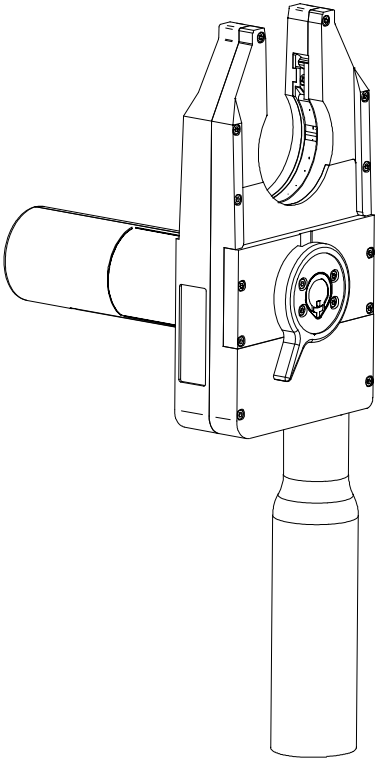
ORBIWELD 25 GC

en **Enclosed orbital weld head**

Translation of original operating instructions and spare parts list



819 060 201 REV 00 | 2024

orbitalum

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
OW 25 GC	Orbital weld head (micro weld head), gas-cooled, type "ORBIWELD 25 GC"
MW	Orbital welding power source from the Mobile Welder series
SW	Orbital welding power source from the Smart Welder series
PW	Orbital welding power source from the Power 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 special risks	Employees at particular risk (with the exception of those with active implants)	Employees with active implants
	(1)	(2)	(3)
Manual arc welding, including • MIG (Metal Inert Gas) • MAG (Metal Active Gas) • TIG (Tungsten Inert Gas) Under observance of established procedures and without physical contact with the conductor	No	No	Yes

* To Directive 2013/35/EU

2.2 Using the machine

2.2.1 Intended use

The orbital weld head is intended exclusively for the following use:

- Use in conjunction with an orbital welding power source from the Mobile Welder, Smart Welder, Power Welder, and ORBIMAT series.
- TIG welding of materials specified in this operating manual (see chapter "Possible applications").
- Empty, non-pressurized pipes that are free of contamination, explosive atmospheres, or liquids.

Only shielding gases classified for the TIG welding process in accordance with DIN EN ISO 14175 may be used.

The following points are also part of the intended use:

- Permanent supervision of the machine during operation. The operator must always be able to stop the process.
- Observe all safety and warning instructions in the operating manual and the general safety instructions for closed orbital weld heads.
- Observe the applicable documents.
- Compliance with all inspection and maintenance work.
- Exclusive use of the machine in its original condition.
- Only use original accessories, original spare parts, and original operating materials.
- Check all safety-related components and functions before commissioning.
- Process the materials specified in the operating instructions.
- Appropriate handling of all components involved in the welding process and all other factors that influence the welding process.
- Exclusive commercial use.

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! 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.

2.6 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! If you pull your hand away from the handle with a jerky motion, there is the risk of your fingers getting caught and being injured.
Dislocations and skin abrasions may be the result.

► Pull your hand and fingers away from the handle carefully.

► Do not wear any finger rings.

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! During the welding process, electromagnetic fields are generated that can be fatal to people with heart problems or pacemakers.

- ► People with heart problems or pacemakers may 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, flashbacks, and fire due to electric arcs.
An electric arc may occur if the welding contacts are loosened during operation. This may result in burns and blindness; in the worst case, a fire may be caused.

- ► Only connect and disconnect the weld head when the power source is switched off.
- ► Lay wires and cables so that they are **not** under tension.
- ► Ensure that people cannot trip over wires and cables under **any** circumstances.
- ► Attach strain relief.
- ► Check that hose package connections are secure when connecting them or before switching on the power source.
- ► Do not work near highly flammable materials.
- ► Only operate on non-combustible surfaces.

⚠	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.

CAUTION! Risk of burns, eye damage, and fire due to arc.
Loosening the welding contacts during operation may cause an arc. Burns and eye damage may result; in the worst case, the arc or dripping molten metal may cause a fire.

- ► 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.
- ► Operate only on non-combustible surfaces.

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 glare protection according to EN 170.
- ► Wear safety gloves to EN 388, Performance level 2.
- ► Wear long clothing.

2.7.7 General danger



CAUTION! General danger

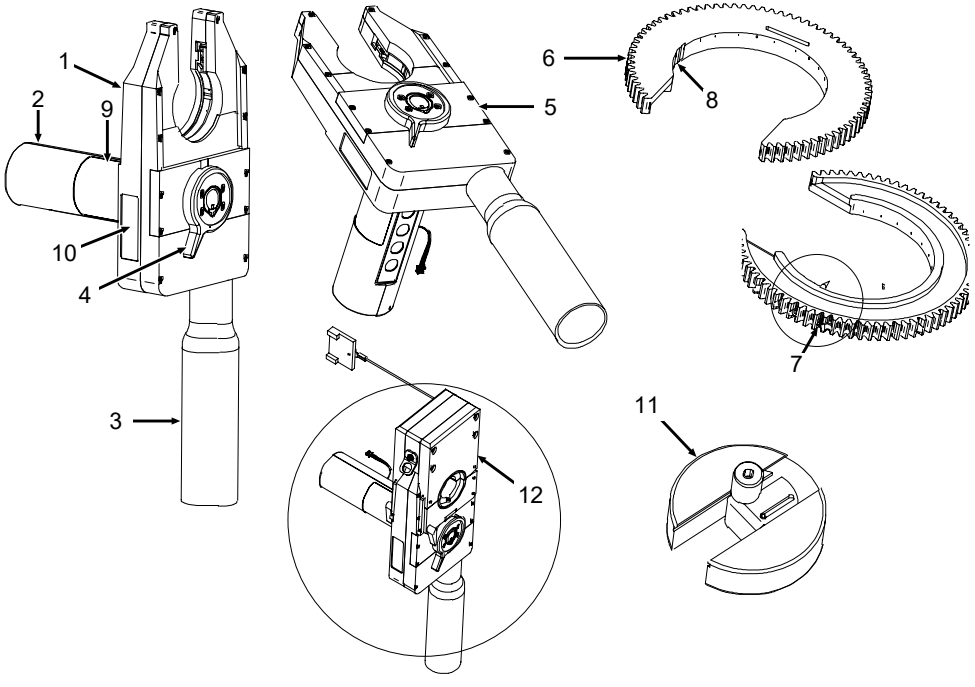
- ► In case of danger, unplug the mains plug!
- ► Accessibility to the mains plug must always be assured in order to permit disconnecting the power supply from the mains.

3 Scope of application

SCOPE OF APPLICATION		OW 25 GC
Pipe (outer diameter)	[mm]	6.0 ... 34
min. … max.	[inch]	0,236 ... 1.339
Wall thickness max.	[mm]	1.65
	[inch]	0,065
Welding process		Tungsten inert gas process (TIG)
Materials		Stainless steel, titanium
Gases		Usage solely of protective gases that are classified for TIG welding process in accordance with DIN EN ISO 14175

4 Description

4.1 ORBIWELD 25 GC



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 1.6 mm (0.063") or Ø 2.4 mm (0.094")	Inserting electrodes (*see chapt.* Setting up electrode [▶ 41]).
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 electrode (*see chapt.* Determining electrode length and electrode gap [▶ 42]).
12	Clamping cassette*	Fitting clamping inserts* (*see chapt.* Fitting clamping inserts [▶ 47]).

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

4.2 Electrode holders OW 25 GC

The OW 25 GC has 2 electrode holes for electrode diameters of 1.6 mm (0.063 in) and 2.4 mm (0.094 in).

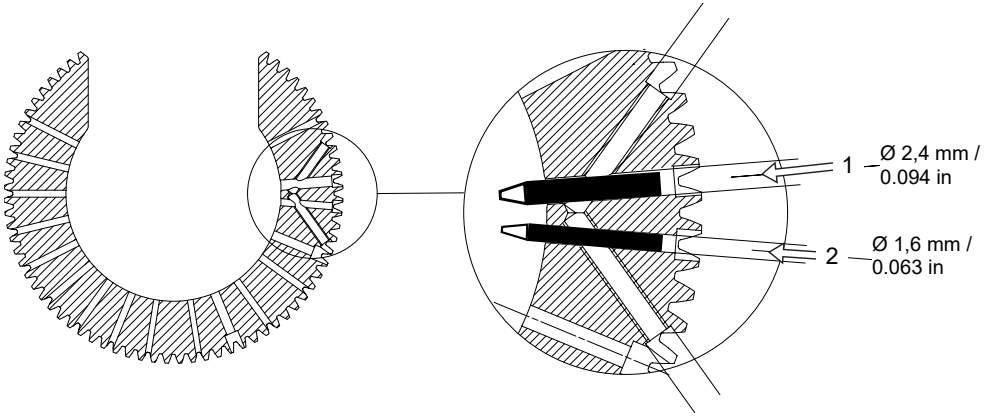


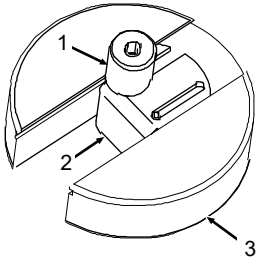
Illustration: Rotor electrode holes

1 Electrode hole Ø 2.4 mm (0.094 in)	2 Electrode hole Ø 1.6 mm (0.063 in)

Setting up electrode, see chapt. Setting up electrode.

4.3 Electrode setting gage

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

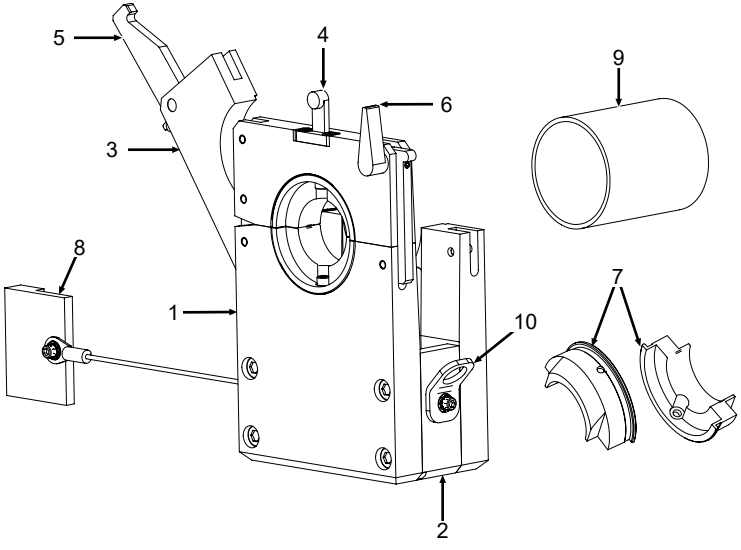


POS.	DESIGNATION
1	Knurl
2	Limit stop
3	Holder

For information on setting up the electrodes, *see chapt.* Setting up electrode [▶ 41].

