ORBITAL TUBE SAW

OTS SERIE

ORBITALSERVICE®

THE FUTURE OF ORBITAL WELDING

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1. Safety insructions & declaration of conformity

We take great pride in manufacturing safe, quality products. Pleasecomplywith the following safety rules and instructions before operating the equipment.

Readthe following content before working

READ THE OPERATION MANUAL
Before installing, you should read the manual, and make sure you understand all setup and operating instructions, it can help you savetime and avoid injuring the operator and the machines

INSPECT MACHINE & ACCESSORIES
Before starting the machine, look for loose bolts or nuts, leaking lubricant, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decreasethe chancesfor injury.

ALWAYS READ SIGNS AND LABLES
Pleaseread the marks and signs. All the marks and signs should be clear and easy to read, and you should carefully to keep them.

Danger! Electric shock
Always disconnect machine to power source before moving or removing motor
Securityof the electricity

Caution injure hand
Keephands, arms and fingers clear of all moving parts

Wear Safety Goggle
Eye protection required. When using equipment, please wear safety goggle no goggle no work

ECDECLARATION OF CONFORMITY WITH

DIRECTIVE2014/30/EUElectromagnetic Compatibility

Date of Issue:	November 21st, 2024
Report No.:	20230278ER
Directive:	2014/30/EU
Conforming Machinery:	Orbital Tube Saw, OTS serie
Parameters:	Rated Voltage:230V~ Rated Input: 1300W~1500W Rated Frequency:50/60Hz
Manufacturer:	Orbitalservice GmbH Kreuzdelle 13, 63872 Heimbuchenthal, Germany
HarmonizedStandards Referencedor Applied:	2014/30/EU EN IEC55014-1:2021 EN IEC55014-1:2021 EN IEC61000-3-2:2019+A1:2021
We hereby certify that the machinery described above conforms with the essential health and safety requirements of council directive 2014/30/EU.	
Signed:	
Signatory:	Dirk Kunze CEO Orbitalservice GmbH

