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Operating instructions

BRB 4

Electric

Boiler pipe preparation machines

Code 790 086 761
Original Operating Instructions

Machine No.: _____

Table of contents

0 About these instructions

For quick comprehension of these instructions and safe handling of the machine, the warnings, notes and symbols used in the instructions are presented here, as are their meanings.

0.1 Warning messages

Warnings are used in these instructions to warn you of injury or damage to property. Always read and heed these warnings!

This is a warning symbol. It warns you of the danger of injury.

Carry out all measures identified with the safety symbol to avoid injury or death.

Warning symbol	Meaning
 **DANGER**	Immediate danger! Non-compliance can result in death or severe injury. ⦸ Prohibited activities (if applicable). ▶ Measures for avoiding danger.
 **WARNING**	Possible danger! Non-compliance can result in serious injury. ⦸ Prohibited activities (if applicable). ▶ Measures for avoiding danger.
 **CAUTION**	Dangerous situation! Non-compliance can result in minor injury.
CAUTION	Dangerous situation! Non-compliance can result in damage to property.

0.2 Further symbols and displays

Symbol	Meaning
Important, Note	Note: Include important information for comprehension.
	Imperative: You must observe this symbol.
1.	Request for action in a sequence of actions: You must carry out an action here.
▶	Single request for action: You must carry out an action here.
▷	Conditional action instruction: You must carry out an action here if the preceding condition is fulfilled.

0.3 Abbreviations

Abbr.	Meaning
BRB Electric	Boiler pipe preparation machine with electric drive
NC	Clamping system with permanently anchored clamping wedges
MFW	Multifunctional tool
WH	Tool holder
QTC®	Quick Tool Change

Important **Attention: When using electrical tools, the following basic safety measures need to be observed to prevent electric shock, injury or fire. Read all these instructions before using this electrical tool and keep them in a safe place.**

1 Safety instructions

The boiler pipe preparation machines (hereinafter referred to as BRB 4) are state-of the-art machines. Use other than that described in these instructions can lead to personal injury of the user or third parties. It may also damage the machine or other equipment.

For this reason:

- Use the machine only in perfect technical condition.
- Comply with these safety instructions.
- Store all documentation near the machine.

1.1 Proper use

- Only use BRB 4 to machine (face and bevel) metallic pipe ends

  up to 4 inches. The machine should only be used on empty, deenergized pipes. Temperature range: -15 ° to 40 °C.

1.2 Improper use

- The machine is not intended for use by private consumers. Do not use the machine on energized piping, in explosive atmospheres or on contaminated pipes.
- Do not use the machine outdoors when it is foggy, raining, during a thunderstorm or when the relative humidity > 80% (measured at 20°C). Do not use the BRB as a drive for any applications other than that named as the intended use (chapter 1.1).

1.3 Machine constraints

- Space requirement/Movement space: A radial space requirement for people of approx. 1 m around the machine is required.
- Work lighting: min. 300 Lux.
- Minimum age of operator: 14 years old.

DANGER

Defective safety parts due to soiling and wear!

Bodily injury due to failure of safety parts.

▶ Check faulty safety parts daily for proper operation.

▶ Clean and maintain the machine every day.

⦸ **Do not** misuse the cable, for example by suspending or carrying the machine by the cable.

⦸ 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.

1.4 Safety regulations

- 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 spare parts and operating materials from Orbitalum Tools.
- Work on the electrical equipment may only be carried out by a qualified electrician.
- Only operate the BRB Electric if the electrical safety equipment/restart inhibitor is working.

1.5 Supervised operation

- Workshop application: The workshop manager 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.
- Outdoor/field use: The site manager 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.

1.6 Working with safety in mind

"Make your contribution to safety in the workplace."




- Report deviations in operating behavior to the person in charge immediately.
- Be aware of safety aspects at all times when working.
- When working with the BRB, wear safety shoes as per EN ISO 20345 S3, safety goggles as per DIN EN 166, safety gloves as per EN 388 and hearing protection as per DIN EN 352.
  Note: The suggestions for "personal safety equipment" apply exclusively and specifically for 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.
- After each work process, switch off the machine and let it run to a stop.
- BRB Electric: Before cleaning, maintenance, or repair work, turn off the compressed air supply and allow the machine to run to a stop.
- Do not reach into the tools while machining is being carried out.

DANGER

Damaged insulation!

Fatal electric shock.

⦸ **Do not** screw signs to the electrical tool.

▶ Use adhesive signs.

DANGER

Loss of insulation due to collection of metal dust in the housing!

Fatal electric shock.

▶ Clean the machine every week with dry, oil-free compressed air.

DANGER

Electric shock from damaged plugs!

Death.

▶ Connecting plugs of the machine must fit into the outlet.

⦸ **Do not** use adapter plugs together with protectively grounded power tools.

DANGER

Electric shock from grounded elements!

Death.

⦸ **Avoid** contact with grounded surfaces such as tubes, heating, cookers or refrigerators.

WARNING

Machine noise levels > 80 dB (Laeq [dB(A)])!

Irreversible damage to hearing.

▶ Wear hearing protection in accordance with DIN EN 352.

WARNING

Parts can be ejected when working!

Irreversible eye injuries.

▶ Wear safety goggles in accordance with DIN EN 166.

WARNING

Falling objects!

Feet can be irreversibly crushed.

▶ Wear safety shoes in accordance with DIN EN 20345-S3.

