

BERNARDO®

www.bernardo.at



TRANSLATION OF THE ORIGINAL USER MANUAL

Double grinding machines DS 175 S / DS 200 S / DS 250 S



EN

2/2



PWA Handelsges.m.b.H.
4020 Linz | Nebingerstraße 7a | Austria
phone: +43.732.66 40 15 | fax: +43.732.66 40 15-9
e-mail: bernardo@pwa.at | www.bernardo.at

Edition 11/2016

© COPYRIGHT 2016 Bernardo PWA Ltd.
Changes and copies (and extracts) only permitted by written consent from PWA Ltd.
Any infringement to these provisions will be prosecuted without exception.

Index

1. General	4
1.1 Information for this manual and safety booklet	4
1.2 Applicable documents	4
2. Intended Use	4
2.1 Surrounding conditions	4
3. Technical Data	5
3.1 Specifications	5
3.2 Standard accessories	5
3.3 Optional accessories DS 175 S / DS 200 S / DS 250 S (recommended)	5
4. Machine Transportation	6
4.1 Symbols on packaging	6
4.2 Damage in transit	7
4.3 Incorrect handling	7
5. Machine Assembly	8
5.1 Incorrect assembly and initial start up	8
5.2 Selection of installation site	8
5.3 Unpacking of machine	9
5.4 Removal of protective coating	10
5.5 Machine assembly	10
5.6 Machine installation	12
6. Initial start up	13
7. Machine description	14
7.1 Double grinding machine	14
7.2 Sanding attachment (optional)	14
8. Operation	15
8.1 Inspection of safety devices	15
9. Care and maintenance	16
9.1 Servicing plan	16
9.2 Grinding wheel replacement	16
9.3 Replacing the sanding belt and checking the belt run (optional)	18
10. Disassembly and disposal	20
11. Trouble shooting	20
12. Wiring Diagram	21
13. Spare parts list	22
14. Declaration of conformity	25

1. General

1.1 Information for this manual and safety booklet

This manual and safety booklet allow for safe and efficient use of this product. As they are part of the machine they need to be kept close within machine range readily accessible to personnel.

All personnel must have thoroughly read and understood the contents of this manual and safety booklet before machine operation. Safe operation can only be ensured in full compliance with the safety precautions and instructions of this manual and safety booklet.

In addition, local health and safety regulations and general safety precautions apply when using this product.

1.2 Applicable documents

- User manual
- Safety booklet

2. Intended use

The Machine is suitable for polishing of metals, plastics and nonferrous materials.

Do not use this machine for the following materials:

- Elastic plastic (e.g. Rubber)
- Inflammable materials (e.g. Magnesium)

Type of usage: Professional

The DS 175 S / DS 200 S / DS 250 S Polishing Machine is designed for an average use of 3 hours per day / 90% operating time. This equals to 600 hours per year.

Part of the intended use is to follow the instructions of this manual as well as the safety booklet. Any variations to the intended use of this machine are considered as improper use.

To mount the optional sanding attachment is only allowed as following :

Sanding attachment **SA1** > **DS 200 S**

Sanding attachment **SA2** > **DS 250 S**

2.1 Surrounding physical conditions

The physical conditions in which this machine is used determines the safety of operation and life span of the machine components.

Guidelines for these conditions are:

- Surroundings: free from vibrations, sudden force and shocks
- Temperature: +5°C, maximum 35°C
- Ambient humidity: 30% - 70% relative humidity (non-condensing)

3. Technical Data


3.1 Specifications

	DS 175 S	DS 200 S	DS 250 S
Grinding wheel Ø x B	175 x 25 mm	200 x 32 mm	250 x 32 mm
Grinding wheel bore	32 mm	32 mm	32 mm
Grinding wheel grit	K 36 / K 80	K 36 / K 80	K 36 / K 80
Spindle speed	2850 rpm	2850 rpm	2850 rpm
Motor power output S ₁ 100%	0,50 kW	0,90 kW	1,5 kW
Motor power input S ₆ 40%	0,70 kW	1,25 kW	2,0 kW
Voltage	230 V	230 V bzw. 400 V	400 V
Width	450 mm	510 mm	510 mm
Depth	230 mm	270 mm	320 mm
Height	250 mm	310 mm	360 mm
Weight ca.	18 kg	25 kg	30 kg
Sound pressure level	68 dB(A)	68 dB(A)	68 dB(A)
Machine number	see serial plate	see serial plate	see serial plate
Year of manufacture	see serial plate	see serial plate	see serial plate

3.2 Standard accessories

Roughing wheel grit 36
 Finishing wheel grit 80
 Spark protection on both sides
 Workpiece support

3.3 Optional accessories DS 175 S/ DS 200 S/ DS 250 S (recommended)

<p>Sanding attachment for DS 200 S und DS 250 S</p>  <p>Art. Nr. 05-1130/05-1131</p>	<p>Wall mount WH</p>  <p>Art. Nr. 56-1049</p>	<p>Stand - model H</p>  <p>Art. Nr. 56-1048</p>	<p>Bigger range</p>  <p>www.bernardo.at</p>
---	--	---	--

4. Transportation

Lifting devices used for transportation, such as a forklift (as well as in machine assembly or disassembly) in- or outside the premises are permitted by licenced and experienced transport personnel only.

4.1 Symbols on packaging

Symbols, such as following are located on packaging:



This side up

Arrows point to the top of the packaging. Arrows must always face top to eliminate damage to the contents of the packaging.



Fragile

Shows packaging containing fragile and/ or breakable goods.

Handle the package with care. Do not drop. Protect from sudden impact.



Keep dry

Protect packaging from getting wet



Handle the package with care. Do not drop. Protect from sudden impact.



Centre of gravity

Shows the centre of gravity on packaging. Pay attention when lifting and transporting.

Symbol is not displayed on packaging when the actual centre of gravity is the centre. In lack of clarity contact the manufacturer.



Fix here

Attach lifting devices (chain, lifting rope etc.) only where this symbol is shown.

4.2 Damage in transit

Inspection on delivery

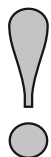
Check the goods immediately after delivery for damages or missing components.

In the event of visible damage before unpacking proceed as follows:

- 1 Reject delivery or accept goods with reservation
- 2 Make a note about the damage on the delivery docket of the logistics company
- 3 Make a claim (see safety booklet section 12 for claim periods)

Return of goods

! NOTE



Damage of goods on return shipment!

PWA Ltd is not liable for goods damaged during return to sender. It is the customer's responsibility to return goods in proper packaging and to ensure safe transport.

4.3 Incorrect handling

WARNING

Property damage caused by incorrect handling!

Incorrect handling during transportation can lead to the event of falling, crashing goods which can cause significant property damage.

- Unload and move goods within premises with caution. Pay attention to the symbols marked on the packaging.
- Use only designated points for lifting.
- Remove packaging only immediately prior to the assembly.

