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Originalfassung

DE BETRIEBSANLEITUNG

Übersetzung / Translation

EN USER MANUAL

ES INSTRUCCIONES DE SERVICIO

FR MODE D'EMPLOI

CZ NÁVOD K POUŽITÍ

SK NÁVOD NA POUŽITIE

IT ISTRUZIONI PER L'USO

NL GEBRUIKSAANWIJZING

OBERFRÄSE

ROUTER

REBAJADORA

DÉFONCEUSE

VRCHNÍ FRÉZKA

Horná fréza

FRESATRICE VERTICALE

BOVENFREES



OBF1200_230V



**YOUR
JOB.**

**OUR
TOOLS.**



3 TECHNIK / TECHNICS

/ Técnica / Technique / Technická část / Technika / Tecnologia / Techniek

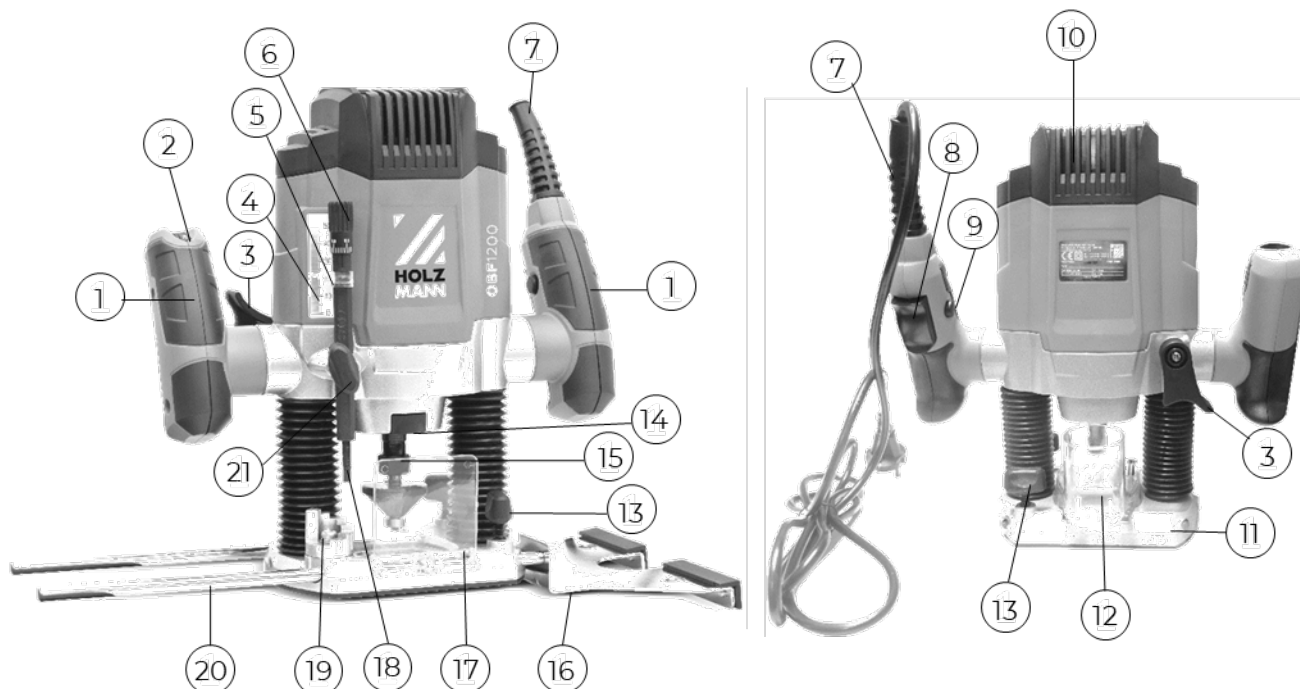
3.1 Lieferumfang / Delivery content / Volumen de suministro / Contenu de la livraison / Rozsah dodávky / Rozsah dodávky / Dotazione di fornitura / Leveringsomvang



#	Beschreibung / Description	Qty.	#	Beschreibung / Description	Qty.
1	Motorgehäuse / motor case / Carcasa del motor / Carter du moteur / Blok motoru / Teleso motora / Cassa di motore / Motorbehuizing	1	7	Spannzange / collet Ø 8mm (montiert / assembled) Ø 6 mm, Ø ¼" / Pinza de sujeción / Pince de serrage / Upínací kleština / Klieština / Pinza portautensili / Spantang	3
2	Parallelanschlag / parallel stop / Tope paralelo / Guide longitudinal / Paralelní doraz / Paralelný doraz / Arresto paralelo / Parallele aanslag	1	8	Kohlebürste / carbon brush / Escobillas de carbón / Balai de charbon / Uhlíkový kartáč / Uhlíková kefa / Spazzole di carbone / Koolborstel	2
3	Absaugadapter / extractor adapter / Adaptador de aspiración / Adaptateur d'aspiration / Adaptér pro odsávání / Adaptér odsávania / Adattatore di aspirazione / Afzuigadapter	1	9	Senkkopfschraube / countersunk screw / Tornillo avellanado / Vis à tête fraisée / Šroub se zápustnou hlavou / Skrutka so zapustenou hlavou / Vite a testa svasata / Verzonken schroef	2
4	Führungshülse / guide sleeve / Casquillo guía / Douille de guidage / Vodicí puzdro / Vodiace puzdro / Manicotto di guida / Geleidehuls	1	10	Mutter / nut / Tuercas / Écrou / Matice / Matica / Dado / Moer	2
5	Führungsstange / guide rod / Barra guía / Barre de guidage / Vodicí tyč / Vodiaca tyč / Asta di guida / Geleidestang	2	11	Gabelschlüssel / open end spanner / Llave fija / Clé à fourche / Vidlicový klíč / Vidlicový klúč / Chiave fissa / Vorksleutel	2
6	Zirkelspitze / compass point / Punta de compás / Pointe du compas / Hrot kružítko / Hrot kružidla / Punta a compasso / Passerpunt	1	12	Betriebsanleitung / manual / Instrucciones de servicio / Mode d'emploi / Návod k použití / Návod na použitie / Istruzioni per l'uso / Gebruiksaanwijzing	1