2. Equipment instruction

OTS Serie Orbital Tube Saw

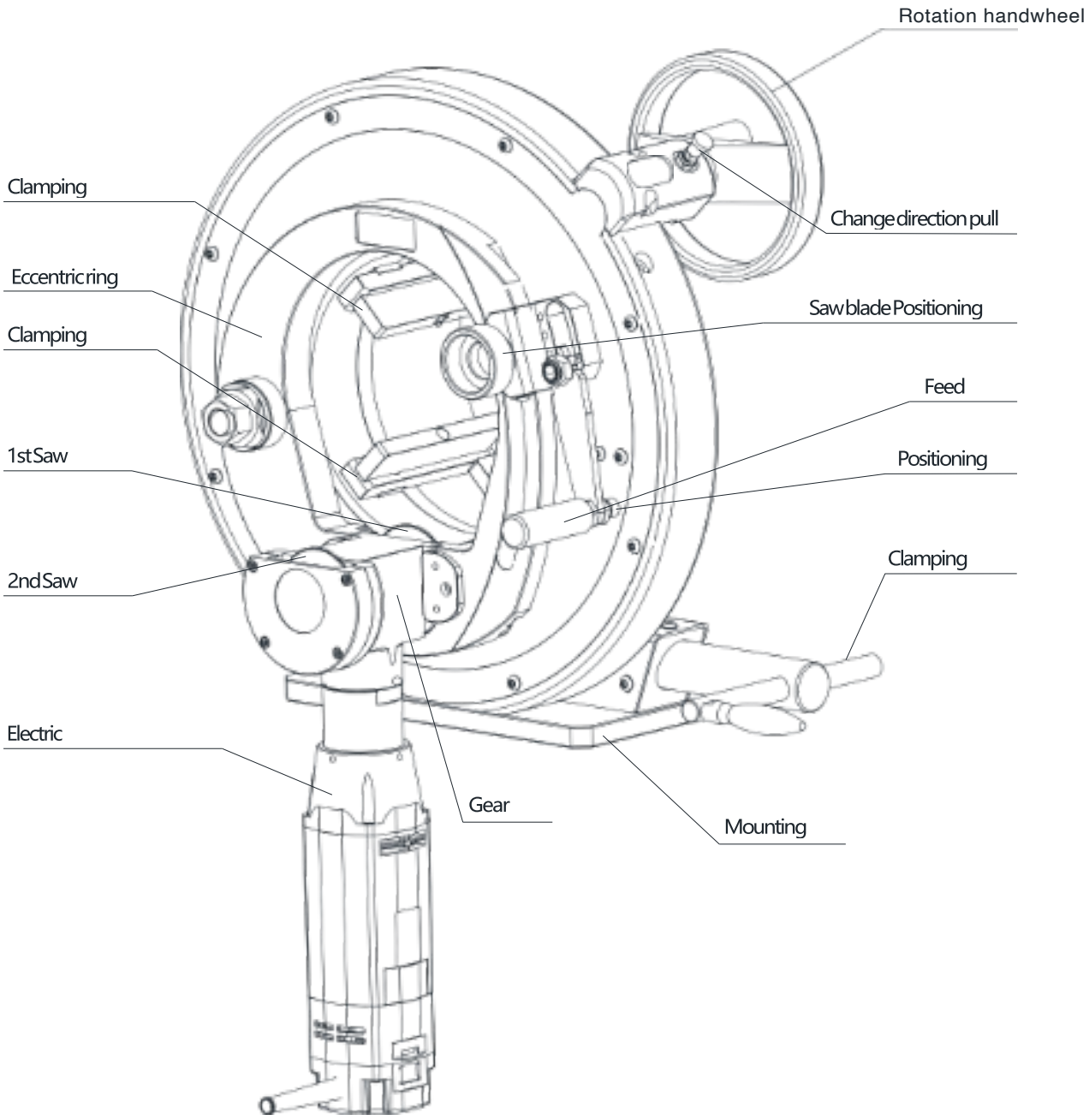
We supply machines and equipment to diverse industries where process piping systems are essential to their operation but require divergent machine tool technology. From power and petrochemical to semiconductor, food and dairy, our wide range of portable tools can be found on all pipe and tube types, sizes and wall thicknesses.

The orbital pipe cutting machine is designed for cutting and beveling of thin-walled stainless steel, mainly used in food, pharmaceutical, semi-conductor, daily chemical and other fields. The cut end face is vertical without burrs and can be directly welded. The function of beveling can also be completed by using a bevel saw blade to ensure the welding quality when required.

Orbitalservice introduces the second generation technology to provide more options according to different applications. With a option of brushless motors 1300W and 1500W, the customized 1500W motor provides more powerful power and is suitable for the cutting of thicker wall pipes.

FEATURES:

Compact design with light weight
Cold cutting/beveling improve safety
Vertical incision, burr-free end surface
Multi-point clamping to avoid deformation
Quick saw blade change
Anti-winding cables are provided
Second saw blade position to cutoff elbows or Tee



Description of major parts

Electric motor- Before order confirmation, Orbitalservice supply the OTSM1220 (1300W). The OTSM2220 (1500w) electric driven assembly as an option

Gear box- Supply the cutting force by gear reducer

Mounting plate- Provided to fix the machine on a table or tripod

Clamping handle- Clamp or release the pipe

Positioning hole- Fix the feed handle

Feed handle - Feed the cutting saw blade or beveling saw blade

Saw blade positioning knob - Tight or release it for saw blade location

Change direction pull pin - Pull up the pin, the machine rotation reversed.

Rotation handwheel- Rotate the machine, complete the cutting job.

Clamping pads - For small size tubes clamping

Clamping jaws - Hold the clamping pads; for larger size tubes clamping

Eccentric ring body - For positioning saw blade

1st saw position- Sawblade position for cutting straight tubes

2nd saw position- Sawblade position for cutting T or elbow

Packaging
The machine is delivered into a portable plywood case

For safety of transport, the machine is fastened to the wooden box bottom by two M12 screws.
Loosen the screws before removing the machine.
The motor assembly is individually stored in a plastic box.

