

SCIENTIFIC PRODUCTION CENTER



SPECTEHNOMASH SPC LLC

Development • Production • Installation

OFFICE@STMUA.COM



**Special technological equipment for
ammunition production of calibers:**

12.7x99; 12.7x108; 14.5x114; 9x18; 9x19

7.62x39; 7.62x51; 7.62x54; 5.45x39; 5.56x45



ABOUT THE COMPANY

"SPECTEHNOMASH" Scientific Production Center" LLC is a modern enterprise that has many years of experience in design, production, and operation of cartridge production equipment. At present, the company has at its disposal the qualified engineering and technical personnel, specialists, production facilities for the manufacture of equipment for the production of cartridges, modern equipment for high-quality tools manufacture and the necessary infrastructure. Specialists of our company developed the design-technological documentation of special technological equipment for the production of small arms ammunition of all main calibers:

- 5.45x39; 5.56x45; 7.62x39; 7.62x51; 7.62x54; 9x18; 9x19 mm (production technology is based on the use of high-performance automatic rotary lines);
- 12.7x99; 12.7x108; 14.5x114; 23; 30 mm (modern multi-position presses are used in production technology).

TECHNOLOGY

The main advantage of the offered technology based on automatic rotary lines over traditional technology is that processing and control of details is carried out in the course of transport moving of processed products.

This principle provides the necessary performance with the compact location of equipment and the minimum number of employees. Having modern research and production potential, the technical level of which is based on production experience of automated technological equipment, the enterprise provides high-quality technological equipment for the production of ammunition, tools, test equipment and packaging.

The quality assurance system at the enterprise is based on production experience and supply of various high reliability products to Customers.



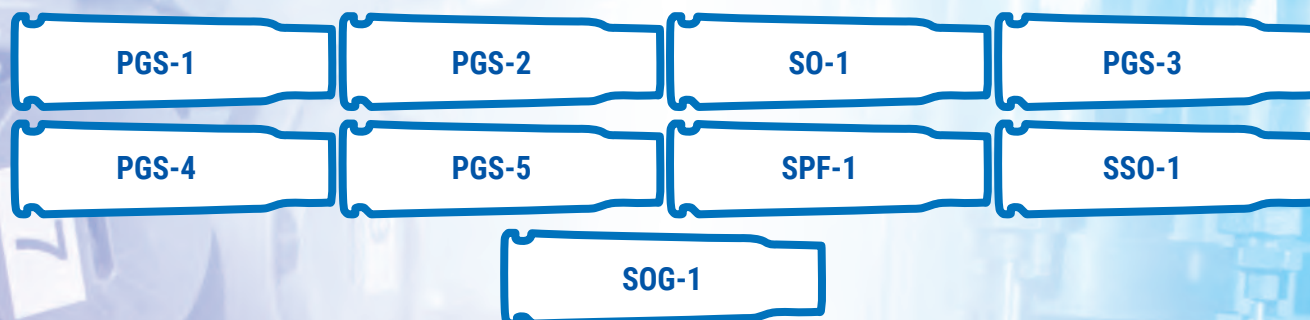
OUR OFFERS

Taking into account the requirements of the Customers, the Company provides:

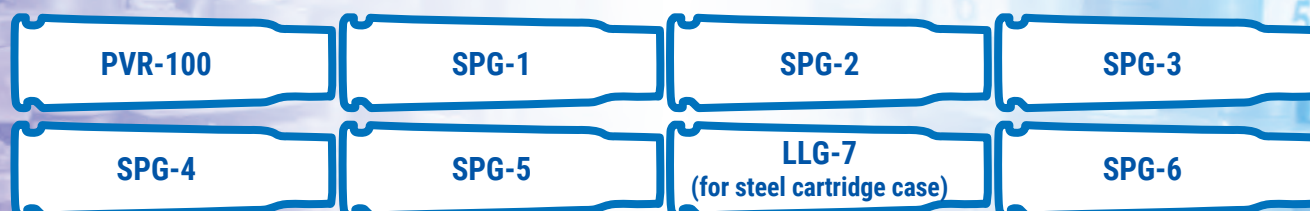
- A comprehensive approach to the manufacture of products
- Ability to supply turnkey equipment (under a separate contract)
- Ensuring the supply of tools and materials to the Customer for the production of ammunition
- Provision of technical documentation and, if necessary highly qualified production and engineering staff
- Training of specialists in the Customer's country
- Modernization and optimization of existing production facilities for expanding the range and increasing production volumes
- Planning decisions and design of equipment placement for the manufacture of cases, bullets, assembly and packaging of cartridges
- After delivery of the equipment to the Customer, we carry out service throughout the service life of supplied equipment
- The supply of spare parts is guaranteed throughout service life

