

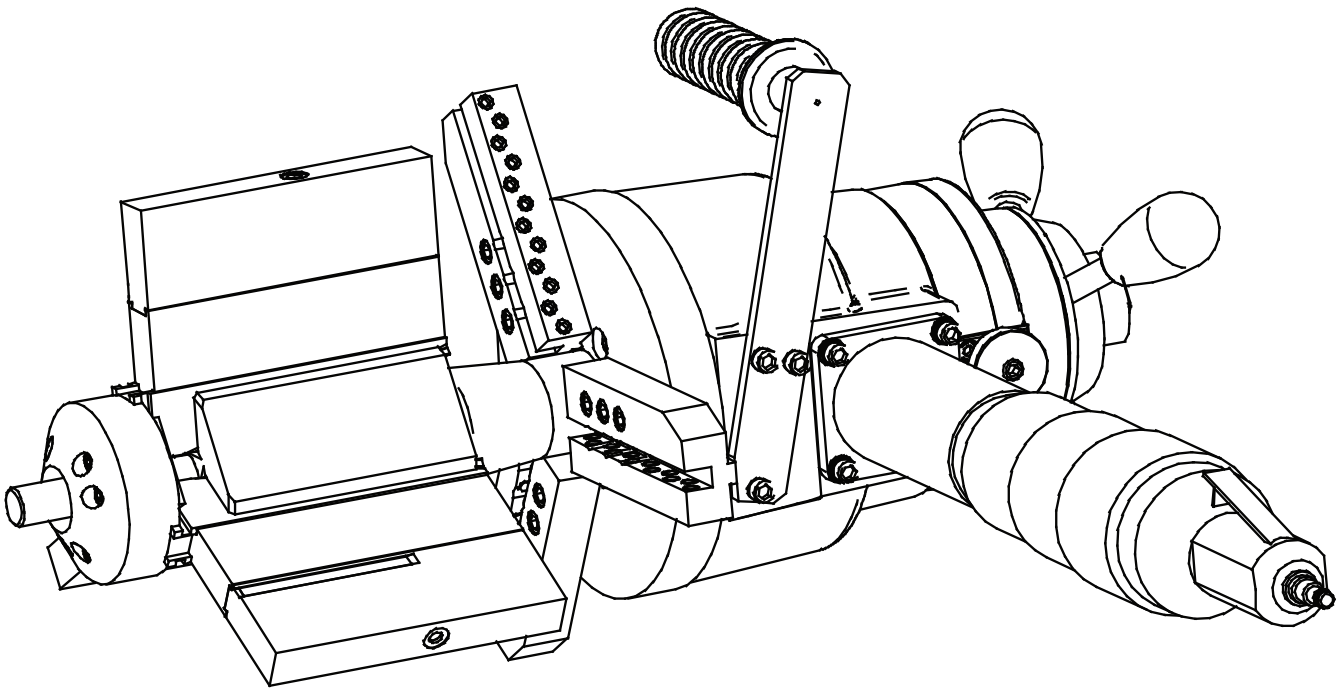
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PRO-10PB

PORTABLE PIPE BEVELLER

OPERATOR'S MANUAL



BEFORE USE, ENSURE EVERYONE USING THIS MACHINE READS AND UNDERSTANDS ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL .

Serial #.....

Date of Purchase.....

TRADEMASTER PRO-10PB PORTABLE PIPE BEVELLING MACHINE

IMPORTED & DISTRIBUTED BY



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In addition to any warranties or conditions implied by applicable Statute or Regulations, Industrial Tool & Machinery Sales warrants all of its products against defective workmanship and faulty materials for a period of twelve (12) months from the date of purchase, unless otherwise stated. At our option we will repair or replace, free of charge, any item on the condition that:

- The complete machine or tool is returned, freight prepaid to ITM or one of its authorised service agents as directed by ITM, and is found to have a material or constructional defect.
- The machine or tool has not been subject to misuse, neglect or damage by accident.
- The fault is not a result of normal “wear and tear”.
- Written permission has been received from ITM prior to commencement of repair.
- Repairs, tampering or modification carried out by unauthorised personnel will void all warranty.
- Consumable items such as cutting tools, pilot pins, saw blades, grinding wheels etc. are NOT covered by warranty.

Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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SAFETY INSTRUCTIONS



READ OPERATOR'S MANUAL BEFORE YOU START TO WORK WITH THE MACHINE.

1. Safety Instructions

The PRO-10PB pipe beveller should be used only to applications stated in the manual. Using in other applications may lead to personal injury and machine damage.

1.1. Application

The PRO-10PB is a pipe beveller designed for facing, bevelling, boring and/or sizing of pipes to prepare them for welding. These operations may be performed simultaneously or separately. The machine is designed for machining of carbon steel, stainless steel, aluminum alloys and copper-nickel. Various interchangeable jaw blocks and ramps secure the machine into pipes of internal diameters from 84 mm to 269 mm (3.31" to 10.59") and from 38 mm to 392 mm (1.50" to 15.43") when used with optional equipment.

1.2. Safety Requirements

Using beveller is not allowed if:

1. The operator has not read the Operator's Manual or has not completed proper occupational safety and health training.
2. Machine is to be used in applications not stated in Operator's Manual
3. Machine is not complete or parts used for repair are not genuine.
4. Power supply specifications do not conform to those stated on rating plate.
5. Operator has not checked condition of machine, including power cord, control panel components and milling tools.
6. Machined pipe is not properly secured from falling or rolling.
7. Bystanders are present in immediate vicinity of machine.

Detailed safety rules:

8. Before you start to work with machine, check condition of electric installation, including power cord and plug.
9. Do not use power cord for other purposes, do not carry the machine by cord or pull it to disconnect the plug from socket.
10. Connect machine only to power equipped with a safety circuit (earthing) protected with 16A fuse for 230V supply or 32A fuse for 115 V. When used on building sites, supply the machine through separation transformer made in second protection class.
11. Keep machine dry. Exposing it to rain or snow is prohibited.
12. Ensure proper lighting in your worksite.
13. Keep worksite clean. Cluttered worksite increases the risk of accidents.
14. Wearing loose clothing or jewelry is prohibited. They may be caught in rotating machine parts. Avoid slippery surfaces. If this is impossible, use antislippery footwear.
15. Keep power cords, cables, rope slings, belts etc. away from machine rotating parts. Do not

SAFETY INSTRUCTIONS

- use machine in vicinity of combustible fluids or gases.
16. If possible, use clamps, vises, chains or belts to secure machined pipe.
 17. Avoid overloading. Machine and tools will operate much better if used under rated loads.
 18. Always use safety goggles and hearing protection.
 19. Keep bystanders or untrained personnel away from worksite. All observers must use eye protection.
 20. Do not remove chips formed during operation.
 21. Do not touch rotating parts of machine. Do not remove chips, adjust machine or check quality of machined surface during operation.
 22. Do not touch or change tool when machine is plugged into power supply.
 23. Tool must be fastened securely. Check if mounting screws are tighten securely.
 24. After changing the tool, check if keys or wrenches used for changing have been removed. Do not leave keys and wrenches behind after changing tool or machine adjustment.
 25. Do not use blunt or damaged tools.
 26. Use only tools recommended by manufacturer.
 27. After every use, remove all formed metal chips from machine.
 28. Perform all maintenance work and repairs only with power cord disconnected from power socket!
 29. Maintain machine and tools with care. Cover steel parts with thin grease layer to protect them against rust when not in use for a longer period. Remove tool bits from holders for safe transport and storage.
 30. Before every use, inspect machine to ensure it is not damaged and check whether machine operates properly and performs its intended function. Check whether any part is cracked and whether all parts are properly fitted. Make sure to maintain proper conditions that may affect machine operation.
 31. Avoid accidental turning on the machine. Do not hold or carry machine by pressing startup valve lever, do not place machine in a manner that makes pressing the lever impossible.
 32. If machine falls on a hard surface, from a height, is wet or has other damage that could affect technical state of machine, stop operation and immediately send machine to service centre for inspection.

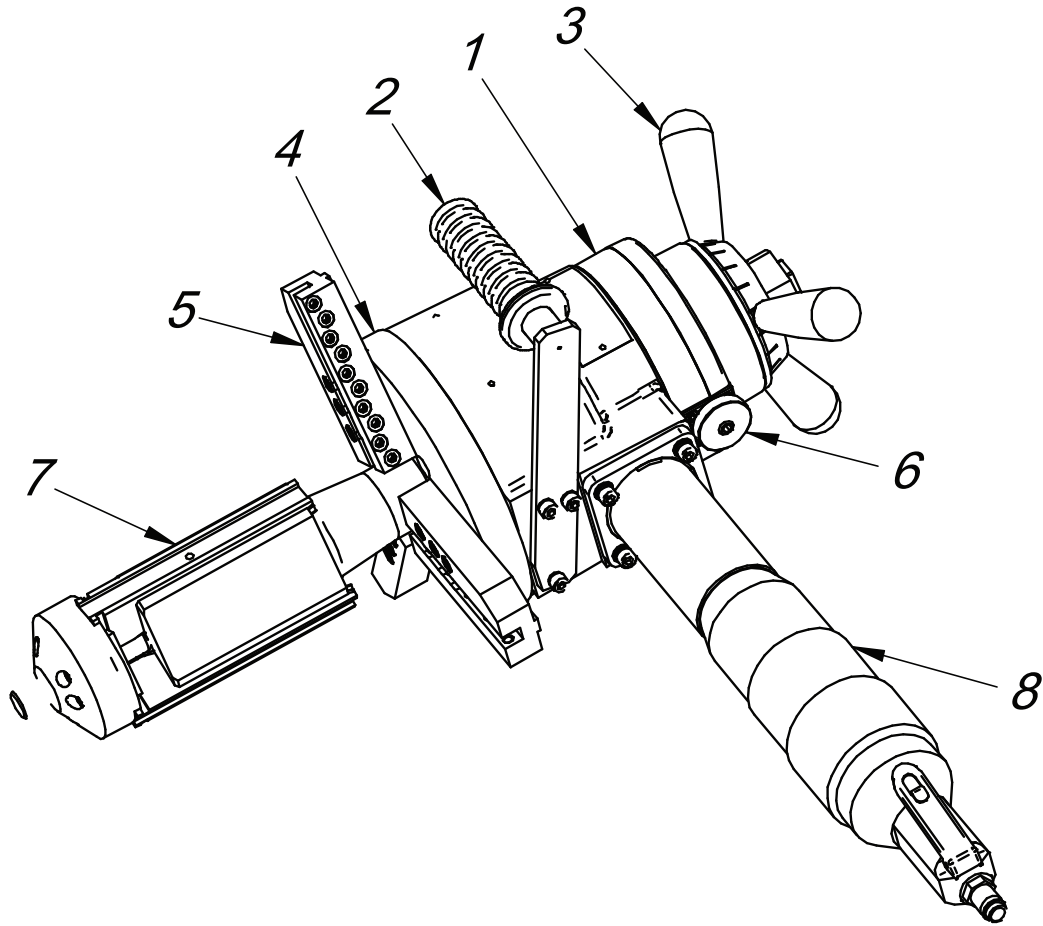
Pneumatic motor used in PRO-10PB pipe beveller is ATEX II2 G/D C IIC T6;T4 certified what is required in explosive environments.



WARNING! SAFETY RULES MUST BE CLOSELY OBSERVED.

2. Startup

2.1. Design



1. Beveler Body
2. Handle
3. Feed Lever
4. Spindle Disc
5. Tool Holder
6. Clearance Removing Set
7. Expanding Mandrel
8. Pneumatic Motor

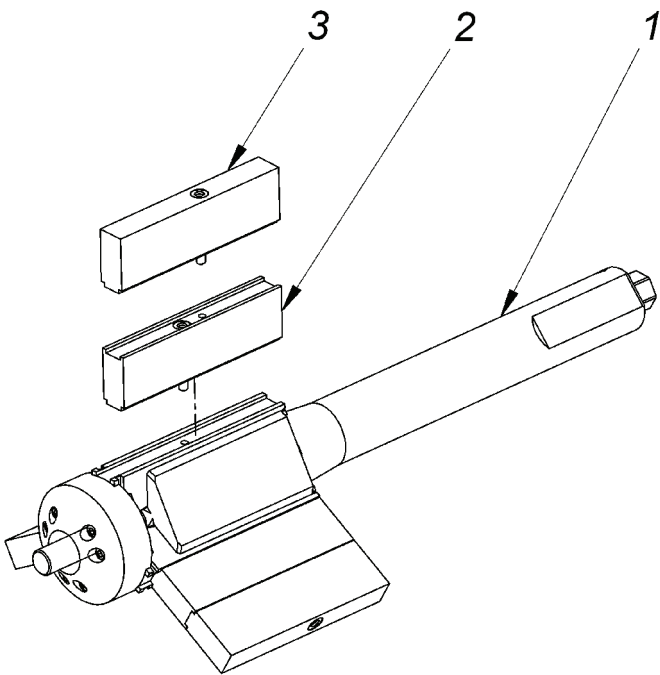
STARTUP

2.2. Equipment Included

PRO-10PB pipe beveller is supplied in metal box with complete standard equipment. The included equipment consists of:

- PRO-10PB portable pipe beveller - 1 unit
- Jaw block set (from no. 1 to 6) mounted on the bar - 1 unit
- Metal box - 1 unit
- Coolant container with nozzle - 1 unit
- Size 24 socket key with handle - 1 unit
- Size 4 Allen key - 1 unit
- Size 5 Allen key - 1 unit
- PH2 screwdriver - 1 unit
- Tool container - 1 unit
- Operator's Manual - 1 unit

2.2. Destination and Setup



Standard Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
84-100	3.31 - 3.94	-	-
99 - 115	3.90 - 4.53	1	-
115 - 131	4.53 - 5.16	2	-
130 - 146	5.12 - 5.75	3	-
146 - 162	5.75 - 6.38	4	-
161 - 177	6.34 - 6.97	5	-
176 - 192	6.93 - 7.56	6	-
192 - 208	7.56 - 8.19	2	+
207 - 223	8.15 - 8.78	3	+
223 - 239	8.78 - 9.41	4	+
238 - 254	9.37 - 10.0	5	+
253 - 269	9.96 - 10.59	6	+

Figure. Mandrel design

- 1 – Expanding mandrel
- 2 – Ramp
- 3 – Jaw block

2.4. Preparing for Operation

2.4.1. Mounting Mandrel into Pipe

- Choose adapter jaw blocks corresponding to given diameter (see 2.3, 4.3.2, 4.2.3).
- Screw jaw blocks to the mandrel and slide it into the pipe.
- Expand mounting jaw blocks into the pipe, rotating feed screw clockwise.

Warning:

To avoid damage of armed/complete expanding mandrel, expand jaw blocks into the pipe below anticipated surface level after milling.

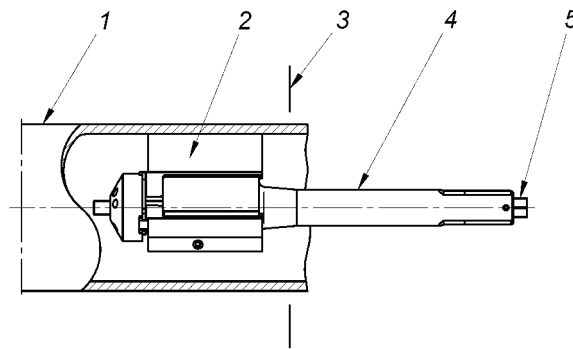


Figure. Mandrel position into the pipe (1 – Pipe; 2 – Jaw block; 3 –Surface after milling; 4 – Mandrel; 5 – Feed screw)

2.4.2. Selecting and Mounting the Tool

Warning:

Using improper and/or not genuine tool bits may damage the machine and lead to loss of warranty.

- Choose proper tool bits for milling.
- Mount tool bits for milling into sockets in position suitable to given type.
- When performing several operations simultaneously, like facing, bevelling and/or boring, mount boring tool bit in the front of bevelling tool bit.
- Mount tool bit into holder sockets, using size 4 Allen key.
- Cutting edge of the tool bit must be placed on the radial centerline of the head.
- Make sure all tool bits are mounted in the same direction as head rotation direction.

STARTUP

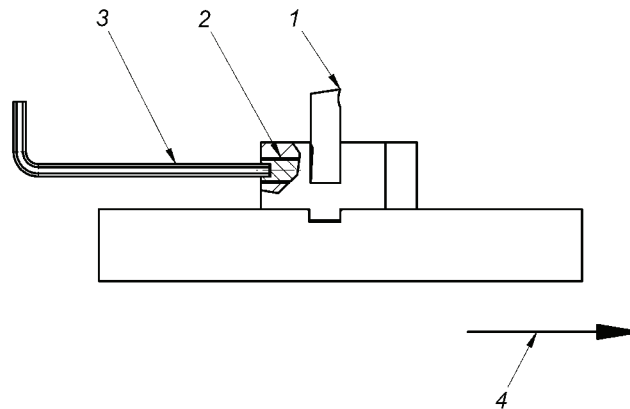


Figure. Mounting the tool bit (1 – Cutting edge; 2 – Clamping screw; 3 – Size 4 Allen key; 4 – Rotation direction)

2.4.3. Preparing for Operation

- Loosen the set screw. Loosening the spring causes enough clearance between insert and mandrel to mount the machine on the mandrel.
- Slide the machine gently onto the mandrel until encountering resistance.
- Rotate the machine until the flat surfaces of the insert (placed inside the machine body) slide onto the mandrel surfaces. Slide the machine to the final resistance position.
- Rotate feed knob clockwise for at least 10 threads when the feed screw nut will engage with the mandrel.

Warning:

Operations mentioned above should be carried out very carefully, due to the resistant surfaces of the mandrel and machine socket being threaded. Forcing the machine or striking it while inserting may lead to damage of the mandrel thread or feed screw nut thread and subsequently prevent the machine from being mounted correctly and used.

- Remove the clearance between the machine and mandrel.

Removing Clearance

Adjusting is necessary every time after the machine is mounted on the mandrel and always when radial clearance is present between the mandrel and machine. The clearance is displayed by vibration of the tool bits during milling.

- Tighten the set screw until clearance is removed.
- Turn the feed knob in both directions to make sure the screw is not too tight.
- If necessary, loosen the screw once again and correct the pressure.
- Tighten the lock nut.

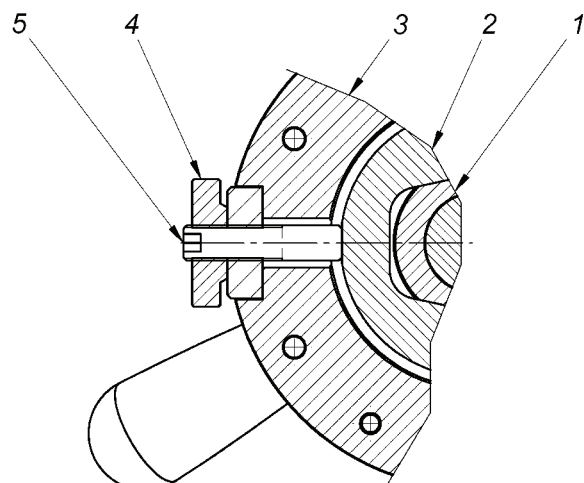


Figure Removing clearance (1 – Mandrel; 2 – Clamping insert; 3 – Body; 4 – Lock nut; 5 – Clamping screw)

2.5. Machine Startup



READ OPERATOR'S MANUAL BEFORE YOU START TO WORK WITH THE MACHINE. IT IS OF UPPER MOST IMPORTANCE THAT POINT "1.2 SAFETY REQUIREMENTS " IS READ THOROUGHLY

2.5.1. Startup

- Check distance between the tool (tool bit) and face of the pipe in its highest point. The distance should be at least 3 mm.
- Make sure once again that distance between the tool bit and jaws or locking jaw blocks is correct.
- Connect the machine to properly prepared air source of required purity. Minimum internal diameter of the air supply hose and joints can not be lower than 12 mm.
- Make sure that the air preparation system is adjusted and correctly prepared for work.

