



CJSC Enterprise

**SPECIAL  
TECHNOLOGIES**

Design  
and manufacture  
of test and repair  
equipment

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[spte.ru](http://spte.ru)





CJSC Enterprise “Special Technologies”  
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CJSC Enterprise “Special Technologies”  
designs and manufactures the equipment for repair  
and testing for over than 20 years:

- pipeline fittings
- wellhead and blowout preventer equipment
- gas cylinders

The enterprise increases its turnover and the production capacity since 1999.

The technical equipment of the enterprise allows to carry out a full cycle of work under own steam.

The arsenal of the enterprise includes production areas, a machine tool park, warehouses and office buildings, a transport park and a staff of experienced and highly qualified employees.

**13 000 m<sup>2</sup>**  
total area of the enterprise

**415**  
unique developments

**1360**  
completed projects

THE PRODUCTS OF ZAO ENTERPRISE “SPECIAL TECHNOLOGIES” COMPLY WITH THE TEST STANDARDS:

GOST R51365-2009	GOST 13846-89	API 598	RD AK “Transneft”	GOST / ISO 14310-2014
GOST 9544-2015	ASTME 1003-05	API 6A	RD PAO “Rosneft”	ANSI / API Spec. 1101
GOST 13862-90	ASME B 16.5	API 527	RD OAO “Gazprom”	
GOST 5762-2002	DIN EN 12266	API 6D	IEC 60534-4	
GOST R 54808-2011	CEI IEC 60534	ISO 5208	ANS / FCI 70-2	

#### PRODUCT QUALITY

We work with high-quality imported and Russian components and trusted suppliers, use modern production technologies, carry out incoming and outgoing control. That is why our products are known as reliable equipment that meets all technological requirements.

#### PROFESSIONALISM

An experienced staff, a team of design engineers and many years of specialization in this segment have made it possible to create a “storage” of ready-made technical solutions. And also our company offers the development and production of non-standard equipment according to the technical specifications of the customer.

#### RECOMMENDATIONS FROM PARTNERS

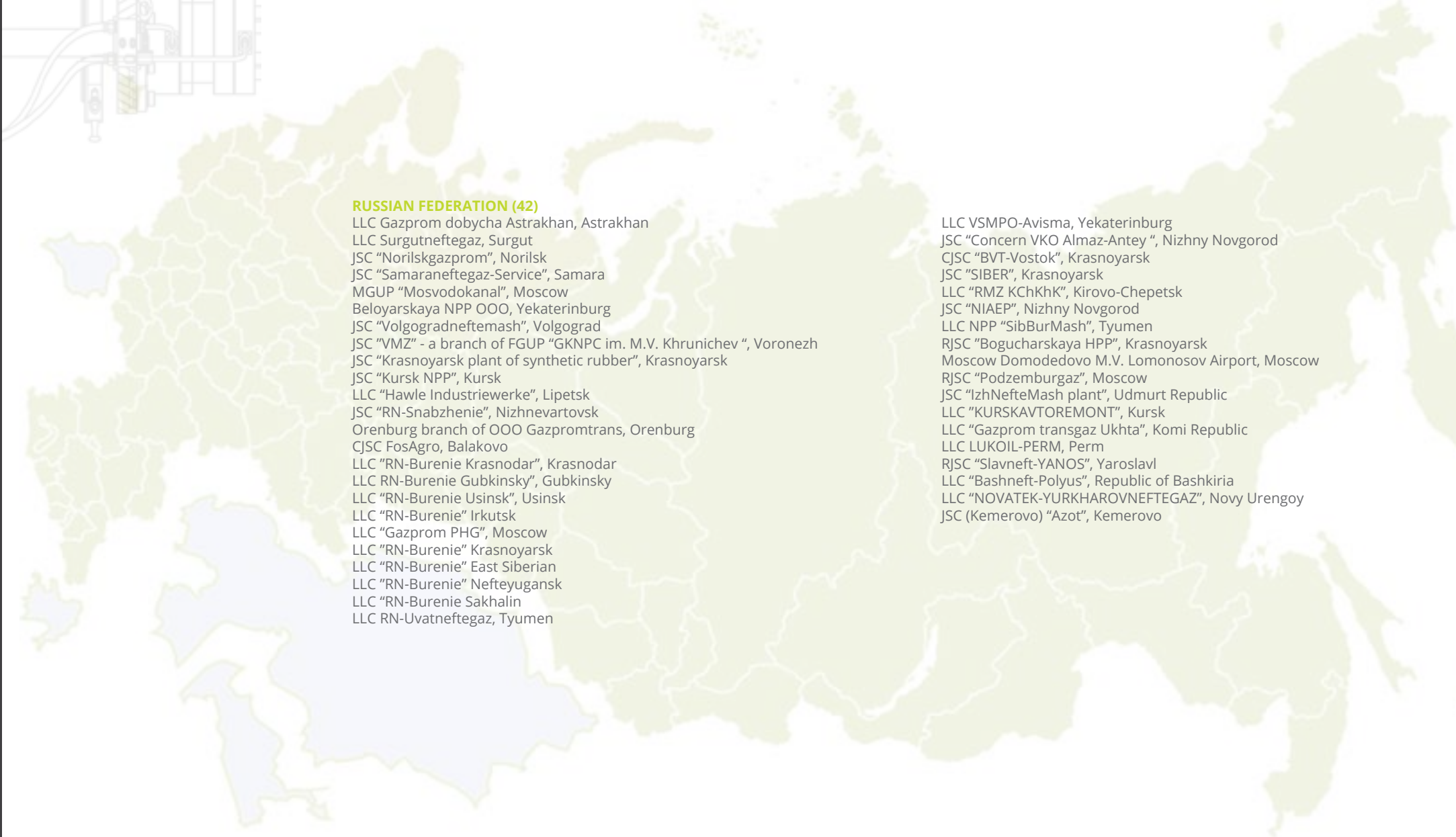
The implemented projects are successfully functioning throughout Russia and the CIS countries. Our regular customers are always ready to give positive recommendations. Just check with us the information about the operation of our equipment in the city you are interested in.

#### SERVICE SUPPORT

The priority of our work is a high level of service. We accompany the customer at all stages - from the moment of equipment selection to the operation process. Service specialists will always support the customer on technical issues and, if necessary, carry out commissioning works.

#### FLEXIBILITY

Our equipment is supplied to both giant enterprises and and small service companies. Our specialists are able to respond flexibly and quickly to the needs of the customer. As a result, an unique mutually beneficial offer is formed that meets the wishes of the customer.



**RUSSIAN FEDERATION (42)**

- LLC Gazprom dobycha Astrakhan, Astrakhan
- LLC Surgutneftegaz, Surgut
- JSC "Norilskgazprom", Norilsk
- JSC "Samaraneftegaz-Service", Samara
- MGUP "Mosvodokanal", Moscow
- Beloyarskaya NPP OOO, Yekaterinburg
- JSC "Volgogradneftemash", Volgograd
- JSC "VMZ" - a branch of FGUP "GKNPC im. M.V. Khrunichev", Voronezh
- JSC "Krasnoyarsk plant of synthetic rubber", Krasnoyarsk
- JSC "Kursk NPP", Kursk
- LLC "Hawle Industriewerke", Lipetsk
- JSC "RN-Snabzhenie", Nizhnevartovsk
- Orenburg branch of OOO Gazpromtrans, Orenburg
- CJSC FosAgro, Balakovo
- LLC "RN-Burenie Krasnodar", Krasnodar
- LLC RN-Burenie Gubinsky", Gubinsky
- LLC "RN-Burenie Usinsk", Usinsk
- LLC "RN-Burenie" Irkutsk
- LLC "Gazprom PHG", Moscow
- LLC "RN-Burenie" Krasnoyarsk
- LLC "RN-Burenie" East Siberian
- LLC "RN-Burenie" Nefteyugansk
- LLC "RN-Burenie Sakhalin
- LLC RN-Uvatneftegaz, Tyumen

- LLC VSMPO-Avisma, Yekaterinburg
- JSC "Concern VKO Almaz-Antey", Nizhny Novgorod
- CJSC "BVT-Vostok", Krasnoyarsk
- JSC "SIBER", Krasnoyarsk
- LLC "RMZ KChKhK", Kirovo-Chepetsk
- JSC "NIAEP", Nizhny Novgorod
- LLC NPP "SibBurMash", Tyumen
- RJSC "Bogucharskaya HPP", Krasnoyarsk
- Moscow Domodedovo M.V. Lomonosov Airport, Moscow
- RJSC "Podzemburgaz", Moscow
- JSC "IzhNefteMash plant", Udmurt Republic
- LLC "KURSKAVTOREMONT", Kursk
- LLC "Gazprom transgaz Ukhta", Komi Republic
- LLC LUKOIL-PERM, Perm
- RJSC "Slavneft-YANOS", Yaroslavl
- LLC "Bashneft-Polyus", Republic of Bashkiria
- LLC "NOVATEK-YURKHAROVNEFTEGAZ", Novy Urengoy
- JSC (Kemerovo) "Azot", Kemerovo

**REPUBLIC OF UZBEKISTAN (2)**

- UDP "Shurtan Gas-Chemical Complex", Tashkent
- LLC "LUKOIL Operating Company", Tashkent

**REPUBLIC OF AZERBAIJAN (1)**

- LLC "Baku Instrument-Making Plant", Baku

**REPUBLIC OF KAZAKHSTAN (7)**

- LLP "KazNefteGazProm", Almaty,
- LLP "Kaztransoil", Astana
- LLP "ARMACOM COMPANY", Almaty
- LLP "Gidromaster", Almaty
- LLP "BATT-SV", Astana
- LLP "Sert-LTD", Aktobe
- LLP "IMC", Kyzylorda

**REPUBLIC OF MOLDOVA (1)**

- JSC "Scientific and Production Center of Gas Turbine Engineering "Salyut", Bendery

**REPUBLIC OF BELARUS (5)**

- JSC "NAFTAN", Novopolotsk
- RUP "PO Belarusneft", Gomel
- JSC "Mozyr NPZ", Mozyr
- JSC "Gomeltransneft", Gomel
- JSC "Gazprom Transgaz Belarus", Minsk



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# Benches for pipeline valves testing



For testing  
pipeline  
valves

Video about this  
equipment



## ■ Horizontal bench with a pressurizing source for valves testing SPTE 1-1



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The horizontal test bench is combined with a pumping station and integrated as a one-piece construction – a clamping device for sealing valves and a pressurizing source.

It has small overall dimensions, which saves space in the test section and does not require an additional investment in the purchase of a pneumohydraulic station.

