NEOTECH

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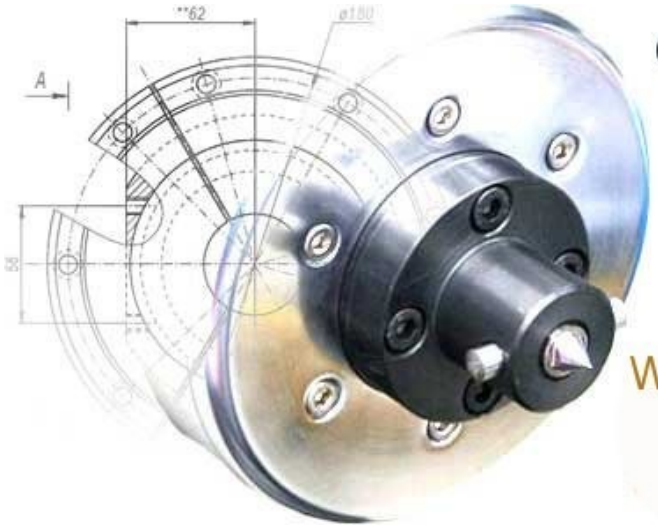
Machines and devices

NEOTECH

ABOUT COMPANY



Our core business is the design and production of manufacturing machines

We specialise in machines for the production of inductive components

Our products include winding machines, automated tinning machines, monitoring and metering devices, automated packaging machines and complete production lines.

Machines are produced to individual order. We can also retrofit used machines.

Thanks to a history of cooperation with many companies with different business profiles we have an extensive experience in mechanical and automation design as well as production and implementation of machines on industrial sites.

We have implemented and operate EN ISO 9001:2008 compliant quality management system for the design and production of machines.

Many years of experience in the design and construction of machines to customer specification make us an ideal and competent partner for you.

FIND OUT MORE ABOUT OUR RANGE OF PRODUCTS AND SERVICES

HISTORY

1989 Zakład Innowacyjno-Wdrożeniowy „BIATECH" Sp. z o.o. - a company producing machines and devices is founded.

1998 Biatech established cooperation with the company Neosid Beteiligungen GmbH.

1999 The company NEOTECH Sp. z o.o. is established by the three members of management of Biatech Sp. z o.o. innovation and implementation facility as a joint venture with German-based Neosid Beteiligungen GmbH & Co. KG. NEOTECH builds on its experience and continues its long tradition in the field of development, design and construction of machines for the production of inductive components. 10 employees are hired in the first year of NEOTECH operation.

2003 NEOTECH Sp. z o.o. becomes the Polish representative of Neosid Pemetzrieder GmbH & Co KG - the manufacturer of inductive components and ferrite cores.

2004 The company obtains the quality certificate according to German industrial standard DIN EN ISO 9001:2000

2008 Finalist of the Quality International 2008 forum in the category QI PRODUCT - the highest quality product

2010 Certyfication audit according to PN-EN ISO 9001:2008.

Present NEOTECH Sp. z o.o. employs 100 people of which 20 work in the machine design and development department. In addition to working in the field of special machine design and development, NEOTECH Sp. z o. o. runs its own production of inductive components to meet the demands of both domestic and international clients.

The company's business profile influence:

1. Machine design, production and servicing
2. Production of inductive components
3. Representation of NEOSID Pemetzrieder GmbH & Co.KG in Poland and Central and Eastern Europe

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PN-EN ISO 9001:2008

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SINGLE SPINDLE WINDER

UNIVERSAL WINDERS NCJ-22, NCJ-24

Single spindle winders NCJ-type are universal machines for winding components on a single spindle. They can be applied as a basic winding tool in production or service facilities. The machines are microprocessor controlled and equipped with color touch control display for user communication. Appliance in service is facilitated by simplified mode of the winder. Advanced software version of the machine enables describing any sequence of: spindle movements, layered winding, wire guide movements, machine stops. Appropriate use of software allows for making starts, endings and taps of coils.

Programming of the winder can be done from a PC. The winder communicates with PC via RS232 cable. (Since RS232 is not a standard in modern PCs, converter USB/RS232 can be used as well).

Standard equipment for the winder is a single wire guide. Accessories like tailstock for supporting coil former are available for purchase. The tailstock can be closed manually or pneumatically. Accordingly: NCJ-xKNR and NCJ-xKNP.

Machines working in service facilities can be equipped with foot switch NCJ-WN to regulate spindle rotation.

The winder enables winding several coil formers on the shared spindle. This kind of winding can require precise adjustment of the wire guide to each coil former separately. This is possible with the wire guide with precise regulation of location NCJ-PR type.

Accessories for winders	Description
NCJ-2KNR	Manual tailstock for winders NCJ-2...
NCJ-2KNP	Pneumatic tailstock for winders NCJ-2...
NCJ-PR	Wire guide with precise regulation
NCJ-PS	Standard wire guide
NCJ-WN	Foot switch with regulation of spindle rotation
NCJ-ST22 or 24	Table of winder

TECHNICAL DATA FOR WINDERS NCJ-2.. TYPE

type		NCJ-22		NCJ-24	
Max. coil diameter	mm	150		150	
Max .coil length	mm	250		450	
Feed rate range	mm	200		400	
Feed rate drive		servo motor		servo motor	
Resolution	mm	0,005		0,005	
Max. feed speed	mm/sec	500		500	
Spindle drive		Servo motor 3500rpm / 2,4Nm		Servo motor 3500rpm / 2,4Nm	
Spindle speed / Torque	rpm / Nm	0...1100	7,8	0...1100	7,8
		0...1600	5,4	0...1600	5,4
		0...2200	3,5	0...2200	3,5
		0...5300	1,6	0...5300	1,6
		0...8200	1,1	0...8200	1,1
		0...12000	0,7	0...12000	0,7
Dimensions L x W x H	mm	750x500x400		950x500x400	
Weight	kg	80		100	
Control system		FATEK controller + color touch panel 7”		FATEK controller + color touch panel 7”	
PC connection		RS232/USB		RS232/USB	
Power supply	V/Hz	230/50 1200VA		230/50 1200VA	
Safety		Safety guard, EMERGENCY STOP button		Safety guard, EMERGENCY STOP button	

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SINGLE SPINDLE WINDER

UNIVERSAL WINDERS NCJ-32, NCJ-34

Single spindle winders NCJ-type are universal machines for winding components on a single spindle.
Control and operation of winding is the same as in the description of the series winders NCJ-2..

Accessories for winders	Description
NCJ-3KNR	Manual tailstock for winders NCJ-3...
NCJ-3KNP	Pneumatic tailstock for winders NCJ-3...
NCJ-PR	Wire guide with precise regulation
NCJ-PS	Standard wire guide
NCJ-WN	Foot switch with regulation of spindle rotation
NCJ-210	Adapter for winding large diameter coils, fits to all types of winders
NCJ-ST32 or 34	Table of winder

TECHNICAL DATA FOR WINDERS NCJ-3.. TYPE

type		NCJ-32F		NCJ-34F		NCJ-32S2		NCJ-34S2		NCJ-32S4		NCJ-34S4	
Max. coil diameter	mm	350		350		350		350		350		350	
Max. coil length	mm	250		450		250		450		250		450	
Feed rate range	mm	200		400		200		400		200		400	
Feed rate drive		servo motor		servo motor		servo motor		servo motor		servo motor		servo motor	
Resolution	mm	0,005		0,005		0,005		0,005		0,005		0,005	
Max. feed speed	mm/sec	500		500		500		500		500		500	
Spindle drive		Induction motor + inverter		Induction motor + inverter		Servo motor 3000rpm/2,4Nm		Servo motor 3000rpm/2,4Nm		Servo motor 3000rpm/5Nm		Servo motor 3000rpm/5Nm	
Spindle speed	rpm	120...740	21	120...740	21	0...1000	6,6	0...1000	6,6	0...1000	14	0...1000	14
		240...1200	13	240...1200	13	0...1500	4,8	0...1500	4,8	0...1500	10	0...1500	10
		440...2200	7	440...2200	7	0...2000	3,3	0...2000	3,3	0...2000	6,9	0...2000	6,9
Torque	Nm	820...4000	3,8	820...4000	3,8	0...4000	1,7	0...4000	1,7	0...4000	3,5	0...4000	3,5
		1500...7600	2	1500...7600	2	0...6000	1,2	0...6000	1,2	0...6000	2,5	0...6000	2,5
						0...8300	0,9	0...8300	0,9	0...8300	1,9	0...8300	1,9
Dimensions L x W x H	mm	1000x750x1200		1250x750x1200		1000x750x1200		1250x750x1200		1000x750x1200		1250x750x1200	
Weight	kg	120		140		110		130		120		140	
Control system		FATEK controller + color touch panel 7"		FATEK controller + color touch panel 7"		FATEK controller + color touch panel 7"		FATEK controller + color touch panel 7"		FATEK controller + color touch panel 7"		FATEK controller + color touch panel 7"	
PC connection		RS232/USB		RS232/USB		RS232/USB		RS232/USB		RS232/USB		RS232/USB	
Power supply	V/Hz	230/50 2500VA		230/50 2500VA		230/50 2000VA		230/50 4500VA		230/50 2000VA		230/50 4500VA	
Safety		Safety guard, EMERGENCY STOP button											

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SINGLE SPINDLE WINDER

SINGLE SPINDLE WINDER NCJ-36S6

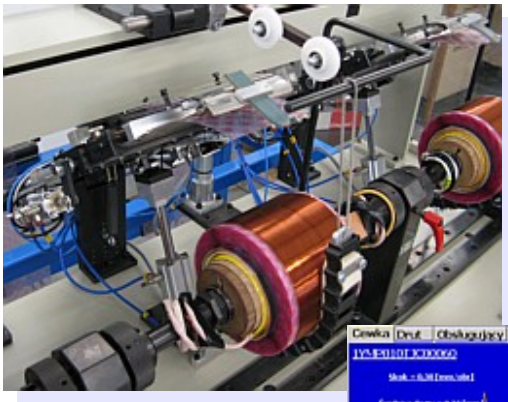
Machine type NCJ-36S6 is universal single spindle winder for use in industrial environments. It is designed for winding on coil formers, rod cores, rectangular and shaped cores.

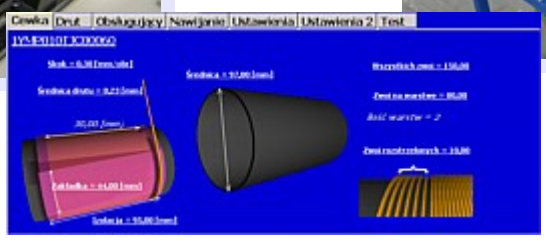
The machine is equipped with three specialized sets of tooling for winding coils and automatic feeding of the insulating separators. The tooling enables simultaneous winding of three transformers. Moreover, the winder is equipped with insulation continuity control systems. Winder software works with barcode scanner which reads part number from Technological Card of the product. On this basis the winder collects data from company's central data base. Winder with a single winding unit is also available.

TECHNICAL DATA NCJ-36S6

Parameter	Unit of measure	Value
Length × width × height	mm	~1850×~1300×~2000
Weight	kg	~400
Control system	FATEK	
Power supply	V/Hz	230/50
Max. power consumption	kVA	3,4
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	150

Transmission ratio	**1**	**2**	**3**	**4**	**5**	**6**
Spindle speed [rpm]	0 … 8571	0 .. 6666	0 .. 5142	0 .. 3111	0 .. 1866	0 .. 1000
Feed rate [mm/sec]	0...500	0...500	0...500	0...500	0...500	0...500
Torque [Nm]	2,8	3,6	4,66	7,71	12,86	24

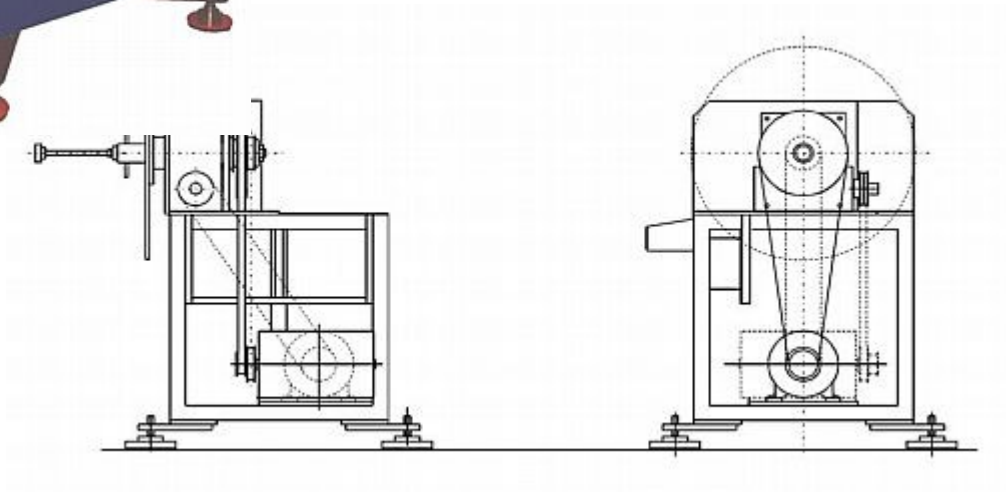




LARGE INDUCTIVE COMPONENTS NRS-01

Winder type NRS-01 is designed for winding stator frames of high power electric motors and other inductive components wound of large diameter wire. Ideal for rewinding huge inductive components. Diameter of winding is limited only by height over the ground of the spindle axis and weight of the coil being wound.

The device has very simple construction that results in price lucrative in relation to the parameters. It has no wire guide. The machine is easy in operation and can be applied in any production or service facility.



TECHNICAL DATA OF NRS-01

Parameter			Value
Number of spindles			1
Tailstock support			NO
Wire guide			NO
Max. coil diameter [mm]			1500
Max. coil length [mm]			ca 300
Microprocessor controller			Micro - BIAT
Power supply [V/Hz]			230 / 50
Power consumption [kVA]			< 2,5
Transmission ratio	1:1	18 Nm	300 ... 1000 rpm *
Spindle torque	1:3,1	54 Nm	100 ... 340 rpm *
Speed	1:49	600 Nm	6 ... 21 rpm *
Weight [kg]			350
Dimensions of the basis without disk and spindle [mm]			1000 x 900
Height without disk and spindle [mm]			1220

(*) values to be agreed

LARGE SINGLE SPINDLE WINDERS NRS-02, NRS-12, NRS-22

Winder NRS-02/12/22 is designed for winding large coils on coil formers and motor frames on templates. It can be used for winding coils on proper coil formers supported by jaws or without support. The winder enables winding with or without advance and is operated manually.