Packing list:
OTS Cutting machine
Cutting saw blade - 3pcs
Tool set
Operation manual

3. Machine specification

Model	OTS 3		OTS 4		OTS 6	
Pipe OD	6 - 80 mm		12 - 120 mm		16 - 171 mm	
	0.236 - 3.15 inch		0.472 - 4.724 inch		0.63 - 6.73 inch	
Wall thickness	≤ 5mm	≤ 8mm	≤ 5mm	≤ 8mm	≤ 5mm	≤ 8mm
	≤ 0.197 inch	≤ 0.315 inch	≤ 0.197 inch	≤ 0.315 inch	≤ 0.197 inch	≤ 0.315 inch
Motor	OTSM1220	OTSM2220	OTSM1220	OTSM2220	OTSM1220	OTSM2220
Power Supply	220-230V 1PH50/60HZ					
Motor Power	1300W	1500W	1300W	1500W	1300W	1500W
Saw Blade RPM	85-210	85-210	85-210	85-210	85-210	85-210
Clamping jaws	4					
Net Weight	31 kgs	32 kgs	40 kgs	41 kgs	55 kgs	56 kgs
Shipping Weight	44 kgs	45 kgs	53 kgs	54 kgs	70 kgs	71 kgs
Package	Plywood case					
Packing size	620*460*550mm		640*490*580mm		690*540*630mm	

Model	OTS 8		OTS 12	
Pipe OD	55 - 228 mm		140 - 330mm	
	2.165 - 8.976 inch		5.512 - 12.99 inch	
Wall thickness	≤ 5mm	≤ 8mm	≤ 5mm	≤ 8mm
	≤ 0.197 inch	≤ 0.315 inch	≤ 0.197 inch	≤ 0.315 inch
Motor	OTSM1220	OTSM2220	OTSM1220	OTSM2220
Power Supply	220-230V 1PH50/60HZ			
Motor Power	1300W	1500W	1300W	1500W
Saw Blade RPM	85-210	85-210	85-210	85-210
Clamping Jaws	6			
Net Weight	60 kgs	61 kgs	81 kgs	82 kgs
Shipping Weight	78 kgs	79 kgs	105 kgs	106 kgs
Package	Plywood case			
Packing size	750*600*690mm		850*700*780mm	

4. Installation and operation

4.1 Take the machine out of the packing case and install it on the work table or the tripod purchased.

1) When it is necessary to install on the desktop work table, drill two M10 holes on the desktop according to the mounting holes on the base plate of the machine. The machine is then secured to the table top using the two sets of M10 locking bolts delivered.

2) If you have purchased a stand, first assembly it, and then fix the machine directly on the stand, all the installation holes have been completed before delivery.

3) Or can use a C-shape clamp fix the machine on the table.

4.2 Selection of cutting saw blade, according to the pipe wall thickness to be cut

Part No.	Spec.				Wall Thickness
	OD(mm)	Qty of Teeth	ID(mm)	Thk (mm)	mm
SB6364	63	64	16	1.6	1.0-2.5
SB63100	63	100	16	1.2	0.7-1.5
SB6844	68	44	16	1.8	2.0-7.0
SB6872	68	72	16	1.6	1.0-3.0
SB8034	80	34	16	2	5.0-12.0
SB8044	80	44	16	1.8	5.0-10.0
SB8054	80	54	16	1.8	2.0-7.0
SB8080	80	80	16	1.8	1.0-2.5

Remark: SB6872, SB6844, SB8080 and SB8054 are the most common used saw blades.

