

MANUAL BEVELLING AND DEBURRING SYSTEM B15 ELECTRA NG



Operation manual for the device

Art.Nr. 25250 (230V) and 25251 (120V)

SUBJECT TO CHANGE

Contents:

General information	3
Machine description B15 ELECTRA	3
Identification data	4
Tests	5
Warranties	5
Safety regulations	5
Technical specifications	6
Machine equipment	7
Control elements B15 ELECTRA	7
Use	8
Setting the removal size	8
Bevelling	10
Bevel angle and shape change.	11
Milling head replacement	11
Replacement of indexable inserts	13
Maintenance and operation	14
Spare parts	14
List of spare parts	15-18



Read the operation manual carefully prior to use

1. General information

Thank you for purchasing one of our machines, and we hope that you will be fully satisfied.

This guide provides instructions for the installation, adjustment, operation and maintenance of the machine B15 ELECTRA in compliance with valid safety standards.

The information and data contained in this document subject to changes due to further improvement of machinery. To eliminate any doubts, when differences are detected, please contact N.KO Machines.

Never perform any operation on the machine before you read the instructions in the manual and understand them. Major part of accidents that happen in the workplace are due to the fact that the guidelines and recommendations contained in the manual are not complied with.

The graphic symbols used in the manual are intended to emphasize the important information regarding the safety and operation of the machine.



Attention :

Information important for the personal safety of the operating staff.



Important:

Instruction that needs to be observed to ensure the proper function of the machine.

2. Machine description B15 ELECTRA

Machine B15 ELECTRA is designed solely for the activities below:

B15 ELECTRA is designed solely for bevelling and fetch fettling of metal materials in the workshop or in the production hall.

This includes manual and manually managed machine. The main feature of the machine is the ability to machine flat and shaped workpieces, openings, and tubes. The machining angle can be changed by replacing the milling head. B15 ELECTRA can perform also the workpiece edge rounding. This application also requires a special tool, see the text below.

Use the machine in the environment protected from rain, snow, and other adverse weather conditions.

3. Identification data and CE Declaration of Conformity

The identification data of machine B15 ELECTRA are listed on the label placed on the machine body.

EC Declaration of Conformity

1. Name and surname of the declaration issuer: N.KO spol s.r.o.
Address of the declaration issuer: Tábořská 398/22
CRN: 2616109

2. Subject matter of the declaration:
Name: HAND HELD BEVELLING MACHINE
Type: B15 ELECTRA
Manufacturer: N.KO, spol. s r.o.

3. Intended use: Edge bevelling of sheets as preparation for welding
4. The above-stated subject matter of the declaration complies with requirements of the following documents:

Directive 2006/42/EG: Machinery Safety – Basic Requirements

Directive 2014/30/EU: Electromagnetic Compatibility

Directive 2011/65/EU: Absence of hazardous substances

EN ISO 12100: Safety of machinery - Basic concepts, general principles for design – Risk Assessment and Risk Reduction

EN ISO 13857: Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs

EN 953: Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards

EN 60204-1: Safety of machinery – Electrical equipment of machines

EN 60745-2-17: Hand held electromechanic machinery – safety – Part1.: General requirements

EN 50581:2012 Technical documentation for assessment of electrical and electronic products in terms of reduction of hazardous substances

EN 61000-3-2 Electromagnetic-compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions-(device with input phase current ≤ 16 A)

EN 61000-3-3 Electromagnetic-compatibility (EMC) part of the furnace 6-3: Generic standards - Emission standard for residential, commercial and light industry

5. Data on accredited / notified person:
Date and place of issue: 1. February 2017, Mladá Boleslav
Name and position of the authorized person: Milan Ríchnr – managing director

Signature of the authorized person:



4. Tests

The machine for edges bevelling is tested in our testing room.

During that test, the correct function of bevelling sheets and profiles by different types and sizes, are tested.

5. Warranties

The B15 ELECTRA is provided by the seller with a guarantee that the article shall not feature any material and production defects for a period of 12 months following the delivery date.

The machine is provided with a 12-months' guarantee from the delivery date for the faultless function of the article and the materials used.

The seller undertakes to make sure that any potential warranty defects are removed free of charge and without undue delay so that the buyer is able to use the article the way they desire. Should the buyer claim liability for warranty-unrelated defects, it shall reimburse the seller for any expenses associated with that.

The manufacturer considers the guarantee invalid if:

- the machine is improperly used.
- used in conflict with national or international standards
- improper installation
- defective power supply
- severe shortcomings in maintenance
- unauthorised modifications or interventions
- other than the original or unapproved parts and accessories by the manufacturer are used for that model;
- full or partial failure to follow the instructions in this manual
- extraordinary events, natural disasters or the like.

6. Safety regulations

 **Attention :**

In order to prevent the injury observe the below instructions

Inspect the machine for mechanical and other damage prior to bevelling.

Commission the machine solely if the electricity supply cable is not damaged.

Check the supply cord regularly. In case of damage have it replaced in an authorised service shop authorised to perform the such repairs. Contact your supplier.

Personal protection from injury

During the work use safety goggles, solid work footwear, hearing protection, suitable head cover, e.g. safety helmet.

