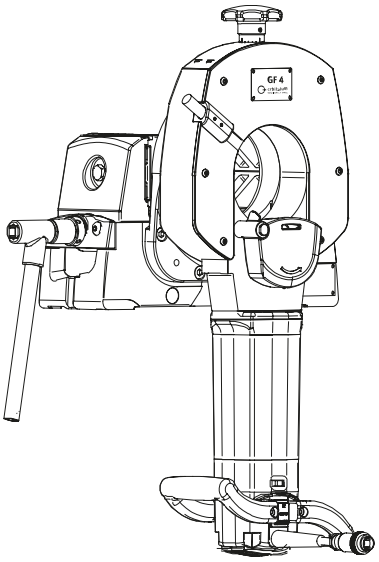
GF 4, GF 6, GF 8, GF 12 (AVM/MVM)

en **Pipe cutting and beveling machines**

Translation of original operating instructions and spare parts list



790 142 765 REV 01 | 2309

orbitalum
tools for piping systems

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

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

1.3 Abbreviations

ABBREVIATION	MEANING
GF	Pipe cutting and beveling machines
AVM	Automatic feed module
MVM	Manual feed module

2 Information and safety instructions for the owner

2.1 Requirements for the owner-operator

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

Employee safety: The safety instructions described in the chapter *Information and safety instructions* of the operating instructions and the general safety instructions described in the safety regulations as well as safety-conscious work with all required safety equipment must be maintained.

2.2 Using the machine

2.2.1 Proper use

- **GF and GFX machines:** The machine must only be used for cutting and beveling materials and pipe dimensions, as listed in *chapt.* Scope of application of the operating instructions.
  PS machines: The machine must only be used for cutting and beveling materials and pipe dimensions, as listed in *chapt.* Scope of application of the operating instructions.
  The machine casing (vice) can be fastened directly onto the work bench/tripod using screws or by means of a mounting plate on it. The mounting plate is also screwed to the work bench.
  Only operate the machine within the voltages specified on the type plate of the drive (*see chapt*. Technical specifications).
- Only the motors listed below are to be used as drives for the following machines:
  - For GF saws: Motor GF07 (code 790 142 460 and 790 142 463).
  - For GFX saws: Motor GF10 (code 790 144 382 and 790 144 383).
  - PS 4.5 Plus: Motor (code 790 048 190 and 790 048 192).
  - PS 4.5 Plus battery: Motor (code 790 037 530 and 790 037 531)
- The drive motor may only be used in connection with the machine.
- Only GF machines: The automatic or manual feed module AVM/MVM may only be operated in connection with Orbitalum Tools pipe saws GF 4, GF 6, GF 8 or GF 12.
- The machine may only be used on pipes and tanks that are empty, unpressurized, do not have explosive atmospheres and are not contaminated.

Intended use also includes:

- Observing all safety and warning information of these operating instructions and the general pipe cutting and beveling machine safety information.
- Complying with all inspection and maintenance work.

- Using it only in its original condition with genuine accessories, spare parts and operating materials.
- Processing only those materials named in the operating instructions.

2.2.2 Improper use

- Any use that differs from or goes beyond the use and stated limits specified under *chapt.* "Intended use" is improper due to the danger involved.
- The owner shall be responsible for any damage which results from improper use. The manufacturer accepts no liability.
- No tools should be used that have not been authorized by the manufacturer of this machine.
- The removal of safety devices is not permissible.
- Do not misuse the machine.
- The machine is not intended for use by private consumers.
- The machine is intended solely for commercial and industrial use.
- It is impermissible to exceed the technical values specified for normal operation.
- Do not use the machine as a drive for any applications other than those named under *chapt.* "Intended use".

2.2.3 Machine constraints

- Keep your working area clean. Disorder or unlit working areas can lead to accidents.
- Work lighting: min. 300 Lux.
- Operation by one person.
- Climate conditions: Temperature range for machine operation: –15 °C to 40 °C.
- Only operate the machine in dry surroundings (not in misty, rainy or stormy conditions (< 80% rel. humidity)).

2.2.4 Shutting down the machine

EMERGENCY STOP or shutdown function descriptions, *see chapter* Shutdown (including in case of emergency) in the operating instructions.

2.3 Environmental protection and disposal

2.3.1 REACh (Registration, Evaluation, Authorization and Restriction of Chemicals)

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.

2.3.2 Chips and gear lubricant

Dispose of chips and replaced gear lubricant as prescribed.

2.3.3 Electric tools and accessories

(as per RL 2012/19/EU)

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

- Electrical and electronic devices marked with the symbol at the right may not be disposed of with household garbage as per EU directive.
- By actively using the offered return and collection systems, you are doing your part to reuse and recycle used electrical and electronic devices.
- Used electric and electronic devices contain parts which must be handled specially as per EU directives. 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 us purchased after August 13, 2005, if they are sent to us postage-paid.
- In the case of used devices which may represent a risk to human health or safety due to contamination during use, we have the option of refusing return.
- The user is responsible for disposing of used devices purchased before August 13, 2005. For this purpose, please contact a professional disposal company in your area.
- **Important note for Germany:** Our devices and machines may not be disposed of at communal dumps, as they are only used in the commercial sector.

2.3.4 Return of accumulators and batteries

Cd

- Accumulators and batteries that are marked with the adjacent symbol may not be disposed of with household garbage as per EU Directive 2006/66/EC.
- In the case of accumulators and batteries containing hazardous materials the chemical sign for the heavy metal contained is specified below the refuse bin: Cd = cadmium Hg = mercury Pb = lead
- **Applies for Germany:** The end consumer is obliged to return defective or used accumulators and batteries to the distributor or to the returning facilities set up to this purpose.

2.4 Basic safety precautions

The machine is a state-of-the-art accessory designed for safe use. Remaining risks are described in the following operating instructions. Use other than that described in these instructions can lead to severe personal injury and damage to property. For this reason:

- Warning information must be observed.

- PS 4.5 Plus (battery) only: Along with these safety instructions, the general warning information for electric tools (see supplement) also applies, which must always be kept.
- Store all documentation near the machine.
- Generally valid regulations for the prevention of accidents must be observed.
- Observe country-specific regulations, standards and guidelines.
- Use the machine only in perfect technical condition. Observe the maintenance information (*see chapt.* Maintenance) of the operating instructions.
- Only operate the machine if all the safety equipment such as the restart inhibitor, overload protection and chips guard are in good working order. The machine must have a solid footing. Check whether the substrate is able to take sufficient loads. A radial space requirement/freedom of movement of approx. 2 meters around the machine is required for people.
- Report deviations in operating behavior of the machine to the person in charge immediately.
- Use only the dimensions and materials listed in these instructions. Other materials may only be used after consulting with Orbitalum Tools customer service.
- Use only genuine tools, spare parts, operating materials and accessories from Orbitalum Tools.
- Repair and maintenance work on the electrical equipment may only be carried out by a qualified electrician.

At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

- Do not carry the machine by its cable and do not use the cable to pull the power plug out of the socket outlet (except in case of an emergency). Protect the cable against heat, oil and sharp edges (chips).
- Do not reach into the tools while machining is being carried out.
- Allow heated tools to cool down and only touch them with safety gloves.
- Ensure that the workpiece is clamped properly.
- Only switch on the machine if a pipe is clamped.
- Only GF machines: When working with the AVM in case of danger press the EMERGENCY STOP button immediately.
- Only GF machines: When working with the AVM shutdown occurs automatically after each cutting action. When processing manually at the end of each working cycle shut the machine down (pipe saw ON/OFF button), wait until the machine/tool comes to a halt and unplug the power plug.
- Only GF machines: When working with the AVM do not stop in the swivel range during the slide housing rotation.
- Only GF machines: When working with the AVM: The machine may only be operated with the AVM protective web installed (*see chapt.* Automatic feed module AVM of the operating instructions).
- Do not use the machine in wet surroundings. Only work in surroundings having a roof or canopy.

- In extreme conditions of use, conductive dust or lubricant can settle inside the machine. For this reason and for better safety, an on-site SPE-PRCD or ground-fault circuit is required between the mains network and the machine, to be installed and tested if necessary by a professional electrician.
- When working with the machine wear safety shoes (as per EN ISO 20345 at least S1), safety goggles (as per DIN EN 166 Class 2, basic strength S), snug-fitting safety gloves (as per DIN EN 388, Class 2 resistance to abrasion, cut resistance Class 3, tear resistance Class 2, perforation resistance Class 3 and as per EN 407 at least Performance level 1 against contact heat) and hearing protection (as per DIN EN 352-4 or comparable).
- Operator age: The respectively valid country-specific laws/standards/guidelines/directives have to be followed.
- Do not use click-in socket outlets and click-in power plugs (blue CEE power plugs) for the power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable (*see operating instructions chapt.* Shutdown of the machine).
- Do not use angled power plugs.

NOTICE!

The suggestions for personal safety equipment apply exclusively and specifically to the product described. Other requirements arising from ambient conditions at the location of use, other products or the link with other products are not taken into account. These suggestions do not relieve the owner (employer) of his/her legal duties regarding work-safety and health protection of employees in any way.

DANGER

If the power cable is damaged, exposed parts can be energized with lethal voltage!

Fatal electric shock.

- ► Keep the mains cable of the saw motor **away** from the saw blade/ bevel cutter.
- ► Do **not** allow a cut pipe section to fall uncontrollably.
- ► Do **not** operate the machine unattended.
- ► Keep an eye on the power cable at all times when processing is being carried out.
- ► Keep machine clean and thoroughly remove lubricant residue on the machine.

DANGER		**Damaged insulation!** Fatal electric shock. ► Do **not** screw signs to the drive motor. ► Use adhesive signs.
DANGER		**Loss of insulation due to collection of metal dust in the motor housing!** Fatal electric shock. ► Clean the machine at least once daily with the brush supplied according to its level of soiling.
DANGER		**Damaged plug.** Fatal electric shock. ► Do **not** use adapter plugs together with protectively grounded power tools. ► Connecting plugs of the machine must fit into the outlet
DANGER		**Risk of danger through the use of the machine outdoors!** Fatal electric shock. ► Do **not** use the machine in wet surroundings.
WARNING		**Danger! The electrical motor can overheat with operation of less than 230 V network!** Severe injury or death. ► Only use the machine in the specified temperature range.
DANGER		**Grounded body!** Fatal electric shock. ► Avoid contact with grounded surfaces such as tubes, heating, cookers or refrigerators.
DANGER		**Catching of loose/long clothing, long hair or jewelry by rotating machine parts!** Severe injury or death. ► Wear tight-fitting clothing when using the machine. ► Secure long hair against being caught.

DANGER

Defective safety parts due to soiling and wear!

Bodily injury due to failure of safety parts.

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

WARNING

Parts thrown off/tool breakage and rotating pipe!

Various injuries and damage to property.

- ► Do **not** process pipe loose in the vice.
- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do not run a new tool into the old cut because this can cause a repeat tool breakage.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension and speed (*see operating instructions chapt.* Clamping pipe and adjusting pipe dimension *and instructions chapt.* Adjusting speed).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

WARNING

Falling objects or tilting and bending tubes!

Irreversible crushing.

- ► Wear safety shoes (in accordance with EN ISO 20345, at least S1).
- ► Place sufficient supports under the tube.
- ► Transport the machine as shown in chapter *Transporting the machine* of the operating instructions.

WARNING

Danger from vibration and unergonomic, monotonous work!

Discomfort, fatigue and malfunctioning of the moving apparatus! Limited response capability and cramps.

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

WARNING

Pressing the ON/OFF button unintentionally!

Various injuries and damage to property.

- ► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, shut the machine down, wait until the machine/tool stops running and pull the mains plug or remove the battery and cover the battery.

WARNING

Dangerous laser radiation!

The eye retina or eye vision can be impaired.

- ► **Do not** look at the laser beam or view it using optical instruments.
- ► **Do not** point the laser beam at other people.
- ► **Do not** misuse the line laser and do not remove it from the pipe saw.
- ► Ensure that the line laser is switched off during mounting/dismantling.

DANGER

Danger of fire from charging the battery with a wrong charger!

Severe injury or death.

- ► Only charge the batteries with chargers recommended by the manufacturer.

WARNING

Liquid leaking from the battery due to wrong use!

Various injuries and damage to property.

- ► Wash with water if touched accidentally.
- ► If liquid enters the eyes, contact a doctor.

WARNING

High speed when transporting the machine!

Risk of being hurt by lifting in the packaged state.

- ► Only transport and raise the pipe saw on a pallet over longer distances using appropriate lifting equipment.
- ► Transport the machine in the transport case using 2 persons. The case has adequate carry handles.

2.5 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.

2.5.1 GF machines

IMAGE	MACHINE TYPE	POSITION ON MACHINE	MEANING	CODE
	GF 4 (AVM/MVM), GF 6 (AVM/MVM), GF 8 (AVM/MVM), GF 12 (AVM/MVM)	Chips guard, frontal	Warning: Risk of injury due to sharp cutting edges.	790 086 200
	GF 4 (AVM/MVM), GF 6 (AVM/MVM), GF 8 (AVM/MVM), GF 12 (AVM/MVM)	Motor, on the side	Rule: • Wear safety goggles in accordance with DIN EN 166. • Wear hearing protection in accordance with DIN EN 352. • Wear snug-fitting safety gloves in accordance with DIN EN 388 and EN 407. • Read operating instructions.	790 046 196
	GF 4 (AVM/MVM), GF 6 (AVM/MVM), GF 8 (AVM/MVM), GF 12 (AVM/MVM)	Directly on laser	Warning: Laser class I.	**For lasers 790 142 125 (230 V machines):** 790 142 288 **For lasers 790 142 135 (120 V machines):** 790 142 298

IMAGE	MACHINE TYPE	POSITION ON MACHINE	MEANING	CODE
	GF 4 (AVM/MVM), GF 8 (AVM/MVM), GF 12 (AVM/MVM)	Line laser holder	Warning: Dangerous laser radiation.	790 142 289
	GF 6 (AVM/MVM)	Slide housing	Warning: Dangerous laser radiation.	

2.5.2 GFX machines

IMAGE	POSITION ON MACHINE	MEANING	CODE
	Motor, frontal	Warning: Risk of injury due to sharp cutting edges.	790 046 196
	Motor, on the side	Rule: Wear safety goggles according to DIN EN 166, hearing protection according to DIN EN 352 and snug-fitting safety gloves according to DIN EN 388 and EN 407. Read operating instructions.	790 086 200

IMAGE	POSITION ON MACHINE	MEANING	CODE
	Directly on laser	Warning: Laser class I.	**For lasers 790 142 125 (230 V machines):** 790 142 288 **For lasers 790 142 135 (120 V machines):** 790 142 298
	Line laser holder	Warning: Dangerous laser radiation.	790 142 289

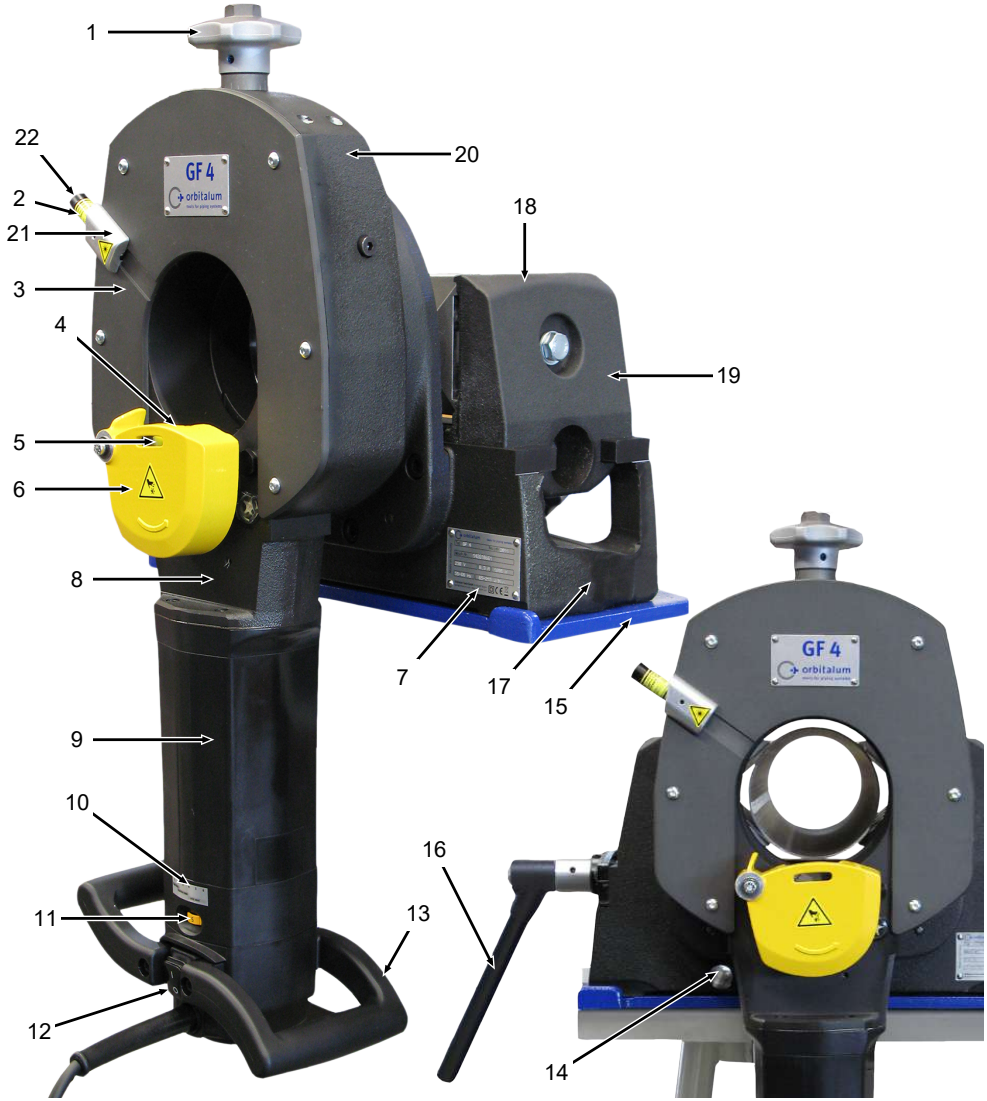
2.5.3 PS machines

IMAGE	POSITION ON MACHINE	MEANING	CODE
	Chips guard, top	Warning: Risk of injury due to sharp cutting edges.	790 046 196
	Vice, on the left	Rule: Wear safety goggles according to DIN EN 166, hearing protection according to DIN EN 352 and snug-fitting safety gloves according to DIN EN 388 and EN 407. Read operating instructions.	790 086 200

IMAGE	POSITION ON MACHINE	MEANING	CODE
	Directly on laser	Warning: Laser class I.	**For lasers 790 142 125 (230 V machines):** 790 142 288 **For lasers 790 142 135 (120 V machines):** 790 142 298
	Line laser holder	Warning: Dangerous laser radiation.	790 142 289

3 Description

3.1 Pipe cutting and beveling machines GF 4, GF 6, GF 8, GF 12



POS.	DESIGNATION	POS.	DESIGNATION
1	Star knob	12	ON/OFF switch
2	Line laser	13	Handles
3	Cover plate	14	Detent pin for remote controller/holding fixture for cutting tool stop
4	Saw blade/bevel cutter	15	Mounting plate
5	Opening for meter rule	16	Multifunctional wrench/vice crank
6	Chips guard	17	Vice
7	Identification plate/machine number	18	Circular clamping jaws (on GF 4 only)
8	Slide	19	Sliding jaws
9	Motor	20	Slide housing
10	Rotating-speed indicator	21	Line laser holder
11	Speed controller	22	Line laser ONOFF switch

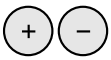
NOTICE!