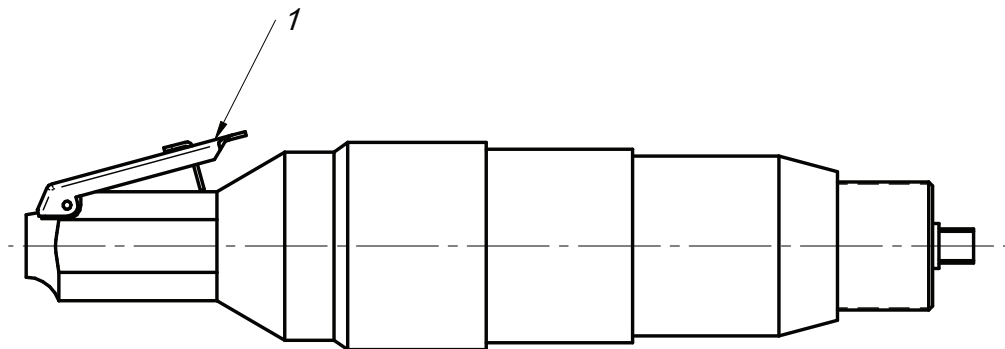


Figure 1. Air motor (1 - Starting Lever)

- Press starting lever on the motor.
- Rotate the feed knob clockwise to move the tool bit close to pipe face. The cutting starts when the first tool bit touches the pipe face.
- If the pipe face is not perpendicular, thus in the first phase of cutting the surface machined in single rotation will be small, limited to highest point of the pipe face.
- To avoid damage of the tool, apply small feed per rotation until the tool bit starts to cut the whole surface of the pipe face.

STARTUP

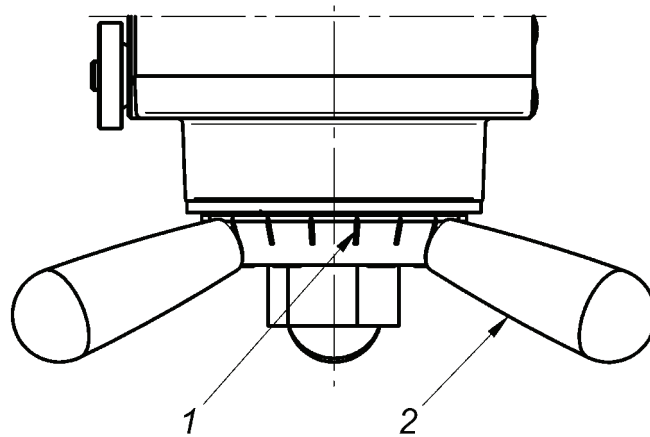


Figure. Feed unit (1 – Scale; 2 –Feed lever)

- Continue operation, rotating the feed levers clockwise until achieving the required geometry of the pipe face.

The feed equals 0.11 mm per one pitch or 2 mm per one full rotation of the feed lever.

- Release motor starting lever to stop the machine.
- Separate the tool from machined surface to a minimum of 3mm, rotating feed lever counterclockwise.
- Unscrew feed screw using size 24 socket wrench to loosen the mandrel located into the pipe.
- Remove machine from the pipe. Do not disassemble the mandrel! The machine and mandrel constitute the complete set and reassembling is not necessary.

2.5.2. Feed Recommendations

- Use very light feed for initial bevelling, until a continuous cut is established, particularly when pipes are cut with the torch and/or when the cut is not perpendicular to the axis.
- Use proper feed to obtain a continuous chip cut. If the feed is too light, chip has a form of a thin spring. If the feed is too heavy, cutting is more difficult and the chip is rough.
- Stainless steels susceptible to hardening during milling should be cut with sufficiently high feed to stay under hardened layer (0.08 - 0.15 mm/rotation). Never allow tool bit to slide and press the surface.
- Changing feed rate often minimizes chatter problem (if it appears).

2.5.3. Cutting Tools

Using PRO-10PB pipe bevelling machine enables the following operations.

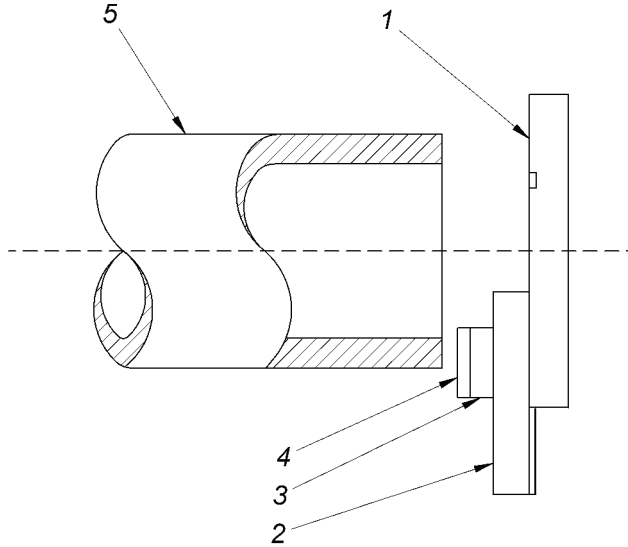


Figure. Facing

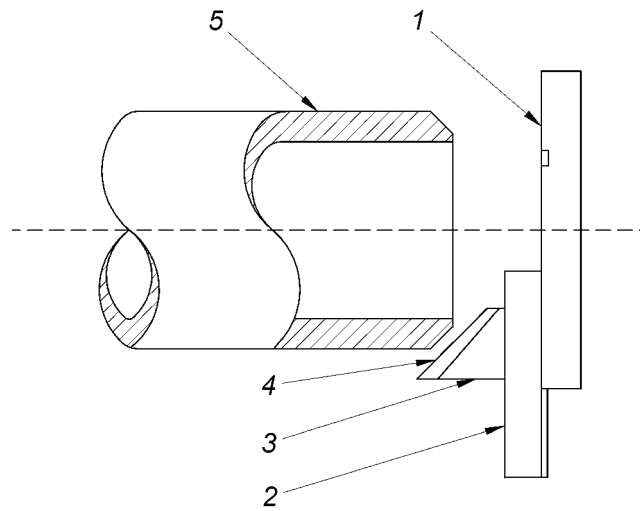


Figure. Bevelling

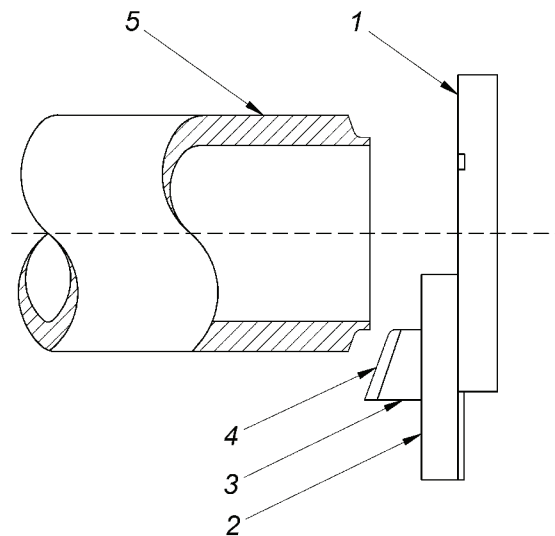


Figure. "J" Bevelling

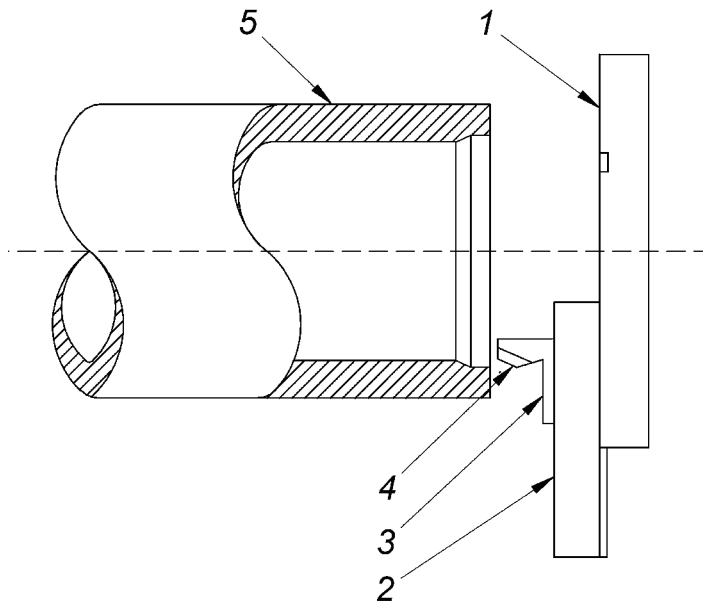


Figure. Boring

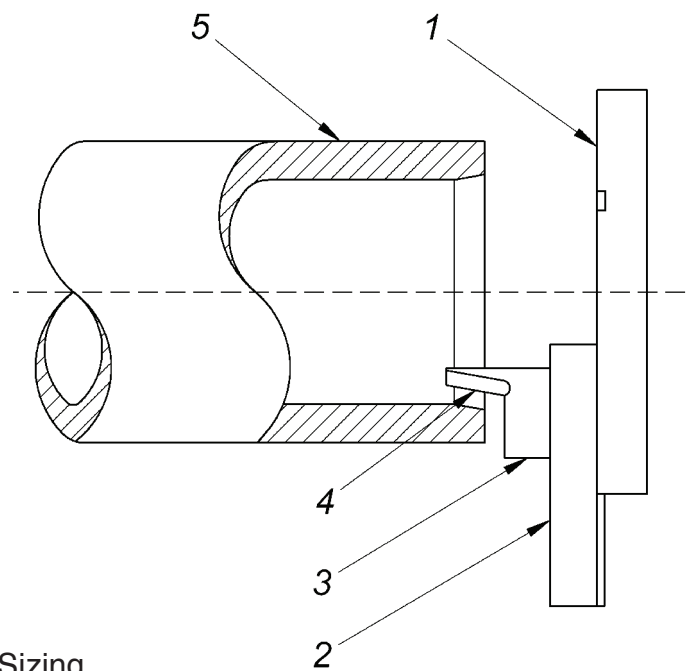


Figure. Internal Bevelling / Sizing

- 1. Working head
- 2. Tool bit holder
- 3. Tool bit
- 4. Cutting edge
- 5. Pipe

2.6. Inspection, Adjustment, Maintenance and Service.

To avoid accidents, the machine, power cords, joints and switches must be checked on a regular basis in case of possible damages.

- All parts should be cleaned and maintained with thin oil film.
- Use clean and pure oil with density according to SAE 10 (90SSU) or lower.
- When working with pneumatic motor, use air preparation system.
- If the PRO-10PB was used in reverse position, rotate it after every use to remove chips or other garbage accumulated on the working head.
- All repairs must be performed in service centre appointed by seller.
- Replace damaged parts of machine only with genuine ones.
- When ordering replacement parts, it is required to state the code (specific parts list available from seller or service centre) and machine type.

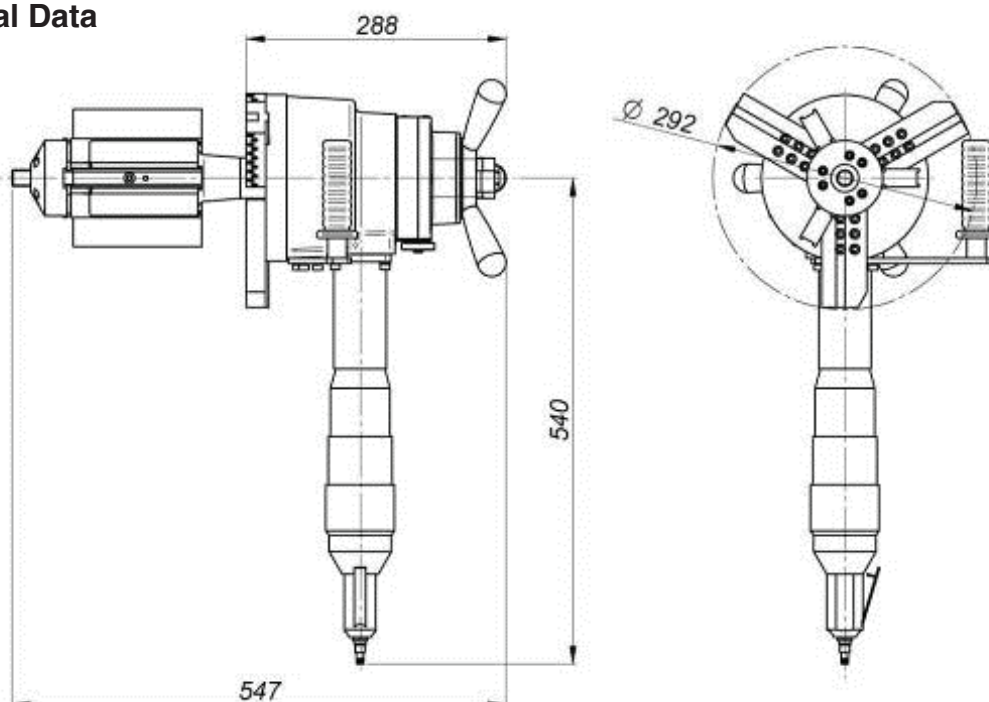
WARNING: Pneumatic motor warranty expires if damages are caused by supplied air contamination or the lack of lubrication.

Air motor lubrication.

- Direct maintenance is not required in normal operation.
- Use air preparation system in the air supply system.
- Perform inspections and maintenance of air preparation system according to demand dependent on air impurity level, dry dehydrator, clean the filter and maintain oil level to equal one drop per 2 to 5 seconds.
- Ignition point of the oil used in air preparation system must be higher than 260°C.

WARNING: PRO-10PB beveler is designed to be supplied with air pressure of 4 to 6 bar (60 to 90 psi). Maintaining technical parameters and the condition of machine depend strictly on purity level, air preparation and proper service.

3. Technical Data

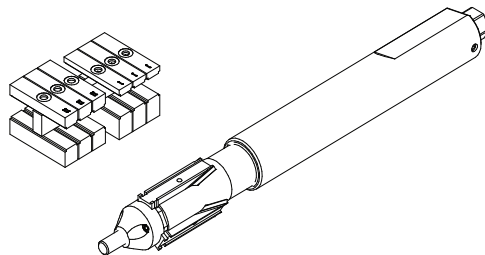


OPTIONAL EQUIPMENT

Nominal pressure	6 bar
Air dissipation	1750 l/min
Motor power	1800 W
Internal diameter working range	84 – 269 mm
Pipe maximum outer diameter	274 mm
Material thickness	to 15 mm
Materials allowed	carbon steel, stainless steel, aluminum alloys, copper-nickels
Rotational speed without load	20 rpm
Rotational speed with maximum torque	10 rpm
Weight	31,5 kg
Noise level	Above 70 dB
Ambient temperature range	-20°C to +40°C

4. Optional Equipment

4.1. Small Expander Set for Pipes of Internal Diameter of 38 - 86 mm. Part# 10/510



4.1.1 Equipment Included

Small expander set is supplied in impermanent packaging and may be fitted into standard metal box of PRO-10PB.

Included equipment consists of:

- Complete small expanding mandrel – 1 unit
- Jaw blocks set (from no. I to no. IV) – 1 unit
- Size 3 Allen key – 1 unit

4.1.2. Destination and Setup

Small Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
38–47,5	1.50–1.87	–	–
47,5–57,5	1.87–2.26	I	–
57,0–67,0	2.24–2.64	II	–
66,5–76,5	2.62–3.01	III	–
76,0–86,0	2.99–3.39	IV	–

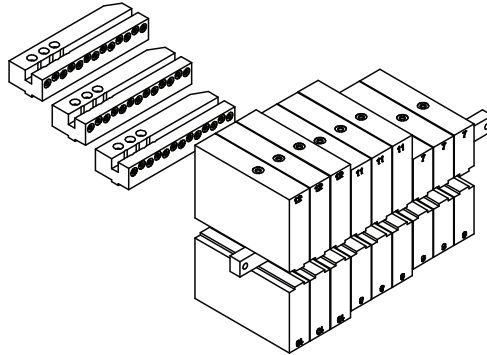
4.1.3. Operation Method

Operation method - see point 2.4

OPTIONAL EQUIPMENT

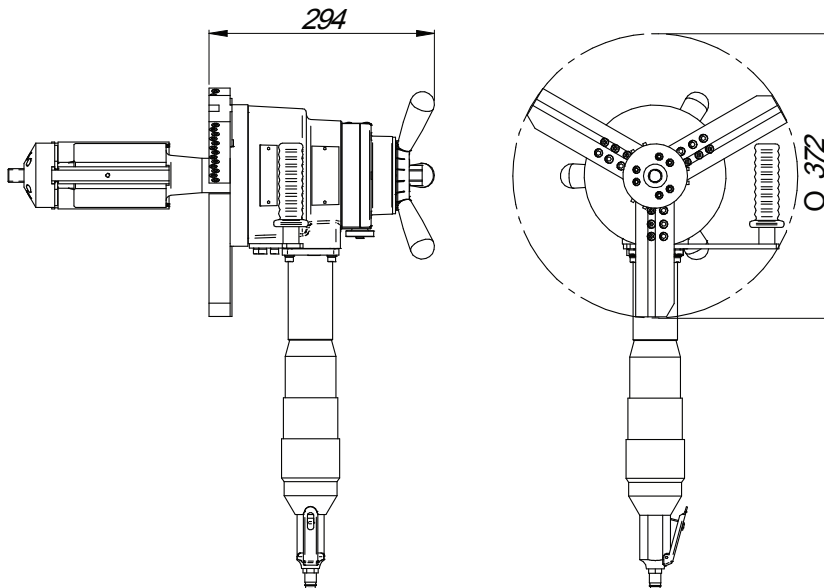
4.2. Range Increasing Jaw Block Set - Part# WAP-B10/550

Using range increasing set enables to mill pipes of internal diameters of $\text{Ø}192 - 365\text{mm}$.



Before you start to work, read all contents of the manual, especially safety rules.

4.2.1. Technical Data



Machined pipe diameters	$\text{Ø}192 - 365 \text{ mm}$
Rotating parts reach	$\text{Ø}372 \text{ mm}$

OPTIONAL EQUIPMENT

4.2.2. Equipment Included

The range increasing set to 365mm is supplied in a metal box. Included equipment consists of:

- Tool bit holder set to 365 – 1 unit
- Jaw blocks set (from no. 7 to 12) mounted on the bar – 1 unit
- Metal box – 1 unit
- Size 4 Allen key – 1 unit
- Size 5 Allen key – 1 unit

is necessary in all cases. Because the “3” segment can not be last, for pipes in 223–251 mm (8.78–9.88”) diameter range place it within “B” segment after dismounting links (Figure 12, Item 4) from connector (Figure 12, Item 3).

