

# USE AND MAINTENANCE INSTRUCTION MANUAL

Butt welding machine to weld pipes and fittings in thermoplastic material suitable for sewer pipelines



**6160/LI**

Version1/2016



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Dear customer,

Thanks for having chosen an OMISA product! This instruction manual has been prepared in order to fully appreciate the superior quality of our product. Inside you will find all the necessary information and warnings for a safe and proper use. We want to advise you **to read it before proceeding with the operations**. We are sure that it will be easier for you to become familiar with the new device and to use it for a long time with great satisfaction.

Cordially,  
O.M.I.S.A. S.r.l

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Text, diagrams and data are corrected at time of going to print. In the interest of continuous improvement of our products, technical specifications are subject to alteration without prior notice.

## 1. GENERAL DESCRIPTION OF THE MACHINE

The welding machine 6160/LI. was designed and manufactured for welding of pipes and/or fittings in thermoplastic material for sewer pipelines and for stated diameters.

This welding machine is mainly composed by:

- Basic machine with electric planing tool and thermoelement support.
- Pair of main clamps for pipes fastening and relevant reductions.
- Work bench frame/ protection for transport; tool box for thermoelement and reductions.

Basic machine with electric planing tool and support for thermoelement:

The basic machine is composed by two carriages in aluminum casting, one fixed and one sliding provided with a spring device, which allows to determinate the pressure during various welding steps and which is useful for the movement of the carriage itself.

This device is driven by a hand wheel (A) connected to a pinion-rack system, which maintains a constant pressure (indicated by the reference C) when it is locked by the lever (B).

The movable carriage is equipped by 4 sliding sheets with a low coefficient of friction and high abrasion resistance which are suitable for using in fields.

Carriage slides on two shafts, chromed and adjusted, anchored to two shoulders which can be fixed to the work bench frame.

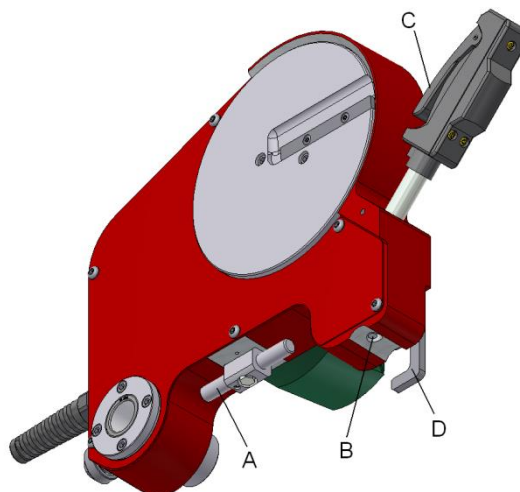
On the back side of the machine, the extractable thermoelement support and planing tool slide on a chromed and adjusted shaft; the linear sliding and the turnover are assured by blow-by ball bearings.

The thermoelement support, manufactured in aluminum casting, allows the right positioning of the thermoplate (already supplied), during the heating stage and its housing, when not used, helping the operator during the following welding stages.

The electric planing tool, manufactured in aluminum casting too, allows a quick flat parallel on both pipes and/or fittings end to be welded. Blades are mounted at 180° the one to each other and they are sharpened on both sides. It will be only needed to turn them in order to use the second sharpening. In any case, do not sharpen blades by yourselves, this will cause a bad electric planing tool working.

The electric planing tool is equipped by a mechanical device (A) which allows the removal of jaws in case they are turned to 7,5°, in order to obtain the right alignment of the elements which have to be welded. The planing tool is provided with a safety micro-switch (B) which avoid the starting of the planing tool itself if it is not positioned on the workplace, although accidental actuation of the switch positioned on the handle (C). The planing tool has also a mechanical hanger for safety (D).

Picture 1



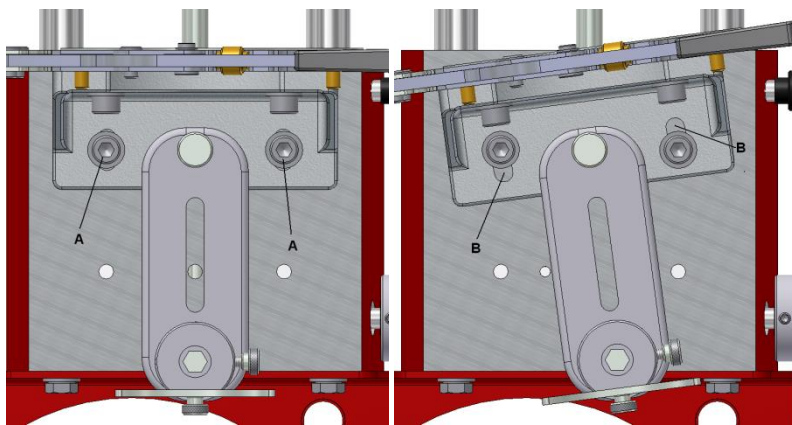
Before feeding the electric planing tool, make sure that the used electrical panel comply with the technical features of the electric planing tool and above all that is equipped of grounded wire.