4.3 Installation and replacement of the saw blade

Loosen the saw blade lock nut using the wrench provided. Counter clockwise direction

Note:
1. Please pay attention to the teeth direction of the saw blade during installation (can be reconfirmed according to the sign before cutting)
2. Installation sequence : saw blade / spacer / lock nut
3. Please use the delivery brush to clean up the iron chips and keep clean

4.4 Install the electric drive on the machine

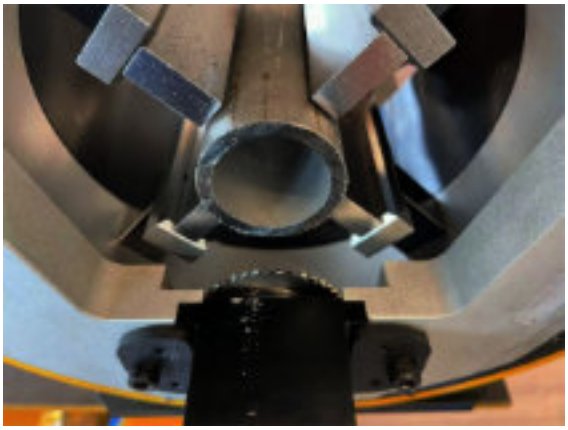
Clean the mounting contact surface with the delivery brush before installing the drive, fix the 2 screws, finish the installation of the electric drive.

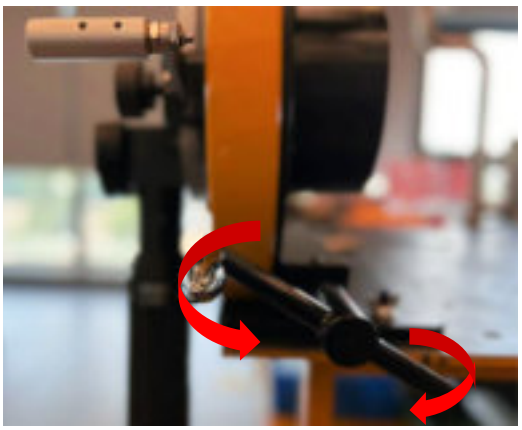
Note: Everytime installation of the motor to the machine, the contact surface must be clean and free of chips.

4.5 Operation Procedure

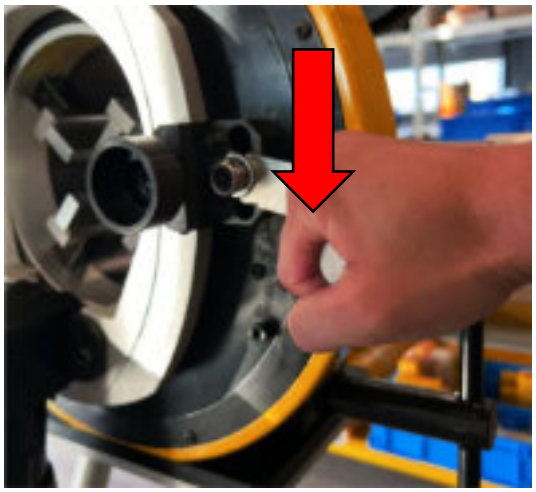
4.5.1 Sawblade positioning

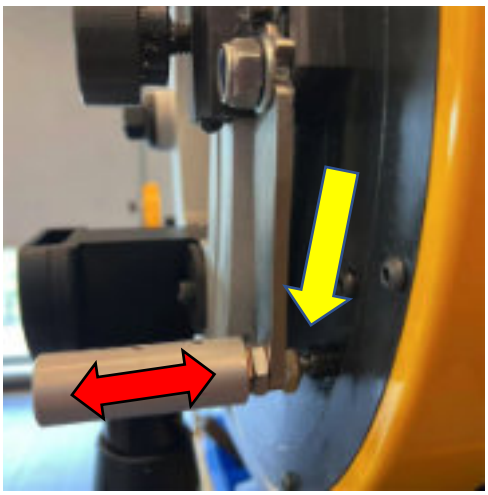
Put the pipe into the machine, pipe end 3-5mm away from the saw blade, and gently lock the Pipe
Lock : Rotate the clamping handle clockwise
Release : Rotate the clamping handle counterclockwise