4.2.3. Destination and Setup

Standard Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
192 - 208	7.56 - 8.19	7	-
208 - 224	8.19 - 8.82	8	-
224 - 240	8.82 - 9.45	9	-
240 - 256	9.45 - 10.08	10	-
256 - 272	10.08 - 10.71	11	-
272 - 288	10.71 - 11.34	12	-
285 - 301	11.22 - 11.85	8	+
301 - 317	11.85 - 12.48	9	+
317 - 333	12.48 - 13.11	10	+
333 - 349	13.11 - 13.74	11	+
349 - 365	13.74 - 14.37	12	+

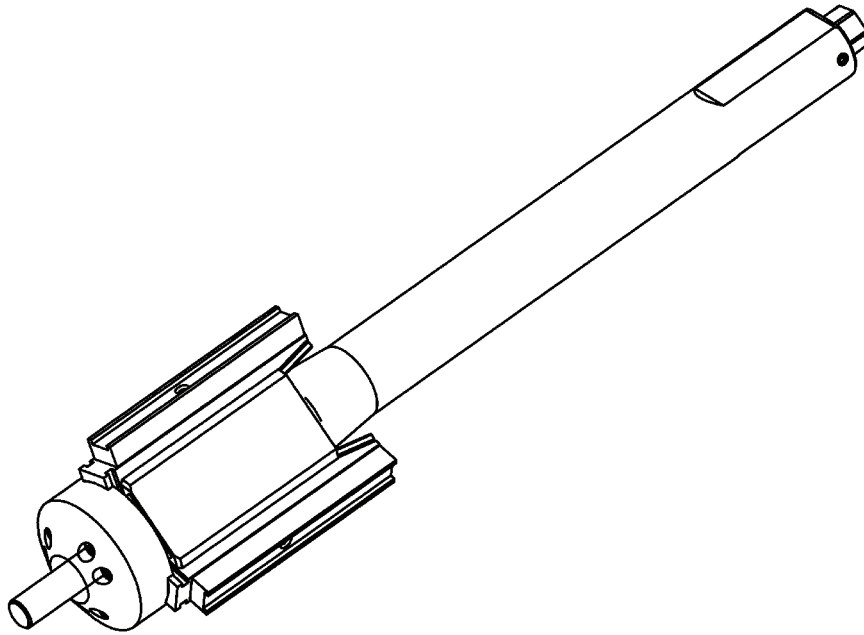
4.2.4. Adjusting PRO-10PB for Beveling Pipes of Ø192 - 365

To machine pipes of outer diameters in Ø215-418 range, disassemble all three tool holders (5, see point 2.1). Remove all garbage from spindle disc (4) – make sure no chips remain. Mount tool bit holder set to pipes of Ø192-365 on the pipe beveller spindle disc (4). Arm the expanding mandrel (7) according to table from point 4.2.3.

4.2.5. Operation Method

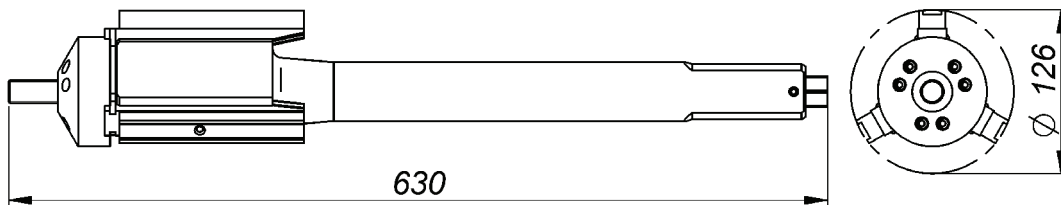
Operation method – see point 2.4.

4.3. Large Expanding Mandrel - Part# WAP-B10/540



Big expanding mandrel is used to mount PRO-10PB beveller into pipes of diameter from 126 mm to 392 mm.

4.3.1. Technical Data



OPTIONAL EQUIPMENT

4.3.2. Destination and Setup

Large Mandrel + Standard Jaw Blocks			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
126 - 142	4.96 - 5.59	1	N/A
142 - 158	5.59 - 6.22	2	N/A
157 - 173	6.18 - 6.81	3	N/A
173 - 189	6.81 - 7.44	4	N/A
188 - 204	7.40 - 8.03	5	N/A
203 - 219	7.99 - 8.62	6	N/A
219 - 235	8.62 - 9.25	2	A
234 - 250	9.21 - 9.84	3	A
250 - 266	9.84 - 10.47	4	A
265 - 281	10.43 - 11.06	5	A
280 - 296	11.02 - 11.65	6	A

Large Mandrel + Range Increasing Jaw Block Set			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
219 - 235	8,62 - 9,25	7	N/A
235 - 251	9,25 - 9,88	8	N/A
251 - 267	9,88 - 10,51	9	N/A
267 - 283	10,51 - 11,14	10	N/A
283 - 299	11,14 - 11,77	11	N/A
299 - 315	11,77 - 12,40	12	N/A
296 - 312	11,65 - 12,28	7	A
312 - 328	12,28 - 12,52	8	A
328 - 344	12,91 - 13,54	9	A
344 - 360	13,54 - 14,17	10	A
360 - 376	14,17 - 14,80	11	A
376 - 392	14,80 - 15,43	12	A

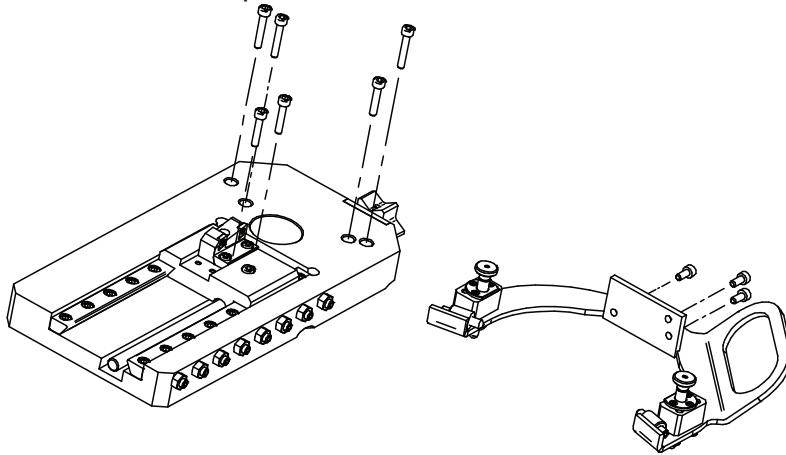
4.3.3. Operation Method

Operation method – see point 2.4.

OPTIONAL EQUIPMENT

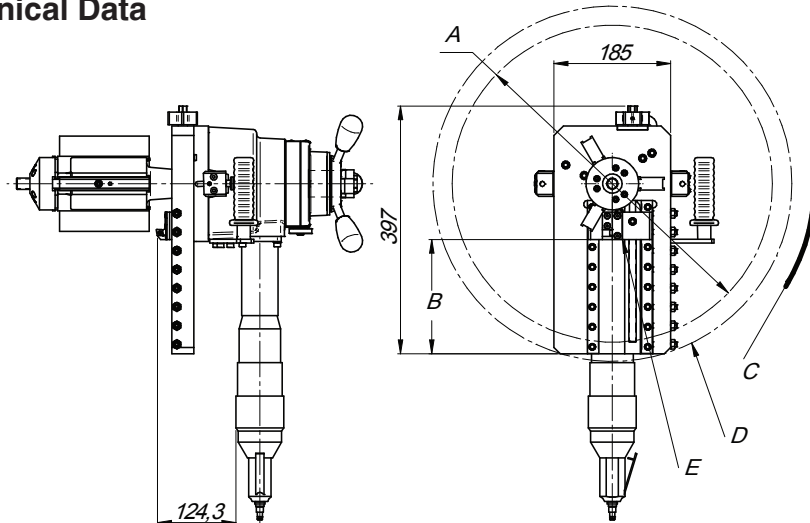
4.4. Flange Turning Attachment - Part# WAP-B10/520

The flange turning attachment is designed for the PRO-10PB pipe beveller. It enables turning and facing of pipe flanges of diameters from 90mm to 508mm. The bumpers (mounted on the holder body) and the rack fixed to the milling set feed screw work together to allow feed to the tool. If the rack is used with one bumper, the feed is equal 0.33 mm/rotation. If the rack is used with two bumpers, the feed is equal 0.66 mm/rotation.



Before you start to work, read all contents of the manual, especially safety rules.

4.4.1. Technical Data



- A – Operating range $\text{Ø}90 - \text{Ø} 508$
- B – Automatic feed $L=180.5$
- C – Rotation direction
- D – Rotating parts diameter $\text{Ø} 569.4$
- E – Tool holder

Operating range	Diameters from 90mm to 508mm
Automatic feed	180.5mm
Feed rate	0.33mm or 0.66mm per rotation
Maximum chip width	5mm
Rotating parts diameter	569.4mm

OPTIONAL EQUIPMENT

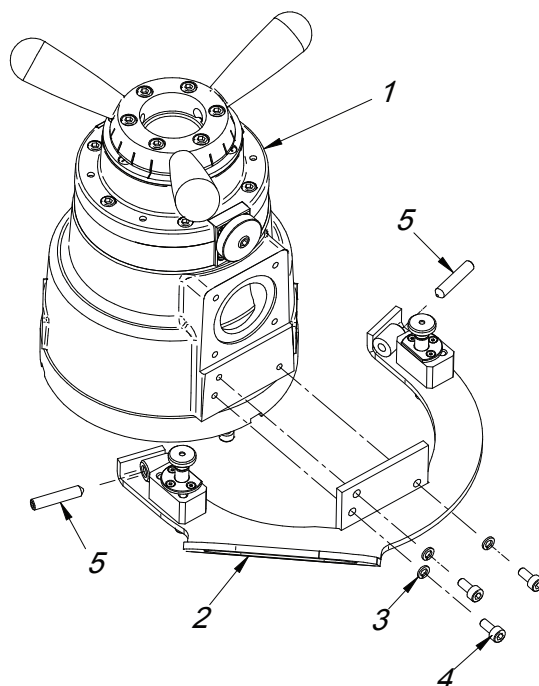
4.4.2. Equipment Included

Flange turning attachment is supplied to client in metal box with complete standard equipment. The included equipment consists of:

- Milling set – 1 unit
- Complete holder – 1 unit
- M6x30 screw – 3 units
- M6x35 screw – 3 units
- M6x14 screw – 3 units
- Metal box – 1 unit
- Size 13 ratcheting combination wrench – 1 unit
- Size 3 Allen key – 1 unit
- Size 4 Allen key – 1 unit
- Size 5 Allen key – 1 unit
- Torx T15 Allen key with lever – 1 unit
- Cutting insert – 8 units
- Screw securing cutting insert – 2 units
- Tool container – 1 unit

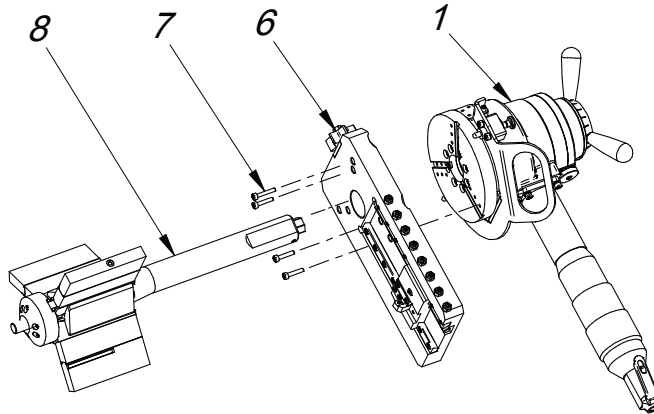
4.4.3. Adjusting PRO-10PB for Flange Facing

1. Dismantle three tool bit holders from spindle disc.
2. Dismantle holder, unscrewing three M6x14 screws (4) with washers (3).
3. Mount flange facing attachment holder (2) to the body, using M6x14 screws (4) with washers (3).
4. Tighten up M8x40 clamping screws (5).



OPTIONAL EQUIPMENT

5. Mount milling set (6) on the pipe beveller spindle disc (1), using six M6x30 screws (7).
6. Mount expanding mandrel (8).



4.4.4. Adjusting Side Clearance

1. Loosen screws that mount the guide from adjusting screws side.
2. Move the slide to maximum outside position.
3. Tighten adjusting screws in such way to gently press the guide to slide. Tighten only screws located opposite the slide.
4. Gently tighten screws that mount the guide (rotate it according to torque 1.5–2.5 Nm).
5. Using supplied ratcheting combination wrench, move the slide to the middle position, rotating the feed screw. There should be no differences in resistance when moving the slide.
6. Gently tighten the remaining adjusting screws.
7. Move the slide through the whole length of the feed. Movement of the slide should be smooth and even.
8. Tighten up the screws mounting the guide and lock the adjusting screws with M8 nuts.
9. Check if the slide moves gently and evenly on the whole length of the feed.
10. If necessary, repeat the adjustment.

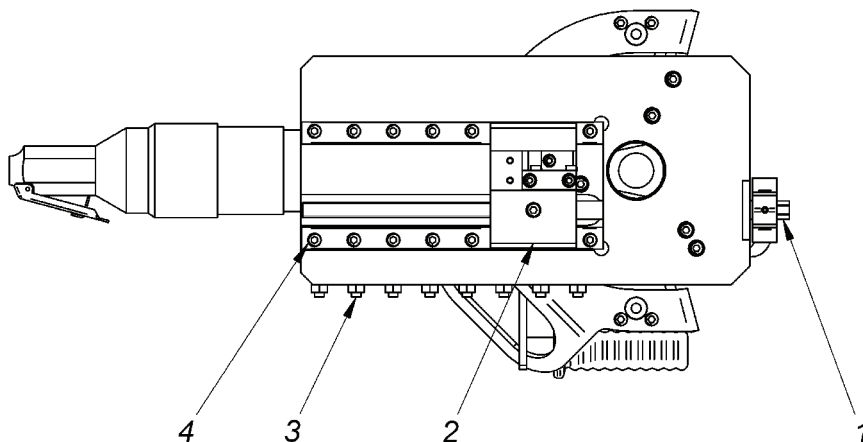


Figure. Slide set adjustment (1 – Feed screw; 2 – Slide; 3 – Adjusting screws; 4 – Screws that mount the guide)

4.4.5. Mounting Tool Holder and Cutting Inserts

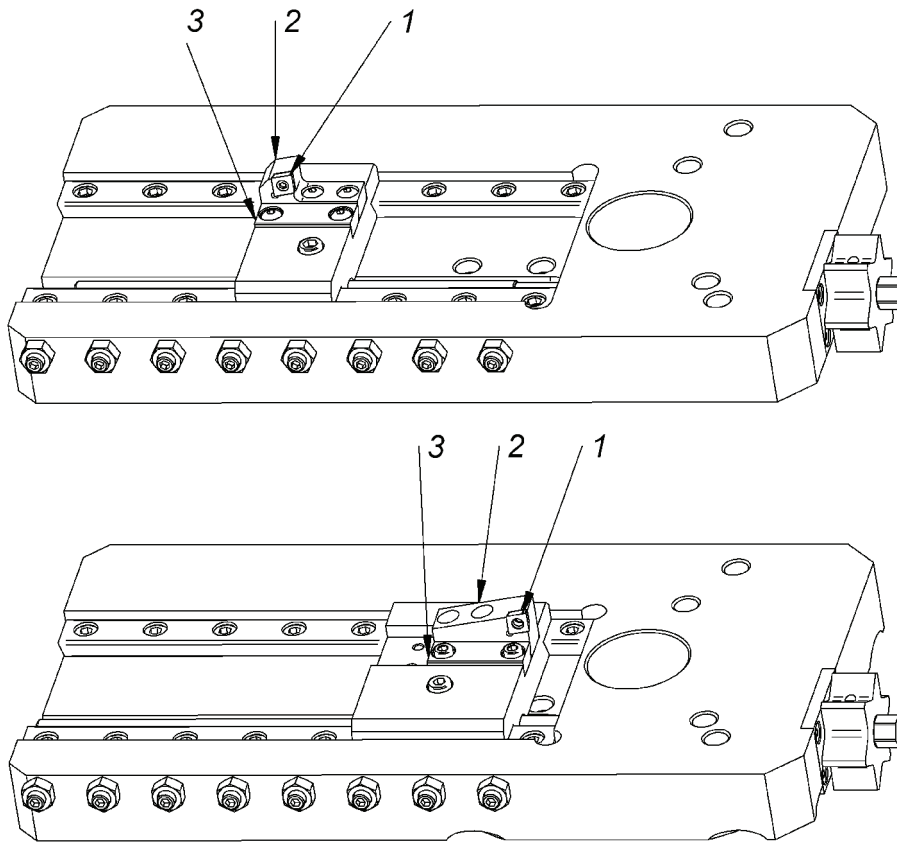


Figure. Mounting the tool with standard rotation direction of the machine (clockwise) seen from operator side.

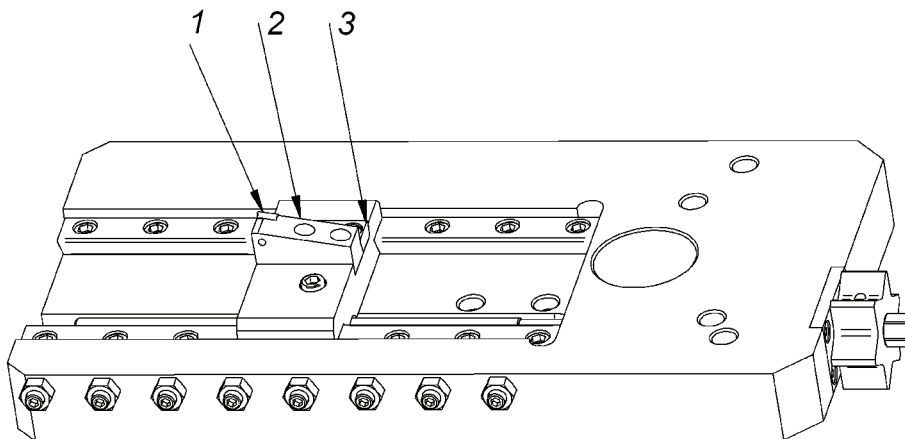


Figure. Mounting the tool with inverse rotation direction of the machine (counterclockwise) seen from operator side.

- 1 – Cutting insert
- 2 – Cutting insert holder
- 3 – Holder clamp

OPTIONAL EQUIPMENT

The arm for flange turning is equipped with two cutting insert holders – external and internal. When the machine is used in the middle of the operating range, both holders can be used. When working in the upper, extreme operating range, the external holder should be used. Similarly, when working in lower operating range, use internal holder.

Operating range dependent on cutting inserts holder	
Cutting inserts internal holder	Ø90 – 451mm
Cutting inserts external holder	Ø147 – 508mm

The arm for flange turning enables operation in both rotation directions of the PRO-10PB pipe beveller spindle. However, operating with left rotation direction is possible only in pipe beveller with the electric motor. Changing rotation direction in PRO-10PB standard pneumatic motor is not possible.

To rearm the device for work with inversed rotation direction, unscrew the clamp holder and the inserts holder with supplied size 3 Allen key. Then mount them again, changing places as shown in Figure “Mounting the tool with inverse rotation direction...”.

Remember that with standard rotation direction (clockwise when seen from operator’s side), the feed of tool is performed from the outside to the middle. After changing the rotation direction, the feed is performed from the middle to the outside.

Milling Parameters

Recommended Milling Depth	
Rough milling	0.5 mm
Precise milling	0.25 mm
Feed rate dependent on material and surface type	
Rough milling	0.66 mm both bumpers are working
Precise milling	0.33 mm one bumper is working

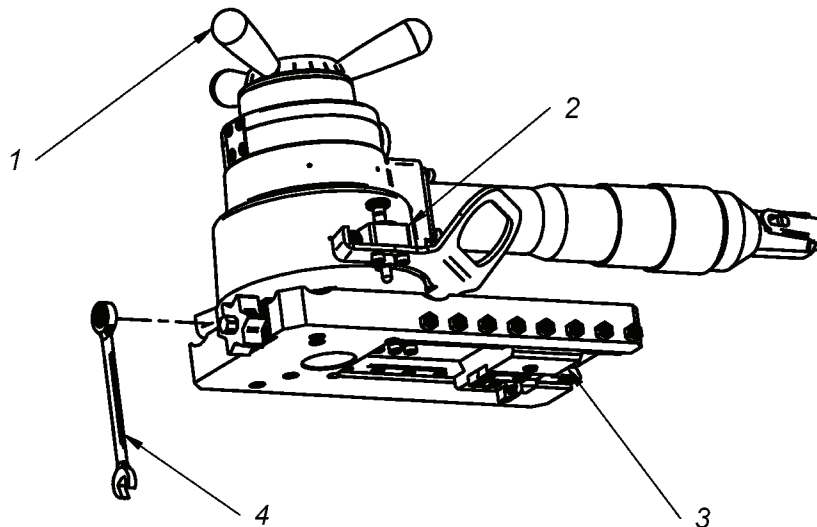
OPTIONAL EQUIPMENT

4.4.6. Operation Method

The method of mounting beveller with the turning flange set into the pipe does not change. After mounting the machine, use supplied size 13 ratcheting combination wrench to move the slide into extreme external or internal position, depending on used cutting inserts holder. Move out both pivots of the bumpers. Rotate the feed lever, set milling depth to a maximum 0.5 mm from the highest point and then turn on the motor and start milling.