Pair of main clamps for pipes fastening and relevant reductions:

The pair of main clamps, made in steel, allows a safety locking of pipes and/or fittings to be welded. They have been made in order to house different reductions to clamp pipes and fittings from  $\varnothing 40$  to  $\varnothing 160$ mm. The upper reductions are shaped to make also branches and tees at  $45^\circ$  and  $60^\circ$ .

Clamps are  $7,5^\circ$  rotatable and it IS enough, without removing the screws (A), to unscrew the clamp group up to the end of the buttonhole positioned on the clamp support (B).

Do the same operation on the other jaw turning it on the opposite side. I will get a  $15^\circ$  segment.



Picture 2

Picture 3

Work bench frame/ protection for transport; tool box for thermoelement and reductions:

The work bench frame /transport protection is made of steel to assure stability to the whole machine during welding process and when the job is finished, it is able to grant a good protection during transport.

On the frame is possible to position the tool box for thermoelement, reductions and equipped pipe supports (from  $\varnothing 40$  to  $\varnothing 160$ ;  $\varnothing 56$  and  $\varnothing 140$  optional)

All parts of the machine 6160/LI are made in order to withstand to atmospheric agent attack.

## 2. TRANSPORT MODE

The machine is supplied inside its transport box protected by proper packing. It is already assembled and able to work.

After receiving it, unpack the machine and inform the transport company about further occurred damages.

## 3. TECHNICAL FEATURES

6160/LI	
Welding capacity	Ø40 # Ø160 mm
Pipe and fitting material	PEand other thermoplastic materials
Dimensions/weight basic machine	660x520x 470 mm - 32 Kg
Carriage stroke	190mm
Power of planing tool	0,71Kw
Voltage of planing tool	230V- 50/60Hz
Transmission of planing tool	Belt
Dimensions / weight support frame	635x583x846 mm -6 Kg
Dimensions / weight reductions box	430x320x100 mm - 3,5 Kg

## 4.SAFETY INSTRUCTIONS



**DANGER!** Read all these instructions before using the device. Follow carefully the indications in order to avoid personal injuries, damages to the machine and mistakes during welding operation. The equipment should be used by qualified personnel and should not remain unguarded.

O.M.I.S.A. Srl cannot anticipate every possible situation that might involve a potential hazard. Warnings in this manual and in the machine are therefore not all inclusive.

### 4.1 WORK STATION – ENVIRONMENTAL CONDITION

The use of any mechanical and electrical device, require the observance of some basic rules:

- Keep clean the work station and the equipment.
- Do not use the machine with inflammable liquids or gases, chemical or corrosive agents nearby.
- Always take care during the use of the machine.
- The machine must be used by qualified personnel and should be not left unattended.
- Take care of feeding cables of the thermoplate and electric planing tool, do not knot or crush them and do not twist them around equipment.
- Avoid use of extension as much as possible.
- Make sure that the used electric panel comply with the electrical features of the thermoplate and electric planing tool that it is equipped of grounded wire
- Never grasp the electric planing tool blades and neither sharpen them; this operation will cause a bad electric planning tool working because the blades would go inevitably undersize.
- Always wear proper clothes: long trousers, long sleeved racket, anti-warm and anti-cuts safety gloves for maintenance operation and safety shoes, helmet if used in building places.
- Do not wear scarf, necklace, rings or any other object that could get entangled.
- Do not leave the machine exposed to atmospheric agents. Do not use the machine with unfavorable condition (snow, fog, rain, high wetness rate, etc.)
- Respect safety working regulations in force in every country you are going to use the machine

This welding machine was designed and manufactured complying with the European Standard in force.

**The use of a 6160/Li machine requires the observance of some specific rules:**



During operations stay a safe distance away from the machine.  
Do not stand or reach in the machine. Keep other people away from the work area.



During operations pay attention handling to the thermoelement, it can reach 300°C! We highly recommend storing it in the designed steel box immediately after use.



During operations pay attention handling to the planing tool, it is very sharp!  
We highly recommend storing it in the designed steel box immediately after use.



Never touch and sharpen the blades of the planing tool, this operation would cause a bad working of the electric planing tool as the blades would go inevitably undersize.

This welding machine has been designed and manufactured according to the European regulation in force and to the specific rules relevant to the butt welding machines for making butt welding joint of pipes and/or fittings in polyethylene (PE) for combustible gas, water and other pressure fluids transportation.

## 5. CARE AND MAINTENANCE



To ensure that machine works properly observe the following maintenance recommendations:

- Completely clean the machine at the end of any job, especially if the dwell is long.
- Check that the sliding shafts are always clean and lubricated.
- Check the functionality of the electric planing tool and when used, verify the blade sharpening. Remember that blades are sharpen on both side, so it will be only needed to turn them in order to use the second sharpening.
- Check the tension of transmission belt of the electric planing tool.
- Check the functionality of clamp lock system.