4.4 Clamping cassette and clamping insert

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	Alignment of electrode and hose joint.
9	Cassette alignment gage	Alignment of cassette side plates with each other.
10	Clamping cassette drop guard eye	Mounting option for a clamping cassette drop guard (e.g. wire cable and snap hook).

5 Technical specifications

MACHINE TYPE		ORBIWELD 25 GC
Code		819 000 001
Pipe (outer diameter)	[mm]	6 ... 34
min. ... max.	[inch]	0.236 ... 1.339
electrode diameter	[mm]	1.6 / 2.4
	[inch]	0.063 / 0.094
Max. welding current	[A]	70 A (100% duty cycle)
Ignition voltage max.	[kV]	10
Max. shielding gas flow rate	[l/m]	Approx. 35
Machine weight incl. hose assembly	[kg]	6
	[lbs]	13,228
Clamping cassette weight	[kg]	1
	[lbs]	2,205
hose assembly length	[m]	7.5
	[ft]	24,606
Cooling type		Gas-cooled

5.1 Dimensions

5.1.1 OW 25 GC

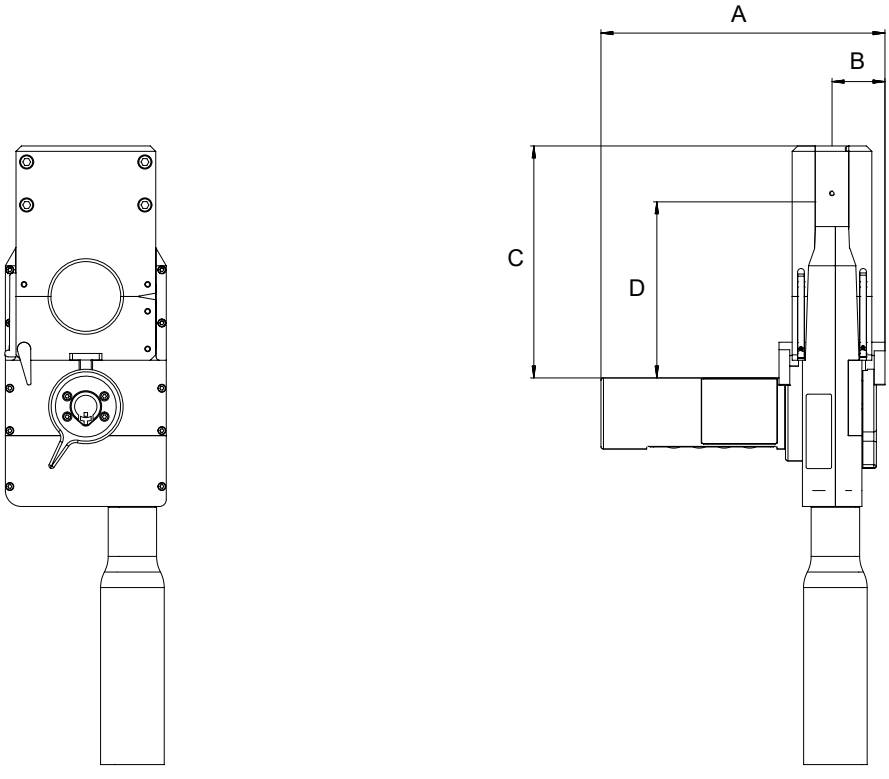


Illustration: OW 25 GC with clamping cassette

DIMENSIONS	DIMENSION	
	[mm]	[inch]
A	167.77	6,605
B	31.27	1,231
C	137.04	5,395
D	104.01	4,095

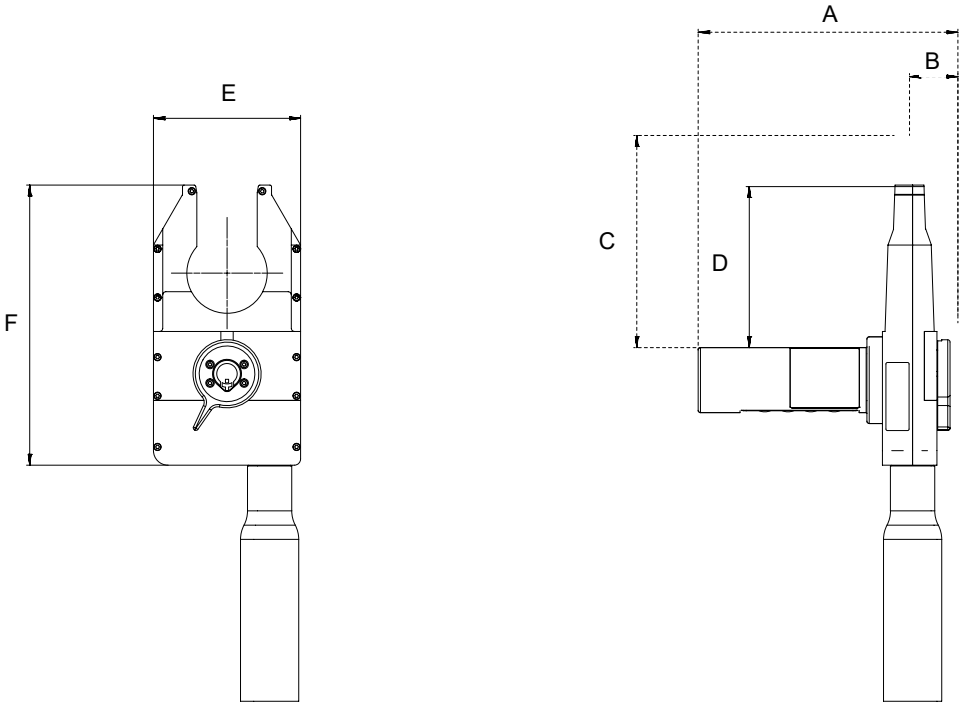
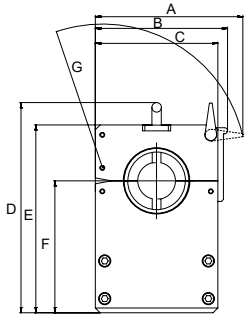


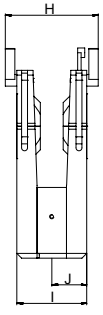
Illustration: OW 25 GC dimensions without clamping cassette

DIMENSIONS	DIMENSION	
	[mm]	[inch]
A	167.77	6,605
B	31.27	1,231
C	137.04	5,395
D	104.01	4,095
E	95	3,740
F	180.91	7,122

5.1.2 Clamping cassette for OW 25 GC

DIMENSION	[MM]*	[INCH]*	DIMENSION DRAWING
A	99.34	3,911	
B	89.1	3,508	
C	82.55	3.25	
D	141.63	5,576	
E	126.6	4,984	
F	88.91	3,500	
G	120°	120°	
H	62.54	2,462	
I	47.04	1,852	
J	23.52	0.926	





**Does not apply to angle G*

6 Transport and shipping

6.1 Gross weight

ITEM		OW 25 GC
Weight*	[kg]	13,20
	[lbs]	29.101

** 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 25 GC	819 000 001	1	PCS.
OW 25 GC tool set	819 030 001	1	PCS.
OW 25 GC electrode setting gage complete	819 050 007	1	PCS.
Hose package safety clamp OW	826 030 010	1	PCS.
OW 25 GC transport case	819 030 004	1	PCS.
General safety information for enclosed weld heads	836 060 101	1	PCS.
Operating instructions & ETL, OW 25 GC Download link PDF: https://www.orbitalum.com/de/download.html	819 060 201	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.
- ► Operate only on non-combustible surfaces.

- ► 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.
- ► Filling weld head with cooling liquid (*see chapt.* Carry out gas function test [▶ 53]).
- ► Check the weld head for loose parts and particles in the transmission.
- ► For usage in overhead position: Securing orbital weld head with drop guard (*see chapt.* Mounting safety clamp [▶ 35]).

8 Setup and mounting

CAUTION



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

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.

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 [▶ 35]
2. Connecting the weld head to the power source [▶ 36]
3. Set up the electrode [▶ 41]
4. Mounting clamping inserts [▶ 47]
5. Clamping the workpieces [▶ 48]
6. Mounting the weld head in the clamping cassette [▶ 51]
7. Attach drop guard to clamping cassette [▶ 52]
8. Carry out gas function test [▶ 53]
9. Connect the accessories [▶ 53]
10. Configure the welding procedure [▶ 53]

8.2 Mounting the safety clamp

WARNING

Falling of unsecured weld head.

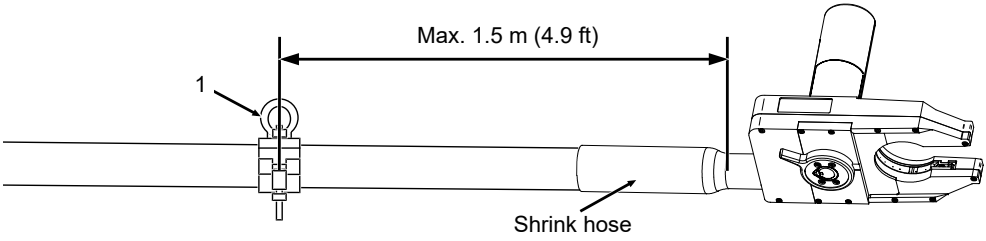
The device may drop and injure people.

- ► 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 (1) 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.
- ► Operate only on non-combustible surfaces.

CAUTION



Unintentional starting up of the weld head!

Crushing of hands and fingers.

- ► Switch off the Orbital welding power source.

