



Oberflächentechnik
Surface Technology



Instruction Manual

TurboHand Grinder

G 180/60 · W 45/40 · W 45/23 · W 90/23

Order no: 0 750 501/ 502/ 503 und 504

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Tips on using the manual

Congratulation on the purchase of this device. Please pay attention to the operating instructions, to be able to use the handpiece effectively - about all - safety.

The symbols used in the manual have the following meaning:



Working and operating processes which must be observed to the letter to exclude any risk to persons.



Working and operating processes which must be observed to the letter to avoid any damage to the device.



Technical information to which the device operator must give special attention.

The illustrations and diagrams are numbered in sequence within each chapter. Some of these illustrations have keys. References to illustrations within the text e. g. (5.1/2) have the following meaning:

5.1 = Figure 5.1

2 = Position 2 in the key to the figure.

Please feel free to call our customer service department at any time should you encounter technical problems which are not dealt with in this manual:

Telephone: 0 22 04 / 8 39 - 0

Telefax: 0 22 04 / 8 39 - 60

Internet: www.joke.de

Safety instructions

This device has been built according to the latest technical standards and generally accepted safety regulations. Nevertheless, it can constitute a hazard to the device itself or other equipment during use.

1. Only use the device if in perfect working order and for its intended purpose. You must always pay attention to the instruction manual and safety instructions therein and be aware of the risks! Repair any faults which could affect the device's safety immediately by yourself or have these repaired.

The unit is designed exclusively for grinding, milling and polishing with the tools listed and approved in the joke catalogue. Any other use will be deemed to be contrary to its intended purpose. The manufacturer cannot be held liable for any resulting damages. The risk is borne solely by the user.

Correct use also includes compliance with the instruction manual and an observation of the care and maintenance conditions.

2. Keep the instruction manual handy at the device's place of use.
3. Pay attention to and observe generally applicable statutory and otherwise binding regulations relating to accident prevention and environmental protection in addition to the information provided in the instruction manual!
4. All personnel commissioned to work on or with the device must have read this instruction manual, and particularly the safety instructions chapter, before starting work. This applies especially for personnel who only work with the device occasionally.
5. Stop the device immediately should you notice changes to the device or its operating behaviour that are relevant to its safety. Have these remedied before restarting work.
6. Do not carry out any modifications, additions or conversions to the device! This also applies to the installation and adjustment of safety equipment.
7. Spare parts must meet the technical requirements specified by the manufacturer. This can only be guaranteed with original joke spare parts.
8. Wear safety goggles when working with the handpiece.
9. Personnel undergoing training or in a general apprenticeship should only be allowed to work with the machine under the constant supervision of an experienced operator!
10. Restrain from any type of work that could jeopardise your safety.
11. The device may only be used if all protective and safety equipment is in place and in proper working order.
12. Do not leave the device unattended when switched on!!
13. Stop and secure the device immediately in the event of malfunctions! Faults must be remedied at once.

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Warranty

joke warrant the correct manufacture of every joke Technology GmbH product which is delivered in accordance with the terms of contract and delivery.

This warranty does not cover damages caused by normal wear and tear, incorrect handling, negligent use, the fitting of non-original spare parts, inadequate care and/or a failure to comply with this technical manual.



The device may only be used by appropriately trained personnel. If it is not, all warranty claims will be forfeited according to the terms of delivery.

Device identification

The manufacturer's code and type code, CE label and series number can be found on the handle sleeve.

Waste disposal

Ensure that the device is properly disposed of and is on no account committed to the domestic waste.



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Use

The air-driven Turbo hand grinders are intended for grinding and milling. Only the permitted precision tools for the handpiece may be used in this case.

Permitted tools: refer to joke-Katalog

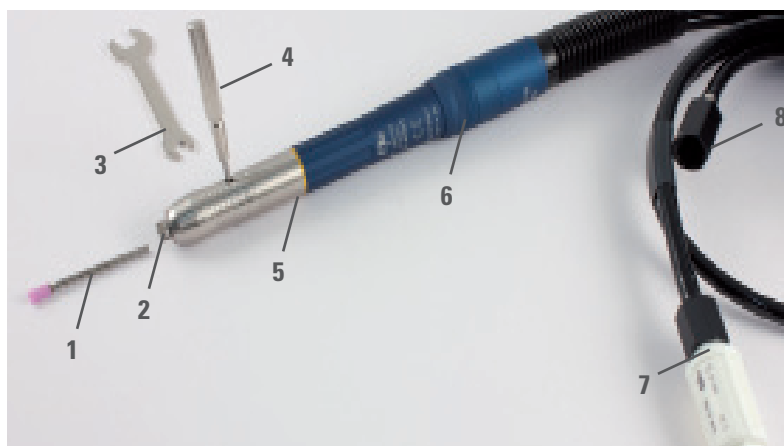


Figure 5.1 Device overview handgrinders G 180/60 and W 45/40

- 1 - Tool
- 2 - Collet
- 3 - Wrench
- 4 - Locking pin
- 5 - Hand grinder
- 6 - Rotating on-off bush
- 7 - Exhaust air hose with oil filter
- 8 - Air supply hose



