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Originalfassung

DE BETRIEBSANLEITUNG

Übersetzung / Translation

EN USER MANUAL

ES INSTRUCCIONES DE SERVICIO

FR MODE D'EMPLOI

DOPPELSCHLEIFBOCK mit DRAHTSCHEIBE

BENCH GRINDER with WIRE WHEEL

LIJADORA FIJA DOBLE con MUELA DE ALAMBRE

TOURET A DEUX MEULES avec DISQUE METALLIQUE



DSM200DS_230V





2 SICHERHEITSZEICHEN / SAFETY SIGNS

DE	SICHERHEITSZEICHEN BEDEUTUNG DER SYM- BOLE	EN	SAFETY SIGNS DEFINITION OF SYM- BOLS	ES	SEÑALES DE SEGURIDAD DEFINICIÓN DE SÍMBOLOS
FR	SIGNALISATION DE SÉ- CURITÉ DÉFINITION DES SYM- BOLES				



DE	CE-KONFORM: Dieses Produkt entspricht den EU-Richtlinien.
EN	EC-CONFORM: This product complies with the EC-directives.
ES	¡CONFORMIDAD CE! - Este producto cumple con las directivas CE.
FR	CONFORMITÉ CE - Ce produit répond aux directives CE.



DE	Anleitung beachten!
EN	Follow the instructions!
ES	¡Observe el manual de instrucciones!
FR	Respecter le manuel!



DE	Schutzausrüstung tragen!
EN	Wear protective equipment!
ES	¡Usar equipo de protección!
FR	Porter un équipement de protection indivi- duelle!

DE	Warnschilder und/oder Aufkleber an der Maschine, die unleserlich sind oder entfernt wurden, sind umgehend zu erneuern.
EN	Missing or non-readable security stickers have to be replaced immediately.
ES	¡Deben sustituirse inmediatamente los letreros de advertencia y/o las pegatinas que haya en la máquina, que se hayan vuelto ilegibles o se hayan retirado!
FR	Les panneaux d'avertissement et/ou autocollants d'avertissement illisibles ou retirés sur la machine doivent être remplacés immédiatement!



3 TECHNIK / TECHNICS

3.1 Lieferumfang / Delivery content



#	Beschreibung / Description	#	Beschreibung / Description
1	Doppelschleifbock mit Drahtbürste / bench grinder with wire brush / lijadora fija doble con muela de alambre / touret à deux meules avec disque métallique	5	Funkenschutz, einstellbar / adjustable spark protection / protector antichispas, ajustable / protection contre les étincelles, réglable
2	Diamant-Abrichter / diamond dresser / rectificadora de diamante / machine à dresser à diamant	6	Kleinteile-Set inkl. Einstellgriff für Schutzglas / set of small parts incl. adjusting handle for eyeshield / kit de piezas pequeñas, incl. empuñadura de ajuste para plexiglás de seguridad / ensemble de petites pièces, poignées de réglage du plexiglas de sécurité incl.
3	Schutzglas mit integrierter Lupe / eyeshield with integrated loupe / Plexiglás de seguridad / Plexiglas de sécurité	7	Betriebsanleitung / user manual / instrucciones de servicio / manual d'utilisation
4	Werkstückauflage verstellbar / adjustable tool rest / Soporte ajustable de herramientas / Support d'outil réglable		

3.2 Komponenten / Components



#	Beschreibung / Description	#	Beschreibung / Description
1	Bürstenabdeckung / brush housing / carcasa del cepillo / boîtier de brosse	6	Schleifscheibe (Typ: AA 60 M, 200x30x32 mm) / grinding wheel (type: AA 60 M, 200x30x32 mm) / muela (tipo: AA 60 M, 200x30x32 mm) / meule (type : AA 60 M, 200x30x32 mm)
2	Messingdrahtbürste / brass wire brush / cepillo de latón / brosse à poils en laiton	7	Werkstückauflage verstellbar / adjustable tool rest / Soporte ajustable de herramientas / Support d'outil réglable
3	Funkenschutz, einstellbar / adjustable spark protection / protector antichispas, ajustable / protection contre les étincelles, réglable	8	Standfuß aus Stahlguss / cast steel machine base / Base de fundición de acero / Embase en fonte d'acier
4	Schutzglas mit integrierter Lupe / eyeshield with integrated loupe / Plexiglás de seguridad con lupa integrada / Plexiglas de sécurité avec loupe intégrée	9	EIN-AUS-Schalter mit Unterspannungsauslöser / ON-OFF switch / interruptor de encendido/apagado con activado de subtensión /



			interrupteur marche/arrêt avec disjoncteur de sous-tension
5	Schleifscheibenabdeckung fix / grinding wheel housing / carcasa de la muela / boîtier de la meule	10	Befestigungsbohrungen / mounting holes / orificios de sujeción / trous de fixation