WARNING

Sharp-edged chips whirling around!

Irreversible cuts.

▶ Wear safety gloves in accordance with EN 388 (protection level 5).

WARNING

Loose clothing and long hair can get caught in the machine!

⦸ **Do not** wear loose clothing, e.g. ties, when operating the equipment.

▶ Secure long hair against being caught.

WARNING

Danger from vibration and unergonomic, monotonous work!

Discomfort, fatigue and malfunctioning of the moving apparatus.

Limited response capability and cramps.

▶ Run through some relaxation exercises every 10 minutes.

▶ Assume an upright and comfortable body position during operation.

1.7 Shutting down the machine

For descriptions of the EMERGENCY STOP functions, see chapter 9.3.1, P. 28.

1.8 Waste disposal

- Dispose of chips and replaced gear lubricant as prescribed.

(as per RL 2002/96/EC)

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 13th, 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 13th, 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.

1.9 REACh (Registration, Evaluation, Authorization and Restriction of Chemicals)

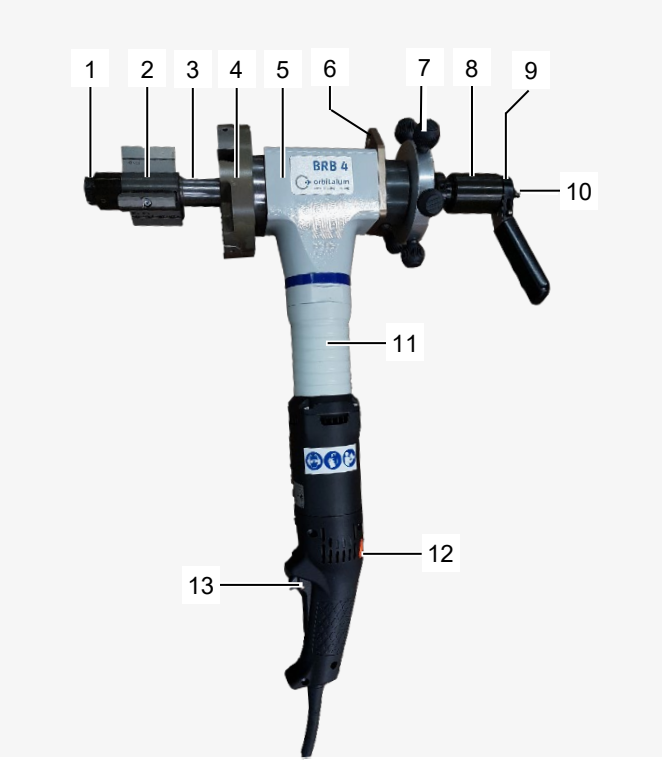
The regulation (EC) 1907/2006 of the European Parliaments and of the Council concerning the registration, evaluation, authorization and restriction of chemicals (REACh) regulates the production, placing on the market and use of chemical substances and the mixtures produced from these.
Our products are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

1.10 Other safety regulations

Observe country-specific regulations, standards and guidelines.

2 Layout of the product

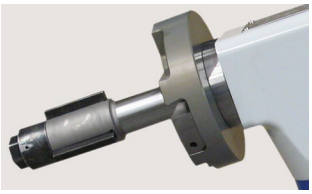
2.1 BRB 4 Electric



BRB 4 Electric with "NC" clamping system

1 *Stop screw*
2 *Clamping insert ("NC" clamping system)*
3 *Mandrel*
4 *Tool mounting plate*
5 *Housing*
6 *Mount for balancer*
7 *Locking wheel*
8 *Clamping nut and stop bushing*
9 *Tension ratchet*
10 *Thread spindle*
11 *Drive unit (EL)*
12 *RPM regulator*
13 *Dead man's switch*

2.1.1 “NC” clamping system



The new "NC" clamping system with its clamping wedges anchored in the mandrel is ideal for applications in which foreign objects may not enter the pipe inside or a tank. The "NC" clamping system provides additional certainty in particular for vertical work. The clamping wedges can be quickly replaced.

2.2 Accessories

WARNING

Danger from insufficiently secured accessories!

Diverse physical injuries.

▶ Use only accessories specially developed and approved by the manufacturer.

2.2.1 Tool holder and multifunctional tool

Use:

- Facing pipe ends
- Beveling various joint geometries on the pipe outer and inner diameter

Depending on usage conditions and/or tool mounting plates, REB tool holders and REB multifunctional tools can also be used.

For list of tools and tool holders, see product catalog.

3 Characteristics and range of applications

3.1 Characteristics

Only use BRB 4 to machine (face and bevel) metallic pipe ends up to 4 inches:

- Pipe end preparation for standard-compliant weld seam joint forms
- Replaceable tool mounting plate for machining different pipe diameters under various operating conditions.
- QTC® (Quick Tool Change) tool system fastener to attach the tool holder to the tool mounting plate Ø 120 mm
- Tool system with pressure wedges for tool mounting plate Ø 68 mm
- Only one multifunctional tool required for:
  - Different machining operations (beveling, squaring)
  - Different pipe wall thicknesses
  - Different raw materials
- Additional use of REB tools and holders (see chapter 2.2.1, P. 10).
- Tool with multiple cutting edges:
  - Only one screw is needed to fix and secure each tool
  - TiAlN tool coating
- “NC” clamping system:
  - 3 wedges to allow a change of dimension without a tool
- Drive:
  - BRB Electric: speed-controlled electric motor
  - Low-maintenance gearing with grease