3.2 Komponenten / Components / Componentes / Composants / Komponenty / Komponenty / Componenti / Componenten



	Beschreibung / Description		Beschreibung / Description
1	Handgriff / handle / Mango / Poignée / Držadlo / Rukovät / Maniglia / Handgriep	12	Absaugadapter / extractor adapter / Adaptador de aspiración / Adaptateur d'aspiration / Adaptér pro odsávání / Adaptér odsávania / Adattatore di aspirazione / Afzuigadapter
2	Drehzahlregler / speed control / Regulador de velocidad / Régulateur de vitesse de rotation / Regulátor otáček / Regulátor otáčok / Regolatore del numero di giri / Snelheidsregelaar	13	Befestigungsschraube / fastening screw / Tornillo de sujeción / Vis de fixation / Upevňovací šroub / Upevňovacia skrutka / Viti di fermo / Bevestigingsschroef
3	Spanngriff / fixing handle / Mando de mordaza / Poignée de serrage / Upínací držadlo / Upínacia rukovät / Maniglia di serraggio / Spangriep	14	Spindelarretierung / spindle lock / Bloqueador de husillo / Blocage de la broche / Aretace vřetena / Aretácia vřetena / Blocco mandrino / Spindelarretering
4	Skala / scale / Escala / Échelle / Stupnice / Stupnica / Scala / Schaal	15	Spannmutter / clamp nut / Tuerca de unión / Écrou de serrage / Upínací matice / Upínacia matica / Dado di arresto / Spanmoer
5	Zeiger / pointer / Puntero / Aiguille / Ukazatel / Ukazovateľ / Indicatore / Wijzer	16	Parallelanschlag / parallel stop / Tope paralelo / Guide longitudinal / Paralelní doraz / Paralelný doraz / Arresto paralelo / Parallele aanslag
6	Feineinstellung Tiefenanschlag / fine adjustment depth stop / Ajuste fino del tope de profundidad / Réglage de la butée de profondeur / Přesné nastavení hloubkového dorazu / Jemné nastavenie – hĺbkový doraz / Regolazione fine arresto di profondità / Fijninstelling diepteaanslag	17	Schutzschild / protective guard / Escudo protector / Bouclier de protection / Ochranný štít / Ochranný štít / Scudo protettivo / Beschermplaat



7	Anschlusskabel / power cable / Cable de conexión / Câble de raccordement / Připojovací kabel / Přípojný kábel / Cavo di allacciamento / Aansluitkabel	18	Tiefenanschlag / depth stop / Tope de profundidad / Butée de profondeur / Hloubkový doraz / Hĺbkový doraz / Arresto di profondità / Diepteaanslag
8	EIN-AUS Schalter / ON-OFF switch / Interruptor de encendido / Interrupteur MARCHÉ-ARRÊT / Spínač/vypínač / Spínač ZAP.-VYP / Interruttore ON/OFF / Aan-Uit-schakelaar	19	Revolver – Endanschlag / revolver stop / Revolver – tope final / Revolver – Butée fin de course / Revolverový koncový doraz / Revolver – koncový doraz / Arresto di finecorsa Revolver / Revolveraanslag
9	Einschalt Sperre / safety lock-off / Bloqueo de conexión / Dispositif de blocage d'enclenchement / Zařízení pro blokaci zapnutí / Blokovanie zapnutia / Dispositivo di blocco / Inschakelblokkering	20	Führungsstange / guide rod / Barra guía / Barre de guidage / Vodicí tyč / Vodiaca tyč / Asta di guida / Geleidestang
10	Motorgehäuse / motor case / Carcasa del motor / Carter du moteur / Blok motoru / Teleso motora / Cassa di motore / Motorbehuizing	21	Flügelschraube / wing screw / Tornillo de mariposa / Vis à oreilles / Šroub s křídlovou hlavou / Křídlová skrutka / Vite ad alette / Vleugelschroef
11	Frässhuh / routing shoe / Zapata de fresado / Sabot de fraisage / Kluzná deska / Frézovacia pätká / Pattino portafresa / Freesvoet		

3.3 Technische Daten / Technical data / Datos técnicos / Données techniques / Technické údaje / Technické údaje / Dati tecnici / Technische gegevens

