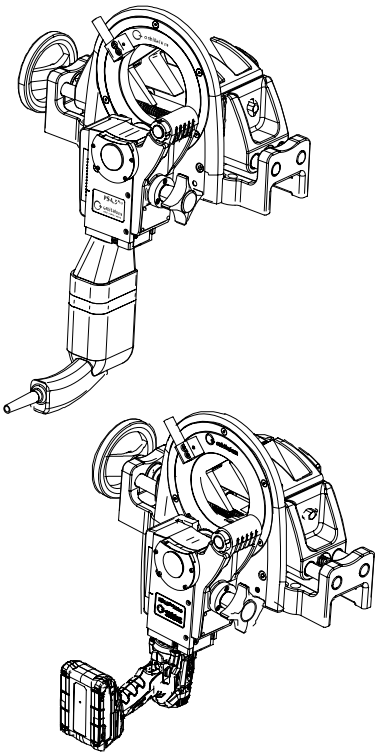
# PS 4.5 Plus (Akku)

**en** **Pipe cutting and beveling machines**
Translation of original operating instructions and spare parts list

790 048 761 REV 01 | 2402



orbitalum
tools for piping systems

*An ITW Company*

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# 1 About these instructions

## 1.1 Warning messages

The warnings used in these instructions warn you of injuries or damage to property.

Always read and observe these warnings!

This is a warning icon. It warns against dangers of injury. In order to avoid injuries or death observe the measures marked with a safety sign.

| | WARNING LEVEL | MEANING |
|---|---|---|
| ⚠ | **DANGER** | Imminently hazardous situation that results in death or serious injuries if the safety measures are not observed. |
| ⚠ | **WARNING** | Potentially hazardous situation that may result in death or serious injuries if the safety measures are not observed. |
| ⚠ | **CAUTION** | Potentially hazardous situation that may result in slight injuries if the safety measures are not observed. |
| ❗ | *NOTE!* | Potentially hazardous situation that may result in material damage if the safety measures are not observed. |

## 1.2 Further icons and displays

| SYMBOL | MEANING |
|---|---|
| ℹ | Important information for comprehension. |
| 1.<br>2.<br>3.<br>… | Request for action in a sequence of actions: Action is required here. |
| ► | Single request for action: Action is required here. |

## 1.3 Abkürzungen

| ABBREVIATION | MEANING |
|---|---|
| GF | Pipe cutting and beveling machines |
| AVM | Automatic feed module [Automatisches Vorschubmodul (AVM)] on GF machines |
| MVM | Manual feed module [Manuelles Vorschubmodul (MVM)] on GF machines |
| GFX | Pipe cutting and beveling machines |
| PS 4.5 Plus | Portable pipe saw for cutting pipes with electric drive |
| PS 4.5 Plus battery | Portable pipe saw for cutting pipes with battery drive |

# 2 Information and safety instructions for the owner

## 2.1 Requirements for the owner-operator

**Workshop/outdoor/field use:** The owner is responsible for safety in the danger zone around the machine, and should allow only qualified personnel to enter the zone or operate the machine in the danger zone.

**Employee safety:** The safety instructions described in the chapter *Information and safety instructions* of the operating instructions and the general safety instructions described in the safety regulations as well as safety-conscious work with all required safety equipment must be maintained.

## 2.2 Using the machine

### 2.2.1 Proper use

- **GF and GFX machines:** The machine must only be used for cutting and beveling materials and pipe dimensions, as listed in *chapt.* Scope of application of the operating instructions.
  **PS machines:** The machine must only be used for cutting and beveling materials and pipe dimensions, as listed in *chapt.* Scope of application of the operating instructions.
  The machine casing (vice) can be fastened directly onto the work bench/tripod using screws or by means of a mounting plate on it. The mounting plate is also screwed to the work bench.
  Only operate the machine within the voltages specified on the type plate of the drive (*see chapt*. Technical specifications).
- Only the motors listed below are to be used as drives for the following machines:
  - For GF saws: Motor GF07 (code 790 142 460 and 790 142 463).
  - For GFX saws: Motor GF10 (code 790 144 382 and 790 144 383).
  - PS 4.5 Plus: Motor (code 790 048 190 and 790 048 192).
  - PS 4.5 Plus battery: Motor (code 790 037 530 and 790 037 531)
- The drive motor may only be used in connection with the machine.
- Only GF machines: The automatic or manual feed module AVM/MVM may only be operated in connection with Orbitalum Tools pipe saws GF 4, GF 6, GF 8 or GF 12.
- The machine may only be used on pipes and tanks that are empty, unpressurized, do not have explosive atmospheres and are not contaminated.

Intended use also includes:

- Observing all safety and warning information of these operating instructions and the general pipe cutting and beveling machine safety information.
- Complying with all inspection and maintenance work.

- Using it only in its original condition with genuine accessories, spare parts and operating materials.
- Processing only those materials named in the operating instructions.

## 2.2.2 Improper use

- Any use that differs from or goes beyond the use and stated limits specified under *chapt.* "Intended use" is improper due to the danger involved.
- The owner shall be responsible for any damage which results from improper use. The manufacturer accepts no liability.
- No tools should be used that have not been authorized by the manufacturer of this machine.
- The removal of safety devices is not permissible.
- Do not misuse the machine.
- The machine is not intended for use by private consumers.
- The machine is intended solely for commercial and industrial use.
- It is impermissible to exceed the technical values specified for normal operation.
- Do not use the machine as a drive for any applications other than those named under *chapt.* "Intended use".

## 2.2.3 Machine constraints

- Keep your working area clean. Disorder or unlit working areas can lead to accidents.
- Work lighting: min. 300 Lux.
- Operation by one person.
- Climate conditions: Temperature range for machine operation: –15 °C to 40 °C.
- Only operate the machine in dry surroundings (not in misty, rainy or stormy conditions (< 80% rel. humidity)).

## 2.2.4 Shutting down the machine

EMERGENCY STOP or shutdown function descriptions, *see chapter* Shutdown (including in case of emergency) in the operating instructions.

# 2.3 Environmental protection and disposal

## 2.3.1 REACh (Registration, Evaluation, Authorization and Restriction of Chemicals)

The regulation (EC) 1907/2006 of the European Parliaments and of the Council concerning the registration, evaluation, authorization and restriction of chemicals (REACh) regulates the production, placing on the market and use of chemical substances and the mixtures produced from these.

Our products are "products" in the sense of the REACh regulation. In accordance with Article 33 of the REACh regulation, suppliers of products must inform their customers if the supplied product contains a substance specified in the REACh SVHC candidate list exceeding 0.1 percent by mass of the object. On June 27, 2018, lead (CAS: 7439-92-1 / EINECS: 231-100-4) was included in the SVHC candidate list. This inclusion activates an obligation to inform along the chain of delivery.

We herewith inform you that individual partial components of our products contain lead in quantities exceeding 0.1 % by mass of the object as an alloy component in steel, aluminum and copper alloys as well as in solders and capacitors of electronic components. The lead content lies within the exceptions specified in the RoHS Directive.

Since lead as an alloy component is firmly bound and therefore no exposure is to be expected in the case of proper use, no additional specification of its safe use are required.

## 2.3.2 Chips and gear lubricant

Dispose of chips and replaced gear lubricant as prescribed.

### 2.3.3 Electric tools and accessories

Used-up power tools and accessories contain a large amount of valuable raw materials and plastics which can be recycled. For this reason:

- Electrical and electronic devices marked with the symbol at the right may not be disposed of with household garbage as per EU directive.
- By actively using the offered return and collection systems, you are doing your part to reuse and recycle used electrical and electronic devices.
- Used electric and electronic devices contain parts which must be handled specially as per EU directives. Separate collection and selective treatment are the basis for environmentally responsible disposal and protection of human health.
- We will properly dispose of devices and machines from us purchased after August 13, 2005, if they are sent to us postage-paid.
- In the case of used devices which may represent a risk to human health or safety due to contamination during use, we have the option of refusing return.
- The user is responsible for disposing of used devices purchased before August 13, 2005. For this purpose, please contact a professional disposal company in your area.
- **Important note for Germany:** Our devices and machines may not be disposed of at communal dumps, as they are only used in the commercial sector.

*(as per RL 2012/19/EU)*

### 2.3.4 Return of accumulators and batteries

- Accumulators and batteries that are marked with the adjacent symbol may not be disposed of with household garbage as per EU Directive 2006/66/EC.
- In the case of accumulators and batteries containing hazardous materials the chemical sign for the heavy metal contained is specified below the refuse bin: Cd = cadmium Hg = mercury Pb = lead
- **Applies for Germany:** The end consumer is obliged to return defective or used accumulators and batteries to the distributor or to the returning facilities set up to this purpose.

*Cd*

## 2.4 Basic safety precautions

The machine is a state-of-the-art accessory designed for safe use. Remaining risks are described in the following operating instructions. Use other than that described in these instructions can lead to severe personal injury and damage to property. For this reason:

- Warning information must be observed.

- PS 4.5 Plus (battery) only: Along with these safety instructions, the general warning information for electric tools (see supplement) also applies, which must always be kept.
- Store all documentation near the machine.
- Generally valid regulations for the prevention of accidents must be observed.
- Observe country-specific regulations, standards and guidelines.
- Use the machine only in perfect technical condition. Observe the maintenance information (*see chapt.* Maintenance) of the operating instructions.
- Only operate the machine if all the safety equipment such as the restart inhibitor, overload protection and chips guard are in good working order. The machine must have a solid footing. Check whether the substrate is able to take sufficient loads. A radial space requirement/freedom of movement of approx. 2 meters around the machine is required for people.
- Report deviations in operating behavior of the machine to the person in charge immediately.
- Use only the dimensions and materials listed in these instructions. Other materials may only be used after consulting with Orbitalum Tools customer service.
- Use only genuine tools, spare parts, operating materials and accessories from Orbitalum Tools.
- Repair and maintenance work on the electrical equipment may only be carried out by a qualified electrician.

At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

- Do not carry the machine by its cable and do not use the cable to pull the power plug out of the socket outlet (except in case of an emergency). Protect the cable against heat, oil and sharp edges (chips).
- Do not reach into the tools while machining is being carried out.
- Allow heated tools to cool down and only touch them with safety gloves.
- Ensure that the workpiece is clamped properly.
- Only switch on the machine if a pipe is clamped.
- Only GF machines: When working with the AVM in case of danger press the EMERGENCY STOP button immediately.
- Only GF machines: When working with the AVM shutdown occurs automatically after each cutting action. When processing manually at the end of each working cycle shut the machine down (pipe saw ON/OFF button), wait until the machine/tool comes to a halt and unplug the power plug.
- Only GF machines: When working with the AVM do not stop in the swivel range during the slide housing rotation.
- Only GF machines: When working with the AVM: The machine may only be operated with the AVM protective web installed (*see chapt.* Automatic feed module AVM of the operating instructions).
- Do not use the machine in wet surroundings. Only work in surroundings having a roof or canopy.

- In extreme conditions of use, conductive dust or lubricant can settle inside the machine. For this reason and for better safety, an on-site SPE-PRCD or ground-fault circuit is required between the mains network and the machine, to be installed and tested if necessary by a professional electrician.
- When working with the machine wear safety shoes (as per EN ISO 20345 at least S1), safety goggles (as per DIN EN 166 Class 2, basic strength S), snug-fitting safety gloves (as per DIN EN 388, Class 2 resistance to abrasion, cut resistance Class 3, tear resistance Class 2, perforation resistance Class 3 and as per EN 407 at least Performance level 1 against contact heat) and hearing protection (as per DIN EN 352-4 or comparable).
- Operator age: The respectively valid country-specific laws/standards/guidelines/directives have to be followed.
- Do not use click-in socket outlets and click-in power plugs (blue CEE power plugs) for the power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable (*see operating instructions chapt.* Shutdown of the machine).
- Do not use angled power plugs.

***NOTICE!***

**The suggestions for personal safety equipment apply exclusively and specifically to the product described. Other requirements arising from ambient conditions at the location of use, other products or the link with other products are not taken into account. These suggestions do not relieve the owner (employer) of his/her legal duties regarding work-safety and health protection of employees in any way.**

**DANGER**

**If the power cable is damaged, exposed parts can be energized with lethal voltage!**

Fatal electric shock.

- ► Keep the mains cable of the saw motor **away** from the saw blade/ bevel cutter.
- ► Do **not** allow a cut pipe section to fall uncontrollably.
- ► Do **not** operate the machine unattended.
- ► Keep an eye on the power cable at all times when processing is being carried out.
- ► Keep machine clean and thoroughly remove lubricant residue on the machine.

| | | |
|---|---|---|
| **DANGER** |  | **Damaged insulation!**<br>Fatal electric shock.<br>► Do **not** screw signs to the drive motor.<br>► Use adhesive signs. |
| **DANGER** |  | **Loss of insulation due to collection of metal dust in the motor housing!**<br>Fatal electric shock.<br>► Clean the machine at least once daily with the brush supplied according to its level of soiling. |
| **DANGER** |  | **Damaged plug.**<br>Fatal electric shock.<br>► Do **not** use adapter plugs together with protectively grounded power tools.<br>► Connecting plugs of the machine must fit into the outlet |
| **DANGER** |  | **Risk of danger through the use of the machine outdoors!**<br>Fatal electric shock.<br>► Do **not** use the machine in wet surroundings. |
| **WARNING** |  | **Danger! The electrical motor can overheat with operation of less than 230 V network!**<br>Severe injury or death.<br>► Only use the machine in the specified temperature range. |
| **DANGER** |  | **Grounded body!**<br>Fatal electric shock.<br>► Avoid contact with grounded surfaces such as tubes, heating, cookers or refrigerators. |
| **DANGER** |  | **Catching of loose/long clothing, long hair or jewelry by rotating machine parts!**<br>Severe injury or death.<br>► Wear tight-fitting clothing when using the machine.<br>► Secure long hair against being caught. |

**DANGER**

**Defective safety parts due to soiling and wear!**

Bodily injury due to failure of safety parts.

- ► Do **not** misuse the cable, for example by suspending or carrying the machine by the cable.
- ► Replace defective safety parts immediately and check daily for proper functioning.
- ► Have an expert replace defective power cables immediately.
- ► Clean and maintain machine after every use.
- ► Keep cable away from heat, oil, sharp edges and moving device parts.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.

**WARNING**

**Parts thrown off/tool breakage and rotating pipe!**

Various injuries and damage to property.

- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do not run a new tool into the old cut because this can cause a repeat tool breakage.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension and speed (*see operating instructions chapt.* Clamping pipe and adjusting pipe dimension *and instructions chapt.* Adjusting speed).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

**WARNING**

**Falling objects or tilting and bending tubes!**

Irreversible crushing.

- ► Wear safety shoes (in accordance with EN ISO 20345, at least S1).
- ► Place sufficient supports under the tube.
- ► Transport the machine as shown in chapter *Transporting the machine* of the operating instructions.

**WARNING**

**Danger from vibration and unergonomic, monotonous work!**

Discomfort, fatigue and malfunctioning of the moving apparatus! Limited response capability and cramps.

- ► Perform "loosening-up" exercises.
- ► Ensure a varied range of activities.
- ► Assume an upright, fatigue-free and comfortable body position during operation

**WARNING**

**Pressing the ON/OFF button unintentionally!**

Various injuries and damage to property.

- ► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, shut the machine down, wait until the machine/tool stops running and pull the mains plug or remove the battery and cover the battery.

**WARNING**

**Dangerous laser radiation!**

The eye retina or eye vision can be impaired.

- ► **Do not** look at the laser beam or view it using optical instruments.
- ► **Do not** point the laser beam at other people.
- ► **Do not** misuse the line laser and do not remove it from the pipe saw.
- ► Ensure that the line laser is switched off during mounting/dismantling.

**DANGER**

**Danger of fire from charging the battery with a wrong charger!**

Severe injury or death.

- ► Only charge the batteries with chargers recommended by the manufacturer.

**WARNING**

**Liquid leaking from the battery due to wrong use!**

Various injuries and damage to property.

- ► Wash with water if touched accidentally.
- ► If liquid enters the eyes, contact a doctor.

**WARNING**

**High speed when transporting the machine!**

Risk of being hurt by lifting in the packaged state.

- ► Only transport and raise the pipe saw on a pallet over longer distances using appropriate lifting equipment.
- ► Transport the machine in the transport case using 2 persons. The case has adequate carry handles.

## 2.5 Warning signs

The warning signs and safety signs located on the machine must be observed.

The warning signs are part of the machine. They must not be removed or modified. Missing or illegible warning signs must be replaced immediately.

### 2.5.1 GF machines

| IMAGE | MACHINE TYPE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|---|
|  | GF 4 (AVM/MVM),<br>GF 6 (AVM/MVM),<br>GF 8 (AVM/MVM),<br>GF 12 (AVM/MVM) | Chips guard, frontal | Warning: Risk of injury due to sharp cutting edges. | 790 086 200 |
|  | GF 4 (AVM/MVM),<br>GF 6 (AVM/MVM),<br>GF 8 (AVM/MVM),<br>GF 12 (AVM/MVM) | Motor, on the side | Rule:<br>• Wear safety goggles in accordance with DIN EN 166.<br>• Wear hearing protection in accordance with DIN EN 352.<br>• Wear snug-fitting safety gloves in accordance with DIN EN 388 and EN 407.<br>• Read operating instructions. | 790 046 196 |
|  | GF 4 (AVM/MVM),<br>GF 8 (AVM/MVM),<br>GF 12 (AVM/MVM) | Directly on laser | Warning: Laser class I. | **For lasers 790 142 125 (230 V machines):**<br>790 142 288<br>**For lasers 790 142 135 (120 V machines):**<br>790 142 298 |

| IMAGE | MACHINE TYPE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|---|
|  | GF 4 (AVM/MVM),<br>GF 8 (AVM/MVM),<br>GF 12 (AVM/MVM) | Line laser holder | Warning: Dangerous laser radiation. | 790 142 289 |
|  | GF 6 (AVM/MVM) | Directly on laser | Warning: Laser class I. | |
|  | GF 6 (AVM/MVM) | Slide housing | Warning: Dangerous laser radiation. | |

## 2.5.2 GFX machines

| IMAGE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|
|  | Motor, frontal | Warning:<br>Risk of injury due to sharp cutting edges. | 790 046 196 |
|  | Motor, on the side | Rule:<br>Wear safety goggles according to DIN EN 166, hearing protection according to DIN EN 352 and snug-fitting safety gloves according to DIN EN 388 and EN 407.<br>Read operating instructions. | 790 086 200 |

| IMAGE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|
|  | Directly on laser | Warning: Laser class I. | **For lasers 790 142 125 (230 V machines):**<br>790 142 288<br>**For lasers 790 142 135 (120 V machines):**<br>790 142 298 |
|  | Line laser holder | Warning: Dangerous laser radiation. | 790 142 289 |

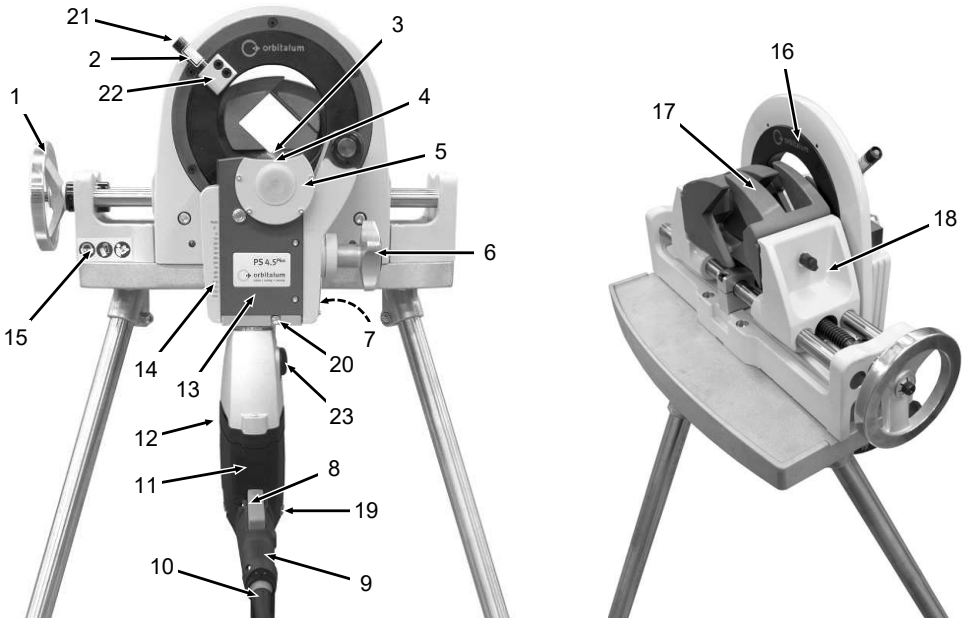
## 2.5.3 PS machines

| IMAGE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|
|  | Chips guard, top | Warning:<br>Risk of injury due to sharp cutting edges. | 790 046 196 |
|  | Vice, on the left | Rule:<br>Wear safety goggles according to DIN EN 166, hearing protection according to DIN EN 352 and snug-fitting safety gloves according to DIN EN 388 and EN 407.<br>Read operating instructions. | 790 086 200 |

| IMAGE | POSITION ON MACHINE | MEANING | CODE |
|---|---|---|---|
|  | Directly on laser | Warning: Laser class I. | **For lasers 790 142 125 (230 V machines):**<br>790 142 288<br>**For lasers 790 142 135 (120 V machines):**<br>790 142 298 |
|  | Line laser holder | Warning: Dangerous laser radiation. | 790 142 289 |

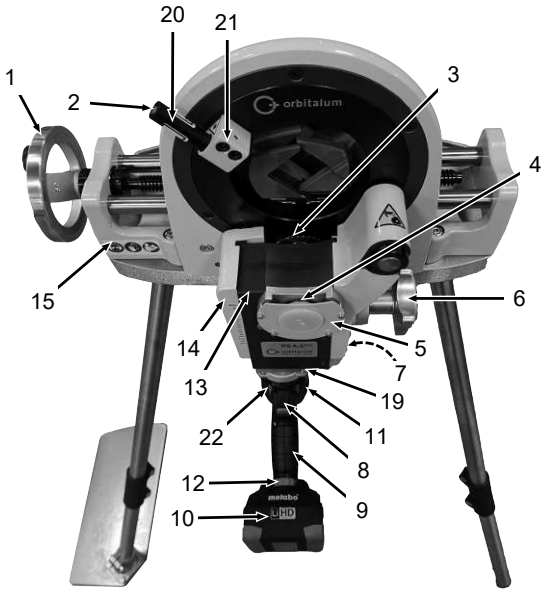
# 3 Description

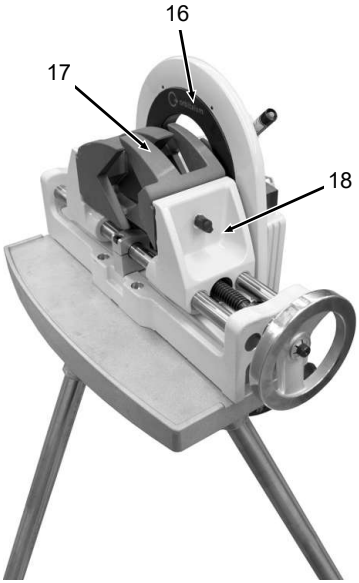
## 3.1 Portable pipe saw PS 4.5 Plus electric




| NO. | DESIGNATION | NO. | DESIGNATION |
|---|---|---|---|
| 1 | Hand wheel for clamping jaws | 13 | Slide |
| 2 | Line laser | 14 | Swivel plate |
| 3 | Saw position 1 | 15 | Vice |
| 4 | Saw position 2 | 16 | Swivel ring |
| 5 | Chips guard | 17 | Clamping jaws made of cast aluminum |
| 6 | Locking handle | 18 | Sliding jaws |
| 7 | Type plate | 19 | Locking button |
| 8 | ON/OFF button | 20 | Clamping screw (to loosen the motor) |
| 9 | Motor grip | 21 | ON/OFF switch line laser |
| 10 | Connecting cable and swivel cable with plug-in coupling | 22 | Line laser holder |
| 11 | Motor | 23 | Gear switch |
| 12 | Speed controller | | |

## 3.2 Portable pipe saw PS 4.5 Plus battery




| NO. | DESIGNATION | NO. | DESIGNATION |
|---|---|---|---|
| 1 | Hand wheel for clamping jaws | 12 | Torque adjusting wheel |
| 2 | ON/OFF switch line laser | 13 | Slide |
| 3 | Saw position 1 | 14 | Swivel plate |
| 4 | Saw position 2 | 15 | Vice |
| 5 | Chips guard | 16 | Swivel ring |
| 6 | Locking handle | 17 | Clamping jaws made of cast aluminum |
| 7 | Type plate | 18 | Sliding jaws |
| 8 | ON/OFF button | 19 | Clamping screw (to loosen the motor) |
| 9 | Motor grip | 20 | Line laser |
| 10 | Battery | 21 | Line laser holder |
| 11 | Motor | 22 | Switch for the direction of rotation |

## 3.3 Characteristics

- Increased safety through standing pipe and rotating tool
- Self-centering clamping system with universally applicable cast aluminum clamping jaws
- Maintenance-free gears
- Right-angled, burr-free cutting surface and deformation-free pipe cross section
- Cold machining process
- Quick cutting action
- Easy and space-saving assembly
- Quick tool change
- Saw position 1: Cutting pipes. The saw blade and clamping jaws are close to one another to absorb vibrations when
- sawing
- Saw position 2: Cutting pipe elbows

Battery drive:

- Brushless battery drive
- Motor with high performance and small size
- No memory effect
- Single cell monitoring in rechargeable battery pack
- Electronic overload protection with integrated temperature monitor
- Robust rechargeable battery packs with capacity indicator
- Low self-discharge
- Environmentally friendly
- AIR COOLED technology for short charging times and a long service life

Electric drive:

- Speed-controlled electric motor with speed stabilization
- Inhibitor protection prevents an inadvertent startup of the machine after repeated power supply connection or in the case of voltage recovery after power failure
- Adjustment wheel for speed selection
- Robust marathon motor
- Overload protection

- Cut-off carbon brushes
- Carbon wear display

## 3.4 Accessories and consumables

Not included in scope of delivery.

**WARNING**

**Danger presented by using accessories that have not been approved.**

Various injuries and damage to property.

► Use only genuine tools, spare parts, operating materials and accessories from Orbitalum Tools.

► See product catalog "Orbital Welding" for a comprehensive overview of suitable accessories.

Download links PDF:

https://www.orbitalum.com/de/download.html

► Connect suitable accessories, see operating instructions of accessories.

**Quick mounting plate with screw clamps**

- Quick and easy assembly.
- Incl. 4 hexagon socket head screws for mounting the PS on the quick-mounting plate.

| Item | Code |
|---|---|
| Quick-mounting plate with screw clamps | 790 048 334 |

**Saw blades**

From the Orbitalum Tools Performance range.

| Pipe wall thickness | | Saw blade Ø | | Code |
|---|---|---|---|---|
| [mm] | [inch] | [mm] | [inch] | |
| 1.0 - 3.0 | 0,039 - 0,118 | 63 | 2,480 | 790 048 072 |
| 0.6 - 1.2 | 0,024 - 0,047 | 63 | 2,480 | 790 041 036 |

**Tripod**

- Made of aluminum.
- Suitable for PS 4.5, PS 4.5 Plus and GFX 3.0.
- Simple mounting of the saws directly on the tripod without mounting plate.
- Dismountable in a few steps.
- Storage in PS transport case possible.
- Space saving.
- Quick application.
- Easy handling.

| Item | Code |
|---|---|
| Tripod | 790 048 390 |

**Spare cable with swivel cable**

- Prevents twisting of the cable.
- For GF, RA and PS machines with protection class II.

| Item | Version | Cable length [m] | Code |
|---|---|---|---|
| Swivel cable complete | 230 V, 50/60 Hz EU | 4 | 790 142 081 |
| | 120 V, 50/60 Hz US/CA | 4 | 790 142 082 |
| | 230 V, 50/60 Hz CH | 4 | 790 142 083 |
| | 230 V, 50/60 Hz AU | 4 | 790 142 084 |
| | 120 V, 50/60 Hz GB | 4 | 790 142 087 |
| Swivel cable | 230 V, 50/60 Hz EU | 4 | 790 142 076 |
| | 120 V, 50/60 Hz US/CA | 4 | 790 142 077 |
| | 230 V, 50/60 Hz CH | 4 | 790 142 078 |
| | 120 V, 50/60 Hz GB | 4 | 790 142 079 |
| | 230 V, 50/60 Hz AU | 4 | 790 142 080 |

Swivel cable complete

Swivel cable

**Warning signs**

Warning signs overview with order numbers, *see chapter* Warning signs [▶ 16].

# 4 Scope of application

## 4.1 Application range

| MATERIAL TYPE | SAW POSITION | PIPE OUTER DIAMETER | | WALL THICKNESS | |
|---|---|---|---|---|---|
| | | [mm] | [inch] | [mm] | [inch] |
| Pipes | 1 | 6 - 120 | 0,236 - 4,724 | 0.6 - 3.0 | 0,024 - 0,118 |
| Elbows | 2 | 30 - 120 | 1,181 - 4,724 | | |

## 4.2 Materials

- Stainless steel with the following mass fractions:
  – Cr ≤ 12%; Mo < 2%; Ni < 26%
  – Cr ≤ 20%; Mo = 0%; Ni < 13%
  – Cr ≤ 28%; Mo < 8%; Ni < 30%
- High-alloy steels (stainless steel material no. 1.40... - 1.45... in accordance with DIN 17 455 and DIN 17 456)
- Unalloyed and low-alloyed steels
- High-temperature steels
- Aluminum
- Copper
- CuNi materials

Other machining ranges and materials upon request.

