

Operating instructions

For responsible bodies and persons using the machine

Tube Squaring Machines

RPG ONE

RPG 1.5

RPG 2.5



To work safely with this machine, please read through the operating instructions in full before initial operation. Retain the operating instructions for future reference.

Machine no.:

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1. ABOUT THESE INSTRUCTIONS

To allow quick understanding of these instructions and safe handling of the machine, all the warning messages, notes and symbols used in these instructions are presented here along with their meaning.

1.1 Warning messages

In these instructions, warning messages are used to warn you against the dangers of injury or material damage. Always read and observe these warning messages!



This is a warning symbol. It should warn you against dangers of injury. Follow all instructions which are identified with this safety symbol in order to avoid injuries or death.

Warning symbol	Meaning
 DANGER	Direct danger! Non-observance could result in death or critical injury. ⊙ Restrictions (if applicable). ► Measures to prevent danger.
 WARNING	Possible danger! Non-observance could result in serious injury. ⊙ Restrictions (if applicable). ► Measures to prevent danger.
 ATTENTION	Dangerous situation! ► Non-observance could result in minor injuries.
ATTENTION	Dangerous situation! ► Non-observance could result in material damage.

1.2 Further symbols and displays

Symbol	Meaning
IMPORTANT NOTE	Notes: Contain particularly important information for comprehension.
	Instruction: You must take notice of this symbol.
1.	Request for action in a sequence of actions: You have to do something here.
►	Single request for action: You have to do something here.
▷	Conditional request for action: You have to do something here if the specified condition is met.

1.3 Abbreviations

Abbr.	Meaning
RPG Electric	Tube Squaring Machine with electric drive
RPG Cordless	Tube Squaring Machine with cordless drive
MFW	Multifunctional tool
WH	Tool holder

2. INFORMATION AND SAFETY INSTRUCTIONS FOR THE RESPONSIBLE BODY

2.1 Requirements for the responsible body

Workshop/outdoor/field application: The responsible body 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 regulations described in chap. 2 must be observed and work must be carried out with safety in mind using the prescribed protective equipment.

2.2 Using the machine

2.2.1 Proper use

- The machine must only be used for the squaring and beveling of materials and tube dimensions as specified in chap. 4.2, p. 16.
- The machines must only be operated using the voltage levels specified on the drive identification plate and in the "technical data" (see chap. 5, p. 17).
- Only use the motor RPG17 (Code 790 038 190 to 790 038 192) as a drive for the electric variant.
- Only use the motor BS18 LTX (Code 790 037 530, 790 037 531) as a drive for the battery variant.
- The drive motor may only be used in connection with the machine.
- The machine may only be used on tubes and containers that are empty, unpressurized, do not have explosive atmospheres and are not contaminated.

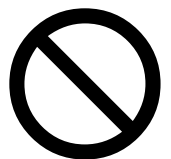


Proper use also includes the following:

- observing all safety instructions and warning messages included in these operating instructions
- carrying out all inspection and maintenance work
- sole use in the original condition with original accessories, spare parts and materials
- processing only materials set out in the operating instructions.

2.2.2 Improper use

- A use other than that defined under "proper use" or a use that goes beyond this or the specified constraints shall be considered improper use due to the potential risks involved.
- The responsible body shall be solely responsible for damages that arise through improper use and the manufacturer shall assume no liability whatsoever.
- No tools should be used that have not been authorized by the manufacturer of this machine.
- Tubes of non-metallic material should not be machined (except aluminum).
- The removal of safety equipment is not permitted.
- Do not misuse the machine.
- The machine is not intended for use by private consumers.
- The technical values defined for normal operation must not be exceeded.
- Do not use the machine as a drive for applications other than those listed under proper use (chap. 2.2.1).
- Do not clamp the machine between both legs (see chap. 8, p. 21).



2.2.3 Machine constraints

- Keep your working area clean. Disorder or unlit working areas can lead to accidents.
- The workplace can be in pipe preparation, in plant construction or in the plant itself.
- A radial space requirement/freedom of movement of approx. 1 m around the machine is required for people.
- Work lighting: min. 300 Lux.
- Age of operator: at least 14 years old and without physical impairments.
- Operated by one person.
- Climate conditions: temperature range for machine operation: -15 °C to 40 °C ($\leq 80\%$ rel. humidity).
- Only operate the machine in dry surroundings (not in misty, rainy or stormy conditions).

2.2.4 Shutting down the machine

Information on the EMERGENCY STOP or the shutting down function, see chap. 9.1, p. 31.

2.3 Environmental protection/disposal

2.3.1 Chips and gear lubricant

Dispose of chips and used gear lubricant according to the regulations.

2.3.2 Electric tools and accessories

Discarded electric tools and accessories contain large quantities of valuable raw and synthetic materials that can be recycled. Therefore:

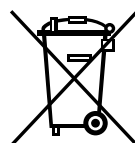
- Electrical (electronic) devices that are marked with the symbol at the side may not be disposed of with household waste in accordance with EU regulations.
- By actively using the available return and collection systems, you actively contribute to the reuse, recycling and utilization of electrical (electronic) devices.
- Used electrical (electronic) devices contain parts that must be handled selectively according to EU regulations. Separate collection and selective treatment is the basis for environment-friendly disposal and the protection of human health.
- Appliances and products that you bought from us after August 13, 2005 will be disposed of in accordance with legal standards after they have been supplied to us at no cost.
- We may refuse to accept old appliances that pose a risk to human health or safety due to contamination produced during use.
- The end user is responsible for disposing of used appliances introduced to the market before August 13, 2005. Please contact a disposal center near you for this purpose.
- **Important for Germany:** our products may not be disposed of in municipal disposal sites as they are only used for industrial purposes.



(as per RL 2002/96/EC)

2.3.3 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 91/157/EEC.
- 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
- **Valid 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 instructions

The machine (hereinafter referred to as the RPG ONE, RPG 1.5 or RPG 2.5 (Cordless)) is a state-of-the-art machine designed for safe use. The risks involved in using the machine are described in the operating instructions below. Using this machine in a way other than that described in these instructions can lead to serious physical injury and material damage.

Therefore:

- Observe warning messages at all times.
- In addition to this operating instructions, the general warning messages for electric and cordless tools (see supplement), which should always be retained.
- Keep complete documentation close by the machine.
- Generally valid regulations for the prevention of accidents must be observed.
- Observe country-specific regulations, standards and guidelines.
- Always ensure that the machine is in good working order. Observe the maintenance information (chap. 10, p. 38).
- The machine may only be operated if all safety equipment such as restarting block and overload protection is in proper working order, the viewing window is closed and the machine has a solid footing. Check whether the substrate is able to take sufficient loads.
- Report any unusual machine behavior to the person responsible immediately.
- Only use the dimensions and materials specified in these instructions. Other materials should be used only after consulting with Orbitalum Tools customer service.
- Use only original tools, spare parts, 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, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.
- Do not carry the machine by the cable and do not use the machine to pull out the mains plug except in an emergency. Protect the cable from heat, oil and sharp edges (chips).
- During operation, keep hands away from the tools.
- Check that the tube is correctly clamped.
- Switch on the machine only when the tube has been clamped.
- Do not use the machine in wet surroundings. Only work in canopied surroundings.
- In extreme conditions of use, conductive dust 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 (in accordance with EN ISO 20345, at least S1), safety goggles (according to DIN EN 166 Class 2 basic resistance S), snug-fitting safety gloves (according to DIN EN 388 Class 2 against wear, cut resistance Class 3, tearing resistance Class 2, piercing resistance Class 3 and as per EN 407 at least Performance level 1 against contact heat) and hearing protection (according to DIN EN 352-4 or comparable).
- 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 (shutdown, see chap. 9.1, p. 31).
- Do not use angled power plugs.

NOTE

The recommendations concerning "Personal protective equipment" only apply to the product being described. Other requirements resulting from the ambient conditions on-site or of other products, or from combining with other products, are not taken into account. These recommendations do not in any way release the responsible body (employer) from its statutory health and safety at work obligations towards its employees.





DANGER

If the mains cable is damaged, live parts may cause death if touched directly!

Fatal electric shock.

- ⊘ **Do not** allow the power cable of the motor to be near the machine, especially the cutting tool (MFW).
- ⊘ Do not run the machine unattended.
- ▶ During processing, always keep an eye on the position of the mains cable.
- ▶ Keep the machine clean. Always remove lubricant residues from the machine.



DANGER

Damaged insulation!

Fatal electric shock.

- ⊘ **Do not** screw any indicators or signs to the drive motor.
- ▶ Use stickers.



DANGER

Metal dust can collect in the motor housing and cause loss of insulation!

Fatal electric shock.

- ▶ Clean the machine at least once daily with the brush supplied according to its level of soiling.



DANGER

Damaged mains plug!

Fatal electric shock.

- ⊘ **Do not** use adapter plugs with ground protected electrical tools.
- ▶ The machine connector plug must fit the socket.



DANGER

Risk of danger through the use of the machine outdoors!

Fatal electric shock.

- ⊘ **Do not** use the machine outdoors.



DANGER

The electrical motor can overheat with operation in a 110 V network!

Serious injury or death.

- ▶ Only use the machine in the specified temperature range.



DANGER

Grounded body!

Fatal electric shock.

- ▶ Avoid contact with grounded surfaces such as tubes, heating, cookers or refrigerators.



DANGER

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

Serious injury or death.

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



DANGER

Danger of fire from short-circuiting between the battery contacts!

Serious injury or death.

- ▶ Keep the unused battery away from paper clips, coins, keys, nails, screws or other small metal objects that may cause a bypassing of the contacts.



DANGER

Loose/baggy clothing, long hair or jewelry can get caught in rotating machine parts!

Serious injury or death.

- ▶ Wear tight-fitting clothing when using the machine.
- ▶ Tie up long hair to prevent it from being caught.



DANGER

Safety components that are contaminated or worn are defective!

The failure of safety components can cause physical injury.

- ⊘ **Do not** misuse the cable, e.g. such as using it to suspend or carry the machine.
- ▶ Replace defective safety components immediately and check them daily to ensure proper operation.
- ▶ Clean and perform maintenance on the machine after each use.
- ▶ Keep cables away from heat, oil, sharp edges and moving equipment parts.
- ▶ Inspect the machine daily for visible signs of damage or defects, and have them repaired by a specialist if necessary.



WARNING

Flying parts/breaking tool!

Diverse physical injuries and material damage.