### Purpose

- strength and density tests of body parts materials and welds under pressure of the test medium
- gate tightness tests
- environmental leakage tests on dynamic and static connection seal
- functional tests

### Tested products

- gate valves
- ball valves
- stop valves
- non-return valves
- butterfly valves
- plug valves

### Type of connection

- flanged
- welded (at the customer's request)
- nipple joint

### Advantages

- all components coming into contact with water are corrosion-resisting or have antirust coating
- power hydraulic of the clamping device is actuated by the oil pumping station, which lengthens the test bench lifetime
- valves testing on gate tightness from both sides does not require the tested valves adjustment, which significantly cuts the time for the test preparation
- the test bench is equipped with a tray for drained water
- usage of high-pressure hoses with quick-release coupling (QRC) allows to cut the testing time substantially
- the test bench may be promptly adjusted to the face-to-face dimension of the valve due to the available electrically or hydraulically actuated crossbeam
- the method of the fastening of the tested valves allows to inspect the leaks
- by agreement with the customer, it is possible to equip the test benches with self-sealing stopper plugs ensuring minimal axial compression of the tested valves

### Specifications

Parameters	Value
Valve diameter, mm	15...100
Test pressure, MPA	1...25,0
Maximum force perceptible by the bench, t	20
Angle of guide screws	30°
Min./max. diameter of the clamped flange, mm	90 / 515
Min./max. distance between test tables, mm	80 / 900
Distance between screws in clear, mm	840





For testing  
pipeline  
valves

## ■ Vertical bench for valves testing SPTE 1-2 (hand operated)



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### Purpose

- strength and density tests of body parts materials and welds under pressure of the test medium
- gate tightness tests
- environmental leakage tests on dynamic and static connection seal
- functional tests
- adjustment of relief valves

### Tested products

- gate valves
- ball valves
- stop valves
- relief valves
- non-return valves
- butterfly valves
- plug valves

### Type of connection

- flanged
- true union\*
- threaded\*
- nipple joint\*
- welded\*
- plunger\*

*\*at the customer's request*

### Advantages

- all components coming into contact with water are corrosion-resisting or have antirust coating
- valves testing on gate tightness from both sides does not require the tested valves adjustment, which significantly cuts the time for the test preparation
- the test bench is equipped with a tray for drained water
- usage of high- pressure hoses with quick-release coupling (QRC) allows to cut the testing time substantially
- the test bench may be promptly adjusted to the face-to-face dimension of the valve due to the available cross-beam with a hand actuator
- the method of the fastening of the tested valves allows to inspect the leaks
- the bench has a simple, reliable construction, small overall dimensions and an affordable price
- testing can be carried out using a hand pump



additionally recommended



CFS, page 101

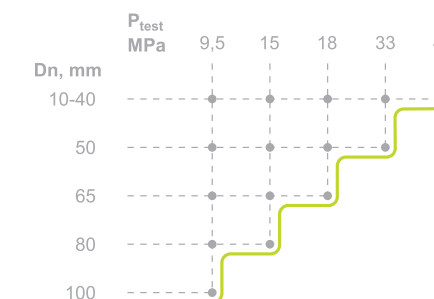


CT-RS, page 60

### Specifications

Parameters	Value
Maximum force taken by the bench, tf	12
Maximum diameter of the flange of the fitted valves, mm	255
Maximum thickness of the flange of the fitted valves, mm	50
Maximum face-to-face dimension of the fitted valves, mm	440

### Applicability table





For testing  
pipeline  
valves

Video about this  
equipment



## ■ Horizontal bench for valves testing SPTE 1-3



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### Purpose

- strength and density tests of body parts materials and welds under pressure of the test medium
- gate tightness tests
- environmental leakage tests on dynamic and static connection seal
- functional tests

### Tested products

- gate valves
- ball valves
- stop valves
- non-return valves
- butterfly valves
- plug valves

### Type of connection

- flanged
- welded\*

*\*at the customer's request*

### Advantages

- all components coming into contact with water are corrosion-resisting or have antirust coating
- power hydraulic of the clamping device is actuated by the oil pumping station, which lengthens the test bench lifetime
- valves testing on gate tightness from both sides does not require the tested valves adjustment, which significantly cuts the time for the test preparation
- the test bench is equipped with a tray for drained water
- usage of high-pressure hoses with quick-release coupling (QRC) allows to cut the testing time substantially
- the test bench may be promptly adjusted to the face-to-face dimension of the valve due to the available electrically or hydraulically actuated crossbeam
- method of the fastening of the tested valves allows to inspect the leaks

By agreement with the customer, it is possible to equip the test benches with self-sealing stopper plugs ensuring minimal axial compression of the tested valves.

additionally recommended



PS, page 54



CT-RS, page 60



CFS, page 101





For testing  
pipeline  
valves

Video about this  
equipment



## ■ Horizontal bench for valves testing SPTE 1-3



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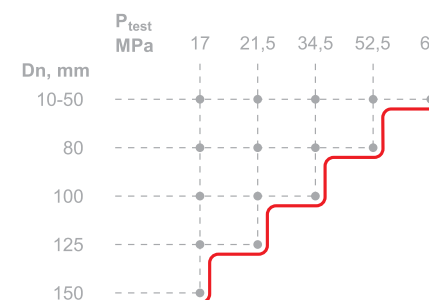
### Specifications

Parameters	SPTE 1-3-150/40	SPTE 1-3-300/60	SPTE 1-3-400/200	SPTE 1-3-600/350
Maximum force taken by the bench, tf	40	60	200	350
Nominal diameter (DN) range of the tested valves, mm	10-150	10-300	10-400	50-600
Maximum test pressure, MPa	65			

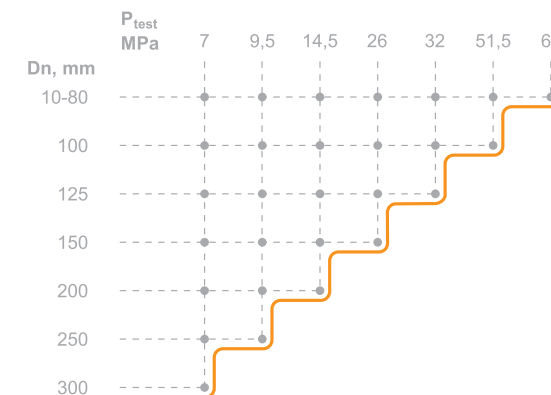
Parameters	SPTE 1-3-800/600	SPTE 1-3-1000/800	SPTE 1-3-1200/1200	SPTE 1-3-1400/2800
Maximum force taken by the bench, tf	600	800	1200	2800
Nominal diameter (DN) range of the tested valves, mm	50-800	100-1000	100-1200	300-1400
Maximum test pressure, MPa	65			

### Applicability table

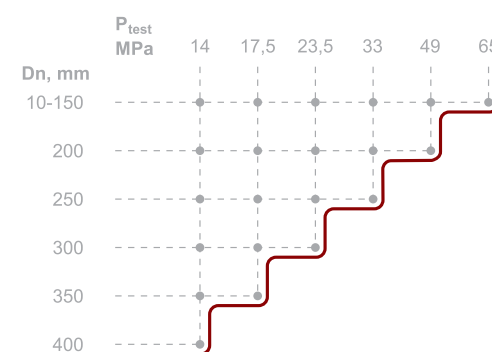
SPTE 1-3-150/40



SPTE 1-3-300/60



SPTE 1-3-400/200



Horizontal bench for valves testing  
SPTE 1-3

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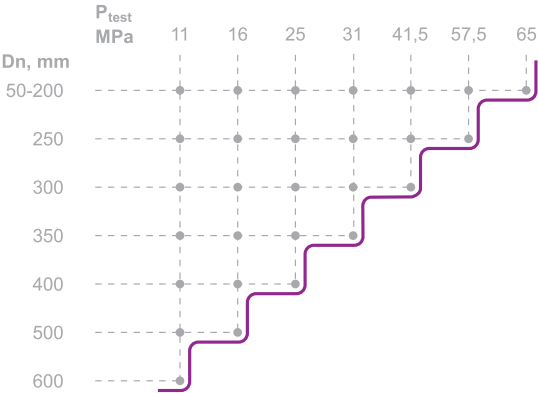


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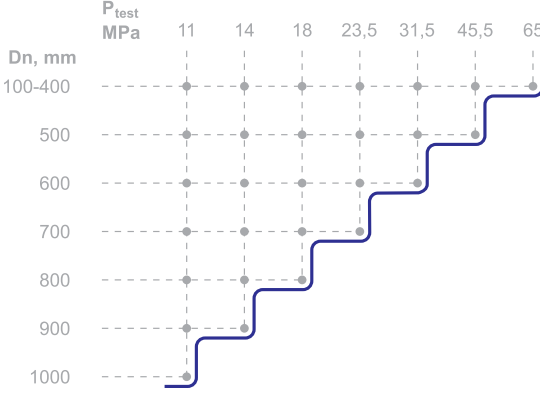
Applicability table

Applicability table

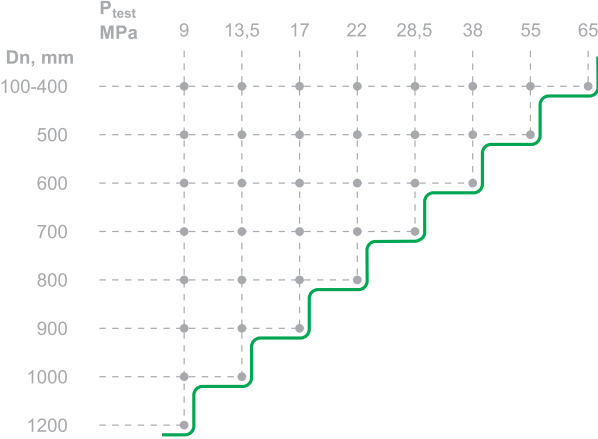
SPTE 1-3-600/350



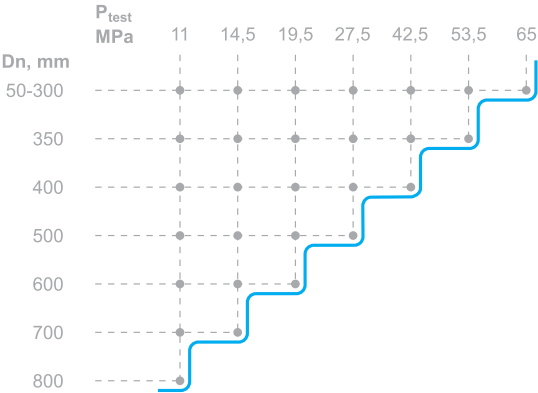
SPTE 1-3-1000/800



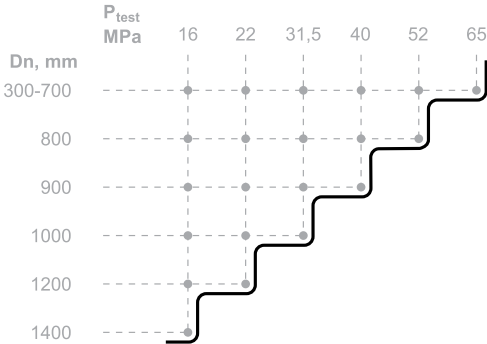
SPTE 1-3-1200/1200



SPTE 1-3-800/600



SPTE 1-3-1400/2800





For testing  
pipeline  
valves

Video about this  
equipment



## ■ Vertical bench for valves testing SPTE 1-4



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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### Purpose

- strength and density tests of body parts materials and welds under pressure of the test medium
- gate tightness tests
- environmental leakage tests on dynamic and static connection seal
- functional tests
- adjustment of relief valves

### Tested products

- gate valves
- stop valves
- relief valves
- non-return valves
- butterfly valves
- plug valves

### Type of connection

- flanged
- true union\*
- threaded\*
- nipple joint\*
- welded\*
- plunger\*

*\*at the customer's request*

### Advantages

- all components coming into contact with water are corrosion-resisting or have antirust coating
- power hydraulic of the clamping device is actuated by the oil pumping station, which lengthens the test bench lifetime
- valves testing on gate tightness from both sides does not require the tested valves adjustment, which significantly cuts the time for the test preparation
- tiltable crossbeam simplifies the process of the installing the valve before testing
- the test bench is equipped with a tray for drained water
- usage of high-pressure hoses with quick-release coupling (QRC) allows to cut the testing time substantially
- the test bench may be promptly adjusted to the face-to-face dimension of the valve due to the available crossbeam with an electric actuator
- the method of the fastening of the tested valves allows to inspect the leaks
- tiltable clamping arms simplify the process of the valve installing before testing
- technical version of the equipment is possible without hydraulic clamping or with manual control of hydraulic clamping