3.2 Scope of application

3.2.1 BRB application range with “NC” clamping system

Machine model		BRB 4, Kit 1	BRB 4, Kit 3	BRB 4, Kit 5
Pipe ID	[mm]	19.1 - 38.0	35.0 - 108.0	19.1 - 108.0
	[inch]	0.752 - 1.490	1.378 - 4.252	0.752 - 4.252
Wall thickness steel	[mm]	2.0 - 10.0	2.0 – 10.0	2.0 - 10.0
	[inch]	0.079 - 0.254	0.079 - 0.254	0.079 - 0.254
Wall thickness rustproof steel	[mm]	2.0 - 8.0	2.0 - 8.0	2.0 - 8.0
	[inch]	0.079 - 0.203	0.079 - 0.203	0.079 - 0.203
Wall thickness aluminum	[mm]	2.0 - 15.0	2.0 - 15.0	2.0 - 15.0
	[inch]	0.079 - 0.590	0.079 - 0.590	0.079 - 0.590

3.2.2 Raw materials

- Unalloyed and low-alloyed steels
- High-alloy steels (stainless steel material no. 1.40. – 1.45. in accordance with DIN 17 455 and DIN 17 456)
- Aluminum

Others on request

4 Technical specifications

4.1 BRB 4

		BRB 4 Electric
Dimensions with “NC” clamping system, approx.	[mm] [inch]	(L) 450 x (W) 120 x (H) 570 (l) 17,717 x (w) 4,724 x (h) 22,441
Weight gross/net, approx.	[kg] [lbs]	26.6 / 11.7 58.5 / 25.7
Power	[kW] [hp]	1.20 1.63
Air consumption (for 6 bar)	[m³/min]	–
Power connection	[V, Hz]	230 V, 50/60 Hz
Speed max. idle speed	[min^{-1}]	15 - 35
Laeq sound pressure level,1 m*	[dB (A)]	approx. 82 (mid-range speed)
Vibration level to EN 28662, Part 1	[m/s²]	2.5

*) *The sound pressure level measurement was carried out under normal operating conditions to EN 23741.*

5 Commissioning

Checking scope of delivery

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

5.1 Scope of delivery

Subject to change

5.1.1 Standard scope of delivery

- 1 boiler pipe preparation machine BRB 4
- 1 hard-sided transport case
- Tool mounting plates, clamping sets and mandrel, depending on the machine (summary tables: chapter 3.2.1BRB application range with “NC” clamping system, P. 12 and chapter 5.1.2, P. 14).
- 1 cooling cutting material spray pump KSS-TOP (Code 790 060 226)
- 1 tool key set
- 1 integrated lug for balancer attachment
- 1 set of operating instructions and 1 spare parts list

5.1.2 Additional scope of delivery of the “NC” clamping system

For information on replacing the individual components:

- ▶ BRB 4: see chapter 8, P. 17.

Machine model		BRB 4, Kit 1	BRB 4, Kit 3	BRB 4, Kit 5
Clamping wedge sets	[Pieces]	9 - -	- 8 2 clamping attachments	9 8 2 clamping attachments
Mandrel Ø with Clamping wedge retainer	[mm]	19.05 (small) -	- 34.50	19.05 34.50
	[inch]	0,750 -	- 1,358	0,750 1,358
Tool holder Ø	[mm]	68 / 19 - -	- - 120 / 27	68 / 19 68 / 27 120 / 27
	[inch]	2.677 / 0.748 - -	- - 4.724 / 1.063	2.677 / 0.748 2.677 / 1.063 4.724 / 1.063

6 Transport and storage

DANGER

BRB Electric:

Risk of death from electric shock.

▶ Disconnect the BRB from the power supply prior to transport.

WARNING

The BRB 4 Kit 5 is very heavy when transported in its case (26 kg)!

Risk of overstraining.

▶ Use appropriate lifting equipment to transport the BRB 4 Kit 5 over long distances.

CAUTION

Improper machine storage!

Diverse risks.

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

The BRB is a portable, hand-operated machine. Special transport aids are not required.

▶ For safe machine transport, hold the machine as shown below.

Removing the BRB from its case

BRB transportation

7 Preparation

DANGER

BRB Electric:

Risk of death from electric shock.

▶ Prior to assembly, dismantling, maintenance and adjustment work, disconnect the BRB from the power supply and let it come to a complete stop.

CAUTION

Danger from falling machine and pipe.

Danger of crushing.

▶ Check machine condition and secure it to prevent it falling.

7.1.1 BRB Electric

The power connection must fulfill the following requirements:

- 1-phase alternating current 230 V, 50/60 Hz.
  Fault current (FI) protection must be provided by the customer.
- Power fuse at least 10 A.

8 Clamping wedge and mandrel assembly BRB 4

8.1 Overview of clamping wedges, clamping attachments and mandrel

DANGER

BRB Electric:

Risk of death from electric shock.

- Prior to assembly, dismantling, maintenance and adjustment work, disconnect the BRB from the power supply and let it come to a complete stop.

8.1.1 BRB 4 with "NC" clamping system

- Select clamping wedge, if necessary, clamping attachment (to be screwed onto the clamping wedge) and mandrel (Ø 19.05 or Ø 34.5) depending on the pipe inner diameter of the pipe to be machined.