Technological scheme of elements production and cartridge assembly

Scheme 1. Cartridge case production of calibers 12.7; 14.5 mm



of calibers 7.62; 5.45; 5.56; 9 mm



Scheme 2. Bullet production of calibers 12.7; 14.5 mm



of calibers 7.62; 5.45; 5.56; 9 mm



Scheme 3. Cartridge assembly of calibers 12.7; 14.5 mm



of calibers 7.62; 5.45; 5.56; 9 mm



Equipment for cartridge case production of calibers 12.7; 14.5 mm

Press PGS-1

Function

The special horizontal single-crank closed press PGS-1 is intended for the first and second case drawings.

Functional operations

- First drawing
- Second drawing



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 9.0 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3300x1900x1970 |
| Net weight, kg | 6480 |

Press PGS-2

Function

The special horizontal single-crank closed press PGS-2 is intended for the third and fourth case drawings.

Functional operations

- Third drawing
- Fourth drawing



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 9.0 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3300x1900x1970 |
| Net weight, kg | 6480 |

Machine SO-1

Function

The machine SO-1 is intended for cutting semi-finished cartridge cases after the operation «drawing».

Functional operations

- Cutting the billet edge



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 26 |
| Power consumption, kW | 1.5 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 15 |
| Overall dimensions without packing, LxWxH, mm | 1450x1300x1850 |
| Net weight, kg | 530 |

Press PGS-3

Function

The special horizontal single-crank closed press PGS-3 is intended for the first stamping of the primer pocket.

Functional operations

- First stamping of the primer pocket



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 8.5 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3420x1940x1800 |
| Net weight, kg | 6300 |

Press PGS-4

Function

The special horizontal single-crank closed press PGS-4 is intended for the second stamping of the primer pocket.

Functional operations

- Second stamping of the primer pocket



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 8.5 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3420x1940x1800 |
| Net weight, kg | 6300 |

Press PGS-5

Function

The special horizontal single-crank closed press PGS-5 is intended for mouth tapering.

Functional operations

- Mouth tapering



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 8.5 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3100x1500x1900 |
| Net weight, kg | 3700 |

Machine SPF-1

Function

The machine SPF-1 is intended for the operation of flange part grooving and mouth part trimming of the case.

Functional operations

- Mouth part trimming
- Flange part grooving



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 24±4 |
| Power consumption, kW | 3.5 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 15 |
| Overall dimensions without packing, LxWxH, mm | 1700x1500x2150 |
| Net weight, kg | 1600 |

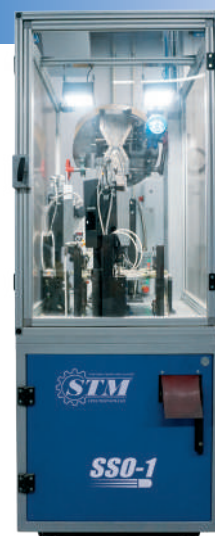
Machine SSO-1

Function

The drilling machine SSO-1 is intended to perform the operation of drilling the flash holes of the case.

Functional operations

- Drilling flash holes



Technical features

| | |
|---|---------------|
| Production rate, pcs./min. | 25 |
| Power consumption, kW | 1.2 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 12.0 |
| Overall dimensions without packing, LxWxH, mm | 1530x840x2070 |
| Net weight, kg | 800 |

Equipment for bullet production of calibers 12.7; 14.5 mm

Press PMP-40/10-1

Function

The vertical multi-position transfer press PMP-40/10-1 is intended for the manufacture of bullet jacket.

Functional operations

- Drawing
- Tapering
- Trimming



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 13 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3200x2050x3500 |
| Net weight, kg | 15000 |

Press PMP-40/10-3

Function

The vertical multi-position transfer press PMP-40/10-3 is intended for assembling cartridge bullets.

Functional operations

- Stamping of lead core / jacket
- Insertion of the lead core / jacket
- Insertion of the steel core
- Tapering of the tail part of the bullet
- Grooves knurling
- Calibration of bullet diameters



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Rated force, kN | 400 |
| Power consumption, kW | 13 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 12 |
| Overall dimensions without packing, LxWxH, mm | 3200x2050x3500 |
| Net weight, kg | 15000 |

Machine SOP-1

Function

The bullet inspection machine SOP-1 is intended for visual control of the appearance of finished bullets for the cartridge.