The chips guard is a safety-relevant component. It has to be checked every day for function. The chips guard on every machine has to be able to move back to the original position (see the following illustrations) by itself.

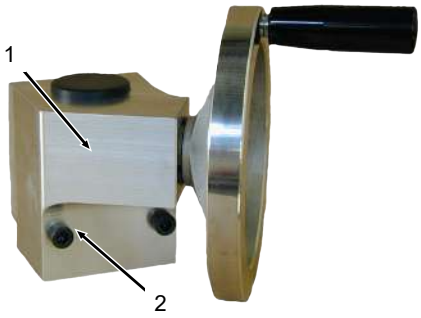
3.2 Automatic feed module [Automatisches Vorschubmodul] AVM

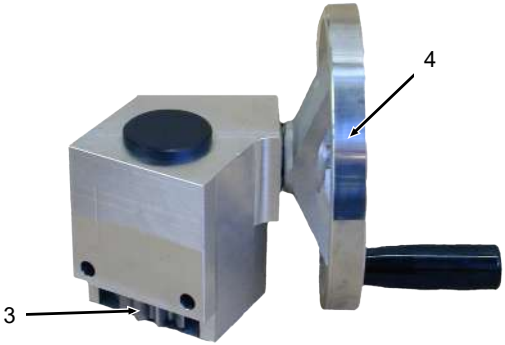
POS.	DESIGNATION
1	Display
2	Start button
3	Stop button
4	EMERGENCY STOP button
5	Buttons for the feed force level
6	Light barrier
7	Protective bar

3.2.1 Operator button panel

CONTROL ELEMENT	FUNCTION
	**Display:** If the control unit is connected to the power supply, the display shows the feed force level currently selected. A point is shown at the bottom right of the display to signal that the light barrier recognizes the reflector. The AVM can only be started with reflector recognition. If a fault occurs, this indicator blinks every second and displays **F** and a umber from **1** to **6**. Error messages/troubleshooting, *see chapt.* Error messages/troubleshooting the AVM [▶ 76]
	**Feed buttons:** By pressing these buttons, it is possible to preset the desired feed force in 10 levels. If the device is ready for operation, these buttons may be pressed at any time to set the feed force level or to vary it during processing. If one of the buttons remains pressed by the user, the display runs in the direction selected by the user.
	**Start button:** The machining process is initiated by pressing this button when the saw motor is running. After startup, this button serves no further function. It also has no function during a fault or while the software version is being displayed.
	**Stop button:** Pressing this button during the machining process stops the feed and the saw motor. Then the saw motor has to be returned to the starting position. By keeping the zero button pressed the saw motor can be turned back more easily. The saw motor must not be running. As soon as a point lights up at the bottom right of the display the AVM can be restarted.
	Calling up the current version of the AVM: The version is displayed when the + / - buttons are pressed simultaneously. Then e.g. the following sequence flashes: **S 2 0 0 H 1 2 3**. The **S** stands for “software” and the following three numbers for the software version. The subsequent **H** stands for “hardware” and the following three numbers for the hardware version. Then the display returns to the last feed force level that was set.
	EMERGENCY STOP button: Only press in an emergency. Pressing the EMERGENCY STOP button interrupts the power supply. Unlock the button to restart.
	With error messages the O button can be used to switch the AVM off, then the error no longer appears in the display.

3.3 Manual feed module [Manuelles Vorschubmodul] MVM





POS.	DESIGNATION
1	Transmission
2	Fastening screws
3	Gear with freewheel
4	Handwheel

3.4 Characteristics

The pipe saws are characterized by the following properties:

- Enhanced safety thanks to standing pipe and rotating tool.
- Inhibitor protection prevents an inadvertent startup of the machine after repeated power supply or in case of voltage recovery after power failure.
- Self-centering clamping system.
- Low-maintenance gearing with oil bath lubrication.
- Saw motor with RPM control and ergonomic motor grip for a more secure operator position.
- Burr-free cutting surface and deformation-free pipe cross section.
- Cold machining process.
- Quick cutting action.
- Production of standardized welding bevels.
- Cutting of pipe elbows.
- Quick tool change.

- Plug connection with quick-disconnect coupler for easy and convenient replacement of the power cable and preventing the cable from twisting.
- Working without getting tired when cutting and beveling pipes with larger pipe dimensions and thicker walls.
- Line laser for optically marking the cutting area.
- Locking mechanism of the slide housing prevents unauthorized use and theft (for GF 4/GF 6/GF 8 (AVM/MVM) only).

Corrosion protection

Coated parts for better slide characteristics and corrosion protection.

Multifunctional crank

Detachable. This multifunctional wrench enables up to 6 different settings on the machine:

Dimension adjustment

Vice crank

Fixture for clamping jaws (for GF 4 (AVM/MVM) only)

Fixture for saw blade/bevel cutter

Saw fixture for the quick-mounting plate

Locking mechanism of the slide housing protects against unauthorized use and theft.

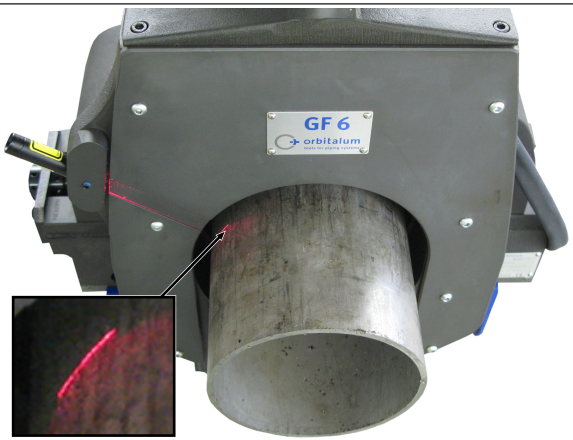
Line laser

For identifying the cutting point on the pipe. Ideal for checking whether the pipe is adjusted to the desired cutting point.

► By pressing the red button on the line laser a red line marking (arrow) appears on the clamped pipe, which identifies the cutting point. If necessary, the pipe position can be readjusted until the desired cutting point is indicated.

► The line laser switches itself off automatically after 2 min.

► To switch it back on, press the red ON button twice.



Circular clamping jaws

Clamping jaw assembly, *see chapt.* GF 4: Fitting the clamping jaws [▶ 46].

The GF 4 (AVM/MVM) is equipped with circular clamping jaws. Turning the clamping jaws enables the following pipe diameters to be processed:

PIPE OD [MM]	PIPE OD [INCH]
12 - 56 / 20 - 120	0.472 - 2.205 / 0.787 - 4.724

Plug connection with a quick-disconnect coupler

Easy and convenient replacement of power cables and protection against twisting.

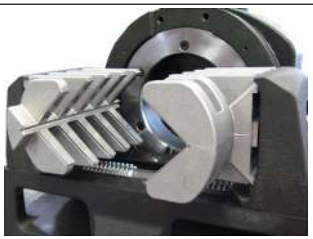
Optimized chip guard

Protects the user against flying chips and on the GF 4 (AVM/MVM) comes with a meter rule slot for measuring the pipe length.

Set of stainless steel caps

Ideal for machining stainless steel tubes.

Prevents contact corrosion between tube and clamping parts.



Additional characteristics of the GF 4 AVM, GF 6 AVM, GF 8 AVM or GF 12 AVM:

- The intelligent control of the AVM continuously monitors the feed force as a function of the required output.
- Thanks to the operator position the greatest protection possible against hot chips flying about is guaranteed.
- Feed movement in the conventional mode is possible at any time by actuating the saw motor grip (e.g. when cutting thin-walled pipes).

3.5 Accessories and consumables

Not included in scope of delivery.

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.

Saw blades and bevel cutters

All saw blades and bevel cutters are developed specifically for our pipe saws for extreme demands and maximum service life. 4 different saw blades and bevel cutter versions are available for the various applications:

- **Economy series** for low-alloyed and unalloyed steels as well as cast materials
- **Performance series** for high-alloyed steels (special steel)
- **High-Performance series** for high-performance materials and high-alloyed steels
- **Premium series** specifically for special steel applications with extra high service life

Saw blade lubricant GF TOP

- Synthetic high quality lubricant for sawing and milling.
- Increases the service life of the saw blade.
- Fulfills the requirements for H2 lubricants.
- Thanks to the screw-on brush, simple and even lubrication of the saw blade is ensured.

Code 790 060 228

Saw blade lubricating paste GF LUB

- Chlorine-free high quality lubricant for sawing and milling.
- Increases the service life of the saw blade.
- The ecological lubricating paste is the environment-friendly successor of ROCOL; with new name and improved quality.
- GF LUB complies with latest environmental guidelines and ecological standards.

Code 790 041 016

Quick-mounting plate with screw clamps

- For fast mounting of the machines on workbenches.

Ideal for frequently changing operation locations.

Code 790 041 027

Pipe feeder basic unit and extension unit

The pipe feeder allows you to feed long and heavy pipes effortlessly and coaxially to the pipe saws.
Very robust and stable design with powder-coated frame and stainless steel rollers. The ideal supplement for all Orbitalum pipe saws (except for GF 20 AVM. RA 2, GFX 3.0, PS 4.5, PS 6.6 possible on request).

Code 790 068 051

- Extreme stability and structural stability
- Rapid adjustment of dimensions
- Centering of pipes in seconds
- Specially coated, maintenance-free steel frame
- Stainless-steel rollers
- Extension of pipe feeder possible with add-on module
- Saves time and money
- No contamination
- Suitable for all steels

Code 790 068 061

Mobile workstation

- For mobile construction site and workshop use.
- The ideal supplement for all Orbitalum pipe saws (except for GF 20 AVM. RA 2, PS 4.5, PS 6.6 possible on request).

Code 790 068 071

Special gear oil

For all GF and RA types.

Code 790 041 030

Mandatory action and warning sighs overview with order numbers, *see chapt.*

4 Scope of application

4.1 Application range

MACHINE MODEL		GF 4 (AVM/MVM)	GF 6 (AVM/MVM)	GF 8 (AVM/MVM)	GF 12 (AVM/MVM)
Pipe OD/pipe elbow OD	[mm]	12 - 120	21.3 - 168.3	114 - 230	157 - 325
	[inch]	0,472 - 4,724	0,839 - 6,626	4,488 - 9,055	6,181 - 12,795
Wall thickness, depending on material*	[mm]	1 - 9	1.5 - 15	2 - 10	2 - 10
	[inch]	0,039 - 0,354	0,059 - 0,591	0,079 - 0,394	0,079 - 0,394
Pipe ID min. (saw blade Ø 63 mm/ 2.480")	[mm]	21	30	137	190
	[inch]	0,827	1,181	5,394	7,480
Pipe ID min. (saw blade Ø 68 mm/ 2.677")	[mm]	16	25	132	185
	[inch]	0,630	0,984	5,197	7,283
Pipe ID min. (saw blade Ø 80 mm/ 3.150")	[mm]	4	13	120	173
	[inch]	0,157	0,512	4,724	6,811
Pipe ID min. (saw blade Ø 100 mm/ 3.937")	[mm]	–	0	100	153
	[inch]	–	0	3,937	6,024
Pipe ID min. (saw blade Ø 110 mm/ 4.331")	[mm]	–	0	–	–
	[inch]	–	0	–	–

** With automatic immersion process. Larger wall thicknesses through manual feeding or through additional separation cut possible (depending on saw blade diameter). Special clamping shells (accessories) may be necessary for thin pipe wall thicknesses.*

4.2 Materials

- High-quality steel (any Cr and Mo content)
- High-quality stainless steel (any Cr and Mo content)
- High-quality steel (Cr < 12% and Mo < 2.5%; Cr < 20% and Mo = 0%): case hardened steels, high-speed steels, tempering steels, bearing steels, tool steels
- Black and galvanized steel pipe
- General structural steel
- Annealed cast iron pipe (GGG [Geglühtes Gussrohr])
- Aluminum
- Brass
- Copper
- Plastic (PE, PP, PVDE, PVC)

5 Technical specifications

5.1 Pipe cutting and beveling machines

MACHINE MODEL		GF 4 (AVM/MVM)	GF 6 (AVM/MVM)	GF 8 (AVM/MVM)	GF 12 (AVM/MVM)
Dimensions (hxdxw)	[mm]	680 x 325 x 480	920 x 352.7 x 574	778 x 485 x 430	940 x 592 x 374
	[inch]	26.8 x 12.8 x 18.9	36.2 x 13.9 x 22.6	30.6 x 19.1 x 16.9	37.0 x 23.3 x 14.7
Dimensions (hxdxw) with AVM	[mm]	810 x 325 x 480	972 x 352.7 x 574	918 x 485 x 430	1,070 x 592 x 374
	[inch]	31.9 x 12.8 x 18.9	38.3 x 13.9 x 22.6	36.1 x 19.1 x 16.9	42.1 x 23.3 x 14.7
Dimensions (hxdxw) with MVM	[mm]	780 x 325 x 480	920 x 352.7 x 574	788 x 485 x 430	1,090 x 592 x 374
	[inch]	30.7 x 12.8 x 18.9	36.2 x 13.9 x 22.6	31.0 x 19.1 x 16.9	42.9 x 23.3 x 14.7
Machine weight approx.*	[kg]	55.0	92.7	102.5	138.6
	[lbs]	121.2	204.4	225.9	305.6
Machine weight approx.* with AVM	[kg]	64.5	101.7	110.0	146.1
	[lbs]	142.2	224.2	242.5	322.1
Machine weight approx.* with MVM	[kg]	60.0	97.8	104.6	140.7
	[lbs]	132.2	215.6	230.6	310.2
Versions,	[V,Hz]	230, 50/60	230, 50/60	230, 50/60	230, 50/60
1-phase alternating current	[V,Hz]	120, 50/60	120, 50/60	120, 50/60	120, 50/60
Power without AVM	[kW]	1.8	1.8	1.8	1.8
	[HP]	2.41	2.41	2.41	2.41
Power with AVM	[kW]	1.9	1.9	1.9	1.9
	[HP]	2.54	2.54	2.54	2.54
Power AVM	[kW]	0.05	0.05	0.05	0.05
	[HP]	0.07	0.07	0.07	0.07
Protection class		Safety insulated in accordance with class II, DIN EN 60745-1			

MACHINE MODEL		GF 4 (AVM/MVM)	GF 6 (AVM/MVM)	GF 8 (AVM/MVM)	GF 12 (AVM/MVM)
Protection class with AVM		Safety insulated in accordance with class II, EN 60204-1			
Protection class with MVM		Safety insulated in accordance with class II, DIN EN 60745-1			
Tool speed	[rpm]	40 - 215	40 - 215	40 - 215	40 - 215
Machine head speed with AVM	[rpm]	0.1 - 3.9	0.3 - 3.5	0.1 - 2.3	0.1 - 1.8
Machine head torque max. with AVM	[Nm]	101	353	165	210
Sound pressure level at the workplace approx.**	[dB (A)]	79	79	79	79
Vibration level	[m/s^2]	< 2.5 in accordance with DIN EN 28662, Part 1			
Mains fuse on site	[A]	16	16	16	16

** Weight without packaging and accessories.*

*** The sound pressure level measurement was carried out under normal operating conditions in accordance with EN 50144-1. As the noise level in unfavorable operating conditions can also rise above 80 dB (A), it is necessary to wear ear protection in accordance with DIN EN 352.*

5.2 Line laser

Dimensions (l x w)	[mm]	68 x 15
	[inch]	2.7 x 0.59
Weight	[g]	30
	[lbs]	0,012
Total emitted power	[mW]	5
	[HP]	5x10-6
Power for the classification	[µW]	< 390
Beam range	[m]	1
	[inch]	39.37
Wave length	[nm]	650
Operating voltage	[V DC]	2.8 to 4.5
Operating current	[mA]	20
Operating temperature	[°C]	-10 to 40
Storage temperature	[°C]	-40 to 80
Laser class	[Class]	1
Automatic switch-off laser	[min]	2 (To switch the line laser back on, press the red ON button twice.)
Battery type		2 x LR44 / AG13

6 Commissioning

6.1 Scope of delivery

ITEM	PCS.	GF 4 (AVM/MVM*)	GF 6 (AVM/MVM*)	GF 8 (AVM/MVM*)	GF 12 (AVM/MVM*)
Pipe cutting and beveling machine	1	x	x	x	x
Transportation case	1	x	x	x	x
Saw blade, code 790 ...	1	...042 064	...043 018	...043 018	...043 018
Mounting plate	1	x	x	x	x
Line laser with fastening screws and 10 button cells 1.5 V (code 790 142 124)**	1	x	x	–	–
Wrench set*** (accessory bag with contents code 790 041 014)	1	x	x	x	x
Bottle of special gear oil (code 790 041 030)	1	x	x	x	x
General pipe cutting and beveling machine safety information	1	x	x	x	x
GF 4, GF 6, GF 8, GF 12 (AVM/MVM) operating instructions & spare part list Download links PDF: https://www.orbitalum.com/de/download.html	PDF	x	x	x	x

We reserve the right to make changes.

* *The automatic or manual feeding module AVM/MVM is already mounted on the pipe saw on delivery.*

** *With the GF 4, GF 6, GF 8 and GF 12 (AVM/MVM) the line laser is delivered separately and has to be mounted on the machine before commissioning (see chapt.* Mounting the line laser [▶ 45]*)*

*** *The tool key set includes the following:*

- *Hexagon key AF 4 (code 243 870 049), AF 5 (code 243 870 059), AF 8 (code 243 870 089)*
- *1 brush (code 790 041 017)*
- *1 tube GF TOP saw blade lubricant (code 790 060 228)*

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

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

7 Storage and transport

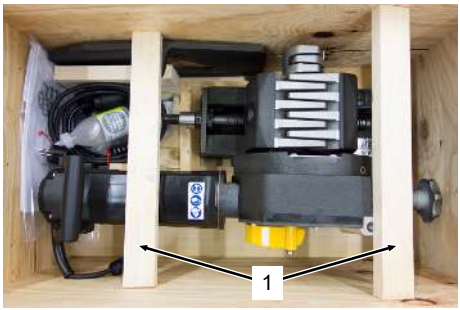
7.1 Storage

CAUTION		**Improper machine storage!** Various injuries and damage to property. ► Store the machine in its original case and in dry conditions.