Spezifikation / Specification	
Spannung / voltage / Tensión / Tension / Napětí / Napätie / Tensione / Spanning	230 V / 50 Hz
Motorleistung / motor power / Potencia del motor / Puissance du moteur / Výkon motoru / Výkon motora / Potenza motore / Motorvermogen	1200 W
Leerlauf Drehzahl / idle speed / Velocidad en ralentí / Ralenti du régime / Otáčky při chodu naprázdno / Volhobežné otáčky / Funzionamento a vuoto-numero di giri / Nullast - toerental	11000 – 30000 min ⁻¹
Hubhöhe – Frästiefe / lift height – routing depth / Altura de elevación – Profundidad de fresado / Hauteur de levée - Profondeur de fraisage / Výška zdvihu – hloubka frézování / Výška zdvihu – hĺbka frézovania / Altezza di sollevamento-profondità di fresatura / Slaghoogte - freesdiepte	55 mm
Spannzange / collet / Pinza de sujeción / Pince de serrage / Upínací kleština / Klieština / Pinza portautensili / Spantang	max. Ø 8 mm
Schutzklasse / protection class / Clase de protección / Classe de protection / Třída ochrany / Stupeň ochrany krytom / Classe di protezione / Beschermingsklasse	II
Schwingungsemissionswert a _h /vibration emission value a _h / Valor de emisiones de vibración a _h / Valeur d'émission des vibrations a _h / Hodnota vibračních emisí a _h / Emisná hodnota vibrácií a _h / Valore di emissione vibratoria a _h / Trillingsemisiewaarde a _h	7,08 m/s ²k: 1,5 m/s ²
Maschinenmaße (L×B×H) / machine dimensions (L×W×H) / Dimensiones de la máquina (LxAxH) / Dimensions de la machine (LxIxH) / Rozměry stroje (dxšxv) / Rozmery stroja (D x Š x V) / Dimensioni macchina (LxPxH) / Afmetingen machine (L×B×H)	150(260)×110×290 (235) mm
Verpackungsmaße (L×B×H) / packaging dimensions (L×W×H) / Dimensiones del embalaje (LxAxH) / Dimensions d'emballage (LxIxH) / Rozměry obalu (dxšxv) / Rozmery obalu (D×Š×V) / Dimensioni dell'imballo (LxPxH) / Afmetingen verpakking (L×B×H)	290×160×260 mm



Gewicht Brutto / weight gross / Peso bruto / Poids brute / Hmotnost brutto / Hmotnosť brutto / Peso lordo / Gewicht brutto	4,5 kg
Gewicht Netto / weight net / Peso neto / Poids net / Hmotnost netto / Hmotnosť netto / Peso netto / Gewicht netto	4,0 kg
Schallleistungspegel L_{WA} / sound power level L_{WA} / Nivel de potencia sonora L_{WA} / Niveau de puissance sonore L_{WA} / Hladina akustického výkonu L_{WA} / Hladina akustického výkonu L_{WA} / Livello di potenza sonora L_{WA} / Geluidsdrukkniveau L_{WA}	99 dB(A).....k: 3 dB(A)
Schalldruckpegel L_{PA} / sound pressure level L_{PA} / Nivel de presión sonora L_{PA} / Niveau de pression acoustique L_{PA} / Hladina akustického tlaku L_{PA} / Hladina akustického tlaku L_{PA} / Livello di pressione sonora L_{PA} / Geluidsdrukkniveau L_{PA}	88 dB(A).....k: 3 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.

(CZ) Označení - údaje o hlučnosti: Uvedené hodnoty jsou emisní hodnoty, a proto nemusejí současně představovat i bezpečné hodnoty na pracovišti. Přestože existuje korelace mezi hladinami emisí a imisí, nelze z ní spolehlivě odvodit, zda jsou nutná další preventivní opatření, či nikoli. Mezi faktory, které ovlivňují skutečnou hladinu imisí na pracovišti, patří charakter pracovního prostoru a další zdroje hluku, tj. počet strojů a dalších sousedních pracovních procesů. Přípustné hodnoty na pracovišti se rovněž mohou v jednotlivých zemích lišit. Tato informace však má uživateli umožnit lépe posoudit ohrožení a riziko.

(SK) Oznámenie týkajúce sa údajov o hlučnosti: Uvedené hodnoty sú emisné hodnoty a zároveň tým nemusia predstavovať aj bezpečné hodnoty na pracovisku. Napriek tomu, že existuje korelácia medzi emisnými a imisnými hladinami, nemožno z toho spoľahlivo vyvodit, či sú alebo nie sú potrebné dodatočné preventívne bezpečnostné opatrenia. Faktory, ktoré ovplyvňujú na pracovisku skutočne pretrvávajúcu imisnú hladinu, zahŕňajú osobitosť pracovného priestoru a iné zdroje zvukov, tzn. počet strojov a iných susediacich pracovných postupov. Povolené hodnoty na pracovisku sa taktiež môžu líšiť medzi jednotlivými krajinami. Táto informácia by však mala používateľa kvalifikovať na to, aby lepšie odhadol ohrozenie a riziko.

(IT) Nota Dati sulla rumorosità: I valori indicati sono valori di emissione e quindi non devono rappresentare contemporaneamente valori di sicurezza sul posto di lavoro. Sebbene esista una correlazione tra i livelli delle emissioni e immissioni, non si può dedurre in modo affidabile se siano o meno necessarie ulteriori precauzioni. I fattori che influenzano il livello di emissioni effettivamente presente sul luogo di lavoro includono le condizioni tipiche dell'area di lavoro e altre fonti di rumore, come per es. il numero di macchine e la presenza di altri processi di lavoro adiacenti. I valori consentiti sul posto di lavoro possono anche variare da paese a paese. Tuttavia, queste informazioni permettono all'utente di stimare nel modo migliore pericoli e rischi.