Depending on the model the winder is equipped with tailstock and wire guide.

TECHNICAL DATA

Parameter	NRS-02	NRS-12	NRS-22
Number of spindles	1		
Tailstock support	NO	YES	YES
Wire guide	NO	NO	YES
Max. coil diameter [mm]	1500	1500	1500
Max. coil length [mm]	ca 300	1200	1200
Microprocessor controller	Micro - BIAT	Micro - BIAT	BIAT - 2
Power supply [V/Hz]	230 / 50		
Power consumption [VA]	3400		
Speed Spindle torque	2,3...13 rpm 560 Nm		
	9...46 rpm 140 Nm		
	25...133 rpm 65 Nm		
	87...480 rpm 23 Nm		
Weight [kg]	850	1100	1350
Height without disk and spindle [mm]	1550	1550	2100
Noise emission [dB]	< 72		

MULTI SPINDLE WINDERS

UNIVERSAL MULTI SPINDLE WINDER CNW

Winding machine designed for winding coils on coil formers or ferrite cores. Device is equipped with XYZ three-axes manipulator to leading wires. The winding machine is equipped with a rotating shaft with wire guides rotating up to an angle of 90°, which allows wrapping pins in two planes.

The winder is equipped with an extra wire clamps block and cutting scissors optionally.

For attaching coil formers or coils are replaceable handles manufactured on demand. Spindles are driven by gear which allow to obtain two degree of transmission ratio.

The device is equipped with a PC controller (in industrial version) with a Windows XP Embedded operating system. Winder is programmable and allowes to remember the settings for each product.

The system software of winder allows to:

- Change the programs by the user.
- Write new programs. The user programs are password protected. It can be changed by authorized persons.
- Modify the program during oparation.
- Single-step operation (execute the next line of the program).
- Learning sequence of movements.

TECHNICAL DATA

Parameter	Unit of measure	Value
Control system		Industrial controller PC type
Power supply / current frequency	V/Hz	400/50
Max. power consumption	VA	6000
Pneumatic supply	MPa	0,6
Wire diameter range	mm	0,05÷0,5
Precision of spindle setting	turn	0,002
Mechanical lock of spindles		every 15º
Winding direction		free
Resolution in the XYZ axes	mm	0,001
Max. speed of movement in XYZ axes	mm/sec	400
Safety		Safety guard, EMERGENCY STOP button

TYPE	Number of spindles	Sspacing of pindles [mm]	Width of the spindles panel [mm]	Max. turns of spindle [turn/min]	Torque [Nm]	Length x Width x Height [mm]
CNW-4040	4	82,5	400	8000/4000	0,6/1,2	800 x 1000 x 1500
CNW-4041	4	82,5	400	12000/6000	0,4/0,8	without tensioners and spools
CNW-6040	4	125	600	8000/4000	1,2/2,4	1000 x 1000 x 1500 without tensioners and spools
CNW-6041	4	125	600	12000/6000	0,8/1,6	
CNW-6060	6	82,5	600	8000/4000	0,8/1,6	
CNW-6061	6	82,5	600	12000/6000	0,5/1	
CNW-8060	6	125	800	8000/4000	1,25/2,5	1200 x 1000 x 1500 without tensioners and spools
CNW-8061	6	125	800	12000/6000	0,8/1,6	
CNW-8100	10	82,5	800	8000/4000	0,7/1,4	
CNW-8101	10	82,5	800	12000/6000	0,4/0,8	

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MULTI SPINDLE WINDERS

UNIVERSAL 10-SPINDLE WINDER CNW-204

Winding machine designed for winding coils on ferrite cores or coil formers. The machine comprises two main assemblies: ten-spindle winding machine and ZL-04 linear changer. The winding machine is equipped with a rotating shaft with wire guides rotating up to an angle of 90°, which allows wrapping pins in two planes.

The linear changer is designed for loading cores or coil formers, delivering them to the winder and collecting finished coils. The changer can be equipped with rotating shaft of 90° angle rotation. For attaching coils or coil formers are replaceable sockets manufactured on demand.

TECHNICAL DATA OF CNW-204

Parameter	Unit of measure	Value
Length x width x height	mm	3600 x 1600 x 1600
Number of spindles		10
Weight	kg	~700
Control system		Microprocessor controller
Power supply	V/Hz	230/50
Max. power consumption	VA	2100
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/cycle	8
Wire diameter range	mm	0,05÷1,0
Axis spacing of spindles	mm	80
Inner diameter of spindles	mm	Ø 12 H7
Torque	Nm / spindle	0,4
Max. winding diameter	mm	70
Winding direction		optional
Max. winding speed	rpm	9000

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MULTI SPINDLE WINDERS

WINDER FOR INDUCTIVE COMPONENTS NCS-10

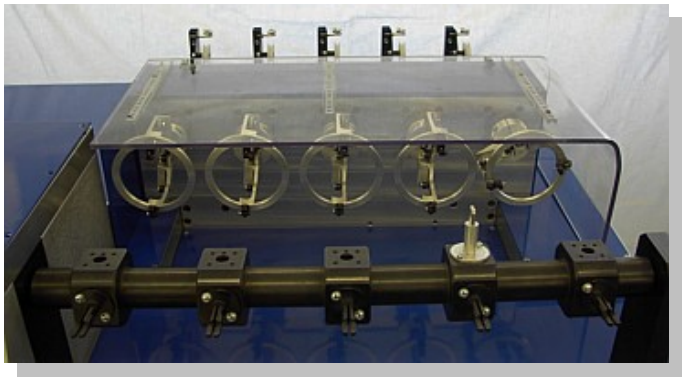
The NCS-10 is a five-spindle microprocessor controlled automated universal winding machine. Fixed coil formers or cores mounted on rotating changer are wound with the wire by the rotating winding arms. Application of the changer makes it possible to replace completely wound components during the winding process.

Winding program is created by the user by choosing commands describing spindle movements, shifting table feeds, location of changer. Proper collection of movements enables to wound radial and axial connectors or edgings of coil formers. NCS-10 has test function for checking subassemblies of the device.

The winder is perfect for medium- and long-run production series.

TECHNICAL DATA OF NCS-10

Parameter	Unit of measure	Value	
Length x width x height	mm	960 x 1000 x 1200	
Number of spindles		5	
Weight	kg	~150	
Power supply	V/Hz	230/50	
Max. power consumption	VA	2000	
Noise emission	dB	72	
Wire diameter range	mm	0,05÷0,4	
Max. coil diameter	mm	58	
Max. coil length	mm	75	
Max. feeding speed	mm/sec	50	
Spindle speed	rpm	0÷2100	0÷4200
Axis spacing of spindles	mm	80	
Winding feed	mm	0÷10	
Torque	Nm	2,4	1,2
Resolution feed	mm	0,01	



The machine is designed for winding skeins. It enables winding selected number of skein turns and wrapping the skein in a tight spiral. The device requires permanent operating.
Worker operating the device must catch the beginning of rope on a crutch and press the foot pedal (footswitch), which starts making selected number of turns of the rope. The machine stops after finishing winding. In the next phase the wrapping starts. The worker manually leads the rope during the wrapping. Number of wrappings is adjustable. After the wrapping worker cuts the rope and protects the ending from unwinding on the skein. Next removes the skein and hooks the cutted end of rope on crutch.

Time of winding the 15m skein takes from 12 to 15 seconds depending on the efficiency of the operator.

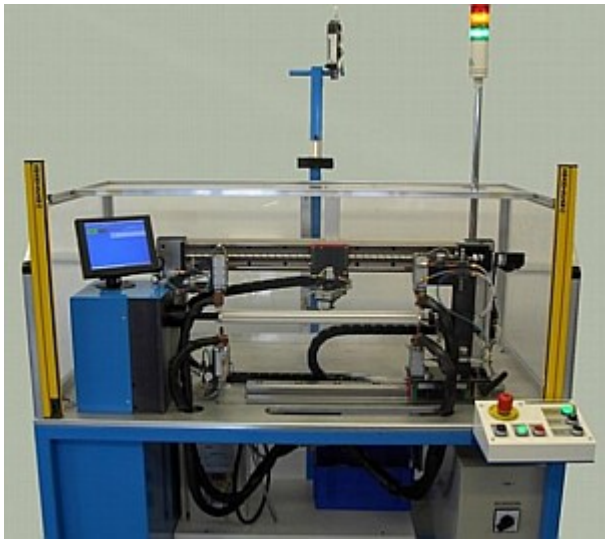
TECHNICAL DATA OF NAM-01

Parameter	Value
Diameter of wound ropes	2..4 mm
Length of wound skein	220 mm *
Length x width x height	ca. 1000 mm x 850 mm x 300 mm
Machine weight	~25 kg
Control system	Microprocessor controller
Power supply / current frequency	230 V / 50 Hz
Max. power consumption	500 VA
Number of turns (to select)	0...999
Number of wrappings (to select)	0...999
Winding and wrapping speed	setting dial
Safety	EMERGENCY STOP button

*) The value can be chosen at a time of placing an order.

SPECIAL WINDERS

MACHINE FOR WINDING HV FUSES NBW-01



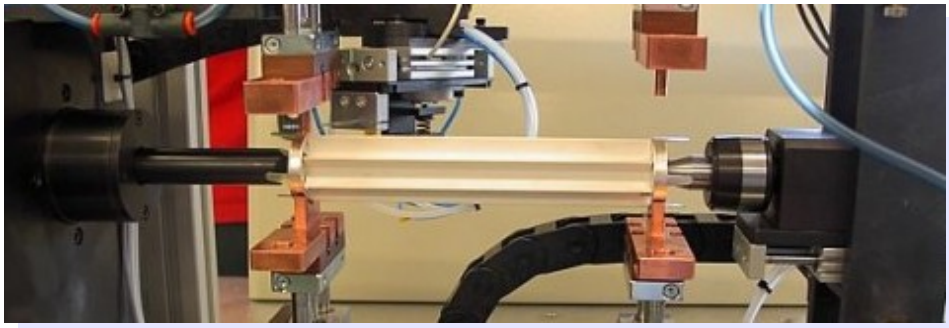
Machine NBW–01 is designed for winding fuse wire on porcelain brackets of high voltage fuses. The machine enables winding wire on the brackets of length between 170 and 515 mm and of two diameters: 25 and 36 mm.

The fuse bracket is placed between spindle pivot and rotating center of tailstock. It begins with pre-welding wire with first bracket ferrule then winding starts. Construction of the device enables complex movements of the spindle and manipulator unit which ensures the feed during winding. This guarantees winding the fuse wire on the bracket keeping length required by technology. Winding process is followed by second welding and breaking off the wire. Winding cycle is repeatable.

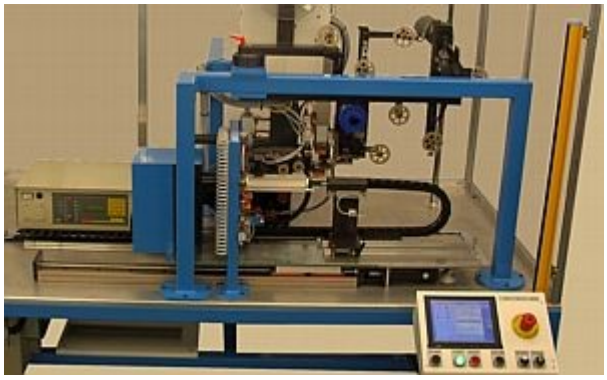
The machine is equipped with resistance welder and two pairs of electrodes. One pair is fixed and other pair is placed on the tailstock unit. This makes feasible winding brackets of different length only by changing tailstock's location.

TECHNICAL DATA OF NBW-01

Parameter	Unit of measure	Value
Length x width x height	mm	~1350 x ~1000 x ~2000
Weight	kg	~200
Control system	PC/104; Windows XP Embedded	
Power supply / current frequency	V/Hz	400/50
Max. power consumption	kVA	6
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	~15
Protection against electric shock	automatic power off	



MACHINE FOR WINDING HV FUSES NBW-02



Machine NBW–02 is designed for winding silver tape on porcelain brackets of high voltage fuses. The machine enables for winding tape on the brackets of length between 170 and 519 mm and of four diameters: 10, 25, 36 and 52 mm.

The machine is equipped with changeable notching units for tape widths 2,5mm and 5mm. The tape is run through a punch where neckings are cut and through notching wheels where notches are made on the tape in the middle of space between neckings.

The fuse bracket is placed between spindle pivot and rotating center of tailstock. Construction of the device enables changing angle of winding tape on the bracket in the range from 0 to 90° and complex movement of the spindle and manipulator unit ensures the feed during winding. This guarantees winding the fuse wire on the bracket keeping length and angle required by technology. Winding process is followed by second welding and breaking off the wire. Winding cycle is repeatable.

TECHNICAL DATA OF NBW-02

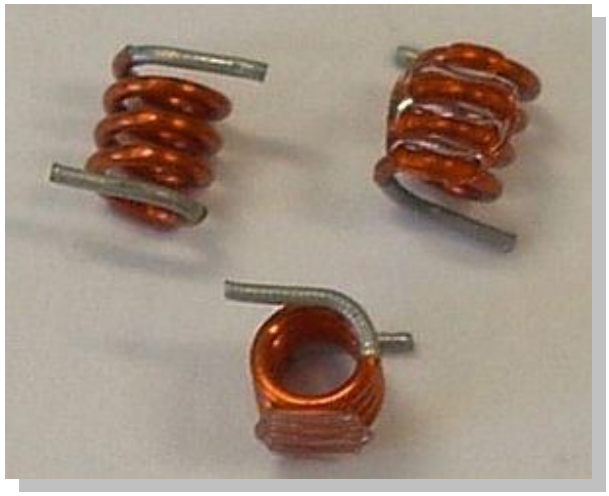
Parameter	Unit of measure	Value
Length x width x height	mm	~1900x~1000x~1990
Weight	kg	~400
Control system	PC/104; Windows XP Embedded	
Power supply / current frequency	V/Hz	400/50
Max. pulse power supply (1 sec)	kVA	80
Max. averaged power supply (1 min)	kVA	1
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	~16

AIR COIL WINDER NCP-223

Air coil winder is designed for long-run production of air coils or as a module of automatic machine for long-run production of inductive components on rod cores. The machine consists of wire preparation unit, winder and microprocessor control unit. The whole is placed on a common basis. The winder is designed for air coils of inner diameter from 1 mm to 6 mm wound of unsolderable winding wire thermal class min. 180 and diameter 0,2 mm - 0,8 mm.