- Connect the machine in electrical network solely if the machine is in off position.
- Prior to each use, check the device and electricity supply cord for damage. Do not use the machine in case of any damage.
- Do not use the machine in humid environment and protect from high moisture.
- Ensure good lighting at the workplace to prevent the risk of potential injury or eyesight damage.
- Caution, the tool (milling machine) is sharp with the risk of injury. During the replacement use safety gloves, **never touch the rotating milling head.**
- The machined material must always be fastened and in a horizontal position. Optimum workpiece height is 900 mm above ground.
- During work pay attention to the electricity supply cable; it should be loosely placed on the ground outside the worked material and other sharp objects.
- After work, disconnect equipment from the electricity supply.
- Do not overload the machine motor. The machine operates better if not overloaded.
- During work, hold the device by both hands.
- Attention is drawn to the injury hazard with hot metal shavings.

Important:

In case of damage have the machine repaired in an authorised service shop authorised to perform the repairs. For more information on, contact your supplier.

7. Technical specifications

Bevel angle	Replacement head 30° / 37,5° / 45° / 50° / 60° other angles upon request
Bevel width	0 to 15 mm (.6 in) < 400N/mm ² - 0 to 8 mm (.3 in) > 400N/mm ²
Rounding	R 2,5 mm (0.08in) / R 3.5 mm (0.12in) / R 4 mm (0.16in)
Motor	electric
Motor power	2600W(230V/50Hz), 1900W/15Amps (120V/60Hz)
Revolutions	6600 rpm
Weight	9,1 kg (20.06lb)
Number of indexable inserts	3pcs

7.1. Beveling holes and openings – minimum dimensions

Bevel angle α°	Minimum ID of the processed hole. Head type - X PREMIUM (* roll for cutting inserts Art.Nr. 28008)
30°	31 mm (1.22 in) / *34 mm (1.33 in)
37,5°	27 mm (1.06 in) / *31 mm (1.22 in)
45°	27 mm (1.06 in) / *31 mm (1.22 in)
50°	27 mm (1.06 in) / *31 mm (1.22 in)
60°	20 mm (1.06 in) / *26 mm (1.02 in)
R 2,5mm	38 mm (1.49 in)
R 3,5/4mm	38 mm (1.49 in)

8. Machine equipment

Unpack the machine from the cardboard box and check if the machine is ok and free from damage. If necessary contact the seller.

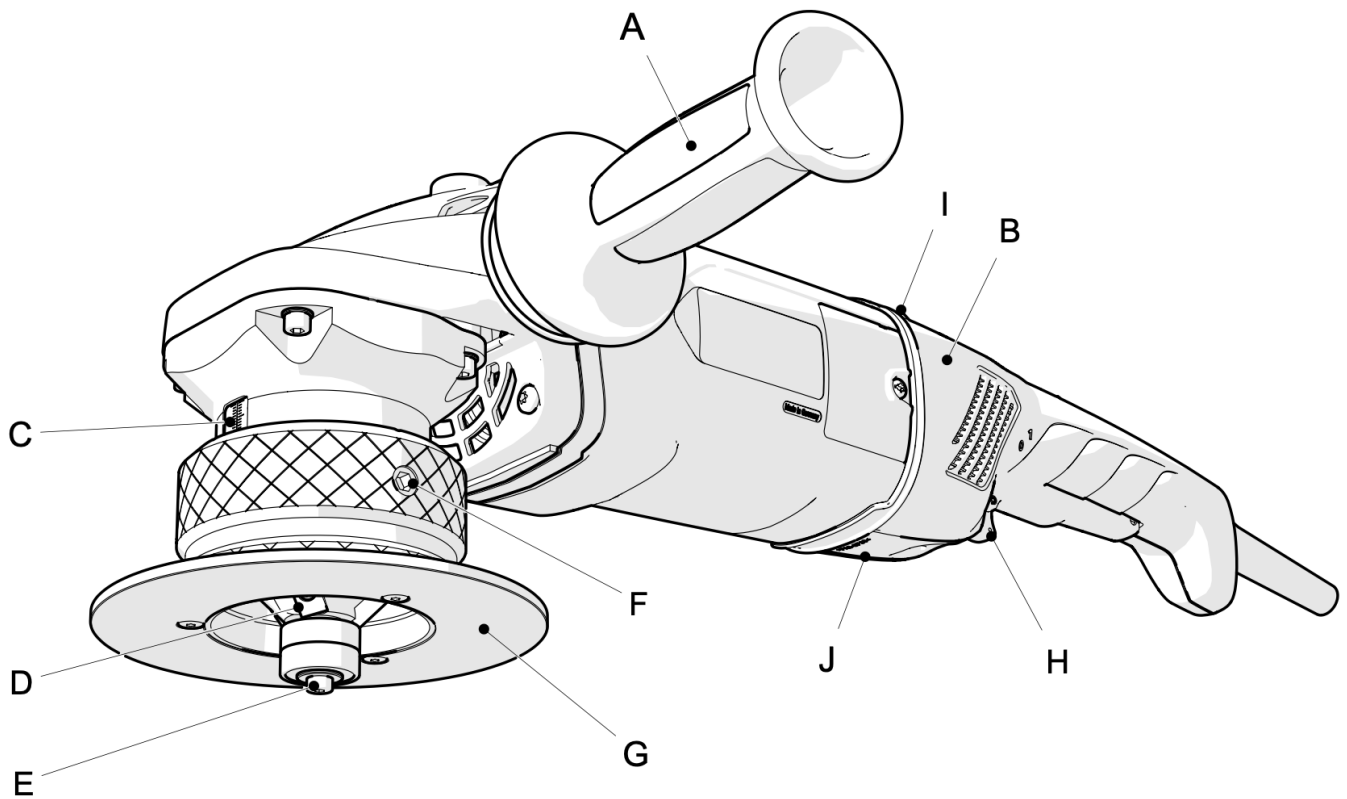
Machine B15 ELECTRA is supplied with required tools for the operation without the tool.