Figure 5.2 Device overview - hand grinders W90/23 and W 45/23

- 1 – Tool
- 2 – Collet
- 3 – Wrench
- 4 – Locking pin, 2 x
- 5 – Hand grinder
- 6 – Rotating on-off bush
- 7 – Exhaust air hose with oil filter
- 8 – Air supply hose
- 9 – Allan key
- 10 – Locking shaft
- 11 – Cup wheel
- 12 – Rubber holder (accessory)
- 13 – Abrasive disc for gluing to rubber disc, 8x (accessory)

Mode of operation

The Turbo hand grinder is driven by compressed air, which must be treated with oil via a maintenance unit (for example joke Oiljet).

The hand grinder drive consists of a low noise emission rotary vane type motor. The high quality bearing guarantees a high degree of truth of running.

The drive air is discharged rearwards through an exhaust air line, to the end of which a silencer and is fitted.

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Technical Data

joke TURBO Hand grinder	G 180/60 Head 180°	W 45/40 Head 45°	W 45/23 Head 45°	W 90/23 Head 90°
Max. speed	60,000 1/min	40,00 1/min	23,000 1/min	23,000 1/min
Power	70 W	70 W	70 W	70 W
Air pressure	4 - 6 bar	4 - 6 bar	4 - 6 bar	4 - 6 bar
Air consumption	165 l/min	165 l/min	165 l/min	165 l/min
Exhaust air	backwards	backwards	backwards	backwards
Noise level	80 - 90 dB(A)	80 - 90 dB(A)	90 - 95 dB(A)	90 - 95 dB(A)
Vibration	< 0.32 m/s ²	< 0.32 m/s ²	< 0.56 m/s ²	< 0.56 m/s ²
Maße	Ø 24 x 146 mm	Ø 24 x 158 mm	Ø 51.5 x 159 mm	Ø 46.5 x 152
Lubrication	continuous with oil mist	continuous with oil mist	continuous with oil mist	continuous with oil mist
Weight	200 g	230 g	230 g	230 g
Accessories	Tube package (1.1 m) with coupling sleeve 1/4", collet Ø 3 mm (type CHS), tool set		1 x rubber holder, 2 x cup wheels, 1 x clamping shank, assortment of consumables, tool set, tube package 1.1 m with coupling sleeve 1/4", collet Ø 3 mm (type CHS)	

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Maintenance unit and air connection for the Turbo-hand grinder



The compressed air required to drive the Turbo hand grinder must be supplied via a maintenance unit.

The maintenance unit must consist of the following functional units:

- Water separator and filter
- Pressure gauge
- Oil mist lubricator (micro oil mist lubricator)



Optimum function of the Turbo hand grinder is guaranteed by using the joke Oiljet (Order no. 0 004 050) with a micro oil mist lubricator.



Figure 7.1 Maintenance unit joke Oiljet (Best.-Nr. 0 004 050)



For other accessories, refer to the joke catalogue.

The maintenance unit joke Oiljet consists of:

- automatical water separator
- filter
- pressure gauge
- oil container
- micro oil mist lubricator
- wall mounting.



Please do not make an extension of the original air pipe or the spiral coiled tube whereby the diameter will be reduced. Thus, the oil cannot flow to the motor and it gets dry!

Technical data for maintenance unit joke-Oiljet:

max. volume flow: 1.200 l/min
max. inlet pressure: 16 bar
adjustment range: 0 - 12 bar

Operating principle of the oil mist lubricator

The micro oil mist lubricator ensures uniform, rapid and precisely dosed hand grinder lubrication.

The oil mist lubricator is set to 3 drops per minute.

The special air supply makes it possible to reduce the size of the oil particles. The latter can be conveyed in the airflow over wide distances as micro mist. They are scarcely deposited. All surfaces with which they come into contact are intensively and very evenly moistened. An even, stable oil film results on the bearing surfaces with a thickness that can be rapidly and precisely adjusted.



The label on the container shows the minimal and maximal oil level. If the level of oil falls below the minimum oil level, it must be refilled.

Adjusting screw



Refill screw

Figure 7.2 View from above maintenance unit

Setting up and connecting the maintenance unit

1. On the maintenance unit, check whether:
 - the condensate drainage screw is closed; Turn to the right to close.
 - the pressure adjustment screw is open; Turn to the left to open.
2. Fill the oil container up to the mark with joke high performance lubricant X 73012.