Functional operations

- Visual bullets inspection



Technical features

| | |
|---|---------------|
| Production rate, pcs./min. | 47 |
| Power consumption, kW | 0.3 |
| Overall dimensions without packing, LxWxH, mm | 1700x900x1700 |
| Net weight, kg | 330 |

Machine SKPM-1

Function

The machine SKPM-1 is intended to control mass of the finished bullet.

Functional operations

- Weighing a bullet
- Sorting bullets by weight:
 - normal
 - heavy
 - light



Technical features

| | |
|---|---------------|
| Production rate, pcs./min. | 60 |
| Power consumption, kW | 0.5 |
| Accuracy of measuring of the bullet mass, g | ±0.06 |
| Max. permissible mass of the bullet being weighed, kg | 1.0 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m³/hour | 0.008 |
| Overall dimensions without packing, LxWxH, mm | 1500x750x1450 |
| Net weight, kg | 150 |

Machine SKG-127 (145)

Function

The machine SKG-127 (145) is intended for inserting the primer into the cartridge case.

Functional operations

- Primer insertion
- 100% automatic control of the primer insertion depth
- Center-punching at the end face of the case



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 60±5 |
| Power consumption, kW | 1.5 |
| Compressed air consumption, m³/hour | 7 |
| Pressure, MPa | 0.6 |
| Overall dimensions without packing, LxWxH, mm | 2700x1000x2600 |
| Net weight, kg | 3300 |

Machine SSP-127 (145)

Function

The machine SSP-127 (145) is intended for loading and assembling of cartridges.

Functional operations

- Dressing of case mouth
- Control of case and primer presence
- First and second powder chamber filling
- Powder charge level control
- Preliminary and final assembly of the bullet and cartridge case
- Bullet presence control
- First and second tapering of cartridge mouth
- 100% automatic control of cartridge configuration
- 100% automatic control of cartridge length



Technical features

| | |
|---|----------------|
| Production rate, pcs./min. | 40 |
| Power consumption, kW | 4.0 |
| Compressed air consumption, m³/hour | 10 |
| Pressure, MPa | 0.6 |
| Overall dimensions without packing, LxWxH, mm | 2400x1900x2800 |
| Net weight, kg | 1650 |

Machine VS-2

Function

The weight control machine VS-2 is intended to perform an operation to control the weight of the finished cartridge.

Functional operations

- Cartridge weighing
- Sorting by weight deviation



Technical features

| | |
|---|---------------|
| Production rate, pcs./min. | 40 |
| Power consumption, kW | 0.1 |
| Compressed air consumption, m³/hour | 7.3 |
| Pressure, MPa | 0.6 |
| Overall dimensions without packing, LxWxH, mm | 1200x800x1300 |
| Net weight, kg | 360 |

Machine SGP-127 (145)

Function

The machine SGP-127 (145) is intended for cartridge sealing and painting the tip of the bullet of the cartridge.

Functional operations

- Coloring the tip of the cartridge bullet
- Sealing of the landing site of the primer in the case, the junction of the bullet and the case
- LED UV paint and sealant drying after application
- Visual inspection of cartridges by appearance



Technical features

| | |
|---|---------------|
| Production rate, pcs./min. | 60 |
| Power consumption, kW | 1.2 |
| Compressed air consumption, m³/hour | 10 |
| Air change rate, consumed by exhaust ventilation, m³/hour | 500 |
| Overall dimensions without packing, LxWxH, mm | 4410x900x1900 |
| Net weight, kg | 770 |

Equipment for cartridge case production of calibers 7.62; 5.45; 5.56; 9 mm

Press PVR-100

Function

The special-purpose press PVR-100 is intended for blanking of parts from strip material.

Function operations

- Blanking



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 800 |
| Power consumption, kW | 15.64 |
| Compressed air consumption, m³/hour | 10.5 |
| Capacity of press, kN | 1000 |
| Traverse stroke, mm | 30 |
| Ram stroke frequency, min⁻¹ | 140 |
| Feed pitch of material: maximal / minimal, mm | 40 / 17 |
| Voltage, V / Current frequency, Hz | 380 / 50 |
| Overall dimensions without packing, LxWxH, mm | 2800x1700x2900 |
| Net weight, kg | 13170 |

Machine SPG-1



Function

The machine SPG-1 is intended for the manufacture of billets of the first and second drawing, recrystallization annealing of billets after the second drawing and further cooling.

