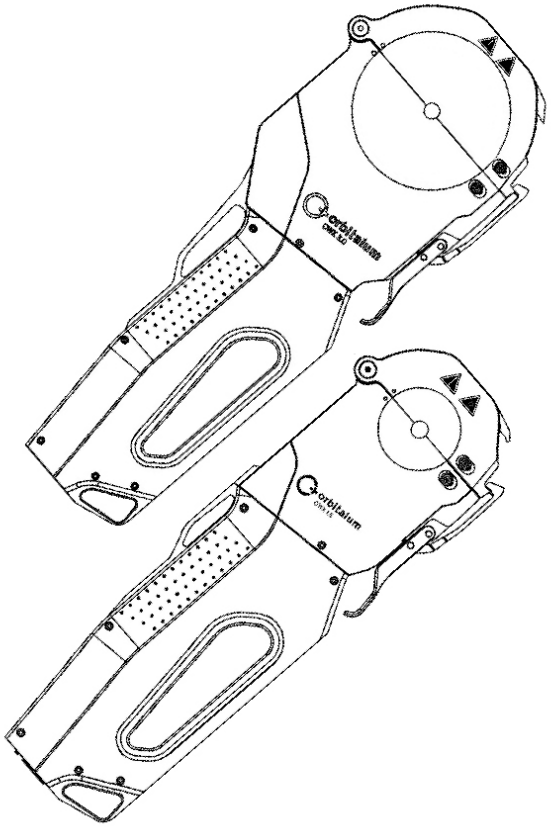
ORBIWELD X

en Enclosed orbital weld head

Translation of original operating instructions
and spare parts list



836 060 201 REV 00 | 2610

orbitalum

An ITW Company

Table of Contents

1 About these instructions 4

1.1 Warning messages 4
1.2 Further icons and displays 4
1.3 Legend 5
1.4 Further applicable documents 5

2 Information and safety instructions for the owner 6

2.1 Requirements for the owner-operator 6
2.2 Using the machine 7
2.2.1 Intended use 7
2.2.2 Machine constraints 8
2.3 Environmental protection and disposal 9
2.3.1 Information regarding the Ecodesign Directive 2009/125/EG 9
2.4 Personnel qualification 9
2.5 Fundamental information on operational safety 10
2.6 Personal protective equipment 10
2.7 Remaining risks 10
2.7.1 Mechanical hazards 10
2.7.2 Electrical hazards 12
2.7.3 Thermal hazards 15
2.7.4 Risks due to materials and substances 17
2.7.5 Ergonomic hazards 17
2.7.6 Hazards due to radiation 18
2.7.7 General danger 19

3 Description 20

3.1 Weld head 20
3.2 Electrode holders 22
3.3 Integration in custom-specific devices 22
3.4 Table mount (optional) 23

4 Application area 24

5 Technical specifications 25

5.1 Dimensions 26

6 Transport and shipping 28

6.1 Gross weight 28
6.2 Transport 28

7 Commissioning OWX 29

7.1 Scope of delivery 29
7.2 Preparing initial operation 29

8 Setup and mounting 31

8.1 Procedure 31
8.2 Fit drop guard 32
8.3 Power Source Software Update 33
8.3.1 Select the “Orbitalum” headlist 34
8.4 Table bracket V2 (optional) 36
8.4.1 Mounting table mount 37
8.4.2 Fastening the weld head on the table mount 39
8.5 Connecting the weld head to the power supply 41
8.5.1 Connection sequence 42
8.5.2 Connection scheme 43
8.6 Mount clamping inserts 45
8.7 Set up the electrode 46
8.8 Clamping the workpieces 48
8.9 Carry out gas and cooling liquid function test 50
8.10 Configure the welding procedure 50
8.11 Dismantling the clamping inserts 50

9 Operation 51

9.1 Operator button panel 51
9.2 Menu control 52
9.3 Start menu 54
9.4 Settings 57
9.5 Info menu 58
9.6 Welding menu 58
9.7 Weld mode 60
9.7.1 Welding with autopositioning 63

10 Maintenance and troubleshooting 67

10.1 Instructions for care 67
10.2 Maintenance and care 68
10.2.1 Standard cleaning process 70
10.3 Troubleshooting 72
10.4 Grinding electrode 75
10.5 Service/Kundendienst 75

11 Storage and decommissioning . 76

12 Accessories (optional)..... 77

13 ERSATZTEILLISTE | SPARE PARTS LIST 79

13.1 OWX 1.5 | OWX 1.5 79

13.2 Grundkörper Basisteil OWX 1.5 | Base body OWX 1.5 81

13.3 Kopfbaugruppe OWX 1.5 | Head assembly OWX 1.5 85

13.4 Grundkörper Deckel OWX 1.5 | Main body cover OWX 1.5 89

13.5 Verschluss, vorne OWX 1.5 | Closure, front OWX 1.5 91

13.6 Verschluss, hinten OWX 1.5 | Closure, back OWX 1.5 93

13.7 OWX 3.0 | OWX 3.0 95

13.8 Grundkörper Basisteil OWX 3.0 | Base body OWX 3.0 99

13.9 Kopfbaugruppe OWX 3.0 | Head assembly OWX 3.0 103

13.10 Grundkörper Deckel OWX 3.0 | Main body cover OWX 3.0 109

13.11 Verschluss, vorne OWX 3.0 | Closure, front OWX 3.0 111

13.12 Verschluss, hinten OWX 3.0 | Closure, back OWX 3.0 112

13.13 Tischhalterung OWX, V2 | Table mount OWX, V2 113

14 Konformitätserklärungen 115

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

Term/SYMBOL	MEANING
OW	Closed orbital weld head from the ORBIWELD series
OWX	Closed orbital weld head of the ORBIWELD X series
SW	Orbital welding power source from the Smart Welder series
MW	Orbital welding power source from the Mobile 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 workstation may be located in the tube preparation area, in the plant engineering department, or within the plant itself.
- The machine is operated by one person.
- A clearance of approximately 2 m must be ensured around the machine to allow for movement.
- Work lighting: min. 300 lux.
- Operating environmental conditions:
  Ambient Temperature: –10 °C to +40 °C
  Relative humidity: < 90% at +20 °C, < 50% at +40 °C
- Environmental 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 set up and operated in a dry environment in accordance with IP 23 (not in fog, rain, thunderstorms, etc.). Use a welding tent if necessary.
- Avoid smoke, steam, oil fumes, and grinding dust.
- Avoid environments with salty air (seaside 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 assign personnel who comply with the occupational and age-specific regulations in effect at the work site.
- **None. No** physical or mental impairments.
- Persons whose reaction time is impaired by drugs, alcohol, or medication are not permitted to operate the machine.
- Minors may operate the machine only under the supervision of an authorized supervisor.
- A basic understanding of the WIG welding process is required.

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 when working on the system:

- ► Safety shoes in accordance with EN ISO 20345, Class SB.
- ► When working overhead, wear a safety helmet in accordance with DIN EN 397.
- ► Wear hearing protection in work environments with noise levels above 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.

⚠	**WARNING!**	Warning: Risk of burns from hot surfaces, materials, and process residues. Thermal processes may generate hot surfaces, materials, or particles. Contact with these can cause burns.

- ► Wear appropriate personal protective equipment.
- ► Wear appropriate personal protective equipment.
- ► Use safety devices as intended and do not bypass them.
- ► Before working on components, check their temperature and, if necessary, allow sufficient cooling time.

⚠	**WARNING!**	Risk of burns, eye damage, and fire due to an arc. An arc may form if the welding contacts become loose during operation. This can result in burns and temporary blindness; in the worst case, the arc or dripping weld spatter may cause a fire.

- ► Connect and disconnect the weld head only when the power source is turned off.
- ► Route wires and cables so that they are **not** under tension.
- ► Ensure that **none** of the people can trip over wires and cables under **any** circumstances.
- ► Install a strain relief.
- ► Check that the hose assembly connections are secure before connecting them or turning on the power source.
- ► Do not work near flammable materials.
- ► Operate only on non-flammable surfaces.

⚠	**WARNING!**	Fire hazard if incorrect gases (e.g., oxygen-containing gases) are used during the welding process**.** This can result in burns. In the worst case, a fire may be triggered.

- ► Follow the safety instructions in the power source's operating manual.
- ► Use only Gas Types classified according to DIN EN ISO 14175 for the WIG welding process.

⚠	**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.

⚠	**CAUTION!**	Risk of burns from hot machine parts and workpieces. Very high temperatures are generated, especially after several welding operations in succession. When working on the weld head (e.g., re-clamping or mounting/dismounting the electrode), there is a risk of burns or damage to the contact points. Thermally unstable materials may be damaged upon contact with the hot weld head.

► Wear protective gloves in accordance with EN 388, performance level 2.

► Before working on the weld head or packing it in the transport case, wait until the surfaces have cooled to below 50 °C (122 °F).

► Position the weld head correctly.

► Only use approved materials in the welding area.

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 Hazard

- ► In case of danger, unplug the power source!
- ► Always ensure that the power plug is accessible so that the power source can be disconnected from the mains.

3 Description

3.1 Weld head

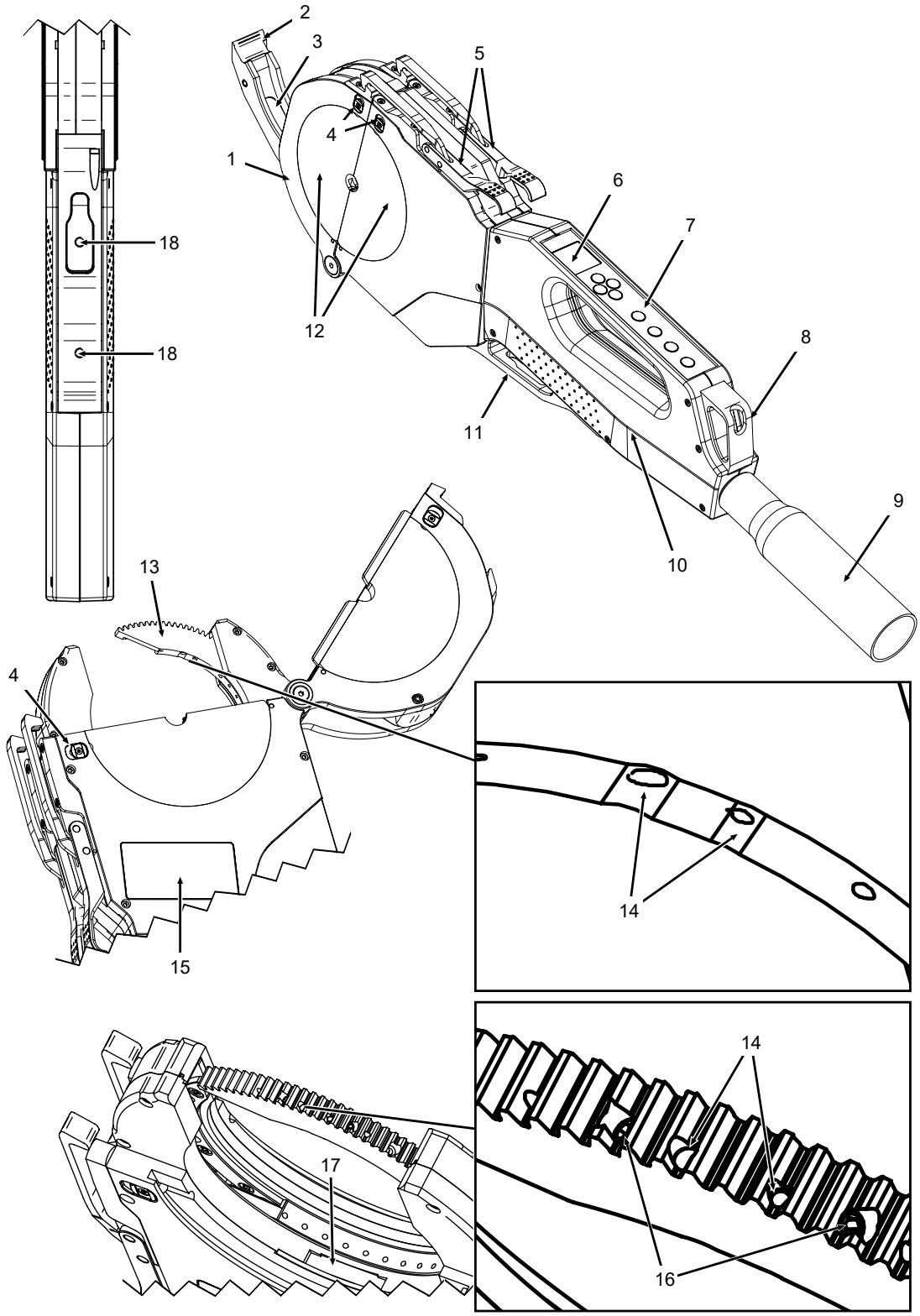


Illustration: Example shown: OWX 3.0

POS.	DESIGNATION	FUNCTION
1	Swivel clamp	Open and close the weld head.
2	Flip cover	Opening the welding chamber to align the electrode and to check the sleeve joint and the offset.
3	View window made of protection welding glass	Monitor welding protected against infrared, glare and UV rays.
4	Clamping insert lock	Lock and unlock clamping insert
5	Latches	Lock closed swivel bracket.
6	Display	Displays of weld head menu and information.
7	Control panel	Operate weld head.
8	Handle mounting lug	Mounting option for drop guard.
9	Hose package	Connect weld head with welding power supply.
10	Handle	Hold weld head.
11	Basic body mounting lug	Mounting option for table mount or fall protection.
12	Clamping insert*	Align and clamp workpieces.
13	Rotor	Guide the electrode radially around the workpiece.
14	Electrode holders (1.6 and 2.4 mm) with brass markings	Holder for electrodes.
15	Type plate	Lists data for the weld head.
16	Electrode clamping screws	Fasten and unfasten the electrodes in the electrode holders.
17	Inside light	Illumination of the welding chamber, *see Chap.* Start menu
18	Mounting holes	Interface for installation in a system, *see Chap.* Dimensions

** Clamping inserts are not included in the scope of delivery but are absolutely necessary for the insert and have to be ordered separately. See* Accessories (optional)

3.2 Electrode holders

The OWX series has 2 electrode holes for electrode diameters of 1.6 mm (0.063 in) and 2.4 mm (0.094 in).

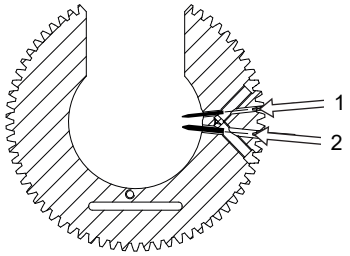


Illustration: Rotor electrode holes

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

Installing electrode, see chapt. Set up the electrode [▶ 46]

3.3 Integration in custom-specific devices

For the installation of the weld head in customer-specific fixtures, such as factory holding and handling fixtures, two 7 mm deep M5 threads (1) and (2) are located in the aluminum body of the mounting lug.

For the position determination *see chapt.* Dimensions.

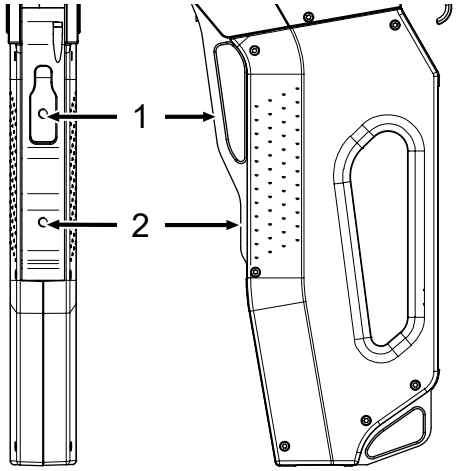
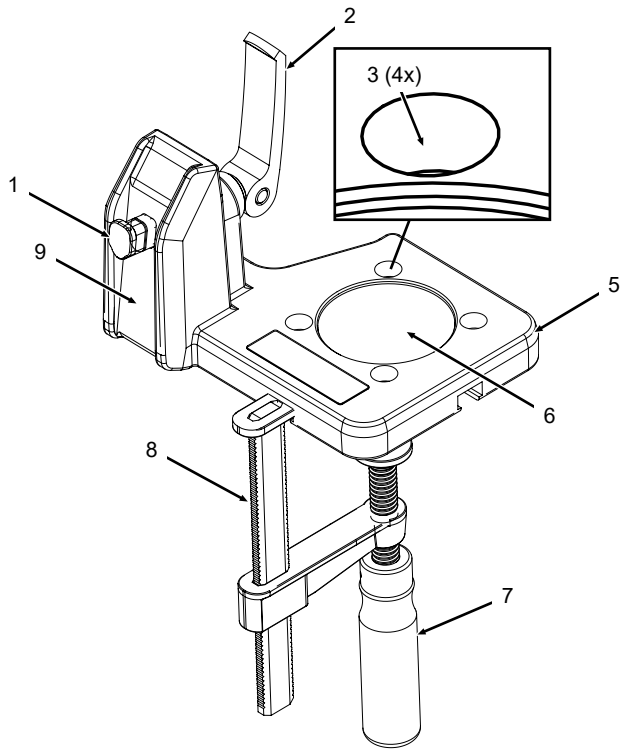


Illustration: Holes in the aluminum body of the mounting lug

3.4 Table mount (optional)

See also Mounting table mount



POS.	DESIGNATION	FUNCTION
1	Holding pin	Holds the weld head's mounting lug in place.
2	Clamping lever	Clamping and unclamping the weld head on the table mount.
3	Mounting holes (4x)	Holder of mounting screws for • Fastening the mounting bracket. • Fastening on table top.
4	Base	Supports and connects the quick clamping system and screw clamp.
5	Rubber pad	Is used as a defined support for small parts, like electrodes and screws, when the table mount is mounted using the integrated screw clamp or with screws on the worktop.
		Is used in the application of alternative fastening systems as the supporting area for feet of screw clamps or quick clamps.
6	Tensioning screw	Clamp bracket (8) and base (5) on edge of table.
7	Vise angle	Counter support for tensioning screw (7).
8	Guide groove welding head	Guides and fastens the weld head in position.
9	Guide groove vise angle	Guides and secures the base of the table mount in position.

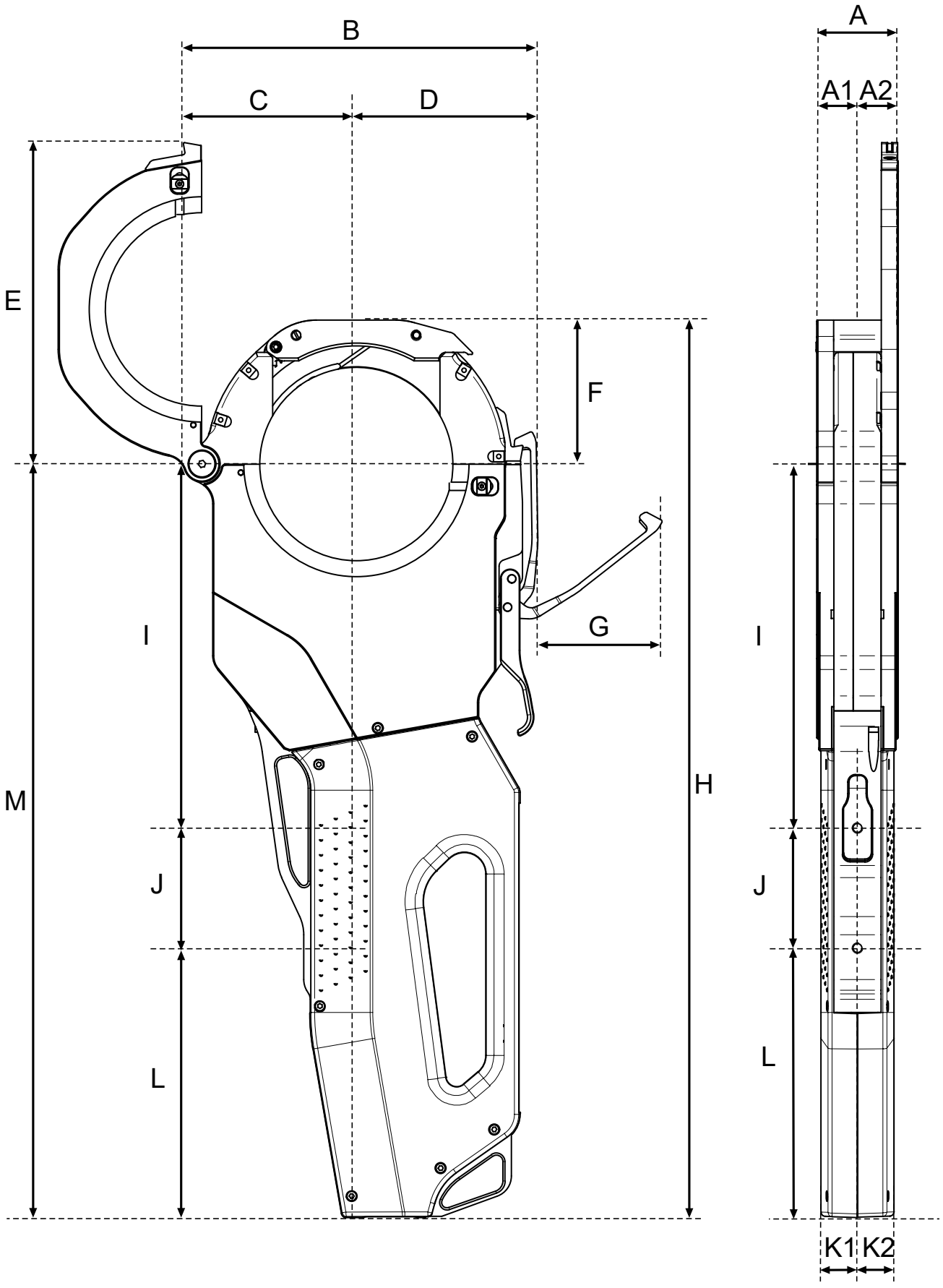
4 Application area

SCOPE		OWX 1.5	OWX 3.0
Tube (Outer Diameter)	[mm]	3 ... 39	6 ... 77
min. … max.	[inch]	0.125 ... 1.50	0.250 ... 3.00
Welding Process	Tungsten Inert Gas (TIG) Process		
Materials	All materials that are generally suitable for the MIG/TIG welding process.		

5 Technical specifications

TYPE		OWX 1.5	OWX 3.0
Code		836 000 001	837 000 001
Tube (Outer Diameter)	[mm]	3.00 … 39.00 mm	6.00 ... 77.00
min. … max.	[inch]	0.125 … 1.535	0.250 ... 3.000
Welding Current max.	[A]	100	100
electrode diameter	[mm]	1.6/2.4	1.6/2.4
	[inch]	0.063/0.094	0.063/0.094
max. rotation speed	[rpm]	12.1	8.1
machine weight incl. hose assembly	[kg]	7.50	8.00
	[lbs]	16.535	17.637
Shipping Weight (Scope of Delivery)	[kg]	15.00	15.50
	[lbs]	33.069	34.172
Hose Assembly Length	[m]	7.5	7.5
	[ft]	24.6	24.6

5.1 Dimensions



TYPE		OWX 1.5	OWX 3.0
		000 001	000 001
	[mm]	34.00	38.00
	[inch]	1.339	1.496
	[mm]	17.00	19.00
	[inch]	0.669	0.748
	[mm]	17.00	19.00
	[inch]	0.669	0.748
	[mm]	123.11	164.27
	[inch]	4.847	6.467
	[mm]	58.00	80.03
	[inch]	2.283	3.151
	[mm]	65.11	84.24
	[inch]	2.563	3.317
	[mm]	108.68	149.64
	[inch]	4.279	5.891
	[mm]	.50	67.00
	[inch]	1.870	2.638
	[mm]	47.01	58.20
	[inch]	1.851	2.554
	[mm]	355.51	417.99
	[inch]	13.996	16.456
	[mm]	141.48	169.50
	[inch]	5.570	6.673
	[mm]	56.00	56.00
	[inch]	2.205	2.205
	[mm]	19.00	17.00
	[inch]	0.748	0.669
	[mm]	19.00	17.00
	[inch]	0.748	0.669
	[mm]	110.53	.49
	[inch]	4.352	4.941
	[mm]	308.01	350.99
	[inch]	12.126	13.819

6 Transport and shipping

6.1 Gross weight

MODEL		OWX 1.5	OWX 3.0
Weight*	[kg]	15.00	15.50
	[lbs]	33.069	34.172

** Incl. scope of delivery and transport case*

6.2 Transport

WARNING



Risk of injury due to the heavy weight of the weld head!
The transport case containing the orbital weld head and scope of delivery weighs up to 15.5 kg (34.172 lbs).