# 5 Technical specifications

## 5.1 Portable pipe saw PS

| MACHINE MODEL | | PS 4.5 PLUS | PS 4.5 PLUS BATTERY |
|---|---|---|---|
| Dimensions (l x w x h) | [mm] | 480 x 230 x 600 | 480 x 420 x 450 |
| | [inch] | 18.9 x 9.1 x 23.6 | 18.9 x 16.5 x 17.7 |
| Machine weight (without accessories and case) | [kg] | 23.6 | 22.0 |
| | [lbs] | 52.0 | 48.5 |
| Power | [W] | 1100 | - |
| | [hp] | 1.5 | - |
| Protection class | [Class] | Safety insulated in accordance with class II, DIN VDE 0740 | Safety insulated in accordance with class II, DIN VDE 0740 |
| Speed | [rpm] | 30 – 182 | 1st gear: 0 - 32<br>2nd gear: 0 - 118 |
| Versions | [V, Hz] | 110, 50/60<br>120, 50/60<br>230, 50/60 | 230, 50/60<br>115, 60 |
| Vibration level to EN 28662, Part 1 | [m/s²] | < 2.5 | < 2.5 |
| Sound pressure level at the workplace* | [dB (A)] | Approx. 78 | Approx. 78 |

** The sound pressure level measurement was carried out under normal operating conditions in accordance with EN 50144-1. As the noise level in unfavorable operating conditions can also rise above 80 dB (A), it is necessary to wear ear protection in accordance with DIN EN 352.*

## 5.2 Line laser

| | | |
|---|---|---|
| Dimensions (l x w) | [mm] | 68 x 15 |
| | [inch] | 2.7 x 0.59 |
| Weight | [g] | 30 |
| | [lbs] | 0,012 |
| Total emitted power | [mW] | 5 |
| | [HP] | 5x10-6 |
| Power for the classification | [µW] | < 390 |
| Beam range | [m] | 1 |
| | [inch] | 39.37 |
| Wave length | [nm] | 650 |
| Operating voltage | [V DC] | 2.8 to 4.5 |
| Operating current | [mA] | 20 |
| Operating temperature | [°C] | -10 to 40 |
| Storage temperature | [°C] | -40 to 80 |
| Laser class | [Class] | 1 |
| Automatic switch-off laser | [min] | 2 (To switch the line laser back on, press the red ON button twice.) |
| Battery type | | 2 x LR44 / AG13 |

# 6 Commissioning

## 6.1 Scope of delivery

| | | PS 4.5 PLUS | PS 4.5 PLUS BATTERY |
|---|---|---|---|
| Portable pipe saw | PCS. | 1 | 1 |
| Clamping jaws made of hardened cast aluminum | Set | 1 | 1 |
| Exchangeable batteries | PCS. | - | 2 |
| Charger | PCS. | - | 1 |
| Hard-sided transport case | PCS. | 1 | 1 |
| Saw blade (Code 790 048 072) | PCS. | 1 | 1 |
| Line laser** | PCS. | 1 | 1 |
| Tool bag (roll-up case code 790 048 345)* | PCS. | 1 | 1 |
| General pipe cutting and beveling machine safety information | PCS. | 1 | 1 |
| PS 4.5 Plus (battery) operating instructions and spare parts list download links PDF:<br>https://www.orbitalum.com/de/download.html | PDF | PDF | PDF |

*We reserve the right to make changes.*

*The tool key set includes the following:*

- *1 brush (code 790 041 017)*
- *1 each Allen key AF 2 (code 790 142 218), AF 2.5 (code 243 870 029), AF 5 (code 243 870 059),*
  *AF 6 (code 790 048 349), AF 8 (code 790 048 342)*

* 
- *1 tube GF TOP saw blade lubricant (code 790 060 228)*
- *10 coin cells 1.5 V (code 790 142 124)*
- *4 cylinder screws (118x80) for fastening the machine to the work bench*
- *1 combination wrench AF 22 (code 790 048 341)*
- *4 hexagon nuts (M8) (code 500 605 312)*
- *4 discs (8) (code 542 500 312)*

** *Line laser already mounted on machine on delivery*

# 7 Storage and transport

**CAUTION**

**Improper machine storage!**

Various injuries and damage to property.

► Store the machine in its original case and in dry conditions.

**DANGER**

**Fatal electric shock!**

► Before transportation or changing the workplace, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

**WARNING**

**During transport, the ON/OFF button could be pressed inadvertently, starting up the machine!**

Various injuries and damage to property.

► Before transportation or changing the workplace, switch off the machine, wait until the machine/tool stops running, pull the mains plug and set the transport lock.

► In the case of battery drives remove the battery and set the transport lock (switch lock) (center setting of the clockwise/counter-clockwise rotation). Cover the battery.

**WARNING**

**High speed when transporting the machine!**

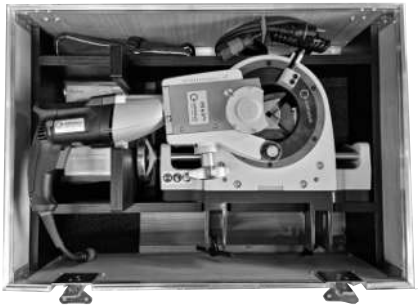
Risk of being hurt by lifting in the packaged state.

► Only transport and raise the pipe saw on a pallet over longer distances using appropriate lifting equipment.

► Transport the machine in the transport case using 2 persons. The case has adequate carry handles.

For a safe transport, the PS 4.5 Plus (battery) should be positioned in the transport case as shown in the two pictures below:

1. Turn the motor 90° on its own axis in the direction of the locking handle (*see chapt.* Cutting pipes or elbows in a cramped workplace [▶ 51]).
2. The vice (with or without quick mounting plate) should lie parallel to the length side of the case in the wooden enclosure.
3. The slide housing with motor then should be rotated approx. 70° sidewards, so that it fits into the case enclosure.



*PS 4.5 Plus electric* with *quick mounting plate*

*PS 4.5 Plus electric* without *quick mounting plate*

*PS 4.5 Plus battery* with *tripod*

*PS 4.5 Plus battery* without *quick mounting plate*

# 8 Set-up and mounting

**WARNING**

**When switching the motor on, the machine may revolve around the pipe uncontrollably, automatically!**

Various injuries and damage to property.

- ► In their home position, the saw blade or bevel cutter must not touch the pipe.
- ► Make sure that the slide housing is in the home position when the cutting process starts.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Before switching the motor on, make sure that the gap between the saw blade or bevel cutter and the pipe is sufficient, and that the pipe is securely clamped in the vice.
- ► Place sufficient supports under the tube.

**WARNING**

**Parts thrown off/tool breakage!**

Various injuries and damage to property.

- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do **not** run a new tool into the old cut because this can cause a repeat tool breakage
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42])and speed (*see chapt.* Determining and setting the speed [▸ 44]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

# 8.1 Mounting the machine on the work bench

***NOTICE!***

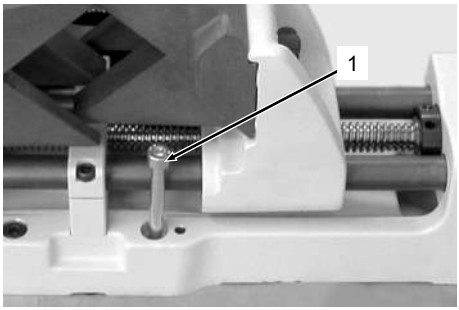
**Prior to initial operation of the portable pipe saw, the drive must be rotated 90° counter-clockwise so that the handle of the motor points toward the front (*see chapt.* Storage and transport [▶ 30]).**

Mount the portable pipe saw together with the vice, either:

- without quick mounting plate on the work bench (*see chapt.* Mounting the machine on the work bench without quick mounting plate [▶ 33]), or
- with quick mounting plate on the work bench (*see chapt.* Mounting the machine on the work bench with quick mounting plate [▶ 33]), or
- On the tripod (*see chapt.* Mounting the machine on the tripod [▶ 34]).

## 8.1.1 Mounting the machine on the work bench without quick mounting plate

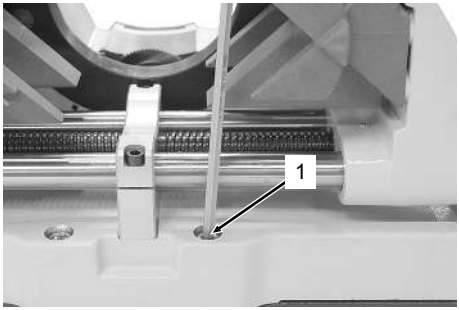
1. Use the pipe saw as a template to punch screw holes in the work bench.
2. Drill 4 holes with 9 mm Ø.
3. Fasten the pipe saw to the work bench using 4 hexagon socket head screws with nuts (1) included.




## 8.1.2 Mounting the machine on the work bench with quick mounting plate

The quick mounting plate with screw clamps is not included in the scope of delivery but is obtainable as an accessory (*see chapt.* Accessories and consumables [▶ 23]).

1. Screw the quick mounting plate to the work bench using the 2 screw clamps.
2. Screw the pipe saw onto the quick mounting plate using the 4 hexagon socket head screws (1) included.



### 8.1.3 Mounting the machine on the tripod

The tripod is not included in the scope of delivery but is obtainable as an accessory (*see chapt.* Accessories and consumables [▶ 23]).

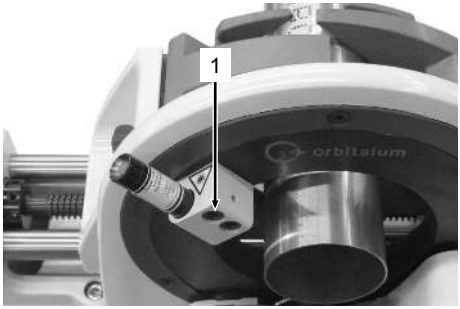
To mount the portable pipe saw on the tripod:

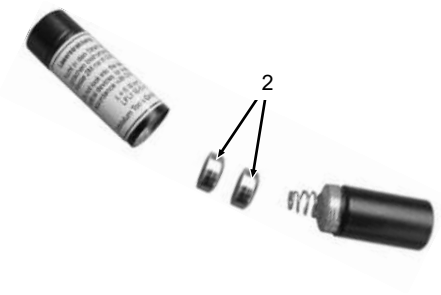
► Screw the pipe saw onto the tripod using the 4 hexagon socket head screws included.

## 8.2 Changing the line laser batteries

**CAUTION** **Opening, modifying or removing the protective covers and housings is prohibited, except to change the line laser batteries.**

1. Loosen the threaded pin M4x4 (1) (Code 445 001 003) of the laser holder by using Allen key SW2 to remove the laser from the cover plate.
2. Unscrew the line laser and replace the batteries (2) (pack of 10 button cells, 1.5 V = code 790 142 124).
3. Screw the parts of the line laser again.
4. Place the line laser back onto the holder, align and retighten it using the threaded pin M4x4 (3).



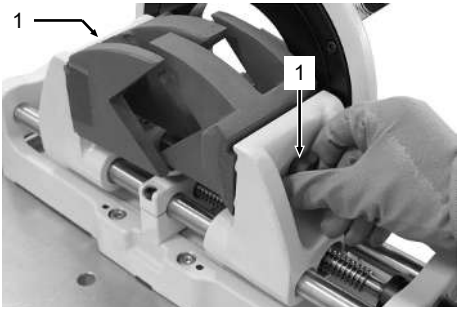
## 8.3 Mounting the clamping jaws on the vice

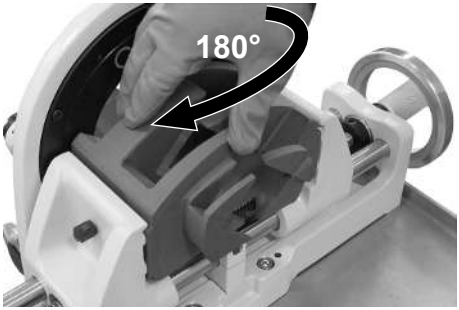
***NOTICE!***

**The PS 4.5 Plus (battery) is equipped with rotatable clamping jaws. By rotating the clamping jaws it is possible to process either small (< 45 mm) or large (> 45 mm) pipe diameters (*see chapt.* Application range [▶ 25]). On delivery the clamping jaws are already mounted on the PS 4.5 Plus (battery), with the result that it is possible to begin processing pipes > 45 mm.**

## 8.4 Disassembling clamping jaws

1. Detach 2 wing screws (1) on the sides of the vice.
2. Remove the clamping jaws and turn by 180°.
3. Refasten the clamping jaws with the 2 wing screws.




## 8.5 Which saw position for which application?

***NOTICE!***

**Use the pipe saw for cutting pipes and pipe elbows only. The user alone is liable for any damage and injuries arising from improper use.**

**Saw blade clamping point 1:**

Cutting pipes

**Saw blade clamping point 2:**

Cutting pipe elbows


## 8.6 Mounting the saw blade at saw blade clamping point 1

**WARNING**

**Flying hot and sharp chips, pipe surfaces, cutting edges and tools!**

Danger of injury to eyes and hands.

- ► Do **not** reach into the rotating tool while working.
- ► **Never** work without a cover hood installed or protection.
- ► Wear recommended protective clothing, as described in chap. Basic safety precautions [▸ 9].
- ► At the end of each working cycle, switch off the machine, wait until the machine/tool stops running and pull the mains plug or remove the battery. Remove chips with snug-fitting safety shoes (according to DIN EN 388 and EN 407) with a suitable tool (e.g. tongs).
- ► Ensure that the cover hood or protection is functional.

**WARNING**

**When switching the motor on, the machine may revolve around the pipe uncontrollably, automatically!**

Various injuries and damage to property.

- ► In their home position, the saw blade or bevel cutter must not touch the pipe.
- ► Make sure that the slide housing is in the home position when the cutting process starts.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Before switching the motor on, make sure that the gap between the saw blade or bevel cutter and the pipe is sufficient, and that the pipe is securely clamped in the vice.
- ► Place sufficient supports under the tube.

**WARNING**

**Parts thrown off/tool breakage!**

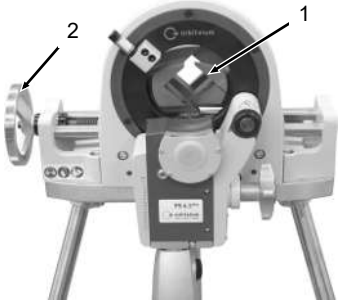
Various injuries and damage to property.

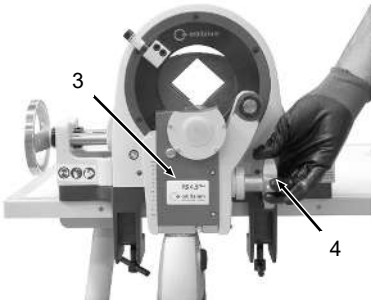
- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do **not** run a new tool into the old cut because this can cause a repeat tool breakage.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42]) and speed (*see chapt.* Determining and setting the speed [▸ 44]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

***NOTICE!***

**Mounting or replacing the saw blades cannot be done when a pipe is clamped in the vice. Should the occasion arise, remove the pipe before mounting the saw blade (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42]).**

1. For a better access to the saw blade, open the clamping jaws (1) by turning the hand wheel (2) counter-clockwise as far as the limit stop.
2. Move the slide (3) upward by turning the locking handle (4) clockwise as far as the limit stop.