(NL) Indicatie geluidsdetails: De genoemde waarden zijn emissiewaarden en moeten daarmee niet meteen veilige werkplaatswaarden weergeven. Ofschoon er een correlatie bestaat tussen emissie- en immissieniveaus, kan daaruit niet betrouwbaar worden afgeleid of aanvullende voorzorgsmaatregelen noodzakelijk zijn of niet. Factoren, welke het op de werkplaats daadwerkelijk aanwezige immissieniveau beïnvloeden, omvatten de eigenschappen van de werkruimte en andere geluidsbronnen, d.b. het aantal machines en andere naburige werkzaamheden. Ook kunnen de toelaatbare werkplaatswaarden van land tot land verschillen. Deze informatie dient ervoor de gebruiker in staat te stellen gevaren en risico's beter te beoordelen.



10 PREFACE (EN)

Dear Customer!

This manual contains information and important notes for safe commissioning and handling of the router OBF1200_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 read and note the safety instructions!

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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11 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!

11.1 Intended use of the machine

The machine is designed exclusively for the following activities:

Routing of edges, profiles, grooves, slotted holes and recesses, copying of curves and lettering wood, wood-like materials and plastics, within the technical limits.

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.

11.1.1 Technical restrictions

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

Relative humidity	max. 70 %
Temperature (operation)	+10 °C to +40 °C
Temperature (storage, transport)	-25 °C to +55 °C

11.1.2 Prohibited applications / Dangerous misuse

- Operation in wet and rainy conditions.
- Operating the machine without adequate physical and mental fitness.
- Operating the machine without knowledge of the manual.
- Modifying the machine design.
- Operating the machine in a potentially explosive environment.
- Operating the machine outside the technical limits specified in this manual.
- Removing of the safety markings attached to the machine.
- Machining workpieces made of metal or stone.
- Modifying, circumventing or disabling the safety devices of the machine.
- Cleaning the machine with water, neither with the power switched on nor with the power switched off.

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.

11.2 User requirements

The machine is designed to be operated by one person. The prerequisites for operating the machine are physical and mental fitness as well as knowledge and understanding of the operating instructions. Persons who, due to their physical, sensory or mental capabilities, inexperience or lack



of knowledge, are unable to operate the machine safely must not use the machine without supervision or instruction by a responsible person.

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

Put on your personal protective equipment before working on the machine.

11.3 General safety instructions

To avoid malfunctions, damage and health impairments when working with the machine, the following points must be observed in addition to the general rules for safe working:

- Check the machine for completeness and function before starting. Only use the machine if the separating and other non-separating protective devices required for machining have are fitted.
- Make sure that the guards are in good working order and properly maintained.
- Ensure sufficient space around the machine.
- Ensure sufficient lighting conditions at the workplace to avoid stroboscopic effects.
- Ensure a clean working environment.
- Keep the area around the machine free of obstacles (e.g. dust, chips, cut-off workpiece parts, etc.).
- Only use tools that are in perfect condition and free of cracks and other defects (e.g. deformations).
- Remove tool keys and other setting tools before switching on the machine.
- Check the machine's connections for strength before each use.
- Never leave the running machine unattended. Switch off the machine before leaving the working area and secure it against unintentional or unauthorized restarting.
- 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.
- Always work with care and the necessary caution and never use excessive force.
- Do not overload the machine.
- Hide long hair under hair protection.
- Wear close fitting protective work clothing and suitable protective equipment (eye protection, dust mask, ear protection, safety-shoes, and work gloves).
- Never wear loose jewellery, loose clothing or accessories (e.g. tie, scarf).
- Do not work on the machine if you are tired, not concentrated or under the influence of medication, alcohol or drugs!
- Connect the machine to a suitable dust collection system.
- Do not use the machine in areas where vapours of paints, solvents or flammable liquids represent a potential danger (danger of fire or explosion!).
- Shut down the machine and disconnect it from the power supply, before adjustment, changeover, cleaning, maintenance or repair work, etc. Before starting work on the machine, wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional restart.

11.4 Electrical safety

- Only use suitable extension cables.
- A damaged or tangled cable increases the risk of electric shock. Handle the cable with care. Never use the cable to carry, pull or disconnect the power tool. Keep the cable away from heat, oil, sharp edges or moving parts.
- Proper plugs and outlets reduce the risk of electric shock.
- Water entry into the machine increases the risk of electric shock. Do not expose the machine to rain or moisture.
- Use the machine only when the ON-OFF switch is in good working order.



11.5 Special safety instructions for this machine

- Never reach into the rotating router tool!
- Only remove the chips when the motor is switched off!
- Excessive noise can cause hearing damage and temporary or permanent loss of hearing. Wear hearing protection certified to health and safety regulations to limit exposure to noise.

11.6 Hazard warnings

11.6.1 Residual risks

Despite intended use, certain residual risk factors remain.

- Risk of injury to hands/fingers from rotating routers during operation.
- Risk of burns to hands/fingers from hot routing tool after use. Always allow the router to cool down for some time before changing it.

11.6.2 Hazardous situations

Due to the structure and construction of the machine, hazardous situations may occur which are identified in this manual as follows:

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.

Regardless of all safety regulations, your common sense and your appropriate technical aptitude/training are and remain the most important safety factor in the error-free operation of the machine. **Safe working depends on you!**

12 ASSEMBLY

12.1 Preparation

12.1.1 Check delivery content

Check the delivery immediately for transport damage and missing parts. Report any damage or missing parts to your dealer or the shipping company immediately. Visible transport damage must also be noted immediately on the delivery note in accordance with the provisions of the warranty, otherwise the goods are deemed to have been properly accepted.