5. Assembly

5.1 Incorrect assembly and initial start-up

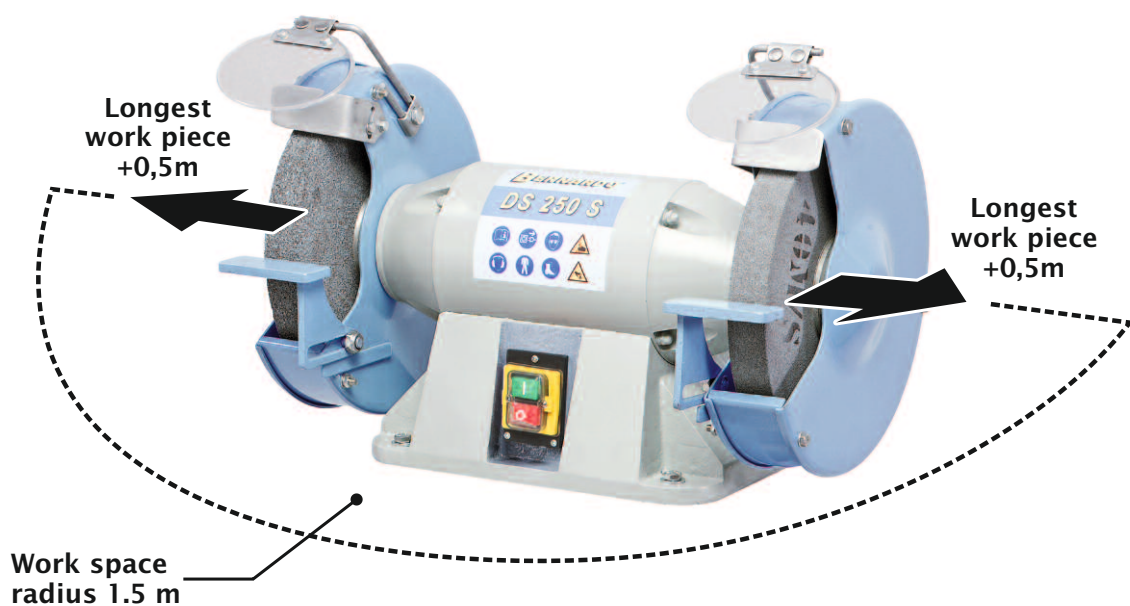
Incorrect assembly and initial start-up can lead to serious injuries and significant property damage.

- Allow for generous space prior to commencing assembly.
- Be extra cautious when dealing with exposed, sharp pieces.
- Keep work environment clean and tidy! Loose parts on top of each other or randomly placed parts can lead to accidents.
- Assemble parts accordingly.
- Secure parts to prevent them from dropping or falling over.
- Prior to initial start-up check that
 - Assembly work has been completed in compliance with the instructions of this manual
 - No personnel is within the immediate surroundings

5.2 Selection of installation site

Following aspects should be taken under consideration:

- Machine weight
- Static and dynamic loads
- Space requirements
- Power supply
- Ensure ground is level and strong enough
- Ensure immediate surroundings allow for intended use



5.3 Unpacking of machine

- 1 Remove packaging and ensure for disposal in accordance with legal requirements and local guidelines.
- 2 Check contents for completeness



- 1 double grinding machine
- 2 workpiece support
- 3 spark protection
- 4 safety glass

5.4 Removal of protective coating

Unvarnished machine parts are covered with a protective coating which must be removed.

Use:

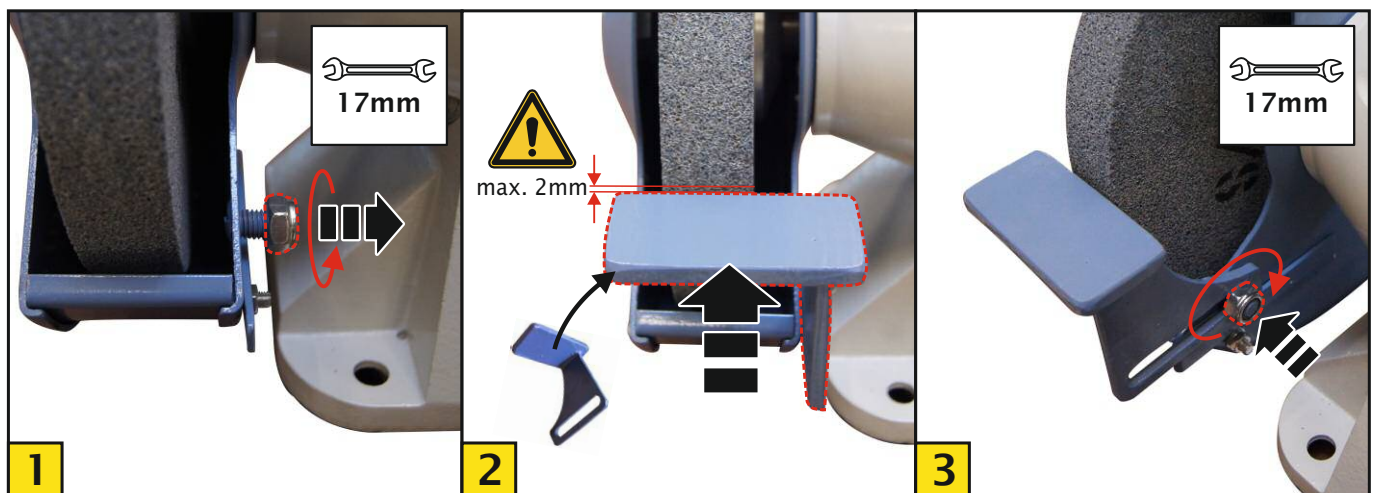
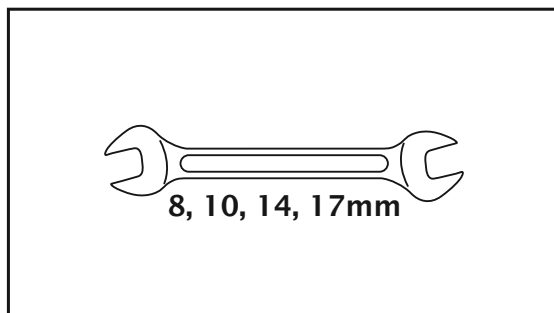
- Cleaning cloth
- Detergents, cold cleaning agents etc. (see manufacturer's guidelines)
- Protective clothing (see safety precautions of cleaning agents)

