جمعية رجال الأعمال المصريين الأفارقة
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السادة أعضاء جمعية رجال الأعمال المصريين الأفارقة المحترمين

استكمالًا للجهود المستمرة والعلاقات المتميزة التي تربط جمعية رجال الأعمال المصريين الأفارقة بشركائها الاستراتيجيين، وحرصًا على تعزيز التعاون الدولي وفتح آفاق جديدة أمام مجتمع الأعمال المصري والأفريقي، فقد ورد إلى الجمعية من سفارة جمهورية بيلاروس في القاهرة ترشيح شركة **JSC VISTAN**، إحدى كبرى الشركات البيلاروسية المتخصصة في تصميم وتصنيع ماكينات تشغيل المعادن ومراكز التشغيل باستخدام التحكم الرقمي(CNC) ، وذلك بهدف استكشاف فرص التعاون التجاري والشراكات مع الشركات المصرية العاملة في القطاع الصناعي والهندسي.

الأمين العام لجمعية
رجال الأعمال المصريين الأفارقة

مصطفي الامير

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رئيس مجلس إدارة جمعية
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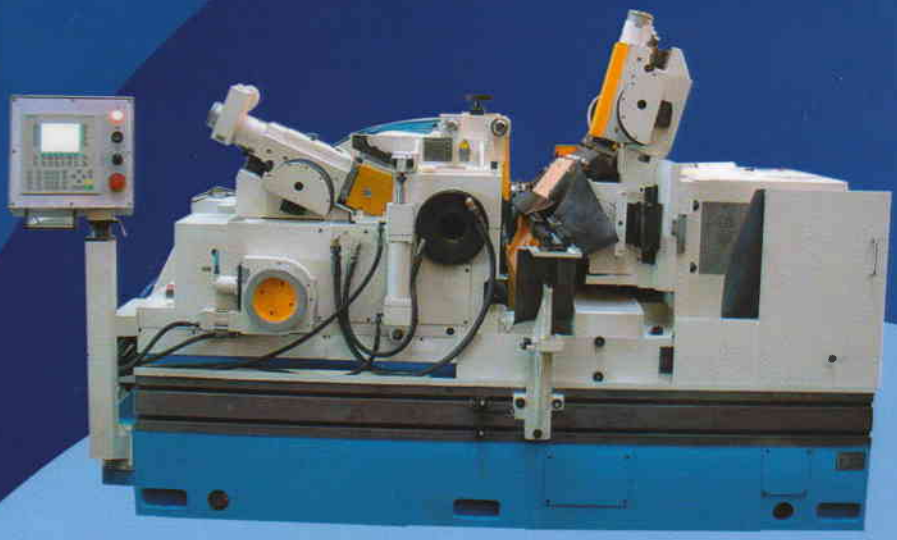

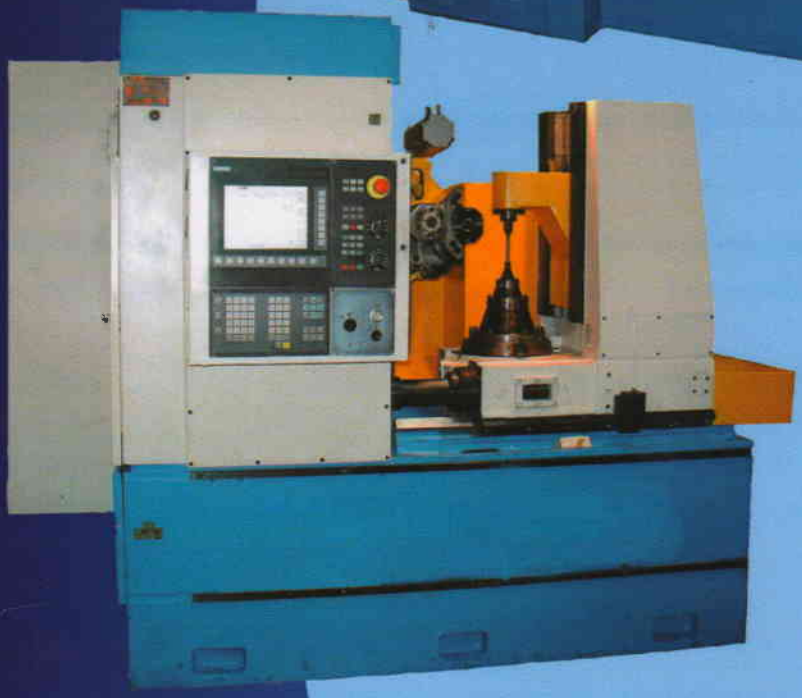

GRINDING MACHINES
LATHES
MACHINES FOR PROCESSING OF COGS
THE MULTIOPERATIONAL PROCCESSING CENTERS

ИСО 9001

VISTAN

THE QUALITY AND ACCURACY

of «VISTAN» – your way to success

The Joint-Stock Company "VISTAN" is one of the oldest machine-tool factories in the Republic of Belarus.

The factory history takes its origin from an army workshop founded in 1914. In April 1918 the workshop reorganized into an agriculture machinery factory. First machines were assembled in 1932.

In 1999 Vitebsk special design bureau for gear grinding and sharpening machines became a part of the factory, we started to solve the issues of long-term designing and operational development of new machinery operatively.

In May 2002 RUE "Vitebsk Machine-Tool Plant Comintern" is joined to our factory. As a result of above reorganization the range of machinery was extended. The enterprise became the largest-scale manufacturer of machine tool production in CIS-countries.

Technological supplying of motor and tractor, bearing, electro technical, aerospace and other leading branches of machine-tool building complex guide manufacturing program of Machine-Tool Plant "VISTAN".

A high level of the technical equipment and organization of production, strict technological discipline, constant use and introduction of the modern achievements of domestic and foreign manufacture of machine-tool, it's all provide production of the competitive machines.

The centerless cylindrical grinding semiautomatic machines by JSC "VISTAN" are well known among the customers. Thousands of machines work successfully practically in all industries as CIS-countries, and foreign countries.

The unified control system on the basis of the programmable controller with the translation of feed gearing of the grinding wheel head are introduced, also rotation of the main wheel, automatic editing of wheels on modern frequency and the servo mechanism. These control system is applied to all models, as for cut-in and through grinding. Operator's panels with programmable controllers are used as main element of control desk.

In 2006 new generation of the centerless cylindrical grinding semiautomatic machines (models BCA-183NC, BCA-184NC, BCA-184KNC, BCA-185NC) is put on manufacture.

Today in our program we have 10 models of the basic semiautomatic machines with processing diameter 0,5-160 mm.

Developing the program of the equipment for finishing treatment, the plant successfully works at the market with centering cylindrical grinding semiautomatic machines.

From this group of the equipment the machines mod. BSH-152UBI(RBI) which industrial release is begun since 1999 are in the steadiest demand in the market of the equipment. Considering wishes of customers, the plant since 2001 has begun delivery of these machines in different modifications depending on their function, a complete set and the sizes of a table (center-to-center distance). It has allowed making them more competitive at the price. Since 2006 the plant has started the production cylindrical grinding machines with control by the programmable controller and the operator's panel, with the servo-motor of feeding (mod. BCA1U(R)BNC).

Our factory begun the manufacture of spindle heads in cooperation with Gomel machine tool units plant, Ryazan machine tool and produce universal engine lathes mod. 16BT20P-21, 16BT20P-22 with centre-to-centre distance 1000mm and 1500mm accordingly.