12.1.2 Requirements for the installation site

The chosen installation site must ensure a suitable connection to the power supply and a connection to an extraction system. Observe the safety requirements and the dimensions of the machine. Place the machine on a level, solid surface. The chosen location of the machine must comply with the local safety regulations and the ergonomic requirements for a workplace with sufficient lighting conditions.

12.1.3 Preparation of the surfaces

Before putting the machine into operation, carefully remove the corrosion protection or grease residues from the bare metal parts. This can be done with the usual solvents. Under no circumstances should you use nitro thinners or other cleaning agents, as these can attack the machine's finish.

NOTE

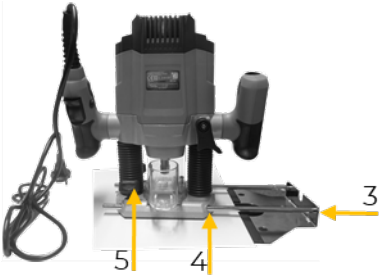
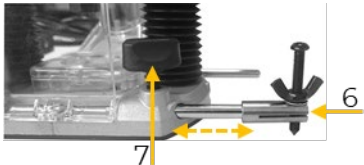


The use of paint thinners, petro, aggressive chemicals or scouring agents will damage the surfaces!

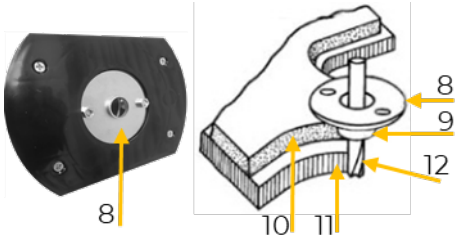
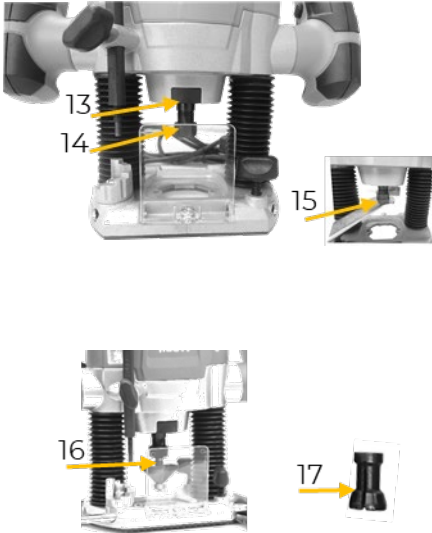
Therefore: Use only mild cleaning agents!

12.2 Assemble

The machine comes fully assembled. For the different operations, the following assemblies / cutters / collet chuck changes can be made as follows.

	Mounting extractor adapter Mount the extractor adapter to the routing shoe (1) with the two countersunk screws and nuts. Connect the extraction system to the machine at the opening (2) provided in the extraction adapter (inner diameter 36 mm).
	Mounting parallel stop Loosen the screws of the guide rods. Screw the guide rods to the parallel stop (3). Push the guide rods through the side holes of the routing shoe (4). Set the desired dimension and fix this with the fastening screws (5).
	Assembling compass point Slide the compass point onto the end of a guide rod and screw it tight with the wing nut (6). Push the guide rod into a hole of the routing shoe. Set the desired radius between the compass tip and the routing tool and fix the position with the fastening screw (7).



	Mounting guide sleeve Mount the guide sleeve to the underside of the routing shoe with the two countersunk screws (8). The guide sleeve is guided along the template (10) with the thrust ring (9). The thickness of the workpiece (11) must be the difference between the outer edge of the router and the outer edge of the thrust ring (12).
	Assembly / disassembly routing tool WARNING Risk of injury! → Disconnect the machine from the power supply when mounting/dismounting the router! → Be sure to wear protective gloves when inserting and changing routing tools! Press the spindle lock (13) and turn the clamp nut (14) until the spindle engages. Loosen the clamp nut with an open end spanner (15) while pressing the spindle lock (13) Insert the shank of the router (16) into the collet. Tighten the clamp nut with an open end spanner (15) while simultaneously pressing the spindle lock (13). The router must be inserted at least 20 mm into the collet or up to the marking. Check that the router is firmly seated and running true before putting it into operation. To dismantle, press the spindle lock (13) and loosen the clamp nut (14). Mounting / replacing the collet chuck Press the spindle lock (13) and remove the clamp nut, the mounted collet together with the spring (14). Press the matching collet (17) with spring into the hollow space of the spindle and fasten it with the clamp nut (14) while simultaneously pressing the spindle lock (13).

12.3 Electrical connection

- Check, whether the supply voltage and the frequency correspond to the specifications of the machine.

NOTE



Deviation of the supply voltage and frequency!

A deviation from the value of the supply voltage of $\pm 5\%$ is permissible.
A short-circuit fuse must be provided in the power supply system of the machine!

- Use a supply cable of type H07RN (WDE282) and take the required cross-section of the supply cable from a current carrying capacity table. Pay attention to the measures for protection against mechanical damage.



- When using an extension cable, make sure that the dimension matches the connected load of the machine. The connection power can be found in the technical data, the correlation of cable cross-section and cable lengths can be found in the technical literature or obtain information from a specialist electrician.
- A damaged cable must be replaced immediately.

13 OPERATION

Only operate the machine when it is in a perfect condition. Before each operation, a visual inspection of the machine must be carried out. Safety devices and operating elements must be checked carefully. Check screw connections for damage and tight fit.