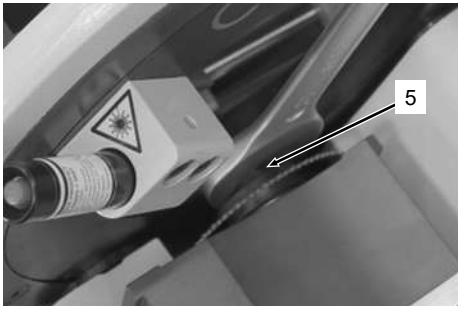



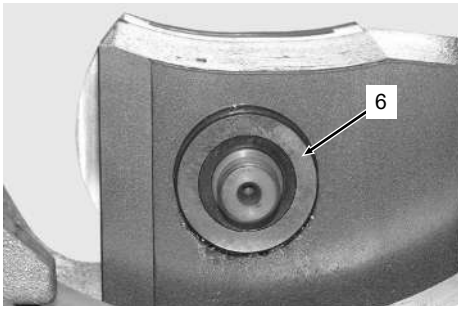
**WARNING**

**Pressing the ON/OFF button unintentionally!**

- ► **Before** a tool change shut the machine down and wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery.
- ► During a tool change put every finger of your free hand around the handle below the ON/OFF button (see the following figure).

3. Loosen the saw blade nut (5) using a combination wrench AF 22 (attention: counter-clockwise thread!).
4. Remove the saw blade nut and the saw blade from the shaft.
5. Clean the saw blade shaft, the contact surface of the clamp bush and surroundings using a brush.



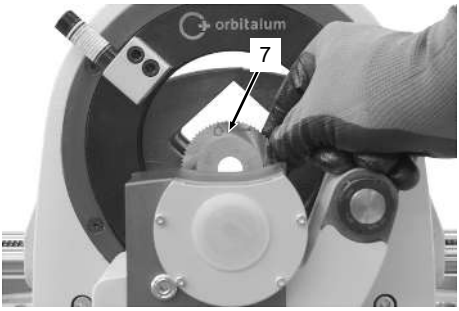

**CAUTION**

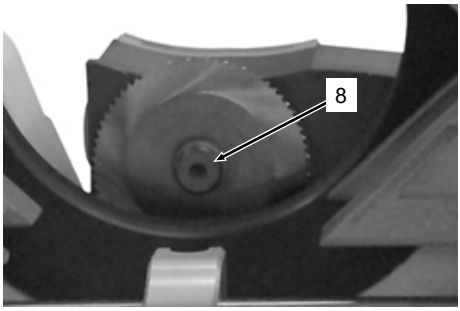
**Damage to property!**

- ► Saw blades must be free of chips and dirt.
- ► Only use original Orbitalum Tools saw blades.
- ► Put the saw blade onto the shaft with the result that the inscription points to slide. The toothing then points in the right direction.

6. Mount the saw blade (7) on the shaft (8) with the inscription pointing to the fixed clamping disc.

7. Place the saw blade nut (5) back onto the shaft (8) and tighten slightly using a combination wrench AF 22 (counter-clockwise thread).




## 8.7 Mounting the saw blade at saw blade clamping point 2

**WARNING**

**Flying hot and sharp chips, pipe surfaces, cutting edges and tools!**

Danger of injury to eyes and hands.

- ► Do **not** reach into the rotating tool while working.
- ► **Never** work without a cover hood installed or protection.
- ► Wear recommended protective clothing, as described in chap. Basic safety precautions [▶ 9].
- ► At the end of each working cycle, switch off the machine, wait until the machine/tool stops running and pull the mains plug or remove the battery. Remove chips with snug-fitting safety shoes (according to DIN EN 388 and EN 407) with a suitable tool (e.g. tongs).
- ► Ensure that the cover hood or protection is functional.

**WARNING**

**When switching the motor on, the machine may revolve around the pipe uncontrollably, automatically!**

Various injuries and damage to property.

- ► In their home position, the saw blade or bevel cutter must not touch the pipe.
- ► Make sure that the slide housing is in the home position when the cutting process starts.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Before switching the motor on, make sure that the gap between the saw blade or bevel cutter and the pipe is sufficient, and that the pipe is securely clamped in the vice.
- ► Place sufficient supports under the tube.

**WARNING**

**Parts thrown off/tool breakage!**

Various injuries and damage to property.

- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do **not** run a new tool into the old cut because this can cause a repeat tool breakage.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▶ 42]) and speed (*see chapt.* Determining and setting the speed [▶ 44]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

***NOTICE!***

**Mounting or replacing the saw blades cannot be done when a pipe is clamped in the vice. Should the occasion arise, remove the pipe before mounting the saw blade (*see chapt.* Clamp pipe and adjust pipe dimension [▶ 42]).**

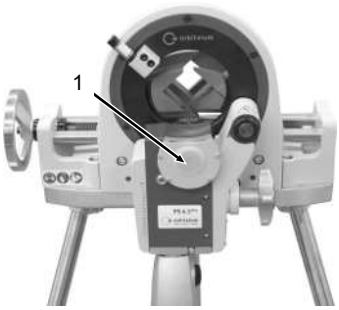
1. Remove the cover (1).

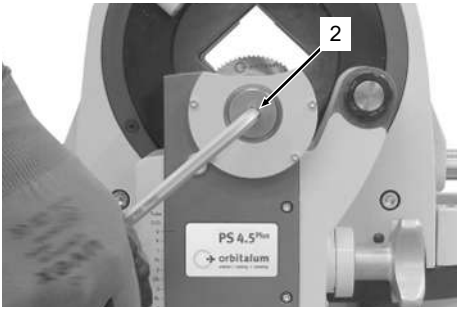
**WARNING**

**Pressing the ON/OFF button unintentionally!**

- ► **Before** a tool change shut the machine down and wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery.
- ► During a tool change put every finger of your free hand around the handle below the ON/OFF button (see the following figure).

2. Loosen the clamping screw (2) using an Allen key.
3. If need be, remove the previously installed saw blade.
4. Clean the saw blade shaft and surroundings using a brush.



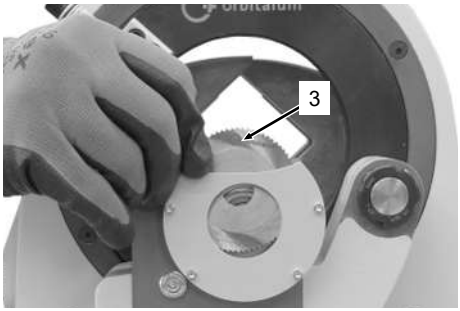



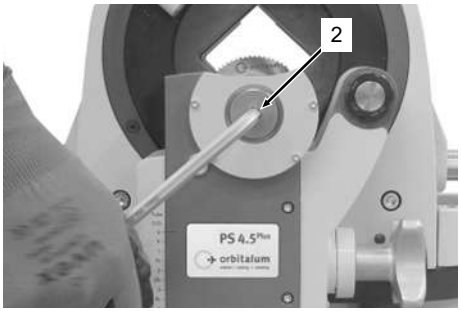

**CAUTION**

**Damage to property!**

- ► Saw blades must be free of chips and dirt.
- ► Only use original Orbitalum Tools saw blades.
- ► Put the saw blade onto the shaft with the result that the inscription points to slide. The toothing then points in the right direction.

5. Mount the saw blade (3) on the saw blade shaft.
6. Slightly tighten the clamping screw (2) **clockwise** using an Allen key.




## 8.8 Clamp pipe and adjust pipe dimension

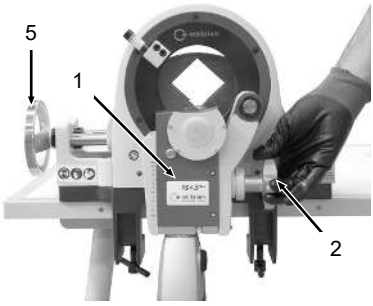
**WARNING**

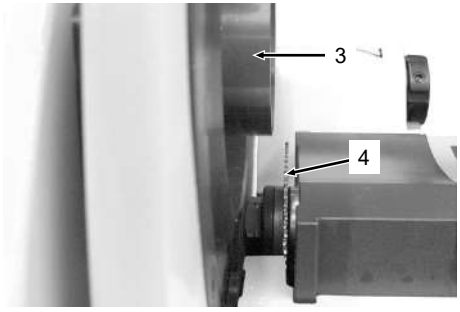
**When switching the motor on, the machine may revolve around the pipe uncontrollably, automatically!**

Various injuries and damage to property.

- ► In their home position, the saw blade or bevel cutter must not touch the pipe.
- ► Make sure that the slide housing is in the home position when the cutting process starts.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Before switching the motor on, make sure that the gap between the saw blade or bevel cutter and the pipe is sufficient, and that the pipe is securely clamped in the vice.
- ► Place sufficient supports under the tube.

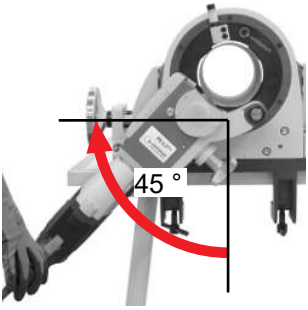
1. Use the locking handle (2) to turn the slide (1) with saw blade down to the lowest position (to the largest pipe dimension).
2. Move the pipe (3) toward the saw blade (4); clamp using the hand wheel (5).

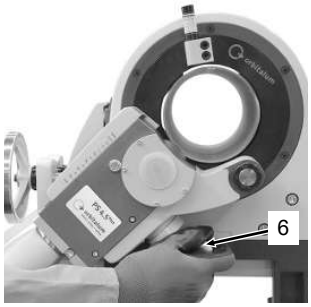


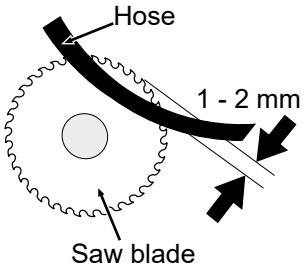



3. Use the motor grip to swing the motor approx. 45° upward clockwise until the saw blade reaches the cutting position.

4. To adjust the saw blade position, turn the locking handle (6) until the teeth of the saw blade reach approx. 1 – 2 mm into the pipe.



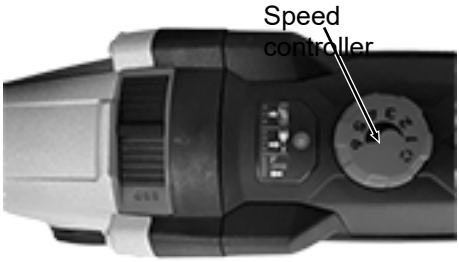

5. Swing the motor back to its original position by means of the grip.

6. Move the pipe forward until reaching the desired point of separation and fasten it using the clamping jaw turning handle.

# 8.9 Determining and setting the speed

## 8.9.1 Electric motor

| PIPE MATERIAL | SPEED SETTING (STAGE) | SPINDLE SPEED (RPM) | GEAR SWITCH (STAGE) |
|---|---|---|---|
| Stainless steel (material no. 1.40...-1.45...) with a wall thickness of 1 mm to 3 mm max. | 4 -6 | 120 – 182 | 2 |
| High-performance materials (nickel chrome molybdenum alloys, Hastelloy and Inconel alloys) | 1 – 4 | 30 – 120 | 2 |





***NOTICE!***

► Select low speed for large pipe diameters and for thick-walled pipes.

***NOTICE!***

► Do not operate motor in pulse setting

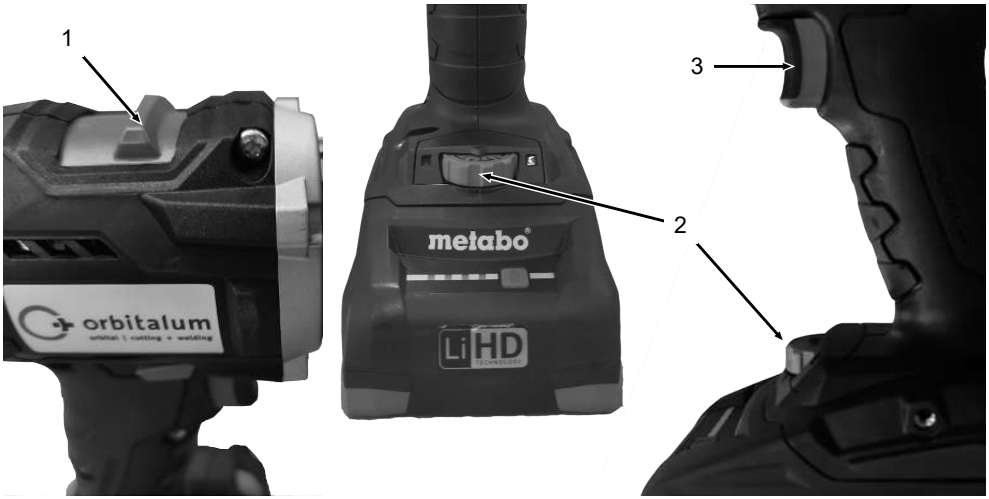
## 8.9.2 Battery motor

***NOTICE!***

**The battery drives have a torque pre-selection.**

► Only work at maximum torque (max. Nm)!

| PIPE MATERIAL | TORQUE SETTING (STAGE) | SPINDLE SPEED (RPM) | GEAR SWITCH (STAGE) |
|---|---|---|---|
| Stainless steel (material no. 1.40...-1.45...) with a wall thickness of 1 mm to 3 mm max. | Max. | 118 | 2 |
| High-performance materials (nickel chrome molybdenum, Hastelloy and Inconel alloys) | Max. | 32 | 1 |




| | | | |
|---|---|---|---|
| 1 | Gear switch (stage1 or stage 2) | 3 | ON/OFF button |
| 2 | Torque adjusting wheel | | |

# 9 Operation

**DANGER**

**Machine startup due to unintentionally pressing the ON/OFF button!**

Fatal electric shock.

Various injuries and damage to property.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

**DANGER**

**When the slide housing is rotating, excess lubricant can get into the motor unit!**

Fatal electric shock.

► Remove excess lubricant from the machine after every cut.

**DANGER**

**Unexpected start up!**

Severe injury or death.

► Electric drive: Before connecting the machine to the power supply the ON/OFF switch must be switched off.

► Battery drive: When connecting the battery to the motor, do not press the ON/OFF button.

**DANGER**

**Catching of loose/long clothing, long hair or jewelry by rotating machine parts!**

Severe injury or death.

► Wear tight-fitting clothing when using the machine.

► Secure long hair against being caught.

**WARNING**

**Parts thrown off/tool breakage!**

Various injuries and damage to property.

- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do **not** run a new tool into the old cut because this can cause a repeat tool breakage
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42])and speed (*see chapt.* Determining and setting the speed [▸ 44]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

**WARNING**

**Danger from falling machine and pipe!**

Irreversible crushing.

- ► Check machine condition and secure it to prevent it falling.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Place sufficient supports under the tube.

**WARNING**

**Fingers jammed between the clamping unit, clamping shells and tube!**

Irreversible crushing.

- ► Do not place fingers between the clamping unit, clamping shells and tube.
- ► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, shut the machine down, wait until the machine/tool stops running and pull the mains plug or remove the battery and cover the battery.

**WARNING**

**Body parts can get caught between the cutting tool and the pipe!**

Severe injury.

**Do not** put body parts between the cutting tool and the pipe.

**WARNING**

**Flying hot and sharp chips, pipe surfaces, cutting edges and tools!**

Danger of injury to eyes and hands.

- ► Do **not** reach into the rotating tool while working.
- ► **Never** work without a cover hood installed or protection.
- ► Wear recommended protective clothing, as described in chap. Basic safety precautions [▶ 9].
- ► At the end of each working cycle, switch off the machine, wait until the machine/tool stops running and pull the mains plug or remove the battery. Remove chips with snug-fitting safety shoes (according to DIN EN 388 and EN 407) with a suitable tool (e.g. tongs).
- ► Ensure that the cover hood or protection is functional.

