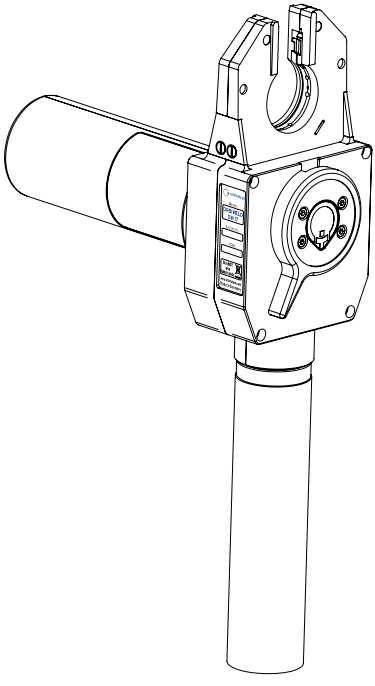
ORBIWELD 17 / 17 GC

en **Enclosed orbital weld head**

Translation of original operating instructions and spare parts list



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orbitalum
tools for piping systems

An ITW Company

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1 About these instructions

1.1 Warning messages

The warnings used in these instructions warn you of injuries or damage to property.

Always read and observe these warnings!

	This is a warning icon. It warns against dangers of injury. In order to avoid injuries or death observe the measures marked with a safety sign.

	WARNING LEVEL	MEANING
⚠	**DANGER**	Imminently hazardous situation that results in death or serious injuries if the safety measures are not observed.
⚠	**WARNING**	Potentially hazardous situation that may result in death or serious injuries if the safety measures are not observed.
⚠	**CAUTION**	Potentially hazardous situation that may result in slight injuries if the safety measures are not observed.
❗	*NOTE!*	Potentially hazardous situation that may result in material damage if the safety measures are not observed.

1.2 Further icons and displays

SYMBOL	MEANING
ℹ	Important information for comprehension.
1. 2. 3. …	Request for action in a sequence of actions: Action is required here.
►	Single request for action: Action is required here.

1.3 Legend

ABBREVIATION	MEANING
OW17	Orbital weld head (micro weld head), water cooled, Type "ORBIWELD 17"
OW17 GC	Orbital weld head (micro weld head), water cooled, Type "ORBIWELD 17 GC"
SW	Orbital welding power source of the Smart Welder series
MW	Orbital welding power source of the Mobile Welder series

1.4 Further applicable documents

The following documents apply together with these operating instructions:

- Operating instructions for the orbital welding power source

2 Information and safety instructions for the owner

2.1 Requirements for the owner-operator

Workshop/outdoor/field use: The owner is responsible for safety in the danger zone around the machine, and should allow only qualified personnel to enter the zone or operate the machine in the danger zone.

Employee safety: The operator has to observe the safety regulations described in this chapter as well as to work safety-consciously and with all prescribed safety equipment.

The employer undertakes to give the employees clear notice of the dangers arising that are specified in the EMF directives and to evaluate the workplace correspondingly.

Requirements for special EMF evaluations with regard to general activities, working materials and workplaces*:

TYPE OF WORKPLACE OR WORK EQUIPMENT	EVALUATION REQUIRED FOR:		
	Employees without particular risk	Employees at particular risk (with the exception of those with active implants)	Employees with active implants
	(1)	(2)	(3)
Arc welding, manual (including MIG (Metal Inert Gas), MAG (Metal Active Gas), TIG (Tungsten Inert Gas) under observance of tried-and-tested procedures and without physical contact to the line	No	No	Yes

* To Directive 2013/35/EU

2.2 Using the machine

2.2.1 Proper use

The orbital weld head is intended solely for the following utilization:

- Utilization in combination with an Orbital welding power supply of the ORBIMAT, Mobile Welder and Smart Welder series.
- TIG welding of materials that are specified in these operating instructions (see chap. applications).
- Empty unpressurized tubes that are free of contaminations, explosive atmospheres or liquids.

Only protective gases that are classified for TIG welding in accordance with EN ISO 14175 may be used.

Proper use also includes the following points:

- Permanent supervision of the machine during operation. The operator must always be able to stop the process.
- Observing all safety and warning information in these operating instructions and the general safety information for enclosed orbital weld heads.
- Observing of the further applicable documents.
- Complying with all inspection and maintenance work.
- Use of the machine solely in its original state.
- Usage solely of original accessories as well as original spare parts and operating materials.
- Checking of all the safety-relevant items and functions before commissioning.
- Processing of those materials named in the operating instructions.
- Proper usage of all components involved in the welding processes as well as of all further factors that have an influence on the welding process.
- Solely commercial usage.

2.2.2 Machine constraints

- The workplace can be in the tube preparation, in plant construction or in the plant itself.
- The machine is operated by one person.
- A space of about 2 m for people to move around the machine must be provided.
- Work lighting: min. 300 Lux.
- Ambient conditions during operation:
  Ambient temperature: –10 °C to +40 °C
  Relative humidity: < 90% at +20 °C, < 50 % at +40 °C
- Ambient conditions during storage and transport:
  Ambient temperature: –20 °C to +55 °C
  Relative humidity: < 90% at +20 °C, < 50 % at +40 °C
- The machine may only be installed and operated in a dry environment according to IP 23 (not in fog, rain, thunderstorms, etc.). If appropriate, use a welding tent.
- Smoke, steam, oil vapors and grinding dust must be avoided.
- Avoid salty ambient air (sea air).

2.3 Environmental protection and disposal

2.3.1 Information regarding the Ecodesign Directive 2009/125/EG

- Do not dispose of product (if applicable) with general waste.
- Reuse or recycle waste electrical and electronic equipment (WEEE) by disposing of it at a designated collection point.
- Contact your local recycling office or dealer for more information.

(as per RL 2012/19/EU)

Critical raw materials potentially present in indicative quantities greater than 1 gram at the component

COMPONENT	CRITICAL RAW MATERIAL
Printed circuit boards	Barite, bismuth, cobalt, gallium, germanium, hafnium, indium, heavy rare earths, light rare earths, Niobium, platinum group metals, scandium, silicon metal, tantalum, vanadium
Plastic components	Antimony, Barite
Electrical and electronic components	Antimony, beryllium, magnesium
Metal components	Beryllium, cobalt, magnesium, tungsten, vanadium
Cable and cable assemblies	Borate, antimony, barite, beryllium, magnesium
Displays	Gallium, indium, heavy rare earths, light rare earths, niobium, platinum group metals, scandium
Batteries	Fluorspar, heavy rare earths, light rare earths, magnesium

2.4 Personnel qualification

CAUTION! The weld head/manual welding torch may only be used by instructed personnel.

- Only employ personnel who satisfy the job- and age-specific regulations that apply to the operation site.
- **No** physical and mental impairments.
- Persons whose ability to respond is affected by drugs, alcohol or medications are not eligible as staff.
- Operation of the machine by underage persons only under supervision by a person authorized to issue instructions.
- A basic knowledge of the TIG welding process is advisable.

2.5 Fundamental information on operational safety

CAUTION! Observe valid safety and accident prevention regulations!

Improper usage can impair safety. This can result in life-threatening injuries.

- Never leave the weld head unattended when the power supply is switched on.
- The operator must ensure that no 2nd person is located within the danger zone.
- Do **not** modify or convert the weld head.
- Use the weld head only in technically flawless operating order and condition.
- Use only genuine tools, spare parts and accessories as well as specified operating materials.
- In case of changes in the operating behavior, stop operation immediately and have the fault eliminated.
- Do not remove safety devices.
- Do not pull the machine by the hose package or the cable.
- Repair and maintenance work on the electrical equipment may only be carried out by a qualified expert.
- Opening or altering the weld head is prohibited, except for the purpose of removing foreign matter from the transmission.
  Observe the troubleshooting information (*see chapt.* “Troubleshooting” of the operating instructions).

CAUTION! Risk of injury due to monotonous work and exhausting work in places that are difficult to access and performing overhead work!

Discomfort, tiredness and malfunctions in the motor system, restricted ability to react and cramping.

► Increase break times.

► Perform "loosening-up" exercises.

► Assume an upright, fatigue-free and comfortable body position during operation.

► Ensure a varied range of activities.

- Perform "loosening-up" exercises.
- Ensure a varied range of activities.
- Assume an upright, fatigue-free and comfortable body position during operation.

2.6 Personal protective equipment

The following personal protective equipment must be worn while working at the system:

- ► Safety gloves according to EN 407 for welding operation and DIN 388 for installing the electrode.
- ► Safety shoes according to EN ISO 20345, Class SB.
- ► For overhead work safety helmet according to EN 397.
- ► Wear hearing protection in work environments > 80 db (A).

2.7 Remaining risks

2.7.1 Mechanical hazards

⚠	**DANGER!**	The rotating machine parts can cause hair, jewelry or clothes to be caught and pulled into the housing.

- ► Wear tight-fitting clothes.
- ► Do **not** wear open hair, jewelry or other accessories that can be easily drawn in.

⚠	**CAUTION!**	If the power cable, gas line or control cable are under tension, there is the danger that persons may trip over them and be injured.

- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Do **not** put lines or cables under tension.
- ► Place the weld head in the transport case after dismantling.
- ► Ensure that the hose package is connected properly and that the strain relief is attached.

	CAUTION!	Falling of the orbital weld head during transportation, mounting/dismantling or setting up.

⚠	**CAUTION!**	Falling of the weld head in case of impermissible usage in overhead position!

- ► Wear safety shoes to EN ISO 20345, Class SB.
- ► Place the transport case on a stable base near (approx. 1.5 m/ 4.9 ft) the welding power supply.
- ► Do **not** carry the transport case on a ladder.
- ► To set up the weld head place it flat and ensure that it cannot fall down.
- ► Fit drop guard to weld head.
- ► Weld head may **only be used with drop guard** in overhead positions.
- ► Do not transport the device by crane. Use handles, straps or holders for hand transport only.

► Always carry out orbital weld head OW 170 mounting/dismantling work on the pipe employing 2 persons.

CAUTION! Falling of the transport case caused by it being put down improperly!

► Place the transport case on a stable base near (approx. 1.5 m) the welding power supply.

CAUTION! Danger of being pricked by the electrode or, where applicable, by the cold wire both for the operator and for third parties while grasping the weld head.

► Do not grasp the weld head at the position of the electrode or of the cold wire (for KD versions).

► Remove the electrode and, if appropriate, the cold wire before storing the weld head (for KD versions).

CAUTION! Risk of body parts being crushed due to the clamping cassette falling off when clamping onto the workpiece.

► Attach drop guard to the clamping cassette (OW 25 GC only).

► Make sure that no one is beneath the site of operation.

► Wear personal protective equipment.

CAUTION! Hands and fingers can be caught in and crushed while setting up the weld head.

► Before setting up or before electrode replacement lay the weld head flat on the base

► Switch off the welding power supply before setting up or before an electrode replacement.

DANGER! Risk of hands and fingers being crushed due to unexpected start of the rotor when the electrode is being set up.

► Before connecting the weld head and before mounting the electrode: Switch off orbital welding system.

► Before moving the rotor with closed weld heads, fit clamping cassette or clamping units and close clamping unit and flip cover.

CAUTION! Risk of fingers being sheared when swivel bracket closed on one side between open swivel bracket and base body.

► Wear safety gloves according to DIN 388.

CAUTION! Danger of cut injuries caused by sharp pipe edges when clamping the weld head onto the pipe.

► Wear safety gloves according to DIN 388.

⚠	**CAUTION!**	Injuries can occur during dismantling for the proper disposal of the weld head through uncertainties in handling tools.

- ► In case of uncertainties send the weld head to Orbitalum Tools – proper disposal is carried out here.
- ► Allow only a professional electrician to access the electrical system and open the weld head.

2.7.2 Electrical hazards

⚠	**DANGER!**	Electrical hazards through touching as well as incorrect or damp protective equipment.

- ► Wear dry safety shoes, dry metal-free (grommet-free) leather gloves and dry safety suits to minimize the electrical hazard.
- ► Work on a dry surface.

⚠	**DANGER!**	Electric shock along with injuries and damage to property on other devices due to erroneous ignition with unmounted or incorrectly positioned weld head!

- ► Do **not** play with weld head.

⚠	**DANGER!**	Electric shock and risk of crushing due to improper action and opening of the weld head.

- ► Unplug the weld head from the power source.
- ► Allow machine to cool down sufficiently before opening.
- ► Allow only a professional electrician to access the electrical system.
- ► **Never** connect open weld head to the power source.

DANGER! Risk of death for people with heart problems or cardiac pacemakers.

DANGER! Depending on the form of the workplace, life-threatening electromagnetic fields can arise in the direct vicinity.

- ► People with heart problems or cardiac pacemakers must not operate the welding system.
- ► The owner has to ensure safe design of the workplace in accordance with the EMF Directive 2013/35/EU.
- ► Use only electrical devices with protective insulation in the working area of the welding system.
- ► Observe electromagnetically-sensitive devices when igniting the system.

DANGER! There is the risk of a fatal electric shock on simultaneous contact with both potentials during the high-frequency ignition.

- ► Before connecting the weld head and before mounting the electrode: Switch off orbital welding system.
- ► Before moving the rotor with closed weld heads, fit clamping cassette or clamping units and close clamping unit and flip cover.
- ► From the start of the welding process avoid contact with the tube and the housing of the orbital weld head.
- ► Wear safety gloves DIN 12477, Type A for welding operation and DIN 388, Class 4 for mounting the electrode.

WARNING! Risk of burns, blindness and fire due to arcs.
An arc may develop by releasing welded contacts during operation. This can result in burns and blindness, in the worst case a fire can be started.

- ► Connect and disconnect the weld head only when the power supply is shut down.
- ► Lay the lines and cables so that they are **not** under tension
- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Attach the strain relief.
- ► Check if the hose package connections are mechanically secured when connecting or switching on the power supply.
- ► Do not work near highly flammable substances.

⚠	WARNING!	Various injuries and damage to property due to electromagnetic incompatibility of surrounding devices during high-frequency ignition and devices in operation without a protective ground.

- ► Use only electrical devices with protective insulation in the working area of the welding system.
- ► Observe electromagnetically-sensitive devices when igniting the system.

⚠	**WARNING!**	Electrostatic discharges when opening the weld head. Damage to electronic components, fires and explosions may be the result.

- ► Send the weld head in for servicing or as an experienced user contact technical support.
- ► Employ ESD-suitable workplaces and ground all conductive components.
- ► Wear ESD-suitable clothing, shoes and gloves.
- ► Use ESD protective mat in the working area.
- ► Use ionizers to neutralize static charges in the air.
- ► Use ESD-safe packaging for sensitive components.
- ► Train employees who regularly deal with ESD and instruct them in the appropriate safety measures.

⚠	**CAUTION!**	Risk of falling due to being startled following electric shock when working at heights. In addition to fall injuries, the weld head and, where applicable, the clamping cassette can fall off and cause injuries.

- ► Before clamping the weld head on the workpieces switch the power supply to test mode.
- ► Attach all drop guards: Hose package strain relief, drop guard to weld head and, where applicable, to clamping cassette.

2.7.3 Thermal hazards

DANGER! Safety parts can fail due to impurity, breakage and wear, causing many risks of injury and risk of fire and burning due to the arc.

