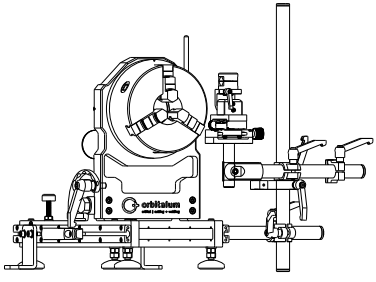
DVR M

en **Welding turning device**

Translation of original operating instructions and spare parts list



855 060 205 REV 00 | 0525

orbitalum

An ITW Company

Table of Contents

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

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

1.3 Legend

ABBREVIATION	MEANING
DVR	Rotating device / welding turntable

1.4 Further applicable documents

Folgende Dokumente gelten mit dieser Betriebsanleitung:

- Betriebsanleitung der Orbitalschweißstromquelle

2 Information and safety instructions for the owner

2.1 Requirements for the owner-operator

Workshop/outdoor/field application: The owner is responsible for safety in the danger zone around the machine and must allow only instructed personnel to remain in or operate the machine in the danger zone.

Safety of the employee: The owner must comply with the safety regulations described in this chapter and must work safety-consciously and with all prescribed protective 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 Proper use

The welding turntable is intended solely for the following use:

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

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

Proper use also includes the following points:

- Permanent supervision of the machine during operation. The operator must always be able to stop the process.
- Observing all safety and warning information in these operating instructions and the general safety information for welding turntables.
- Observing of the further applicable documents.
- Complying with all inspection and maintenance work.
- Use of the machine solely in its original state.
- Usage solely of original accessories as well as original spare parts and operating materials.
- Checking of all the safety-relevant items and functions before commissioning.
- Processing of those materials named in the operating instructions.
- Proper usage of all components involved in the welding processes as well as of all further factors that have an influence on the welding process.
- Solely commercial usage.
- The structures on the turning plate must have a secure fixed connection in such a manner that the structures form a unit with the turning plate. The fact that the welding turntable can be tilted must always be taken into consideration. Dangerous situations for the operating personnel may **not** result through structures.
- The rotary drive must only be used when the tilting device is in a secured working position.
- The welding turntable is used to hold a workpiece support, which must be firmly connected with the turntable. The correspondingly mounted object is only rotated by the device. Additional mechanical connections to the turntable must not be established.

- In particular, the welding turntable must **not** be used for preheating or annealing material, bending, grinding, sawing, winding, rotating objects, or driving other mechanical structures. The weight of the workpiece must not exceed the permissible overall weight specified in chap. “Technical data” for a center of gravity distance of 500 mm (19.69") from the face plate. The holder as well as the workpiece must be attached centrically on the turntable.
- The tilting device is used to tilt the rotating axis. The tilting device must only be usedwhen a free movement of the rotating unit including mounted device and workpiece is ensured.
- The welding turntable must **not** be used for welding with a clamped workpiece and a hand-held torch.
- The welding turntable must **not** be used for welding pressurized or media-carrying pipes.
- The weld current must not exceed the current specified in chap. “Technical data.” Otherwise the current transmitter might be damaged and the operational safety of the set-up is not ensured.
- All work on electronic equipment must only be performed by professional electricians.
- All structures and attachments have to be designed in such a way that **no** dangerous situations can occur for the personnel.

2.2.2 Machine constraints

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

2.3 Environmental protection and disposal

2.3.1 Information regarding the Ecodesign Directive 2009/125/EG

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

(as per RL 2012/19/EU)

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

COMPONENT	CRITICAL RAW MATERIAL
Printed circuit boards	Barite, bismuth, cobalt, gallium, germanium, hafnium, indium, heavy rare earth, light rare earth, niobium, metals of the platinium group, 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

2.3.2 REACh

The regulation (EC) 1907/2006 of the European Parliaments and of the Council concerning the registration, evaluation, authorization and restriction of chemicals (REACh) regulates the production, placing on the market and use of chemical substances and the mixtures produced from these.

Our products are "products" in the sense of the REACh regulation. In accordance with Article 33 of the REACh regulation, suppliers of products must inform their customers if the supplied product contains a substance specified in the REACh SVHC candidate list exceeding 0.1 percent by mass of the object. On June 27, 2018 lead (CAS: 7439-92-1 / EINECS: 231-100-4) was included in the SVHC candidate list. This inclusion activates an obligation to inform along the chain of delivery.

We herewith inform you that individual partial components of our products contain lead in quantities exceeding 0.1 % by mass of the object as an alloy component in steel, aluminum and copper alloys as well as in solders and capacitors of electronic components. The lead content lies within the exceptions specified in the RoHS Directive.

Since lead as an alloy component is firmly bound and therefore no exposure is to be expected in the case of proper use, no additional specification of its safe use are required.

2.3.3 Coolant

Dispose of coolant in accordance with the local statutory regulations.

(as per RL 2012/19/EU)

2.3.4 Electric tools and accessories

Used-up power tools and accessories contain a large amount of valuable raw materials and plastics which can be recycled:

- Used electronic devices marked with the adjacent icon may not be disposed of with household waste in accordance with EU directives.
- By actively using the offered return and collection systems, you are doing your part to reuse and recycle used electronic devices.
- Used electronic devices contain parts that must be handled selectively according to the EU directive. Separate collection and selective treatment are the basis for environmentally responsible disposal and protection of human health.
- We will properly dispose of devices and machines from Orbitalum Tools GmbH purchased after August 13th, 2005 if they are sent to us postage-paid.
- In the case of used electronic devices which may represent a risk to human health or safety due to contamination during use, we have the option of refusing return.
- **Important for Germany:** Devices and machines of Orbitalum Tools GmbH must not be disposed of at municipal collection points, as they are only used in the commercial sector.

(as per RL 2012/19/EU)

2.4 Personnel qualification

CAUTION! The welding turntable may only be used by trained personnel.

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

2.5 Fundamental information on operational safety

CAUTION! Observe valid safety and accident prevention regulations!

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

- Never leave the welding turntable unattended when the power supply is switched on.
- Operator must ensure that no 2 persons are located within the danger zone.
- Do **not** modify or convert the welding turntable.
- Use the welding turntable only in a proper operating condition.
- Use only genuine tools, spare parts and accessories as well as specified operating materials.
- In case of changes in the operating behavior, stop operation immediately and have the fault eliminated.
- Do not remove safety devices.
- Do not pull the machine by the hose package or the cable.
- Repair and maintenance work on the electrical equipment may only be carried out by a qualified expert.
- Opening or altering the welding turntable is prohibited, except for the purpose of removing foreign objects from the gearbox.
  Observe the troubleshooting instructions (*see chap.* "Troubleshooting" of the operating manual).

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

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

► Increase break times.

► Perform "loosening-up" exercises.

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

► Ensure a varied range of activities.

2.6 Personal protective equipment

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

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

2.7 Remaining risks

2.7.1 Mechanical hazards

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

- ► Before connecting the weld head and before mounting the electrode: switch off the welding power supply.

⚠	**DANGER!**	In the event of incorrect use of a forming gas system, gas can emerge from the forming gas system at high pressure and penetrate eyes, mouth and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system components immediately and check them daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

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.

WARNING! Improper installation of structures and workpieces can lead to very dangerous situations!

WARNING! An unsafe standing position, incorrect anchoring, or installation on an inclined surface may result in a dangerous situation for the user!

- ► Place the welding rotary device on a load-bearing, level, fireproof, non-slip, and tip-resistant surface.
- ► Level the welding rotary device using the spirit level on the front crossbar and the locknuts of the height-adjustable support feet.
- ► Mount the brackets at the height of the support bolts for the swivel frame and anchor them in the floor.

WARNING! Falling of the transport crate from an elevated position

- ► Place the transport crate only on a level and stable surface that is secured against tipping over.
- ► Do not place the transport crate in an elevated position.
- ► Wear safety shoes to EN ISO 20345, Class SB.

WARNING! Risk of injury from the high weight of the transport crate. The transport crate including delivery contents weighs 50 kg (110.231 lbs).

- ► Wear safety shoes to EN ISO 20345, Class SB.
- ► When lifting the transport crate, do not exceed the permissible total weight of 25 kg (55.116 lbs) for men and 15 kg (33.069 lbs) for women.
- ► Use suitable transport equipment for long-distance transportation.

WARNING! Risk of impact and crushing due to falling of the welding rotary device and the chuck during transportation, mounting/dismantling, or setting up!

- ► Wear safety shoes to EN ISO 20345, Class SB.
- ► When lifting the welding rotary device, do not exceed the permissible total weight of 25 kg for men and 15 kg for women.
- ► Always use two persons to lift and remove the welding rotary device from the packaging.
- ► Mount the chuck only with two persons.
- ► Only install the chuck with trained personnel.
- ► Place the welding rotary device on a stable base that is secured against tipping over.
- ► Do not transport the device by crane. Use the handles only for manual transport.
- ► Do **not** carry the welding rotary device on a ladder.
- ► For long distances, transport the welding rotary device with suitable industrial trucks.

CAUTION! Falling of the chuck (optional) during mounting/dismantling!

- ► Mount/dismount the chuck with two persons.
- ► Wear safety shoes to EN ISO 20345, Class SB.

WARNING! Risk of crushing due to moving machine parts.

Trapping hands and fingers between moving and adjustable machine parts can cause crushing injuries.

- ► Carry out assembly only with trained personnel.

WARNING! An unbalanced rotating workpiece can strike body parts and cause crushing injuries.

- ► Clamp the workpieces securely.
- ► Support longer workpieces.

WARNING! Touching the rotating workpiece may cause crushing injuries to hands and arms.

- ► Observe the specifications of the maximum permissible workpiece dimensions.

WARNING! Touching sharp edges on components of the device or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts can be severed.

- ► Beware of sharp edges on components of the device or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2.

WARNING! Risk of puncture or stabbing from the electrode.
When grasping the torch, both the operator and third parties are at risk of injury from the sharp electrode tip.

- ► Wear safety gloves in accordance with DIN EN 388 and EN 407.

DANGER! In the event of incorrect use of a forming gas system, gas can emerge from the forming gas system at high pressure and penetrate eyes, mouth and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system components immediately and check them daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION! Risk of crushing injuries and material damage when adjusting the swivel arm and the fall guard.
If fingers get between the fall guard and the cross clamp of the swivel arm, or between the position stop and the swivel arm, they may be crushed when adjusting the swivel arm.

- ► Do not reach between the fall guard and the cross clamp of the swivel arm!
- ► When adjusting the swivel arm, always grasp it with one hand next to the cross clamp and operate the clamping lever with the other!
- ► Do not reach between the position stop and the swivel arm!

CAUTION! Risk of shearing injuries due to moving machine parts.
Intervening in moving machine parts can cause shearing injuries to hands and fingers.

- ► Only carry out assembly and operation with trained personnel.
- ► Observe the warning signs at the hazard points of the welding rotary device.

WARNING! Risk of tripping and falling due to supply lines.
If power cables, gas, or control lines are under tension, people may trip, fall, and pull down the welding rotary device.

- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Anchor the welding rotary device with the mounting brackets on a load-bearing, level, fireproof, non-slip, and tip-resistant surface.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Do **not** put lines or cables under tension.

WARNING! Rotating machine parts can catch hair, jewelry, or clothing.

- ► Wear tight-fitting clothes.
- ► Do **not** wear open hair, jewelry or other accessories that can be easily drawn in.
- ► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/tube holder and the welding position.

CAUTION! Danger of being pricked by the electrode or, if 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, if applicable, the cold wire.
- ► Remove the electrode and, if applicable, the cold wire before transporting the orbital welding device.

CAUTION! Hands and fingers can be caught and crushed while setting up the welding device.

- ► Before releasing the clamping lever for the swivel block, hold the swivel block securely in the handle recess provided.
- ► Switch off the welding power supply before setting up or before an electrode replacement.

CAUTION! Injuries can occur during dismantling for proper disposal of the orbital welding device due to uncertainties in handling tools.

- ► In case of uncertainties, send the orbital welding device to Orbitalum Tools – proper disposal will be carried out there.
- ► Allow only a qualified electrician to access the electrical system and open the weld head.

CAUTION! Risk of crushing and shearing of fingers when adjusting the swivel frame. If fingers get into the guide bow or between the support surface of the swivel frame or the support bolts and the base frame, they may be crushed or sheared off when the swivel frame is adjusted.

- ► Do not reach into the guide bow!
- ► Do not reach between the support surface of the swivel frame or the support bolts and the base frame!
- ► When adjusting the swivel frame, always hold it with one hand in the handle recess in the swivel frame and operate the clamping lever with the other!

⚠	**CAUTION!**	Risk of injury and property damage due to angular adjustment with the workpiece clamped.

► Before adjusting the swivel plate, remove the workpiece from the chuck.

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 as well as injuries and property damage to other devices may occur due to erroneous ignition with an unmounted or incorrectly positioned weld head!

► Do **not** play with the weld head.

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

⚠	**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 the welding power supply.
- ► 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.

⚠	**CAUTION!**	Risk of burns, blindness, and fire due to an arc. An arc may develop if the welding contacts are released during operation. This can result in burns and blindness, and in the worst case, a fire may be triggered by the arc or dripping weld metal.

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

⚠	WARNING!	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.

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! Thermal problems can occur due to 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 before welding.

CAUTION! Risk of burns, blindness, and fire due to an arc.
An arc may develop if the welding contacts are released during operation. This can result in burns and blindness, and in the worst case, a fire may be triggered by the arc or dripping weld metal.

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

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

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

CAUTION! Risk of burns due to arc.
Touching the arc or heated machine components will cause severe burns to hands and arms.

- ► Wear safety gloves according to EN 388, performance level 2.
- ► Observe the warning signs at the machine’s hazard points.

CAUTION! Risk of injury from radiation or heat.
Contact with hot workpieces, dripping weld metal, and sparks causes burns.

- ► Use welding shield or welding helmet with sufficient protective level (depending on use).
- ► Wear dry protective clothing (e.g. welding shield, gloves, safety shoes, etc.) in accordance with the applicable regulations of the respective country!
- ► Protect uninvolved persons against radiation and glare with protective curtains or walls!

⚠	**CAUTION!**	Risk of burns from hot machine parts and workpieces. Very high temperatures arise in particular after several consecutive welding processes. When working on the weld head 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 without thermal resistance can be damaged when in contact with the hot weld head.

- ► Wear safety gloves to EN 388, Performance level 2.
- ► Before working on the weld head or before transport, wait until the surfaces have cooled below 50 °C (122 °F).
- ► Position the weld head correctly.
- ► Use only permissible materials in the welding area.
- ► Observe the warning signs at the hazard points.

2.7.4 Risks due to materials and substances

⚠	**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.

⚠	**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.

⚠	**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!**	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 puncture or prick injury from the electrode. Both the operator and third parties may be injured by the sharp electrode when grasping the torch.

- ► Wear safety gloves in accordance with EN 388 and EN 407.

2.7.5 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.

2.7.6 General danger

⚠	**CAUTION!**	General danger

- ► In case of danger, unplug the power supply!

► Accessibility to the mains plug must always be assured in order to permit disconnecting the power supply from the mains.

2.7.7 Ergonomic hazards

⚠	**CAUTION!**	Risk of injury due to repetitive work. Discomfort, fatigue, musculoskeletal disorders, reduced responsiveness, and cramping may occur.

► Increase break times.

► Perform "loosening-up" exercises.

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

► Ensure a varied range of activities.

3 Description

3.1 Welding turntable DVR M

POS.	DESIGNATION	POS.	DESIGNATION
1	TIG machine welding torch	31	Cross clamp
2	Storage tray for small parts	32	Torch arm
3	Rotary table	33	Stand arm
4	Quick-connect fitting for gas hose OD 6 mm	34	Adjustment knobs compound slide
5	Clamping lever	35	Spirit level
6	Ergonomically shaped crossbar as handle	19	Guide rail for handle and stand slide
7	Plug "Welding current +" (ground cable)	20	Compound slides
8	Handle recess for securing the swivel frame	21	Torch holder joint
9	Mounting bracket with M8 hole	22	Support bolt for swivel frame on base frame
10	Type plate	23	Stand extension arm
11	Service opening for mounting/removing the chuck	24	Sliding carriage with pipe base for stand extension arm
12	Safety clamping wrench, spring-loaded, for chuck (optional) in storage	25	Fall protection with position stop for swivel arm
13	Motor	26	Torch holder
14	Built-in plug control cable	27	Hose package
15	Handle in guide rail	28	Universal joint clamp swivel arm – torch arm
16	Swivel frame	29	Strain relief hose package
17	Swivel guide	30	Swivel arm
18	Operator button panel	31	Welding current sliding contact

3.1.1 Warning signs

The warning signs and safety signs located on the machine must be observed.

The warning signs are part of the machine. They must not be removed or modified. Missing or illegible warning signs must be replaced immediately.