Purchase the tools. The review of tools is defined in the catalogue of N.KO Machines or contact your supplier.

9. Control elements B15 ELECTRA

Fig.9.0.1

- A. Handle
- B. Motor body
- C. Scale for reading the bevel size setting
- D. The miller unit with indexable inserts
- E. Guiding, stop miller roller and roller screw
- F. The arresting screws of the thrust plate sleeve – The set removal provision
- G. The thrust plate with sleeve
- H. Main switch
- I. Control LED, indicates triggered restart protection or overheating
- J. Handle setting lock.



10. Use

Important:

The device can be used solely if it is fitted with the original indexable inserts supplied by your supplier, i.e. the device manufacturer. It is prohibited to use other, than original inserts.

10.1. Setting the removal size

Attention :

During the adjustment operation, wear gloves and other personal protective equipment. The operations must be carried out on the with off machine only, and after disconnecting from the power supply.

- Disconnect the machine from electricity supply.
- Release the setting arresting screws (fig. 9.0.1 position F)
- Turn the guiding plate (fig. 9.0.1 position G) for setting the reduction size. You can read the setting on the scale (fig. 9.0.1 position C). The scale is only indicative and the resulting removal may be different when using different angles of the milling heads.
- After setting, fasten both screws (fig. 9.0.1 position F).

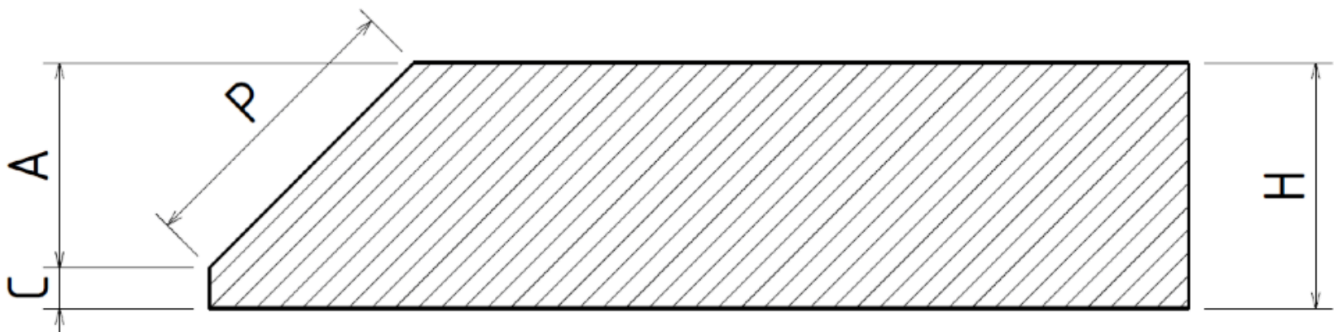
Important:

Maximum bevelling capacity is 15mm of bevel width (dimension P fig.10.1.1). The maximum capacity can be achieved in more steps only. It depends on the material solidity. We recommend performing the test.

Start with lower cut and gradually increase the cut, until the work with the machine is comfortable and the plates can achieve gradually reduction without increased vibrations. For orientation setting, use the tables below.

We recommend administering the work log for recording the measured value and the machining procedure.

Fig. 10.1.1



For orientation setting of the cutting size and the machining process, use the setting tables for individual bevel angles.

Important:

The values in the table are calculated from point 0. Point is the point when the miller touches the material edge for the first time. This point can be determined by gradually rotating the pressure plate (Fig. 9.0.1, position G) and holding the tool against the edge of the material until the cutter touches the workpiece.

45° - For full bevel (P=15mm) is required, turn the thrust plate by 5,2 revolutions

Chip no.	Hypotenuse P	Bevel height A	Number of rpm of the thrust plate
I.	5mm	3.5mm	2 Revolutions
II.	11mm	7.8mm	+ 2 Revolutions
III.	15mm	10.6mm	+ 1.2 Revolutions

See fig.10.1.1.

30° - For full bevel (P=15mm) is required, turn the thrust plate by 6.2 revolutions

Chip no.	Hypotenuse P	Bevel height A	Number of rpm of the thrust plate
I.	5mm	4.3mm	2 Revolutions
II.	10mm	8.6mm	+ 2 Revolutions
III.	15mm	13mm	+ 2.2 Revolutions

See fig.10.1.1.

Important:

The machine was constructed for the preparation of welded surfaces. Machining accuracy is within limit +/-1mm. The condition for reaching the satisfactory results is a perfect preparation of the material edges. Unfortunately the material is often burned or cut. The inaccuracy shall be reflected on the resulting machining.