- ► Do not misuse the cable, for example by suspending or carrying the machine by the cable.
- ► Replace defective parts immediately and check daily for proper functioning.
- ► Have an expert replace defective lines and plugs immediately.
- ► Clean and maintain machine after every use.
- ► Keep the lines and hoses away from heat, oil, sharp edges or moving device parts.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.

WARNING! Risk of burns, blindness and fire due to arcs.
An arc may develop by releasing welded contacts during operation. This can result in burns and blindness, in the worst case a fire can be started.

- ► Connect and disconnect the weld head only when the power supply is shut down.
- ► Lay the lines and cables so that they are **not** under tension
- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Attach the strain relief.
- ► Check if the hose package connections are mechanically secured when connecting or switching on the power supply.
- ► Do not work near highly flammable substances.

WARNING! Fire hazard when using incorrect (e.g. explosive) gases during the welding process**.**
Burns are the result. In the worst case a fire will be started.

- ► Observe safety instructions in the operating instructions of the power source.
- ► Usage solely of protective gases that are classified for TIG welding process in accordance with EN ISO 14175.

WARNING! Thermal problems can arise in the event of incorrect positioning of the weld head, purging system or the use of impermissible materials in the welding area. In the worst case a fire will be started. Observe the local general fire protection measures.

- ► Position the weld head correctly.
- ► Use only permissible materials in the welding area.
- ► Let the cleaning agent evaporate completely after cleaning the weld head and prior to welding.

2.7.4 Risks due to materials and substances

DANGER! When leaks in the gas supply occur, there is a danger of suffocation due to the high argon content in the ambient air. Irreversible damage or deadly hazard due to suffocation may be the result.

- ► Replace defective parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Keep the lines and hoses away from heat, oil, sharp edges or moving device parts.
- ► Use only in well ventilated areas.
- ► Monitor oxygen, if necessary.

DANGER! Many injuries and material damage due to incorrect use of pressure tanks and other parts of the system (e.g. welding gas cylinder)!

- ► Heed safety regulations, especially those for pressure tanks.
- ► Comply with safety data sheets.
- ► If the system and its components exceed 25 kg in weight, lift using several people or lifting equipment.

WARNING! Poisonous vapors and substances during the welding process and handling of the electrodes!

- ► Use extraction devices in accordance with the professional association’s regulations (e.g. BGI: 7006-1).
- ► If necessary, monitor the oxygen level in the air.
- ► Extra caution is required with chrome, nickel and manganese.
- ► **Do not** use electrodes containing thorium.

WARNING! Risk of explosion when using incorrect (explosive) gases during welding process.
Severe injuries and death may be the result.

- ► Observe safety instructions in the operating instructions of the power source.
- ► Usage solely of protective gases that are classified for TIG welding process in accordance with EN ISO 14175.

⚠	**CAUTION!**	Risk of slipping due to coolant leaking when connecting and disconnecting the hose package and power supply.

- ► Remove leaking coolant immediately.

2.7.5 Ergonomic hazards

⚠	**CAUTION!**	Long-lasting physical damage due to incorrect posture. Risk of discomfort, tiredness and malfunctions in the motor system, restricted ability to react and cramping.

- ► Increase break times.
- ► Perform "loosening-up" exercises.
- ► Assume an upright, fatigue-free and comfortable body position during operation.
- ► Ensure a varied range of activities.

⚠	**CAUTION!**	Risk of injury due to monotonous work and exhausting work in places that are difficult to access and performing overhead work! Discomfort, tiredness and malfunctions in the motor system, restricted ability to react and cramping.

- ► Increase break times.
- ► Perform "loosening-up" exercises.
- ► Assume an upright, fatigue-free and comfortable body position during operation.
- ► Ensure a varied range of activities.

2.7.6 Hazards due to radiation

⚠	**WARNING!**	During the welding process infrared, glaring and ultraviolet rays arise that can seriously damage the eyes.

- ► **Do not** look into the electric arc.
- ► Wear eye protection to EN 170.

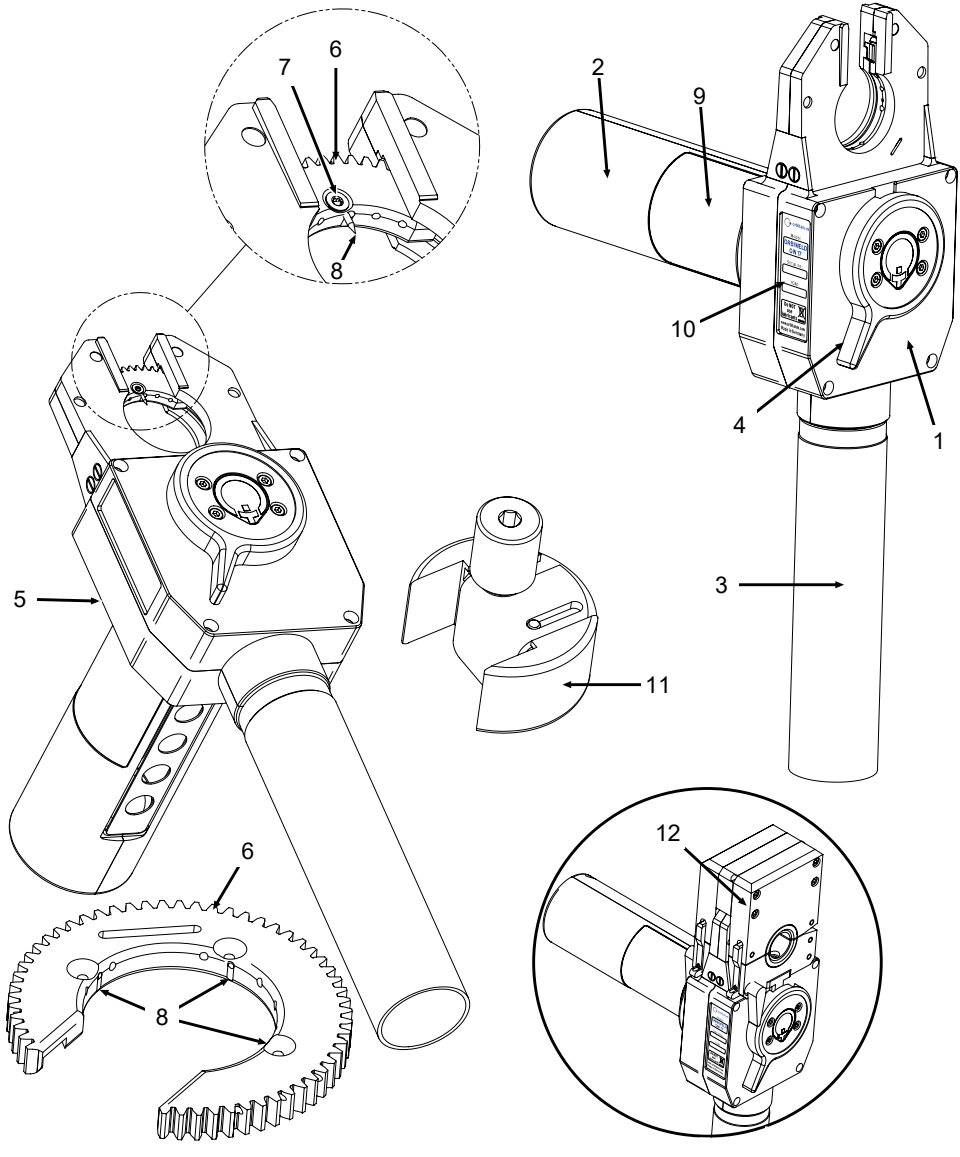
2.7.7 General danger

⚠	**CAUTION!**	General danger

- ► In case of danger, unplug the mains plug!
- ► Accessibility to the mains plug must always be assured in order to permit disconnecting the power supply from the mains.

3 Description

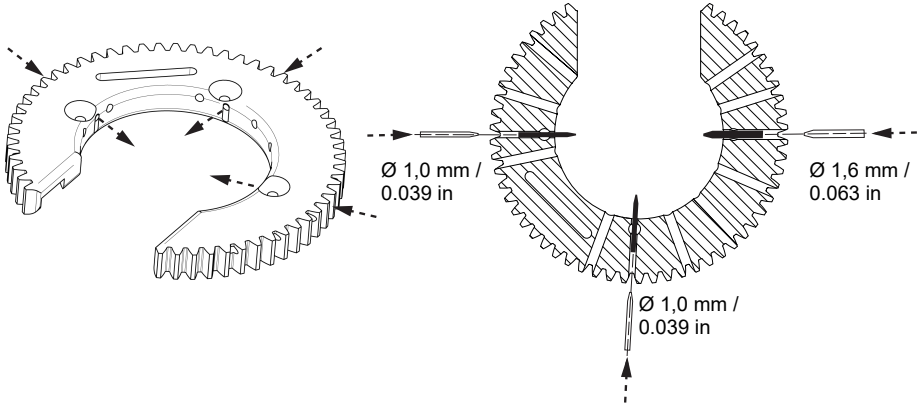
3.1 ORBIWELD 17



POS.	DESIGNATION	FUNCTION
1	Enclosure	Containing interior components and enclosing protectively.
2	Handle/motor	Hold weld head.
3	Hose package	Connect weld head with welding power supply.
4	Rotating clamping handle	Fix, contact and lock the clamping cassette on the weld head.
5	Control panel	Operate weld head.
6	Rotor	Guide the electrode radially around the workpiece.
7	Electrode clamping screw	Fasten the electrodes.
8	Electrode holder Ø 1.0 mm (0.039") or Ø 1.6 mm (0.063")	Inserting electrodes (*see chapt.* Set up the electrode [▶ 39]).
9	"Setting dimensions" sign	Shows electrode lengths for different hose dimensions.
10	Type plate	Lists data for the weld head.
11	Electrode setting gage	Setting up the electrodes (*see chapt.* Determining the electrode length and electrode gap [▶ 40]).
12	Clamping cassette*	Fitting clamping inserts* (*see chapt.* Mounting clamping inserts [▶ 44]).

** Clamping cassettes and clamping inserts are not included in the scope of delivery.*

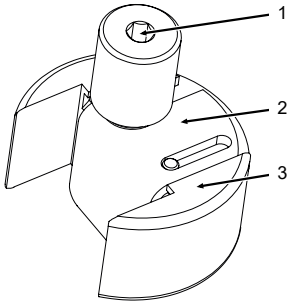
3.2 Electrode holder OW17



For information on setting up the electrodes, *see chapt.* Set up the electrode [▶ 39].

3.3 Electrode setting gage OW17

The supplied, adjustable electrode setting gage makes it easier to set up the electrode.

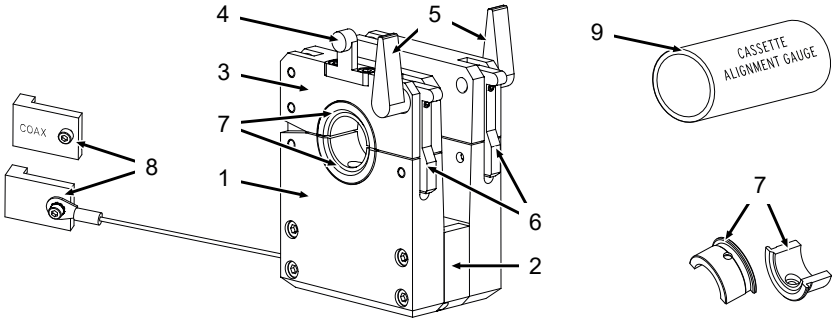


POS.	DESIGNATION
1	Knurl
2	Limit stop
3	Holder

For information on setting up the electrodes, *see chapt.* Set up the electrode [▶ 39].

3.4 Clamping cassette and clamping insert OW17

INFO Clamping cassettes and clamping inserts are not included in the scope of delivery but are absolutely necessary for the insert and have to be ordered separately.



POS.	DESIGNATION	FUNCTION
1	Clamping cassette, side plate	Holding clamping inserts and workpieces.
2	Spacer, center	Holding side plates at a precise distance.
3	Clamping cassette swivel bracket	Clamping the workpieces.
4	Locking element	Locking the weld head into position in a clamping cassette.
5	Clamping cassette clamping lever	Lock clamping cassette onto weld head.
6	Swivel bracket lock	Lock swivel bracket.
7	Clamping insert, 2 parts	1 clamping insert per clamping side. Align and clamp workpieces (hoses).
8	Hose centering gage (standard or COAX*)	Alignment of the electrode, hose joint and hose offset.
9	Cassette alignment gage	Alignment of cassette side plates with each other.

* *Description standard and COAX hose connections, see chapt.* Clamping inserts for OW17 [▶ 67]

4 Scope of application

NOTICE!

The weld head can be used for hose-to-hose and COAX connections.

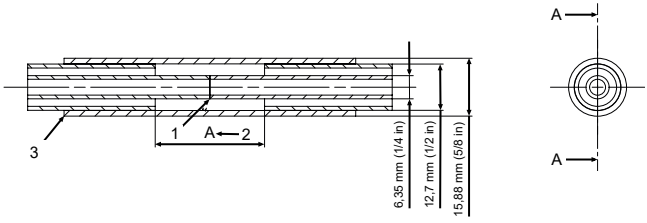
Two hoses with the same diameter are welded together for **hose-to-hose connections** (standard).

For **COAX connections**, also called double hose connections, usually 2 hoses with different hose diameters are welded together, e.g. hose Ø 12.7 mm (1/2") with hose Ø 15.88 mm (5/8"). In the process, two or more hoses are guided into one another and welded together.

An optional COAX sleeve hose centering gage and a clamping insert for the sleeve diameter are required for COAX sleeve fillet weld connections! They are available via the COAX sleeve application set, see chapter Accessories (optional) [▶ 66].

Example:

- ► (1) processing pipe Ø 6.35 mm (1/4") butt welded
- ► (2) safety pipe Ø 12.7 mm (1/2") with distance A
- ► (3) sleeve Ø 15.88 mm (5/8") by means of fillet weld on safety pipe Ø 12.7 mm (1/2") both sides



SCOPE OF APPLICATION		OW17	OW17 GC
Pipe (outer diameter)	[mm]	3.0 ... 17.2	
min. … max.	[inch]	0,118 ... 0,677	
Welding process		Tungsten inert gas process (TIG)	
Materials		All materials that are fundamentally suitable for the TIG welding process.	