NOTICE!		**With GF 4, GF 6, GF 8 or GF 12 with AVM/MVM: The automatic or manual feeding module AVM/MVM is already mounted on the pipe saw on delivery.**

7.1.1 Position of the saw in the transport case

The pipe saw is stored securely in the transport crate and can only be taken from the crate with suitable lifting aids (*see chapt.* Transport [▸ 41]). For the GF 4 and GF 6 (AVM/MVM) the 2 wooden struts (1) must first be removed from the crate.

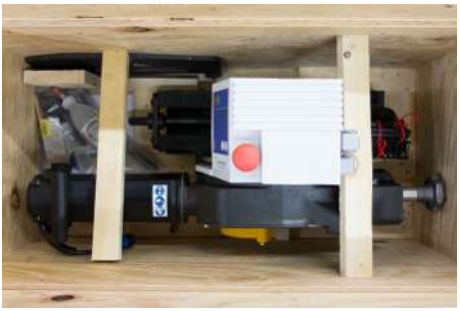


GF 4 (AVM/MVM)

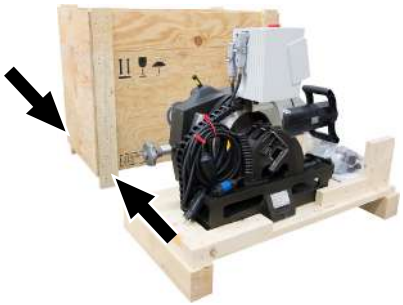
GF 8 (AVM/MVM)

With the GF 6 (AVM/MVM) and GF 8 (AVM/MVM) the transport crate frame can be removed by unscrewing the 4 screws on the left and on the right at the bottom of the two long sides of the crate (see arrows).

NOTICE!		**The accessories with the GF 6 (AVM/MVM) and GF 8 (AVM/MVM) have to be removed from the transport crate before the frame is removed.**



GF 6 (AVM/MVM) in transport crate with frame



GF 6 (AVM/MVM) without frame

7.2 Transport

DANGER

Fatal electric shock!

► Before transportation or changing the workplace, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

WARNING

During transport, the ON/OFF button could be pressed inadvertently, starting up the machine!

Various injuries and damage to property.

► Before transportation or changing the workplace, switch off the machine, wait until the machine/tool stops running, pull the mains plug and set the transport lock.

► In the case of battery drives remove the battery and set the transport lock (switch lock) (center setting of the clockwise/counter-clockwise rotation). Cover the battery.

WARNING

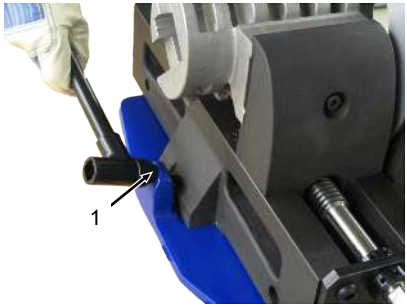
Heavy weight when transporting the machine

Danger of injury due to overstraining.

► Transport the machine over longer distances with suitable lifting gear.

7.2.1 Transporting the machine

1. Unscrew the hexagon screw (1) on the quick-mounting plate.
2. Guide suitable transport belts through the machine head of the pipe saw.
3. Carefully lift the pipe saw by the belts and set on the quick-mounting plate mounted on the side.
4. Fasten the pipe saw in place on the mounting plate with the hexagon screw (1).



8 Setup and assembly

NOTICE! **The work steps described are identical for every version.**

8.1 Mounting the pipe saw on the workbench

Mount the pipe saw together with the vice, either:

- on the quick-mounting plate (assembly, *see chapt.* Mounting the quick-mounting plate on the workbench [▶ 43]), or
- on the quick-mounting plate with screw clamps (is clamped directly to the workbench without pre-drilling).

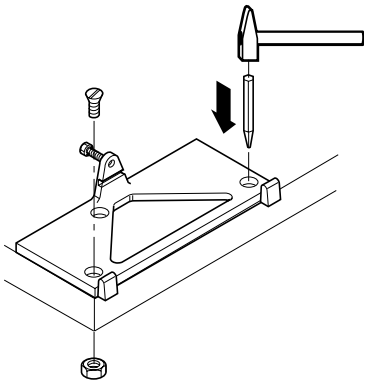
WARNING **The pipe saws are top-heavy and can cause a workbench that is not load-bearing and not secure against tilting to tilt!**

Irreversible crushing and material damage.

► Mount pipe saws only on stable, load-bearing and non-tilting workbenches.

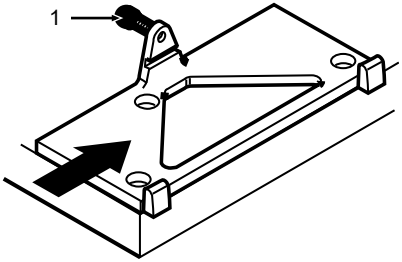
8.1.1 Mounting the quick-mounting plate on the workbench

1. Center-punch screw holes on a stable, load-bearing and non-tilting workbench.
   Use the quick-mounting plate as a template.
2. Drill holes with 13 mm Ø.
3. Fasten the quick-mounting plate in place with the screws M12x70 (8.8) supplied.



8.1.2 Mounting the machine on the quick-mounting plate

1. Set the pipe saw on the quick-mounting plate mounted on the side using a crane or a similar lifting tool only.
2. Fasten the pipe saw in place with the hexagon screw (1).



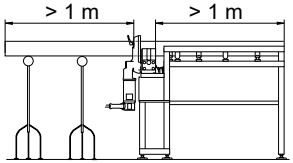
8.1.3 Pipe feeder (base and extension unit, mobile workstation)

When using the pipe feeder base unit from Orbitalum Tools the pipe saw is mounted directly and without dedicated accessories on the mounting plate of the base unit (optional extra, code 790 068 051).

WARNING

Falling objects or tilting and bending pipes!

- ► Wear safety shoes (in accordance with EN ISO 20345, at least S1).
- ► Support pipes whose length exceeds 1 m with a pipe support or a pipe feeder or extension unit.



Pipe feeder base unit (code 790 068 051)

Pipe feeder extension unit (code 790 068 061)

Mobile workstation (code 790 068 071)

8.1.4 Folding workbench

Can only be used for saws with field of application up to 4.5". From 6" use a pipe feeder (code 790 068 051) or the mobile workstation (code 790 068 071).

WARNING

The pipe saws are top-heavy and can cause a workbench that is not load-bearing and not secure against tilting to tilt!

Irreversible crushing and material damage.

- ► Mount pipe saws only on stable, load-bearing and non-tilting workbenches.
- ► Mount GF 6 only on the short side of the folding workbench (code 790 052 030).
- ► Do **not** mount GF 8 and GF 12 on the folding workbench (code 790 052 030).

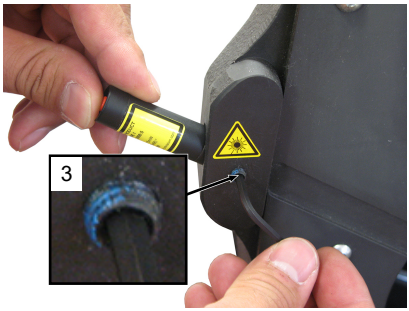
Folding workbench (code 790 052 030)

8.2 Mounting the line laser

NOTICE!

In order to protect the line laser on the GF saws against transportation damage it is supplied separately and has to be mounted on the machine before commissioning. We recommend dismantling the line laser before every transportation of the machine.

1. Take the Indicut line laser (1) out of the packaging and insert it together with the Plexiglas pane into the opening (2) of the line laser holder on the machine intended for this purpose.
2. Switch on the line laser and align it. The line of the laser has to be at a right angle to the pipe axis.
3. Carefully tighten the threaded pin M6x5 (3) (Code 445 001 210) of the line laser holder using an Allen key (Code 024 387 003).

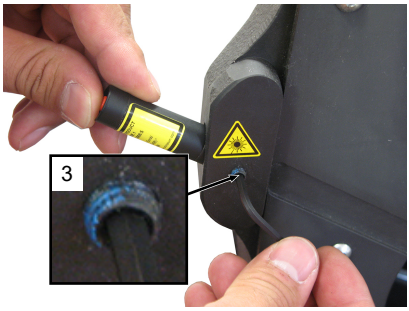


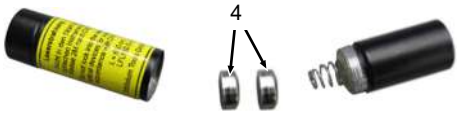
8.3 Replacing the batteries of the line laser

NOTICE!

Opening, modifying or removing the protective covers and housings is prohibited, except to change the batteries. Follow the maintenance instructions (*see chapt.* Maintenance [▶ 73]).

1. Unscrew the threaded pin M6x5 (3) (code 445 001 210) of the line laser holder from the cover plate using an Allen key (code 024 387 003).
2. Unscrew the line laser and replace the batteries (4) (pack of 10 button cells, 1.5 V = code 790 142 124).
3. Screw the parts of the line laser again.
4. Place the line laser back onto the holder, align and retighten it using the threaded pin M6x5 (3).





8.4 GF 4: Fitting the clamping jaws

Clamping jaw characteristics, *see chapt.* --- FEHLENDER LINK ---

8.4.1 Fitting the clamping jaws

1. Loosen the hexagon screws on the side of the vice using the multifunctional crank (1).
2. Insert the clamping jaws.
3. Retighten the hexagon screws.

8.5 Fitting the saw blade, bevel cutter, supplemental bevel cutter

WARNING

When switching the motor on, the machine may revolve around the pipe uncontrollably, automatically!

Various injuries and damage to property.

- ► In their home position, the saw blade or bevel cutter must not touch the pipe.
- ► Make sure that the slide housing is in the home position when the cutting process starts.
- ► Firmly clamp the pipe to be processed in the vice.
- ► Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.
- ► Before switching the motor on, make sure that the gap between the saw blade or bevel cutter and the pipe is sufficient, and that the pipe is securely clamped in the vice.
- ► Place adequate supports under the pipe (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44].

WARNING

Parts thrown off/tool breakage!

Various injuries and damage to property.

- ► **No** damaged or deformed saw blades and bevel cutters should be used.
- ► In the event of tool breakage do **not** run a new tool into the old cut because this can cause a repeat tool breakage (course of action in case of tool breakage *see chapt.* What to do in the event of tool breakage [▸ 75]).
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▸ 50])and speed (*see chapt.* Determining and setting the speed [▸ 54]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

CAUTION

Improper use of accessories

Damage to property!

- ► When using a supplemental bevel cutter only use the special Orbitalum Tools clamping plate (code 790 046 188), not the clamping plate included in the delivery of the saw.
- ► Damaged or deformed saw blades and bevel cutters must not be used.
- ► Saw blades/bevel cutters must be free of chips and dirt.
- ► Use original tools from Orbitalum Tools only.
- ► Mount the saw blade/bevel cutter or supplemental bevel cutter with the inscription facing you.
  The toothing then points in the right direction.

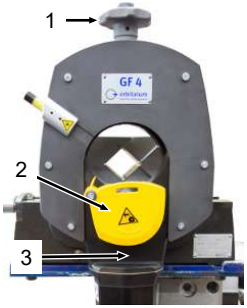
NOTICE!

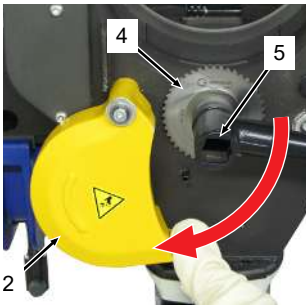
Before fitting the saw blade or bevel cutter:

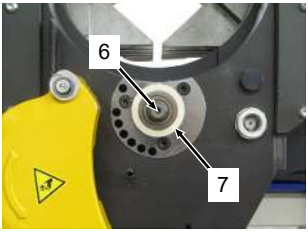
- ► The slide needs to be moved all the way down by turning the star knob. Take *chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▸ 47] into account.

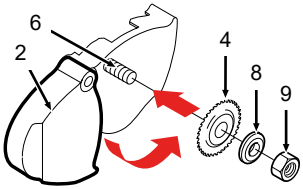
8.5.1 Inserting the saw blade or bevel cutter

1. The slide (3) needs to be moved all the way down by turning the star knob (1).
2. Turn the chip guard (2) down by approx. 90°.
3. Loosen the hexagon nut (9) using the multifunctional crank (5). Remove the clamping plate (8) and the saw blade 4().
4. Clean the saw blade shaft (6) and surroundings using a brush.
5. Fit the saw blade (4) or bevel cutter and clamping plate (8).
   NOTICE! Make sure that the felt ring (7) is situated on the locking sleeve.
6. Tighten the hexagon nut (9) slightly.
7. Move the chip guard (2) back to its original position.





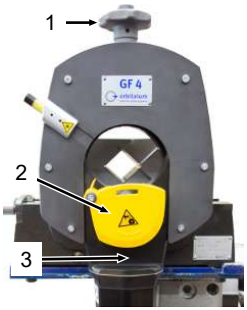


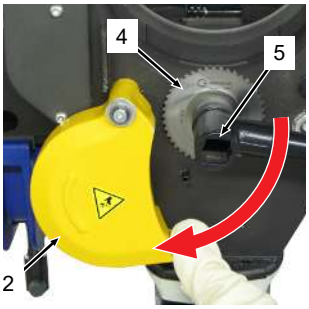


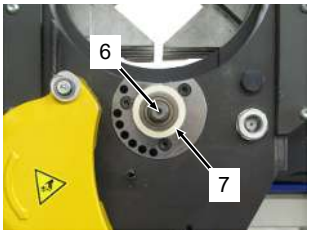
8.5.2 Inserting the saw blade/bevel cutter combination

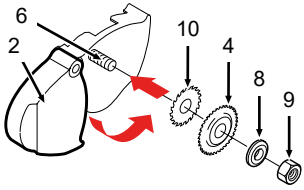
1. The slide (3) needs to be moved all the way down by turning the star knob (1).
2. Turn the chip guard (2) down by approx. 90°.
3. Loosen the hexagon nut (9) using the multifunctional crank (5). Remove the clamping plate (8) and the saw blade 4().
4. Clean the saw blade shaft (6) and surroundings using a brush.

5. Fit the supplemental bevel cutter (10), saw blade (4) and special clamping plate (8) (code 790 046 188).
   NOTICE! Make sure that the felt ring (7) is situated on the locking sleeve.
6. Tighten the hexagon nut (9) slightly.
7. Move the chip guard (2) back to its original position.







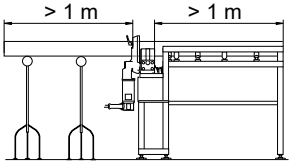


8.6 Clamping the pipe and adjusting the pipe dimension

WARNING

Falling objects or tilting and bending pipes!

- ► Wear safety shoes (in accordance with EN ISO 20345, at least S1).
- ► Support pipes whose length exceeds 1 m with a pipe support or a pipe feeder or extension unit.



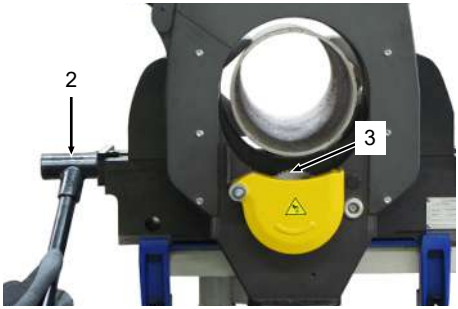
8.6.1 Saw blade without supplemental bevel cutter

CAUTION

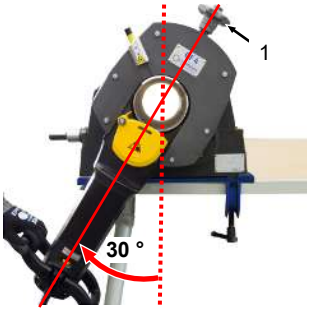
Damage due to incorrectly adjusted slide!

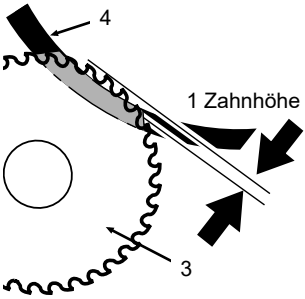
Damage to the pipe and saw blade.

► A slide that is not positioned completely downwards can press the pipe against the saw blade when tightened.



1. The slide needs to be moved all the way down by turning the star knob (1).
2. Insert the pipe so that it almost reaches the saw blade (3) and tighten using the multifunctional crank (2).
3. Use the motor grip to swing the motor approx. 30° clockwise until the saw blade reaches the cut-in position.
4. Turn the star knob (1) until the toothing of the saw blade (3) protrudes into the pipe inside (4). The height of the toothing that has to project into the pipe inside corresponds to about 1 tooth height (differs depending on the saw blade).
5. If desired, perform a test cut (*see chapt.* Cutting the pipe with the AVM [▷ 60] for machines with AVM, *chapt.* Cutting the pipe with the MVM [▷ 63] for machines with MVM and *chapt.* Cutting the pipe in manual mode [▷ 68] for working in manual mode), check the cut and readjust the star knob (1) if necessary.
6. Turn the motor back to its home position.
   When working with the AVM: Keep the STOP button (5) pressed and turn the motor back to its home position.