CAUTION



Skin and eye injuries due to penetration of media under pressure.

In the event of a leak coolant can spray from the coolant circuit and penetrate eyes, mouth and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective coolant circuit 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.
- ► Wear personal protective equipment.

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.

Fall injuries

- ► 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



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

Risk of fall injuries.

- ► Remove leaking coolant immediately.

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!

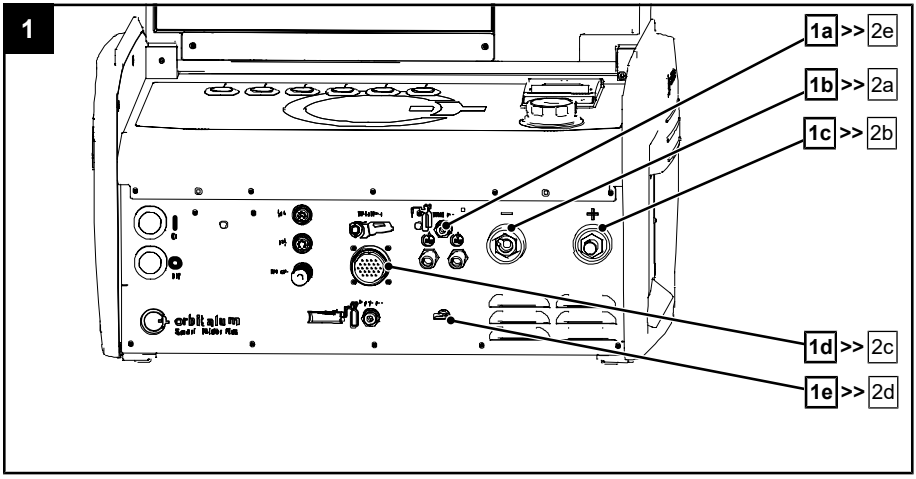
- ► Carefully sever the cable ties without damaging the hose package.

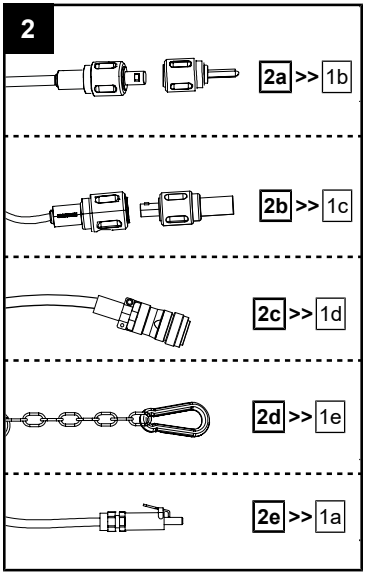
8.3.1 Connection sequence

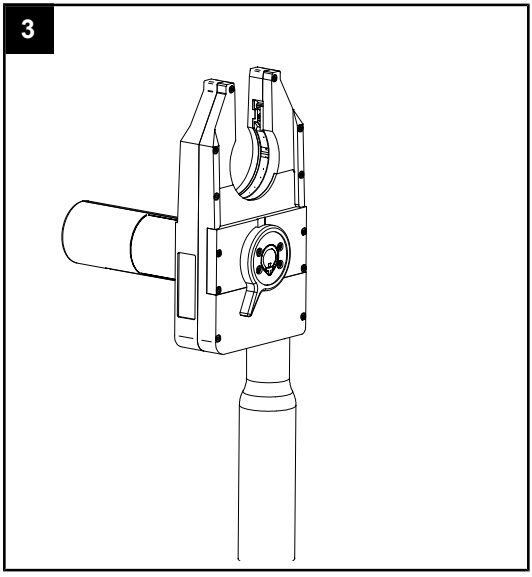
See also section Wiring diagram [▶ 39].

1. Attach the strain relief.
2. Connect the Amphenol plug.
3. Connect the welding current plug and welding current socket.
4. Connect the gas hose.
5. Switch on the welding power source.
6. Press the "GAS" button to perform a gas function test.

8.3.2 Wiring diagram







ITEM	DESIGNATION	TO BE CONNECTED WITH	ITEM
1	**power source**		
1	"Gas" socket	"Gas" plug, hose package	**2e**
1b	Socket "Welding current –" (hose package)	Plug "Welding current –", hose package, with connection adapter* if necessary	**2a**

ITEM	DESIGNATION	TO BE CONNECTED WITH	ITEM
1c	Plug "Welding current +" (ground cable)	Socket "Welding current +", ground cable	**2b**
1d	Socket "Control cable"	Plug "Control line to power source"	**2c**
1e	"Strain relief" eyelet	Carabiner "Strain relief," hose package	**2d**
2	**hose package**		
2	Plug "Welding current –"	Socket "Welding current –", power source	**1b**
2b	Socket "Welding current +"	Plug "Welding current +", power source	**1d**
2c	Plug "Control line"	Socket "Control line to power source"	**1d**
2d	Carabiner "strain relief"	Eyelets "Strain relief," power source	**1e**
2e	Plug "Gas" (quick release)	"Gas" socket, power source	**1a**
3	**Weld head, e.g., type OW 25 GC**		

8.4 Set up the electrode

The weld head contains 2 electrode holes for different electrode diameters that are identified by electrode markings on 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 supply 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.

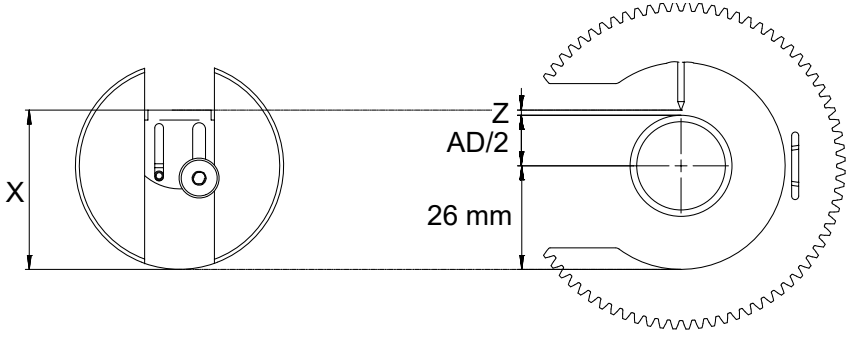
► Shorten the electrode.

INFO

The OW 25 GC weld head has 2 electrode holes for the electrode diameters 1.6 mm (0.063 in) and 2.4 mm (0.094 in) which are marked by electrode markings on the rotor (*see chapt.* Electrode holders [▶ 25]).

8.4.1 Setting the electrode length and electrode gap

Using the electrode adjustment gauge (included in the scope of delivery), a caliper (not included), and the formula listed below, you can quickly and easily adjust the required electrode length and electrode gap on the weld head.



Formula for determining the adjusting dimension X of the electrode adjustment gauge:

$$\text{Adjusting dimension (X) (electrode adjustment gauge)} = 26\ \text{mm} + \frac{\text{OD of tube}}{2} + \text{Electrode gap Z}$$

Formula for determining the electrode length Y:

$$\text{Electrode length (Y)} = \frac{82\ \text{mm} - \text{pipe OD}}{2} - Z - 3\ \text{mm}$$

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).

8.4.2 Inserting an electrode

INFO

The OW 25 GC weld head has 2 electrode holes for the electrode diameters 1.6 mm (0.063 in) and 2.4 mm (0.094 in) which are marked by electrode markings on the rotor (*see chapt.* Electrode holders [▶ 25]).

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.

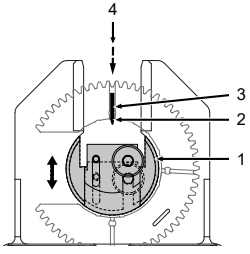
CAUTION

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.

Procedure:



1. Make sure that the orbital welding power supply 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 supply.
4. Determine the correct electrode length and set by means of the electrode setting gage (see chapt. Setting the electrode length and electrode gap [▶ 42]).
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 [▶ 66]) 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 Aligning the side plates of the clamping cassette

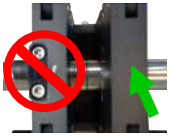
NOTICE!

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:

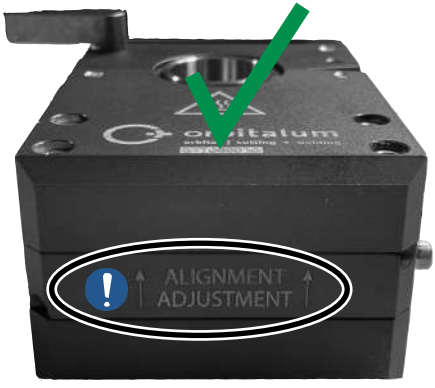
► Variant 1: with the cassette alignment gage supplied.

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

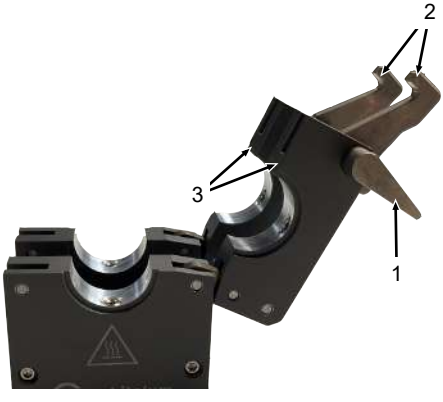
The process is shown using the example of **Variant 1**.

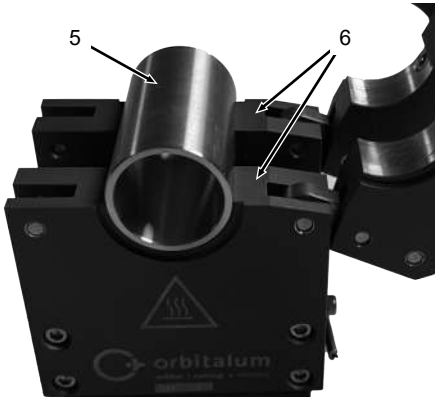
1. Open and turn down both clamping levers (1) and swivel brackets (2) to unlock the clamping cassette.
2. Open both swivel brackets (3).
3. Unscrew 4 cylinder-head screws (4) of the side plate, which is marked by the arrows on the center section, using 3/32” hexagon key.
4. Insert the cassette alignment 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) of the marked 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.