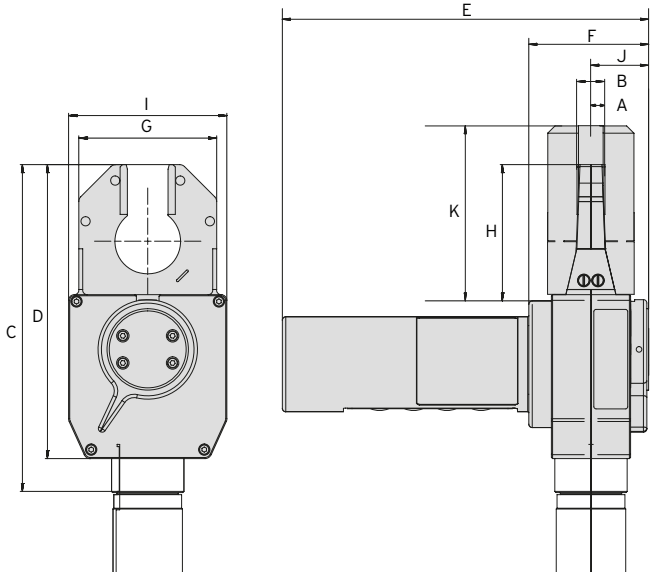
5 Technical specifications

5.1 Application area

MACHINE TYPE		OW17	OW17 GC
Code		817 000 001	817 000 002
Pipe (outer diameter)	[mm]	3 ... 17.2	
min. ... max	[inch]	0.125 ... 0,677	
Electrode diameter	[mm]	1.0 / 1.6	
	[inch]	0.039 / 0.063	
Machine weight including hose package	[kg]	5.5	5.36
	[lbs]	12,125	11,817
Hose package length	[m]	7.5	
	[ft]	24.6	
Cooling type		Liquid-cooled	Gas-cooled

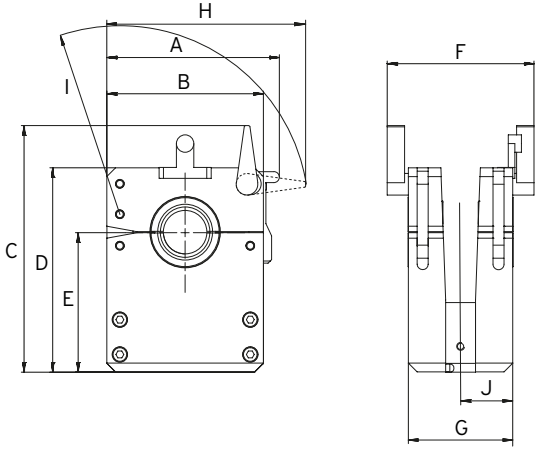
5.2 Dimensions

5.2.1 OW17 / OW17 GC



DIMENSIONS	DIMENSION	
	[mm]	[inch]
Dimension "A"	6.20	0,244
Dimension "B"	12.40	0,488
Dimension "C"	144.50	5,689
Dimension "D"	130.00	5,118
Dimension "E"	162.00	6,378
Dimension "F"	53.00	2,087
Dimension "G"	61.00	2,402
Dimension "H"	60.25	2,372
Dimension "I"	70.00	2,756
Dimension "J"	26.80	1,055
Dimension "K"	75.20	2,961

5.2.2 Clamping cassette for OW17



DIMENSIONS	DIMENSION	
	[mm]	[inch]
Dimension "A"	63.00	2,480
Dimension "B"	57.20	2,252
Dimension "C"	90.00	3,543
Dimension "D"	74.60	2,937
Dimension "E"	50.90	2,004
Dimension "F"	53.60	2,110
Dimension "G"	38.10	1,500
Dimension "H"	72.60	2,858
Dimension "I"	70.00	2,756
Dimension "J"	19.05	0,750

6 Transport and shipping

INFO The following illustrations for the individual work steps show the weld head model OW17 as an example. Procedures or work steps that deviate are, if required, described separately and represented in a separate figure.

6.1 Gross weight

ITEM		OW17	OW17 GC
Weight*	[kg]	13.90	9.80
	[lbs]	30,644	21,605

** incl. scope of delivery and transport case*

6.2 Transport

► Transport the weld head in the transport case using the handle.

CAUTION

Danger of injury through pointed electrode!

If the weld head is removed incorrectly from the transport case, there is the risk that you may touch the pointed electrode in the process.

► Use the handle provided to remove the weld head.

► Dismantle the electrode before transport.

► Use the handle to remove the weld head from the transport case.

7 Commissioning

7.1 Scope of delivery

ITEM	CODE	QUANTITY	UNIT
ORBIWELD 17 /	817 000 001 /	1	PCS.
ORBIWELD 17 GC	817 000 002		
Tool set OW17	817 030 001	1	PCS.
Electrode setting gage complete OW17	817 050 007	1	PCS.
Hose package safety clamp OW	826 030 010	1	PCS.
Transport case OW 17/ Case box OW 17 GC	817030030/ 817030032	1	PCS.
General safety information for enclosed weld heads	836 060 101	1	PCS.
Operating instructions & ETL, OW17 Download link PDF: https://www.orbitalum.com/de/download.html	817 060 201	Unlimited (PDF)	PCS.

We reserve the right to make changes.

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

7.2 Prepare commissioning

Prerequisite:

Welding power supply connected and ready to operate.

WARNING

Risk of explosion when using incorrect (explosive) gases during welding process.

Severe injuries and death may be the result.

- ► Observe safety instructions in the operating instructions of the power supply.
- ► Usage solely of protective gases that are classified for TIG welding process in accordance with EN ISO 14175.

WARNING

Risk of burns, blindness and fire due to arcs!

An arc may develop by releasing the welding contacts during operation. This can result in burns and blindness, in the worst case a fire can be started.

- ► Connect and disconnect the weld head only when the power supply is shut down.
- ► Lay the lines and cables so that they are **not** under tension.
- ► Ensure that under **no** circumstances can people trip over lines and/ or cables.
- ► Attach the strain relief.
- ► Check that hose package connections fit firmly in place when connecting or before activating the power supply.
- ► Do not work near highly flammable substances.

- ► Check the weld head, hose package, ground cable and lines for damage.
- ► Check the working environment for possible sources of danger and, if applicable, eliminate these.
- ► Fill the weld head with cooling liquid (*see chapt.* Carry out the gas and cooling liquid function test [▶ 52]).
- ► Check the weld head for loose parts and particles in the transmission.
- ► For usage in overhead position: Secure the orbital weld head with drop guard (*see chapt.* Mounting the safety clamp [▶ 34]).

8 Setup and mounting

8.1 Procedure

INFO		Observe operating instructions of the ORBIMAT welding power supply or MOBILE WELDER!

Carry out setting up and mounting in the following order:

1. Mounting the safety clamp [▶ 34]
2. Connecting the weld head to the power source [▶ 35]
3. Set up the electrode [▶ 39]
4. Mounting clamping inserts [▶ 44]
5. Clamping the workpieces [▶ 45]
6. Mounting the weld head in the clamping cassette [▶ 51]
7. Carry out the gas and cooling liquid function test [▶ 52]
8. Connect the accessories [▶ 52]
9. Configure the welding procedure [▶ 52]

8.2 Mounting the safety clamp

WARNING

Falling of unsecured weld head.

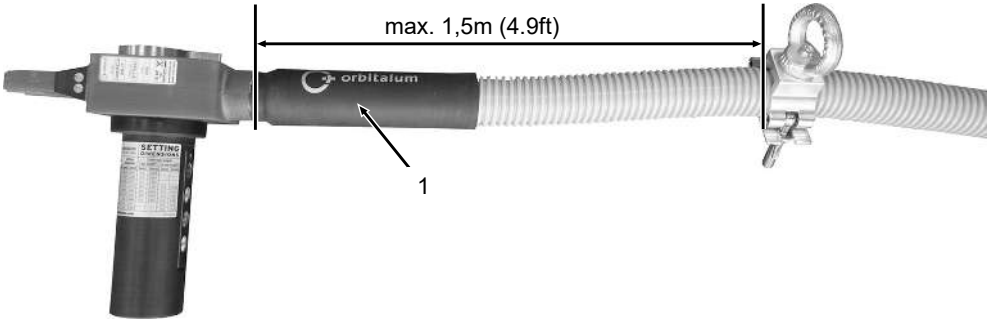
The device may drop and injure people.

- ► Before start of work, fit drop guard with sufficient load capacity (e.g. wire cable with snap hook) to weld head.
- ► Weld head must **not** be used unsecured in overhead positions.

NOTICE!

- ► The safety clamp can be attached **to both the shrink hose and the hose package** both the shrink hose and the hose package(we recommend a maximum distance of 1.5 m (4.9 ft) between weld head and safety clamp).

By default the orbital weld head is delivered with a separate safety clamp to secure the weld head against falling off. This safety clamp has to be mounted on the hose package of the weld head before start of work.



8.3 Connecting the weld head to the power source

WARNING

Risk of burns, blindness and fire due to arcs!

An arc may develop by releasing the welding contacts during operation. This can result in burns and blindness, in the worst case a fire can be started.

- ► Connect and disconnect the weld head only when the power supply is shut down.
- ► Lay the lines and cables so that they are **not** under tension.
- ► Ensure that under **no** circumstances can people trip over lines and/ or cables.
- ► Attach the strain relief.
- ► Check that hose package connections fit firmly in place when connecting or before activating the power supply.
- ► Do not work near highly flammable substances.

CAUTION

Unintentional starting up of the weld head!

Crushing of hands and fingers.

- ► Switch off the Orbital welding power source.

NOTICE!

Overheating of the weld head and damaging of the hose package because of a lack of cooling liquid!

- ► Ensure that the coolant tank of the welding power supply or of the external cooling device is filled sufficiently (coolant level should at least reach the "MIN" marking on the tank).

NOTICE!

During initial commissioning:

The hose package may be damaged while being unpacked from the packaging foil!

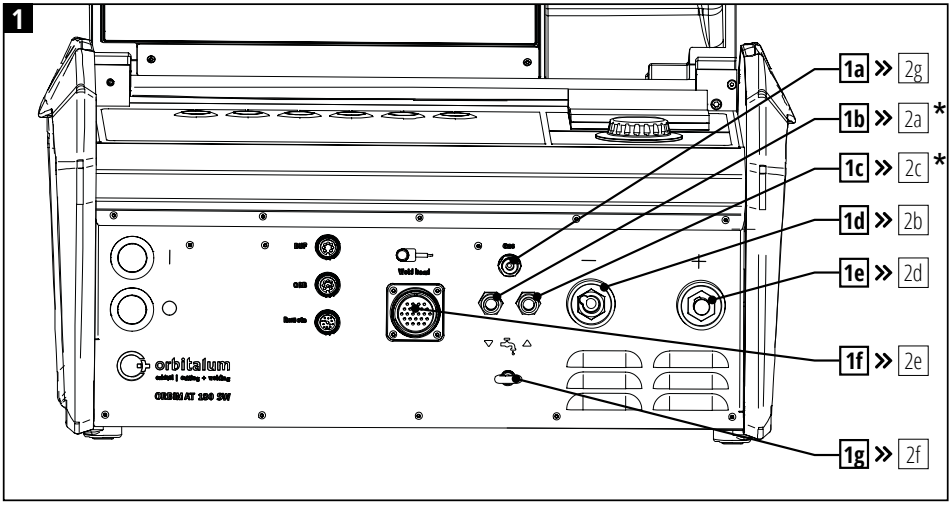
- ► Carefully sever the cable ties without damaging the hose package.

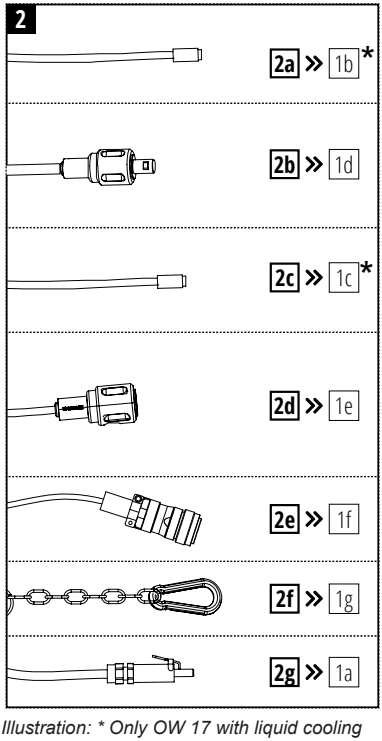
8.3.1 Connection sequence

See also chapt. Wiring diagram [▶ 37]).

1. Attach the strain relief.
2. Connect the Amphenol plug.
3. Connect the welding current plug and welding current socket.
4. Connect the blue and red cooling liquid connections (does not apply to OW17 GC).
5. Connect the gas hose.
6. Switch on the welding power supply.
7. Press the “GAS” button to carry out the gas and cooling liquid function test.

8.3.2 Wiring diagram





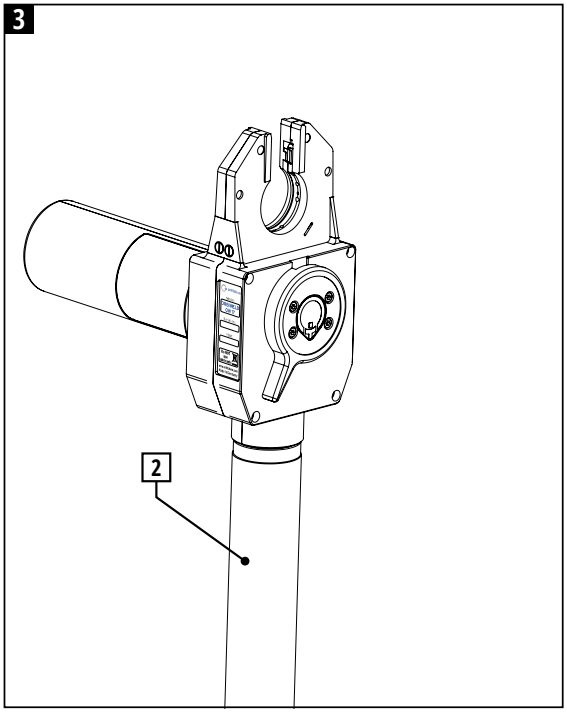


*Illustration: * Only OW 17 with liquid cooling*

POS.	DESIGNATION	TO BE CONNECTED WITH	POS.
1	**Power source, e.g. Smart Welder type**		
1a	Socket "Gas"	Plug "Gas", hose package	**2g**
1b *	"Coolant supply line" socket, **blue**	"Coolant supply line" plug, **blue**, hose package (only OW17)	**2a**
1c *	"Coolant return line" socket, **red**	"Coolant return line" plug, **red**, hose package (only OW17)	**2c**
1d	Socket "Welding current –" (hose package)	Plug "Welding current –", hose package, if necessary with connection adapter*	**2b**
1e	Plug "Welding current +" (ground cable)	Socket "Welding current +", ground cable	**2d**
1f	Socket "Control line"	Plug "control line to power source"	**2e**
1g	"Strain relief" eye	"Strain relief" snap hook, hose package	**2f**
2	**Hose package**		
2a	"Coolant supply line" plug, blue (only OW17)	"Coolant supply line" socket, blue, power source (only OW17)	**1b**
2b	Plug "Welding current –"	"Welding current –" socket, power source	**1d**
2c	"Coolant return line" plug, red	"Coolant return line" socket, red, power source (only OW17)	**1c**
2d	"Welding current +" socket	Plug "Welding current +", power source	**1e**
2e	Plug "Control line"	Socket "Control line for power source"	**1f**
2f	"Strain relief" snap hook	"Strain relief" eye, power source	**1g**
2g	"Gas" plug (quick lock)	"Gas" socket, power source	**1a**
3	**Weld head, e.g. OW17 type**		

** Only OW 17 with liquid cooling*

8.4 Set up the electrode

The weld head contains 2 electrode holes for different electrode diameters that are identified by electrode markings in the rotor. The following steps apply for both electrode diameters.

DANGER

Electrical hazards due to touching as well as incorrect or damp protective equipment.

Electric shock.

- ► Do **not** touch energized parts (pipe), especially when igniting the arc.
- ► Do **not** allow persons with increased sensitivity to electrical hazards (e.g. cardiac failure) to work with the machine.
- ► Wear dry safety shoes, dry metal-free (grommet-free) leather gloves and dry safety suits to minimize the electrical hazard.
- ► Work on a dry surface.

DANGER

The rotation movement of the rotor can cause hair, jewelry or clothes to be caught and pulled into the enclosure.