Risk of overexertion and crushing during transport

- ► When lifting the weld head, do not exceed the permissible total weight of 25 kg (55.116 lbs) for men and 15 kg (33.069 lbs) for women.
- ► Place the transport case on a secure surface.
- ► Wear safety shoes in accordance with EN ISO 20345 Class SB.

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



CAUTION



Risk of injury from the sharp electrode or the exposed end of the cold wire (on KD versions)!

When handling the weld head, there is a risk of puncture for both the operator and third parties from the electrode or, if applicable, the cold wire (on KD versions).

- ► Do not grip the weld head at the location of the electrode or the cold wire.
- ► Hold the weld head only by the handle provided for this purpose.
- ► Remove the electrode before transport.
- ► Wear protective gloves rated 1/1/1/1 according to EN 388 or 1/2/1/1 according to EN 407.

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



7 Commissioning OWX

7.1 Scope of delivery

SCOPE OF DELIVERY FOR THE OWX	CODE	QUANTITY	UNIT
ORBIWELD X 1.5/3.0	836 000 001/ 837 000 001	1	PCS
Tool set OWX	836 030 001	1	PCS
General safety instructions for closed weld heads	836 060 101	1	PCS
Operating Instructions & ETL, OWX PDF download link: https://www.orbitalum.com/DE/download.html	836 060 201	Unlimited (PDF)	PCS
OWX 1.5/3.0 transport case	836 030 010/ 837 030 010	1	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 Preparing initial operation

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 (*see chapt.* Maintenance and care [▷ 68]).
- ► Check the weld head for loose parts and particles in the transmission (*see chapt.* Troubleshooting [▷ 72]).
- ► Check the working environment for possible sources of danger and, if applicable, eliminate them (*see chapt.* Machine constraints [▷ 8] *and* Tripping over wires and cables).
- ► Fill weld head with cooling liquid (*see chapt.* Carry out the gas and cooling liquid function test [▷ 50]).
- ► For usage in overhead position: Secure the orbital weld head with drop guard (*see chapt.* Fit drop guard [▷ 32]).

8 Setup and mounting

In the following chapters, the OWX 3.0 weld head is shown as an example.

8.1 Procedure

INFO  Follow the operating instructions for the welding power supply!

Carry out setting up and mounting in the following order:

1. Before overhead work fit drop guard [▶ 32]
2. Connect the weld head to the power supply [▶ 41]
3. Mount clamping inserts [▶ 45]
4. Set up the electrode [▶ 46]
5. Clamp the weld head onto the workpieces [▶ 48]
6. Carry out the gas and cooling liquid function test [▶ 50]
7. Mount Table bracket V1 (optional) and connect accessories
8. Configure the welding procedure [▶ 50]

8.2 Fit drop guard

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.

Before start of work the weld head must be secured against falling.

To this end the weld heads of the OWX series have a safety lug (1) for fastening a suitable drop guard, such as a screw carbine (2), to a wire cable (3).

Connect safety lug (1), e.g. via a screw carbine (2), to a wire cable (3) secured above the workplace.



8.3 Power Source Software Update

To take full advantage of the OWX weld head's functionality, the power source software must be updated to **version 3.1.0 or higher**.

Preparing for the software update:

The required software files, an instructional video, and step-by-step instructions are available at http://www.orbitalum.com/OWX-update.

► Download the files **SmartWelder.ZIP** and **OM_VX.X.X.OTU** and save them to a USB stick.
Make sure the USB stick is formatted in FAT32 and has a storage capacity of at least 16 GB.

NOTICE! The OWX 1.5 weld head may require an additional head list update in addition to the software update to version 3.1.0 or higher.

► To do this, follow the instructions in the flyer included in the scope of delivery.

Perform the software update:

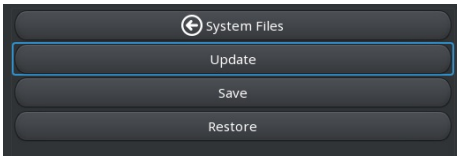
► Insert the USB stick into a free USB port on the power source.

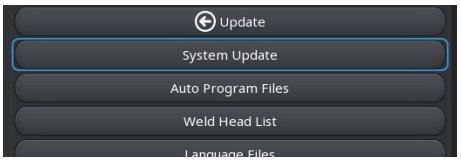
⇨ The power source automatically detects which updates are required based on the currently installed software version

► From the main menu, navigate to "Settings" / "System Data" / "Update" / "Update System" and confirm the update.
The update takes approximately 20–40 minutes, depending on the current software version. Do not turn off the power source during the update and do not remove the USB stick!

⇨ A progress bar on the display shows the status of the update.
Once the update is complete, the power source will restart automatically.





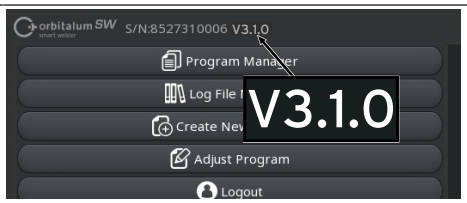


Check the software version:

Depending on the power source's original software version, two update procedures may be required.

If version **3.1.0** is displayed in the header bar of the display, the software update was successfully completed.

If a version < **3.1.0 is displayed** in the header bar of the display, repeat the update procedure according to the instructions above.



8.3.1 Select the "Orbitalum" headlist

When the power source software is updated, the "Orbitalum" header list is also automatically updated.

If the "Orbitalum" header list was modified before the update, an additional "Orbitalum [M]" header list – for "modified" – is generated and selected. Depending on the modification of the "Orbitalum [M]" header list, it is possible that the OWX will not function correctly. It is therefore necessary to select the "Orbitalum" header list first.

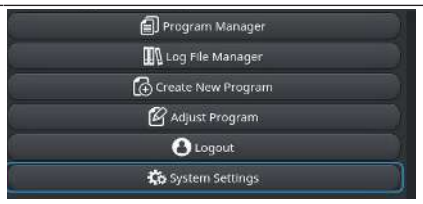
NOTICE!

Degraded communication setup between weld head and power supply.

Malfunctions may occur while setting up the communication if connecting the control cable to a power supply that is already switched on.

► Before connecting the welding head and the control cable make sure that the power supply is switched off.

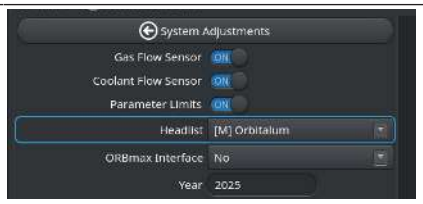
► From the main menu, navigate to "Settings" and then to the "Header list" menu item (1) in the "System settings."

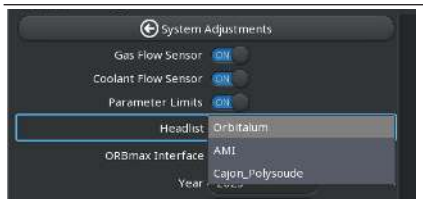


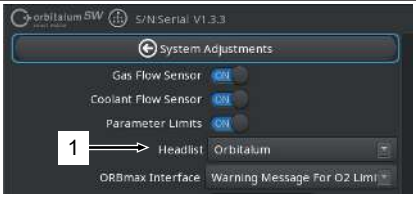


► Check which header list is selected and, if necessary, select the "Orbitalum" header list.

⇨ The OWX is now available with full functionality in the welding head selection.





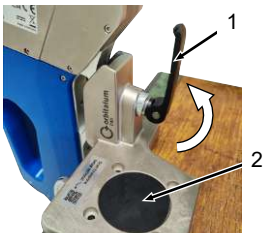

orbitalum SW
S/N:Serial V1.3.3
System Adjustments
Gas Flow Sensor
Coolant Flow Sensor
Parameter Limits
1
Headlist
Orbitalum
ORBmax Interface
Warning Message For O2 Limi

8.4 Table bracket V2 (optional)

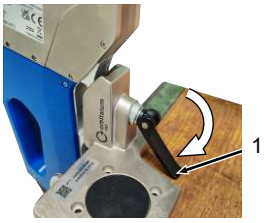
The optional table mount made of anodized aluminum allows convenient and safe mounting and securing of welding heads of the ORBIWELD X series. It can be clamped to the edges of workbenches, screwed onto work surfaces, or integrated into alternative fastening systems.

Possible uses:

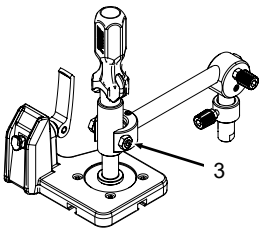
- For the stationary use of the weld head with clamping lever (1) pulled tight.



- For the short-term retention of the weld head with clamping lever (1) released.



- Rubber pad (2) as a support surface for the feet of clamps or quick clamps of alternative fastening systems.

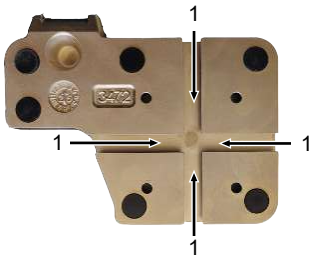


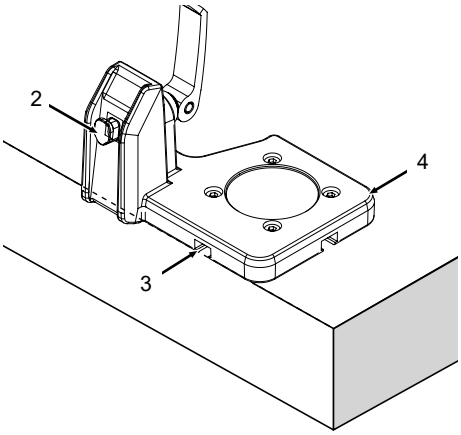
- Rubber pad (2) as a defined storage surface for small parts such as electrodes and screws.

8.4.1 Mounting table mount

Quick mounting on table edge as pre-assembled.

In the base of the table mount, two guide grooves (1) for the vise angle (5) run at right angles to its side edges. This allows the table mount to be mounted flush with a table edge on any of its four sides.





Guide groove (3) for vise angle (5) in the base of the table mount

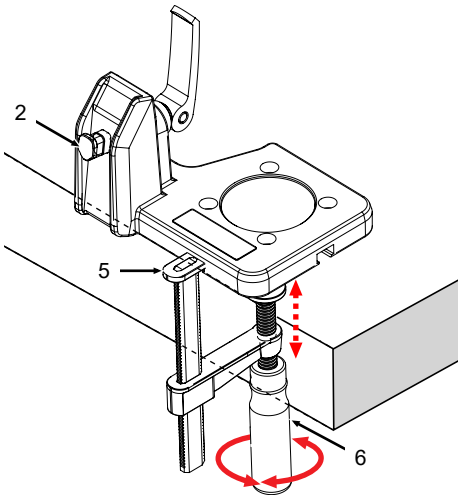
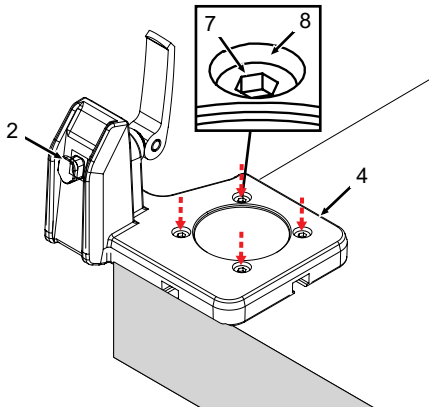


Table bracket with vise angle (5)

Procedure:

1. Align base (4) of the table mount parallel to the table edge so that the mounting pin (2) for the welding head faces away from the table edge.
2. Insert vise angle (5) into the guide groove (3) of the base and tighten clamping screw (6) firmly so that the table mount can no longer be moved by hand.

Screwed on worktop



Base of the table mount screwed onto work surface

Procedure:

1. Align base (4) of the table mount parallel to the table edge so that the mounting pin (2) faces away from the table edge.
2. Secure base (4) with suitable screws (7) through the four mounting holes (6) in the work surface.

Integrate into alternative fastening systems

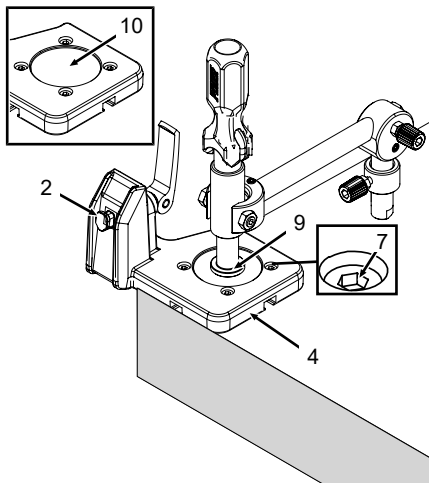


Table mount in alternative fastening system (example)

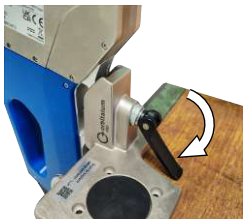
Procedure:

1. Align base (4) of the table mount parallel to the table edge so that the mounting pin (2) faces away from the table edge.
2. Use rubber pad (10) as a support surface for the feet of clamps (9) or quick clamps of the alternative mounting system, *see* installation instructions of the alternative mounting system.

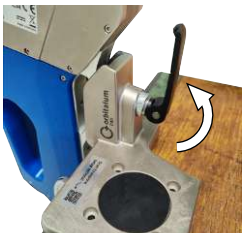
8.4.2 Fastening the weld head on the table mount

The following work steps describe fastening the weld head on the table mount using tightened quick clamp for stationary use and using released quick clamp for short-term retention.

The clamping lever can be used for both the “parking” position for short-term retention and the “clamping” position for fastening the weld head:



Quick clamp tilted vertically downward for short-term retention



Quick clamp tilted vertically upward for stationary use.

CAUTION

If the quick clamp is loosened too much from the table mount, there is the risk that the weld head may fall off.

Injuries and property damage may be the result.

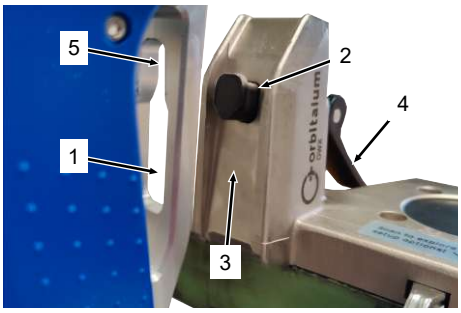
► Before attaching the weld head make sure that the clamping lever is not loosened too much.

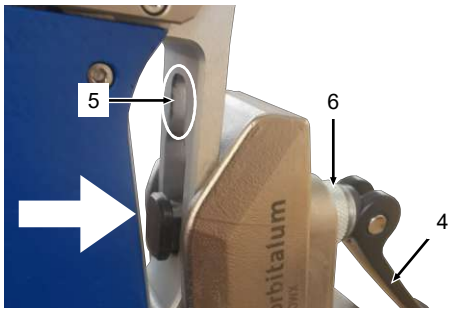
NOTICE!

The table mount is intended exclusively for short-term retention or fastening the OWX weld head. The user alone is liable for any damage and injuries arising from improper use.

► Release quick clamp (4) of the table mount.

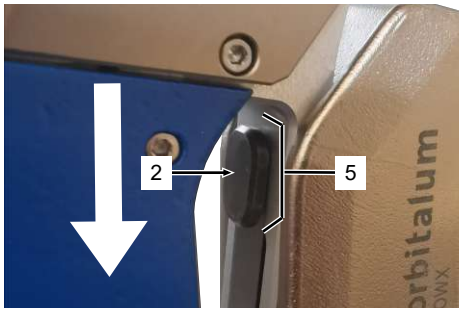
► Hold weld head vertically by the handle and push the lower, extended section of the mounting lug (1) completely over the head of the holding pin (2) and press against the stop face of the guide groove (3).



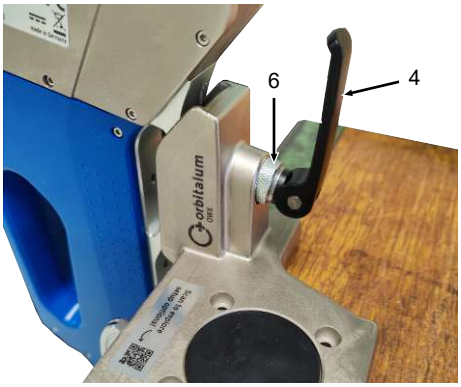


► Keep weld head pressed against the guide groove’s stop face and pull downward as far as the stop so that the head of the holding pin (2) is seated in the upper, narrowed section of the mounting lug (5).

⇨ The table mount may now be used for short-term retention because the weld head can be mounted and unmounted without even releasing the clamping lever.



- ► Screw in threaded sleeve (6) clockwise until the clamping lever (4) can only be operated with resistance. If necessary, unscrew the threaded sleeve until the clamping lever (4) can be fully engaged.
- ► Tilt clamping lever (4) back completely.
  - ⇨ The weld head is now clamped firmly on the table mount for stationary use.
- ► To release and remove the weld head from the table mount carry out the action steps in the reverse order.



8.5 Connecting the weld head to the power supply

DANGER



Fatal electrocution due to live parts.

Fatal electrocution when user generates contact between electrode and ground potential (enclosure/workpiece or the like) and welding process is started.

- ► Switch off the power source before connecting or disconnecting a welding head, hand torch, or machine torch.
- ► If the welding head, hand torch, or machine torch is not ready for operation, switch to test mode.
- ► Keep weld head closed.
- ► Do not generate any contact between electrode and ground potential (enclosure/workpiece or the like).

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



Coolant leakage during weld head change

Irritation of skin, eyes and respiratory tract possible on contact with coolant.

- ► Switch power supply off when changing weld head.

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!

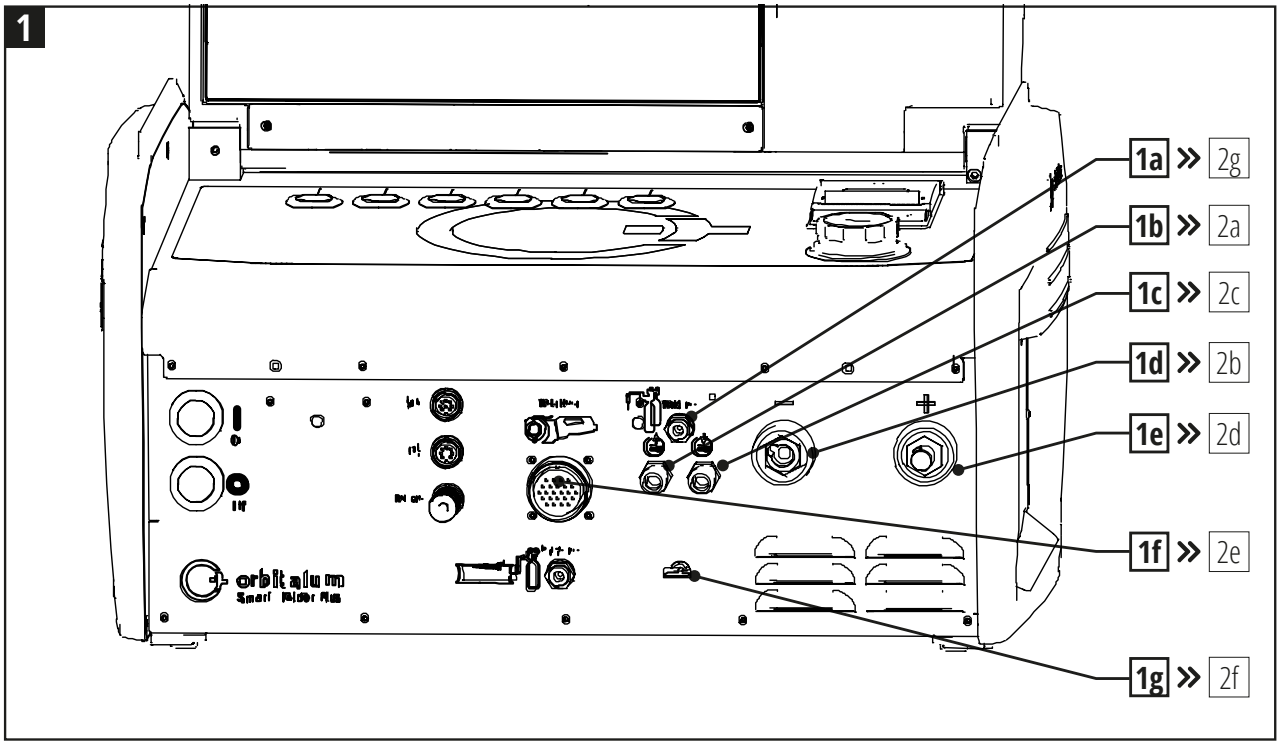
- ► Carefully sever the cable ties without damaging the hose package.

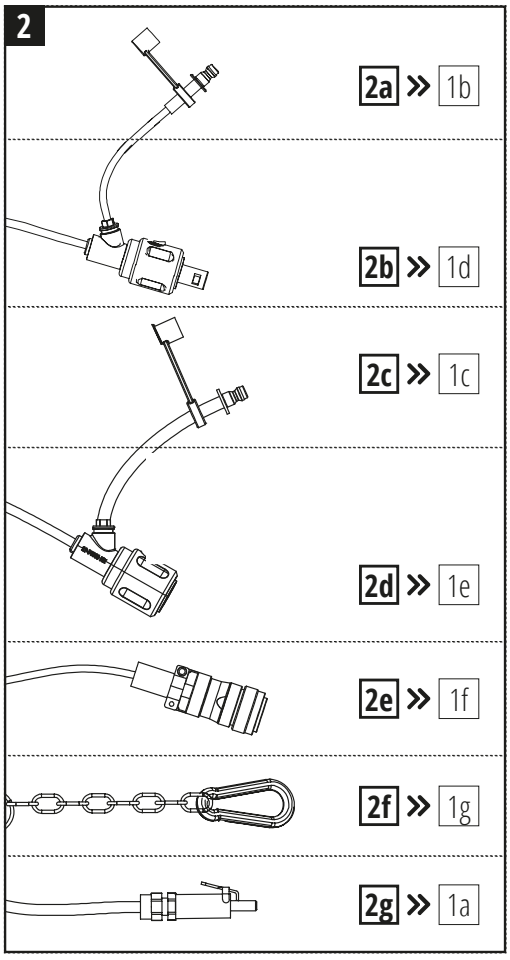
8.5.1 Connection sequence

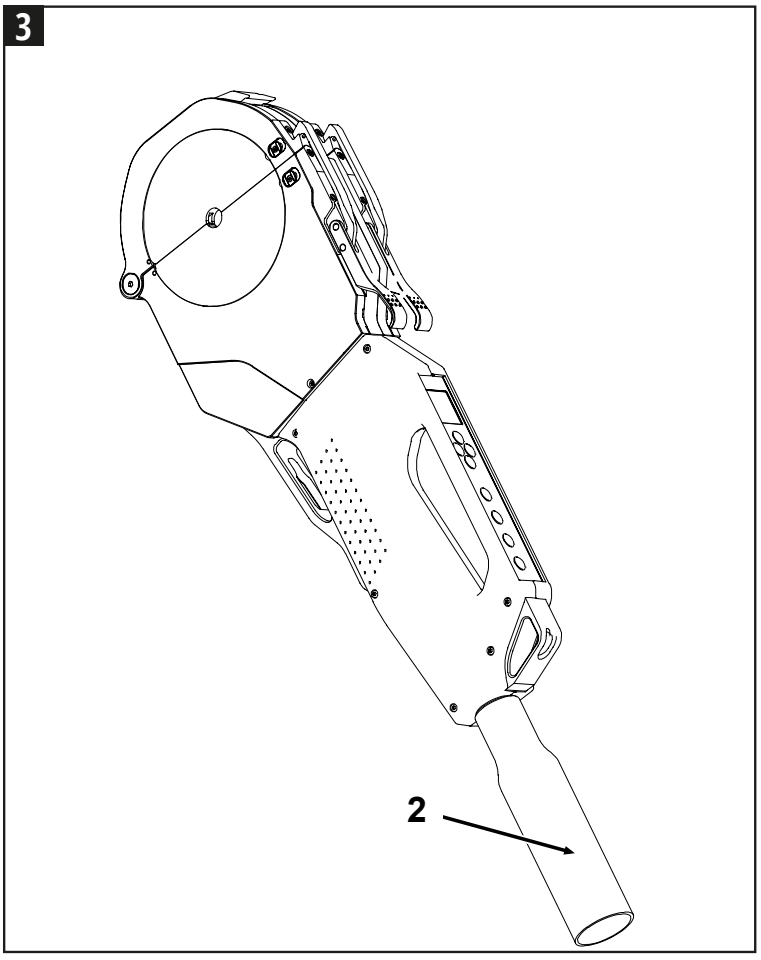
See also chapt. Connection scheme [▶ 43]).