Important:

If it is difficult to machine the bevel within the recommended number of steps, we recommend dividing the process to more chips. The reason can be the wear of the cutting inserts or worse machining properties of material.

10.2. Beveling

- Connect the device in electricity distribution
- After careful setting of the first reduction, see clause 10.1, hold the device with both hands and use the main switch to switch on the device.
- Fit the machine on material in such way the thrust/contact plate (fig. 9.0.1 position G) was in contact with material at maximum possible surface.
- Slowly move the machine to the material until you feel the milling machine is in reduction. CAUTION!!! The rebound is possible at this moment, be careful.

- Press the machine in the direction into the material until the milling head is embedded in the material in the full profile of the set chip removal. Contact roller (fig. 9.0.1 position E) must now touch the workpiece edge. The thrust plate (fig. 9.0.1 position G) must be placed with the surface on material.
- Now, you can start the machining from the left to the right. Shift the machine constantly; using only such speed the milling machine was able to remove material in the set chip profile. Otherwise, the milling machine will be pushed out from the material and the bevel will be unequal.

 **Attention:**

During work, wear gloves and other personal protective equipment.

The maintenance operations must be carried out on the machine at rest and after disconnecting from the power supply.

 **Important:**

The shift during machining is always from left to the right.

 **Attention :**

The device operators must hold the device with both hands.

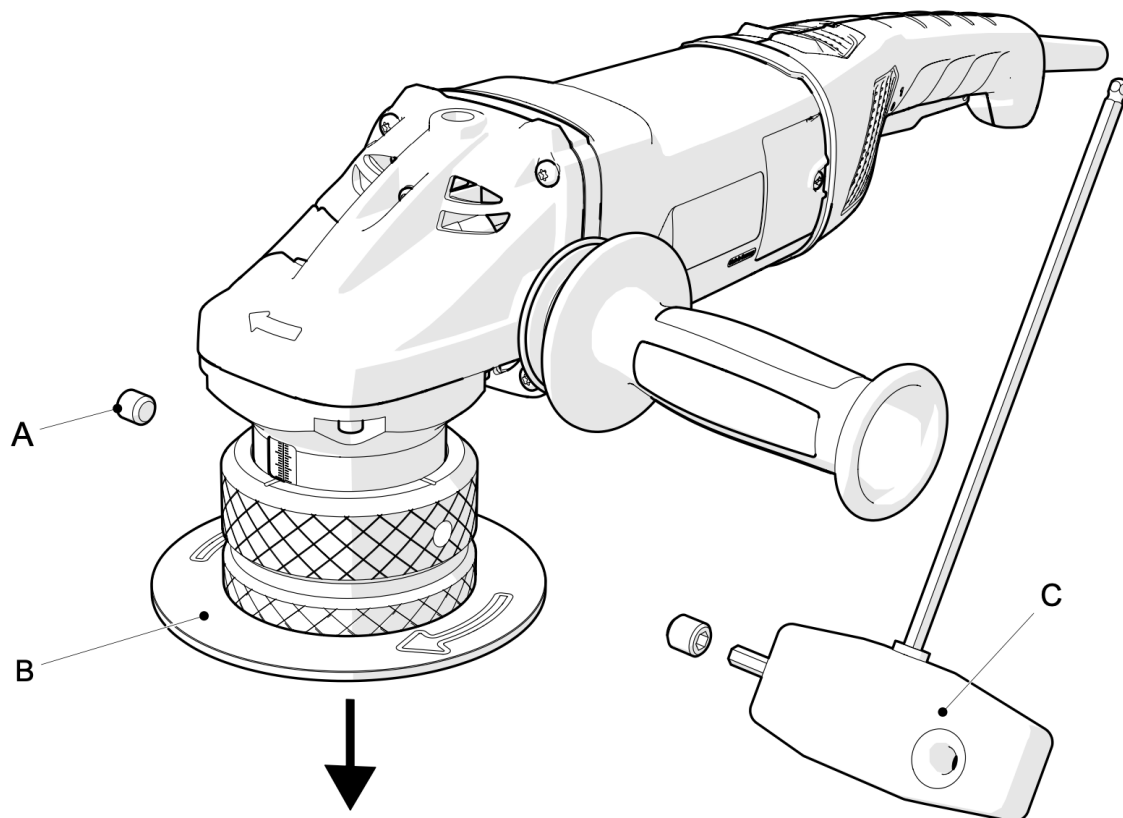
10.3. Bevel angle and shape change. Milling head (Premium type) replacement

Machine B15 ELECTRA is constructed for the use of more types milling heads.