- ► Wear tight-fitting clothes.
- ► Do **not** wear open hair, jewelry or other accessories that can be easily drawn in.

CAUTION

The rotor can start up unexpectedly during the setup of the electrode.

Risk of crushing of hands and fingers!

- ► Before mounting the electrodes: Switch off the power supply.
- ► To move the rotor to home position: Close the clamping cassette or the clamping unit and flip cover.

CAUTION

Danger of being pricked by the electrode for the operator as well as for third parties while taking hold of the orbital weld head.

- ► Do **not** grasp the orbital weld head at the position of the electrode.
- ► Wear safety gloves DIN 12477, Type A for welding operation and DIN 388, Class 4 for mounting the electrode.

CAUTION

Unintentional starting up of the weld head!

Crushing at hands and fingers.

- ► Switch off the welding power source before the weld head is connected.

NOTICE!

Damage to property through electrode in the toothed space!

If the electrode projects into the toothed space, jamming can occur in the transmission.

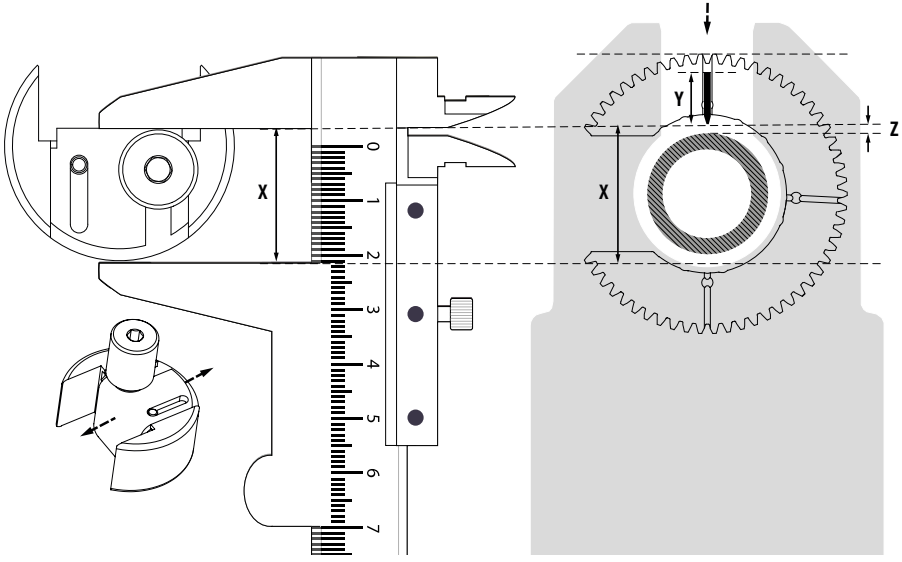
► Shorten the electrode.

INFO

The OW17 weld heads have 2 electrode holes for thee electrode diameters 1.0 mm (0.039 in) and 1.6 mm (0.063 in) which are marked by electrode markings in the rotor (*see chapt.* Electrode holders).

8.4.1 Determining the electrode length and electrode gap

By using the electrode setting gage (included in the delivery), a caliper (which is not included) and the formula shown below, the required electrode length as well as the electrode gap can be determined quickly and easily and set on the weld head.



Setting dimension (X) (electrode setting gage) = ID rotor – (ID rotor – OD hose / 2 – Electrode gap)

NOTICE!

► For applications in the inches range, you must only take inch values as basis for the calculation. For applications in the metric range use metric values (mm).

We recommend the following setting values for the most common hose outer diameters:

OD hose		OD rotor		ID rotor		Electrodes Ø 1.0 mm (0.039")					
						Electrode length (Y)		Electrode gap (Z)*		Setting dimension (X) Electrode setting gage	
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
3.0	0,118	51.2	2,016	29.0	1,142	15.6	0,614	0.7	0,028	16.70	0,657
3.175	0,125					15.6	0,614			16.78	0,661
6.0	0,236					15.6	0,614			18.20	0,717
6.35	0,250					15.6	0,614			18.37	0,723
9.525	0,375					15.6	0,614			19.96	0,786
12.0	0,472					15.6	0,614			21.20	0,835
12.7	0,500					15.6	0,614			21.55	0,848
15.88	0,624					-	-			23.14	0,911
17.2	0,677					-	-			23.85	0,939

OD hose		OD rotor		ID rotor		Electrodes Ø 1.6 mm (0.063")					
						Electrode length (Y)		Electrode gap (Z)*		Setting dimension (X) Electrode setting gage	
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
3.0	0,118	51.2	2,016	29.0	1,142	–	–	1.2	0,047	17.20	0,677
3.175	0,125					–	–			17.29	0,681
6.0	0,236					–	–			18.70	0,736
6.35	0,250					13.8	0,543			18.88	0,743
9.525	0,375					13.8	0,543			20.46	0,806
12.0	0,472					13.8	0,543			21.70	0,854
12.7	0,500					13.8	0,543			22.05	0,868
15.88	0,624					13.8	0,543			23.64	0,931
17.2	0,677					13.8	0,543			24.35	0,959

** Electrode gaps can vary and always depend on the application. The dimensions used in the table above are based on experience.*

8.4.2 Inserting an electrode

INFO

The OW17 has electrode holes for electrode diameters 2 x 1.0 mm (0.039") and 1 x 1.6 mm (0.063") which are marked by corresponding electrode markings in the rotor.

CAUTION

Material damage through protruding electrode clamping screw in the guide area of the rotor!
Material damage may occur if the electrode clamping screw protrudes into the guide area of the rotor.

► Ensure that no electrode clamping screw is protruding.

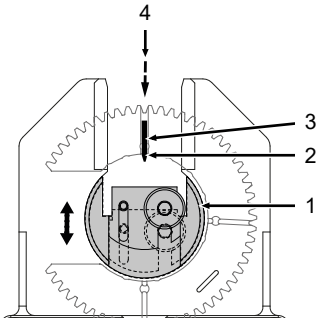
CAUTION

Material damage through several electrodes that are mounted simultaneously at the weld head!

► Ensure that always only 1 electrode is mounted.

► When changing the electrode, first remove the old electrode before inserting a new electrode.

1. Ensure that the Orbital welding power source is switched on.
2. In the control panel, press the MOTOR button and keep it pressed until the desired electrode hole has reached the 12 o'clock position. Observe the markings in the rotor.
3. Switch off the Orbital welding power source.
4. Determine the correct electrode length and set by means of the electrode setting gage (see chapt. Determining the electrode length and electrode gap [▶ 40]).
5. Insert the electrode setting gage (1) in the weld head.
6. Loosen the electrode clamping screw (2).
7. Check the electrode (3) for cut and geometry (see chapt. Grinding electrode [▶ 64]) and insert in the electrode hole (4).
8. Set the electrode gap by means of electrode setting gage (1) and tighten the electrode setting gage finger tight (2) using a Torx screwdriver.
9. Remove the electrode setting gage (1) again.
10. Ensure that the electrode does not project up into the toothed space of the rotor; if required, shorten the electrode.
11. Switch on the Orbital welding power source.
12. In the control panel press the **END.-0-POS** button to move the rotor to the home setting (0-position) (perform ignition only in the home setting).



8.5 Mounting clamping inserts

NOTICE!

A clamping insert consists of 2 half shells for 1 clamping side. Further information on the use of clamping sets, *see chapt.* Clamping inserts for OW17 [▶ 67]

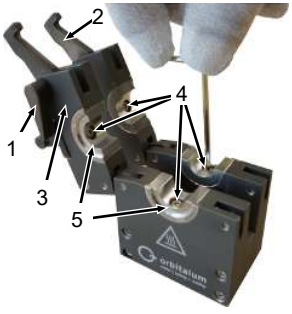
NOTICE!

For COAX connections 2 hoses with different hose diameters are usually welded together (*see chapt.* Scope of application [▶ 26]).

► Ensure that for each clamping cassette side different clamping inserts are used that correspond to the respective hose diameters that are to be welded.

NOTICE!

The ORBIWELD 17 is often used in areas of application where as a default you work with inch tools. All screws and tools listed in this chapter that are required for mounting the clamping inserts correspond, therefore, to specifications in inches and can be reordered if required (*see chapt.* ERSATZTEILLISTE / SPARE PARTS LIST [▶ 69]).



1. Position the clamping cassette flat on the supporting area.
2. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
3. Open both swivel brackets (3).
4. Open the 4 hexagon screws (4) with a hexagon key.
   The following hexagon screws and keys should be used depending on the clamping shell dimension:

CLAMPING SHELLS-Ø	SCREW TYPE	HEXAGON KEY
≤ 14.00 mm (0.551")	SHCS4-40UNCx1/4"	Hexagon key 3/32"
≥ 14.01 mm (0.552")	BHSCS4-40UNCx1/4"	Hexagon key 1/16"

1. If a clamping insert (5) is already mounted, it can now be removed.

2. Insert the clamping insert (5) with the writing facing outwards.
3. Tighten the hexagon screws (4) hand-tight with the hexagon key.
4. Close both swivel brackets (3) again.
5. Close both swivel bracket locks (2) and clamping levers (1) again.
6. Turn the clamping cassette around and repeat work steps 1 to 9.

8.6 Clamping the workpieces

CAUTION

The orbital weld head or pipe falls down during mounting/dismantling/setup or during unsecured usage in overhead position.

- ► Attach the orbital weld head securely to the workpiece and ensure that it **cannot** fall down.
- ► Wear safety shoes to EN ISO 20345, Class SB.
- ► For usage in overhead position: Wear safety helmet to DIN EN 397.

CAUTION

Danger of cut injuries caused by sharp tube edges when placing the tube in the orbital weld head.

- ► Wear safety gloves to EN 388, Performance level 2.

CAUTION

After welding the orbital weld head and the workpiece are hot. Very high temperatures arise in particular after several consecutive welding processes. There is a danger of burns or damage to the points of contact when working on the orbital weld head (for example when changing clamps or mounting/removing the electrodes). Materials without thermal resistance (for example foam inlay of the transport case) can be damaged when coming into contact with the hot orbital weld head.

- ► Wear safety gloves to EN 388, Performance level 2.
- ► Wait until the surfaces have cooled down to below 50 °C before working on the orbital weld head or before packing into the transport case.
- ► Position the weld head correctly.
- ► Use only permissible materials in the welding area.

8.6.1 Aligning the side plates of the clamping cassette

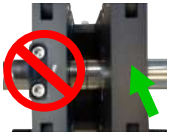
NOTICE!

Before both workpieces are clamped you have to check whether both side plates of the clamping cassette are exactly aligned to each other. Only of this is so, can the central hose joint be exactly on a straight line, when the workpieces are clamped, and the welding can be performed according to the highest standards of quality.

► Check the side plates of the clamping cassette regularly and check whether they are aligned exactly to each other. Readjust, if necessary.

NOTICE!

Only the side plate without cassette fastening is intended for alignment with one another. Only the screws on this side are to be used for the alignment (see the direction of the arrow on the center piece).



NOTICE!

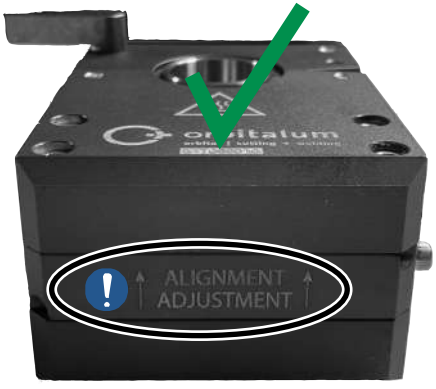
The side plates can be aligned with one another in two different ways:

► Variant 1: with the cassette alignment gage supplied.

► Variant 2: with inserted clamping shells and a straight piece of pipe.

The process is shown using the example of **Variant 1**.

1. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
2. Open both swivel brackets (3).
3. Loosen the 4 cylinder-head screws (4) with hexagon key 3/32" at one of the two side plates.
4. Insert the cassette alignment gage (5) across both side plate sections (6).
5. Close both swivel brackets (3) again.
6. Close both swivel bracket locks (2) and clamping levers (1) again.
7. Retighten the 4 cylinder-head screws (4) at the side plate.
8. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
9. Open both swivel brackets (3) and remove the cassette alignment gage again.
10. The side plates are now exactly aligned to each other.


ALIGNMENT
ADJUSTMENT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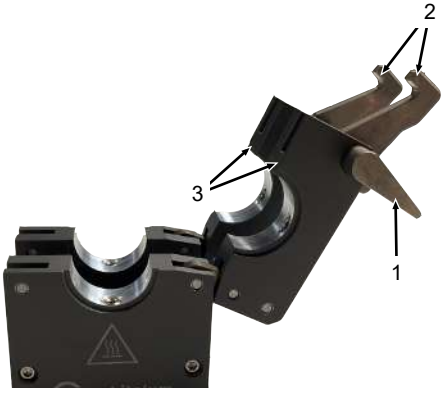
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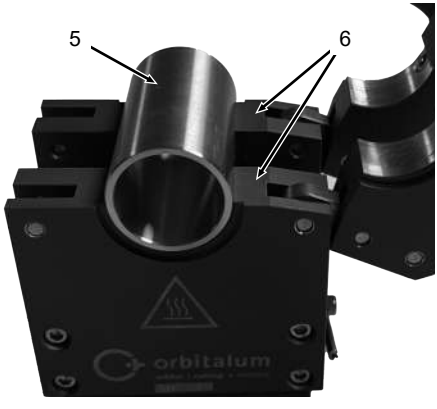
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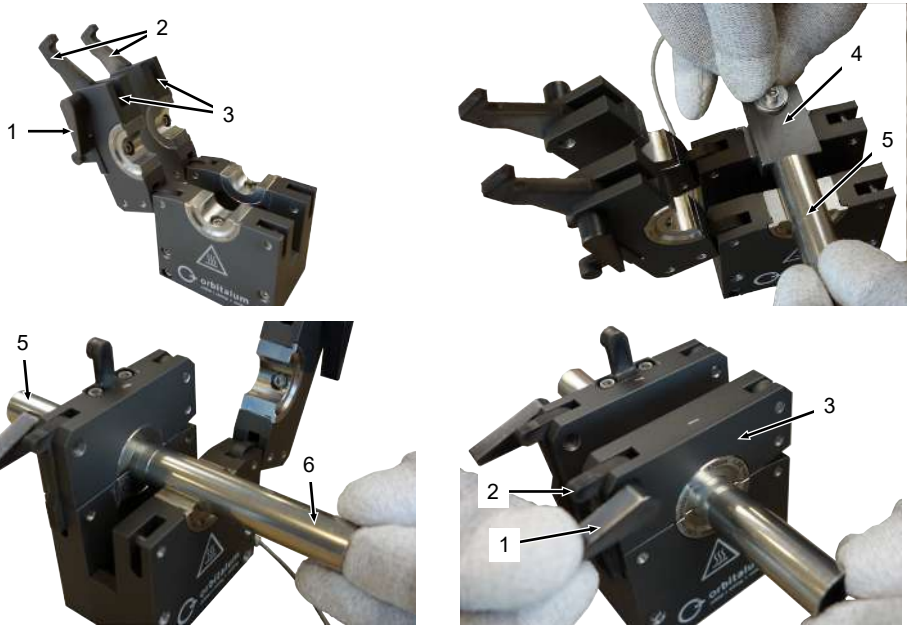
8.6.2 Hose-to-hose connections (standard)

NOTICE! **Ensure that the hose centering gage "Standard" is used and not "COAX". Otherwise the hoses cannot be centrally aligned.**



INFO The electrode has to be positioned **centrally** over the **gap-free workpiece joint** (7).