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 connection.
5. Connect the gas hose.
6. Switch on the welding power supply.
7. Carry out gas and cooling liquid function test.

8.5.2 Connection scheme

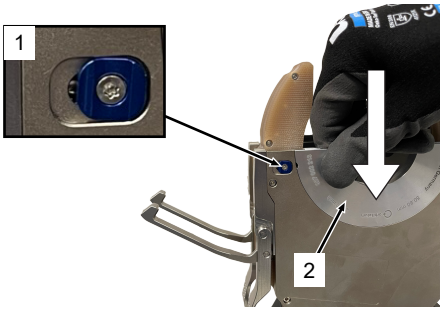






POS.	DESIGNATION	TO BE CONNECTED WITH	POS.
1	**Power supply**		
1a	Socket "Gas"	Plug "Gas", hose package	**2g**
1b	"Coolant supply line" socket, **blue**	"Coolant supply line" plug, **blue**, hose package	**2a**
1c	"Coolant return line" socket, **red**	"Coolant return line" plug, **red**, hose package	**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 supply"	**2e**
1g	"Strain relief" eye	"Strain relief" snap hook, hose package	**2f**
2	**Hose package**		
2a	Plug "Coolant supply line", blue	Socket "Coolant supply line", blue, power supply	**1b**
2b	Plug "Welding current –"	"Welding current –" socket, power supply	**1d**
2c	"Coolant return line" plug, red	"Coolant return line" socket, red, power supply	**1c**
2d	"Welding current +" socket	Plug "Welding current +", power supply	**1e**
2e	Plug "Control line"	Socket "Control line for power supply"	**1f**
2f	"Strain relief" snap hook	"Strain relief" eye, power supply	**1g**
2g	"Gas" plug (quick lock)	"Gas" socket, power supply	**1a**
3	**Weld head, e.g. type OWX 3.0**		

8.6 Mount clamping inserts



1. Position the weld head flat on the support surface.
2. Open the swivel clamp.
3. Insert the clamping insert (2) with the writing facing outwards. The latch (1) must snap into place

8.7 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 action steps
apply for both electrode diameters.

DANGER



Electrical hazards due to contact as well as improper or damp protective equipment.

Electric shock.

- ► **Do not** touch live parts (tube), especially during arc ignition.
- ► Persons with increased sensitivity to electrical hazards (e.g., heart failure) **must not** operate the machine .
- ► Wear dry safety shoes, dry metal-free (rivet-free) leather gloves, and dry protective suits to reduce the risk of electric hazards.
- ► 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 may start unexpectedly while setting up the electrode.

Risk of crushing hands and fingers!

- ► Before mounting the electrode: Turn off the power source.
- ► To move the rotor to the home position: Close the clamping cassette or clamping unit and the 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.

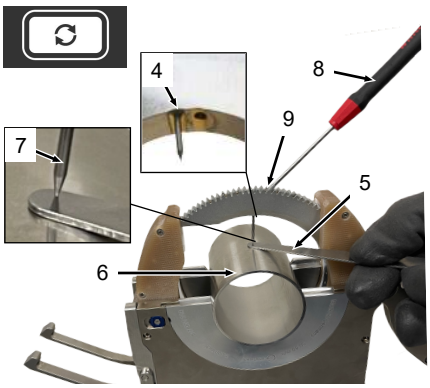
- ► Shorten the electrode.

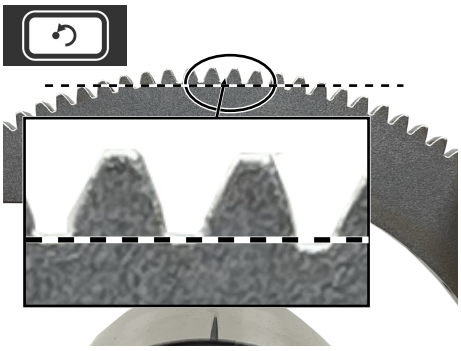
INFO



The OWX weld heads have 2 electrode holes for the electrode diameters 1.6 mm (0.063 in) and 2.4 mm (0.094 in), whlch are marked by electrode markings on the rotor (*see chapt.* Electrode holders).

1. Ensure that the welding power supply is switched on.
2. Move the rotor to the home position (0 position) (e.g. by pressing the "END.-0-POS" button on the control panel on the weld head).
3. Tilt lever (1) upward and lock hook (2) outward.
4. Open the swivel brackets (3).
5. Insert the workpiece (6).
6. Press the “MOTOR” button and keep it pressed until the electrode hole (4) has reached the 12 o' clock position (pay attention to markings on the rotor).
7. Switch off the Orbital welding power supply.
8. Loosen the electrode clamping screw (9).
9. Check the electrode (7) for sharpness and geometry (*see chapt.* Grinding electrode) and insert in the corresponding electrode hole (4)
   .
10. Set the electrode distance with a feeler gage (5) and tighten the electrode clamping screw finger tight using a screwdriver (8).
11. Make sure that the electrode does not project into the toothed space of the rotor;
    if necessary, shorten the electrode.
12. Switch on the welding power supply.
    .
13. Press the “END.- 0-POS button in order to bring the rotor to the home position (0 position).





8.8 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

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.

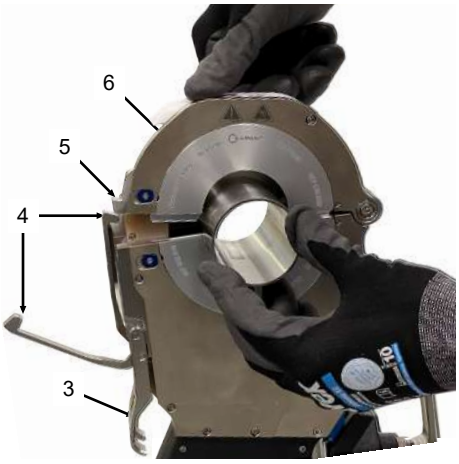
- ► Wear safety gloves to EN 388, Performance level 2.
- ► Before working on the machine torch or transporting, wait until the surfaces have cooled down below 50 °C (122 °F).
- ► Correctly position the machine torch.
- ► Use only permissible materials in the welding area.
- ► Observe the warning signs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

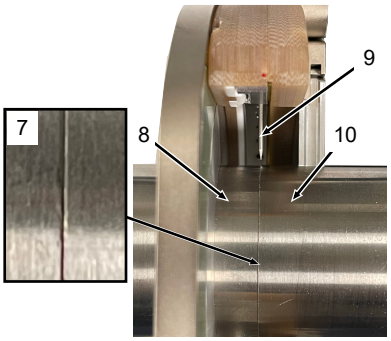
1. Ensure that the welding power supply is switched on.
2. Move the rotor to the home position (0 position) (e.g. by pressing the "END.-0-POS" button on the control panel on the weld head).



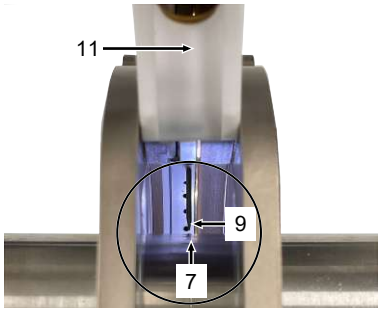
3. Tilt lever (3) upward and lock hook (4) outward.
4. Open both swivel clamps (6).

5. Insert workpiece 1 (8) and align pipe end to electrode tip.
   The electrode (9) has to be positioned centrally over the
   workpiece joint (7).
6. Open the swivel clamps (6).
7. Hook lock hook (4) into the metal nose (5) of the swivel clamp (6) above workpiece 1 (8)
   and tilt lever (3) down as far as the stop.
   => Workpiece 1 (8) is fastened.
8. Place workpiece 2 (10) at pipe end of workpiece 1 (8).
9. Open the swivel clamps (6).
10. Hook lock hook (4) into the metal nose (5) of the swivel clamp (6) above workpiece 2 (10)
    and tilt lever (3) down as far as the stop.
    => Workpiece 2 (10) is fastened.





11. Open the flip cover (11). If necessary, switch inside light on, *see chapt.* Start menu.



12. Check position of the electrode (9) and workpiece joint (7).
    The electrode (9) has to be positioned centrally over the workpiece joint (7); if necessary, repeat steps 1 to 9.
13. Close the flip cover (11).

8.9 Carry out gas and cooling liquid function test

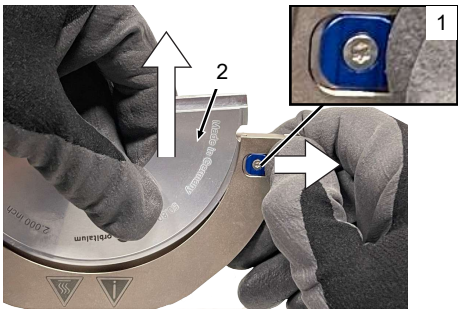
1. Press the “GAS“ button to start the function test of the gas and cooling liquid supply.
2. At the initial operation or if the weld head is not filled, wait 1 minute until the weld head is filled with cooling liquid.
3. If necessary, repeat the procedure until the error message "Coolant or gas shortage"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

8.10 Configure the welding procedure

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

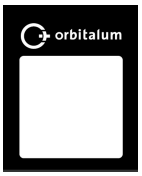
8.11 Dismantling the clamping inserts

1. Open the swivel clamp.
2. Push lock (1) outward.
   ⇨ Clamping insert (2) is unlocked.
3. Remove the clamping insert.



9 Operation

9.1 Operator button panel

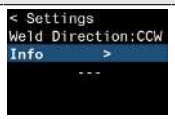
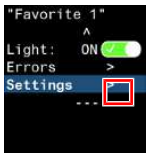
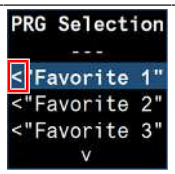
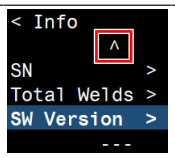
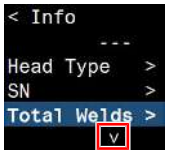
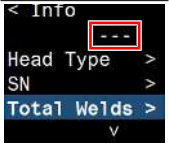
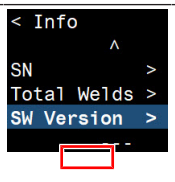
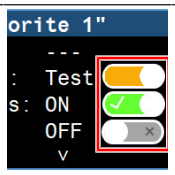
OPERATOR CONTROL	FUNCTION
Display 	• Display of weld head menu.
Arrow keys 	For navigation in the control menu: up, down, right, left.
START/ STOP 	• Pressing once: Starts the welding process. **NOTICE! The welding process starts with a short delay < 2 seconds. In case you are unsure if pushing the button has worked, wait 2 seconds before pushing again.**
	• 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.
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.
END.-0-POS 	• Pressing and holding: The rotor rotates until it has reached its "0-position" home position.
MOTOR 	• Pressing and holding: Rotor can be moved manually, for example to set up the electrode or to check the electrode position.

9.2 Menu control

You can navigate through the menu and change settings using the four arrow keys on the control panel.

The following table shows the screen elements, describes their functions, and the actions that can be performed using the four arrow keys.

NOTICE! The functions of the welding head menu are only supported by the Mobile Welder, Smart Welder, and Power Welder power sources.

SCREEN ELEMENT		FUNCTION	ACTION	ARROW KEY
Menu Cursor		Highlights the current position in the menu with a blue background.	Up	
			Down	
Right arrow		Indicates that the menu item has a submenu.	Submenu Open	
Arrow to the left		Indicates that the menu item is part of a higher-level menu.	Open parent menu	
Up arrow		Indicates that the list of menu items continues above.	Follow list upwards	
Down arrow down		Indicates that the list of menu items continues downward.	Follow list down	
Dotted Line at top		Indicates the top of the menu ribbon.		
Dotted Line at the bottom		Indicates the bottom of the menu bar.		
Slider		Control for selecting between two or more options.	To the next option	

SCREEN ELEMENT		FUNCTION	ACTION	ARROW KEY
Information field		Displays service-related information such as serial number, number of welds, and software version.		
Progress bar bar		Displays the welding program progress in %.		

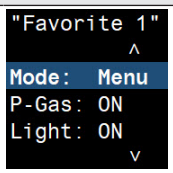
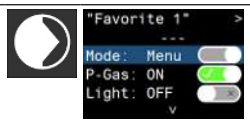
9.3 Start menu

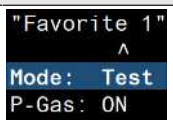
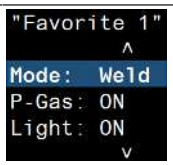
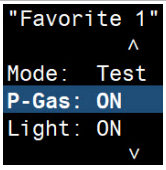
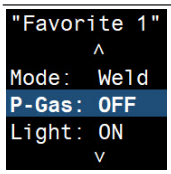
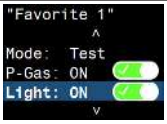
NOTICE! **The Start menu is only available outside of the welding process running.**

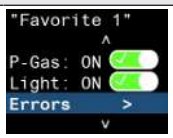
The Start menu appears immediately after the start of the power supply on the weld head display (*see* menu item “PRG Selection” screen image).

It provides setting options relevant to the welding process and is the starting point for switching to the settings (“Settings”).

The following table gives an overview of the menu items, their functions and setting options.

MENU ITEM	SCREEN IMAGE	SUBMENU	FUNCTION
PRG Selection			Display of the welding procedure currently loaded. Arrow key to the right opens the welding procedure selection (“PRG Selection”). *See chap.* Menu control [▶ 52] Every welding procedure from the “Favorites” procedure folders of the power supplies and the “DEFAULT” procedure are listed in the procedure selection. Loading the welding procedure: ✓ Favored welding procedures were highlighted as Favorites by the power supply’s procedure manager. 1. Highlight welding procedure using the menu cursor. 2. Confirm selection using “Arrow to the left” button.
Mode: Menu			“Menu” mode (idle): Switches the power supply in its main menu. • The power supply and weld head are idle. • In this mode the START/STOP button of the weld head operator button panel is deactivated. • Neither a welding process nor a test process can be started. • The GAS, END.-0-POS and MOTOR button functions continue to be available. **If the weld head is not being used, NOTICE! always switch to the “Idle” mode or to the power supply’s main menu. In this way the welding/test mode is prevented from starting inadvertently by means of the operator button panel.**

MENU ITEM	SCREEN IMAGE		SUBMENU	FUNCTION
Mode: Test				“Test” mode: Switches the power supply to the test mode. In the test mode, a simulation process can be started and all welding-relevant functions can be controlled in order to check and adjust the sequence of the currently loaded welding procedure. The entire welding process is started, but without: • Arc ignition / welding current • Flow of welding gas • Coolant flow Except for the features mentioned above, the test mode is identical to the "Weld" mode. ► Press the START/STOP button to start the simulation process.
Mode: Weld				“Weld” mode: Switches the power supply to the “Weld“ mode. In the “Weld” mode, the welding menu is activated and the welding process can be started. ► Press the START/STOP button to start the welding process. *See chapt.* Welding menu [▶ 58] *and chapt.* Weld mode [▶ 60]
P-Gas				Permanent Gas is activated. The Permanent Gas function continuously pressurizes the weld head with a constant flow of welding gas to prevent oxygen from entering the weld head. Prerequisite: Permanent Gas volume is configured in the “system settings” of the power supply.
				Permanent Gas is deactivated.
Light				Weld head inside light on. The Light function switches the illumination in the weld head’s welding chamber on. The illumination serves to better visually assess the alignment and offset of the workpieces to the electrode.
				Weld head inside light off. **NOTICE! The ”Light” function is switched to “ON” automatically after every welding in order to facilitate the insertion of new workpieces.**

MENU ITEM	SCREEN IMAGE	SUBMENU	FUNCTION
Errors			Status overview of the “Gas”, “Inv” (Inverter), “Cooling” and “System” system components. • “OK” = okay • “NOK” = not okay
Settings			Leads to the settings. *See chapt.* Settings [▶ 57]

9.4 Settings

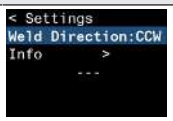
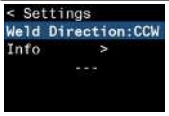
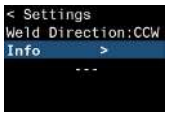
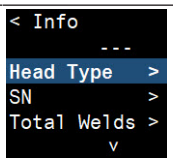
NOTICE! **The Start menu is only available outside of the welding process.**

Open from the start menu from “Settings”:

1. Move cursor to "Settings” menu item.
2. Press arrow key to the right.



Overview of the menu items, their functions and setting options:

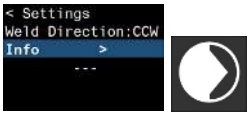
MENU ITEM	SCREEN IMAGE		SUBMENU/ SETTING	FUNCTION	
Weld Direction				Selection option of the direction of the weld head rotor’s rotation.	“Weld Direction:CW”: Rotor rotation starts welding upward clockwise.
					“Weld Direction:CCW”: Rotor rotation starts welding downward counterclockwise.
Info		 		Leads to the Info menu. *See chap.* Info menu [▶ 58]	

9.5 Info menu

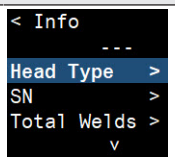
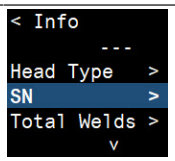
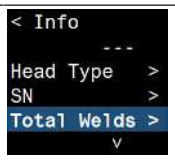
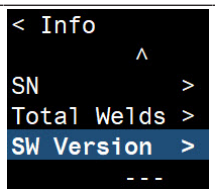
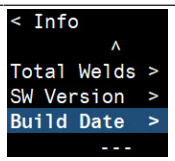
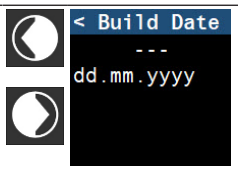
NOTICE! **The Info menu is only available outside of the welding process.**

Open the “Info” menu item from the “Settings”:

1. Move cursor to "Info” menu item.
2. Press arrow key to the right.



Overview of the information types and their functions:

MENU ITEM	SCREEN IMAGE	SUBMENU	FUNCTION
Head Type			Display of the weld head type.
SN			Display of the weld head serial number.
Total Welds			Display of the total number of weldings successfully completed up to now using the weld head.
SW version			Display of the software version of the weld head.
Build Date			Display of the date of manufacture of the weld heat in day-month-year format.

9.6 Welding menu

NOTICE! **The Info menu is only available during the welding process.**

Open the welding menu:

► Start the welding process.

⇨ The welding menu appears on the display. *See chapt.* Weld mode [▶ 60].
It indicates the name of the currently loaded welding procedure and also the process progress.

Overview of the displays and functions:

PARAMETER	SCREEN IMAGE	FUNCTION
Favorite		Display of the welding procedure currently loaded.
Progress bar		Graphic display of the welding procedure progress in [%].
Welding process active		The red bar signals the active welding process.

9.7 Weld mode

DANGER



Fatal electrocution due to live parts.

Fatal electrocution when user generates contact between electrode and ground potential (enclosure/workpiece or the like) and welding process is started.

- ► Switch off the power source before connecting or disconnecting a welding head, hand torch, or machine torch.
- ► If the welding head, hand torch, or machine torch is not ready for operation, switch to test mode.
- ► Keep weld head closed.
- ► Do not generate any contact between electrode and ground potential (enclosure/workpiece or the like).

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.

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 are emitted during the welding process.

Skin and eye damage.

- ► Close the clamping unit completely.
- ► Replace defective or ill-fitting clamping inserts immediately.

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.

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

Coolant leakage during weld head change

Irritation of skin, eyes and respiratory tract possible on contact with coolant.

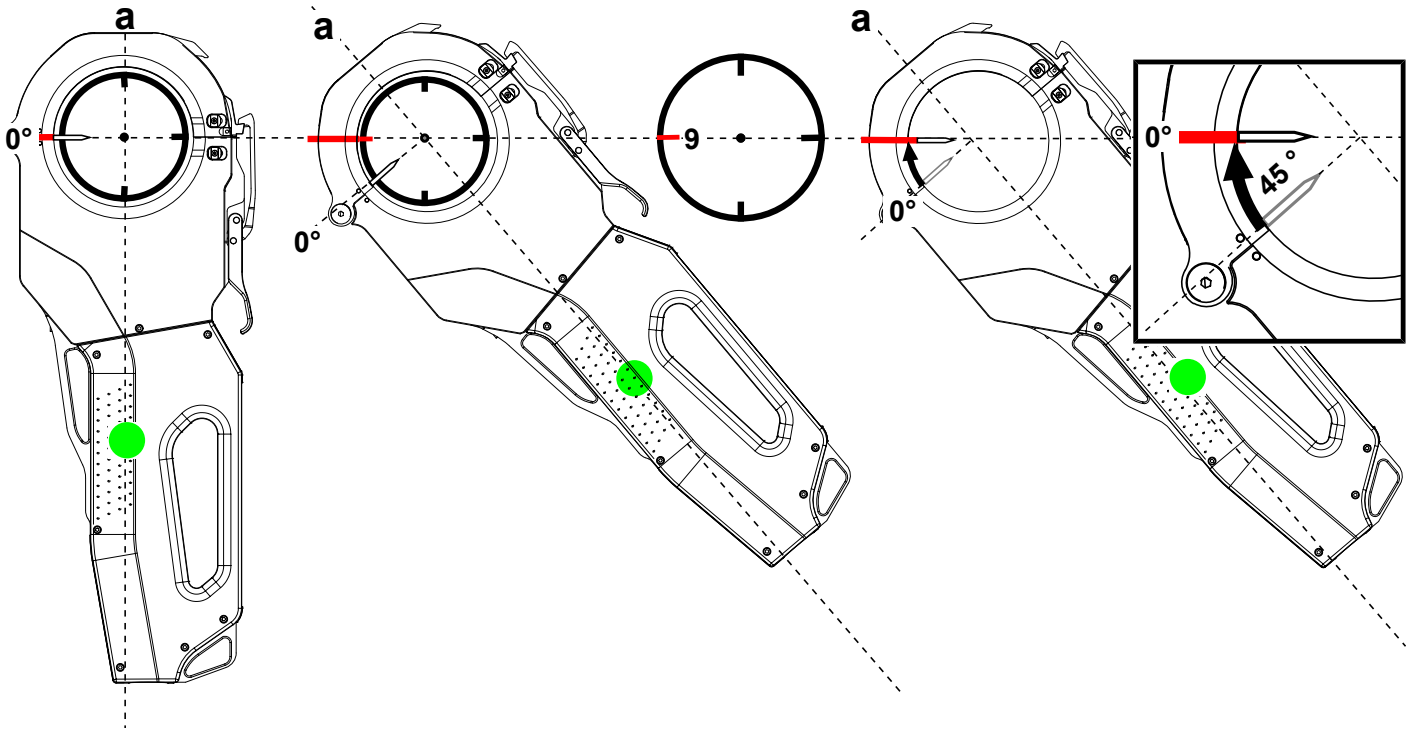
- ► Switch power supply off when changing weld head.