In order to make the maintenance operation is required:

- Properly insulation of the electrical plant of the machine; UNPLUG THE FEEDING CABLE FROM THE ELECTRICAL SUPPLY.
- Do not remove protection of mobile parts (e.g. planing tool shaped sheet), if not required maintenance on them. Place them back as soon as all operation are finished.

## 6. PROPER USAGE



The machine was designed for welding pipes and/or fittings in thermoplastic material, so it should be NOT used for jointing other materials.

## 7. INCONVENIENCES AND SOLUTIONS

INCONVENIENCE	SOLUTIONS
The electric planing tool does not work.	Check that: The electric plant is connected and comply with the technical features of the electric planing tool. Switches at the beginning of the plug and on the machine are closed.
The electric planing tool does not face.	Check that: The blade sharpening placed on two turning plates is in good condition.
The cutter block plate of the electric planing tool does not turn, even if the motor works.	Check that: The transmission belt is in tension. (Disassemble the protection shaped sheet and eventually operate on the cam, turning it. Then assemble again the shaped sheet).

## 8. DISPOSAL

Components of the machine are made by normal metal material so are recyclable. They have to be put to recycling. For the non-recyclable components (as electronic ones) you should contact the local waste disposal authority.



Components that comes with the picture show here, that means waste of electric and electronic equipment, have to be absolutely disposed separately from domestic waste and by authorized and certified companies.



## **9.PREPARATION TO THE WELDING**

This welding machine is manufactured only for welding pipes and/or fittings in thermoplastic materials for sewage pipelines; any other use is to be considered not proper and dangerous and it will relieve the manufacturing company from any kind of responsibility.

Before using the machine, carefully check the perfect working and efficiency of the safety devices and movable parts, that are not broken or locked and that all parts are mounted in the right way. Verify that all other conditions, which could influence the regular working of the machine, are optimal.

Be sure that outlet and plug of the planing tool are compatible. Do not use extensions and adapters as much as possible, but if they are needed, use only the ones complied with safety rules in force, checking that cables section is suitable to absorbed power by the planing tool.

The electric planing tool is supplied with grounded wire, so the electrical safety is assured only if it is correctly connected to an effective grounded network as foreseen by the law in force about electrical safety.

Unwind for its whole length the electrical feeding cable of the planing tool and do not leave it inserted into the network, when the planing tool is not used. If required by diameters of pipes and/or fittings to be welded, insert relevant reductions into the main clamps, in the proper housing. Make sure that they are fixed with the proper housing placed on the horizontal flat of the two carriages and make sure that the two clamps are aligned.

At the same time switch on the thermoplate, not before having completely read the use and maintenance instruction manual of this article.

## 10. WELDING OPERATION

Insert the pipe and/or fittings to be welded and make sure that they are properly clamped into the jaws.

Leave enough space to put the electric planing tool and thermoplate between them. The locking efficacy is regulated by the adjustment of the brass pawl which is positioned on the clamp's upper part.

Remember that clamps on the fixed carriages can be perpendicularly translated to the sliding axis of the mobile carriage of some millimeters. Then it should be properly locked again. In this way it can be avoided further alignment "mistakes" between the parts to be welded.

Before starting with the real welding stage, face pipes and/or fittings.

Place the electric planing tool between the two parts which have to be joined, using EXCLUSIVELY its handle (picture 1, part C) and never through the turning plates. The handle, in fact, is equipped with a safety switch which prevents any accidental starting of the electrical motor. Then, lock the planing tool using the security hanger (picture 1, part D).

Always be careful during the facing stage, as it is very important in order to get a good final welding.

**During this stage, due to safety reasons, it is needed to keep a hand on the movement hand-wheel of the mobile carriage, and the other one on the control handle of the planing tool (picture 1, part C) after locking the lever and established a light planing pressure of about 80N.**

The facing process is finished and correct only when the result of the operation is a continuous chip with the same thickness of the pipe and/or fitting on both elements to be welded.

At this point, bring the electric planing tool back to its initial position and place the thermoplate between the two parts to be welded.

The heating stage starts when the two parts get in touch with the thermoelement surface. This stage ends when the bead and the foreseen time are reached.

Then, bring the thermoelement back to its position as fast as possible and join the two heated surfaces.

Operating on the movement hand-wheel, get the heated end parts in touch with each other.