Overview

Clamping range [mm]	Clamping range [inch]	Kit 1	Kit 3	Kit 5
19.1 – 47.0	0,752 – 1,490	x		x
35.0 – 64.0	1,378 – 2,520		x	x
63.0 – 108.0	2,480 – 4,252		x	x

Kit 1

Kit 1: Clamping area 19.1 – 47.0 mm
Pipe inside ∅ clamping wedge [mm]
19.1 – 23.0 Code 790 086 390
22.0 – 26.00 Code 790 086 391
25.0 – 29.0 Code 790 086 392
29.0 – 32.0 Code 790 086 393
31.0 – 35.0 Code 790 086 394
34.0 – 38.0 Code 790 086 395
37.0 – 41.0 Code 790 086 396
40.0 – 44.0 Code 790 086 397
43.0 – 47.0 Code 790 086 398

Kit 3

Clamping area 35.0 – 108.0 mm			
Pipe inside ∅ clamping wedge [mm]	**Clamping attachment A to inside ∅ [mm]**	**Clamping attachment B to inside ∅ [mm]**	**Mandrel [mm]**
35.0 – 40.0 Code 790 086 311	–	–	∅ 34.5 Code 790 086 441
39.0 – 44.0 Code 790 086 312	–	–	
43.0 – 48.0 Code 790 086 313	–	–	
47.0 – 52.0 Code 790 086 314	67.0 – 72.0 Code 790 086 319	87.0 – 92.0 Code 790 086 324	
51.0 – 56.0 Code 790 086 315	71.0 – 76.0 Code 790 086 319	91.0 – 96.0 Code 790 086 324	
55.0 – 60.0 Code 790 086 316	75.0 – 80.0 Code 790 086 319	95.0 – 100.0 Code 790 086 324	
59.0 – 64.0 Code 790 086 317	79.0 – 84.0 Code 790 086 319	99.0 – 104.0 Code 790 086 324	
63.0 – 68.0 Code 790 086 317	83.0 – 88.0 Code 790 086 319	103.0 – 108.0 Code 790 086 324	

Kit 5

Clamping area 19.1 – 108.0 mm			
Pipe inside Ø clamping wedge [mm]	**Clamping attachment A to inside Ø [mm]**	**Clamping attachment B to inside Ø [mm]**	**Mandrel [mm]**
19.1 – 23.0 Code 790 086 390	–	–	∅ 19.05 Code 790 086 381
22.0 – 26.00 Code 790 086 391	–	–	
25.0 – 29.0 Code 790 086 392	–	–	
29.0 – 32.0 Code 790 086 393	–	–	
31.0 – 35.0 Code 790 086 394	–	–	∅ 34.5 Code 790 086 441
34.0 – 38.0 Code 790 086 395	–	–	
35.0 – 40.0 Code 790 086 311	–	–	
39.0 – 44.0 Code 790 086 312	–	–	
43.0 – 48.0 Code 790 086 313	–	–	
47.0 – 52.0 Code 790 086 314	67.0 – 72.0 Code 790 086 319	87.0 – 92.0 Code 790 086 324	
51.0 – 56.0 Code 790 086 315	71.0 – 76.0 Code 790 086 319	91.0 – 96.0 Code 790 086 324	
55.0 – 60.0 Code 790 086 316	75.0 – 80.0 Code 790 086 319	95.0 – 100.0 Code 790 086 324	
59.0 – 64.0 Code 790 086 317	79.0 – 84.0 Code 790 086 319	99.0 – 104.0 Code 790 086 324	
63.0 – 68.0 Code 790 086 317	83.0 – 88.0 Code 790 086 319	103.0 – 108.0 Code 790 086 324	

8.2 Replace clamping wedge: BRB 4 "NC"

▶ Clamping wedge overview, see chapter 8.1.1, P. 17.

DANGER

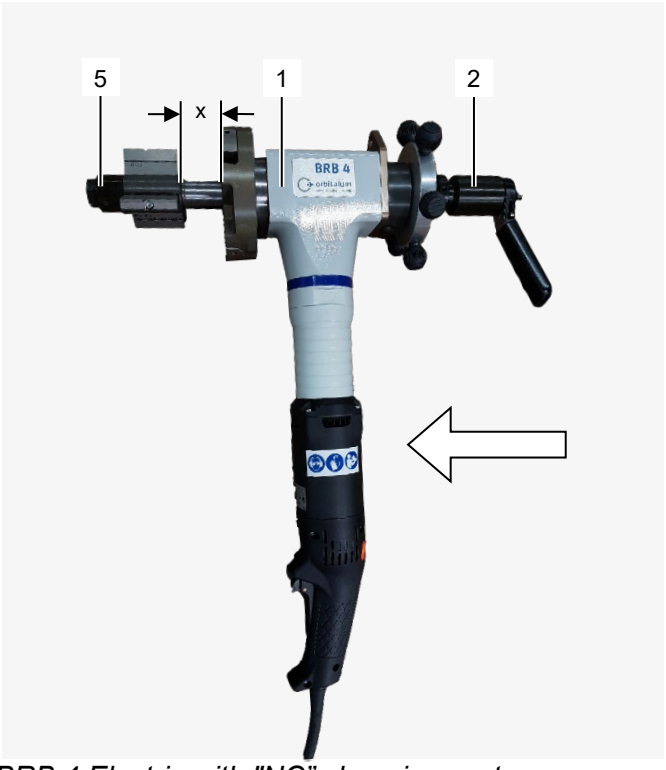
BRB Electric:

Risk of death from electric shock.