**CAUTION**

**Restarting the machine after blockage!**

Various injuries and damage to property.

- ► In case of blockage, always disconnect the machine from the power supply before eliminating the problem. In the case of battery drives remove the battery.
- ► If necessary, remove tensioned parts before restarting the machine.

**CAUTION**

**Vapor when working with lubricants!**

Damage to lungs, skin and the environment.

- ► Only use original lubricant recommended by Orbitalum Tools.

# 9.1 Shutdown (including in case of emergency)

**WARNING**

**EMERGENCY STOP function not available by unplugging the power plug!**

Various injuries and damage to property.

- ► **Do not** use angled power plugs.
- ► **Do not** use click-in socket outlets and click-in power plugs (blue CEE power plugs) for power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable.
- ► Only use genuine spare parts from Orbitalum Tools.
- ► Ensure free access to the power plug.

In order to be able to stop the machine (including in an emergency), carry out respective step and immediately remove from danger zone until the machine comes to a halt:

With the Electric variant:

**If the locking button (1) is not locked:**

► Release the ON/OFF button (2).

**If the locking button (1) is locked:**

► Press and release the ON/OFF button (2).

**If the ON/OFF button (2) no longer functions:**

► Unplug the power plug, or vacate the danger zone as quickly as possible and then unplug the power plug.


With the battery variant:

► Release the ON/OFF button (3).
If the ON/OFF switch (3) no longer functions, remove the battery.

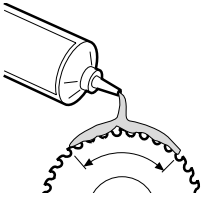
## 9.2 Cutting pipes

The process is the same in saw blade positions 1 and 2.

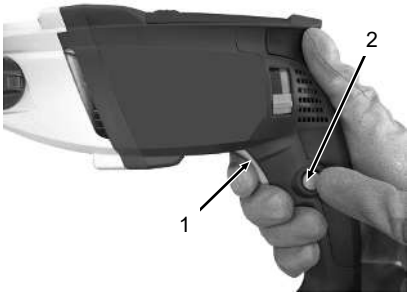
1. Tighten the saw blade.
2. Set pipe dimension and penetration depth (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42]).
3. Mark the point of separation on the pipe.
4. Move the pipe forward in the vice until reaching the desired pipe length and clamp it (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42])). Make sure that clamping surfaces re clean.

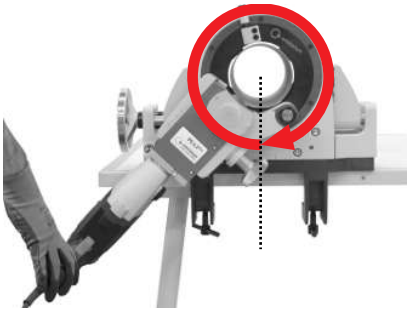
***NOTICE!***

- ► Apply saw blade lubricant to the saw blade **after each cut**.
- ► Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP).
- ► Keep machine clean and thoroughly remove lubricant residue on the machine.
- ► The clamping area of the clamping jaws must be free of dirt, chips and lubricants.



5. Connect the pipe saw to the power supply.
6. Switch the motor on by pressing the ON/OFF button (1) and keep it pressed; lock it using the locking button (2).



7. Select the speed stage (*see chapt.* Determining and setting the speed [▸ 44]).
8. Holding pipe saw by the grip slowly turn the saw clockwise until the pipe wall is pierced.

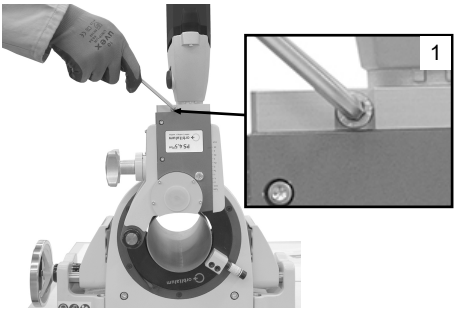
9. Continue turning until the pipe is cut off.
10. Turn the pipe saw **counter-**clockwise back to the home position.
11. Switch the motor off via the ON/OFF button.

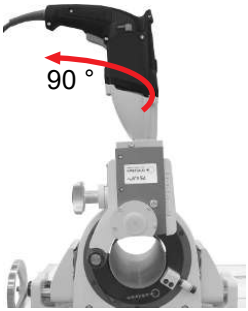
## 9.2.1 Cutting pipes or elbows in a cramped workplace

To cut pipes or pipe elbows in a cramped environment the saw's swivel radius can be reduced by turning the motor.

1. Loosen the screw (1) using an Allen key (AF 5).
2. The motor can now be turned by 90°.
3. Retighten the screw (1).

The working procedure is the same as described in *chapt.* Cutting pipes [▶ 50].



# 10 Maintenance, service and troubleshooting

***NOTICE!***

**Some of the tasks named are heavily dependent on use and ambient conditions. The stated cycles are minimum values. In individual cases, different maintenance cycles are possible. To ensure machine safety, have the maintenance performed annually by authorized service points with VDE testing. Should the machine not function as described above, it must also be sent to an authorized service point.**

**DANGER**

**Risk of death from electric shock!**

Non-compliance can result in death or severe injury.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

**DANGER**

**Electrical hazards from improperly assembled electrical system!**

Fatal electric shock.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

► Repair and maintenance work on the electrical equipment may only be carried out by a qualified electrician.

► Check components for damage, e.g. cables, plugs

## 10.1 Maintenance

| TIME FRAME | ACTIVITY |
|---|---|
| Before beginning work | ► Remove any chips and dirt from the saw blades. |
| | ► Remove any chips and dirt from the sliding jaw guide and threaded spindle on the vice. |
| Daily | ► Remove the saw blade and brush away any chips. |
| At every cleaning, at every tool change | ► Clean the shafts using a cloth or brush. |
| | ► Brush away any chips between the slide and the swivel plate; to do this, move the slide to the upper and lower position. |

### 10.1.1 Line laser

- ► The laser does not require servicing.
- ► Maintenance work on the laser is not permitted.
- ► The laser is to be returned to the factory for any maintenance or repair work that may be required.
- ► Opening, modifying or removing the protective covers or housings is prohibited, except to change the batteries.

## 10.2 What to do if...? – General troubleshooting

| MALFUNCTION | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| Electric motor of the pipe saw is not running<br>(the electronic signal indicator of the motor lights up). | Rapid flashing:<br>**Restart protection.**<br>For safety reasons, the machine will not restart automatically when voltage is restored following a power failure even if it was switched on prior to the failure. | ► Switch the pipe saw motor off and back on. |
| | Slow flashing:<br>**The carbon brushes are worn out.**<br>The carbon brushes are almost completely worn out. If the carbon brushes are worn out completely, the machine will switch off automatically. | ► Have the carbon brushes replaced by the after-sales service personnel. |
| | Continuous lights:<br>**Overload.**<br>If the machine is overloaded for a persistently lengthy period of time, its power input will be reduced to prevent the motor from heating further. | ► Disconnect the machine from power supply and let it cool down for a few minutes. |
| The pipe saw cannot turn. | The pipe dimension has not been set correctly. | ► Set the correct pipe dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▸ 42]). |
| The saw blade is not cutting and is slipping. | The hexagon nut on the saw blade shaft has not been tightened. | ► Tighten the hexagon nut slightly. |

| MALFUNCTION | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| The saw blade is not cutting. | The saw blade was mounted incorrectly. | ► Mount the saw blade correctly (*see chapt.* Mounting the saw blade at saw blade clamping point 1 [▶ 36] or Mounting the saw blade at saw blade clamping point 2 [▶ 39]). |
| | The saw blade is worn out. | ► Replace the saw blade. |
| The pipe is not cut through. | The pipe dimension has not been set correctly. | ► Set the correct pipe dimension (*see chapt.* Clamp pipe and adjust pipe dimension [▶ 42]). |
| Poor machining quality on the cut surfaces. | The tool is blunt. | ► Use a new original tool from Orbitalum Tools. |
| | Inadequate tool lubrication. | ► Lubricate the saw blade. |
| | Incorrect speed setting. | ► Set the speed according to the table (*see chapt.* Setting the speed). |

## 10.3 Servicing/Customer service

The following data are required to order spare parts:

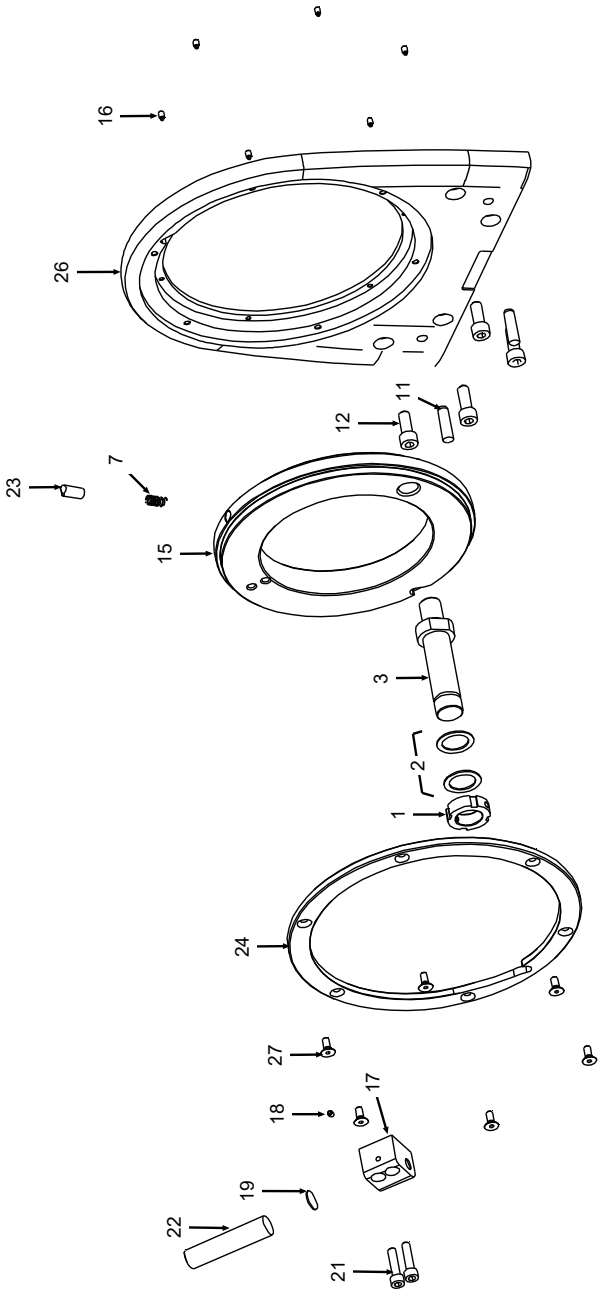
- Machine model: Portable pipe saw PS 4.5 Plus battery, for example
- Machine No.: See type plate

► For ordering spare parts, see the spare part list.

► Contact your local branch directly in order to eliminate problematic situations.

# 11 ERSATZTEILLISTE / SPARE PARTS LIST

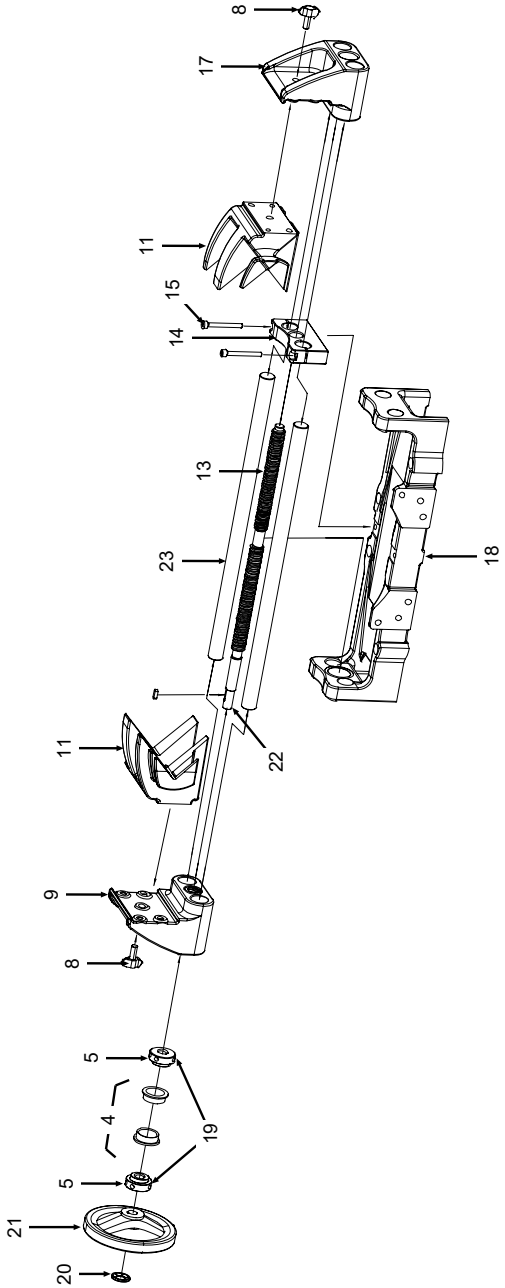
## 11.1 Lagerflansch | Bearing flange



| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|
| 1 | 790 048 316 | 1 | Wellenmutter M20x1<br>Shaft nut M20x1 |
| 2 | 554 307 020 | 2 | Passscheibe DIN988-20x28x1.0<br>Adjusting washer DIN988-20x28x1.0 |
| 3 | 790 048 108 | 1 | Lagerbolzen M16x1-M20x1<br>Bearing bolt M16x1-M20x1 |
| 7 | 790 048 126 | 1 | Druckfeder 0.8x7.1x23<br>Pressure spring 0.8x7.1x23 |
| 11 | 565 808 524 | 2 | Zylinderstift DIN7979/ISO8735-8x30-A-ST<br>Cylinder pin DIN7979/ISO8735-8x30-A-ST |
| 12 | 305 505 269 | 4 | Zylinderschraube ISO4762-M8x20-8.8-ZN<br>Cylinder screw ISO4762-M8x20-8.8-ZN |
| 15 | 790 048 110 | 1 | Lagerring 120<br>Bearing ring 120 |
| 16 | 790 048 184 | 6 | Druckschraube M4x4<br>Pressure screw M4x4 |
| 7 | 790 048 124 | 1 | Halter INDICUT<br>Holder INDICUT |
| 18 | 445 001 003 | 1 | Gewindestift DIN913-M4x4-45H<br>Grub screw DIN913-M4x4-45H |