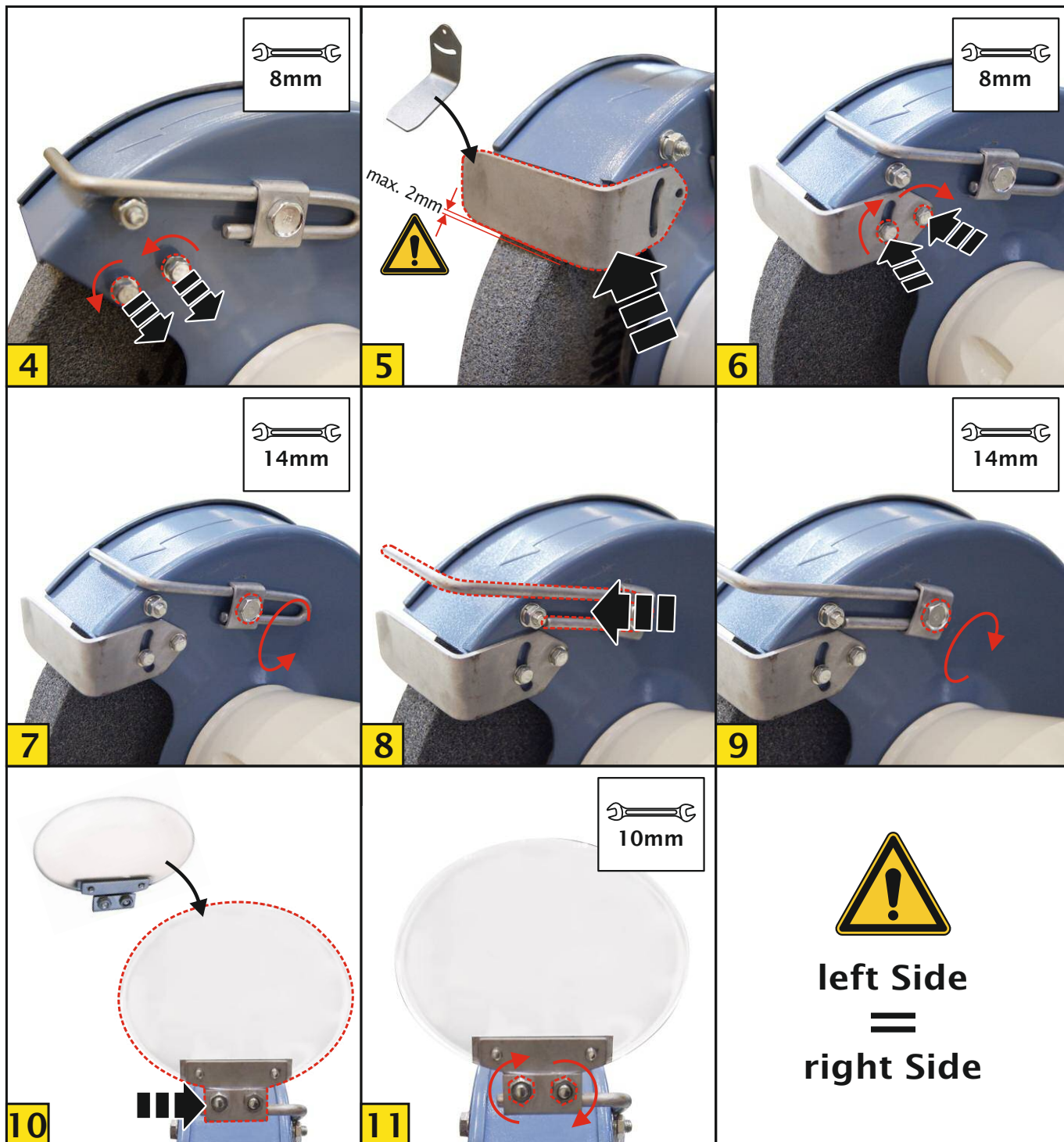
Remove protective coating:

- 1 Wear protective clothing
- 2 Use cleaning detergents as recommended by manufacturer
- 3 Apply metal protector or motor oil 20W on the cleaned surfaces

5.5 Machine assembly

The following tools for assembly and ongoing adjustments are not supplied by PWA Ltd. and therefore have to be supplied by the customer.





5.6 Machine installation

WARNING



If the machine is mounted on a machine stand, the stand must be fixed to the floor before the machine is mounted on the stand.

- 1 Lift machine to installation site.
- 2 Mount the machine at the installation site.



6. Initial start-up

DANGER



Compliance to the following is of high importance:

- Always turn the machine off by pressing the designated button. Never switch off the machine by pulling out the plug or by turning off a limit switch!
- Only certified electricians are authorized to deal with faults.
- Never make changes to the electrical parts of the machine.

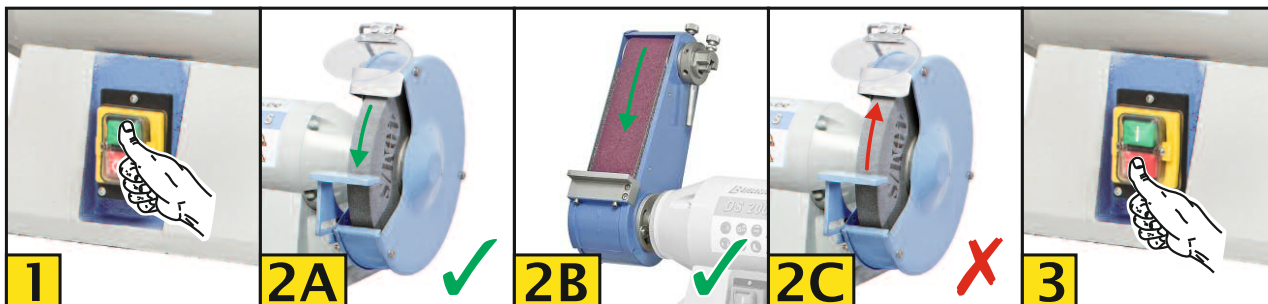
DANGER



Connection to the power supply by an electrician must be in compliance with electric installation regulations and guidelines.

Correct power supply voltage! Specifications on the serial plate must comply with the voltage of the power supply.

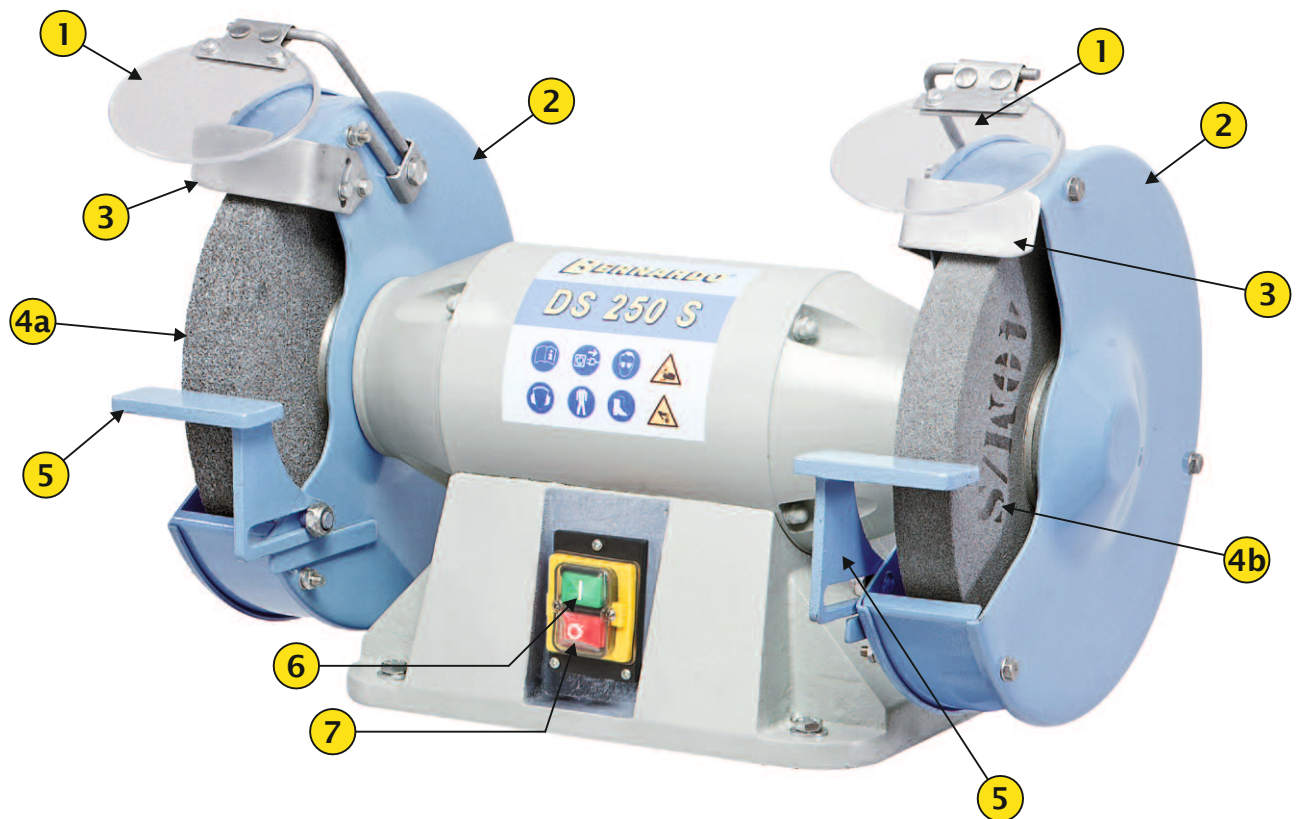
- 1 Connect to power source
- 2 Check spindle rotation (400V model only)