▶ Prior to assembly, dismantling, maintenance and adjustment work, disconnect the BRB from the power supply and let it come to a complete stop.

8.2.1 Replacing clamping wedge: BRB 4 "NC" with mandrel Ø 34.50

1. The mandrel should be positioned in the machine housing (1) so that dimension "X" is approx. 50 mm (1,969 inch).
2. For BRB 4 Electric rotate clamping nut (2) in direction of arrow as far as the stop.
3. Disassemble the stop (5) with an SW24 open-end wrench.



BRB 4 Electric with "NC" clamping system

4. The 3 clamping wedges (6) can now be pushed from the guide of the clamping wedge retainer (7) in the direction of the arrow.
5. Insert the selected clamping wedges into the guide of the clamping wedge retainer (7).

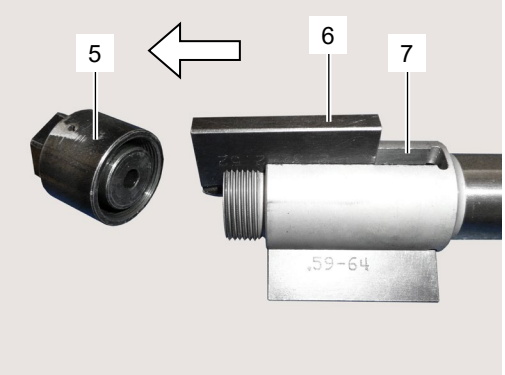
CAUTION

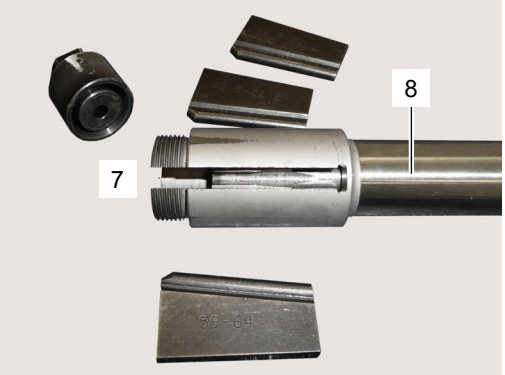
Damage to tool!

⦸ The clamping wedges must **not** be tilted.

▶ Ensure that the 3 clamping wedges used are always identical.

6. Refit the stop (5) with an SW24 open-end wrench.





8.3 Replacing the mandrel: BRB 4 "NC"

▶ Mandrel overview, see chapter 8.1.1, P. 17.

DANGER

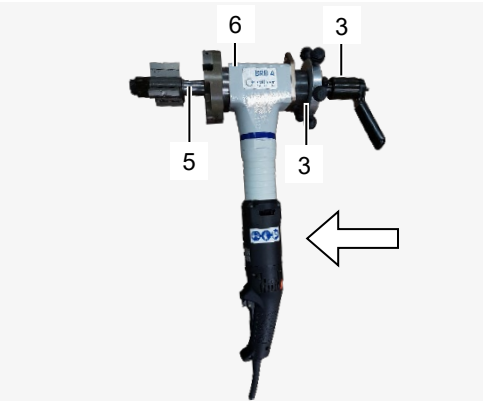
BRB Electric:

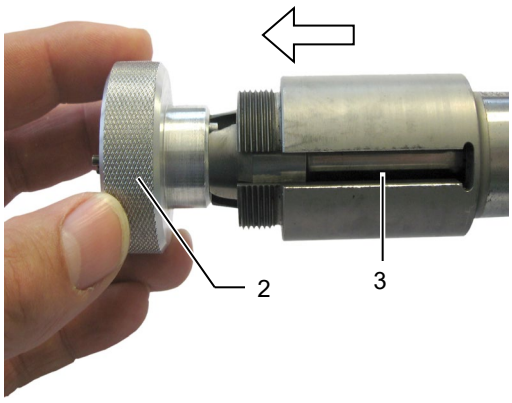
Risk of death from electric shock.

▶ Prior to assembly, dismantling, maintenance and adjustment work, disconnect the BRB from the power supply and let it come to a complete stop.

8.3.1 Replacing the mandrel: BRB 4 "NC" with mandrel Ø 19.05 and Ø 34.50

1. Remove clamping wedge (see chapter 8.2 Replace clamping wedge: BRB 4 "NC", P. 19).
2. With mandrel Ø 19.05 the tool mounting plate must be removed; with mandrel Ø 34.5 no tool mounting plate must be removed.
3. Use mounting aid (1) (Code 790 085 490) to unscrew clamping wedge attachment (2) in the direction of the arrow and remove it. **Warning, left hand thread!**
4. Rotate clamping nut (3) down from the mandrel (5).
5. Rotate mandrel (5) in the direction of the arrow with the ratchet wheel (4).
6. Pull mandrel (5) out of the housing (6).