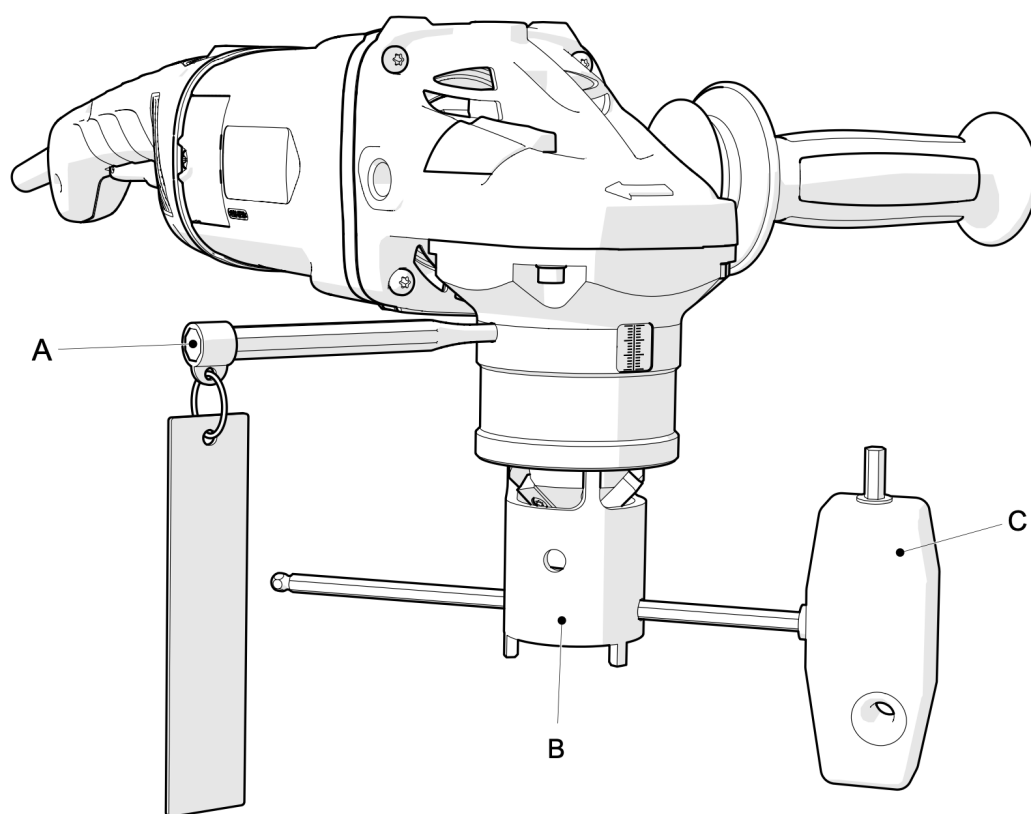
For the head replacement, proceed as follows.

- Disconnect the machine from electricity supply.
- Release the setting arresting screws (fig. 10.3.1 position A) by the enclosed allen key (fig. 10.3.1 position C)
- Turn the guiding plate (fig. 10.3.1 position B) for complete disassembly from the machine
- Secure the spindle against turning by using the enclosed mandrel (fig. 10.3.2 position A)
- Now disassemble the milling head by enclosed special tube, double-sided spanner (fig.10.3.2 position B plus C)
- Use the same process to assemble new head and re-assemble the machine.
- All connections must be appropriately fastened.

Obr. 10.3.1



Obr. 10.3.2



Important:

Always, when the milling head is replaced, treat the head thread and the screw with copper-containing or Graphite-containing grease. This anti seize paste prevents the thread of the milling head from being jammed / sealed and facilitates future loosening.

Attention :

During the adjustment operation, wear gloves and other personal protective equipment. The operations must be carried out on the switch off machine and after disconnecting from the power supply only.

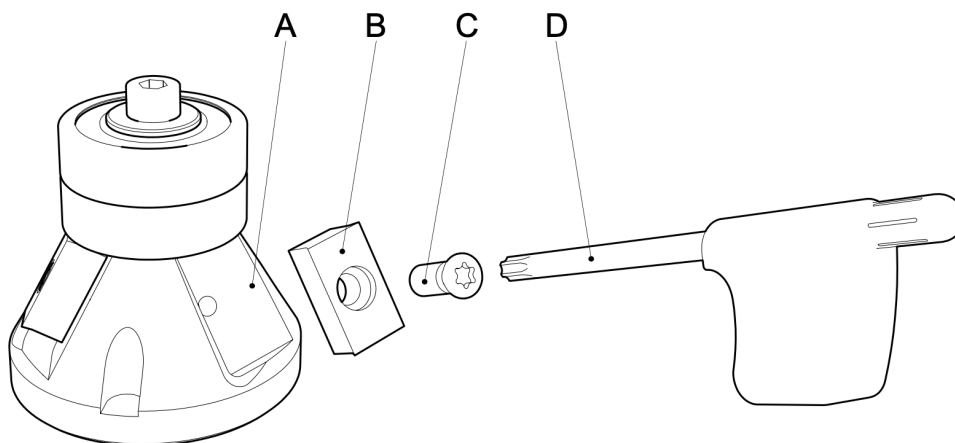
10.4. Replacement of indexable inserts - PREMIUM

Important:

Work solely with sharp and not damaged indexable inserts. It prevents the machine damage. If the cutting inserts are worn or damaged or cracked, they must be replaced.

- Attach the wrench (fig. 10.4.1 position D) release the screws used for fastening the indexable inserts (fig. 10.4.1 position C)
- Indexable inserts (fig. 10.4.1 position B) replace with new, different, or just turn them to use all cutting edges.. Attention! Considering the specific shape, focus on this operation.
- Indexable inserts must be appropriately fastened (fig. 10.4.1. position C).
- Assemble the guiding plate set according to chapter 10.3.

Fig. 10.4.1



11. Maintenance and operation

Maintenance of machine B15 ELECTRA does not require any special tools and it is very simple. Keep the machine clean and replace the lubrication grease in the machine gearbox every 1000 working hours. This operation must be performed solely in authorised service N.KO Machines.