The effects of gravitational force on the melt change with the rotation of the electrode during the welding process. To offset them, different parameters can be set for each sector in the power supply's welding procedure.

The regular physical start position of the electrode in the weld head is the 9 o'clock position (home position/End.-0-Position).

It necessary to ensure that the start position of the electrode corresponds to the programmed start position (0° position) of the welding procedure.

To do this, there are two options:



1.) The weld head is clamped on the pipe in such a way that the 9 o'clock position of the electrode **corresponds** to the start position in the welding procedure (0° position).	2.) The weld head is clamped on the pipe in such a way that the 9 o'clock position of the electrode **does not correspond** to the start position in the welding procedure (0° position). ► Adjustment of the "start position" welding parameter in the welding procedure, here by 45°. ⇨ After pressing the Start button, the rotor moves the electrode to the start position programmed in the welding procedure (0° position) before the welding process starts.

Prerequisite:

- Welding power supply and weld head are ready for operation.
- Weld head is clamped.

Procedure:

► Press "END.-0-POS" button.



⇨ Rotor is moved to the 0/start position.

► Press the "START/STOP button to start the welding process.



► Observe the welding process.

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

⇨ The electrode returns automatically to home position/0° position.

9.7.1 Welding with autopositioning

The **“Autoposition” function** is available in the **power supply settings** of the Mobile Welder and Smart Welder series.
See also the power supply operating instructions.

NOTICE!



The “autoposition” function prevents welding from starting in the event of vertical pipe routing or inclination too steep.

“Autoposition” function is only effective when welding horizontally routed pipes.

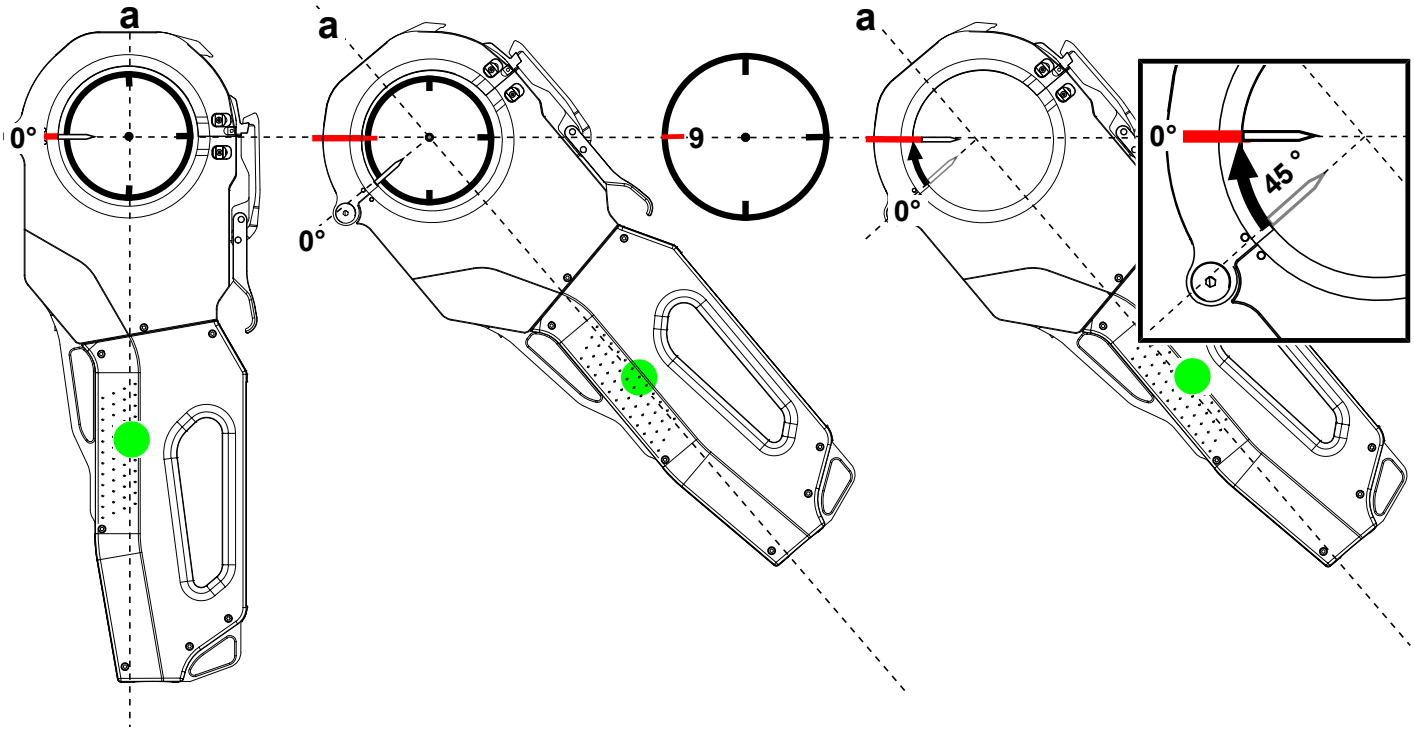
- ► Activate “autoposition” function only in the event of horizontal pipe routing.
- ► Deactivate “autoposition” function in the event of vertical pipe routing or inclination too steep.

The effects of gravitational force on the melt change with the rotation of the electrode during the welding process. To offset them, different parameters can be set for
each sector in the power supply’s welding procedure.

The regular physical start position of the electrode in the weld head is the 9 o’clock position (home position/End.-0-Position).

With **”autoposition”** activated, it is assured that the electrode always moves to the start position programmed in the welding procedure automatically prior to ignition, irrespective of the direction of the head.

When **"autoposition"** activated:



1.) The weld head is clamped on the pipe in such a way that the electrode 9 o'clock position **corresponds** to the start position in the welding procedure (0° position).

► No adjustment by the "autoposition" function because the electrode position corresponds to the programmed start position.

2.) The weld head is clamped on the pipe in such a way that the electrode 9 o'clock position **does not correspond** to the start position in the welding procedure (0 °-Position).

► After pushing the start button, the rotor automatically moves the electrode to the start position (0° position), programmed in the welding procedure, before the welding process begins.

In the **power supply process graph** the **position of the handle** is indicated by the dot (2) and the **position of the electrode** by the light-colored bar (1). If the weld head turns around the axis of the pipe , the position indicators move along with it.

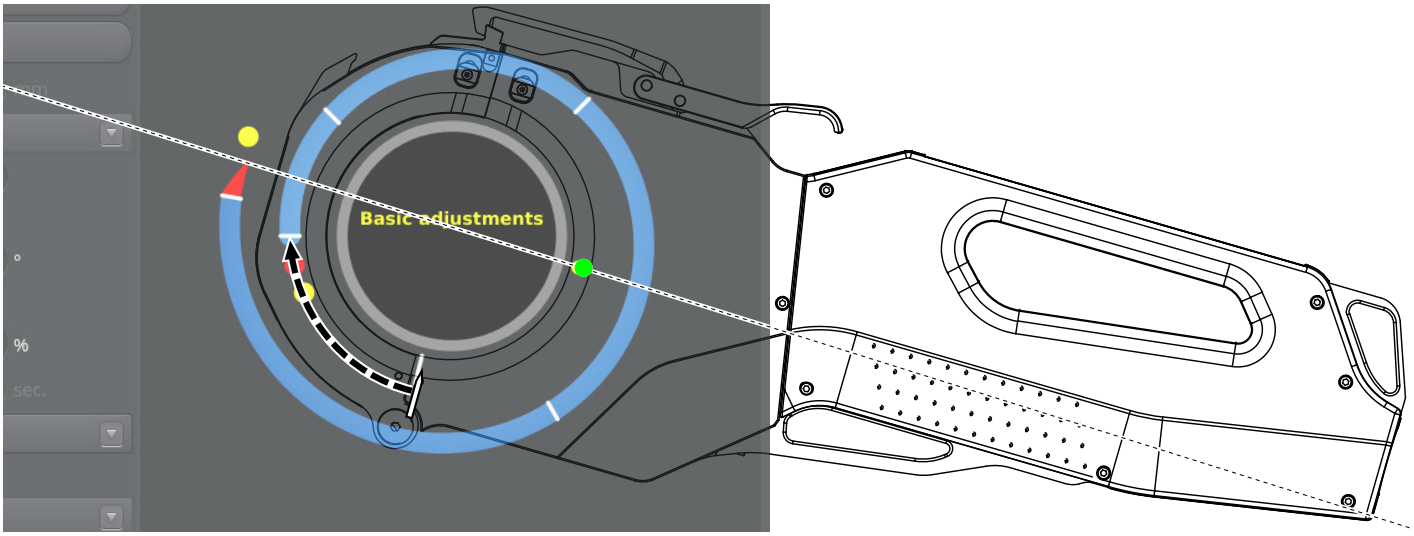
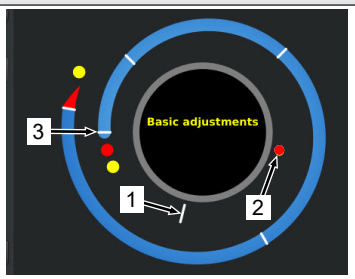
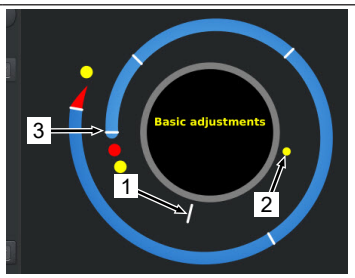
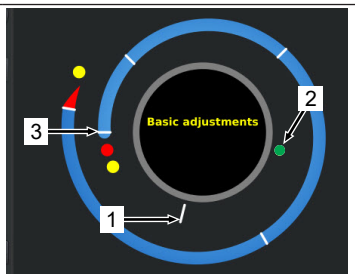
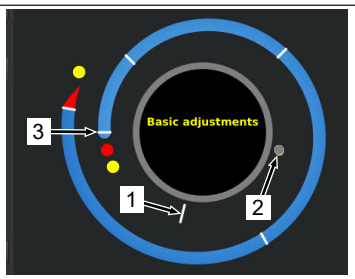
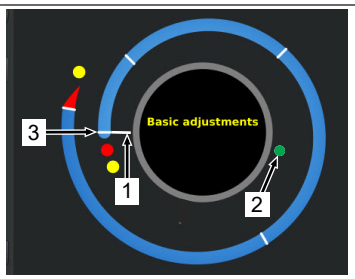
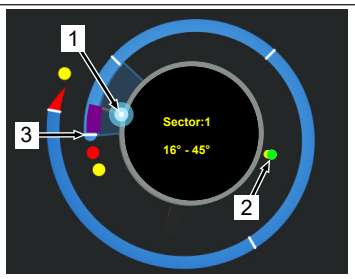


Illustration: Autopositioning of the electrode to the 9 o'clock position

The dot (2) indicates by its color whether it is possible to start the welding process in the current position or not, **between** red, yellow and green.

Color legend if the handle position indicator:

COLOR	STATUS	INDICATOR IN THE PROCESS GRAPH
●	✓ Pipe routing deviates too steeply from the horizontal. ► Welding is not possible.	
●	✓ Weld head in motion. ► Clamp the weld head onto the workpiece.	
●	✓ Weld head is clamped in possible welding position. ► The “END.-0-POS” can be pressed to move the electrode to the 9 o’clock position.	
●	✓ Electrode moves to the 9 o’clock position = 0° position. ► Wait until the electrode has reached the 9 o’clock position.	
●	✓ Electrode at the 9 o’clock position. ► Press the “START/STOP button to start the welding process.	
●	✓ Welding process is running. ► Monitor the welding process. ⇨ After ignition the electrode symbol changes to a blue illuminated dot. ⇨ The welded path is lightly highlighted.	

Prerequisite:

- Welding power supply of the Mobile Welder or Smart Welder series is connected and ready for operation.
- The “autoposition” function of the power supply is activated.
- The workpieces proceed horizontally; the symbol for the handle indicates readiness for welding (green).

Procedure:

► Press ”END.-0-POS” button.



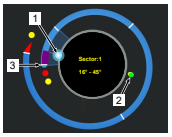
⇨ Electrode is moved to home position/0° position.

► Press the "START/STOP" button.



⇨ Welding process starts; the progress can be monitored in the power supply process graph.

► Observe the welding process.



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

⇨ The electrode returns to home position/0° position automatically.

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 Maintenance and care

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 moving 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 for the orbital welding power supply.
	Remote control	► Check the keys for functionality.
	Clamping cassette	► Check the lock and clamping mechanism for ease of use, function and clamping.
Before every use	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	► Ensure electrode gap 0.8 – 1.3 mm (0.031 – 0.051") (*see chapt.* Set up the electrode [▷ 46])
		► Only use cleanly partially ground quality electrodes. Recommendation: Type WS2, grinding angle 30.0° (*see chapt.* Grinding electrode)
	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: 12 - 18 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 supply (*see* operating instructions of the orbital welding power supply).
	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 60 weldings or daily	Welding chamber, 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 since the surfaces might be damaged otherwise).
		► Wipe out the rotor with a lint-free cotton cloth. **CAUTION Attention: Danger due to rotating rotor!**

INTERVAL	RESPECTIVE COMPONENT	ACTIVITY
Min. every 250 weldings or every week	Weld head	► Perform the standard cleaning process (*see chapt.* Standard cleaning process [▶ 70]). A shorter cleaning interval can prolong the service life of the weld head 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	► Have it replaced by certified Orbitalum service center.

10.2.1 Standard cleaning process

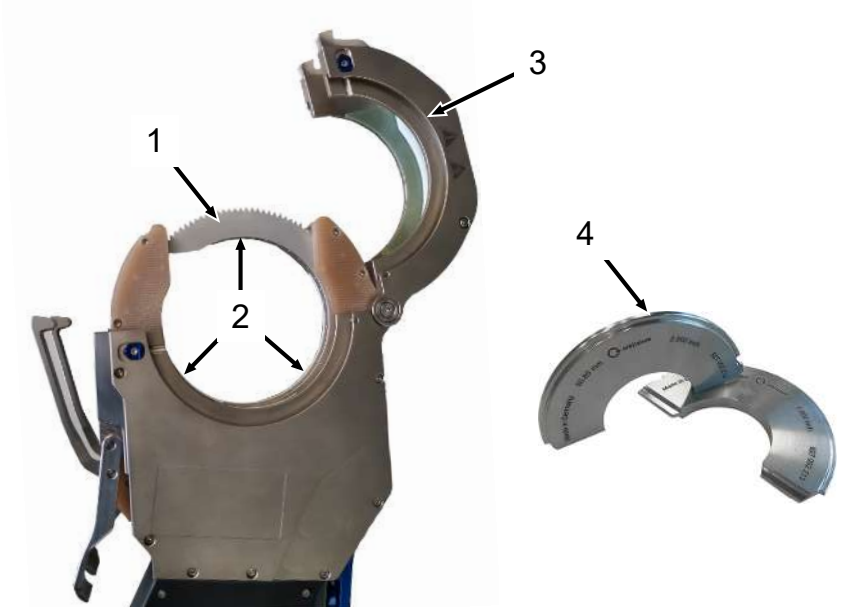
DANGER		**The rotation movement of the rotor can cause hair, jewelry or clothes to be caught and pulled into the enclosure.** ► Wear tight-fitting clothes. ► Do not wear open hair, jewelery or other accessories that can be easily drawn in.
CAUTION		**Risk of crushing due to unexpected start of the rotor 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.
CAUTION		**The use of lubricants can severely influence the function and cause damage.** ► Never spray lubricant **into** the welding tongs!

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.* Set up the electrode [▶ 46]).
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. Remove clamping insert (*see chapt.* Mount clamping inserts [▶ 45]).



Coarse cleaning procedure:

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

Fine cleaning procedure:

1. Spray the rotor (1) (both front surfaces of the rotor in particular), swivel clamp (3) and clamping inserts (4) again with contact cleaner. Let the rotor rotate by 360° while spraying (press MOTOR button).
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. Next, 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 coarse and fine cleaning.
5. Let cleaning agents evaporate completely.
6. Mounting clamping insert again.

10.3 Troubleshooting

WARNING



Electrostatic discharges when opening the weld head!

This can result in damage to electronic components, fires, and explosions.

- ► Send the weld head in for servicing or, as an experienced user, contact technical support.
- ► Use an ESD-compliant workstation and ground all conductive components.
- ► Wear ESD-compliant clothing, shoes, and gloves.
- ► Use an ESD protective mat on the work surface.
- ► Use ionizers to neutralize static charges in the air.
- ► Use ESD-safe packaging for sensitive components.
- ► Regularly train employees in handling ESD and the appropriate protective measures.

NOTICE!

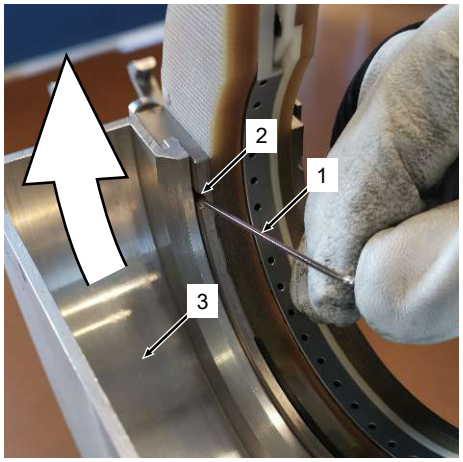


Opening or modifying the weld head is prohibited, except for the purpose of removing foreign objects from the gearbox.

- ► Follow the troubleshooting instructions.

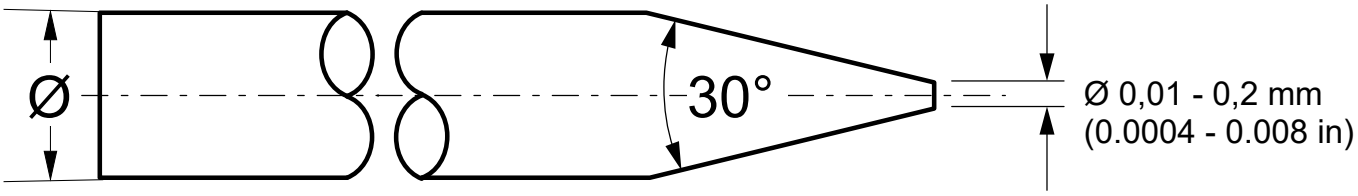
PROBLEM	POSSIBLE CAUSE	REMEDY
Welding process does not start.	No signal, gas, coolant, or welding current supply.	► Check connections to welding power source.
Weld head does not clamp properly onto workpiece.	Workpiece outside tolerance.	► Use adapted clamping inserts .
	Clamping force too low due to worn locking hook.	► Replace locking hook
Permanent large and constantly varying speed deviations.	Defect in power source or weld head.	► Contact service center.
Arc does not ignite.	Contact fault between workpiece and clamping insert.	1. Clean workpiece and clamping insert. 2. Remove insulating spacers.
	Workpieces are dirty.	► Clean workpiece.
	Welding gas concentration too low.	► Check welding gas supply and welding gas quantity.
	Electrode gap too large.	► Adjust the electrode distance.
	Electrode tip worn.	► Regrind the electrode.
	Cable break.	► Replace hose package.
	Conductivity of coolant too high.	► Only use Orbitalum OCL-30 coolant.
Arc pulls to the side.	Electrode worn.	► Regrind the electrode.
	Electrode ground incorrectly.	► Regrind the electrode.
	Poor electrode quality.	► Use Orbitalum electrodes.
	Incorrect or different workpiece materials (sulfur content).	► Change workpiece material.

PROBLEM	POSSIBLE CAUSE	REMEDY
Arc ignites against parts of the weld head.	Electrode not working properly.	► Replace electrode.
	Electrode gap too high.	► Adjust electrode distance.
	Weld head dirty.	► Clean the weld head.
	Gas pre-flow time too short.	► Increase gas pre-flow time.
	Electrode not installed.	► Install the electrode.
No menu appears on the display. No menu appears on the display	Control line plug	► Check for secure fit.
	Software version Power source	► Perform MW/SW/PW software update Perform.
	Power source type	► Function only compatible with MW/SW/ PW power sources.
Rotary motion does not start.	Connection faulty.	► Check the plug and welding power source.
	Electrode or other foreign objects in the gearbox.	► Disconnect the weld head from the power source.
		► If possible, remove foreign objects using a vacuum cleaner. Otherwise, send the weld head in for servicing or, if you are an experienced user, contact technical support, see Service/Kundendienst [▶ 75].
The mounting bolt and coil spring have fallen out of the table mount.	The clamping lever has been turned too far out of the base of the table mount.	► Slide the spring over the thread of the mounting bolt and screw it clockwise into the thread of the table mount base, applying pressure. Then tighten the threaded sleeve. Make sure that the clamping lever can still be moved with noticeable resistance. *See also section* Fastening the weld head on the table mount [▶ 39]

PROBLEM	POSSIBLE CAUSE	REMEDY
The lock for releasing the clamping insert cannot be reached with your finger.	Chamber inserts for fittings for OW 76S (code 827 050 007) were used.	► Insert a 1.5 mm hexagonal angle screwdriver (not included in the scope of delivery) (1) into the recess (2) between the chamber insert (3) and the outside of the welding head and push the locking device outwards. *See also section* Dismantling the clamping inserts [▶ 50] 

10.4 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.



10.5 Service/Kundendienst

Do you have questions about the operation of your Orbitalum system or do you have a technical problem?

Our experienced and qualified product and application specialists will support you in the correct selection and application of products.

In order to process your request as efficiently as possible, please provide us with the serial number of the equipment concerned when contacting us. This way we will have an initial overview.

- Handling of technical inquiries and problems
- Systematic fault diagnosis and correction
- Support in the selection of the right spare parts
- Support during operation, commissioning and test runs
- Support by telephone, by e-mail and on request also at your facility

E-mail: tech.support@orbitalum.com

Phone: +49 (0) 77 31 792-764

The following data are required to order spare parts:

- Machine model: (example: OWX 3.0)
- 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. Place 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.

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.

► For a detailed overview of compatible accessories, see the "Orbital Welding" product catalog.

PDF download links:

https://www.orbitalum.com/de/download.html

► Connect suitable accessories; see the accessory's operating instructions.

Clamping inserts



- Made of aluminum.
- One clamping insert consists of 2 clamping shells for one clamping side.
- Two clamping inserts (= 4 clamping shells) are required per tube diameter.

Chamber inserts for fittings



Clamping inserts for welding fittings (e.g., flanges, end plates, and bolted joints in the food industry).

1 chamber insert consists of 2 clamping shells.

For dimensions, see the "Orbital Welding" product catalog.

T-joint clamping inserts



Clamping inserts capable of holding both the necked-down pipe and the pipe to be welded.

For each application and dimension, the following is required:

- 1 T-piece clamping insert
- 1 electrode adapter set
- 1 clamping insert

Inserts for arc welding



To weld standard elbows without a straight leg attachment to pipes.

When using these inserts on one weld head side (right or left), only gas shielding around the elbow is ensured; clamping does not occur, so the elbow must be tacked.