- ⊘ **No** damaged or deformed cutting tools (MFW) should be used.
- ▶ Firmly clamp the tube to be machined into the clamping unit.
- ▶ Immediately replace worn-out tools.
- ▶ Ensure that the cutting tools are correctly fitted.
- ▶ The inner diameter of the clamping shells must be identical to the outer diameter of the tube to be machined. The specific inner diameter is specified on the clamping shells. The outer diameter of the tube must be determined.
- ▶ Avoid tool breakage by ensuring low (measured) infeed (max. clamping thickness: 0.05 mm) and correct setting of speed (see chap. 9.2, p. 32).
- ▶ Check that the tool holder (WH) and multifunctional tool (MFW) are seated firmly, and tighten if required.



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 chap. 7.1, p. 20.



WARNING

Danger caused by vibration and unergonomic, monotonous work!

Discomfort, tiredness and disruptions to the locomotor system.

Limited ability to react, and cramps.

- ▶ Do relaxation exercises.
- ▶ Ensure activity is varied.
- ▶ Assume an upright, fatigue-free and comfortable body position during operation.



WARNING

Pressing the ON/OFF switch unintentionally!

Diverse physical injuries and material damage.

- ▶ At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.



WARNING



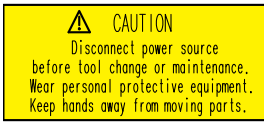
Liquid leaking from the battery due to wrong use!

Diverse physical injuries and material damage.

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

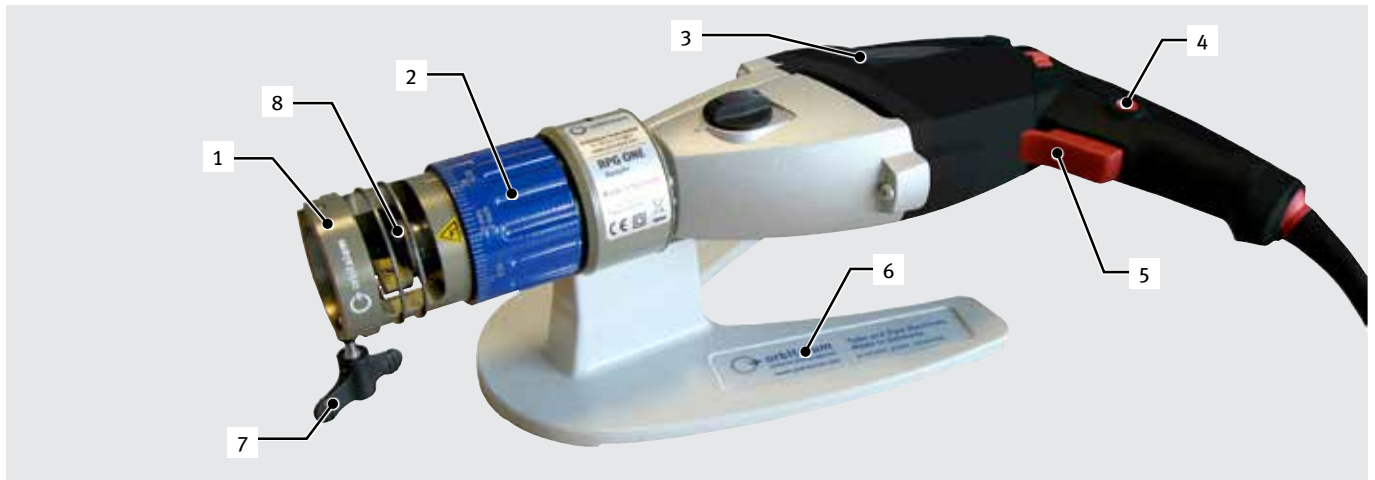
2.5 Warning symbols

Observe all of the warnings and safety instructions affixed to the machines.
The following labels also appear on the machine:

Image	Position on machine	Meaning	Code
	RPG ONE (Cordless): Tool support/Housing	WARNING: Danger of injury from rotating tool.	790 046 196
	RPG 1.5 (Cordless), RPG 2.5 (Cordless): Viewing window	WARNING: Danger of injury from rotating tool.	790 033 070
	Motor/battery motor	INSTRUCTION: Wear safety goggles in accordance with DIN EN 166, ear protection in accordance with DIN EN 352 and tightfitting safety gloves in accordance with DIN EN 388 and EN 407. Read the operating instructions.	790 086 200
	Motor/battery motor (only with US version 120 V)	WARNING: Unplug the power plug before tool change or maintenance. Wear protective clothing. Keep hands away from moving parts.	790 086 199

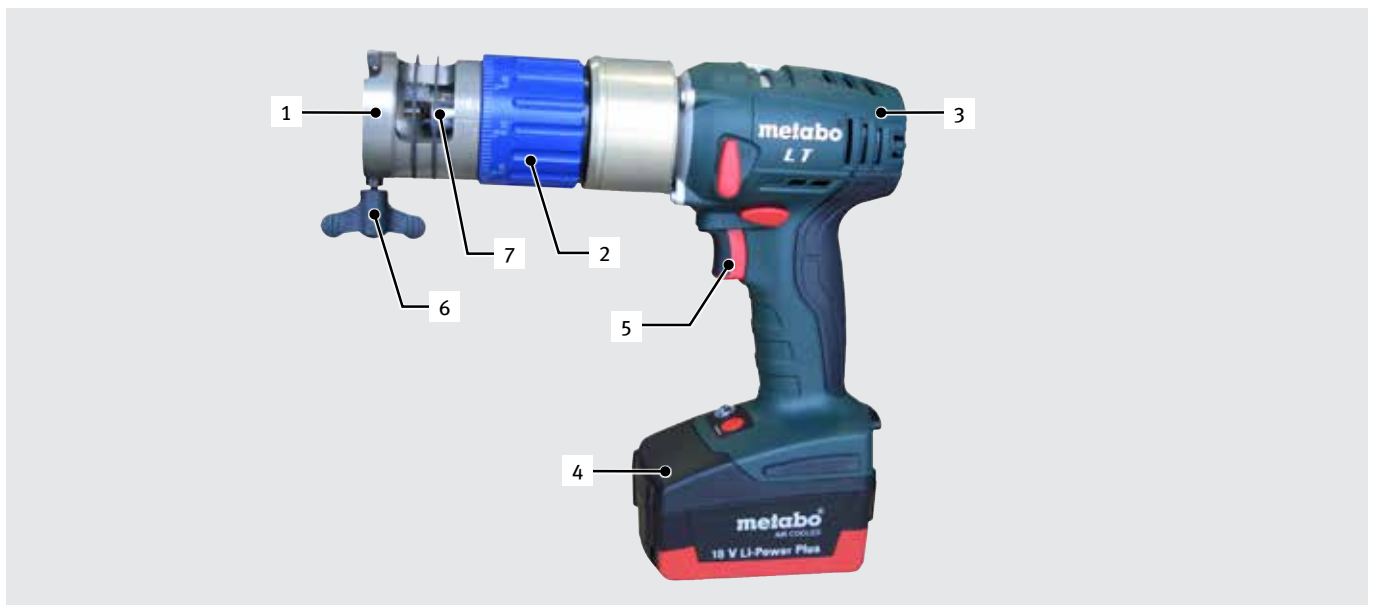
3. PRODUCT DESIGN

3.1 RPG ONE Electric



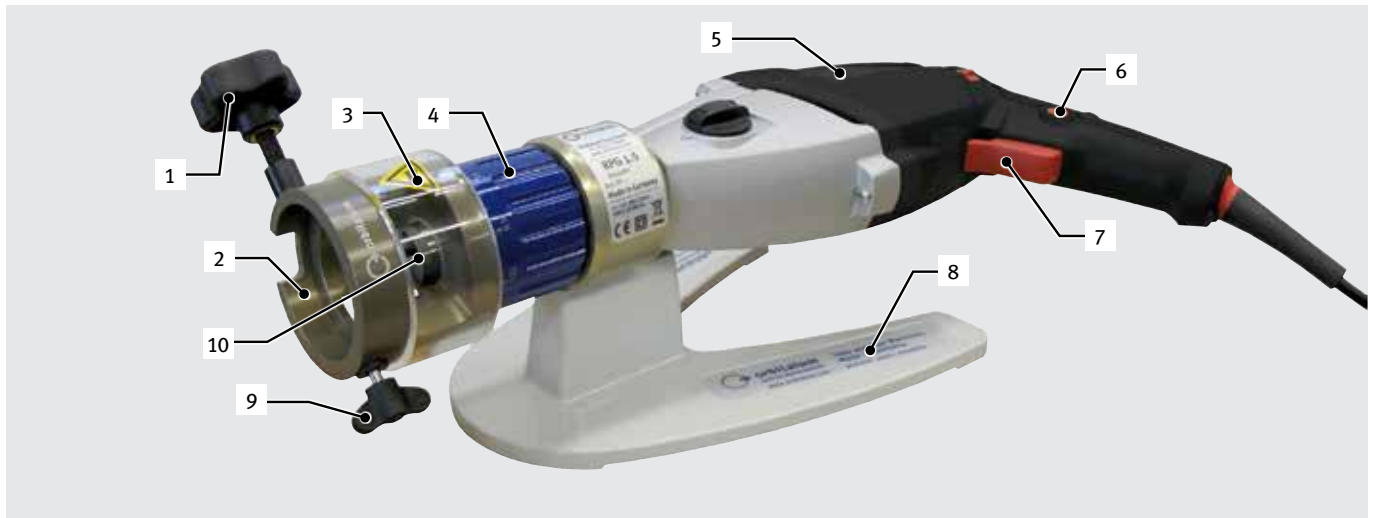
- | | |
|------------------------------|----------------------------|
| 1. Housing | 5. ON/OFF switch |
| 2. Feed with scale divisions | 6. Bench stand (removable) |
| 3. Driving motor | 7. Tensioning screw |
| 4. Fixing button | 8. Tool support |

3.2 RPG ONE Cordless



- | | |
|------------------------------|----------------------------------|
| 1. Housing | 5. ON/OFF switch/speed regulator |
| 2. Feed with scale divisions | 6. Tensioning screw |
| 3. Cordless motor | 7. Tool support |
| 4. Rechargeable battery | |

