

## "KHARKOVSTAND" LLC

Ukraine, Kharkov region, Pesochin 62416, st. Transportatna, 1 tel. (057) 742-75-34; mob. +38 067 577-22-43  
code 06653341 settlement account 26000000076321 in UniCredit bank ("Ukrsotsbank") MFO 300023



### Album of the equipment of domestic manufacture for subway and railway.



Ukraine, Kharkov - 2016



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### *Introduction*

LLC "Kharkovstand" was founded in 1989, the first samples of test equipment for subways and railways have been developed and put into operation in 1989 - 1990. The basis of the team consists of professionals with extensive experience in leading research and design enterprises.

We have over 25 years experience in the development and implementation of non-standard technological equipment: assembly/disassembly stand; inspection stand; proving stand; rebuilt bench; test unit; pneumatic test rig; air-brake test rack; test control valves stand; stand for testing of air distributors; stand test for brakes; testbench electromechanical; special electromechanical wrench; special tools for mechanical maintenance; work tables (work areas) for dispatchers and other. Our equipment makes it more qualitative maintenance of rolling stock. We make equipment for the repair of components and assemblies, as well as for testing.

Our equipment is in operation in all subways depot: Ukraine (the cities Kiev, Kharkov, Dnepropetrovsk.); in Moscow (Russia); Sofia (Bulgaria). Also, our equipment is used in railway depots (locomotives, passenger wagons, freight wagons) of railways of Ukraine, our equipment samples were shown on Russian railways.

Our equipment makes it easier to work on the repair and maintenance of rolling stock. Our equipment for testing devices and machines made on the basis of technical advice to manufacturing plants and existing regulations of railways and subways.

With the technological feasibility of the new models of our products are equipped with a computer system that allows you to not only automate the verification process technology, but also in a more visual way to present the results of inspections and record them for further analysis.

A distinctive feature of the automated test stands (automated working places) from the other manufacturers similar equipment is that it has two modes of operation: "Manual " and "Automatic". While operating in the manual mode, the reading's checks of the pressure values are determined by the pressure gauges. The operator controls the operation of the equipment with switching and control devices panels. While operating in the automatic mode, the reading's checks of the pressure values are determined by the sensors and testing process is controlled by computer with the help of 17" touch screen monitor.

The latest developments of our office are:

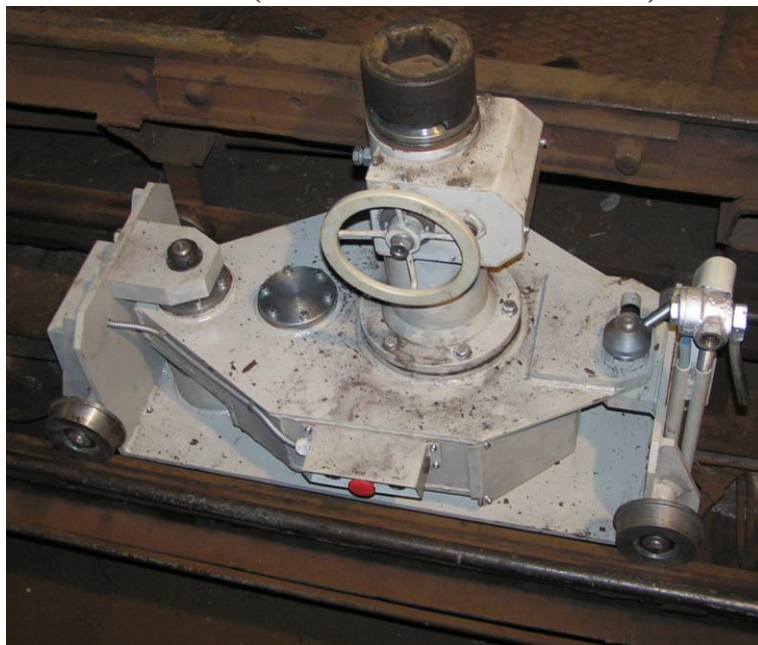
- Set of equipment for carrying out routine maintenance and inspection of hydraulic dampers , based on a new approach of mathematical modeling of its work;
- Train testing stands to check auto modes , hydraulic dampers , diffusers , type of sleeves 369A ; safety valves in manual and automatic modes, safety valve 722.000-03 ; safety valve E- 216 ; safety valve NHS 179965/2100 , etc.
- Workers designated trains for routine maintenance from the rolling stock apparatus; for hydraulic testing of the air tanks; for assembly and disassembly of cranes and hoses; for washing and drying machines; for cranes testing in the manual and automatic modes; for dismantling EVR 305, BP 292, stripping the metal parts of the sleeves, cranes auto regulator brake linkage; repair EVR-305; for repair BP-292; for assembly and disassembly of brake linkages; test auto regulator brakes ; for assembly, disassembly, check the tightness of the channels VR cameras; for assembly and disassembly of R369A-type sleeves, etc.
- Stands for automated testing machines of the pneumatic wagon type : 81-760 / 761 "Oka".
- We would like to emphasize that not all the equipment produced by the JV "Transport equipment centre studies" is included in this catalog. Every day our office employees design the new models of equipment to facilitate the routine maintenance with machines rolling subways and railways .If the Index you can not find your particular type of equipment that you need or there are only similar devices , please, feel free to contact us and we guarantee that the necessary equipment will be developed .