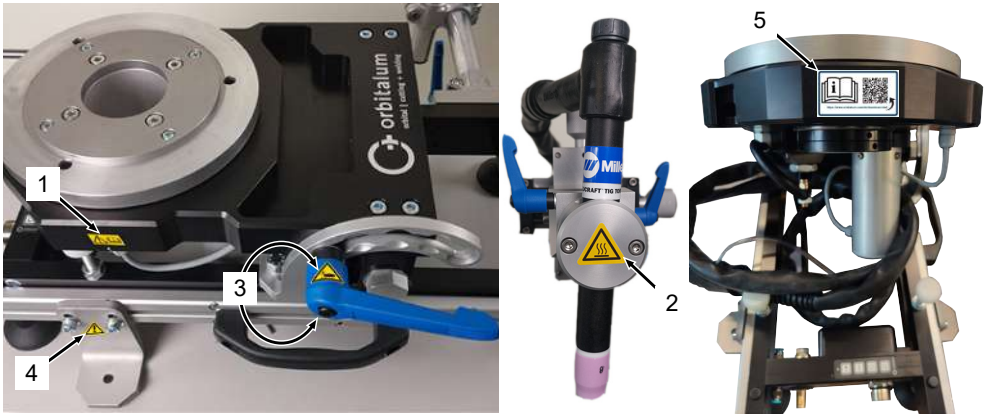
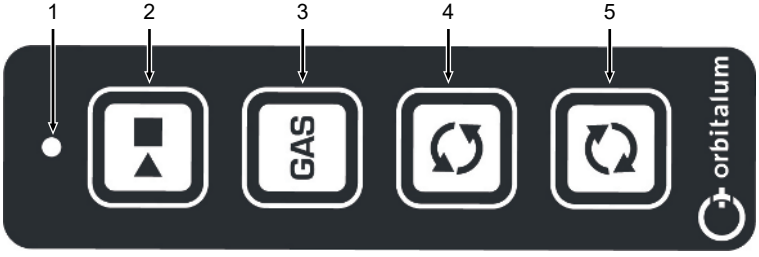


Illustration: Warning signs on DVR M

POS.	IMAGE	POSITION ON MACHINE	MEANING	CODE
1		Side surface of swivel frame (1x)	Read the safety instructions!	871 001 057
2		Torch holder (1x)	Warning hot surface	855 060 002
3		Top and bottom clamping lever pivot adjustment (2x)	Warning hand injury	855 060 003
4		Mounting bracket left (1x) and right (1x)	General warning	855 060 004
5		Upper surface of swivel frame (1x)	Link / QR code to download the operating manual	888 060 005

3.1.2 Operator button panel



POS.	CONTROL ELEMENT	FUNCTION
1	**LED**	• LED blinks in ready-to-weld state.
		• LED lights up constantly during the welding process.
2	**START/**	• Single press: Starts the welding process.
	STOP	• Press during the welding process: The welding process stops and the post-flow time starts.
		• Press during post-flow time: Post-flow is canceled.
3	**GAS**	• Single press: Function test of the gas supply starts.
		• Press again: Function test ends.
		• Press and hold in welding mode or in test mode of the welding power supply: Mode is switched.
4	**ROTATION (COUNTER-CLOCKWISE)**	• Short press: Turntable rotates step-by-step (counterclockwise) in the welding direction.
		• Press and hold: Turntable rotates continuously (counterclockwise) in the welding direction.
5	**ROTATION (CLOCKWISE)**	• Short press: Turntable rotates step-by-step (clockwise) in the welding direction.
		• Press and hold: Turntable rotates continuously (clockwise) in the welding direction.

3.2 Workpiece holders

A workpiece holder is mandatory for use of the welding turntable and must be ordered separately.

- Three-jaw rotary chuck: For welding in the angle range of 0 – 90° at five inclination angles at 22.5° intervals.

3.2.1 Three-jaw rotary chuck DVR M (option)

Centered clamping three-jaw chuck made of hardened and ground steel

For vertical and horizontal workpiece rotation in stationary use.

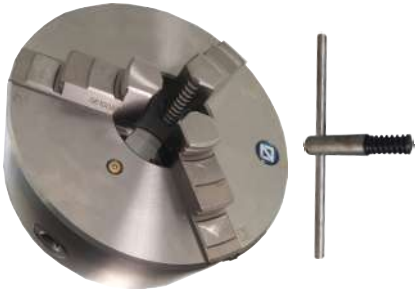
With cylindrical retainer for clamping the pipe.

The inner diameter of the hollow shaft is 72 mm.

A pipe holder is mandatory for use and must be ordered separately.

The scope of delivery includes:

- 1 three-jaw lathe chuck
- 1 spring-loaded safety clamping key
- 1 set each of turning and drilling jaws, graded to the inside and outside
- 1 set of fastening screws for clamping chuck on turntable



See also chap. Clamping range three-jaw chuck (optional) [▶ 36]

ARTICLE	OUTER Ø CHUCK [MM]	OUTER Ø CHUCK [INCH]	INNER Ø HOLE [MM]	INNER Ø HOLE [INCH]	CODE	KG
Three-jaw lathe chuck DVR M	230	9.06	72	2.83	855002001	14.16

4 Accessories and consumables (optional)

WARNING

Danger presented by using accessories that have not been approved.

Various injuries and damage to property.

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

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

Download links PDF:

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

► Connect suitable accessories, see operating instructions of accessories.

Control cable TP/MH

Suitable for all ORBIWELD TP and MH orbital weld heads and the DVR M welding turntable.

Ground cable

For use in combination with an orbital welding power supply from the MOBILE WELDER and ORBIMAT series.

Length 5 m (16.4 ft).

Required for use with DVR M welding turntables.

ORBIPURGE forming set

Complete with Teflon gas hose and quick-release couplers.

The ORBIPURGE forming set for pipe inner diameters of 12 – 110 mm (0.472" – 4.331") includes all accessories for quick and efficient internal forming during orbital welding.

- Forming plugs for larger diameters are available separately.
- Suitable for all common materials
- Different forming plugs adapt precisely to the inner diameter of the pipe and thus ensure complete sealing
- The complete set is delivered in a rugged plastic case
- The standard scope of delivery includes 2 forming plugs each per size, a Teflon gas hose as well as protective gas vents made of sinter metal with quick-release couplers.
- Especially suitable for very high cleanliness requirements of the forming atmosphere and the ideal supplement to the ORBmax residual oxygen meter [▸ 33]
- The included, self-closing quick-release couplers allow a simple connecting and disconnecting of the gas hose
- **Replacement protective gas vents for ORBIPURGE forming plugs: Suitable for all ORBIPURGE forming plugs.**

ORBIPURGE forming set

Replacement protective gas vents

ORBmax

Residual oxygen meter

Characteristics, see product data sheet

Illustration: ORBmax

TECHNICAL SPECIFICATIONS	ORBMAX:
Dimensions (LxWxH)	203 x 204 x 82 mm
	7.99 x 8.03 x 3.23 in
Weight, approx.	1.65 kg
	3.64 lbs
Protection class device	IP32
Protection class transport case	IP67
Power connection	100 - 240 V AC, 50 - 60 Hz
Measuring range	1 - 999 ppm
Scope of delivery	• 1 ORBmax residual oxygen meter • 1 transport case • 1 power unit supply set 100 - 240 VAC/ 12 VDC • 1 measuring hose (with test tip and filter) • 1 SD card incl. PC evaluation software "O2_log" • 1 interface cable ORBmax/ ORBIMAT CA • 1 interface cable ORBmax/ ORBIMAT SW • 2 reserve filter inserts • 1 operating instructions

Copper paste

Copper paste for coating the contact surfaces of the turntable and the welding current sliding contact. Mineral oil-polymer mixture with copper solid lubricant pigments.

Brand: Caramba

Item No.: 691301

- Protects metallic parts against wear, fitting rust, seizing, and burning.

- Protects joints against rusting and scaling.
- Excellent lubrication, separation, and protection properties.
- Smooth and therefore easy to apply.

5 Scope of application

Welding process	Tungsten inert gas (TIG)
Gas Type	According to DIN EN 439
Materials	All metallic materials suitable for the TIG process.
Application	Welding of metallic pipes and attachments such as flanges and bends up to a maximum wall thickness of 2.5 mm with butt weld without cold wire.
Pipe (outer diameter) min. … max.	9.53 mm (0.38 in) - 230 mm (9.06 in)

5.1 Clamping range three-jaw chuck (optional)

The three jaws are graduated outward, resulting in different clamping ranges.

Internal clamping range: d1

External clamping ranges: d2, d3

Tubes with OD max. 72 mm (2.83 in) can be pushed through the hollow shaft.

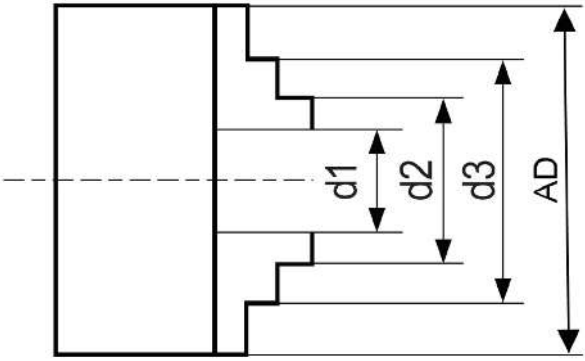


Illustration: Three-jaw chuck clamping range diagram

TYPE	OD	D1	D2	D3 MAX.
DVR M	200 mm	9.53-90 mm	52-135 mm	120-202 mm
	7.87 in	0.38-3.54 in	2.05-5.31 in	4.72-7.95 in

6 Technical specifications

Welding turntable		**DVR M**
Code		855 000 030
Welding turntable		
Dimensions (H x W x D)	[mm]	670 x 665 x 600
	[inch]	26.38 x 26.18 x 23.62
Weight (without tripod, workpiece holder)	[kg]	22.00
	[lbs]	48.50
Distance floor to rotating axis:	[mm]	360
	[inch]	14.17
Turning plate Ø OD	[mm]	227.6
	[inch]	8.96
Hollow shaft Ø ID	[mm]	72
	[inch]	2.83
Max. rotation speed	[rpm]	4.9

- Built-in weld power coupling for mass transfer to turning plate
- Built-in welding current socket for ground cable connection
- Limit switch for zero setting and speed calibration
- Mounting bracket in guide rail

Workpiece dimensions and load capacity		
Operation with three-jaw chuck		
Max. radial load capacity (tilting moment) at pipe end with max. workpiece length and max. extended stand	[kg]	4
	[lbs]	8.81
Max. workpiece weight without counter support	[kg]	10
	[lbs]	22.05
Max. workpiece weight with counter support	[kg]	20
	[lbs]	44.09
Max. workpiece length without counter support	[mm]	500
	[inch]	19.69
Max. workpiece length with counter support	[mm]	2000
	[inch]	78.74

Max. weld position axial to workpiece holder	[mm]	300
	[inch]	11.81
Max. projecting parts radial to the clamping axis	[mm]	300
	[inch]	11.81
Torch stand (mountable on rotary device)		
Dimensions stand extension OD x L:	[mm]	30 x 300
	[inch]	1.18 x 11.81
Dimensions stand arm OD x L:	[mm]	30 x 500
	[inch]	1.18 x 19.69
Dimensions swivel arm OD x L:	[mm]	30 x 300
	[inch]	1.18 x 11.81
Dimensions torch swivel arm OD x L:	[mm]	25 x 100
	[inch]	0.98 x 3.94
Linear adjustment path cross slide for torch fine adjustment	[mm]	30.00
	[inch]	1.18
Stand weight	[kg]	4.83
	[lbs]	10.65

- Position stop for swivel arm to lock the welding position •
- Torch coarse adjustment via clamping lever
- Torch holder can be rotated 360°

Welding parameters		
Welding direction		Counterclockwise
		Clockwise
Welding position		Vertical
		Horizontal
Machine torch cooling		GAS
Max. shielding gas volume flow:	[l/min]	40
Max. shielding gas pressure	[bar]	4
Max. forming gas volume flow:	[l/min]	10
Max. forming gas pressure	[bar]	4
Weld current @ 100% duty cycle	[A]	100
Weld current @ 35% duty cycle	[A]	140
Weld current, max.	[A]	150

Electrode diameter	[mm]	1.6 … 2.4
	[inch]	0.06 … 0.094
Torch hose package length	[m]	3.80
	[ft]	12.47

7 Storage and transport

7.1 Gross weight

MODEL	WEIGHT*	
DVR M	[kg]	50
	[lbs]	110.23

**including scope of delivery and transport case*

COMPONENTS	WEIGHT	
DVR base machine (without stand, clamping device)	[kg]	22.00
	[lbs]	48.50
Machine torch GC (including hose package)	[kg]	2.23
	[lbs]	4.92
Tripod (without torch)	[kg]	4.83
	[lbs]	10.65
Three-jaw lathe chuck	[kg]	14.16
	[lbs]	31.22
Safety clamping wrench, spring-loaded, for rotary chuck	[kg]	0.30
	[lbs]	0.66
DVR base machine with three-jaw chuck (incl. safety clamping wrench)	[kg]	43.52
	[lbs]	95.95
Tool set	[kg]	0.72
	[lbs]	2.20
Transportation case	[kg]	33.50
	[lbs]	73.85

7.2 Unpack welding turntable

NOTICE!

► Report any damage to your power supply immediately.

WARNING

Risk of injury due to the high weight of the welding turntable! The base machine without attachments weighs 22 kg (48.50 lbs).

Risk of overstraining and crushing during transport

► When lifting the welding turntable, do not exceed the permissible total weight of 25 kg for men and 15 kg for women.

► For transport, secure the handle centrally in one of the guide rails.

► When carrying with one hand, always hold the welding turntable by the designated handle or the ergonomically shaped crossbar.

► Use a suitable means of transport for longer distances.

1. Open the closure and lid of the transport case.
2. First remove the tripod tubes, machine torch, tool case, handle, and mounting brackets from the box.
3. Grasp the welding turntable at the base frame with both hands (if necessary with two people) and lift it out of the transport case.
4. Place the welding turntable upright on a flat, stable, non-slip, and fire-resistant surface.
5. Check the welding turntable and accessories for transport damage.

7.3 Transporting the welding turntable

WARNING

Risk of injury due to the high weight of the transport case! The transport case, including delivery contents, weighs 50 kg (110.231 lbs).

Risk of overstraining and crushing during transport

- ► When lifting the transport case, do not exceed the permissible total weight of 25 kg (55.116 lbs) for men and 15 kg (33.069 lbs) for women.
- ► Use a suitable means of transport for longer distances.

WARNING

Risk of the transport case falling from an elevated storage position

Risk of crushing injuries.

- ► Place the transport case only on a level and stable surface that is secured against tipping.
- ► Do not place the transport case in an elevated position.
- ► Wear safety shoes to EN ISO 20345, Class SB.

WARNING

Risk of injury due to the high weight of the welding turntable! The base machine without attachments weighs 22 kg (48.50 lbs).

Risk of overstraining and crushing during transport

- ► When lifting the welding turntable, do not exceed the permissible total weight of 25 kg for men and 15 kg for women.
- ► For transport, secure the handle centrally in one of the guide rails.
- ► When carrying with one hand, always hold the welding turntable by the designated handle or the ergonomically shaped crossbar.
- ► Use a suitable means of transport for longer distances.

WARNING

Risk of accident from impermissible transport by crane

The welding turntable may fall and injure people.

- ► Do **not** transport the welding turntable by crane.
- ► Use handles and crossbars of the base frame for manual transport only.

CAUTION

Danger of injury through pointed electrode!

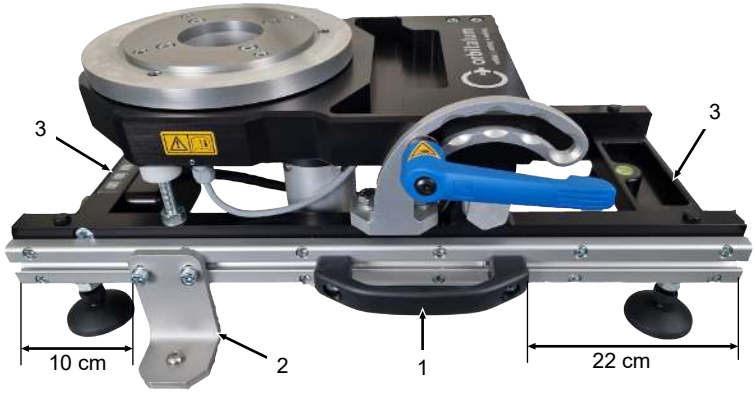
Danger of being pricked by the electrode for the operator as well as for third parties while grasping the machine welding torch.

- ► Do not grasp the machine welding torch at the position of the electrode.
- ► Remove the electrode before transporting the welding turntable.

- ► Transport the DVR M by the handle (1) or the crossbars (3).
- ► Use a suitable forklift for transport over longer distances or when the maximum permissible load is exceeded.

The handle and bracket are pre-assembled.

To ensure balance when carrying the welding turntable and secure fastening, observe the dimensions indicated in the following figure for positioning the handle (1) and mounting brackets (2).



7.4 Preparing storage

The following storage conditions must be observed:

- Storage only in enclosed spaces
- Do not store near materials that may cause corrosion.
- Temperature range -20 to +55 °C
- Relative humidity up to 90% at 40 °C

Carry out the following steps before storage:

1. Disconnect the welding turntable from the welding power supply.
2. Remove the electrode.
3. Store the welding turntable properly in the supplied transport case. Ensure that the hose package is not twisted or squeezed.

Carry out the following steps additionally before longer storage periods:

1. Clean the surfaces.
2. Lightly oil the chuck.

For additional care and maintenance instructions, *see Chap.* Care Instructions and Maintenance [▸ 91].

8 Commissioning

8.1 Scope of delivery

ITEM	QUAN-TITY	UNIT
Welding turntable DVR M* (without chuck)	1	PCS.
Stand	1	PCS.
Machine torch with equipment	1	PCS.
Accessory set DVR M Consisting of:	1	PCS.
Tool case (without contents)	1	PCS.
Hex key with T-handle SW3x100	1	PCS.
Hex key with T-handle SW6x100	1	PCS.
Hex key with T-handle SW8x150	1	PCS.
Hex key with T-handle SW5x150	1	PCS.
Gas nozzle, TP/MH/HB V1/MB 250A	1	PCS.
Gas lens 2.4 TP/MH/HB V1/MB 250A	1	PCS.
Standard collet 2.4 mm MB 250 A	1	PCS.
Operating instructions and spare part list Download link PDF: https://www.orbitalum.com/de/download.html	Unlimited (PDF)	PCS.