WARNING!
BEFORE STARTING THE MACHINE MAKE SURE
THAT SIZE 13 RATCHETING COMBINATION WRENCH IS NOT LEFT BEHIND.
CHANGING POSITION OF FEED LEVER DURING MILLING IS PROHIBITED.

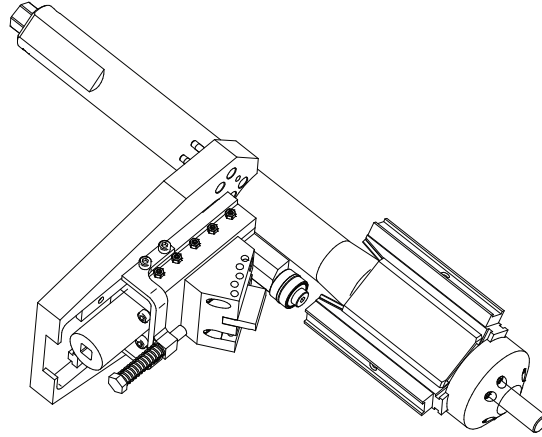
When turning of the pipe flange is finished, switch the motor off and after it stops rotate the feed lever counterclockwise (looking from operator's side) to prevent damaging the cutting insert from the slide back to initial position. If the material is not removed from the whole turning face, repeat the above action. If the surface layer is removed from the whole flange area, perform finishing milling using only one moved out bumper mandrel with milling depth below 0.25 mm.



- 1 – Feed lever
- 2 – Bumper
- 3 – Slide
- 4 – Size 13 ratcheting wrench

OPTIONAL EQUIPMENT

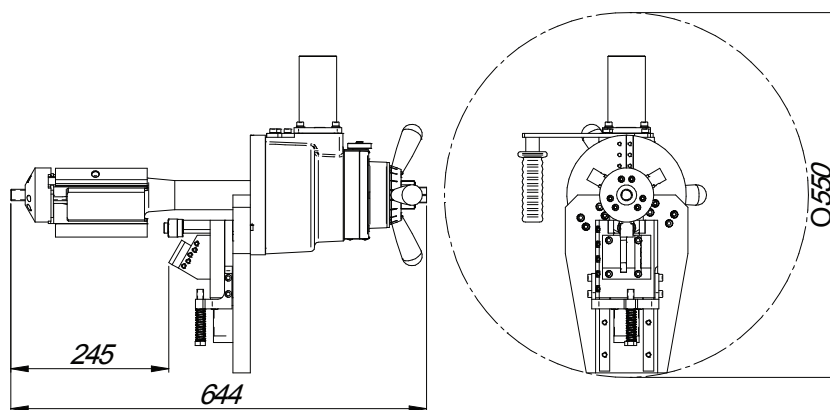
4.5. Attachment for Oval Pipes - Part# WAP-B10/530



Attachment for oval pipes is designed for the PRO-10PB beveller. It enables facing and bevelling of oval profile edges from 126 to 296 mm (depending on chosen mandrel configuration and ramps).

WARNING! The oval pipes attachment should be used only with the large expanding mandrel – using other mandrel leads to danger of operator injury and machine damage. Before you start to work, read all contents of the manual, especially safety rules.

4.5.1. Technical Data



Machined internal pipe diameters	126 - 296 mm
Rotating parts reach	Ø550 mm

OPTIONAL EQUIPMENT

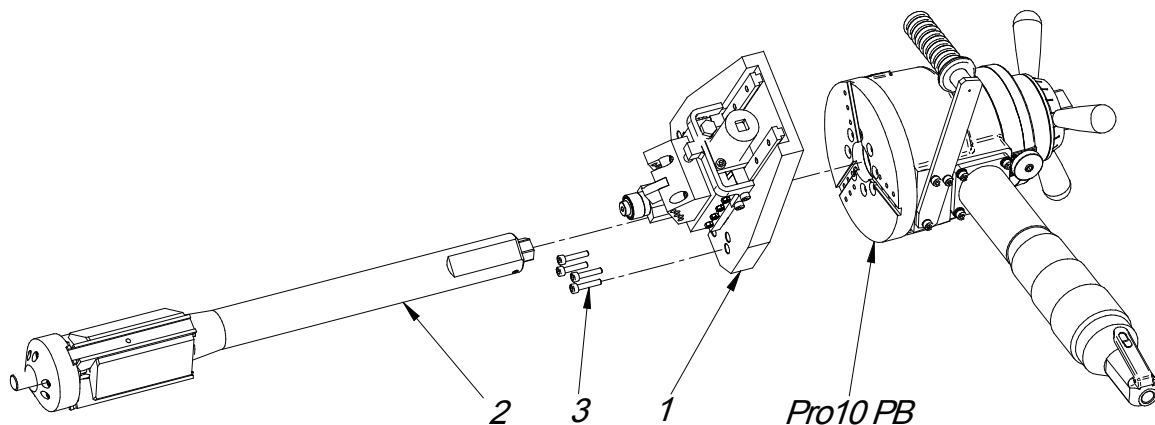
4.5.2 Equipment Included

Oval pipe attachment is supplied to client in metal box with complete equipment. The included equipment consists of:

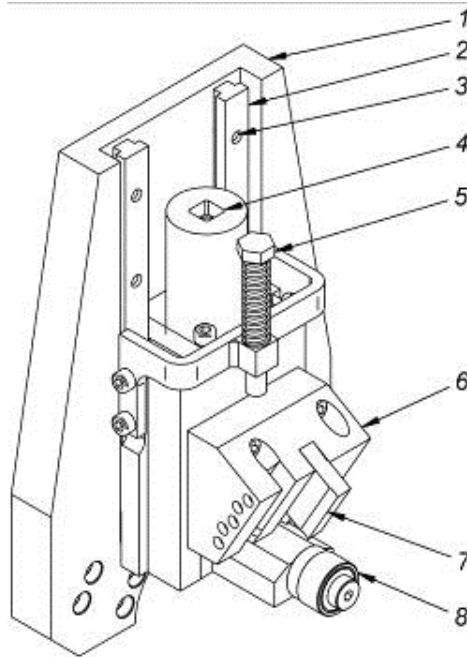
- Beveling set for oval pipes – 1 unit
- Big expanding mandrel – 1 unit
- Metal box – 1 unit
- Ratcheting knob 1/2" – 1 unit
- Size 8 flat key – 1 unit
- Size 6 Allen key – 1 unit
- Size 5 Allen key – 1 unit
- Size 4 Allen key – 1 unit
- Size 2.5 Allen key – 1 unit
- Tool container – 1 unit

4.5.3. Mounting Attachment for Beveling Oval Pipes

To use the attachment for beveling oval pipes, dismantle mandrel and tool holders. Then, mount cutting set (1) to PRO-10PB disc, using all eight M6x30 screws (3). Arm the big expanding mandrel in jaw blocks corresponding to required diameter (see point 2.3) and mount it according to the manual.



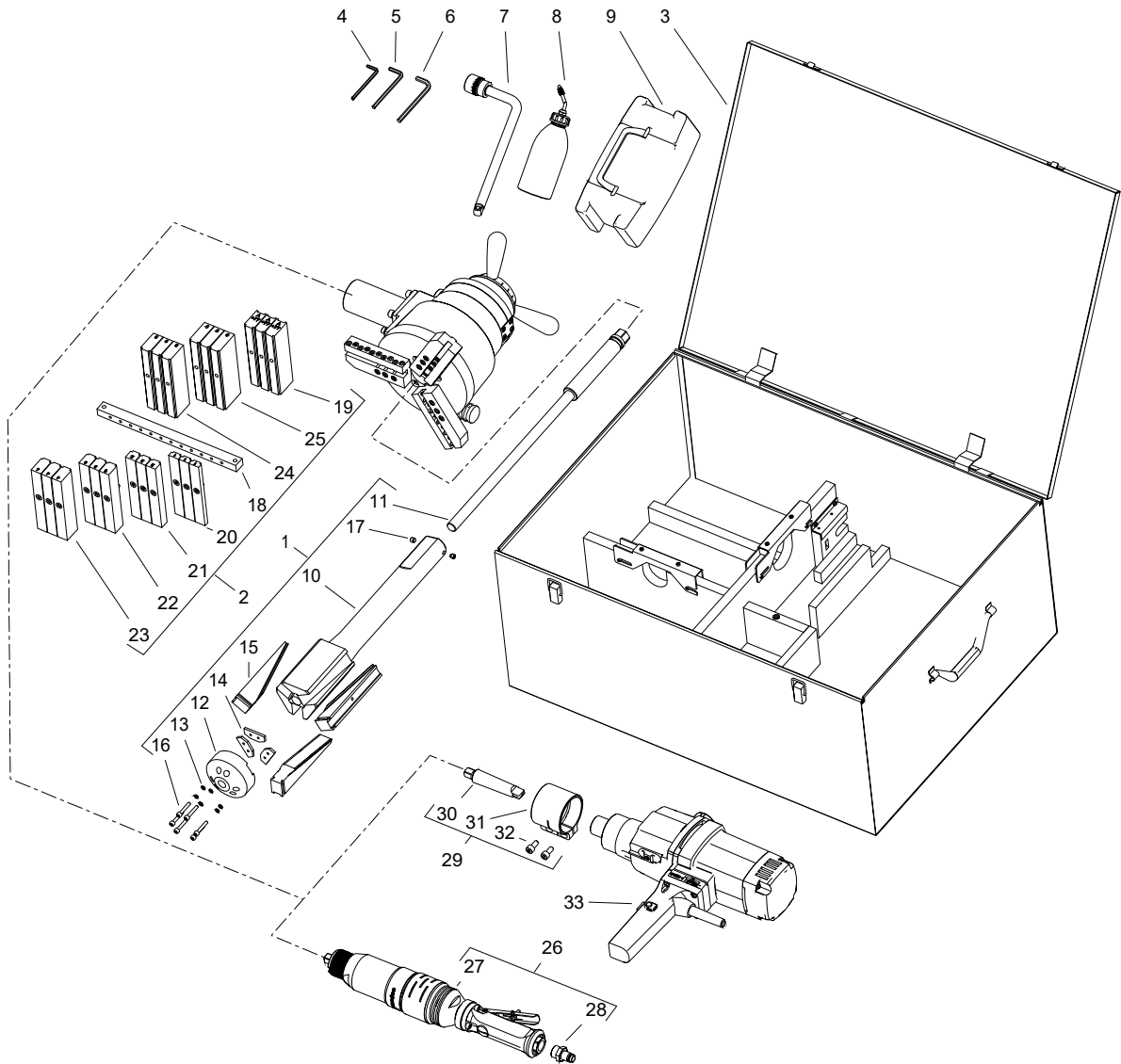
4.5.4. Operation Method



1. Read Operator's Manual before you start to work with the machine.
2. Always use safety goggles during operation.
3. Mount PRO-10PB beveller properly into the pipe.
4. Tighten bumper screw to lock the tool bit holder.
5. Loosen guide screws and rotate spindle until the feed roller reaches the smallest diameter.
6. Tighten guide screws what will block the slide.
7. Mount the tool bit.
8. Unscrew the bumper screw.
9. Put the feed roller into the pipe.
10. Initially increase tension of the spring using supplied ratcheting key $\frac{1}{2}$ ".
11. MAKE SURE THAT NO KEYS ARE LEFT IN THE SCREW SOCKETS.
12. To avoid damage of the tool, it must bypass the highest point of machined flange during first rotation.
13. Start the motor.
14. If the pipe edge is not perpendicular to pipe axis, at the beginning the tool mills only small part of the edge during every rotation.
15. If the cutting is done improperly:
 - a. Stop the spindle.
 - b. Check tool bit condition.
 - c. Increase tension of the spring that presses the tool holder.
 - d. Start the engine and check the result of adjustment.
16. After the milling is finished, turn off the motor to stop the tool.
17. Release fixing mandrel and take out the PRO-10PB beveller from the pipe.

4.5.5. Adjusting Side Clearance

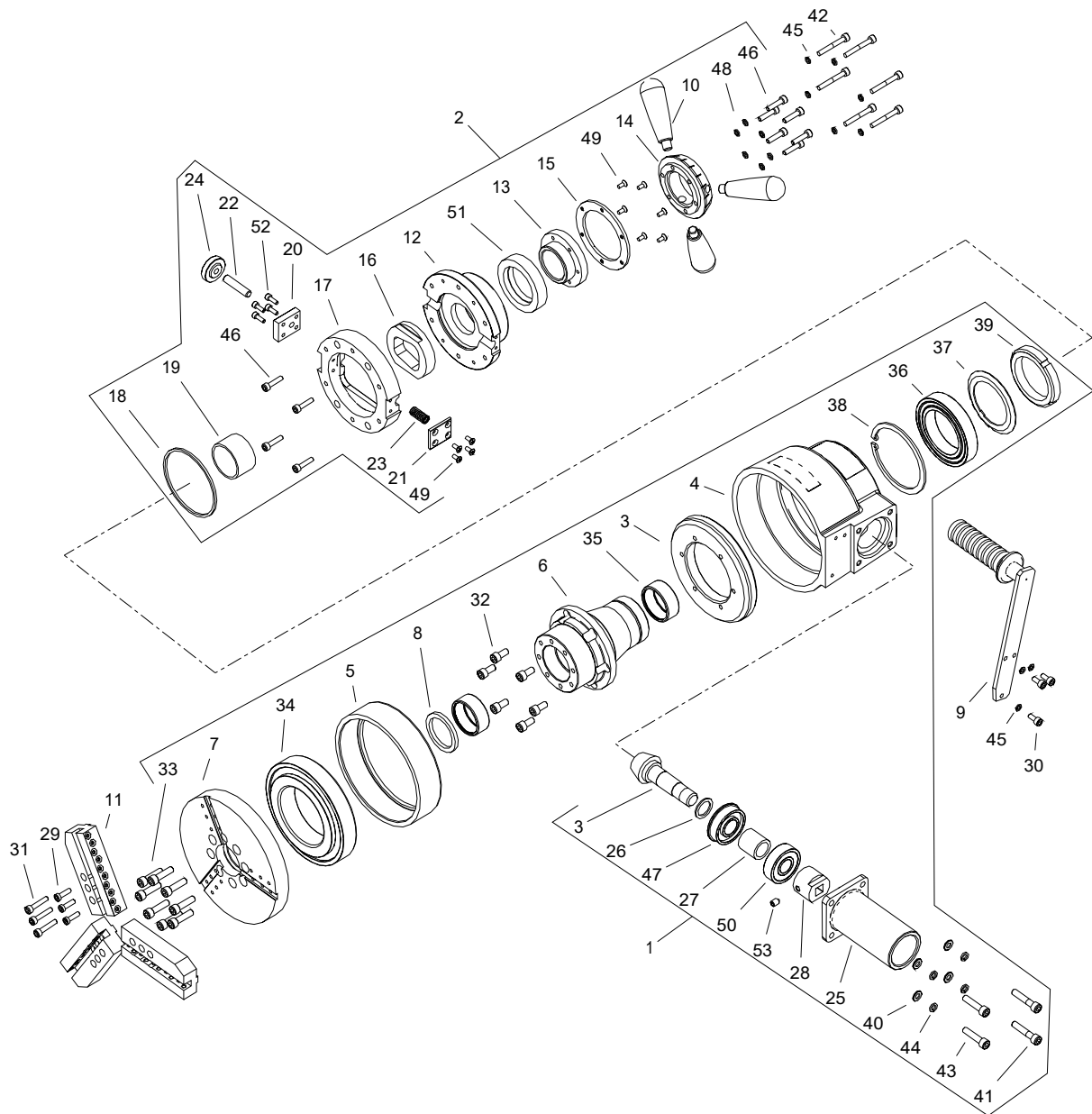
Adjusting slide clearance should be performed in the same way as for the arm for flange facing (see point 4.3.4).



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	TRZ-0200-04-01-00-2	STANDARD EXPANDING MANDREL ASSY	1
2	ZST-0200-20-00-00-0	JAW BLOCKS AND ADAPTERS SET	1
3	SKR-0200-08-00-00-1	METAL BOX	1
4	KLC-000056	4 MM HEX WRENCH WITH BALL END	1
5	KLC-000057	5 MM HEX WRENCH WITH BALL END	1
6	KLC-000009	6 MM HEX WRENCH	1
7	KLC-000001	24 MM SOCKET WRENCH	1
8	PJM-000003	COOLANT CONTAINER	1
9	PJM-000010	TOOL CONTAINER	1
10	TRZ-0200-04-01-00-1	MANDREL	1
11	SRB-0200-04-02-00-1	MANDREL SCREW	1
12	NKR-0200-04-03-00-0	MANDREL NUT	1
13	PDK-000045	SPRING WASHER 5.1	6
14	PLY-0200-04-04-00-0	NUT PLATE	3
15	SZC-0200-04-05-00-0	JAW	3
16	SRB-000089	HEX SOCKET HEAD CAP SCREW M5x30	6
17	WKR-000023	HEX SOCKET SET SCREW WITH DOG POINT M8x8	2
18	PLY-0200-20-08-00-0	STANDARD BLOCK BAR	1
19	KPL-0200-20-07-00-0	ADAPTER SET	1
20	KPL-0200-20-01-00-0	BLOCK SET L=11.5	1
21	KPL-0200-20-02-00-0	BLOCK SET L=19.2	1

Parts list PRO 10 PB v.2.05

ITEM	PART NUMBER	DESCRIPTION	Q-TY
22	KPL-0200-20-03-00-0	BLOCK SET L=26.9	1
23	KPL-0200-20-04-00-0	BLOCK SET L=34.6	1
24	KPL-0200-20-05-00-0	BLOCK SET L=42.3	1
25	KPL-0200-20-06-00-0	BLOCK SET L=49.5	1
26	SLN-0200-15-00-00-0	AIR MOTOR ASSY	1
27	SLN-000195	AIR MOTOR	1
28	KRC-000010	MALE PLUG, G1/2" 10.4 mm	1
29	ZST-0200-12-01-00-0	ELECTRIC MOTOR CONNECTING SET	1
30	TRZ-0200-00-02-00-0	MOTOR ARBOR	1
31	OBJ-0200-00-01-00-0	CLAMPING RING	1
32	SRB-000142	HEX SOCKET HEAD CAP SCREW M8x16	2
33	SLN-000094	MOTOR ASSY 1800W – 230V (CEE)	1
33	SLN-000102	MOTOR ASSY 1800W – 115V (US)	1
33	SLN-000120	MOTOR ASSY 1800W – 115V (UK)	1