Reach the required pressure and lock the spring-loaded rack-pinion device acting on the lever

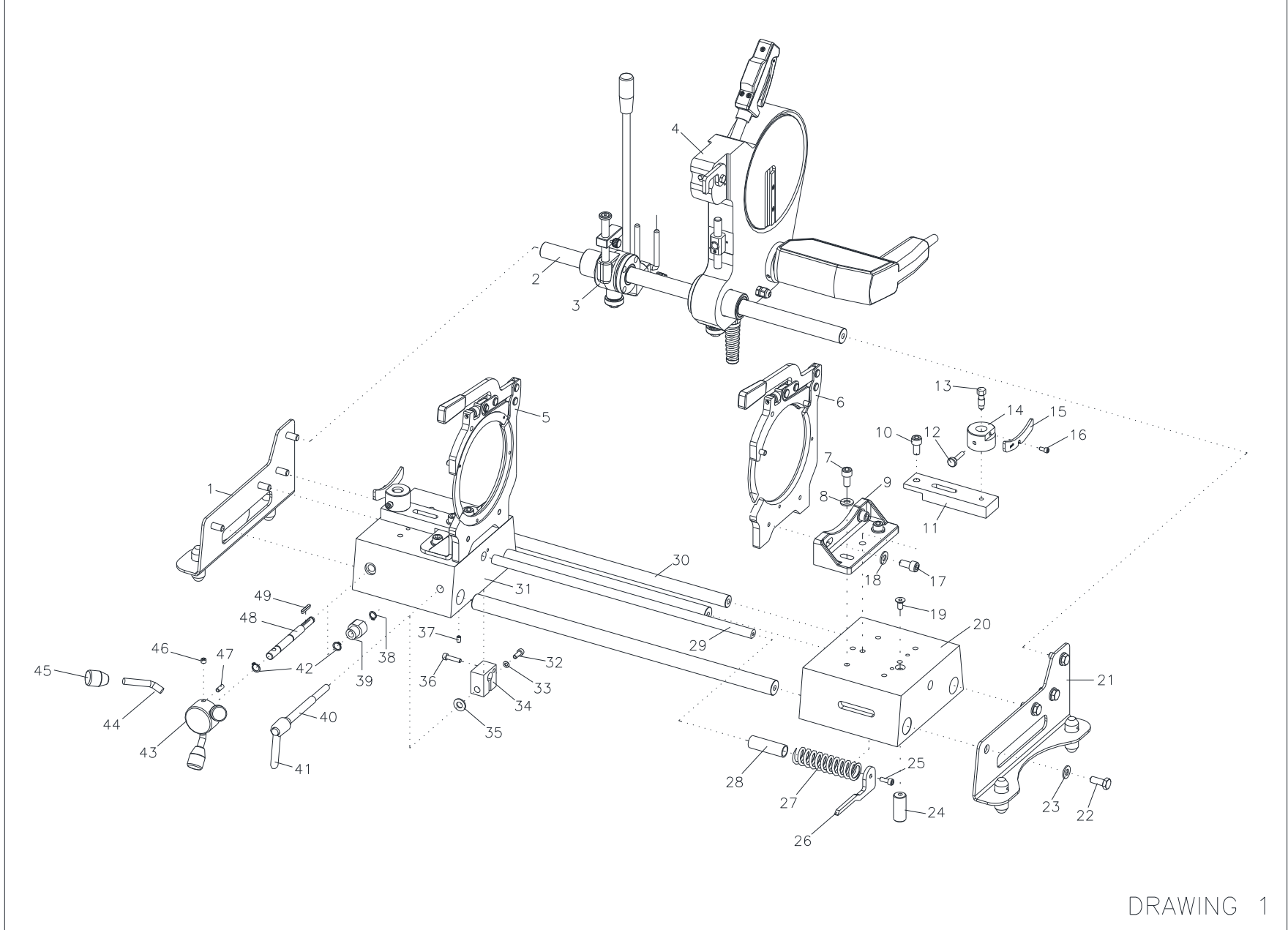
Keep the two pipe ends in touch for the required time in order to allow a complete and gradual cooling to obtain a correct welding.

It is very important, at this stage, that the welded parts do not suffer any kind of mechanical stress.