Regularly check the supply power cable. In case of damage have it replaced in an authorised service shop authorised to perform the such repairs. Contact your supplier.

Important:

The moving parts, threads, and mechanical connections must be gradually cleaned using compressed, and must be preserved (greased).

Attention :

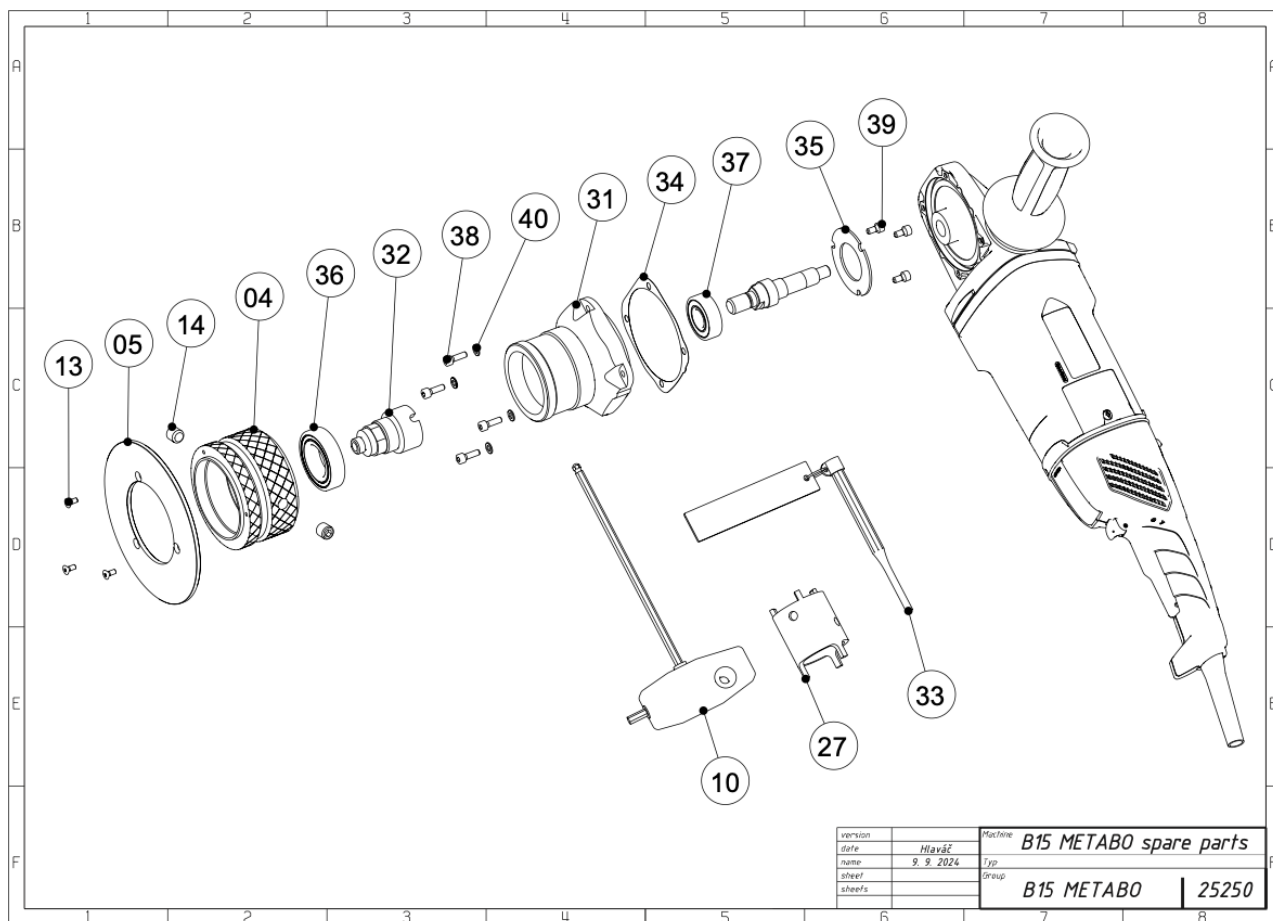
When using compressed air for cleaning, wear safety goggles and never use a pressure exceeding 2 bar.

12. Spare parts

Orders of spare parts shall contain the following information:

- machine type;
- serial number;
- Description of required part and its number
- quantity.