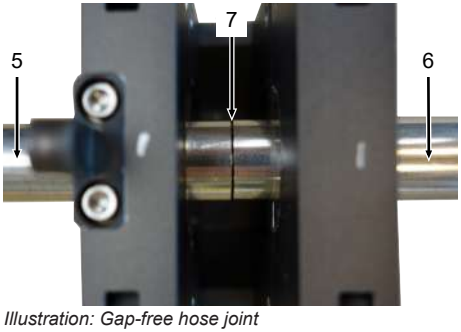


Illustration: Gap-free hose joint

1. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
2. Open both swivel brackets (3).
3. Insert the hose centering gage "Standard" (4) (see note above).
4. Insert **workpiece 1** (5) and insert the hose centering gage "Standard" (4) up to the limit stop (see information below).
5. Close the corresponding swivel bracket (3) again.
6. Close the swivel bracket lock (2) and clamping lever (1) again to attach the workpiece.
7. Remove the hose centering gage (4).
8. Insert **workpiece 2** (6) and align with workpiece 1 (5) on the joint (7) (see information box).
9. Close the corresponding swivel bracket (3) again.
10. Close the swivel bracket lock (2) and clamping lever (1) again to attach the workpiece.

8.6.3 COAX connections (double hose applications)

NOTICE!

For COAX connections 2 hoses with different hose diameters are usually welded together (*see chapt.* Scope of application [▶ 26]).

► Ensure that for each clamping cassette side different clamping inserts are used that correspond to the respective hose diameters that are to be welded.

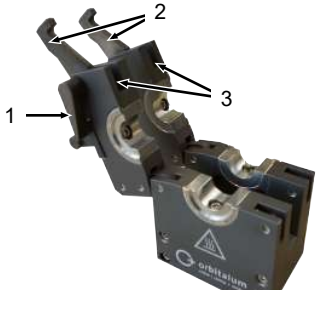
NOTICE!

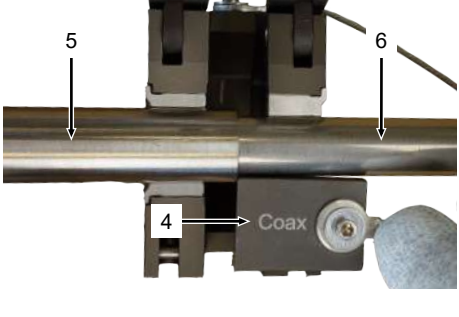
Ensure that the hose centering gage "COAX" is used and not "Standard". Otherwise the hoses cannot be centrally aligned.

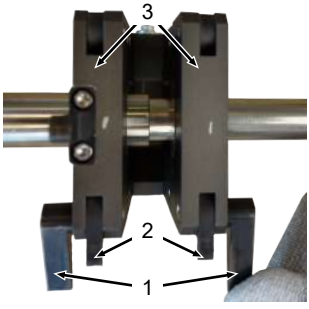
INFO

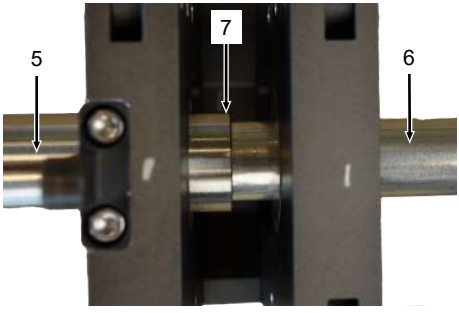
The electrode must be positioned exactly above the hose end (7) of the workpiece with the larger diameter (5).

1. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
2. Open both swivel brackets (3).
3. Insert the hose centering gage "COAX" (4) (see note above).
4. Insert **workpiece 1** (5), this means the hose piece with the **larger** diameter, up to the stop for the hose centering gage "COAX" (4) (see information below).
5. Remove the hose centering gage (4).
6. Insert **workpiece 2** (6), this means the hose piece with the **smaller** diameter, and slide it approx. 5 - 10 mm (0.197" - 0.394") into workpiece 1 (5) (see information below).
7. Close both swivel brackets (3) again.
8. Close the swivel bracket lock (2) and clamping lever (1) again to attach the workpiece.



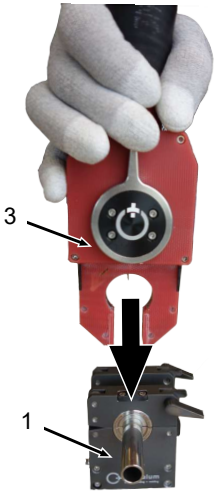


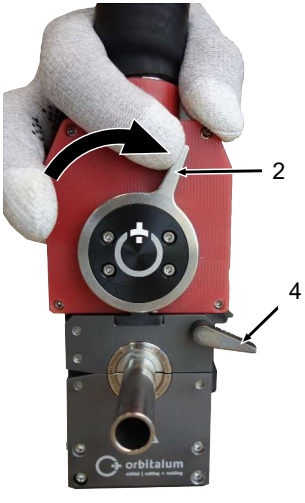




8.7 Mounting the weld head in the clamping cassette

1. Position the clamping cassette (1) flat on the supporting area.
2. Bring the rotating tension handle (2) at the weld head (3) into the open position.
3. Insert the weld head (3) into clamping cassette (1) and lock.
4. Lock the rotating tension handle (2) again.
5. Lock the clamping lever (4) of the clamping cassette.





8.8 Carry out the gas and cooling liquid function test

1. Press the “**GAS**“ button to start the function test of the gas and cooling liquid supply.
2. At the initial operation or if the weld head is not filled, wait 1 minute until the weld head is filled with cooling liquid.
3. If necessary, repeat the procedure until the error message "Coolant or gas shortage" does not appear anymore.
4. Press the “**GAS**“ button to terminate the function test.
5. Check the coolant level of the welding power source and refill if necessary (*see* operating instructions for the welding power source).

8.9 Connect the accessories

WARNING

Danger presented by using accessories that have not been approved.

Various injuries and damage to property.

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

► Connect suitable accessories.

► *See* "Orbital Welding" product catalog for a comprehensive overview of suitable accessories.

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8.10 Configure the welding procedure

► Configure the welding procedure in accordance with the operating instructions of the welding power supply.

8.11 Calibrating the motor

If several weld heads of the same type are in use, Orbitalum Tools GmbH recommends that the motors be calibrated before use. The calibration of the motors ensures that saved programs on all the weld heads produce the same result.

► Calibrate motors in accordance with the operating instructions for the welding power supply.

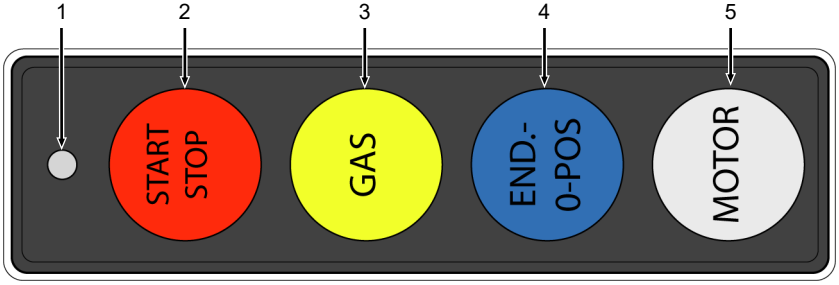
⇨ The weld head is ready to use.

8.12 Dismantling clamping inserts and clamping cassettes

Perform the work steps described in *chapt.* Mounting clamping inserts [▸ 44] and *chapt.* Mounting the weld head in the clamping cassette [▸ 51] in the reverse order.

9 Operation

9.1 Operator button panel



POS.	CONTROL ELEMENT	FUNCTION
1	**LED**	• Flashes red in the ready-to-weld state.
		• Lights up continuously red during the welding process.
2	**START/**	• Pressing once: Starts the welding process.
	STOP	• Press during the welding process: Welding process is stopped and gas post purge time is started.
		• Press during the gas post purge time: Gas post purge time and cooling are stopped.
3	**GAS**	Pressing once: Function test of the gas and cooling-liquid supply is started.
		• Pressing again: Function test is terminated.
		• Pressing and holding the key in welding mode or in test mode of welding power supply: Mode is switched.
4	**END.-0-POS**	• Pressing and holding: The rotor rotates until it has reached its "0-position" home position.
		• Pressing once: Welding process aborts through controlled lowering. After the arc has extinguished, the gas post purge time is activated.
5	**MOTOR**	• Pressing and holding: Rotor can be moved manually, for example to set up the electrode or to check the electrode position.

9.2 Setting the welding parameters

► *See operating instructions for the welding power source.*

9.3 Welding

Prerequisite: Welding power supply connected and ready to operate.

DANGER

Electromagnetic fields arise during the welding process.

► The plant operator must configure the workplaces in accordance with the EMF Directive 2013/35/EU in such a way that there is no danger whatsoever for the operator or persons in the vicinity of the welding system.

DANGER

If the argon share in the air rises above 50%, lasting damage or risk of death can arise through suffocation.

► Ensure sufficient ventilation in rooms.

► If necessary, monitor the oxygen level in the air.

WARNING

UV and infrared radiation arises during the welding process.

Damage to skin and eyes.

► Close the clamping unit completely.

► Immediately replace defective clamping inserts that do not fit exactly.

WARNING

Thermal problems can arise in the case of incorrect positioning of the forming system or the use of impermissible materials in the welding area.

In the worst case a fire will be started.

► Observe the local general fire protection measures.

WARNING

Poisonous vapors and substances during the welding process and handling of the electrodes!

Health problems, including cancer.

► Use extraction devices in accordance with the professional association's regulations (e.g. BGI: 7006-1).

► Extra caution is required with chrome, nickel and manganese.

► **Do not** use electrodes containing thorium.

1. Press the "**END.-0-POS"** button to move the rotor to the 0 position.
2. Press the "**START/STOP"** button to start the welding process.

3. Observe the welding process.

⇨ The welding process ends automatically after the gas post purge time has expired.

⇨ The electrode returns automatically to the 0-position.

10 Maintenance and troubleshooting

10.1 Instructions for care

CAUTION

The use of cleaning agents may cause sensitization.

► Wear protective clothing to prevent contact with cleaning agents.

► **Do not** use lubricants or sliding agents.

► Ensure that dirt particles or small items **do not** get into the transmission (head inside) (the transmission is open at the head end for design reasons).

► If the surfaces are soiled, use only residue-free cleaning agents for cleaning.

► Clean the welding chamber, rotor, basic body and remove residues. Depending on the soiling by using, for example, a wipe/alcohol/isopropyl, cleaning fleece or vacuum cleaner (do not use aggressive cleaning agents since the surfaces might be damaged otherwise).

10.2 Operating and cooling phases

CAUTION

The weld head is designed for continuous operation. During longer use diverse machine parts can become very hot, though, and be damaged by this!

Damage to machine parts.

► Always let hot machine parts cool down before touching.

NOTICE!

► For continuous work with the ORBIWELD 17, we recommend the usage of a 2nd clamping cassette. The clamping cassette which is not being used can cool down (possibly on a heat-dissipating surface, such as, for example, a suitable metal plate) while you can keep working with the second clamping cassette.

10.3 Wartung und Pflege

The following instructions for care depend, if not stated otherwise, strongly on the usage of the weld head.

Shorter cleaning intervals influence the equipment service life positively.

INTERVAL	RESPECTIVE COMPONENT	ACTIVITY
Before every use	Weld head, hose package	► Check for damage and ease of operation of all parts (e.g. defective functional surfaces, leakages, cracks, defective screw heads, etc.).
	Weld head	► Perform motor calibration (permissible tolerance of the TARGET speed of rotation: < 2 %), see operating instructions of the Orbital welding power source.
	Remote control	► Check the keys for functionality.
	Clamping cassette	► Check the lock and clamping mechanism for ease of use, function and clamping.
	Rotor	► Check the correct home setting ("0 position"): The rotor must be completely covered by the enclosure.
	Rotor / electrode	► Check the correct electrode position/rotor setting before each welding. To avoid arcing the rotor must be in the "0 position" before each welding.
	Electrodes 0.5 mm – 1.15 mm (0.020 in – 0.045 in)	► Ensure the correct electrode gap (*see chap.* Determining the electrode length and electrode gap [▶ 40]
		► Only use cleanly partially ground quality electrodes. Recommendation: Type WS2, grinding angle 22.5° (*see chap.* Grinding electrode [▶ 64]).

INTERVAL	RESPECTIVE COMPONENT	ACTIVITY
Before every use	Protective gas for welding	► Only use protective gases that are classified for the TIG welding process according to EN ISO 14175 (e.g. Argon 4.6 or purer protective gas for welding).
		► Set the flow rate: 10 – 20 l/min.
		► Set the gas pre-flow time to at least 30 seconds, with flow force to at least 15 seconds.
	Coolant pump*	► To ensure efficient cooling of the head, also between the welding processes: Activate the "pump follow-up time" at the power source (see operating instructions for the orbital welding power source).
	Workpiece/hose	► Ensure a straight hose cut of 90° (with Orbital hose saw) (burred and planed).
		► I-seam (hose-to-hose) without gap or axle offset.
		► Hose surfaces have to be metallically bright and completely free of greases and other soiling.
Every 100 weldings or daily	Welding chamber (clamping cassette), rotor, basic body	► Clean and remove residues. Depending on the soiling, by using, for example, a wipe/alcohol/isopropyl, cleaning fleece or vacuum cleaner (**do not** use aggressive cleaning agents, as the surfaces might be damaged).
		► Wipe out the rotor with a lint-free cotton cloth. **CAUTION Attention: Danger due to rotating rotor!**
Min. every 500 weldings or every week	Weld head	► Perform the standard cleaning procedure (*see chap.* Standard cleaning process [▸ 60]) Standard cleaning process). A shorter cleaning interval can prolong the service life of the weld head, the clamping cassettes and the clamping inserts.
Min. every 30,000 weldings or every 24 months	Weld head	► Send in weld head to Orbitalum service for basic cleaning or have cleaning performed by an authorized expert trained by Orbitalum.
Every 2 years	Hose package/power and coolant cables*	► Have it replaced by certified Orbitalum service center.

** Only OW17 with liquid cooling*

10.3.1 Standard cleaning process

DANGER

The rotation movement of the rotor can cause hair, jewelry or clothes to be caught and pulled into the enclosure.

- ► Wear tight-fitting clothes.
- ► Do not wear open hair, jewelery or other accessories that can be easily drawn in.

CAUTION

Risk of crushing due to unexpected start of the rotor when setting up the electrode.

Risk of crushing of hands and fingers!

- ► Before connecting the weld head and before mounting the electrode: Switch off orbital welding system.
- ► Before moving the rotor with closed weld heads, fit clamping cassette or clamping inserts and close clamping unit and flip cover.

NOTICE!

Cleaning work on the welding tongs may only be carried after it has cooled down completely!

NOTICE!

Cleaning of the welding tongs should be carried out at least every 500 welding processes. Shorter cleaning intervals influence the equipment service life positively.

Required cleaning materials:

- Compressed-air vacuum unit or vacuum cleaner
- Nylon brush
- Lint-free cotton cloth
- Contact spray cleaner (e.g. LOCTITE 7039). Observe safety data sheet of the spray cleaner used!