3.3 RPG 1.5 Electric



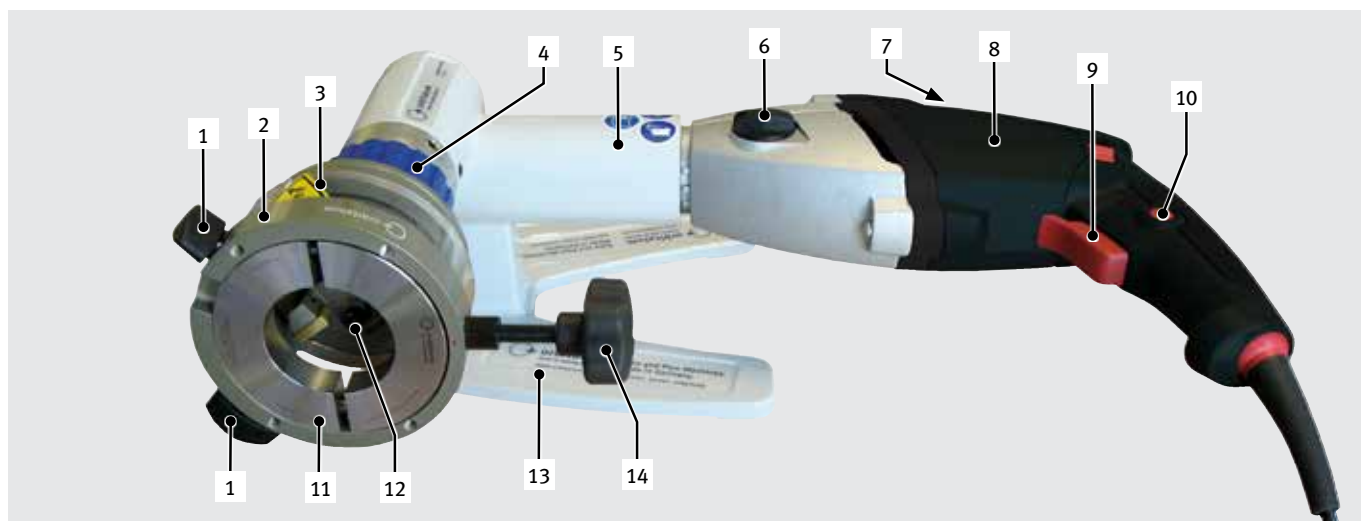
- | | |
|------------------------------|----------------------------|
| 1. Tensioning screw | 6. Fixing button |
| 2. Housing | 7. ON/OFF switch |
| 3. Viewing window (slidable) | 8. Bench stand (removable) |
| 4. Feed with scale divisions | 9. Clamping screw |
| 5. Driving motor | 10. Tool support |

3.4 RPG 1.5 Cordless



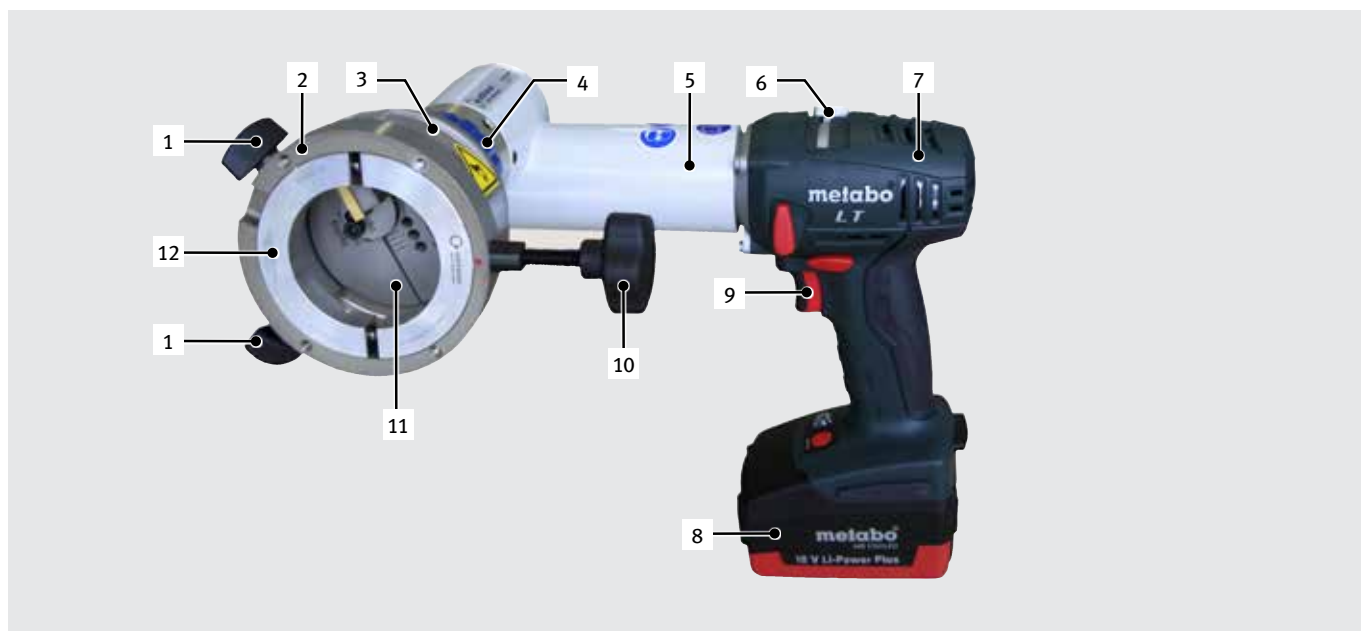
- | | |
|------------------------------|----------------------------------|
| 1. Tensioning screw | 6. ON/OFF switch/speed regulator |
| 2. Viewing window (slidable) | 7. Clamping screw |
| 3. Feed with scale divisions | 8. Housing |
| 4. Cordless motor | 9. Tool support |
| 5. Rechargeable battery | |

3.5 RPG 2.5 Electric



- | | |
|---------------------------------------|--|
| 1. Clamping screw | 8. Driving motor |
| 2. Housing | 9. ON/OFF switch |
| 3. Viewing window (slidable) | 10. Fixing button |
| 4. Feed with scale divisions | 11. Clamping shell |
| 5. Gear box unit | 12. Tool support with tool holder and multifunctional tool |
| 6. Speed regulator for pre-adjustment | 13. Bench stand (removable) |
| 7. Speed thumb wheel for fine-tuning | 14. Tensioning screw |

3.6 RPG 2.5 Cordless



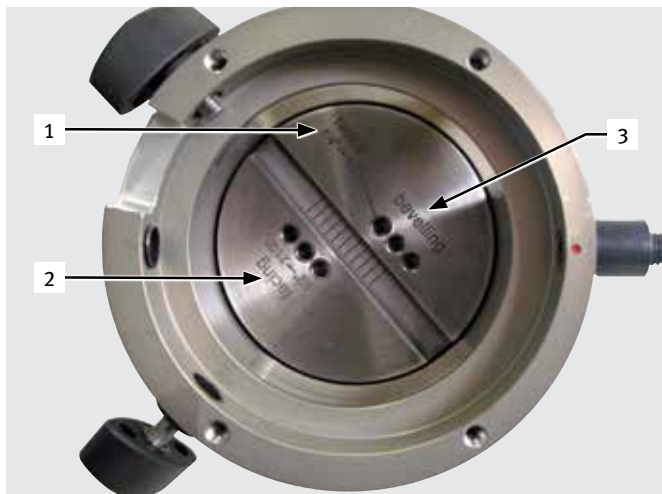
- | | |
|------------------------------|--|
| 1. Clamping screw | 7. Cordless motor |
| 2. Housing | 8. Rechargeable battery |
| 3. Viewing window (slidable) | 9. ON/OFF switch/speed regulator |
| 4. Feed with scale divisions | 10. Tensioning screw |
| 5. Gear box unit | 11. Tool support with tool holder and multifunctional tool |
| 6. Speed switch | 12. Clamping shell |

3.7 RPG 2.5 (Cordless) tool support

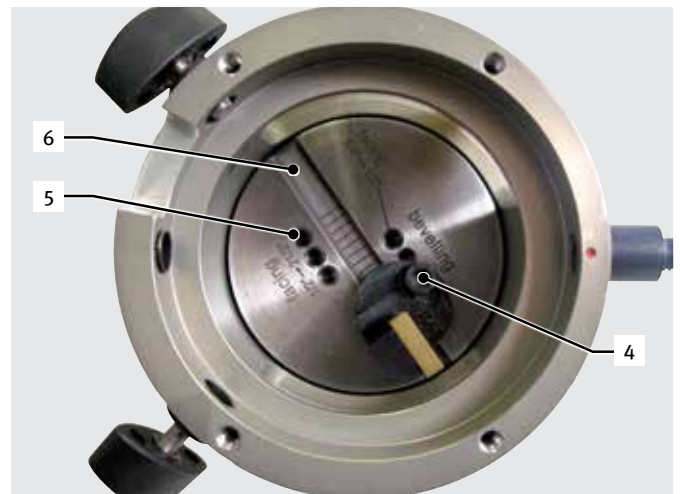
The tool support of the RPG 2.5 (Cordless) offers different tool holder assembly possibilities, according to type of application:

- Facing (1) of 6.35 - 12.0 mm (0.250" - 0.472")
- Facing (2) of 12.7 - 65 mm (0.500" - 2.559")
- Beveling (3), dimension range as per bevel tool.

- NOTE**
- The tool holder (4) should be assembled in one of the 6 fastening threads (5) as a function of the above listed processing type and tube outer diameter.
 - The bigger the outer diameter of the tube, the further apart are the fastening threads selected for the tool holder (see arrows).
 - For exact positioning, install the tool holder (4) with a multifunctional tool in the groove guide (6) and screw it in as a function of the desired processing type along the groove guide and using the correct fastening thread (5).
 - The groove guide (6) has markings to help position the tool holder (4).



Tool support *without* tool holder



Tool support *with* tool holder

3.8 Accessories



WARNING

Danger presented by using poor-quality accessories and tools not approved by Orbitalum Tools!
Diverse physical injuries and material damage.

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

NOTE

Please check the outer diameter of the tubes before ordering the clamping shells. The different standards sometimes involve a special size (particularly for tubes in accordance with DIN 2430).

3.8.1 Multifunctional tool (MFW)

1 multifunctional tool (MFW) (Code 790 038 314) is included with standard supply.
Two-sided tool bit with high-performance Balinit® Futura protective coating against tool wear.
Usable for all machines of the RPG series.



Article	Qty.	Code
Multifunctional tool MFW-P-2	1	790 038 314
Multifunctional tool MFW-P-2	10	790 038 315
Torx screw	1	790 086 220

3.8.2 Tool holder (WH) for beveling and squaring

1 tool holder (WH) (Code 790 037 152) is included with standard supply.
Adjustable tool holder incl. Torx screw.



Further tool holder for different bevel angles on request.