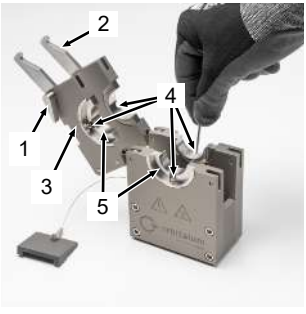
8.6 Mounting clamping inserts

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 OW 25 GC

NOTICE!

The ORBIWELD 25 GC is often used in areas of application where by default you work with tools in inch sizes. 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 [▶ 70])



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 4 hexagon screws SHS 4-40 UNCx1/4" (4) using hexagon key 3/32".
   If a clamping insert (5) is already mounted, it can now be removed.
5. Insert the clamping insert (5) with the writing facing outwards.
6. Tighten the hexagon screws (4) hand-tight with the hexagon key.
7. Close both swivel brackets (3) again.
8. Close both swivel bracket locks (2) and clamping levers (1) again.
9. Turn the clamping cassette around and repeat work steps 1 to 9.

8.7 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 pipe edges when clamping the weld head onto the pipe.

Risk of hands and fingers being cut.

- ► 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.

Risk of hands and fingers being cut.

- ► Wear safety gloves according to DIN 388.

CAUTION



Risk of burns from hot machine parts and workpiece.

Very high temperatures arise in particular after several consecutive welding processes. When working on the machine torch or the torch holder (e.g., repositioning or mounting/dismounting the electrode), there is a risk of burns or damage to the contact points. Materials not resistant to heat may be damaged upon contact with the hot machine torch.

- ► Wear safety gloves to EN 388, Performance level 2.
- ► Before working on the machine torch or transporting, wait until the surfaces have cooled down below 50 °C (122 °F).
- ► Correctly position the machine torch.
- ► Use only permissible materials in the welding area.
- ► Observe the warning signs on the hazard areas.

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.

CAUTION

Risk of injury due to the clamping cassette falling off when clamping onto the workpiece

Injuries.

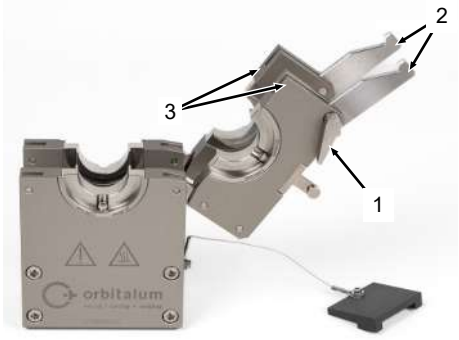
- ► Attach drop guard to clamping cassette.
- ► Make sure that no one is beneath the site of operation.
- ► Wear personal protective equipment.

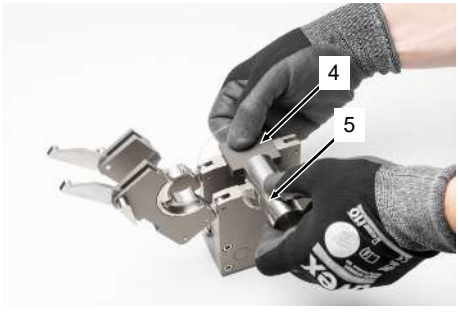
CAUTION

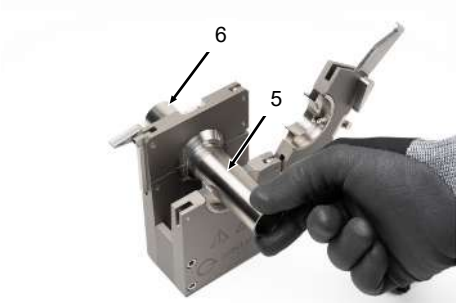
Risk of fingers being sheared between open swivel bracket and base body when closing the swivel bracket if swivel bracket closed on one side.

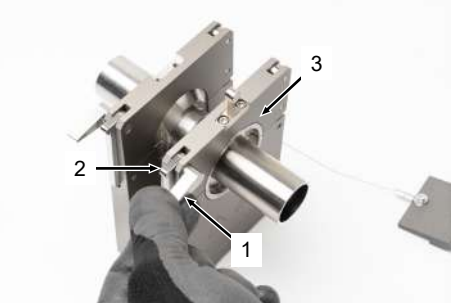
Fingers may be sheared off.

- ► Wear safety gloves according to DIN 388.









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

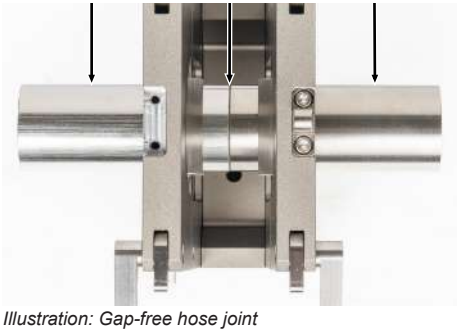


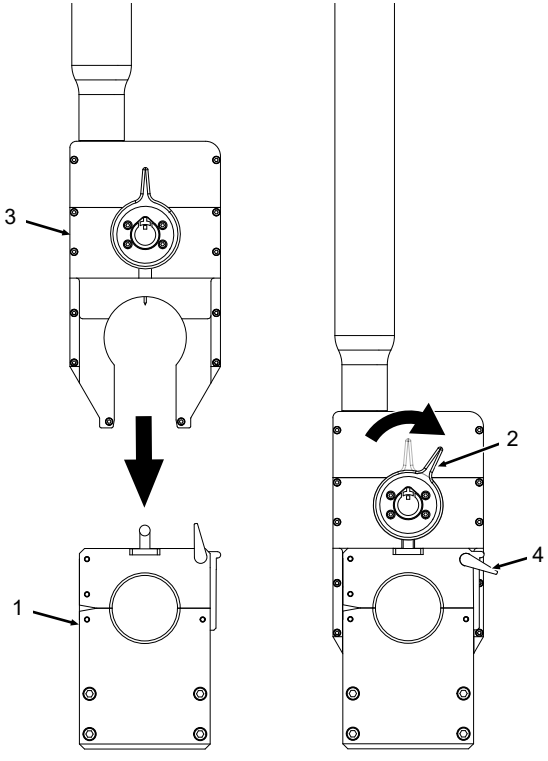
Illustration: Gap-free hose joint

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 (4) (see note above).
4. Insert **workpiece 1** (5) and insert the hose centering gage (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.

8.8 Mounting the weld head in the clamping cassette

- ✓ The clamping cassette side plates are aligned.
- ✓ Clamping cassette (1) is clamped on the workpieces.
- ✓ Clamping levers (4) of the clamping cassette are locked.

1. Release rotating clamping handle (2) on the weld head (3).
2. Insert the weld head (3) into clamping cassette (1) and lock.
3. Lock the rotating clamping handle (2).



8.9 Attach drop guard to clamping cassette

CAUTION

Risk of falling due to being startled following electric shock when working at heights.

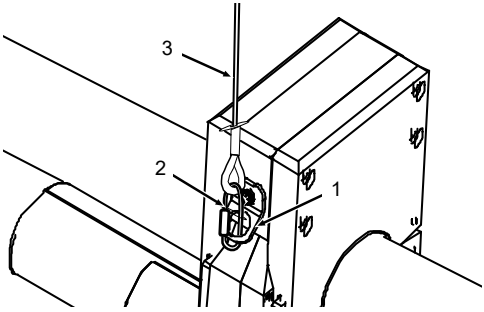
In addition to fall injuries, the weld head and, where applicable, the clamping cassette can fall off and cause injuries.

- ► 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.

Before start of work the clamping cassette must be secured against falling.

For this purpose the clamping cassette for the OW 25 GC weld head has a drop guard (1) for fastening suitable retaining elements, such as a screw carbine (2), to a wire cable (3).

- ► Connect drop guard (1), e.g. via a screw carbine (2), to a wire cable (3) secured above the workplace.



8.10 Carry out gas 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).

8.11 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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8.12 Configure the welding procedure

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

8.13 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.

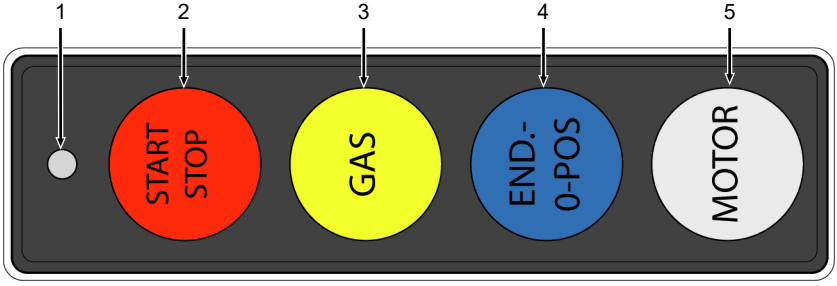
⇨ The weld head is ready to use.

8.14 Dismantling clamping inserts and clamping cassettes

Perform the work steps described in *chapt.* Mounting clamping inserts [▶ 47] and *chapt.* Mounting the weld head in the clamping cassette [▶ 51] in the reverse order.

9 Operation

9.1 Operator button panel



ITEM	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

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



Fire hazard when using incorrect (e.g. oxygenated) 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 supply.

► Usage solely of protective gases that are classified for TIG welding process in accordance with EN ISO 14175.

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



Electromagnetic fields arise during the welding process.

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

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.

CAUTION



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

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.

✓ Welding power supply connected and ready to operate.

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.

9.4 Preparing storage

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. Store the weld head in the transport case. Ensure that the hose package is not twisted or squeezed.

   ⇨ The weld head is prepared for short-term storage.

5. **In the case of long-term storage** carry out the following steps as well:
6. Clean the surfaces, *see chapt.* Instructions for care and Standard cleaning process [▸ 61].

10 Maintenance and troubleshooting

10.1 Instructions for care

CAUTION



Sensitization from liquids

The use of cleaning agents may cause sensitization.

► Wear protective clothing to avoid contact with the cleaning agent.

► **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 25 GC, we recommend using 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 position ("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)	► Ensuring correct electrode gap (*see chapt.* Determining electrode length and electrode gap [▷ 42]
		► Only use cleanly partially ground quality electrodes. Recommendation: Type WS2, grinding angle 22.5° (*see chapt.* Grinding electrode [▷ 66]).
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.
	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.