In 2003 JSC "VISTAN" produced the first batch of CNC engine lathes mod. BCT-625-21 CNC with maximal processing diameter 320 mm and with centre-to-centre distance 1000 mm, which have a high demand.

In 2001 the plant upgraded the machines like "the machining centre" had applied CNC system by "SIEMENS" to increase their competitiveness.

After analysis of "narrow" places and problems on manufacture of cogwheels at the large enterprises of the auto-tractor industry the plant has made modernization of the own machines and has engineered new models of machines for satisfaction of inquiries of the customer.

As a result of such actions the plant started to manufacture new gear spline-hobbing machines mod. BCH-613NC, BCH-620CNC, gear shaping machines mod. BCH-123NC, BCH-150NC, BCH-180 CNC.

The tendency of application of modern control systems and drives which was in recent years allows to use more widely all opportunities of these systems that's why the plant started to manufacture the machine mod. BCH-732CNC. In this machine the traditional mechanism of barrel formation is replaced with electronic mechanism about what the main customers of machines of this group asked many times.

Considering the leader tendencies of world machine-tool building industry, since 2007 JSC "VISTAN" started to manufacture the gear spline-hobbing semiautomatic machines mod. BCH-620CNC and gear shaping semiautomatic machines mod. BCH-180CNC (diameter for treat 800 mm), in 2008 – the gear-hobbing semiautomatic machines mod. 3A50CNC with electronic and drive connections instead of mechanical links.

Since 2011 all machines for processing of cogs can be made in such design on request of the customers

In 2012 our plant started to manufacture the spline grinding semiautomatic machines mod. BCH-840CNC and rod-milling semiautomatic machines mod. BCH-6PCNC.

In 2014 our plant started to manufacture the gear rounding semiautomatic machines mod. GBCH-580CNC25.

In 2015 our plant started to manufacture the gear-hobbing semiautomatic machines mod. GBCH-232 CNC for treatment of conic wheels with straight cogs.

The high cost of the new domestic and import equipment has forced many enterprises of the Republic of Belarus and Russia to order to our plant renovation and modernization of the working equipment. In recent years the plant has mastered the renovation of all types of machines for processing of cogs and centerless cylindrical grinding semiautomatic machines.

The combination of opportunities of reliable mechanics and modern electronics in our machines will provide you the advantages to competitors.

Dear customers, we invite you to mutually beneficial cooperation!

Best regards,
Director of JSC "VISTAN"
V.M. Kalinenka

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VISTAN

BCA-180NC, BCA-183NC, BCA-184NC, BCA-184KNC, BCA-185NC

Centerless cylindrical grinding semiautomatic machines

GRINDING MACHINES

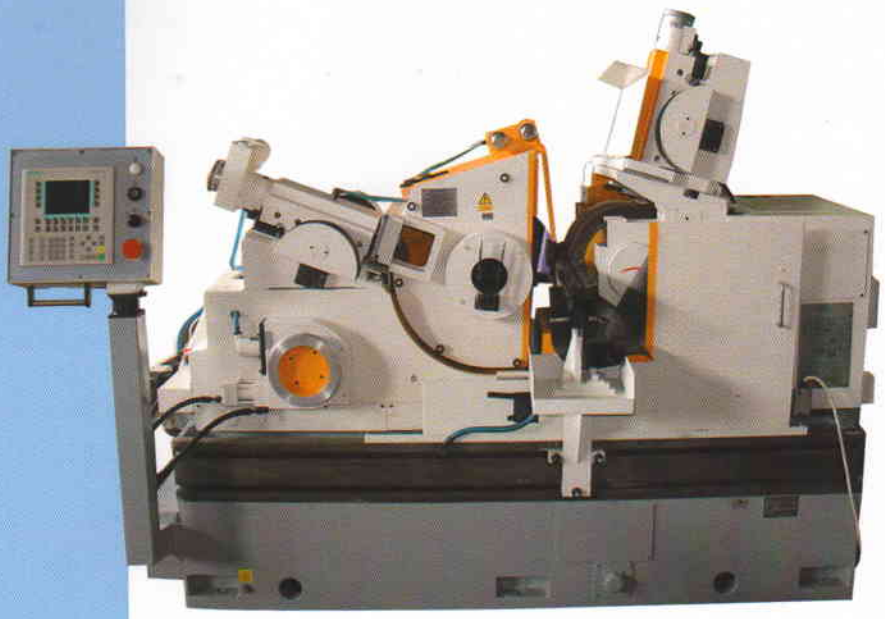
The semiautomatic machines are intended for grinding of smooth, stepped, conical and shaped surfaces of bodies-of-rotation type by method of plunge-cut or through-feed grinding. Work pieces of cast iron, steel, non-ferrous metals and their alloys before and after heat treatment, as well as work pieces of various nonmetallic materials with the corresponding selection of abrasive tool and work rest blade material are being ground. The special automatic machines can be produced on the base of the semiautomatic machines equipped with loading-unloading devise.

High productivity, accuracy treatment and quality of work pieces surface are provided by availability of reliable and precision spindles: the working spindle is in high-precision antifriction bearings, the grinding spindle is in hydrodynamic bearings. Feed of grinding wheel on the work piece with the compensation of removalling of abrasive layer when dressing, as well as minor setting-up are provided by electromechanical mechanism of feeds with the servo drive (except of BCA-180NC). The machines are equipped with systems of automatic dressing of grinding wheels.

Availability of programmable controller with the electronic operator's panel enables to carry out monitoring and controlling of operation of the machines efficiently.

The machines are completed with the «SIEMENS» or «MITSUBISHI» control systems and electric drives in consultation with the Customer.

The semiautomatic machines can be issued on the relay control scheme of 3E- series.



Model		BCA-180NC (3E180B)	BCA-183NC (3E183BM)	BCA-184NC (3E184BM)	BCA-184KNC (3E184SHB)	BCA-185NC (3E185BM)
Diameter of grinding	mm	0,5...10	2...40	4...80	5...80	8...160
Maximal length of blank to be treated						
- the through-feed grinding without special attachments	mm	68	170	260	320	360
- the plunge-cut grinding with the nominal height of the wheel	mm	38	155	245	495	315
Grinding wheel:						
- maximal diameter	mm	200	400	500	500	600
- maximal width	mm	40(63*)	160	250	500	250(320*)
- perforation	mm	76	203	305	305	305
Circumferential speed of grinding wheel	m/s	35	35	35	35	35
Power drive	KW	2,2	11	30	45	37
Leading wheel:						
- maximal diameter	mm	150	300	350	350	400
- maximal width	mm	40(63*)	160	250	500	250(320*)
- perforation	mm	51	127	203	203	203
Rotational speed of regulating wheels spindle						
- when the grinding	rpm	5/250	15/150	12/150	10/150	10/150
- when the dressing	rpm	380	300	300	300	300
Power of primary motion drive	KW	0,25	1,1	2,2	2,2	2,2
Discontinuity of the minimum subadjustment movements	mcm	-	±1,0	±1,0	±1,0	±1,0
Angulation of head of the leading wheel in vertical plane (max)	grad	±6	±8	±8	±6	±8
Total consumed power	KW	3,79	17,6	38,52	54,66	45,3
Weight of the machine	kg	1230	4580	6740	10860	9100