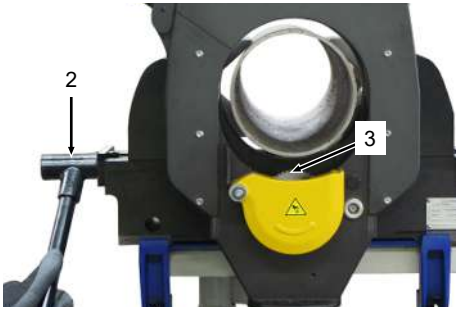




NOTICE!		**Star knob scale marking: A readjustment by one graduation mark results in a radial feed or bevel alteration of 0.1 mm (0.004"), for the GF 6 of 0.2 mm (0.008").**

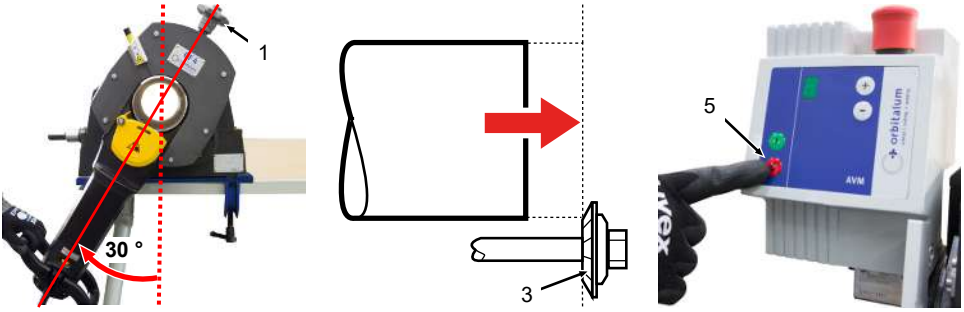
8.6.2 Saw blade with supplemental bevel cutter

CAUTION		**Damage due to incorrectly adjusted slide!** Damage to the pipe and saw blade. ► A slide that is not positioned completely downwards can press the pipe against the saw blade when tightened.



1. The slide with saw blade and supplemental bevel cutter needs to be moved all the way down by turning the star knob (1).
2. Insert the pipe so that it almost reaches the saw blade (3) and tighten using the multifunctional crank (2).
3. Use the motor grip to swing the motor approx. 30° clockwise until the saw blade reaches the cut-in position.
4. Turn the star knob (1) until the toothing of the supplemental bevel cutter (3) covers the wall thickness of the pipe.

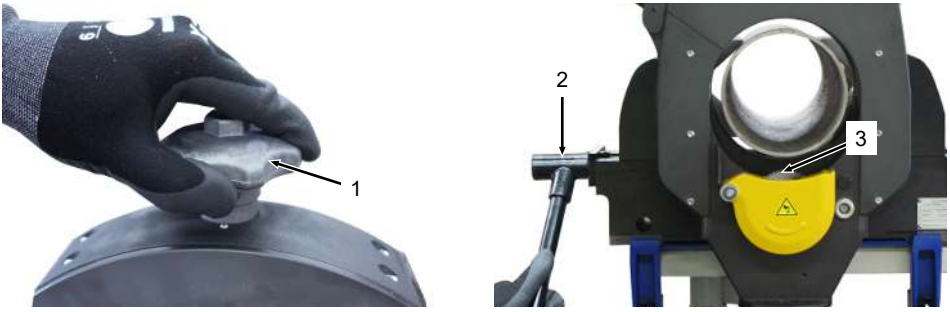
5. If desired, perform a test cut (*see chapt.* Cutting and beveling pipes with the AVM at the same time [▸ 62] for machines with AVM, *chapt.* Cutting and beveling pipes with the MVM at the same time [▸ 66] for machines with MVM and *chapt.* Cutting and beveling pipes in manual mode at the same time [▸ 70] for working in manual mode), check the cut and readjust the star knob (1) if necessary.
6. Turn the motor back to its home position.
   When working with the AVM: Keep the STOP button (5) pressed and turn the motor back to its home position.



NOTICE!		**Star knob scale marking: A readjustment by one graduation mark results in a radial feed or bevel alteration of 0.1 mm (0.004"), for the GF 6 of 0.2 mm (0.008").**

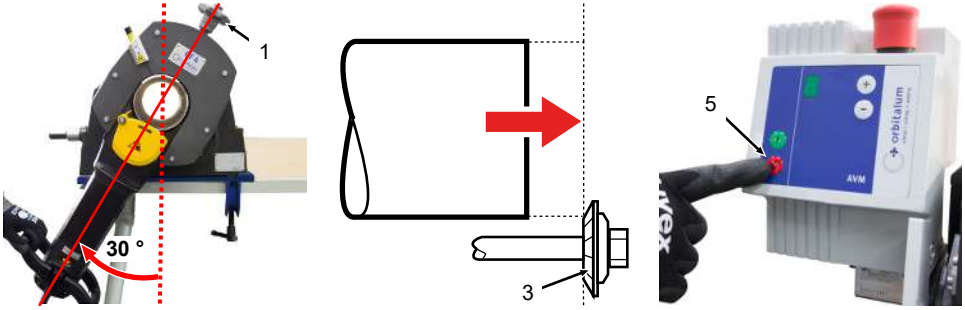
8.6.3 Adjusting the bevel cutter

CAUTION		**Damage due to incorrectly adjusted slide!** Damage to the pipe and saw blade. ► A slide that is not positioned completely downwards can press the pipe against the saw blade when tightened.



1. Move the slide with bevel cutter all the way down by turning the star knob (1).

2. Insert the pipe so that it almost reaches the bevel cutter (3) (the pipe must not project over the cutter) and tighten using the multifunctional crank (2).
3. Use the motor grip to swing the motor approx. 30° clockwise until the bevel cutter reaches the cutting position.
4. Turn the star knob (1) until the toothing of the bevel cutter (3) covers the wall thickness of the pipe and reaches the desired bevel position.
5. If desired, perform a test bevel (beveling pipe, *see chapt.* Beveling the pipe with the AVM [▶ 61] for machines with AVM, *chapt.* Beveling the pipe with the MVM [▶ 65] for machines with MVM and *chapt.* Beveling the pipe in manual mode [▶ 69] for working in manual mode), check the bevel and readjust the star knob (1) if necessary.
6. Turn the motor back to its home position.
   When working with the AVM: Keep the STOP button (5) pressed and turn the motor back to its home position.



NOTICE!	**Star knob scale marking: A readjustment by one graduation mark results in a radial feed or bevel alteration of 0.1 mm (0.004"), for the GF 6 of 0.2 mm (0.008").**

8.7 Determining and setting the speed

NOTICE!	**Select low speed for tough and high-strength materials and large wall thicknesses.**

8.7.1 Standard values for spindle speed and feed force level (AVM)

PIPE MATERIAL	RPM CONTROL SETTING (1)	SPINDLE SPEED (RPM)	FEED FORCE LEVEL AVM*
High-alloyed stainless steels	1 - 2	40 - 65	L - 2
Low-alloyed stainless steels	2 - 4	65 - 150	L - 4
Structural steel	4 - 6	150 - 215	5 - 9

The feed force level and spindle speed may be varied depending on the thickness and diameter of the pipe wall.

NOTICE!

- ► When first starting to process the pipe with the AVM a low feed force level is recommended, which may be increased later. Higher values result in more chip production, possibly in greater wear on tools as well. The intelligent control of the AVM continuously monitors the feed force as a function of the required output.
- ► When cutting thin-walled pipes (wall thickness 3 - 5 mm), always start with level 1 and select a higher level afterwards.
- ► Select the feed force level (L - 9) using the ⊕/⊖ buttons on the AVM display (for standard values, see the table above).

9 Operation

DANGER

Machine startup due to unintentionally pressing the ON/OFF button!

Fatal electric shock.

Various injuries and damage to property.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

DANGER

When the slide housing is rotating, excess lubricant can get into the motor unit!

Fatal electric shock.

► Remove excess lubricant from the machine after every cut.

DANGER

Unexpected start up!

Severe injury or death.

► Electric drive: Before connecting the machine to the power supply the ON/OFF switch must be switched off.

► Battery drive: When connecting the battery to the motor, do not press the ON/OFF button.

DANGER

Catching of loose/long clothing, long hair or jewelry by rotating machine parts!

Severe injury or death.

► Wear tight-fitting clothing when using the machine.

► Secure long hair against being caught.

WARNING

Parts thrown off/tool breakage!

Various injuries and damage to property.

- ► Do not process pipe loose in the vice.
- ► Damaged or deformed saw blades and bevel cutters must not be used.
- ► In the event of tool breakage do not run a new tool into the old cut because this can cause a repeat tool breakage (course of action in case of tool breakage, *see chapt.* What to do in the event of tool breakage [▶ 75]
- ► Firmly clamp the pipe to be processed in the vice.
- ► Change worn tool immediately.
- ► Ensure proper mounting of the cutting tools.
- ► The pipe dimension must be adjusted properly; when cutting, the saw blade must plunge through the pipe wall entirely.
- ► Prevent tool breakage by means of low (adequate) feed force, correct adjustment of the dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]) and speed (*see chapt.* Determining and setting the speed [▶ 54]).
- ► Hold on to the motor unit tightly by the handle, and guide it with low (adequate) feed force during the machining process.

WARNING

Danger from falling machine and pipe!

Irreversible crushing.

- ► Check machine condition and secure it to prevent it falling.
- ► Ensure that the machine has a solid footing and stands on a sufficiently stable substrate.
- ► Place sufficient supports under the tube.

WARNING

Fingers jammed between the clamping unit, clamping shells and tube!

Irreversible crushing.

- ► Do **not** place fingers between the clamping unit, clamping shells and pipe.
- ► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug.

WARNING

Body parts can get caught between the cutting tool and the pipe!

Severe injury.

Do not put body parts between the cutting tool and the pipe.

WARNING

Flying hot and sharp chips, pipe surfaces, cutting edges and tools!

Danger of injury to eyes and hands.

- ► Do not reach into the rotating tool during working.
- ► Never work without an installed cover hood or protection.
- ► Wear recommended protective clothing, as described in *chapt.* .
- ► At the end of each working cycle, switch off the machine, wait until the machine/tool stops running and pull the mains plug or remove the battery. Remove chips with snug-fitting safety shoes (according to DIN EN 388 and EN 407) with a suitable tool (e.g. tongs).
- ► Ensure that the cover hood or protection is functional.

CAUTION

Restarting the machine after blockage!

Various injuries and damage to property.

- ► In case of blockage, always disconnect the machine from the power supply before eliminating the problem. In the case of battery drives remove the battery.
- ► If necessary, remove tensioned parts before restarting the machine.

CAUTION

Vapor when working with lubricants!

Damage to lungs, skin and the environment.

- ► Only use original lubricant recommended by Orbitalum Tools.

9.1 Processing the pipe with the AVM

For processing the pipe with the MVM, *see from chapt.* Processing the pipe with the MVM [▶ 62].

For manual mode without the AVM or MVM, *see from chapt.* Processing the pipe in manual mode [▶ 66].

NOTICE!

Operate the AVM in conjunction with Orbitalum pipe saws GF 4, GF 6, GF 8 or GF 12 only.

- ► Do **not** connect any external devices to the AVM socket.

9.1.1 Shutdown (including in case of emergency)

WARNING

EMERGENCY STOP function not available by unplugging the power plug!

Various injuries and damage to property.

- ► **Do not** use angled power plugs.
- ► **Do not** use click-in socket outlets and click-in power plugs (blue CEE power plugs) for power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable.
- ► Only use genuine spare parts from Orbitalum Tools.
- ► Ensure free access to the power plug.
- ► Remove from the danger zone until the machine stops.
- ► A radial space requirement/freedom of movement of approx. 2 m around the machine is required for people.

NOTICE!

EMERGENCY STOP button on the AVM:

- ► Only press in an emergency. Pressing the EMERGENCY STOP button (1) interrupts the power supply. Unlock the button to restart.

EMERGENCY STOP button on the AVM

ON/OFF toggle switch on the motor

- ► Activate by switching the ON/OFF toggle switch (2). If the ON/OFF toggle switch (2) fails to work, pull the plug or vacate the danger zone as quickly as possible and then pull the plug.

9.1.2 Commissioning the AVM

1. Connect the pipe saw with swivel cable to the AVM.
2. Connect the mains cable of the AVM to the main power supply.

9.1.3 Cutting the pipe with the AVM

NOTICE!

If pipe saws have not been used for a relatively long time:

- ► Turn the saw motor by 180°.
- ► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▶ 60]); let the saw motor run for approx. 10 s.

⇨ All gear parts are lubricated as a result.

NOTICE!

Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.

NOTICE!

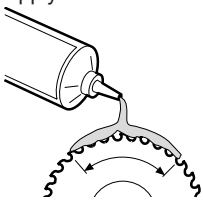
Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.

NOTICE!

For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.

1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]).
2. Adjust the saw blade to the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]).
3. If necessary, tighten the hexagon nut of the saw blade fixture slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▶ 47])
4. Adjust the spindle speed and the feed force level (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▶ 55]).
5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44]

6. Apply saw blade lubricant to the saw blade:



Recommendation:
- up to 2": at least every 3 cuts,
- over 2" and with chrome and high-quality steel pipes: prior to every cut.

7. Switch the pipe saw on.
8. Press the start button.

⇨ This starts the pipe processing. The saw shuts off automatically after a correct cut has been made.

9.1.4 Beveling the pipe with the AVM

NOTICE!

If pipe saws have not been used for a relatively long time:

► Turn the saw motor by 180°.

► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▸ 60]); let the saw motor run for approx. 10 s.

⇨ All gear parts are lubricated as a result.

NOTICE!

Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.

NOTICE!

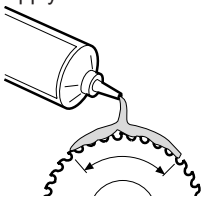
Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.

NOTICE!

For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.

1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▸ 50]).
2. Adjust the bevel cutter to the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▸ 50]).
3. If necessary, tighten the hexagon nut of the bevel cutter fixture slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▸ 47]

4. Adjust the spindle speed and the feed force level (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▶ 55]).
5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt*. Pipe feeder (base and extension unit, mobile workstation) [▶ 44].
6. Apply saw blade lubricant to the bevel cutter:



   Recommendation:
   - up to 2": at least every 3 cuts,
   - over 2" and with chrome and high-quality steel pipes: prior to every cut.
7. Switch the pipe saw on.
8. Press the ⏻ start button.

⇨ This starts the pipe processing. The saw shuts off automatically after a correct bevel has been made.

9.1.5 Cutting and beveling pipes with the AVM at the same time

- Pipes with a wall thickness of up to 7 mm (0.276") can be cut and beveled simultaneously.
- When using a supplemental bevel cutter the saw motor has to be turned more slowly than when sawing because two machines are being used at the same time. The work procedure is the same as described in *chapt.* Cutting the pipe with the AVM [▶ 60].

9.2 Processing the pipe with the MVM

For processing the pipe with the AVM, *see chapt.* Processing the pipe with the AVM [▶ 58].

For manual mode without the AVM or MVM, *see from chapt.* Processing the pipe in manual mode [▶ 66].

9.2.1 Shutdown (including in case of emergency)

WARNING

EMERGENCY STOP function not available by unplugging the power plug!

Various injuries and damage to property.

- ► **Do not** use angled power plugs.
- ► **Do not** use click-in socket outlets and click-in power plugs (blue CEE power plugs) for power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable.
- ► Only use genuine spare parts from Orbitalum Tools.
- ► Ensure free access to the power plug.
- ► Remove from the danger zone until the machine stops.
- ► A radial space requirement/freedom of movement of approx. 2 m around the machine is required for people.

ON/OFF toggle switch on the motor

► Activate by switching the ON/OFF toggle switch (2). If the ON/OFF toggle switch (2) fails to work, pull the plug or vacate the danger zone as quickly as possible and then pull the plug.

9.2.2 Cutting the pipe with the MVM

NOTICE!

If pipe saws have not been used for a relatively long time:

- ► Turn the saw motor by 180°.
- ► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▶ 60]); let the saw motor run for approx. 10 s.

⇨ All gear parts are lubricated as a result.

NOTICE!

Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.

NOTICE!

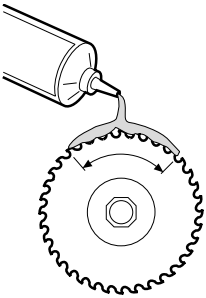
Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.

NOTICE!

For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.

1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]).
2. Adjust the saw blade to the pipe dimension (*see chapt.* Saw blade without supplemental bevel cutter [▶ 51]).
3. If necessary, tighten the hexagon nut of the saw blade fixture slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▶ 47]
4. Adjust the spindle speed (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▶ 55]).
5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44].
6. Apply saw blade lubricant to the saw blade:

   Recommendation:
   - up to 2": at least every 3 cuts,
   - over 2" and with chrome and high-quality steel pipes: prior to every cut.
7. Switch the pipe saw on.
8. Carefully turn the MVM handwheel (1) clockwise until the pipe wall is pierced.
9. Continue to steadily turn the pipe until it is cut off.
10. Switch the machine off and wait until the machine/tool stops running.

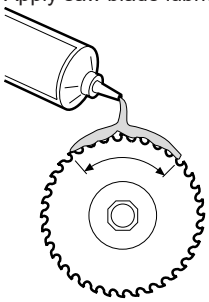


9.2.3 Beveling the pipe with the MVM

NOTICE!		**If pipe saws have not been used for a relatively long time:** ► Turn the saw motor by 180°. ► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▷ 60]); let the saw motor run for approx. 10 s. ⇨ All gear parts are lubricated as a result.
NOTICE!		**Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.**
NOTICE!		**Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.**
NOTICE!		**For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.**

1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▷ 50]).
2. Adjust the bevel cutter to the pipe dimension (*see chapt.* Adjusting the bevel cutter [▷ 53]).
3. If necessary, tighten the hexagon nut of the bevel cutter fixture slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▷ 47]
4. Adjust the spindle speed (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▷ 55]).

5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44].
6. Apply saw blade lubricant to the bevel cutter:



   Recommendation:
   - up to 2": at least every 3 cuts,
   - over 2" and with chrome and high-quality steel pipes: prior to every cut.
7. Switch the pipe saw on.
8. Carefully turn the MVM handwheel (1) clockwise until the bevel cutter is engaged.
9. Continue to steadily turn the pipe until it is beveled.
10. Switch the machine off and wait until the machine/tool stops running.

9.2.4 Cutting and beveling pipes with the MVM at the same time

- Pipes with a wall thickness of up to 7 mm (0.276") can be cut and beveled simultaneously.
- When using a supplemental bevel cutter the saw motor has to be turned more slowly than when sawing because two machines are being used at the same time. The work procedure is the same as described in *chapt.* Cutting the pipe with the AVM [▶ 60].

NOTICE!

If necessary, lubricate the saw blade and the supplemental bevel cutter again during work.

For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.

The evenness of the bevel height is subject to the roundness of the pipe.

9.3 Processing the pipe in manual mode

For processing the pipe with the AVM, *see chapt.* Processing the pipe with the AVM [▶ 58]

For processing the pipe with the MVM, see from chapt. Processing the pipe with the MVM [▶ 62]

9.3.1 Shutdown (including in case of emergency)

WARNING

EMERGENCY STOP function not available by unplugging the power plug!

Various injuries and damage to property.