Preparation:

1. Ensure that the Orbital welding power source is switched on.
2. Remove electrode if necessary (*see chapt.* Set up the electrode).
3. Move the rotor into the basic setting (0 position) (e.g. by pressing the key "END.-0-POS" in the control panel at the weld head).
4. Dismantle clamping cassette and clamping inserts (see chapt. Mount clamping inserts).

Coarse cleaning procedure:

1. Spray the rotor (1) with contact cleaner spray. Let the rotor revolve once by 360° while spraying (press the **MOTOR** button).

2. Spray all of the exterior and interior surfaces of the clamping cassette (2), swivel bracket (3) and the clamping inserts (4) with contact spray cleaner.
3. Then remove coarse dirt from the rotor (1), weld head interior (5), clamping inserts and the entire clamping cassette using a nylon brush.
4. Vacuuming of the carbon-like deposits by using a compressed-air vacuum unit or vacuum cleaner.

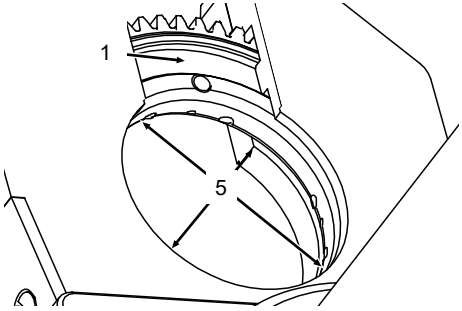
Fine cleaning procedure:

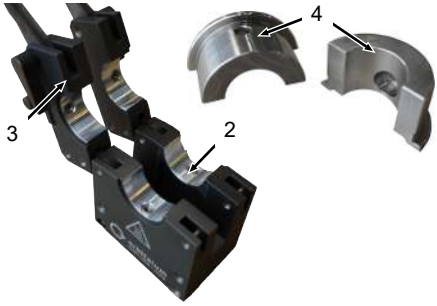
CAUTION **The use of lubricants can severely influence the function and cause damage.**

► Never spray lubricant **into** the welding tongs!

1. Spray the rotor (1), weld head interior (5) as well as the complete clamping cassette and the clamping insert again thoroughly using the contact cleaner (in particular the 2 front surfaces of the rotor).
2. Fine cleaning of all treated surfaces with a lint-free cotton cloth.
3. Vacuuming of the carbon-like deposits by using a compressed-air vacuum unit or vacuum cleaner.
4. Wipe both front surfaces of the rotor clean using a lint-free cotton cloth. Apply the cloth only at a complete standstill of the rotor.

   ⇨ If necessary, repeat steps 5 to 12 (coarse / fine cleaning).
5. Let cleaning agents evaporate completely.
6. Remount the clamping cassette and clamping inserts.





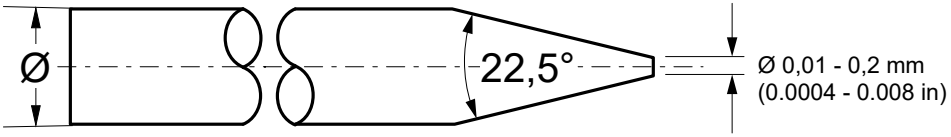
10.4 Troubleshooting

PROBLEM	POSSIBLE CAUSE	REMEDY
Welding process does not start.	No gas and cooling liquid supply.	► Check the connections at the welding power supply.
		► Check the coolant level at the power source.
		► Check the forming gas supply and forming gas quantity.
Weld head does not clamp correctly on the workpiece.	Workpiece outside the tolerance range.	► Use adapted clamping inserts.
Continuously large and constantly different speed deviations.	Defect at power supply or on weld head.	► Contact Service.
Arc does not ignite.	Excess electrical resistance arising from soiling between the weld head and the clamping inserts/clamping cassette and workpiece.	1. Clean the workpiece and clamping insert. 2. Clean the contact surfaces between the weld head and clamping inserts/clamping cassette and workpiece to clamping jaw/clamping cassette.
	Workpieces soiled.	► Clean the workpiece.
	Forming gas concentration too low.	► Check the forming gas supply and forming gas quantity.
	Electrode distance too large.	► Set the electrode distance. (*See chapt.* Set up the electrode)
	Electrode tip worn.	► Regrind the electrode. (*See chapt.* Grinding electrode [▶ 64])
	Contact fault between electrode and rotor.	► Clean the head again.
	Cable break.	► Replace the hose package.
	Conductivity of the cooling liquid too high.	► Use only Orbitalum cooling liquid OCL-30.

PROBLEM	POSSIBLE CAUSE	REMEDY
Arc tends to one side.	Electrode worn.	► Regrind the electrode. (*See chapt.* Grinding electrode [▷ 64])
	Electrode ground incorrectly.	► Regrind the electrode. (*See chapt.* Grinding electrode [▷ 64])
	Poor electrode quality.	► Use Orbitalum electrodes.
	Bad material quality.	► Sulfur content too high or different.
		► Inhomogeneous alloy components.
Arc ignites against parts of the weld head.	Electrode worn.	► Replace the electrode.
	Electrode ground incorrectly.	► Set the electrode distance.
	Poor electrode quality.	► Clean the weld head.
	Gas pre-purge time too short.	► Increase the gas pre-purge time.
	Electrode not installed.	► Install electrode.
No menu appears on the display.	Control line plug.	► Check for tight seat.
	Power source software version.	► Perform SW/MW software update.
	Power source type.	► Function only compatible with SW/MW power supplies.
Rotation movement does not start.	Fuse overloaded.	► Let the fuse cool down (thermal fuse).
	Foreign matter in the transmission.	► If possible, remove the foreign matter by means of a vacuum unit. Otherwise send the weld head to the Service. Under no circumstances let the rotor rotate.
	Connection faulty.	► Check the plug and welding power supply.

10.5 Grinding electrode

1. Grind the electrode only in the longitudinal direction.
2. After the electrode has been ground, break the tip in accordance with the following sketch.



10.6 Service/Kundendienst

The following data are required to order spare parts:

- Machine model: (example: OW17)
- Machine No.: (See type plate)

► For ordering spare parts, see the spare part list.

► Contact your local branch directly in order to eliminate problematic situations.

11 Storage and decommissioning

Carry out the following steps before storage:

1. Remove the electrode.
2. If appropriate, remove the clamping inserts.
3. Disconnect the weld head from the welding power supply.
4. Pull the end caps for cooling liquid over the cooling liquid connections*.
5. Store the weld head in the transport case. Ensure that the hose package is not twisted or squeezed.

Carry out the following steps additionally before longer storage periods:

1. Remove the coolant completely from the hose package and the weld head*.
2. Clean the surfaces, *see chapt.* Instructions for care [▶ 57].

** Only OW 17 with liquid cooling*

12 Accessories (optional)

WARNING

Danger presented by using accessories that have not been approved.

Various injuries and damage to property.

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

INFO

Clamping cassettes and clamping inserts are not included in the scope of delivery but are absolutely necessary for the insert and have to be ordered separately.

► See product catalog "Orbital Welding" for a comprehensive overview of suitable accessories.

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► Connect suitable accessories, see operating instructions of accessories.

12.1 Clamping cassette for OW17

The clamping cassette is made of stainless steel and delivered in a robust, lockable plastic box, including accessories:

- 1 x hose centering gage for standard applications
- 1 x 3/32" hexagon wrench
- 1 x 1/16" hexagon wrench
- 1 x plastic box
- 1 x cassette alignment gage

Suitable clamping inserts for different tube diameters must be ordered separately.

12.2 COAX sleeve application set for OW 17

COAX sleeve application set for OW 17

Extension set for COAX double wall pipe sleeve applications – fillet welding sleeve on safety pipe.

For sleeve Ø 15.88 mm (5/8").

Scope of delivery:

- 1 x hose centering gage for COAX sleeve applications
- 1 x clamping insert for OW17, 15.88 mm/0.625”

Clamping insert for safety pipe must be ordered separately.

ARTICLE	CODE	KG
Application set OW17 COAX sleeve 15.88mm	817060025	0,999

12.3 Clamping inserts for OW17

- Made of stainless steel.
  Can only be used when clamping cassette OW17 and other common or compatible clamping cassettes are used.
- 1 clamping insert consists of 2 half shells.

► Per clamping side of the clamping cassette you require 1 clamping insert (= 2 half shells).

► Thus you have to use 2 clamping inserts (=4 half shells) per clamping cassette.

VERSION	PIPE OD [MM]	PIPE OD [INCH]	VERSION	PIPE OD [MM]	PIPE OD [INCH]
Inches	3.18	0,125	Metric	3.00	0,118
	4.76	0,188		4.00	0,157
	6.35	0,250		5.00	0,196
	7.94	0,313		6.00	0,236
	9.53	0,375		8.00	0,314
	12.70	0,500		9.00	0,354
	14.29	0,563		10.00	0,393
	15.88	0,625		11.00	0,433
	Other diameters upon request.			12.00	0,472
				14.00	0,551
				15.00	0,590
				16.00	0,629
				17.20	0,677

12.4 Hose package extensions

Using the hose package extension the hose package can be extended by up to 20 m (64 ft) .

Fitting for all weld heads of Orbitalum, with exception of the AVC/OSC versions of the ORBIWELD TP series.

The weld current connection adapter set may be required for use with older Orbitalum welding power supplies and heads with green Superior connections. Newer machine models are already equipped with DINSE-compatible connections.

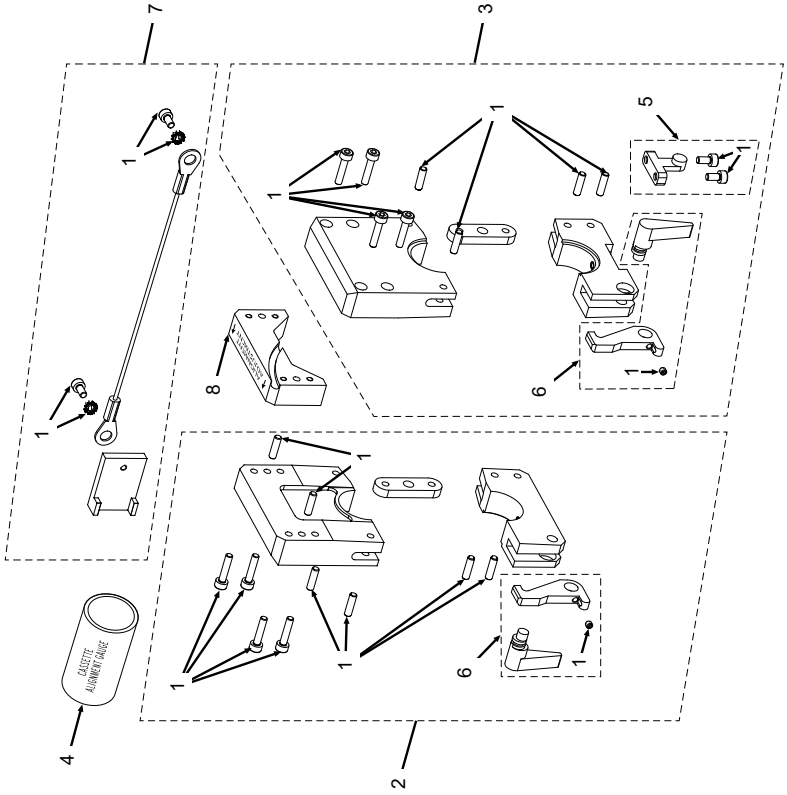
ITEM	LENGTH [M]	LENGTH [FT]
Hose package extension 5 m/16 ft	5	16
Hose package extension 10 m/32 ft	10	32
Hose package extension 15 m/49 ft	15	49
Hose package extension 20 m/64 ft	20	64
Special hose package OW 19 (WB) 23 m/75 ft	23	75

Further lengths on request.