* for special order

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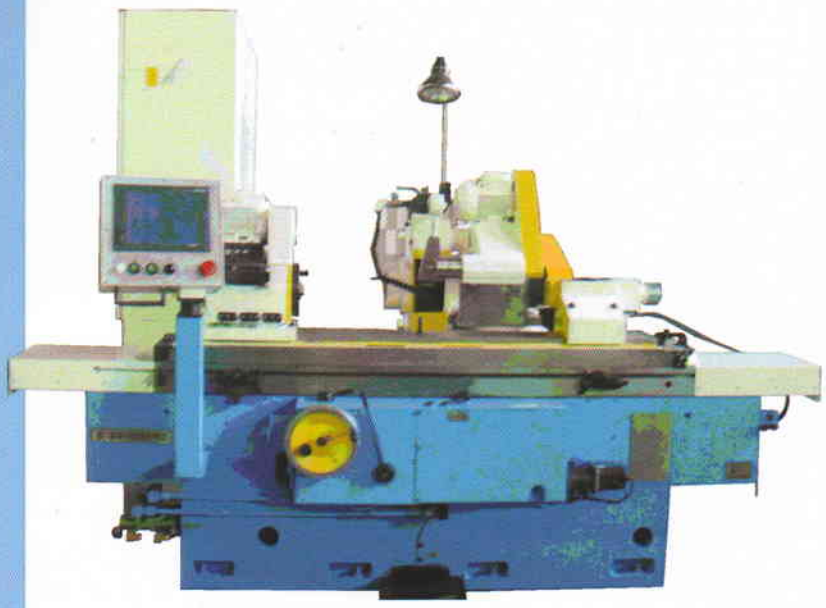
BCA-1U52NC, BCA-1R52NC

Universal centring cylindrical grinding semiautomatic machines

The semiautomatic machine is intended for grinding of outer surfaces of various materials bodies-of-rotation by method of plunge-cut and traverse grinding of parts in centers and in chuck.
It is additionally possible the machining of inner surfaces of bodies-of-rotation in manual control on the semiautomatic machine model BCA-1U52-01 NC.
Also it is additionally possible the machining of face flat surfaces in manual control and of inner surfaces of bodies-of-rotation on the semiautomatic machine model BCA-1R52-01 NC.
The spindle of grinding wheel is made in hydrodynamic sliding bearings. The spindle of inner-grinding stock is made in high-accuracy antifriction bearings. The table is traveled by the hydraulic cylinder. The machine has a cast bed and base.
The semiautomatic machines are completed with "SIEMENS" or "TOSHIBA" programmable systems and electric drives. The semiautomatic machines BSH-152 are manufactured on the relay control scheme with electric drives for workpieces by "TOSHIBA".



Model	BCA-1U52NC	BCA-1U52-01NC	BCA-1R52NC	BCA-1R52-01NC
Diameter of workpiece to be installed in the centers, mm				
- maximal	(200)250	(200)250	(200)250	(200)250
- minimal	10	10	10	10
Maximal length of workpiece to be installed in the centers, mm	1000	1000	1000	1000
Diameter of workpiece to be installed in the chuck, mm				
- maximal	200	200	200	200
- minimal	22	22	22	22
Maximal length of the blank to be installed				
- in the chuck, mm	250	250	250	250
- in the chuck with the enclosed rest, mm	350	350	350	350
Diameter and height of grinding wheel for:				
- external grinding, mm	500/80	500/80	400/50	400/50
- internal grinding, mm	-	16/20;20/20;40/40;50/40	-	16/20;20/20;40/40;50/40
- face grinding, mm	-	-	-	250/25
Diameter and length of inner surface to be ground, mm	-	20-160/120	-	20-160/120
Maximal swivel angle of upper table, deg.				
- clockwise	6	6	6	6
- counter clockwise	9	9	9	9
Maximal swivel angle of whelhead, deg.				
- clockwise	5	5	90	90
- counter clockwise	5	5	180	180
Maximal swivel angle of work head, deg.				
- counter clockwise	90	90	90	90
- when the operation with the sine fixture counterclockwise	30	30	30	30
Maximal weight of blank to be installed, kg				
When the operation in the centers				
- fastened quill	160	160	160	160
- when the external and internal grinding in a chuck	40	40	40	40
- when the internal grinding in a chuck with the enclosed rest		60		60
Taper in quill of workhead	Morse 5	Morse 5	Morse 5	Morse 5
Taper in quill of tailstock	Morse 4	Morse 4	Morse 4	Morse 4
Circumferential speed of grinding wheel, m/sec.				
- external grinding	43	43	38	38
- face grinding	-	24	-	24
Limits of workpiece rotational speeds (steplessly), rpm	50-500	50-500	50-500	50-500
Power of grinding wheel drive, KW	5,5	5,5	4	4
Power of inner-grinding wheel drive, kW	-	1,1	-	1,1
Total power of installed electric motors, kW	10,49	11,59	8,91	10,09
Overall dimensions, mm:				
- length	2950	2950	2950	2950
- width	2295	2295	2295	2295
- height	2480	2480	2480	2480
Weight of the machine, kg	6000	6000	6000	6000

Note: the size in parentheses technologically possible, but for this size norms of accuracy and the roughness of a sample product established to GOST don't extend.

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16BT20P-21, 16BT20P-22

Engine lathe

ENGINE LATHE

The high accuracy universal engine lathes are intended for broad range of turning works: outer turning and boring of inner cylindrical and conical surfaces, drilling, core-drilling and reaming as well as cutting of external and internal metric, inch, modular and pitch threads.

Design of the machines and their structural features provide high-quality treatment of parts of various materials by advanced cutting tools at optima cutting speeds.

Design features: high precision spindle with the ø55 mm hole, 4-positions rigid tool post, heat treated ground bed guides to provide long service life and raised treatment accuracy, mechanical friction clutch, pneumatic loading of tailstock, the apron has an its own drive of carriage and support rapid travel, enables to operate with the rests with the automatic feeds switching off when the contact with the rest at the moment of load increasing on neck pinion, guards of cutting and chuck zones, electrical and mechanical interlocking's guarantee the safety operating a machine.

Maximal diameter of blank to be treated, mm	
- above bed	500
- above support	275
Maximal length of blank to be installed, mm	1000, 1500*
Diameter of spindle hole, mm	57
Maximal height of cutting tool to be installed on the machine, mm	25
Maximal travel length of support tool slide, mm	150
Maximal length of carriage travel: Longitudinal (cross), mm	935, 1435*, (285)
Maximal travel of tailstock quill, mm	150
Limits of spindle rotational speeds, rpm	12,5-1600**
Number of speeds of forward (reverse) rotation spindle	24 (12)
Limits of support working feeds, mm/rev	
- longitudinal	0.05...2,8
- cross	0,025...1,4
Number of support longitudinal (cross) feeds	24 (24)
Limits of pitches of threads to be cut:	
- metric, mm	0,5...112
- inch; number of threads per 1"	56...0.5
- modular, module	0,5...112
Pitch, pitch	56...0.5
Speed of support rapid travels, m/min	
- longitudinal	3,8
- cross	1,9
Spindle maximal torque, Knm	1,0
Power of primary motion drive, KW	11,0***
Overall dimensions of the machine, mm:	
- length	2800, 3300*
- width	1265
- height	1505
Weight of the machine, kg	3000, 3250*
Accuracy class	П

Standard delivery set:

1. Three-jaw chuck
2. Rotating center
3. Lathe center with the Morse taper
4. Set of accessories
5. Documentation

Additionally for extra payment at the Customer's request:

1. Driver plate
2. Follower rest
3. Rear tool post
4. Holder for the centering tool
5. Bushing rest
6. Micrometrical multi-positional stop of cross stroke
7. Micrometrical stop of cross stroke
8. Micrometrical rigid stop of longitudinal stroke
9. Steady rest
10. Set of change gears (when the straight threads cutting).