**TECHNICAL DRAWINGS**

**AND LIST**

**OF SPARE PARTS**

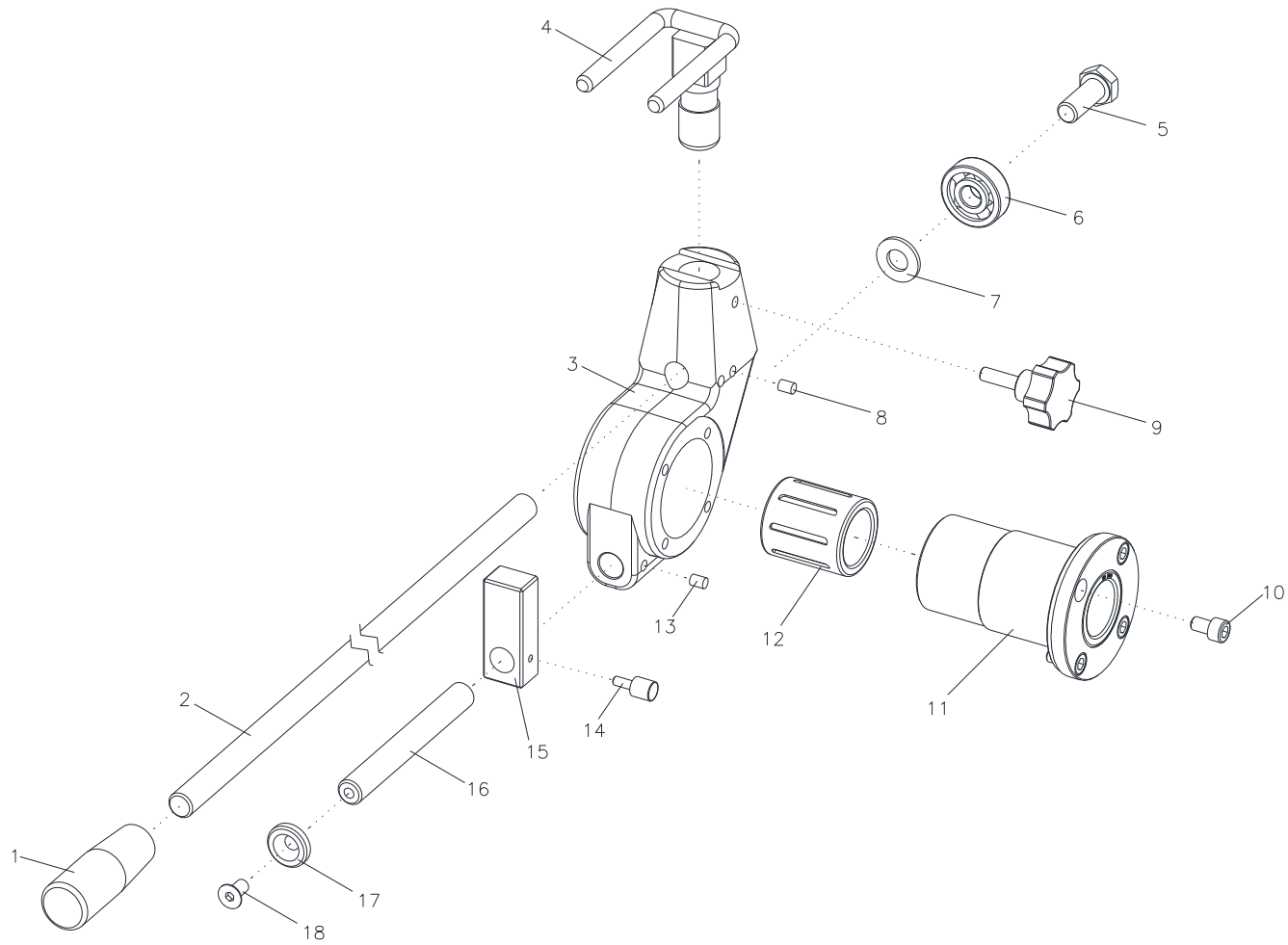


DRAWING 1

## DRAWING 1

Pos.	Description	Art. Code	Qty
1	Left support	160LI.OA.0004	1
2	Sliding shaft	160LI.OA.0001	3
3	Thermoplate support	160LI.OB	1
4	Electric planning tool	160LI.OD	1
5	Jaws left complete	GAN.HWT.SX	1
6	Jaws right complete	GAN.HWT.DX	1
7	UNI 5931 M10x25 screw	V.5931.10x25	2
8	UNI 6592 M10 washer	RON.6592.10	2
9	Support jaws	HWT.OA.0006	2
10	UNI 5931 M10x30 screw	V.5931.10x30	2
11	Base for pipe support	160LI.OA.0016	2
12	UNI 5931 M6x20 screw	V.5931.6x20	2
13	Pin block support rotating	HWT.OA.0018	2
14	Support rotating	HWT.OA.0017	2
15	Pipe support Ø160		2
16	UNI 5931 M6x12 screw	V.5931.6x12	2
17	UNI 5931 M10x20 screw	V.5931.10x20	4
18	UNI 6592 M10 washer	RON.6592.10	4
19	UNI 5933 M8x16 screw	V.5933.8x16	1
20	Moving base	160LI.OA.0003	1
21	Right support	160LI.OA.0005	1
22	UNI 5937 M10x20 screw	V.5737.10x20	8
23	UNI 6592 M10 washer	RON.6592.10	8
24	Stop rod rack	160LI.OA.0026	1
25	UNI 5931 M6x16 screw	V.5931.6x16	1
26	Pressure indicator	HWT.OA.0015	1
27	Spring	160S.OA.0016	1
28	Stop for spring	HWT.OA.0025	1
29	Rack M1.5	160LI.OA.0019	1
30	Shaft support bearing	160LI.OA.0007	1
31	Fixed base	160LI.OA.0002	1