Consisting of:

• 2 base holder halves, independent of tube diameter

• 2 cover disc halves, depending on the tube diameter

The cover discs are inserted into the basic retainer and can be rotated as desired, allowing for any exit angle of the elbow leg from the weld head. The pipe to be welded on the opposite side of the weld head is held in place by a standard clamping insert.

For each application and dimension, the following is required:

- 1 insert for elbow welding
- 1 clamping insert

Brass electrode adapter



Robust brass adapter for lateral adjustment of the tungsten electrode.

The brass electrode adapter reduces the maximum weldable tube diameter:

MODEL	[MM]	[INCH]
OWX 1.5	25.40	1,000
OWX 3.0	48.00	1,890

Electrode adapter for front seam welding



The electrode adapter for front seam welding is used to join two workpieces along their end faces.

Electrode adapter for internal welding



Electrode adapter for internal welding.

Hose package extensions



The hose package extension allows the hose assembly to be extended by up to 20 m.

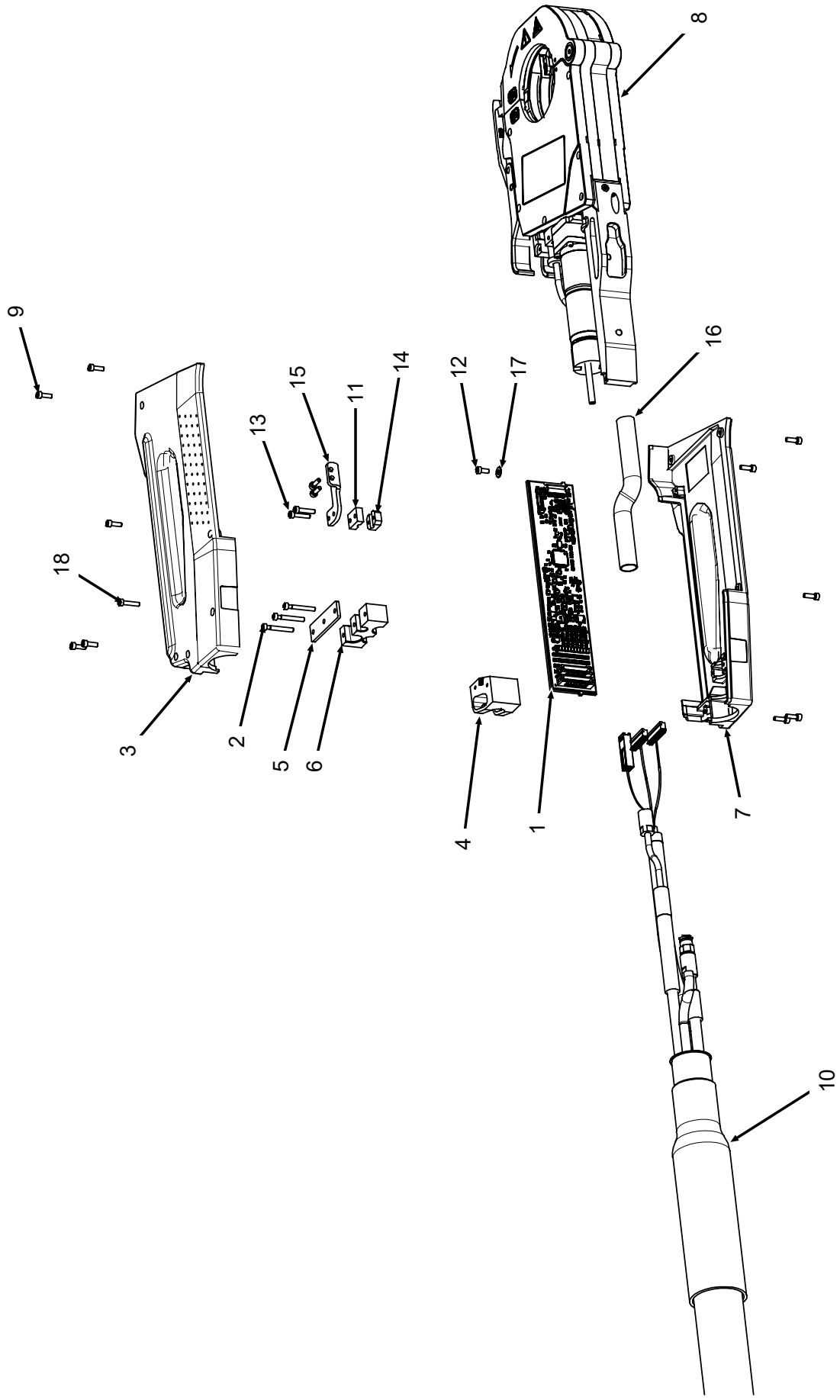
OWX Table Mount, V2



The table mount, made of anodized aluminum, features a quick clamp that allows for convenient and secure placement and securing of ORBIWELD X-series weld heads. It can be clamped to the edges of workbenches, screwed onto workbenches, or integrated into alternative mounting systems.
The screw clamp can be slid into the base from four sides, providing additional flexibility.

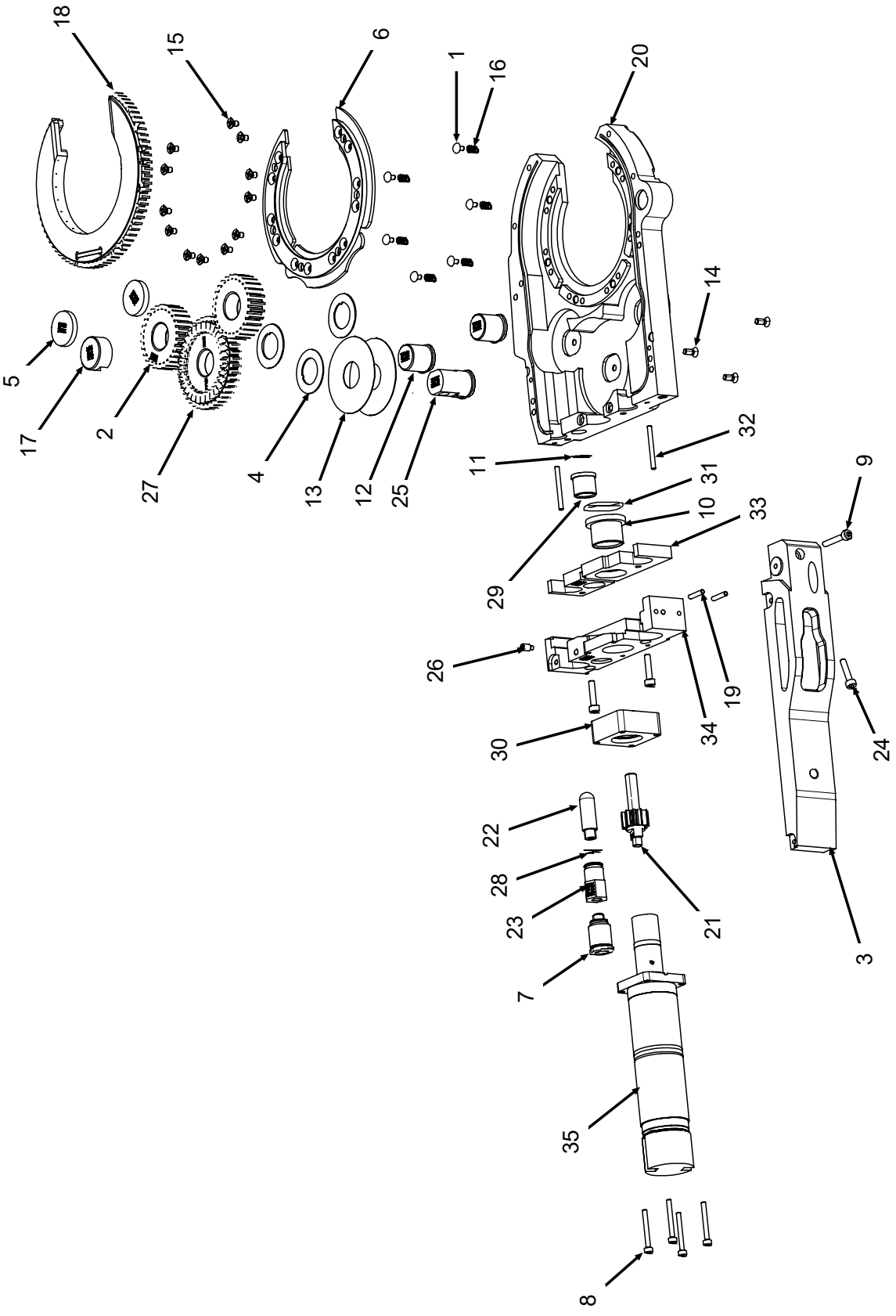
13 ERSATZTEILLISTE | SPARE PARTS LIST

13.1 OWX 1.5 | OWX 1.5

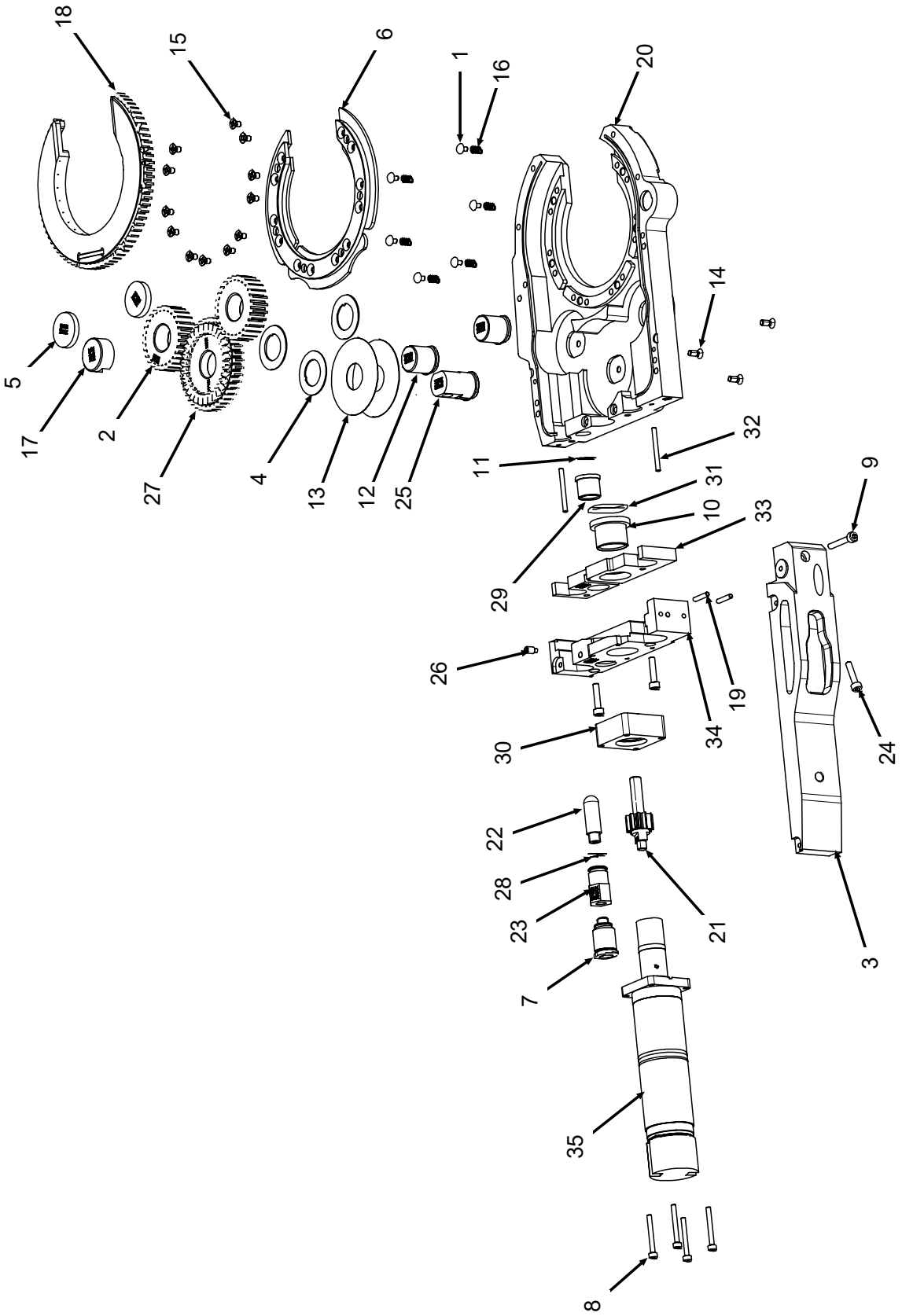


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	837 050 120	1	Bedienpanel OWX L Control panel OWX V	11	836 020 079	1	Stromkontaktklemme OWX, Oberteil Current contact clamp OWX, upper part
2	305 501 097	3	Zylinderschraube ISO4762-M2.5x20-A2 Cylinder screw ISO4762-M2.5x20-A2	12	'836 020 085	1	Kunststoffschraube M2,5x6 Plastic screw M2,5x6
3	836 020 057	1	Handgriff, Hinterteil OWX1.5 Handle, rear part OWX1.5	13	305 501 051	2	Zylinderschraube ISO4762-M2.5x12-A2 Cylinder screw ISO4762-M2.5x12-A2
4	836 020 060	1	Endstück, Handgriff OWX1.5 End piece, handle OWX1.5	14	836 020 080	1	Stromkontaktklemme OWX, Unterteil Current contact clamp OWX, lower part
5	836 020 061	1	Fixierblech, Zugentl. SP OWX1.5/3/4 Fixing plate, strain relief CS OWX1.5/3/4	15	836 070 004	1	Stromkontaktblech OWX1.5 Current contact plate OWX1.5
6	836 020 059	1	Zugentlastung, Handgriff OWX1.5/3/4 Strain relief, handle OWX1.5/3/4	16	836 070 002	1	Isolationsschlauch OWX Insulation hose OWX
7	836 020 058	1	Handgriff, Vorderteil OWX1.5 Handle, front part OWX1.5	17	836 020 084	1	Distanzhülse 7x3,4x2 PA 6 Space Sleeve 7x3,2x2 PA 6
8	836 050 001	1	Kopfbaugruppe Head assembly	18	305 501 103	1	Zylinderschraube ISO4762-M2.5x14-A2 Cylinder screw ISO4762-M2.5x14-A2
9	305 501 054	12	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2				
10	836 050 021	1	Schlauchpaket OWX Hose package OWX				

13.2 Grundkörper Basisteil OWX 1.5 | Base body OWX 1.5

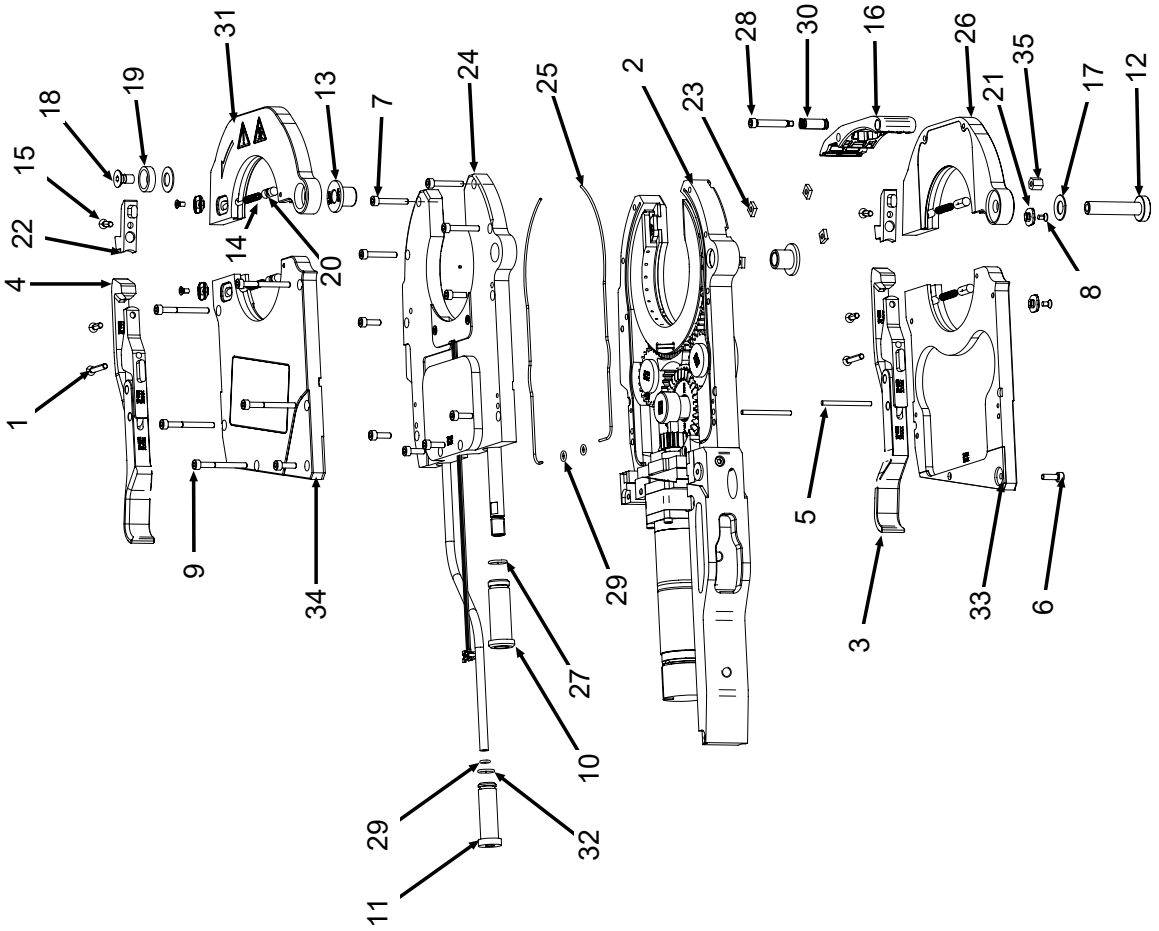


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	826 007 011	6	Kugelkopfdruckstück OWS/X Spherical head pressure piece OWS/X	11	836 020 030	1	O-Ring DIN3771-7.0x1 O-Ring DIN3771-7.0x1
2	836 020 053	2	Stirnzahnrad, Z27 OWX1.5/4/6 Spur gear, Z27 OWX1.5/4/6	12	836 020 014	2	Lagerzapfen, kurz OWX Bearing journal, short OWX
3	836 020 045	3	Trägerplatte Handgriff OWX1.5 Support plate handle OWX1.5	13	836 020 016	2	Distanzscheibe, Kronenrad OWX Spacer, crown wheel OWX
4	836 020 002	1	Teflonscheibe, Typ A OWX Teflon washer, type A OWX	14	305 501 018	3	Senkschraube ISO14581-M2.5x6-A2-TX Countersunk screw ISO14581-M2.5x6-A2-TX
5	836 020 004	2	Abstandshalter,Typ A 2.8 OWX1.5/3.0 Spacer, type A 2.8 OWX1.5/3.0	15	302 000 029	12	Senkschraube ISO7046-1-M2.5x4-A2 Countersunk screw ISO7046-1-M2.5x4-A2
6	836 020 035	1	Teflonring OWX1.5 Teflon ring OWX1.5	16	826 020 009	6	Feder für Kugelkopfdruckstück OWS/X Spherical head press.piece, spring OWS/X
7	817 020 011	1	Steckverschraubung QSM-M5-6-I Push-in fitting QSM-M5-6-I	17	836020012	1	Axialsicherung, Kronenrad OWX Axial lock, crown wheel OWX
8	305 501 047	4	Zylinderschraube ISO4762-M2x18-A2 Cylinder screw ISO4762-M2x18-A2	18	836 050 004	1	Rotor OWX1.5 Rotor OWX1.5
9	305 501 052	1	Zylinderschraube ISO4762-M2.5x16-A2 Cylinder screw ISO4762-M2.5x16-A2	19	565 808 170	2	Zylinderstift ISO2338-2M6x10-A2 Cylinder pin ISO2338-2M6x10-A2
10	836 020 001	1	Isolierbuchse, Motorwelle OWX Insulating bush, motor shaft OWX	20	836 020 031	1	Grundkörper, Basisteil OWX1.5 Base body, base part OWX1.5

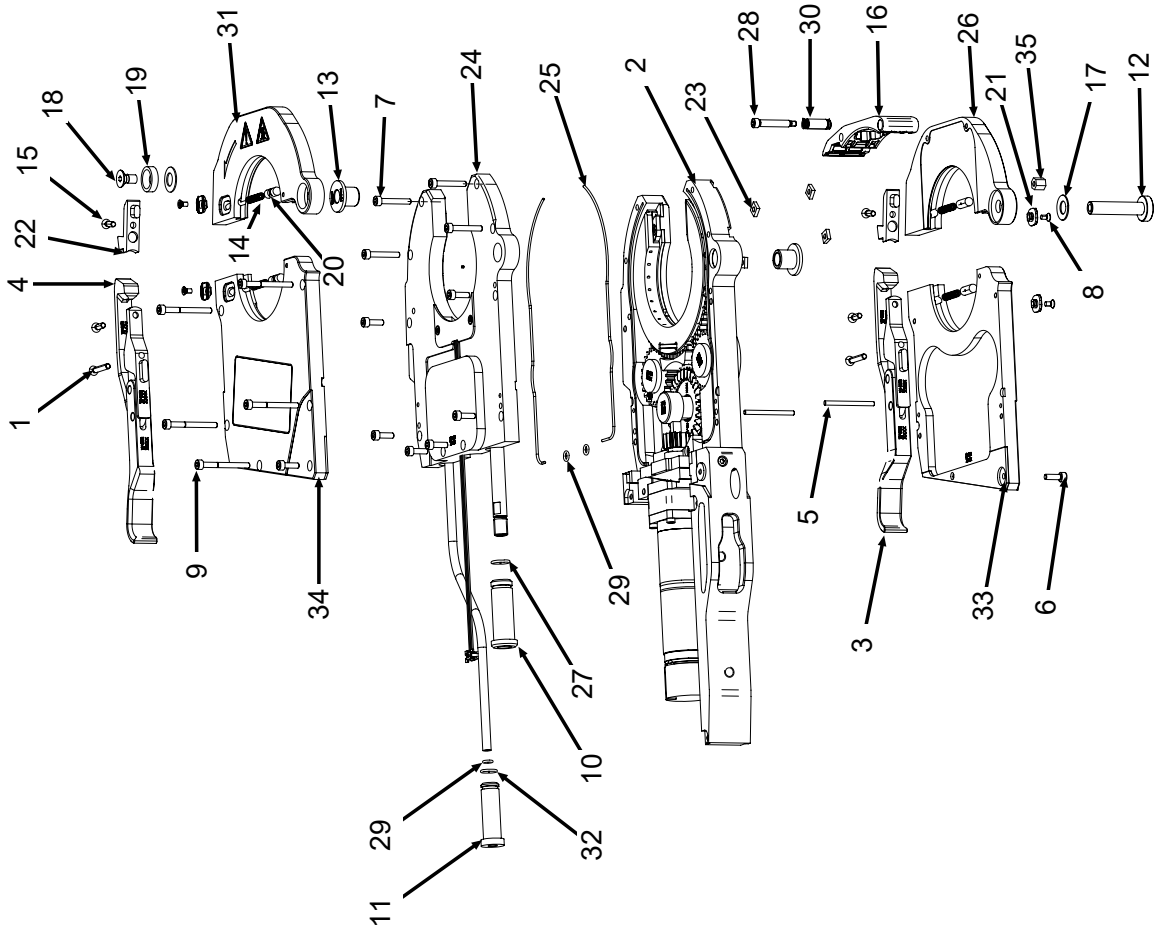

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POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	836 020 019	1	Antriebsritzel OWX Drive pinion OWX	31	826 020 012	1	O-Ring 14.00 x 1.78 O-ring 14.00 x 1.78
22	827 020 011	1	Schweißgasausströmer OW 76S/19/X Welding gas diffuser OW 76S/19/X	32	836 025 001	2	Zylinderstift ISO2338-2m6x20-A2 Cylinder pin ISO2338-2m6x20-A2
23	836 020 006	1	Gas-Verbinder OWX Gas connector OWX	33	836 020 068	1	Isolierplatte, Kronenrad OWX1.5 Insulating plate, crown wheel OWX1.5
24	305 501 051	3	Zylinderschraube ISO4762-M2.5x12-A2 Cylinder screw ISO4762-M2.5x12-A2	34	836 020 069	1	Montageplatte Motor OWX1.5 Mounting plate motor OWX1.5
25	836 020 013	1	Lagerzapfen, lang OWX Bearing journal, long OWX	35	836 050 025	1	Motor OWX 1.5/3.0 Motor OWX 1.5/3.0
26	827 020 001	1	Elektrodenklemmschraube 76S/115S/X3.0 Electrode clamping screw 76S/115S/X3.0				
27	836 020 010	1	Kombinationszahnrad OWX Combination gear OWX				
28	836 020 029	1	O-Ring DIN3771-6x1 -farbig- O-ring DIN3771-6x1				
29	836 020 063	1	Bundbuchse, Gasausströmer OWX Collar bushing, gas outlet OWX				
30	837 020 025	1	Distanzplatte Motor OWX Spacer plate motor OWX				