Tool holder / Code	Possible application		Beveling angle [°]		Recommended application range	Tube OD		
	Squaring	Beveling				RPG ONE	RPG 1.5	RPG 2.5
WH12-I/Standard* Code 790 037 152	x	-	-	[mm]	6.0 - 12.7	6.0 - 25.4	6.0 - 38.1	6.0 - 65.0
				[inch]	0.236 - 0.5	0.236 - 1.0	0.236 - 1.5	0.236 - 2.559
WH12-I Code 790 037 161	x	-	-	[mm]	3.0 - 6.0	3.0 - 6.0	3.0 - 6.0	3.0 - 6.0
				[inch]	0.118 - 0.236	0.118 - 0.236	0.118 - 0.236	0.118 - 0.236
WH12-I/Micro fittings** Code 790 037 156	x	-	-	[mm]		-	3.0 - 21.2	6.35 - 21.2
				[inch]		-	0.118 - 0.84	0.25 - 0.84
WH3-V-30 Code 790 037 158	-	x	30°	[mm]		-	max. 35.0	max. 60.3
				[inch]		-	max. 1.378	max. 2.374
WH3-V-35 Code 790 037 159	-	x	35°	[mm]		-	max. 33.7	max. 59.3
				[inch]		-	max. 1.327	max. 2.335
WH3-V-45*** Code 790 037 157	-	x	45°	[mm]		-	max. 33.7	max. 59.0
				[inch]		-	max. 1.327	max. 2.3

* Supplied as standard.

** Only to be used with stainless steel clamping shells for micro fittings.

*** Not applicable with the RPG ONE.

3.8.3 One-piece stainless steel clamping shells

Not supplied as standard.

For deformation-free clamping of tubes. Extremely durable.
Ensures precise mounting of tubes/micro fittings and quick change of clamping shells without tools.
For use on all materials with an OD from 3.0 mm up to 63.5 mm (0.118 - 2.500 inch).
You can find a range of clamping shell dimensions with code numbers in our current product catalogue.



3.8.4 Warning symbols

Overview of warning symbols with order numbers, see chap. 2.5, p. 10.

4. FEATURES AND SCOPE OF APPLICATION

4.1 Features

The Tube Squaring Machine RPG ONE, RPG 1.5 and RPG 2.5 are distinguished by the following main features:

- Tube end preparation for welds conforming to standards
- Only one multifunctional tool necessary for:
 - Different tube wall thicknesses (up to 3 mm/0.118 inch)
 - Different tube materials (exclusively ferrous materials)
- Multifunctional tool:
 - Non standard tool holders are available on request to the case under consideration
 - Tool with multiple cutting edges
 - Only if necessary, a screw for fastening and fixing the tools
 - Tool cover TiN
- Cordless drive:
 - Rotating / removable
 - Motor with high performance and small size
 - No memory effect
 - Single cell monitoring in the cordless pack
 - Electronic overload protection with integrated temperature monitor
 - Robust cordless packs with capacity display
 - Minimal self-discharge
 - Environmentally friendly
 - AIR COOLED technology for short charging times and a long service life
- Electric drive:
 - twistable/detachable
 - Built-in electronic speed regulation with speed stabilization: Vario-Tachometer-Constamatic (VTC) full wave electronics
 - Restart protection to prevent the machine from starting in an uncontrolled way after it has been re-connected to the electric mains or after the voltage supply has been reestablished after a power failure
 - RPM regulator
 - Sturdy marathon motor
 - Overload protection
 - Shut-off carbon brushes
 - Carbon wear indicator
- Quick change system for clamping sh
- Feed with scale divisions (for values, see Technical specifications, chap. 5, p. 17)

4.2 Range of applications

Application range		RPG ONE	RPG ONE Cordless	RPG 1.5	RPG 1.5 Cordless	RPG 2.5	RPG 2.5 Cordless
Tube OD min.-max.	[mm]	3.0* - 25.4	3.0* - 25.4	3.0* - 38.1	3.0* - 38.1	3.0* - 65.0	3.0* - 65.0
	[inch]	0.118* - 1.0	0.118* - 1.0	0.118* - 1.5	0.118* - 1.5	0.118* - 2.559	0.118* - 2.559
Wall thickness max.	[mm]	3.0	3.0	3.0	3.0	3.0	3.0
	[inch]	0.118	0.118	0.118	0.118	0.118	0.118
Tube materials		High-alloy steels, unalloyed and low-alloy steels and aluminum. Others on request.					

* Application range with standard tool holder (Code 790 037 152) is from 6.0 mm/0.236" OD. With special tool holder (Code 790 037 161) 3.0 mm/0.118" OD is possible. For the RPG 2.5 (battery) only with a special adapter clamping shell (included in the standard scope of delivery of the RPG 2.5).

5. TECHNICAL SPECIFICATIONS

Type of machine		RPG ONE	RPG ONE Cordless	RPG 1.5	RPG 1.5 Cordless	RPG 2.5	RPG 2.5 Cordless
Dimensions (lxwxh)	[mm]	390x70x200	261x80x255	400x160x350	275x90x255	500x170x300	260x320x300
	[inch]	15.4x2.8x7.9	10.3x3.2x10	15.8x6.3x13.8	10.8x3.5x10	19.7x6.7x11.8	10.2x12.6x11.8
Weight (without accessories)	[kg]	4.140	2.880	4.700	3.440	6.600	5.230
	[lbs]	9.13	6.35	10.36	7.58	14.6	11.8
Versions	[V, Hz]	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz
		110 V, 50/60 Hz	115 V, 60 Hz	110 V, 50/60 Hz	115 V, 60 Hz	110 V, 50/60 Hz	115 V, 60 Hz
		120 V, 50/60 Hz		120 V, 50/60 Hz		120 V, 50/60 Hz	
Power	[W]	1010	–	1010	–	1010	–
Voltage recharge- able battery	[V]	–	18	–	18	–	18
Capacity	[Ah]	–	4.0	–	4.0	–	4.0
Speed of the tool	[rpm]	145 - 380	0 - 500	145 - 380	0 - 500	1. speed: 9 - 52 2. speed: 27 - 153	1. speed: 0 - 29 2. speed: 0 - 100
Sound pressure level (EN 23741), approx.	[dB (A)]	78	78	78	78	78.2	78.2
Vibration level (EN 60745)	[m/s ²]	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Feed total	[mm]	10.0	10.0	10.0	10.0	10.0	10.0
	[inch]	0.394	0.394	0.394	0.394	0.394	0.394
Feed per rotation	[mm]	3.0	3.0	3.0	3.0	3.0	3.0
	[inch]	0.118	0.118	0.118	0.118	0.118	0.118
Feed per graduation mark	[mm]	0.05	0.05	0.05	0.05	0.05	0.05
	[inch]	0.002	0.002	0.002	0.002	0.002	0.002

6. INITIAL OPERATION

6.1 Checking the parts of delivery

- Check delivery for completeness and damage caused by transport.
- Report any missing parts or damage caused by transport to your supplier immediately.

6.2 Included with the machine

Subject to modifications.

Type of machine		RPG ONE	RPG ONE Cordless	RPG 1.5	RPG 1.5 Cordless	RPG 2.5	RPG 2.5 Cordless
Tube squaring machine	Pc.	1	1	1	1	1	1
Durable storage and shipping case	Pc.	1	1	1	1	1	1
Rechargeable batteries	Pc.	–	2	–	2	–	2
Battery charger	Pc.	–	1	–	1	–	1
Overload protection (square nut)	Pc.	–	–	–	–	1	1
Tool holder WH Code 790 ...	Pc.	1 ... 037 152	1 ... 037 152	1 ... 037 152	1 ... 037 152	1 ... 037 152	1 ... 037 152
Multifunctional tool MFW (Code 790 038 314)	Pc.	1	1	1	1	1	1
Adapter clamping shell (Code 790 030 094)	Pc.	–	–	–	–	1	1
Tool set	Set	1	1	1	1	1	1
Operating instructions and spare parts list	Set	1	1	1	1	1	1
Bench stand for cordless machines optional available (Code 790 037 169)							

6.3 Connection requirements

The mains supply must meet the following requirements:

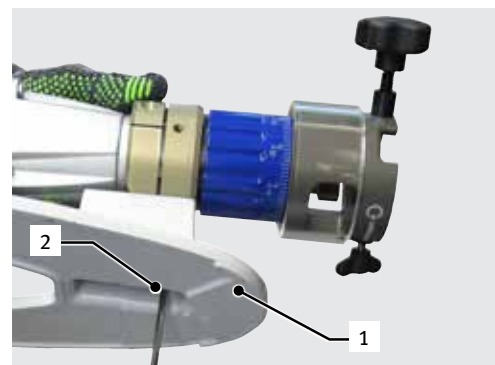
- 1-phase alternating current, protection class II:
 - 230 V, 50/60 Hz
 - 110 V, 50/60 Hz
 - 120 V, 50/60 Hz
 - 230 V, 50/60 Hz EU, Cordless: 18 V
 - 115 V, 60 Hz US, Cordless: 18 V
- Mains fuse at least 10 A
- Residual current circuit breaker

6.4 Assembly of the bench stand

Baseplate (1) for battery machines is optionally available on request (Code 790 037 169).

The bench stand (1) for RPG ONE, RPG 1.5 and RPG 2.5 Electric needs to be assembled for commissioning the machine.

- Fasten the bench stand on the machine with a spanner (SW4x150).



7. STORAGE AND TRANSPORT



ATTENTION

Incorrect machine storage!

Diverse physical injuries and material damage.

- ▶ Store the machine in its original case and in dry conditions.



DANGER

Fatal electric shock!

- ▶ Before transporting the machine or changing the workplace, allow the machine to come to a standstill and pull the power plug or remove the exchangeable battery from the machine.



WARNING

During transportation, the ON/OFF switch may unintentionally be activated causing the machine to start up!

Diverse physical injuries and material damage.

- ▶ Before transporting the machine or changing the workplace, allow the machine to come to a standstill and pull the power plug or remove the exchangeable battery from the machine.

7.1 Transporting the machine

The RPG is a portable machine. Special resources are not required for transportation (carry the machines as shown in the diagrams to ensure safe transportation).



RPG ONE Electric and RPG 1.5 Electric



RPG ONE Cordless and RPG 1.5 Cordless



RPG 2.5 Electric with bench stand



RPG 2.5 Cordless

8. SETUP AND ASSEMBLY



DANGER

Machine start-up due to unintentional pressing of the ON/OFF switch or the speed regulator!

Fatal electric shock.

Diverse physical injuries and material damage.

- ▶ At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.



WARNING

Protruding tool holder!

Hands may be crushed and the machine damaged.

- ⊘ The tool holder with fitted MFW must **not** project over the edge of the tool support.
- ▶ Before switching on the machine, make sure that the distance between the MFW and the housing is sufficient.
- ▶ Close the viewing window before switching on the machine.



WARNING

Risk of machine and tube falling!

Irreversible crushing.

- ▶ Check the machine's position and secure it so it cannot fall.
- ▶ Ensure that the machine has a solid footing (see chap. 6.4, p. 19).
- ▶ 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, switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.
- ▶ Always close the viewing window after removing chips.