All equipment manufactured by our company meets the following standards TU U 33.2.21237717-001 : 2005 .



*New developments of "KHARKOVSTAND" LLC for the railways and subways.*

**SDT-423 (electromechanical wrench)**



**Wrench for loosening and tightening nuts of tail for passenger cars railways**

It has pneumatic and manual lifting and lowering modes for tailstock spindle.

**SDT-725 (clutch generator puller). Under tests currently!**



Is intended for the removal/pressing-in of the passenger wagon clutch generator.

**IS-177/A (brake linkage regulator (Slack adjuster) types PTPИI-675, PTPИI-675M, PTPИI 574Б). Under tests currently!**



Designed to testing brake linkage regulator (Slack adjuster) PTPИI-675, PTPИI-675M, 574Б.

***Stands for testing pneumatic apparatus (railway).***

**IS-420/A (automatic proportional empty-and-load device)**



**Designed to testing :**

- Automatic proportional empty-and-load device 265 A1;
- Automatic proportional empty-and-load device 265 A4.

It has automatic and manual modes.

**IS-422/A (drake control valve)**



**Designed to testing**

**Brake control valve:**

- Brake control valve 242-1;
- Brake control valve 292M;
- Electric brake control valve 305;
- Electric brake control valve 305-1.

It has automatic and manual modes.

**IS-169/A (connection hose)**



**Designed to testing:**

- Connection hose P-369A
- Connection hose P-36
- Connection hose P-17B

It has automatic and manual modes.

**Available in different versions.**



***Testing machine (stands) for testing of springs and shock absorbers (universal).***

**IS-712/A (springs from 0,5 to 5 т.)**

**IS-702/A (springs to 120 kg.)**

**IS-727/A [IS-717/A, IS-705/A]  
(hydraulic damper)**



**Designed to testing and control:**

– *the mechanical characteristics of the springs*

It has automatic and manual modes.

**Designed to testing and control:**

– *the mechanical characteristics of the springs.*

It has automatic and manual modes.

**Designed to testing**

shock absorber for passenger cars and and locomotives.

It has automatic and manual modes.

**Available in different versions.**



***Stands for testing pneumatic apparatus (wagon type: 81-760/761 "Oka").***

**IS-203.760/A (bypass valve)**



**Designed to testing :**

- *bypass valve «D» (conventional № A48 164; type 125510/1)*
- *position control of the wagon body (type SV1205-G/140).*

**IS-210.760/A  
(parking brake control unit (BUST))**



**Designed to testing :**

- *parking brake control unit (BUST) №№ 192;*
- *parking brake control unit (BUST) №№ 076;*
- *Electro-pneumatic valve - 120.*

**IS-244/A (safety valve to 12 atm.)**



**Designed to testing :**

- *safety valve 722.000-03 (9-0,2);*
- *safety valve Э-216 (9-0,2);*
- *safety valve NHS 179965/2100 (10-0,2)*
- *other safety valve - on your requirement.*

**Available in different versions.**

***Stands for testing pneumatic apparatus (wagon type: 81-740/741 «Rusich»; 81-760/761 "Oka").***

**IS-202**



**Designed to testing :**

- control valve KY 013;
- pressure switch of cock 013 44.02.078.02;
- disconnecting valve of cock 013 44.02.078.03;
- Electro-pneumatic valve (conventional № 177);
- Anti-Stall Valve 363 2M TU 24.0510.074-97.

**IS-203.740 (only wagon type: 81-740)**



**Designed to testing :**

- fast-acting valve (conventional № 398 TU 24.05.10.086-97);
- position control of the wagon body 003-1 TU 24.05.10.119-97.