3.3 Technische Daten / Technical data

Spezifikation / Specification / Especificación / Spécifications	Wert / value / Valor / Valeur
Spannung / voltage / tensión / tension	230 V / 1p / 50 Hz
Motorleistung (S1/S6) / motor power (S1/S6) / potencia del motor (S1/S6) / puissance moteur (S1/S6)	600 W / 900 W S6(15%)
Drehzahl / speed / velocidad de giro / régime	2950 min ⁻¹
Wellendurchmesser / shaft diameter / diámetro de eje / diamètre de l'arbre	18 mm
Dimension der Schleifscheibe / grinding wheel dimensions / medidas de la muela / dimension de la meule	200 x 32 x 32 mm
Bürsten-Maße / brush dimensions / medidas del cepillo / dimension de la brosse	200 x 25 x 32 mm
Vibration / vibration / vibración / vibrations	2,5 m/s ²
Maschinenmaße (LxBxH) / machine dimensions (LxWxH) / medidas de la máquina (LxAxA) / dimensions de la machine (LxlxH)	570 x 330 x 265 mm
Gewicht Netto / weight net / Peso (neto) / Poids (net)	27,5 kg
Schallleistungspegel L _{WA} / sound power level L _{WA} / Nivel de potencia de sonido L _{WA} / Niveau de puissance acoustique L _{WA}	97,1 dB(A)
Schalldruckpegel L _{PA} / sound pressure level L _{PA} / Nivel de presión sonora L _{PA} / Niveau de pression acoustique L _{PA}	84,1 dB(A)

(DE) Hinweis Geräuschangaben: Die angegebenen Werte sind Emissionswerte und müssen damit nicht zugleich auch sichere Arbeitsplatzwerte darstellen. Obwohl es eine Korrelation zwischen Emissions- und Immissionspegeln gibt, kann daraus nicht zuverlässig abgeleitet werden, ob zusätzliche Vorsichtsmaßnahmen notwendig sind oder nicht. Faktoren, welche den am Arbeitsplatz tatsächlich vorhandenen Immissionspegel beeinflussen, beinhalten die Eigenart des Arbeitsraumes und andere Geräuschquellen, d. h. die Zahl der Maschinen und anderer benachbarter Arbeitsvorgänge. Die zulässigen Arbeitsplatzwerte können ebenso von Land zu Land variieren. Diese Information soll jedoch den Anwender befähigen, eine bessere Abschätzung von Gefährdung und Risiko vorzunehmen.

(EN) Notice noise emission: The values given are emission values and therefore do not have to represent safe workplace values at the same time. Although there is a correlation between emission and immission levels, it cannot be reliably deduced whether additional precautions are necessary or not. Factors influencing the actual immission level at the workplace include the nature of the workspace and other noise sources, i.e. the number of machines and other adjacent operations. The permissible workplace values may also vary from country to country. However, this information should enable the user to make a better assessment of hazard and risk.

(ES) Aviso sobre los valores de ruido: Los valores indicados son valores de emisión y, por lo tanto, no representan necesariamente al mismo tiempo valores seguros en el lugar de trabajo. Aunque hay una correlación entre los niveles de emisión y los de inmisión, no se puede deducir con certeza si es necesario adoptar medidas de precaución adicionales o no. Entre los factores que influyen en el nivel de inmisión real en el lugar de trabajo, se encuentran la naturaleza del espacio de trabajo y otras fuentes de ruido, es decir, el número de máquinas y otros procesos de trabajo adyacentes. Asimismo, los valores admisibles en el lugar de trabajo pueden variar de un país a otro. No obstante, esta información debe capacitar al usuario a evaluar mejor los peligros y los riesgos.

(FR) Avis Données sur le bruit: Les valeurs indiquées sont des valeurs d'émission et ne représentent donc pas nécessairement des valeurs de sécurité sur le lieu de travail. Bien qu'il existe une corrélation entre les niveaux d'émission et d'immission, il est impossible de déduire de manière fiable si des mesures de précaution supplémentaires sont nécessaires ou non. Les facteurs influençant le niveau d'immission réellement présent sur le lieu de travail comprennent les caractéristiques de la salle de travail et d'autres sources de bruit, c'est-à-dire le nombre de machines et d'autres processus de travail adjacents. Les valeurs autorisées sur le lieu de travail peuvent également varier d'un pays à l'autre. Toutefois, ces informations devraient permettre à l'utilisateur de mieux évaluer le danger et le risque.



11 PREFACE (EN)

Dear Customer!

This manual contains information and important notes for safe commissioning and handling of the double bench grinder with wire slide DSM200D_230V, hereinafter referred to as “machine” in this document.