* - for 16BT20P-22 machines

** - on customer's demand at additional expense the machine is completed with a set of pulleys and the table for providing limits of frequencies of rotation of a spindle 16...2000min-1

*** - for special order – 7,5 KW

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BCT-625-21 CNC, BCT-625-22 CNC

CNC engine lathe

The machine is intended for turning in semiautomatic cycle of outer and inner surfaces of bodies-of-rotation parts with step and curvilinear profile of different complexity.
Nodular cast iron bed with heal treated ground guides provide long service life and raised treatment accuracy.
Primary motion drive includes primary motion motor 12 KW and spindle head with three ranges of rotational speeds provide maximal spindle torque up to 800 nm. Selection of range of spindle rotational speeds is provided according to program.
Treatment in manual and in automatically mode is supported by CNC system, operated on the base of continued cycles.
The machine is equipped with the SIEMENS CNC system SINUMERIC 802D.

Standard delivery set:

1. Three-jaw chuck
2. Tailstock with electromechanical head of quill feeding
3. Accessories
4. Lathe center
5. Rotating center

Additionally on order:

1. Steady rest
2. Follower rest
3. Chip disposal conveyer with coolant pump.

Maximal diameter of blank to be installed, mm	500
Maximal diameter of blank to be treated, mm	
- above bed	320
- above support	200
Maximal length of blank to be installed, mm	1000, 1500*
Maximal height of the cutter established in a capstan, mm	25
Maximal length of carriage longitudinal travel (axis Z), mm	905, 1405*
Maximal length of support cross travel (axis X), mm	285
Maximal travel of tailstock quill, mm	150
Limits of spindle rotational speeds, rpm	22...1800
Number of ranges of spindle rotational speeds	3
Limits of speeds of support working feeds, mm/min:	
- longitudinal (axis Z)	3,5...5000
- cross (axis X)	1,75...2500
Limits of steps of the cut carvings, mm	0,5...56
Speed of quick travel, mm/min	
- linear (axis Z)	7500
- cross (axis X)	5000
Maximal torsion torque on a spindle, Hm	800
Power of primary motion drive, KW	12
Total power of installed drive, KW	18,94
Overall dimensions of the machine, mm:	
- length	3500, 4000*
- width	1655
- height	1830
Weight of the machine, kg	3300, 3600*
Number of coordinates to be controlled	2
Number of coordinates to be controlled simultaneously	2
Discretization of a task of movement on coordinates, mm	
- linear (axis Z)	0,001
- cross (axis X)	0,001
Accuracy class according to GOST 8-82	П

* - for BCT-625-22CNC machines

BCH-332NC21, BCH-332NC22

Gear hobbing machines

The semiautomatic machines with upright axis of work piece for treatment of spur and helical gears, sprockets, worm wheels with hobs by method of form-generating. The semiautomatic machine has a configuration with upright axis of work piece and with movable table. The hydraulic cylinder of blank's clamping is built into the table spindle. Adjustment of rotational speed of hob spindle as well as of values of axial and radial feeds is realized with frequency converters-powered servomotors steplessly. High static and dynamic rigidity due to rational shape of column and support carriage guides as well as rigidity increase of main shape-creating units. To use full length of hob cutting edge its periodical travel along the axis (shifting) is provided.

The semiautomatic machine 53B30P is equipped with the relay control system.

The semiautomatic machine 53B30P-02 is equipped with the SIEMENS programmable controller and drives.

The semiautomatic machine BCH-332NC2 is equipped with the SIEMENS programmable controller and drives.

The semiautomatic machine BCH-332CNC 2 is equipped with the CNC system mod. SINUMERIK 802D and with the SIEMENS drives.

The semiautomatic machines BCH-332 have a protection of a work zone of room type.

Model	BCH-332NC21	BCH-332NC22,CNC
Maximal outer diameter of gear to be cut, mm	320	320
Maximal module to be treated, mm	6	6
Maximal helix angle of teeth to be cut, deg.	±60	±45
Maximal width of face to be cut (of spur gear), mm	220	220
Maximal width of face to be cut (of helical gear), mm	150/100	150/100
Diameters of table, mm	250	250
Distance between the tool axis and the table axis, mm	30...250	25...250
Maximal dimensions of hobs to be installed, mm		
- diameter	160	160
- length	140	140
Maximal hob travel along the axis (shifting), mm	75	120
Number of coordinates to be controlled	-	3
Number of coordinates to be controlled simultaneously	-	2
Range of numbers of hob revolutions, rpm	50...500	50...500
Range of upright feeds, mm/min.	0,63...7,3	3...750
Range of radial feeds, mm/min.	1...16	3...600
Power of primary motion drive, KW	4,0/4,75	5,5
Total power of installed drive, KW	8,97	13,29
Overall dimensions (length x width x height), mm	2300x1300x1950	2680x1510x1915
Weight of the semiautomatic machine, kg	5100	6500

VISTAN

BCH-350NC, BCH-350CNC, BCH-3A50CNC

Gear hobbing semiautomatic machine with increased accuracy

The gear-hobbing semiautomatic machine with upright axis of workpiece is designed for treatment of spur and helical gears, sprockets, worm wheels with hobs by method of form-generating.

The semiautomatic machine is made in upright arrangement with movable front column and stationary table.

Adjustment of rotational speed of hob spindle as well as of values of axial and radial feeds is realized with frequency converters-powered asynchronous or servomotors (depending on version) steplessly.

High static and dynamic rigidity due to rational shape of column and support carriage guides as well as rigidity increase of main shape-creating units.

To use full length of hob cutting edge its periodical travel along the axis (shifting) is provided.

The semiautomatic machine has the centralized lubrication system.

The semiautomatic machine BCH-350NC is equipped with the SIEMENS operator desk, programmable controller and drives.

The semiautomatic machine BCH-350CNC, BCH-3A50CNC is equipped with the CNC system mod. SINUMERIK 802D by SIEMENS and have the "untied" kinematic chains.

The semiautomatic machine BCH-3A50CNC is equipped with the thor-engine therefore this machine has very high accuracy rating of processing and high productivity.