**IS-206**



**Designed to testing :**

- valve - 120;
- valve - 120A;
- valve - 175;
- valve - 177;
- valve - BB-32.

**IS-207**



**Designed to testing :**

- *pressure switch AK-11B (AK-11B);*
- *pressure indicator (type СД-115, СД-115А);*
- *sensor of pressure (ДДХ-И-0,6-03U "Persej");*
- *sensor of pressure (ДДХ-И-1.0-03U "Persej").*

**IS-208**



**Designed to testing :**

- *the three-way cock (three - position discharge valve);*
- *the drain valve;*
- *disconnecting valve (cock);*
- *Stop valve (cock);*
- *reducing valve, (conventional № 348).*

**IS-209**



**Designed to testing :**

- *limiting valve (conventional № 109);*
- *valve for railways horn conventional № 4-3;*
- *air horn.*



**IS-210.740 (only wagon type: 81-740)**



**Designed to testing :**

- parking brake control unit (BUST) №№ 192;;
- parking brake control unit (BUST) №№ 182.

**IS-211**



**Designed to testing :**

- brake control valve BP155.10;
- automatic controls braking modes APII100.050-1M;
- pressure switch 033.010;
- control valve 013.010;
- Electro-pneumatic valve VTB «BTБ» conventional №175.

**IS-212**



**Designed to testing :**

- pressure divider, conventional № 155.040;
- pressure divider, conventional № 155.040-01;
- pressure divider, conventional № 155.040-02.



***Stands for testing pneumatic apparatus (wagon type: «E»- all modifications; 81-717/714 «Nomernoj».)***

**IS-010 (brake system)**



**IS-011**



**IS-012**



**Designed to testing :**

- *brake control valve 44.02.023.00, conventional № 337-4;*
- *pneumatic valve for substitution of electro-pneumatic brake with pneumatic brake;*
- *control valve, conventional № 013;*
- *automatic controls braking modes, conventional № 260.*

**Designed to testing :**

- *universal circuit breaker for automatic braking gear 44.02.005.00, conventional № 288 (UAVA);*
- *Anti-Stall Valve 363.000-2CB;*
- *electro-pneumatic valve (KEP) 44.02.043.00, conventional № BB-32, ЭПБ-177;*
- *pressure switch of control valve conventional № 013;*
- *disconnecting valve of control valve conventional № 013;*
- *electro-pneumatic valve ЭПК-481.*

**Designed to testing :**

- *the three-way cock (three - position discharge valve) conventional №2-3;*
- *pneumatic actuator electric-box unified coupler subway wagon and brake shoe;*
- *Brake control valve of door 44.02.004.00, conventional № 87 (DVR);*
- *pneumatic throttle 06-2 VХЛ 4;*
- *automatic braking switch, conventional № 325 (ABT);*
- *automatic control switch 44.02.097.00, conventional № 045 (ABY);*
- *brake release switch 44.02.031.00, conventional №№ 325A (COT);*
- *pressure switch AK-11B (AK-11B).;*
- *pneumatic cylinder door 2.7170.35.81.011.00.*

### IS-013 (automatic parking air-spring brake)



**Designed to testing :**

- automatic parking air-spring brake, drawing № 2.7170.31.45.011.30.

### IS-014 (valves)



**Designed to testing :**

- valves: BB-2, BB-3, BB -6, BB-10, EV-31, EV-55-1, BB-32, ЭПВ-120, 175, 177;
- line contactor;
- pressure switch AK-11B (AK-11Б).

### IS-127/A (brake control valve)



**Designed to testing :**

- Brake control valve (various modifications (on request)).

on the picture for Brake control valve conventional № 337

**IS-102 (brake system)**



**Designed to testing :**

- Cocks and valves: conventional №№ 4200, 4360, 383, 377(114), 395;
- check (reverse) valve: conventional №№ Э-155, Э-175;
- brake system;
- brake release switch 44.02.031.00, conventional №№ 325A(COT) and 115;
- automatic control switch 44.02.097.00, conventional № 045(ABY);
- automatic braking switch, conventional № 325-1(ABT)
- pneumatic control switch ПБУ;
- siphon valve, conventional № 4150 V2 and air horn;
- wiper conventional № CJИ-440;
- wiper valve (cock) conventional № KP-30B;
- reducer, conventional № 348.

**IS-103 (safety valve to 10 atm.)**



**Designed to testing :**

- safety valve conventional № Э-216
- check (reverse) valve conventional № Э-155, Э-175.
- pressure switch AK-11B (AK-11B).