This manual is part of the machine and must not be removed. Save it for later reference and if you let other people use the machine, add this manual to the machine.

Please pay special attention to the chapter safety!

Before first use read this manual carefully. It eases the correct use of the machine and prevents misunderstanding and damages of machine.

Due to constant advancements in product design, construction, illustrations and contents may deviate slightly. If you notice any errors, please inform us.

We reserve the right to make technical changes!

Check the goods immediately after receipt and note any complaints on the consignment note when taking over the goods from the deliverer!

Transport damage must be reported to us separately to us within 24 hours.

HOLZMANN MASCHINEN GmbH cannot accept any liability for transport damage that has not been reported.

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The place of jurisdiction is the regional court Linz or the court responsible for 4170 Haslach is valid.

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12 SAFETY

This section contains information and important notes on the safe commissioning and handling of the machine.



For your safety, read this manual carefully before commissioning. This will enable you to handle the machine safely and thus prevent misunderstandings as well as personal injury and damage to property. Pay special attention to the symbols and pictograms used on the machine as well as the safety information and danger warnings!

12.1 Intended use of the machine

The machine is designed exclusively for the following activities:

The machine is designed exclusively for tangential grinding and brushing work (= grinding or brushing a workpiece surface with the circumference of the tool) on metals, wood and plastic. Materials that can generate flammable or explosive dust, such as aluminium or magnesium and their alloys, are excluded.

NOTE



HOLZMANN MASCHINEN GmbH assumes no responsibility or warranty for any other use or use beyond this and for any resulting damage to property or injury.

12.1.1 Technical restrictions

The machine is designed for the work under the following conditions:

Relative humidity	max. 90 %
Temperature (operation)	+5 °C to +35 °C

12.1.2 Prohibited applications / Dangerous misuse

- Operating the machine without adequate physical and mental fitness.
- Operating the machine without knowledge of the manual.
- Operating the machine outdoors, in very humid rooms or in the presence of flammable liquids or gases.
- Modifying the machine design.
- Operating the machine in a potentially explosive environment.
- Processing of materials that can generate flammable or explosive dust, such as aluminium or magnesium and their alloys.
- Operating the machine outside the technical limits specified in this manual.
- Removing of the safety markings attached to the machine.
- Modifying, circumventing or disabling the safety devices of the machine.

The non-intended use or the disregard of the explanations and instructions described in this manual will result in the expiration of all warranty claims and compensation claims for damages against HOLZMANN MASCHINEN GmbH.

12.2 User requirements

The machine is designed for operation by one person! The physical and mental aptitude as well as knowledge and understanding of the operating instructions are prerequisites for operating the machine.

Please note that locally applicable laws and regulations determine the minimum age of the operator and may restrict the use of this machine!

When operating the machine, be sure to wear appropriate personal protective equipment. Take off rings, bracelets, watches, chains etc. before working on the machine, tie long hair together if necessary, always wear closed, close-fitting clothing when working on the machine and always fold long sleeves inwards only.

Work on electrical components or equipment may only be carried out by a qualified electrician or under the guidance and supervision of a qualified electrician.

12.3 Safety devices

- The distance between the grinding wheel and the grinding wheel housing is less than 5 mm.



- The polycarbonate spark protection and the tool holder can be adjusted to 2 mm from the grinding wheel.
- The machine is equipped with a dust collecting nozzle and an ON-OFF switch with undervoltage release, which prevents the machine from restarting automatically after a power failure.

12.4 General safety instructions

- To avoid malfunctions, damage and health hazards when working with the machine, in addition to the general rules for safe working, the following points in particular must be observed:
- Choose a level, vibration-free, non-slip surface for the installation location.
- Ensure sufficient space around the machine.
- Ensure sufficient lighting conditions at the workplace to avoid stroboscopic effects.
- Only use suitable tools that are free of cracks and other defects (e.g. deformations).
- Remove tool keys and other setting tools before switching on the machine.
- Keep the area around the machine free of obstacles (e.g. dust, chips, etc.).
- Check that the machine is in perfect condition before each use.
- Never leave the running machine unattended.
- The machine may only be operated, maintained or repaired by persons who are familiar and who have been informed about the dangers arising from this work.
- Ensure that unauthorized persons keep a safety distance from the machine and keep children away from the machine.
- Wear suitable work clothing (eye protection, ear protection, dust mask, safety shoes) and close-fitting protective clothing - never loose clothing, ties, jewellery, etc. - danger of being drawn in!
- Hide long hair under hair protection.
- Do not remove splinters and chips by hand!
- Do not work on the machine if you are tired, not concentrated or under the influence of medication, alcohol or drugs!
- Do not use the machine outdoors, in very damp rooms or in the presence of flammable liquids or gases.
- Do not smoke in the immediate vicinity of the machine (fire hazard)!
- Always disconnect the machine from the mains before cleaning, maintenance or repair work and secure it against unintentional restarting.