Pos.	Description	Art. Code	Qty
32	UNI 5931 M6x25 screw	V.5931.6x25	1
33	UNI 6592 M6 washer	V.6592.6	1
34	Block rack	HWT.OA.0014	1
35	UNI 6592 M10 washer	RON.6592.10	1
36	UNI 5931 M6x25 screw	V.5931.6x25	1
37	UNI 5923 M6x10 screw	V.5923.6x10	4
38	UNI 7435 Ø10 seeger	S.7435.10	1
39	Pinion M1.5 Z15	160LI.OA.0008	1
40	Pinion shaft lock	HWT.OA.0013	1
41	Lever	HWT.OA.0023	1
42	UNI 7435 Ø12 seeger	S.7435.12	2
43	Movement hand wheel	160LI.OA.0011	1
44	Rod movement hand wheel	160LI.OA.0053	3
45	Knob	GAN.110PB.0004	3
46	UNI 5927 M8x8 screw	V.5927.8x8	1
47	UNI 5923 M6x6 screw	V.5923.6x6	3
48	Pinion shaft	160LI.OA.0010	1
49	UNI 6604 4x4x25 tang	L.6604.4x4x25	1
15	Pipe support Ø40	HWT.OA.0042	2
15	Pipe support Ø50	HWT.OA.0043	2
15	Pipe support Ø56 (optional)	HWT.OA.0044	2
15	Pipe support Ø63	HWT.OA.0045	2
15	Pipe support Ø75	HWT.OA.0046	2
15	Pipe support Ø90	HWT.OA.0047	2
15	Pipe support Ø110	HWT.OA.0048	2
15	Pipe support Ø125	HWT.OA.0049	2
15	Pipe support Ø140 (optional)	HWT.OA.0050	2
15	Pipe support Ø160	HWT.OA.0051	2