**Available in different versions.**

**IS-017 (check air tanks up to 300 l.) it consists of IS-106 and IS-107**



**Designed to hydraulic testing:**

- Air tank wagon up to 300 liters.
- It consists of IS-106 «control unit» and IS-107 «loading unit»

**Additional technical data:**

- nominal pressure in the hydraulic system of the stand, MPa (kgf/cm<sup>2</sup>) 0,5 (5)
- maximum pressure developed by the pump stand MPa (kgf/cm<sup>2</sup>) 2,0 (20)



**IS-019 (connection hose)**



**Designed to testing :**

- Connection hose P-1 subway wagon;
- Connection hose P-2 subway wagon;

It has automatic and manual modes.

**Available in different versions.**

Simultaneous verification of 4 pieces of P-1 or 2 pieces of P-2

**IS-022 (axial sensor of speed DS-1)**



**Designed to testing :**

- axial sensor of speed DS-1 (ДС-1) of cruise control device (ARS) .

**IS-029 (PL-072 type motors)**



**Designed to testing :**

- PL-072 type motors 24-volt and 70-volt power supply.



**Mobile booths for checking undercar equipment.**

**IS-502 (thyristor control device RT 300/300A)**



**Designed to testing :**

– *thyristor control device RT 300/300A wagon type 81-717/714*

Mobile booths for checking underwagon equipment: check the settings of brake amperage, the time of transition from the electrodynamic braking to a rheostat, a также electronic protection, and simulating actions of automatic controls braking modes.

**Additional technical data:**

- *current range for the sensor DT (with smooth adjustable within the range)* *100÷390 A.*
- *current ripple factor sensor DT* *max 1,5 %.*
- *simulating actions of automatic controls braking modes:*  
*«empty», «1/2», «laden».*
- *meter range of "harmonization" of time (In increments of 0.1 s)* *0÷9,9 s.*
- *measurement error of time* *max 1 %.*
- *Voltage range for check of the protection regulator (in increments of adjustment within a range of 0.1 V)* *10÷50 V*

**IS-504 (inspection and adjustment of the relay wagon and equipment “ЯВ-1001-44/ДКУ2”)**



**Designed to testing :**

- *current relay;*
- *voltage relay;*
- *power protection devices*

*Workbench specialized.*

**WB-111 (brake cylinder 6": assembly/disassembly, inspection and adjustment)**



**WB-112 (door cylinder assembly/disassembly, inspection)**



**WB-115 (automatic controls braking modes and brake control valve: assembly/disassembly)**



**WB-117 (hydraulic damper: assembly/disassembly)**





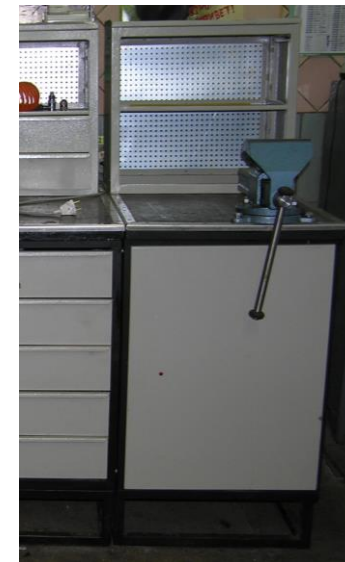
**WB-018 (pneumatic actuator for electric-box coupler subway car, connection hose P32, P34, P21, P23: assembly/disassembly)**



**WB-125 (special work table mechanics with pneumatic and wise)**



**WB-118 (additional work table mechanics with wise)**



*Special stillage store.*

**CH-401 (special stillage store for brake cylinder)**



**CH-402 (special stillage store for door cylinder)**



**CH-403 (special stillage store for hydraulic damper)**



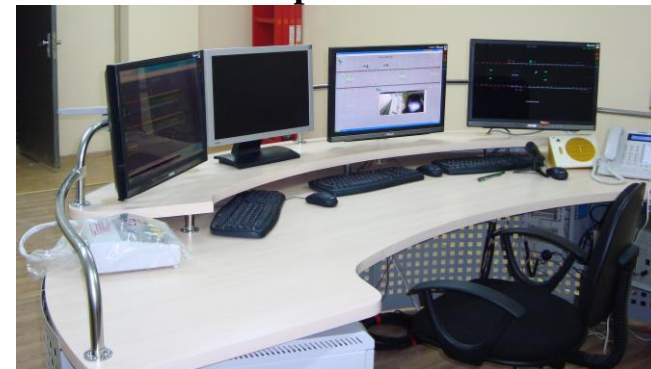
*Various portable stands on request (subway).*