CFS, page 101



PS, page 54



CT-RS, page 60

additionally recommended





For testing  
pipeline  
valves

Video about this  
equipment



## ■ Vertical bench for valves testing SPTE 1-4



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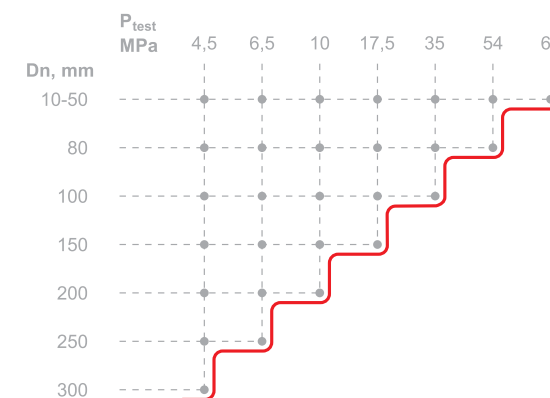
### Specifications

Parameters	SPTE 1-4 300/40	SPTE 1-4 400/60	SPTE 1-4 400/100	SPTE 1-4 600/100
Maximum force taken by the bench, tf	40	60	100	100
Nominal diameter (DN) range of the tested valves, mm	10-300	10-400	10-400	10-600
Maximum test pressure, MPa	65			

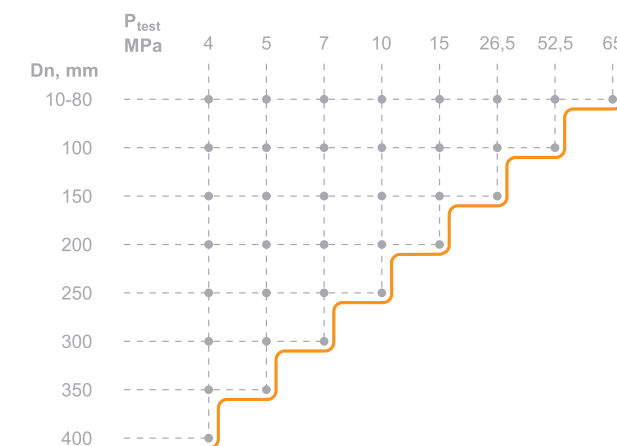
Parameters	SPTE 1-4 400/180	SPTE 1-4 800/160	SPTE 1-4 600/220
Maximum force taken by the bench, tf	180	160	220
Nominal diameter (DN) range of the tested valves, mm	50-400	50-800	50-600
Maximum test pressure, MPa	65		

### Applicability table

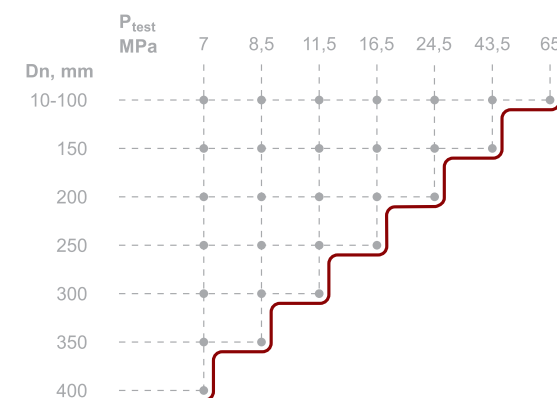
#### SPTE 1-4-300/40



#### SPTE 1-4-400/60



#### SPTE 1-4-100/100



■ Vertical bench for valves testing  
SPTE 1-4



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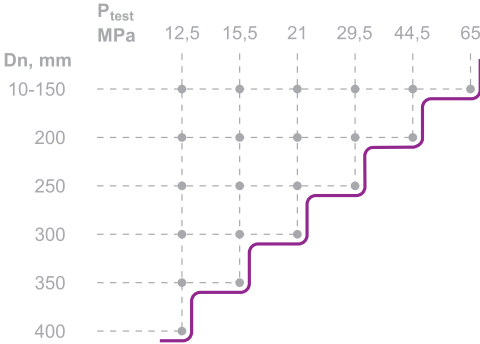


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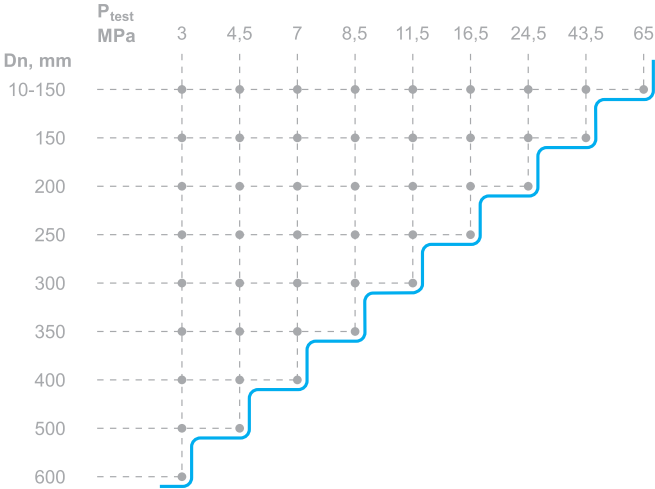
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Applicability table

SPTE 1-4-400/180

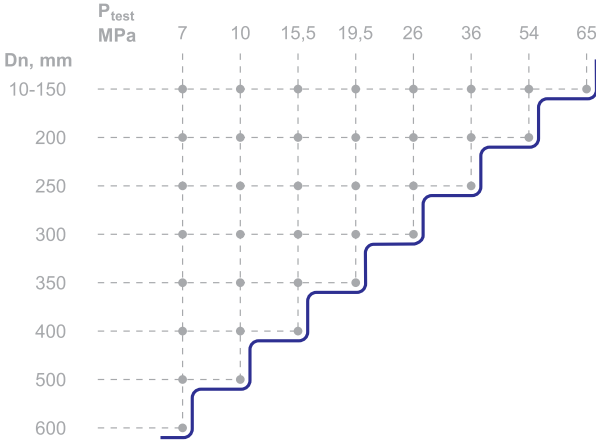


SPTE 1-4-600/100

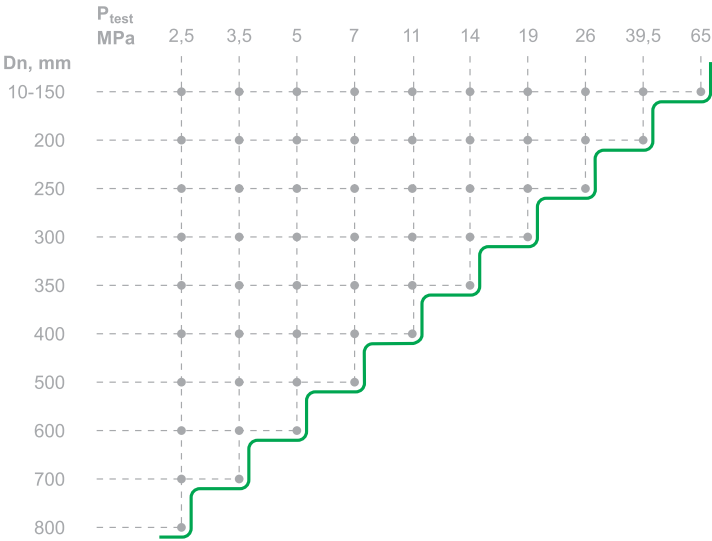


Applicability table

SPTE 1-4-600/220



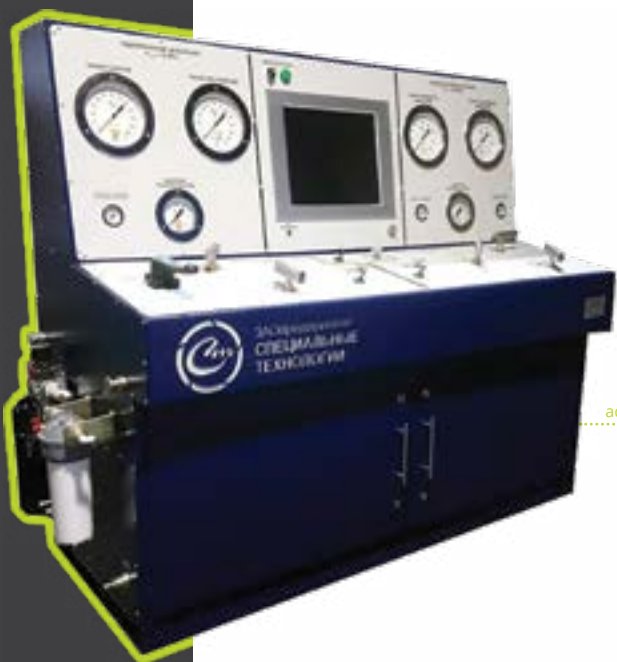
SPTE 1-4-800/160





For testing  
pipeline  
valves

Video about this  
equipment



## ■ Automatically controlled bench for valves testing SPTE-A



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### Purpose

Automatically controlled test bench of vertical or horizontal construction  
conducts the complete test cycle directly in accordance with the  
parameters set by the operator.

Equipped with a ST-RS computer measurement control system for  
recording and storing test results.

Automatically controlled system eliminates completely the human  
errors.

The work of the bench begins only when the operator leaves the  
hazardous test area.

### Product features

- automatically controlled system of the proportional clamp in  
order to minimize the load on the body of the tested products
- automatically controlled filling of the tested product with the test  
medium
- automatically controlled set of the test pressure and maintaining  
it during the tests
- automatically controlled pressure relieve and test medium  
removal from the product
- computer analysis, registration and printing of test results
- test data transfer via local network

### Specifications

Parameters	Value
Diameter of the tested valves for horizontal version of the bench, mm	50...1200*
Diameter of the tested valves for vertical version of the bench, mm	50...600*
Test pressure, MPa	65

\* at the customer's request

additionally recommended



SPTE 1-4, page 18



SPTE 1-3, page 12





# Benches for relief valves testing



For relief  
valves testing

Video about this  
equipment



## ■ Benches for relief valves testing SPTE 2-1, SPTE 2-2



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### Purpose

Bench for input and periodic hydro - and pneumatic relief valve tests:

- on readiness for operation after storage and transportation
- to check the tightness of the valve
- to adjust the relief valves to the operation pressure

### Type of connection

- flanged
- nipple joint\*
- threaded\*
- true union\*

*\*at the customer's request*

### Testing medium

- drinking water in accordance with GOST R 54232-98
- air of class 7 GOST 17433-80

### Test control

- visual: by the leakage indicator
- tool: according to the indication of manometers
- computer measuring and recording system

### Construction

- the bench is designed for quick and easy clamping of products
- the pressure is supplied through the outlet pipe
- the bench consists of a frame and movable clamps, which move with a special handle
- fixing is done by the clamping of the mounting flange between the clamp and the table
- the bench is equipped with a foot pedal for convenience of the valves pre-fixing
- control of the hydraulic system of the bench does not require a separate control panel



additionally recommended



PS, page 54



CS-4B, page 50



CT-RS, page 60



Armoured fencing, page 100



Filter -silencer, page 107





For relief  
valves testing

■ Benches for relief valves testing  
SPTE 2-1, SPTE 2-2



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Video about this  
equipment