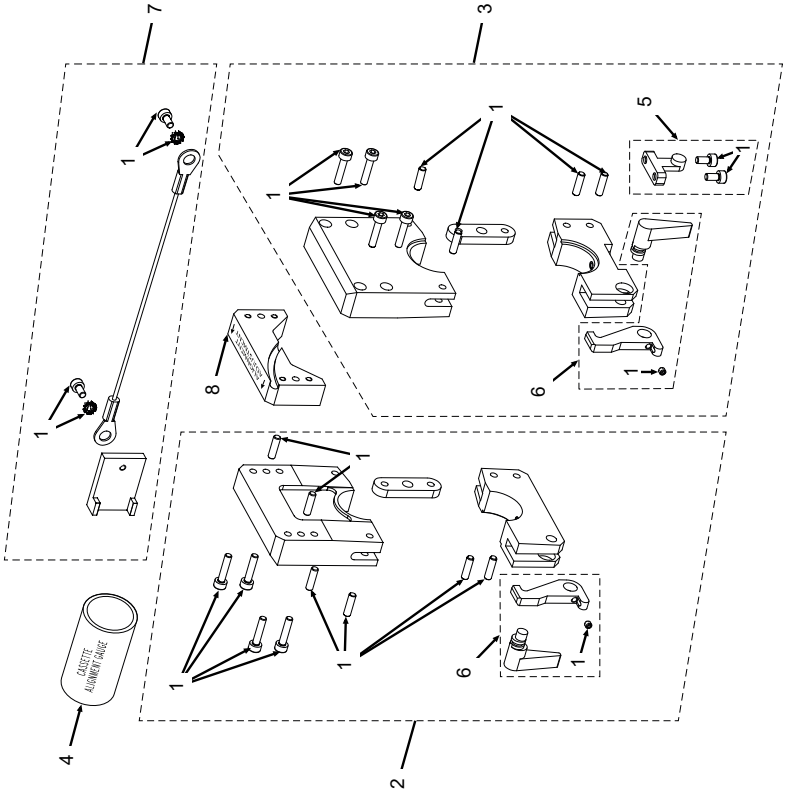
13 ERSATZTEILLISTE / SPARE PARTS LIST

13.1 Schweißkopf komplett | Weld head complete

13.2 A: Spannkassette | A: Clamping cartridge

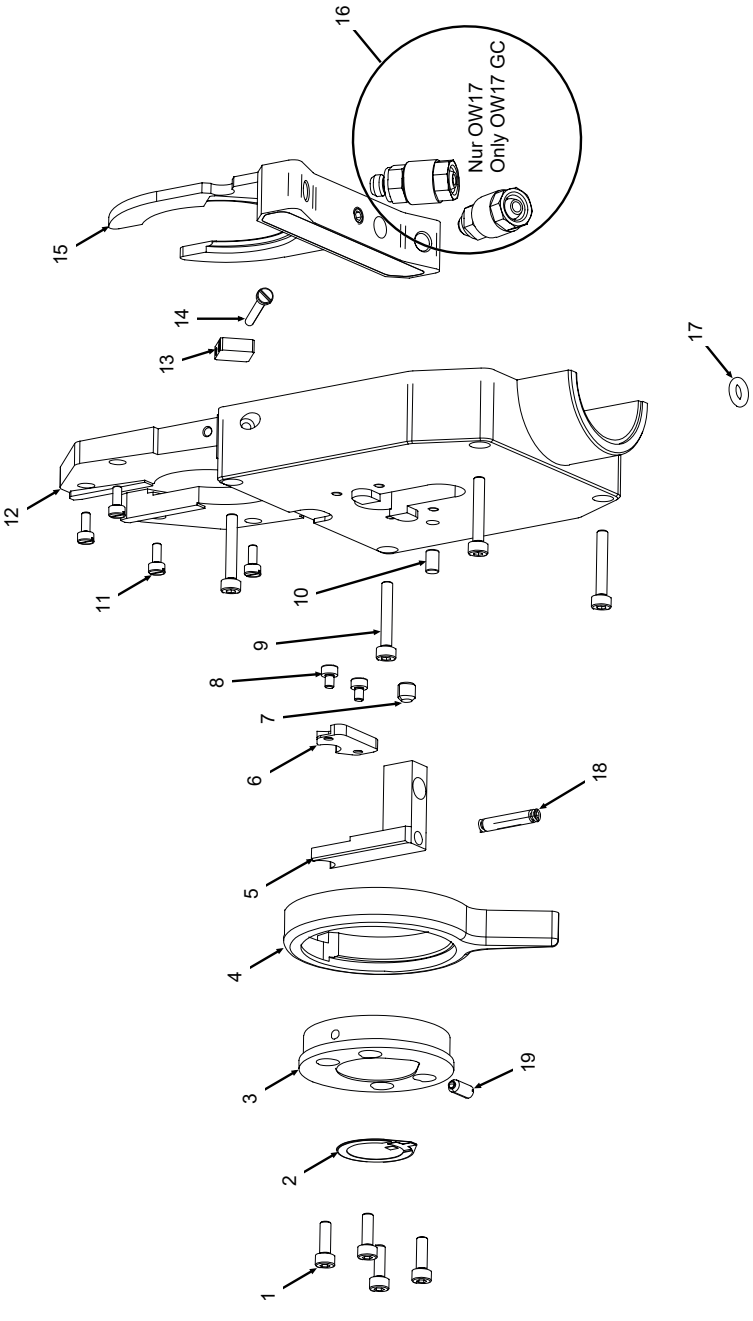


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	817 060 015	1	Normteile-Set Kassette bestehend aus: Standard parts set cassette consisting of:	2	817 050 011	1	Seitenplatte links kpl. OW17 Side plate, left cpl. OW17
			3 ST Fächerscheibe DIN6798-A3.2-FST 3 PC Serrated washer DIN6798-A3.2-FST	3	817 050 012	1	Seitenplatte rechts kpl. OW17 Side plate, right cpl. OW17
			9 ST Zyl.-S. SHCS4-40 UNC x 3/16"-A2 9 PC Cyl. s. SHCS 4-40 UNC x 3/16" -A2	4	817 002 013	1	Kassetten Ausrichtlehre OW17 Cassette alignment gauge OW 17
			11 ST Zylinderstift 1/8" x 7/16"-A2 11 PC Cylinder pin 1/8" x 7/16"-A2	5	817 060 016	1	Ersatzteile-Set Kassette Fixierung Spare parts set cassette fixation
			7 ST Zyl.-s. SHCS 4-40 UNC x 1/4"-A2 7 PC Cyl. s. SHCS 4-40 UNC x 1/4"-A2	6	817 060 017	1	Ersatzteile-Set Kassette Verschluss Spare part set cassette lock
			5 ST Linsens. SHCS 4-40 UNC x 1/4"-A2 5 PC Ov. H. s. SHCS 4-40 UNC x 1/4"-A2	7	817 050 009	1	Rohrmittenlehre Standard, kpl. OW17 Tube centering gauge standard, cpl. OW17
			3 ST Zyl.-S. SHCS 4-40 UNC x 3/16"-A2 3 PC Cyl. s. SHCS 4-40 UNC x 3/16"-A2		817 050 014		Rohrmittenlehre COAX kpl. OW17 Tube centering gauge COAX, cpl. OW17
			3 ST Gewindestift DIN915-M2.5x4-A2 3 PC Grub screw DIN915-M2.5x4-A2	8	817 050 017	1	Distanzplatte, Spannkassette OW17 Spacer plate, clamping cartridge OW17


7
3
1
1
5
1
1
1
8
6
1
1
1
1
1
1
6
1
CASSETTE
ALIGNMENT GAUGE
4
2

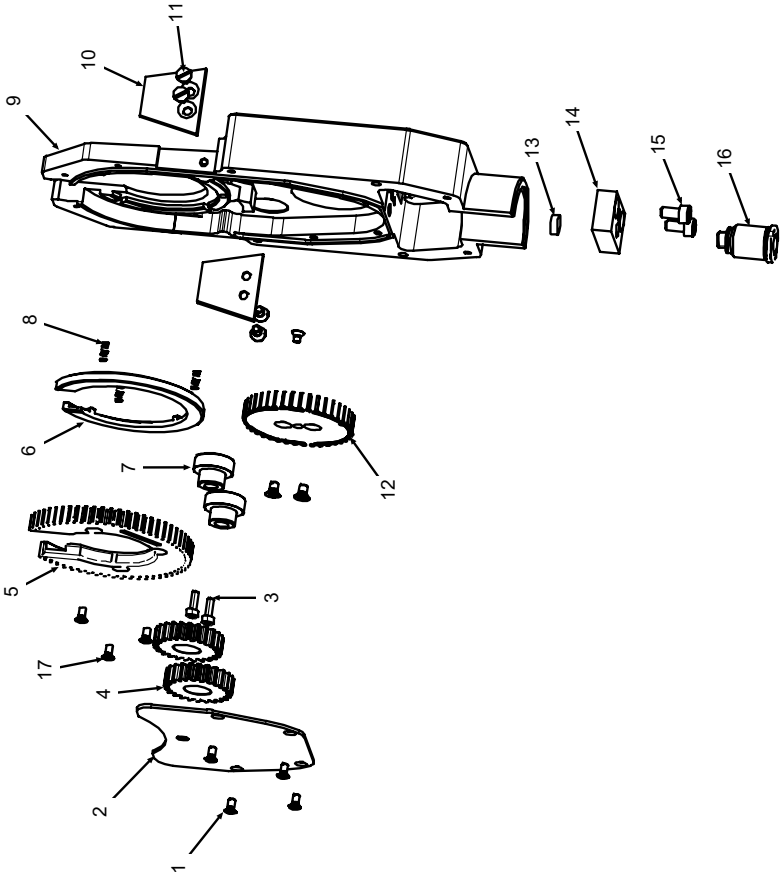
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
-	817 060 020	1	Sechskantschlüssel 3/32 Inch Hexagon key 3/32 inch
-	817 060 026	1	Kleinteile, Spannkassette OW17 Clamping cartridge OW17, Accessories

13.3 B: Gehäuseoberteil | B: Housing upper part

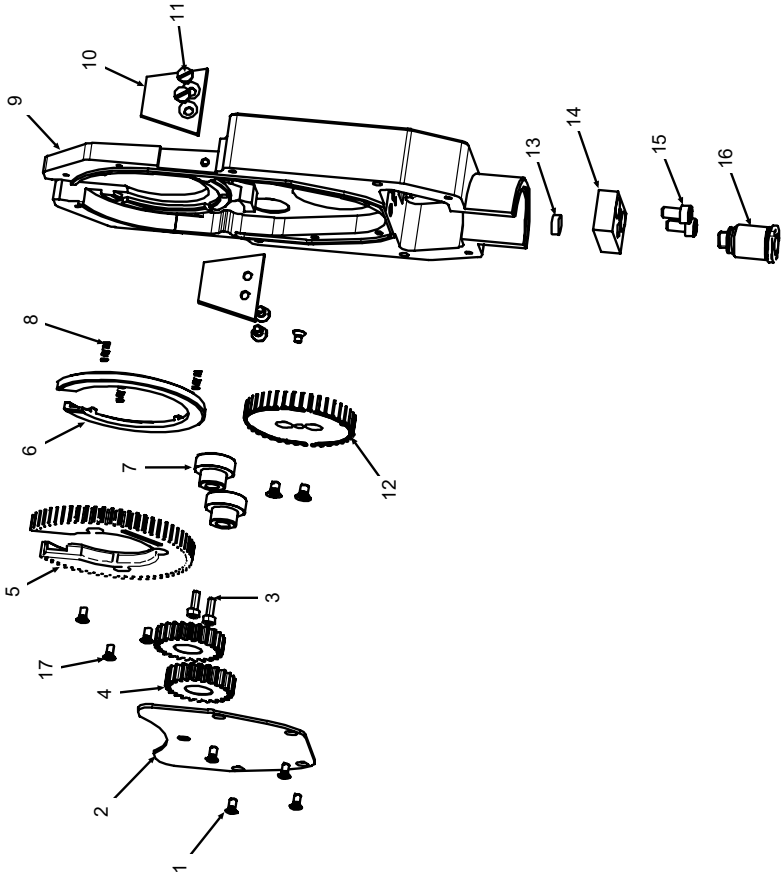


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 054	4	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2	11	817 060 008	4	Zylinderschraube ISO1207-M2x5-KS Cylinder screw ISO1207-M2x5-KS
2	817 060 012	1	Aufkleber OT Logo OW17 Label OT logo OW17	12	817 050 013	1	Grundkörper, Deckel OW17 kpl. Base body, cover cpl. OW17
3	817 007 011	1	Spannring Führung OW17 Clamping ring guiding OW17	13	817 050 008	1	Endschalter kpl. OW17 Home switch cpl. OW17
4	817 007 012	1	Drehspanngriff OW17 Rotary cocking handle OW17	14	817 060 009	1	Zylinderschraube ISO1207-M2x20-KS Cylinder screw ISO1207-M2x20-KS
5	817 007 010	1	Kontaktstück Cu OW17 Contact piece Cu OW17	15	817 050 005	1	Kühlplatte kpl. OW17 Cooling plate cpl. OW17
					817 050 031	1	Kühlplatte kpl. OW17GC Cooling plate cpl. OW17GC
6	817 007 009	1	Anschlag OW17 Stop OW17	16	882 020 006	2	Ger. Eins.-versch. ORBmax (nur OW17) Str. Scr.-in con. ORBmax (only OW17)
7	445 005 227	1	Gewindestift DIN913-M4x4-A2 Grub screw DIN913-M4x4-A2	17	826 020 004	1	O-Ring 3.35 x 1.78 O ring 3.35 x 1.78
8	305 501 084	2	Zylinderschraube ISO4762-M2x3-A2 Cylinder screw ISO4762-M2x3-A2	18	817 020 002	1	Druckfeder De 0,63x2,37xL16,5 Pressure spring De 0,63x2,37xL16,5
9	305 501 052	4	Zylinderschraube ISO4762-M2.5x16-A2 Cylinder screw ISO4762-M2.5x16-A2	19	826 020 023	1	Druckstück Spanneinsatz M3 Pressure piece clamping insert M3
10	565 808 179	1	Zylinderstift ISO2338-3M6x5-A2 Cylinder pin ISO2338-3M6x5-A2				

13.4 C: Gehäuseunterteil | C: Housing lower part



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	302 020 037	4	Senkschraube ISO7046-1-M2x4-A2 Countersunk screw ISO7046-1-M2x4-A2	9	817 007 001	1	Grundkörper, Basisteil OW17 Base body, base part OW17
2	817 007 007	1	Abdeckscheibe Antrieb OW17 Coverplate drive OW17	10	817 007 022	2	Verstärkungsrippe OW17 Reinforcing rib OW17
3	305 501 087	2	Zylinderschraube ISO4762-M2x6-A2 Cylinder screw ISO4762-M2x6-A2	11	302 000 030	4	Senks. ISO2009-M2.5x5 Kunststoff Counters. s. ISO2009-M2.5x5 plastic
4	822 008 007	2	Stirnzahnrad innen Ø8 mm Spur gear inside Ø8 mm	12	817 007 037	1	Antriebszahnrad kpl. OW17 Drive gear wheel cpl. OW17
5	817 050 016	1	Rotor inkl. 3ST 305501022 (Pos.19) Rotor inkl. 3PC 305501022 (pos.19)	13	817 020 005	1	Schweißgasausströmer D6x2 OW17 Welding gas diffuser D6x2 OW17
6	817 007 005	1	Führungsring OW17 Guide ring OW17	14	817 007 018	1	Gasanschlussplatte Antrieb OW17 Gas connecction plate drive OW17
7	817 007 003	2	Lager Zahnrad OW17 Bearing gear wheel OW17	15	305 501 071	2	Zylinderschraube ISO4762-M3x6-8.8 Cylinder screw ISO4762-M3x6-8.8
8	817 020 001	3	Druckfeder De2,2x0,2xL5,9 OW17 Pressure spring De2,2x0,2xL5,9 OW17	16	817 020 011	1	Steckverschraubung QSM-M5-6-I Push-in fitting QSM-M5-6-I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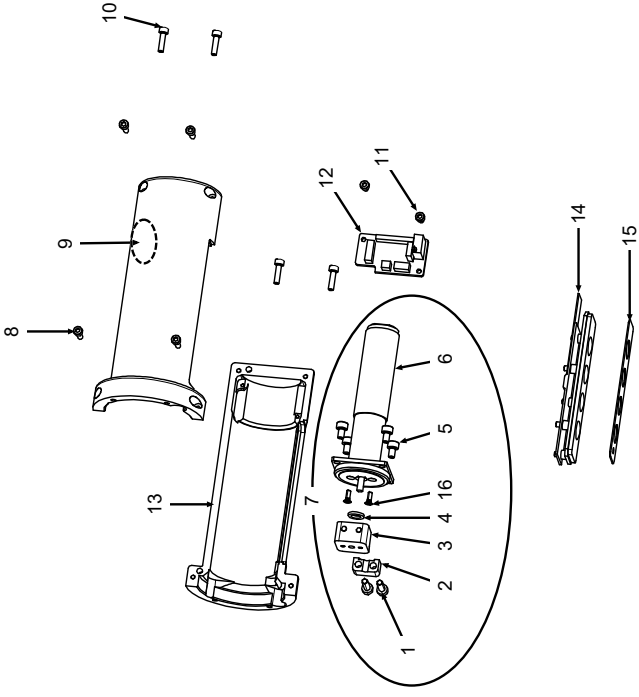
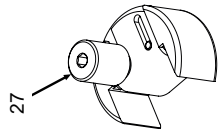
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
17	305 501 022*	3	Senkschraube ISO14581-M2x4-A2-TX Countersunk screw ISO14581-M2x4-A2-TX
	817 020 010**		Elektroden Sonderschraube OW17 Electrode special screw OW17
	445 200 170***		Gewindestift DIN913-M2.5x3-A2 Grub screw DIN913-M2.5x3-A2
* ab Serialnummern:			8177210020 8177220040
**ab Serialnummer:			8177210001 bis 8177210019 8177220001 bis 8177220043
***bis Serialnummer:			81771509