13.1 Operating instructions

- Do not use a routing of poor quality or damaged. Only use routers with a shank diameter of 6–8 mm. The routers must also be designed for the respective idle speed.
- Secure the workpiece to be machined so that it cannot be thrown away while working.
- Use clamping devices.
- Always lead the mains cable away to the rear!
- Never router over metal parts, screws, nails, etc.!
- Only use sharp routing tools. An unsharp router leads to inaccurate routing results and puts additional wear and stress on the motor.

13.2 Handling

13.2.1 Switch the machine on and off



Switch on

- Press the safety lock-off (1).
- Press and hold the ON-OFF switch (2).

Switch off

- Release the ON-OFF switch (2).

CAUTION

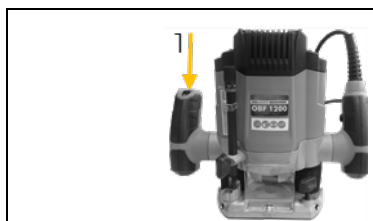


- Let the router run out completely before removing the workpiece or before putting down the machine!
- Let the router cool down after working!!

13.2.2 Set the router speed

The appropriate speed depends on the material to be machined and the diameter of the routing tool. You can select 7 different switch positions:

(1) 11.000 / (2) 12.000 / (3) 15.000 / (4) 18.000 / (5) 22.000 / (6) 26.000 / (7) 30.000 min⁻¹



Use the speed control to set the desired speed (1).

NOTE: Do not start processing the workpiece until the machine has reached the set speed.



13.2.3 Router

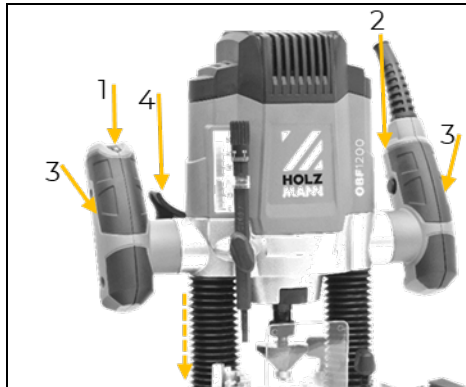
Mount the desired router.

WARNING



Risk of injury!

- Disconnect the machine from the power supply when mounting/dismounting the router
- Always wear protective gloves when inserting and changing the routing tools.



Place the machine on the workpiece.
Set the desired routing depth including the fence.
Select the desired speed (1).
Switch on the machine and let the machine run at the set speed (2).
Hold the machine by both handles (3) and carefully lower the router to the set working height.
Block the machine with the fixing handle (4).
Carry out the routing process and switch off the machine.

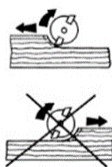
13.2.4 Feed speed

For the correct feed speed, test routing with the same material properties is recommended in order to identify the appropriate working speed.

If the feed speed is too low, the routing tool could heat up too much and the material to be machined could discolour and, in the worst-case scenario, even ignite.

If the feed speed is too high, the router tool could be damaged and the routing result could be inaccurate.

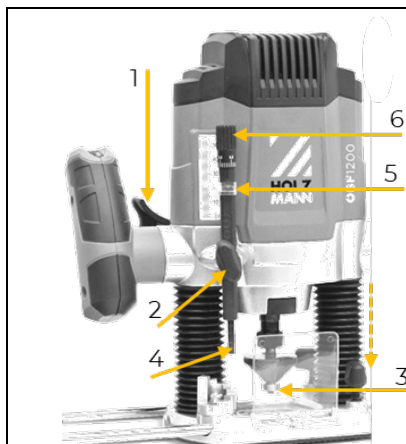
13.2.5 Routing direction



The routing tool rotates in a clockwise direction.
Routing must always be done against the direction of rotation.

13.2.6 Set routing depth with end stop

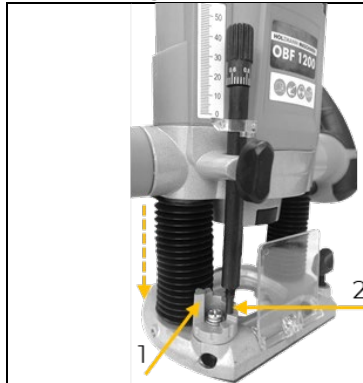
Depending in the hardness of the material to be machined and the routing depth, routing in several stages is recommended:



Set the start position of the milling process with the highest end step of the revolver stop and depth stop.
Set the desired end position of the routing process with the lowest end stage of the revolver stop in combination with the depth stop.
Now, with the help of the revolver stop (1), the routing depth to be removed can be divided into max. 6 smaller ones, thus protecting material, tool and machine.

**13.2.7 Routing depth with revolver stop**

Depending on the hardness of the material to be machined and the routing depth, routing in several stages is recommended:



Turn the revolver stop (1) so that the depth stop (2) is positioned on the highest end step of the revolver stop.
Carry out a routing operation.
Turn the revolver stop further so that the depth stop is positioned on the middle end step.
Carry out another routing operation.
Continue turning the revolver stop so that the depth stop is positioned at the lowest end step.
Finish the routing process.

13.2.8 Routing with parallel stop

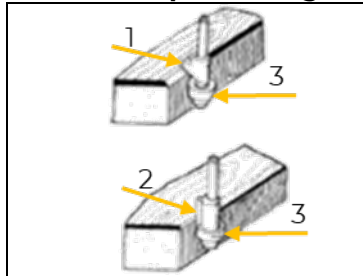
Use the parallel stop for routing along straight workpiece edges.



Assemble the parallel stop, see chapter Assembly, Assemble, Mounting parallel stop.
Guide the parallel stop along the outer edge of the workpiece and carry out the routing process (1).