WARNING

Flying parts/breaking tool!

Diverse physical injuries and material damage.

- ⊘ **No** damaged or deformed cutting tools (MFW) should be used.
- ▶ Firmly clamp the tube to be machined into the clamping unit.
- ▶ Immediately replace worn-out tools.
- ▶ Ensure that the cutting tools are correctly fitted.
- ▶ The inner diameter of the clamping shells must be identical to the outer diameter of the tube to be machined. The specific inner diameter is specified on the clamping shells. The outer diameter of the tube must be determined.
- ▶ Avoid tool breakage by ensuring low (measured) infeed (max. clamping thickness: 0.05 mm) and correct setting of speed (see chap. 9.2, p. 32).
- ▶ Check that the tool holder (WH) and multifunctional tool (MFW) are seated firmly, and tighten if required.



WARNING

Flying, hot and sharp-edged chips, tube surfaces, cutting edges and tools!

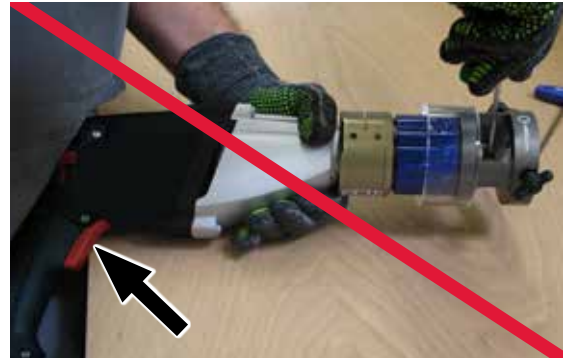
Danger of injury to eyes and hands.

- ⊘ **Do not** touch the rotating tool while the machine is in operation.
- ⊘ **Never** work without attached viewing window covering the work area.
- ▶ Wear recommended protective clothing, as described in chap. 2.4, p. 7.
- ▶ At the end of each working cycle switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine. Remove chips with tight-fitting safety gloves (in accordance with DIN EN 388 and EN 407) using suitable tools (e.g. tongs).
- ▶ Ensure that the viewing window is functional.



Machine start-up due to unintentional pressing of the ON/OFF switch!

Diverse physical injuries and material damage.
⊘ When carrying out a tool change, cleaning, maintenance, adjustment and repair to the machine, **do not** hold it as shown to the right so that the ON/OFF switch is pressed against the workbench (see arrow).



The MFW multifunctional tool may be damaged by wrong inserting of a tube!

Damage to tool.
▶ Before clamping the tube, ensure sufficient distance between the MFW and the tube.

8.1 Determining tube dimension

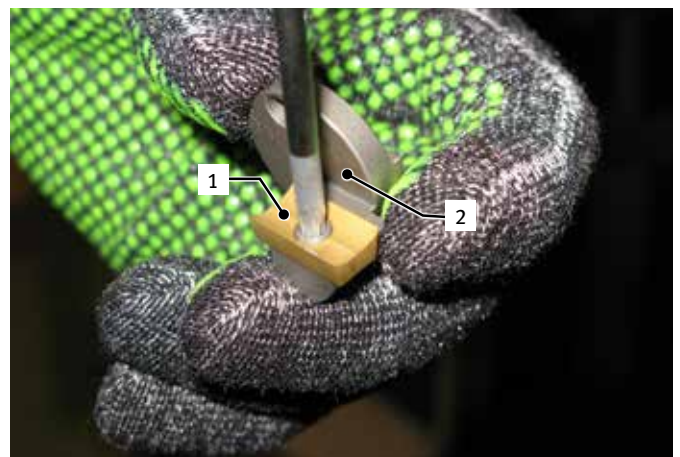
1. Determine the tube dimension to be processed.
2. Select tool holder, multifunctional tool and clamping shells (accessories, see chap. 3.8, p. 14).

NOTE Please check the outer diameter of the tubes before ordering the clamping shells. The different standards sometimes involve a special size (particularly for tubes in accordance with DIN 2430).

8.2 Fitting the multifunctional tool (MFW) and the tool holder (WH)

8.2.1 Fitting the multifunctional tool (MFW)

- ▶ Screw on the multifunctional tool (1) with Torx screw-driver onto the tool holder (2).



8.2.2 Fitting the tool holder

1. Install tool holder (1) with multifunctional tool in the groove guide frontal from the front and place the processing type and outer diameter of tube accordingly. RPG 2.5 (Cordless): according to the type of application (beveling/squaring) install the tool holder in one of the 6 fastening threads as per description, see chap. 3.7, p. 14.
2. Tighten screw (2) of the tool holder with the spanner.
3. Check that the tool holder (WH) and multifunctional tool (MFW) are seated firmly, and tighten if required.

The tool holder with the multifunctional tool is now assembled.



RPG ONE and RPG 1.5 (Cordless)



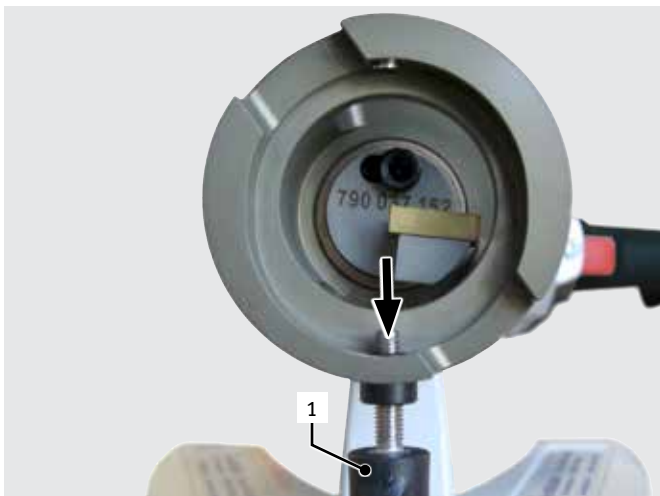
RPG 2.5 (Cordless)

8.3 Inserting/replacing the clamping shells

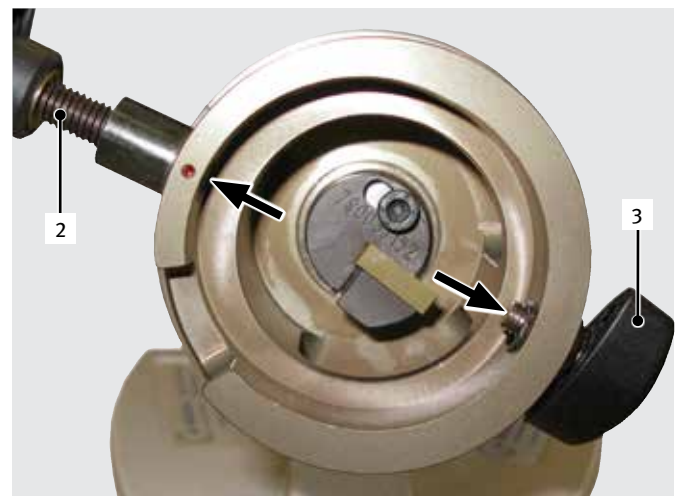
8.3.1 Remove a clamping shell

1. Select correct clamping shell according to tube dimension (see chap. 3.8.3, p. 15).
2. Disassemble the tensioning screw:
 - RPG ONE (Cordless):** Screw out the tensioning screw (1) (flush with housing on the inside, see arrow).
 - RPG 1.5, RPG 2.5 (Cordless):** Screw out the tensioning screw (2) (flush with housing on the inside, see arrow).
3. Screw out the clamping screw (3) until it runs freely (flush with housing on the inside, see arrows).

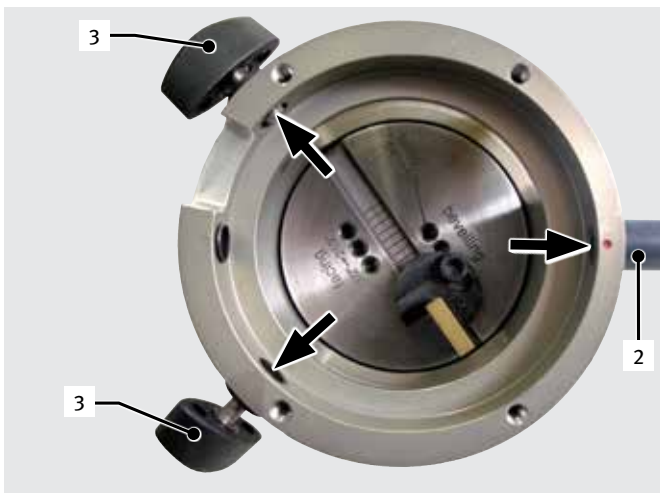
If a clamping shell that has already been assembled needs to be replaced, it can now be removed by simply pressing on it.



RPG ONE (Cordless)



RPG 1.5 (Cordless)



RPG 2.5 (Cordless)

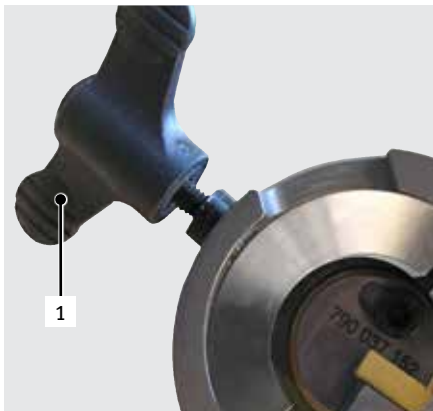
8.3.2 Inserting a clamping shell

1. Press a little on the clamping shell and install it in the body.
RPG 1.5, RPG 2.5 (Cordless): The Orbitalum logo should cover the clamping shell with the point marked in red on the body (see arrows).

NOTE The clamp shell has been installed correctly, if it is locked in place. If the clamping shell is not locked, this fact can be rectified by a gentle turn of the clamping shell.



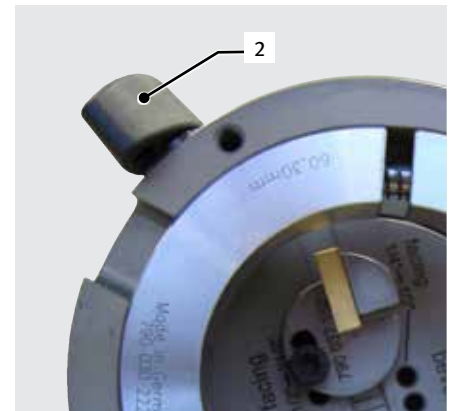
2. Setting up clamping shells:
RPG ONE (Cordless): Tighten the clamping shell with the tensioning screw (1).
RPG 1.5, RPG 2.5 (Cordless): Tighten the clamping shell with the clamping screw (2).