(2B - only if sanding attachment is mounted)

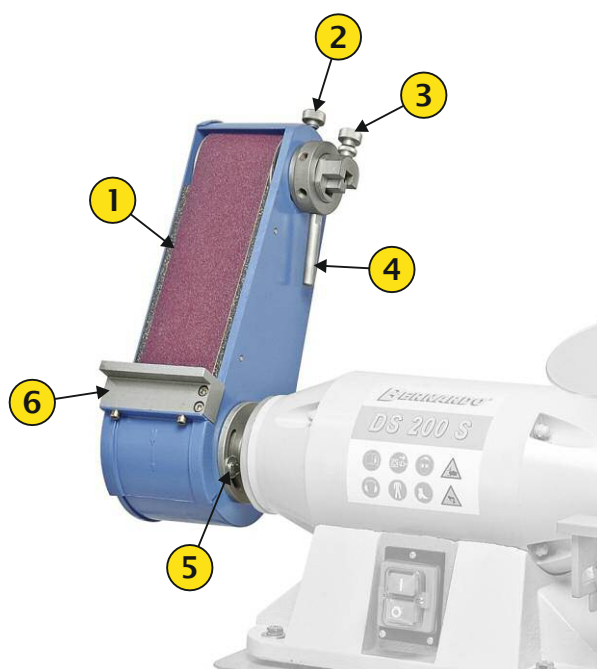
7. Machine Description

7.1 Double grinding machine



- | | | | |
|----|--------------------|----|---------------------|
| 1 | Safety glass | 4b | Finishing wheel K80 |
| 2 | Protective cover | 5 | Workpiece support |
| 3 | Spark protection | 6 | ON-button |
| 4a | Roughing wheel K36 | 7 | Off-button |

7.2 Sanding attachment (optional)



- | | |
|---|--|
| 1 | Sanding belt |
| 2 | Set screw belt tension |
| 3 | Set screw belt run |
| 4 | Clamping lever for sanding belt |
| 5 | Fastening screw (2piece) to swirl the Sanding attachment |
| 6 | Work piece support |

8. Operation

WARNING

Improper use may lead to serious injuries and property damage. Prior to operation the machine operator must ensure that there is no other person near the work space of the machine and that all safety devices are in proper working order.

WARNUNG

Long over run period!

The machine may be running up to 2 minutes after being switched off!

Normal operation

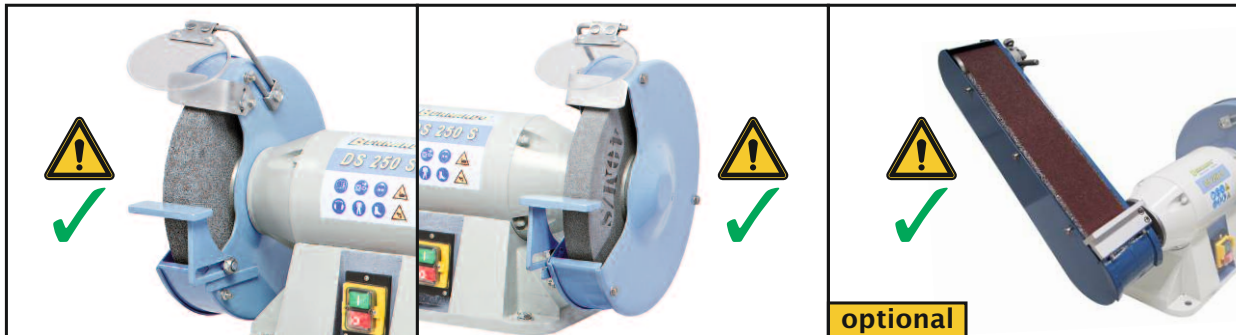
The following lists an average operating procedure:

- 1 Before commencing machine operation ensure unobstructed rotation of grinding wheel and sanding belt*.
- 2 When turning on the machine stand to the side of it, not directly in front of it.
- 3 After turning on the machine, wait until it reaches full speed before starting any work.
- 4* Check sanding belt run. (see 9.3)


* only if sanding attachment is mounted


8.1 Inspection of safety devices

Prior to operation check whether protective covers and safety glass is mounted properly.



9. Care and Maintenance

 **DANGER**




Before starting any maintenance work or adjustments on the machine disconnect machine from the power supply and be certain that the machine cannot be turned on.


The following guidelines for machine maintenance and servicing plans are essential for problem free machine run and smooth operation.

If there are any queries regarding the maintenance and servicing plan contact the manufacturer, see page 2 for contact details.

9.1 Servicing plan

 **WARNING**

Spilt fluids and lubricants create an extremely slippery floor!



Avoid spillage of fluids and lubricants of all kind within machinesurroundings in order to avoid accidents through slippery floors

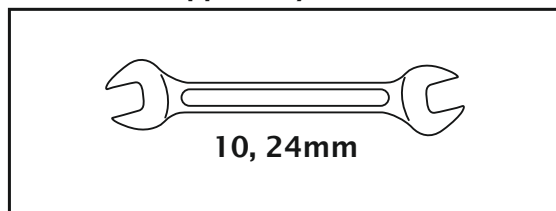
Intervals	Type of maintenance	Personnel
After daily use	Wipe machine with a dry cloth	Operator
Once per year	Inspect electric functions	Qualified electrician