Function operations

- First cupping/drawing
- Second drawing
- Recrystallization annealing
- Cooling

Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200+20 |
| Air change rate, consumed by exhaust ventilation, m³/hour | 600 |
| Power consumption, kW | 97 |
| Water flow rate, m³/hour | 4.0 |
| Compressed air consumption, m³/hour | 8.7 |
| Overall dimensions without packing, LxWxH, mm | 3740x1050x2900 |
| Net weight, kg | 8250 |

Machine SPG-2

Function

The machine SPG-2 is intended for third and fourth drawings, and for first and second cutting of cartridge case billets.

Function operations

- Third drawing
- First cutting
- Fourth drawing
- Second cutting



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 28.9 |
| Water flow rate, m³/hour | 4.0 |
| Overall dimensions without packing, LxWxH, mm | 3570x1050x2820 |
| Net weight, kg | 7730 |

Machine SPG-3

Function

The machine SPG-3 is intended for the manufacture of cartridge case billets by press forming.

Function operations

- First forming
- 100% automatic check of primer pocket depth
- Second forming
- 100% automatic check of anvil depth
- 100% automatic check of primer pocket diameter
- Flash hole piercing
- Edge finishing of flash hole
- 100% automatic check of flash hole presence



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 31.8 |
| Water flow rate, m³/hour | 4.0 |
| Overall dimensions without packing, LxWxH, mm | 4485x1065x2550 |
| Net weight, kg | 7390 |

Equipment for cartridge case production of calibers 7.62; 5.45; 5.56; 9 mm

Machine SPG-4

Function

The Machine SPG-4 is intended for tapering of cartridge case billets.

Function operations

- Mouth annealing
- Cooling
- Pickling
- Rinsing
- Phosphatization
- Saponification
- First tapering
- Second tapering
- Rinsing
- Drying

Technical features

| | |
|--|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 93 |
| Water flow rate, m ³ /hour | 4 |
| Compressed air consumption, m ³ /hour | 35 |
| Air change rate, consumed by exhaust ventilation, m ³ /hour | 2500 |
| Pressure, MPa | 0.6 |
| Overall dimensions without packing, LxWxH, mm | 6490x1550x2520 |
| Net weight, kg | 11700 |
| Product-flow time for cases, min | 9 |



Machine SPG-5

Function

The machine SPG-5 is intended for cartridge cases machining and control.

Function operations

- Grooving
- Calibration
- Cutting of mouths
- 100% rim height check
- 100% extraction groove diameter check
- 100% cartridge case length check

Technical features

| | |
|--|---------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 6.4 |
| Compressed air consumption, m ³ /hour | 2.5 |
| Pressure, MPa | 0.6 |
| Overall dimensions without packing, LxWxH, mm | 3250x910x2200 |
| Net weight, kg | 6145 |



Machine LLG-7

Function

The machine LLG-7 is intended for varnishing (lacquering) semi-finished steel cartridge cases of all required calibers.

Function operations

- lacquering
- pre-drying
- final drying

Technical features

| | |
|--|----------------|
| Production rate, pcs per minute | 200 |
| Power consumption, kW | 81 |
| Air flow rate, consumed by exhaust ventilation, m ³ /hour | 2000 |
| Time of passing products through the furnace, min | 30÷35 |
| Furnace operating temperature, °C | 170÷185 |
| Compressed air consumption, m ³ /hour | 3.0 |
| Air pressure, MPa | 0.6 |
| Overall dimensions without pack., LxWxH, mm | 7300x1570x2480 |
| Net weight, kg | 9900 |



Machine SPG-6

Function

The machine SPG-6 is intended for complete automatic check of cartridge case dimensions and visual inspection of quality of cartridge case surface alongside with further conditional rejection of the flow.

Function operations

- 100% automatic control by calibration chamber
- 100% automatic control of anvil depth
- 100% automatic control of pocket diameter
- 100% automatic control of flash hole presence

Technical features

| | |
|---|---------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 4.1 |
| Overall dimensions without packing, LxWxH, mm | 2750x880x2040 |
| Net weight, kg | 3900 |



Equipment for bullet production of calibers 7.62; 5.45; 5.56; 9 mm

Press PVK-50

Function

The special multi-row punching press PVK-50 is intended for blanking and cupping of detail "cup" from the strip material - the initial blank of the semi-finished bullet jacket. The press PVK-50 is recommended to be used together with the decoiling and winding devices RSU-500.