12.5 Electrical safety

- Make sure that the machine is grounded.
- Only use suitable extension cables.
- Check the mains cable regularly and, if damaged, have it repaired by an authorised workshop.
- Make sure that the ON-OFF switch is in the "Off" position before connecting the machine to the power supply.
- Use the machine only when the ON-OFF switch is in good working order.

12.6 Special safety instructions for this machine

- Allow the grinding wheel and brush to reach their maximum speed before starting machining.
- Adjust the eyeshield and spark protection so that you, the operator, are protected from flying sparks.
- Always hold the workpiece with both hands.
- Do not hit the workpiece on the grinding wheel or brush, but exert progressive pressure.
- Cool the workpiece from time to time in a water tray.
- Do not touch the moving grinding wheel or the rotating brush.
- Wait until the grinding wheel and brush have come to a complete stop before carrying out any work on the machine.
- Pay attention to the surface of the machine during continuous operation - there is an acute risk of burns due to heat generation!



12.7 Hazard warnings

Despite their intended use, certain residual risks remain. Due to the design and construction of the machine, hazardous situations may occur when handling the machines, which are identified as follows in these operating instructions:

DANGER



A safety instruction designed in this way indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING



A safety instruction designed in this way indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION



A safety instruction designed in this way indicates a possibly hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE



A safety notice designed in this way indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Irrespective of all safety regulations, your common sense and appropriate technical suitability/training are and will remain the most important safety factor for error-free operation of the machine.

Safe working depends on you!

13 TRANSPORT

Due to the weight and dimensions of the machine, two persons are required for transport.

Care must also be taken when transporting the grinding tools. Improper transport can cause them to undergo changes that reduce their strength properties, so that safety is no longer guaranteed. In particular, when transporting grinding tools, for example between storage, tool preparation and machine, there is a risk of mechanical damage, including knocks, vibrations or falls, resulting in cracks. For this very reason, grinding wheels must not be rolled.

14 ASSEMBLY

14.1 Preparation

14.1.1 Check delivery content

NOTE



Visible transport damage must be noted immediately on the delivery note in accordance with the warranty provisions, otherwise the goods are deemed to have been properly accepted.

Open the packaging carefully upon receipt of the delivery and check that all parts are in order. Complain damages and/or missing parts immediately to your retailer.

14.1.2 Requirements for the installation site

Choose a level, vibration-free surface with the appropriate amount of space as the installation location. The installation site must also meet the ergonomic requirements of a workplace.



	<p>Procedure:</p> <ul style="list-style-type: none"> • Mount the machine on a suitable base or workbench using mounting holes (1) in the base. (The recommended height of the workpiece support is 70 to 80 cm above the floor). • If necessary, connect the dust collecting nozzle to a suitable extraction system (Ø A1: 48 mm, Ø A2: 39 mm).
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14.2 Electrical connection

WARNING

	<p>Dangerous electrical voltage! Improperly performed electrical work can result in serious injury or death. Therefore, electrical work may only be carried out by qualified and authorized personnel for low-voltage work! The warranty does not cover damage caused by improper connection.</p>
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Before the first use:

- Make sure that the voltage of the mains supply cable and the motor voltage match.
- Make sure that the mains to which the machine is to be connected is properly earthed and complies with the applicable safety standards.
- Regularly check the condition of the power cord, switch and cable gland.
- Never operate the unit with a damaged cable.
- Use a cable drum with cross-section and length according to the performance of the device and unwind it completely.
- Never pull the plug by pulling the cable, but always by pulling the plug out of the socket.
- After making the connection, check that the grinding wheel and brush rotate in the same direction as indicated by the arrow on the housing.

15 OPERATION

15.1 Check before initial start-up

Before initial operation, check:

- whether the guards are in place, intact and in good condition.
- that the moving parts are functioning properly and that there are no damaged parts.
- whether the grinding wheel and brush are intact.
- whether the machine is securely anchored.
- whether the machine is functioning properly when idle.

15.2 Check before each use

Before operation, check:

- whether the grinding wheel and brush clamping nuts are firmly tightened.
- whether the grinding wheel and brush are intact and in good condition.

Pay attention to the surface temperature of the drum during continuous operation - danger of burns!