13.3 Kopfbaugruppe OWX 1.5 | Head assembly OWX 1.5

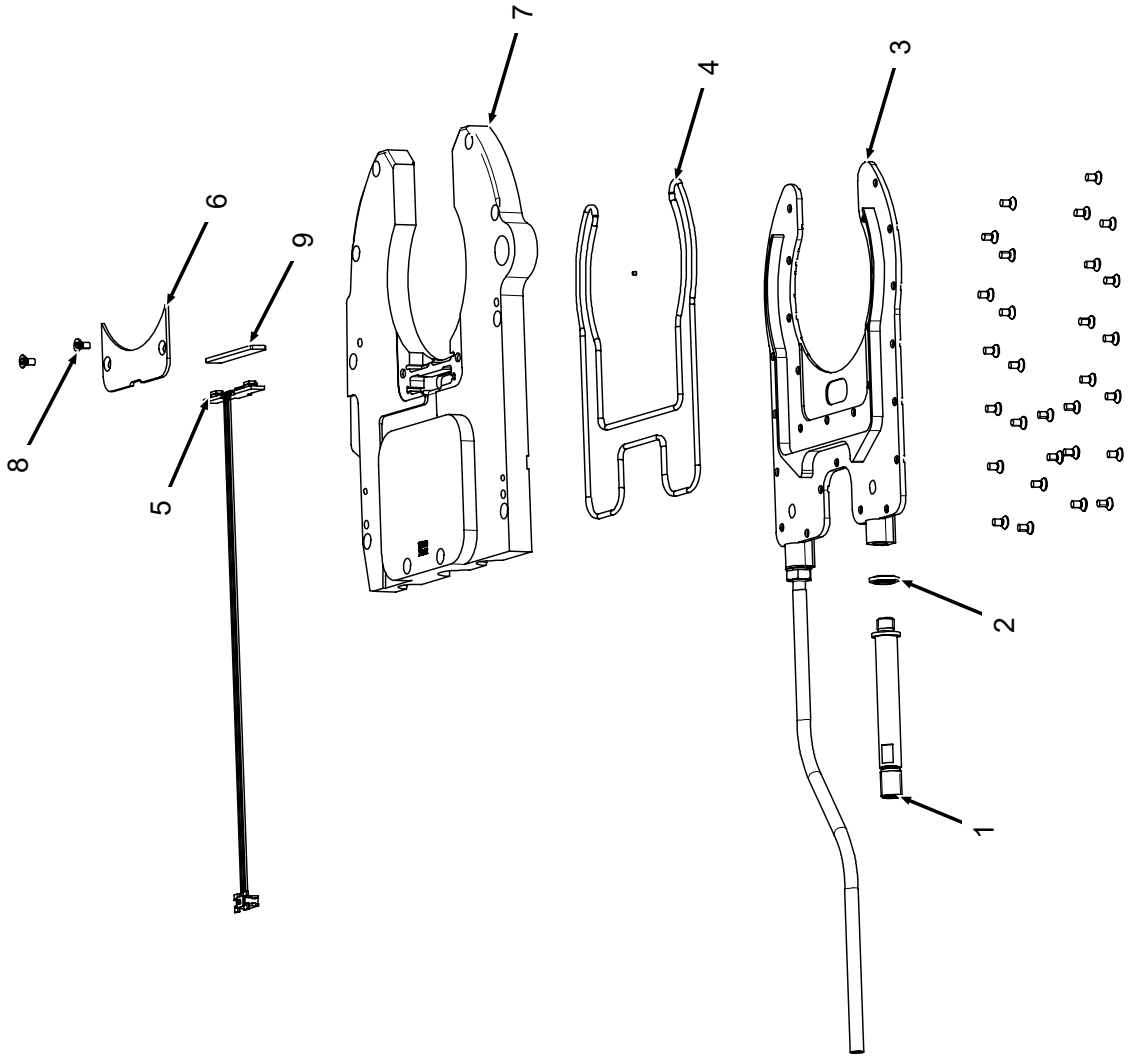


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 017	2	Senks. ISO14581-M2.5x16-A2-TX C.scr. ISO14581-M2.5x16-A2-TX	10	836 020 017	1	Buchse, El.. Anschl.nippel OWX Socket, el.. Conn. nipple OWX
2	836 050 002	1	Grundkörper Basisteil OWX1.5 Main body base part OWX1.5	11	836 020 018	1	Buchse, Rücklauf Kühlplatte OWX Bushing, return Cooling plate OWX
3	836 050 006	1	Verschluss, vorne OWX1.5 Closure, front OWX1.5	12	836 020 044	1	Gelenkbolzen OWX1.5 Hinge pin OWX1.5
4	836 050 007	1	Verschluss, hinten OWX1.5 Closure, rear OWX1.5	13	836 020 024	2	Gleitlagerbuchse, Scharnier OWX1.5/3 Sliding bearing bushing, hinge OWX1.5/3
5	565 808 185	2	Zyl.st. ISO2338-2m6x26-A2 Cyl. pin ISO2338-2m6x26-A2	14	836 020 071	4	Druckfeder Arretierungsstift OWX1.5/4.5 Pressure spring locking pin OWX1.5/4.5
6	305 501 054	8	Zyl.schr.ISO4762-M2.5x8-A2 Cyli. screw ISO4762-M2.5x8-A2	15	305 501 016	4	Senkschraube ISO14581-M2.5x8-A2-TX Countersunk screw ISO14581-M2.5x8-A2-TX
7	305 501 052		Zyl.schr. ISO4762-M2.5x16-A2 Cyl. scr. ISO4762-M2.5x16-A2	16	836 020 036	1	FlipCover OWX1.5 FlipCover OWX1.5
	305 501 054	4	Bis SN XXX XXX XXXX | Up until SN XXX XXX XXXX Zyl.schr. ISO4762-M2.5x16-A2 Cyl. scr. ISO4762-M2.5x16-A2 Ab SN YYY YYY YYYY | From SN YYY YYY YYYY Zyl.schr. ISO4762-M2.5x8-A2 Cyl. scr. ISO4762-M2.5x8-A2	17	836 020 028	2	Tellerfeder DIN16983 12x6.2x0.5-A2 Belleville washer DIN16983 12x6.2x0.5-BR
8	305 501 022	4	Senks. ISO14581-M2x4-A2-TX C.scr. ISO14581-M2x4-A2-TX	18	302 303 118	1	Senkschraube ISO10642-M4x8-A2 Countersunk screw ISO10642-M4x8-A2
9	305 501 128	5	Zyl.schr. ISO4762-M2.5x25-A2 Cyl. scr. ISO4762-M2.5x25-A2	19	836 020 008	1	Andruckscheibe Scharnier OWX1.5/3 Pressure disc, hinge OWX1.5/3


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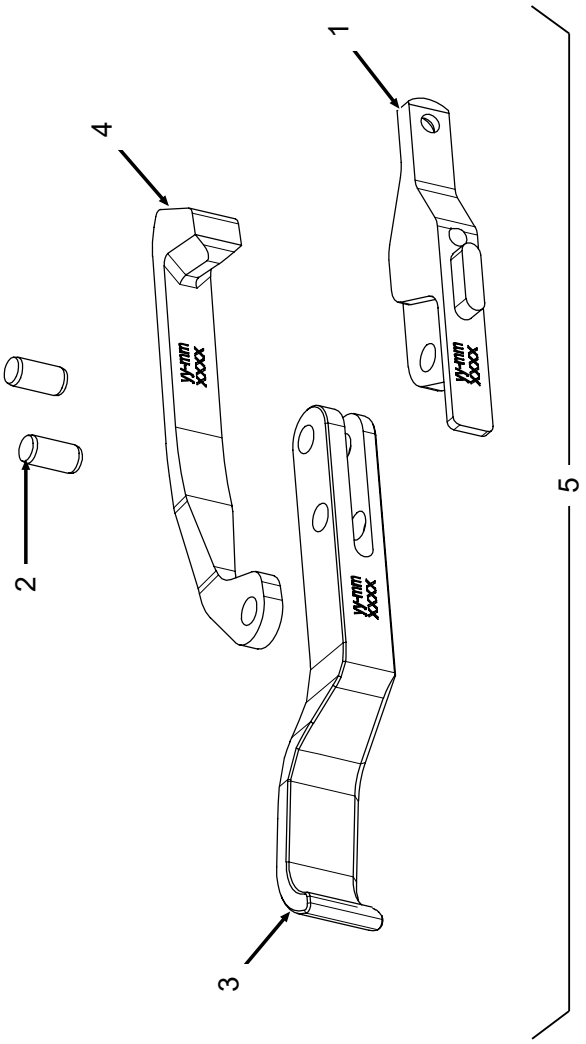
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	836 020 022	4	Arretierungsstift, Spanneinsatz OWX Locking pin, clamping insert OWX	30	836 020 074	1	Druckfeder VD-108 Pressure spring VD-108
21	836 020 021	4	Bedienscheibe, SPE Arretierung OWX Operating disk, SPE Lock. dev. OWX	31	836 050 015	1	Schwenkbügel, hinten OWX1.5 m.Iso. Swivel bracket, rear OWX1.5 w. insul.
22	836 020 048	2	Gegenhaken OWX1.5 Counter hook OWX1.5	32	836 020 029	1	O-Ring DIN3771-6x1 -farbig- O-ring DIN3771-6x1 -colored-
23	500 602 315	4	Bis SN XXX XXX XXXX | Up until SN XXX XXX XXXX Vierkantmutter DIN562-M2.5-A2 Square nut DIN562-M2.5-A2 Ab SN YYY YYY YYYY | From SN YYY YYY YYYY entfällt not required	33	836 050 017	1	Seitenplatte, vorne OWX1.5 Side plate, front OWX1.5
24	836 020 032	1	Grundkörper Deckel OWX1.5 Main body cover OWX1.5	34	836 050 008	1	Seitenplatte, hinten OWX1.5 Side plate, rear OWX1.5
25	826 020 013	1	Rundschnurdichtung 1 mm Round cord seal 1 mm	35	836 020 081	1	Abstandsbolzen 1.4305 L5.0 SW5 M2.5Spacer bolt 1.4305 L5.0 SW5 M2.5
26	836 050 019	1	Schwenkbügel, vorne OWX1.5 m.Isol. (V2) Swivel bracket, front OWX1.5 w. ins. V2				
27	836 020 030	1	O-Ring DIN3771-7.0x1 O-Ring DIN3771-7.0x1				
28	836 020 083	1	Passschulterschraube OWX1.5/3.0/4.5 (V2) Shoulder screw OWX1.5/3.0/4.5 V2				
29	836 020 064	3	O-Ring 3x1-75Sh-FKM-Viton O-ring 3x1-75Sh-FKM-Viton				

13.4 Grundkörper Deckel OWX 1.5 | Main body cover OWX 1.5



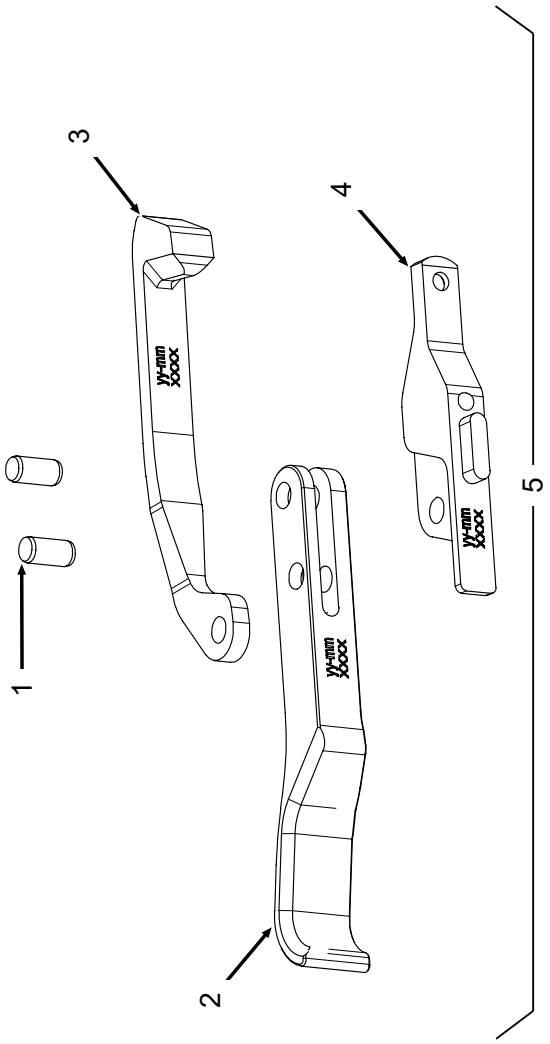
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 020 011	1	Elektroden Anschlussnippel OWX Electrode connection nipple OWX
2	836 020 015	1	U-Seal Ring M5 8.9x5.2x1.8 U-Seal ring M5 8.9x5.2x1.8
3	836 050 005	1	Kühlplatte OWX1.5 Cooling plate OWX1.5
4	836 020 054	1	Grundkörperdichtung OWX1.5 Base body seal OWX1.5
5	837 010 007	1	Platine, LED-Endlagenschalter OWX Circuit board, LED limit switch OWX
6	836 020 049	1	Abdeckung, LED-Platine OWX1.5 Cover, LED board OWX1.5
7	836 020 032	1	Deckel, Grundkörper OWX1.5 Cover, base body OWX1.5
8	305 501 022	31	Senkschraube ISO14581-M2x4-A2-TX Countersunk screw ISO14581-M2x4-A2-TX
9	836 020 007	1	LED-Glas OWX LED glass OWX

13.5 Verschluss, vorne OWX 1.5 | Closure, front OWX 1.5



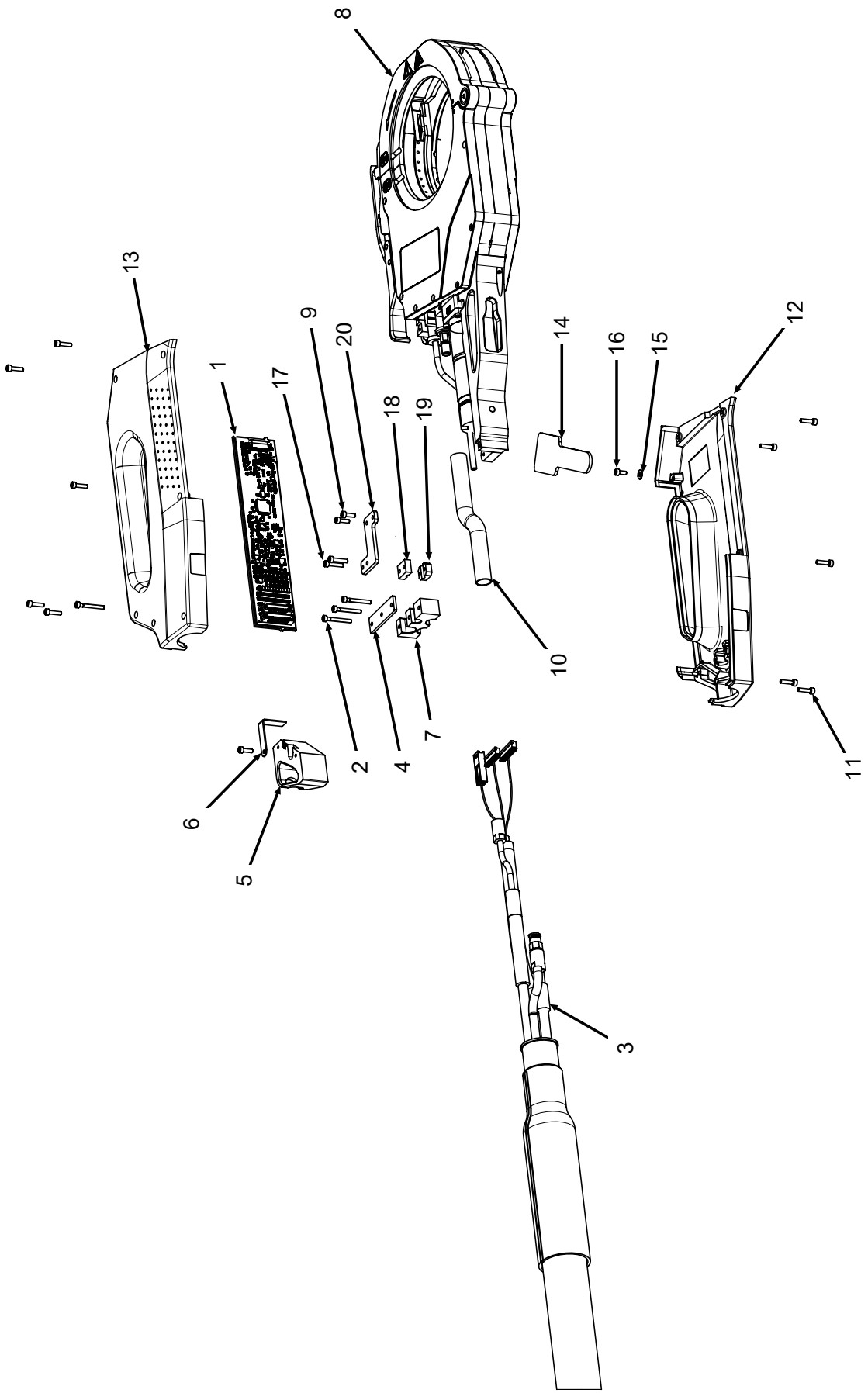
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 020 046	1	Aufnahme, Seitenplatte OWX1.5 Mounting, side plate OWX1.5
2	836 025 002	2	Zylinderstift 4x8 h6 vernickelt (OWX) Cylinder pin 4x8 h6 nickel-plated (OWX)
3	836 020 026	1	Hebel vorne, Verschluss OWX Lever left, catch OWX
4	836 020 047	1	Federhaken OWX1.5 Spring hook OWX1.5
5	836 050 006	1	Verschluss, vorne OWX1.5 Closure, front OWX1.5

13.6 Verschluss, hinten OWX 1.5 | Closure, back OWX 1.5

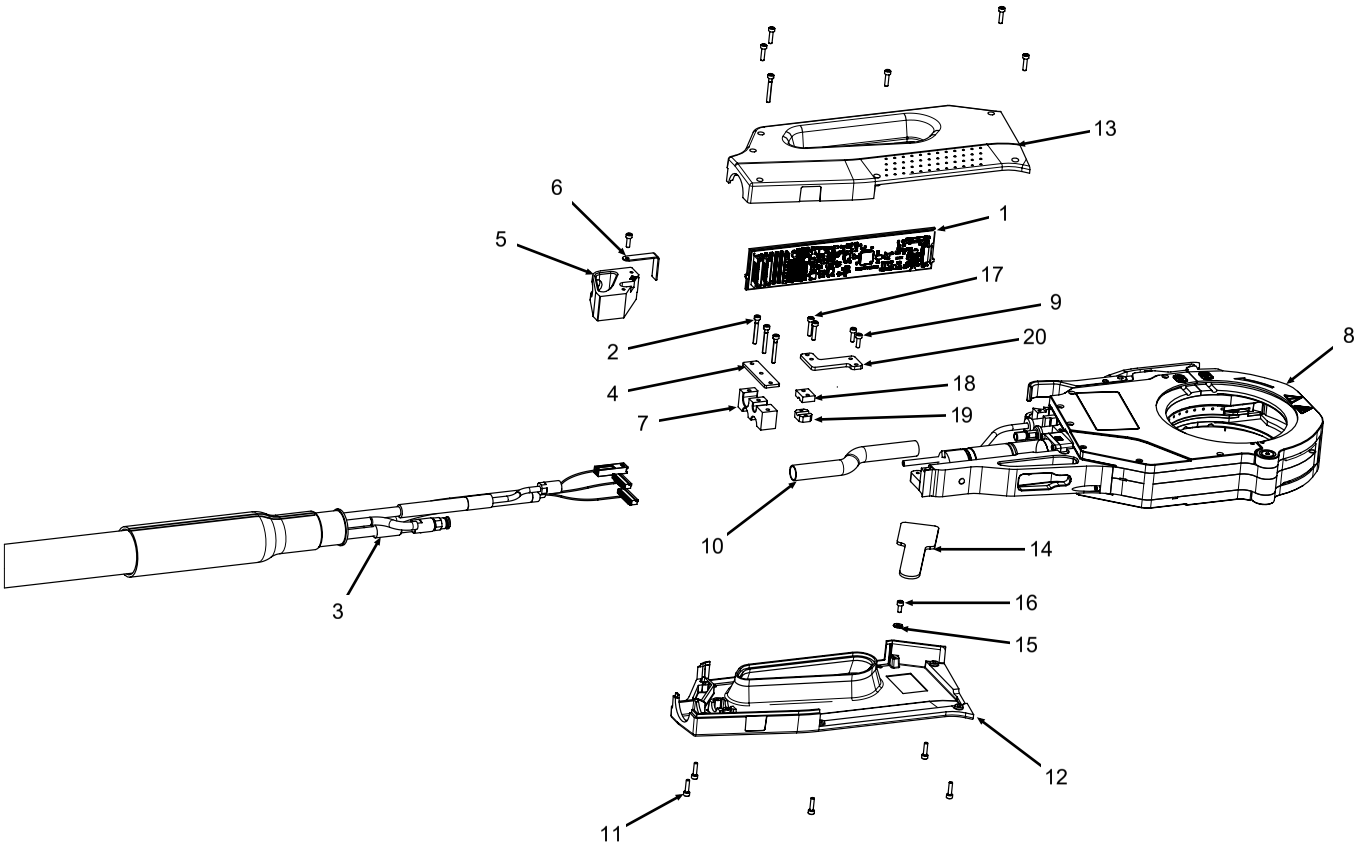


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 025 002	2	Zylinderstift 4x8 h6 vernickelt (OWX) Cylinder pin 4x8 h6 nickel-plated (OWX)
2	836 020 025	1	Hebel hinten, Verschluss OWX Lever right, lock OWX
3	836 020 047	1	Federhaken OWX1.5 Spring hook OWX1.5
4	836 020 046	1	Aufnahme, Seitenplatte OWX1.5 Mounting, side plate OWX1.5
5	836 050 007	1	Verschluss, hinten OWX1.5 Closure, rear OWX1.5