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	ZSP-0200-01-00-00-3	SPINDLE ASSY	1
2	ZSP-0200-02-00-00-1	FEED ASSY	1
3	PKL-0200-09-00-00-0	BEVEL GEAR SET	1
4	KRP-0200-01-01-00-4	SPINDLE BODY	1
5	TLJ-0200-01-02-00-2	BEARING BUSH	1
6	WRZ-0200-01-03-00-1	SPINDLE	1
7	TRC-0200-01-04-00-1	SPINDLE DISK	1
8	USZ-0200-01-05-00-0	FELT SEAL	1
9	UCW-0200-07-00-00-0	HANDLE ASSY	1
10	DZW-0200-02-07-00-0	LEVER	3
11	OBS-0200-01-06-00-2	ALUMINIUM TOOL HOLDER	2
11	OBS-0200-01-06-00-3	STEEL TOOL HOLDER	1
12	KRP-0200-02-01-00-2	FEED BODY	1
13	NKR-0200-02-02-00-0	DRIVE NUT	1
14	TRC-0200-02-03-00-0	NUT DISK	1
15	OGR-0200-02-04-00-0	NUT LIMITER	1
16	OBJ-0200-02-08-00-0	LOCKING CLASP	1

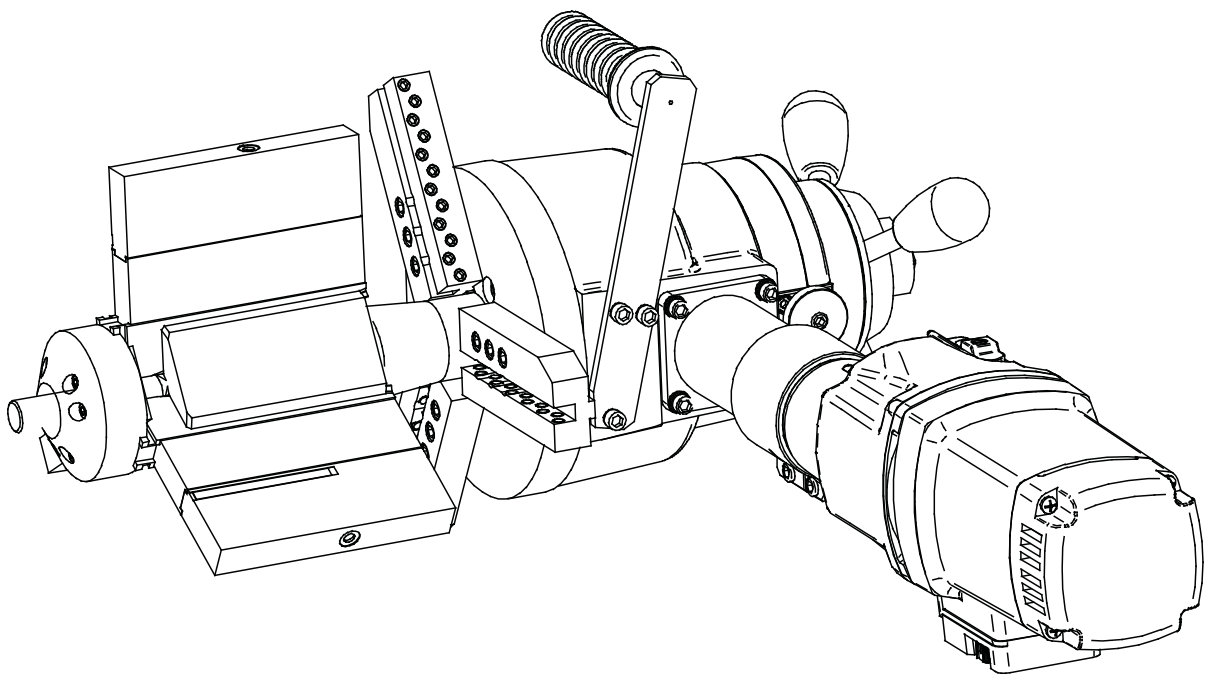
Parts list PRO 10 PB v.2.05

ITEM	PART NUMBER	DESCRIPTION	Q-TY
17	BLD-0200-02-09-00-0	CLASP LOCK	1
18	PRS-0200-02-10-00-0	BEARING STOPPER RING	1
19	TLJ-0200-02-11-00-0	DISTANCE BUSH	1
20	PLY-0200-02-12-00-0	SCREW STOPPER PLATE	1
21	PLY-0200-02-13-00-0	SPRING STOPPER PLATE	1
22	SRB-0200-02-14-00-0	SET SCREW	1
23	SPR-0200-02-15-00-0	SPRING	1
24	NKR-0200-02-16-00-0	KNURLED NUT	1
25	KRP-0200-03-01-00-1	DRIVE BODY	1
26	PRS-0200-03-02-00-0	DISTANCE RING	1
27	TLJ-0200-03-04-00-0	DISTANCE BUSH	1
28	ZBI-0200-03-05-00-0	DRIVER	1
29	SRB-000304	LOW HEAD SOCKET CAP SCREW M6x20	9
30	SRB-000105	HEX SOCKET HEAD CAP SCREW M6x14	3
31	SRB-000118	HEX SOCKET HEAD CAP SCREW M6x30	9
32	SRB-000142	HEX SOCKET HEAD CAP SCREW M8x16	6
33	SRB-000155	HEX SOCKET HEAD CAP SCREW M8x30	8
34	LOZ-000078	CONE BEARING 85x150x30	1
35	LOZ-000011	NEEDLE BEARING 45x52x20	2
36	LOZ-000021	ANGULAR BALL BEARING 65x100x18	1
37	PDK-000069	BEARING TOOTHED WASHER MB-3	1
38	PRS-000001	INTERNAL RETAINING RING 100w	1
39	NKR-000048	BEARING NUT KM-13	1
40	PDK-000202	SMALL ROUND WASHER 8.4	4
41	SRB-000157	HEX SOCKET HEAD CAP SCREW M8x40	2
42	SRB-000126	HEX SOCKET HEAD CAP SCREW M6x45	6
43	SRB-000156	HEX SOCKET HEAD CAP SCREW M8x35	2
44	PDK-000051	SPRING WASHER 8.2	4
45	PDK-000046	SPRING WASHER 6.1	9
46	SRB-000115	HEX SOCKET HEAD CAP SCREW M6x25	10
47	LOZ-000077	BEARING 22x52x15	1
48	PDK-000046	SPRING WASHER 6.1	6
49	WKR-000431	CROSS RECESSED OVAL COUNTERSUNK HEAD SCREW M5x12	10
50	LOZ-000074	BALL BEARING 20x52x15	1
51	LOZ-000033	THRUST BALL BEARING 55x78x16	1
52	SRB-000082	HEX SOCKET HEAD CAP SCREW M5x14	4
53	WKR-000069	HEX SOCKET SET SCREW WITH CONE POINT M8x12	1



PRO-10PBE PORTABLE PIPE BEVELLER

OPERATOR'S MANUAL



BEFORE USE, ENSURE EVERYONE USING THIS MACHINE READS AND UNDERSTANDS ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL .

Serial #.....

Date of Purchase.....

TRADEMASTER PRO-10PBE PORTABLE PIPE BEVELLING MACHINE

IMPORTED & DISTRIBUTED BY



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- The machine or tool has not been subject to misuse, neglect or damage by accident.
- The fault is not a result of normal "wear and tear".
- Written permission has been received from ITM prior to commencement of repair.
- Repairs, tampering or modification carried out by unauthorised personnel will void all warranty.
- Consumable items such as cutting tools, pilot pins, saw blades, grinding wheels etc. are NOT covered by warranty.

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SAFETY INSTRUCTIONS



READ OPERATOR'S MANUAL BEFORE YOU START TO WORK WITH THE MACHINE.

1. Safety Instructions

Pipe beveller should be used only to applications stated in the manual. Using in other applications may lead to personal injury and machine damage.

1.1. Application

The PRO-10PB is a pipe beveller designed for facing, bevelling, boring and/or sizing of pipes to prepare them for welding. These operations may be performed simultaneously or separately. The machine is designed for machining of carbon steel, stainless steel, aluminum alloys and copper-nickel. Various interchangeable jaw blocks and ramps secure the machine into pipes of internal diameters from 84 mm to 269 mm (3.31" to 10.59") and from 38 mm to 392 mm (1.50" to 15.43") when used with optional equipment.

1.2. Safety Requirements

Using beveller is not allowed if:

1. The operator has not read Operator's Manual or has not completed proper occupational safety and health training.
2. Machine is to be used in applications not stated in Operator's Manual
3. Machine is not complete or parts used for repair are not genuine.
4. Power supply specifications do not conform to those stated on rating plate.
5. Operator has not checked condition of machine, including power cord, control panel components and milling tools.
6. Machined pipe is not properly secured from falling or rolling.
7. Bystanders are present in immediate vicinity of machine.

Detailed safety rules:

8. Before you start to work with machine, check condition of electric installation, including power cord and plug.
9. Do not use power cord for other purposes, do not carry the machine by cord or yank it to disconnect the plug from socket.
10. Connect machine only to installation equipped with safety circuit (earthing) protected with 16 A fuse for 230 V supply or 32 A fuse for 115 V. When used on building sites, supply the machine through separation transformer made in second protection class.
11. Keep machine dry. Exposing it to rain or snow is prohibited.
12. Ensure proper lighting in your worksite.
13. Keep worksite clean. Cluttered worksite increases the risk of accidents.
14. Wearing loose clothing or jewelry is prohibited. They may be caught in rotating machine parts. Avoid slippery surfaces. If this is impossible, use antislippery footwear.
15. Keep power cords, cables, rope slings, belts etc. away from machine rotating parts. Do not use machine in vicinity of combustible fluids or gases.

SAFETY INSTRUCTIONS

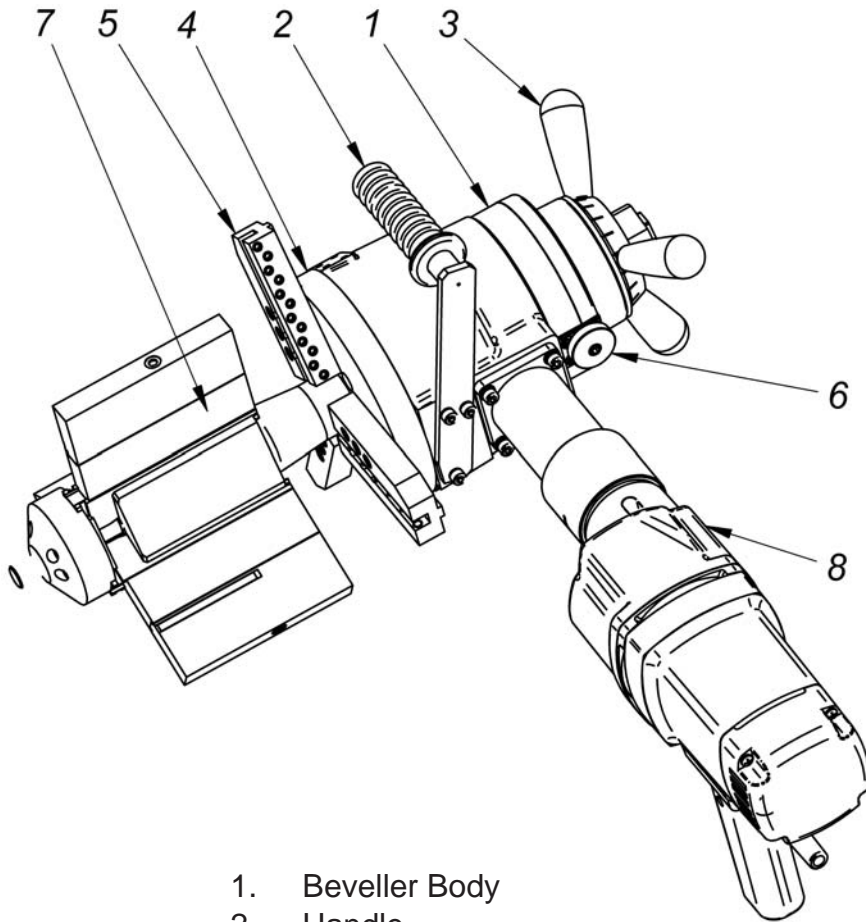
16. If possible, use clamps, vices, chains or belts to secure machined pipe.
17. Avoid overloading. Machine and tools will operate much better if used under rated loads.
18. Always use safety goggles and hearing protection.
19. Keep bystanders or untrained personnel away from worksite. All observers must use eye protection.
20. Do not remove chips formed during operation.
21. Do not touch rotating parts of machine. Do not remove chips, adjust machine or check quality of machined surface during operation.
22. Do not touch or change tool when machine is plugged into power supply.
23. Tool must be fastened securely. Check if mounting screws are tighten securely.
24. After changing the tool, check if keys or wrenches used for changing have been removed. Do not leave keys and wrenches behind after changing tool or machine adjustment.
25. Do not use blunt or damaged tools.
26. Use only tools recommended by manufacturer.
27. After every use, remove all formed metal chips from machine.
28. Perform all maintenance work and repairs only with power cord disconnected from power socket!
29. Maintain machine and tools with care. Cover steel parts with thin grease layer to protect them against rust when not in use for a longer period. Remove tool bits from holders for safe transport and storage.
30. Before every use, inspect machine to ensure it is not damaged and check whether machine operates properly and performs its intended function. Check whether any part is cracked and whether all parts are properly fitted. Make sure to maintain proper conditions that may affect machine operation.
31. Avoid accidental turning on the machine. Do not hold or carry machine by pressing startup valve lever, do not place machine in a manner that makes pressing the lever impossible.
32. If machine falls on a hard surface, from a height, is wet or has other damage that could affect technical state of machine, stop operation and immediately send machine to service centre for inspection.



WARNING! SAFETY RULES MUST BE CLOSELY OBSERVED.

2. Startup

2.1. Design



1. Beveler Body
2. Handle
3. Feed Lever
4. Spindle Disc
5. Tool Holder
6. Clearance Removing Set
7. Expanding Mandrel
8. Electric Motor

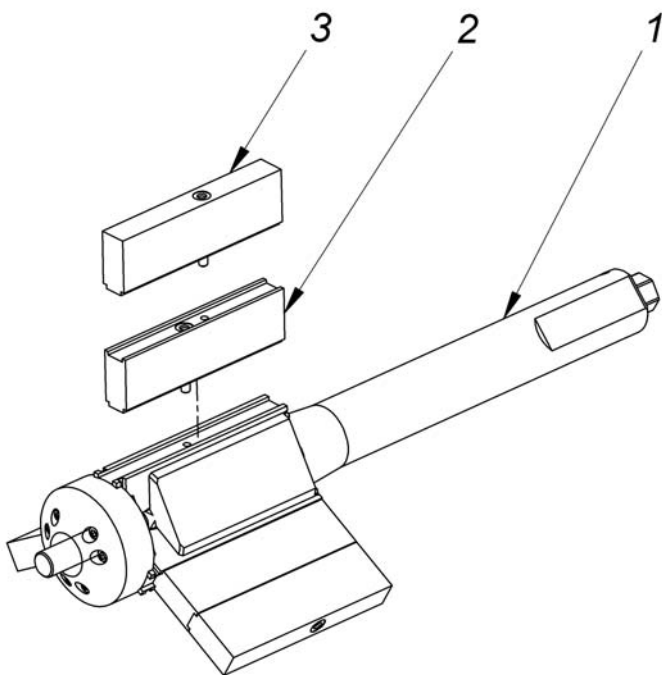
STARTUP

2.2. Equipment Included

PRO-10PB pipe beveller is supplied in metal box with complete standard equipment. The included equipment consists of:

- PRO-10PBE portable pipe beveller - 1 unit
- Jaw block set (from no. 1 to 6) mounted on the bar - 1 unit
- Metal box - 1 unit
- Coolant container with nozzle - 1 unit
- Size 24 socket key with handle - 1 unit
- Size 4 Allen key - 1 unit
- Size 5 Allen key - 1 unit
- Size 6 Allen key - 1 unit
- Tool container - 1 unit
- Operator's Manual - 1 unit
- Container with cutting fluid - 1 unit

2.2. Destination and Setup



Standard Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
84-100	3.31 - 3.94	-	-
99 - 115	3.90 - 4.53	1	-
115 - 131	4.53 - 5.16	2	-
130 - 146	5.12 - 5.75	3	-
146 - 162	5.75 - 6.38	4	-
161 - 177	6.34 - 6.97	5	-
176 - 192	6.93 - 7.56	6	-
192 - 208	7.56 - 8.19	2	+
207 - 223	8.15 - 8.78	3	+
223 - 239	8.78 - 9.41	4	+
238 - 254	9.37 - 10.0	5	+
253 - 269	9.96 - 10.59	6	+

Figure. Mandrel design (1 – Expanding mandrel; 2 – Ramp; 3 – Jaw block)

2.4. Preparing for Operation

2.4.1. Mounting Mandrel into Pipe

- Choose adapter jaw blocks corresponding to given diameter (see 2.3, 4.3.2, 4.2.3).
- Screw jaw blocks to the mandrel and slide it into the pipe.
- Expand mounting jaw blocks into the pipe, rotating feed screw clockwise.

Warning:

To avoid damage of armed/complete expanding mandrel, expand jaw blocks into the pipe below anticipated surface level after milling.

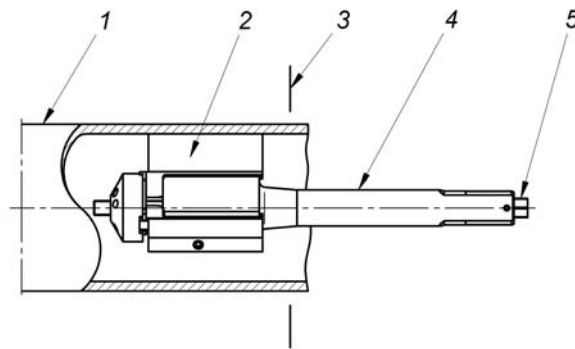


Figure. Mandrel position into the pipe (1 – Pipe; 2 – Jaw block; 3 –Surface after milling; 4 – Mandrel; 5 – Feed screw)

2.4.2. Selecting and Mounting the Tool

Warning:

Using improper and/or not genuine tool bits may damage the machine and lead to loss of warranty.

- Choose proper tool bits for milling.
- Mount tool bits for milling into sockets in position suitable to given type.
- When performing several operations simultaneously, like facing, bevelling and/or boring, mount boring tool bit in the front of bevelling tool bit.
- Mount tool bit into holder sockets, using size 4 Allen key.
- Cutting edge of the tool bit must be placed on the radial centerline of the head.
- Make sure all tool bits are mounted in the same direction as head rotation direction.

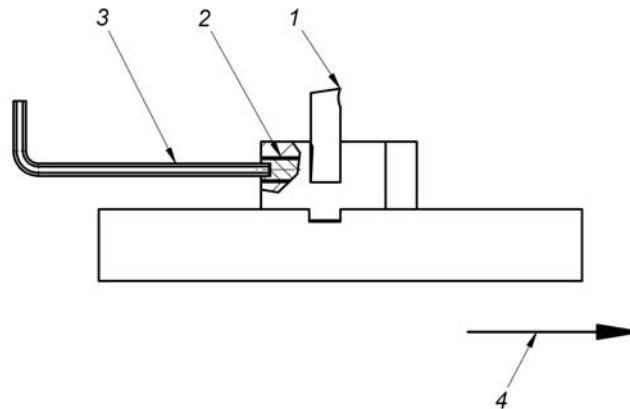


Figure. Mounting the tool bit (1 – Cutting edge; 2 – Clamping screw; 3 – Size 4 Allen key; 4 – Rotation direction)

2.4.3. Preparing for Operation

- Loosen the set screw. Loosening the spring causes enough clearance between insert and mandrel to the mount the machine on the mandrel.
- Slide the machine gently onto the mandrel until encountering resistance.
- Rotate the machine until the flat surfaces of the insert (placed inside the machine body) slide onto the mandrel surfaces. Slide the machine to the final resistant position.
- Rotate feed knob clockwise for at least 10 threads when the feed screw nut will engage with the mandrel.