We reserve the right to make changes.

**Chuck and vertical tube holders are not included in the scope of delivery.*

1 Check the delivery for completeness and damage caused by transport.

2 Report any missing parts or damage caused by transport to your supplier immediately.

8.2 Setting up

WARNING

An unstable stand, incorrect anchoring, or installation on an inclined surface may result in a dangerous situation for the user!

Risk of injury and damage to the welding turntable.

- ► Place the welding turntable with the mounting brackets on a load-bearing, level, fire-resistant, non-slip, and tilt-proof surface.
- ► Level the welding turntable using the spirit level on the front cross strut and the lock nuts of the height-adjustable feet.
- ► Mount the mounting brackets at the height of the support bolts for the swivel frame and anchor them to the ground.

WARNING

Risk of injury due to the high weight of the welding turntable! The base machine without attachments weighs 22 kg (48.50 lbs).

Risk of overstraining and crushing during transport

- ► When lifting the welding turntable, do not exceed the permissible total weight of 25 kg for men and 15 kg for women.
- ► For transport, secure the handle centrally in one of the guide rails.
- ► When carrying with one hand, always hold the welding turntable by the designated handle or the ergonomically shaped crossbar.
- ► Use a suitable means of transport for longer distances.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

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 welding turntable only when the power source is switched off.
- ► 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.
- ► 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

Risk of crushing and shearing injuries due to moving machine parts.

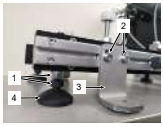
Contact with moving machine parts can cause crushing or shearing injuries to hands and fingers.

- ► Assembly and operation must only be performed by trained personnel.
- ► Observe the warning signs on the hazard areas of the welding turntable.

- ► Set up the device in such a way that sufficient space is available to set the control elements.
- ► Do not block escape routes!
- ► Lay cables or hose packages straight and bundled (use cable ducts or other aids if necessary)!

Procedure:

1 Place the turntable on a load-bearing, level, fire-resistant, non-slip surface secured against tipping.



2 Level the turntable using the spirit level (5) on the front cross strut and the lock nuts (1) on the height-adjustable feet (4).

3 Loosen the screws (2) in the elongated holes of the mounting brackets (3), adjust to the ground, and secure.

4 Guide the supplied mounting screws (7) through the holes (6) in the mounting brackets and anchor them in the ground.

8.3 Adjusting the position of the swivel frame

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

CAUTION

Risk of crushing and shearing injuries due to moving machine parts.

Contact with moving machine parts can cause crushing or shearing injuries to hands and fingers.

- ► Assembly and operation must only be performed by trained personnel.
- ► Observe the warning signs on the hazard areas of the welding turntable.

CAUTION

Risk of crushing and shearing of fingers when adjusting the swivel frame

If fingers get into the guide arc or between the support surface of the swivel frame or the support bolts and the base frame, there is a risk of crushing or shearing when adjusting the swivel frame.

- ► Do not reach into the guide arc!
- ► Do not reach between the support surface of the swivel frame or the support bolts and the base frame!
- ► When adjusting the swivel frame, always hold it with one hand in the handle recess of the swivel frame and operate the clamping lever with the other!

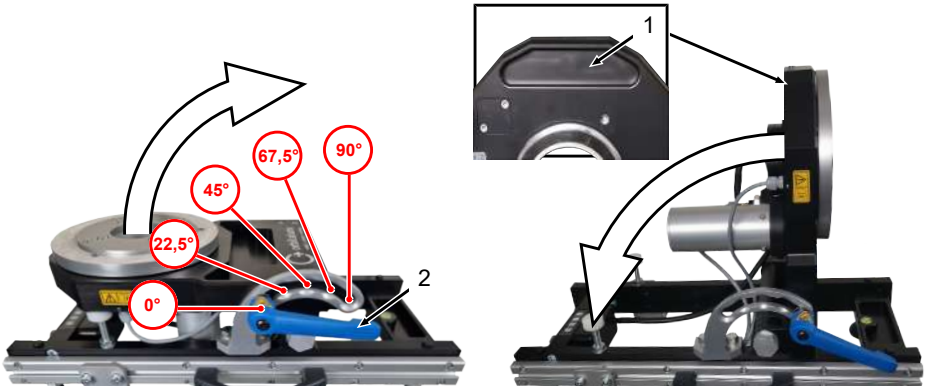
CAUTION

Risk of injury and damage to property when adjusting the angle with a clamped workpiece.

Injuries and property damage may be the result.

- ► Before adjusting the swivel plate, remove the workpiece from the chuck.

✓ Ensure that the power source is switched off!



The swivel frame can be rotated from 0° to 90°. It can be locked in five positions, each 22.5° apart.

1. Hold the swivel frame with one hand in the handle recess (1).
2. Loosen the clamping lever (2) with the other hand by turning it counterclockwise.
3. Swivel the frame (3) to the desired position of the five available.
4. Secure the swivel frame (3) by tightening the clamping lever (2) firmly.

8.4 Preparing initial operation

- ► Check the hose package and lines for damage.
- ► Check the welding turntable and machine torch for loose parts.
- ► Ensure that the welding rotary device is correctly set up and secured against tipping with the mounting brackets.
- ► Check the working environment for possible sources of danger and, if applicable, eliminate these.

9 Set-up and mounting

9.1 Procedure

INFO		Observe the operating instructions of the connected welding power supply!

Carry out setting up and mounting in the following order:

1. Connect the control cable [▶ 55]
2. Connect the ground cable [▶ 57]
3. Connecting the welding power supply [▶ 59]
4. Clamp/insert the pipe [▶ 64]
5. Replacing the electrode [▶ 65]
6. Mount and position the torch stand [▶ 68]
7. Mount the torch and hose assembly on the stand [▶ 71]
8. Torch fine adjustment [▶ 73]
9. Adjust the stop of the swivel arm [▶ 77]
10. Carry out the gas and cooling liquid function test [▶ 79]
11. Connect the accessories [▶ 79]
12. Configure the welding procedure [▶ 81]
13. Calibrating the motor [▶ 81]

9.2 Mount the chuck

WARNING

Risk of impact and crushing from the welding rotary device and the chuck falling during transport, assembly/disassembly, or setup.

Injuries and property damage may be the result.

- ► Wear safety shoes to EN ISO 20345, Class SB.
- ► Lift and remove the welding rotary device and chuck from the transport box only with two persons.
- ► Only carry out mounting/dismantling of the chuck with two persons.
- ► Only carry out mounting/dismantling of the chuck with trained personnel.
- ► Place the welding rotary device on a stable surface secured against tipping.
- ► Do not transport the device by crane. Use the handles exclusively for manual transport.
- ► Do **not** carry the welding rotary device on a ladder.
- ► Transport the welding rotary device over longer distances with suitable industrial trucks.

WARNING

Risk of crushing on the workpiece due to gravity

An unbalanced rotating workpiece may strike body parts and cause crushing injuries.

- ► Clamp the workpieces securely.
- ► Support longer workpieces.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

CAUTION

Risk of crushing and shearing injuries due to moving machine parts.

Contact with moving machine parts can cause crushing or shearing injuries to hands and fingers.

- ► Assembly and operation must only be performed by trained personnel.
- ► Observe the warning signs on the hazard areas of the welding turntable.

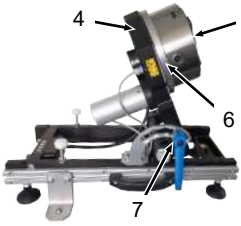
CAUTION

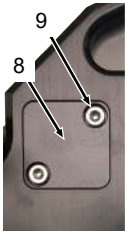
Risk of crushing and shearing of fingers when adjusting the swivel frame

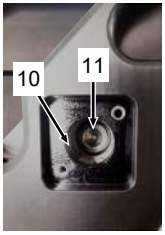
If fingers get into the guide arc or between the support surface of the swivel frame or the support bolts and the base frame, there is a risk of crushing or shearing when adjusting the swivel frame.

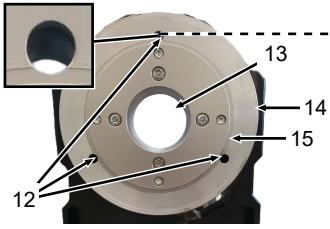
- ► Do not reach into the guide arc!
- ► Do not reach between the support surface of the swivel frame or the support bolts and the base frame!
- ► When adjusting the swivel frame, always hold it with one hand in the handle recess of the swivel frame and operate the clamping lever with the other!

✓ Ensure that the welding rotary device is completely disconnected from the power supply!

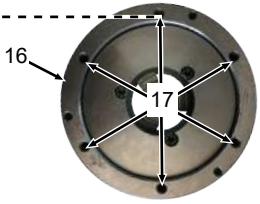




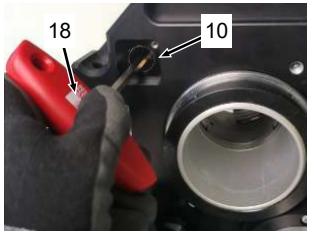




Holes in the turntable



Threaded holes in the chuck



1. Swivel the swivel plate (4) to the 67.5° position (7) of the guide bend (1) and fix it. *See* Adjusting the position of the swivel frame [▶ 48].
2. Use the supplied hex key SW 5x150 to unscrew the two hexagon socket screws (9) from the cover (8) of the service opening (10) and store them securely, e.g., in the storage tray for small parts (2) in the front cross strut.
3. Remove the cover (8) from the service opening (10) and store it securely, e.g., in the storage tray for small parts (2) in the front cross strut.
4. Turn the turntable (14) by hand until one of the three holes (12) is accessible through the service opening (10).
5. Place the chuck (5) on the hub (13) of the turntable so that one of the five threaded holes (17) in the chuck aligns with the hole in the turntable that is aligned with the service opening (10).
6. **NOTICE! The chuck must always be secured by a second person!**Using the included hex key SW 8x150 (18), successively screw in the three fastening screws (11) of the chuck through the service opening (10) into the threaded holes (12) of the chuck.
   After securing each screw, rotate the chuck by hand until the next thread is accessible through the service opening (10).
7. Screw the cover (8) of the service opening (10) back on.

⇨ The chuck is mounted on the turntable.

9.3 Connect the control cable

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

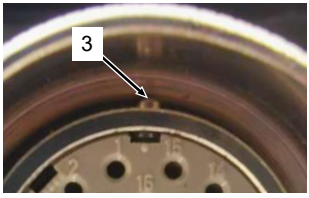
- ► Ensure that under **no** circumstances can people trip over lines and/ or cables.
- ► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Do **not** put lines or cables under tension.

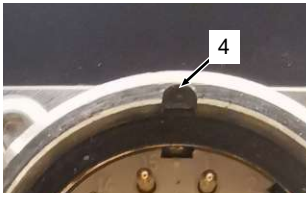
WARNING

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 welding turntable only when the power source is switched off.
- ► 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.
- ► 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.





► Position the control line socket (1) with the spring (3) on the groove of the control line plug (2) (4) and screw the retaining ring (5) on as far as it will go.

⇨ The control cable is connected and secured.

9.4 Connect the ground cable

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.

- ► Before connecting the welding rotary device and before mounting the electrode: switch off the orbital welding power supply.
- ► From the start of the welding process, avoid contact with the pipe and the machine torch.
- ► Wear safety gloves DIN 12477, Type A for welding operation and DIN 388, Class 4 for mounting the electrode.

DANGER

Danger to life from electromagnetic fields

During the welding process, electromagnetic
fields are generated which can be fatal for people with heart problems or pacemakers.

- ► People with heart problems or pacemakers must not operate the welding system.
- ► The plant operator must realize the workplaces in accordance with the EMF Directive 2013/35/EU in such a manner that no danger whatsoever exists for the operator or persons in the vicinity of the welding system.

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

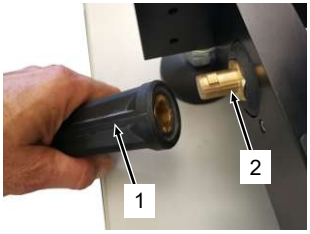
- ► Ensure that under **no** circumstances can people trip over lines and/ or cables.
- ► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Do **not** put lines or cables under tension.

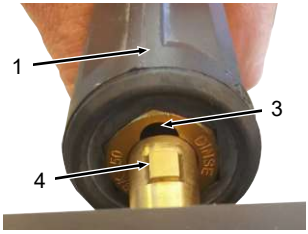
WARNING

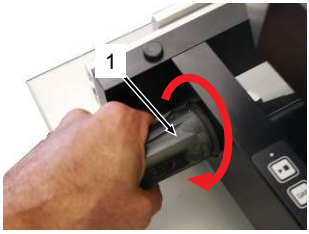
Risk of burns, blindness and fire due to arcs

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 welding turntable only when the power source is switched off.
- ► 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.
- ► 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.







1. Insert the ground cable socket (1) with the groove (3) aligned with the spring (4) onto the ground plug (2).
2. Rotate the ground cable socket (1) clockwise until it stops.

⇨ The ground plug (2) is locked in the ground cable socket (1).

9.5 Connecting the welding power supply

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

- ► Ensure that under **no** circumstances can people trip over lines and/ or cables.
- ► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Do **not** put lines or cables under tension.

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 welding turntable only when the power source is switched off.
- ► 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.
- ► 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

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

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

- ► Switch welding power supply off before setting up.
- ► Replace defective coolant circuit parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION

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

If the forming gas system is used incorrectly, gas under high pressure may escape from the forming gas system and penetrate the eyes, mouth, and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION

Danger of burns from improper welding current connection!

Unsecured welding current plugs or dirty workpiece connections (dust, corrosion) can heat up and cause burns if touched.

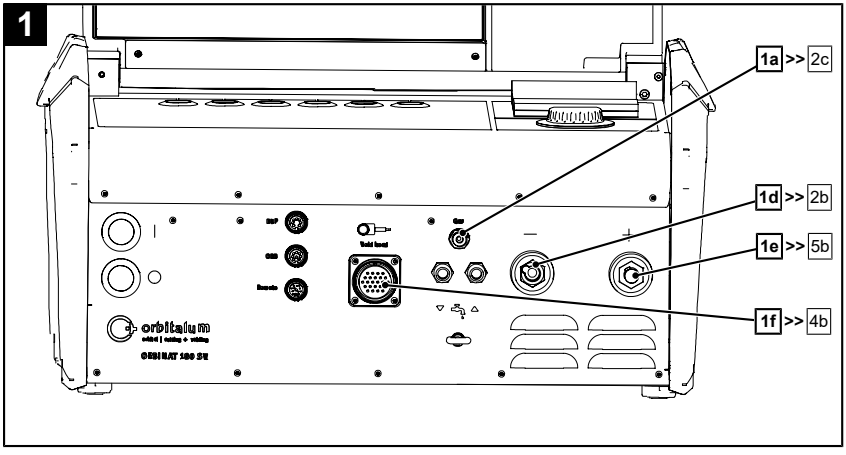
- ► Check welding current connections daily and ensure cable socket latch is engaged.
- ► Clean the workpiece connection point thoroughly and fasten it securely!
- ► Do not use structural parts of the workpiece as welding current return line!

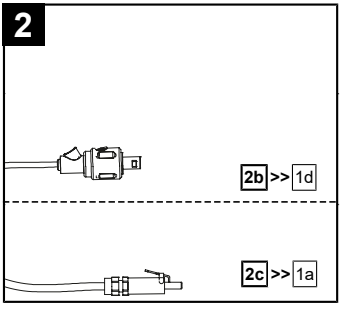
NOTICE!

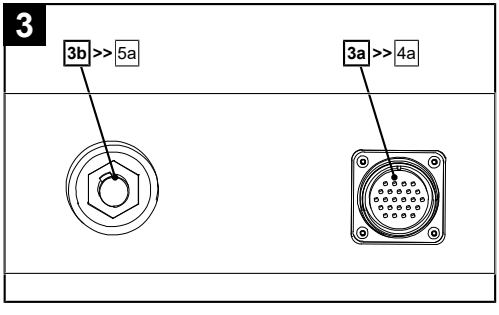
Overheating of the torch body and damage to the hose package due to missing coolant!

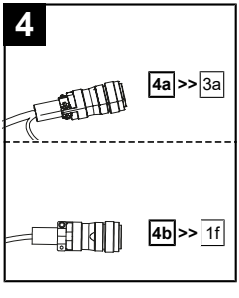
- ► Ensure that the coolant tank of the welding power supply or of the external cooling device is filled sufficiently (coolant level should at least reach the "MIN" marking on the tank).