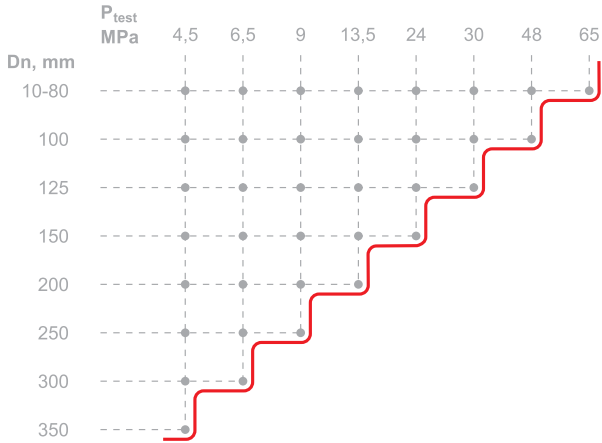


Specifications

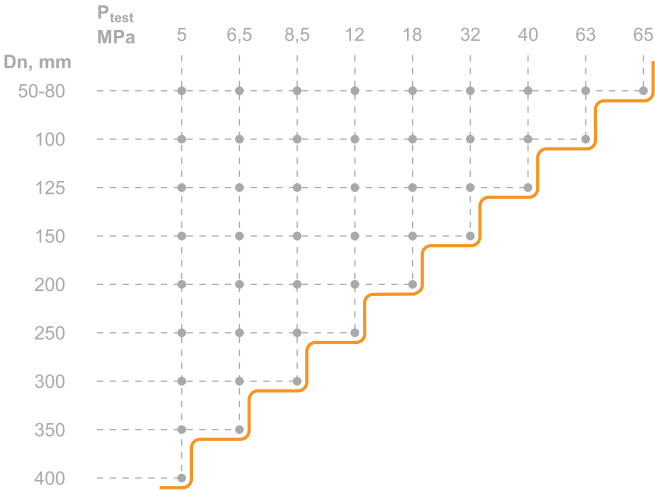
Parameters	SPTE 2-1-350/56	SPTE 2-2-400/75
Maximum diameter of the flange of the installed valves, mm	530	660
Maximum thickness of the flange of the installed valves, mm	80	80
The maximum force perceiving by the bench, tf	56	75

Applicability table

SPTE 2-1-350/56



SPTE 2-2-400/75







For relief  
valves testing

Video about this  
equipment



## ■ Bench for relief valves testing SPTE 2-1P



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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**SPECIAL  
TECHNOLOGIES**

### Purpose

Simplified bench for input and periodic hydro - and pneumatic relief valve tests:

- on readiness for operation after storage and transportation
- to check the tightness of the valve
- to adjust the relief valves to the operation pressure

### Type of connection

- flanged
- true union\*

*\*at the customer's request*

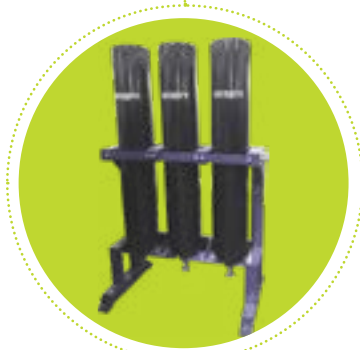
### Testing medium

- water of purity class not lower than 7 in accordance with GOST 17216 2001
- compressed air of class 7 in accordance with GOST 17433 80

additionally recommended



PS-M, page 58



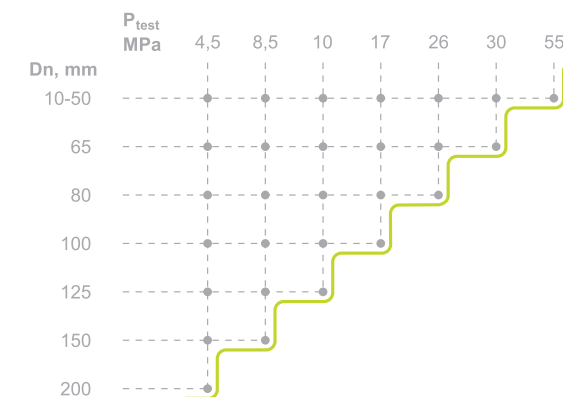
Receiver

### Construction

- the bench is small in size and weight, therefore can be used as a mobile testing equipment and move directly to the test site
- pressure supply to the outlet pipe
- quick and easy clamping of products
- the bench consists of a foundation plate and clamps
- fixation takes place by pressing of the mounting flange to the clamps with the lower table
- equipped with a high-precision pressure gauge to ensure a test control

The bench can be equipped with a manual hydraulic pump from 4 to 25 MPa

### Applicability table



### Specifications

Parameters	Value
Range of nominal diameter of the tested valves, mm	10...200
Test pressure range, MPa	up to 16,0
Maximum diameter of the flange of the installed valves, mm	410
Maximum thickness of the flange of the installed valves, mm	55
The maximum force perceiving by the bench, tf	20



For relief  
valves testing

Video about this  
equipment



## ■ Bench for springs testing SPTE 80-100



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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### Purpose

- testing of relief valve springs
- testing of pressure springs
- testing of other springs of various purposes
- force measuring and measuring of changes in linear dimensions by testing of the pressure and tension springs

### Construction

- the bench is equipped with a precision-build electromechanical drive with a smooth control of the movement speed of the active crossbeam and microprocessor control device
- has the ability to remember, store, use the information about spring parameters based on identification number
- evaluates the test results (calculation of the permissible permanent deformation)
- displays the entered and received data on the display in the form of test reports and, if necessary, archives them

### Advantages

- equipped with a high-precision linear encoder
- possibility to test different spring diameters without the change of equipment and readjustments
- does not have stand-alone power units
- on request, the test bench can be equipped with sensors for testing the tension springs
- control is carried out from a freestanding control panel equipped with a touchscreen operator panel

### Principle of operation

In automatic (when entering an identification number) or adjustment mode:

- threefold compression (extension) of the spring with the followed release and measurement of the permanent deformation
- consistent spring load up to a given force with stopping and outputting to a digital indicator of the deformation (or spring height) at this point

### Specifications

Parameters	Value	
	Parameters of controlled springs in the range of 50 ... 500 kgf	Parameters of controlled springs in the range of 500 ... 10000 kgf
Range of controlled force, kgf	50 ... 500	500...10000
Range of external diameters, mm	20 ... 150	55...300
Height of the tested springs, mm	40...400	50...550
Operating run of a crossbeam, mm	550	
Electric drive power, kW	2,0	
Energy source - current electricity	bench 380 V, 50 Hz, control panel 220 V, 50 Hz	
Measuring systems type	electronic with digital indication	
linear displacement resolution, mm	0,01	
Inaccuracy of measurements, %	1	

\*on request, the bench can be equipped with the sensors for testing of tension springs



For relief  
valves testing

Video about this  
equipment



## ■ Bench for springs testing SPTE 10



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CJSC Enterprise  
**SPECIAL  
TECHNOLOGIES**

### Purpose

- testing of relief valve springs
- testing of pressure springs
- testing of other springs of various purposes
- force measuring and measuring of changes in linear dimensions by testing of the pressure and tension springs

### Construction

- the bench is equipped with a precision-build electromechanical drive with a smooth control of the movement speed of the active crossbeam and microprocessor control device
- has the ability to remember, store, use the information about spring parameters based on identification number
- evaluates the test results (calculation of the permissible permanent deformation)
- displays the entered and received data on the display in the form of test reports and, if necessary, archives them
- the package comes as standard with a printer for printing test reports and a table for placing the bench and control panel

### Advantages

- equipped with a high-precision linear encoder
- possibility to test different spring diameters without the change of equipment and readjustments
- does not have stand-alone power units
- on request, the test bench can be equipped with sensors for testing the tension springs
- the bench control panel for entering test data can be based on the following devices (at the customer's choice): a standard personal computer with sensor control, an industrial laptop

### Principle of operation

- In automatic (when entering an identification number) or adjustment mode:
- threefold compression (extension) of the spring with the followed release and measurement of the permanent deformation
  - consistent spring load up to a given force with stopping and outputting to a digital indicator of the deformation (or spring height) at this point

### Specifications

Parameters	Value
Range of controlled force, kgf	50 ... 500
Range of external diameters, mm	4 ... 100
Height of the tested springs, mm	10...500
Operating run of a crossbeam, mm	1000
Electric drive power, kW	0,4
Energy source - current electricity	220 V/50 Hz
Measuring systems type	electronic
Linear displacement resolution, mm	0,01
Inaccuracy of measurements, %	1
Bench dimensions, mm	510x1560x270
Bench table dimensions, mm	1400x760x710
Bench weight, kg	115



For relief  
valves testing

Video about this  
equipment



## ■ Portable complex for adjustment of spring pressure relief valve SPTE 10P



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equipment are for informational purposes only and can be  
changed according to the specifications of the customer

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**SPECIAL  
TECHNOLOGIES**

### Purpose

For determining of start-to-open pressure of spring relief valves equipped with a manual override. Adjusting of these products is conducted without dismounting them from the worksite, with an option to record results in electronic and paper form

### Construction

- the portable complex was designed for quick and easy use of the equipment on-site
- an all-purpose mounting bracket allows to use the device for different threaded connections of a doubling machine coverage
- tests may be performed on the pipeline under pressure and at a zero pressure
- equipped with high-precision pressure sensors for adjusting

### Delivery set

- mechanical module
- S-shaped strain gage force sensor
- rugged tablet PC
- interface cable
- adapter USB-COM MOXA UPort 1110
- monochrome A4 laser printer
- USB extension interface cable
- mounting elements kit
- shipping container

### Advantages

- indispensable by operation with flangeless valves (complex allows to test the spring relief valves on a pipeline and there is no necessity to “cut out” valves for next welding connection)
- high accuracy of test results due to use of four interchangeable pressure sensors with the accuracy class 0.25 as well as two interchangeable force sensors with the accuracy class C3
- low mass of the device makes it convenient to work in hard-to-reach places
- does not require connection to any power supply units during the testing

### Specifications

Parameters	Value
Usable range DN, mm	25...200
Maximum test pressure, MPa	25,0
Overall dimensions, mm	560x560x880
Weight (without tools, accessories and interchangeable parts), kg	13





# Test benches for blowout prevention and wellhead equipment



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For testing  
of blowout  
and wellhead  
equipment

## ■ Bench for hydraulic testing of blowout proof equipment simplified



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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### Purpose

For hydraulic testing of blowout proof equipment with a flanged connection type in accordance with GOST 28919-91:

- testing for strength, material density of parts and welds operating under pressure up to 150 MPa
- tightness test of the stop valves gate against the external medium, blowout proof equipment up to 150 MPa



CFS, page 101

additionally recommended



PS, page 54



CT-RS, page 60

### Tested products

- blowout proof equipment (slide gate valves, spools, tee -joints, pipe crosses)
- blowout preventers
- wellhead equipment – DN 50...425 mm
- injection equipment

The simplified hydraulic test bench is a welded construction in the form of racks with support planes.

The bottom plane is fixed to the foundation. The bottom stopper plug with the test medium supply channel is fastened by a bolt to the upper plane with an air wrench. On it, through a sealing gasket, the tested product is installed and fastened with studs and nuts. To the upper stopper plug of the tested product, through the sealing gasket, the upper stopper plug is fastened with studs and nuts.