TECHNICAL DATA OF NCP-223

Parameter	Unit of measure	Value
Length x width x height	mm	1200 x 600 x 1450
Weight	kg	~80
Control system		Microprocessor (loading program from RS 232 or floppy disk)
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	600
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	150
Wire diameter range	mm	0,2÷0,8
Winding feed	mm	0,05÷3,0
Max. coil length	mm	23
Max. ending length	mm	20
Max sum of endings length	mm	30
Max. speed of wire guide movements	mm/sec	40
Max. speed of operating movements	mm/sec	40
Torque	Nm	1,2
Winding speed (adjustable)	rpm	1÷1500



AUTOMATIC WINDERS

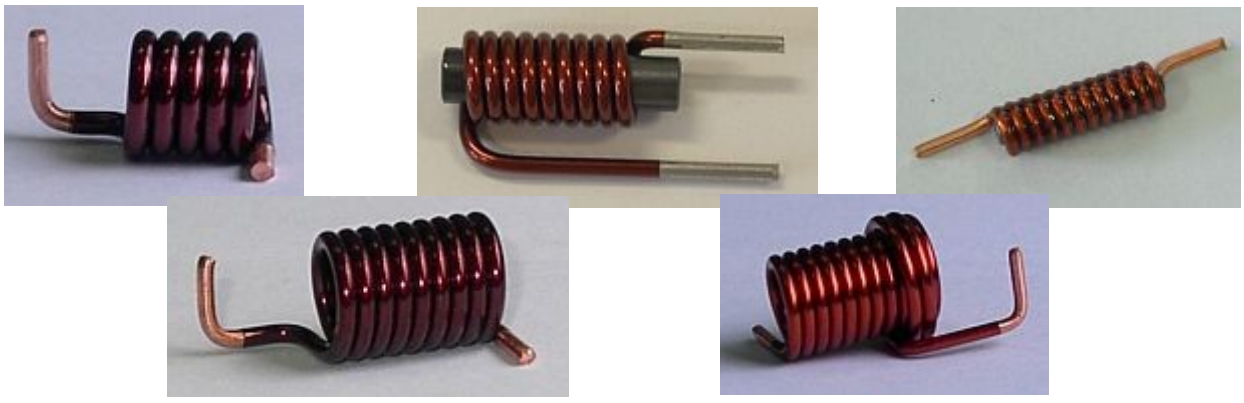
AIR COIL WINDER FOR LARGE DIAMETER WIRES NG-02

The NG-02 winding machine is designed for production of single layer coils using unsolderable wires with shaped and tinned endings. Depending on the tooling the endings can be lead axially or radially. The device works in automatic cycle of single spindle winding. The wire runs through entrance roll, straightening rolls, wire tensioner, wire stripper, flux, melting pot, and feeder to the winding grip.

Forming unit is used to form endings of the coil in the direction of its axis. After finishing winding cycle the coil is automatically dropped from a pivot. Units of tensioning, wire stripping, feeding and cutting can be distant from the spindle.

TECHNICAL DATA OF NG-02

Parameter	Unit of measure	Value
Length x width x height	mm	2340x1020x1480
Weight	kg	~300
Control system		Microprocessor
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	1700
Noise emission	dB	<70
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/cycle	1
Wire diameter range	mm	0,8÷2,0
Winding width	mm	50
Max. winding diameter	mm	10
Number of spindles		1
Number of layers		1 with 2
Winding direction		optional
Spindle speed	rpm	0÷1500
Output	pcs/h	450-500



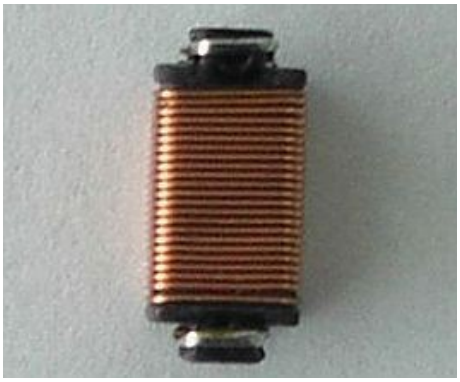
AUTOMATIC WINDERS

PRODUCTION LINE FOR CHOKE Ms36 AMD-01

Production line for choke Ms36, type AMD-01 is fully automatic line for complex production of inductive components based on ferrite cores including winding and tinning operations. Machine cycle takes 6,4 sec. The device is equipped with vibratory feeder bowl for ferrite cores, laser position and orientation system for cores, and the winder. The next stage is covering choke's endings with tin and collecting components in trays. The trays are automatically taken from a stack and after filling taken for a pile with chokes.

TECHNICAL DATA OF AMD-01

Parameter	Unit of measure	Value
Length x width x height	mm	2215 x 1250 x 1700
Weight	kg	~700
Control system		2 controllers PC-type
Power supply / current frequency	V/Hz	400/50
Max. power consumption	VA	3000
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	500
Noise emission	dB	72
Cycle time	sec	6,4
Choke dimensions	mm	3,2 x 3,2 x 8



AUTOMATIC WINDER FOR HELIX ANTENNAS ADA-01

Machine is designed for long-run production of Helixantenne 433 MHz wound of CuAg wire of diameter Φ 0,71 mm on polypropylene coil former. The production process is highly automated.

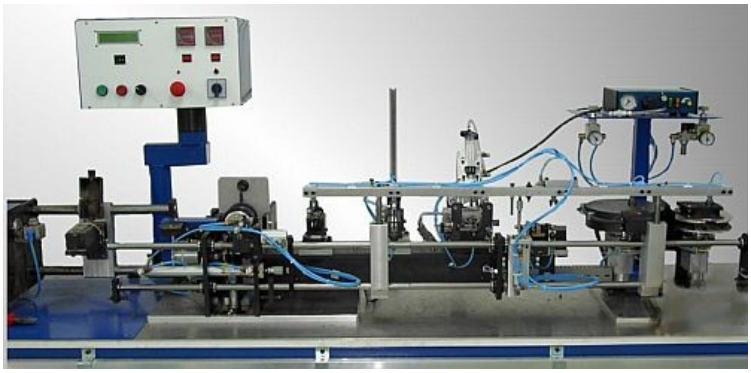
The machine is supplied from two sources: power supply and pneumatic supply.

TECHNICAL DATA OF ADA-01

Parameter	Unit of measure	Value
Length x width x height	mm	2340 x 1600 x 1655
Weight	kg	~600
Control system		2 controllers PC-type
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	3500
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	60
Noise emission	dB	72
Cycle time	sec	14

AUTOMATIC WINDERS

AUTOMATIC MACHINE FOR CHOKE PRODUCTION ADP-400



ADP-400 automatic machine is designed for long-run production of inductive components with inserted ferrite core and glue spot applied. The obtained glue spot makes gripping surface for transport units using the vacuum technique. The surface improves safety and strength of holding during transport and assembly of components in target technological processes. Construction of this automatic machine enables to apply round and linear shapes of the glue spot.

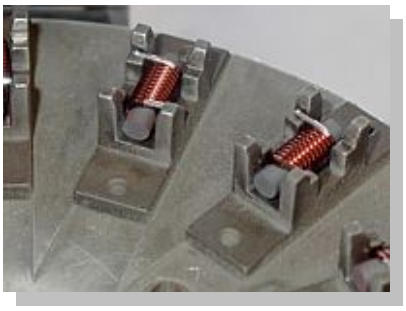
The machine consists of two basic parts situated on different tables. Both parts can be separated for easier transportation. The first part contains stations of wire preparation, winding air coil, assembly and gluing the core in, and temperature curing of the adhesive.

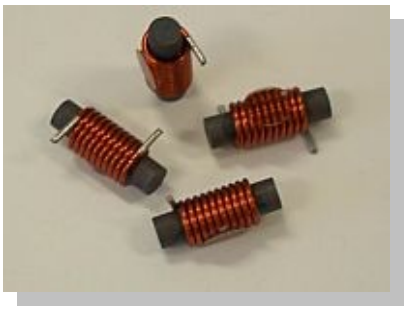
The second part contains stations of pull-out force testing, electrical parameters testing, application and curing the glue surface (ASF), receiving and placing finished products in trays. Both parts are controlled by own developed controllers perfectly working together. The automatic machine has a modular structure.

The ADP-400 is designed for production of Z4 series of chokes with inner diameter Φ 4 mm, wound of 0,8 mm wire.

TECHNICAL DATA OF ADP-400

Parameter	Unit of measure	Value
Length x width x height	mm	4500 x 900 x 1500
Weight	kg	~400
Control system		Two BIAT controllers
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	500
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	750
Cycle time	sec	8





AUTOMATIC WINDERS

MACHINE FOR PRODUCTION OF CHOKES BY WELDING METHOD NCP-270

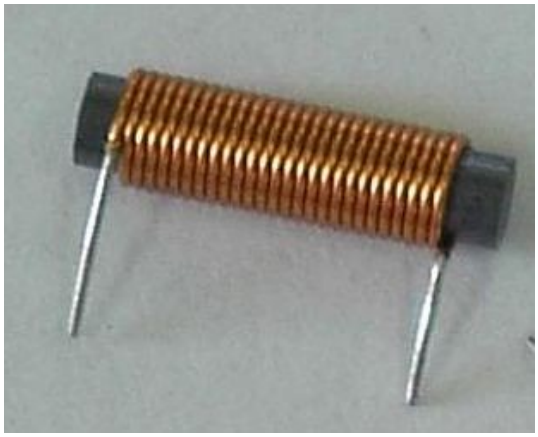
Specialized automatic machine for production of Z2,9/7 choke. The choke is used in airbag system release in cars.

The machine performs following operations:

- tinning endings
- winding coils
- core assembly
- bonding core and coil
- testing electrical parameters and choke selection
- testing pull-out force of core
- cutting endings to specified dimension
- packing components into packaging

TECHNICAL DATA OF NCP-270

Parameter	Unit of measure	Value
Length x width x height	mm	2100 x 950 x 1650
Weight	kg	~250
Control system		2 microprocessor controllers BIAT
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	800
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	750
Noise emission	dB	<70
Cycle time	sec	10
Core size	mm	Ø 2,9 x 10



TOROIDAL WINDERS

TOROIDAL WINDING MACHINE NCT-02

NCT toroid winding machines are designed for winding coils on toroidal cores, especially winding power toroidal transformers.

A characteristic feature of the NCT winders is constant wire tension during winding, which guarantees high quality of coil and minimizes risk of breaking the wire during winding.

The winders are designed based on the latest solutions in the field of drives and control. This unique type of winder control enables keeping wire tension stable during each turn of the winder.

The NCT-02 winder uses brushless DC motor for reel drive. Depository drive is independent from the reel, created by using induction motor with frequency inverter. The depository brake is electrically controlled. Braking force is electronically controlled.

The winder can be equipped with different types of winding heads; details are given below. After installing taping head the winder can be transformed into toroidal taping machine.

TECHNICAL DATA OF NCT-02

Parameter	Unit of measure	Value
Wire diameter range	mm	0,2÷2,0
Max. winding speed	rpm	250
Max. core diameter	mm	180
Min. gap diameter	mm	Dependent on head
Head type and storage capacity	To be agreed	

TOROIDAL WINDERS

HEADS TO NCT-02 WINDERS

HEAD TYPE		„miniature" G116	„small" G160	„medium" G195	„large" G238	„very large" G320	Taping GT
Wire diameter range in mm		0,2 - 0,8	0,2 - 0,8	0,3 - 1,5	0,4 - 2,0	0,5 - 2,2	-
Average ring diameter mm		116	150	195	238	320	195
Storage capacity in cm³		7,8	18	38	51	120	-
Min. gap diameter left in wound core in mm	For 15 mm height	13,5	19	-	-	-	-
	For 30 mm height	-	-	24	29	-	20
	For 60 mm height	-	-	-	32	35	-
Sort of tape – estrofol tape, width in mm	I completion	-	-	-	-	-	10
	II completion	-	-	-	-	-	12

TOROIDAL WINDING MACHINE WITH TAPING HEAD NCT-03

Solution applied in winder NCT-03 enables receiving possibly constant value of wire tension. This eliminates harmful phenomenon of loosing wire in one coil winding cycle. It involves proper control of reel motor. This brings constant linear velocity of wire fed from the storage and hence regular core winding with stable wire tension. Control system of the winder is equipped with joystick making it easier to operate.

Winding head is equipped with scissors to cut the wire after taking it to storage.

To this winder we offer taping head for taping cores and transformers. The taping head is equipped with automatic system of cutting tape.

The winder can be configured with elements listed below:

BASIS OF WINDING MACHINE	NCT-03-PN
BASIS OF TAPING MACHINE	TUT-03-PT
WINDING HEAD FOR NCT-03-PN	NCT-03-GN
TAPING HEAD SUITABLE FOR NCT-03-PN AND TUT-03-PT	NCT-03-GT

TECHNICAL DATA OF THE SET: NCT-03-PN + NCT-03-GN + NCT-03-GT

Parameter	Unit of measure	Value
Length x width x height	mm	1379 x 1680 x 1726
Weight	kg	~500
Control system		BIAT Controller
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	3300
Noise emission	dB	72
Wire diameter range (winding of 2 wires)	mm	0,5÷2,8
Wire diameter range (winding of 1 wire)	mm	0,5÷3,6
Max. outer diameter of wound transformer	mm	560
Min. inner diameter of wound transformer	mm	90
Max. height of transformer being wound	mm	130
Width of estrofol tape	mm	10 or 20
Winding speed	rpm	33÷160

TOROIDAL TAPING MACHINE TUT-02

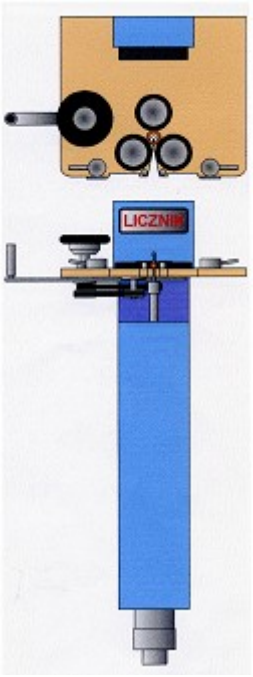
Toroidal taping machine is designed for insulating toroidal cores with coils wound on them by a plastic tape. The machine is indispensable in production process of toroidal transformers. Modern design solutions allow for efficient and careful isolation of coil by tapes of different materials and wide range of thicknesses. Applied controller and software allow for programming the machine by a person not having an additional qualification.