INTERVAL	RESPECTIVE COMPONENT	ACTIVITY
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 [▶ 61]) 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 cable	► Have it replaced by certified Orbitalum service center.

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. Make sure that the orbital welding power supply is switched on.
2. Remove electrode if necessary (*see chapt.* Setting up electrode [▶ 41]).
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. Fitting clamping inserts [▶ 47]).

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

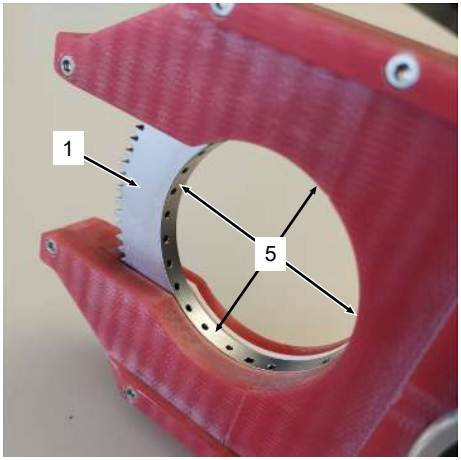


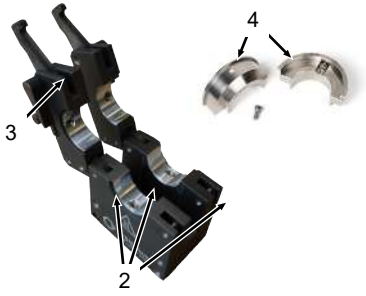
The use of lubricants can severely influence the function and cause damage.

► 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 when the rotor is at a complete stop.
   ⇨ 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

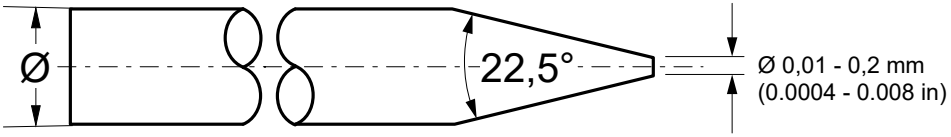
PROBLEM	POSSIBLE CAUSE	SOLUTION
Welding process does not start.	No gas supply.	► Check connections to welding power source.
		► Check the forming gas supply and forming gas quantity.
Weld head does not clamp properly onto workpiece.	Workpiece outside tolerance.	► Use adapted clamping inserts.
Permanent large and constantly varying speed deviations.	Defect in power source or weld head.	► Contact service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Arc does not ignite.	Excessive electrical resistance due to contamination between the weld head and the clamping inserts/clamping cassette or between the clamping inserts/clamping cassette and the workpiece.	1. Clean the workpiece and clamping insert. 2. Clean the contact surfaces between the weld head and clamping inserts/clamping cassette and the workpiece to the clamping jaw/ clamping cassette.
	Workpieces are dirty.	► Clean the workpiece.
	Forming gas concentration too low.	► Check the forming gas supply and forming gas quantity.
	Electrode gap too large.	► Adjust the electrode gap. (*See section on* setting up the electrode [▶ 41])
	Electrode tip worn.	► Regrind the electrode. (*See section "* Grinding electrode [▶ 66]")
	Contact problems between electrode and rotor.	► Clean the head again.
	Cable break.	► Replace hose package.
Arc pulls to the side.	Electrode worn.	► Regrind the electrode. (*See section* Grinding electrode [▶ 66])
	Electrode ground incorrectly.	► Regrind the electrode. (*See section* Grinding electrode [▶ 66])
	Poor electrode quality.	► Use Orbitalum electrodes.
	Poor material quality.	► Sulfur content too high or inconsistent.
		► Inhomogeneous alloy components.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Arc ignites against parts of the weld head.	Electrode worn.	► Replace electrode.
	Electrode ground incorrectly.	► Regrind the electrode. (*See section* Grinding electrode [▷ 66])
	Poor electrode quality.	► Clean the weld head.
	Gas pre-flow time too short.	► Increase gas pre-flow time.
	Electrode not installed.	► Install the electrode. (*See section* Set up the electrode [▷ 41])
No menu appears on the display.	Control line connector.	► Check that it is securely connected.
	Software version power source.	► Perform MW/SW/PW software update.
	Power source type.	► Function only compatible with MW/SW/PW power sources.
Rotary movement does not start.	Fuse overloaded.	► Allow fuse to cool down (thermal fuse).
	Foreign object in the gearbox.	► If possible, remove foreign objects using a vacuum cleaner. Otherwise, send the weld head in for servicing. Do not allow the rotor to turn under any circumstances.
	Connection faulty.	► Check the plug and welding power source.

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: OW 25 GC)
- 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 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.

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

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► Connect suitable accessories, see operating instructions of accessories.

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.

11.1 Clamping cassette

Clamping cassette for OW 25 GC

Aus Edelstahl. Abnehmbare Clamping cassette especially for inline assembly or prefab production of modules. For holding clamping inserts. A captive pipe center gauge attached to the cassette ensures the exact positioning of the pipe joint to be welded. The clamping cassettes are supplied in a robust, lockable plastic box.

- Scope of delivery:
- 1 x Pipe centering gauge
- 1 x Cassette alignment gauge
- 1 x Hexagon wrench 3/32"
- 1 x Hexagon wrench 5 /32"
- 1 x Plastic box

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

ARTICLE	CODE	KG
Clamping cassette for OW 25 GC	819 050 010	1.00

11.2 Clamping inserts

Clamping inserts for OW 25 GC

Made of stainless steel. Can only be used when clamping cassette OW 25 GC 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.

Further dimensions on request.

IMPERIAL			METRIC		
pipe OD		Code	pipe OD		Code
[mm]	[inch]		[mm]	[inch]	
6.35	1/4	819 002 201	6.00	0.236	819 002 209
7.94	5/16	819 002 202	10.00	0.393	819 002 210
9.53	3/8	819 002 203	12.00	0.472	819002217
12.70	1/2	819 002 204	14.00	0.551	819 002 211
15.88	5/8	819 002 205	18.00	0.709	819 002 212
19.05	3/4	819 002 206	22.00	0.866	819 002 213
22.20	7/8	819 002 207	27.20	1,071	819 002 214
25.40	1	819 002 208	30.00	1,181	819,002,215
38.10	1 1/2	819 002 218	34.00	1,339	819 002 216

11.3 Hose package extensions

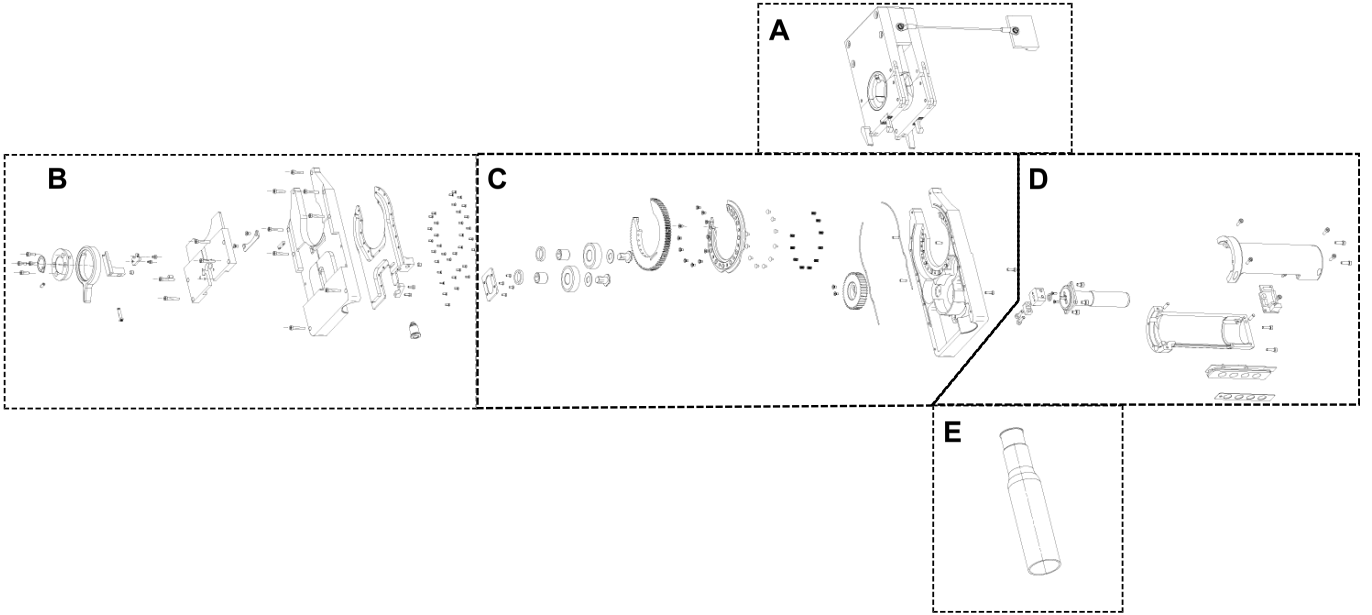
Hose package extensions

Suitable for all Orbitalum weld heads, with the exception of the AVC/OSC versions of the ORBIWELD TP series. A welding current connection adapter set may be required for use with older Orbitalum welding power sources and heads with green Superior connectors. Newer machine models are already equipped with DINSE-compatible connectors.