Warning:

Operations mentioned above should be carried out very carefully, due to the resistant surfaces of the mandrel and machine socket being threaded. Forcing the machine or striking it while inserting may lead to damage of the mandrel thread or feed screw nut thread and subsequently prevent the machine from being mounted correctly and used.

- Remove the clearance between the machine and mandrel.

Removing Clearance

Adjusting is necessary every time after the machine is mounted on the mandrel and always when radial clearance is present between the mandrel and machine. The clearance is displayed by vibration of the tool bits during milling.

- Tighten the set screw until clearance is removed.
- Turn the feed knob in both directions to make sure the screw is not too tight.
- If necessary, loosen the screw once again and correct the pressure.
- Tighten the lock nut.

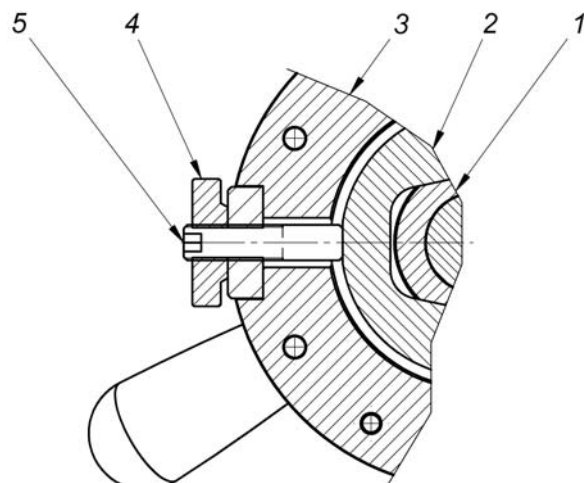


Figure Removing clearance (1 – Mandrel; 2 – Clamping insert; 3 – Body; 4 – Lock nut; 5 – Clamping screw)

2.5. Machine Startup



READ OPERATOR'S MANUAL BEFORE YOU START TO WORK WITH THE MACHINE. IT IS OF UPPER MOST IMPORTANCE THAT POINT "1.2 SAFETY REQUIREMENTS" IS READ THOROUGHLY

2.5.1. Startup

- Check distance between the tool (tool bit) and face of the pipe at its highest point. The distance should be at least 3mm.
- Make sure once again that the ramp between tool bit and jaws or locking jaw blocks is correct to provide operation without collision.
- Connect the machine to power grid (see 1.2).
- Check if the proper rotation direction is set on the engine. Starting operation with improper rotation direction leads to damage of the tools and creates a risk for personnel in the vicinity.
- Rotate the POWER knob to maximum "+" direction. It will enable motor working with maximum torque.

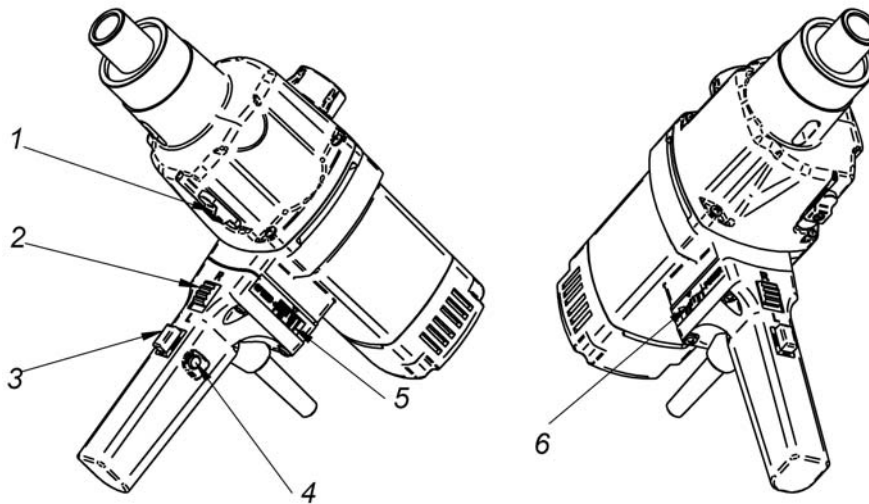


Figure 6. Removing clearance (1 – Drive gear switch; 2 – Rotation direction switch; 3 – Main switch; 4 – Lock button; 5 – Speed adjustment knob; 6 – Torque adjusting knob)

- Press and hold engine main switch button. To lock the button in "on" position, press the lock button first.
- Rotate the feed knob clockwise to move the tool bit close to pipe face. The cutting starts when the first tool bit touches the pipe face.
- If the pipe face is not perpendicular, thus in the first phase of cutting the surface machined in single rotation will be small, limited to highest point of the pipe face.
- To avoid damage of the tool, apply small feed per rotation until the tool bit starts to cut the whole surface of the pipe face.
- To maintain the correct performance of the milling and to maximally extend life of the tool, adjust feed rate/milling speed to machined material by rotating speed knob and/or changing drive gear (changing drive gear can be performed only after the spindle is stopped).

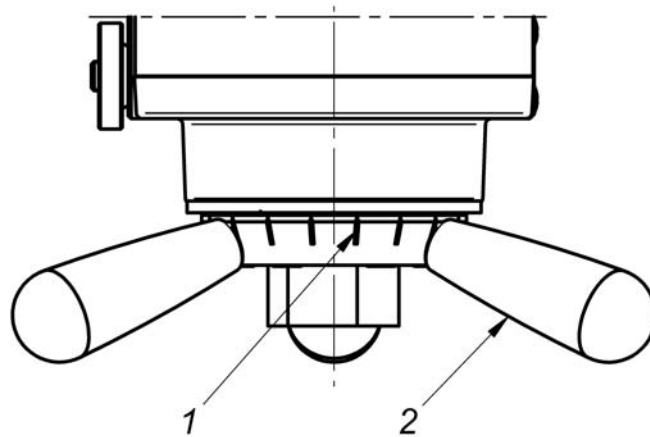


Figure. Feed unit (1 – Scale; 2 –Feed lever)

- Continue operation, rotating the feed levers clockwise until achieving the required geometry of the pipe face.

The feed equals 0.11 mm per one pitch or 2 mm per one full rotation of the feed lever.

- Stop removing metal chips and allow the head to rotate several rotations to finish the prepared surface.
- Release motor starting button to stop the machine.
- Separate the tool from machined surface to a minimum of 3 mm, rotating feed lever counterclockwise.
- Unscrew feed screw using size 24 socket wrench to loosen the mandrel located into the pipe.
- Remove machine from the pipe. Do not disassemble the mandrel! The machine and mandrel constitute the complete set and reassembling is not necessary.

2.5.2. Feed Recommendations

- Use very light feed for initial bevelling, until a continuous cut is established, particularly when pipes are cut with the torch or/and when the cut is not perpendicular to the axis.
- Use proper feed to obtain a continuous chip cut. If the feed is too light, chip has a form of a thin spring. If the feed is too heavy, cutting is more difficult and the chip is rough.
- Stainless steels susceptible to hardening during milling should be cut with sufficiently high feed to stay under hardened layer (0.08–0.15 mm/rotation). Never allow tool bit to slide and press the surface.
- Changing feed rate often minimizes chatter problem (if it appears).

2.5.3. Cutting Tools

Using PRO-10PB pipe bevelling machine enables the following operations.

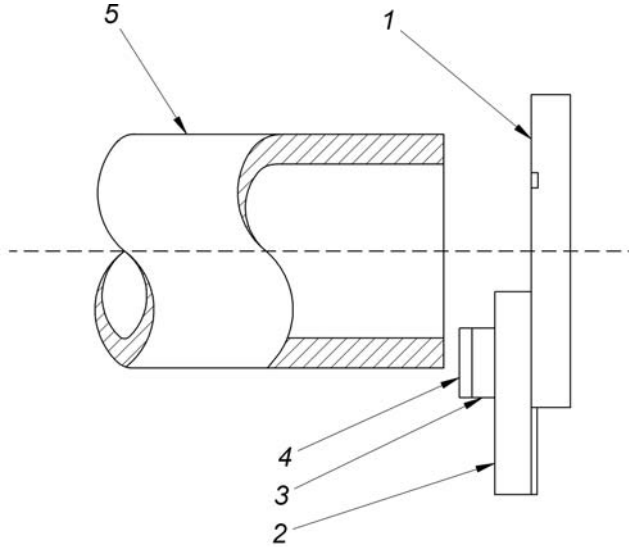


Figure. Facing

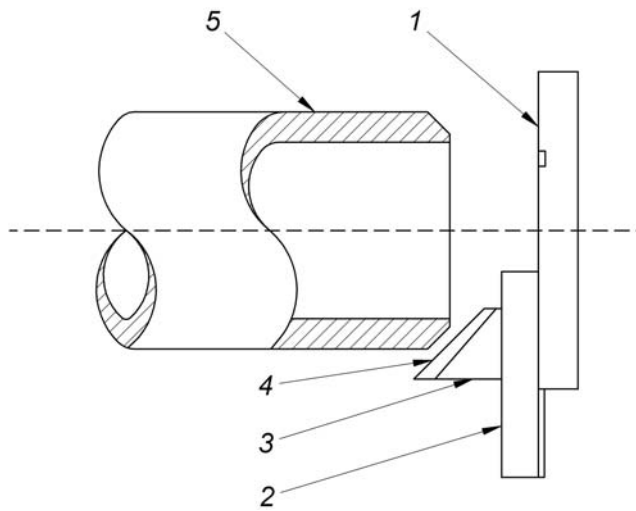


Figure. Bevelling

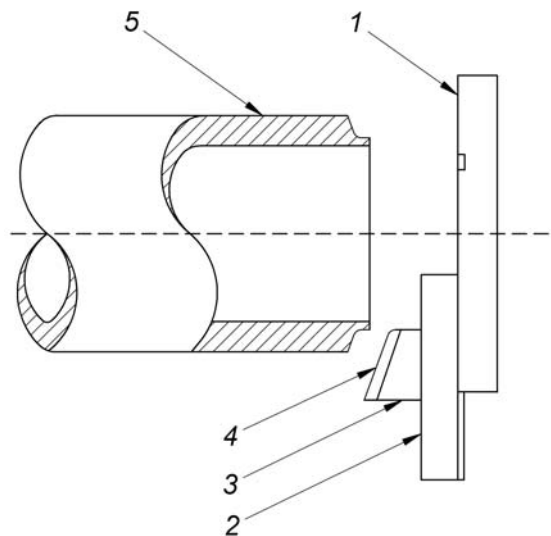


Figure. "J" Bevelling

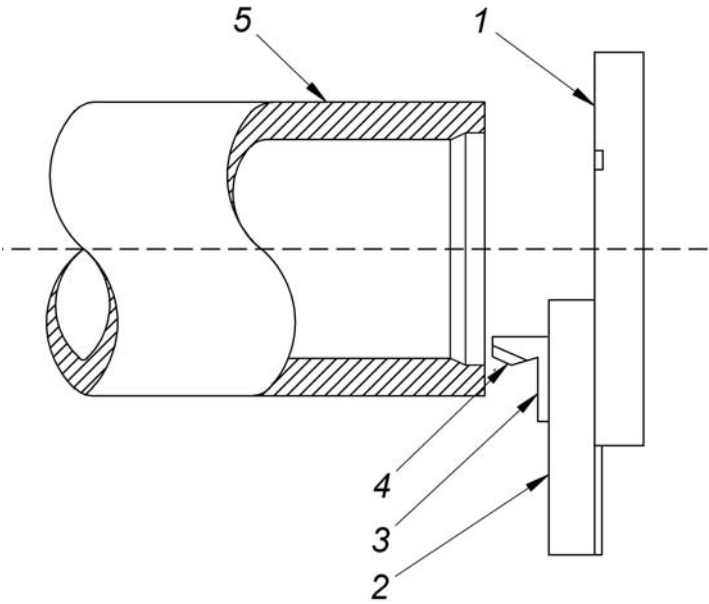


Figure. Boring

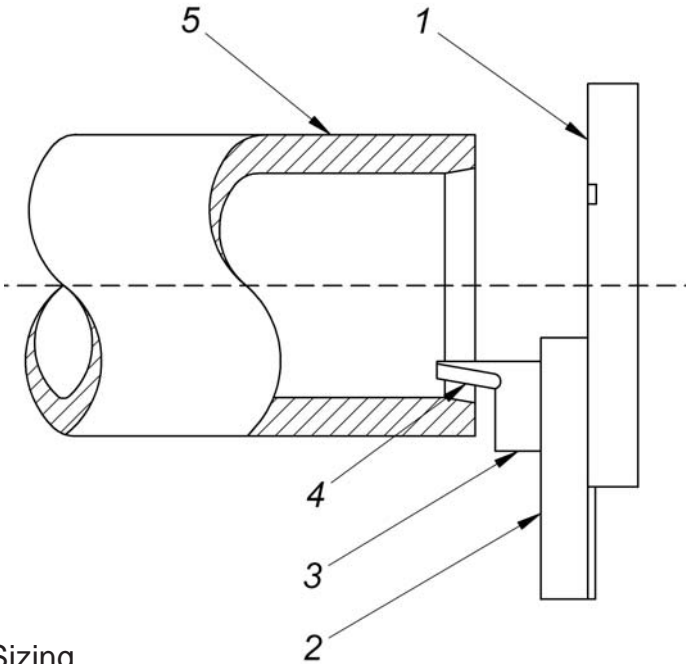


Figure. Internal Bevelling / Sizing

- 1. Working head
- 2. Tool bit holder
- 3. Tool bit
- 4. Cutting edge
- 5. Pipe

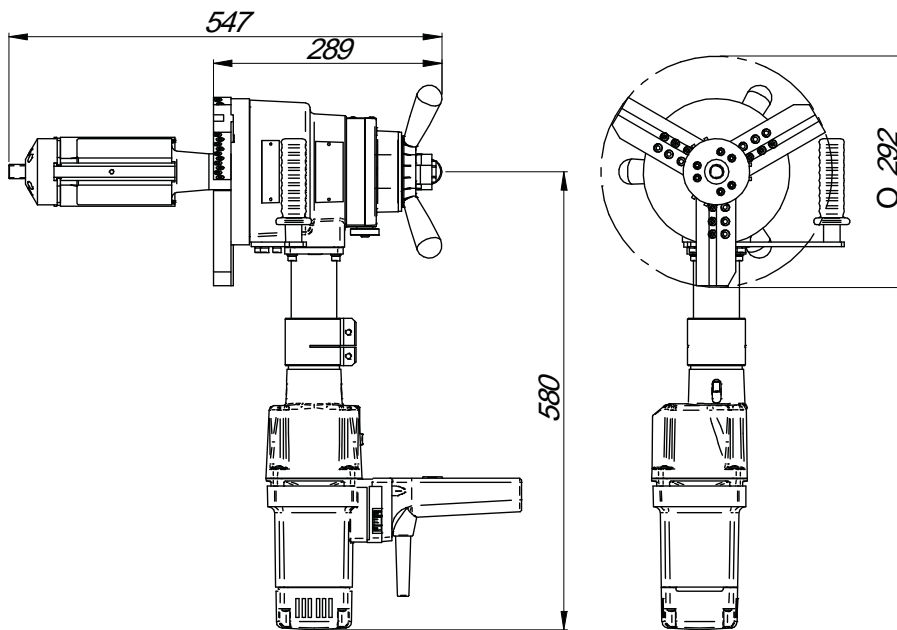
TECHNICAL DATA

2.6. Inspection, Adjustment, Maintenance and Service.

To avoid accidents, the machine, power cords, joints and switches must be checked on a regular basis in case of possible damages.

- All parts should be cleaned and maintained with thin oil film.
- Use clean and pure oil with density according to SAE 10 (90SSU) or lower.
- If the PRO-10PB was used in reverse position, rotate it after every use to remove chips or other garbage accumulated on the working head.
- All repairs must be performed in service centre appointed by seller.
- Replace damaged parts of machine only with genuine ones.
- When ordering replacement parts, it is required to state the code (specific parts list available from seller or service centre) and machine type.

3. Technical Data

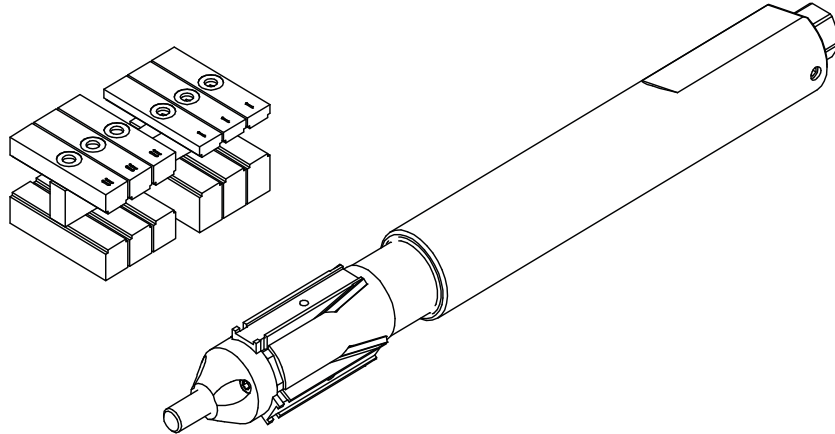


Power supply	110V AC / 50-60 Hz 230V AC / 50-60 Hz
Motor power	1800 W
Internal diameter working range	84-269 mm
Pipe maximum outer diameter	274 mm
Material thickness	up to 15 mm
Materials allowed	carbon steel, stainless steel, aluminum alloys, copper-nickels
Spindle rotational speed on I gear	12-28 rpm
Spindle rotational speed on II gear	41-96 rpm
Weight	31.5 kg
Noise level	Below 70 dB
Ambient temperature range	-20°C to +40°C

OPTIONAL EQUIPMENT

4. Optional Equipment

4.1. Small Expander Set for Pipes of Internal Diameter of 38 - 86 mm. Part# 10/510



4.1.2. Destination and Setup

Small Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
38–47,5	1.50–1.87	–	–
47,5–57,5	1.87–2.26	I	–
57,0–67,0	2.24–2.64	II	–
66,5–76,5	2.62–3.01	III	–
76,0–86,0	2.99–3.39	IV	–

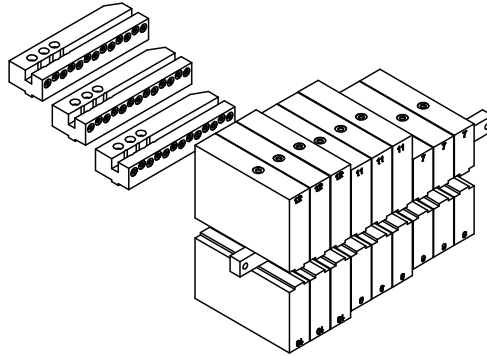
4.1.3. Operation Method

Operation method - see point 2.4

OPTIONAL EQUIPMENT

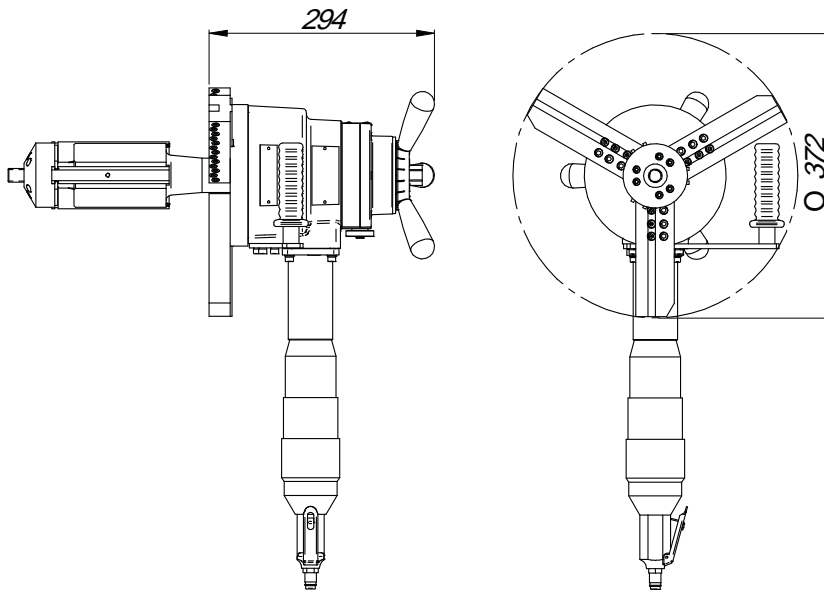
4.2. Range Increasing Set - Part# 10/550

Using range increasing set enables to mill pipes of internal diameters of $\text{Ø}192 - 365\text{mm}$.