RPG ONE (Cordless)



RPG 1.5 (Cordless)



RPG 2.5 (Cordless)

The clamping shell has now been set up correctly.

8.4 RPG 2.5: Setting up and/or replacing adapter clamping shell

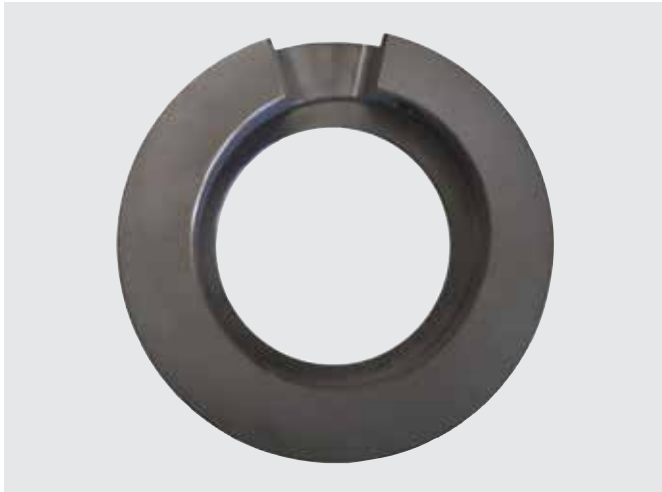
8.4.1 When is the adapter clamping shell necessary?

- Whenever tubes with an outer diameter of 6.35 - 38.1 mm (0.250" - 1.5") need to be processed.

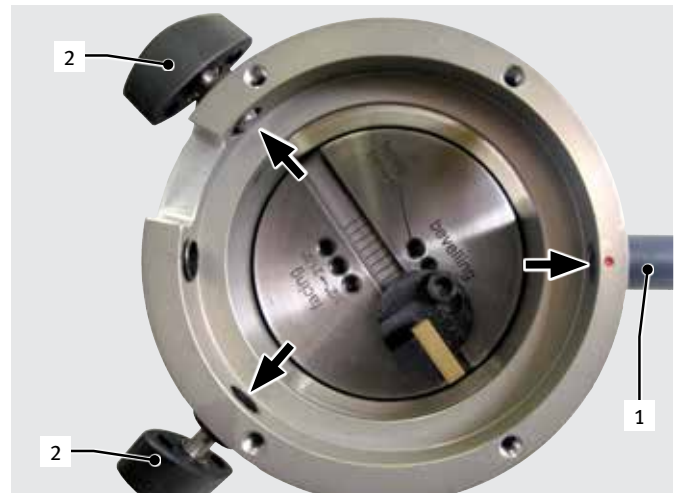
8.4.2 Removing clamping shell

1. Select correct clamping shell according to the tube dimension (see chap. 3.8.3, p. 15).
2. Screw out the tensioning screw (1) (flush with housing on the inside, see arrows).
3. Screw out the clamping screws (small handles) (2) until they run freely (flush with housing on the inside, see arrows).

If a clamping shell has already been assembled, it can now be removed by simply pressing on it.



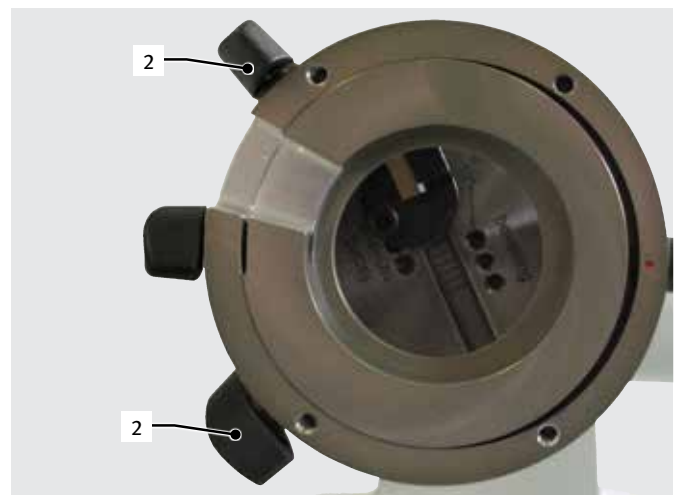
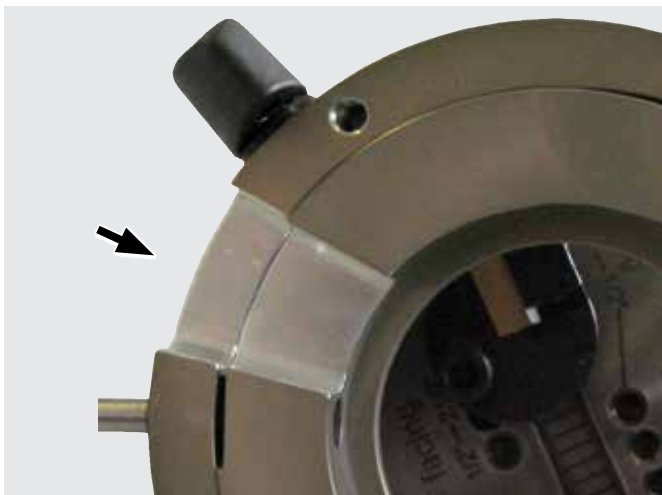
Adapter clamping shell



RPG 2.5 (Cordless)

8.4.3 Inserting adapter clamping shell

1. Install the adapter clamping shell into the body. The cavity of the clamping shell should thereby be flush with the cavity of the RPG 2.5-body (see arrow).
2. Tighten the adapter clamping shell with the clamping screws (small handles) (2).

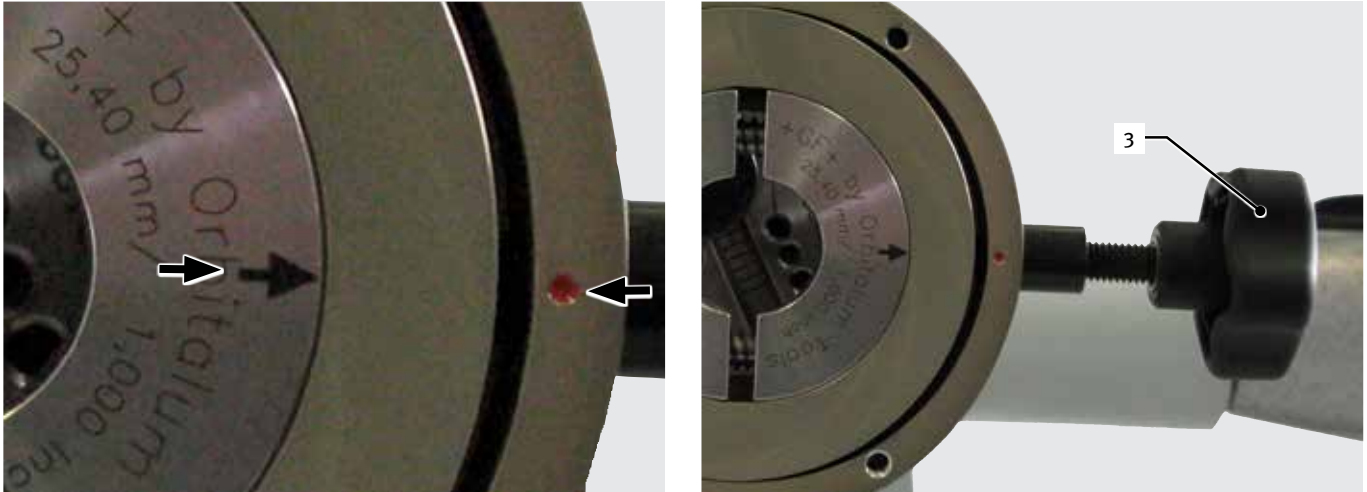


3. Press on the clamping shell slightly and install it into the adapter clamping shell.

IMPORTANT The Orbitalum logo should cover the clamping shell with the point marked in red on the body (see arrows below).

4. Tighten the clamping shell with the tensioning screw (large handle) (3).

The clamping shell has now been installed correctly.



NOTE The clamping shell has been correctly installed, if it is locked in place. If the clamp shell is not locked, this can be rectified by a gentle turn of the clamping shell.



ATTENTION

Using the adapter clamping shell could lead to collisions with the tool!

Tool breakage.

► Take care that there is enough space between the tool and the adapter clamping shell.

8.5 Clamping the tube



WARNING

Flying parts/breaking tool!

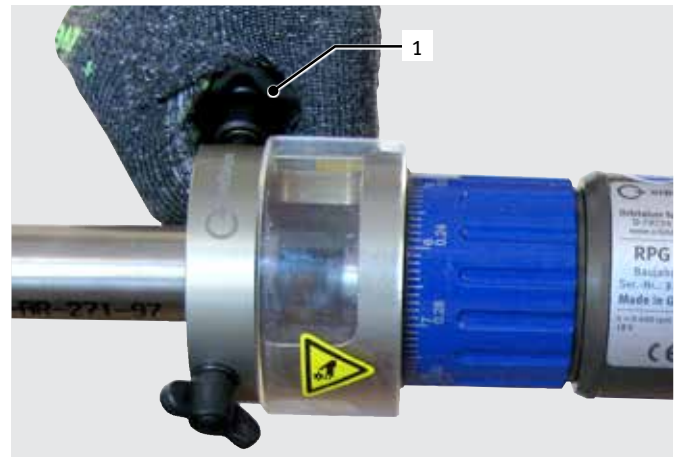
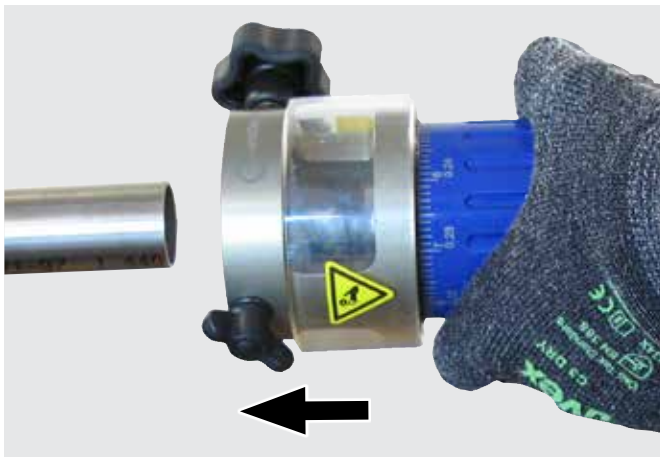
Diverse physical injuries and material damage.