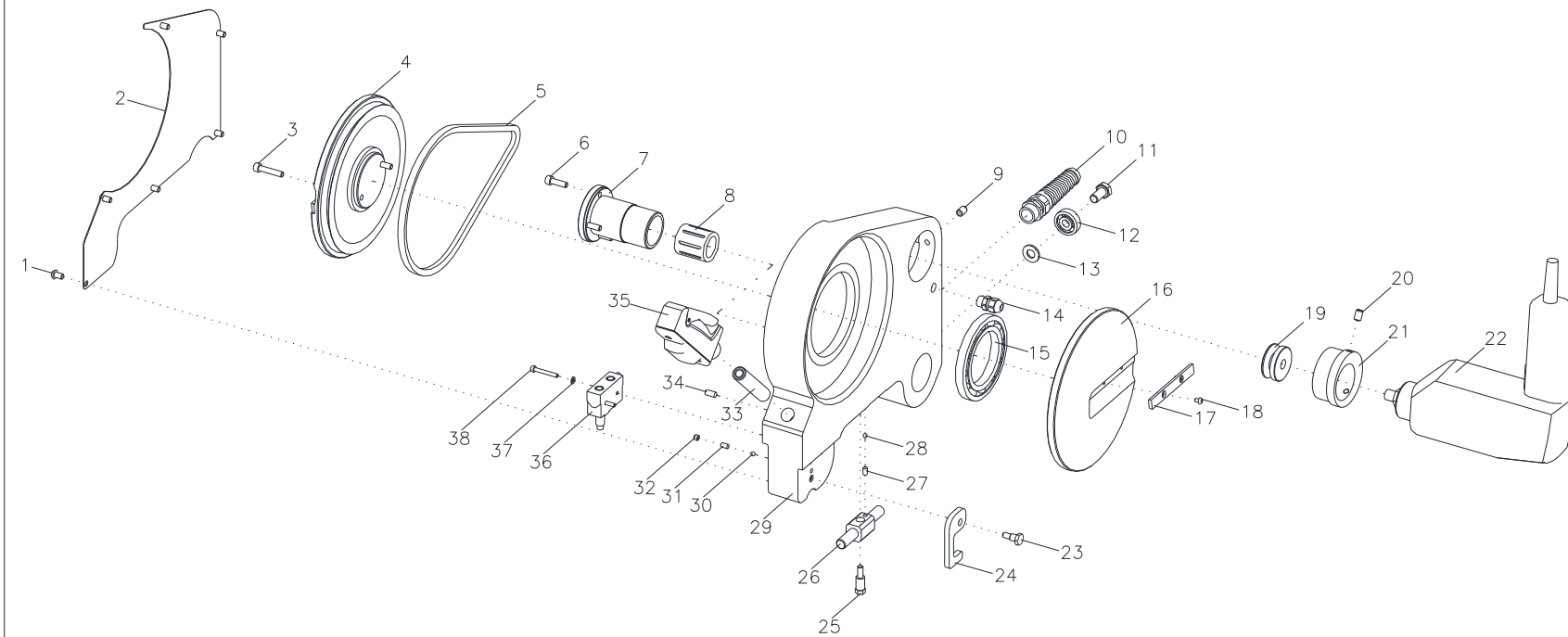


DRAWING 2

## DRAWNIG 2

Pos.	Description	Art. Code	Qnt
1	Knob	160S.OB.0003	1
2	Lever	160LI.OB.0003	1
3	Thermoplate support body	160LI.OB.0001	1
4	Support for polywelder	100N.OA.0054	1
5	UNI 5739 M10x20 screw	V.5739.10x20	1
6	Bearing	CUSC.6200.2Z	1
7	UNI 6592 M10 washer	RON.6592.10	1
8	UNI 5927 M6x6 screw	V.5927.6x6	2
9	Polywelder block knob	125PB.OA.0027	1
10	UNI 5931 M6x16 screw	V.5931.6x12	4
11	Bearing seat	HWT.0D.0002	1
12	2540 blow-by balls coupling	HWT.OB.0004	2
13	UNI 5927 M6x6 screw	V.5927.6x6	1
14	Knob	GAN.160.0008	1
15	Stop for polywelder	160LI.OB.0005	1
16	Lock	160LI.OB.0004	1
17	Washer	315P.0D.0047	1
18	UNI 5933 M6x16 screw	V.5933.6x16	1