Model	BCH-350NC	BCH-350CNC
Maximal diameter of spur gear to be treated, mm	500	
Maximal module to be treated, mm	10	
Maximal helix angle of teeth to be cut, deg.	±45	
Maximal width of the cut wheel wreath,mm	220	
Diameter of workpiece spindle, mm	250	
Distance between the tool axis and the table axis, mm: minimal/maximal	30...350	
Maximal diameter of hobs to be installed, mm		
- diameter	160	
- length	230	
Maximal hob travel along the axis (shifting), mm	170	
Range of numbers of hob revolutions, rpm	75....400	
Range of axial feeds, mm/rev.	3....500	
Range of radial feeds, mm/min.	3....400	
Number of coordinates to be controlled	3	
Number of coordinates to be controlled at the same time	1	
Power of primary motion drive, KW	18,5	
Total power of installed drive, KW	27,94	
Overall dimensions (length x width x height), mm	3485x2160x2335	
Weight of the semiautomatic machine, kg	8500	

VISTAN

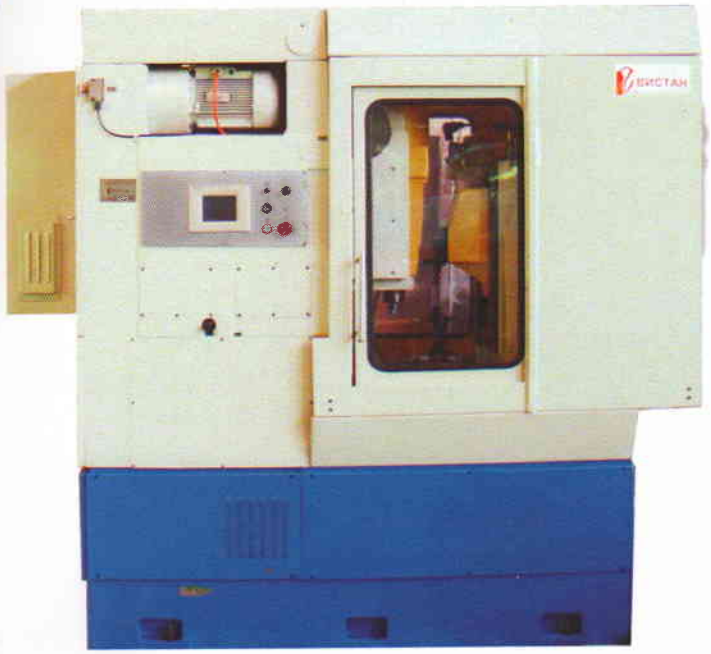
BCH-123CNC

Gear shaping semiautomatic machines

The vertical gear shaping semiautomatic machines are intended for cutting of spur external and internal gears by method of form-generating. The machine has configuration with upright axis of workpiece and with movable table for changing of spacing on centres.

The control of operational cycle of the gear shaping semiautomatic machines is realized with the help of «SIEMENS» programmable controller.

The semiautomatic machines BCH-123CNC is equipped with the SIEMENS operator desk, programmable controller and drives.



Maximal diameter of gears, mm	250
Maximal module of gears, mm	5
Maximal face width of gears, mm	60
Maximal nominal pitch diameter of gear cutter, mm	100
Diameter of cylindrical neck of arbor for gear cutter, mm	44,45(31,75)
Diameter of table working surface (of workpiece spindle flange), mm	250
Distance between the table axis and the tool axis, mm	-60...160
Length of adjusting travel of tool spindle, mm	110
Number of double strokes of tool spindle per minute	200...1000
Range of circular feeds, mm/min	20...450
Range of radial feeds, mm/min.	0,5...80
Number of coordinates to be controlled(X,B)	2
Discontinuity coordinate X, mKm	5
Discontinuity coordinate Y, arc/sec	7
Power of primary motion drive, KW	15
Power of main drives, KW	4
Total power of drives, KW	7,37
Overall dimensions, mm	2500x1500x2000
Weight of the semiautomatic machine, kg	4500

VISTAN

BCH-150CNC, BCH-180CNC

Gear shaping semiautomatic machines

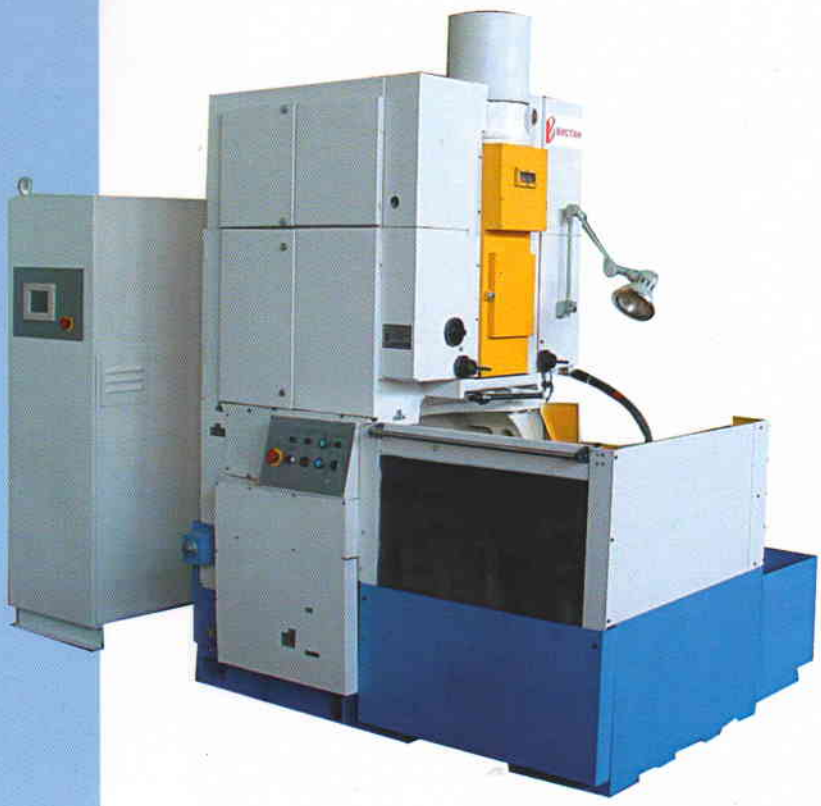
The gear shaping semiautomatic machines are intended for cutting of spur external and internal gears with disk-type gear cutters by method of form-generating.

The semiautomatic machines have the upright arrangement. At idle running the implement from a workpiece is taken away by the tool. The implement from a workpiece at idle running is taken away.

Treatment of one, two and three cuts with the changing of cutting speeds by every cut. The treatment is realized according to semiautomatic cycle. By idle running the tool from a workpiece can be taken away at an angle due to offset of a rack in the cross direction.

The control of operational cycle of the gear shaping semiautomatic machines is realized by «SIEMENS» programmable controller.

The semiautomatic machines are equipped with the SIEMENS operator desk, programmable controller and drives.



Model	BCH-150CNC	BCH-180NC2
Maximal diameter of gears, mm	500	800
Maximal module of gears, mm	8	12
Maximal face width of gears, mm	100	160
Maximal nominal pitch diameter of gear cutter, mm	125	200
Diameter of cylindrical neck of arbor for gear cutter, mm	44,443-0,005	
Diameter of table working surface (of workpiece spindle flange), mm	560	800
Distance between the table axis and the tool axis, mm	0...355	0...700
Distance between the mirror of a table and butt end of a spindle of the tool -minimal -maximal	 120 270	 155 355
Length of adjusting travel of tool spindle, mm	150	200
Number of double strokes of tool spindle per minute	55...560	30...240
Range of circular feeds when the gear cutter 100, mm/double stroke	0,06...0,6	0,2...1,5
Range of radial feeds, mm/min.	0,02...0,2	0,01...0,5
Power of primary motion drive, KW	15	15
Overall dimensions, mm	2263x1660x2510	3700x1500x3300
Weight of the semiautomatic machine, kg	7500	10450

VISTAN

BCH-6A13CNC, BCH-613NC, BCH-613CNC, BCH-620NC, BCH-620CNC

Gear spline-hobbing semiautomatic machines

The semiautomatic machine with horizontal axis of rotation is intended for cutting of spline shafts, spur and helical gears, and also worm-wheels with hobs by method of form-generating.

The semiautomatic machines BCH-6A13CNC25-10 are intended for cutting of worm-wheels and lead screws by disk-mill.