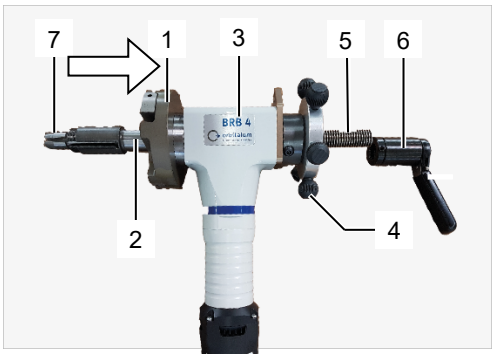


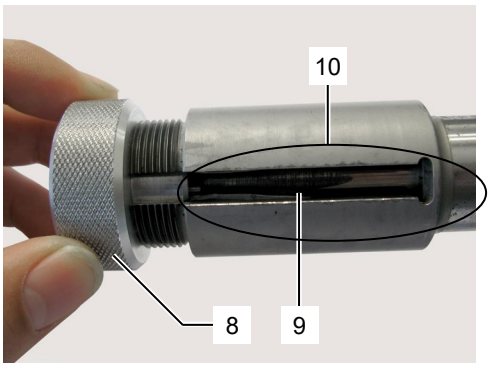
8.3.2 Fitting the mandrel: BRB 4 "NC" with mandrel Ø 19.05 and Ø 34.50

Important

1. The tool mounting plate (1) for mandrel Ø 34.5 must already be fitted; the tool mounting plate for mandrel Ø 19.05 can only be fitted at the end.
2. Push mandrel (2) into housing (3). Watch out for the groove position!
3. Use feed ratchet (4) to move mandrel (2) in the direction of the arrow until least 60 mm of the thread (5) is visible.
4. Rotate the clamping nut (6) onto the mandrel thread (2) as far as the stop.
5. Push clamping wedge attachment (7) into mandrel (2) and screw it in with the mounting aid (8) (Code 790 085 490) until the mounting aid is flush up against the mandrel. **Warning, left hand thread!**

   The clamping wedge attachment (7) must now be exactly 12 mm (0.472 inch) from the end of the mandrel. If the mandrel Ø 19.05 mm, this dimension is 3 mm (0.118 inch).
6. The 3 grooves (9) on the clamping wedge attachment (7) must coincide with the 3 openings (10) on the mandrel.
7. Fit the required clamping wedges.





9 Machining pipe

WARNING

Danger of bodily injury by trapping fingers between clamping wedges and pipe!

Clamping wedges trap fingers.

⦸ Do **not** insert fingers between the clamping wedges and pipe.

WARNING

BRB Electric:

Pulling the plug as an EMERGENCY STOP is not correct!

Diverse risks.

⦸ Do **not** use cables bent at right angles.

⦸ Under **no** circumstances use blue, locking CEE plugs.

▶ Ensure free access to the plug.

▶ Simulate an emergency by trying to loosen the plug from a distance.

CAUTION

Risk of falling when screwing cutters into clamping wedges!

The machine can become detached from the pipe and fall to the floor unchecked.

▶ Always return the feed unit to the starting position with the motor switched off.

CAUTION

Hot surfaces!

Danger of burns.

⦸ Do **not** touch the pipe surfaces or the cutters.

CAUTION

Vapor when working with lubricants!

Damage to lungs, skin and the environment.

▶ Use only KSS-TOP lubricant.

CAUTION

Poor lighting!

Diverse risks.

▶ Ensure that the minimum lighting rating is 300/200 lux (working area/surrounding area).

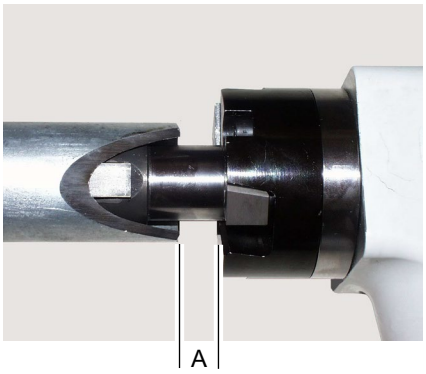
9.1 Mounting the BRB in the pipe to be machined

9.1.1 Distance A

Note Distance A (pipe end – clamping wedges) depends on the machining method.

Pipe machining to outer diameter:
Distance A as small as possible but at least 10 mm

Pipe machining to inner diameter:
Distance A = length of the tool cutting edge plus 5 mm



9.1.2 Machining the pipe with BRB Electric

1. Bring the BRB to the neutral position using the feed ratchet.

Neutral position Thread run out from the mandrel (1) is flush with the feed ratchet.

2. Insert the BRB into the pipe.
3. Set distance A (see chapter 9.1.1).

Attaching BRB Electric to the pipe

When the BRB is positioned correctly:

4. Tighten the threaded spindle by turning the clamping ratchet (2).

Detaching BRB Electric to the pipe

To remove the machine from the pipe at a later time:

▶ Loosen the threaded spindle by turning the clamping ratchet (2).

9.2 Mounting the multifunctional tool (MFW) and tool holder (WH)

CAUTION

Sharp edges and cutters!

Risk of cuts.

▶ Wear safety gloves in accordance with EN 388 (protection level 5).

CAUTION

Tool breakage!

Parts can be ejected.

▶ Ensure proper mounting of the cutting tools.