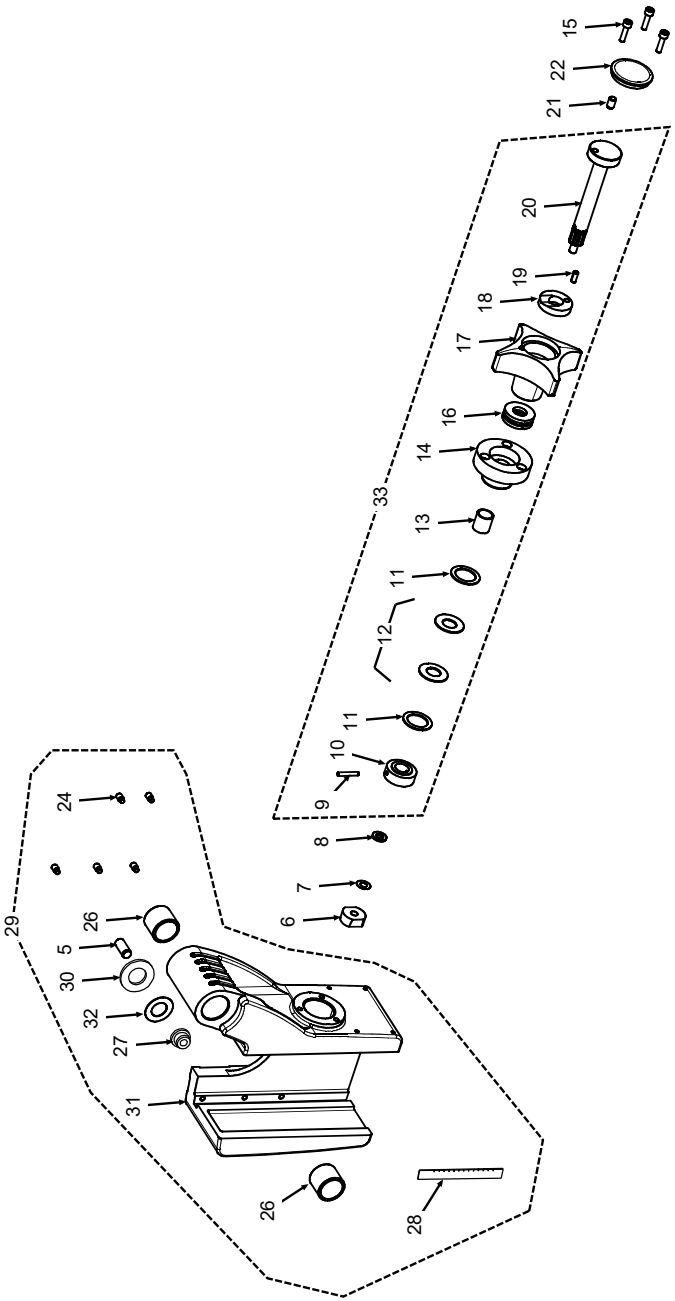
| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|
| 19 | 790 142 479 | 1 | PLEXIGLAS D15 mm<br>PLEXIGLAS D15 mm |
| 21 | 305 805 219 | 2 | Zylinderschraube DIN7984-M6x25-8.8-ZN<br>Cylinder screw DIN7984-M6x25-8.8-ZN |
| 22 | 790 142 125 | 1 | INDICUT<br>INDICUT |
| | 790 142 135 | 1 | INDICUT US<br>INDICUT US |
| 23 | 790 048 123 | 1 | Einraststift<br>Locking pin |
| 24 | 790 048 147 | 1 | Führungsring PS 4.5<br>Guide ring PS 4.5 |
| 26 | 790 048 146 | 1 | Lagerflansch<br>Bearing flange |
| 27 | 302 301 164 | 6 | Senkschraube DIN7991-M5x12-8.8<br>Countersunk screw DIN7991-M5x12-8.8 |
| 19 | 790 142 479 | 1 | PLEXIGLAS D15 mm<br>PLEXIGLAS D15 mm |
| 21 | 305 805 219 | 2 | Zylinderschraube DIN7984-M6x25-8.8-ZN<br>Cylinder screw DIN7984-M6x25-8.8-ZN |

## 11.2 Schraubstock komplett | Vice complete

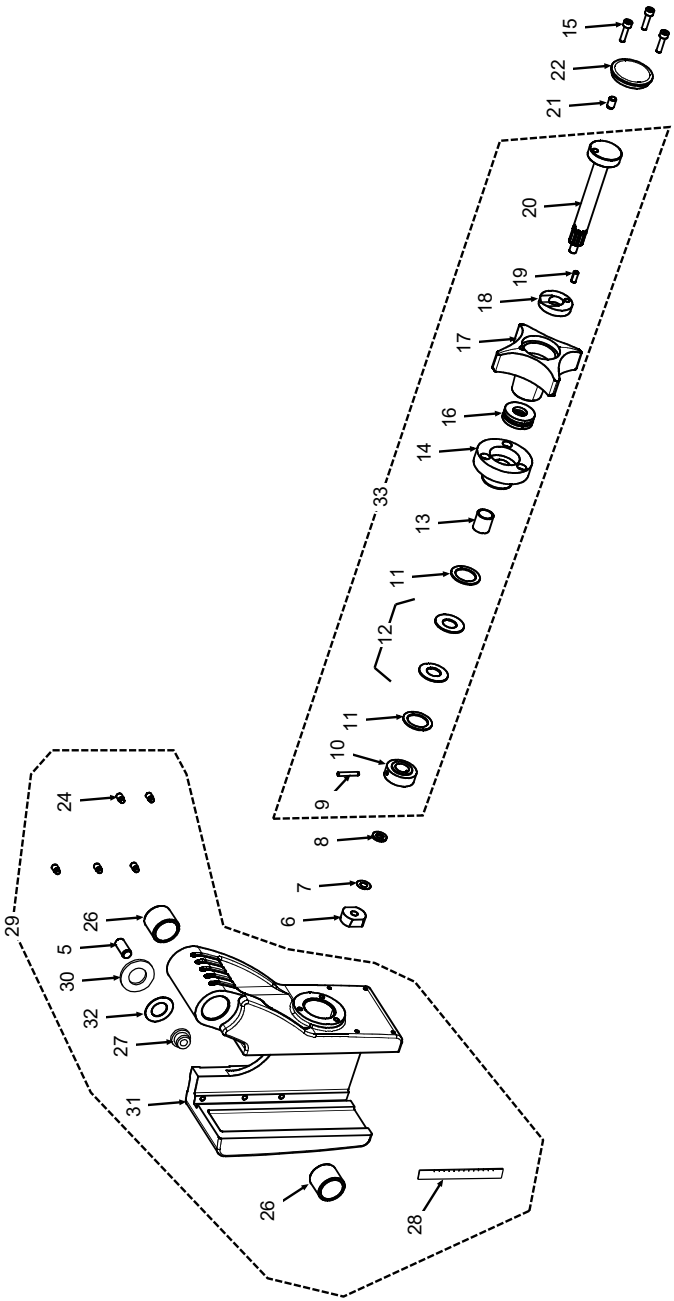


| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 4 | 790 048 128 | 2 | Bundbuchse<br>Flange bushing | 19 | 445 201 213 | 2 | Gewindestift DIN915-M6x10-45H<br>Grub screw DIN915-M6x10-45H |
| 5 | 790 048 127 | 2 | Stellring<br>Adjusting ring | 20 | 790 048 251 | 1 | Sicherungsscheibe STARLOCK D12 (399417)<br>Lock washer STARLOCK D12 (399417) |
| 8 | 790 048 323 | 2 | Flügelschraube M8x20<br>Wing screw M8x20 | 21 | 790 048 252 | 1 | Handrad GN-322-125-K12-A<br>Handwheel GN-322-125-K12-A |
| 9 | 790 048 300 | 1 | Gleitbacke PS 4.5, links<br>Slide jaw PS 4.5, left-hand | 22 | 565 000 116 | 1 | Passfeder DIN6885-A4x4x14<br>Fitting key DIN6885-A4x4x14 |
| 11 | 790 048 380 | 1 | Spannbackenpaar PS 4.5<br>Clamping jaws PS 4.5, pair | 23 | 790 049 320 | 2 | Führungswelle<br>Guide shaft |
| 13 | 790 048 350 | 1 | Trapezgewindespindel TR18x4<br>Trapezoidal thread spindle TR18x4 | | | | |
| 14 | 790 048 314 | 1 | Lagerblock PS<br>Bearing block PS | | | | |
| 15 | 305 501 232 | 2 | Zylinderschraube ISO4762-M6x50-8.8<br>Cylinder screw ISO4762-M6x50-8.8 | | | | |
| 17 | 790 048 305 | 1 | Gleitbacke PS 4.5, rechts<br>Slide jaw PS 4.5, right-hand | | | | |
| 18 | 790 048 302 | 1 | Schraubstockgehäuse<br>Vice housing | | | | |

## 11.3 Schwenkplatte mit Zustelleinheit | Swivel plate with feed unit



| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 5 | 790 048 205 | 1 | Steuerstift<br>Control pin | 13 | 790 048 218 | 1 | Buchse SKF-GLY. PG 121415F 12x14x15<br>Bushing SKF-GLY. PG 121415F 12x14x15 |
| 6 | 790 048 178 | 1 | Keilscheibe<br>Wedge plate | 14 | 790 048 172 | 1 | Flanschnabe<br>Flange hub |
| 7 | 554 307 106 | 1 | Passscheibe DIN988-6x12x0.1<br>Adjusting washer DIN988-6x12x0.1 | 15 | 305 505 116 | 3 | Zylinderschraube ISO4762-M4x16-10.9-ZN<br>Cylinder screw ISO4762-M4x16-10.9-ZN |
| 8 | 554 307 154 | 1 | Passscheibe DIN988-6x12x0.15<br>Adjusting washer DIN988-6x12x0.15 | 16 | 790 048 270 | 1 | Axial Rillenkugellager DIN711-51101<br>Axial grooved ball bearing DIN711-51101 |
| | 554 307 256 | 1 | Passscheibe DIN988-6x12x0.25<br>Adjusting washer DIN988-6x12x0.25 | 17 | 790 048 182 | 1 | Sterngriff<br>Star grip |
| | 554 307 010 | 1 | Passscheibe DIN988-6x12x1.0<br>Adjusting washer DIN988-6x12x1.0 | 18 | 790 048 176 | 1 | Kurvenscheibe<br>Cam plate |
| 9 | 565 800 219 | 1 | Zylinderstift ISO2338-3M6x20-ST<br>Cylinder pin ISO2338-3M6x20-ST | 19 | 566 958 113 | 1 | Spannstift ISO8752-4x10-ST<br>Dowel pin ISO8752-4x10-ST |
| 10 | 790 048 180 | 1 | Klemmring<br>Clamping ring | 20 | 790 048 174 | 1 | Antriebswelle<br>Drive shaft |
| 11 | 554 307 018 | 2 | Passscheibe DIN988-18x25x1.0<br>Adjusting washer DIN988-18x25x1.0 | 21 | 790 048 272 | 1 | Kugeldruckschraube NLM07110-10610M6x18.8<br>Ball press. screw NLM07110-10610M6x18.8 |
| 12 | 790 048 269 | 2 | Tellerfeder 25.0x12.2x1.0<br>Cup spring 25.0x12.2x1.0 | 22 | 790 048 330 | 1 | Abdeckung GPN910/3790 (KAPSTO)<br>Cover GPN910/3790 (KAPSTO) |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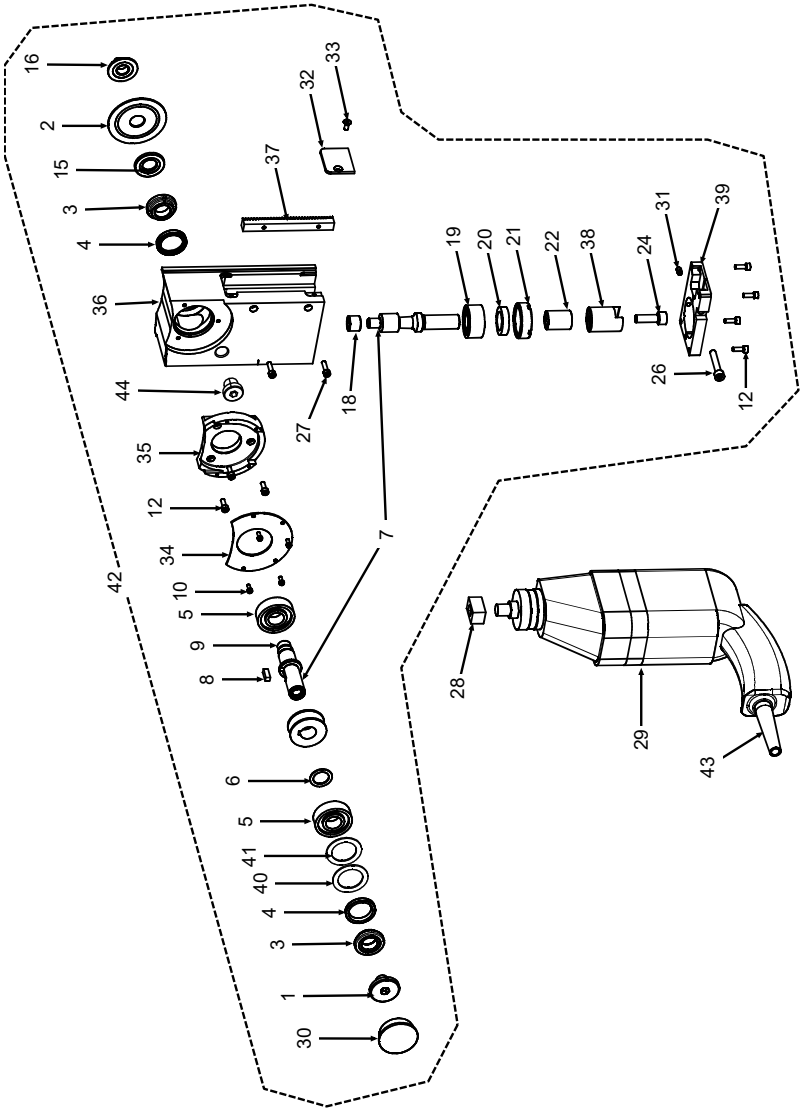
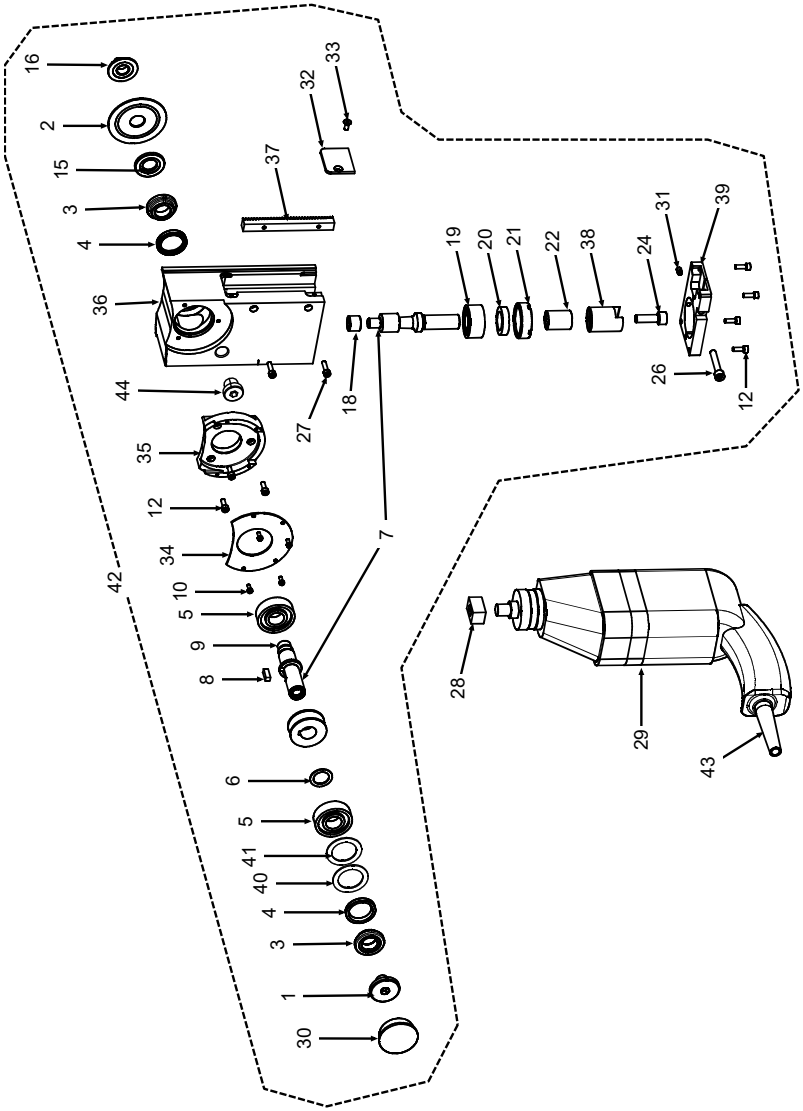
| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|
| 24 | 790 046 165 | 5 | Druckschraube M5x8.5<br>Pressure screw M5x8.5 |
| 26 | 790 048 333 | 2 | Gleitlager 20x24x20<br>Slide bearing 20x24x20 |
| 27 | 790 048 141 | 1 | Buchse<br>Bushing |
| 28 | 790 048 221 | 1 | PS 4.5 Skala MM<br>PS 4.5 scale MM |
| 29 | 790 048 145 | 1 | Schwenkplatte, kpl.<br>Swivel plate, cpl. |
| 30 | 790 048 142 | 1 | Abstreifer<br>Washer |
| 31 | 790 048 140 | 1 | Schwenkplatte<br>Swivel plate |
| 32 | 790 048 143 | 1 | Wellenfeder KAS27<br>Shaft spring KAS27 |
| 33 | 790 048 256 | 1 | Zustelleinheit PS, vormontiert<br>Feed unit PS, pre-mounted |