*Special device and tools; work tables (work area) for train dispatchers and other dispatchers.*

**SDT-715 (device for disassembling cams drive coupling (driveline clutches))**

**Work tables (work area) for train dispatchers and depots dispatchers**





**Work table (work area) for dispatchers of department of signaling, centralization, blocking.**



**Work table (work area) for dispatchers at the subways station**



**Work table (work area) for dispatchers automatic system for management subway station**



*At the design stage.*

**WB-172 is the table-bench for valve brake disassembly devices.** in order to develop the brake devices including disassembly and pre-develop the following equipment: 292 and BP -305 EVR , as well as the switching valve. The table - bench has a combined grip for BP - 292 and EVR- 305 , pneumatic impact driver with a set of heads , as well as the gun purge. It allows to disassemble the parts in accordance with the requirements and the standards.

**WB-173 is the table-bench which is designed to repair EVR-305.** This table-bench consists of the composite grip for mounting EVR, control valves, electrical control unit which imitates electrical air brakes modes in order to perform the measurement of anchors and brake valves , tanks, necessary amount of pressure gauges, and other necessary equipment, including a purge gun.

**WB-174 is the table-bench which is designed to repair VP-292.001 and 292M.**

**WB-168 is the table-bench for assembly and disassembly connection hose P17 и P369A]**

**WB-170 is the table-bench for the repair of taps and valves of various modifications on request;**

**IS-171 (IS-171/A) is the stand designed to test taps and valves of various modifications on request**

**WB-176 is the table-bench for assembly/disassembly and repair brake linkage regulator (Slack adjuster) types PTPH-675, PTPH-675M, PTPH 574Б)**

**WB-161 is the table-bench with machine for washing brake devices and brake wagon fittings**

**WB-164 is the table-bench with special vacuum cleaner and air blasting for outside cleaning heavily soiled parts of the braking equipment)**

Has forced ventilation, it consists of a tank for the accumulation of technological waste. Table for cleaning parts with a purge gun and pneumatic tools.

Connected to the pressure air line with a pressure of not less than 5 kgf/cm<sup>2</sup>.

***Equipment specifications.***

Main parameters	IS-010	IS-011	IS-012	IS-013	IS-014	IS-015	IS-017	IS-019
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)
supply voltage, V	220	220	220	220	220	220	220	220
Power consumption (no more than), kW	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,16
Equipment weight (no more), kg	410	340	340	300	320	300	420	360
Dimensions in mm (Height*Width*Length)	1600*800*	1600*800*	1600*800*	1600*800*	1600*800*	1600*800*	1100*800*	1500*800*
main unit	1500	1500	1500	1500	1500	1500	1500	1500
additional unit (control unit or external table)	-	850*800* 350	-	-	-	-	1600*800* 750	-

Main parameters	IS-021	IS-022	IS-023	IS-029	IS-031	IS-032	IS-033	IS-034	IS-035
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	-	-	-	-	-	-	-	-	-
supply voltage, V	220	220	220	220	220	220	220	220	220
Power consumption (no more than), kW	0,25	0,16	0,25	0,16	0,4	0,3	0,3	0,4	0,4
Equipment weight (no more), kg	170	160	5	140	210	210	210	250	200
Dimensions in mm (Height*Width*Length)	1600*750*	1500*800*	250*350*	1500*800*	1400*750*	1400*750*	1400*750*	1400*750*	1400*800*
main unit	1200	800	120	800	1500	1500	1500	1500	2000
additional unit (control unit or external table)	-	-	portable stand	-	-	-	-	750*750* 500	-

Main parameters	IS-051	IS-052	IS-063	IS-064	IS-065	IS-100	IS-101	IS-102
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	-	-	-	-	-	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)
supply voltage, V	220	220	220	220	220	220	220	220
Power consumption (no more than), kW	0,4	0,16	0,16			0,25	0,25	0,25
Equipment weight (no more), kg	240	300	180	5	5	400	420	360
Dimensions in mm (Height*Width*Length)	1400*800*	1400*800*	1400*750*	120*280*	250*350*	1600*800*	1600*800*	1600*800*
main unit	1800	2000	1200	190	120	1500	1500	1500
additional unit (control unit or external table)	-	-	-	portable stand	portable stand	-	-	-