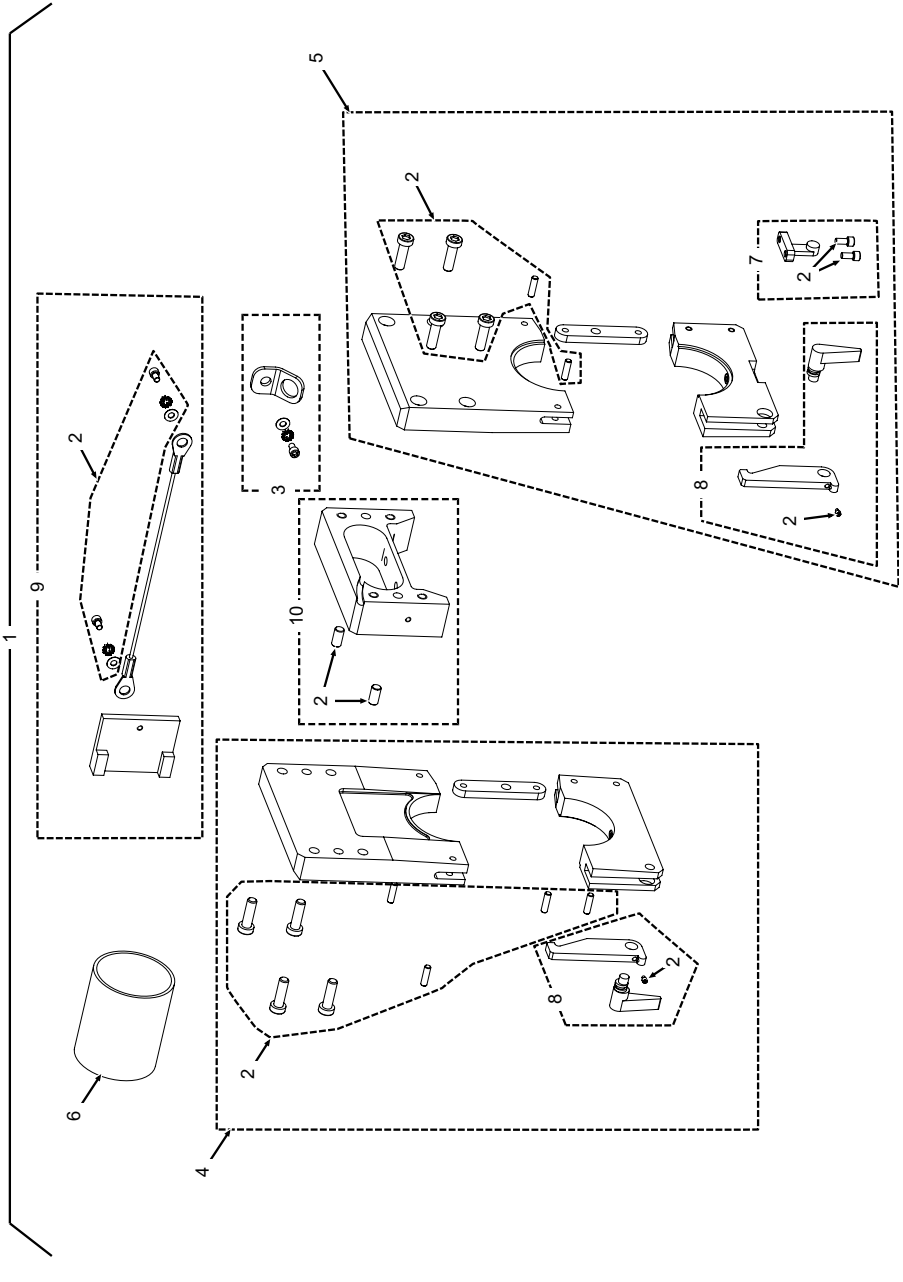
Other lengths available on request.

12 ERSATZTEILLISTE / SPARE PARTS LIST

12.1 Schweißkopf komplett | Weld head complete

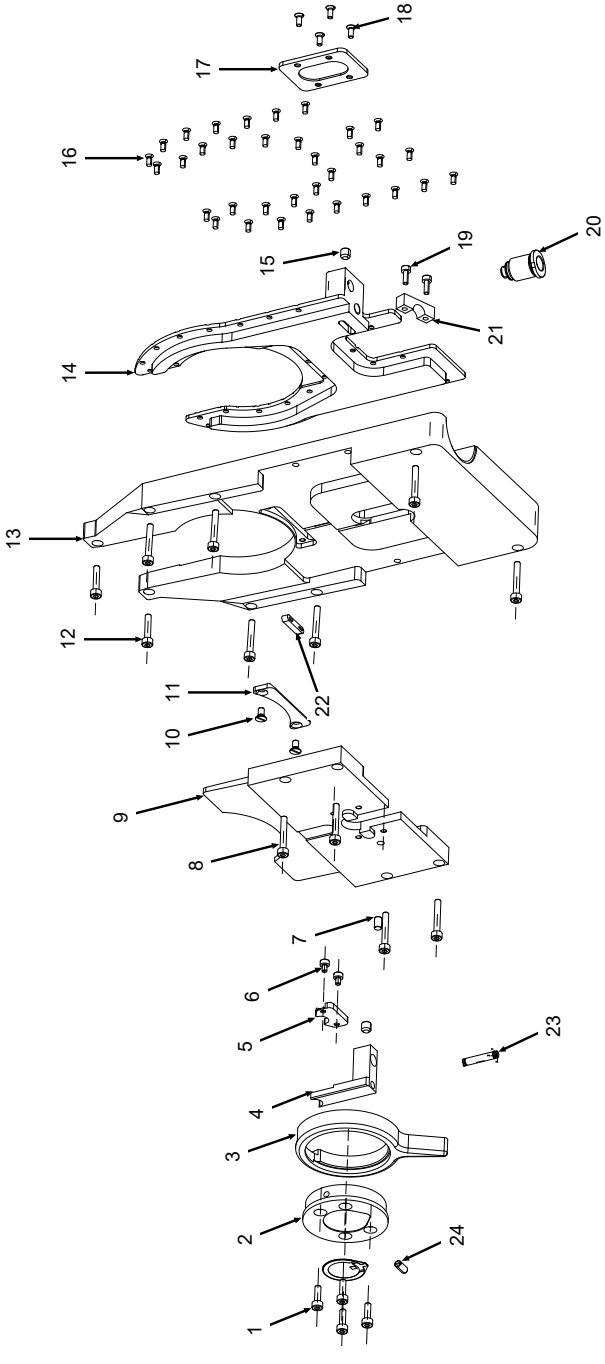


12.2 A: Spannkassette | A: Clamping cartridge

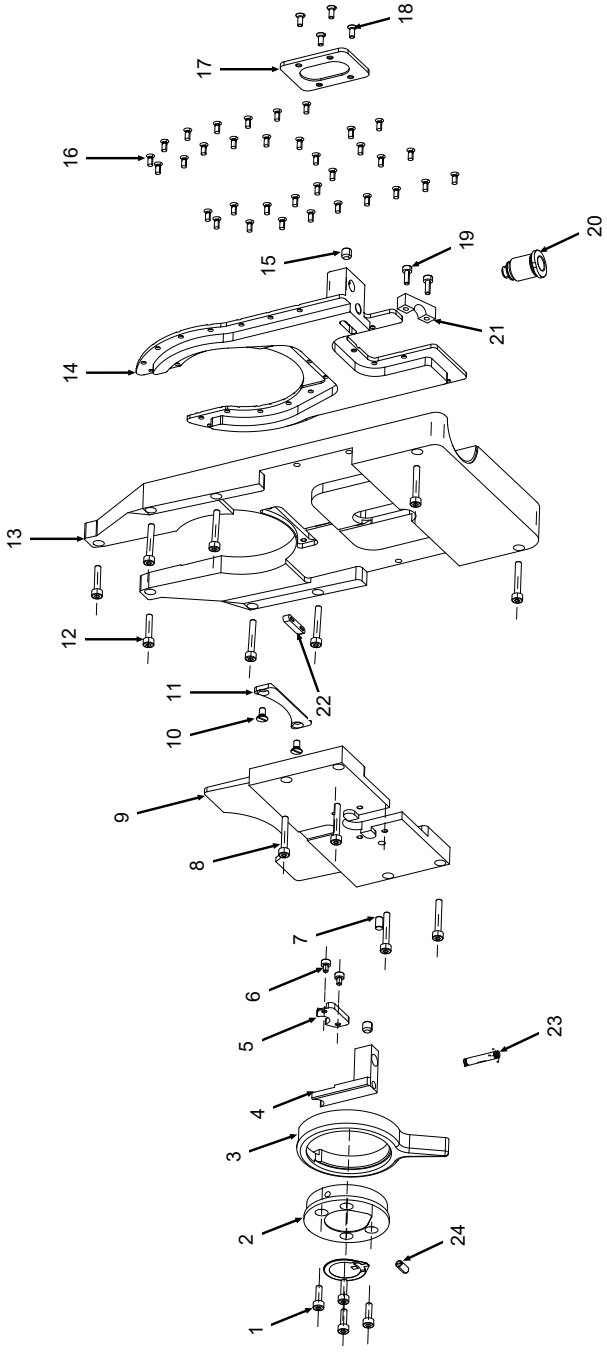


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	819 050 010	1	Spannkassette kpl. OW25 Clamping cartridge cpl. OW25	5	819 050 013	1	Seitenplatte rechts kpl. OW25 Side plate, right cpl. OW25
2	819 060 015	1	Normteile-Set Kassette OW 25 bestehend aus: Standard parts set cassette consisting of:	6	819 002 001	1	Kassetten Ausrichtlehre OW25 Cassette alignment gauge OW25
			3 ST Fächerscheibe DIN6798-A3.2-FST 3 PC Serrated washer DIN6798-A3.2-FST	7	819 060 016	1	Ersatzteile-Set Kassette Fixierung OW 25 Spare parts set cassette fixation OW25
			8 ST Zylinderstift 1/8" x 7/16"-A2 8 PC Cylinder pin 1/8" x 7/16"-A2	8	819 060 017	2	Ersatzteile-Set Kassette Verschluss Spare part set cassette lock
			5 ST Zyl.-s. SHCS 4-40 UNC x 1/4"-A2 5 PC Cyl. s. SHCS 4-40 UNC x 1/4"-A2	9	819 050 014	1	Rohrmittenlehre kpl. OW25 Tube centering gauge, cpl. OW25
			3 ST Gewindestift DIN915-M2.5x4-A2 3 PC Grub screw DIN915-M2.5x4-A2	10	819 050 011	1	Distanzplatte, Spannkassette OW25 Spacer plate, clamping cartridge OW25
			8 ST Zylinderschr. SHCS 10-24 UNX x 5/8" 8 PC Cyl. s. SHCS 10-24 UNX x 5/8"	-	819 030 002	1	Werkzeugset Spannkassette OW25 Tool set Clamping cartridge cpl. OW25
			3 ST Gewindestift DIN915-M2.5x4-A2 3 PC Grub screw DIN915-M2.5x5-A2	-	817 060 020	1	Sechskantschlüssel 3/32 Inch Hexagon key 3/32 inch
3	819 050 015	1	Fallsicherung kpl. OW25 Fall prevention cpl. OW25	-	817 060 021	1	Sechskantschlüssel 5/32 Inch Hexagon key 5/32 inch
4	819 050 012	1	Seitenplatte links kpl. OW25 Side plate, left cpl. OW25				