The oil level must not reach higher than the deflector of the microoil mist lubricator .



Order no. for the lubricant in different container sizes, refer to the joke catalogue.



Take care that the air flows through the housing in the direction indicated by the arrow.

Connecting the hand grinder

1. Connect the air supply hose of the hand grinder to the maintenance unit.



A hose length of more than 2 m does not ensure any continuous lubrication of the hand grinder since the oil already deposits in the inside of the hose.

2. Lay the hose with the end filter freely; do not kink!
3. Set a pressure of 6 bar on the maintenance unit. The hand grinder is ready for operation.

Setting hand grinders G 180/60 and W 45/40 into operation

1. Secure the mandrel in the hand grinder with the locking pin (7.3/3).
2. Insert tool (7.3/1) in the collet and screw tight with wrench (7.3/2).
3. Switch on the speed by turning knurled ring (7.3/4).

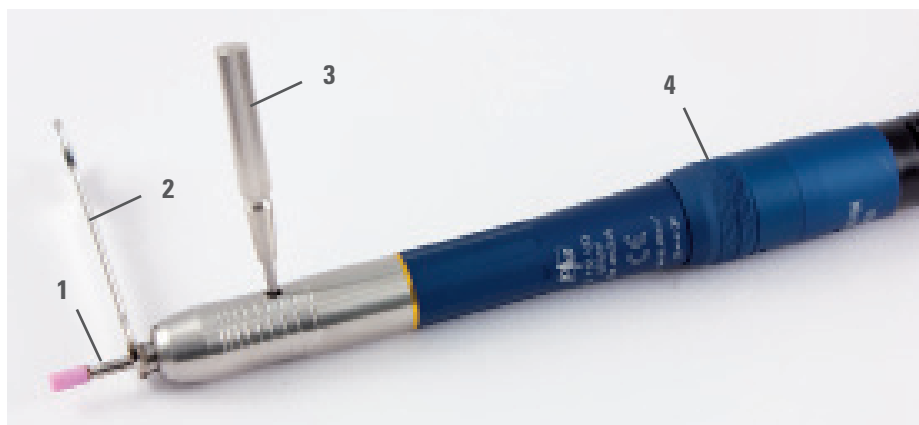


Figure 7.3 Setting hand grinders G 180/60 into operation

Setting hand grinders W 45/23 and W 90/23 into operation



When using a collet, set the hand grinder into operation as described in the following section.

When using a locking shaft (7.4/2):

1. Secure the mandrel in the hand grinder with a locking pin.
2. Insert the second locking pin through the locking shaft (7.4/2) and screw the locking shaft into the hand grinder.
3. Screw tool (7.4/1) into the locking shaft.
4. If necessary, cover (7.4/6) can be removed after loosening a headless pin with the Allan key (7.4/5).

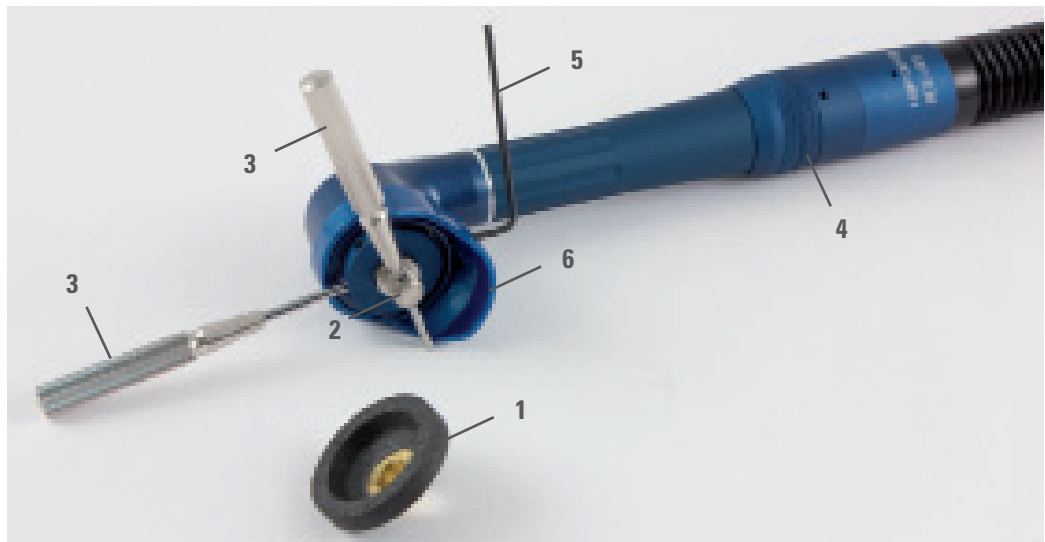


Figure 7.4 Setting hand grinders W 90/23 into operation

Changing the collets

hand grinders W 45/40, W 45/23 und W 90/23

For all hand-grinders W 45/23 and W 90/23 the hexagon insert must be loosen first like (pic. 5.2/9).