- ⊘ **No** damaged or deformed cutting tools (MFW) should be used.
- ▶ Firmly clamp the tube to be machined into the clamping unit.
- ▶ Immediately replace worn-out tools.
- ▶ Ensure that the cutting tools are correctly fitted.
- ▶ The inner diameter of the clamping shells must be identical to the outer diameter of the tube to be machined. The specific inner diameter is specified on the clamping shells. The outer diameter of the tube must be determined.
- ▶ Avoid tool breakage by ensuring low (measured) infeed (max. clamping thickness: 0.05 mm) and correct setting of speed (see chap. 9.2, p. 32).
- ▶ Check that the tool holder (WH) and multifunctional tool (MFW) are seated firmly, and tighten if required.

NOTE

Clamp the tube squarely, ensuring that the tube and machine axes are aligned. If care is not taken, the tube end may not be processed at right angles.

1. Set up the tube in the clamping shell of RPG or with the use of a RPG Cordless, guide the machine to the tube and pick it up with the clamping shell.
2. To clamp the tube, rotate the tensioning screw (large handle) (1) in a clockwise direction until the stop.
3. Check that the tube is correctly seated.



The tube can be processed now.

- ▶ To release the tube from the machine, rotate the tensioning screw (large handle) (1) in an anti-clockwise direction until the stop.

9. OPERATION



DANGER

Machine start-up due to unintentional pressing of the ON/OFF switch or the speed regulator!

Fatal electric shock.

Diverse physical injuries and material damage.

- ▶ At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.



DANGER

Unexpected start-up!

Serious injury or death.

- ▶ Before connecting the machine to the power supply, check the ON/OFF switch is switched off.



DANGER

Loose/baggy clothing, long hair or jewelry can get caught in rotating machine parts!

Serious injury or death.

- ▶ Wear tight-fitting clothing when using the machine.
- ▶ Tie up long hair to prevent it from being caught.



WARNING

Flying parts/breaking tool!

Diverse physical injuries and material damage.

- ⊘ **No** damaged or deformed cutting tools (MFW) should be used.
- ▶ Firmly clamp the tube to be machined into the clamping unit.
- ▶ Immediately replace worn-out tools.
- ▶ Ensure that the cutting tools are correctly fitted.
- ▶ The inner diameter of the clamping shells must be identical to the outer diameter of the tube to be machined. The specific inner diameter is specified on the clamping shells. The outer diameter of the tube must be determined.
- ▶ Avoid tool breakage by ensuring low (measured) infeed (max. clamping thickness: 0.05 mm) and correct setting of speed (see chap. 9.2, p. 32).
- ▶ Check that the tool holder (WH) and multifunctional tool (MFW) are seated firmly, and tighten if required.



WARNING

Risk of machine and tube falling!

Irreversible crushing.

- ▶ Check the machine's position and secure it so it cannot fall.
- ▶ Ensure that the machine has a solid footing. (see chap. 6.4, p. 19).
- ▶ 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, switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.
- ▶ Always close the viewing window after removing chips.



WARNING

Body parts can fit between the cutting tools and the tube!

Serious injury.

- ⊘ **Do not** place body parts between the cutting tools and the tube.



WARNING

Flying, hot and sharp-edged chips, tube surfaces, cutting edges and tools!

Danger of injury to eyes and hands.

- ⊘ **Do not** touch the rotating tool while the machine is in operation.
- ⊘ **Never** work without attached viewing window covering the work area.
- ▶ Wear recommended protective clothing, as described in chap. 2.4, p. 7.
- ▶ At the end of each working cycle switch off the machine, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine. Remove chips with tight-fitting safety gloves (in accordance with DIN EN 388 and EN 407) using suitable tools (e.g. tongs).
- ▶ Ensure that the viewing window is functional.



ATTENTION

Restarting the machine following blockage!

Diverse physical injuries and material damage.

- ▶ In the event of a blockage, always disconnect the machine from the power supply before clearing it.
- ▶ If necessary, remove any tensioned parts before restarting the machine.



ATTENTION

A tube that is not sawn off at right-angles can damage the tool (MFW) if the distance between the cutting edge and the tube end is too small!

Tool breakage.

- ▶ Before switching on the machine ensure that the tool has sufficient axial distance around the complete tube circumference.
- ▶ Only drive the rotating tool with limited feed to the tube.
- ▶ General trouble shooting, see chap. 10.1, p. 38.



ATTENTION

RPG Cordless:**Excessive feed during the operation, and the ON/OFF switch still remains depressed, the operation may be damaged (by overheating)!**

- ▶ Release the ON/OFF switch immediately and separate the machine from the tube.

If the speed is reduced too quickly whilst operating, the tool may "dig in", causing damage to the face and the tool, and may cause the machine to stop!

- ▶ Always reduce the feed gradually.

9.1 Shutting down (even in an emergency)



WARNING

EMERGENCY STOP function not available by unplugging the power plug!

Diverse physical injuries and material damage.

- ⊘ 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 original Orbitalum Tools parts.
- ▶ Ensure free access to the power plug.

To be able to stop the machine (also in case of emergency), perform the corresponding steps and immediately remove from the danger area, until the machine comes to a stop:

With the Electric variant:

If the locking button (1) is not activated:

- ▶ Release the ON/OFF switch (2).

If the locking button (1) is activated:

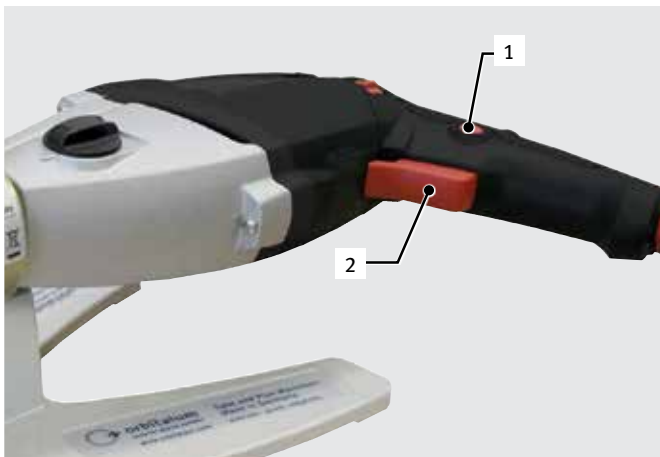
- ▶ Press and release the ON/OFF switch (2).

If the ON/OFF switch (2) does not function:

- ▶ Unplug the power plug, or leave the danger zone as quickly as possible and then unplug the power plug.

With the battery variant:

- ▶ Release the ON/OFF switch (3).



RPG ONE, RPG 1.5, RPG 2.5 (Electric)



RPG ONE, RPG 1.5, RPG 2.5 (Cordless)

9.2 Determining and setting the speed

9.2.1 Determining the cutting speed

There are 2 speed levels in the RPG drives. It is recommended that you work exclusively with speed level 1. RPG ONE and RPG 1.5: disabled speed level 2 upon delivery.

Type of machine	Speed range level 1 [min ⁻¹]	Speed range level 2 [min ⁻¹]
RPG ONE	145 - 380	disabled
RPG ONE Cordless	0 - 500	disabled
RPG 1.5	145 - 380	disabled
RPG 1.5 Cordless	0 - 500	disabled
RPG 2.5	9 - 52	27 - 153
RPG 2.5 Cordless	0 - 29	0 - 100

9.2.2 Setting speed with RPG Electric machines

NOTE The chip removal characteristic may be influenced by the speed.

The speed level can be pre-installed using the speed regulator (1) in the RPG Electric. The outer diameter of the tube can be adjusted precisely using the thumb wheel (2):

Speed regulator (1) level codes

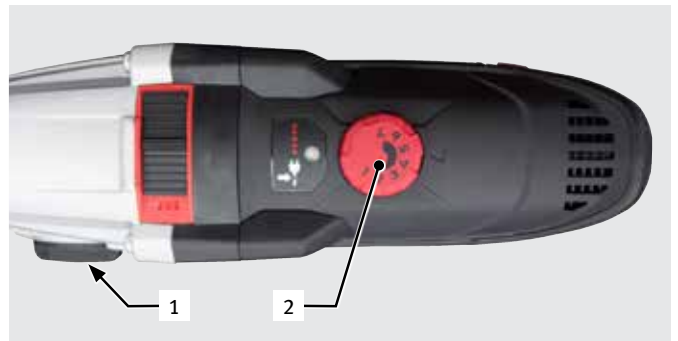
Tortoise	Level 1	9 - 52 min ⁻¹
Hare	Level 2	27 - 153 min ⁻¹

Increasing speed:

- ▶ Increase speed using thumb wheel (2).

Decreasing speed:

- ▶ Decrease speed using thumb wheel (2).



Standard values for the revolutions per minute (n)	Tube OD		Fine-tuning of the thumb wheel speed regulator (2)
	[mm]	[inch]	[Level]
RPG ONE	3.18	0.125	3
RPG ONE	6.35	0.250	2
RPG ONE	12.70	0.500	1
RPG ONE	25.40	1.000	1
RPG 1.5	3.18	0.125	3
RPG 1.5	6.35	0.250	2
RPG 1.5	12.70	0.500	1
RPG 1.5	38.10	1.500	1
RPG 2.5	6.35	0.250	7
RPG 2.5	38.10	1.500	4
RPG 2.5	50.80	2.000	3
RPG 2.5	65.00	2.559	2

9.2.3 Regulating speed with RPG Battery machines

With the RPG Battery machines the speed level is finely set via the speed controller (1).

- | | |
|------|---|
| NOTE | <ul style="list-style-type: none">• The harder the speed regulator (1) is depressed, the higher is the speed.• Chip removal can be influenced by the speed.• The processing of tubes can slow down and/or influence the speed, and it can be controlled with the speed regulator (1).• The larger the tube diameter the lower the speed must be set, to gain optimal cutting conditions. |
|------|---|

Regulate the speed:

- ▶ With the speed regulator and/or the ON/OFF switch (1).

Increasing speed:

- ▶ Press the speed regulator (1) further down.

Decreasing speed:

- ▶ Release the speed regulator (1).

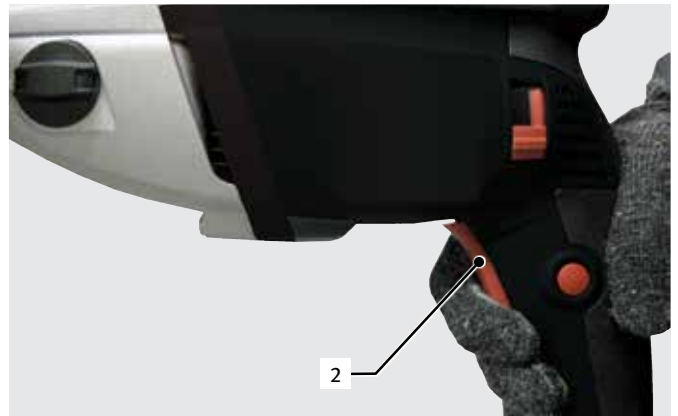


9.3 Switching the machine on

9.3.1 RPG Electric

1. Check if the viewing window is closed, and close it, if necessary.
2. Set the desired speed via the speed regulator (1).
3. Press the ON/OFF switch (2).