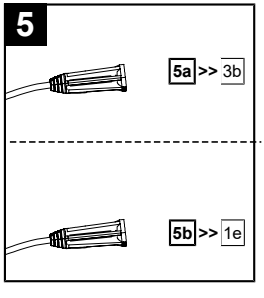
9.5.1 Connection scheme











POS.	DESIGNATION	TO BE CONNECTED WITH	POS.
1	**Power supply**		
1a	Socket "Gas" (quick lock)	Plug "Gas", hose package	**2c**
1d	Socket "Welding current (–)" (hose assembly)	Connector “Welding current (–)”, hose assembly	**2b**
1e	Plug "Welding current +" (ground cable)	Socket "Welding current +", ground cable	**5b**
1f	Socket "Control line"	Plug "control line to power supply"	**4b**
2	**Hose package**		
2b	Plug "Welding current (–)"	Socket "Welding current (–)”, power source	**1d**
2c	Gas plug (quick lock)	Gas socket, power supply	**1a**
3	**Welding rotary device DVR M**		
3a	Socket "Control line"	Plug "Control line to welding rotary device," control cable	**4a**
3b	Plug "Welding current +" (ground cable)	Socket "Welding current +", ground cable	**5a**
4	**Control cable**		
4a	Plug "Control line to welding rotary device"	Socket "Control line," welding rotary device	**3a**
4b	Plug "Control line to power supply"	Socket "Control line", power source	**1f**
5	**Ground cable**		
5a	Socket "Ground cable"	Plug "Welding current +" (DVR M)	**3b**
5b	Socket "Ground cable"	Plug "Welding current +", power source	**1e**

9.5.2 Connection sequence

Carry out connections in the following sequence:

1. Connect the plug "Control line to power source" (**4b**) to the "Control line" socket (**1f**) at the power source.
2. Connect the plug "Control line" (**4a**) to the "Control line" socket (**3a**) on the DVR and tighten securely (*see* Connect the control cable [▶ 55]).
3. Connect the "Welding current –" plug (**2b**) of the hose package to the "Welding current –" socket (**1d**) at the power source and lock it with a turning movement.
4. Connect the "Gas" plug (**2c**) of the hose package to the "Gas" socket (**1a**) at the power source.
5. Connect the "Ground cable" plug (**5b**) of the ground cable to the "Welding current +" socket (**1e**) at the power source and screw hand-tight.
6. Connect the "Ground cable" plug (**5a**) of the ground cable to the "Welding current +" socket (**3b**) on the DVR M. Ensure good electrical contact.
7. Switch on the welding power supply.
8. Carry out a gas and cooling liquid function test (*see* Carry out gas and cooling liquid function test [▶ 79]).

9.6 Clamp/insert the pipe

9.6.1 Clamp the pipe in the chuck

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

CAUTION

Risk of crushing and shearing injuries due to moving machine parts.

Contact with moving machine parts can cause crushing or shearing injuries to hands and fingers.

► Assembly and operation must only be performed by trained personnel.

► Observe the warning signs on the hazard areas of the welding turntable.

CAUTION

Risk of injury and damage from inserted chuck key!

If the chuck is moved with the chuck key inserted, persons may be injured, and damage may occur!

► Use the safety chuck key supplied with the three-jaw chuck.

► Check whether the chuck key has been removed from the chuck lock before every movement of the lathe chuck!

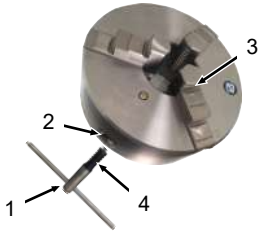
► Remove the chuck key from the chuck lock before every movement of the lathe chuck!

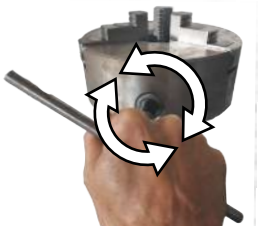
NOTICE!

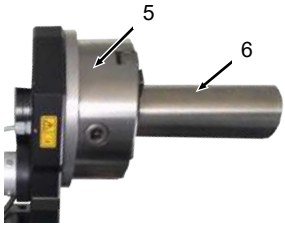
► Pipe ends are tacked together flush and without gaps. If necessary, carry out with seam preparation beforehand.

NOTICE!

► To avoid deformations or damage to the workpiece, adapt the clamping force to the wall thickness of the workpiece.







1. Insert the chuck key (1) into the chuck lock (2) against the pressure of the safety spring (4) and roughly adjust the clamping jaws (3) to the current pipe diameter by turning them.
2. Insert the pipe (6) into the chuck (5) and tighten with the chuck key.

9.7 Replacing the electrode

The torch is designed for electrode diameters of 1.6 mm (0.063") and 2.4 mm (0.094").

DANGER

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

Electric shock.

► Do **not** touch energized parts (pipe), especially when igniting the arc.

► Do **not** allow persons with increased sensitivity to electrical hazards (e.g. cardiac failure) to work with the machine.

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

► Work on a dry surface.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

► Wear safety gloves in accordance with EN 388 and EN 407.

CAUTION

Risk of burns from hot machine parts and workpiece.

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

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

► Before working on the machine torch or transporting, wait until the surfaces have cooled down below 50 °C (122 °F).

► Correctly position the machine torch.

► Use only permissible materials in the welding area.

► Observe the warning signs on the hazard areas.

CAUTION

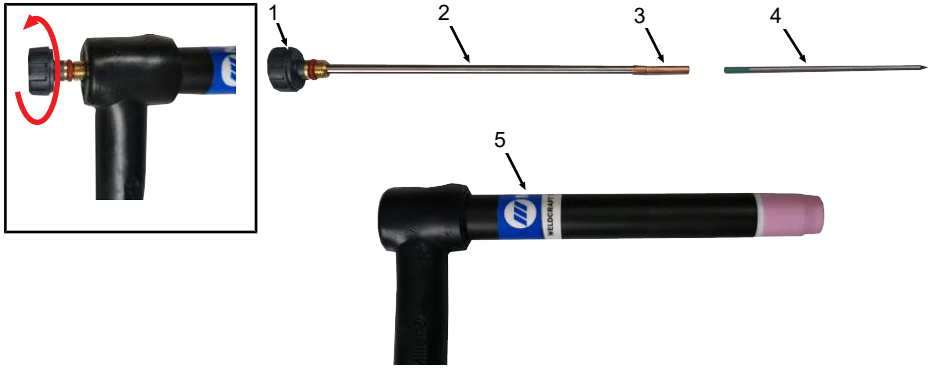
Unintentional startup of the welding rotary device!

Crushing of hands and fingers.

► Switch off the Orbital welding power supply.

NOTICE!

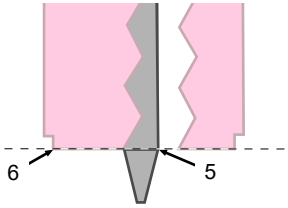
Before inserting the electrode, check that it has the correct length and the sharpness. Rework, if necessary. *See chap.* Grinding electrode



1. Unscrew the torch cap counterclockwise (1) and pull it together with the electrode holder (2), electrode clamping sleeve (3), and any worn electrode from the torch body (5).
2. Remove any worn electrode from the electrode clamping sleeve (3).
3. Insert the newly ground electrode (4) into the electrode clamping sleeve (3) with the unground end first.
4. Push the torch cap (1), together with the electrode holder (2), electrode clamping sleeve (3), and newly ground electrode (4), back into the torch body (5).
5. Tighten the torch cap (1) hand-tight again.
6. Adjust the electrode projection from the gas nozzle (6) as required:

Recommended electrode projection:

Longitudinal grinding edge of electrode (4) flush with the lower edge of the gas nozzle (6).



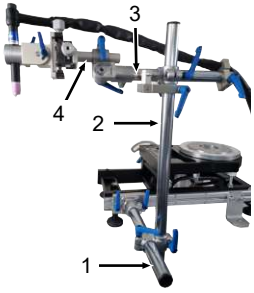
9.8 Mount and align the torch stand

The stand components can be mounted and aligned individually depending on the welding task.

Components and functional description

The torch stand consists of four tubes that are connected with cross clamps:

- Stand extension (1)
- Stand arm (2)
- Swivel arm (3)
- Torch arm (4)



The tubes can be freely rotated and moved within the clamps and fixed with clamping levers:

- ► Tighten clamp: Turn the clamping lever clockwise.
- ► Loosen clamp: Turn the clamping lever counterclockwise.
- ► Swivel the clamping lever to the most convenient clamping position: Lift the clamping lever, swivel, and release it in the desired position. When released, the handle automatically re-engages.

The stand boom (1) is mounted on a sliding carriage that can move freely in the guide rails and be fixed with clamping levers.

The torch arm (4) is inserted into a universal joint clamp (13), allowing it to be inclined at an angle of 0 - 180° to the swivel arm (3).

The torch is clamped into the torch holder with two hexagon socket screws (*see chap.*). Mount torch and hose assembly in tripod. [▶ 71]). The torch holder is connected to the compound slide via a joint, allowing it to be inclined at an angle of 0 - 180° to the compound slide and fixed with a clamping lever.

Fine adjustment of the torch is carried out using the adjusting screws on the compound slide *see chap.* Torch fine adjustment. [▶ 73].

The position stop (11) on the stand arm must be adjusted with an adjusting screw and lock nut so that the set welding position can be easily found again after swinging out the swivel arm. The position stop is mounted on the stand arm and limits the end position of the swivel arm to the welding position.

The hose assembly is guided along the swivel arm and fastened with two hexagon socket screws in the strain relief of the hose assembly. This can be freely positioned on the pipe and fixed with a clamping lever.

Procedure:

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

NOTICE!

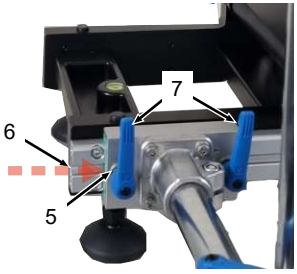
Risk of machine damage if the maximum distance between chuck/ pipe holder and welding position is exceeded.

There is a risk that the welding system may collapse.

► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/pipe holder and the welding position.

► Slide the sliding carriage (5) into the guide rail (6) and fix it in the desired position with the two clamping levers (7).

⇨ The stand boom is mounted.



► Push the stand arm (2) with the cross clamp (10) onto the stand boom and fix it in the desired position with clamping levers (8) and (9).

⇨ The stand arm is mounted.

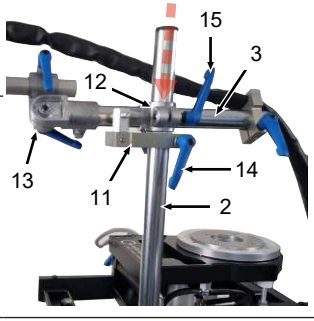
CAUTION

Risk of crushing when adjusting the swivel arm and the fall protection.

If fingers get caught between the fall protection and the cross clamp of the swivel arm or between the position stop and the swivel arm, there is a risk of them being crushed when adjusting the swivel arm.

- ► Do not reach between the fall protection and the cross clamp of the swivel arm!
- ► When adjusting the swivel arm, always grasp it with one hand next to the cross clamp and operate the clamping lever with the other!
- ► Do not reach between the position stop and the swivel arm!

- ► Position the position stop (11) for the swivel arm (3) at the desired location on the stand arm (2) and fix it with the clamping lever (14).
- ► Push the swivel arm (3) with the cross clamp (12) onto the stand arm (2) and fix it in the desired position with clamping levers (15).
  - ⇨ The swivel arm is mounted.



- ► Lower the stand arm onto the work surface to use it as a lateral support foot.
- ► For longer workpieces, use a counter bearing/pipe holder for rotating components.

9.9 Mount torch and hose assembly in tripod.

The torch is mounted in the freely rotatable torch holder, the hose assembly is mounted in the strain relief on the swivel arm. This ensures trouble-free, safe operation without restricting the freedom of movement of the swivel arm.

Procedure:

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

► Ensure that under **no** circumstances can people trip over lines and/or cables.

► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.

► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.

► Do **not** put lines or cables under tension.

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

► Wear safety gloves in accordance with EN 388 and EN 407.

CAUTION

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

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

- ► Switch welding power supply off before setting up.
- ► Replace defective coolant circuit parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION

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

If the forming gas system is used incorrectly, gas under high pressure may escape from the forming gas system and penetrate the eyes, mouth, and skin.

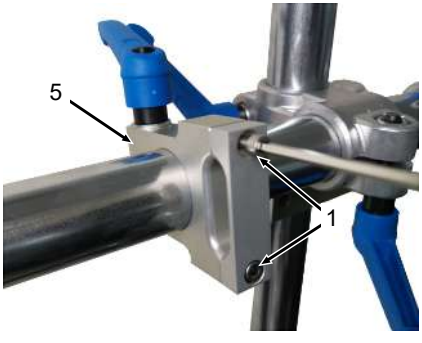
- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

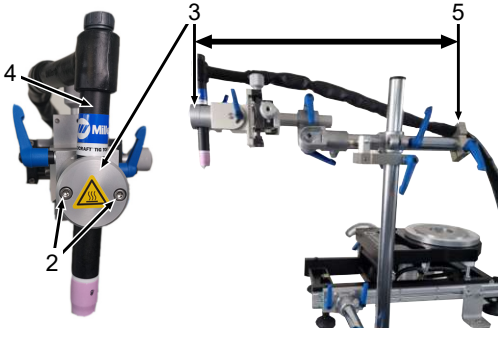
NOTICE!

Risk of machine damage if the maximum distance between chuck/ pipe holder and welding position is exceeded.

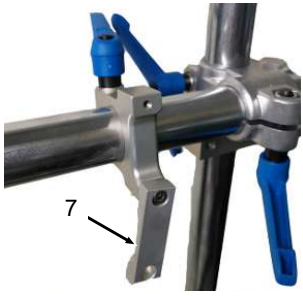
There is a risk that the welding system may collapse.

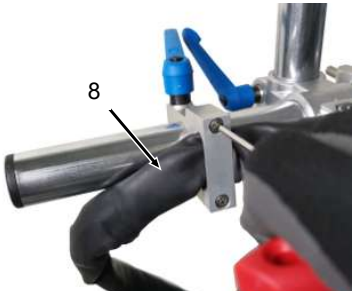
- ► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/pipe holder and the welding position.





1. Loosen the two screws (2) of the torch holder (3) until the torch (4) can be inserted.
2. Insert the torch (4) into the torch holder up to the middle of the torch body and retighten the two screws (2).
3. Unscrew one of the two hexagon socket screws (1) from the strain relief (5) and store it safely (e.g., in the storage compartment in the front cross brace).
   ⇨ The torch is mounted.





1. Guide the hose assembly (8) from the torch along the swivel arm to the strain relief (5). **NOTICE! Ensure that the portion of the hose assembly clamped between the torch holder and the strain relief is long enough to allow fine adjustment of the torch.**
2. Fold the bracket (7) of the strain relief (5) to the side and then insert the hose assembly (8).
3. Tighten the bracket (7) again.
   ⇨ The hose assembly is mounted.

9.10 Torch fine adjustment.

Fine adjustment of the torch or electrode distance can be carried out using four adjustment options.

Procedure:

WARNING		**Risk of crushing from rotating workpiece.** Touching the rotating workpiece can cause crushing injuries to hands and arms. ► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

- ► Wear safety gloves in accordance with EN 388 and EN 407.

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.

NOTICE!

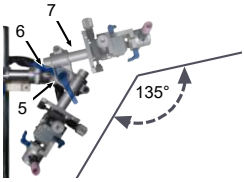
Risk of machine damage if the maximum distance between chuck/ pipe holder and welding position is exceeded.

There is a risk that the welding system may collapse.

- ► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/pipe holder and the welding position.

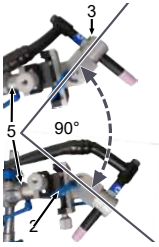
Adjust universal joint clamp between swivel arm and torch arm:

► Adjust the angle between the torch arm (5) and the swivel arm (7) and fix it with the clamping lever (6).
The swivel range is approx. 135°.



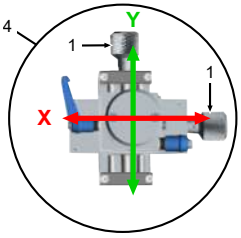
Adjust torch holder joint between torch arm and torch holder:

► Adjust the angle between the torch holder (3) and the torch arm (5) and fix it with the clamping lever (2).
The swivel range is 90°.



Adjust compound slide on torch arm:

► Adjust the torch position with the adjustment knobs (1) of the compound slide (4) in the X and Y directions.
The maximum travel is 30 mm (1.18 in).



CAUTION

Risk of burns from hot torch and torch holder.

Burns and damage to thermally non-resistant materials (e.g., foam inlay of the transport box) may result from contact with the hot torch or torch holder.

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

► Before working on the torch or before packing it into the transport box, wait until surfaces have cooled down below 50 °C.

► Use only permissible materials in the welding area.

CAUTION

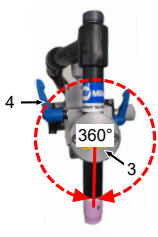
Crushing of hands and fingers

► When adjusting the angle of the torch holder, always hold the torch with one hand and the clamping lever with the other.

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

Swivel joint in the torch holder.

1. Release the clamping lever (4) with one hand and rotate the torch holder (3) with the other hand on the torch to the desired position. 360° rotatable.
2. Tighten the clamping lever (4).



9.11 Adjust stop for swivel arm.

Procedure:

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

► Wear safety gloves in accordance with EN 388 and EN 407.

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

► Wear safety gloves in accordance with EN 388 and EN 407.

CAUTION

Risk of crushing and shearing injuries due to moving machine parts.

Contact with moving machine parts can cause crushing or shearing injuries to hands and fingers.

► Assembly and operation must only be performed by trained personnel.

► Observe the warning signs on the hazard areas of the welding turntable.

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.

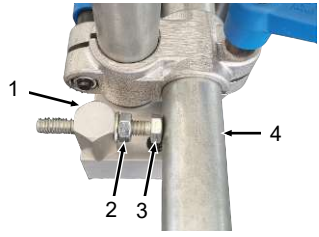
- ► Wear safety gloves to EN 388, Performance level 2.
- ► Before working on the machine torch or transporting, wait until the surfaces have cooled down below 50 °C (122 °F).
- ► Correctly position the machine torch.
- ► Use only permissible materials in the welding area.
- ► Observe the warning signs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

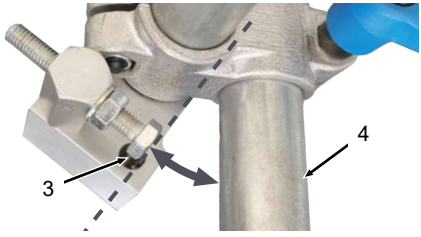
NOTICE!

Risk of machine damage if the maximum distance between chuck/pipe holder and welding position is exceeded.