13.2.9 Routing with compass point

Mount the compass stop, see chapter Assembly, Assemble, Assembling compass point.
Place the compass point on the centre of the circle to be routed and press firmly.
Carry out the routing process by guiding the machine around the centre point.

13.2.10 Shape and edge routing

Special routers with a thrust ring can also be used for form (1) and edge (2) routing.
Mount the routing tool.
Carefully guide the machine to the workpiece.
Guide the guide pin or ball bearing (3) along the workpiece with light pressure.

13.2.11 Routing with guide sleeve

Mount the guide sleeve, see chapter Assembly, Assemble, Mounting guide sleeve.
Use a routing tool with a smaller diameter than the inner diameter of the template.
Position the template on the workpiece.
Place the machine with guide sleeve against the template.
Carry out the routing process by guiding the machine along the template with light lateral pressure.

13.2.12 Free-hand routing

Free-hand routing allows you to do creative routing work, such as creating lettering.

Only use a very flat routing depth setting for this!

Observe the direction of rotation of the router!

14 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.



14.1 Cleaning

Regular cleaning guarantees the long service life of your machine and is a prerequisite for its safe operation.

NOTE



Incorrect cleaning products can attack the finish of the machine. Do not use any solvents, nitro thinners or other cleaning products that could damage the machine's finish.

Observe the specifications and instructions of the cleaning agent manufacturer.

- Keep guards, air vents and motor housing as free of dust and dirt as possible.
- Wipe the machine with a clean cloth or blow it out with low pressure.
- Make sure that no water enters the inside of the machine.

14.2 Maintenance

The machine is low-maintenance and only a few parts need to be serviced. Malfunctions or defects that could affect your safety must be repaired immediately!

- Before each operation, check the perfect condition of the safety devices.
- Regularly check the perfect and legible condition of the warning and safety labels of the machine.
- Use only proper and suitable tools.
- Use only original spare parts recommended by the manufacturer.

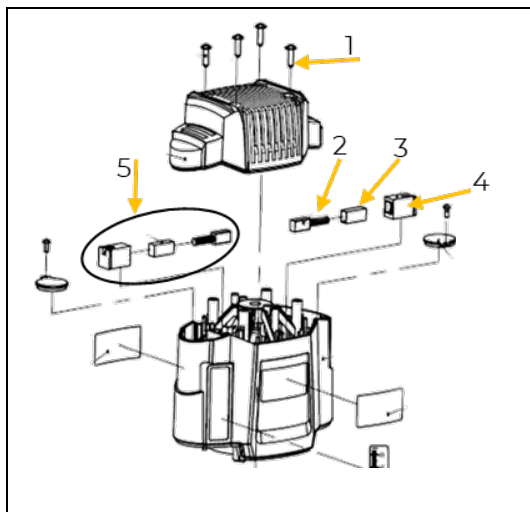
14.2.1 Change carbon brushes

When the carbon is worn out, change the carbon brushes as follows:

NOTE



The carbon brushes may only be changed by a qualified electrician.



Remove the 4 screws of the motor case and take it off (1).

Remove the carbon brush (2) from the socket (3) and insert the new one. Make sure that the bushing is firmly seated in the holder (4).

Repeat this procedure with the 2nd carbon brush (5).

Secure the motor case to the motor (1) with the 4 screws.

14.3 Storage

Store the machine in a dry, frost-proof and lockable place when not in use. Disconnect the machine from the power supply. Make sure that unauthorised persons and especially children do not have access to the machine.

NOTE



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



14.4 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.

15 TROUBLESHOOTING

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 maintenance or repair work and secure it against unintentional reconnection.