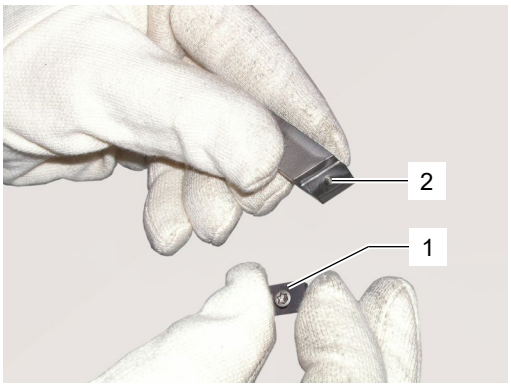
Up to 3 tool holders can be clamped into the BRB tool mounting plate. This means that the following types of machining can be carried out simultaneously:

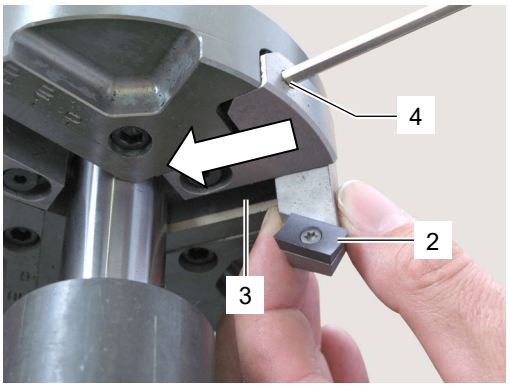
- Squaring
- 1. Beveling
- 2. Beveling/counterboring

Joint preparation is therefore reproducible for other pipe ends.

Mounting MFW and WH

1. Select the appropriate multifunctional tool according to the type of machining (split/combined) indicated in chapter 2.2.1, P. 10.
2. Screw the multifunctional tool (1) onto the tool holder (2) using a Torx screwdriver.
3. Insert the tool holder (2) with fitted multifunctional tool into the guiding groove (3) and position it.
4. Tighten the screw (4), at the same time press the tool holder against the bearing surface of the tool holder.





Note

To speed up the setup process for the same job in the future:

▶ Take a reading of the value on the tool holder and make a note of it.

9.3 Switching on the BRB

DANGER

BRB Electric:

Electric shock from bypassing the armature shaft insulation!

Danger of death.

⦸ Do **not** connect anything other than the stipulated safety equipment between the socket and the machine.

▶ Use ground-fault circuit (fault current switch) when connecting.

WARNING

Risk of injury if body parts get between the tool bits and the pipe!

Tool bits injure body parts.

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

WARNING

Machine noise > 80 dB (A value)!

Irreversible damage to hearing.

▶ Wear hearing protection in accordance with DIN EN 352.

WARNING

Parts can be ejected when working!

Irreversible eye injuries.

▶ Wear safety goggles in accordance with DIN EN 166.

WARNING

Falling objects!

Feet can be irreversibly crushed.

▶ Wear safety shoes in accordance with DIN EN 20345-S3.

WARNING

Sharp-edged chips whirling around!

Irreversible cuts.

▶ Wear safety gloves in accordance with EN 388 (protection level 5).

Caution

Damage to tool

A non-right-angled tube end can damage the tool when the distance between the cutting edge and the tube end is too low.

▶ Before switching on the BRB ensure that sufficient distance is between the tool tip and the pipe end.

BRB Electric

1. Connect the BRB (for information on the connection requirements, see chapter 7.1.1, P. 16)

2. Press the dead man’s switch (1).

The BRB starts.

9.3.1 EMERGENCY STOP function for BRB Electric

WARNING

BRB Electric:

Pulling the plug as an EMERGENCY STOP is not correct!

Diverse risks.

- ⦸ Do **not** use cables bent at right angles.
- ⦸ Under **no** circumstances use blue, locking CEE plugs.
- ▶ Ensure free access to the plug.
- ▶ Simulate an emergency by trying to loosen the plug from a distance.

▶ Activate by pressing the dead man's switch (1).

Dead man's switch BRB 4 Electric

Note If the tool chatters after machine start-up, cutting speed is too high.

▶ Reduce the speed (see chapter 9.4.1, P. 29).

9.4 Setting the speed

Note The cutting speed recommended by Orbitalum Tools can be found in chapter 9.4.2, P. 30 and thus used to determine the speed.

9.4.1 Increasing and reducing the speed

Increasing the speed

▶ Turn the regulator (1) to a higher number.

Decreasing the speed

▶ Turn the regulator (1) to a lower number.

Regulate speed with BRB 4 Electric

Regulator (level)	Speed (rpm)
1	15
2	19
3	23
4	27
5	31
6	35

9.4.2 Determining the speed

1. You can take the recommended cutting speed from the table below.
2. Determine actual speed (see below).
3. Increase/decrease the determined speed and, if required, compare with the specified cutting speed.

Guide values for rotary speed (n) or cutting speed (v)

Exterior pipe ∅ OD		Nominal width DN	Unalloyed and low-alloyed steel		High-alloy steel	
[mm]	[inch]	[inch]	RPM regulator level	n [rpm]	RPM regulator level	n [rpm]
26.9	1.305	¾	6	35	5	31
33.7	1.315	1	5 - 6	33	4 - 5	29
42.4	1.660	1¼	5	31	4	27
48.3	1.900	1½	4 - 5	29	3 - 4	25
60.3	2.375	2	4	27	3	23
76.1	2.875	2½	3 - 4	25	2 - 3	21
88.9	3.500	3	3	23	2	19
101.6	4.000	3½	2 - 3	21	1 - 2	17
114.3	4.500	4	2	19	1	15

Determining the speed (n)

4. Measure the number of revolutions of the tool mounting plate in one minute (= speed (n)).
5. Determine the speed using the following formula:

$$\text{Speed n} = \frac{v \bullet 1000}{\pi \bullet d} = [1/\min]$$

v Cutting speed (m/min)
d Exterior pipe ∅ OD (mm)
n Speed (rpm)

Note A lower speed reduces the tendency to vibrate.