## 11.4 Schieber (Elektro) | Slide (electric)



| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 1 | 790 048 216 | 1 | Spannschraube<br>Clamping screw | 12 | 305 505 114 | 7 | Zylinderschraube ISO4762-M4x12-10.9-ZN<br>Cylinder screw ISO4762-M4x12-10.9-ZN |
| 2 | auf Anfrage<br>on request | - | Sägeblatt<br>Saw blade | 15 | 790 044 192 | 1 | Scheibe SPEZIAL ab 6 mm<br>Washer SPECIAL from 6 mm |
| 3 | 790 041 208 | 2 | Klemmbuchse<br>Clamping sleeve | 16 | 790 044 191 | 1 | Mutter SPEZIAL M14x1.5, links<br>Nut SPECIAL M14x1.5, left |
| 4 | 790 041 207 | 2 | INA-Dichtring GF 24x32x4<br>INA seal GR 24x32x4 | 18 | 790 041 190 | 1 | Lagerbuchse 10x16x11<br>Bearing bush 10x16x11 |
| 5 | 610 102 017 | 2 | Rillenkugellager DIN625-6203-Normal-SKF<br>Grooved ball bearing DIN625-6203Norm-SKF | 19 | 612 032 015 | 1 | Schrägkugellager DIN6283202-A-Norm.-SKF<br>Angular ball b. DIN6283202-A-Norm-SKF |
| 6 | 554 607 017 | 1 | Passscheibe DIN988-17x24x1.0<br>Adjusting washer DIN988-17x24x1.0 | 20 | 624 541 201 | 1 | Wellendichtring DIN3760-A20x30x7<br>Shaft seal DIN3760-A20x30x7 |
| 7 | 790 041 400 | 1 | Schneckenwelle und Rad<br>Worm shaft and wheel | 21 | 790 048 246 | 1 | Gewindering M38x1.5<br>Threaded ring M38x1.5 |
| 8 | 790 041 186 | 1 | Passfeder DIN6885-B5x5x14<br>Fitting key DIN6885-B5x5x14 | 22 | 790 048 244 | 1 | Hülse<br>Sleeve |
| 9 | 790 048 214 | 1 | Arbeitsspindel<br>Work spindle | 24 | 302 301 269 | 1 | Senkschraube DIN7991-M8x20-8.8<br>Countersunk screw DIN7991-M8x20-8.8 |
| 10 | 305 005 072 | 4 | Zylinderschraube ISO1207-M3x8-ZN<br>Cylinder screw ISO1207-M3x8-ZN | 26 | 305 505 226 | 1 | Zylinderschraube ISO4762-M6x35-8.8-ZN<br>Cylinder screw ISO4762-M6x35-8.8-ZN |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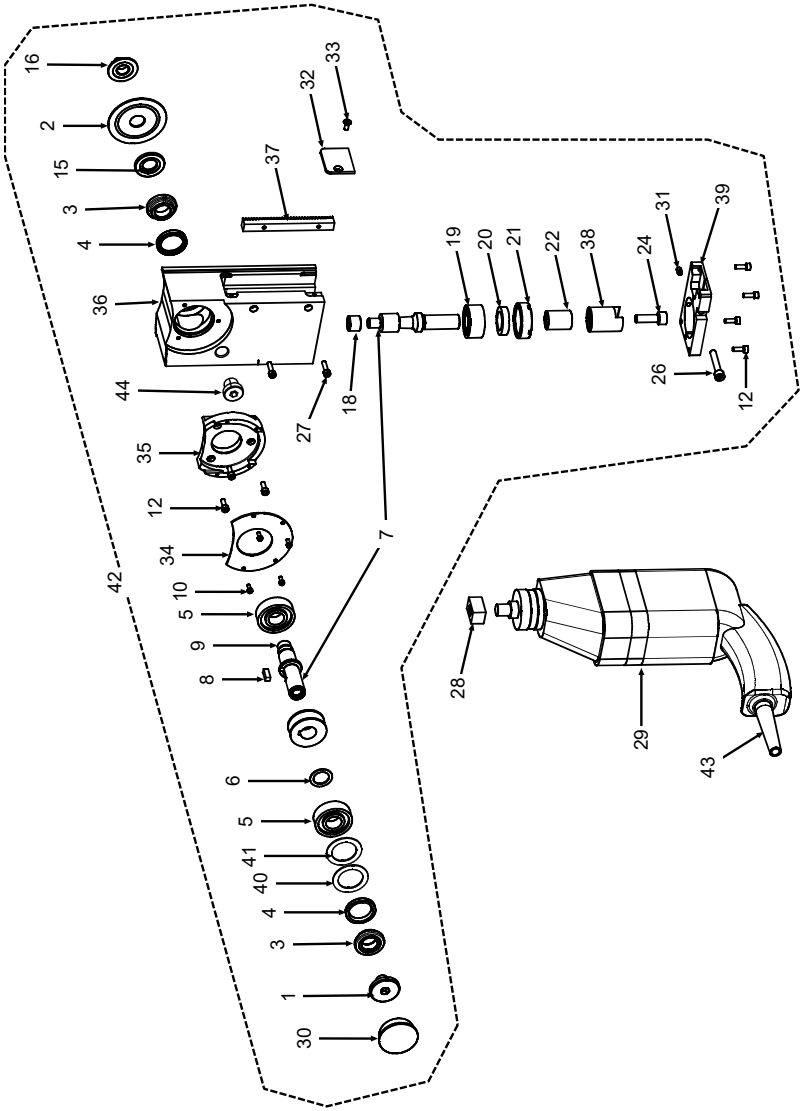
| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 27 | 305 505 116 | 2 | Zylinderschraube ISO4762-M4x16-10.9-ZN<br>Cylinder screw ISO4762-M4x16-10.9-ZN | 34 | 790 049 248 | 1 | Schutzdeckel<br>Protective cover |
| 28 | 790 048 242 | 1 | Motorkupplung<br>Motor coupling | 35 | 790 049 212 | 1 | Lagerdeckel<br>Bearing cover |
| 29 | 790 048 190 | 1 | PS Motor 230 V 50/60 Hz m. Flexdrehkabel<br>PS motor 230 V 50/60 Hz w. swivel cable | 36 | 790 048 230 | 1 | Schiebergehäuse<br>Slide block housing |
| | 790 048 191 | 1 | PS Motor 120 V 50/60 Hz US m. Flexdrehk.<br>PS motor 120V 50/60 Hz US w. swivel cbl. | 37 | 790 048 232 | 1 | Zahnstange<br>Rack |
| | 790 048 192 | 1 | PS Motor 110 V 50/60 Hz GB m. Flexdrehk.<br>PS motor 110V 50/60 Hz GB w. swivel cbl. | 38 | 790 049 241 | 1 | Getriebekupplung<br>Gear coupling |
| 30 | 790 048 250 | 1 | Verschlussstopfen GPN300 F30 (KAPSTO)<br>Sealing plug GPN300 F30 (KAPSTO) | 39 | 790 048 236 | 1 | Flanschplatte<br>Flange plate |
| 31 | 445 201 162 | 1 | Gewindestift DIN915-M5x8-45H<br>Grub screw DIN915-M5x8-45H | 40 | 790 041 213 | 1 | Distanzscheibe 28x39x0.10<br>Spacer 28x39x0.10 |
| 32 | 790 048 234 | 1 | Abdeckung<br>Cover | 41 | 790 041 214 | 1 | Distanzscheibe 28x39x0.15<br>Spacer 28x39x0.15 |
| 33 | 302 305 113 | 1 | Senkschraube DIN7991-M4x10-8.8-ZN<br>Countersunk screw DIN7991-M4x10-8.8-ZN | 42 | 790 048 200 | 1 | PS Schieber mit Getriebe<br>PS slide block with gear |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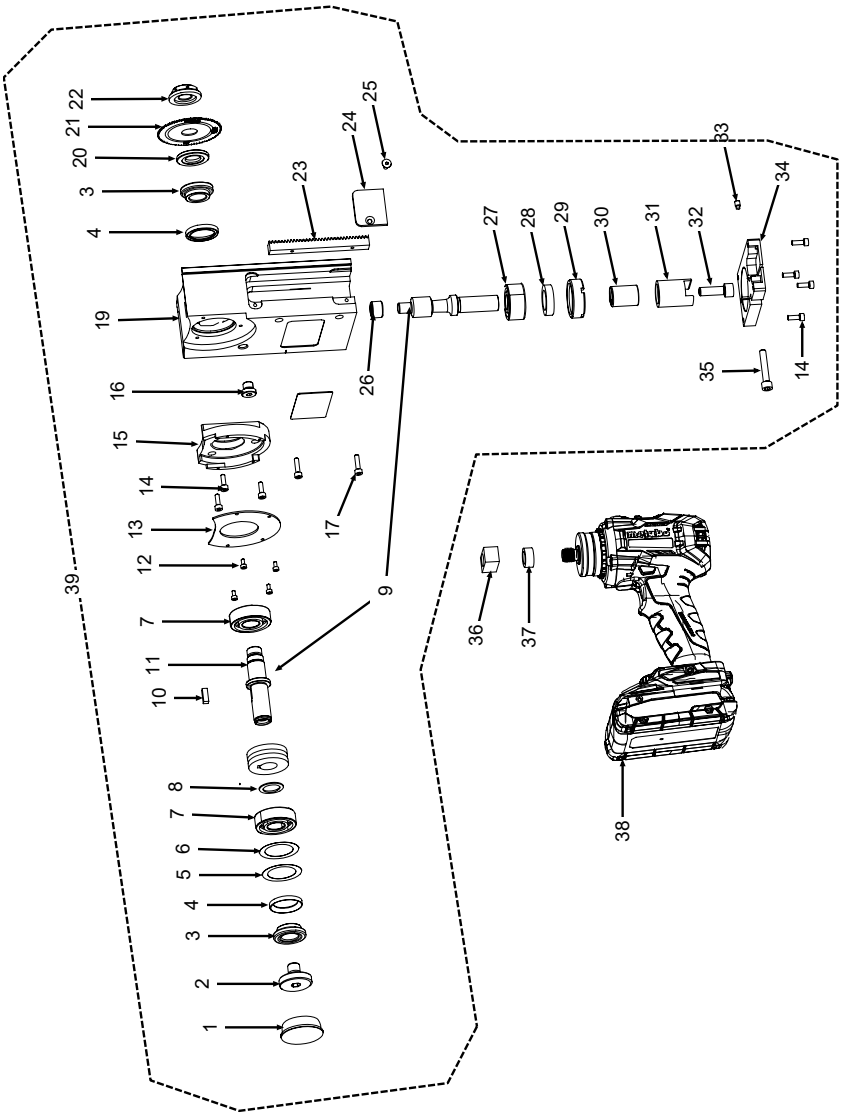
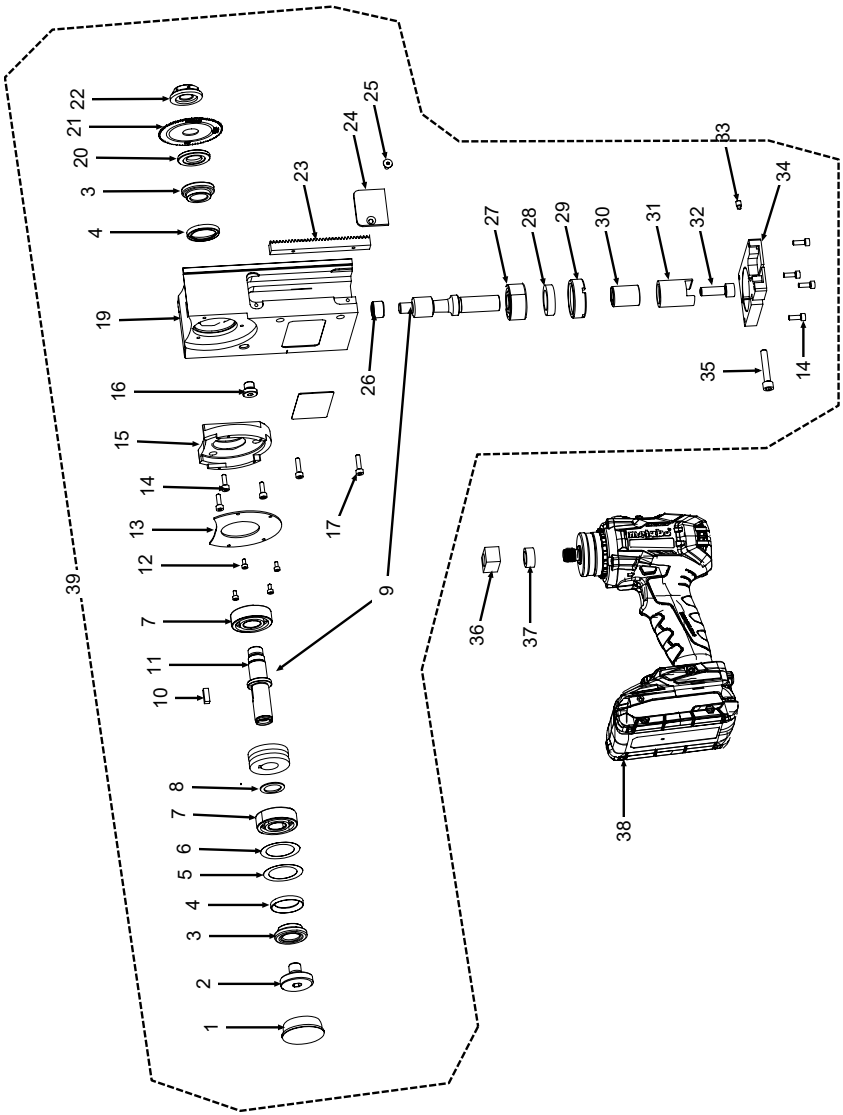
| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|
| 43 | 790 048 225 | 1 | SBE 1100 Plus Kabelschutzschlauch<br>SBE 1100 Plus cable protective hose |
| 44 | 790 050 191 | | Ölstopfen 1/8" mit Dichtung<br>Oil plug 1/8" with seal |