TECHNICAL DATA OF TUT-02

Parameter	Unit of measure	Value
Weight	kg	~200
Carrier for winding programs		Floppy disc 3,5”
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	1000
Tape width *	mm	10
Tape thickness	mm	from 0,035
Max. core diameter	mm	180
Min. diameter of gap left in taping element for 30 mm width	mm	20
Max. taping speed	rpm	250

* other widths on demand

TOROIDAL THREAD WINDING MACHINE UMP-02

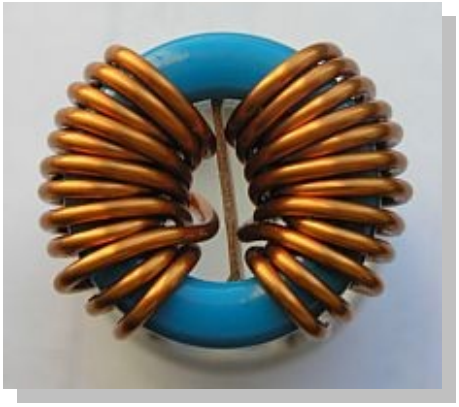


Toroidal thread winding machine is designed for winding on toroidal cores when winding only a few or several coils is required and using classic toroidal winding machine is unprofitable.

The thread winding machine is equipped with a counter indicating number of wound coils and number of required coils. It has the function of blocking the drive trigger after finishing the set number of coils.

TECHNICAL DATA OF UMP-02

Parameter	Unit of measure	Value
Power supply	V	230
Pneumatic supply	MPa	0,6
Wire diameter range	mm	0,15÷1,0
Max. core diameter	mm	40
Min. core diameter	mm	8



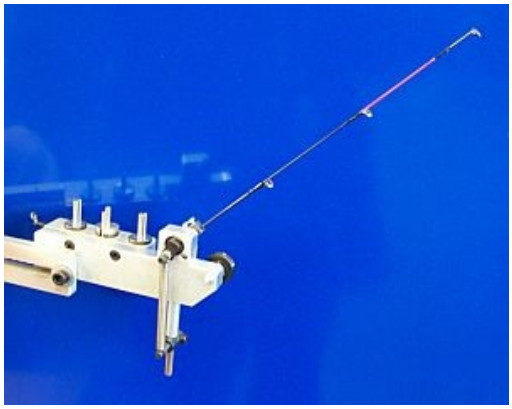
WIRE TENSIONERS — WINDING WIRE TENSIONERS NDC-103 AND NDC-104

Wire tensioners NDC-103 type are designed to ensure proper tension of a winding wire during winding coils, chokes, transformers, etc.

TECHNICAL DATA

Parameter	Unit of measure	NDC-103	NDC-104
Wire tension range	N	1,0 – 4,5	0,15 – 1,40
Wire diameter range (acc. Aumann's)	mm	0,118 – 0,25	0,036 – 0,14
Settings tolerance	%	+/- 20	+/- 20
Settings adjustment		constant	constant
Dimensions (without antenna)	mm	227x185x60	227x185x60
Weight	kg	1,4	1,4

WIRE TENSIONERS — WINDING WIRE TENSIONER NDC-301

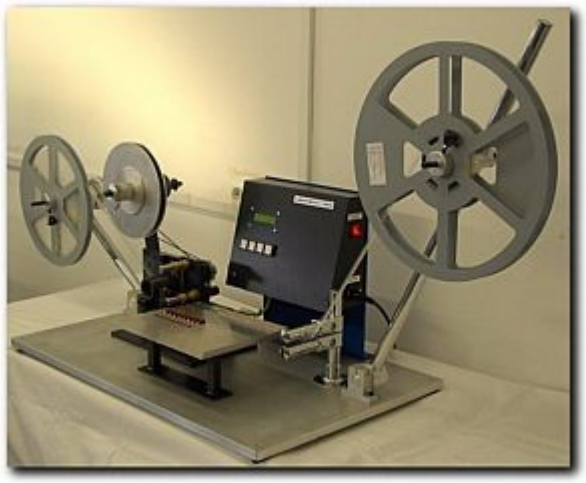


Wire tensioners NDC-301 type are designed to ensure proper tension of a winding wire during winding coils, chokes, transformers, etc. The wire tensioner NDC-301 is designed for wire range of 0,01 – 0,05 mm diameter.

TECHNICAL DATA OF NDC-301

Parameter	Unit of measure	Value
Wire tension range	N	0,04 – 0,16
Wire diameter range (acc. Aumann's)	mm	0,02 – 0,04
Settings tolerance	%	± 20
Settings adjustment		stepping
Dimensions (without antenna)	mm	150x105x45
Weight	kg	0,24

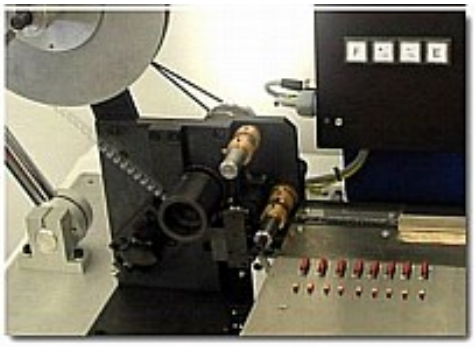
BLISTER TAPE PACKING MACHINE UPG-10



UPG-10 machine is designed for manual packing of elements into blister tape. The device is adapted to close top of the carrier tape with adhesive tape.

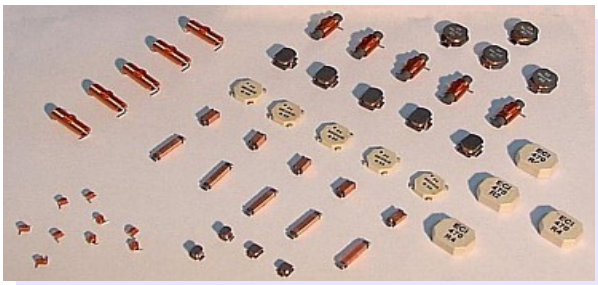
The carrier tape is powered by disk with pins. Disk rotation is provided by motor connected to the gear. Adjusting the width of the tape guides by micrometer. The device is equipped with table for easier insertion of elements into blister tape. Passing the tape released by a foot switch.

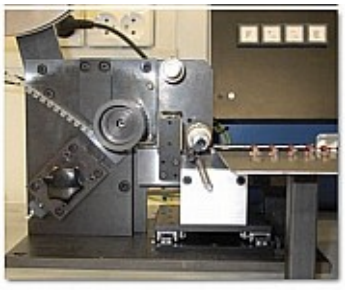
The UPG-10 device is equipped with program with fixed algorithm. Software allows the user to set characteristic for packing operation parameters like: counter of tape protrusion, moving speed, single step of tape.



TECHNICAL DAT OF UPG-10

Parameter	Value
Min. tape width	8 mm
Max. tape width	56 mm
Tape perforation (raster)	4 mm
Tape perforation (gap diameter)	1,5 mm
Length x width x height	500 mm x 800 mm x 450 mm
Arm length of left reel	450 mm
Arm length of right reel	750 mm
Total weight	50 kg
Power supply / current frequency	230 V / 50 Hz
Max. power consumption	60 VA





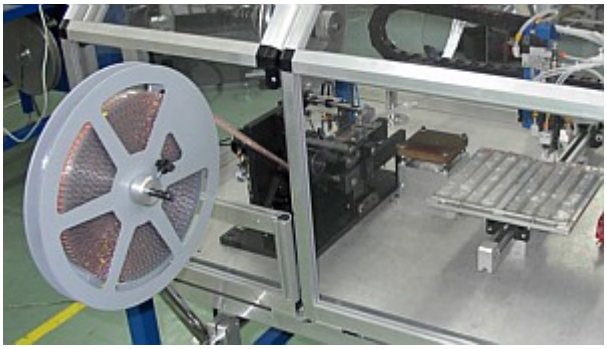
AUTOMATIC PACKING

UNIVERSAL AUTOMATIC MEASURING AND PACKING MACHINE APG-01

Measuring and packing machine APG-01 type enables automatic testing and packing electronic components and similar products into blister tape. The automatic machine is designed on the basis of module closing blister tape with adhesive tape used in UPG-10 packing machine.

APG-01 is equipped with XY moving table where trays filled with elements are placed. The automatic device collects elements from the tray and tests the inductance and resistance of choke in the testing station. The station cooperates with independent measuring system which reports to the controller of the machine whether the element is compliant or non-compliant. The compliant element is passed to the packing station and the non-compliant is rejected. The device is programmable and allows for creating any algorithms.

Replaceable clutches and reference elements enables for testing and packing wide range of components. The clutch can be equipped with head with sucker or mechanical clutch. Manipulator and table are driven by stepper motors.



TECHNICAL DATA OF APG-01

Parameter	Value
Min. tape width	8 mm
Max. tape width	56 mm
Tape perforation (raster)	4 mm
Tape perforation (gap diameter)	1,5 mm
Length x width x height	1600 mm x 1100 mm x 1580 mm
Cycle time	Approx. 4 sec
Weight	~120 kg
Power supply / current frequency	230 V / 50 Hz
Pneumatic supply	0,6 MPa
Max. power consumption	500 VA
Safety	Safety guard, EMERGENCY STOP button

AUTOMATIC PACKING

AUTOMATIC MEASURING AND PACKING MACHINE WITH PRINTER APG-04

Measuring and packing device APG-04 type enables for automatic measuring and packing chokes into blister tape.

The machine is equipped with inkjet printer for making imprints on components while transporting them to the tape.

The chokes are fed to the device on rails. A vibratory feeder transports them to the place of reception by clutch. The choke is moved to the electrical measurement unit (for option with printer -imprint is made during the transport).

In case of finding discrepancy by the measuring unit the coil is rejected and thrown to a box for non-compliant products. Thanks to tape drive unit the filled tape is wound on receiving reel.

The measuring and packing device APG-04 works in automatic cycle.

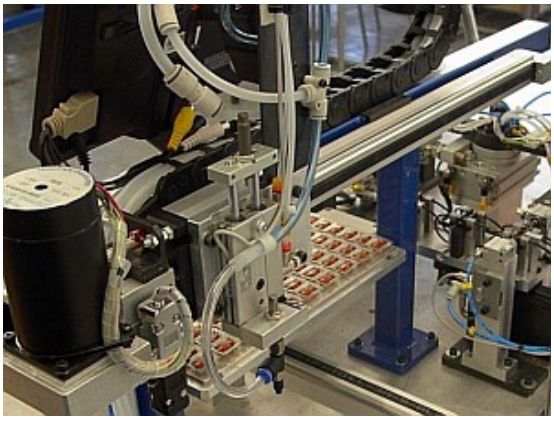
The machine is equipped with PC controller with touch panel. The device operates with external RLC meter. Information about measured values is send through serial link the controller of machine and saved there. Manipulator is driven by servo motor.

TECHNICAL DATA OF APG-04

Parameter	Value
Min. tape width	8 mm
Max. tape width	56 mm
Tape perforation (raster)	4 mm
Tape perforation (gap diameter)	1,5 mm
Length x width x height	1010 mm x 1950 mm x 500 mm
Cycle time	Approx. 2,5 sec
Weight	~120 kg
Power supply / current frequency	230 V / 50 Hz
Max. power consumption	800 VA
Pneumatic supply	0,6 MPa
Safety	Safety guard, EMERGENCY STOP button

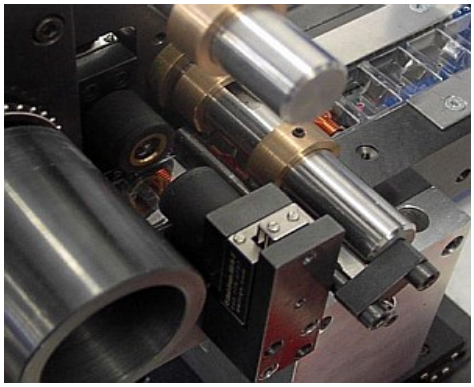
AUTOMATIC PACKING

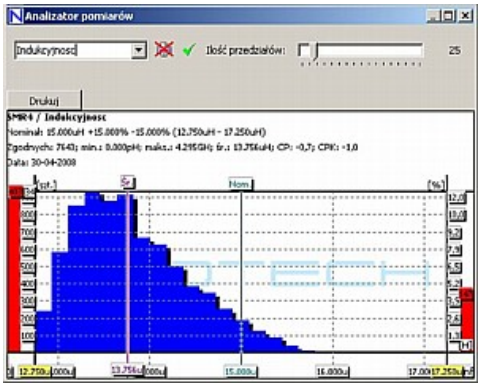
AUTOMATIC MEASURING AND PACKING MACHINE FOR CHOKES Z4-TYPE APG-05



Measuring and packing device APG-05 type is designed for automatic measuring and packing Z4-type chokes into blister tape. The automatic machine enables testing different parameters of the choke by different measurement stations. Parameters for testing are: pull-out force of the core, angle between endings, inductance and resistance of the choke. The device uses laser system to measure the angle between endings. The automatic machine is equipped with PC controller with touch panel.