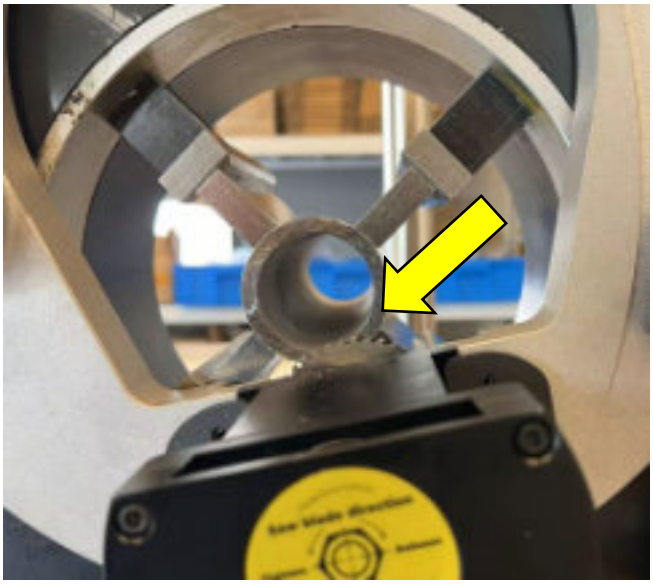
Press the feed handle to the bottom, pull up the handle, and insert it into the positioning hole





Loosen the saw blade positioning knob. At this time, the eccentric ring body can rotate. Rotate the motor counterclockwise. When the saw blade crosses the inner wall of the pipe and exposes 2-3 teeth, lock the positioning knob. The saw blade positioning is completed.

Positioning Knob :
Release:Rotate the knob counterclockwise
Lock: Rotate the knob clockwise