### Complete set

- bench-pedestal for testing blowout proof equipment
- replaceable counter-adapters ( stopper plugs) for each standard size
- fasteners
- sealing ring in accordance with GOST 28919-91
- air wrench (with a set of interchangeable heads for bolted connections of all types of tested equipment)

### Specifications

Parameters	Value
Diameters of the tested products, mm	50-425
Connection type	Flanged according to GOST 28919-91
Developed test pressure, MPa	2,5...150
Test medium	drinking water according to GOST R 54232-98
Overall dimensions, mm	no more than 1200x1200x900



For testing of blowout and wellhead equipment

Video about this equipment



## Vertical bench for hydraulic tests of blowout proof equipment



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

SPTE.RU

### Purpose

For hydraulic tests of wellhead , injection equipment and blowout proof equipment with a flanged connection type in accordance with GOST 28919-91:

- testing for strength, material density of parts and welds operating under pressure up to 150 MPa
- tightness test of the stop valves gate against the external medium, blowout proof equipment up to 150 MPa



Armoured fencing, page 100



CFS, page 101



PS, page 54



CT-RS, page 60

additionally recommended

The bench includes: clamping unit, control panel, hydraulic station, a set of replaceable stopper plugs

### Tested products

- blowout preventers
- blowout proof equipment (slide gate valves, spools, tee-joints, pipe crosses)
- wellhead equipment – DN 50...425 mm

### Advantages

- quick and easy clamping and sealing of products;
- consists of a foundation slab and three horizontally moving clamps that move synchronously with hydraulic drive;
- fixation and sealing goes by hold-down of the tested product flange to the clamps;
- the bench is equipped with an ergonomic control panel for clamping process;
- controlled clamping force

### Specifications

Parameters	SPTE 1-5	SPTE 1-6
Diameters of clamped flanges of products, mm	165-270	165-685
Connection type	flanged	
Maximum developed clamping force, tf	150	700
Type of clamping device	hydraulic	
Clamps moving	manual (pneumatic)	hydraulic
Test medium	water temperature from + 5°C up to + 40°C	
Overall dimensions of the clamping unit (no more than), mm	700x600x700	1700x1300x1550
Overall dimensions of the control panel (no more than), mm	925x740x1545	



For testing  
of blowout  
and wellhead  
equipment

Video about this  
equipment



■ Vertical bench for hydraulic tests  
SPTE 1-4U



The technical characteristics and the image of the  
equipment are for informational purposes only and can be  
changed according to the specifications of the customer

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**SPECIAL  
TECHNOLOGIES**

Purpose

SPTE 1-4U bench for hydraulic and pneumatic tests of Xmas tree assembly , injection equipment and blowout proof equipment with a flanged connection type of a wellhead equipment in accordance with GOST 28919-91:

- tests for strength and density of external cover material and welds under pressure of the test medium
- leak tightness tests of the valve gate
- tightness tests of the sealing of movable and fixed joints against the external medium
- functional tests

Tested products

- blowout proof equipment (slide gate valves, spools, tee-joints, pipe crosses)
- blowout preventers
- Xmas tree assembly

Connection type

- flanged
- threaded connection for tubing strings

Advantages

- the bench is equipped with a fold-out upper traverse for convenient installation of the tested product
- it is possible to manufacture the bench in a caisson design, when the table top of the hydraulic press is on the same floor level of the section
- the clamping unit is equipped with a control panel for clamp control of the device
- all parts that come into contact with water are corrosion-resistant or anti-corrosion coating
- the power hydraulics of the clamping device operates from the oil pumping station which increases the service life of the bench
- valves test for tightness of the valve gate on both sides does not require reinstallation of the tested valves, which significantly reduces the time for preparation to the tests
- usage of high-pressure hoses with quick-release coupling (QRC) allows to cut the testing time substantially
- the test bench may be promptly adjusted to the face-to-face dimension of the the valve due to the available crossbeam with an electric actuator (depending on the model)
- the method of the fastening of the tested valves allows to inspect the leaks

Specifications

Parameters	Value
Maximum force taken by the bench, tf	220
Nominal diameter (DN) range of the tested valves, mm	50...230
Range of the tested pressure, MPa	up to 150
Distance between the racks, mm	940

Applicability table

	P <sub>test</sub> MPa	14 (28)	21 (42)	35 (70)	70 (105)	105 (157,5)
Dn, mm						
50						
65						
80						
100						
180						
230						





# Pressure sources



Pressure sources

Video about this equipment



## Compressor stations CS

### Air compressor stations (0-40 MPa)



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TECHNOLOGIES

#### Purpose

- pressure source for pneumatic testing of pressure vessels
- outturn, accumulation, control and operation of test medium pressure
- operation in closed spaces of factories, workshops, areas
- regulator to maintain the required pressure

#### Advantages

- safe operation by creating of high pressure
- provides high reliability, easy control and operation, regulation of the technological process of testing and maintenance
- smooth (stepless) regulation of the output pressure
- high accuracy of maintaining of the pressure level
- designed for long-term continuous operation
- installation of a bubble indicator to control leaks
- compressor and receiver can be installed separately from the control panel for soundproofing and safety
- according to the customer's specifications, compressor station can have several test lines

additionally recommended



Armoured fencing, page 100



Receiver

#### Equipment

- control panel for pressure supplying to the tested product, regulation and control of pressure according to precision manometers
- electric compressor for generating the compressed air
- receiver for accumulating the compressed air

#### Options

- the compressor can be integrated into the control panel for compactness of the equipment
- the compressor can be supplied in a soundproofed case

#### Specifications

Parameters	CS-1	CS-2	CS-3
Tested medium	compressed air		
Pressure, MPa	up to 20	up to 30	up to 40
Voltage, V/Hz	380/50		
Receiver volume	50...200		

#### Specifications to the electrical compressor

Wattage	Capacity	Maximum pressure		
2,2 kW	100 l/min	20 MPa	30 MPa	40 MPa
4 kW	230 l/min			
5,5 kW	270 l/min			
5,5 kW	300 l/min			
7,5 kW	350 l/min	20 MPa	30 MPa	40 MPa



Pressure sources

Video about this equipment



## Compressor stations CS-B

### Nitrogen compressor stations (0-150 MPa)



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TECHNOLOGIES

#### Purpose

- pressure source for pneumatic testing of pressure vessels
- outturn, accumulation, control and operation of test medium pressure
- operation in closed spaces of factories, workshops, areas
- regulator to maintain the required pressure

#### Advantages

- safe operation by creating of high pressure
- provides high reliability, easy control and operation, regulation of the technological process of testing and maintenance
- smooth (stepless) regulation of the output pressure
- high accuracy of maintaining of the pressure level
- designed for long-term continuous operation
- installation of a bubble indicator to control leaks

additionally recommended



Armoured fencing, page 100



Nitrogen rack

#### Equipment

- control panel with built-in gas booster (booster compressor) to supply pressure to the tested product, pressure regulation and control by precision manometers
- nitrogen rack for storing the test medium

#### Options

- Operation of the compressor station with other inert gases is possible

#### Specifications

Parameters	CS-4B	CS-5B	CS-6B
Tested medium	nitrogen		
Pressure, MPa	up to 45	up to 105	up to 150
Powering medium	Compressed air 0,6...0,8 MPa		
Nitrogen rack volume, l	50...200		
Maximum pressure of the stored gas in the nitrogen rack, MPa	20...30		

#### Recommendations

- carry out tests with the installation of armored fencing





Pressure  
sources

## ■ Pumping station SPTE PS



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TECHNOLOGIES**

### Purpose

- pressure source for pneumatic testing of pressure vessels
- control panel for the test bench

### Functions

- stepless pressure control from 0.5 to 150 MPa
- visual inspection by high-precision pressure gauge
- used as a separate pressure source and as part of the test benches
- equipped with an additional channel for pneumatic tests (0.6 MPa) for valve tightness and for quick removal of water after the end of the test

### Options

- built-in computer system for measuring and registering CT-RS
- built-in unit of automatic registration
- a pneumatic gun for purging and drying after hydrotests
- additional high-pressure air channel for carrying out the pneumatic tests
- additional high pressure hydraulic channels
- installation of devices for measuring air and water leaks

### Advantages

- safe operation by creating of high pressure
- provides high reliability, easy control and operation, regulation of the technological process of testing and maintenance
- smooth (stepless) regulation of the output pressure
- high accuracy of maintaining of the pressure level
- all elements come into contact with water are made of corrosion-resistant materials or have anti-corrosion coatings
- processing and cleaning-out systems of feeding and powering medium
- additional outputs for connecting the control measuring instruments
- construction of the station provides a convenient and easily maintenance of station elements



additionally recommended



CT-RS, page 60



CFS, page 101

### Specifications

Type	PS-1	PS-2	PS-3	PS-4	PS-5	PS-6	PS-7
Output pressure, MPa	0,2...4	1,0...10	1,0...25	1,6...45	6...75	10...105	50...150
Output air pressure, MPa	0,6						
Dimensions, mm	1175x740x1640						
Weight, kg	260						





Pressure  
sources

## ■ Automated pumping station SPTE PS-A



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CJSC Enterprise  
**SPECIAL  
TECHNOLOGIES**

### Purpose

- pressure source for pneumatic testing of pressure vessels
- used as a separate pressure source and as part of the test benches

### Functions

- automatic gaining and maintenance of pressure at a given level
- pressure measuring of the test medium with an error no more than 1%
- relieves pressure automatically after finishing the tests
- stepless pressure control from 0.5 up to 150 MPa
- visual inspection by the precision pressure gauge
- measures temperature of the environment and the surrounding air
- measures pressure at the test points during the test
- displays information in tabular and graphical form
- stores test results
- forms a database for each product
- transfers data to another computer via a connection via LAN (RS-485, Ethernet)
- prints the test results in paper form
- test medium: water, air, industrial oil, industrial oil, kerosene

### Options

- built-in computer system for measuring and registering CT-RS
- built-in unit of automatic registration
- proportional clamping system (excludes axial load on the tested product)
- additional high-pressure air channel for carrying out the pneumatic tests
- additional high pressure hydraulic channels
- installation of devices for measuring air and water leaks

### Advantages

- filter in front of the pressure relief valve
- safe operation by creating of high pressure
- provides high reliability, easy control and operation, regulation of the technological process of testing and maintenance
- smooth (stepless) regulation of the output pressure
- high accuracy of maintaining of the pressure level
- all elements come into contact with water are made of corrosion-resistant materials or have anti-corrosion coatings
- processing and cleaning-out systems of feeding and powering medium
- additional outputs for connecting the control measuring instruments
- construction of the station provides a convenient and easily maintenance of station elements

### Specifications

Parameters	Value
Pressure, MPa	0,5...150
Test medium	water of 12 purity class according to GOST 351232-98, air class 7 according to GOST 17433-80
Powering medium	compressed air of class 7 in accordance with GOST 17433-80
Powering medium pressure (air), MPa	0,6...0,8
Test medium pressure supplied to the station, MPa	0,1...0,2



Pressure  
sources

Video about this  
equipment



## Pumping station of mobile version SPTE PS-M



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TECHNOLOGIES**

### Purpose

Generating and automatic maintenance of working medium high pressure. The mobile pumping station is used as a separate source of pressure, and as part of test benches

### Functions

- made as a lightweight frame
- complete with a container for the test fluid circulation
- control medium - compressed air enriched with oil, for preventing the friction of the pump cylinders (multiplier)
- possibility to install an automatic registration unit

### Options

- possible modification on a frame with wheels equipped with a container for test fluid circulation

### Advantages

- safe operation by creating of high pressure
- low noise and power consumption
- performed for any pressure range
- provides high reliability, easy control and operation, regulation of the technological process of testing and maintenance
- smooth (stepless) regulation of the output pressure
- high accuracy of maintaining of the pressure level
- all elements come into contact with water are made of corrosion-resistant materials or have anti-corrosion coatings
- processing and cleaning-out systems of feeding and powering medium
- additional outputs for connecting the control measuring instruments
- construction of the station provides a convenient and easily maintenance of station elements

### Specifications

Name	PS-1m	PS-2m	PS-3m	PS-4m	PS-5m	PS-6m	PS-7m
Test medium	water, industrial oil, antifreeze, kerosene						
Powering medium	compressed air of class 7 in accordance with GOST 17433-80						
Output pressure, MPa	0,2...4	1,0...10	1,0...25	1,6...45	6...75	10...105	50...150
Dimensions, mm	905x660x752						
Weight, kg	no more than 110						



Источники  
давления

## ■ Computer measuring and registration system SPTE CT-RS



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### Purpose

Designed to measure the parameters of the test process and save the results of previous and current tests.

Builds graphical dependencies, stores and prints the valve test reports and reports of other products, working under pressure.

Works with various benches produced by CJSC Enterprise "Special technologies".

All registration and computational procedures are performed in accordance with GOST 9544-93 and GOST 95-44-2005 and are designed for tests of:

- strength-density of body parts and gaskets connections
- the moment of the gate actuation during the test of the relief valves
- tightness of the valve gate.