There is a risk that the welding system may collapse.

- ► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/pipe holder and the welding position.





✓ Pipe ends are tacked together light-/gap-free.

✓ The torch is precisely aligned with the pipe joint and the electrode distance is adjusted.

1. Loosen the lock nut (2) by eye.
2. Unscrew the adjusting screw (3) from the stop (1) until the screw head touches the swivel arm (4) in the welding position.
3. Readjust if necessary.
4. Screw the lock nut (2) back hand-tight against the stop (1).

⇨ The stop (1) for the swivel arm is now set to the welding position.

9.12 Connect the accessories

WARNING

Danger presented by using accessories that have not been approved.

Various injuries and damage to property.

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

► Connect suitable accessories, see operating instructions of accessories.

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

Download links PDF:

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

9.13 Carry out gas and cooling liquid function test

By carrying out the gas and cooling liquid function test, the gas flow and the cooling liquid supply can be checked independently of the welding process to ensure functional readiness. In the event of insufficient gas, the welding power supply issues an error message.

CAUTION

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

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

► Switch welding power supply off before setting up.

► Replace defective coolant circuit parts immediately and check daily for proper functioning.

► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.

► Wear personal protective equipment.

CAUTION

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

If the forming gas system is used incorrectly, gas under high pressure may escape from the forming gas system and penetrate the eyes, mouth, and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

NOTICE!

Before carrying out the gas function test, ensure the following:

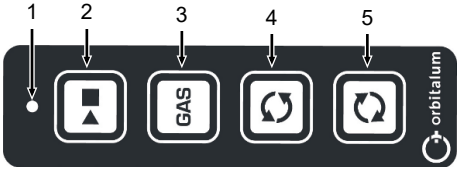
- ► Gas supply **must** be connected to the power supply and gas quantity correctly adjusted (*see* power source operating instructions).

NOTICE!

In the event of a welding power supply error message.

- ► Check whether the welding gas supply and torch are correctly connected, the welding gas quantity is correctly set, and the gas source supplies sufficient gas.
- ► OR: *See the operating manual of the power supply*.

Procedure (via control panel of weld head):



✓ Make sure that the welding gas supply and weld head are correctly connected and that a sufficient amount of welding gas is available.

1. Press the “GAS” button (3) to start the function test of the gas and cooling liquid supply.
2. Press the “GAS” button (3) again to end the function test.

⇨ The gas and cooling liquid function test is complete.

► Check the coolant level of the welding power supply and refill if necessary (*see* operating instructions for the welding power supply).

9.14 Calibrating the motor

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

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

⇨ The weld head is ready for use.

9.15 Configure the welding procedure

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

► The weld head is ready for use.

10 Operation

10.1 Weld mode

DANGER

Danger to life from electromagnetic fields

During the welding process, electromagnetic
fields are generated which can be fatal for people with heart problems or pacemakers.

- ► People with heart problems or pacemakers must not operate the welding system.
- ► 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

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.

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 injury due to radiation or heat!

Contact with hot workpieces and sparks leads to burns.

- ► Use welding shield or welding helmet with sufficient protective level (depending on use).
- ► Wear dry protective clothing (e.g. welding shield, gloves, etc.) according to the applicable regulations of the respective country.
- ► Protect uninvolved persons with protective curtains or walls against radiation and glare.

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

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

- ► Observe the specifications of the maximum permissible workpiece dimension.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Do **not** put lines or cables under tension.

WARNING

Skin and eye damage due to radiation.

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

- ► Do not look into the electric arc.
- ► Wear eye protection in accordance with EN 170.
- ► Wear safety gloves to EN 388, Performance level 2.
- ► Wear long clothing.

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 explosion and fire when using incorrect (explosive or oxygenated) gases during the welding process.

Severe injuries and death may be the result.

- ► Observe safety instructions in the operating manual of the power supply

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

CAUTION

Risk of injury through monotonous work.

Risk of discomfort, tiredness and malfunctions in the motor system, restricted ability to react and cramping.

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

CAUTION

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 switched off.
- ► 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

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

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

- ► Switch welding power supply off before setting up.
- ► Replace defective coolant circuit parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION

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

If the forming gas system is used incorrectly, gas under high pressure may escape from the forming gas system and penetrate the eyes, mouth, and skin.

- ► Switch welding power supply off before setting up.
- ► Replace defective forming gas system parts immediately and check daily for proper functioning.
- ► Check machine daily for externally visible damage and defects and have them remedied by a professional if necessary.
- ► Wear personal protective equipment.

CAUTION

Risk of burns from arc.

Touching the arc or heated machine components will cause severe burns to hands and arms.

- ► Wear safety gloves to EN 388, Performance level 2.
- ► Observe warning signs at the machine's hazard points.

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.

NOTICE!

Risk of machine damage if the maximum distance between chuck/pipe holder and welding position is exceeded.

There is a risk that the welding system may collapse.

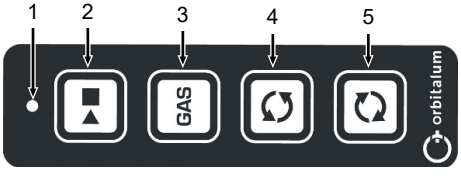
- ► Maintain a maximum distance of 300 mm (11.811 in) between the chuck/pipe holder and the welding position.

NOTICE!

Various risks

- ► Permanently observe welding process!

Procedure (via control panel of weld head):



- ✓ Welding power supply, ground cable, and weld head are connected, set up, and ready for operation.

1. Press the "**START/STOP**" (2) key to start the welding process.

2. Observe the welding process.

OR via welding power supply:

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

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

10.2 Aborting welding

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.

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

► Beware of sharp edges on device components or on pipe ends or workpiece edges!

► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of tripping and falling due to connecting cables.

If the power cable, gas line, or control cable is under tension, there is a risk of tripping, falling, and pulling down the welding rotary device.

► Ensure that under **no** circumstances can people trip over lines and/or cables.

► Anchor the welding rotary device with the mounting brackets on a load-bearing, flat, fireproof, non-slip surface secured against tipping.

► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.

► Do **not** put lines or cables under tension.

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.

WARNING

Risk of crushing from rotating workpiece.

Touching the rotating workpiece can cause crushing injuries to hands and arms.

- ► Observe the specifications of the maximum permissible workpiece dimension.

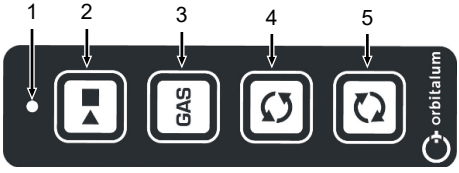
CAUTION

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.

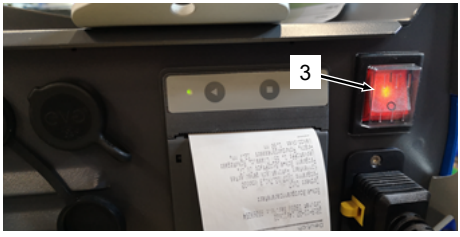
- ► Connect and disconnect the weld head only when the power supply is switched off.
- ► Lay the lines and cables so that they are **not** under tension.
- ► Ensure that under **no** circumstances can people trip over lines and/or cables.
- ► Attach the strain relief.
- ► Check that hose package connections 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.

Procedure (via control panel of the weld head):



► Press the “START/STOP” (2) button on the control panel of the weld head. The current process is stopped. Only the programmed gas post-purge time continues to run.
Pressing the “START/STOP” button again during the gas post-purge time also stops it.

OR via welding power supply:

INFO		To demonstrate power sources in these operating instructions the MOBILE WELDER is used as an example.
1	► Press hardware softkey 1 (7)	
2	► Press touchscreen softkey button “STOP” (8)	
3	► Press the ON-OFF switch (6)	

► *See operating instructions of the power source*

11 Maintenance and troubleshooting

NOTICE!

► The system has to be secured against unintentional switching-on for all maintenance, repair and mounting work. This can take place by switching off the main switch at the switch box and pulling the power plug.

The weld head is fundamentally designed to be maintenance-free. The weld current transfer of the turntable to the base frame takes place via a ground pin. This is installed with a copper paste (*see chap.* Accessories and consumables (optional) [▷ 32]) during mounting.

► In case of heavy contamination of the system, this contact pin should be cleaned every six months and the contact surface re-greased with copper paste.
All installed rolling bearings are sealed and lifetime-lubricated.

11.1 Instructions for care

► Ensure that **no** dirt particles or small parts enter the transmission of the weld head.

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

11.2 Wartung und Pflege

The following care instructions depend, unless otherwise stated, largely 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, hoses, and lines	► Check for damage and ease of operation of all moving parts (e.g. defective functional surfaces, leakages, cracks, defective screw heads, etc.).
	Operator button panel	► Check the keys for functionality.
	3-jaw chuck	► Check the clamping mechanism for ease of use, function and clamping.
	Electrodes	► Ensure the correct electrode gap.
		► Only use cleanly partially ground quality electrodes. Recommendation: Type WS2, grinding angle 30° (*see chap.* Grinding the electrode [▸ 99]).
Before every use	Protective gas for welding	► Only use protective gases that are classified for the TIG welding process according to EN ISO 14175 (e.g. Argon 4.6 or purer protective gas for welding).
		► Set the flow rate: max. 10 l/min.
		► Set gas pre-flow time to min. 5 seconds.
	Workpiece/hose	► Ensure a straight pipe cut of 90° (with orbital pipe saw) (deburred and faced).
		► 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.
		► Hoses have to be aligned and tacked to each other without offset.

INTERVAL	RESPECTIVE COMPONENT	ACTIVITY
After 100 operating hours or every 500 operating hours (at least twice per year).	Fastening screws	► Check fastening screws for tightness and retighten if necessary.
After installation without load or after 1000 operating hours (at least once per year without load).	Ball bearing	► Check the bearing play of the turntable. If the bearing play is twice the value of the reference measurement, replace the bearing.
Min. every 150 weldings or every week	Weld head, torch, 3-jaw chuck	► Carry out the standard cleaning process (*see chap.* Standard cleaning process [▶ 95]). A shorter cleaning interval can extend the service life of the weld head, the chuck, and the torch.
Min. every 20,000 welds or every 2 years	Sliding contact track and rotor turntable.	1. Apply a thin film of Caramba copper paste to the raceway of the sliding contact on the turntable. 2. Lubricate the rotor teeth with Eni Autol Top 2000 Super Longtime lubricant. *See chap.* Lubricate track and toothing [▶ 93]

11.2.1 Corrosion protection

► Regularly apply a fine oil film to the surfaces of the chuck, for example, using an oil-soaked cloth.

Recommended oils:

- BALLISTOL corrosion protection oil
- NEOVAL Oil MTO300
- WD40

11.2.2 Lubrication

Track and toothing must be lubricated regularly:

- After installation
- After each cleaning of the toothing
- Before and after long standstill times.

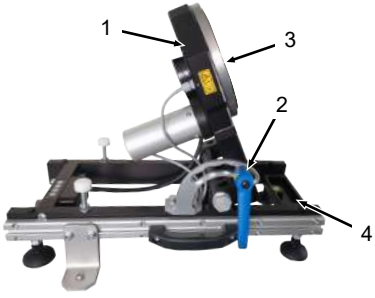
11.2.2.1 Lubricate track and toothing

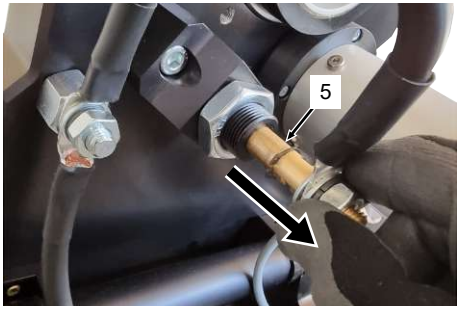
► When relubricating, use the following lubricants.

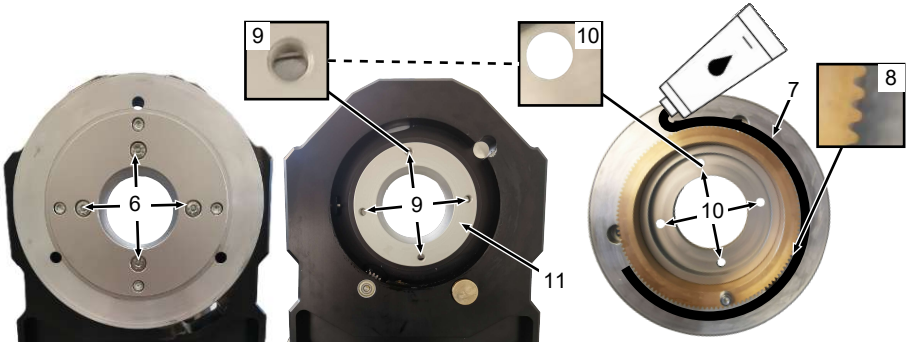
Lubricants for track and toothing:

MANUFACTURER	PRODUCT DESIGNATION:	COMPONENT
Eni	Autol Top 2000	Toothing
Caramba	Copper paste	Track system

Procedure:







1. Unscrew the four fastening screws (6) with the hex key SW 5x150 included in the delivery and store them securely, e.g., in the storage tray for small parts (4) in the front cross strut.
2. Swivel the swivel plate (1) to the 67.5° position (2) of the guide arc and secure it. *See* Adjusting the position of the swivel frame [▸ 48].
3. Pull back the sliding contact (5) on the rear of the swivel plate and simultaneously lift off the turntable (3).
4. Place the turntable with the rotor (8) facing upward on a clean, flat work surface.
5. Apply a thin film of copper paste to the raceway (7) of the sliding contact.
6. Grease the rotor teeth (8) all around.
7. Pull back the sliding contact (5) on the rear of the swivel plate and at the same time place the turntable onto the rotor flange (11) so that the screw holes (10) in the turntable align with the threaded holes (9) in the rotor flange.
8. Hand-tighten the four fastening screws (6) with the hex key SW 5x150 included in the delivery.

11.2.3 Standard cleaning process

NOTICE!		Cleaning work on the welding turntable may only be carried out after it has completely cooled down!
NOTICE!		Cleaning of the welding turntable should be carried out at least every 250 welds. Shorter cleaning intervals influence the equipment service life positively.
NOTICE!		The welding turntable must **not** be cleaned with a high-pressure cleaner!

Required cleaning materials:

- Compressed-air vacuum unit or vacuum cleaner
- Nylon brush
- Scotch-Brite 3M A-VFN 150x115 mm (or similar product)
- Industrial cleaner spray (e.g. WEICOM spray cleaner S)

Procedure:

1. Spray the chuck and turntable with industrial cleaner.
2. Then clean the chuck and turntable of coarse dirt with a nylon brush.
3. Vacuuming and wiping off the carbon-like deposits by using a compressed-air vacuum unit or vacuum cleaner and cloth.
4. Fine cleaning of the chuck with Scotch-Brite fleece
5. Vacuuming and wiping off the carbon-like deposits by using a compressed-air vacuum unit or vacuum cleaner and cloth.
6. Circumferentially spray the turntable and chuck with contact cleaner again.
7. Finally wipe all surfaces with a cloth.
   Allow the cleaning agent to evaporate completely before proceeding to the next step.
8. Sprinkle BALLISTOL corrosion protection oil onto the cloth again. Use the cloth to apply an extremely thin oil film to the chuck surfaces.

11.3 Troubleshooting

PROBLEM	POSSIBLE CAUSE	REMEDY
Torch neck overheating	The electrode is loose.	► Tighten the electrode.
	Gas flow too low.	► Check the gas settings.
	Torch duty cycle exceeded.	► Allow for a longer cooling phase.

PROBLEM	POSSIBLE CAUSE	REMEDY
Welding process does not start.	No gas supply.	► Check the connections at the welding power supply.
		► Check the hoses, gas cylinder, and pressure regulator.
Arc does not ignite.	Weld head and ground cable incorrectly connected.	1. Clean the workpiece and contact clamp.
	Contact fault between workpiece and contact clamp.	2. Remove isolating intermediate layers.
	Workpieces soiled.	► Clean the workpiece.
	Welding gas concentration too low.	► Check welding gas supply and quantity.
	Electrode distance too large.	► Reduce the electrode gap.
	Electrode tip worn.	► Regrind the electrode. *See chap.* Grinding electrode
	Cable break.	► Replace the hose package.
Arc tends to one side.	Electrode worn.	► Regrind the electrode. *See chap.* Grinding electrode
	Electrode ground incorrectly.	► Regrind the electrode. *See chap.* Grinding electrode
	Poor electrode quality.	► Use Orbitalum electrodes. *See chap.* Replacing the electrode [▷ 65]
	Incorrect workpiece material	► Change workpiece material.
	Bad workpiece quality	► Use different material batch.
Pore formation	Protective gas supply too low.	► Increase the protective gas supply.
		► Check the contents of the gas cylinder and replace if necessary.
	Drafts	► Shield the welding area from drafts.

11.4 Replacing the gas nozzle and/or lens

WARNING

Risk of cuts or severed body parts from sharp edges.

Contact with sharp edges on device components or on pipe ends or workpiece edges can cause cuts; in the worst case, body parts may be severed.

- ► Beware of sharp edges on device components or on pipe ends or workpiece edges!
- ► Wear safety gloves to EN 388, Performance level 2!

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

- ► Wear safety gloves in accordance with EN 388 and EN 407.

CAUTION

Risk of burns from hot machine parts and workpiece.

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

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

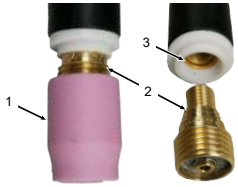
CAUTION

Unintentional starting of the welding turntable!

Crushing of hands and fingers.