9.2 Grinding wheel replacement

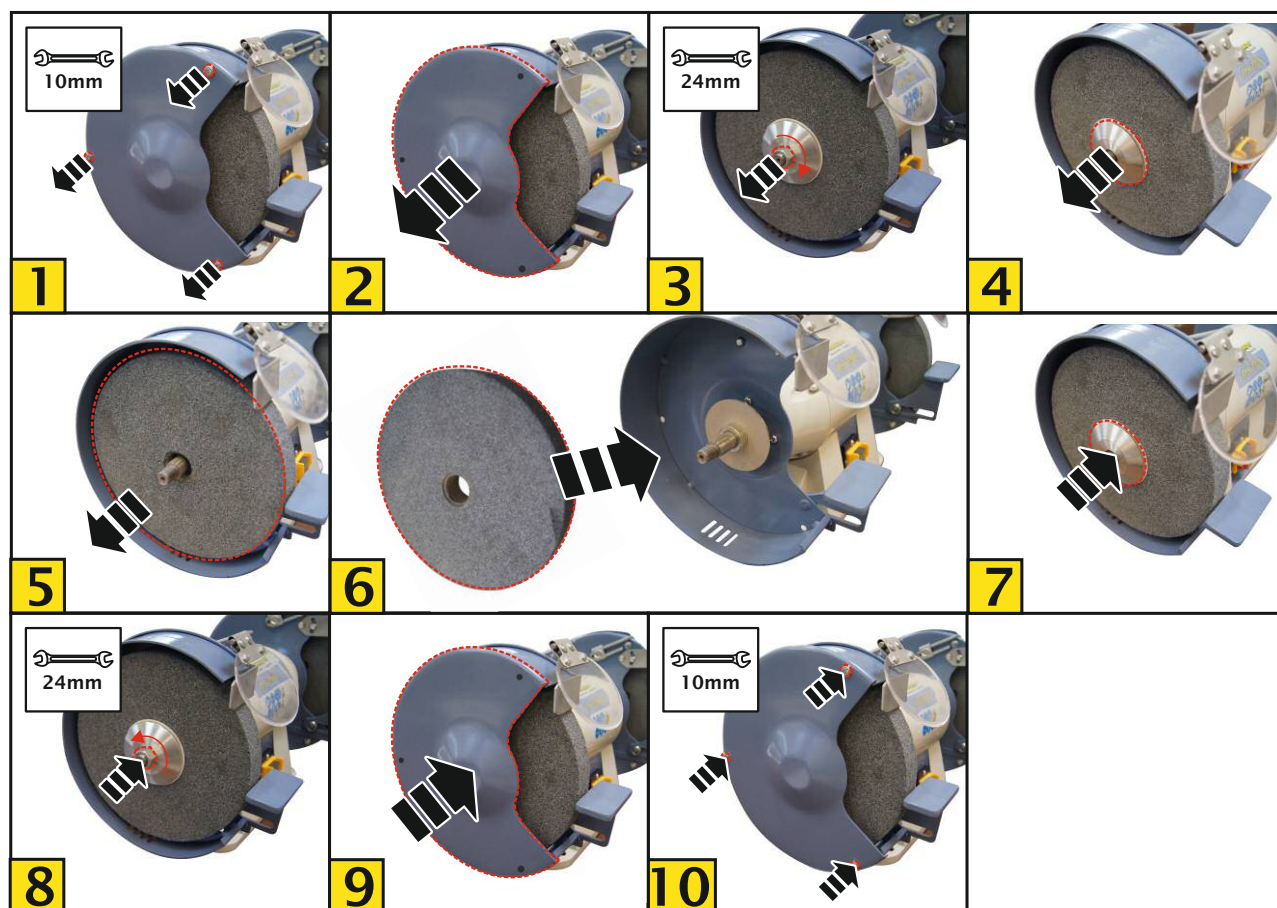
 **WARNING**

Check for the top speed of the grinding wheel!

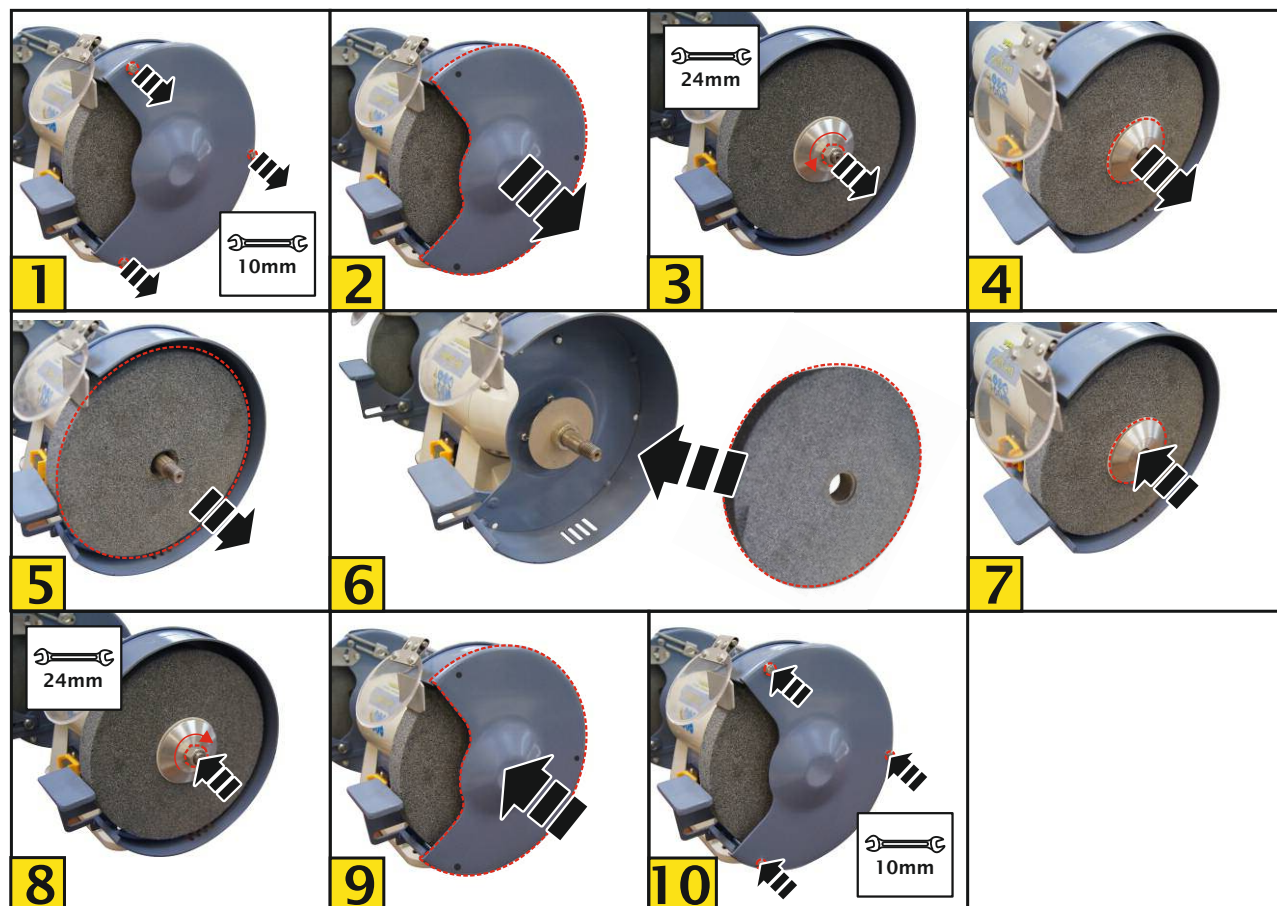
The following tools for grinding wheel replacement have to be supplied by the end user:



Grinding wheel left

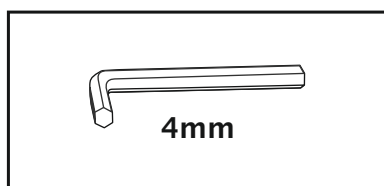


Grinding wheel right

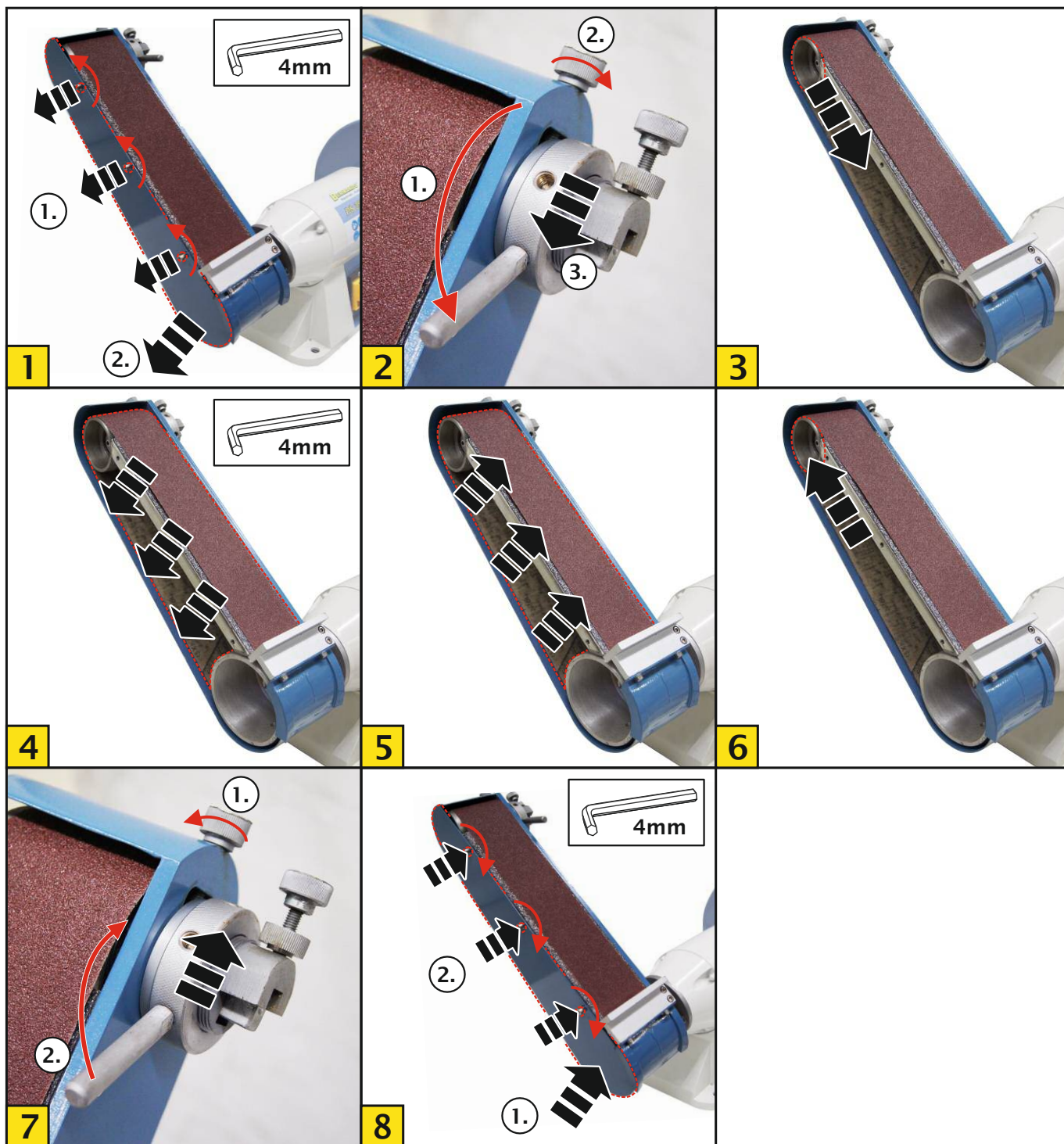


9.3 Replacing the sanding belt and checking the belt run (optional)

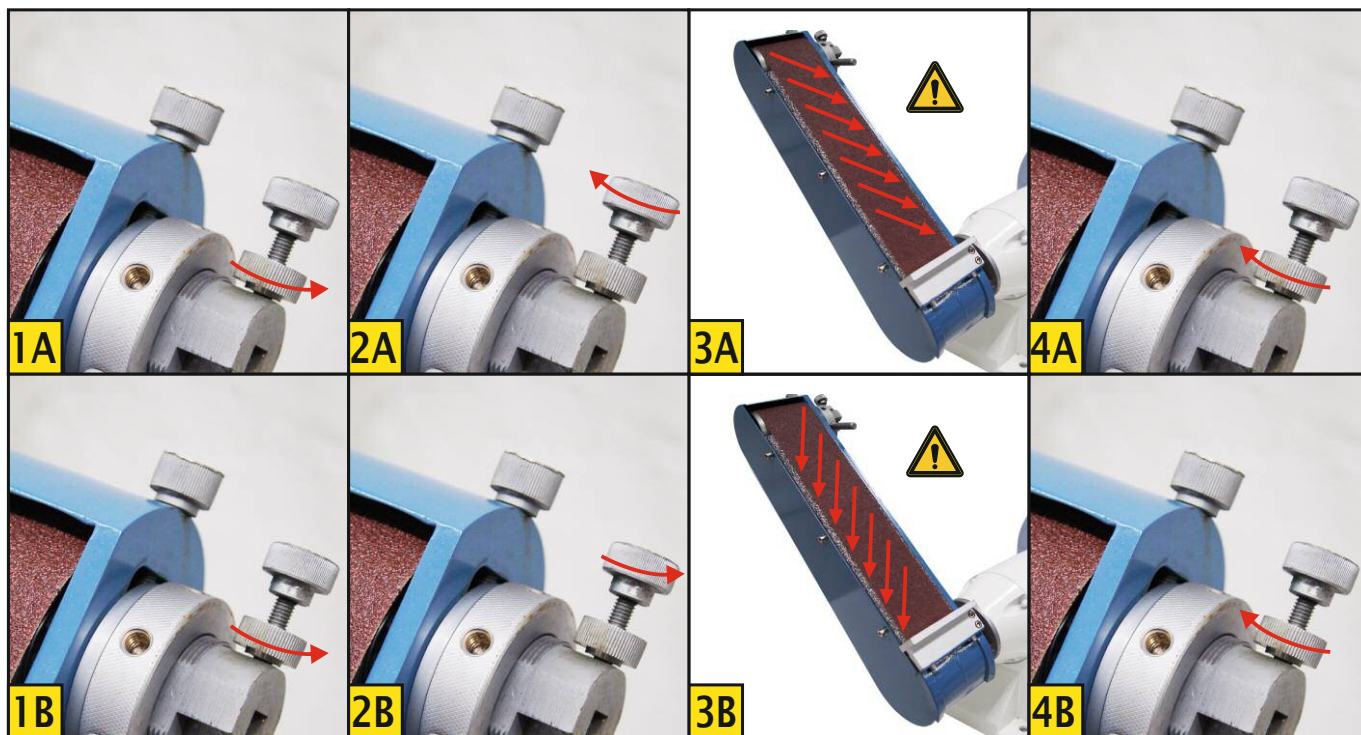
The following tools for sanding belt replacement have to be supplied by the end user:



Replacing the sanding belt



Checking the belt run

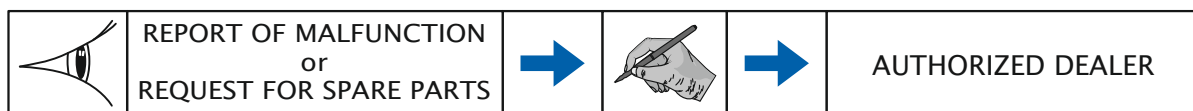


10. Disassembly and disposal

If you have no further use for the machine it has to be disassembled and disposed of in an environmentally friendly manner.