- ► **Do not** use angled power plugs.
- ► **Do not** use click-in socket outlets and click-in power plugs (blue CEE power plugs) for power connection, otherwise the EMERGENCY STOP does not function. The user must check whether the power plug can be pulled out of the outlet by the cable.
- ► Only use genuine spare parts from Orbitalum Tools.
- ► Ensure free access to the power plug.
- ► Remove from the danger zone until the machine stops.
- ► A radial space requirement/freedom of movement of approx. 2 m around the machine is required for people.

ON/OFF toggle switch on the motor

- ► Activate by switching the ON/OFF toggle switch (2). If the ON/OFF toggle switch (2) fails to work, pull the plug or vacate the danger zone as quickly as possible and then pull the plug.

9.3.2 Cutting the pipe in manual mode

NOTICE!

If pipe saws have not been used for a relatively long time:

- ► Turn the saw motor by 180°.
- ► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▶ 60]); let the saw motor run for approx. 10 s.

⇨ All gear parts are lubricated as a result.

NOTICE!

Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.

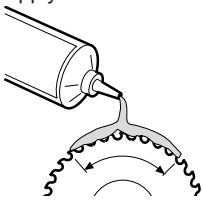
NOTICE!

Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.

NOTICE!

For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.

1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]).
2. Adjust the saw blade to the pipe dimension (*see chapt.* Saw blade without supplemental bevel cutter [▶ 51]).
3. If necessary, tighten the hexagon nut of the saw blade fixture slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▶ 47]
4. Adjust the spindle speed (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▶ 55]).
5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44].
6. Apply saw blade lubricant to the saw blade:



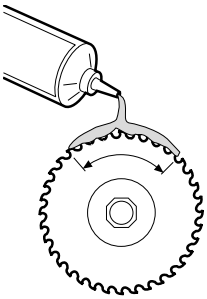
Recommendation:
- up to 2": at least every 3 cuts,
- over 2" and with chrome and high-quality steel pipes: prior to every cut.

7. Switch the motor on.
8. Using the motor grip (1), carefully turn the saw clockwise until the pipe wall is pierced.

9. Continue to steadily turn the pipe until it is cut off.
10. Switch the machine off and wait until the machine/tool stops running.

9.3.3 Beveling the pipe in manual mode

NOTICE!		**If pipe saws have not been used for a relatively long time:** ► Turn the saw motor by 180°. ► Switch the AVM and pipe saw on (*see chapt.* Cutting the pipe with the AVM [▸ 60]); let the saw motor run for approx. 10 s. ⇨ All gear parts are lubricated as a result.
NOTICE!		**Pull the multifunctional crank off of the spindle before the slide housing starts to rotate.**
NOTICE!		**Use only saw blade lubricant/lubricating paste (no oils) from Orbitalum Tools (e.g. GF LUB or GF TOP). Keep machine clean and thoroughly remove lubricant residue on the machine. The clamping area of the clamping jaws must be free of dirt, chips and lubricant.**
NOTICE!		**For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.**



1. Adjust the pipe dimension (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50]).
2. Adjust the bevel cutter to the pipe dimension (*see chapt.* Adjusting the bevel cutter [▶ 53]).
3. If necessary, tighten the hexagon nut slightly (*see from chapt.* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▶ 47]
4. Adjust the spindle speed (for standard values, *see from chapt.* Standard values for spindle speed and feed force level (AVM) [▶ 55]).
5. Move the pipe forward in the vice until reaching the desired pipe length and clamp it.
   Pipes whose length exceeds 1 m have to be supported with a pipe feeder (*see chapt.* Pipe feeder (base and extension unit, mobile workstation) [▶ 44].
6. Apply saw blade lubricant to the saw blade:
   Recommendation:
   - up to 2": at least every 3 cuts,
   - over 2" and with chrome and high-quality steel pipes: prior to every cut.
7. Switch the motor on.
8. Using the motor grip (1), carefully turn the saw clockwise until the pipe wall is pierced.
   Continue to steadily turn the pipe until it is beveled.
9. Switch the machine off and wait until the machine/tool stops running.

9.3.4 Cutting and beveling pipes in manual mode at the same time

- Pipes with a wall thickness of up to 7 mm (0.276") can be cut and beveled simultaneously.
- When using a supplemental bevel cutter the saw motor has to be turned more slowly than when sawing because two machines are being used at the same time. The work procedure is the same as described in *chapt.* Cutting the pipe in manual mode [▶ 68].

NOTICE!		**If necessary, lubricate the saw blade and the supplemental bevel cutter again during work.** **For continuous operation: After sawing loosen the hexagon nut on the saw blade to prevent damage caused by tension.** **The evenness of the bevel height is subject to the roundness of the pipe.**

10 Maintenance, service and troubleshooting

DANGER

Risk of death from electric shock!

Non-compliance can result in death or severe injury.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

DANGER

Electrical hazards from improperly assembled electrical system!

Fatal electric shock.

► At the end of each working cycle, before transportation, changing tools, cleaning and performing any maintenance, adjustment or repair work, switch off the machine, wait until the machine/tool stops running and pull the mains plug. In the case of battery drives remove the battery and cover the battery.

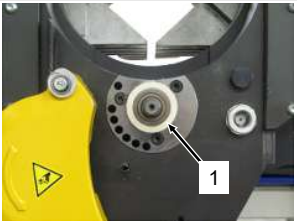
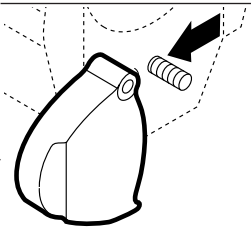
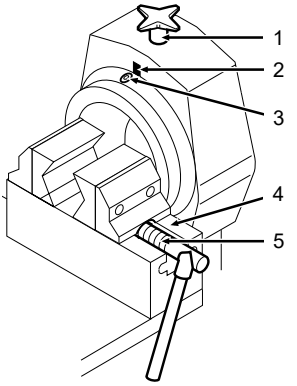
► Repair and maintenance work on the electrical equipment may only be carried out by a qualified electrician.

► Check components for damage, e.g. cables, plugs

NOTICE!

Some of the tasks named are heavily dependent on use and ambient conditions. The stated cycles are minimum values. In individual cases, different maintenance cycles are possible. To ensure machine safety, have the maintenance performed annually by authorized service points with VDE testing. Should the machine not function as described above, it must also be sent to an authorized service point.

10.1 Maintenance

TIME FRAME	ACTIVITY	
Before beginning work	► Remove any chips and dirt from the saw blades.	
	► Keep the vent holes free from chips.	
	► Check the oil level of the gear and top up if necessary (*see chapt.*).	
	► Make sure that the felt ring (1) is situated on the locking sleeve, replace if necessary. Felt ring for GF 4, GF 6, GF 8, GF 12: code 790 046 168	
During every cleaning, During every tool change	► Do not use compressed air to clean the area at the end of the shaft, indicated by the arrow, because the shaft seal will otherwise be damaged by invasive chips.	
	► Clean the end of the shaft using a cloth or brush.	
Weekly	► Clean and lubricate: • Star knob spindle (1) • Sliding block (2) • Guide bush (3) • Vice tracks (4) • Vice spindle (5)	

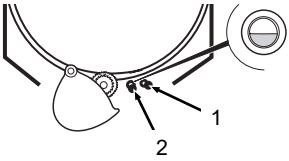
10.1.1 Line laser

► Own maintenance work on the laser is not permitted. The laser is to be returned to the factory for any maintenance or repair work that may be required.

► Opening, modifying or removing the protective covers or housings is prohibited, except to change the batteries.

10.2 Checking the oil level of the gear and topping up

The gears of the pipe saws have an oil level indicator. The oil level should be visible in the middle of the inspection glass.



1. Check the oil level through the inspection glass (2) and top up if necessary.
2. Unscrew the oil filler screw (1).
   Fill with special Orbitalum Tools gear oil.
3. Screw the oil filler screw in and tighten.

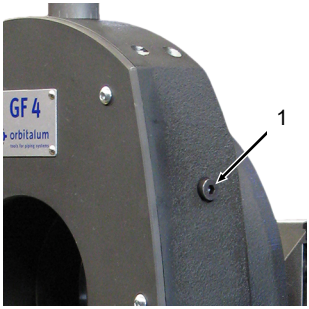
10.3 Cleaning the slide guide

WARNING

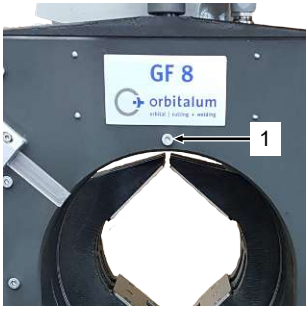
Risk of being injured by an inadequately secured slide!

- ► **Never** remove the slide by pulling it downward.
- ► Tighten the safety screw when installing the slide.

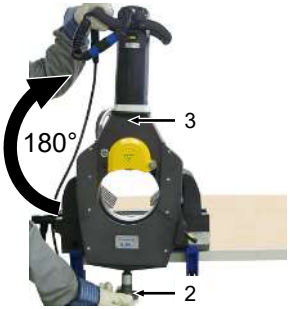
1. Remove the safety screw (1).
2. Turn the slide housing upward by 180°.
3. Turn the star knob (2) counterclockwise.
4. Pull the slide (3) out with the motor upward.
5. Clean the guides of the slide housing and slide. Lightly lubricate both parts using HD 30 engine oil.
6. Reinstall the slide. Tighten the safety screw (1) firmly.



Position of the safety screw (1) on the GF 4 and GF 6 (AVM/MVM).



Position of the safety screw (1) on the GF 8 and GF 12 (AVM/MVM).



10.4 What to do if...? – General troubleshooting

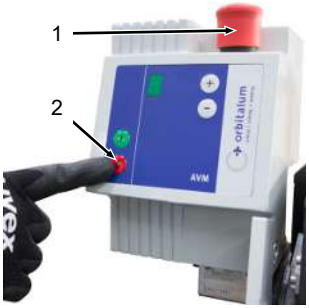
MALFUNCTION	POSSIBLE CAUSE	REMEDY
The motor is not running.	Overload protection has been triggered.	► Set the switch to "0", switch the pipe saw back on and allow to idle for approx. 1 min.
	Restart inhibitor protection has been triggered.	► Set the switch to "0", then switch the pipe saw back on.
The pipe saw cannot turn.	The pipe dimension has not been set correctly.	► Set the pipe dimension correctly (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▸ 50])
The saw blade is not cutting and is slipping.	The hexagon nut on the saw blade shaft has not been tightened.	► Tighten the hexagon nut slightly.
The saw blade is not cutting.	The saw blade was inserted the wrong way round.	► Insert the saw blade properly. The labeling on the saw blade has to be visible.
It is no longer possible to set the pipe dimension.	The slide guide is dirty.	► Clean the slide guide (*see chapt.* --- FEHLENDER LINK ---)
The feeder does not start.	Feed force level or motor speed too low.	► Increase feed force level or motor speed.
Tool breakage.	Feed rate and cutting speed too high.	► Remedy, *see chap.* What to do in the event of tool breakage [▸ 75].

10.4.1 What to do in the event of tool breakage

NOTICE!

In the event of tool breakage do not run a new tool into the old cut because this can cause a repeat tool breakage.

1. Do not let the machine continue to run.
2. Press the EMERGENCY STOP button (1), pull the mains plug and unscrew the hexagon nut on the saw blade.
3. Plug the mains plug back in and allow the EMERGENCY STOP button (1) to disengage.
4. Keep pressing the red stop button (2) on the AVM and, if required, return the machine to its starting position.
5. Mount the new tool; pull the mains plug before changing the tool (mounting the saw blade/bevel cutter, see from *chapt. 8.5* Fitting the saw blade, bevel cutter, supplemental bevel cutter [▶ 47])



10.5 Error messages/troubleshooting the AVM

In the event of malfunctions that affect the AVM the machine will stop automatically. The display will flash at 1-second intervals, alternately showing “F” and a figure from 1 to 6. Before restarting the AVM it has to be disconnected from the mains power supply by pressing the red stop button (2) or by pulling the mains plug.

MALFUNCTION	POSSIBLE CAUSE	REMEDY
Alert F1: Saw motor overload.	Feed force level too high.	► Select a lower feed force level.
Alert F2: Feed motor overload.	Feed force level too high.	► Select a lower feed force level.
	The pipe dimension has not been set correctly.	► Set the pipe dimension correctly (*see chapt.* Clamping the pipe and adjusting the pipe dimension [▶ 50])
	Chips between slide housing and pipe.	► Remove the chips.
	The slide housing is running sluggishly.	► Make the slide housing run smoothly.
	Obstacle in the swiveling range.	► Remove the obstacle.

MALFUNCTION	POSSIBLE CAUSE	REMEDY
Alert F3: The saw motor stops during processing.	The saw motor's power supply is interrupted.	► Check the connecting cable and the plug connections.
	The saw motor's overload protection has been triggered.	► Set the switch to "0", switch the pipe saw back on and allow to idle for approx. 1 min.
Alert F4: Internal control error.	The processor is defective.	► Contact the service department.
Alert F5: Overheating.	The control system's temperature is too high.	► Self-regulating after cooling down.
Alert F6: Internal control error.	Wrong basic setting.	► Contact the service department.
No alert: AVM does not start.	The saw motor is not running or does not run long enough.	► The saw motor has to be running for at least 5 seconds before the AVM can be started.
The feed stops in the cut-in area.	Blocking by chips.	► Remove the chips.
	The pipe dimension has not been set correctly.	► Correct the setting.
	The saw blade is worn out.	► Insert a new saw blade.
The feed does not stop at the stop position. Readout in the display: No decimal point at the stop position.	Light barrier or reflector defective.	► Replace the defective parts (contact the service department, if necessary).
	Light barrier or reflector dirty.	► Clean the dirty parts.

After having corrected the cause of a malfunction, the AVM has to be reconnected to the power supply.

After having switched the saw motor off (to position "0"), it may be restarted.

10.6 Servicing/Customer service

The following data are required to order spare parts:

- Machine model: For example, Pipe Cutting and Beveling Machine GF 4
- Machine No.: See type plate

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

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

11 Declarations of conformities

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):

Rohrtrenn- und Anfasmaschinen
- **GF 4, GF 4 MVM, GF 4 AVM**
- **GF 6, GF 6 MVM, GF 6 AVM**
- **GF 8, GF 8 MVM, GF 8 AVM**
- **GF 12, GF 12 MVM, GF 12 AVM**
- **GFX 3.0**
- **GFX 6.6**
- **PS 4.5 Plus**
- **PS 4.5 Plus Akku**

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

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

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

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

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

- **EN ISO 12100:2011-03**
- **EN ISO 62841-1:2016-07**

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, 22.06.2023:

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):

Rohrtrenn- und Anfasmaschinen
- **GF 4, GF 4 MVM, GF 4 AVM**
- **GF 6, GF 6 MVM, GF 6 AVM**
- **GF 8, GF 8 MVM, GF 8 AVM**
- **GF 12, GF 12 MVM, GF 12 AVM**
- **GFX 3.0**
- **GFX 6.6**
- **PS 4.5 Plus**
- **PS 4.5 Plus Akku**

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 12100:2011-03**
- **EN ISO 62841-1:2016-07**

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

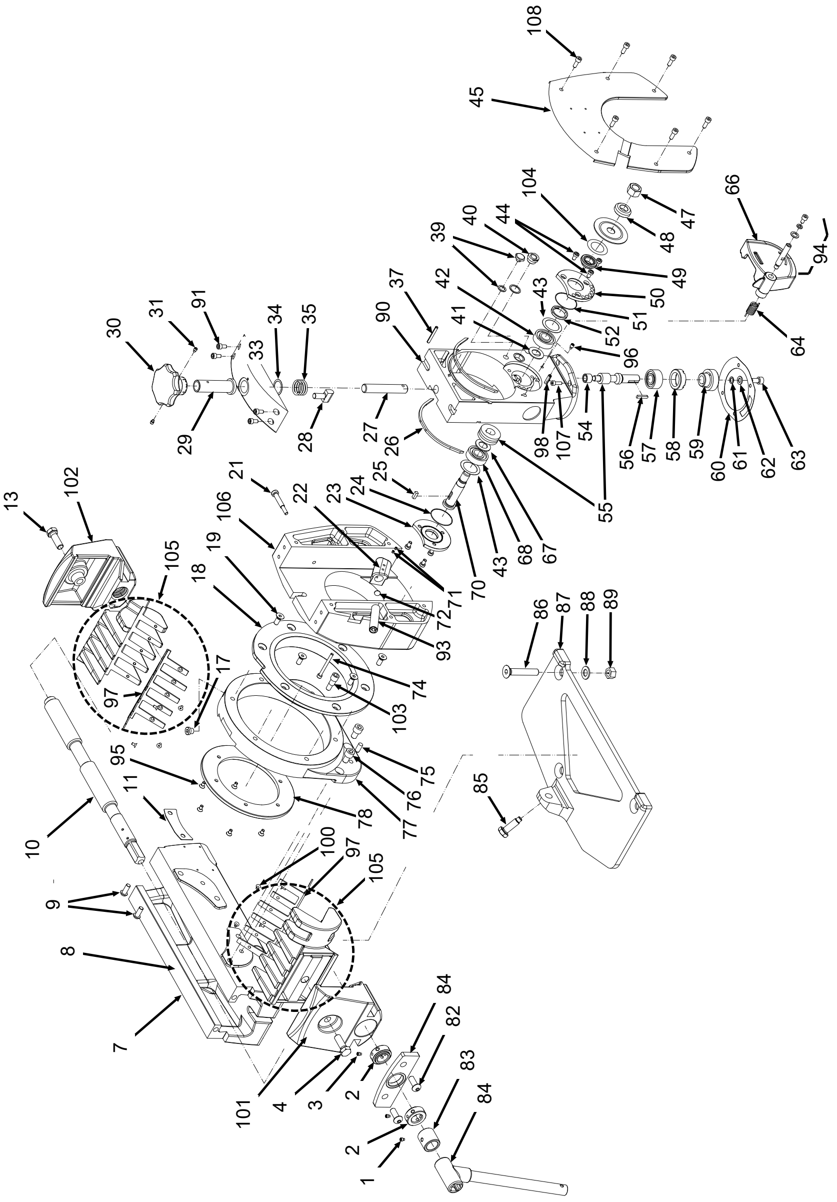
Bestätigt durch: / Confirmed by:

Singen, 11.08.2023:

