

SCIENTIFIC PRODUCTION CENTER



SPECTEHNOMASH SPC LLC

Development • Production • Installation

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**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.



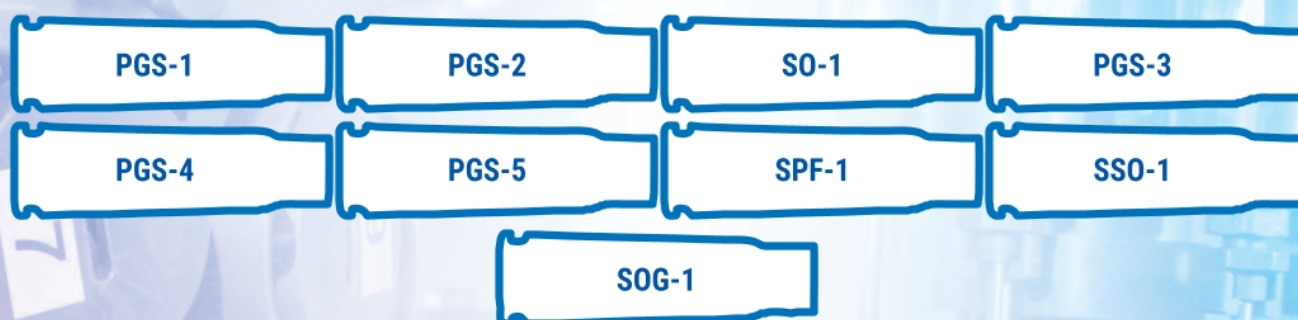
OUR OFFERS

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

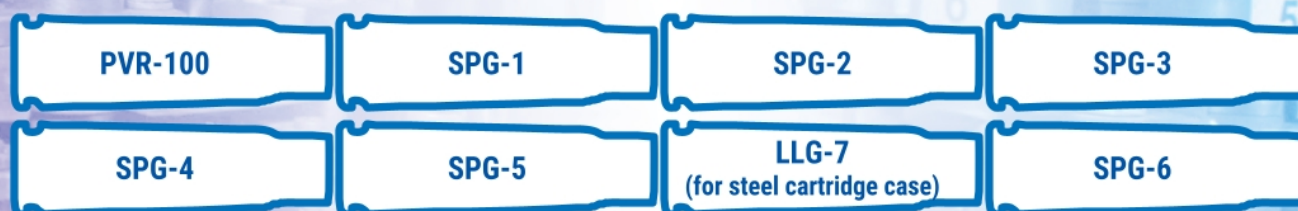
- A comprehensive approach to the manufacture of products
- Ability to supply turnkey equipment (under a separate contract)
- Ensuring the supply of tools and materials to the Customer for the production of ammunition
- Provision of technical documentation and, if necessary highly qualified production 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



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

Equipment for cartridge case production of calibers 12.7; 14.5 mm

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, m ³ /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, m ³ /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, m ³ /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, m ³ /hour	12.0
Overall dimensions without packing, LxWxH, mm	1530x840x2070
Net weight, kg	800

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, m ³ /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, m ³ /hour	600
Power consumption, kW	97
Water flow rate, m ³ /hour	4.0
Compressed air consumption, m ³ /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, m ³ /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, m ³ /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
Process fluid	Degreasing solution
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



Induction heating machine SIN-3T

Function

Induction heating machine SIN-3T is intended for performing recrystallization annealing of blanks after operations «stamping» and «tapering».

Functional operations

- Induction annealing of case blanks

Technical features

Number of flows	2
Production rate of one flow, pcs./min.	40
Total production rate, pcs./min.	80
Power consumption, kW	185
Air change rate, consumed by exhaust ventilation, m ³ /hour	2000
Compressed air consumption, m ³ /hour	2
Pressure, MPa	0.6
Overall dimensions without packing, LxWxH, mm	2900x1640x2160
Net weight, kg	3580



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