12.3 B: Gehäuseoberteil | B: Housing upper part

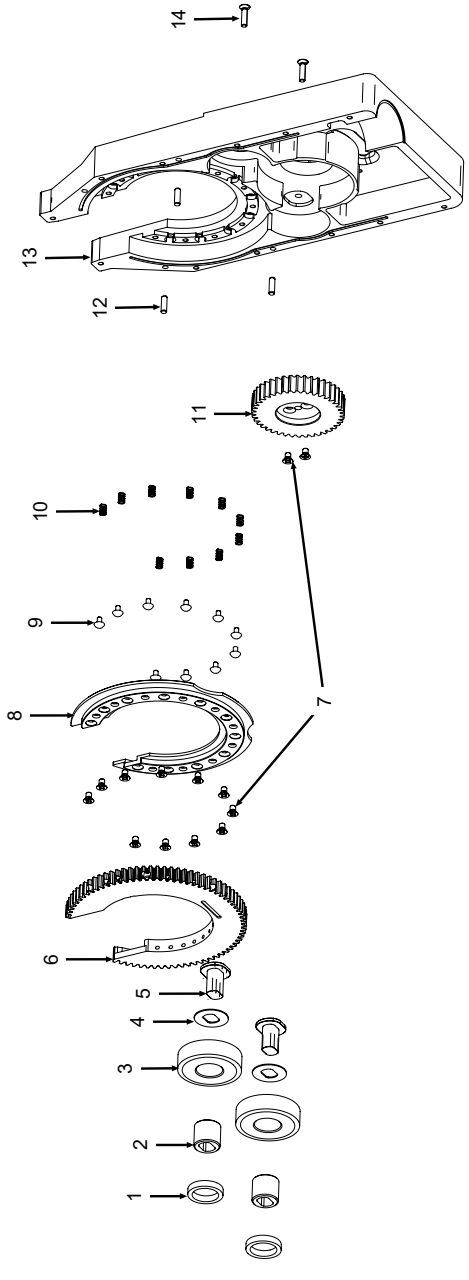


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 054	4	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2	11	819 020 004	1	Deckel Endschalter OW 25 Limit switch, cover OW 25
2	817 007 011	1	Spannring Führung OW17 Clamping ring guiding OW17	12	305 501 051	2	Zylinderschraube ISO4762-M2.5x12-A2 Cylinder screw ISO4762-M2.5x12-A2
3	817 007 012	1	Drehspanngriff OW17 Rotary cocking handle OW17	13	819 050 017	1	Grundkörper, Deckel OW25 Base body, cover OW25
4	817 007 010	1	Kontaktstück Cu OW17 Contact piece Cu OW17	14	819 050 005	1	Kühlplatte OW25, kpl. Cooling plate OW25, cpl.
5	817 007 009	1	Anschlag OW17 Stop OW17	15	445 005 227	2	Gewindestift DIN913-M4x4-A2 Grub screw DIN913-M4x4-A2
6	305 501 084	2	Zylinderschraube ISO4762-M2x3-A2 Cylinder screw ISO4762-M2x3-A2	16	305 501 022	34	Senkschraube ISO14581-M2x4-A2-TX Countersunk screw ISO14581-M2x4-A2-TX
7	565 808 178	1	Zylinderstift ISO2338-3M6x6-A2 Cylinder pin ISO2338-3M6x6-A2	17	819 002 009	1	Abdeckung Stirnrad OW25 Cover Spur gear OW25
8	305 501 052	10	Zylinderschraube ISO4762-M2.5x16-A2 Cylinder screw ISO4762-M2.5x16-A2	18	821 020 003	4	Kunststoffschraube M2x5 mm Senkkopf Plastic screw M2x5 mm
9	819 020 003	1	Abdeckung Antriebsseite OW25 Drive side cover OW25	19	305 501 087	2	Zylinderschraube ISO4762-M2x6-A2 Cylinder screw ISO4762-M2x6-A2
10	302 000 030	2	Senkschraube ISO2009-M2.5x5-Kunststoff Countersunk screw ISO2009-M2.5x5-Plastic	20	817 020 011	1	Steckverschraubung QSM-M5-6-I Push-in fitting QSM-M5-6-I


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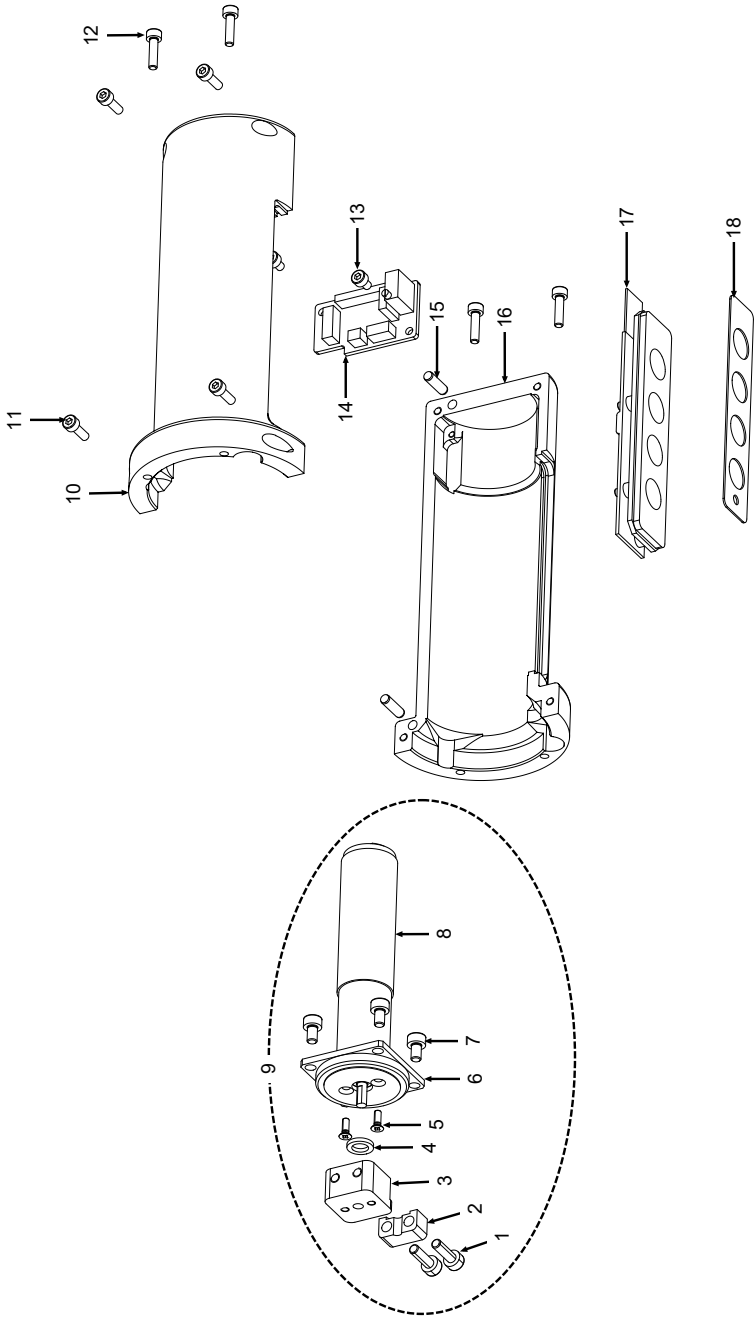
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	819 020 005	1	Zugentlastung Steuerleitung OW25 Strain relief Control cable OW25
22	819 050 001	1	Endschalter kpl. OW25 Home switch cpl. OW25
23	817 020 002	1	Druckfeder De0,63x2,37xL16,5 OW17 Pressure spring De0,63x2,37xL16,5 OW17
24	826 020 023	1	Druckstück Spanneinsatz M3 Pressure piece clamping insert M3