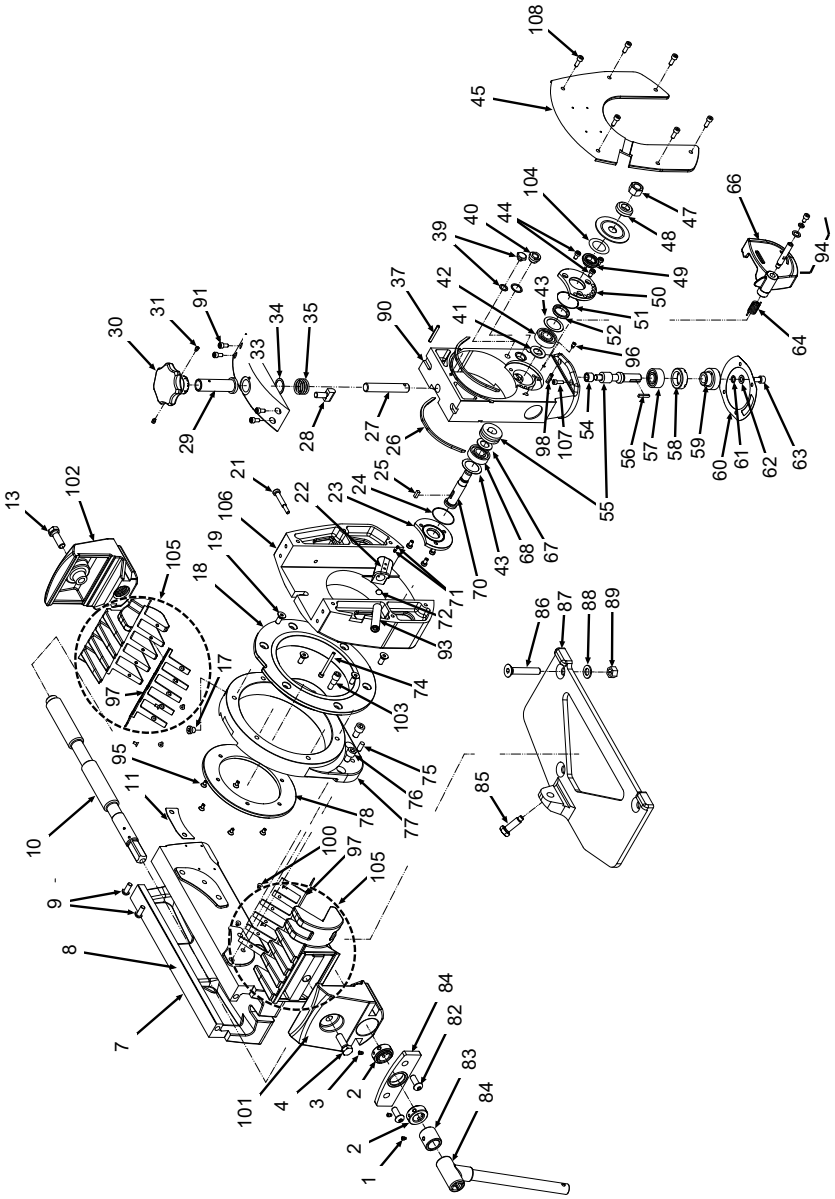
Jürgen Jäckle - Product Compliance Manager

12 ERSATZTEILLISTE / SPARE PARTS LIST

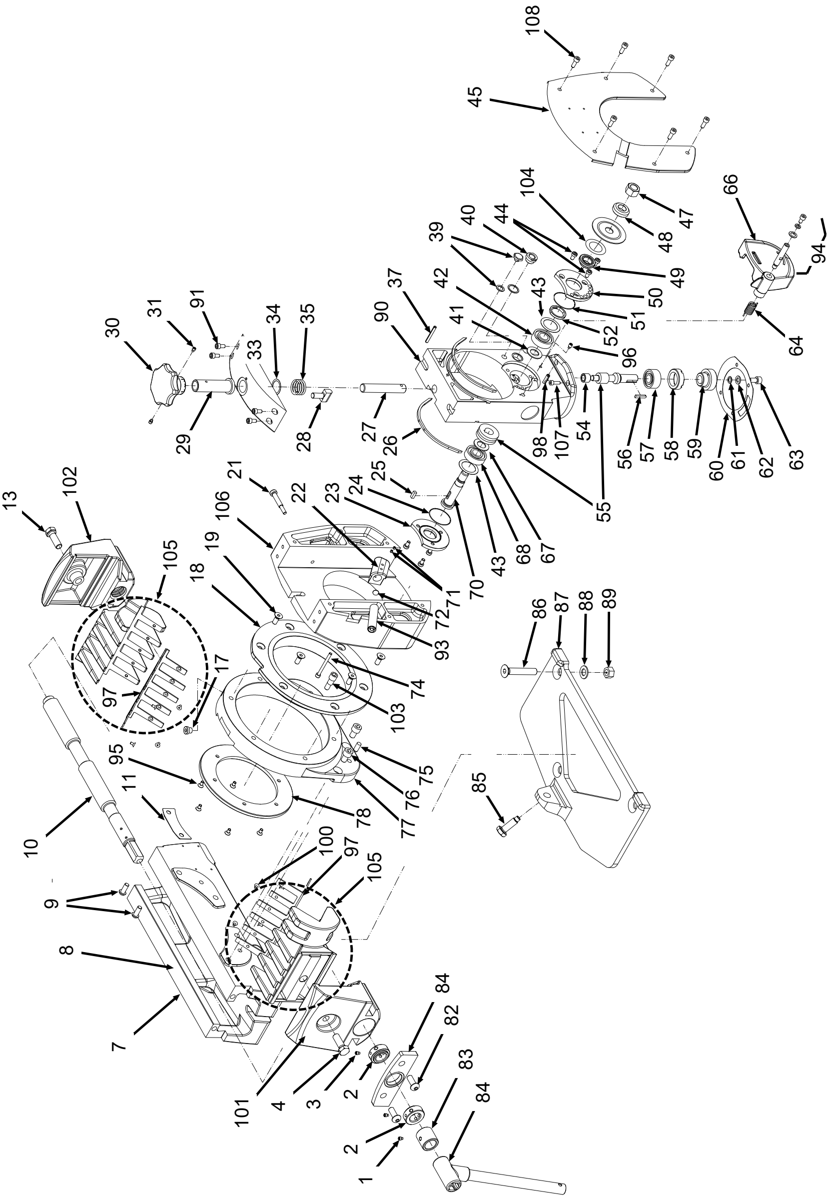
12.1 GF 4


108
45
104
47
66
48
94
49
44
40
39
37
42
43
50
51
52
41
90
96
64
30
31
91
34
35
33
29
28
27
26
98
107
54
56
57
58
59
60
61
62
63
55
67
68
43
70
71
72
25
24
23
22
21
106
13
102
105
19
18
93
74
103
17
97
95
11
10
75
76
77
78
86
87
88
89
85
100
97
105
9
8
7
101
4
3
2
84
82
83
84
2
1

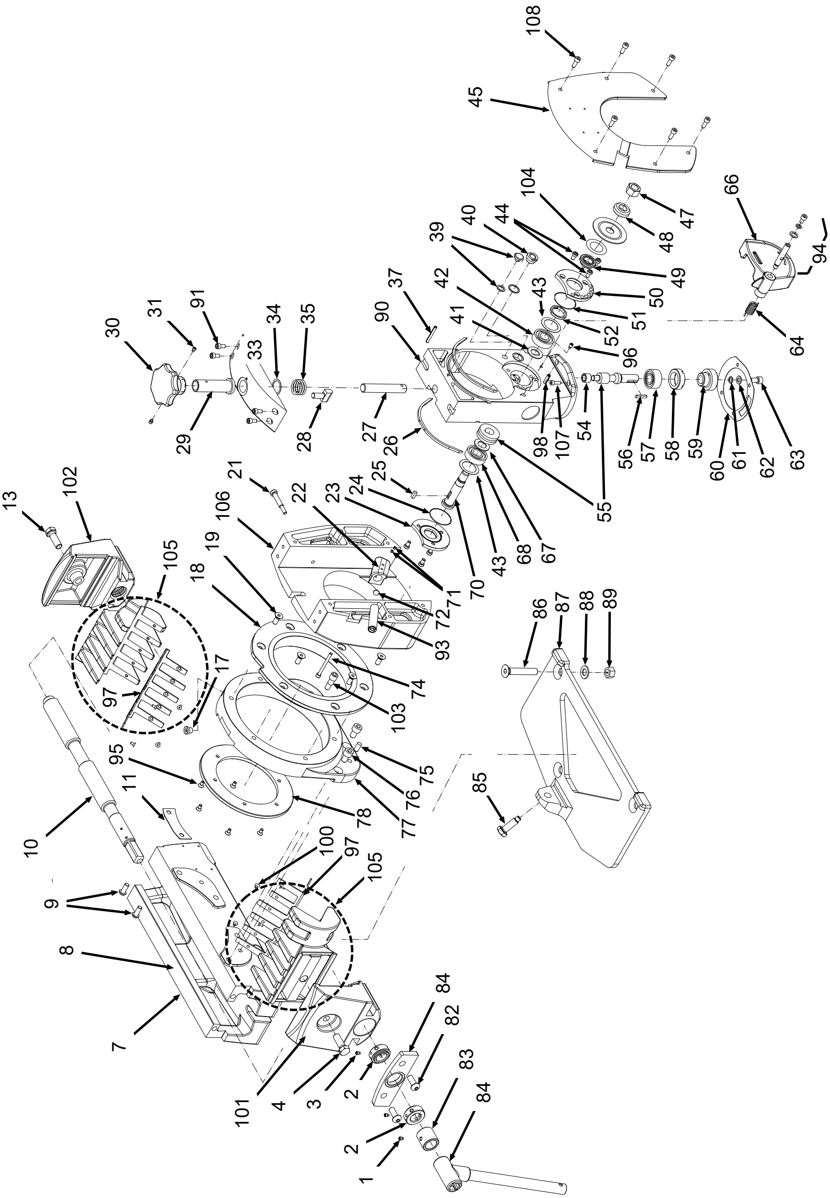
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	445 209 212	1	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round	17	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
2	790 011 511	2	Stellring Adjusting ring	18	790 142 114	1	Führungsbuchse Guide bushing
3	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	19	302 301 269	6	Senkschraube DIN7991-M8x20-8.8 Countersunk screw DIN7991-M8x20-8.8
4	300 005 426	2	Sechskantschraube EN24017-M12x40-8.8-ZN Hexagon screw EN24017-M12x40-8.8-ZN	21	790 142 130	1	Zylinderschraube I-6KT. M8x51.5 Cylinder screw I-6KT. M8x51.5
7	566 320 419	1	Kerbstift ISO8740-8x20-ST Grooved pin ISO8740-8x20-ST	22	790 142 122	1	Halter INDICUT Holder INDICUT
8	790 142 108	1	Gehäuse Housing	23	790 042 183	1	Deckel Cover
9	307 001 269	2	Linsenschraube ISO7380-M8x20-10.9 Oval-head screw ISO7380-M8x20-10.9	24	790 041 209	2	O-Ring 42x1 O-ring 42x1
10	790 012 473	1	Schraubstockspindel Vice spindle	25	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14
11	790 142 486	1	Orbitalum Schild GF 4 Orbitalum label GF 4	26	790 093 171	2	Filzstreifen 4x4 lfm. Felt strip 4x4 rm.
13	300 005 426	2	Sechskantschraube EN24017-M12x40-8.8-ZN Hexagon screw EN24017-M12x40-8.8-ZN	27	790 041 308	1	Gewindespindel Threaded spindle


1
2
2
3
4
7
8
9
10
11
13
17
18
19
21
22
23
24
25
26
27
28
29
30
31
33
34
35
37
39
40
41
42
43
44
45
47
48
49
50
51
52
54
55
56
57
58
59
60
61
62
63
64
66
67
68
70
71
72
74
75
76
77
78
82
83
84
84
85
86
87
88
89
90
91
93
94
95
96
97
97
98
100
101
102
103
104
105
105
106
107
108

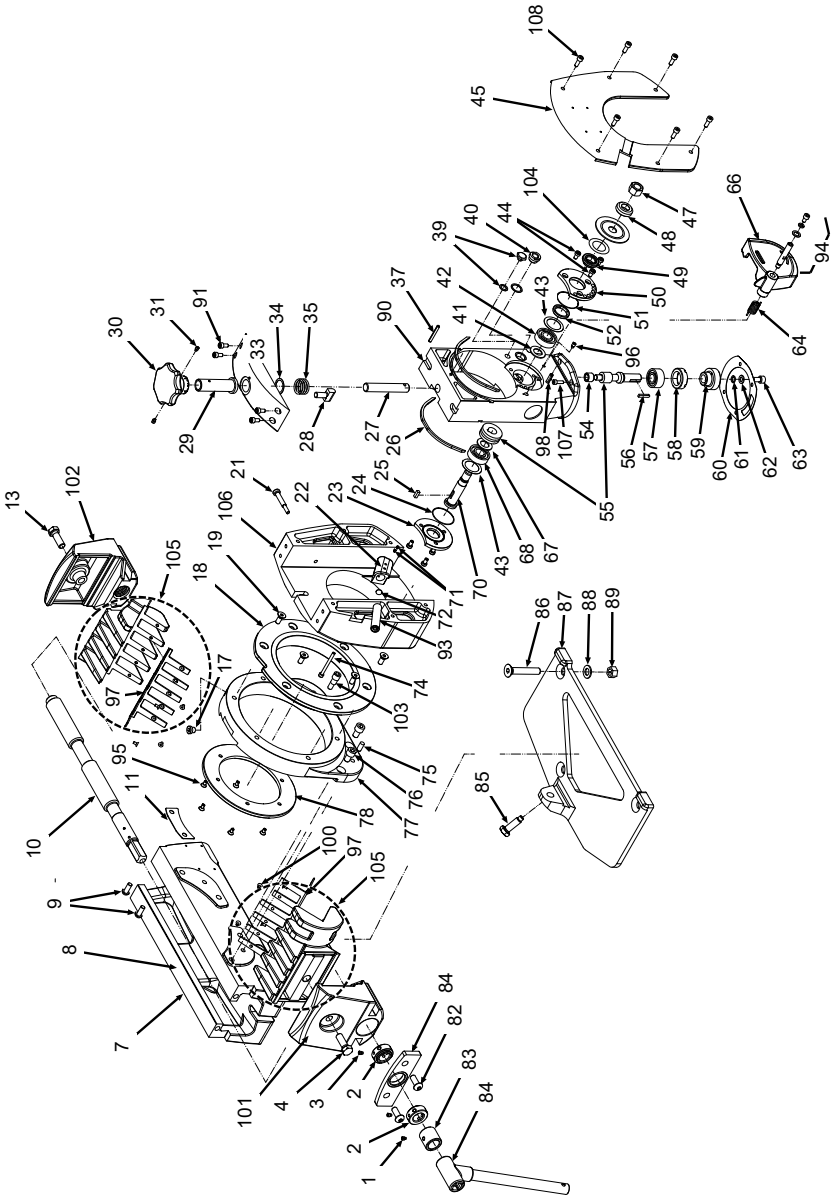
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
28	790 042 121	1	Gleitschuh Slide shoe	41	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
29	790 041 306	1	Gewindebuchse Threaded bushing	42	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
30	790 041 302	1	Sterngriff Star grip	43	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10
31	445 209 212	2	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round		790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
33	790 142 189	1	Abdeckplatte Cover plate		790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
34	790 041 312	20	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1		790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
35	790 041 310	1	Druckfeder 3x28.5x16.2 Pressure spring 3x28.5x16.2	44	305 801 213	6	Zylinderschraube DIN7984-M6x10-8.8 Cylinder screw DIN7984-M6x10-8.8
37	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST	45	790 142 121	1	Deckblech, kpl. Cover plate, cpl.
39	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"	47	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
40	790 042 190	1	Ölschauglas GN541 11 G3/8 A Oil sight glass GN541 11 G3/8 A	48	790 041 188	1	Klemmscheibe Clamping washer


108
45
104
47
48
66
94
40
44
49
39
50
43
51
52
96
64
37
42
41
90
31
91
30
34
35
33
29
28
27
26
98
107
54
56
57
58
59
60
61
62
63
55
21
25
24
23
22
106
102
13
105
19
18
97
17
70
43
68
67
71
72
93
74
103
75
76
77
78
95
11
10
86
87
88
89
85
100
97
105
9
8
7
101
4
3
2
84
82
83
84
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
49	790 041 208	1	Klemmbuchse Clamping sleeve	60	790 142 126	1	Dichtung zu Motor Seal for motor
50	790 042 185	1	Lagerdeckel Bearing cover	61	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN
51	790 041 209	2	O-Ring 42x1 O-ring 42x1	62	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST
52	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4	63	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8
54	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	64	790 042 256	1	Schenkelfeder Leg spring
55	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel	66	790 142 252	1	Späneschutz Chip protection
56	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24	67	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
57	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF	68	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
58	790 041 189	1	Gewindering Threaded ring	70	790 041 185	1	Schneckenradwelle Worm wheel shaft
59	790 142 128	1	Antriebsritzel Drive pinion	71	445 001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H