- ► Switch off the Orbital welding power supply.

Procedure:



► Unscrew any soiled or damaged gas nozzle (1) by hand counter-clockwise from the gas lens (2) and screw on the new gas nozzle clockwise.

Carry out the following additional steps to replace the gas lens:

1. Remove the electrode, if fitted *see chap.* Replacing the electrode [▶ 65].
2. Unscrew the gas lens (2) by hand counterclockwise from the thread of the torch body.
3. Screw the new gas lens (2) by hand clockwise into the thread of the torch body.

Remount the electrode, if applicable.

11.5 Grinding electrode

WARNING

Risk of puncture injury from electrode.

When grasping the torch, there is a risk for the operator as well as third parties of being pricked or punctured by the sharp electrode or, if applicable, by the cold wire (for KD versions).

► Wear safety gloves in accordance with EN 388 and EN 407.

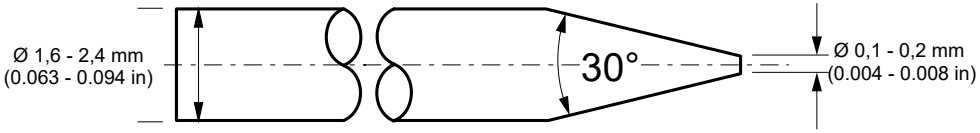
WARNING

Health hazard from inhalation of radioactive particles

► Do not use electrodes containing thorium.

► Do not weld radioactive workpieces.

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.



11.6 Servicing/Customer service

The following data are required to order spare parts:

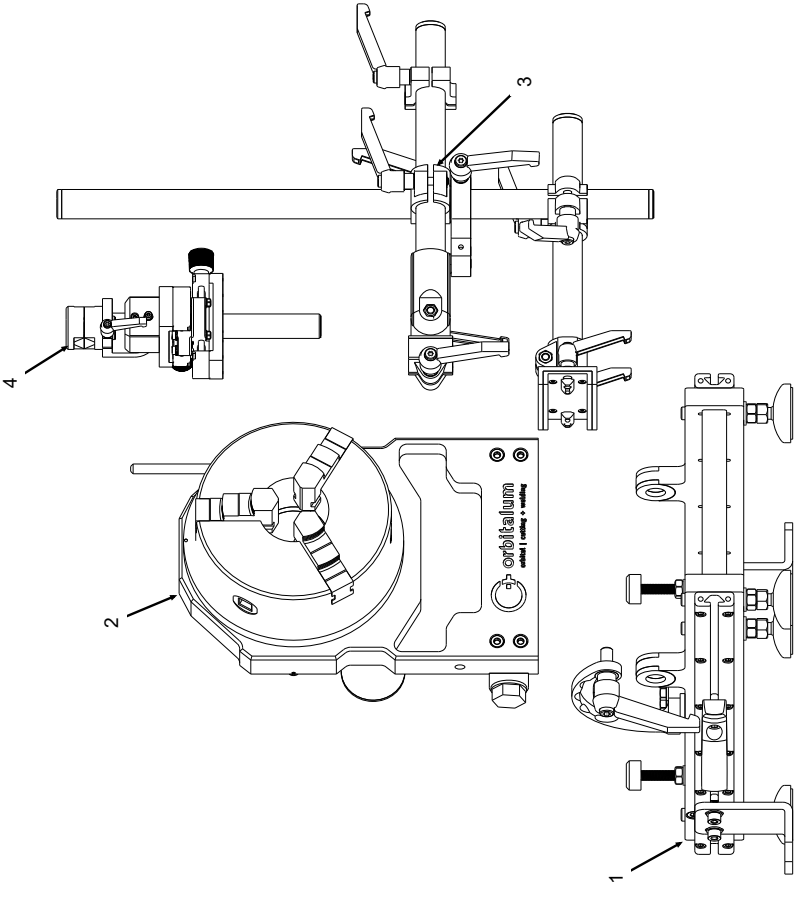
- Machine type: (example: DVR M)
- Machine No.: See type plate

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

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

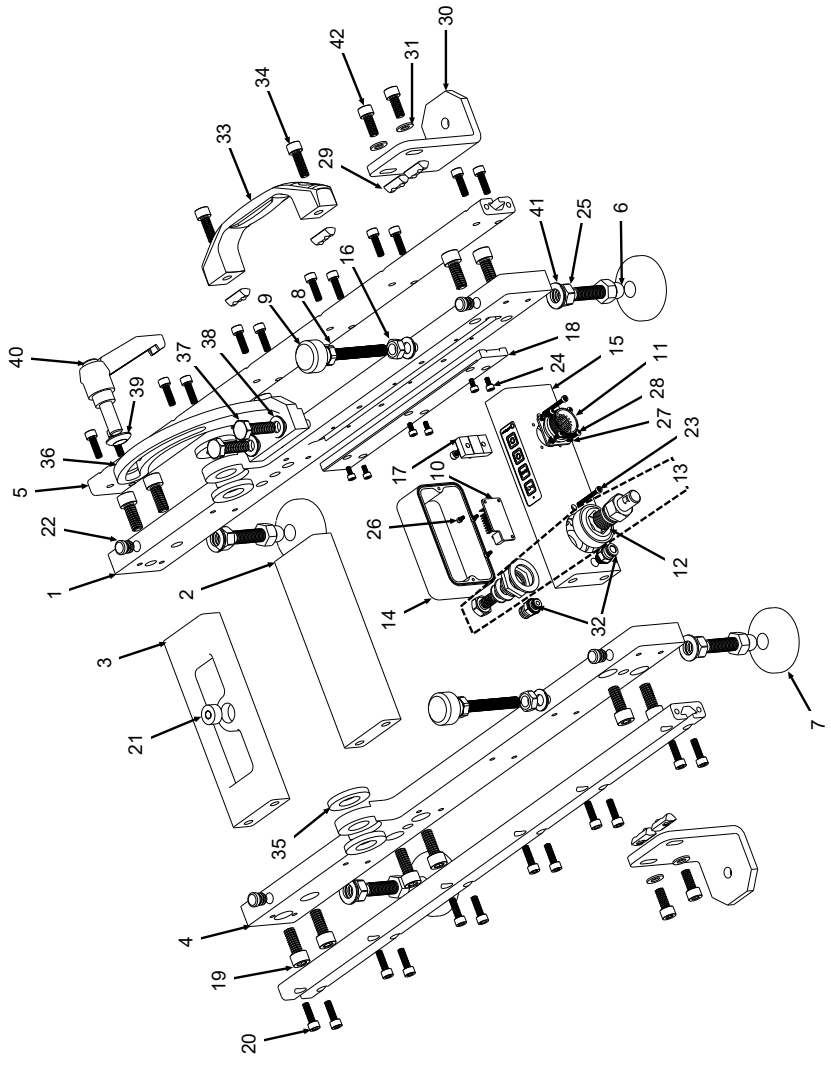
12 Ersatzteilliste / Spare parts list

12.1 DVR M Übersicht | DVR M overview

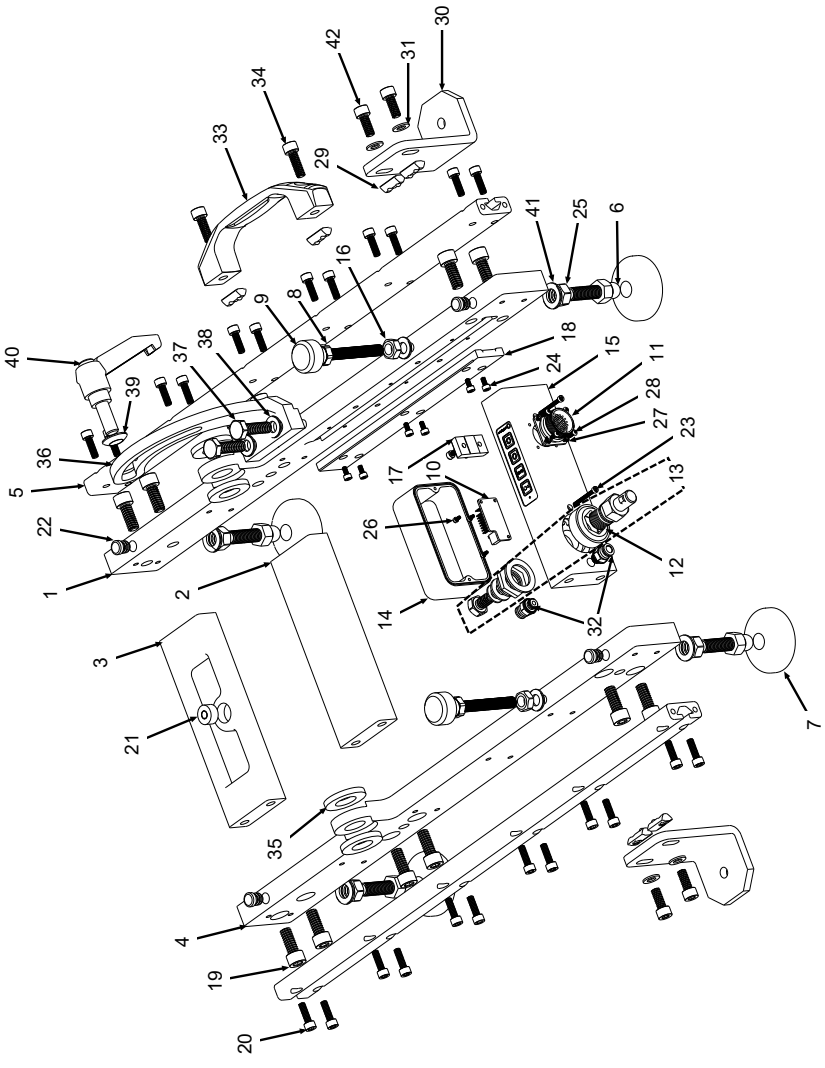


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1		1	Maschinenrahmen Machine frame
2		1	Halteplatte Support plate
3		1	Brennerhaltesystem Burner support system
4		1	Kreuzschlitten Cross slide

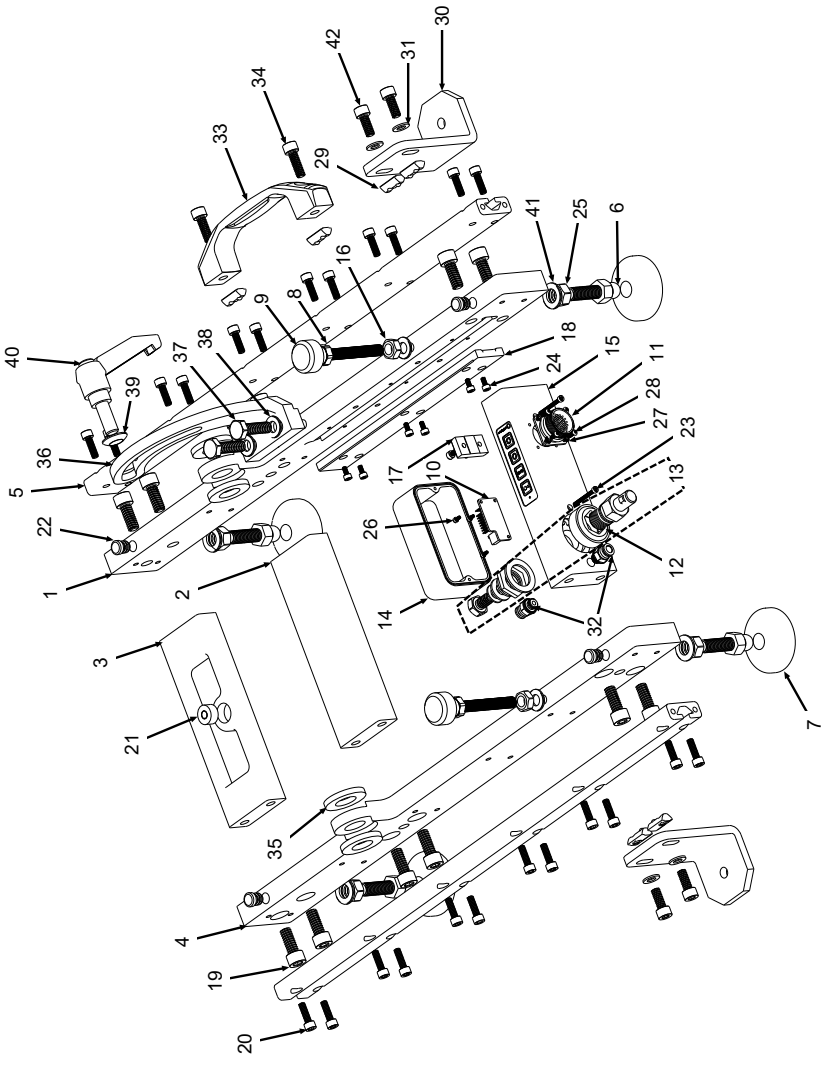
12.2 Maschinenrahmen | Machine frame



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	090DVRM	1	Grundrahmen links Base frame, left	11	855 050 031	1	Anschlussdose Steuerleitung DVR M Connection socket, signals DVR M
2	091DVRM	1	Abstandleiste Mitte Spacer strip, center	12	099DVRM	1	Anschluss Kunststoff Plastic connector
3	092DVRM	1	Abstandleiste Libelle Spacer strip, spirit level	13	850 010 018	1	Schweißstrom-Einbaustecker 400A Weld current built-in plug 400A
4	093DVRM	1	Grundrahmen rechts Base frame, right	14	100DVRM	1	Kappe Anschluß Cap connection
5	094DVRM	2	T-Nutenschiene T-slot rail	15	101DVRM	1	Abstandleiste Anschluß Spacer strip connection
6	095DVRM	4	Stehbolzen Fuß Stud bolt, foot	16	060DVRM	2	Mutter M10 DIN934 Nut M10 DIN934
7	096DVRM	4	Maschinenfuß 27800–2060 Machine foot	17	102DVRM	1	Kabelabdeckung Abstandleiste Anschluß Cable cover spacer strip connection
8	097DVRM	4	Sechskantschraube M10x70 Hexagon screw M10x70	18	103DVRM	1	Kabelabdeckung Grundrahmen links Cable cover base frame left
9	099DVRM	2	Schutzkappe für M10 Stehbolzen Protective cap for M10 stud bolt	19	104DVRM	12	Zylinderschraube DIN912 M10x25 Cylinder screw DIN912 M10x25
10	855010004	1	Platine Motor circuit board DVR M	20	030DVRM	24	Zylinderschraube DIN912 M6x20 Cylinder screw DIN912 M6x20

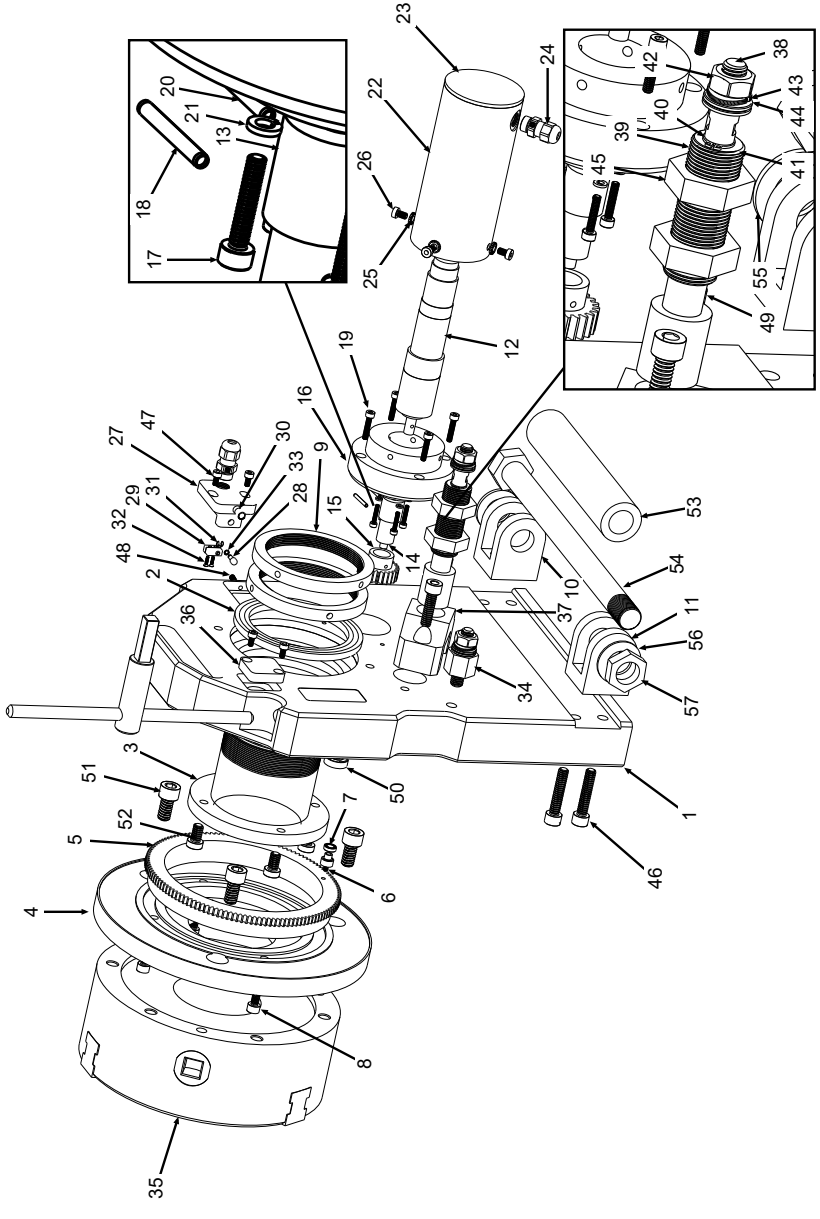

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	105DVRM	1	Libelle Spirit level	31	542 500 321	4	Scheibe DIN125-ISO7089-Ø8.4-A2 Washer DIN125-ISO7089-Ø8.4-A2
22	106DVRM	4	Lamellenstopfen D13 Lamella plug D13	32	110DVRM	2	Pneumatik Steckverschraubung 1–8 Pneumatic push-in fitting 1-8
23	305 501 056	2	Zylinderschraube DIN912–M3x30–A2 Cylinder screw DIN912-M3x30-A2	33	111DVRM	1	Handgriff Handle
24	305 501 064	8	Zylinderschraube DIN912–M4x8–A2 Cylinder screw DIN912-M4x8-A2	34	305 505 272	2	Zylinderschraube DIN912–M8x25 Cylinder screw DIN912-M8x25
25	107DVRM	4	Mutter M12 DIN934 Nut M12 DIN934	35	112DVRM	4	Gleitscheibe Sliding disc
26	108DVRM	3	Zylinderschraube DIN912–M2,5x5–A2 Cylinder screw DIN912-M2.5x5-A2	36	113DVRM	1	Winkelverstellung Angle adjustment
27	553 458 325	4	Fächerscheibe DIN6798-A3.2-A2 Serrated lock washer DIN6798-A3.2-A2	37	114DVRM	2	Sechskantschraube DIN933–M10x35 Hexagon screw DIN933-M10x35
28	307 001 114	4	Linsenschraube ISO7380-M3x8-A2 Oval-head screw ISO7380-M3x8-A2	38	062DVRM	4	Scheibe DIN125-ISO7090-10-200HV-ZN Washer DIN125-ISO7090-10-200HV-ZN
29	018DVRM	6	Nutstein Aluprofil Slotted nut aluminum profile	39	115DVRM	1	Kugelscheibe Ball disc
30	109DVRM	2	Befestigungswinkel Mounting bracket	40	116DVRM	1	Klemmhebel M12x30 Clamping lever M12x30