To raise the hob life due to using of cutting edges all over the length the hob travels along the axis periodically (shifting).

For the semiautomatic machines BCH-613NC and BCH-620NC are equipped with the SIEMENS operator desk, programmable controller and drives.

The semiautomatic machines BCH-613CNC, BCH-6A13CNC and BCH-620CNC are equipped with the CNC system mod. SINUMERIK 802D by SIEMENS and have the "untied" kinematic chains.

The disk-mills with diameter 130-230 mm and maximum thickness 60 mm are installed on the semiautomatic machines BCH-6A13CNC25-10.

Model	BCH-6A13CNC	BCH-613	BCH-620
Centre height above the bed, mm	230	230	300
Maximal length of the blank, mm	710	710	1000,3000*
Diameters of gears to be treated	125	125	20...200(20...320)
Maximal length of splines to be cut, mm	500	500	820,2500*
Module of gears to be treated, mm	6	6	8,10*
Maximal teeth helix angle of gears to be treated	±45	±45	±45
Maximal diameter of hobs to be installed, mm	160	160	160
Maximal length of hobs to be installed, mm	160	145	200
Maximal travel of hob (shifting), mm	110	75	100
Range of rotational speed of hob spindle, rpm	63...400	63...400	40...400
Range of working axial feeds, mm/min	3,0...700	3,0...700	3,0...700
Range of working radial feeds, mm/min	3,0...500	3,0...500	3,0...500
Diameter of through hole in the workpiece spindle, mm	72	72	90
Speed of saddle rapid travels, mm/min	700	700	700
Speed of column rapid travels, mm/min	500	500	500
Power of primary motion drive, KW	11,2	7,5	18,5;29,3
Total power of electric motors installed, KW	18,8	15,3	30,6;46,11
Weight, kg	4500	5200	8000
Overall dimensions (length x width x height), mm	2790x2180x2000	2600x1910x1950	3640x2190x1970

* - to special order

VISTAN

BCH-5A50-20, BCH-5A50-2-20

Semiautomatic machine for pinions teeth chamfering with abrasive wheel

The semiautomatic machine is designed for deburring and chamfering along the teeth contour of bevel of spur and helical with external and internal gears, spur and helical gears, pinion-shafts, worm wheels and sprockets by abrasive wheel.

These semiautomatic machines are manufactured in the following versions:

BCH-5A50-20 – with one spindle for chamfering in one butt-end.

BCH-5A50-2-20 - with two spindles for chamfering in two butt-ends at one time.

The semiautomatic machines BCH-5A50 are equipped with the SIEMENS operator desk and drives and high-speed electric spindle (Germany).

The semiautomatic machines BCH-550 have the relay control circuit. It is equipped with SIEMENS-drive and electric spindle of own production.

Maximal diameter gears, mm	500
Minimal outer diameter, mm	70
Module gears to be treated, mm	1,5...10
Maximal height of gears to be treated, mm	350
Maximal diameter of grinding wheel, mm	125
Diameter of a spindle of the tool, mm	14
Distance between the base of a semiautomatic machine and upper butt-end of a faceplate, mm	910
Distance between the tool axis and front side of the semiautomatic machine, mm	250
Minimal distance between the table and the butt-end of tool, when the under butt-end is treated, mm	150
Maximal vertical travel of wheel-head, mm	300
Rotational speed of grinding wheel, mm	7700
Limits of rotational speed of a table (stageless), mm	0,3...6
Overall dimensions, mm (LxBxH)	1050x870x1400
Weight, kg	350
Power of primary motion drive, kW	0,74

VISTAN

BCH-580, GBCH-580

Gear rounding semiautomatic machine

The semiautomatic machines BCH-580 and GBCH-580 CNC25 are intended for treatment of gears of external and internal gearing with special form end milling cutters.

For BCH-580 the treatment (rounding, chamfering of roofing) is achieved by jaw installation for particular kind of treatment. In standard version the semiautomatic machine BCH-580 is equipped with the jaw for teeth faces rounding. By the special order the jaw for chamfering of spur cylindrical gears of external and internal gearing and for roofing of particular workpiece can be supplied.

For semiautomatic machine GBCH-580 CNC25 the treatment can be choosed on the operator's console monitor.

The semiautomatic machine GBCH-580 CNC25 is equipped with a tailstock allowing treating a shaft.

By customer's request the semiautomatic machine should be used for treatment of pinion-shifts. For this work support arm, with the support for upper part of shaft to be treated, to be installed on the semiautomatic machine.

Model	BCH-580	GBCH-580CNC25
The arrangement axes of workpiece about horizon	vertically	horizontally
Maximal diameter workpiece to be treated, mm	320,400*	320,400*
Module of gears to be treated, mm	1,5...6	1...6
Number of teeth to be treated	10...120	6...320
Distance between instrumental centers, mm	-	600
Diameter of mill to be installed, mm	16;13*;18*	16;13*;18*
Distance between the tool axis and butt-end of spindle, mm: - minimal -maximal	 50 190	 10 210
Maximal length of travel of instrumental head along blank axes, mm	100	500
Rotational travel of instrumental spindle, deg	+5/-20	±30
Diameter of workpiece spindle, mm	250	190
Symbolic size of end of workpiece spindle (GOST 12595-85)	-	6
Diameter of through hole in the workpiece spindle, mm	-	72
Number of instrumental spindle	1	3
Rotational speed of tool spindle, min-1	1075/1630/3258	1...6000
Power of primary motion drive, KW	1,4/1,5/2,1	22
Total power of electric motors installed, KW	4,88	60,17
Number of coordinates to be controlled	-	5
Overall dimensions, mm (LxWxH)	1675x1110x1810	2790x2120x2000
Weight, kg	2950	4500

* - to qualify for order

VISTAN

BCH-732NC / BCH-932NC

Gear shaving machines / Gear honing semiautomatic machine

The gear shaving machines are intended for finishing treatment of teeth of soft cylindrical gears of external gearing in serial mass production. It is provided the possibility of "barrel" and tapered teeth making on the semiautomatic machine.

The rotary guides of table provide the possibility of shaving with longitudinal, diagonal and cross feeds of workpiece. There is possibility of setting-up for in-feed shaving.

The semiautomatic machine BCH-732NC is equipped with the SIEMENS operator desk, programmable controller and drives.

To make barrel and tapered teeth there are synchronous electronic kinematic couplings instead of mechanical on the semiautomatic machine BCH-732 CNC installed. It is equipped with the CNC system mod. SINUMERIK 802D by SIEMENS.

The semiautomatic machine BCH-932NC is intended for the finishing treatment of hardened short spline shafts, spur and helical cylindrical gears with abrasive and diamond-tipped gear hones by method of form-generating, with isolated gear train using longitudinal and diagonal feeds.

The gear honing on the machine is possible when the radial and circumferential loading after "without reverse" method and with reverse of rotation of workpiece and hone to provide the improving of surface roughness after the head treatment and the noise abatement.

It is possible to treat gears with barrel-shaped teeth.

The semiautomatic machine is equipped with the SIEMENS programmable controller and drives.