### Functions

- pressure registration of the test medium with an error no more than 1%
- registration of environment temperature
- registration of pressure changes during the test
- display of information in tabular and graphical form
- registration, storage and printing of test results
- to create a database for each product
- to transfer data over the network

The equipment meets the requirements and standards of the State Register of Measuring Instruments and approved by the Federal Agency for Technical Regulation and Metrology.







Equipment  
for repair of pipeline  
valves





Equipment  
for repair of  
pipeline valves

## ■ Sandblast cabinet KSO

### Purpose

- valve cleaning
- removal of rust, sand and scale
- obtaining the required roughness
- removal of layers, matting, hardening, deburring
- preparation of valve surfaces before anti-corrosion coatings (paints and varnishes, metallization coatings)

The camera uses light abrasive materials: electrocorundum, silicon carbide with a fraction of 0.1-2.0 mm. and others.

Climatic modification of the chamber - boreal climate 4, according to GOST 151550-69 and GOST 15543-70.

The camera is designed to work in closed rooms without connections to ventilation systems.

The chamber is equipped with a system for removing of contaminated air from working area and its cleaning, with simultaneous cleaning of the abrasive material from large inclusions and dust.

The camera must not be used in an explosive environment.

### Specifications

Parameters	Value
The maximum dimensions of the processed parts, * mm	600x600x600
Workpiece weight, kg	up to 300
Weight, kg	500
Productivity, m2/hour	1...1,2
Overall dimensions,* mm	2225x1250x2000



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the technical specifications of the customer

## ■ Machine for valves parts washing SPTE WM-1

### Purpose

- washing of valves, components and assemblies in the chamber of a dead-end type

### Advantages

- process cycle (movement of the carriage with items, dampers and pumping station operation, washing time) is set by the operator and is performed automatically
- the temperature of the cleaning solution is kept at the required level for the whole period of operation
- simple and functional installation

### Specifications

Parameters	Value
Maximum dimensions parts to be washed *, mm	800x850x650
Warm-up time of the washing medium, hour	up to 2
Washing liquid temperature, °C	50...80
Duration of the washing cycle, min	2...10
Carriage drive electric motor power, kW	1,1
The total power of all electric motors and electric heaters, kW	40
Overall dimensions,* mm	2380x1500x2110
Machine weight, kg	1450

\*at the customer's request



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Equipment  
for repair of  
pipeline valves

Video about this  
equipment



## ■ Workplace for assembly or disassembly of valves

Designed for certain types of operation according to the technical specifications of the customer and is completed with necessary elements and tools for ensuring the performing functions.

### The basis of the workplace

- locksmith's table with lockers and protective screen, lamp and junction box for connecting the electrical equipment

### Completion according to the customer's specifications

- workbench with drilling machine and vise units
- vise units for disassembling and assembling of valves
- setting device for disassembly and assembly
- a device for dish-shaped spring hardening
- bench work tools
- rack with pivoting breaking boom for pneumatic tool, air preparation unit, pneumatic impact wrench with replaceable heads
- bench-pedestal for disassembly and assembly of valves with DN 15-300 mm, DN 300-600 mm and relief valves with DN 15-300 mm
- stairs with a flyover
- bench for assembly and disassembly of injection molding machines and drive settings



Rack with pivoting articulated boom for pneumatic tool



stairs with a flyover



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Bench-pedestal for disassembly and assembly of pipeline valve DN 150-300 mm



Pedestal for disassembly-assembly of pipeline valves DN 300-600 mm



bench for assembly and disassembly of injection molding machines and drive settings



Workbench with drilling machine and vise units



## ■ Blade-edging machine (bench) ST 3-1R



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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### Purpose

- machining (with a cutter) of the sealing surfaces of valve housing and gate wedges

### Bench distinctive features

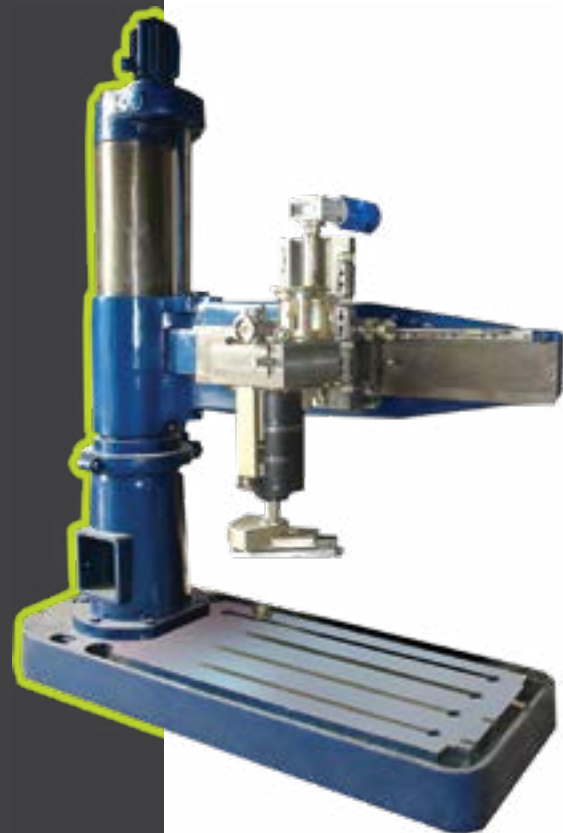
- the presence of a frequency-controlled spindle drive with smooth launching
- operation in closed industrial areas of the factories, workshops in areas with a temperate and cold climate, placement category NF 4 GOST 15150-69

### Packing list

- blade-edging machine (bench)
- slab made in the form of a rigid casting, reinforced with a large number of longitudinal and transverse ribs
- tilting table with an adjustable tilt angle for the installation of the workpiece

### Specifications

Parameters	Value
Wedge gate valve machining, mm	50...600
Surface hardness after casting, no more, HRC	40
Spindle speed, rpm	280
Spindle speed control	stepless
Installed power, kW	no more than 5
Weight, kg	no more than 3500
Overall dimensions, mm	2225x1250x2000
Energy carrier	current electricity 380 / 220V, 50Hz







Equipment  
for repair of  
pipeline valves



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## ■ Special technological equipment for blade-edging machining

### Purpose

- mechanical (blade) machining of sealing surfaces of valve housing and gate wedges
- identity of the wedge chamber angles in the housing and at the wedge, which provides a high tightness in the gate of the assembled gate valve
- equipment is compatible with screw-lathes, turning-and-boring lathes and screw-cutting lathes

### Advantages

- does not require the metrological equipment for measuring of angles and subsequent adjustment
- tooling is used in lathe machines depending on standard sizes of processed valves (see the table)
- basic version with a wedge chamber angle - 10°

### Specifications

Specifications	Range DN, mm	Tilt angle, °
STO-1-50/80R	50...80	6, 8, 10
STO-1-50/150R	50...150	
STO-1-200/400R	200...400	
STO-1-500/600R	500...600	

## ■ Adjustable tilt table

### Purpose

- high-precision machining of the sealing surfaces of the gate valves housing and wedges of valves at the required angle of inclination and their subsequent grinding

### Specifications

Parameters	Value
Range of DN use, mm	200...600
Model compatibility with machine tool equipment	turning-and-boring lathe 1525
Table tilt angle, °	12...0...+12
Installation accuracy, min.	±1
Working plate diameter, mm	1100
Dimensions, mm	1110x1110x300
Weight, kg	790



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## ■ Automated system for electroarc welding SPTE EW



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### Purpose

For mechanical repair surface welding with solid wire of sealing surfaces:

- wedges
- gate valve housing
- valve housing
- valve housings and spools

### Principle of operation

- the surfacing process is automatic
- the installation can be performed as with a rotating die and rotating table
- the consumption of the surfacing wire depends on the diameter and wear of valves
- the unit is completed with a power source for the arc
- operation in the protective gases medium or under a layer of flux
- table tilt – 0°, 5°, 10°

### Advantages

- eliminates the need for special training through the automating of the operation
- quality of preparation and the surfacing process conducting allow the absence of splashes, overheating of parts
- use of a surfacing installation in the shielding gas medium is safe due to the use of a forced cooling automatic system of the welding tool
- all this allows to increase the service life of the tool, makes the process reliable, safe, and technologically perfect

### Specifications

Parameters	EW-1	EW-2	EW-2-1	EW-3
Welding current, A	50... 500			
Surfacing wire diameter, mm	1,6...4	2...5	2...5	2...5
Changing of wire feed rate	stepped			
Rotation speed changing of the faceplate / die	continuous			
Range of use by surfacing DN, valve gate housing (wedge), mm	50...200	50...600	50...600	200...800
Range of use by surfacing DN, valve housing (spool), mm	40...200			
Rotation object	product	product	die	product
Overall dimensions, mm	1680x1400x2400	1880x1900x2700	1200x1250x3375	2200x1600x3275
Weight (installation, power supply, control panel), kg	700; 300; 100	850; 300; 100	1130; 300; 100	700; 300; 100



Equipment  
for repair of  
pipeline valves

Video about this  
equipment



## ■ Grinding and lapping machines SPTE 3-3, ST 3-4



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### Purpose

- for lapping and grinding of flat parts made of various steels, cast iron, including gate valve wedges, spools valves, pump mechanical seals, etc

### Construction

- foundation plate
- high quality cast iron lapping disc
- device for smooth start and speed control (control panel operating)
- timer that allows to set the processing time
- lapping abrasive feeder

### Advantages

- simultaneous processing of a batch of small parts
- automatic supply of lapping agent
- easy replenishment of lapping agent or its replacement
- the machine provides high productivity
- achievable flatness up to 0.6 microns, roughness up to 0.05 microns (10..12 grade)
- cassettes providing even wear of the lap

### Equipment

- replaceable cassettes
- set of fill pieces
- individual lamp
- set of weights

### Additional accessories

- set of interference glasses
- device for determining roughness

### Specifications

Model	SPTE 3-3	SPTE 3-4
Nominal diameter of valve DN for wedge gate valves, mm	50...500	15...200
Nominal diameter of valves DN for valve spools, mm	50...200	15...200
Cast iron lap diameter, mm	1000	530
Number of installed cassettes, pcs (inner diameter)	3 (405 mm) 1 (680 mm)	3 (205 mm)
For grinding	interchangeable tooling with self-adhesive different grit sandpaper	
For lapping	replaceable equipment made of high quality cast iron	
Lap speed, rpm	5,0...37,5	5,0...37,5
Drive power, kW	3,0	0,75
Power supply, V/Hz	380/50	380/50
Overall dimensions, mm	1650x1495x1150	1020x820x1000
Weight excluding the replaceable kit, kg	1300	350





Equipment  
for repair of  
pipeline valves

Video about this  
equipment



## ■ Grinding and lapping machine SPTE 3-1, ST 3-1M



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### Purpose

- for grinding and lapping flat seal surfaces of housings and wedges of valves with DN 50 - DN 600 mm, DN 15 - DN 300 mm

The adjustable angle of inclination of the XY table allows to machine the sealing surfaces of valves with different angles of the wedge chamber.