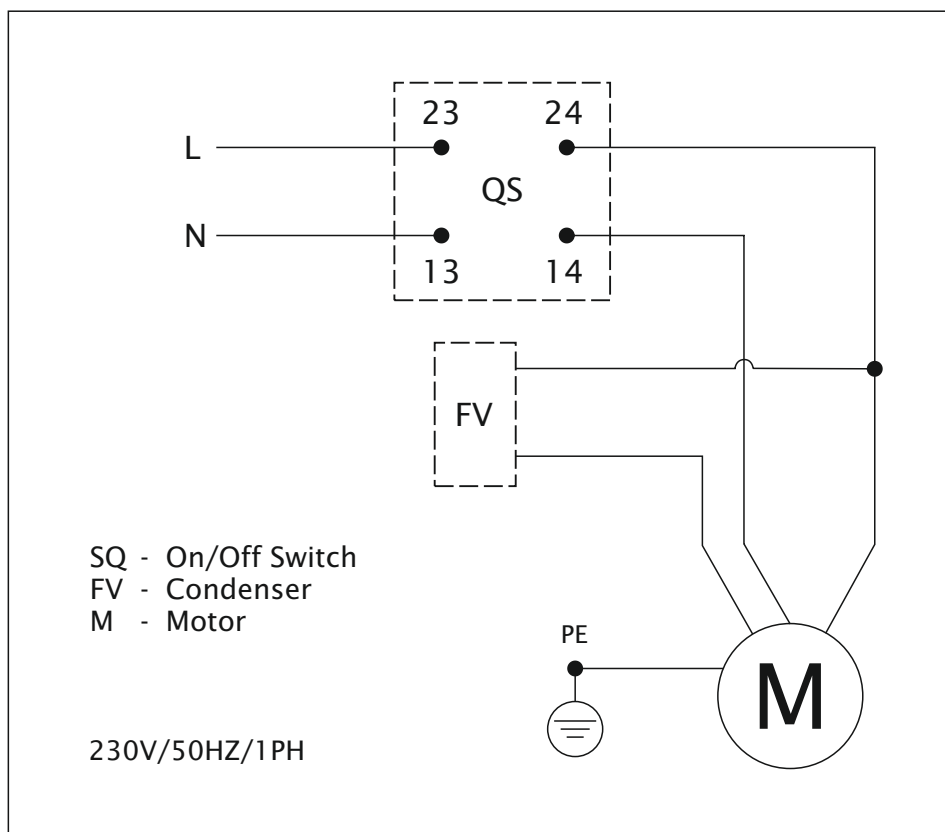
11. Trouble shooting

Problem	Possible causes	Solutions	Personnel
Machine not starting	<ul style="list-style-type: none"> No power supply On-/off switch defect Motor defect 	<ul style="list-style-type: none"> Check power supply Replace on-/off switch Replace motor 	Qualified electrician Qualified electrician Qualified electrician Servicing/ Maintenance agent
High noise level	<ul style="list-style-type: none"> Loose grinding wheels Irregular wear on grinding wheels Machine mount loose Defect bearings 	<ul style="list-style-type: none"> Tighten grinding wheels Smoothen grinding wheels with dresser Secure machine Replace bearings 	Operator Operator Operator Servicing/ Maintenance agent
Poor finish	<ul style="list-style-type: none"> Unsuitable grinding wheel grit Irregular wear on grinding wheels 	<ul style="list-style-type: none"> Select suitable grit Smoothen grinding wheels with dresser 	Operator Operator
Machine slows down during operation	<ul style="list-style-type: none"> Pressure on workpiece too high Motor only works on 2 phases (model 400 V only) 	<ul style="list-style-type: none"> Reduce pressure check power supply 	Operator Qualified electrician