15.3 Mounting the grinding wheel

	<ol style="list-style-type: none"> 1. Mount the spark protection (8) on the wheel arches (1, 6) and set a maximum distance of 5 mm from the peripheral edge of the grinding wheel. 2. Attach the eyeshield (7) to the spark protection (8) and adjust to protect the operator. 3. Attach the tool rest (10) to the wheel boxes (1, 6) and set a maximum distance of 2 mm from the peripheral edge of the wheel.
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	4. The diameter of the grinding wheel decreases with increasing wear and the distances become larger. Therefore, spark protection and tool rest must be readjusted from time to time in accordance with the wear of the grinding wheel in order to maintain the specified distance from the peripheral edge of the wheel.
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15.4 Grinding and brushing process

CAUTION



Risk of hand injuries (jamming, burning, abrasion, crushing) due to rotating tool. Keep your hands away from the machining areas while the machine is running! Never reach into the running machine!

NOTE



- Always use tool rest in horizontal position.
- Always keep the eyeshield clean.
- Always allow the grinding wheel or brush to reach its maximum speed before starting to machine.
- Do not brake or block the wheel or brush by applying too much pressure. Too much pressure does not increase the working performance, but only reduces the service life of tool and machine!
- In case of strong vibrations, identify the unbalanced wheel or brush and correct it with a suitable tool.

15.4.1 Grinding

The grinding wheel has a fine grain (AA 60 M) and is suitable for dry grinding of tools (planing knives, scissors, etc.), hard metal and hardened metals.

Procedure:

1. Adjust eyeshield, spark protection and tool rest so that there is no contact with the grinding wheel.
2. Make sure that you wear the right protective equipment.
3. Plug the machine plug into the socket of the electrical installation.
4. Start the machine motor by pressing the switch-on button (I) and wait until the wheel and brush have reached their speed.
5. Bring the workpiece up to the grinding wheel.
6. Always hold the workpiece with both hands and cool it from time to time in a water tray.

15.4.2 Brushing

The brush with corrugated steel wires made of brass is suitable for pickling, cleaning, derusting or polishing ferrous and non-ferrous metal parts, wood, plastics and materials.

Procedure:

Steps 1 to 5 as described under "grinding".

1. Hold the part to be brushed with both hands and press evenly against the brush, but do not let the machine lose its normal rotational speed. Cool the workpiece to be machined from time to time in a suitable water tank.

15.4.3 Stopping the machining operation

To finish machining, press the red switch-off button (O) on the ON-OFF switch.

(Caution: the wheel / brush will continue to run for a few seconds).

The machine comes to a standstill after a few seconds. Wait until the machine has come to a complete standstill before carrying out any further work on the machine.



16 CLEANING, MAINTENANCE, STORAGE, DISPOSAL

WARNING



Danger due to electrical voltage! Handling the machine with connected power supply may result in serious injury or death.

→ Always disconnect the machine from the power supply before cleaning, maintenance or repair work and secure it against unintentional reconnection.

16.1 Cleaning

NOTE



Incorrect cleaning agents may damage the machine's paint. Do not use solvents, nitro thinners, or other cleaning agents that could damage the machine's paint.

- Do not use compressed air to remove machining chips.
- Do not immerse the machine in water and do not wash it with a jet of water.
- Use a clean, dry brush and cloth for all cleaning work!
- Do not use solvents or aggressive cleaning agents.
- Clean the unit and especially the grinding wheel and brush housings after each use or at least once a week to avoid accumulation of dust and chips!

16.2 Maintenance

The machine is low-maintenance. It is generally sufficient to clean the machine regularly of grinding dust and to readjust the protective devices. Irrespective of this, malfunctions or defects which could impair the safety of the user must be rectified immediately! Before each operation, check the perfect condition of the safety devices.

- Before each operation, check that the safety devices are in perfect condition.
- Check screw connections for tightness at least once a week.
- Regularly check the perfect and legible condition of the warning and safety labels of the machine.

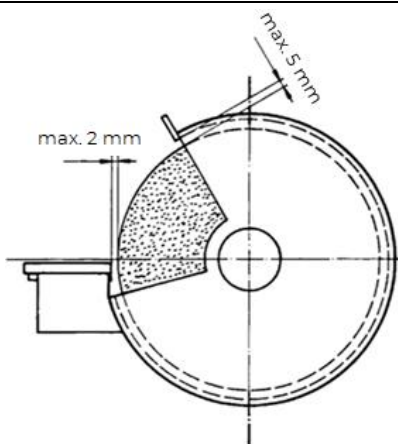
16.2.1 Lubrication

The motor bearings are lubricated maintenance-free for their entire service life.

16.2.2 Eyeshield

Keep the eyeshield clean and replace if damaged. (The maximum life of the eyeshield is two years.)

16.2.3 Settings



The distances between spark protection, tool rest and grinding wheel change over time as a result of wear.

Check these distances regularly and readjust them according to the wear of the grinding wheel.