Inductive components for packing are fed to the machine in trays. Chokes taken by sucker are transported to the first station where bonding between core and coil is tested. Compliant products are taken from testing station and put away on a prism where angle between endings is measured. After testing the choke is send to the next station where electrical parameters are measured. If the electrical parameters are within the tolerance the choke is put into blister tape and closed with upper tape. The tape filled with chokes is wound on receiving reel. After each testing products beyond the tolerance are rejected and thrown to the box for non-compliant products. All measurements are saved by controller of the machine. Results can be presented as a chart or the data can be read for further processing.





TECHNICAL DATA OF APG-05

Parameter	Value
Min. tape width	8 mm
Max. tape width	56 mm
Tape perforation (raster)	4 mm
Tape perforation (gap diameter)	1,5 mm
Cycle time	Approx. 2,5 sec
Length x width x height	~1780 mm x 1610 mm x ~1540 mm
Weight	~150 kg
Power supply / current frequency	230 V / 50 Hz
Max. power consumption	max. 400 VA
Pneumatic supply	0,6 MPa
Safety	Safety guard, EMERGENCY STOP button

UNIVERSAL MEASURING AND PACKING MACHINE APG-06

Measuring and packing machine APG-06 type enables automatic measurement and packing wide sort of chokes into blister tape. This is the variant of automatic machine APG-01. Servo drive used in manipulator of the clutch enables quick and precise testing and packing. APG-06 is equipped with XY moving table where trays filled with elements are placed. The machine is controlled by PC controller with touch panel.

Replaceable clutches and reference elements enables for testing and packing wide range of components. Inductive components for packing are fed to the machine in trays. Chokes taken by a sucker in centering head are send to the electrical measurement station. The testing unit measures inductance and resistance of the choke. If the electrical parameters are within the tolerance the choke is put into blister tape. Each product beyond the tolerance is rejected and thrown to the box for non-compliant products. All measurements are saved by controller of the machine. Results can be presented as a chart or the data can be read for further processing. Thanks to tape drive unit the tape filled with chokes is wound on receiving reel.

The measuring and packing machine APG–06 works in automatic cycle.

TECHNICAL DATA OF APG-06

Parameter	Value
Min. tape width	8 mm
Max. tape width	56 mm
Tape perforation (raster)	4 mm
Tape perforation (gap diameter)	1,5 mm
Cycle time	Approx. 2,5 sec
Length x width x height	~1600 mm x 1100 mm x ~1580 mm
Weight	~120 kg
Power supply / current frequency	230 V / 50 Hz
Max. power consumption	max. 610 VA
Pneumatic supply	0,6 MPa
Safety	Safety guard, EMERGENCY STOP button

AUTOMATIC MACHINE FOR TINNING ENDINGS ACW-03

Automatic machine for tinning endings of inductive components ACW-03 is designed for automatic tinning by immersion. The endings can be wound around metal ends, coil former projections or ferrite cores. Replaceable units used in machine enables for tinning wide range of products. Operating the machine includes preparation, starting up, monitoring of machine work and exchanging trays with elements. Characteristic feature of the machine is simultaneous tinning number of elements taken from the tray. The machine can be used for tinning in case of manual immersion elements in short-run production or medium- or long-run production when using trays.

Construction solutions as simplifying the mechanics by using modern drives and control electronics ensure reliability and long service life.

TECHNICAL DATA OF ACW-03

Parameter	Unit of measure	Value
Length x width x height	mm	1250 x 950 x 1650
Weight	kg	~250
Control system		BIAT Controller
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	1800
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	500
Noise emission	dB	<70
Dimensions of tin mirror	mm	315 x 43
Stabilization of tin level	mm	± 0,2
Stabilization of tin temperature	%	± 0,5
Max. width x depth of working area	mm	270 x 360
Flux application		by immersion
Manipulation movements range	mm	X=850 Y=1000
Max. speed of manipulation movements	mm/sec	75
Approx. cycle time of single tinning	sec	40 ÷ 60

TINNING

AUTOMATIC MACHINE FOR TINNING ENDINGS ACW-05

Automatic machine for tinning endings of inductive components ACW-05 is designed for automatic tinning by immersion. The endings can be wound around metal ends, coil former projections or ferrite cores. Replaceable units used in machine enables for tinning wide range of products.

Operating the machine includes preparation, starting up, monitoring of machine work and exchanging trays with elements. Characteristic feature of the machine is simultaneous tinning number of elements taken from the tray.

The machine can be used for tinning in case of manual immersion elements in short-run production or medium- or long-run production when using trays.

The machine is equipped with flux pump which keeps stable level of flux and mixing in the dosing container to ensure stable chemical composition. The machine has servo drives in the X and Y axis and stepping motors for rotation of clutches and spindles on clutches (optional). Control from PC with Windows operating system. Colour touch panel for user communication.

TECHNICAL DATA OF ACW-05

Parameter	Unit of measure	Value
Length x width x height	mm	1250 x 950 x 1650
Weight	kg	~250
Control system		PC104
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	1800
Pneumatic supply	MPa	0,6
Max. compressed air consumption	Nl/min	500
Noise emission	dB	<70
Dimensions of tin mirror (depends on pot)	mm	315 x 43
Binder	Solder	Pb lub ~~Pb~~
Stabilization of tin level	mm	± 0,2
Stabilization of tin temperature	%	± 0,5
Max. tin temperature	°C	450
Flux application		by immersion or contact with sponge soaked in flux
Manipulation movements range	mm	X=850 Y=1000
Max. speed of manipulation movements	mm/sec	200

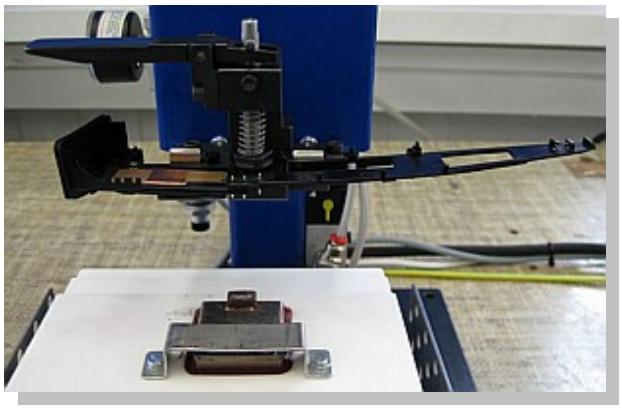
DEVICE FOR SOLDERING PINS ULP-01

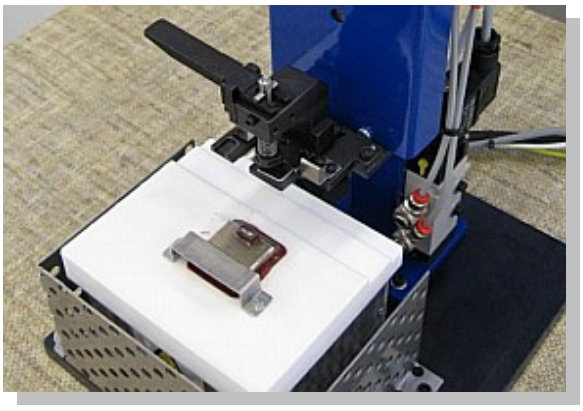
Device is designed for soldering pins wrapped with winding wire which are inserted in antenna with carrier. After designing particular sockets for each unit it can be used for tinning endings of different complex elements.

The soldering device is intended for use in industrial environment. Using lead-free tin alloys is advised. Soldering time range is set via a time relay and enables soldering within 0,5 to 5 seconds.

TECHNICAL DATA OF ULP-01

Parameter	Unit of measure	Value
Control system housing (height x width x depth)	mm	80x200x400
Device (H x W x D)	mm	400x240x300
Total weight	kg	17
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	200
Pneumatic supply – max. pressure	MPa	0,6
Operating pressure	MPa	0,4
Noise emission	dB	<70
Max. temperature setting	°C	400
Time setting range		0,1sec …10sec
Solder tank capacity	cm^3	0,25
Flux tank capacity	cm^3	80





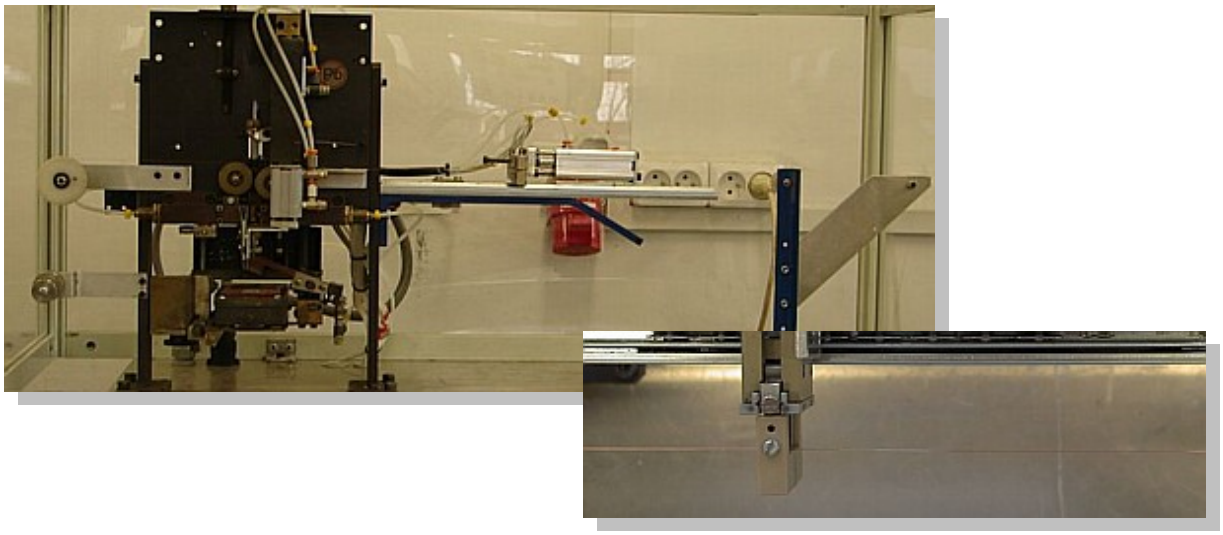
DEVICE FOR TINNING WIRE UCP-11

Device is designed for automatic tinning of enameled copper wire with keeping fixed spaces between tin-plated segments. Any length of tinned segments can be set in the device.

The wire for treatment is taken from a reel with winding wire and after treating is wound on receiving reel. The production process is automatic.

TECHNICAL DATA OF UCP-11

Parameter	Unit of measure	Value
Overall width (with open shields)	mm	2200
Depth	mm	830
Total height	mm	1500
Weight	kg	<150
Control system		PLC FATEK Controller
Power supply / current frequency	V/Hz	230/50
Max. electric power consumption	VA	570
Protection class of device		Class I
Operating pressure	MPa	0,5
Cycle time	sec	16
Noise emission	dB	<70



TINNING

AUTOMATIC MACHINE FOR WELDING AND SOLDERING CONTACTS ULZ-01

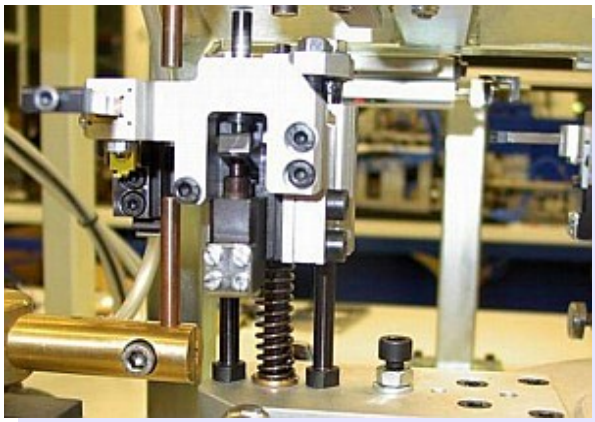
Device is designed for welding and soldering contacts with terminals and covering the welded area with tin.

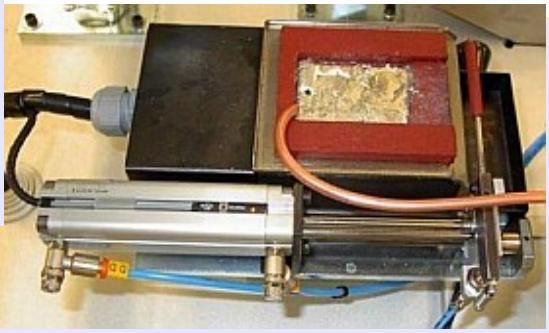
Contact and terminal fixed to a clutch unit go between the electrodes of electric welder. After welding they are moved to a fluxing unit where the welded area is immersed in flux. In the next step the contacts are carried to a melting pot filled with tin where after immersing in hot tin the welded area becomes soldered. After soldering the contacts are left in bin where they are cooled in water bath.

Welding and soldering processes performed on contacts of different shapes are feasible thanks to replaceable clutch units.

TECHNICAL DATA OF ULZ-01

Parameter	Unit of measure	Value
Length x width x height	mm	1600x1270x2030
Weight	kg	~380
Power supply / current frequency	V/Hz	400/50
Max. power consumption	kVA	6
Max. pneumatic supply	MPa	1
Operating pneumatic pressure	MPa	0,6
Water supply	l/h	min. 300
Compressed air consumption	Nl/min	max. 50
Protection against electric shock	automatic power off (1st class of protection)	
Cycle time	sec	8





GLUE DISPENSER DK-03

Device DK-03 type is designed for potting elements with a two-component potting mixture, mostly resins and silicones. The dispenser is a universal device and can be used for dosing miscellaneous mixtures in appropriate proportions for different types of elements.

Glue components are taken from containers to a dispensing unit and are transported through pipes to the flow channels and piston chamber in the plate of a pump. After gathering components in the piston chamber the inlet valves are closed and pump pistons start lowering and extruding the potting mixture through open exhaust valves to the body of static mixer.

Two components of glue are mixed in a mixing unit and spread to the elements prepared for potting.