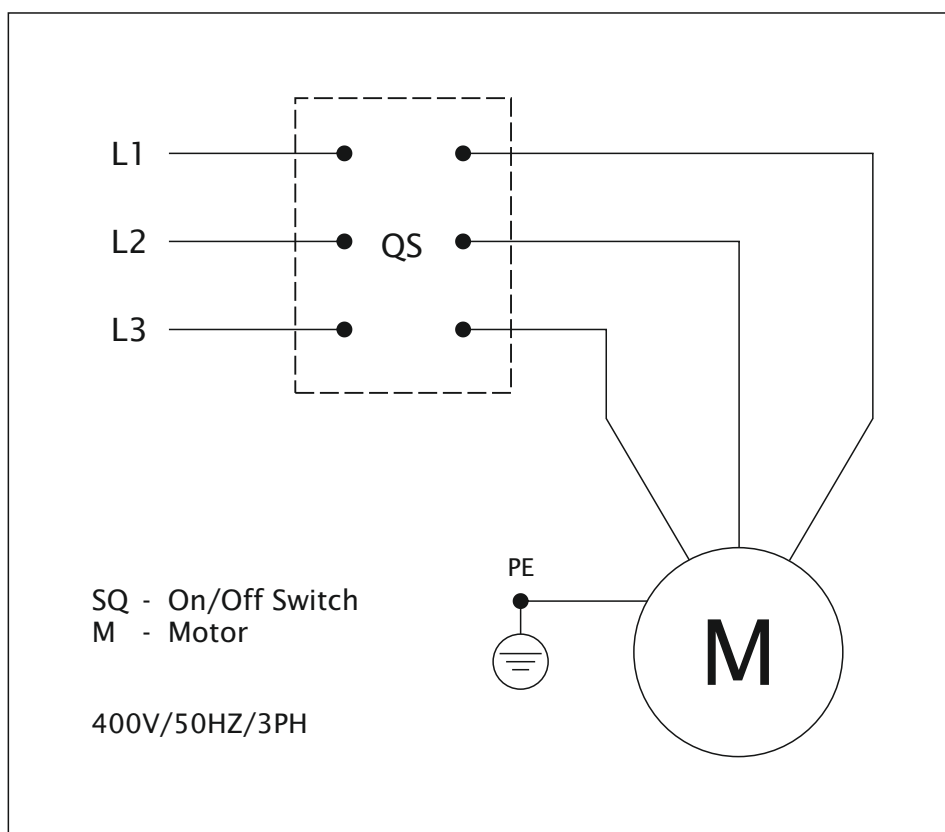


12. Wiring Diagram

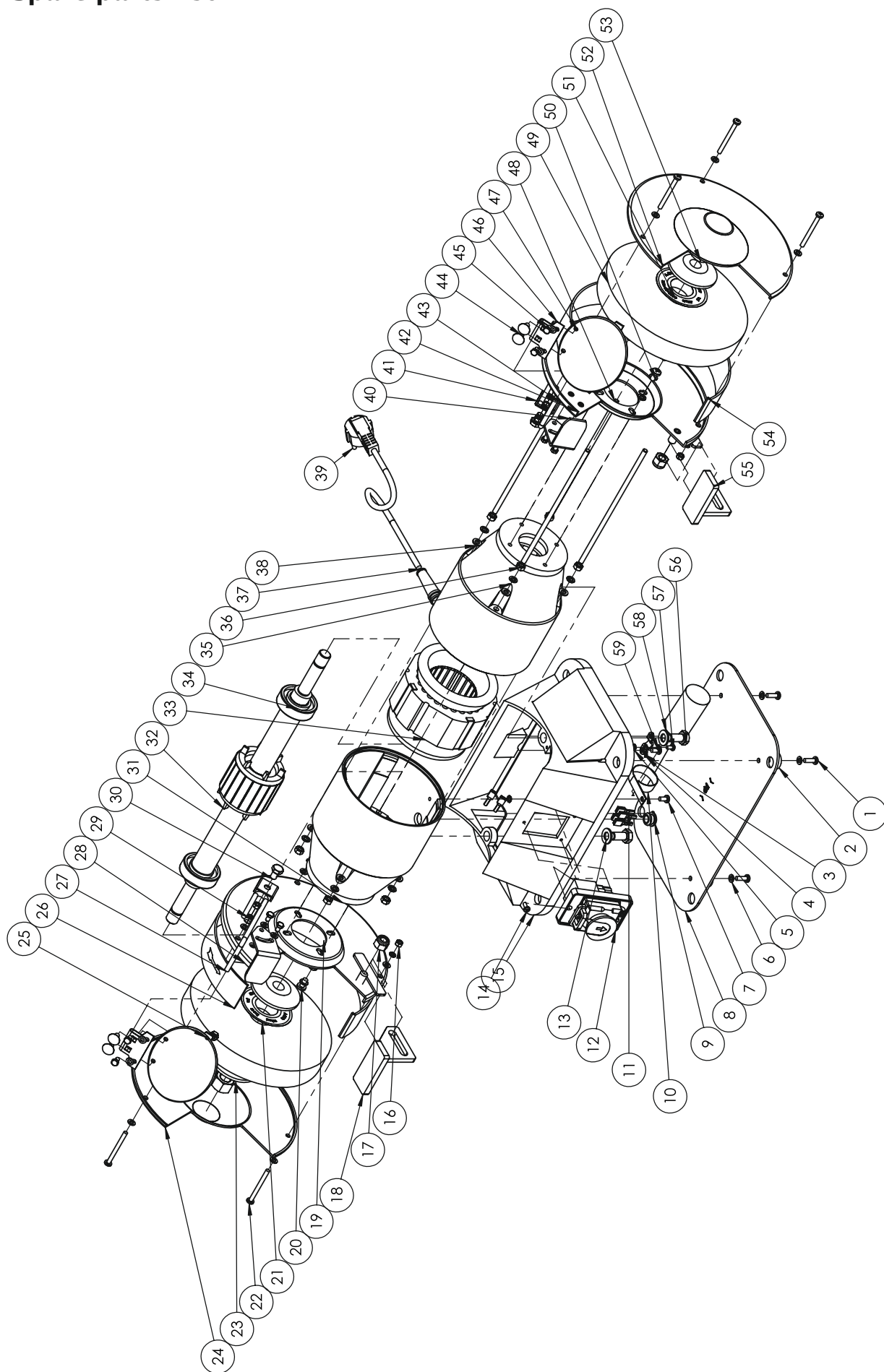
DS 175 S - DS 200 S (230V)



DS 200 S - DS 250 S (400V)



13. Spare parts list



No.	Designation	Specification	Qty.
1	screw	M5X16	4
2	bottom cartridge		4
3	cable clamp		1
4	earthing point	Ø4	1
5	washer	Ø4	1
6	Washer	Ø5	24
7	Screw	M5X10	3
8	mounting plate		1
9	protective covering of cable		1
10	capacitor clamp		1
11	rubber cover for cable lug		6
12	power switch		1
13	washer	10	2
14	screw	M4X10	2
15	machine frame		1
16	hexagon nut	M5	6
17	lock nut	M10	2
18	support for workpieces, left side		1
19	dust tube		2
20	screw	M6X12	8
21	paper ring	A-36Q	2
22	screw	M5X55	6
23	securing disc/counter-disc		4
24	left protective cover		1
25	mechanism plate		2
	cover for left wheel		1
27	glass guard support, left side		1
28	inner cover for grinding wheel, left side		1
29	Snap ring	5	7
30	Hexagon bolt	8X12	2
31	left housing		1
32	motor shaft		1

No.	Designation	Specification	Qty.
33	stator		1
34	shaft bearing	6205	2
35	right housing		1
36	hexagon nut	M6	12
37	mains lead cleat		1
38	washer	6	8
39	power cord with plug		1
40	adjustable protective cover		2
41	mechanism plate		2
42	inner cover for grinding wheel,right side		1
43	mounting for transparent spark-guard right side		1
44	screw	M6X12	4
45	Hexagon bolt	M5X8	8
46	Mechanism plate		2
47	Spark-guard		2
48	Bolt	M6X210	4
49	Grinding wheel		2
50	Snap ring	6	16
51	Paper ring	A-60Q	2
52	right protective cover		1
53	Hexagon nut	M16	2
54	cover for right wheel		1
55	Support for workpieces,right side		1
56	Hexagon bolt	M10X20	2
57	Screw	M5X8	1
58	Capacitor	25uf	1
59	Snap ring	4	1
60			
61			
62			
63			
64			

14. Declaration of conformity

PWA HandelsgmbH
Nebingerstraße 7a A-4020 Linz - Austria
Tel.: +43 732 66 40 15 - Fax: +43 732 66 40 15-9
bernardo@pwa.at www.bernardo.at

EG - KONFORMITÄTSERKLÄRUNG

Declaration of Conformity

nach

EG-Maschinenrichtlinie 2006/42/EG, Anhang II Teil 1A

according to

Directive 2006/42/EC, Annex II Part 1 A

Hiermit erklären wir, dass die nachfolgend bezeichneten Maschinen aufgrund ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung sämtlichen, grundlegenden Sicherheits- und Gesundheitsanforderungen folgender EG-Richtlinien entsprechen: 2006/42/EG, 2006/95/EG und 2004/108/EG. Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Hereby we declare that the following machines meet all essential health and safety requirements of the following EC Directives: 2006/42/EC, 2006/95/EC, 2004/108/EC. Any by us unauthorized changes of the machine cause losing of the declaration validity.

**Die Technische Dokumentation wird
verwaltet von:**

The technical documentation is managed by:

PWA HandelsgmbH
Nebingerstraße
A-4020 Linz

Bezeichnung der Maschine:

Product:

Doppelschleifmaschine
Bench grinders

Maschinentype/typen:

Type/Types:

DS 175 S, DS 200 S, DS 250 S

Baujahr:

Year of manufacture:

ab Jänner 2015

Angewandte harmonisierte Normen:

Applied harmonized European standards:

EN ISO 12100: 2013
EN 60204-1: 2009, AC2 2011
EN 13218: 2012

Ort / Datum:

Linz, 07.01.2015

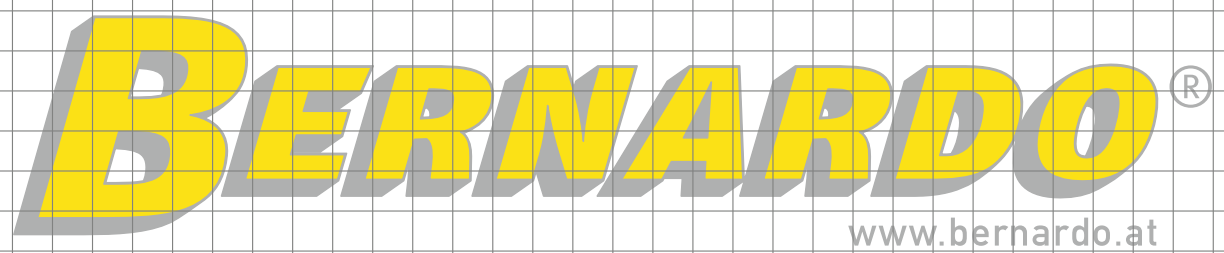
PWA HandelsgmbH
Nebingerstraße 7a, A-4020 Linz

Name und Funktion des zu Unterzeichnenden:

Name and Function of the Signatory:

Bernhard Pindens, Geschäftsführer
Bernhard Pindens, Manager

BERNARDO®
www.bernardo.at





PWA Handelsges.m.b.H.
4020 Linz | Nebingerstraße 7a | Austria
phone: +43.732.66 40 15 | fax: +43.732.66 40 15-9
e-mail: bernardo@pwa.at | www.bernardo.at