### Advantages

- clean surface treatment of both housings and wedges, or spools
- minimal time resource consumption during the tool changeover and process control
- high performance and maintainability
- automatic mode of products processing using rate speed control and timer
- a wide range of areas to be treated
- ergonomics in process control
- has pull-out storage drawers
- digital device for precise setting of the inclination angle

### Packing list

- machine
- adjustable tilt table
- replaceable equipment
- remote control

### Specifications

Parameters	SPTE 3-1	SPTE 3-1M
Range of use DN, mm	50...600	15...300
Spindle speed, rpm	14...200	
Spindle speed control	stepless	
For grinding	interchangeable tooling with self-adhesive rough abrasive cloth	
For lapping	replaceable equipment made of high quality cast iron	
Electric motor power, kW	up to 2,2	
Overall dimensions, mm	1505x1635x2530	1500x1050x2950
Test bench weight in a complete set, kg	1420	1280



Equipment  
for repair of  
pipeline valves

## ■ Lapping test bench SPTE 3-1/2



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### Purpose

- for grinding and lapping flat seals of housing and wedge surfaces of gate valves of DN 8 - DN 300 mm

### Advantages

- the bench is equipped with two lapping tables made of high quality cast iron, which gives a multiple capacity increase : one table with an adjustable tilt, second table is rotating for horizontal surfaces
- clean surface treatment of housings and wedges or spools
- minimal time consumption during the tool changeover and process control
- high performance and maintainability
- automatic mode of products machining using speed control and timer
- digital device for setting of the exact angle
- a wide range of areas to be treated
- ergonomics in process control
- the adjustable angle of inclination of the XY table allows to machine the sealing surfaces of valves with different angles of the wedge chamber

### Specifications

Parameters	Value
Range of use, mm	8...300
Maximum diameter of the valve flange installed on the table, mm	500
Maximum face-to-face length of valves installed on the table, mm	700
Maximum weight of installed components, kg	500
Dimensions of the working surface of the inclined table, mm	500x500
Table tilt angle, degrees	0...12
Dimensions of the working surface of the rotating table, mm	Ø 500
Table rotation rate	2-20
For grinding	interchangeable tooling with self-adhesive different grit sandpaper
For lapping	replaceable tooling from high quality cast iron
Spindle speed, rpm	10...280
Power consumption, kW	2
Power supply, V / Hz	380/50
Overall dimensions, mm	1800x1200x2600
Weight, kg	1300





Equipment  
for repair of  
pipeline valves

Video about this  
equipment



## ■ Portable bench for repairing of valve sealing surfaces SPTE 4-1

Portable benches for repairing of sealing surfaces of gate valve housings without removing them from pipelines and gate valves wedges.

High quality of the machined surface is achieved due to the design of the machining head and making corrections, which create a complex plane-parallel movement of the tool along the processed surface.

Achievable flatness up to 1  $\mu\text{m}$ , roughness up to 0.08 microns (10..12 class).

### Construction

- fixing device for mounting on the middle flange
- pneumatic/electric drive
- interchangeable machining heads for grinding and lapping
- setting device for processing wedges

### Equipment

- carrying case
- device for processing wedges
- installation devices
- pneumatic/electric drive
- interchangeable tooling for various diameters



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### Specifications

Type	Range of use DN, mm	Drive	Immersion depth, H mm	Minimum distance, L mm	Power, supply voltage	Air flow, operating pressure
SPTE-4-1	50...250	Electric	650	40	1100 W, 230 V	
SPTE-4-1p		Pneumatic				1,6 m <sup>3</sup> /h, 0,6-0,8 MPa
SPTE-4-2	200...600	Electric	1000	60	1300 W, 230 V	
SPTE-4-2p		Pneumatic				1,6 m <sup>3</sup> /h, 0,6-0,8 MPa
SPTE-4-3	600...1000	Electric	1300	80	1600 W, 230 V	
SPTE-4-3p		Pneumatic				1,6 m <sup>3</sup> /h, 0,6-0,8 MPa

For grinding	interchangeable tooling with self-adhesive different grit sandpaper
For lapping	replaceable tooling from high quality cast iron





Equipment  
for repair of  
pipeline valves

Video about this  
equipment



## ■ Bench for machining of spherical surfaces SPTE 3-4B



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#### Purpose

- restoration of spherical surfaces from steel and cast iron during their manufacture and repair

#### Construction

- foundation plate
- frequency controlled electric drive with soft start
- device for smooth start and speed control (control panel)
- timer that allows to set the processing time
- cooling mixture supply

#### Advantages

- parts machining in different modes (speed control and amplitude, as well as lap time)
- automatic cooling mixture supply
- easy replenishing of the lapping agent (cooling mixture) and replacing
- the machine provides high productivity
- a wide range of settings via the control panel

#### Equipment

- control panel for motor and pump
- individual lamp
- workholder for product installation
- support hook for processing element
- coolant tank
- coolant pump

#### Specifications

Name	Value
Surface type of workpieces	spherical
Voltage, V/Hz	380/50
Installed capacity (no more), kW	1,05
Rotational speed of the main shaft, rev/min	from 13,9 up to 41,7
Rotational speed of the drive motor shaft, rev/min	1400
Coolant tank capacity, l (no more)	80
Overall dimensions, mm	1240x1100x1415
Weight, kg (no more)	350



Equipment  
for repair of  
pipeline valves



## ■ Grinding and lapping accessories STO 2-15/300, STO 2-50/600



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### Purpose

- grinding (with little wear) and final machining (lapping) of the sealing surfaces of the valve parts

### Construction

- table with an angle of inclination 0-10° with clamps
- set of tool adapters
- a set of replaceable laps made of high quality material

### Optional equipment

- set of interference glasses
- device for roughness determining

### Advantages

- tooling ensures high performance
- achievable flatness up to 0.6 microns, roughness up to 0.05 microns

### Specifications

Type	Part	Purpose	Range of use DN, mm
STO-2-15/300	Housing/wedge	grinding/lapping	15...300
STO-2-50/600	Housing/wedge	grinding/lapping	50...600

For grinding	interchangeable tooling with self-adhesive different grit sandpaper
For lapping	replaceable tooling from high quality cast iron



# Equipment for repair of pipeline valves



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Equipment  
for pipelines

Video about this  
equipment



## ■ Pipe test bench



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The bench is designed for hydraulic testing of pipes on strength and density.

By moving of the movable support, the tested pipe can be of various lengths.

The bench is combined with a hydropneumatic station to generate the test pressure.

The bench can have one or several test stations.

The fixation clamps are equipped with high-precision pressure gauges and the tested product is hermetically fixed on the bench. Clamps are controlled by the hydraulic pump included to the kit.

The bench is equipped with a manifold unit for spilling of the process medium supply.

### Complex composition

- bench foundation plate for sealing and fixing the pipes
- movable support
- set of accessories (plugs, inserts, discs)
- high pressure hose
- spare parts kit
- pneumohydraulic station PS

### Connection types

- flanged
- nipple joint
- sleeve

### Specifications

Name / Parameters	Bench for flanged connection	Bench for nipple joint connection and sleeve connection
Nominal diameter DN, mm	40...200	6; 10; 15; 20; 25; 32
Process medium pressure: - compressed air, MPa - water, MPa	0,6...0,8 0,1...0,2	
Outlet pressure of test media: - water, MPa - air, MPa	up to 4,0 up to 0,6	up to 16,0 up to 0,6
Pipe length	It can be different. It is adjusted by the operator by moving of the movable support to the required distance.	
Overall dimensions, mm	1690x955x1310	755x605x1140
Weight, kg	478	170



Equipment  
for pipelines

Video about this  
equipment



## ■ Device for branch joint with a manual drive SPTE-UV-1R, SPTE-UV-2R



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### Purpose

- branch joint into the existing process pipeline under product pressure (transported medium) with preservation of tightness by tie-in
- the tie-in process is carried out by cutting of a hole through pre-welded to the pipe branch pipe with a flange and a flange-mounted gate valve (ball valve)
- branch joint is carried out by a manual drive

### Purpose area

- repair and installation of pipelines for various purposes
- the device is used in the field environment, on industrial objects
- ensures that there is no need for preliminary pipeline shutdown
- repair and installation of pipelines for various purposes

### Specifications

Parameters	SPTE-UV-1R	SPTE-UV-2R
Maximum pressure in the cut pipeline, MPa	6,3	
Diameter of the cut pipeline, mm	45-1420	
Maximum wall thickness of the cut pipeline, mm	22	
Range of use DN	20; 25; 32; 40; 50; 65; 80; 100	50; 65; 80; 100; 125; 150; 200
Tool stroke without refixing, mm	100	120
Maximum length of assembly branch-gate valve-adapter, mm	500	900
Cutting tool rotation drive	manual	
Cutter feed	manual	



Equipment  
for pipelines

Video about this  
equipment



## ■ Device for branch joint with an electric drive SPTE-UV-E



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### Purpose

- branch joint into the existing process pipeline under product pressure (transported medium) with preservation of tightness by tie-in
- the tie-in process is carried out by cutting of a hole through pre-welded to the pipe branch pipe with flange and a flange-mounted gate valve (ball valve)
- branch joint is carried out by an electric drive

### Purpose area


- repair and installation of pipelines for various purposes
- the device is used in the field environment, on industrial objects. Climatic category NF1
- ensures that there is no need for preliminary pipeline shutdown

### Working environment in the pipeline

- oil
- gas
- steam
- water

### Specifications

Parameters	1E	2E	3E	3EB
Maximum pressure in the cut pipeline, MPa	6,3			
Diameter of the cut pipeline, mm	45-1420			
Maximum wall thickness of the cut pipeline, mm	22			
Range of use DN	20; 25; 25; 32; 40; 50; 65; 80; 100	50; 65; 80; 100; 125; 150; 200	65; 80; 100; 125; 150; 200; 250; 300	100; 125; 150; 200; 250; 300; 350; 400; 500
Tool stroke without refixing, mm	100	120	140	155
Maximum assembly length of bend-gate valve-adapter, mm	500	900	1300	2400
Rotation drive power of the cutting tool, kW	1,3	2,2	3,0	
Spindle rotation, rpm	100 / 300	22,5	18	
Cutter feed	manual			
Explosion protection	not available	1ExdIIBT4		



Branch joints can be equipped with a pneumatic drive



Equipment  
for pipelines

Video about this  
equipment



## ■ Test bench for bellows expansion joints



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TECHNOLOGIES**

### Purpose

- for hydraulic testing of bellows expansion joints on tightness and strength

### Design features

- movable crossbeam for adjustment to the face-to-face length of bellows expansion joints with a digital scale
- removable clamps with the hydraulic drive for bellows expansion joints with flanges
- replaceable sealing elements for various standard sizes
- vertical position of bellows expansion joints

### Specifications

Parameters	Value
Maximum thrust force perceived by the bench, tf	350
Bellows expansion joint length, mm	300-1740
Maximum diameter of the bellows expansion joint, mm	1400
Crossbeam speed, mm/min	280
Capacity, kW	7,5
Power supply, V/Hz	380/50
Dimensions, mm	2450x1750x3550
Weight, kg	7800





# Auxiliary equipment



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## ■ Armored tank for pneumatic and hydraulic tests

### Purpose

- protection of users conducting pneumatic and hydraulic tests on strength and tightness
- control of leaks by the bubble method during pneumatic tests

### Technical description

- strong structure, welded from square and angle sections and jacketed with a sheet material up to 6 mm thick
- special protective device for pipeline valves testing on strength and tightness with a submersion of the product in a liquid medium, with which this structure is filled. It allows to conduct tests safely for humans
- design development is carried out on the basis of strength calculation and digital simulation of the testing process and blowout of the tested product
- equipped with bulletproof glasses
- armored cover can be designed with a mechanical lifting device controlled from the console



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## ■ Armored chamber for testing

### Purpose

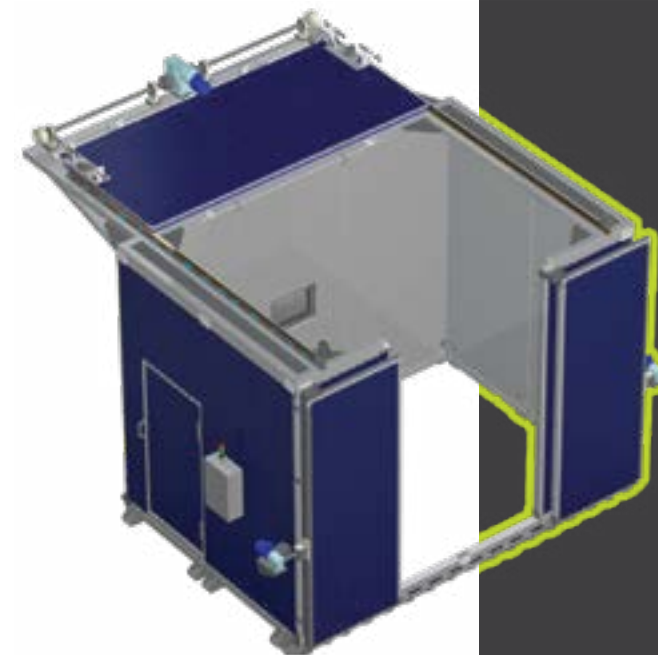
- protection of users conducting pneumatic and hydraulic tests on strength and tightness