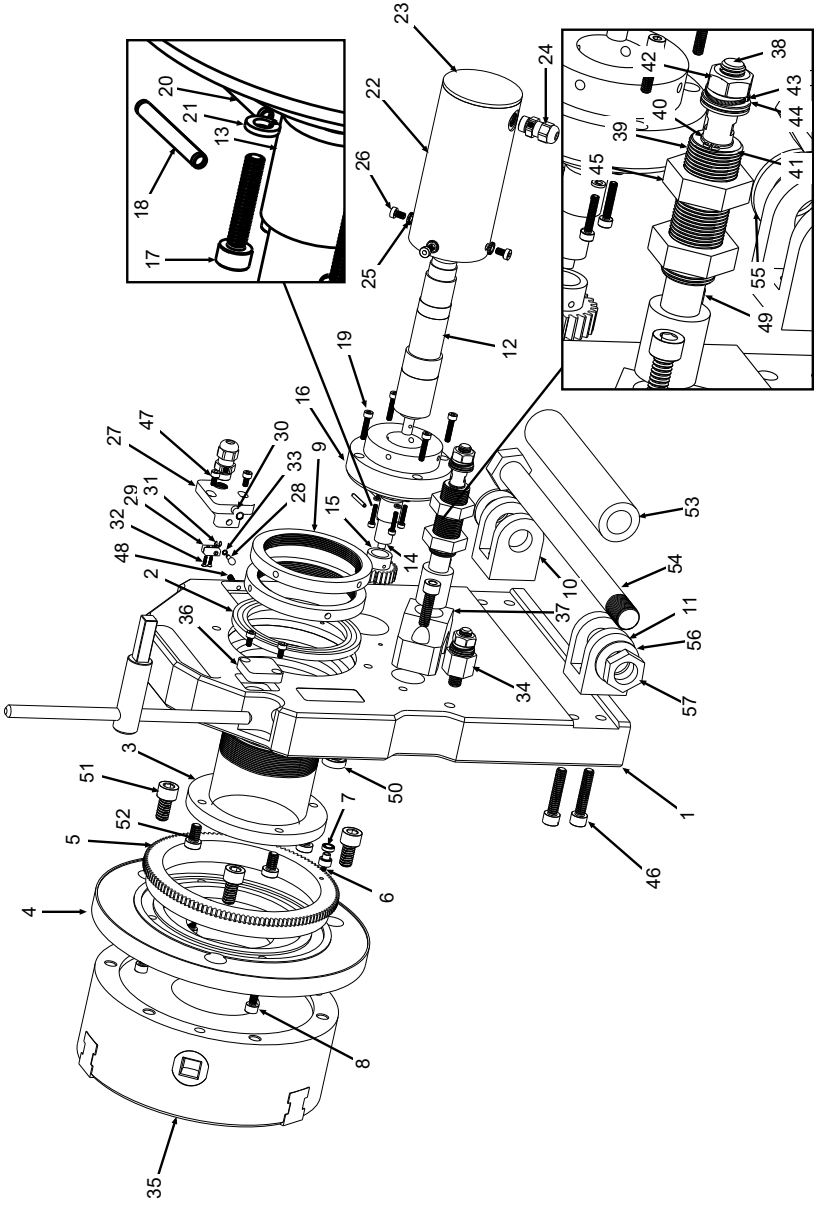

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG1 DESCRIPTION1
41	117DVRM	4	Scheibe DIN125-ISO7090-12-200HV-ZN Washer DIN125-ISO7090-12-200HV-ZN
42	305 505 269	4	Zylinderschraube DIN912 M8x20 Cylinder screw DIN912 M8x20

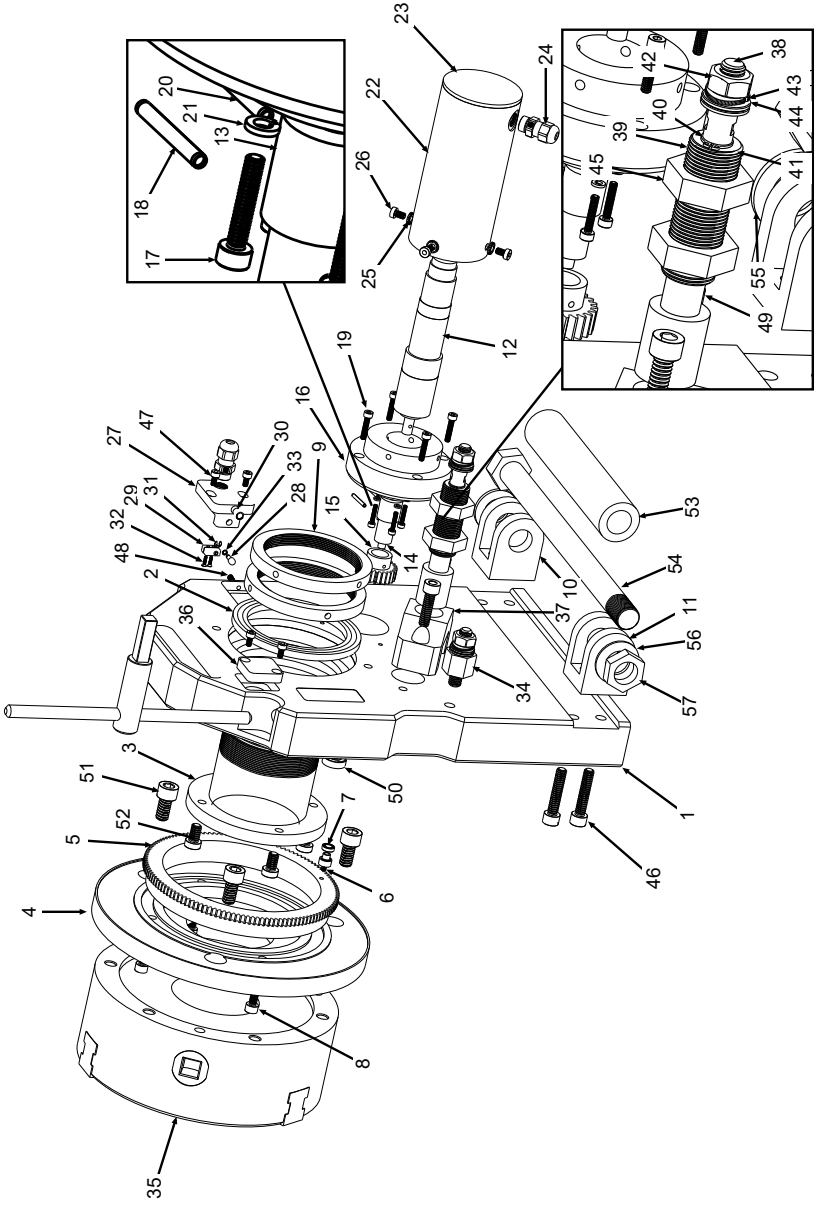
12.3 Schwenkrahmen | Swivel frame



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	023DVRM	1	Halteplatte Retaining plate	11	032DVRM	1	Gelenkkonsole mit Gewinde M20x1,5 Joint bracket with M20x1.5 thread
2	024DVRM	2	Axiallager Axial bearing	12	855 050 030	1	Motor/Encodereinheit DVR M Motor/encoder unit DVR M
3	025DVRM	1	Führungsbuchse Drehscheibe Guide bushing Turntable	13	855 050 030	1	Kupplungswelle Coupling shaft
4	026DVRM	1	Drehscheibe für Futter Turntable for chuck	14	034DVRM	1	Führungswelle Guide shaft
5	027DVRM	1	Stirnrad Antrieb Drehscheibe Spur gear drive Turntable	15	035DVRM	1	Stirnrad Motorantrieb Z24 Spur gear motor drive Z24
6	028DVRM	1	Homingschalter Sockel Rillenkugellager Home switch Base Deep groove ball bear-ing	16	036DVRM	1	Motorflansch Motor flange
7	029DVRM	1	Rillenkugellager Deep groove ball bearing	17	037DVRM	4	Zylinderschraube DIN912–M3x16–A2 Cylinder screw DIN912-M8x16-A2
8	030DVRM	4	Zylinderschraube DIN912 M6x20 Cylinder screw DIN912 M6x20	18	038DVRM	1	Spiralspannstift D2,5x20 DIN7344 Spiral clamping pin D2.5x20 DIN7344
9	031DVRM	2	Mutter Nut	19	039DVRM	4	Zylinderschraube DIN912–M4x20 Cylinder screw DIN912-M6x20
10	032DVRM	1	Gelenkkonsole Joint bracket	20	040DVRM	1	Spiralspannstift D2,5x16 DIN7344 Spiral clamping pin D2.5x16 DIN7344

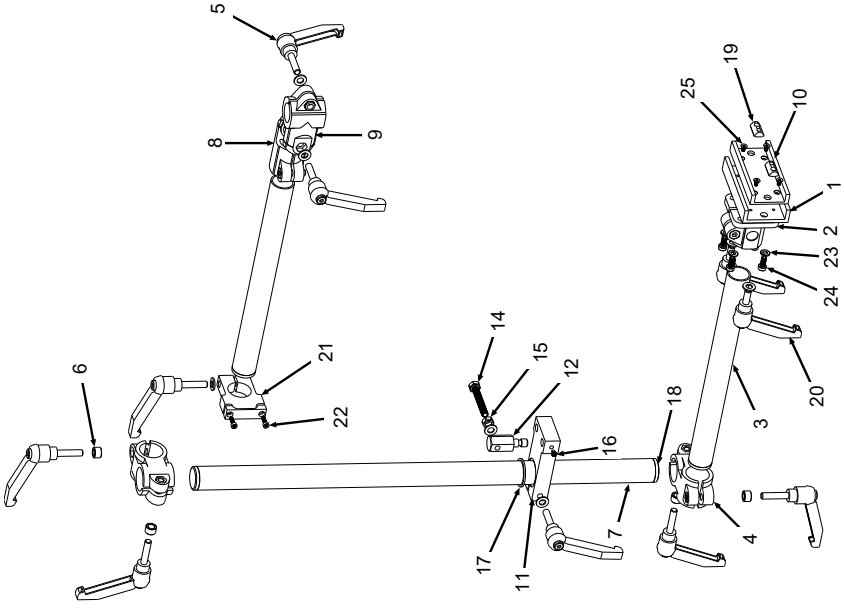

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	042DVRM	4	Federing M3 DIN7980 A2 Spring washer M5 DIN7980 A2	31	051DVRM	1	Sicherungsscheibe für Wellen DIN 6799 Washers for shafts DIN 6799
22	043DVRM	1	Motorschutzhülse Rohr Motor protection sleeve tube	32	803 025 001	2	Senkkopfschraube DIN965–M2x8–A2 Countersunk screw DIN965-M2x8-A2-TX
23	044DVRM	1	Motorschutzhülse Deckel Motor protection sleeve cover	33	052DVRM	1	Druckfeder Compression spring
24	045DVRM	2	Kabelverschraubung PG7 Cable gland PG7	34	053DVRM	1	Stehbolzen für Massebefestigung Stud bolt for ground connection
25	553 458 322	4	Fächerscheibe DIN6798-A5.3-A2 Serrated washer DIN6798-A5.3-A2	35	855 002 001	1	Dreibackenfutter D200 Three-jaw chuck DVR M
26	046DVRM	4	Zylinderschraube M5x8 DIN7984 A2 Cylinder screw M5x8 DIN7984 A2	36	054DVRM	1	Abdeckung Futterbefestigung Chuck mounting cover
27	047DVRM	1	Konsole für Homingschalter Bracket for homing switch	37	055DVRM	1	Halter für Masseübertragung Holder for ground connection
28	048DVRM	1	Pin Homingschalter Pin homing switch	38	056DVRM	1	Stehbolzen Masseübertragung Stud bolt for ground connection
29	049DVRM	1	Homingschalter Homing switch	39	057DVRM	1	Druckfeder Pressure spring
30	050DVRM	1	Druckfeder Compression spring	40	058DVRM	1	Sicherungsring für Wellen DIN471 DIN471 retaining ring for shafts

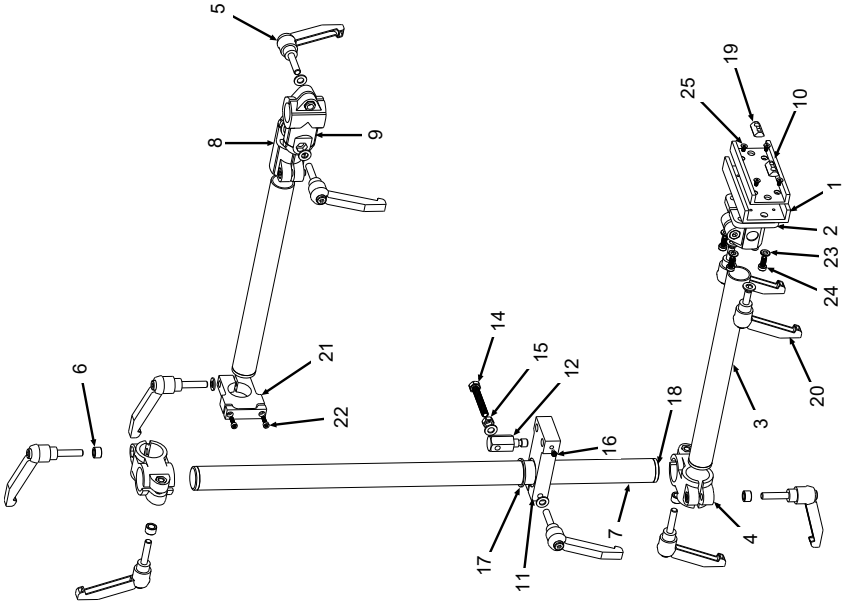

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
41	059DVRM	1	Führungshülse Masseübertragung Guide sleeve for ground connection	51	067DVRM	1	Zylinderschraube DIN912-M10x20 Cylinder screw DIN912-M10x20
42	060DVRM	2	Mutter M10 DIN934 M10 DIN934 nut	52	068DVRM	4	Zylinderschraube M8x14 DIN7984 Cylinder screw M8x14 DIN7984
43	061DVRM	2	Sperrkantring VSK 10.2 VSK 10.2 locking ring	53	069DVRM	1	Zwischenhülse für Gelenk Spacer sleeve for joint
44	062DVRM	4	U-Scheibe M10 DIN125 A M10 DIN125 A washer	54	070DVRM	1	Spannwelle für Gelenk Clamping shaft for joint
45	063DVRM	1	Mutter M22x1,5 M22x1.5 nut	55	071DVRM	1	U-Scheibe D36.5x21x2(3) Washer D36.5x21x2
46	305 505 278	4	Zylinderschraube DIN912–M8x40 Cylinder screw DIN912-M8x40	56	072DVRM	1	U-Scheibe M20 DIN125 B Washer M20 DIN125 B
47	305 501 064	4	Zylinderschraube DIN912–M4x8–A2 Cylinder screw DIN912-M4x8-A2	57	073DVRM	1	Mutter M20x1.5 DIN439-04 Nut M20x1.5 DIN439-04
48	064DVRM	1	Gewindestift ISO4026-M4x8-A2 Threaded pin ISO4026-M4x8-A2				
49	065DVRM	2	Zylinderschraube DIN912-M8x30 Cylinder screw DIN912-M8x30				
50	066DVRM	1	Rillenkugellager Deep groove ball bearing				