TECHNICAL DATA OF DK-03

Parameter		Unit of measure	Value
Length x width x height		mm	1100 x 600 x 1530
Weight		kg	~80
Control system			BIAT Controller
Power supply / current frequency		V/Hz	230/50
Max. power consumption		VA	300
Pneumatic supply		MPa	0,6
Noise emission		dB	<70
Diameter of pump piston		mm	4,5÷8
Number of dosed components			2
Max. dose quantity	Ø of piston 2x4,5 mm	cm^3	0,64
	Ø of piston 2x8 mm		2

GLUE DISPENSER DK-04

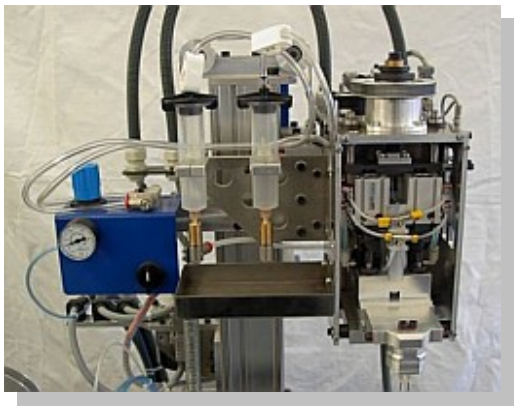
Device DK-04 type is designed for potting elements with a two-component potting mixture, mostly polyurethanes. The dispenser is a universal device and can be used for dosing miscellaneous mixtures in appropriate proportions for different types of elements.

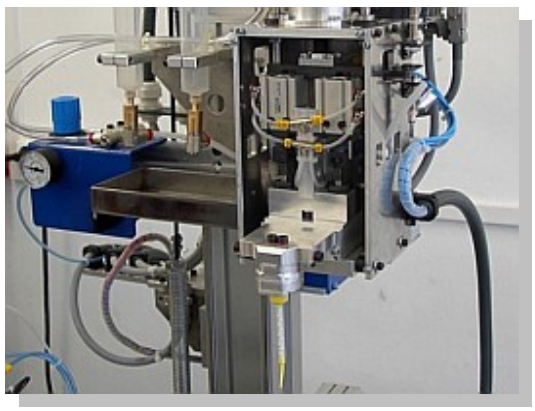
Glue components are taken from containers to a dispensing unit and are transported through pipes to the flow channels and piston chamber in the plate of a pump. After gathering components in the piston chamber the inlet valves are closed and pump pistons start lowering and extruding the potting mixture through open exhaust valves to the body of static or dynamic mixer.

Two components of glue are mixed in a mixing unit and spread to the elements prepared for potting. The dispenser can be equipped with dynamic mixer.

TECHNICAL DATA OF DK-04

Parameter	Unit of measure	Value
Length x width x height	mm	~1000x700x~1306
Weight	kg	~90
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	350
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/h	ca 60
Capacity of tanks	cm3	2 x 30
Max. piston stroke	mm	10
Min. piston stroke	mm	0,188
Min. stroke displacement	mm	0,002
Max. piston diameter	mm	8
Max. dose quantity	mm3	2 x 500
Noise emission	dB	<70





GLUING

DEVICE FOR APPLICATION OF UV CURED ADHESION POINT UPK-110

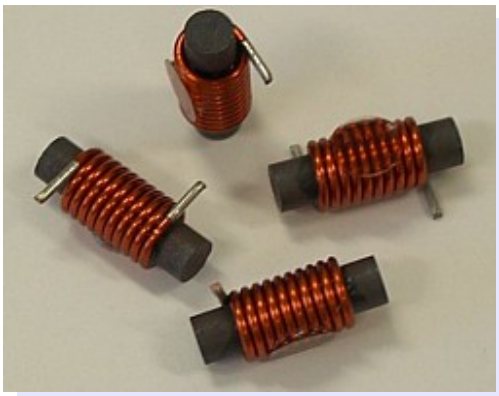
Device for application of UV cured adhesion point UPK series is designed for automatic application of glue spot on products of different shape. The obtained point of glue makes a gripping surface for transporting units using the vacuum technique.

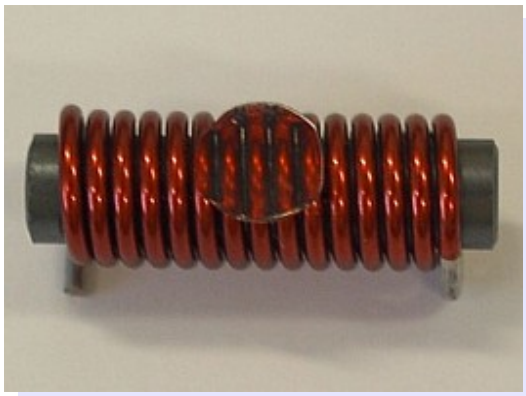
The design of machine allows for creating both circular and linear shape of the adhesion point. Application on wide range of elements is feasible thanks to replaceable clutch and reference run units.

The device for application of UV cured adhesion point UPK series works in automatic cycle. Chokes are taken from tray and transported to tape. After leaving choke on the glue spot the tape moves through UV chamber to cure the glue. In the reception area chokes are grabbed and inserted into the tray. Electrical parameters of the elements can be measured as well.

TECHNICAL DATA OF UPK-110

Parameter	Unit of measure	Value
Power supply	V/Hz	230/50
Max. power consumption	VA	400
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	Up to 500
Length	mm	1000
Width	mm	750
Weight	kg	ca 300
Cycle time	sec	8





GLUING

DEVICE FOR APPLICATION OF THERMO MELTING ADHESION POINT UPT-110

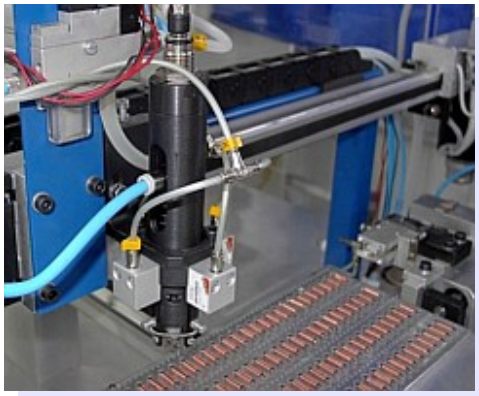
Device for application of thermo melting adhesion point UPT-1XX series is designed for automatic application of thermo melting glue on products of different shape. The obtained point of glue strengthens bonding between PCB and choke during SMD assembly process.

The design of machine allows for creating required length of the adhesion point. Width of obtained strap depends on width of glue strap that is used. Application on wide range of elements is feasible thanks to replaceable clutch and reference run units.

The machine works in automatic cycle. Choke is taken from tray, transported and pressed to a cut segment of the glue strap, then put back to the tray. Electrical parameters of the elements can be measured as well.

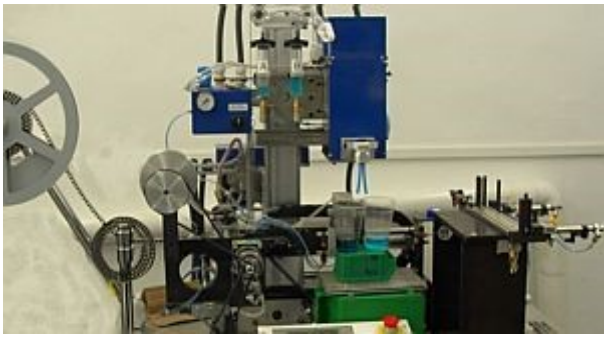
TECHNICAL DATA OF UPT-110

Parameter	Unit of measure	Value
Control system		BIAT Controller
Power supply	V/Hz	230/50
Max. power consumption	VA	1600
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	up to 500
Length	mm	1215
Width	mm	760
Weight	kg	ca 100



GLUING

AUTOMATED MACHINE FOR POTTING CHOKES IN CASING UZD-01



Machine UZD-01 type is designed for potting SM-R4 chokes with a two-component potting mixture, it works with glue dispenser DK-03 type. The machine works in automatic cycle.

Potting wide range of elements with the mixture is feasible thanks to replaceable clutch and reference run units.

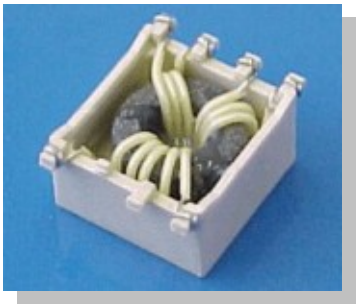
A static mixer in the machine is dosing programmed dose of the potting mixture.

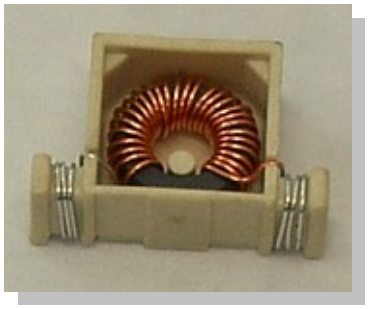
The choke is taken from tray, oriented and transported to a station of potting with the glue mixture. After dosing set quantity of potting mixture the choke is put to rails which move automatically.

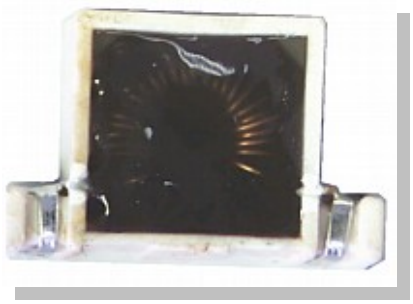
Potting station can move vertically and horizontally which allows for precise filling elements of complex structure with potting mixture.

TECHNICAL DATA OF UZD-01

Parameter	Unit of measure	Value
Total length	mm	1236
Total width	mm	967
Total height	mm	1430
Weight	kg	~100
Control system		BIAT Controller
Operating pressure	MPa	0,6
Compressed air consumption (theoretical)	Nl/min	~ 60
Power supply / current frequency	V / Hz	230 / 50
Max. power consumption	VA	300
Number of dosed components	pcs	2
Diameter of pump's piston	mm	3,65
Min. single dose quantity (2xø3,65mm)	mm^3	1
Max. single dose quantity (2xø3,65mm)	mm^3	200







Device SD8-01 is designed for attaching automatically fed ferrite cores to wire endings and compression of these terminals to an appropriate size.

The thermosetting adhesive applied on the contact area of cores and wire endings is cured by sufficiently long time of passing through a furnace where the temperature is setted to obtain adequate durability of the adhesive.

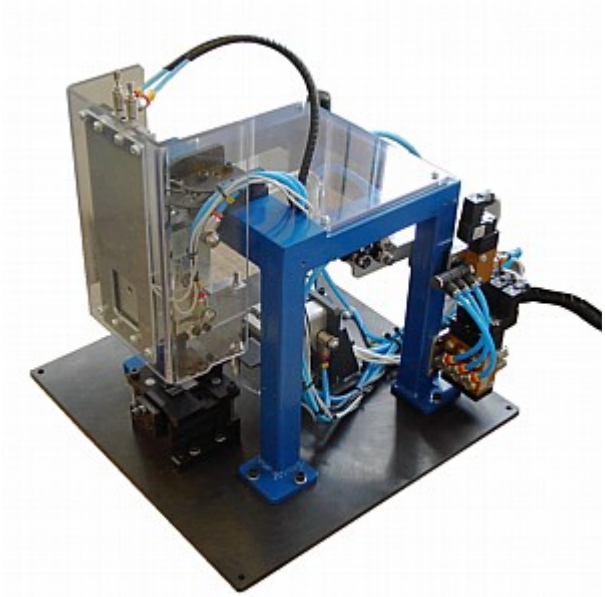
TECHNICAL DATA OF SD8-01

Parameter	Unit of measure	Value
Length x width x height	mm	2756 x 550 x 1507
Weight	kg	~100
Control system		BIAT Controller
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	1450
Pneumatic supply	MPa	0,6

MANUAL ASSEMBLY

DEVICE FOR PIN INSERTING AND CUTTING OFF SPRUE USO-01

Device USO-01 type is designed for pin inserting and cutting of sprue (plastic) in coil former of carriage antenna. Swapping the product for left/right version is made by changing clutch and clamp on pin inserting (clamping) servomotor.

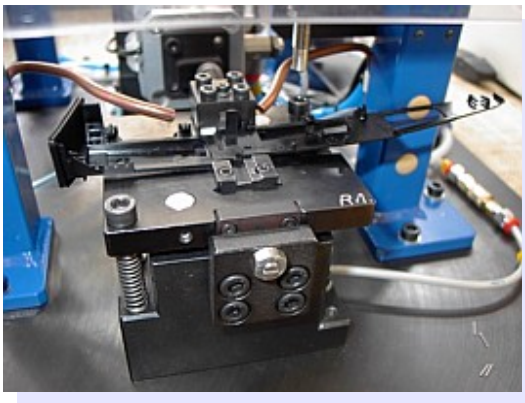


Semiautomatic cycle of work includes the following actions of the operator:

- putting pins into holes in base;
- putting coil formers on the base;
- starting pin inserting and cutting by pressing footswitch;
- removing the handle after cutting.

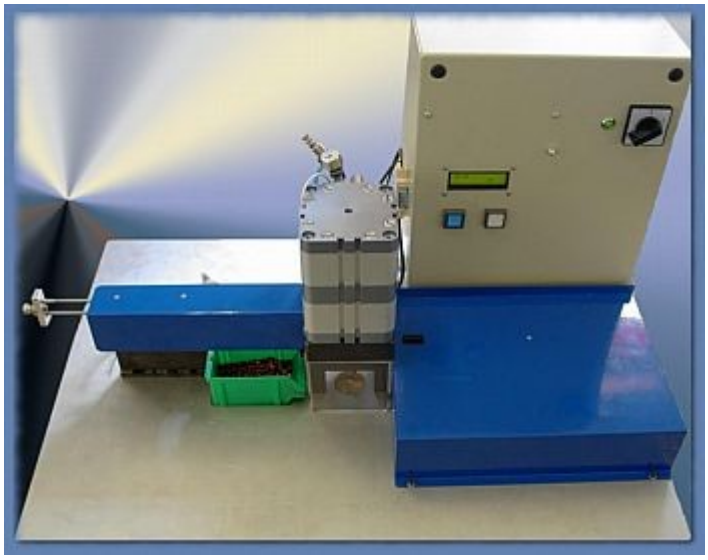
TECHNICAL DATA OF USO-01

Parameter	Unit of measure	Value
Length x width x height	mm	400x 400x 400
Weight	kg	~33
Control system	PLC Controller: Fatek FBs-24MATJ	
Power supply / current frequency	V/Hz	230 / 50
Max. power consumption	VA	46



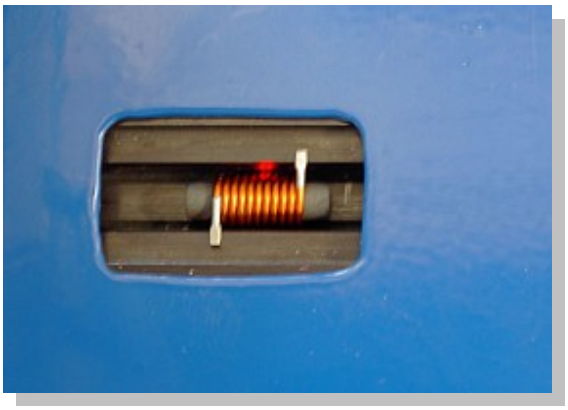
DEVICE FOR FLATTENING ENDINGS ZW-01

Device ZW-01 is designed for flattening endings of inductive components to obtain stable positioning of the component on a PCB. The maximum diameter of the flattening wire is 2 mm.