12.4 C: Gehäuseunterteil | C: Housing lower part



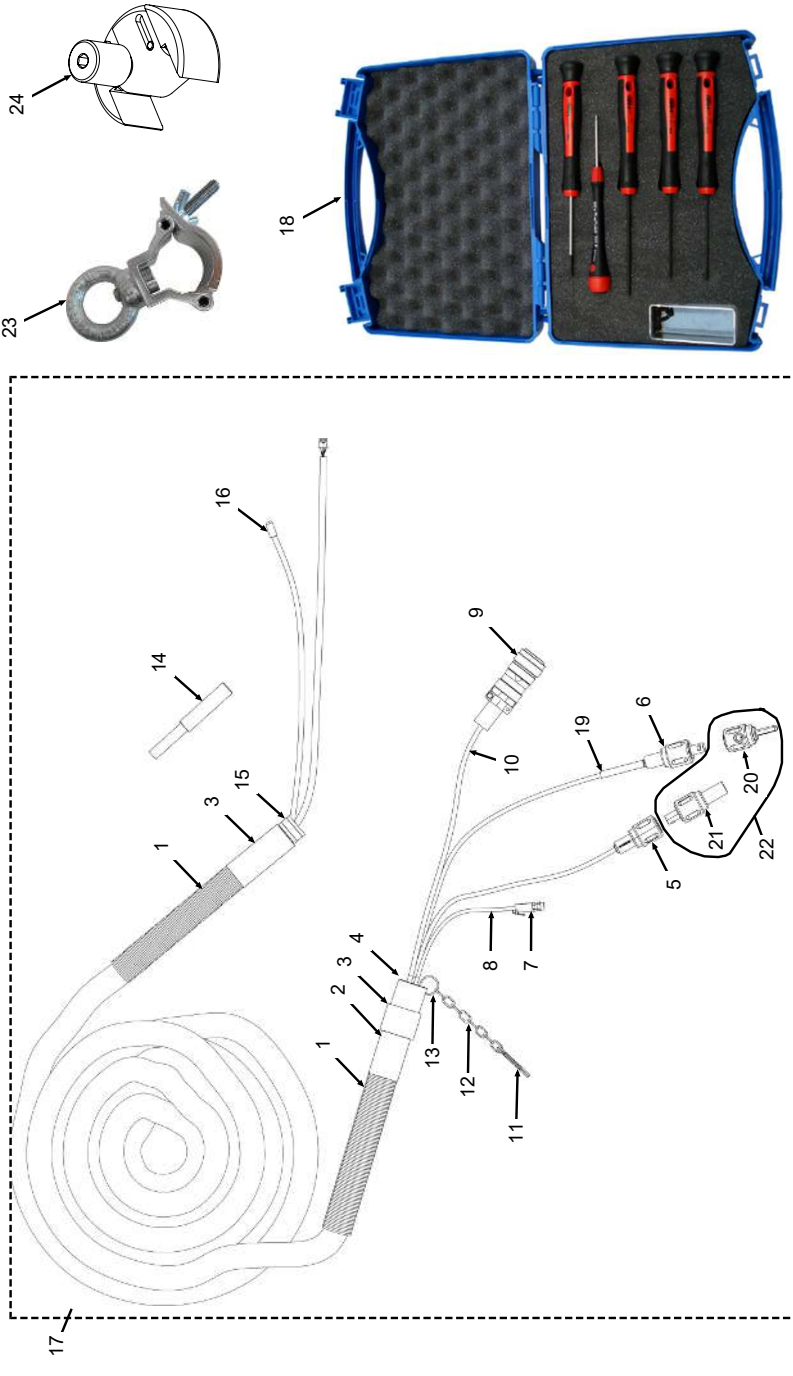
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	826 007 002	2	Abstandshalter, Zahnrad Spacer, gear wheel	10	826 020 009	10	Feder für Kugelkopfdruckstück OWS/X Spherical head press.piece, spring OWS/X
2	826 011 002	2	Lager RULON OW 38S, kurz Bearing RULON OW 38S, short	11	819 002 008	1	OW25 Stirnrad groß STIRNWHEEL OW25 big
3	836 020 053	2	Stirnzahnrad, Z27 OWX1.5/4/6 Spur gear, Z27 OWX1.5/4/6	12	565 808 156	4	Zylinderstift ISO2338-2.5x8-A2 Cylinder pin ISO2338-2.5x8-A2
4	827 008 002	2	Teflonscheibe, Typ A Teflon washer, type A	13	819 020 001	1	Grundkörper OW 25 Basic part OW 25
5	826 007 006	2	Lagerzapfen OW 38S, lang Bearing pin OW 38S, long	14	305 501 015	2	Senkschraube ISO14581-M2.5x10-A2-TX Countersunk screw ISO14581-M2.5x10-A2-TX
6	826 050 013	1	Rotor OW 38S Rotor OW 38S				
7	305 501 020	13	Senkschraube ISO14581-M2.5x4-A2-TX Countersunk screw ISO14581-M2.5x4-A2-TX				
8	826 008 004	1	Teflonring OW 38S Teflon ring OW 38S				
9	826 007 011	10	Kugelkopfdruckstück OWS/X Spherical head pressure piece OWS/X				

12.5 D: Griff | D: Handle

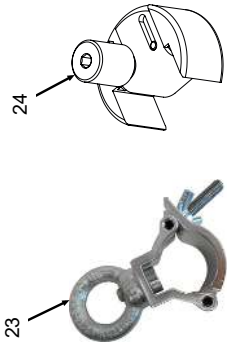


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 100	2	Zylinderschraube ISO4762-M3x10-A2 Cylinder screw ISO4762-M3x10-A2	11	305 501 054	4	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2
2	817 007 034	1	Klemmstück Nabe Antriebszahnrad OW17 V2 Clamping piece hub drive gear OW17 V2	12	305 501 051	4	Zylinderschraube ISO4762-M2.5x12-A2 Cylinder screw ISO4762-M2.5x12-A2
3	817 007 036	1	Nabe Antriebszahnrad OW17 V2 Drive gear hub OW17 V2	13	305 501 081	2	Zylinderschraube ISO4762-M2x4-A2 Cylinder screw ISO4762-M2x4-A2
4	826 007 013	1	Motorwelle, Teflonscheibe Motor shaft, teflon washer	14	821 012 001	1	Tachospannungsteiler, Platine OW12/17 Voltage devider, circuit board OW 12/17
5	302 000 040	2	Senkschraube ISO7046-1-M2x6-A2 Countersunk screw ISO7046-1-M2x6-A2	15	565 808 163	2	Zylinderstift ISO2338-3M6x10-A2 Cylinder pin ISO2338-3M6x10-A2
6	817 007 035	1	Motorflansch OW17 V2 Motor flange OW17 V2	16	817 007 013	1	Handgriff links OW17 Handle left OW17
7	305 501 065	4	Zylinderschraube ISO4762-M3x6-A2 Cylinder screw ISO4762-M3x6-A2	17	821 050 008	1	Schalterplatte OW 12/17 Switch plate OW 12/17
8	817 050 015	1	Motor/Tachoeinheit OW17 Motor/speedometer unit OW17	18	817 007 015	1	Betätigungsschutz Schalterplatte OW17 Actuation protection switch plate OW17
9	817 050 021	1	Motorflansch OW17 kpl. V2 Motor flange OW17 cpl. V2	-	819 060 003	1	Aufkleber Elektroden OW25 Label Electrode OW25
10	817 007 014	1	Handgriff rechts OW17 Handle right OW17				

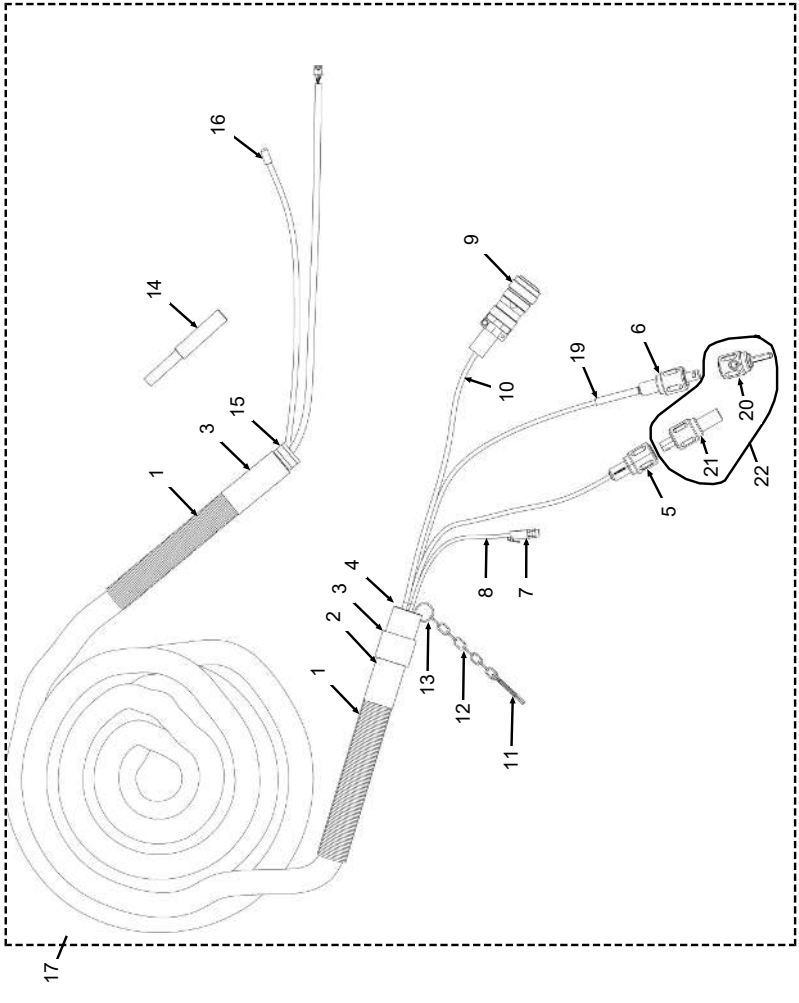
12.6 E: Schlauchpaket & Zubehör | E: Hose package & accessories



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	885 012 024	1	Schweißstromkabelbuchse DINSE, BK 25 Weld current cable connector DINSE, BK25	15	817 007 030	1	Schutzhülse OW17 GC Protection sleeve OW17 GC
6	885 012 023	1	Schweißstromkabelstecker DINSE, SK 25 Weld current cable plug DINSE, SK 25	16	826 020 014	1	Schnellkupplung Gas Quick coupling gas
7	823 020 014	1	Gasstecker, Schnellverschluss 1/4" Weld connector, quick-release 1/4"	17	819 050 030	1	Schlauchpaket OW25GC Hose package OW25 GC
8	823 020 016	1	Gasschlauch Teflon 6x4 mm, weiß Gas hose, Teflon 6x4 mm, white	18	819 030 001	1	Werkzeugset OW25 Tool set OW25
9	885 012 014	1	Amphenol-Kabelstecker 24-polig Amphenol cable plug 24 pole	19	875 020 044	2 x 0,17 m	Schrumpfschlauch 19.0 x 9.5 Shrink tube 19.0 x 9.5
10	823 012 011	8,5 m	Steuerleitung 12x0.25 qmm OW/OWS/HX Control cable 12x0.25 qmm OW/OWS/HX				


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POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	850 030 003	1	OM Schweißstromadapter, Elektrode (-) OM weld current adapter, tungsten (-)
21	850 030 002	1	OM Schweißstromadapter, Masse (+) OM weld current adapter, ground (+)
22	850 030 004	1	OM Schweißstromadapter Set OM weld current adapter, set
23	826 030 010	1	Sicherungsschelle Schlauchpaket OWS Safety clamp hose package OWS
24	819 050 007	1	Elektrodeneinstelllehre kpl. OW25 Electrode setting gauge cpl. OW25

13 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

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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**
- **OW 76 S**
- **OW 115 S**
- **OW 170**
- **OWX 1.5**
- **OWX 3.0**
- **OWX 4.5**

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):

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(*inkl. Orbitalschweißstromquelle)
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- **OWX 1.5**
- **OWX 3.0**
- **OWX 4.5**

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**

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Jürgen Jäckle - Product Compliance Manager

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