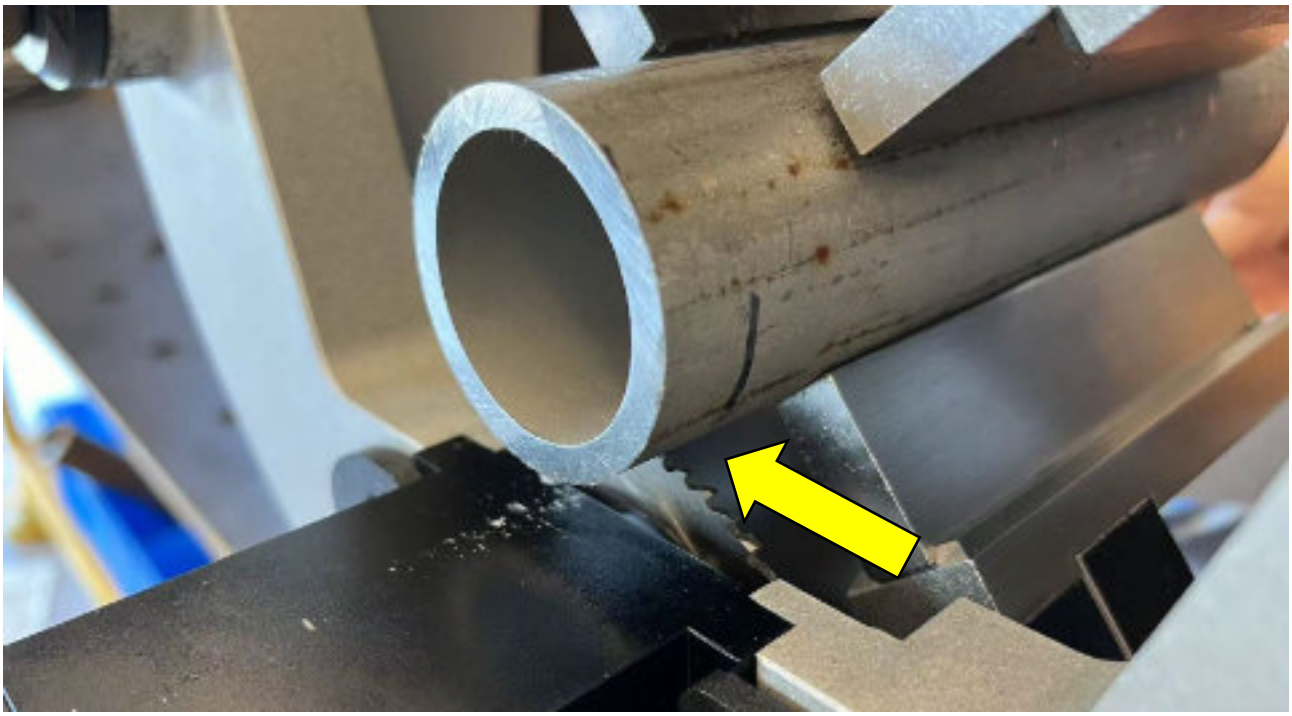


4.5.2 Clamp the pipe

Lift the feed handle and keep the saw blade away from the pipe

Mark the cutting line on the pipe according to the length to be cut.

Rotate the clamping handle counterclockwise. When the cutting line and the saw blade are at the same position, rotate the clamping handle clockwise to lock the pipe.



4.5.3 Motor speed regulation

Select the corresponding motor speed according to the material

If wall thickness is less than 3mm, select the speed 3-4

If wall thickness is more than 3mm, select the speed 1-2

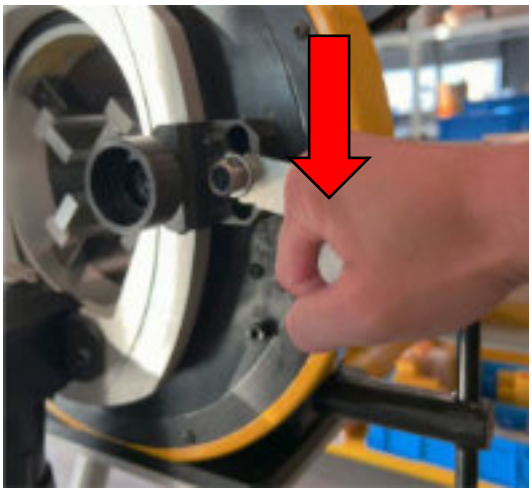
When cutting the duplex or inconel tube, select the speed 1-2 and use lubricant

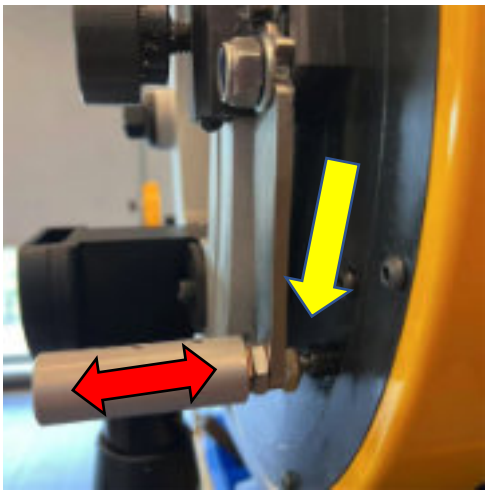
4.5.4 Pipecut-off

Connect the power source and turn on the motor.

Press the feed handle clockwise downward to allow the saw blade to cut into the inner wall of the pipe. Pull the feed handle outward and insert it into the positioning hole

(Theoperation like the tool positioning)





Turn the rotation hand wheel clockwise to make the motor rotate one turn counterclockwise to complete the pipe cut-off.

Note: When the pipe material is hard, slow down the cutting speed.
Better performance when cutting oil is used

4.5.5 Cleaning and maintenance

After the cutting process, use the supplied brush to clean the iron chips on the machine.

Note: Do not to use an air gun to blow the iron pins, it will avoid a possible danger.

After the machine is used, cleaning and greasing maintenance work should be done on time to extend the service life of the machine.