TECHNICAL DATA OF ZW-01

Parameter	Unit of measure	Value
Length x width x height	mm	750 x 550 x 420
Weight	kg	~40
Control system		microBIAT Controller
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	600
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	40
Cycle time	sec	5



AUTOMATIC ASSEMBLY

DEVICE FOR METALLIZATION BY WRAPPING UDO-03

Device for metallization UDO-03 type is designed for automatic wrapping sliver-plated wire on coil cores in order to increase mechanical strength of assembly points on coil endings and improve tinning quality.

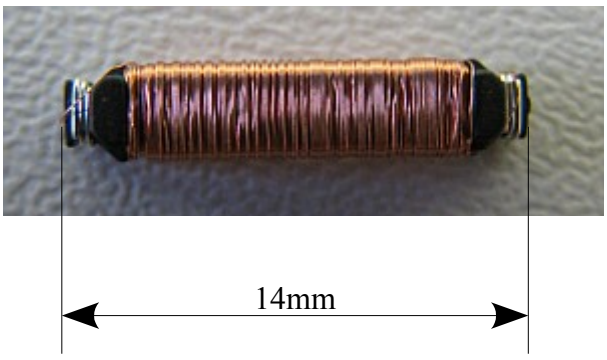
Wrapping wide sort of products is feasible thanks to replaceable core clutch units.

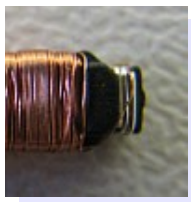
To wrap coil endings with silver-plated wire has been used manipulator which contains unit of two linear guides driven by servomotor and a motorized lever system. Construction of manipulator allows for any (programmable) positioning of winding tube in axes X and Y from 0 to 50mm and axis Z from 0 to 2mm.

Automatic device for metallization UDO-03 works in automatic cycle. Operating the device refers only to exchanging trays filled with chokes by the operator.

TECHNICAL DATA OF UDO-03

Parameter	Unit of measure	Value
Length x width x height	mm	800x800x1300
Weight	kg	~100
Control system		FATEK
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	780
Pneumatic supply	MPa	0,6
Compressed air consumption	Nl/min	30
Silver wire diameter	mm	0,15 … 0,30





NEOTECH

AUTOMATIC ASSEMBLY

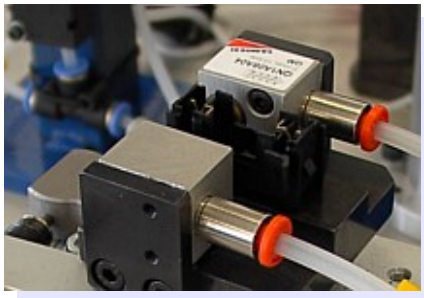
DEVICE FOR CONNECTOR ASSEMBLY UML-01

Device UML-01 is designed for installation connectors in WZ8 casing sockets. The machine is designed for use in industrial environments and works in semiautomatic cycle.

WZ8 casings are manually fed into the machine, while the connectors are fed using vibratory feeders. During the machine work cycle the connectors are centered and inserted into the casing. Finished and checked for assembly connectors are dropped to prepared container.

TECHNICAL DATA OF UML-01

Parameter	Unit of measure	Value
Length x width x height	mm	1010x950x1380
Weight	kg	~150
Control system		FATEK Controller
Operating pressure	MPa	0,6
Compressed air consumption (theoretical)	l/min	~40
Power supply / current frequency	V/Hz	230 / 50
Max. power consumption	VA	300
Protection against electric shock		protective earthing
Cycle time	sec	~7



NEOTECH

AUTOMATIC ASSEMBLY

DEVICE FOR INSTALLATION OF BULB HOLDER CONNECTORS UMO-01

Device UMO-01 is designed for installation of pins in OZ3 bulb holder. The machine is designed for use in industrial environments and works in semiautomatic cycle.

During the machine work cycle bulb holders are fed manually to the bulb holder centering unit, pins are tipped to bins of vibratory feeders, than moved and cached in pin collecting unit. Next a transport head moves pins to the pin centering unit. Thence assembly head moves pins to the bulb holder centering unit and instal them into the bulb holders. Punch of manipulator presses pins to the accurate depth. Parts of the unit curve pin endings to make the installation stable in the bulb holder. After checking proper installation of pins in the testing unit the bulb holders are put into prepared container.

TECHNICAL DATA OF UMO-01

Parameter	Unit of measure	Value
Total length	mm	1113
Total width	mm	926
Total height	mm	1295
Weight	kg	~150
Control system		BIAT Controller
Operating pressure	MPa	0,6
Compressed air consumption (theoretical)	l/min	~ 50
Power supply / current frequency	V / Hz	230 / 50
Max. power consumption	VA	~500
Cycle time	s	7,8

NEOTECH

AUTOMATIC ASSEMBLY

CONNECTOR ASSEMBLY INSTALLATION WORKSTATION UML-10

Device UML-10 is designed for assembly of connector set with wires. The machine is operated by two workers.

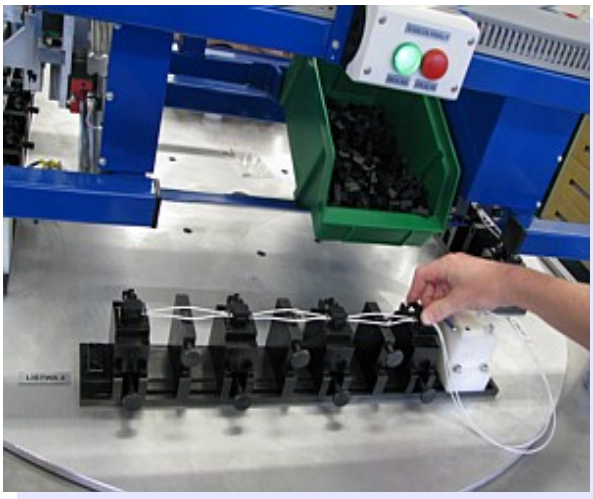
The machine pushes in the wires that were earlier organized in sockets by the worker into contacts of the connector's body. At the time the other worker is preparing casings for connector, which are pressed by the machine on the body.

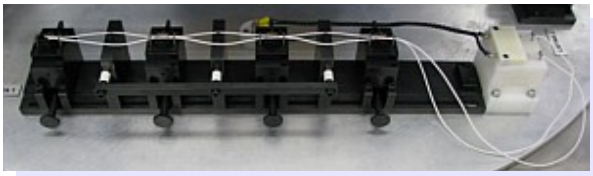
Moreover, the device checks functioning (electrical transition) of all connectors in the bunch.

The machine is designed for use in industrial environments and works in semiautomatic cycle.

TECHNICAL DATA OF UMO-01

Parameter	Unit of measure	Value
Number of manual operation stations		2
Number of automatic operation sockets		2
Length × width × height	mm	1600x1400x1500
Weight	kg	~400
Power supply		1/N/PE AC 230V 50Hz
Max. power consumption	kVA	1,1
Pneumatic supply	MPa	~0,6
Compressed air consumption	Nl/min	120





UNWINDERS ODD-01, ODD-02, ODD-03

Wire unwinders ODD-01 are designed to work with device for cutting wire UCD-01. Unwinders ODD-02 type are used to rewind tape working with machine for gluing Sd8a. Tape unwinder ODD-03 works with device for cutting tape.

Each of the unwinders can be used for other purposes connected to unwinding tape, wire or similar materials.

Each type of unwinder is composed of main units, which are:

- basis
- disk of unwinder
- control box
- tensioning unit

Basis of the unwinder is build of frame which is made of welded steel square tubing. Electric motor is mounted at the lower part of the basis and drives the reducer through a gear with toothed belt. Output shaft of the reducer rotates the unwinder's disk and material on it through the coupler with flexible insert.

The control box can be placed at any side of the unwinder. At the front part of the box is a desctop with NETWORK switch and STOP button. Inverter operation panel for engine control is placed at the front side of the control box.

Disk of unwinder is to support unwinded material. For different inner diameters of wire or tape circles the effect of centering the circle to the disk's axis can be obtained by radial shifting each pivot being above surface of the disk. Task of the tensioning unit is switching the disk rotation on and off depending on the unit receiving material from the unwinder.

The unwinder can be set at stable feet with shock absorbers or at carriageable wheels (rotary wheels as well as equipped with brackets).

TECHNICAL DATA OF UNWINDERS

Parameter		Type of unwinder		
		ODD-01	ODD-02	ODD-03
Max. disk's loading weight [kg]		150	150	400
Rotational speed of disk (*) min^{-1}	min.	0,7	5,6	0,7
	max.	11,9	22,4	11,9
Power supply		electrical, 230 V, 50 Hz		
Driving motor		0,37 kW, 1400 min^{-1} 230/380 V, 50 Hz		0,55 kW 1400 min^{-1} 230/380 V, 50 Hz
Power consumption [VA]		370	370	600
Dimensions (without additional devices) [mm]	length	1230	1010	1150
	width	1010	800	1170
	height	1090	1170	1150
Weight of unwinder [kg]		60	45	120

(*) Can set wide range of the rotational speed of disk - the frequency of the inverter from 5 to 100 Hz - should then take into account the decrease of torque.

UNWINDER ODD-04

Unwinder ODD-04 is designed for work with winder NCJ-02 in version adapted to work with the unwinder. Task of the unwinder is feeding line to the reel with speed corresponding to the line usage by the winder. Using the unwinder feeding line allows for achieving high speed of unwinding and eliminating problems common for loose unwinding line from the spool. The spool with line is mounted to the vertical pivot. The line goes through grommet and stable line leading roller and then meets the roller mounted at moving arm. Task of the pendulum arm is compensating temporary differences between speed of feeding the line from the reel and speed of receiving the line by the winder. The pendulum arm is linked to transducer of arm swing angle. Information form transducer is used for normalization of spool rotation speed. Line from spool on moving arm goes to another stable spool, then to the winder. The spool with line is driven by motor controlled by control electronics unit.

TECHNICAL DATA OF ODD–04

Parameter	Unit of measure	Value
Length x width x height	mm	690 x 1210 x 670
Weight	kg	~100
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	4000
Noise emission	dB	<82
Line diameter range	mm	0,04÷1,0
Max. reel weight	kg	10
Max. reel height	mm	300
Max. reel diameter	mm	320
Max. speed of spool rotation	rpm	2790

UNWINDING

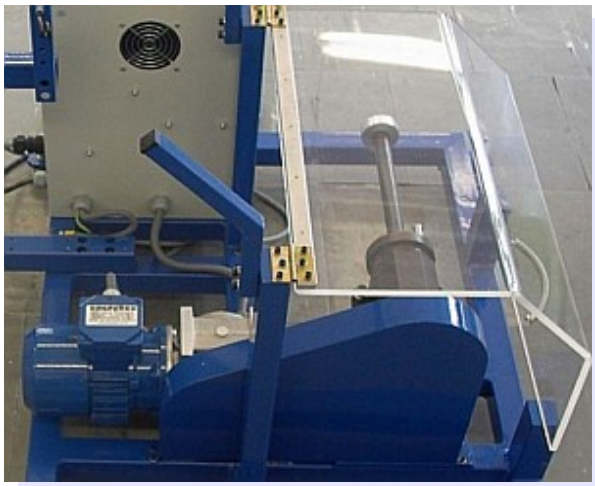
HORIZONTAL UNWINDER 60KG ODD-06

Unwinder ODD-06 is designed for work with NG-type winder. Task of the unwinder is feeding wire to the winder. Application of the unwinder for feeding wire allows for usage wires of diameter from 1mm to 2mm.

Application of the unwinder for feeding wire allows for usage wires of diameter from 1mm to 2mm. Unwinder eliminates axial twisting of the wire. Spool of wire is mounted at horizontal pivot. Task of the pendulum arm is reducing the tension of wire fed from spool to winder. Two inductive sensors are mounted for this purpose. Information from the sensors is used to switching spool rotation on and off. The spool of wire is driven by control electronics unit (inverter).

TECHNICAL DATA OF ODD–06

Parameter	Unit of measure	Value
Power supply / current frequency	V/Hz	230/50
Max. power consumption	VA	540
Weight	kg	~60
Length x width x height	mm	770 x 1440 x 650
Wire diameter range	mm	1 ÷ 2
Max. reel weight	kg	22
Max. reel height	mm	200
Max. reel diameter	mm	250
Max. speed of spool rotation	rpm	27



DEVICE FOR MAKING NECKING CUT-OUTS IN SILVER TAPE UWT-01

Machine UWT-01 type is designed for making necking cut-outs in high voltage self-fusing silver tape.

The device allows for cutting-out tape with thickness of: 0,03 ÷ 0,4 mm.

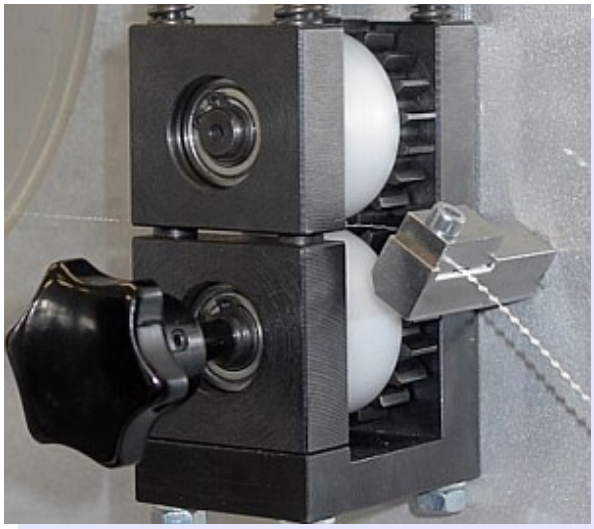
Moreover, UWT-01 allows for smooth regulation of cutting values.