► The machine starts up.



NOTE ⚠ **Do not** use the locking button as this inhibits the shutdown process, see chap. 9.1, p. 31.

NOTE If the tool vibrates after starting up, the cutting speed is too high.

► Reduce the cutting speed, see chap. 9.2, p. 32.

9.3.2 RPG Cordless

1. Check whether the viewing window is closed, and close it, if necessary (only with RPG 1.5 and RPG 2.5 battery).
2. Connect battery (1) to RPG Cordless.
3. Press the ON/OFF switch and/or speed regulator (2).

► The machine starts.



NOTE ⚠ **Do not** use the locking button as this inhibits the shutdown process, see chap. 9.1, p. 31.

- NOTE If the tool vibrates after starting up, the cutting speed is too high.
- ▶ Reduce the cutting speed, see chap. 9.2, p. 32.

9.4 Infeeding the tool

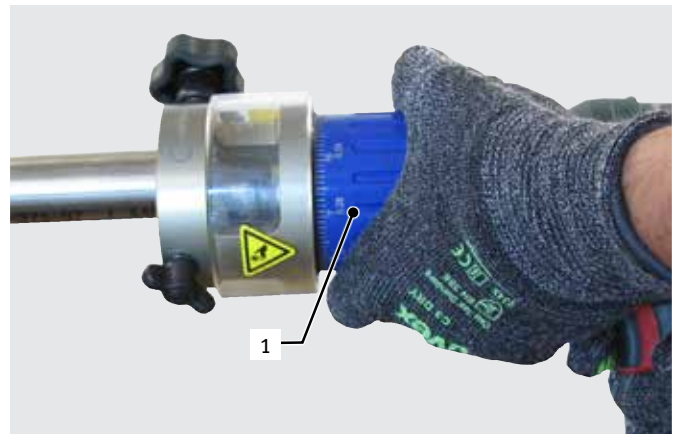
9.4.1 Feed with scale divisions

Each division means an insertion of 0.05 mm/0.002 inch. Do not exceed clamp thickness of 0.05 mm (0.002 inch) with chip removal. Excessive feed levels will reduce the speed or even stop the machine ("Troubleshooting", see chap. 10.1, p. 38). Wear recommended protective clothing, as described in chap. 2.4, p. 7.

1. Introduce the tool with feed (1) to the tube, until the tool is in contact.

When the tool is cutting at the complete face of the tube:

- ▶ Continue the tool with the same pressure further, until the desired processing result is achieved.
- ▶ To achieve the optimum squareness and finish, the tool should be allowed to rotate for 2-3 revolutions without any feed being applied.



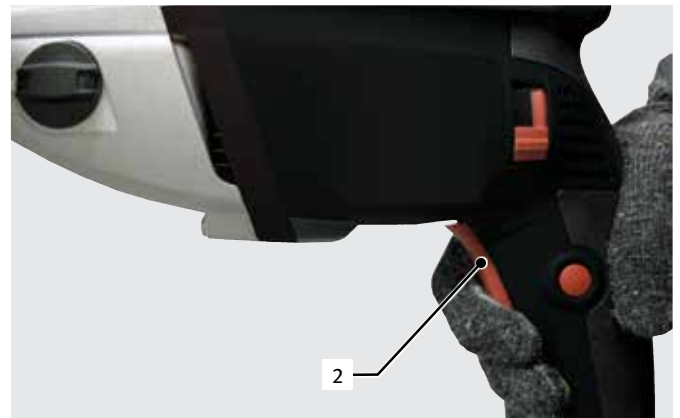
9.5 Switching the machine off

9.5.1 RPG Electric

1. Release the ON/OFF switch (2).

The machine comes to a stop.

2. Unplug the power plug from the power source.
3. Release the tube from the machine (see chap. 8.5, p. 28).
4. Remove the chips from the housing with suitable tools (tongs) after each machining process.
5. Close the viewing window after removing chips.



9.5.2 RPG Cordless

1. Release the ON/OFF switch or speed controller (3).

The machine comes to a stop.

2. Remove the exchangeable battery.
3. Release the machine from the tube (see chap. 8.5, p. 28).
4. Remove the chips from the housing with suitable tools (tongs) after each machining process.
5. Close the viewing window after removing chips.

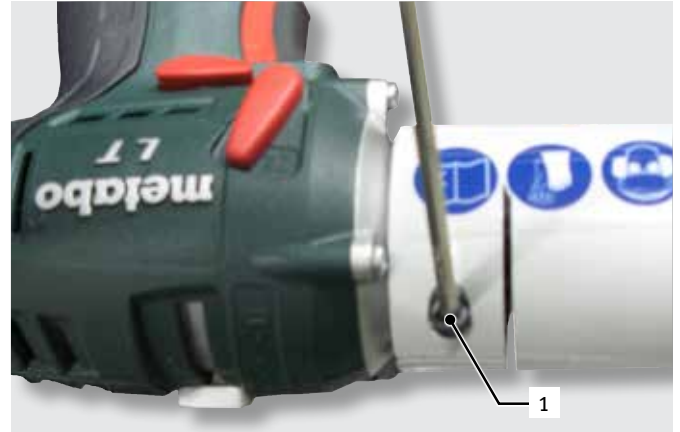


9.6 Processing in restricted environments

To make operation easier, the position of the machine with respect to the tube can be changed as follows:.

9.6.1 Change position of drive

1. Release screw (1) on the reverse of the body.
2. Rotate drive to desired position.
3. Install screw (1).



9.6.2 Change position of housing


Body position changeable only at the RPG 2.5 (Cordless).

1. Fully unscrew headless screw (2) on the reverse of the body.
2. Rotate body to desired position (only possible in 4 x 90° steps). Pay attention to countersinks in the body.
3. Assemble headless screw (2).




10. SERVICING, MAINTENANCE, TROUBLESHOOTING

NOTE Some of the work mentioned depends a great deal on the use and on the ambient conditions. The cycles specified are minimum specifications. In individual cases, differing maintenance cycles are possible. To ensure the safety of the machine, perform maintenance annually using an authorized service center with VDE testing. If the machine does not function as previously described, the machine must also be sent into an authorized service center.

 **DANGER** **Danger of death by electric shock!**
 Non-observance could result in death or serious 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, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.

 **DANGER** **Risk of electric shock due to poor electrics!**
 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, allow it to run to a stop and pull the mains plug and/or take the rechargeable battery out of the machine.
- ▶ Repair and maintenance work on the electrical equipment may only be carried out by a qualified electrician.

Maintenance

Time/Interval	Activity
Before starting work	▶ Check the tube clamping if the tube is already mounted in the machine.
Every time the cutter is cleaned	▶ Clean the clamping shells and the tool supports for the multifunctional tool.
Every time the tool is changed	▶ Clean the tool support and the multifunctional tool. ▶ Remove any dirt from the bearing surface of the tool holder.

10.1 What to do if ...? – General trouble shooting

Problem	Possible cause	Remedy
The tool (multifunctional tool) is catching during machining.	Feed is too big or battery is almost empty.	<ul style="list-style-type: none"> ▶ Disassemble tool holder and take out tube from the machine. ▶ Remove chip using side cutting pliers and file off section. ▶ Introduce carefully during new processing.
	MFW or WH loose.	▶ Screw in MFW or WH tightly.
Rechargeable battery power system of the RPG Cordless does not work.	Battery completely discharged.	<ul style="list-style-type: none"> ▶ Charge battery (refer to attached operating instructions of the charger). ▶ Use spare battery.
	Battery not connected to RPG Cordless.	▶ Connect battery to RPG Cordless.
Tool tends to vibrate.	Speed too high.	▶ Reduce speed (see chap. 9.2, p. 32).
Strong tendency to vibrate.	Axial or radial play in the components.	▶ Check machine for freedom from play.
	MFW loose.	▶ Check MFW on fixed seat.
The processed tube is jagged or has a burr which is too big.	MFW blunt.	▶ Replace MFW.

10.2 Servicing/customer service

For ordering spare parts, refer to the separate spare parts list.

For troubleshooting, please contact the branch responsible directly.

Please indicate the following details:

- Type of machine:
 - **RPG ONE (Cordless)**
 - **RPG ONE (Electric)**
 - **RPG 1.5 (Cordless)**
 - **RPG 1.5 (Electric)**
 - **RPG 2.5 (Cordless)**
 - **RPG 2.5 (Electric)**
- Machine-no.: *(see type plate)*

11. EG DECLARATION OF CONFORMITY



EG Declaration of Conformity
 Declaration of conformity
 Dichiarazione di conformità
 Déclaration de conformité
 Declaración de conformidad

Orbitalum Tools GmbH
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According to machine guideline 2006/42/EG (MaschR).

Die Bauart der Maschine:
 The following product:
 Il seguente prodotto:
 Le produit suivant:
 El producto siguiente:

RPG ONE Tube Squaring Machine Electric*
RPG ONE Tube Squaring Machine Cordless*
RPG 1.5 Tube Squaring Machine Electric*
RPG 1.5 Tube Squaring Machine Cordless*
RPG 2.5 Tube Squaring Machine Electric*
RPG 2.5 Tube Squaring Machine Cordless*

Seriennummer:
 Series number:
 Numero di serie:
 Nombre de série:
 Número de serie:

Baujahr / Year / Anno / Année / Año:

ist entwickelt, konstruiert und gefertigt in Übereinstimmung mit folgenden EG-Richtlinien:
 was designed, constructed and manufactured in accordance with the following EC guidelines:
 è stata progettato costruito e commercializzato in osservanza delle seguenti Direttive:
 a été dessiné, produit et commercialisé selon les Directives suivantes:
 ha sido proyectado construido y comercializado bajo observación de las siguientes Directivas:

Maschinen-Richtlinie (2006/42/EG)
EMV-Richtlinie (2014/30/EU)
Niederspannungsrichtlinie (2014/35/EU)

Folgende harmonisierte Normen sind angewandt:
 The following harmonized norms have been applied:
 Le seguenti norme armonizzate ove applicabili:
 Les normes suivantes harmonisées où applicables:
 Las siguientes normas armonizadas han sido aplicadas:

DIN EN ISO 12100: 2011.03
DIN EN 62841-1: 2016.07

* including all accessories of Orbitalum Tools.

Authorised to compile the technical file is Mr. Gerd Riegraf, Orbitalum Tools GmbH, D-78224 Singen.

Singen, 03.08.2017

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We value your opinion! Please send us your comments and queries.