13.7 OWX 3.0 | OWX 3.0



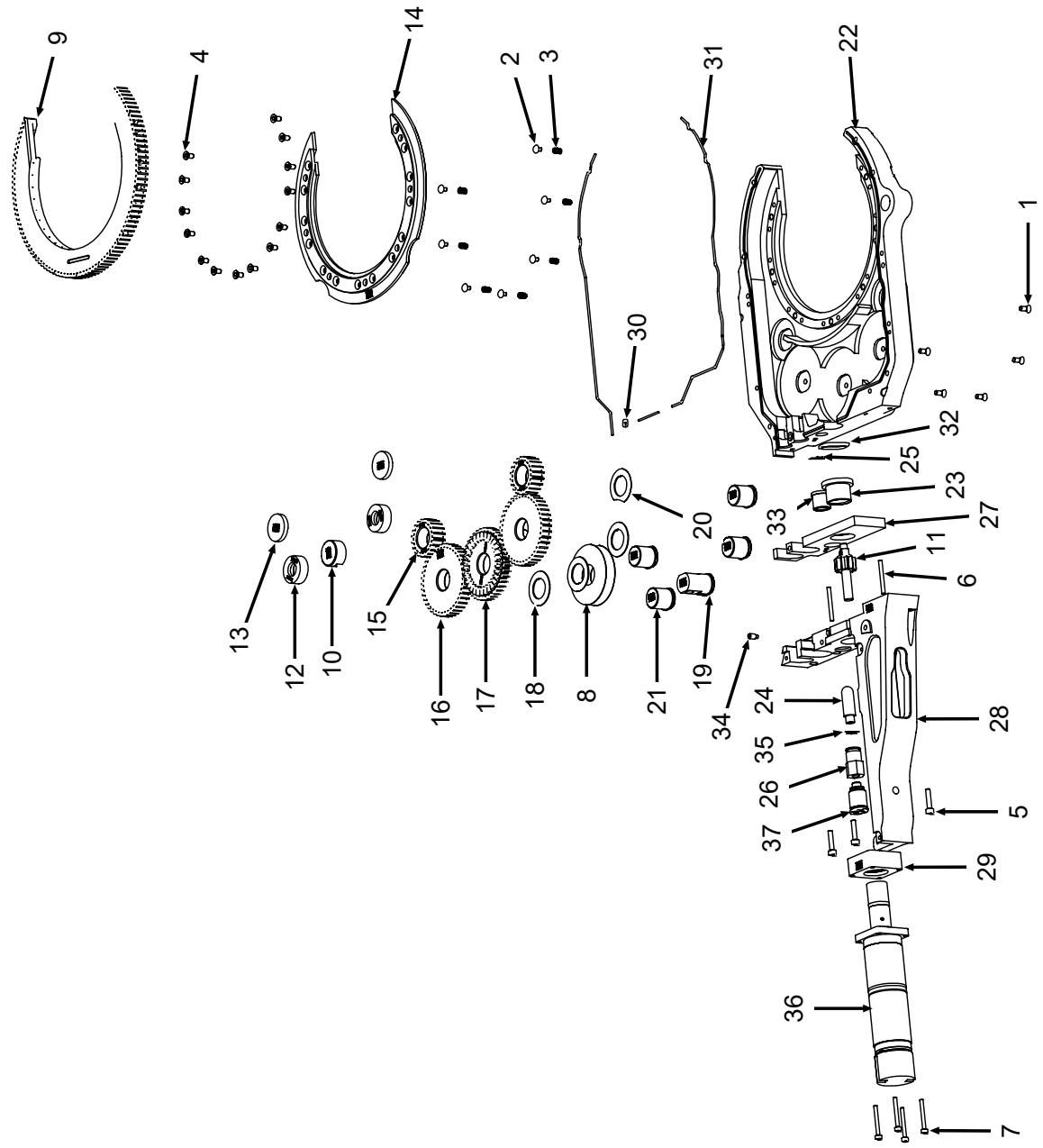
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	837 050 120	1	Bedienpanel OWX Control panel OWX V	8	-	1	Kopfbaugruppe OWX3.0 Head assembly OWX3.0
2	305 501 097	4	Zylinderschraube ISO4762-M2.5x20-A2 Cylinder screw ISO4762-M2.5x20-A2	9	305 501 054	3	Zylinderschraube ISO4762-M2.5x8-A2 Cylinder screw ISO4762-M2.5x8-A2
3	836 050 021	1	Schlauchpaket OWX Hose package OWX Handgriff, Hinterteil OWX3.0/4.5 Handle, rear part OWX3.0/4.5	10	836 070 002	0,12 m	Isolationsschlauch OWX Insulation hose OWX
4	836 020 062	1	Fixierblech, Steuerleitung OWX1.5/3/4 Fixing plate, control cable OWX1.5/3/4	11	305 501 076	10	Zylinderschraube ISO4762-M2.5x10-A2 Cylinder screw ISO4762-M2.5x10-A2
5	837 020 060	1	Endstück, Handgriff OWX3.0/4.5 End piece, handle OWX3.0/4.5	12	837 020 027	1	Handgriff, Vorderteil OWX3.0/4.5 Handle, front part OWX3.0/4.5
6	836 020 062	1	Fixierblech, Steuerleitung OWX1.5/3/4 Fixing plate, control cable OWX1.5/3/4	13	837 020 026	1	Handgriff, Hinterteil OWX3.0/4.5 Handle, rear part OWX3.0/4.5
7	836 020 059	1	Zugentl., Handgriff OWX1.5/3/4 Strain relief, handle OWX1.5/3/4	14	836 070 006 -	1	Mini-Klettbandhalter selbstklebend Mini Velcro fastener self-adhesive Kopfbaugruppe OWX3.0 Head assembly OWX3.0



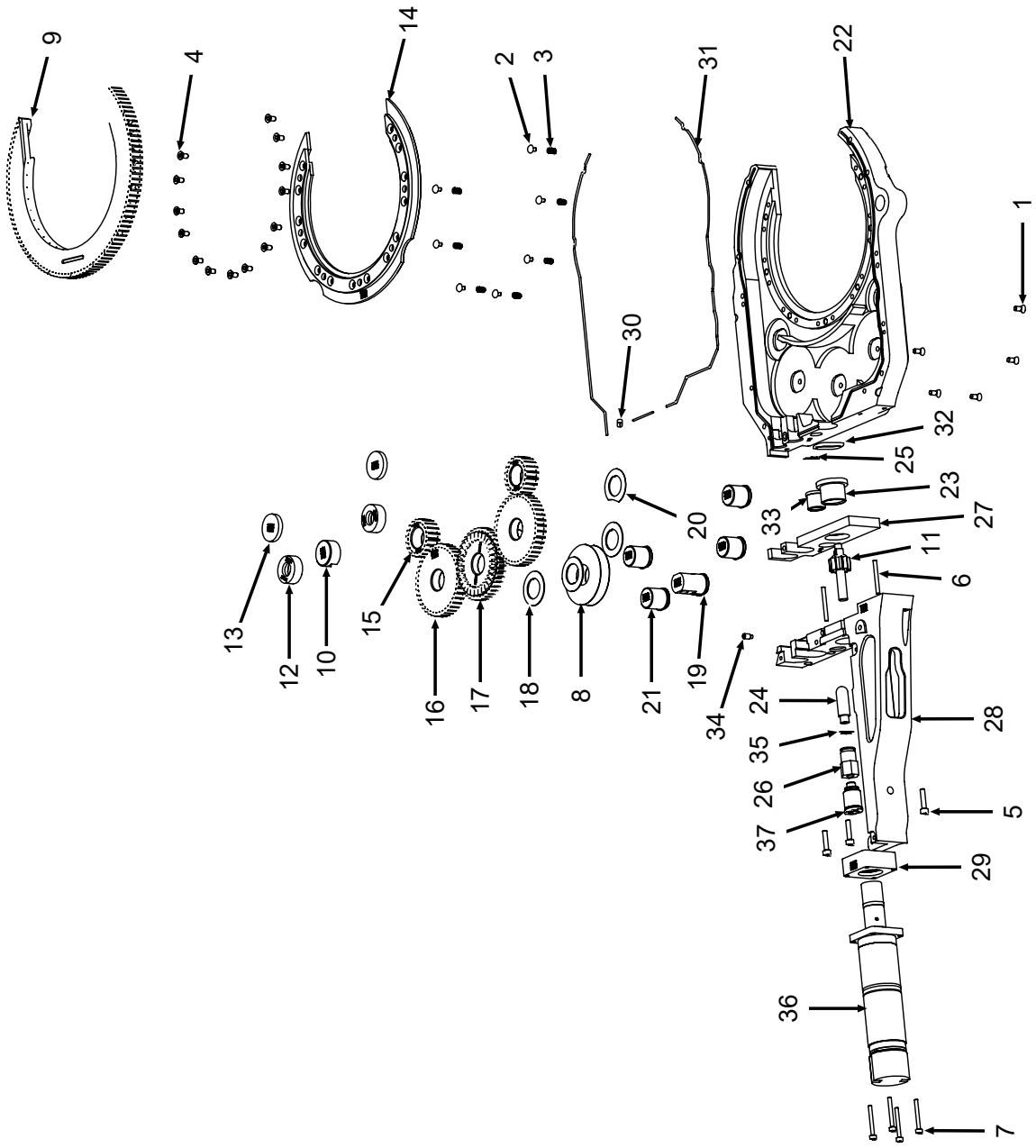
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
15	836 020 084	1	Distanzhülse 7x3,4x2 PA 6 Space Sleeve 7x3,2x2 PA 6
16	836 020 085	1	Kunststoffschraube M2,5x6 Plastic screw M2,5x6
17	305 501 051	2	Zylinderschraube ISO4762-M2.5x12-A2 Bis SN 8377610216 beim erstmaligen Tausch des Schlauchpakets zwingend erforderlich. Cylinder screw ISO4762-M2.5x12-A2 Up to SN 8377610216 mandatory for first time replacement of hose package.

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
18	836 020 079	1	Stromkontaktklemme OWX, Oberteil Bis SN 8377610216 beim erstmaligen Tausch des Schlauchpakets zwingend erforderlich. Current contact clamp OWX, upper part Up to SN 8377610216 mandatory for first time replacement of hose package.
19	836 020 080	1	Stromkontaktklemme OWX, Unterteil Bis SN 8377610216 beim erstmaligen Tausch des Schlauchpakets zwingend erforderlich. Current contact clamp OWX, lower part Up to SN 8377610216 mandatory for first time replacement of hose package.
20	837 070 004	1	Stromkontaktblech OWX3.0 Bis SN 8377610216 beim erstmaligen Tausch des Schlauchpakets zwingend erforderlich. Current contact plate OWX3.0 Up to SN 8377610216 mandatory for first time replacement of hose package.
21	836 020 064	1	O-Ring 3x1-75Sh-FKM-Viton O-ring 3x1-75Sh-FKM-Viton

13.8 Grundkörper Basisteil OWX 3.0 | Base body OWX 3.0

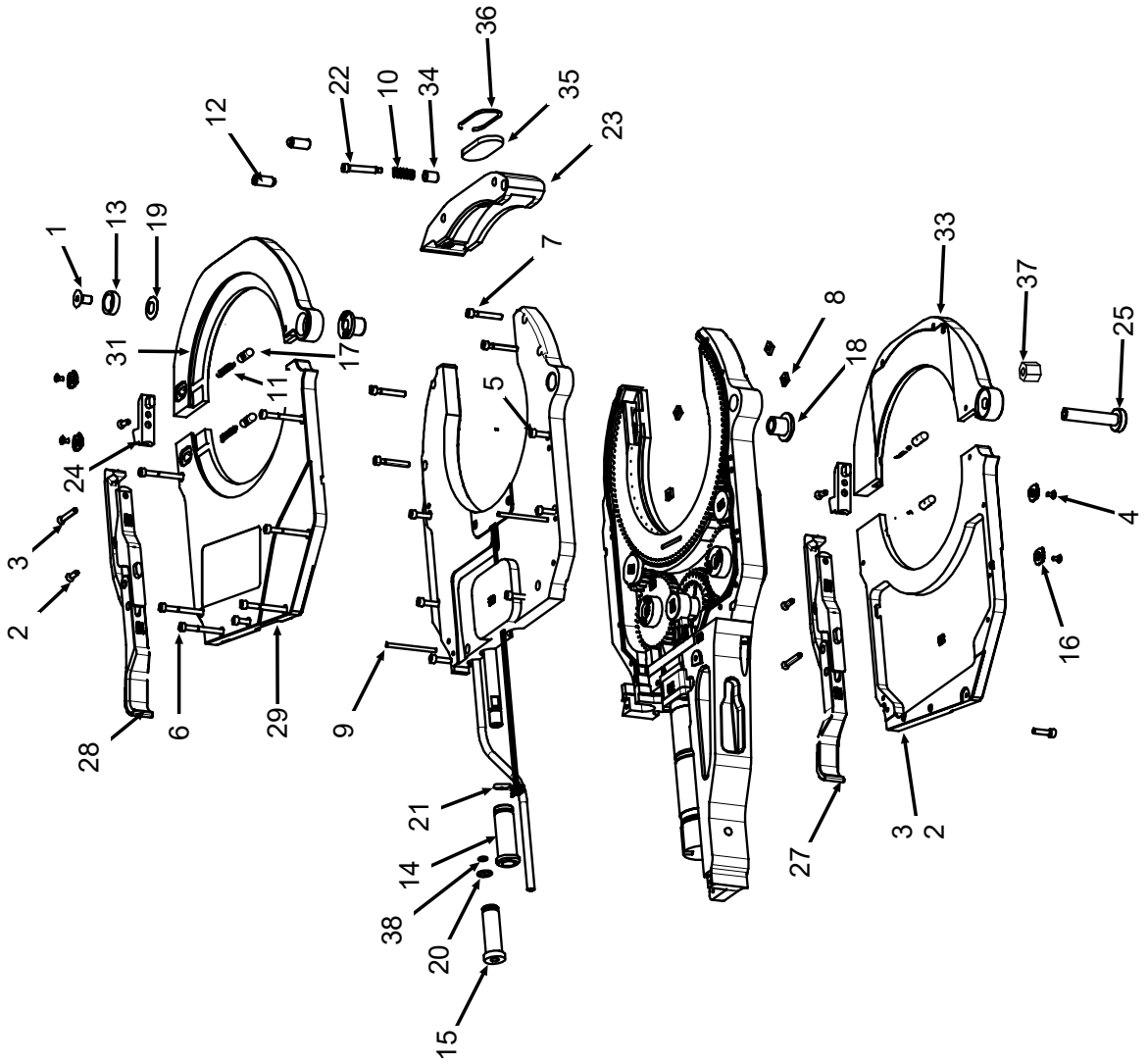


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 016	5	Senkschraube ISO14581-M2.5x8-A2-TX Countersunk screw ISO14581-M2.5x8-A2-TX	11	836 020 019	1	Antriebsritzel OWX Drive pinion OWX
2	826 007 011	7	Kugelkopfdruckstück OWX Spherical head pressure piece OWX	12	837 020 004	2	Abstandshalter, Typ B 6.5 OWX3.0 Spacer, type B 6.5 OWX3.0
3	826 020 009	7	Feder für Kugelkopfdruckstück OWS/X Spheric. head press.piece, spring OWS/X	13	836 020 004	2	Abstandshalter,Typ A 2.8 OWX1.5/3.0 Spacer, type A 2.8 OWX1.5/3.0
4	305 501 021	14	Senkschraube ISO14581-M2.5x5-A2-TX Countersunk screw ISO14581-M2.5x5-A2-TX	14	837 020 005	1	Teflonring OWX3.0 Teflon ring OWX3.0
5	305 501 051	3	Zylinderschraube ISO4762-M2.5x12-A2 Cylinder screw ISO4762-M2.5x12-A2	15	837 020 024	2	Stirnzahnrad, Z20 OWX3/4/6 Spur gear, Z20 OWX3/4/6
6	565 808 193	2	Zylinderstift ISO 2338-2m6x18-A2 Cylinder pin ISO2338-2m6x18-A2	16	837 020 023	2	Stirnzahnrad, Z40 OWX3/4/6 Spur gear, Z40 OWX3/4/6
7	305 501 047	4	Zylinderschraube ISO4762-M2x18-A2 Cylinder screw ISO4762-M2x18-A2	17	836 020 010	1	Kombinationszahnrad OWX Combination gear OWX
8	836 020 016	2	Distanzscheibe, Kronenrad OWX Spacer, crown wheel OWX	18	836 020 002	3	Teflonscheibe, Typ A OWX Teflon washer, type A OWX
9	837 050 004	1	Rotor OWX3.0 Rotor OWX3.0	19	836 020 013	1	Lagerzapfen, lang OWX Bearing journal, long OWX
10	836 020 012	1	Axialsicherung, Kronenrad OWX Axial lock, crown wheel OWX	20	836 020 003	2	Teflonscheibe, Typ B OWX Teflon washer, type B OWX

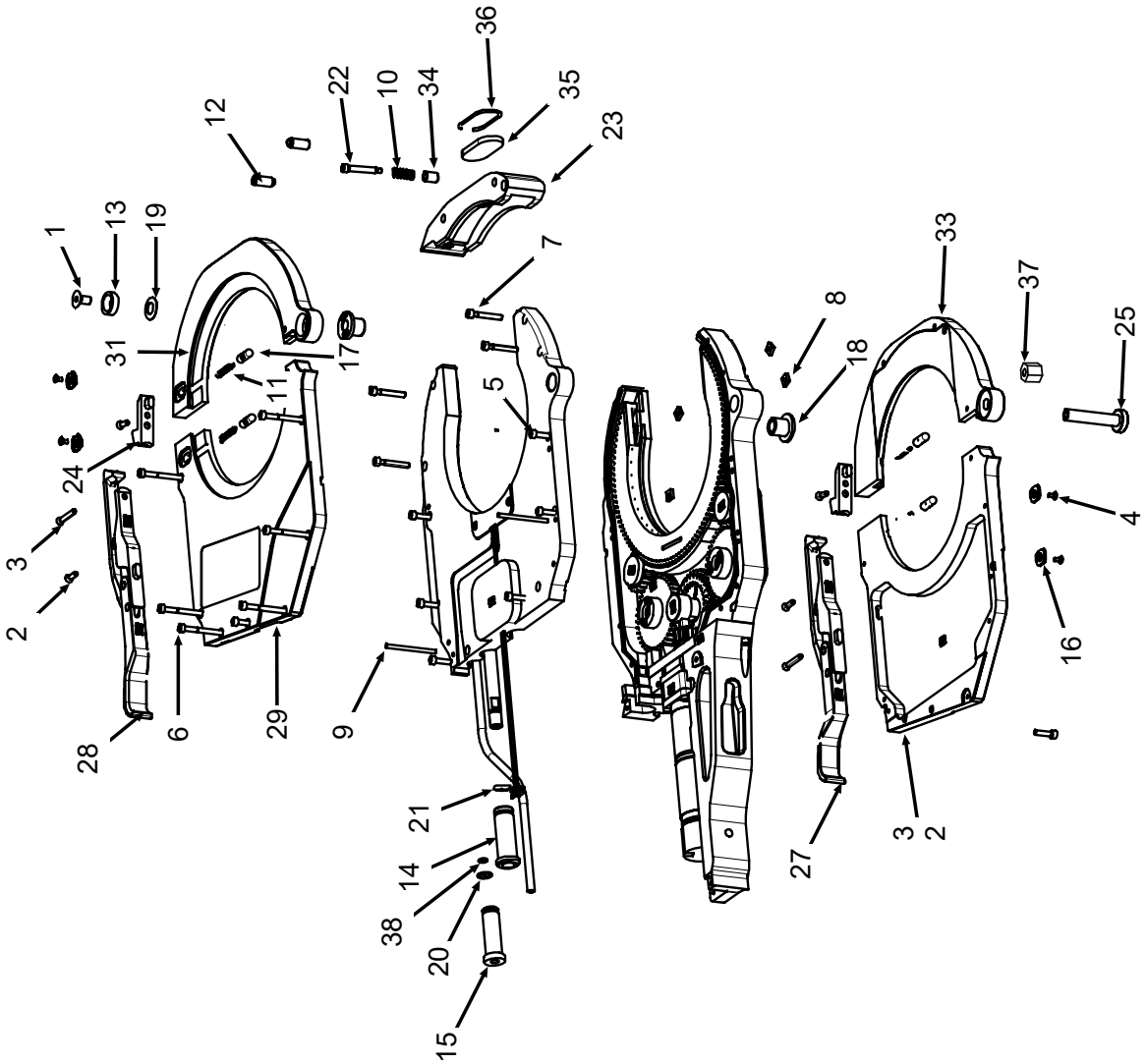

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POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	836 020 014	4	Lagerzapfen, kurz OWX Bearing journal, short OWX	31	826 020 013	1	Rundschnurdichtung 1 mm Round cord seal 1 mm
22	837 020 001	1	Basisteil, Grundkörper OWX3.0 Base part, main body OWX3.0	32	826 020 012	1	O-Ring 14.00 x 1.78 O-ring 14.00 x 1.78
23	836 020 001	1	Isolierbuchse, Motorwelle OWX Insulating bush, motor shaft OWX	33	836 020 063	1	Bundbuchse, Gasausströmer OWX Collar bushing, gas outlet OWX
24	827 020 011	1	Schweißgasausströmer OWX Welding gas diffuser OWX	34	827 020 001	1	Elektrodenklemmschraube Electrode clamping screw
25	836 020 030	2	O-Ring DIN3771-7.0x1 O-Ring DIN3771-7.0x1	35	836 020 029	1	O-Ring DIN3771-6x1 -farbig- O-ring DIN3771-8.5x1
26	836 020 006	1	Gas-Verbinder OWX Gas connector OWX	36	836 050 025	1	Motor OWX Motor OWX
27	837 020 019	1	Isolierplatte Kronenrad OWX3.0 Insulating plate, crown wheel OWX3.0	37	817 020 011	1	Steckverschraubung QSM-M5-6-I Push-in fitting QSM-M5-6-I
28	837 020 020	1	Hauptträger OWX3.0 Main carrier OWX3.0				
29	837 020 025	1	Distanzplatte Motor OWX Spacer plate motor OWX				
30	836 020 064	1	O-Ring 3x1-75Sh-FKM-Viton O-ring 3x1-75Sh-FKM-Viton				

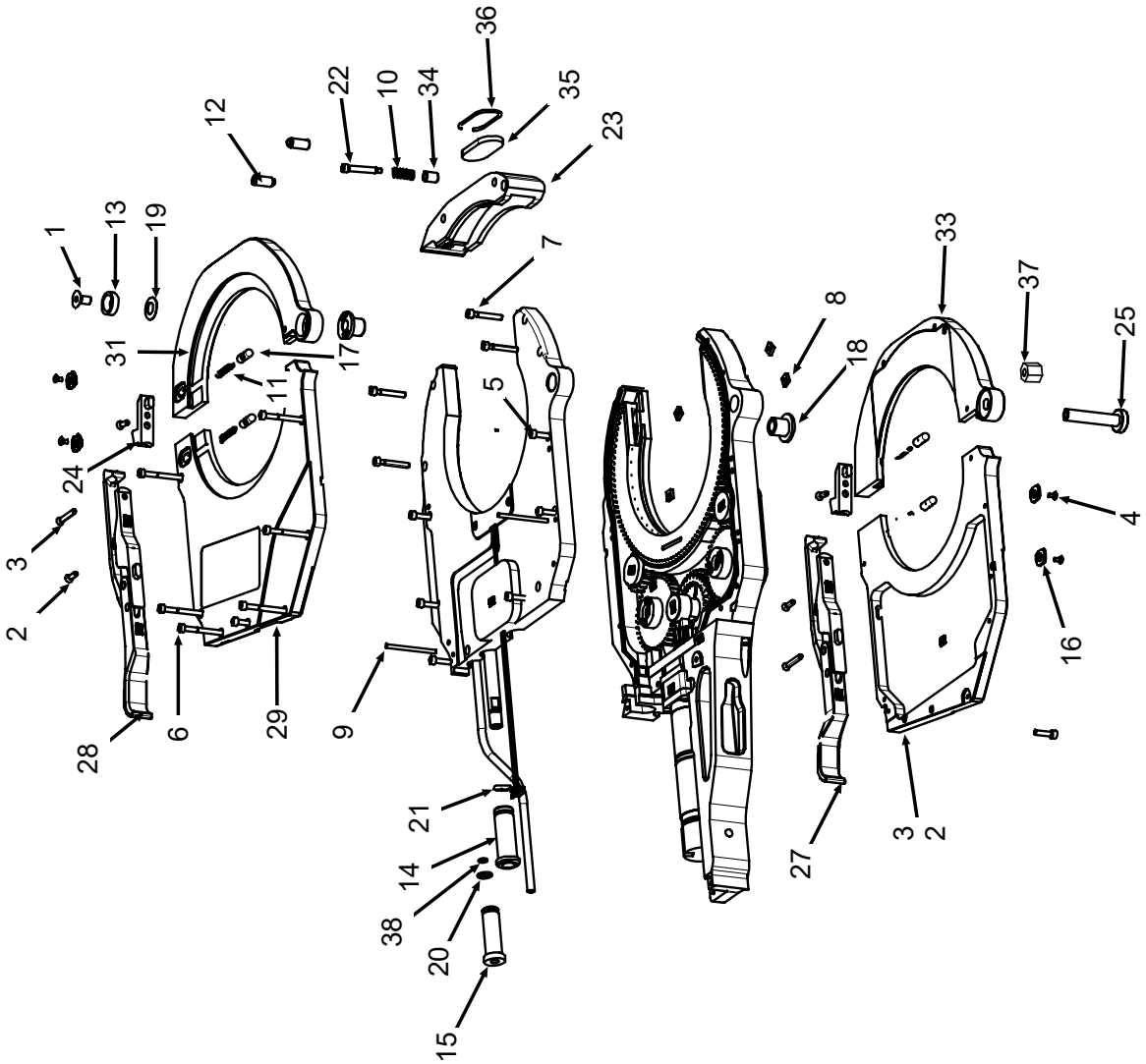
13.9 Kopfbaugruppe OWX 3.0 | Head assembly OWX 3.0