9.5 Machining pipe

WARNING

Danger of injury to eyes and hands!

Hot and sharp-edged chips.

- ▶ Always wear protective goggles, ear protection and safety shoes.
- ▶ Always wear gloves and use a chips mandrel to remove the chips.

WARNING

Machine noise > 80 dB (A value)!

Irreversible damage to hearing.

- ▶ Wear hearing protection in accordance with DIN EN 352.

WARNING

Parts can be ejected when working!

Irreversible eye injuries.

- ▶ Wear safety goggles in accordance with DIN EN 166.

WARNING

Falling objects!

Feet can be irreversibly crushed.

- ▶ Wear safety shoes in accordance with DIN EN 20345-S3.

WARNING

Sharp-edged chips whirling around!

Irreversible cuts.

- ▶ Wear safety gloves in accordance with EN 388 (protection level 5).

Note Use the KSS-TOP cooling lubricant recommended by Orbitalum Tools for machining. Machining with KSS-TOP increases the service life of multifunctional tools.

Note During machining, do not exceed a machining thickness of 0.4 mm.

BRB Electric feed control

Feed is carried out with the feed ratchet (1) for BRB Electric:

1. Move the tool towards the pipe using the feed ratchet (1).
2. Carefully guide the tool using the feed ratchet (1) until the tool touches the pipe.

If the cutting edge of the tool is cutting on the entire circumference of the pipe:

3. Continue to guide the tool applying pressure evenly.

9.6 Switching off the BRB

BRB Electric

▶ Release the dead man’s switch (1).

The BRB stops.

Dead man's switch
BRB 4 Electric

10 Maintenance

Note Should the machine not function as described above, it must be sent to an authorized service point for authorization with VDE check.

DANGER

Fatal electric shock as a result of poor electrical assembly!

Death.

- ▶ Do not meddle with the machine electrics
- ▶ Send the machine to an authorized service point equipped with VDE check.

DANGER

BRB Electric:

Risk of death from electric shock

- ▶ Disconnect the power supply before carrying out any maintenance work.

Time frame	Activity
Before beginning work	▶ Visual check and general cleaning
During every cleaning process	▶ Clean the clamping wedges and tool retainer (mandrel and head).
At every tool change	▶ Clean the tool holder and MFW. ▶ Remove cooling lubricant and soiling from the contact surface of the tool holder.

11 What to do if...?

11.1 Troubleshooting

The following table shows the possible fault causes and their remedies.

Malfunction	Possible causes	Remedy
Tool (MFW) hooks in during machining.	Feed too large.	▶ Dismantle the tool holder and take the machine out of the pipe. ▶ Remove chippings by using a side cutter and file off the recess. ▶ Feed carefully during the next machining.
	MFW loose.	▶ Tighten the MFW.
Motor of the BRB Electric does not run.	Overheating.	▶ Release dead man's switch and allow to cool down.
	Carbon brushes worn out.	▶ Have the carbon brushes replaced by a specialist.
Tool tends to chatter.	Cutting speed too high.	▶ Adjust speed (cutting speed) in accordance with table.
Strong tendency to chatter.	Axial or radial play in the components. MFW loose.	▶ Check the machine for radial play. ▶ Check that the multifunctional tool (MFW) is seated firmly.

11.2 Servicing/Customer service

To order spare parts, refer to the separate spare parts list.

For troubleshooting, please contact the responsible branch directly.

Please indicate the following details:

- Machine model: **BRB 4 Electric**
- Machine No.: *(see type plate)*

12 EC Declaration of Conformity

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
ru ЕС Декларация о соответствии стандартам
cn 符合性声明
cz ES Prohlášení o shodě
sk EÚ Prehlásenie o zhode

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78224 Singen, Germany
Phone: +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): / Машина и тип (включительно с опционально предлагаемыми принадлежностями Orbitalum): / 机器和型号(含可选购的 Orbitalum 配件): / Stroj a typ stroje (včetně volitelného příslušenství firmy Orbitalum): / Stroj a typ (vrátane voliteľne dostupného príslušenstva od Orbitalum):

Pipe end machining machine:
- **BRB 4 Electric**

Seriennummer: / Series number: / Nombre de série: / Numero di serie: / Número de serie: / Serienummer: / Серийный номер: / 序列号: / Sériové číslo: / Sériové číslo:

Baujahr: / Year: / Année: / Anno: / Año: / Bouwjaar: / Год выпуска: / 制造年份: / 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: / Настоящим мы подтверждаем, что указанная машина изготовлена и испытана в соответствии с приведенными ниже директивами: / 我们在此确认，所述“机器”已遵循下列指令进行生产和检验: / 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:

- **Machine Directive 2006/42/EC**
- **EMC Directive 2014/30/EU**
- **RoHS Directive 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: / Применены следующие гармонизированные стандарты: / 适用以下统一标准: / Jsou použity následující harmonizované normy: / Boli aplikované tieto harmonizované normy:

- **DIN EN ISO 12100: 2011 - 03**
- **DIN EN 62841-1: 2016 - 07**

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Singen, 17.05.2021

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