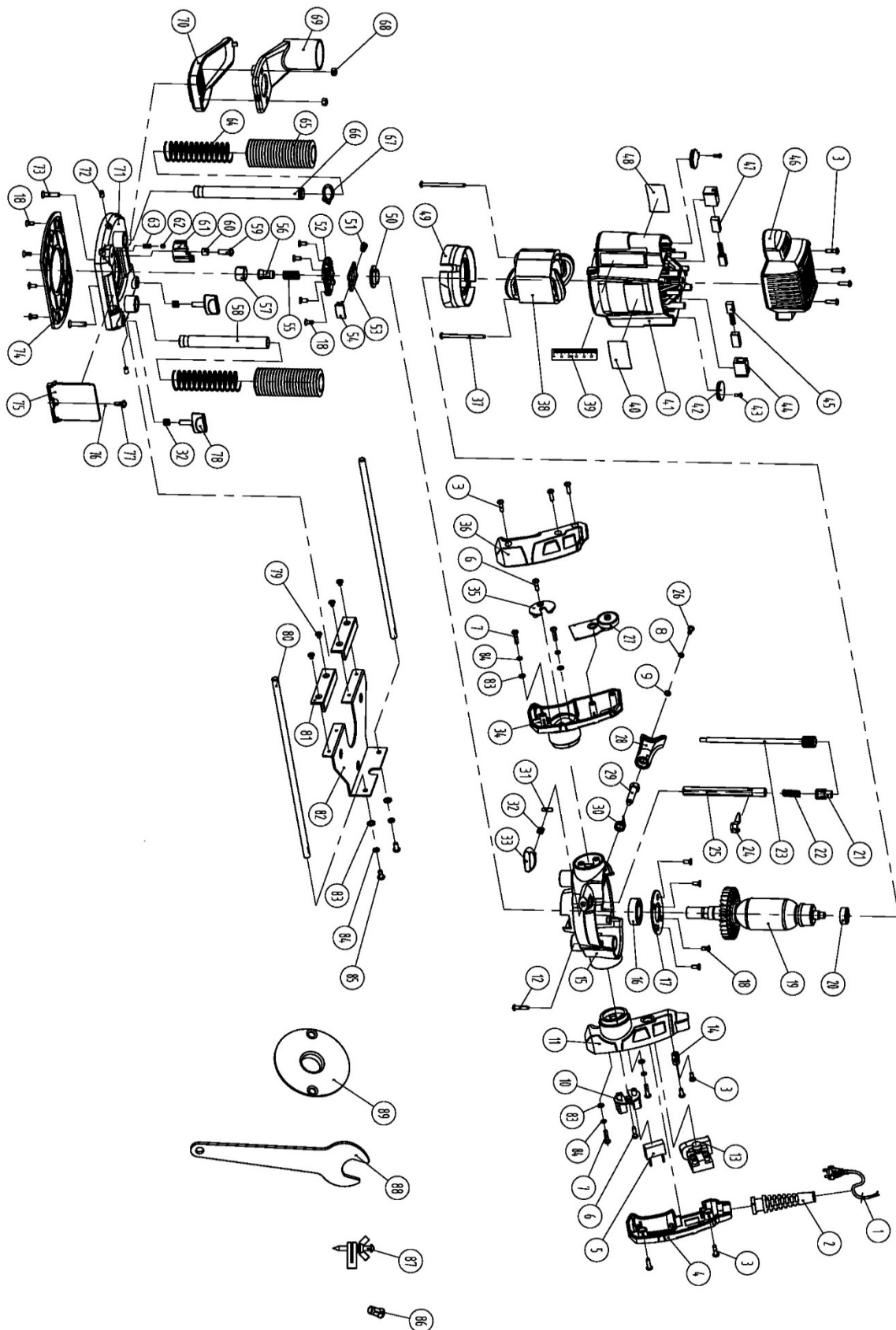
Many possible sources of error can be eliminated in advance if the machine is properly connected to the power supply.

If you are unable to carry out the necessary repairs properly and/or do not have the required training, always consult a specialist to solve the problem.

Trouble	Possible cause	Solution
motor does not run	• switch defective	• repair switch
	cable or connector plug defective	Check cable and connector, replace if necessary.
Router tool does not work properly	routing tool blunt	• change routing tool
	speed not suitable	adjust speed
	motor overloaded	reduce pressure on machine
machine vibrates strongly	shaft of the routing tool bent	• change routing tool
sparks in the housing	carbon brushes worn out	replace carbon brushes



**53.2 Explosionszeichnung / Exploded view / Vista de despiece / Vue éclatée /
Výkres v rozloženém stavu / Výkres rozloženej zostavy / Disegno esploso /
Explosietekening**





53.3 Ersatzteilliste / Spare part list / Listado de piezas de recambio / Liste des pièces de rechange / Seznam náhradních dílů / Zoznam náhradných dielov / Lista parti di ricambio / Reserveonderdelenlijst

No.	Description	Qty.	No.	Description	Qty.
1	Cable	1	45	Carbon brush	2
2	Cable jacket	1	46	Upper cover	1
3	Tapping screw ST4.2×16	11	47	Brush holder bush	2
4	Right handle cover	1	48	Nameplate	1
5	Capacitor 0.33 µF	1	49	Wind baffle	1
6	Tapping screw ST4.2×13	2	50	Nut	1
7	Screw M5×16	4	51	Self lock spring	1
8	Spring washer 4	5	52	Front cover	1
9	Washer 4	5	53	Self lock piece	1
10	Board A	1	54	Self lock knob	1
11	Right handle	1	55	Collet spring	1
12	Tapping screw ST4.2×22	4	56	Collet 8	1
13	Switch	1	57	Collet nut	1
14	Cable clip	1	58	Guide pole A	1
15	Gear box	1	59	Screw M6×16	1
16	Bearing 6003-2Z	1	60	Iron sleeve	1
17	Platen	1	61	Resist piece	1
18	Screw M4×10	12	62	Steel ball ø 5.5	1
19	Rotor	1	63	Resist piece spring	1
20	Bearing 608-2Z	1	64	Up and down	2
21	Still adjust	1	65	Plastic loop	2
22	Ruler spring	1	66	Guide pole A	1
23	Moving adjust	1	67	Circlip for shaft	15
24	Pointing piece	1	68	Nut M5	2
25	Ruler	1	69	Plastic cover A	1
26	Screw M4×10	1	70	Plastic cover B	1
27	Control board	1	71	Base	1
28	Plastic spanner	1	72	Locking screw M5×10	2
29	Screw	1	73	Screw M5×25	2
30	Spring	1	74	Base plate	1
31	Washer	1	75	Baffle	1
32	Knob spring	1	77	Screw	1
33	Knob	1	78	Knob 1	2
34	Left handle	1	79	Screw M4×6	4
35	Board B	1	80	Guide rod	2
36	Left handle cover	1	81	Plastic board	2
37	Tapping screw ST4.2×60	2	82	Ruler	1
38	Stator	1	83	Washer 5	2
39	Depth label	1	84	Spring washer 5	2
40	Trademark	1	85	Screw M5×10	2
41	Housing case	1	86	Collet 6	1
42	Cover plate	2	87	Localizer	1
43	Tapping screw ST2.9×9.5	2	88	Spanner	1
44	Brush holder cover	2	89	Propriety	1