Before you start to work, read all contents of the manual, especially safety rules.

4.2.1. Technical Data



Machined pipe diameters	$\text{Ø}192 - 365 \text{ mm}$
Rotating parts reach	$\text{Ø}372 \text{ mm}$

OPTIONAL EQUIPMENT

4.2.2. Equipment Included

The range increasing set to 365mm is supplied to the client in a metal box. Included equipment consists of:

- Tool bit holder set to 365 – 1 unit
- Jaw blocks set (from no. 7 to 12) mounted on the bar – 1 unit
- Metal box – 1 unit
- Size 4 Allen key – 1 unit
- Size 5 Allen key – 1 unit

is necessary in all cases. Because the “3” segment can not be last, for pipes in 223–251 mm (8.78–9.88”) diameter range place it within “B” segment after dismounting links (Figure 12, Item 4) from connector (Figure 12, Item 3).

4.2.3. Destination and Setup

Standard Expanding Mandrel			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
192 - 208	7.56 - 8.19	7	-
208 - 224	8.19 - 8.82	8	-
224 - 240	8.82 - 9.45	9	-
240 - 256	9.45 - 10.08	10	-
256 - 272	10.08 - 10.71	11	-
272 - 288	10.71 - 11.34	12	-
285 - 301	11.22 - 11.85	8	+
301 - 317	11.85 - 12.48	9	+
317 - 333	12.48 - 13.11	10	+
333 - 349	13.11 - 13.74	11	+
349 - 365	13.74 - 14.37	12	+

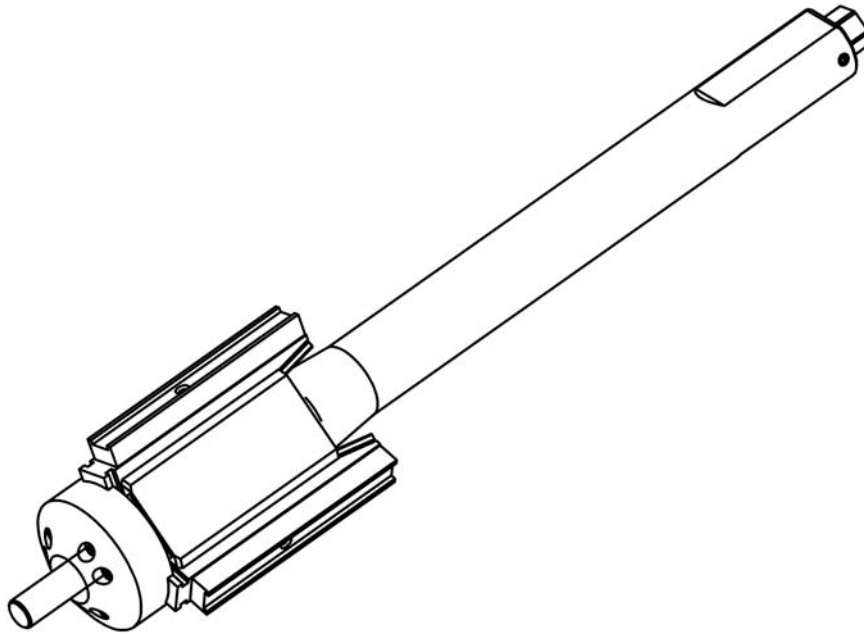
4.2.4. Adjusting PRO-10PB for Beveling Pipes of Ø192 - 365

To machine pipes of outer diameters in Ø215-418 range, disassemble all three tool holders (5, see point 2.1). Remove all garbage from spindle disc (4) – make sure no chips remain. Mount tool bit holder set to pipes of Ø192-365 on the pipe beveller spindle disc (4). Arm the expanding mandrel (7) according to table from point 4.2.3.

4.2.5. Operation Method

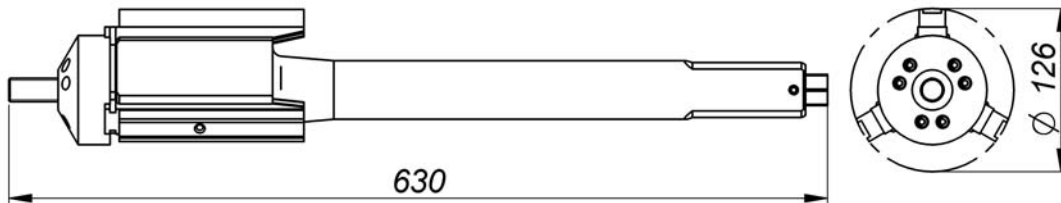
Operation method – see point 2.4.

4.3. Big Expanding Mandrel - Part# 10/540



Big expanding mandrel is used to mount PRO-10PB beveller into pipes of diameter from 126 mm to 392 mm.

4.3.1. Technical Data



OPTIONAL EQUIPMENT

4.3.2. Destination and Setup

Big Mandrel + Standard Jaw Blocks			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
126 - 142	4.96 - 5.59	1	N/A
142 - 158	5.59 - 6.22	2	N/A
157 - 173	6.18 - 6.81	3	N/A
173 - 189	6.81 - 7.44	4	N/A
188 - 204	7.40 - 8.03	5	N/A
203 - 219	7.99 - 8.62	6	N/A
219 - 235	8.62 - 9.25	2	A
234 - 250	9.21 - 9.84	3	A
250 - 266	9.84 - 10.47	4	A
265 - 281	10.43 - 11.06	5	A
280 - 296	11.02 - 11.65	6	A

Big Mandrel + Jaw Blocks of Milling Pipes Range Increasing Set			
Pipe diameter (mm)	Pipe diameter (in)	Jaw block no.	Ramp
219 - 235	8,62 - 9,25	7	N/A
235 - 251	9,25 - 9,88	8	N/A
251 - 267	9,88 - 10,51	9	N/A
267 - 283	10,51 - 11,14	10	N/A
283 - 299	11,14 - 11,77	11	N/A
299 - 315	11,77 - 12,40	12	N/A
296 - 312	11,65 - 12,28	7	A
312 - 328	12,28 - 12,52	8	A
328 - 344	12,91 - 13,54	9	A
344 - 360	13,54 - 14,17	10	A
360 - 376	14,17 - 14,80	11	A
376 - 392	14,80 - 15,43	12	A

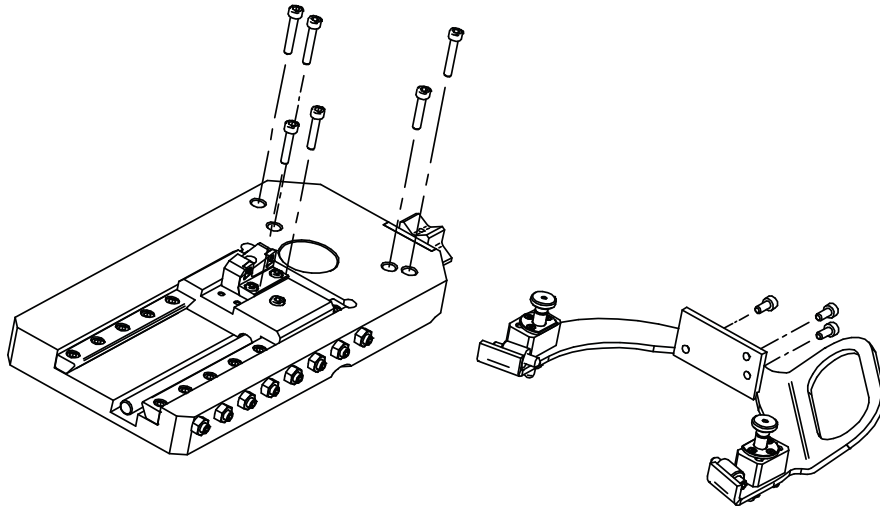
4.3.3. Operation Method

Operation method – see point 2.4.

OPTIONAL EQUIPMENT

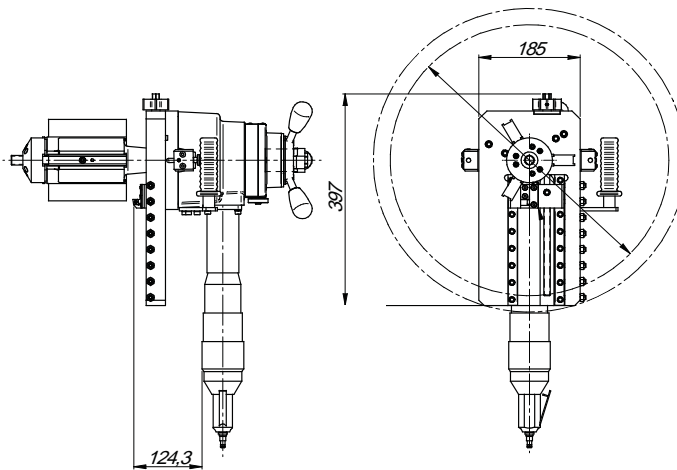
4.4. Flange Facing Attachment - Part# 10/520

The flange facing attachment is designed for the PRO-10PB pipe beveller. It enables facing of pipe flanges of diameters from 90mm to 508mm. The bumpers (mounted on the holder body) and the rack fixed to the milling set feed screw work together to allow feed to the tool. If the rack cooperates with one bumper, the feed is equal 0.33 mm/rotation. If the rack cooperates with two bumpers, the feed is equal 0.66 mm/rotation.



Before you start to work, read all contents of the manual, especially safety rules.

4.4.1. Technical Data



Operating range	Diameters from 90mm to 508mm
Automatic feed	180.5mm
Feed rate	0.33mm or 0.66mm per rotation
Maximum chip width	5mm
Rotating parts diameter	569.4mm

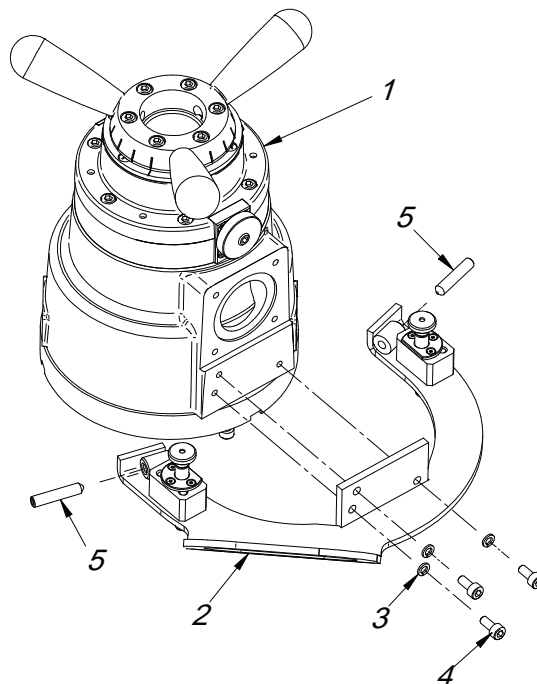
4.4.2. Equipment Included

Flange facing attachment is supplied to client in metal box with complete standard equipment. The included equipment consists of:

- | | |
|---|-----------|
| • Milling set | – 1 unit |
| • Complete holder | – 1 unit |
| • M6x30 screw | – 3 units |
| • M6x35 screw | – 3 units |
| • M6x14 screw | – 3 units |
| • Metal box | – 1 unit |
| • Size 13 ratcheting combination wrench | – 1 unit |
| • Size 3 Allen key | – 1 unit |
| • Size 4 Allen key | – 1 unit |
| • Size 5 Allen key | – 1 unit |
| • Torx T15 Allen key with lever | – 1 unit |
| • Cutting insert | – 8 units |
| • Screw securing cutting insert | – 2 units |
| • Tool container | – 1 unit |

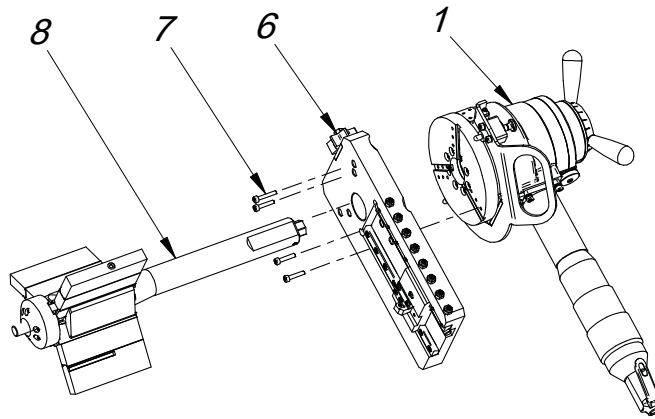
4.4.3. Adjusting PRO-10PB for Flange Facing

1. Dismantle three tool bit holders from spindle disc.
2. Dismantle holder, unscrewing three M6x14 screws (4) with washers (3).
3. Mount flange facing attachment holder (2) to the body, using M6x14 screws (4) with washers (3).



OPTIONAL EQUIPMENT

4. Tighten up M8x40 clamping screws (5).
5. Mount milling set (6) on the pipe beveller spindle disc (1), using six M6x30 screws (7).
6. Mount expanding mandrel (8).



4.4.4. Adjusting Side Clearance

1. Loosen screws that mount the guide from adjusting screws side.
2. Move the slide to maximum outside position.
3. Tighten adjusting screws in such way to gently press the guide to slide. Tighten only screws located opposite the slide.
4. Gently tighten screws that mount the guide (rotate it according to torque 1.5–2.5 Nm).
5. Using supplied ratcheting combination wrench, move the slide to the middle position, rotating the feed screw. There should be no differences in resistance when moving the slide.
6. Gently tighten the remaining adjusting screws.
7. Move the slide through the whole length of the feed. Movement of the slide should be smooth and even.
8. Tighten up the screws mounting the guide and lock the adjusting screws with M8 nuts.
9. Check if the slide moves gently and evenly on the whole length of the feed.
10. If necessary, repeat the adjustment.

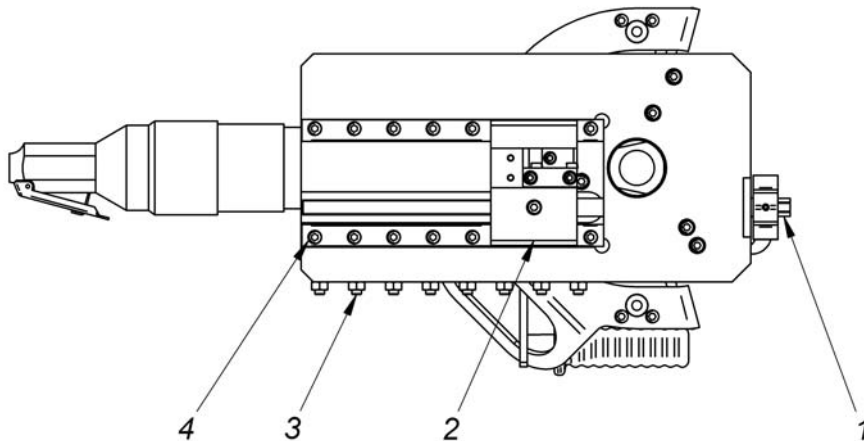


Figure. Slide set adjustment (1 – Feed screw; 2 – Slide; 3 – Adjusting screws; 4 – Screws that mount the guide)

4.4.5. Mounting Tool Holder and Cutting Inserts

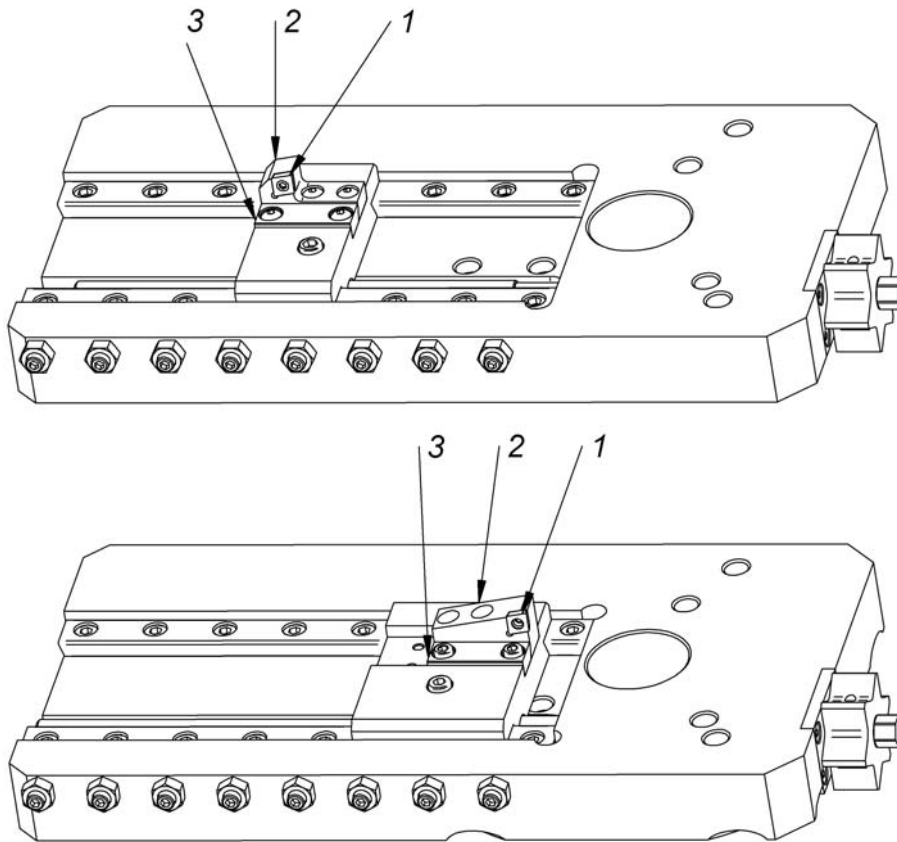


Figure. Mounting the tool with standard rotation direction of the machine (clockwise) seen from operator side.

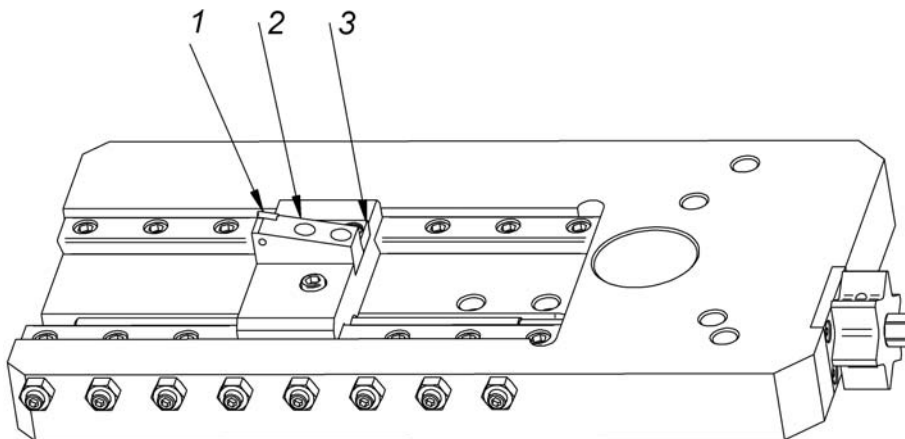


Figure. Mounting the tool with inverse rotation direction of the machine (counterclockwise) seen from operator side.