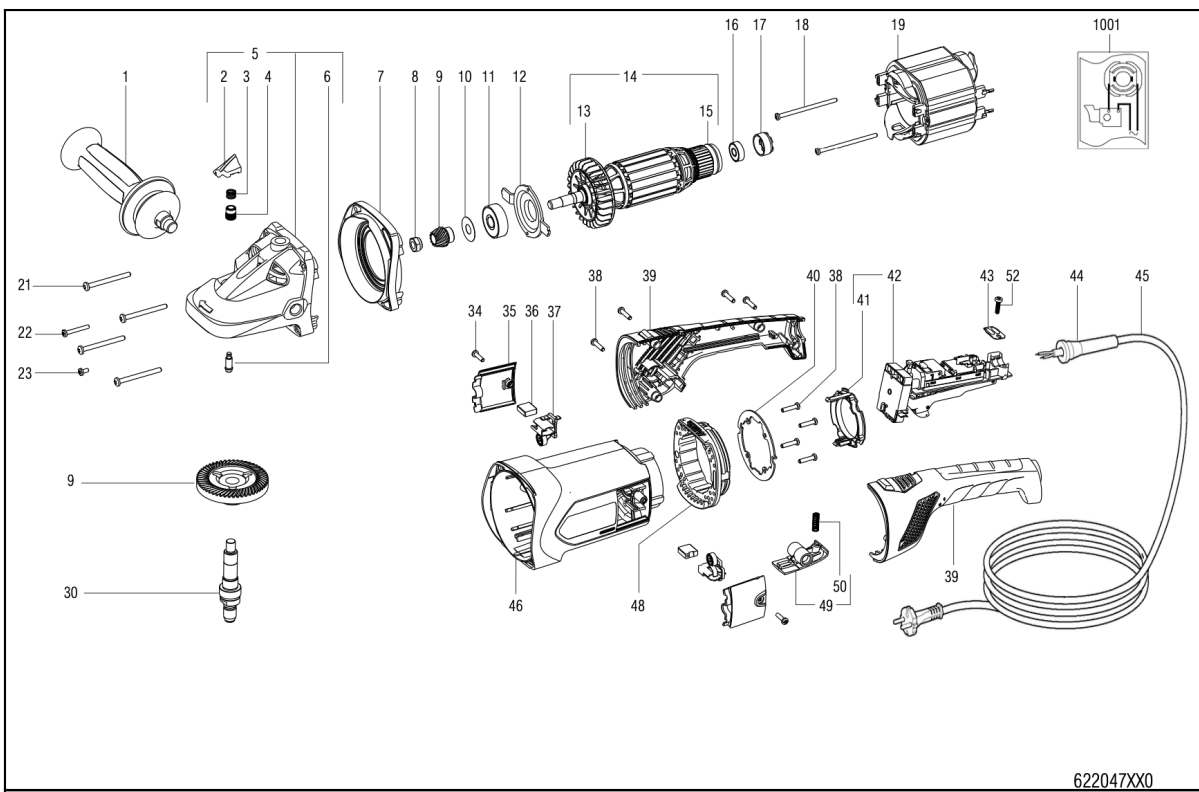
12.1 List of spare parts



B15 METABO SPARE PARTS

drawing no. 25250 B15 METABO

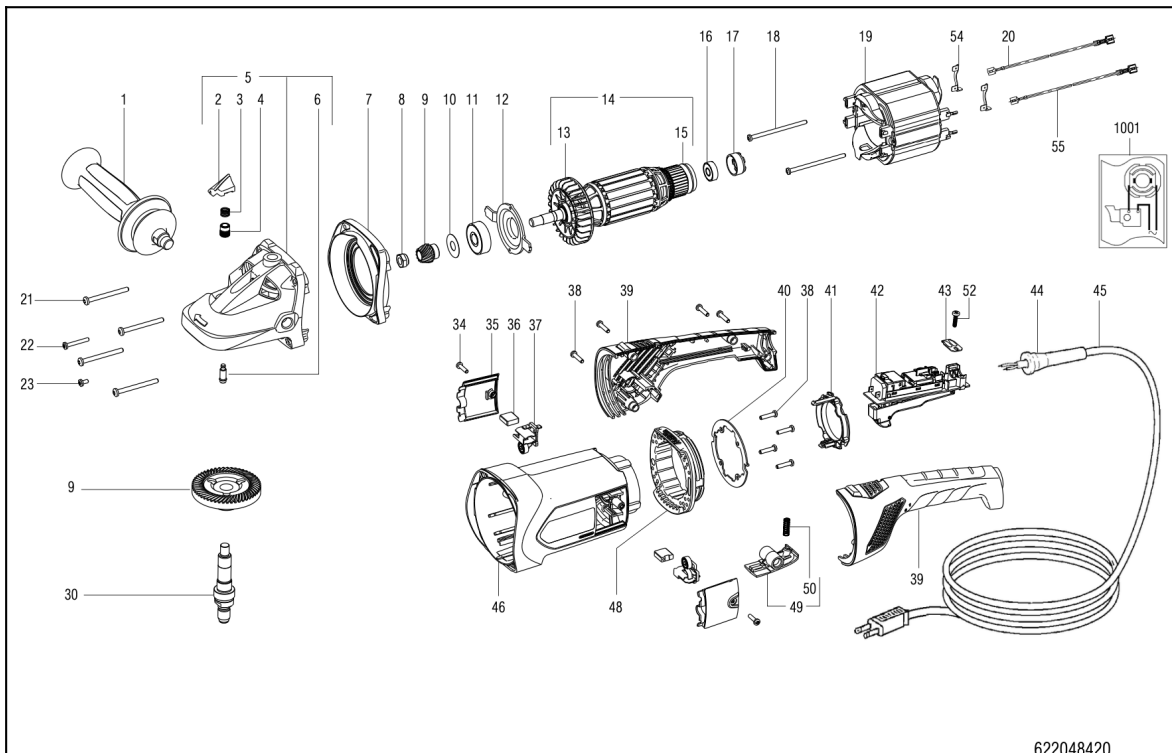
Number	Fig	Part name	Note	Pcs
27220.50	04	backstop		1
27220.51	05	disk		1
27220.54	10	key		1
27220.58	13	screw		3
27220.57	14	screw		2
25300.27	27	universal tube key		1
25250.31	31	neck		1
25250.32	32	adapter		1
25250.33	33	stop pin		1
25250.34	34	washer		1
25250.35	35	washer		1
25250.36	36	ball bearing		1
25250.37	37	ball bearing		1
25250.38	38	screw		4
25250.39	39	screw		3
25250.40	40	washer		4