- The distance between the spark protection and the peripheral edge of the grinding wheel must not exceed 5 mm (see illustration on the left).
- The distance between the tool rest and the peripheral edge of the grinding wheel must not exceed 2 mm (see illustration on the left).



16.2.4 Replacing the grinding wheel

NOTE



- Do not install a brush in the grinding wheel housing or vice versa.
- Always replace a grinding wheel with a model of the same mass and size.
- Replace the grinding wheel as soon as its diameter is 140 mm or less. Do not mount or use wheels with a diameter less than 140 mm. Do not use damaged wheels.
- Only use "glazed" grinding wheel with an indicated speed equal to or greater than that indicated on the type plate of the tool (see imprint on the grinding wheel).

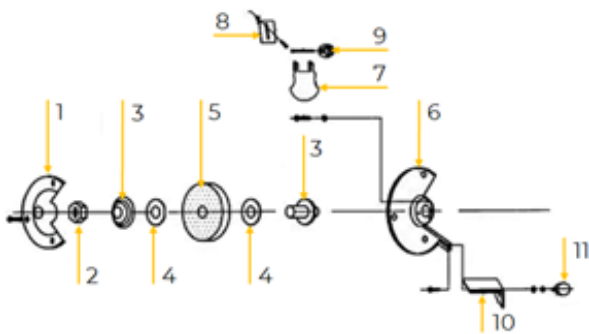
Integrity check of a new disk:

Before mounting a new wheel, sound test it to check its general condition. To perform this test, the wheel must be dry and clean, otherwise the radiated sound may be attenuated.

To verify identity, lightly tap the side of the wheel with a non-metallic object (wooden handle of a screwdriver, rubber hammer).

An undamaged grinding wheel produces a clear sound, a damaged one a dull or rattling sound.

Wheel Exchange procedure:



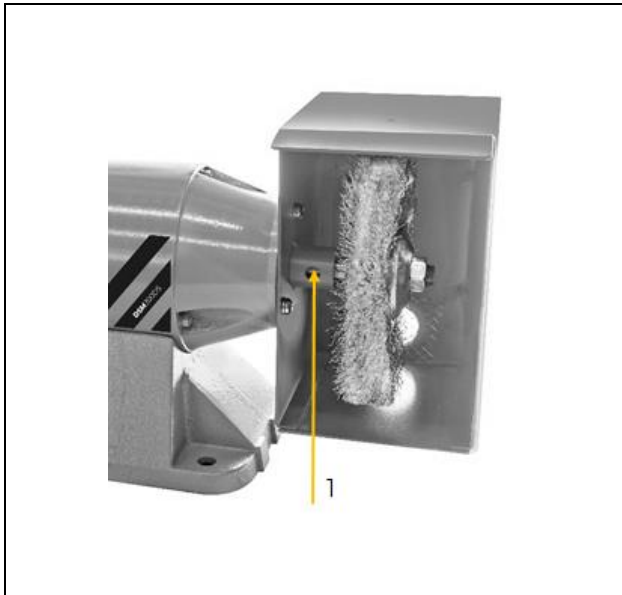
1. Make sure that the machine is disconnected from the power supply.
2. Remove spark protection (8) and tool rest (10).
3. Remove the outer grinding wheel housing (1) by loosening the screws.
4. Hold the motor shaft in position with a flat spanner at the shaft end.
5. Unscrew the washer nut (2) with a wrench.
6. The left-hand side nut has a left-hand thread, i.e. it must be loosened in a clockwise direction.
7. Remove the outer grinding wheel flange (3).
8. Replace the used grinding wheel (5) with a new one. (Make sure that the flanges and the mounting shaft are clean before remounting a grinding wheel.)
9. Check that the bore of the grinding wheel matches the shaft of the grinding wheel. Use reducing rings if necessary.
10. Fit the outer grinding wheel flange again.
11. Screw on the fixing nut again and tighten it firmly, but without exaggerating.
12. Remount the outer grinding wheel housing.
13. Make sure that the lateral distance between the grinding wheel and the housing is less than 10 mm.
14. Assemble the previously dismantled elements.

16.2.5 Replacing the brush

NOTE



- Do not install a grinding wheel in the brush housing or vice versa.
- Always replace the brush with a model of the same mass and size.
- Do not use a worn or damaged brush.
- Only use brushes with an indicated speed equal to or greater than the speed indicated on the tool's nameplate (see the imprint on the brush).

**Procedure:**

1. Make sure that the power supply is disconnected.
2. Secure the motor shaft by aligning the hole in the motor shaft to the left of the brush with the hole in the shaft housing (1).
3. Unscrew the brush nut with a flat spanner.
4. The right side nut has a right-hand thread, i.e. it must be loosened counterclockwise.
5. Remove the outer brush flange.
6. Replace the used brush with a new one (make sure the flanges and mounting rod are clean before reassembling the brush).
7. Check that the bore of the brush matches the shaft of the brush holder. Use reducing rings if necessary.
8. Remount the outer brush flange.
9. Screw the fixing nut back on and tighten it, but without exaggerating!