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	302 303 112	1	Senkschraube M4x8-A2 Tuflok Countersunk screw M4x8-A2 Tuflok	11	837 020 071	4	Druckfeder Arretierungsstift OWX3.0 Pressure spring locking pin OWX3.0
2	305 501 016	4	Senkschr. ISO14581-M2.5x8-A2-TX Count. s. ISO14581-M2.5x8-A2-TX	12	827 020 014	2	Druckstück GN 615-M5-KN Pressure piece GN 615-M5-KN
3	305 501 017	2	Senkschr. ISO14581-M2.5x16-A2-TX Count. s. ISO14581-M2.5x16-A2-TX	13	836 020 008	1	Andruckscheibe Scharnier OWX1.5/3 Pressure disc, hinge OWX1.5/3
4	305 501 022	4	Senkschraube ISO14581-M2x4-A2 Countersunk screw ISO14581-M2x4-A2	14	836 020 017	1	Buchse, Elektr. Anschl.-nippel OWX Socket, electr. Connect. nipple OWX
5	305 501 076	8	Zylinderschr. ISO4762-M2.5x10-A2 Cylinder screw ISO4762-M2.5x10-A2	15	836 020 018	1	Buchse, Rücklauf Kühlplatte OWX Bushing, return Cooling plate OWX
6	305 501 059	6	Zylinderschr.e ISO4762-M2.5x30-A2 Cylinder screw ISO4762-M2.5x30-A2				
7	305 501 073	4	Zylinderschr. ISO4762-M2.5x18-A2 Cylinder screw ISO4762-M2.5x18-A2				
8	500 602 315	4	Vierkantmutter DIN562-M2.5-A2 Square nut DIN562-M2.5-A2				
9	565 808 180	2	Zylinderstift ISO2338-2m6x30-A2 Cylinder pin ISO2338-2m6x30-A2				
10	812 020 016	1	Druckfeder, DV Pressure spring, WA				

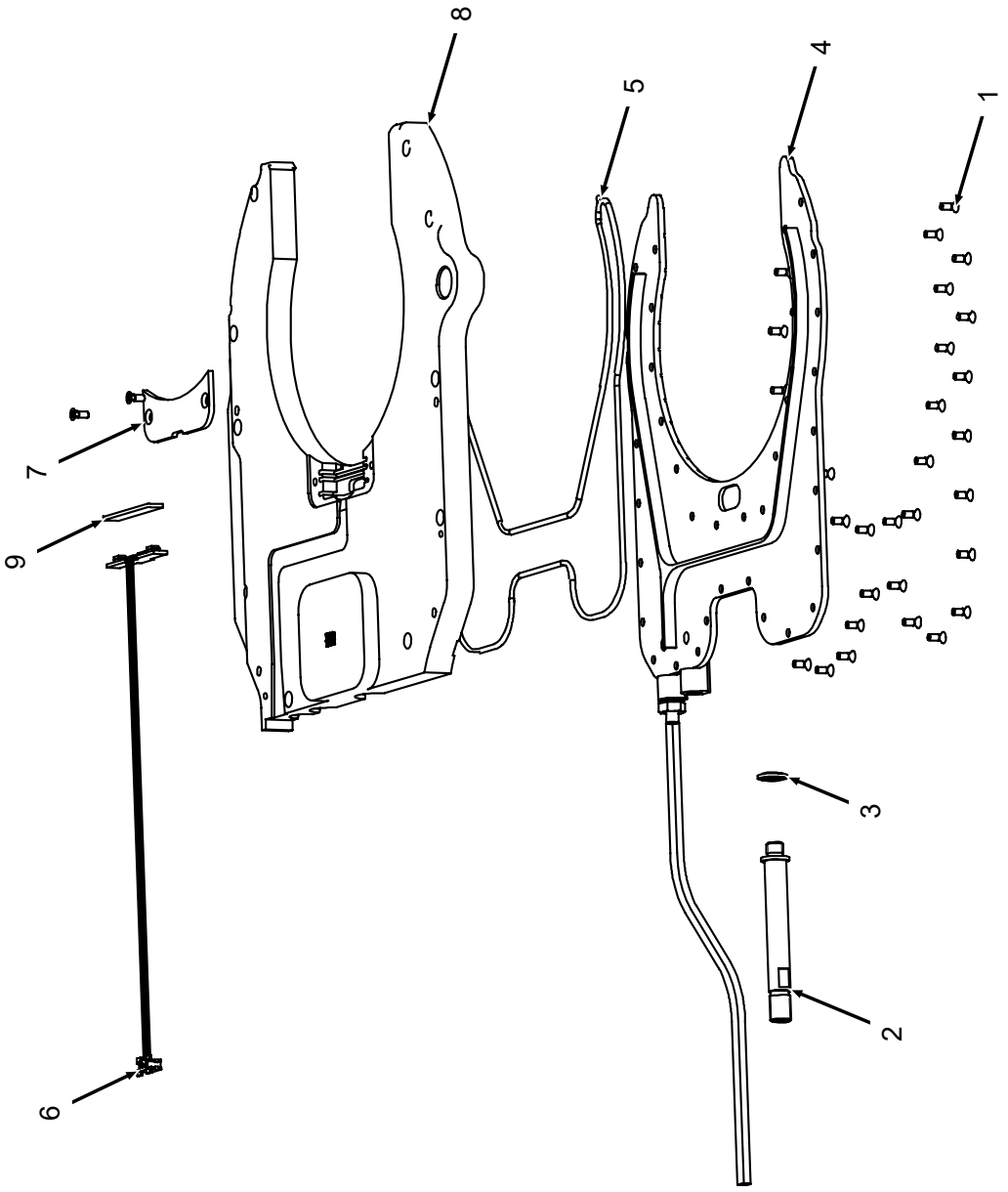

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POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
16	836 020 021	4	Bedienscheibe, SPE Arretier. OWX Op. disk, SPE Locking device OWX	27	837 050 006	1	Verschluss, vorne OWX3.0 Closure, front OWX3.0
17	836 020 022	4	Arretierungsstift, Spanneinsatz OWX Locking pin, clamping insert OWX	28	837 050 007	1	Verschluss, hinten OWX3.0 Closure, rear OWX3.0
18	836 020 024	2	Gleitl.-buchse, Scharnier OWX1.5/3 Sl. bearing bushing, hinge OWX1.5/3	29	837 050 008	1	Seitenplatte, hinten (inkl. Pos.33) Side plate, rear (incl. Pos.33)
19	836 020 028	2	Tellerfeder DIN16983 12x6.2x0.5 Belleville washer DIN16983 12x6.2x0.5				
20	836 020 029	1	O-Ring DIN3771-8.5x1 O-ring DIN3771-8.5x1				
21	836 020 030	1	O-Ring DIN3771-7.0x1 O-Ring DIN3771-7.0x1				
22	836 020 083	1	Passschulterschraube OWX1.5/3.0/4.5 (V2) Shoulder screw OWX1.5/3.0/4.5 V2				
23	837 020 008	1	FlipCover OWX3.0 FlipCover OWX3.0				
24	837 020 016	2	Gegenhaken OWX3.0 Counter hook OWX3.0				
25	837 020 021	1	Gelenkbolzen OWX3.0 Hinge pin OWX3.0				
26	837 050 002	1	(MBG) Grundkörper Basisteil OWX3.0 (ASG) Main body base part OWX3.0				


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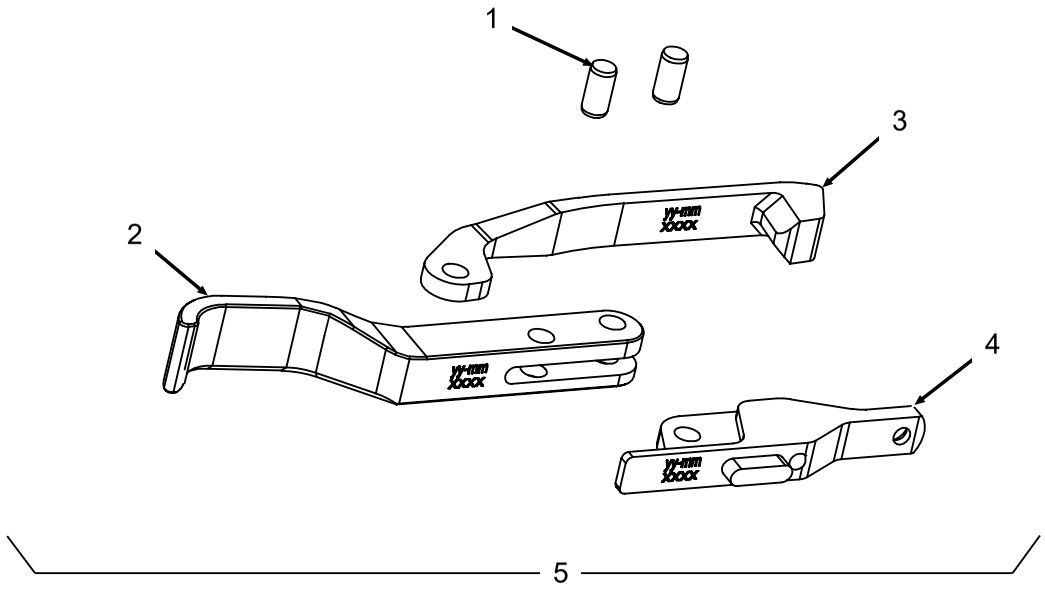
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
30	837 050 009	1	(MBG) Grundkörper Deckel OWX3.0 (ASG) Main body cover OWX3.0
31	837 050 015	1	Schwenkbügel, hinten OWX3.0 m.Isolierung Swivel bracket, rear OWX3.0 w. insul.
32	837 050 016	1	Seitenplatte, vorne OWX3.0 Side plate, front OWX3.0
33	837 050 019	1	Schwenkbügel, vorne OWX3.0 m.Isol. (V2) Swivel bracket, front OWX3.0 w. ins. V2
34	837 020 038	1	Lagerbuchse, Flipcover OWX3.0/4.5 Bearing bush, flip cover OWX3.0/4.5
35	836 020 020	1	Sichtfenster OWX1.5/3 Inspection window OWX1.5/3
36	836 020 023	1	Fixierklemme, Sichtfenst. OWX1.5/3 Fix. clamp, view. window OWX1.5/3
37	836 020 081	1	Abstandsbolzen 1.4305 L5.0 SW5 M2.5 Spacer bolt 1.4305 L5.0 SW5 M2.5
38	836 020 064	1	O-Ring 3x1-75Sh-FKM-Viton O-ring 3x1-75Sh-FKM-Viton

13.10 Grundkörper Deckel OWX 3.0 | Main body cover OWX 3.0



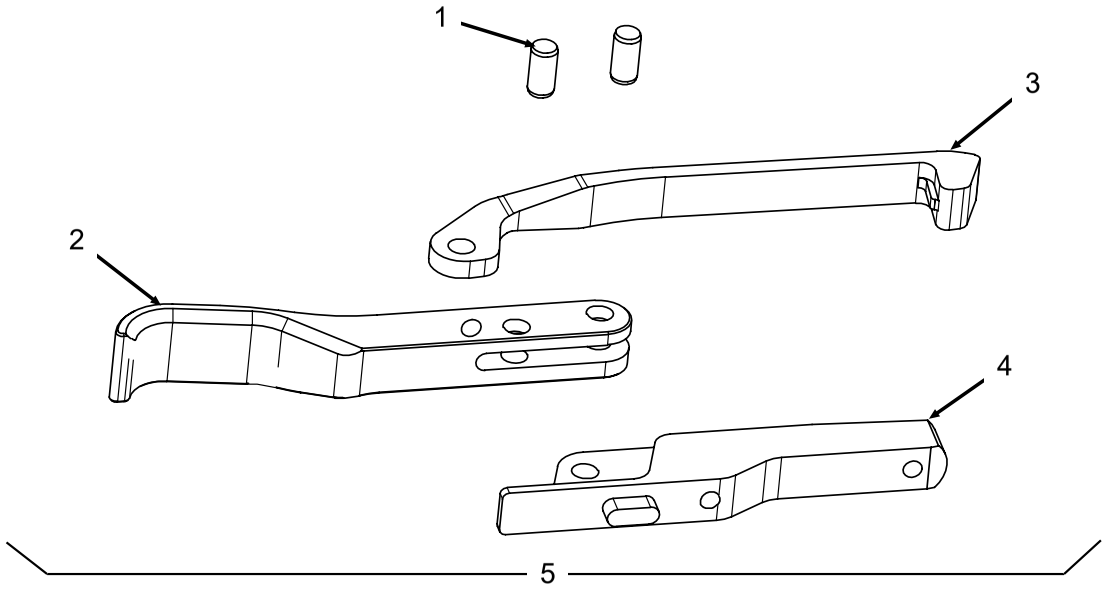
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 014	39	Senkschraube ISO14581-M2x5-A2-TX Countersunk screw ISO14581-M2x5-A2-TX
2	836 020 011	1	Elektroden Anschlussnippel OWX Electrode connection nipple OWX
3	836 020 015	1	U-Seal Ring M5 8.9x5.2x1.8 U-Seal ring M5 8.9x5.2x1.8
4	837 050 005	1	Kühlplatte OWX3.0 Cooling plate OWX3.0
5	837 020 022	1	Grundkörperdichtung OWX3.0 Base body seal OWX3.0
6	836 010 007	1	Platine, LED-Endlagenschalter OWX Circuit board, LED limit switch OWX
7	837 020 007	1	Abdeckung, LED-Platine OWX3.0 Cover, LED board OWX3.0
8	837 020 002	1	Deckel, Gründkörper OWX3.0 Cover, main body OWX3.0
9	836 020 007	1	LED-Glas OWX LED glass OWX

13.11 Verschluss, vorne OWX 3.0 | Closure, front OWX 3.0



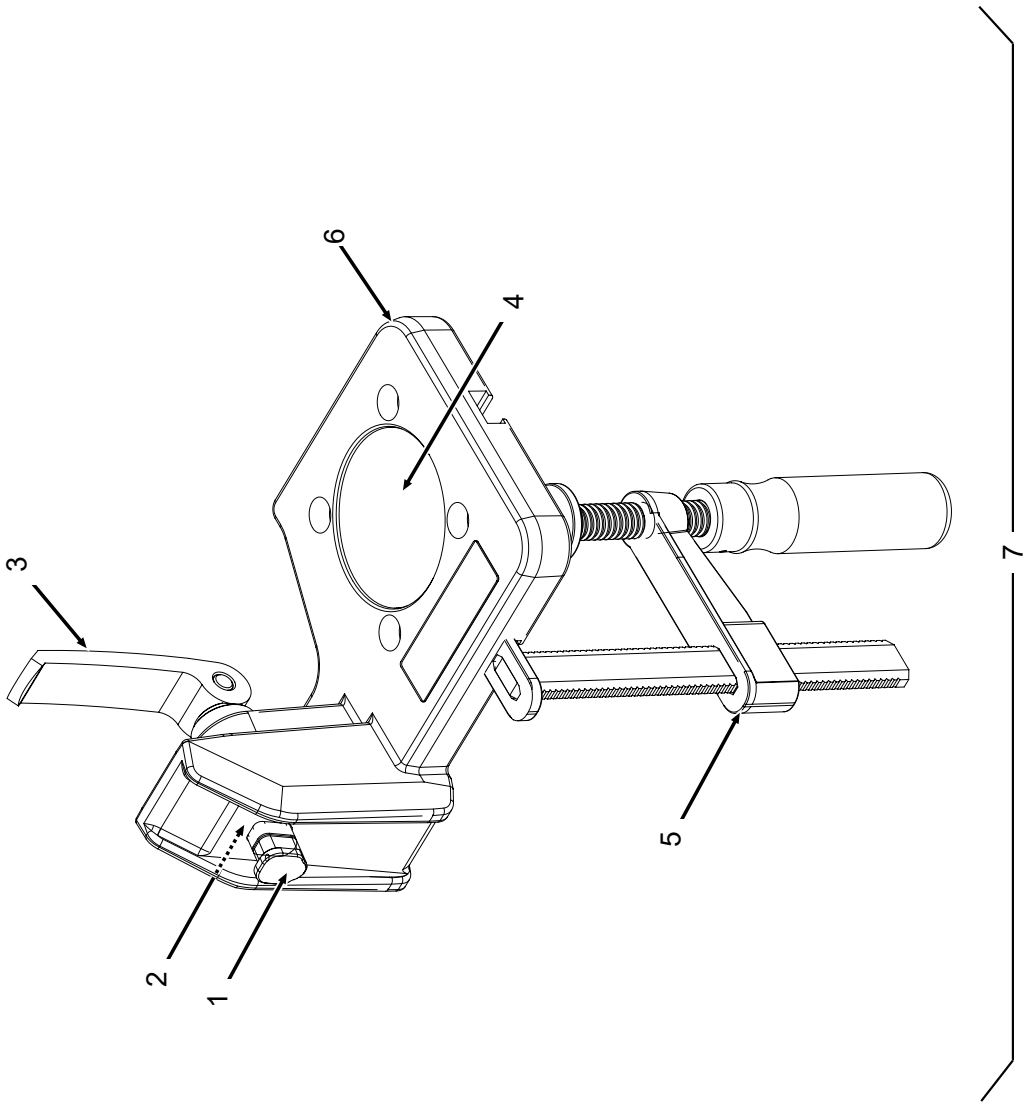
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 025 002	2	Zylinderstift 4x8 h6 vernickelt (OWX) Cylinder pin 4x8 h6 nickel-plated (OWX)
2	836 020 026	1	Hebel vorne, Verschluss OWX Lever left, catch OWX
3	837 020 014	1	Federhaken OWX3.0 Spring hook OWX3.0
4	837 020 015	1	Aufnahme, Seitenplatte OWX3.0 Mounting, side plate OWX3.0
5	837 050 006	1	Verschluss, vorne OWX3.0 Closure, front OWX3.0

13.12 Verschluss, hinten OWX 3.0 | Closure, back OWX 3.0



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 025 002	2	Zylinderstift 4x8 h6 vernickelt (OWX) Cylinder pin 4x8 h6 nickel-plated (OWX)
2	836 020 025	1	Hebel hinten, Verschluss OWX Lever right, lock OWX
3	837 020 014	1	Federhaken OWX3.0 Spring hook OWX3.0
4	837 020 015	1	Aufnahme, Seitenplatte OWX3.0 Mounting, side plate OWX3.0
5	837 050 007	1	Verschluss, hinten OWX3.0 Closure, rear OWX3.0

13.13 Tischhalterung OWX, V2 | Table mount OWX, V2



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	836 020 202	1	Aufnahmebolzen, Tischhalterung OWX Mounting bolt, table mount OWX
2	836 020 203	1	Druckfeder, Tischhalterung OWX* Pressure spring, table mount OWX*
3	836 020 201	1	Spannhebel, Tischhalterung OWX Clamping lever, table mount OWX
4	836 020 204	1	Gummi Pad, Tischhalterung OWX Rubber pad, table mount OWX
5	836 020 207	1	Klemme, Tischhalterung OWX, V2 Mounting bracket, table mount OWX, V2
6	836 020 208	1	Basisteil,Tischhalterung OWX, V2 Basepart, table mount OWX, V2
7	836 030 201	1	Tischhalterung OWX, V2 Table mount OWX, V2

** Ohne Abbildung / Without figure*

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

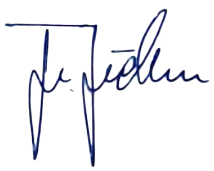
Orbitalum Tools GmbH
Josef-Schüttler-Straße 17
78224 Singen, Deutschland
Tel. +49 (0) 77 31 792-0

Maschine und Typ (inklusive optional erhältlichen Zubehörartikeln von Orbitalum): / Machinery and type (including optionally available accessories from Orbitalum): / 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):	**Orbitalschweißkopf (inkl. Schweißstromquelle) / Orbital weld heads (incl. orbital welding power source):** **• OWX 1.5** **• OWX 3.0**
Seriennummer: / Series number: / Nombre de série: / Numero di serie: / Número de serie: / Serienummer: / Sériové číslo: / Sériové číslo:	
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:	**• Maschinen-Richtlinie 2006/42/EG** **• EMV-Richtlinie 2014/30/EU** **• RoHS-Richtlinie 2011/65/EU**
Schutzziele folgender Richtlinien werden eingehalten: / Protection goals of the following guidelines are observed: / Les objectifs de protection des directives suivantes sont respectés : / Gli obiettivi di protezione delle seguenti linee guida sono rispettati: / Se observan los objetivos de protección de las siguientes directrices: / De beschermingsdoelstellingen van de volgende richtlijnen worden in acht genomen: / Jsou splněny ochranné cíle těchto nařízení: / Sú splnené ochranné ciele týchto nariadení:	**• Niederspannungsrichtlinie 2014/35/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:	**• EN ISO 12100:2010** **• EN ISO 13849-1:2023** **• EN ISO 13849-2:2012** **• EN 60204-1:2018** **• EN IEC 60974-1: 2018+A1:2019** **• EN 60974-7: 2019** **• EN 60974-10: 2014+A1:2015** **• EN IEC 63000:2018**
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:	**Gerd Riegraf** **Orbitalum Tools GmbH** **D-78224 Singen**
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Singen, 18.11.2025:	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):	**Orbitalschweißkopf (inkl. Schweißstromquelle) / Orbital weld head (incl. welding power source)** • **OWX 1.5** • **OWX 3.0**
Seriennummer: / Series number:	
Baujahr: / Year:	
Hiermit bestätigen wir, dass die genanne 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:	• **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 norms have been applied:	• **EN ISO 12100:2010** • **EN ISO 13849-1:2023** • **EN ISO 13849-2:2012** • **EN 60204-1:2018** • **EN IEC 60974-1: 2018+A1:2019** • **EN 60974-7: 2019** • **EN 60974-10: 2014+A1:2015** • **EN IEC 63000:2018**
Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file:	
Bestätigt durch: / Confirmed by:	
Singen, 18.11.2025	Jürgen Jäckle - Product Compliance Manager

Notizen

Notizen

Notizen

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