622047XX0

B15 Electra NG Spare Parts, Art.Nr. 25250 (230V)

Position Nr.	Art.Nr.	Name of the part	Quantity per tool
0001	314001260	Anti-vibration handle neutral,M 14	1
0002	343399790	Push button black	1
0003	342003390	Pressure spring	1
0004	341005830	Guide bush	1
0005	316045500	Gear housing cpl.	1
0006	341515430	Bolt	1
0007	343459510	Intermediate flange	1
0008	341100660	Self locking nut	1
0009	316045530	Bevel gear	1
0010	141123870	Washer	1
0011	143115510	Ball bearing, 12x37x12	1
0012	339007280	Fixed bearing cover	1
0013	316045560	Fan w. dust guard	1
0014	310011350	Armature compl.,230 V	1
0015	343390630	Sealing washer	1
0016	143115800	Ball bearing, 8x22x7	1
0017	344102590	Rubber bushing	1
0018	141118970	Self-tap. fill. h. screw	2
0019	311009580	Field coil	1
0021	141118810	Self-tap. fill. h. screw	4
0022	141122020	Fillister head screw	1
0023	141119850	Fillister head screw	1
0030	316082640	Spindle shaft	1
0034	341702050	Screw	2
0035	343397710	Brush holder cover	2
0036	316045570	Carbon brush set,230 V	1
0037	343000950	Brush guide	2
0038	141116020	Self-tap fill h screw	8
0039	343399760	Handle upper+lower part	1
0040	339007320	Retaining sheet	1
0041	343399800	Edge protection	1
0042	316052180	Electronic switch set,Defond 230V	1
0043	339127730	Cable clip	1
0044	344094550	Cable sleeve	1
0045	344487800	Cable with plug	1
0046	315013450	Motor housing	1
0048	343459500	Damper	1
0049	343395520	Locking lever	1
0050	342002170	Pressure spring	1
0052	141116800	Self-tap. fill. h. screw	1
1001	338505670	Wiring diagram	1



622048420

B15 Electra NG Spare Parts, Art.Nr. 25251 (120V)

Position Nr.	Art.Nr.	Name of the part	Quantity per tool
0001	314001260	Anti-vibration neutral,M 14	1
0002	343399790	Push button black	1
0003	342003390	Pressure spring	1
0004	341005830	Guide bush	1
0005	316045500	Gear housing cpl.	1
0006	341515430	Bolt	1
0007	343459510	Intermediate flange	1
0008	341100660	Self locking nut	1
0009	316045530	Bevel gear	1
0010	141123870	Washer	1
0011	143115510	Ball bearing, 12x37x12	1
0012	339007280	Fixed bearing cover	1
0013	316045560	Fan w. dust guard	1
0014	310011340	Armature compl.,120V	1
0015	343390630	Sealing washer	1
0016	143115800	Ball bearing, 8x22x7	1
0017	344102590	Rubber bushing	1
0018	141118970	Self-tap. fill. h. screw	2
0019	311009580	Field coil	1
0020	344494200	Strand	1
0021	141118810	Self-tap. fill. h. screw	4
0022	141122020	Fillister head screw	1
0023	141119850	Fillister head screw	1
0030	316082640	Spindle shaft	1
0034	341702050	Screw	2
0035	343397710	Brush holder cover	2
0036	316046780	Carbon brush set,120 V	1
0037	343000950	Brush guide	2
0038	141116020	Self-tap fill h screw	8
0039	343399760	Handle upper+lower part	1
0040	339007320	Retaining sheet	1
0041	343399800	Edge protection	1
0042	343413140	switch 230V/120V	1
0043	339127730	Cable clip	1
0044	344094550	Cable sleeve	1
0045	344490920	Cable with plug	1
0046	315013450	Motor housing	1
0048	343459500	Damper	1
0049	343395520	Locking lever	1
0050	342002170	Pressure spring	1
0052	141116800	Self-tap. fill. h. screw	1
0054	339160850	Contact strap	2
0055	344498080	Strand compl.,120V	1
1001	338504750	Wiring diagram	1

A copy of this manual is supplied with every
machine B15 ELECTRA
All rights reserved.

No part of this publication may be reproduced without the previous consent granted by the
company N.KO.

Manufacturer's and Distributor's Address:

N.KO spol. s r.o.
a Member of Richtr Group
Táborská 398/22
293 01 Mladá Boleslav
Czech Republic – Europe Union
Phone: +420 326 772 001 fax: +420 326 774 279
email: nko@nko.cz

USA Distributor's Address:

BEVELER USA INC.
a Member of Richtr Group
Business Office, Workshop, Warehouse

511 Parkway View Dr,
Pittsburgh, PA 15205

Toll Free Number: 1-800-973-1138
Phone Ambridge (PA) office: 1-412-452-2563
email: service@bevelerusa.com