4.6 Cutting of tees and elbows

1. Use a straight pipe (same size as the Tee or Elbow size) to confirm the position of the saw blade
(see the previous instructions for saw blade positioning)

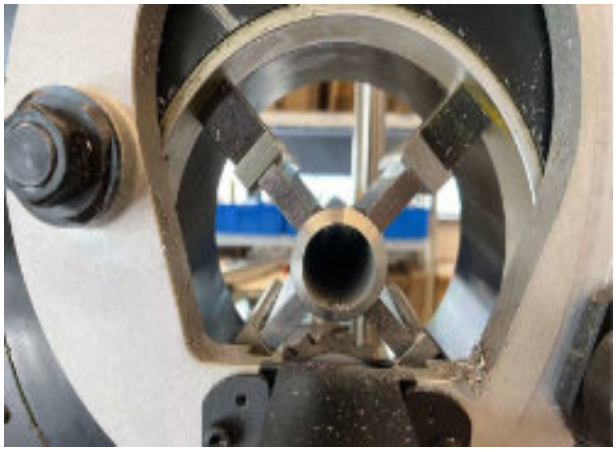
2. Remove the saw blade at the first saw blade position
Install it at the second saw blade position

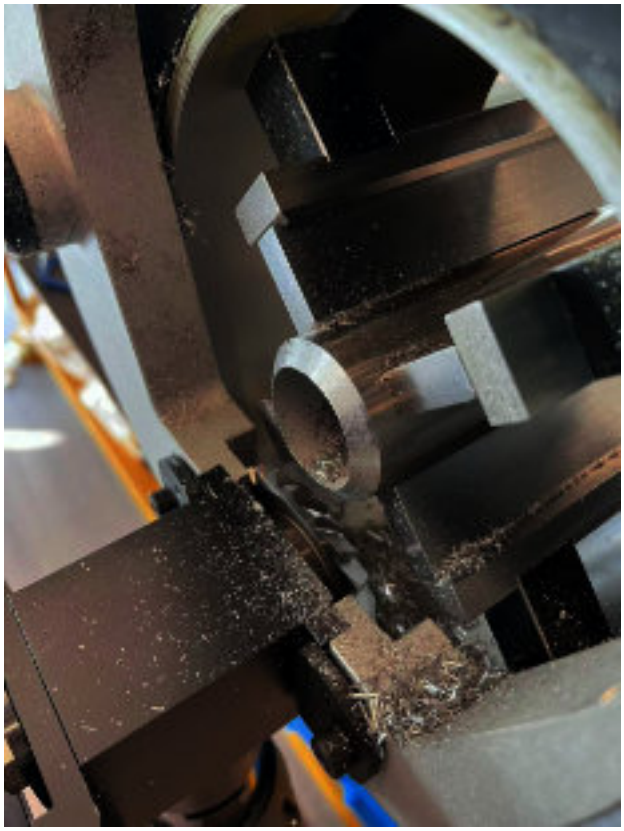
3. Cut the tee and elbow as needed

4.7 Tube Beveling Operation

1. Remove the cutting saw blade and replace it with a beveling saw blade
2. Insert the pipe and clamp it, make sure the beveling saw blade can cover the pipe wall thickness
3. Lock the pipe and start beveling

Note: The beveling function is an auxiliary function of this equipment. If you need efficient beveling, you can contact us.





5 Diagram of clamping jaws

Model	OTS 3	OTS 4	OTS 6	OTS 8	OTS 12
No Clamping Pads	Ø 6-80	Ø 29-120	Ø 74-171	Ø 128-228	Ø 230-330
With Clamping Pads	N/A	Ø 12-99	Ø 16-116	Ø 55-155	Ø 140-239