### Technical description

- armored chamber is welded from square and angle sections, jacketed with a sheet material up to 6 mm thick
- movable door with a lock is mounted on the front wall, two viewing windows made of armored glass are on the side wall to monitor the testing process, only a test bench is in the armored chamber
- other components of the test bench (control panel, pneumatic hydraulic station, registration and measuring system) are placed outside of it
- can be equipped with a lifting device or a sliding roof
- design development is carried out on the basis of strength calculation and digital simulation of the testing process and blowout of the tested product

Completed with a video surveillance system:

- at least two color dome cameras with a two-plane positioning system and digital zoom
- camera control panel
- color display with a diagonal of at least 14 inches
- commutation switch



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## ■ Armored fencing for equipment testing

### Purpose

- protection of users conducting pneumatic and hydraulic tests on strength and tightness

### Technical description

- heavy prefabricated panel modular structure with a wall thickness up to 6 mm
- the structure has a hinged door with a lock
- viewing windows made of armored glass to monitor the testing process
- only the test bench is placed in the armored fencing, control panel, pneumatic hydraulic station, registration and measuring system are placed outside of it
- design development is carried out on the basis of strength calculation and digital simulation of the testing process and blowout of the tested product

Completed with a video surveillance system:

- at least two color dome cameras with a two-plane positioning system and digital zoom
- camera control panel
- color display with a diagonal of at least 14 inches
- commutation switch

The overall dimensions of the armored fencing are to be agreed with the customer



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## ■ Circulating fluid station for hydraulic test benches CFS

### Purpose

- liquid supply of the test process

### Completeness

- the large tank fills the tested product with the test liquid. The tank is reversible - the liquid gets back to the tank from the product after testing
- a tank of small capacity, which is power supply of the pneumohydraulic station, ensures uninterrupted operation of the entire station, by eliminating of foreign bodies insertion (sand, scale, debris) to the control lines, thereby it significantly extends the service life of the equipment

### Advantages

- equipped with a high-performance centrifugal pump and a filtration system that provides liquid purification after prolonged and repeated use, which provides the operation of the equipment without a sewerage system and water supply

### Specifications

- volume - 100, 250, 500, 1000, 1500, 2000, 2500, 3000 l
- head - not less than 15 m H<sub>2</sub>O
- energy carrier - electric current 220/380 V, 50 Hz
- power - no more than 1 kW
- productivity - not less than 60 l/min



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■ Drilling machine for gaskets cutting  
and drilling SPVP-1



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Purpose

- cutting out gaskets made of paronite and other non-metallic materials
- drilling, countersinking, boring
- tapping

Equipment

- vertical drilling machine 2C132 (2H135)
- set of interchangeable clamps
- 2 sets of knives
- shank
- protective cover
- machine-tool attachment

Advantages

- ensures precision manufacturing of gaskets of various materials, cover the manual work, reduces injury risk and enhances production culture

Specifications

Parameters	Value
Range of cut gaskets, mm	60 (internal) up to 500 (external)
Connection size of the shank taper included in the kit for gaskets cutting	Morse taper 4 GOST 25557-82
Overall dimensions of the table for gaskets cutting: diameter / height, mm	560/76
Overall dimensions of the machine, mm	1055x850x2680
Machine weight, kg	1458
Set for gaskets cutting, kg	50
Drilling range of steel, mm	3-32





## ■ Stationary machine for gaskets cutting SPTE CG-2



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### Purpose

- cutting of round, rectangular or free-form gaskets from sheet material of 1 ... 4 mm thick

### Description and principle of operation

- the device consists of a base unit, on which a bracket support is installed, along the guideways of it the carriage roller is moved with the help of a lead screw
- using a bracket support, an electromechanical cutting device is attached to the carriage roller
- a movable center moves in the guide grooves of the base, the position of which is fixed with a screw
- the ruler is used to count the values of the radii of the cut-out gaskets

### Advantages

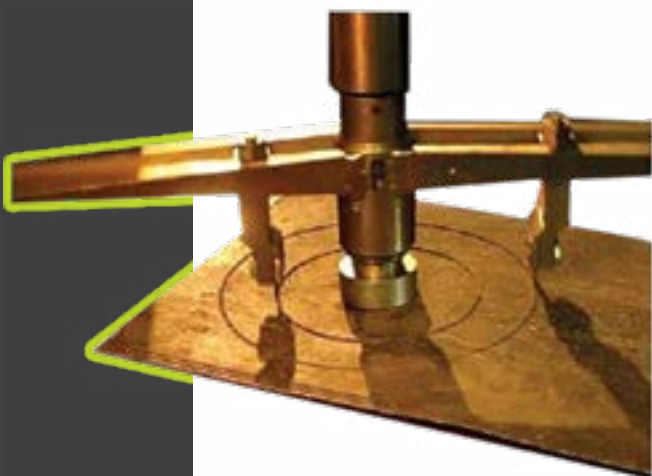
- easy-to-use equipment, works efficiently
- the accuracy of gaskets manufacturing of any non-metallic materials
- covers manual work, reduces the time for gaskets cutting, improves production culture, reduces the risk of injury

### Gasket material

- paronite
- metal asbestos sheet
- fluoroplastic (additional heating is not needed)
- vinyl plastic
- rubber
- other reinforced and unreinforced materials

### Specifications

Parameters	Value
Minimum inner diameter of the gasket, mm	90
Maximum thickness of the cut sheet, mm	4
Cutting speed, not less, m/min	7
Maximum outer diameter, mm	1500
Power supply, V/Hz	220/50
Power consumption, kW	0,6
Overall dimensions, mm	1750x1030x1200
Weight, kg	200



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## ■ Device for gaskets cutting PVP

### Purpose

- cutting out round gaskets of paronite and other non-metallic materials

### Equipment

- adapter
- set of knives made of high-alloy steel
- ruler
- clamps

### Advantages

- covers manual work, reduces the gaskets cutting time, increases production culture, reduces the risk of injury
- ensures precision manufacturing of gaskets of any non-metallic materials
- simple, convenient and trouble-free design, easy to operate

### Specifications

Parameters	PVP-1	PVP-2
Dimensions of cut-out gaskets, mm	60...500	100...1200
Overall dimensions, mm	560x270	800x350
Weight, kg	50	90

## ■ Filter-silencer for pneumatic testing of relief valves

### Purpose

- reduction of noise and exhaust filtration during pneumatic testing of relief valves

### Filter-silencer Specifications

Parameters	Value
Filtration type	hydro
Range of use, DN, mm	50-400
Dimensions, mm	1260x340x1480
Height from the base of the transition piece axis, mm	610
Weight, kg	no more than 75

### Hydraulic table LTH-300A Specifications

Parameters	Value
Weight-carrying capacity, kg	300
Maximum lifting height, mm	900
Minimum table height, mm	340
Handle height, mm	1000
Dimensions, mm	935x600
Weight, kg	75



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■ Vacuumizing machine



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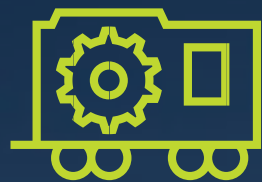
Purpose

- for air evacuating from the tested item (valves) for further filling with the test medium (water)
- vacuumizing allows to fill quickly the test item with water without air residues
- can be used in other industries where it is required to create a vacuum in the vessel
- automatic control system
- used in conjunction with horizontal and vertical test benches produced by CJSC Enterprise “Special Technologies”
- required by valves testing with DN 400 mm and more

Specifications

Parameters	Value
Power supply, V/Hz	380/50
Power consumption, kW (no more)	0,55
Productivity, m³/hour (no more)	12
Minimum residual pressure created by the vacuum pump, mbar	0,007
Overall dimensions, mm (no more):	885x730x1095
Weight, kg (no more)	325





# Mobile workshops



CJSC Enterprise  
**SPECIAL  
TECHNOLOGIES**





Mobile workshops

Video about this equipment



## ■ Mobile complexes SPTE-MRS



The technical characteristics and the image of the equipment are for informational purposes only and can be changed according to the specifications of the customer

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Mobile complexes for repair and testing are required in the conditions of production and operation, directly at the fields, as well as in pipeline sections, where pipeline valves are operated. These complexes allow to work in the field.

The complete set of mobile systems depends on the required types of testing and repair work, **i.e. equipment is based on the customer's specifications.**

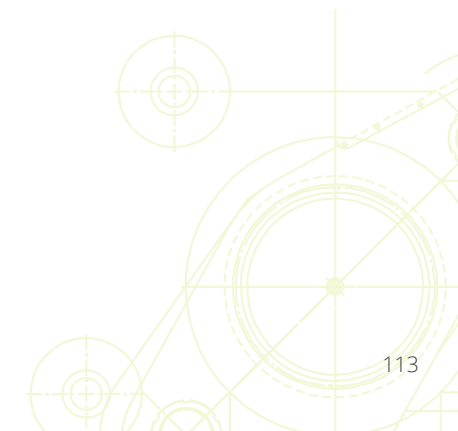
The mobile complex allows to carry out the necessary repairs and testing:

- at the fields at the mouth of oil and gas wells (complexes for blowout equipment ST-MK)
- in places of operation of various types of pipeline valves (complexes for pipeline valves)
- in the places of operation of gas cylinders (complexes for the inspection of gas cylinders STI-NS-PK2)

**Mobile complexes  
from CJSC Enterprise  
"Special Technologies"  
have high functionality,  
ergonomics, safety.**

### Construction

- strengthened body of a 40-foot container, which allow multiple loading/unloading, both on the vehicle chassis and on the railway platform
- test area is isolated from the operator control room with an armored wall and an armored window and equipped with a video surveillance system
- pressure source operates in automatic mode, with the ability to record test data
- comfortable operator room
- workplace for repair is equipped with all the necessary tools and a lifting mechanism
- container is insulated, heating and air conditioning system are installed in the working and operator areas, which allows to work in any climatic conditions



## ■ Mobile complex SPTE-MRS



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### Mobile complexes for blowout equipment



- pumping station for hydrotesting
- recycling water supply station
- computer measuring registration system ST-RS
- generator
- compressor
- plugs and fasteners for all standard sizes of products
- high and low pressure hoses up to 300 cm long

### Mobile complexes for pipeline valves

- mobile pumping station
- recycling water supply station
- test bench for pipeline valves and relief valves adjustment
- bench for relief valves springs testing
- workplace for assembly and disassembly of valves
- measuring and recording computer system ST-RS
- portable machine for repairing of valves sealing surfaces
- branching joint into the existing pipeline
- gasket cutter
- generator
- compressor
- stopper plugs and fasteners for all standard sizes of products
- pneumatic impact wrench and other necessary bench tool
- high pressure hoses

### Mobile complexes for the inspection of gas cylinders

- post-storage of cylinders in a block-box
- post-cleaning of internal surfaces of cylinders
- post-determination of mass and capacity
- post-hydraulic tests
- post-drying of inner surfaces of cylinders
- post-loading of cylinders into block-box
- container unit
- stamping station for cylinders
- liquid circulation station ST-250
- control panel for testing process
- 5 m long high-pressure hoses with quick-release couplings and fasteners for all standard sizes of products





The products of CJSC Enterprise “Special Technologies”  
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