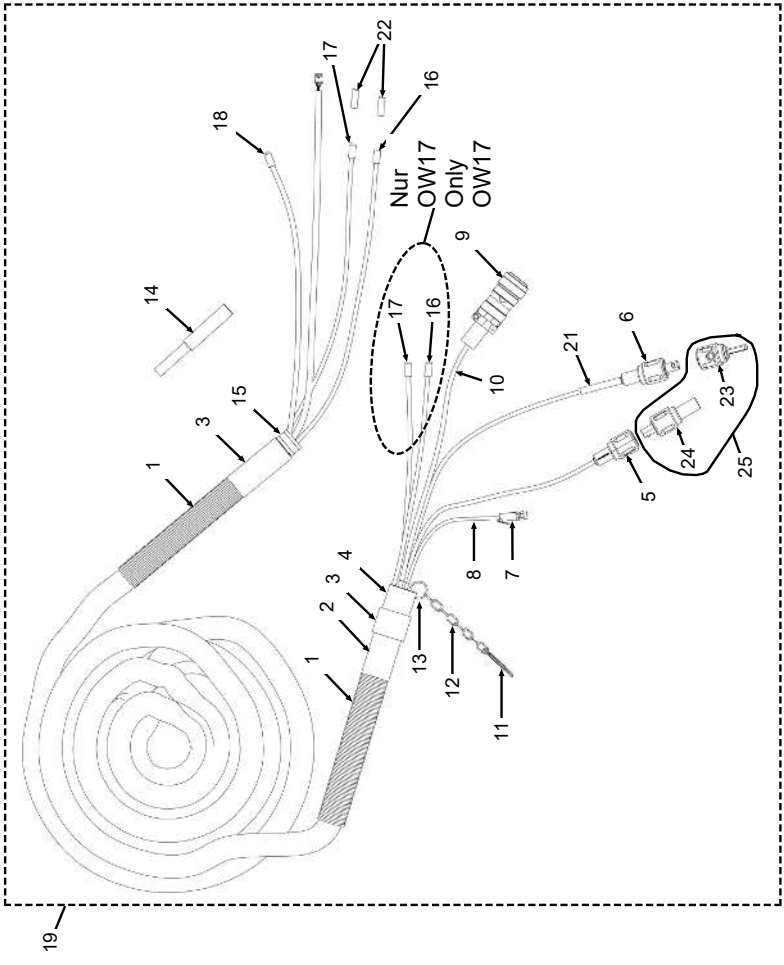
13.5 D: Griff | D: Handle



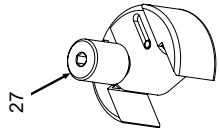
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 100	2	Zylinderschraube ISO4762-M3x10-A2 Cylinder screw ISO4762-M3x10-A2	11	305 501 053	2	Zylinderschraube ISO4762-M2.5x4-A2 Cylinder screw ISO4762-M2.5x4-A2
2	817 007 034	1	Klemmstück Nabe Antriebszahnrad OW17 V2 Clamping piece hub drive gear OW17 V2	12	821 012 001	1	Tachospannungsteiler, Platine Voltage devider, circuit board
3	817 007 035	1	Motorflansch OW17 V2 Motor flange OW17 V2	13	817 007 013	1	Handgriff links OW17 Handle left OW17
4	826 007 013	1	Motorwelle, Teflonscheibe Motor shaft, teflon washer	14	821 050 009	1	Schalterplatte OW12/17 Switch plate OW12/OW17
5	305 501 062	4	Zylinderschraube ISO4762-M3x5-A2 Cylinder screw ISO4762-M3x5-A2	15	817 007 015	1	Betätigungsschutz Schalterplatte OW17 Actuation protection switch plate OW17
6	817 050 015	1	Motor/Tachoeinheit OW17 Motor/speedometer unit OW17	16	302 000 040	2	Senkschraube ISO7046-1-M2x6-A2 Countersunk screw ISO7046-1-M2x6-A2
7	817 050 021	1	Motorflansch OW17 kpl. V2 Motor flange OW17 cpl. V2				
8	305 501 054	4	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2				
9	817 007 014	1	Handgriff rechts OW17 Handle right OW17				
10	305 501 076	4	Zylinderschraube ISO4762-M2.5x10-A2 Cylinder screw ISO4762-M2.5x10-A2				

13.6 E: Schlauchpaket & Zubehör | E: Hose package & accessories





POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	821 002 007	7,5 m	Kabelschutzschlauch, D19 mm Cable protective hose, D19 mm	11	823 020 013	1	Schlauchpaket, Karabinerhaken Hose package, snap hook
2	823 020 011	1	Kaltschrumpfschlauch D35 mm Cold-shrink tube D35 mm	12	823 005 004	1	Schlauchpaket, Befestigungskette 0.12 m Hose package, fastening chain 0.12 m
3	823 020 012	3	Kaltschrumpfschlauch D30 mm Cold-shrink tube D30 mm	13	823 005 005	1	Schlauchpaket, Schlüsselring Hose package, key ring
4	823 005 009	1	Schlauchpaket, Zugentlastung Hose package, strain relief	14	823 005 002	2	Alu-Rohr als Knickschutz Aluminum tube for bend protection
5	823 012 023	1	Strom-/Wasserkabelbuchse (m. Abfluss.) Current/water cable conn.(+water outlet)	15	821 001 025	1	Schutzhülse OW12/OW17 Protection sleeve OW12/OW17
6	823 012 024	1	Strom-/Wasserkabelstecker (m. Abfluss) Current/water cable plug (+water outlet)	16	821 012 003	1	Strom-/Wasserkabel (rot) OW12/OW17 Current/water cable (red) OW12/OW17
7	823 020 014	1	Gasstecker, Schnellverschluss 1/4" Weld connector, quick-release 1/4"	17	821 012 002	1	Strom-/Wasserkabel (blau) OW12/OW17 Current/water cable (blue) OW12/OW17
8	823 020 061	1	Teflonschlauch OW/OWS 8.5 Teflon hose OW/OWS 8.5	18	826 020 014	1	Schnellkupplung Gas Quick coupling gas
9	823 012 008	1	Amphenolstecker 24-polig, kpl. Amphenol plug 24 pin, cpl.	19	817 050 006	1	Schlauchpaket OW17 Hose package OW17
10	823 012 013	8,5 m	Steuerleitung C-PVC 12x0.14 qmm Control cable C-PVC 12x0.14 qmm		817 050 030		Schlauchpaket OW17 GC Hose package OW17 GC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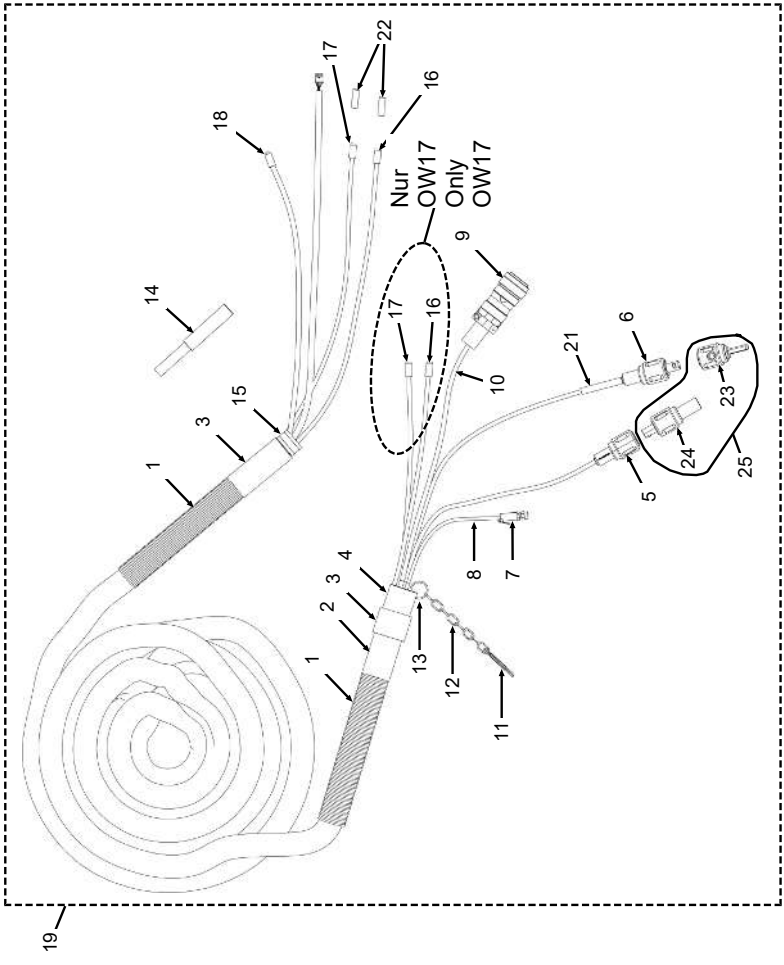
Nur OW17
Only OW17
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POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	817 030 001	1	Werkzeugset OW17 Tool set OW17
21	875 020 046	2 x 0,17 m	Schrumpfschlauch 19.0 x 9.5 Shrink tube 19.0 x 9.5
22	875 020 044	2 x 0,1 m	OW17: Schrumpfschlauch 9.5 x 4.8 OW17: Shrink tube 9.5 x 4.8
		1 x 0,17 m	OW17 GC: Schrumpfschlauch 9.5 x 4.8 OW17 GC: Shrink tube 9.5 x 4.8
23	850 030 002	1	OM Schweißstromadapter, Masse (+) OM weld current adapter, ground (+)
24	850 030 003	1	OM Schweißstromadapter, Elektrode (-) OM weld current adapter, tungsten (-)
25	850 030 004	1	OM Schweißstromadapter Set OM weld current adapter, set
26	826 030 010	1	Sicherungsschelle Schlauchpaket OWS Safety clamp hose package OWS
27	817 050 007	1	Elektrodeneinstelllehre kpl. OW17 Electrode setting gauge cpl. OW17

14 Konformitätserklärungen

ORIGINAL

de EG-Konformitätserklärung
en EC Declaration of conformity
fr CE Déclaration de conformité
it CE Dichiarazione di conformità
es CE Declaración de conformidad
nl EG-conformiteitsverklaring
cz ES Prohlášení o shodě
sk EÚ Prehlásenie o zhode
pl Deklaracja zgodności WE

CE

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78224 Singen, Deutschland
Tel. +49 (0) 77 31 792-0

Maschine und Typ (inklusive optional erhältlichen Zubehörartikeln von Orbitalum): / Machinery and type (including optionally available accessories from Orbitalum): / Machine et type (y compris accessoires Orbitalum disponibles en option): / Macchina e tipo (inclusi gli articoli accessori acquistabili opzionalmente da Orbitalum): / Máquina y tipo (incluidos los artículos de accesorios de Orbitalum disponibles opcionalmente): / Machine en type (inclusief optioneel verkrijgbare accessoires van Orbitalum): / Stroj a typ stroje (včetně volitelného příslušenství firmy Orbitalum): / Stroj a typ (vrátane voliteľne dostupného príslušenstva od Orbitalum): / Maszyna i typ (wraz z opcjonalnie dostępnymi akcesoriami firmy Orbitalum):

Orbitalschweißköpfe
(*inkl. Orbitalschweißstromquelle)
Orbital weld heads
(*incl. orbital welding power source):

- **OW 12**
- **OW 19 (HD)**
- **OW 17 (GC)**
- **OW 25 GC**
- **OW 38 S**
- **OW 76 S**
- **OW 115 S**
- **OW 170**
- **OWX 3.0**

Seriennummer: / Series number: / Nombre de série: / Numero di serie: / Número de serie: /
Serienummer: / Sériové číslo: / Sériové číslo / :Numer seryjny

Baujahr: / Year: / Année: / Anno: / Año: / Bouwjaar: / Rok výroby: / Rok výroby:

Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Richtlinien gefertigt und geprüft worden ist: / Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following standards: / Par la présente, nous déclarons que la machine citée ci-dessus a été fabriquée et testée en conformité aux directives: / Con la presente confermiamo che la macchina sopra specificata è stata costruita e controllata conformemente alle direttive qui di seguito elencate: / Por la presente confirmamos que la máquina mencionada ha sido fabricada y comprobada de acuerdo con las directivas especificadas a continuación: / Hiermee bevestigen wij, dat de vermelde machine in overeenstemming met de hieronder vermelde richtlijnen is gefabriceerd en gecontroleerd: / Tímto potvrzujeme, že uvedený stroj byl vyroben a testován v souladu s níže uvedenými směrnicemi: / Týmto potvrdzujeme, že uvedený stroj bol zhotovený a odskúšaný podľa nižšie uvedených smerníc: / Niniejszym potwierdzamy, że powyższa maszyna została wyprodukowana i przetestowana zgodnie z wymienionymi poniżej wytycznymi:

- **Maschinen-Richtlinie 2006/42/EG**
- **EMV-Richtlinie 2014/30/EU**
- **RoHS-Richtlinie 2011/65/EU**

Folgende harmonisierte Normen sind angewandt: / The following harmonized norms have been applied: / Les normes suivantes harmonisées où applicables: / Le seguenti norme armonizzate ove applicabili: / Las siguientes normas armonizadas han sido aplicadas: / Onderstaande geharmoniseerde normen zijn toegepast: / Jsou použity následující harmonizované normy: / Boli aplikované tieto harmonizované normy: / Stosowane są następujące normy zharmonizowane:

- **DIN EN ISO 12100:2011-03**
- **DIN EN ISO 13849-2:2013-02**
- **DIN EN 60204-1:2019-06**
- **DIN EN 60974-1:2018-12**
- **DIN EN 60974-2:2013-11**
- **DIN EN 50445:2009-02**

Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file: / Autorisé à compiler la documentation technique: / Incaricato della redazione della documentazione tecnica: / Autorizado para la elaboración de la documentación técnica: / Gemachtigde voor het samenstellen van het technisch dossier: / Osoba zplnomocněná k sestavení technické dokumentace: / Splnomocnenec pre zostavenie technických podkladov: / Uprawniony do sporządzania dokumentacji technicznej:

Gerd Riegraf
Orbitalum Tools GmbH
D-78224 Singen

Bestätigt durch: / Confirmed by: / Confirmé par: /
Confermato da: / Confirmado por: / Bevestigd door: / Potvrdil: / Potvrdil: / Bestätigt durch:

Singen, 06.01.2025:

Jürgen Jäckle - Product Compliance Manager

ORIGINAL

de **UKCA-Konformitätserklärung**
en **UKCA Declaration of conformity**

Orbitalum Tools GmbH
Josef-Schüttler-Straße 17
78224 Singen, Deutschland
Tel. +49 (0) 77 31 792-0

Maschine und Typ (inklusive optional erhältlichen Zubehörartikeln von Orbitalum): / Machinery and type (including optionally available accessories from Orbitalum):	**Orbitalschweißköpfe (*inkl. Orbitalschweißstromquelle) Orbital weld heads (*incl. orbital welding power source):** • **OW 12** • **OW 19 (HD)** • **OW 17 (GC)** • **OW 25 GC** • **OW 38 S** • **OW 76 S** • **OW 115 S** • **OW 170** • **OWX 3.0**
Seriennummer: / Series number:	
Baujahr: / Year:	
Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Richtlinien gefertigt und geprüft worden ist: / Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following regulations:	• **S.I. 2008/1597 Supply of Machinery (Safety)** • **S.I. 2016/1091 Electromagnetic Compatibility** • **S.I. 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment**
Schutzziele folgender Richtlinien werden eingehalten: / Protection goals of the following guidelines are observerd:	• **S.I. 2016/1101 Electrical Equipment (Safety)**
Folgende harmonisierte Normen sind angewandt: / The following harmonized standards have been applied:	• **EN ISO 12100:2010** • **EN ISO 13849-1:2015** • **EN ISO 13849-2:2012** • **EN 60204-1:2018** • **EN IEC 60974-1:2018+A1:2019** • **EN 60974-10:2014+A1:2015** • **EN 60204-1:2018**
Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file:	
Bestätigt durch: / Confirmed by:	
Singen, 06.01.2025:	Jürgen Jäckle - Product Compliance Manager

Orbitalum Tools GmbH provides global customers one source for the finest in pipe & tube cutting, beveling and orbital welding products.

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