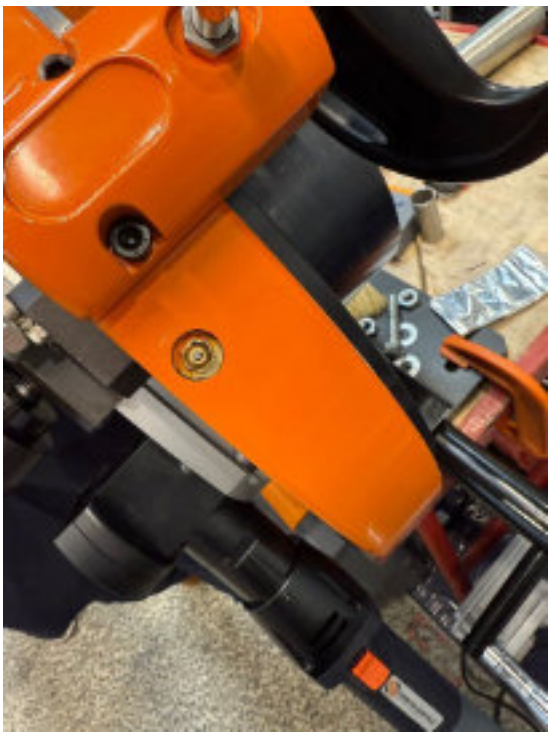
6 Important notes

1. Before start the machine
   Clean the saw blade

2. Clean the machine
   Do not use an air gun to blow away iron chips, as will cause iron chips to enter the machine, affecting the machine's accuracy and cutting accuracy.

3. Replace the saw blade
   Before installing the blade, make sure there is no iron filings at the blade installation location

4. Lubricating
   Lubricate the machine every week.



7 Tooling chart

Cutting Saw Blade

Part No.	Spec.						Wall Thickness	
	OD(mm)	OD(inch)	Qty of Teeth	ID(mm)	ID(inch)	Thk(mm)	mm	Inch
SB6364	63	2.48	64	16	0.63	1.6	1.0-2.5	0.039-0.098
SB63100	63	2.48	100	16	0.63	1.2	0.7-1.5	0.0276-0.059
SB6844	68	2.68	44	16	0.63	1.8	2.0-7.0	0.079-0.276
SB6872	68	2.68	72	16	0.63	1.6	1.0-2.5	0.039-0.098
SB8034	80	3.15	34	16	0.63	2	5.0-12.0	0.197-0.47
SB8044	80	3.15	44	16	0.63	1.8	5.0-10.0	0.197-0.394
SB8054	80	3.15	54	16	0.63	1.8	2.0-7.0	0.079-0.276
SB8080	80	3.15	80	16	0.63	1.8	1.0-2.5	0.039-0.098

Beveling Saw Blade

Part No.	Beveling Angle
SBB30R	30°
SBB35R	35°
SBB37.5R	37.5°
SBB45R	45°

Note: The beveling function is an auxiliary function of this machine and may not be able to complete the bevel work with high requirements.

8 Trouble shooting

Trouble	Possible reason	Remedy
The blade is loose	The nut locking the blade is not tightened	Tighten the hexagonalnut with the special wrench provided
Cannot cut	The saw blade is installed reversed	The direction of the saw blade tooth tip should be the same as the marked direction
Clampingnot smoothly	The guide rail or screw rod is not clean and has debris.	Cleanthe guide rail or screw
Motor doesnot work	The overload protection device is triggered and the red light is always on.	Shut down the machine and restart it after 15 minutes
	When the machine is turned on, the motor does not rotate and the red light flashes quickly	Turn off the switch, unplug the plug, press the switch several times, and then turn it on again.
	The motor makes abnormal noises, sparks loudly, and the red light flashes slowly	Replacethe motor carbon brushes
	The power cord is broken or the anti-tangle mechanism is disconnected	Find the disconnected location and reconnect it
The cut surface of the pipe is not vertical	There are iron chips on the bottom when installing the saw blade	Cleanthe iron filings from the saw blade installation position

Note:
If a problem not listed in the chart, stop operation and contact us for additional instructions

9 Ordering infromation

ORDERING OR MORE INFORMATION

To place an order or get more detailed information:
Tel.: +49-(0)6092 822 94-0
E-Mail: info@orbitalservice.de
Internet: www.orbitalservice.de

ORDERING REPLACEMENT PARTS

Pleaserefer to parts lists provided in manual. Advise us part number and description of replacement parts to help expedite order and ensure proper parts are being ordered.

Or take photo for replacement parts, send an email to us.

REPAIR INFORMATION

Please call Orbitalservice GmbH prior to returning any equipment for repair. We will advise you of shipping and handling. Please enclose with machine to be repaired your name, address, phone number and a brief description of the problem or work to be done or estimated.

All repair work done at our plant will be estimated and the customer advised of cost and time required to complete repair.

POSTAL ADDRESS

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