Main parameters	IS-103	IS-103.760/A	IS-105	IS-106	IS-110	IS-127/A	IS-202	IS-203.740	IS-203.760/A
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)
supply voltage, V	380	380	-	220	220	220	220	220	220
Power consumption (no more than), kW	2,4	2,4	-	0,25	0,25	0,5	0,25	0,16	0,5
Equipment weight (no more), kg	300	300	300	120	400	380	300	300	400
Dimensions in mm (Height*Width*Length)	1600*800*	1900*800*	1100*800*	1600*800*	1600*800*	1600*800*	1600*800*	1600*800*	1900*800*
main unit	800	1500	1500	750	1500	1500	1500	1500	1500
additional unit (control unit or external table)	-	-	-	-	-	-	-	-	-

Main parameters	IS-206	IS-207	IS-208	IS-209	IS-210.740	IS-210.760/A	IS-211	IS-212	IS-216
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)
supply voltage, V	220	220	220	220	220	220	220	220	220
Power consumption (no more than), kW	0,25	0,16	0,16	0,16	0,25	0,5	0,25	0,16	0,16
Equipment weight (no more), kg	300	300	300	300	300	260	300	300	300
Dimensions in mm (Height*Width*Length)	1600*800*	1600*800*	1600*800*	1600*800*	1600*800*	1900*800*	1600*800*	1600*800*	1600*800*
main unit	1500	1500	1500	1500	1500	760	1500	1500	1500
additional unit (control unit or external table)	-	-	-	-	-	-	-	-	-

Main parameters	IS-169/A	IS-244/A	IS-420/A	IS-422/A	IS-702/A	IS-705/A	IS-712/A	IS-717/A	IS-727/A
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)
supply voltage, V	220	220	220	220	220	220	220	220	220
Power consumption (no more than), kW	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Equipment weight (no more), kg	360	260	350	410	360	410	400	410	410
Dimensions in mm (Height*Width*Length)	1600*800*	1900*800*	1600*800*	1600*800*	1600*600*	2000*800*	1600*600*	2000*800*	2000*800*
main unit	1500	760	1000	1500	600	1500	760	1500	1500
additional unit (control unit or external table)	-	-	-	-	1300*600* 600	1300*600* 600	1300*600* 600	1300*600* 600	1300*600* 600

Main parameters	WB-017	WB-018	WB-111	WB-112	WB-115	WB-117	WB-120	WB-121	WB-125
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	0,63 (6,3)	-
supply voltage, V	220	-	220	220	220	220	220	220	-
Power consumption (no more than), kW	2,0	-	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Equipment weight (no more), kg	350	300	350	400	470	380	350/300/500		
Dimensions in mm (Height*Width*Length) main unit	1200*800*1500	1400*800*1500	1200*800*1500	1200*800*2000	1200*800*2000	1200*800*1500	1200*800*1500/1200/2000	1200*800*2000	1200*800*1500

Main parameters	WB-126	WB-127	WB-136	WB-145	WB-146	WB-151	WB-161	WB-168	WB-170
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	-	-	-	-	-	-	-	-	-
supply voltage, V	220		220	220	220	220	220	220	220
Power consumption (no more than), kW	2,0		2,0	2,0	2,0	2,0	2,0	2,0	2,0
Equipment weight (no more), kg			170 (200)	190	160	210	210	210	210
Dimensions in mm (Height*Width*Length) main unit	1200*800*1500		1100*750*1500(1200)	1200*750*1500	1200*750*1500	1200*750*1500	1200*750*1500	1200*750*1500	1200*750*1500

Main parameters	WB-170	WB-171	WB-172	WB-173	WB-174	WB-176	WB-177	SDT-423	
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	-	-	-	-	-	-	-	0,63 (6,3)	
supply voltage, V								380	
Power consumption (no more than), kW								4,0	
Equipment weight (no more), kg								450	
Dimensions in mm (Height*Width*Length) main unit								1550*930*630	

Main parameters	WB-214	WB-217	WB-235/1	WB-235/2	WB-235/3	WB-235/4		
nominal pressure in the pneumatic system of the equipment, MPa (kgf / cm <sup>2</sup> )	-	-	0,63 (6,3)					
supply voltage, V	220	220	380					
Power consumption (no more than), kW	2,0	2,0	5,0					
Equipment weight (no more), kg			Σ маца 800					
Dimensions in mm (Height*Width*Length) main unit	1200*800*1200	1200*850*1500	900*900*150	1200*1100*1100	1200*600*1200	1300*600*600		