16.2.6 Planing

Grinding wheels and polishing wheels must be dressed after clamping and at regular intervals. The dressing process is intended to achieve perfect concentricity and maintain or restore the grinding effect ("sharpening"). Suitable and safe tools such as whetstones, dressing rollers or diamond dressers must be used for the dressing process. When using them, it must be ensured that the infeed is not too large and that the removal of abrasive grit is not too coarse. The protective devices must be in the protective position during the dressing process.

16.3 Storage**NOTE**

Improper storage can damage and destroy important components. Only store packed or already unpacked parts under the intended ambient conditions!

A special feature of grinding tools is that they can undergo changes during storage due to unfavourable environmental conditions, which reduce their strength properties, so that safety is no longer guaranteed. Therefore, store the machine and its tools only in dry, evenly tempered, frost-free rooms. This prevents moisture absorption. Maintaining constant temperatures prevents the formation of stress cracks due to uneven heating or cooling.

For this very reason, protect the machine and its tools from direct sunlight. Especially with synthetic resin bonded tools, the ageing process can be accelerated during storage due to unfavourable ambient conditions.

Grinding tools should be stored on a flat surface, for example on shelves. Care must be taken to avoid deflection of the grinding wheels and to ensure that the pressure on the lowest layers does not become too high when the grinding wheels are placed on top of each other. In both cases this can result in dangerous cracks. Therefore, the base must have sufficient stiffness to prevent deflection; the stack height must be limited in the case of superimposed grinding wheels. It is advisable to store the abrasives in a clearly arranged manner according to the type of abrasive tool so that they can be easily removed without having to be repositioned.

16.4 Disposal

Observe the national waste disposal regulations. Never dispose of the machine, machine components or operating equipment in the residual waste. If necessary, contact your local authorities for information regarding available disposal options. If you purchase a new machine or equivalent equipment from your specialist dealer, he is obliged in certain countries to dispose of your old machine properly.



17 TROUBLESHOOTING

WARNING


Danger due to electrical voltage!

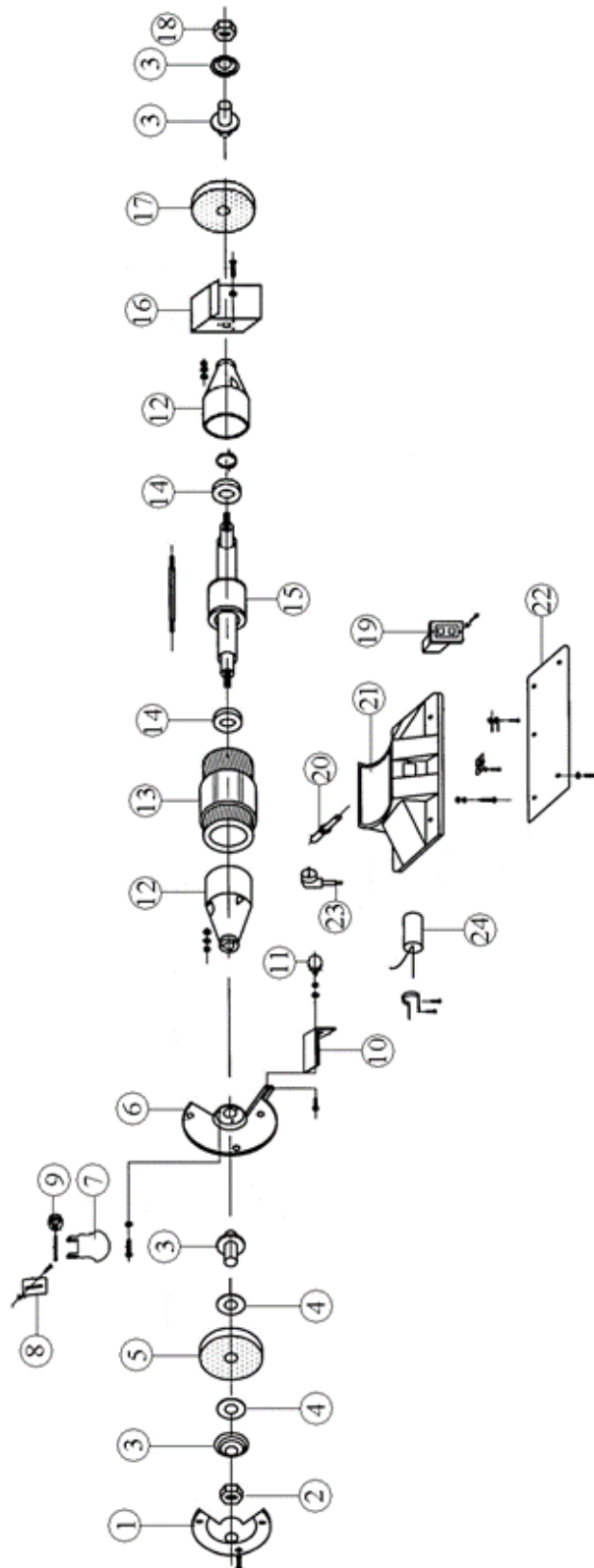
Handling the machine with connected power supply may result in serious injury or death.

