control box cable length 30 m
Remote firing box cable length 30 m
Power supply cable length 30 m
Power 3x400 V, 10 A

DESCRIPTION

The GM1 Moving Gun Table is appointed for holding of Universal ballistic breech UZ-2002 and its setting to the requested position in side, height and angle to shoot at the target from the requested direction.
DESCRIPTION

The Vehicle manipulator is device allowing lifting, tilting and rotation for realizing test according AEP-55. The equipment can take a 6000 kg vehicle on its platform, Lift, Tilt and rotate it to the wanted position for test. It consist mainly of the following components:
- tilt, lift and rotation table including hydraulic cylinders
- side extension
- support legs
- digital tilt angle measurement device
- ramps for elevation the vehicle up to the platform

TECHNICAL PARAMETERS

Size (L x W) 5 x 3 m
Lifting capacity 6000 kg
Maximum angle of lift 30°
Maximum angle of tilt 30°
Angle of rotation 360°
Total weight 6800 ± 100 kg
Power connection 3 phase 400V 32A for Hydraulic
3 phase 400V 16A for Winch
LS-06
INTELLIGENT LIGHT GATES

TECHNICAL PARAMETERS

- Range of velocity measured 50 to 1500 m·s⁻¹
- Range of rate of fire measured 60 to 3000 min⁻¹
- Range of projectile caliber 4.5 to 20 mm
- Area observed triangular 0.6 m²
- Basis 1 m, 2 m optional
- Interface WLAN, 10/100 Ethernet, RS 232

DESCRIPTION

- data presentation on standard PC (Desktop, Notebook)
- evaluation software suitable for Windows
- immediate display of velocity and rate of fire values
- presentation of statistically processes values (minimum, maximum, average)
- calculation drop of velocity (two Light gates required)
- optional addition of a mobile wireless terminal with touch sensitive screen
- measurement of velocity and rate of fire
- optical scanning of passage of projectile
- integrated evaluation unit equipped with WLAN communication module, Ethernet and RS 232 interface
- graphic presentation of time behaviour of values
PYAWMS - Yaw measurement system was developed for measurement bullet yaw before impact on the target according AEP-55 Standard.

TECHNICAL PARAMETERS:
- Active area - dia 400mm
- Projectile velocity up to 2500 m/s
- Length of projectile up to 180mm
DESCRIPTION

DRS-1 Doppler radar system is an equipment designed for projectile velocity measurement.

TECHNICAL PARAMETERS

Measured parameters:
- dependence velocity / distance / time
- dependence acceleration / distance / time

Caliber range 2 to 100 mm
Velocity range 50 to 2000 m·s⁻¹

Measuring distance (typical measuring distance in outdoor, indoor measuring is usually longer due to reflections from walls.)
- cal. 5,56 mm 60 m
- cal. 7,62 mm 100 m
- cal. 9 mm 150 m
- cal. 12,7 mm 200 m

Velocity measurement accuracy 0,2 %
Frequency 24,15 / 35,5 GHz (optional)
Transmitter output 100 mW
Beam width 12°
Protection IP63
TECHNICAL PARAMETERS

Size without tyre (LxWxH) 1,53 x 0,88 x 1,3  m
Overall weight (without tyre) 390 kg
Maximum weight added 250 kg
Weight of external ballistic slats 59 kg
Dimensions of V belt 17Bx11 (Lw=Lp=1160mm)
Range of temperatures from -25°C to +40°C
Input voltage for electronics box 400 V / 50-60 Hz / 16 A
Output voltage of electronics for micro switch DC 33-44 V / 2 A
Length of power cable 10 m
Rotation of electromotor 720 min⁻¹
Rotation of tyre 785 min⁻¹
Accepted tyre rims 6,5x15 (5x100,ET 43), Škoda Octavia 5.5Jx15
Washer for rim No. 6Jx15 6Jx15
Armour plates 6.000Gx16

DESCRIPTION

The SOP-1 Tyre tester is intended for tyres testing or testing of effectiveness of ammunition after hit of tyre. Principle of the Tyre tester is based on simulation of tyre rotation under load. Propelling of the tyre is realised by electromotor. Number of tyre revolution is rigidly taken by V belt pulleys diameter. Load of half axle simulating weight (type of weight could be optional).