Function operations

- Blanking-cup cupping



Technical features

| | |
|--|----------------|
| Production rate, pcs per minute | 800 |
| Number of sliders strokes, min ⁻¹ | 120 |
| Slider stroke inner / outer, mm | 80/30 |
| Rated force, kN | 630 |
| Power consumption, kW | 14 |
| Pressure, MPa | 0.6 |
| Compressed air consumption, m ³ /hour | 10.5 |
| Strip width / thickness (maximum), mm | 131 / 0.99 |
| Overall dimensions without packing, LxWxH, mm | 1760x1760x2810 |
| Net weight, kg | 6240 |

Machine SPP-1

Function

The machine SPP-1 is intended for manufacture of bullet jackets.

Function operations

- First drawing
- Second drawing
- First tapering
- Second tapering
- Third tapering
- Fourth tapering
- Jacket cutting
- Jacket expanding



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 38 |
| Water flow rate, m ³ /hour | 1 |
| Overall dimensions without packing, LxWxH, mm | 4360x1100x2397 |
| Net weight, kg | 10000 |

Machine SPP-2

Function

The machine SPP-2 is intended for manufacture of lead jacket and preliminary bullet assembly.

Function operations

- Lead billet cutting
- First forming
- Second forming
- Lead jacket drawing
- Drying
- Insertion of core into jacket
- 100% visual control of core insertion
- Insertion of unit with core into jacket and preliminary folding of jacket ends



Technical features

| | |
|--|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 18.0 |
| Air change rate, consumed by exhaust ventilation, m ³ /hour | 2000 |
| Overall dimensions without packing, LxWxH, mm | 3955x1310x2030 |
| Net weight, kg | 7500 |

Machine SPP-3

Function

The machine SPP-3 is intended for the bullet assembly.

Function operations

- First flanging of jacket ends
- Second flanging of jacket ends
- First tapering of bullet jacket boat-tail
- Second tapering of bullet boat-tail
- Bullet figure calibration
- Diametrical calibration of bullet
- Cannelure crimping
- 100% automatic control of bullet main diameter
- 100% automatic control of bullet tail part cone height



- 100% automatic control of bullet length
- 100% automatic control of bullet weight

Technical features

| | |
|---|---------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 6.4 |
| Overall dimensions without packing, LxWxH, mm | 4085x840x2030 |
| Net weight, kg | 6920 |

Machine SKP-7

Function

The machine SKP-7 is intended for insertion of primer into cartridge case.

Function operations

- Primer insertion
- 100% automatic control of primer insertion depth



Technical features

| | |
|---|---------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 2.0 |
| Compressed air consumption, m³/hour | 7 |
| Pressure, MPa | 0.2 |
| Overall dimensions without packing, LxWxH, mm | 1950x880x1965 |
| Net weight, kg | 3700 |

Machine SSP-7

Function

The machine SSP-7 is intended for assembly, geometrical and weight control of cartridges.

Function operations

- Case mouth expanding
- Powder chamber filling
- Propellant presence control
- Preliminary assembly of bullet and cartridge case
- Final assembly of bullet and cartridge case
- Tapering of cartridge mouth
- 100% automatic control of cartridge configuration
- 100% automatic control of cartridge case body length
- 100% automatic control of cartridge length
- 100% automatic control of cartridge weight



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200+20 |
| Power consumption, kW | 2.0 |
| Overall dimensions without packing, LxWxH, mm | 3680x1170x2000 |
| Net weight, kg | 5600 |

Machine SGP-7

Function

The machine SGP-7 is intended for the cartridges sealing.

Function operations

- Sealing on the mouth
- Sealing of the priming
- Drying
- 100% visual inspection



Technical features

| | |
|--|----------------|
| Production rate, pcs per minute | 200±10 |
| Flow path height at the beginning / at the end, mm | 980/900 |
| Power consumption, kW | 4.6 |
| Overall dimensions without packing, LxWxH, mm | 2160x1625x1625 |
| Net weight, kg | 3400 |

Machine SSU-7

Function

The machine SSU-7 is intended for packing cartridges in cardboard boxes.