Please fix the mandrel with a lock bolt (5.2/4) and loosen the collet (5.2/4) with the hook wrench. After loosen the collet it can be replaced by a new one.



Figure 7.5 changing collet

Notes on operation

- The recommended air pressure for operation of the hand grinder is 6 bar. Higher pressure may result in damage to the hand grinder.
- When immobile, the mandrel must be treated particularly carefully. Under no circumstances must the mandrel be knocked, since the high precision bearings, which are necessary for operation, will be damaged as a result. Impact stress in the immobile state results in permanent deformation of the bearing races.
- Use only light pressure when grinding and milling with the hand grinder.
- Pay attention to the permitted cutting speeds and the tool manufacturer's prescriptions before reusing the tools.
- Check that the tool is seated firmly and securely tighten the collet with the prescribed keys.
- Regularly check the maintenance unit. If condensed water and dirt are present, drain the condensate and clean the filter (refer to Care/maintenance section).



Wear protective goggles!

Tool receptions

- The Turbo hand grinders are intended only for manual use.
- The tool reception is designed in such a way that tools with shafts of a \varnothing up to 3 mm can be fitted into the collets.
- When inserting the collets, care must be taken to ensure meticulous cleanliness of the collet itself and the inner cone. Only in this way can optimum truth of running be achieved. Furthermore, a distance of approx. 1 mm is necessary between the tool shaft and the base of the mandrel. Take care in this case to always select the largest possible shaft \varnothing and the shortest possible collet – grinding point distance (resulting in safety and stability).



For usable tools, refer to the joke catalogue

- Every grinding point has flyweight and must be dressed before use. The dressing process begins at a low speed and is constantly repeated until the device has reached the highest speed.
A joke diamond conditioner is recommended for dressing.
- Tungsten carbide burs, diamond tools, drills and graving tools
It is essential to check truth of running with these tools. Errors in truth of running cannot be remedied by dressing. A certain possibility for correction exists only when the shaft of the tool is rotated into the loosened collet. If the necessary truth of running cannot be achieved, another tool must be selected.



The resulting flyweight may endanger the user and also rapidly destroy the mandrel bearings.

It is therefore recommended to only use tungsten carbide burs and diamond tools, for which the manufacturer guarantees the necessary truth of running.

Troubleshooting

Malfunction	Possible cause	Remedy
Tool does not turn	Hand grinder not switched on at the rotating ring	Turn the rotating ring
	Hose lines kinked	Eliminate the kink
	Air pressure controller on the maintenance unit not opened.	Set pressure controller to 6 bar.
	Collect faulty	Change collet
	Bearing in headpiece faulty	Change headpiece
	Maintenance unit faulty	Send to joke service
	Motor läuft trocken	Vane worn out
Operation with a spiral hose		Oil can't be supplied optimal
Operation hose is too long (more than 2 m)		Oil can't be supplied optimal

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Care

Clean the hand grinder if required with a soft brush/paintbrush or a dry cloth. Otherwise, the hand grinder is maintenance-free.

Maintenance

Changing the oil filter on the exhaust air hose of the hand grinder.

1. Unscrew the filter housing on the exhaust air hose.
2. Remove the filter from the housing and change..
3. Screw the filter housing back on to the hose.

Draining condensate from the air filter of the maintenance unit.

1. Unscrew the condensate container
2. Screw off the air filter and change.



Take care that the filter mounting and the loose seal are rein-stalled in an identical position.

3. Screw the condensate container back in and perform a functional test.

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To

joke Technology GmbH
Service-department
Fax: 0 22 04 / 8 39 - 60

Sender:

Company _____

Name/Department _____

Customer-no. _____

Street _____

Post code/town _____

Please send us the spare parts drawing with parts list for the following devices:

- as a printout (see above for address,
- per fax,
- as a pdf file to my email address.

Turbo hand grinder G 180/60	Order no. 0 750 501	<input type="checkbox"/>
Turbo hand grinder W 45/40	Order no. 0 750 502	<input type="checkbox"/>
Turbo hand grinder W 45/23	Order no. 0 750 503	<input type="checkbox"/>
Turbo hand grinder W 90/23	Order no. 0 750 504	<input type="checkbox"/>
Maintenance unit joke Oiljet	Order no. 0 004 050	<input type="checkbox"/>

Date Signature



Brilliant solutions for perfect surfaces

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