12.4 Brennerhaltesystem | Torch holder System

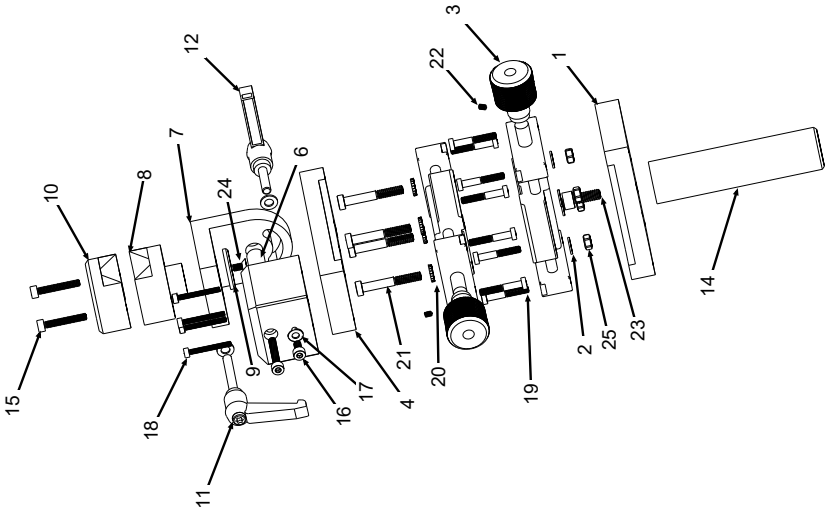


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	001DVRM	1	Spannplatte für Brennerhaltesystem Clamping plate for burner support system	11	011DVRM	1	Anschlag Brennerstativ Stop burner stand
2	002DVRM	1	Rohrverbinder mit Fuß Pipe connector with base	12	012DVRM	1	Stehbolzen Anschlag Brennerstativ Stud bolt stop burner stand
3	003DVRM	2	Rohr D30x300 Pipe D30x300	13	542 500 321	7	Scheibe DIN125-ISO7089-Ø8.4-A2 Washer DIN125-ISO7089-Ø8.4-A2
4	004DVRM	2	Rohrverbinder Kreuzstück Pipe connector cross piece	14	013DVRM	1	Sechskantschraube M8x55 Hexagon screw M8x55
5	005DVRM	8	Klemmhebel M8x35 Clamping lever M8x35	15	014DVRM	3	Mutter M8 Nut M8
6	006DVRM	4	Zwischenstück 8,5 Intermediate piece 8.5	16	015DVRM	1	Gewindestift ISO4028–M6x8–A2 Threaded pin ISO4028-M6x8-A2
7	007DVRM	1	Rohr D30x600 Pipe D30x600	17	016DVRM	1	Scheibe PTFE D36xD31x2 Washer PTFE D36xD31x2
8	008DVRM	1	Rohrverbinder außenverzahnt Pipe connector with external teeth	18	017DVRM	4	Lamellenstopfen D30 Lamella plug D30
9	009DVRM	1	Rohrverbinder Gelenkstück innenverzahnt Pipe connector joint piece with internal teeth	19	018DVRM	2	Nutenstein Aluprofil Slotted nut aluminum profile
10	010DVRM	1	Gleitführung Brennerhaltesystem Sliding guide burner holding system	20	019DVRM	2	Klemmhebel M8x20 Gr.3 Clamping lever M8x20 size 3

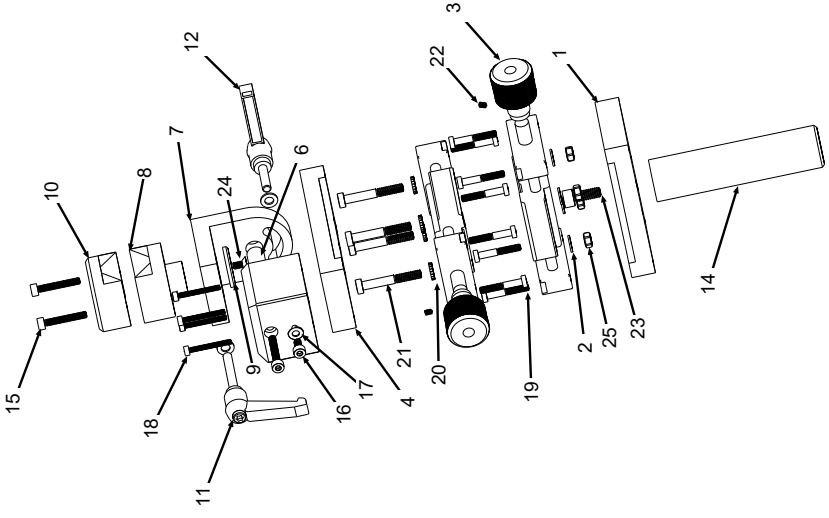

5
8
9
21
22
6
14
15
12
16
18
17
11
7
25
19
10
1
2
23
24
20
3
4

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	020DVRM	1	Zugentlastung Brennerstativ Strain relief burner stand
22	305 501 074	2	Zylinderschraube DIN912–M4x14–A2 Cylinder screw DIN912-M4x14-A2
23	542 500 320	4	Scheibe DIN125-ISO7089-d6.4-A2 Washer DIN125-ISO7089-d6.4-A2
24	021DVRM	4	Zylinderschraube mit niedrigem Kopf M6x14 DIN7984 Low head cylinder screw M6x14 DIN7984
25	022DVRM	4	Senkkopfschraube DIN7991–M4x8 Countersunk head screw DIN7991-M4x8

12.5 Kreuzschlitten | Cross slide



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	074DVRM	1	Trägerplatte unten Lower support plate	11	084DVRM	1	Klemmhebel M5x35 Clamping lever M5x35
2	075DVRM	2	Linearschlitten Linear slide	12	085DVRM	1	Klemmhebel M5x20 Clamping lever M5x20
3	076DVRM	2	Verstellschraube Adjusting screw	13	542 500 316	6	Scheibe DIN125-ISO7089-d5.3-A2 Washer DIN125-ISO7089-d5.3-A2
4	077DVRM	1	Trägerplatte oben Upper support plate	14	086DVRM	1	Befestigungsbolzen für Kreuzsupport Fastening bolts for cross support
5	078DVRM	1	Konsole für Winkel Bracket for angle bracket	15	305 501 121	3	Zylinderschraube DIN912-M4x25-A2 Cylinder screw DIN912-M4x25-A2
6	079DVRM	1	Führungsbolzen Guide pin	16	305 501 064	1	Zylinderschraube DIN912-M4x8-A2 Cylinder screw DIN912-M4x8-A2
7	080DVRM	1	Winkel für Verstellung Angle bracket for adjustment	17	542 500 318	1	Scheibe DIN125-ISO7089-d4.3-A2 Washer DIN125-ISO7089-d4.3-A2
8	081DVRM	1	Brennerhalterung Unterteil Lower part of burner holder	18	305 501 069	4	Zylinderschraube DIN912-M3x25-A2 Cylinder screw DIN912-M3x25-A2
9	082DVRM	1	Scheibe Washer	19	305 860 218	8	Zylinderschraube DIN7984-M4x25-A2 Cylinder screw DIN7984-M4x25-A2
10	083DVRM	1	Brennerhalterung Oberteil Upper part of burner holder	20	553 458 322	4	Fächerscheibe DIN6798-A5.3-A2 Serrated washer DIN6798-A5.3-A2


3
12
22
1
7
6
10
8
24
14
15
9
21
2
25
23
18
17
4
20
19
16
11

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	087DVRM	4	Zylinderschraube mit niedrigem Kopf M5x35 DIN7984 A2 Low head cylinder screw M5x35 DIN7984 A2
22	088DVRM	2	Gewindestift ISO4027-M3x4-A2 Threaded pin ISO4027-M3x4-A2
23	305 505 216	1	Zylinderschraube DIN912-M6x16 Cylinder screw DIN912-M6x16
24	022DVRM	1	Senkkopfschraube DIN7991-M4x8 Countersunk head screw DIN7991-M4x8
25	089DVRM	4	Mutter M5 DIN934 Nut M5 DIN934

12.6 Maschinenbrenner | Machine burner

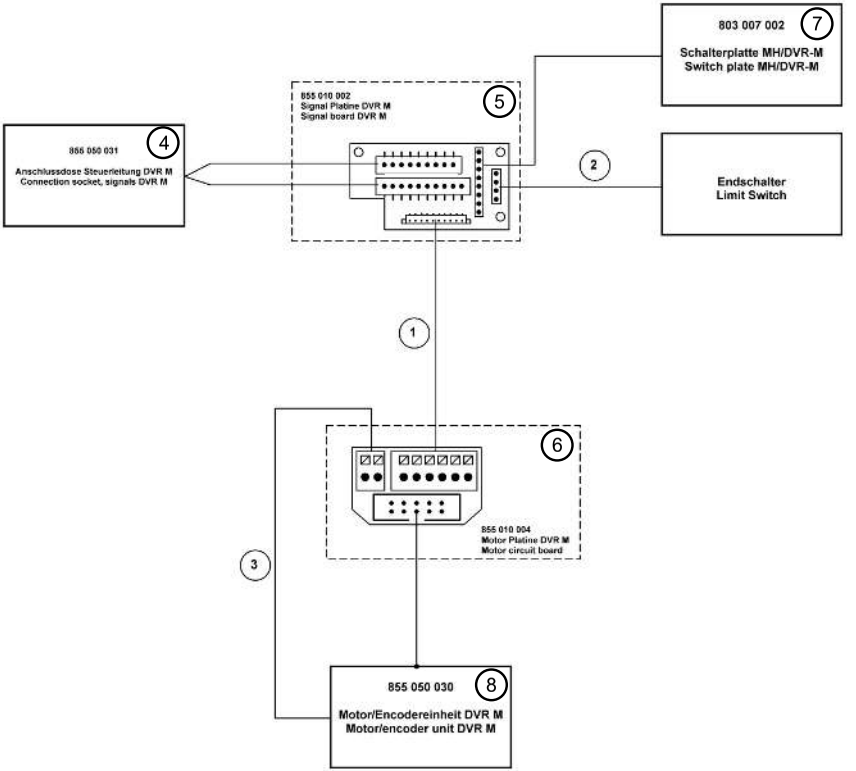
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	855 050 032	1	WIG-Maschinenbrenner GC 150ADC L:3.8m WIG machine torch GC 150ADC L:3.8m
2	890 020 046	1	Brennerkappe, DVR Torch cap, DVR
3	890 020 039	1	Spannhülse Standard 2.4 mm, DVR Clamping sleeve standard 2.4 mm, DVR
4	812 020 023	1	Gasdüse, TP/MH/HB/DVR Gas nozzle, TP/MH/MT/DVR
5	890 020 041	1	Brennerisolator, DVR Torch isolator, DVR
6	812 020 022	1	Gaslinse 2.4, TP/MH/HB/DVR Gas lens 2.4, TP/MH/MT/DVR
7	823 020 014	1	Gasstecker, Schnellverschluss 1/4" Weld connector, quick-release 1/4"

12.7 Zubehör | Accessories

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	890 030 015	1	Massekabel DVR, 5m Ground cable DVR, 5m	11	855 030 030	1	Sechskantschlüssel m. Quergriff SW3x100 Hexagon wrench w. cross-handle SW3x100
2	890 030 022	1	Steuerleitung DVR-Drehvorrichtung, 5 m Control cable DVR turntable, 5 m	12	790 105 095	1	Sechskantschlüssel m. Quergriff SW5x150 Hexagon wrench w. cross-handle SW5x150
3	855 050 033	1	Werkzeugset DVR M Tool set DVR M	13	855 030 033	1	Sechskantschlüssel m. Quergriff SW6x100 Hexagon wrench w. cross-handle SW6x100
4	831 030 121	1	Werkzeugkoffer P/HX/DVR ohne Inhalt Tool case P/HX/DVR empty	14	855 030 034	1	Sechskantschlüssel m. Quergriff SW8x150 Hexagon wrench w. cross-handle SW8x150
5	890 020 039	1	Spannhülse Standard 2.4 mm, DVR Clamping sleeve standard 2.4 mm, DVR				
6	823 020 023	1	Rechteckdose, transparent Rectangular box, transparent				
7	812 020 022	1	Gaslinse 2.4, TP/MH/HB/DVR Gas lens 2.4, TP/MH/MT/DVR				
8	812 020 023	1	Gasdüse, TP/MH/HB/DVR Gas nozzle, TP/MH/MT/DVR				
9	890 020 041	1	Brennerisolator, DVR Torch isolator, DVR				

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
10	890 020 046	1	Brennerkappe, DVR Torch cap, DVR				

12.8 Leitungsplan | Wiring diagram



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	855 040 002	1	Kabel IF-Box/Motor DVR M Cable IF box/motor DVR M
2	855 040 001	1	Kabel IF-Box/Endlagenschalterr DVR M Cable IF box/end position switch DVR M
3	855 040 005	1	Kabelset Motoranschluss DVR M Motor connection cable set DVR M
4	855 050 031	1	Anschlussdose Steuerleitung DVR M Connection socket, signals DVR M
5	855 010 002	1	Signal Platine DVR M Signal board DVR M
6	855 010 004	1	Motor Platine DVR M Motor circuit board DVR M
7	803 007 002	1	Schalterplatte MH/DVR-M Switch plate MH/DVR M
8	855 050 030	1	Motor/Encodereinheit DVR M Motor/encoder unit DVR M

Konformitätserklärungen

ORIGINAL

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

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): / Maszyna i typ (wraz z opcjonalnie dostępnymi akcesoriami firmy Orbitalum):

Schweißdrehvorrichtung / Welding turning device (*inkl. Orbitalschweißstromquelle / incl. Orbital welding power source):
- **DVR M**

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

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

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

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

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 / Cele ochronne następujących dyrektyw są spełnione:

- **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: / Stosowane są następujące normy zharmonizowane:

- **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 60974-10:2014+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: / Uprawniony do sporządzania dokumentacji technicznej:

Gerd Riegraf
Orbitalum Tools GmbH
D-78224 Singen

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

Singen, 25.09.2025:

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):

Schweißdrehvorrichtung / Welding turning device (*inkl. Orbitalschweißstromquelle / incl. Orbital welding power source):
- **DVR M**

Seriennummer: / Series number:

Baujahr: / Year:

Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Richtlinien gefertigt und geprüft worden ist: / Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following regulations:

- **S.I. 2008/1597 Supply of Machinery (Safety)**
- **S.I. 2016/1091 Electromagnetic Compatibility**
- **S.I. 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment**

Schutzziele folgender Richtlinien werden eingehalten: / Protection goals of the following guidelines are observerd:

- **S.I. 2016/1101 Electrical Equipment (Safety)**

Folgende harmonisierte Normen sind angewandt: / The following harmonized standards have been applied:

- **EN ISO 12100:2010**
- **EN ISO 13849-1:2023**
- **EN ISO 13849-2:2012**
- **EN 60204-1:2018**
- **EN IEC 60974-1:2018+A1:2019**
- **EN 60974-10:2014+A1:2015**

Bevollmächtigt für die Zusammenstellung der technischen Unterlagen: / Authorised to compile the technical file:

Bestätigt durch: / Confirmed by:

Singen, 25.09.2025:

Jürgen Jäckle - Product Compliance Manager

Notizen

Notizen

Notizen

Orbitalum Tools GmbH offers global customers the best in the field of pipe cutting and beveling as well as orbital welding technology from a single source.

worldwide | sales + service

NORTH AMERICA

USA

Orbitalum North America
Headquarters
281 Lies Rd E
Carol Stream, IL 60188
USA
Tel. +1 847 484 9100
24-Hour Emergency Response:
Tel. +1 847 484 9100

Northeast US
Orbitalum - New Jersey
1001 Lower Landing Road, Suite 208
Blackwood, New Jersey 08012
USA
Tel. +1 856 579 8747
24-Hour Emergency Response:
Mob. +1 609 414 21638

PACIFIC NORTHWEST US
Orbitalum - Oregon
2056 NE Aloclek Drive, Suite 314
Hillsboro, Oregon 97124
USA
Tel. +1 503 941 9270
24-Hour Emergency Response:
Mob. +1 971 777 2603

Southeast US
Orbitalum - South Carolina
171 Johns Road, Unit A
Greer, South Carolina 29650
USA
Tel. +1 864 655 4771
24-Hour Emergency Response:
Mob. +1 470 806 6663

SOUTHWEST US
Orbitalum - Arizona
Customer Support Center
3106 W Thomas Road, Suite 1117
Phoenix, AZ 85017
USA
Tel. +1 602 540 0813
24-Hour Emergency Response:
Tel. +1 805 433 3270

SOUTHWEST US
Orbitalum - Arizona
Customer Support Center
3106 W Thomas Road, Suite 1117
Phoenix, AZ 85017
USA
Tel. +1 602 540 0813
24-Hour Emergency Response:
Tel. +1 805 433 3270

CANADA

Wachs Canada Ltd - East
Eastern Canada Sales,
Service & Rental Center
1250 Journey's End Circle, Unit 5
Newmarket, Ontario L3Y 0B9
Canada
Tel. +1 905 830 8888
Toll Free: 888 785 2000
24-Hour Emergency Response:
Mob. +1 647 278 0537

Wachs Canada Ltd - West
Western Canada Sales, Service & Rental Center
5411 82 Ave NW
Edmonton, Alberta T6B 2J6
Canada
Tel. +1 780 469 6402
Toll Free: 800 661 4235
24-Hour Emergency Response:
Mob. +1 847 537 8800

EUROPE

GERMANY

Orbitalum Tools GmbH
Josef-Schuettler-Str. 17
78224 Singen
Germany
Tel. +49 (0) 77 31 - 792 0

ASIA

CHINA

Orbitalum Tools GmbH
189 Huayuan Road
Kunshan, Jiangsu Province
China
Mob. +86 (0) 183 5165 7838
Tel. +86 (0) 512 5016 7816

INDIA

ITW India Pvt. Ltd
Plot No.28/22, D-2 Block
Near KSB Chowk
MIDC, Chinchwad
Pune - 411019
Maharashtra - India
Mob. +91 (0) 91 00 99 45 78

orbitalum

An ITW Company