Function operations

- Packing of cartridges in cardboard boxes
- 100% control of package weight with cartridges



Technical features

| | |
|---|----------------|
| Production rate, pcs per minute | 200 |
| Power consumption, kW | 1.5 |
| Overall dimensions without packing, LxWxH, mm | 3470x1430x1830 |
| Net weight, kg | 1900 |

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**SPECIAL THERMOCHEMICAL EQUIPMENT
FOR CARTRIDGE PRODUCTION**

Degreasing unit AO-1

Function

The AO-1 degreasing unit is intended for the operation of degreasing brass semi-finished product of cartridge case.

Functional operations

- Chemical degreasing
- Rinsing
- Separation
- Drying

Technical features

| | |
|--|----------------|
| Production rate, kg/min | 5.7 ÷ 14.3 |
| Power consumption, kW | 80 |
| Amount of air discharged by exhaust ventilation, m³/hour | 1000 |
| Water consumption, m³/hour | 0.8 |
| Overall dimensions without packing, LxWxH, mm | 7300x1500x1600 |
| Net weight, kg | 2200 |



Pickling unit AT-1

Function

The AT-1 pickling unit is intended for pickling of brass semi-finished product of cartridge case.

Functional operations

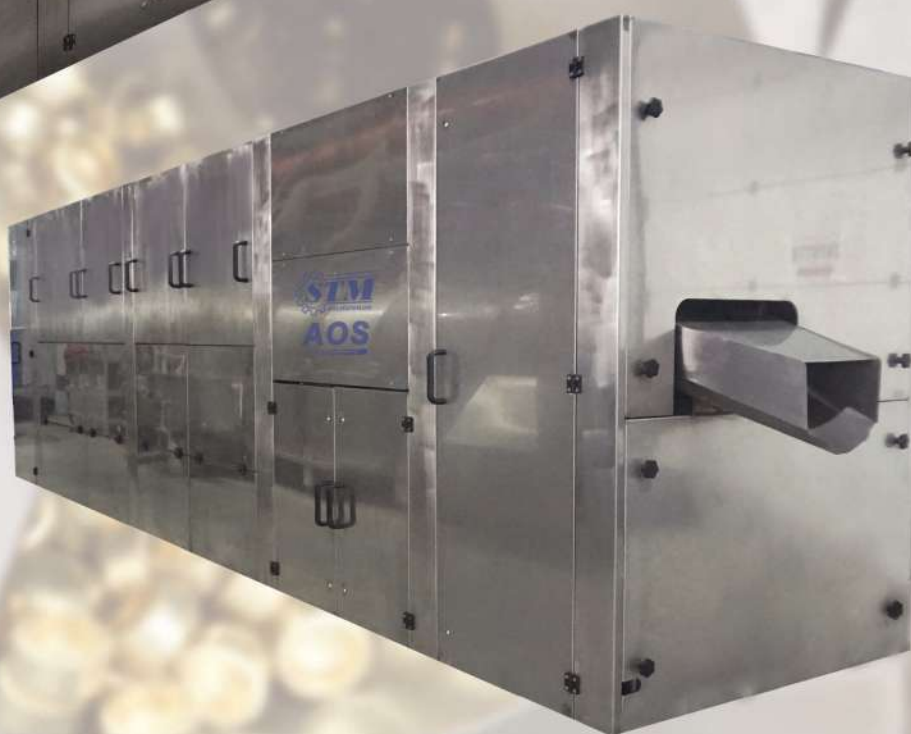
- Pickling
- Rinsing
- Separation
- Drying

Technical features

| | |
|--|----------------|
| Production rate, kg/min | 5.7 ÷ 14.3 |
| Power consumption, kW | 80 |
| Process fluid | Sulfuric acid |
| Process fluid concentration, not more than, g/l | 20 |
| Amount of air discharged by exhaust ventilation, m³/hour | 1000 |
| Water consumption, m³/hour | 0.8 |
| Overall dimensions without packing, LxWxH, mm | 7300x1500x1600 |
| Net weight, kg | 2200 |



The core degreasing unit AOS



Function

The core degreasing unit AOS is intended for degreasing the semi-finished product of bullet.

Functional operations

- Degreasing
- Rinsing
- Passivation
- Drying

Technical features

| | |
|--|----------------|
| Production rate, kg/min | 5,2 ÷ 15 |
| Power consumption, kW | 80 |
| Amount of air discharged by exhaust ventilation, m ³ /h | 1500 |
| Water consumption, m ³ /h | 0,6 |
| Overall dimensions without packing, LxWxH, mm | 6650x1450x1600 |
| Net weight, kg | 2700 |