→ Disconnect the machine from the power supply before starting work to eliminate defects!

Trouble	Possible cause	Solution
motor does not start	• low voltage	• check mains voltage
	• open circuit in motor or loose connections	• check line connections on the motor for loose or open connections.
	• short-circuit in cable or plug	• check plug for damaged insulation and short-circuited wires.
motor overheated	• motor overloaded	• reduce motor load
motor stuck	• short circuit in motor or loose connections	• check motor connections for loose or short-circuited terminals or burnt-out insulation.
	• low voltage	• correct low voltage
	• incorrect fuse or circuit breaker in circuit	• install the correct fuse or circuit breaker.
	• motor overloaded	• reduce motor load
machine becomes slow during operation	• pressure too high	• decrease pressure
machine vibrates	• dirt on rotating parts	• cleaning
	• unequal wear of the grinding wheel	• dressing the wheel
wavy surface of the workpiece	• machine not mounted on a solid surface.	• check whether the machine has been securely mounted on a solid surface and/or use a holder to hold the workpiece securely in place.
	• too hard grinding wheel or too high feed speed	• use softer grinding wheel or reduce feed speed
scratches on the surface of the workpiece	• contamination on the surface of the pane	• clean the surface of the grinding wheel
	• workpiece is not sufficiently held in place	• use a holder to hold the workpiece securely in place.
spraying sparks or cracks in the workpiece	• incorrect grinding wheel	• use softer grinding wheel or grinding wheel with coarser grain size
	• incorrect delivery	• reduce the infeed of the workpiece into the grinding wheel
	• (no or too little) coolant required	• add coolant system or add coolant manually
grinding wheel quickly becomes blunt, grain falls out	• cutting depth too large	• reduce the infeed of the workpiece into the grinding wheel
	• grinding wheel is too soft for the material to be machined	• select a softer bond
	• grinding wheel diameter too small	• replace grinding wheel
	• poor post-treatment of the grinding wheel	• treating the surface of the grinding wheel
	• defective grinding wheel bond	• contact the manufacturer of the grinding wheel
grinding wheel "clogged", workpiece has combustion markings	• grinding wheel is too hard	• choose a softer bond
	• coolant required	• add coolant system or add coolant manually



32.2 Explosionszeichnung / Exploded view Vista de despiece / Vue éclatée



**32.3 Ersatzteilliste / Spare part list****Pedido de piezas / Commande de pièces détachées**

No.	Description	Qty.	Pos.
1	External grinding wheel housing	1	Pos. 1 + 6
2	Wheel clamping nut	1	
3	Flange	4	
4	Washer	4	
5	Grinding wheel (Ø 200 x 32 x 32)	1	
6	Internal grinding wheel housing	1	
7	Protective screen	2	Pos. 7 + 8 + 9
8	Spark arrester/screen support	2	
9	Screws/screen fixing	1	
10	Tool holder	1	
11	Screws/attachment tool holder	2	
12	Motor flange	2	
13	Stator	1	
14	Bearing	2	
15	Rotor	1	
16	Brush housing	1	
17	Brush (Ø 200 x 25 x 32)	1	
18	Brush clamping nut	1	
19	On-Off Switch	1	
20	Power supply cable	1	Pos. 20+23
21	Base	1	
22	Plate	1	
23	Electrical socket	1	
23	Capacitor	1	

33 ZUBEHÖR / ACCESSORIES / ACCESORIOS / ACCESSOIRES

(DE) Optionales Zubehör finden Sie online auf der Produktseite, Kategorie EMPFOHLENES ZUBEHÖR ZUM PRODUKT.

(EN) Optional accessories can be found online on the product page, category RECOMMENDED PRODUCT ACCESSORIES.

(ES) Los accesorios opcionales se encuentran en la página del producto en internet, en la categoría ACCESORIOS RECOMENDADOS PARA EL PRODUCTO.

(FR) Des accessoires en option sont disponibles en ligne sur la page produit, catégorie ACCESSOIRES RECOMMANDÉS POUR LE PRODUIT.