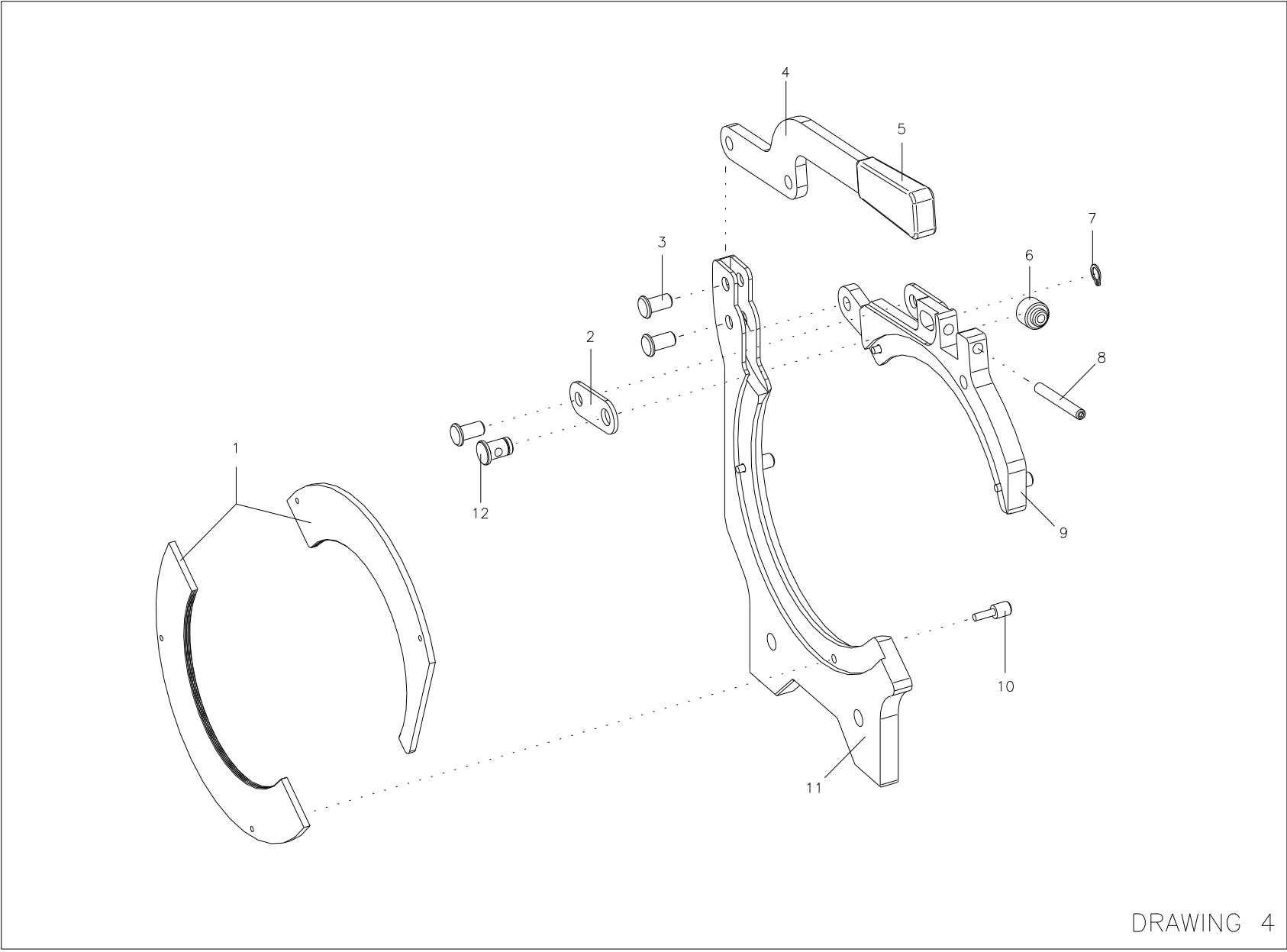
Pos.	Description	Art. Code	Qnt



DRAWING 3







DRAWING 4

### DRAWING 4 (GAN.160LI.DX; GAN.160LI.SX)

Pos.	Description	Art. Code	Qty
	JAWS RIGHT COMPLETE	GAN.160LI.DX	1
1	Complete reducing ring		
2	Hinge	GAN.160.0004	2
3	Rivet	GAN.160.0005	3
4	Locking lever	GAN.160.0006	1
5	Black hand grip	GAN.160.0007	1
6	Adjustment revolving plug	GAN.160.0009	1
7	Seeger DIN 471 Ø8	S.471.8	1
8	UNI 5923 M6X50 dowel	V.5923.6x50	1
9	Right upper half jaw	GAN.160DX.0002	1
10	Revolving plug for half ring locking	GAN.160.0008	4
11	Right lower half jaw	GAN.HWTDX.0001	1
12	Screw rivet	GAN.160.0003	1
1	Ø40 complete reducing ring	Ri.160.40	1
1	Ø50 complete reducing ring	Ri.160.50	1
1	Ø56 complete reducing ring (optional)	Ri.160.56	1
1	Ø63 complete reducing ring	Ri.160.63	1
1	Ø75 complete reducing ring	Ri.160.75	1
1	Ø90 complete reducing ring	Ri.160.90	1
1	Ø110 complete reducing ring	Ri.160.110	1
1	Ø125 complete reducing ring	Ri.160.125	1
1	Ø140 complete reducing ring (optional)	Ri.160.140	1
1	Ø160 complete reducing ring	Ri.160.160	1

Pos.	Description	Art. Code	Qty
	JAWS LEFT COMPLETE	GAN.160LI.SX	1
1	Complete reducing ring		
2	Hinge	GAN.160.0004	2
3	Rivet	GAN.160.0005	3
4	Locking lever	GAN.160.0006	1
5	Black hand grip	GAN.160.0007	1
6	Adjustment revolving plug	GAN.160.0009	1
7	Seeger DIN 471 Ø8	S.471.8	1
8	UNI 5923 M6X50 dowel	V.5923.6x50	1
9	Left upper half jaw	GAN.160SX.0002	1
10	Revolving plug for half ring locking	GAN.160.0008	4
11	Left lower half jaw	GAN.HWTSX.0001	1
12	Screw rivet	GAN.160.0003	1
1	Ø40 complete reducing ring	Ri.160.40	1
1	Ø50 complete reducing ring	Ri.160.50	1
1	Ø56 complete reducing ring (optional)	Ri.160.56	1
1	Ø63 complete reducing ring	Ri.160.63	1
1	Ø75 complete reducing ring	Ri.160.75	1
1	Ø90 complete reducing ring	Ri.160.90	1
1	Ø110 complete reducing ring	Ri.160.110	1
1	Ø125 complete reducing ring	Ri.160.125	1
1	Ø140 complete reducing ring (optional)	Ri.160.140	1
1	Ø160 complete reducing ring	Ri.160.160	1

# CONFORMITY DECLARATION



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## DECLARES

That the welding machine:

Manufactured and sold by our company in compliance with:

EN 60335-1, EN60335-2-45  
EN 60204-1 (CEI 44-5), EN 60204-1 (CEI 44-6)  
2004/108/CE, 2006/95/CE  
EN 55014, EN 61000-3-2, EN 61000-3-3  
2006/42/CE  
2002/95/CE, 2002/96/CE, 2003/108/CE

This declaration loses its validity in case of changes to the welding machine without our written authorization.

Sovico, 10<sup>th</sup> September 2019

**O.M.I.S.A. S.r.l.**

## **WARRANTY CONDITION**

Each article manufactured by our company is guaranteed for 12 months from the purchase date. For warranty means the replacement and free reparation of product parts that are faulty for manufacture vices.

Warranty does not cover possible faulty for the following reasons:

- Negligence and carelessness in using.
- Unsuitable use, longevity and wear of the product.
- Not authorized people and third-party tampering, if not authorized by us in writing.
- Damages for transport or circumstances that don't come from manufacture vices.
- Non-observance of directions fixed by the supplier and written in the instruction manual supplied.
- Damages due to not-stabilized tension rushes.

In case of vices or fault, the product should be sent to us in free port within 7 days from receipt and it will be sent back in free port.

O.M.I.S.A. Srl will not be liable for possible damages that could come directly or indirectly to people or things during the product use.



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