Model	BCH-732NC	BCH-932NC
Maximal treatment diameter, mm	320	320
Maximal length of blank, mm	500	500
Maximal face width, mm	150	125
Module, mm	8	1,5...8
Maximal nominal pitch diameter of gear-shaving cutter, mm	250	250
Maximal width, mm	40	40
Fit diameter of gear-shaving cutter, mm	63,5	63,5;100
Maximal angular displacement of gear-shaving cutter head from the mid-position, deg.	30	25
Maximal travel length of table, mm	150	140
Maximal cross travel of table, mm	25	-
Maximal vertical travel of table, mm	165	-
Distance between the tool spindle axis and the workpiece spindle axis, mm	120...285	130...285
Maximal angular displacement of tables guides from the mid-position, deg.	-30...+90	-
Maximal value of template travel from the zero position, mm	15	-
Maximal angular displacement of template, deg.	45	45
Range of rotational speed of tool spindle, rpm	56...360	160...1000
Range of speeds of table horizontal travels, mm/min.	15...300	-
Range of table radial feeds, mm	0,01...0,04 (0,02...0,04)*	-
Maximal value of the removed allowance,mm	-	250...1250
Limits of rotational speed of left head's spindle, mm	-	50...400
Limits of table feeds, mm/min	-	1...5
Number of the double motions of a table for a cycle	-	630
Maximal value of the radial weighting, H	-	160
- when the normal shaving - when the plunge-cut shaving	0,4 0,3	
Range of values of unloading rebound, mm	0,01...0,04(0,02...0,04)*	-
Total power, KW	6,7	10,4
Overall dimensions (length x width x height), mm	1750x2200x2120	1600x1000x2200
Weight of the semiautomatic machine, kg	4700	3150

* – for BC-E02B-02

VISTAN

GBCH-840CNC

Spline grinding semiautomatic machine

The spline grinding semiautomatic machine is designed for the high-performance finishing processing of spur and helical gears by continuous flow forming of grinding worm grinding wheel by the speed up to 60 m/s.

The processing is carried out by the pendulum or lifting grinding method. By the pendulum grinding the worm grinding wheel is supplying after each grinding passage in the upper and lower extreme points to the workpiece for the calculated value. Thus the rough grinding is performing. After that before the finishing the tangential shift of the worm wheel is performed. The new sections of the grinding wheel are introducing in the processing area.

The shifting-grinding (diagonal) grinding is performed unlike pendulum grinding in fewer passes. In most cases in one or two passes: all allowances for roughing and high precision processing is realized during the single finishing pass.

The spline grinding semiautomatic machine can provide the processing of cog-wheels with longitudinal teeth modification (barrel form, taper form) and grinding with various adjustments by the radial wheel feed (Z axis).

The cleaning of lubricant-coolant liquid is carried out by 2-stage system. During the first stage the separation of the chips with the abrasive powder is carried out by magnetic separator. During the second stage the lubricant-coolant liquid is filtered by the paper filter with automatic paper feed.

The fence of the working area is made in the cabinet form with electric blocking of doors.

The rotational sharpened roller with diamond coating provides the adjustment of the worm wheel with profile angle of 15-30 degrees. The various modifications of the left and right profile of the worm wheel are possible.

The automatic feed into the engagement with the grinding wheel during the adjustment, as well as the automatic feed into the engagement of the grinding wheel with the workpiece simplifies the process of machine service. The high speed and precision generating module in combination with flexible control system provides the high level of spin-grinding of gears with optimal quality and economic results. CNC system «SINUMERIK 840Dsl» is a good basis for integration into the flow forming process of gear grinding, as well as into the structure of the machine maintenance and engineering software.

For all basic coordinates the roller guides and roller backlash-free ball screw nuts are installed, which provide the smooth movement and precision.

As an additional option we can delivered the following accessories:

- Internal cooling of the tool holder with simultaneous automatic balancing of worm wheel by the coolant;
- Installation of oil mist and fumes remove systems with subsequent electrostatic condensation of coolant liquid.

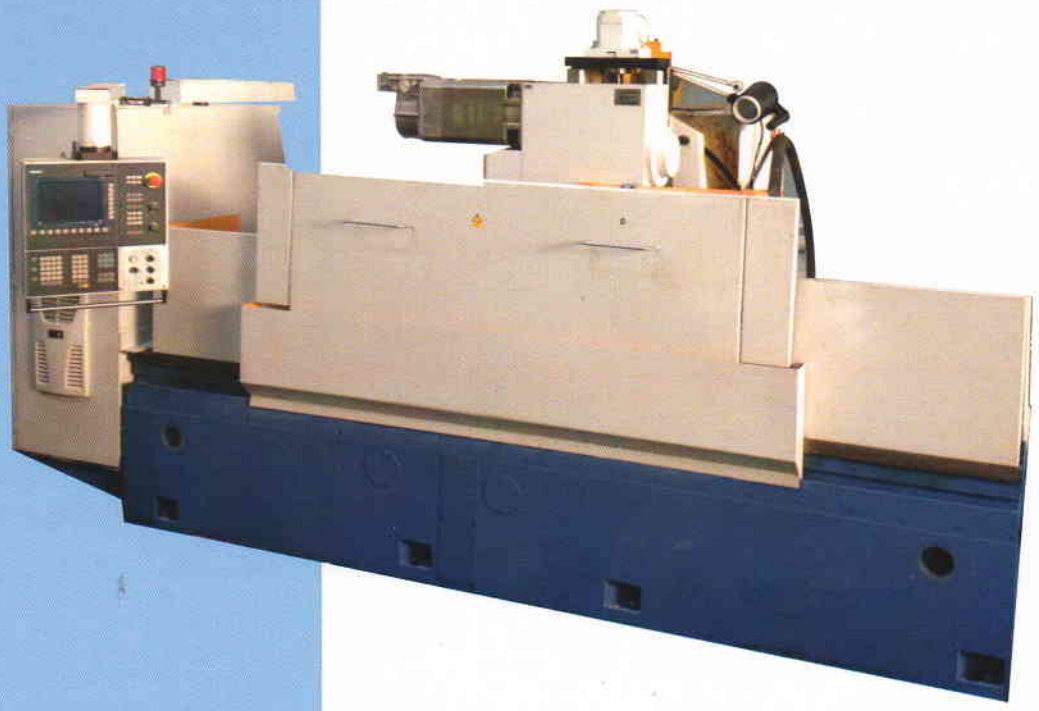
Maximal diameter of cog-wheel, mm	400
Maximal module of gears, mm	8
Maximal angulation of support, grad	±35
Maximal diameter worm wheel, mm	300
Minimal diameter worm wheel, mm	210
Maximal length worm wheel, mm	180
Diameter of bore of a tool holder, mm	160h5
Diameter of spindle of workpiece, mm	250
Maximal vertical travel of support (axis Z), mm	450
Maximal travel of main carriage along an axis of a worm wheel (a shifting, axis Y), mm	350
Limits of interaxal distance (axis X), mm	70-480
Maximal rotational speed spindle of workpiece (axis C), min-1	650
Maximal rotational speed spindle of tool (axis B), min-1	10000
Positioning accuracy, micron	±5
The number of the managed coordinates	10
The number of at the same time managed coordinates	5
Limits of feed on axes X, Z, mm/min.	1-1000
Limits of feed on axes Y, Z1, mm/min.	1-1000
Power drive of main motion, KW	26,4
Power drive of rotation of workpiece, KW	27
Total power, KW	93
Overall dimensions (together with separately located units and electric equipment) (length x width x height), mm	4300x4275x3200
Weight of the semiautomatic machine (together with separately located units and electric equipment), kg	12000

VISTAN

BCH-6PCNC

Rod-milling semiautomatic machine

The rod-milling semiautomatic machine with CNC (model BCH-6PCNC) is intended for handling straight and helical laths by method of single division for single and serial production.
Mathematical software allows you to control semiautomatic machine interactively.
The semiautomatic machine with 4 simultaneously controlled axes is equipped with CNC Sinumerik 840D and SIEMENS drives.