## 11.5 Schieber (Akku) | Slide (battery)



| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 1 | 790 048 250 | 1 | Verschlussstopfen GPN300 F30 (KAP-STO)<br>Sealing plug GPN300 F30 (KAPSTO) | 11 | 790 048 214 | 1 | Arbeitsspindel<br>Work spindle |
| 2 | 790 048 216 | 1 | Spannschraube<br>Clamping Screw | 12 | 305 505 071 | 4 | Zylinderschraube ISO1207-M3x8-ZN<br>Cylinder screw ISO1207-M3x8-ZN |
| 3 | 790 041 208 | 2 | Klemmbuchse<br>Clamping sleeve | 13 | 790 049 248 | 1 | Schutzdeckel<br>Portective cover |
| 4 | 790 041 207 | 2 | INA-Dichtring GF 24x32x4<br>INA seal GR 24x32x4 | 14 | 305 505 114 | 7 | Zylinderschraube ISO4762-M4x12-10.9-ZN<br>Cylinder screw ISO4762-M4x12-10.9-ZN |
| 5 | 790 041 213 | 1 | Distanzscheibe 28x39x0.10<br>Spacer 28x39x0.10 | 15 | 790 048 212 | 1 | Lagerdeckel<br>Bearing cover |
| 6 | 790 041 214 | 1 | Distanzscheibe 28x39x0.15<br>Spacer 28x39x0.15 | 16 | 790 050 191 | 1 | Ölstopfen 1/8"" mit Dichtung<br>Oil plug 1/8"" with seal |
| 7 | 610 020 017 | 2 | Rillenkugellager DIN625-6203-Normal-SKF<br>Grooved ball bearing DIN625-6203-Norm-SKF | 17 | 305 505 116 | 2 | Zylinderschraube ISO4762-M4x16-10.9-ZN<br>Cylinder screw ISO4762-M4x16-10.9-ZN |
| 8 | 554 607 017 | 1 | Passscheibe DIN988-17x24x1.0<br>Adjusting washer DIN988-17x24x1.0 | 18 | 790 048 235 | 1 | PS 4.5 Plus Akku Schild 60x35 mm<br>PS 4.5 Plus Cordless label 60x35 mm |
| 9 | 790 041 400 | 1 | Schneckewelle und Rad<br>Worm shaft and wheel | 19 | 790 048 230 | 1 | Schiebergehäuse<br>Slide block housing |
| 10 | 790 041 186 | 1 | Passfeder DIN6885-B5x5x14<br>Fitting key DIN6885-B5x5x14 | 20 | 790 044 192 | 1 | Scheibe SPEZIAL ab 6 mm<br>Washer SPECIAL from 6 mm |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| POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION | POS. NO. | CODE PART NO. | STK. QTY. | BEZEICHNUNG DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 21 | "auf Anfrage on request" | - | Sägeblatt<br>Saw blade | 31 | 790 049 241 | 1 | Getriebekupplung<br>Gear coupling |
| 22 | 790 044 191 | 1 | Mutter SPEZIAL M14x1.5, links<br>Nut SPECIAL M14x1.5, left | 32 | 305 805 272 | 1 | Zylinderschraube ISO4762-M8x25-8.8-ZN<br>Cylinder screw ISO4762-M8x25-8.8-ZN |
| 23 | 790 048 232 | 1 | Zahnstange<br>Rack | 33 | 445 201 162 | 1 | Gewindestift DIN915-M5x8-45H<br>Grub screw DIN915-M5x8-45H |
| 24 | 790 048 234 | 1 | Abdeckung<br>Cover | 34 | 790 048 236 | 1 | Flanschplatte<br>Flange plate |
| 25 | 302 305 113 | 1 | Senkschraube DIN7991-M4x10-8.8-ZN<br>Countersunk screw DIN7991-M4x10-8.8-ZN | 35 | 305 505 226 | 1 | Zylinderschraube ISO4762-M6x35-8.8-ZN<br>Cylinder screw ISO4762-M6x35-8.8-ZN |
| 26 | 790 041 190 | 1 | Lagerbuchse 10x16x11<br>Bearing bush 10x16x11 | 36 | 790 048 242 | 1 | Motorkupplung<br>Motor coupling |
| 27 | 612 032 015 | 1 | Schrägkugellager DIN6283202-A-Norm-SKF<br>Angular ball b. DIN6283202-A-Norm-SKF | 37 | 790 036 407 | 1 | Buchse 19x13<br>Bushing 19x13 |
| 28 | 624 541 201 | 1 | Wellendichtring DIN3760-A20x30x7<br>Shaft seal DIN3760-A20x30x7 | 38 | 790 037 530 | 1 | Akkumotor inkl. Ladegerät und 2 Akkus EU 230V<br>Battery motor+charger+2 batteries EU |
| 29 | 790 048 246 | 1 | Gewindering M38x1.5<br>Threaded ring M38x1.5 | 39 | 790 048 200 | 1 | PS Schieber mit Gehäuse<br>PS slide block with gear |
| 30 | 790 048 244 | 1 | Hülse<br>Sleeve | | | | |

# 11.6 Ohne Abbildung | Without Illustration

| CODE<br>PART NO. | STK.<br>QTY. | BEZEICHNUNG<br>DESCRIPTION | CODE<br>PART NO. | STK.<br>QTY. | BEZEICHNUNG<br>DESCRIPTION |
|---|---|---|---|---|---|
| 790 142 081 | 1 | Flexdrehkabel 230 V EU, kpl.<br>Swivel cable 230 V EU, cpl. | 790 041 017 | 1 | Pinsel Nr. 8<br>Brush no. 8 |
| 790 142 082 | 1 | Flexdrehkabel 120 V US/CA, kpl.<br>Swivel cable 120 V US/CA, cpl. | 790 048 341 | 1 | Ring-Maulschlüssel SW22 CV ISO3318 FORMA<br>Combin. spanner SW22 CV ISO3318 FORMA |
| 790 142 083 | 1 | Flexdrehkabel 230 V CH, kpl.<br>Swivel cable 230 V CH, cpl. | 790 048 342 | 1 | Schraubendreher, Sechskant SW8 DINISO2936<br>Screw driver, hexagon SW8 DINISO2936 |
| 790 142 084 | 1 | Flexdrehkabel 230 V AUS, kpl.<br>Swivel cable 230 V AUS, cpl. | 790 048 349 | 1 | Schraubendreher, Sechskant SW6 DINISO2936<br>Screw driver, hexagon SW6 DINISO2936 |
| 790 142 087 | 1 | Flexdrehkabel 120 V 50/60 Hz GB, kpl.<br>Swivel cable 120 V 50/60 Hz GB, cpl. | 790 014 218 | 1 | Stiftschlüssel, Sechskant DIN911 SW2,0<br>Wrench key, hexagon DIN911 SW2.0 |
| 790 142 076 | 1 | Flexdrehkabel 230 V EU<br>Swivel cable 230 V EU | 024 387 005 | 1 | Schraubendreher, Sechskant SW5ISO2936<br>Screw driver, hexagon SW5ISO2936 |
| 790 142 077 | 1 | Flexdrehkabel 120 V US/CA<br>Swivel cable 120 V US/CA | 790 142 516 | 1 | Kabel mit Steckkupplung 230 V<br>Cable with plug coupling 230 V |
| 790 142 078 | 1 | Flexdrehkabel 230 V CH<br>Swivel cable 230 V CH | 790 142 517 | 1 | Kabel mit Steckkupplung 120 V<br>Cable with plug coupling 120 V |
| 790 142 079 | 1 | Flexdrehkabel 120 V GB<br>Swivel cable 120 V GB | 790 144 385 | 1 | Getriebefett GFX/PS<br>Gear grease GFX/PS |
| 790 142 080 | 1 | Flexdrehkabel 230 V AUS<br>Swivel cable 230 V AUS | ** PS 4.5: bis Maschinen-Nr. 48600514*<br>*PS 4.5: up to machine no. 48600514*<br>*** PS 4.5: ab Maschinen-Nr. 48600515*<br>*PS 4.5: from machine no. 48600515* | | |

| CODE<br>PART NO. | STK.<br>QTY. | BEZEICHNUNG<br>DESCRIPTION |
|---|---|---|
| 790 142 080 | 1 | Flexdrehkabel 230 V AUS<br>Swivel cable 230 V AUS |

** PS 4.5: bis Maschinen-Nr. 48600514*

*PS 4.5: up to machine no. 48600514*

*** PS 4.5: ab Maschinen-Nr. 48600515*

*PS 4.5: from machine no. 48600515*

# 12 Konformitätserklärung

## ORIGINAL

**de EG-Konformitätserklärung**
**en EC Declaration of conformity**
**fr CE Déclaration de conformité**
**it CE Dichiarazione di conformità**
**es CE Declaración de conformidad**
**nl EG-conformiteitsverklaring**
**cz ES Prohlášení o shodě**
**sk EÚ Prehlásenie o zhode**
**pl Deklaracja zgodności WE**

**Orbitalum Tools GmbH**
**Josef-Schüttler-Straße 17**
**78224 Singen, Deutschland**
**Tel. +49 (0) 77 31 792-0**

| | |
|---|---|
| Maschine und Typ (inklusive optional erhältlichen Zubehörartikeln von Orbitalum): / Machinery and type (including optionally available accessories from Orbitalum): / Machine et type (y compris accessoires Orbitalum disponibles en option): / Macchina e tipo (inclusi gli articoli accessori acquistabili opzionalmente da Orbitalum): / Máquina y tipo (incluidos los artículos de accesorios de Orbitalum disponibles opcionalmente): / Machine en type (inclusief optioneel verkrijgbare accessoires van Orbitalum): / Stroj a typ stroje (včetně volitelného příslušenství firmy Orbitalum): / Stroj a typ (vrátane voliteľne dostupného príslušenstva od Orbitalum): / Maszyna i typ (wraz z opcjonalnie dostępnymi akcesoriami firmy Orbitalum): | **Portable Rohrsägen:**<br>**• PS 4.5 Plus**<br>**• PS 4.5 Plus Akku** |
| Seriennummer: / Series number: / Nombre de série: / Numero di serie: / Número de serie: / Serienummer: / Sériové číslo: / Sériové číslo / :Numer seryjny | |
| Baujahr: / Year: / Année: / Anno: / Año: / Bouwjaar: / Rok výroby: / Rok výroby: | |
| Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Richtlinien gefertigt und geprüft worden ist: / Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following standards: / Par la présente, nous déclarons que la machine citée ci-dessus a été fabriquée et testée en conformité aux directives: / Con la presente confermiamo che la macchina sopra specificata è stata costruita e controllata conformemente alle direttive qui di seguito elencate: / Por la presente confirmamos que la máquina mencionada ha sido fabricada y comprobada de acuerdo con las directivas especificadas a continuación: / Hiermee bevestigen wij, dat de vermelde machine in overeenstemming met de hieronder vermelde richtlijnen is gefabriceerd en gecontroleerd: / Tímto potvrzujeme, že uvedený stroj byl vyroben a testován v souladu s níže uvedenými směrnicemi: / Týmto potvrdzujeme, že uvedený stroj bol zhotovený a odskúšaný podľa nižšie uvedených smerníc: / Niniejszym potwierdzamy, że powyższa maszyna została wyprodukowana i przetestowana zgodnie z wymienionymi poniżej wytycznymi: | **• Maschinen-Richtlinie 2006/42/EG**<br>**• EMV-Richtlinie 2014/30/EU**<br>**• RoHS-Richtlinie 2011/65/EU** |
| Folgende harmonisierte Normen sind angewandt: / The following harmonized norms have been applied: / Les normes suivantes harmonisées où applicables: / Le seguenti norme armonizzate ove applicabili: / Las siguientes normas armonizadas han sido aplicadas: / Onderstaande geharmoniseerde normen zijn toegepast: / Jsou použity následující harmonizované normy: / Boli aplikované tieto harmonizované normy: / Stosowane są następujące normy zharmonizowane: | **• EN ISO 12100:2011-03**<br>**• EN ISO 62841-1:2016-07** |
| Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file: / Autorisé à compiler la documentation technique: / Incaricato della redazione della documentazione tecnica: / Autorizado para la elaboración de la documentación técnica: / Gemachtigde voor het samenstellen van het technisch dossier: / Osoba zplnomocněná k sestavení technické dokumentace: / Splnomocnenec pre zostavenie technických podkladov: / Uprawniony do sporządzania dokumentacji technicznej: | **Gerd Riegraf**<br>**Orbitalum Tools GmbH**<br>**D-78224 Singen** |
| Bestätigt durch: / Confirmed by: / Confirmé par: / Confermato da: / Confirmado por: / Bevestigd door: / Potvrdil: / Potvrdil: / Bestätigt durch: | |
| Singen, 22.06.2023: | Jürgen Jäckle - Product Compliance Manager |

# ORIGINAL

**de UKCA-Konformitätserklärung**
**en UKCA Declaration of conformity**

**Orbitalum Tools GmbH**
**Josef-Schüttler-Straße 17**
**78224 Singen, Deutschland**
**Tel. +49 (0) 77 31 792-0**

| | |
|---|---|
| Maschine und Typ (inklusive optional erhältlichen Zubehörartikeln von Orbitalum): / Machinery and type (including optionally available accessories from Orbitalum): | **Portable Rohrsägen:**<br>• **PS 4.5 Plus**<br>• **PS 4.5 Plus Akku** |
| Seriennummer: / Series number: | |
| Baujahr: / Year: | |
| Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Richtlinien gefertigt und geprüft worden ist: / Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following regulations: | • **S.I. 2008/1597 Supply of Machinery (Safety)**<br>• **S.I. 2016/1091 Electromagnetic Compatibility**<br>• **S.I. 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment** |
| Schutzziele folgender Richtlinien werden eingehalten: / Protection goals of the following guidelines are observerd: | • **S.I. 2016/1101 Electrical Equipment (Safety)** |
| Folgende harmonisierte Normen sind angewandt: / The following harmonized standards have been applied: | • **EN ISO 12100:2011-03**<br>• **EN ISO 62841-1:2016-07** |
| Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file: | |
| Bestätigt durch: / Confirmed by: | |
| Singen, 11.08.2023: | Jürgen Jäckle - Product Compliance Manager |

**Orbitalum Tools GmbH provides global customers one source for the finest in pipe & tube cutting, beveling and orbital welding products.**

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