Making replaceable elements of the punch is possible and enables obtaining the tape in accordance with technological requirements.

UWT–01 machine works in automatic cycle. Continuous use is possible until the tape ends on unwinding reel or set length of tape is finished.

TECHNICAL DATA OF UWT-01

Parameter	Unit of measure	Value
Length x width x height	mm	1250 x 480 x 2180
Weight	kg	~200
Power supply / current frequency	V/Hz	230 / 50
Max. power consumption	kVA	1



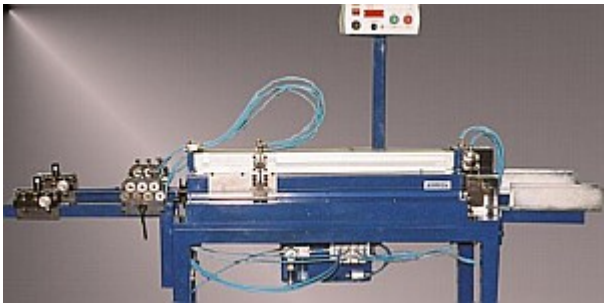
METERING

DEVICE FOR METERING AND CUTTING HEAT-SHRINKABLE SLEEVE UCR-010

The device for measuring and cutting heat shrinkable sleeve. Cutting the length is set mechanically using fenders. Number of pieces to be cut can be pre-programmed.

METERING

DEVICE FOR CUTTING WIRE AND CABLES UCD-01



The device for measuring and cutting steel or copper wire. The machine features double measuring and cutting system, which improves efficiency.

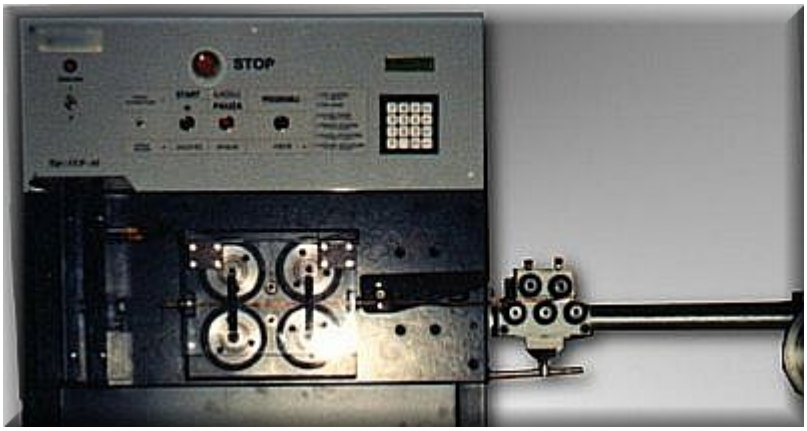
Equipped with double-plane straightening system. Cutting the length is set mechanically. Controller counts cut elements and enables pre-programming their number. The device works with unwinders, eg. ODD-01.

TECHNICAL DATA OF UCD-01

Parameter	Unit of measure	Value
Power supply / current frequency	V/Hz	230/50
Control system		microBIAT Controller
Steel wire diameter	mm	0,5÷2,0
Copper wire diameter	mm	0,8÷4,0
Max. length of cutted wire for single cutting	mm	500
Max. length of cut wire for multiple cutting	mm	limited by length of receiving table
Precision	mm	0,1

DEVICE FOR METERING AND CUTTING WIRE UCP-01

Device for metering, cutting and stripping enamelled wire. Basic element of the device is set of rollers transporting the wire. The rollers are unwinding the wire from a spool placed at a stand. The wire goes from spool through reversible roller to straightening unit. Metering of programmed wire segment runs during unwinding the wire. Roller of rotary-pulse converter is used, which rolls on transported wire. After reaching the programmed counter which corresponds with required length of segment, transporting rollers are stopped (slows down earlier) and servomotor of cutting unit is run.



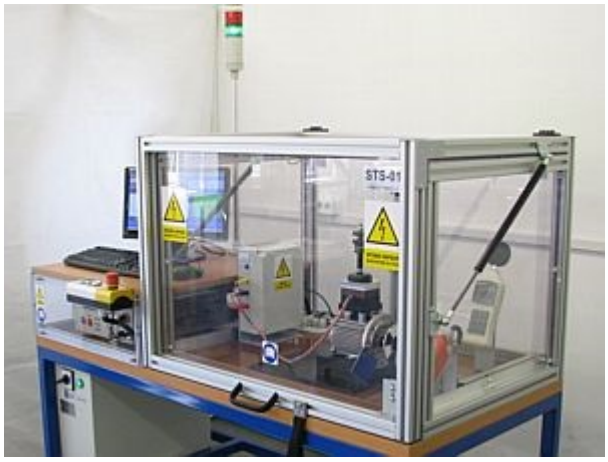
Working of cutting unit is controlled by microprocessor controller through two inductive sensors. Cutting program can run further only after cutting measured segment. Each cutted segment is counted by microprocessor controller and after counting programmed number of segments the machine stops.

TECHNICAL DATA OF UCP–01

Parameter	Unit of measure	Value
Power supply / current frequency	V/Hz	230/50
Pneumatic supply	MPa	0,6
Control system		BIAT Controller
Max. copper wire diameter	mm	3
Metering precision	mm	0,2

TESTING

STATION FOR TESTING INDUCTION MOTORS STS-01



Station STS-01 type is designed for testing single- and three-phase electric motors.

The station is equipped with automatic protect against direct contact according to PN-EN 50191-2002 "Installation and exploitation of electrical testing stations".

Testing made on station:

1. Withstand voltage test – testing motor isolation made on sample according to PN-EN 60034-1:2009.

Withstand voltage test is carried out tight endings of motor's winding and its cover.

2. Idle current test, phase power supply U=230V AC 50Hz for single-phase asynchronous motors, phase voltage supply U=400V AC 50Hz for three-phase asynchronous motors. Energy source is a three-phase supply network to which station for testing is connected.

Running tests is controlled by computer installed in control box together with electrical equipment. The computer controls and sets work parameters for measuring devices installed on testing station.

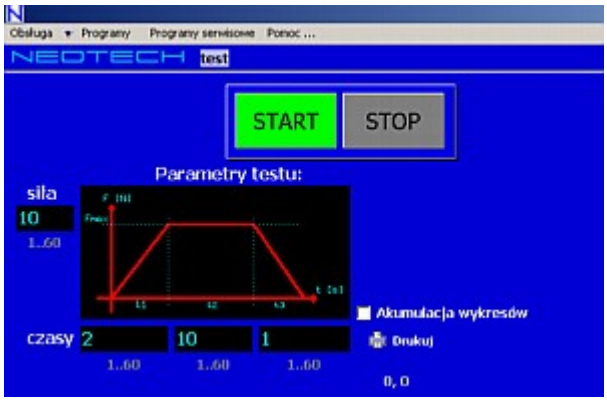
Station STS-01 is controlled by PC computer with Windows XP Embedded operating system and keyboard, mouse, and monitor.

Software controlling the station retrieves data of tested motor from the engine database introduced by technologist. Test results are saved in *.csv file. This is the basis for analysis of test results.

TECHNICAL DATA OF STS-01

Parameter	Unit of measure	Value
Length × width × height	mm	~1540×~750×~1400
Weight	kg	~150
Control system	PC/104 Controller, Windows XP Embedded	
Supply system / Power supply / current frequency	V/Hz	3/N/PE AC 400/230V 50Hz
Max. power consumption	kVA	4,5
Max. wire idle current	A	5
Power supply for single-phase motors in idle current test	V/Hz	230V 50Hz directly from power supply
Power supply for three-phase motors in idle current test	V/Hz	400V 50Hz directly from power supply
Max. measured rotary speed of tested engines	rpm	3000

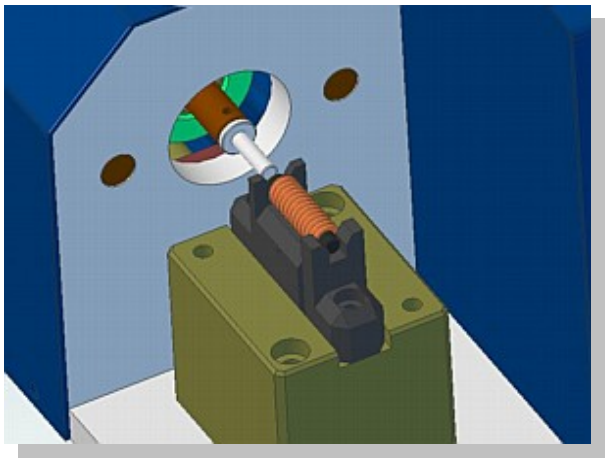
Device is designed for testing pull-out force of the core in Z-type chokes.



Driver of the device can be any PC computer with Windows XP or newer system and with USB port. The device itself has no control logic.

TECHNICAL DATA OF SWR–DZ

Parameter	Value
Length × width × height	403 mm x 303 mm x 200 mm
Weight	~ 19 kg
Control system	PC computer (WIN)
Power supply	230 ~
Max. power consumption	68 VA
Force measurement range	50 N max.
Working temperature	15ºC - 30ºC



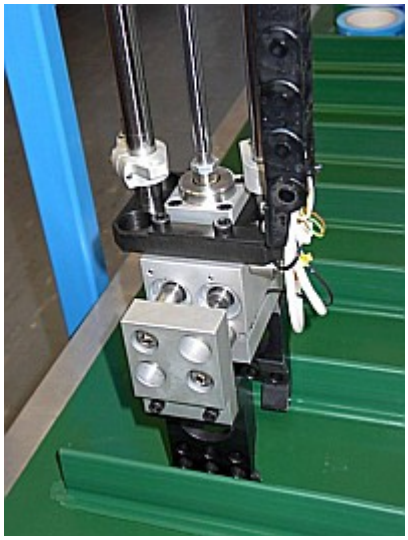
OTHER

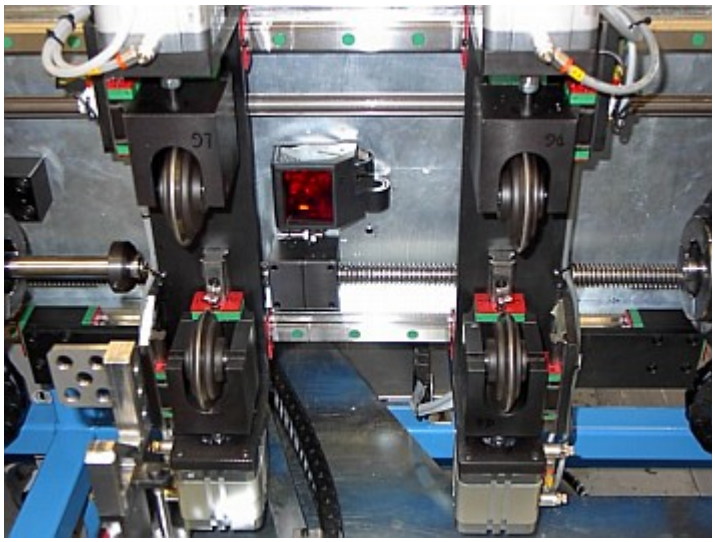
DEVICE FOR CRIMPING FLANGES AZB-01

Automatic machine for closing high voltage fuses is designed for forming cooper ferrules (also equipped with angular contacts) of the fuse on groove of porcelain tube. The device measures the fuse resistance and selects compliant and noncompliant products, where compliant products are transferred to buffer conveyor and then received by worker.

TECHNICAL DATA OF AZB–01

Parameter	Unit of measure	Value
Length x width x height	mm	5700x3100x2000
Weight	kg	~700
Control system	PC/104; Windows XP Embedded	
Power supply		3/N/PE AC 400/230V 50Hz
Max. power consumption	kVA	3,8
Pneumatic supply	MPa	~0,6
Compressed air consumption	Nl/min	120





OTHER

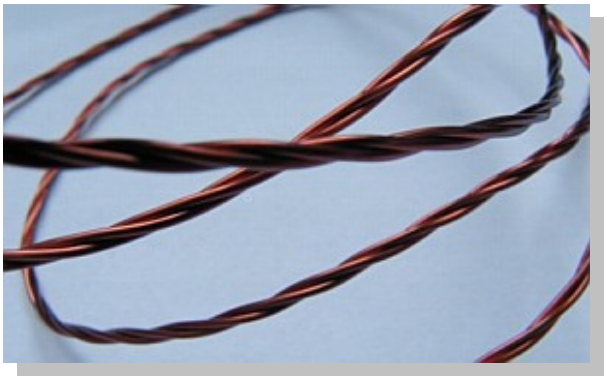
WIRE TWISTING MACHINE FOR WINDING WIRE UDS-01

Machine UDS-01 is designed for making a twisted wire of single cooper enamelled wires.

Wire twisting machine enables simultaneous twisting from 2 to 5 wires of diameter between 0,1mm and 0,3mm. At the same time the product can be made on two tracks of the machine. The device is twisting the wire with speed up to 1,5m/sec on single track and makes 60 twists per meter. Number of twists per 1 meter is adjustable. Twisted wire is wound at spool. The machine is designed for work in industrial conditions.

Parameters set on the control panel:

- speed of twisting
- number of twists per meter
- stroke of folding the twisted wire at spool.

TECHNICAL DATA OF UDS-01

Output	1500 twists/min twist of 3 wires
Wire diameter	0,1mm....0,4mm
Max diameter of twisted wire	Up to 1,5mm
Max number of twists	Up to 80 per meter
Spool for twisted wire	Spool for twisted wire fi 160 (DIN160)
Control system	PLC
Power supply	230V / 50Hz
Power consumption	max 2000 VA
Dimensions of the machine length x width x height	600 x 700x 1200mm (without stand for spools)
Safety	Safety guards, EMERGENCY STOP button