Maximal length workpiece, mm	2100
Maximal module of cutting rack , mm	10
Maximal teeth helix angle of gears, grad	25
Maximal width workpiece, mm	120
Maximal diameter of mill	200
Length travel of mill (axis X), mm	2100
Vertical travel of mill (axis Z), mm	300
Cross travel of mill (axis Y), mm	400
Limits of rotational speed of mill's spindle, min-1	20...200
Speed travel along axis: X, mm/min Y, mm/min Z, mm/min	 2000 5...1000 20...1000
Total power, KW	27
Overall dimensions (length x width x height), mm	4650x1979x2670
Weight of the semiautomatic machine, kg	12000

VISTAN

GBCH-232CNC

Gear-hobbing semiautomatic machines for treatment of conic gears

The gear-hobbing semiautomatic machine is intended for fair and draft cutting of conic wheels with straight cogs. The processing is realized two coupled by gear-cutting heads by method of a running-in or cutting-in, and also by the combined method.

- The semiautomatic machine GBCH-232 CNC has classical configuration of gear-cutting machines for cutting of conic wheels.

- The semiautomatic machine GBCH-232 CNC is equipped with the CNC system SINUMERIK 828D by SIEMENS with use of 4 controlled axes that provides the "untied" kinematics – synchronous rotation of cradle and rotation of workpiece, the movement of table, radial cutting-in.

- The rotating speed regulation of mill spindle is realized by the CNC system stepless according to the technological program.

- For increase in the general reduction of drives and decrease of dimensions of engines in a drive's design the high-precision planetary reducers with a reduction 1:5 and 1:10 are used.

- The removal of shaving washout, collecting in the box for shaving acceptance is realized by the magnetic conveyor with cleaning of lubricant-coolant liquid.

- The clutch of blank is realized by a hydraulic cylinder with a controllable clamping force.

- The semiautomatic machine has the centralized lubrication system.

Maximal outer diameter of gear, mm	320
Maximal module, mm	8
Maximal outside conical distance, mm	160
Maximal width of gear ring of wheel, mm	50
Maximal height of gear, mm	18
Number of gear of the cut wheels Installation angle of a block, grad	10...150
Distance between spindle butt-end and centre of machine, mm	4...90
Maximal shift of an axis of turn of a block of a workpiece from zero	60...360
situation (shift of table), mm	
- on a cradle	25
- from a cradle	25
Outer diameter of a conic hole of a spindle's block of a workpiece	100
by GOST 17547-80,mm	80
Diameter of a cylindrical hole of a spindle's block of a workpiece	278
on length from a spindle butt-end 500 mm, mm	60
Rated diameter of gear-cutting heads by GOST 24904-81, mm	0...10
Maximal angle of swing of a cradle, gradAngle of divorce of	0,3...9
supports, grad	
Angular feed rate by running, gradMain drive (1PH8107 "SIEMENS"):	10
- power, KW	135
- rated moment, Nm	30...120
Rotating speed of tool spindlesNumber of installed electric motors	7
Total power, KW	25,02
Overall dimensions (length (with open door) x width x height), mm	2450x2740x2000
Weight of the semiautomatic machine, kg	7500

PRODUCT RANGE OF JSC "VISTAN"

CENTERLESS CYLINDRICAL GRINDING SEMIAUTOMATIC MACHINES

BCA-180NC	d processing 0,5-10 mm	3E180B*
BCA-183NC	d processing 2,0-40 mm	3E183BM*
BCA-184NC	d processing 4,0-80 mm	3E184BM*
BCA-185NC	d processing 8,0-160 mm	3E185BM*
BCA-184KNC	d processing 5,0-80 mm	3E184SHV*

UNIVERSAL CENTRING CYLINDRICAL GRINDING SEMIAUTOMATIC MACHINES

BCA-1U52NC d=10-250,L=1000mm (outer grinding)
ВШ-152УВИ*
BCA-1U52-01NC d=10-250,L=1000mm (outer, inner grinding)
ВШ-152УВИ-01*
BCA-1R52NC d=10-250,L=1000mm (outer grinding)
ВШ-152РВИ*
BCA-1R52-01NC d=10-250,L=1000mm (outer, inner, face grinding)
ВШ-152РВИ-01*

HORIZONTAL MACHINING CENTRE

BCM-206BM13CNC table 630×800, 30 tools SIEMENS 2206BMF4-13*

ENGINE LATHES

16ВТ20П-21	d=500mm, L=1000mm
16ВТ20П-22	d=500mm, L=1500mm
BCT-625-21CNC	d=320mm, L=1000mm
BCT-625-22CNC	d=320mm, L=1500mm

BENCH-TYPE MACHINE TOOLS, TYPE «MINICS»

BCT-028	Universal bench-type lathe machine	BSH-028*
BCM-008	Bench-type drilling machine	KC-8-01*
BCH-12	Bench-type threading machine	BC-12M*
BCM-029	Bench-type drilling-milling machine	BSH-029*

OTHER MACHINES

BSH-041	Rough-grinding machine
BSH-042	Hacksaw-cutting-off machine

ROD-MILLING SEMIAUTOMATIC MACHINE

BCH-6PCNC m=10, L=2100mm

GEAR HOBBING SEMIAUTOMATIC MACHINES

53B30П	m=6, D=320
BCH-332 NC21 (53B30П-02)	m=6, D=320
53B30П-10	m=6, D=320
BCH-332NC	m=6, D=320
BCH-332CNC	m=6, D=320
BCH-350NC	m=10, D=500
BCH-3A50CNC	m=10, D=500

GEAR SPLINEHOBBING SEMIAUTOMATIC MACHINES

BCH-613NC	m=6, D=125, $L_{grinding}$=500
BCH-613CNC	m=6, D=125, $L_{grinding}$=500
BCH-620NC	m=8, D=200, $L_{grinding}$=820
BCH-620CNC	m=8, D=200, $L_{grinding}$=820
BCH-6A13CNC – 10 lead screw, worm	D=125, L=500

GEAR SHAPING SEMIAUTOMATIC MACHINES

BCH-123CNC	m=5, D=200
BCH-150CNC	m=10, D=500
BCH-180CNC	m=12, D=800

GEAR DEBURRING SEMIAUTOMATIC MACHINES

BCH-5A50-20	m=10, D=500	one spindle
BCH-5A50-2-20	m=10, D=500	two spindle

GEAR ROU
NDING AND SHAPING SEMIAUTOMATIC MACHINE

BCH-580, GBCH-580 m=6, D=320

GEAR SHAVING MACHINES

BCH-732NC	m=8, D=320	SIEMENS
BCH-732CNC	m=8, D=320	SIEMENS

GEAR HONING SEMIAUTOMATIC MACHINE

BCH-932NC	m=8, D=320	SIEMENS

GEAR GRINDING SEMIAUTOMATIC MACHINE

BCH-840CNC	m=8, D=400	SIEMENS

GEAR-HOBBING SEMIAUTOMATIC MACHINE FOR TREATMENT OF CONIC WHEELS

GBCH-232CNC	m=8, D=320	SIEMENS

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