- 1 – Cutting insert
- 2 – Cutting insert holder
- 3 – Holder clamp

OPTIONAL EQUIPMENT

The arm for flange facing is equipped with two cutting inserts holders – external and internal. When the machine is used in the middle of the operating range, both holders can be used. When working in the upper, extreme operating range, the external holder should be used. Similarly, when working in lower operating range, use internal holder.

Operating range dependent on cutting inserts holder	
Cutting inserts internal holder	Ø90 – 451mm
Cutting inserts external holder	Ø147 – 508mm

The arm for flange facing enables operation in both rotation directions of the PRO-10PB pipe beveller spindle. However, operating with left rotation direction is possible only in pipe beveller with the electric motor. Changing rotation direction in PRO-10PB standard pneumatic motor is impossible.

To rearm the device for work with inversed rotation direction, unscrew the clamp holder and the inserts holder with supplied size 3 Allen key. Then mount them again, changing places as shown in Figure “Mounting the tool with inverse rotation direction...”.

Remember that with standard rotation direction (clockwise when seen from operator’s side), the feed of tool is performed from the outside to the middle. After changing the rotation direction, the feed is performed from the middle to the outside.

Milling Parameters

Recommended Milling Depth	
Rough milling	0.5 mm
Precise milling	0.25 mm
Feed rate dependent on material and surface type	
Rough milling	0.66 mm both bumpers are working
Precise milling	0.33 mm one bumper is working

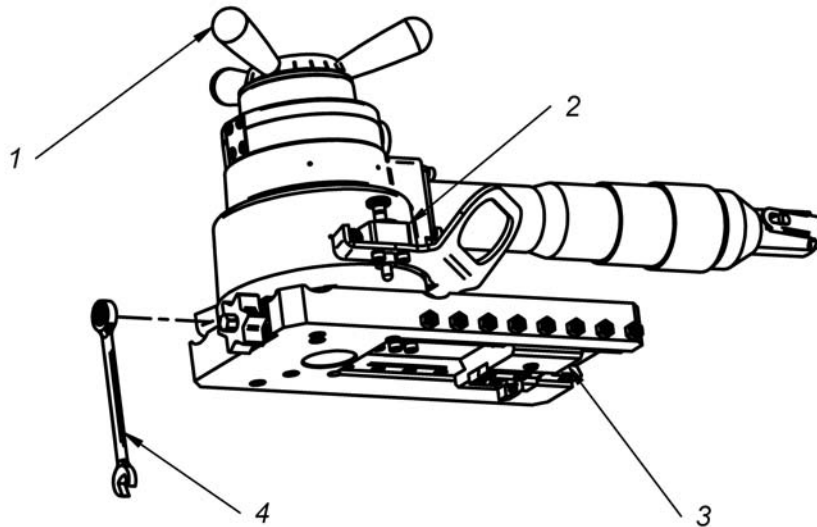
OPTIONAL EQUIPMENT

4.4.6. Operation Method

The method of mounting beveller with the facing flange set into the pipe does not change. After mounting the machine, use supplied size 13 ratcheting combination wrench to move the slide into extreme external or internal position, depending on used cutting inserts holder. Move out both pivots of the bumpers. Rotate the feed lever, set milling depth to a maximum 0.5 mm from the highest point and then turn on the motor and start milling.

WARNING!
BEFORE STARTING THE MACHINE MAKE SURE
THAT SIZE 13 RATCHETING COMBINATION WRENCH IS NOT LEFT BEHIND.
CHANGING POSITION OF FEED LEVER DURING MILLING IS PROHIBITED.

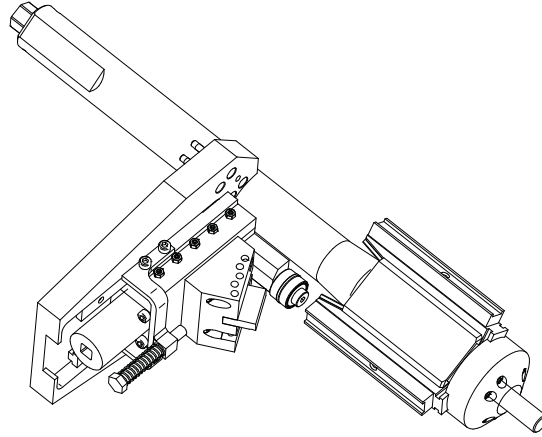
When facing of the pipe flange is finished, turn the motor off and after it stops rotate the feed lever counterclockwise (looking from operator's side) to prevent damaging the cutting insert from the slide back to initial position. If the material is not removed from the whole flange face, repeat the above action. If the surface layer is removed from the whole flange area, perform finishing milling using only one moved out bumper mandrel with milling depth below 0.25 mm.



- 1 – Feed lever
- 2 – Bumper
- 3 – Slide
- 4 – Size 13 ratcheting wrench

OPTIONAL EQUIPMENT

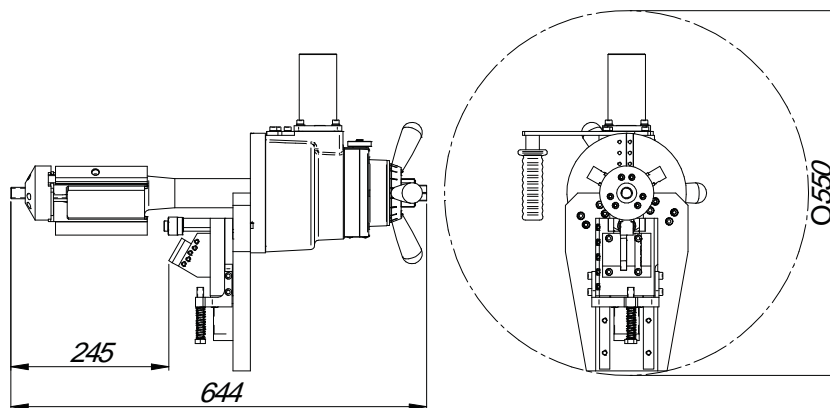
4.5. Attachment for Oval Pipes - Part# 10/530



Attachment for oval pipes is designed for PRO-10PB beveller. It enables facing and bevelling of oval profile edges from 126 to 296 mm (depending on chosen mandrel configuration and ramps). The attachment can be mounted to PRO-10PB beveller easily and quickly instead of the standard one, and vice versa.

Before you start to work, read all contents of the manual, especially safety rules.

4.5.1. Technical Data



Machined internal pipe diameters	126 - 296 mm
Rotating parts reach	Ø550 mm

OPTIONAL EQUIPMENT

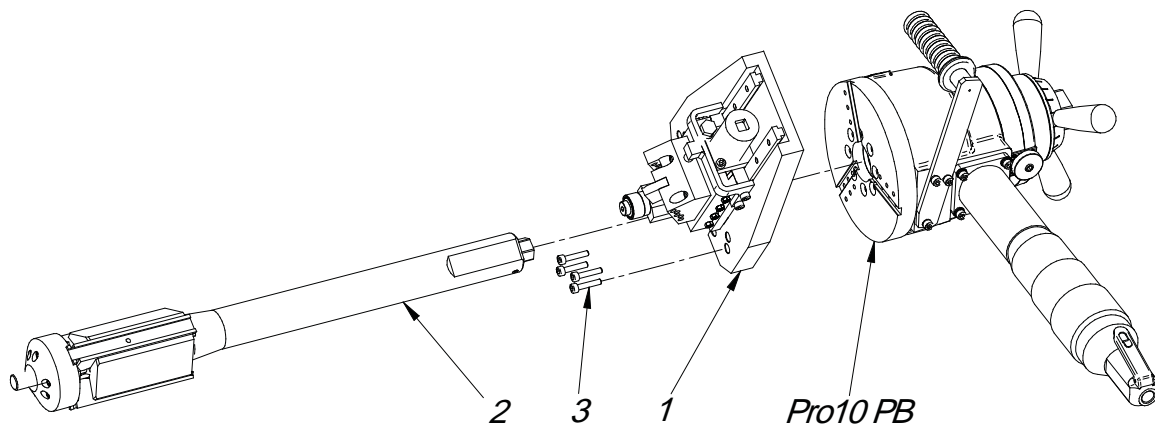
4.5.2 Equipment Included

Oval pipe attachment is supplied to client in metal box with complete equipment. The included equipment consists of:

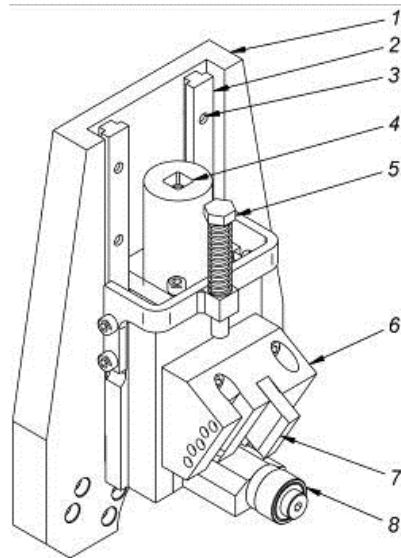
- Beveling set for oval pipes – 1 unit
- Big expanding mandrel – 1 unit
- Metal box – 1 unit
- Ratcheting knob 1/2" – 1 unit
- Size 8 flat key – 1 unit
- Size 6 Allen key – 1 unit
- Size 5 Allen key – 1 unit
- Size 4 Allen key – 1 unit
- Size 2.5 Allen key – 1 unit
- Tool container – 1 unit

4.5.3. Mounting Attachment for Beveling Oval Pipes

To use the attachment for beveling oval pipes, dismantle mandrel and tool holders. Then, mount cutting set (1) to PRO-10PB disc, using all eight M6x30 screws (3). Arm the big expanding mandrel in jaw blocks corresponding to required diameter (see point 2.3) and mount it according to the manual.



4.5.4. Operation Method



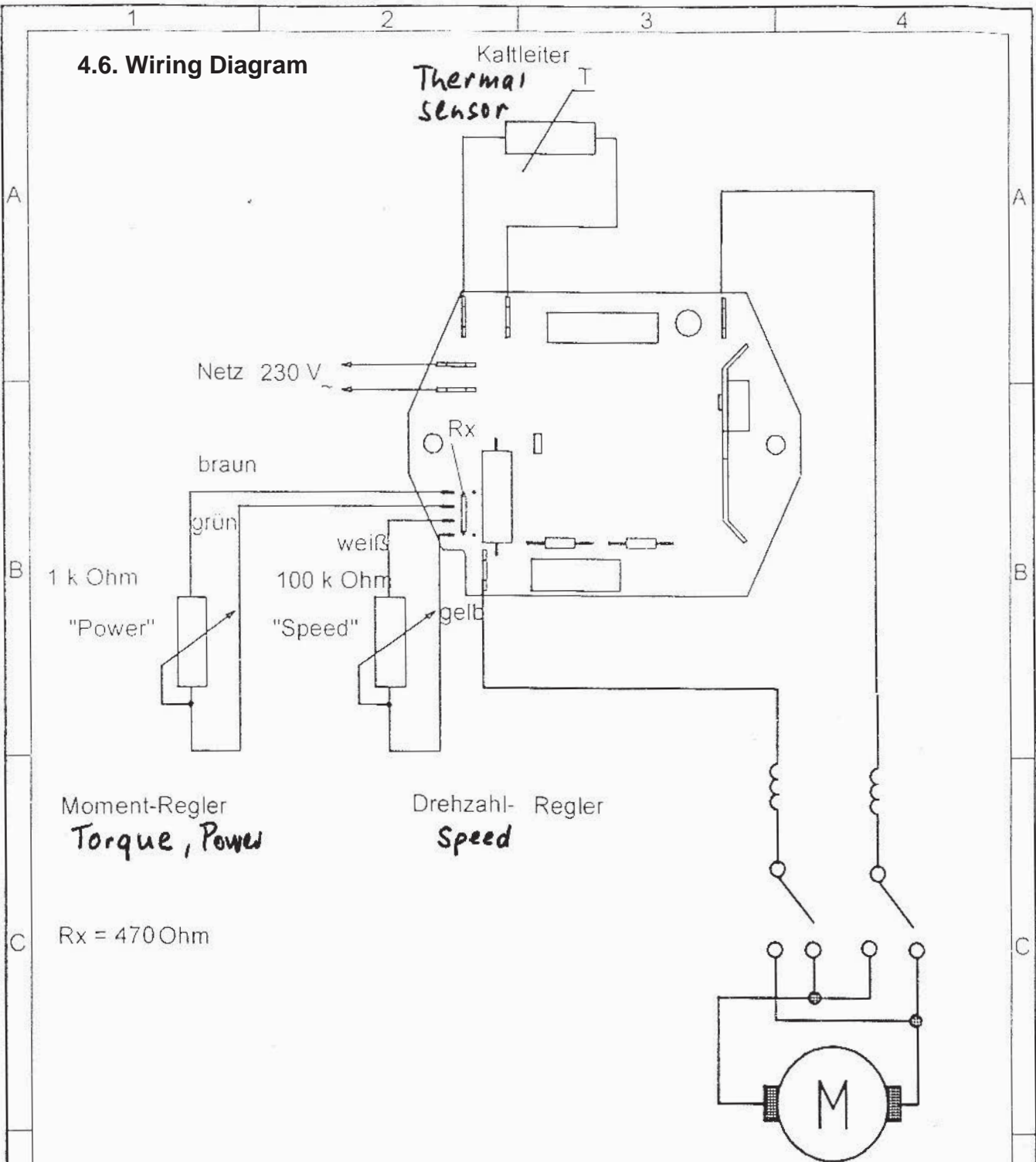
1. Read Operator's Manual before you start to work with the machine.
2. Always use safety goggles during operation.
3. Mount PRO-10PB beveller properly into the pipe.
4. Tighten bumper screw to lock the tool bit holder.
5. Loosen guide screws and rotate spindle until the feed roller reaches the smallest diameter.
6. Tighten guide screws what will block the slide.
7. Mount the tool bit.
8. Unscrew the bumper screw.
9. Put the feed roller into the pipe.
10. Initially increase tension of the spring using supplied ratcheting key $\frac{1}{2}$ ".
11. MAKE SURE THAT NO KEYS ARE LEFT IN THE SCREW SOCKETS.
12. To avoid damage of the tool, it must bypass the highest point of machined flange during first rotation.
13. Start the motor.
14. If the pipe edge is not perpendicular to pipe axis, at the beginning the tool mills only small part of the edge during every rotation.
15. If the cutting is done improperly:
 - a. Stop the spindle.
 - b. Check tool bit condition.
 - c. Increase tension of the spring that presses the tool holder.
 - d. Start the engine and check the result of adjustment.
16. After the milling is finished, turn off the motor to stop the tool.
17. Release fixing mandrel and take out the PRO-10PB beveller from the pipe.

4.5.5. Adjusting Side Clearance

Adjusting slide clearance should be performed in the same way as for the arm for flange facing (see point 4.3.4).

WIRING DIAGRAM

4.6. Wiring Diagram



Moment-Regler
Torque, Power

Drehzahl-Regler
Speed

Rx = 470 Ohm

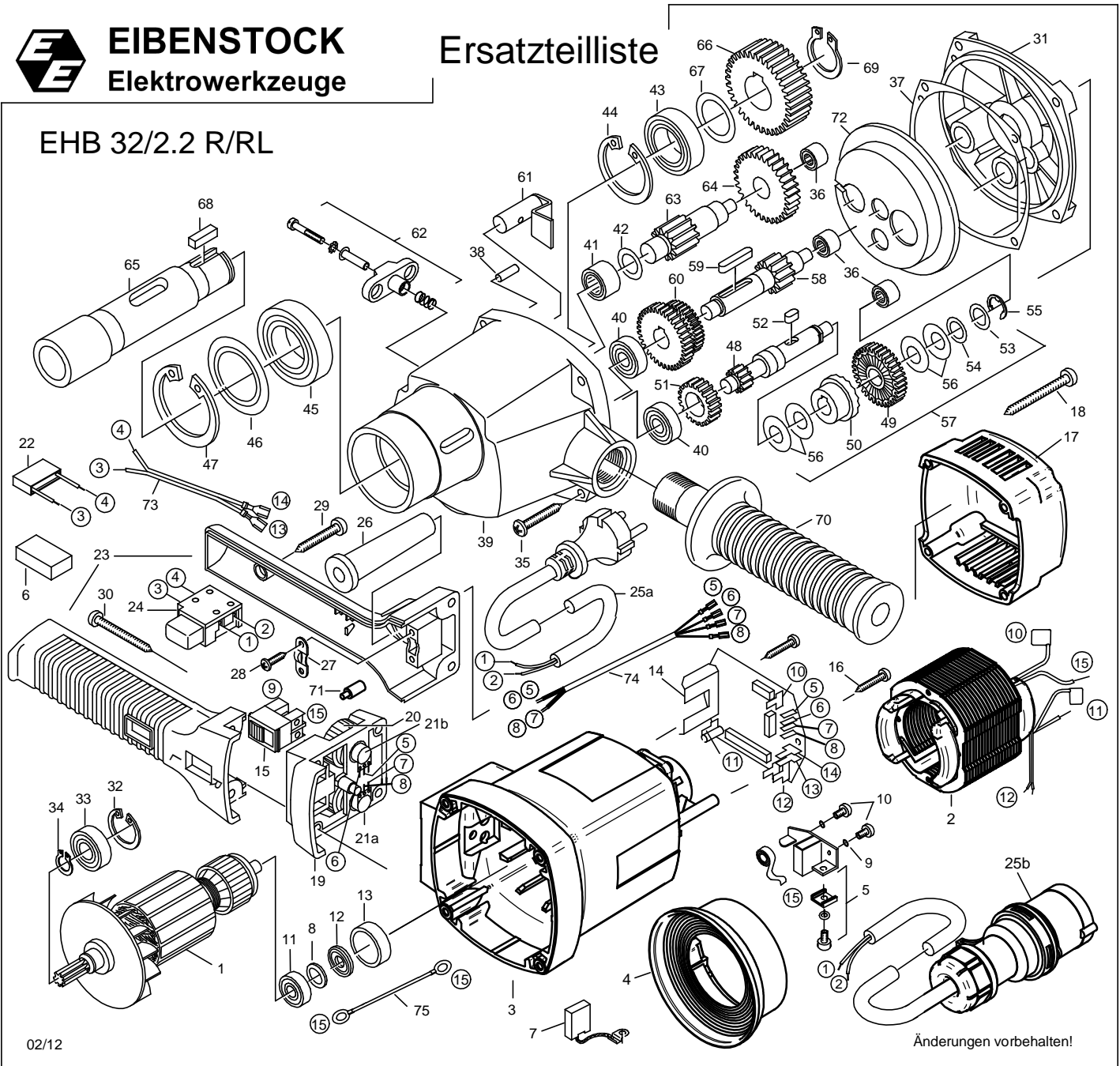
Diese Zeichnung darf ohne unsere Erlaubnis nicht kopiert, zur Ausführung benutzt oder dritten Personen ausgehändigt werden (Gem § 598 ff BGB)		Maße ohne Toleranzangabe nach DIN 7168 - mittel -		Oberflächenzeichen nach ISO 1302		Maßstab		Werkstoff/Halbzeug	
		Datum		Name		Benennung			
		Bearb. 27.02.02		M		Anschlußschema/Leiterplatte EHB 23u.32/2.2R/ R-L			
		Gepr. 27.1.02		<i>[Signature]</i>					
		Norm. 27.1.02		<i>[Signature]</i>					
		Elektrowerkzeuge Eibenstock GmbH				Zeichnungsnummer 71428280		Blatt 1 / 1	
Zust	Änderung	Datum	Name	Gewicht	Ers 1	Ers d.			



EIBENSTOCK
Elektrowerkzeuge

Ersatzteilliste

EHB 32/2.2 R/RL



02/12

Änderungen vorbehalten!