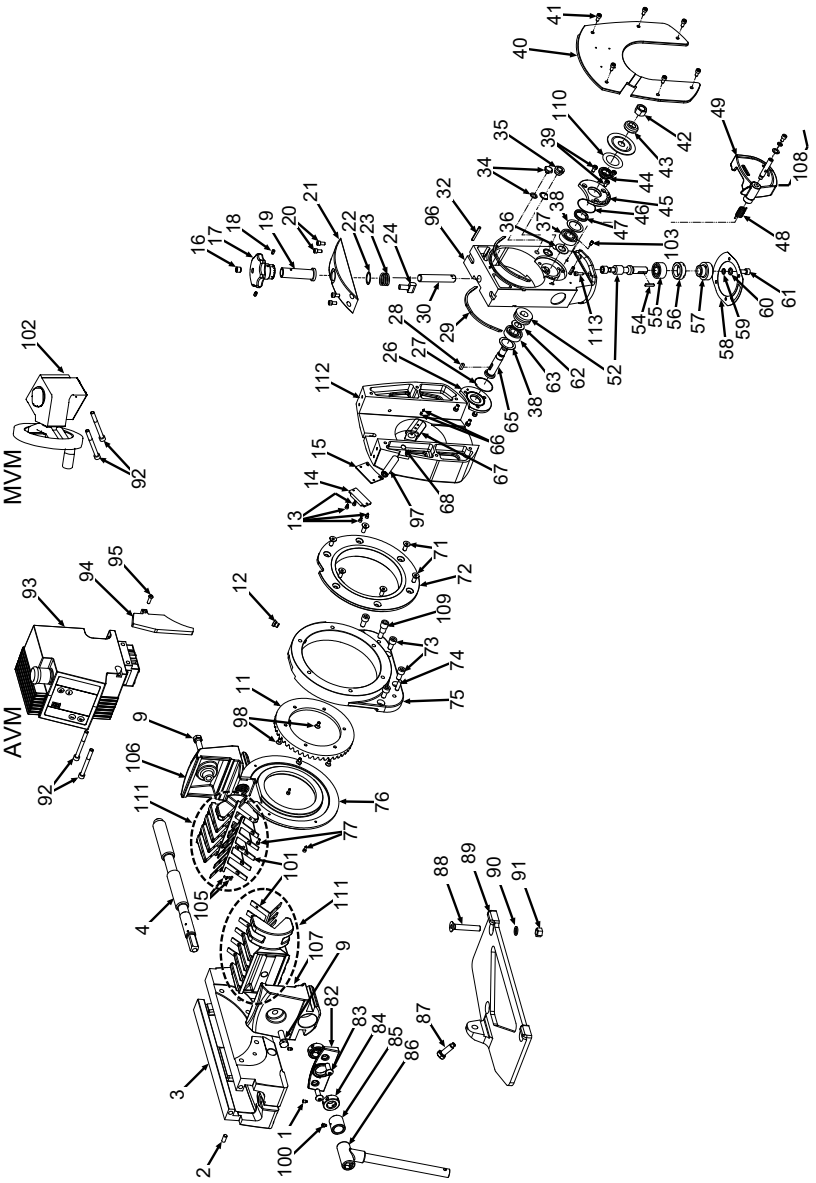

108
45
104
47
48
66
94
39
40
44
49
50
43
51
52
37
42
41
96
64
90
30
31
91
34
35
33
29
28
27
26
98
107
54
56
57
58
59
60
61
62
63
55
21
25
24
23
22
106
13
102
19
18
105
70
43
68
67
71
72
93
86
87
88
89
17
97
74
103
95
11
75
76
77
78
85
10
100
97
105
9
8
7
84
82
83
84
101
4
3
2
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
72	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm	85	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
74	305 505 181	1	Zylinderschraube ISO4762-M5x55-8.8-ZN Cylinder screw ISO4762-M5x55-8.8-ZN	86	302 301 440	3	Senkschraube DIN7991-M12x70-8.8 Multifunctional crank DIN7991-M12x70-8.8
75	565 808 524	1	Zylinderstift DIN7979/ISO8735-8x30-A-ST Cylinder pin DIN7979/ISO8735-8x30-A-ST	87	790 042 814	1	Schnellmontageplatte Quick-mounting plate
76	305 501 322	4	Zylinderschraube ISO4762-M10x25-8.8 Cylinder screw ISO4762-M10x25-8.8	88	542 500 314	3	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
77	790 142 204	1	Lagerflansch Bearing flange	89	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
78	790 042 142	1	Ring Ring	90	790 142 180	1	Schieber, vormontiert, o. Motor Slide block, pre-mounted, w/o motor
81	790 142 282	1	Schraubstockplatte Vice plate	91	305 805 214	4	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
82	307 001 322	2	Linsenschraube ISO7380-M10x25-10.9 Oval-head screw ISO7380-M10x25-10.9	93	790 142 125	1	INDICUT INDICUT
83	790 142 212	1	Gewindebuchse zu Spindel Threaded bushing for spindle		790 142 135	1	INDICUT US INDICUT US
84	790 142 152	1	Multifunktionskurbel Vice crank handle	94	790 142 254	1	Welle, kpl. (Ersatzteil) Shaft, cpl. (spare part)

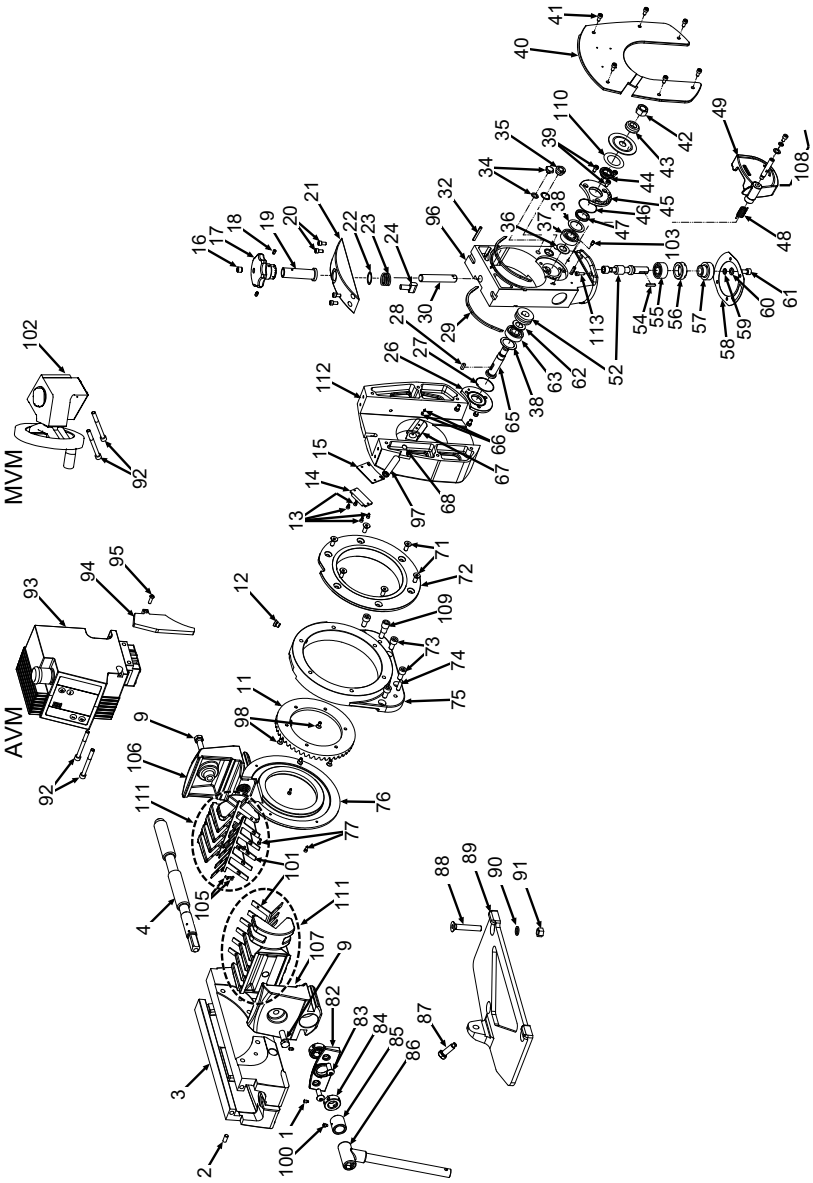

1
2
2
3
4
7
8
9
10
11
13
17
18
19
21
22
23
24
25
26
27
28
29
30
31
33
34
35
37
39
40
41
42
43
44
45
47
48
49
50
51
52
54
55
56
57
58
59
60
61
62
63
64
66
67
68
70
71
72
74
75
76
77
78
82
83
84
84
85
86
87
88
89
90
91
93
94
95
96
97
97
98
100
101
102
103
104
105
105
106
107
108

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
95	302 305 214	6	Senkschraube DIN7991-M6x12-10.9 Countersunk screw DIN7991-M6x12-10.9	106	790 142 243	1	Drehkörper mit Deckblech, kpl. Slide housing with cover plate, cpl.
96	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	107	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8
97	790 142 241	1	Spannaufsatz, V4A, kpl. Clamping insert, V4A, cpl.	108	305 805 214	6	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
98	566 958 224	1	Spannstift ISO8752-6x30-ST Dowel pin ISO8752-6x30-ST				
100	302 303 112	22	Senkschraube DIN7991-M4x8-A2 Counters. screw DIN7991-M4x8-A2				
101	790 142 471	1	Gleitbacke, links Slide jaw, left-hand				
102	790 142 470	1	Gleitbacke, rechts Slide jaw, right-hand				
103	790 142 190	1	Exzenterbolzen Eccentric bolt				
104	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4				
105	790 142 245	1	Spannbackensatz inkl. V2A-Aufsatz Clamping jaws, set incl. V2A attachment				

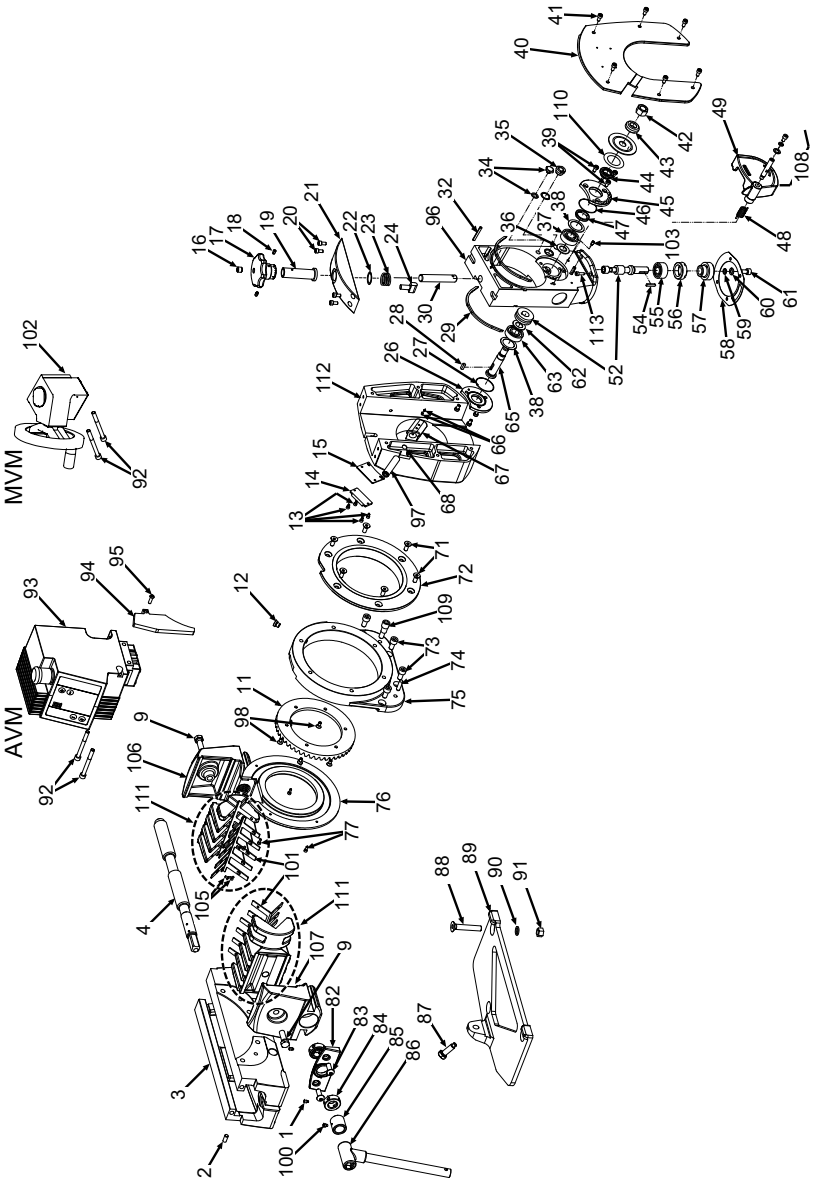
12.2 GF 4 AVM/MVM



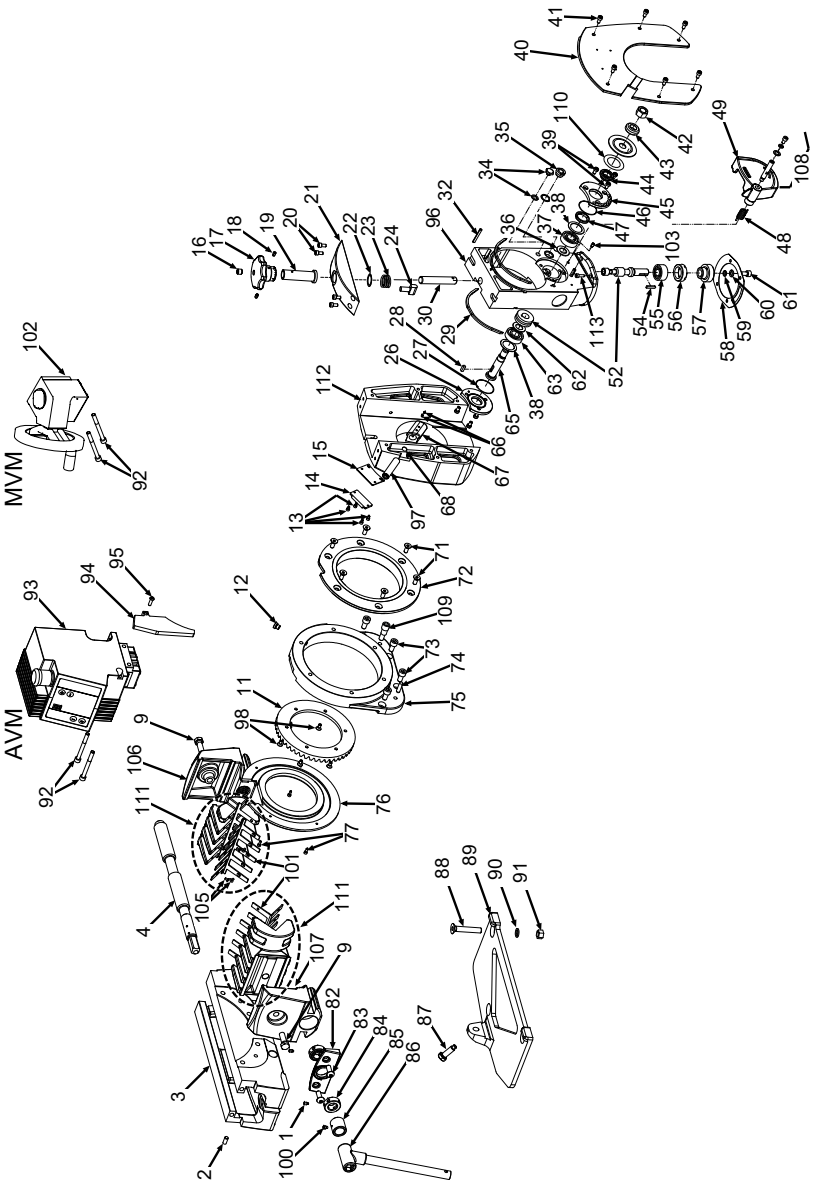
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	16	445 001 413	1	Gewindestift DIN913-M12x10-45H Threaded pin DIN913-M12x10-45H
2	566 320 419	1	Kerbstift ISO8740-8x20-ST Grooved pin ISO8740-8x20-ST	17	790 041 302	1	Sterngriff Star grip
3	790 142 108	1	Gehäuse Housing	18	445 209 212	2	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round
4	790 012 473	1	Schraubstockspindel Vice spindle	19	790 041 306	1	Gewindebuchse Threaded bushing
9	300 005 426	2	Sechskantschraube EN24017-M12x40-8.8-ZN Hexagon screw EN24017-M12x40-8.8-ZN	20	305 805 214	4	Zylinderschr. DIN7984-M6x12-8.8-ZN Cyl. screw DIN7984-M6x12-8.8-ZN
11	790 142 206	1	Kronenrad Contrate wheel	21	790 142 189	1	Abdeckplatte Cover plate
12	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN	22	790 041 312	20	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1
13	305 505 111	4	Zylinderschraube ISO4762-M4x6-8.8-ZN Cylinder screw ISO4762-M4x6-8.8-ZN	23	790 041 310	1	Druckfeder 3x28.5x16.2 Pressure spring 3x28.5x16.2
14	790 043 556	1	Reflektor Reflector	24	790 042 121	1	Gleitschuh Slide shoe
15	790 142 290	1	Blech zu Reflektor Sheet metal for reflector	26	790 042 183	1	Deckel Cover


MVM
AVM

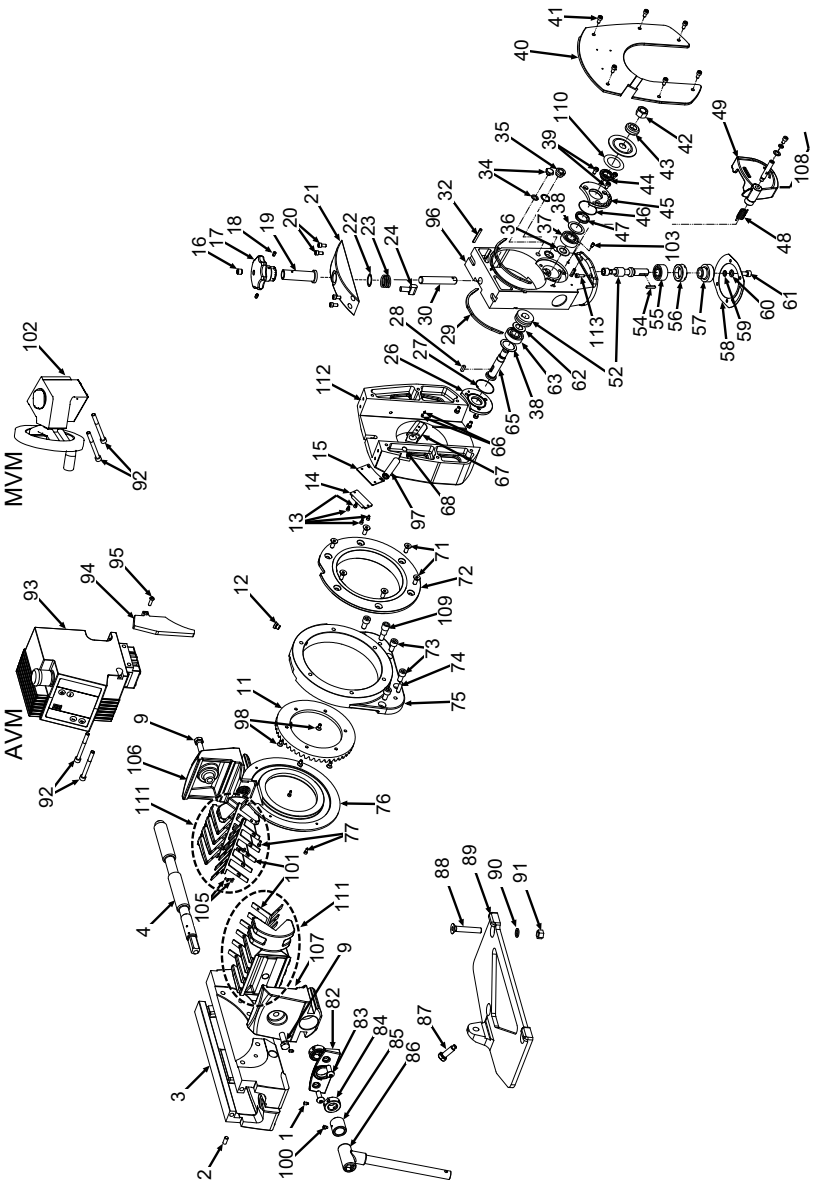
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
27	790 041 209	2	O-Ring 42x1 O-ring 42x1	38	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10
28	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14		790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
29	790 093 171	2	Filzstreifen 4x4 lfm. Felt strip 4x4 rm.		790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
30	790 041 308	1	Gewindespindel Threaded spindle		790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
32	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST	39	305 801 213	6	Zylinderschr. DIN7984-M6x10-8.8 Cylinder scr.DIN7984-M6x10-8.8
34	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"	40	790 142 121	1	Deckblech, kpl. Cover plate, cpl.
35	790 042 190	1	Ölschauglas GN541 11 G3/8 A Oil sight glass GN541 11 G3/8 A	41	305 805 214	6	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
36	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7	42	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
37	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203-Norm-SKF	43	790 041 188	1	Klemmscheibe Clamping washer
				44	790 041 208	1	Klemmbuchse Clamping sleeve


MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
45	790 042 185	1	Lagerdeckel Bearing cover	57	790 142 128	1	Antriebsritzel Drive pinion
46	790 041 209	2	O-Ring 42x1 O-ring 42x1	58	790 142 126	1	Dichtung zu Motor Seal for motor
47	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4	59	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN
48	790 042 256	1	Schenkelfeder Leg spring	60	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST
49	790 142 252	1	Späneschutz Chip protection	61	305 501 266	1	Zylinderschr. ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8
52	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	62	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
53	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel	63	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
54	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24	65	790 041 185	1	Schneckenradwelle Worm wheel shaft
55	612 032 015	1	Schrägkugellager DIN6283202 Angular ball b. DIN6283202-A	66	445 001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H
16	445 001 413	1	Gewindestift DIN913-M12x10-45H Threaded pin DIN913-M12x10-45H				

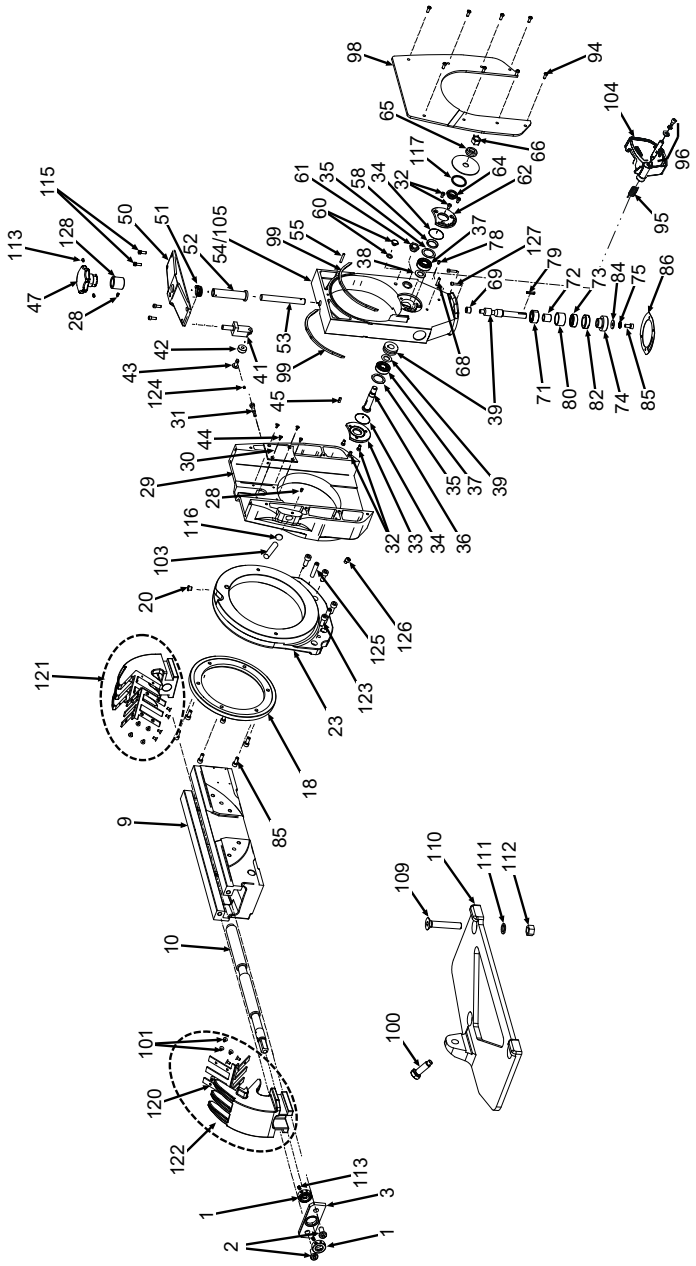

MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
68	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm	84	790 011 511	2	Stellring Adjusting ring
71	302 301 269	6	Senkschraube DIN7991-M8x20-8.8 Countersunk screw DIN7991-M8x20-8.8	85	790 142 212	1	Gewindebuchse zu Spindel Threaded bushing for spindle
72	790 142 114	1	Führungsbuchse Guide bushing	86	790 142 152	1	Multifunktionskurbel Multifuncional crank
73	305 501 316	2	Zylinderschr.ISO4762-M10x25-8.8 Cylinder head screw ISO4762-M10x25-8.8	87	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
74	565 808 524	1	Zylinderstift DIN7979/ISO8735-8x30-A-ST Cylinder pin DIN7979/ISO8735-8x30-A-ST	88	302 301 440	3	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8
75	790 142 204	1	Lagerflansch Bearing flange	89	790 042 814	1	Schnellmontageplatte Quick-mounting plate
76	790 142 210	1	Schutzring AVM/MVM Protective ring AVM/MVM	90	542 500 314	3	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
77	305 501 113	4	Zylinderschraube ISO4762-M4x10-12.9 Cylinder screw ISO4762-M4x10-12.9	91	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
82	790 142 282	1	Schraubstockplatte Vice end plate	92	305 601 294	2	Zylinderschraube ISO4762-M8x80/28-8.8 Cylinder screw ISO4762-M8x80/28-8.8
83	307 001 322	2	Linsenschraube ISO7380-M10x25-10.9 Oval-head screw ISO7380-M10x25-10.9	93	790 043 575	1	AVM v2 kpl. (230/110 V) AVM v2 cpl. (230/110 V)

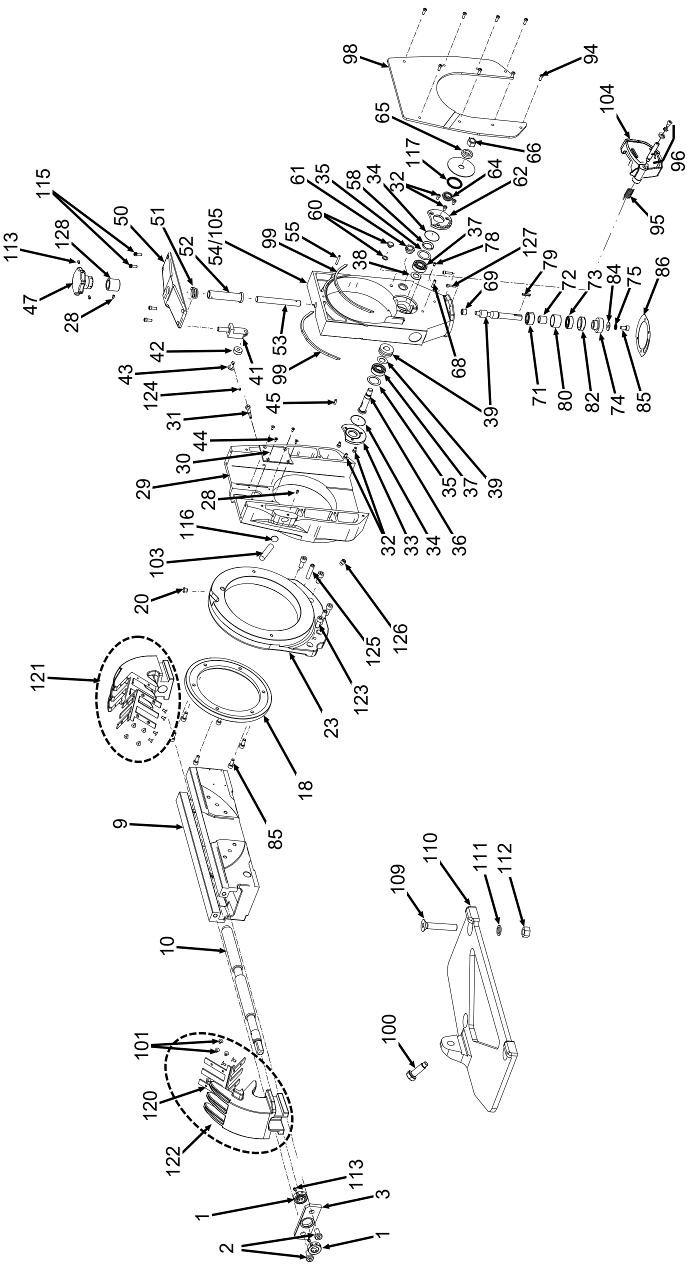

MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
94	790 142 214	1	Schutzsteg Protective web	103	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H
95	307 002 219	1	Linsenschraube ISO7380-M6x20-10.9-ZN Oval-head screw ISO7380-M6x20-10.9-ZN	105	302 303 112	22	Senkschraube DIN7991-M4x8-A2 Countersunk screw DIN7991-M4x8-A2
96	790 142 180	1	Schieber, vormontiert, o. Motor Slide block, pre-mounted, w/o motor	106	790 142 470	1	Gleitbacke, rechts Slide jaw, right-hand
97	790 142 125	1	INDICUT INDICUT	107	790 142 471	1	Gleitbacke, links Slide jaw, left-hand
	790 142 135	1	INDICUT US INDICUT US	108	790 142 254	1	Welle, kpl. (Ersatzteil) Shaft, cpl. (spare part)
98	302 305 214	6	Senkschraube DIN7991-M6x12-10.9 Counters. screw DIN7991-M6x12-10.9	109	790 142 190	1	Exzenterbolzen Eccentric bolt
99	566 958 224	1	Spannstift ISO8752-6x30-ST Dowel pin ISO8752-6x30-ST	110	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
100	445 209 212	1	Gewindestift DIN915-M6x8-45H-TUFLOK/rund Grub screw DIN915-M6x8-45H-TUFLOK/round	111	790 142 245	1	Spannbackensatz inkl. V2A-Aufsatz Clamping jaws incl. V2A attachm.
101	790 142 241	1	Spannaufsatz, V4A, kpl Clamping insert, V4A, cpl.	112	790 142 243	1	Drehkörper mit Deckblech, kpl. Slide housing w. cover plate, cpl.
102	790 043 505	1	Vorschubmodul, manuell (MVM) kpl. Feed module, manual (MVM) cpl.	113	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8

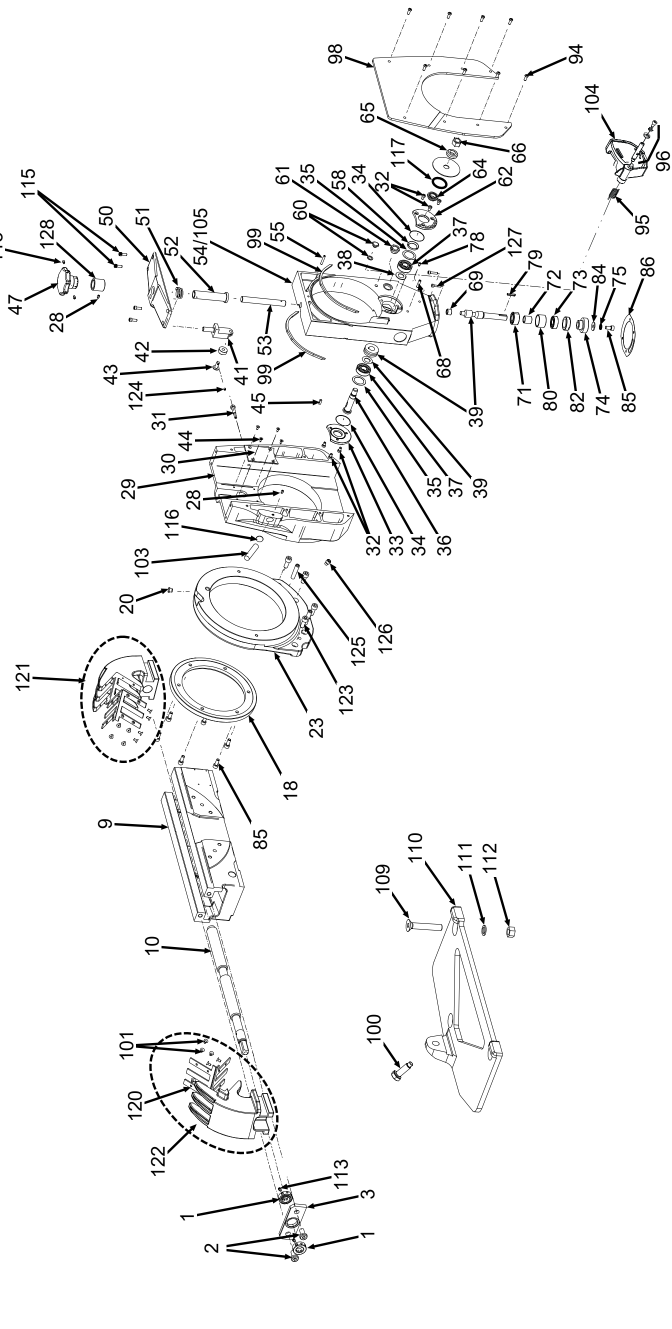
12.3 GF 6


98
94
65
66
104
96
117
64
62
61
35
58
34
32
60
55
99
54/105
52
51
50
115
113
128
47
28
37
78
127
79
72
73
84
75
86
69
68
39
71
80
82
74
85
53
41
42
43
124
31
45
44
30
29
28
116
103
20
32
33
34
36
35
37
39
125
126
123
23
121
18
85
9
10
101
120
122
1
113
3
2
1
109
110
111
112
100

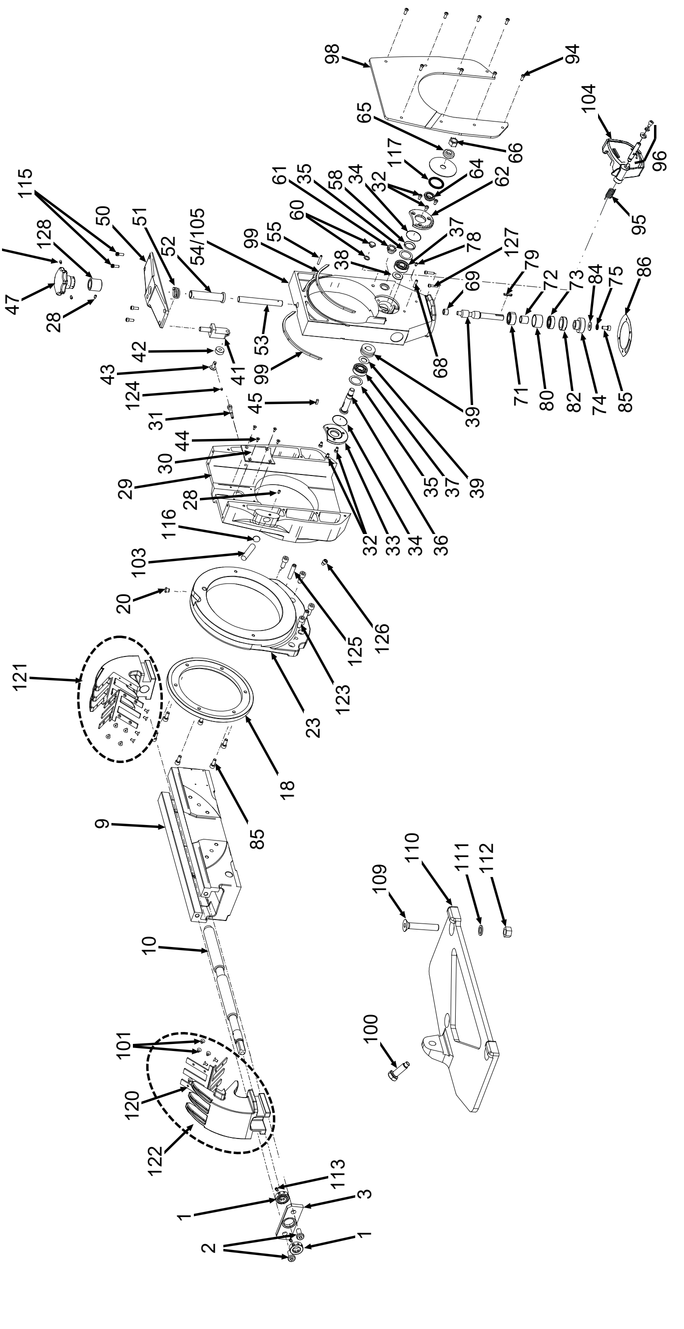
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 011 511	2	Stellring Adjusting ring	29	790 143 250	1	Drehkörper mit Deckplatte Slide housing with cover plate
2	307 001 422	2	Linsenschraube ISO7380-M12x25-10.9 Oval-head screw ISO7380-M12x25-10.9	30	790 143 119	1	Deckplatte Cover plate
3	790 012 474	1	Schraubstockplatte Vice plate	31	790 143 130	1	Zylinderschraube M8x55 (Nacharbeit) Cylinder screw M8x55 (rework)
8	566 320 422	1	Kerbstift ISO8740-8x25-ST Grooved pin ISO8740-8x25-ST	32	305 801 213	6	Zylinderschr. DIN7984-M6x10-8.8 Cylinder screw DIN7984-M6x10-8.8
9	790 143 108	1	Schraubstockgehäuse Vice housing	33	790 043 183	1	Deckel Cover
10	790 047 158	1	Schraubstockspindel Vice spindle	34	790 041 209	2	O-Ring 42x1 O-ring 42x1
18	790 043 129	1	Ring Ring	35	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10
20	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN	36	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
23	305 501 322	4	Zylinderschraube ISO4762-M10x25-8.8 Cylinder screw ISO4762-M10x25-8.8	37	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
28	445 001 210	2	Gewindestift DIN913-M6x5-45H Grub screw DIN913-M6x5-45H	38	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30


98
94
104
65
66
117
64
96
115
113
128
47
28
50
51
52
54/105
99
55
61
35
58
34
32
62
60
37
78
127
79
38
69
72
73
84
75
86
95
53
42
43
41
99
68
124
45
31
44
30
29
28
39
71
80
82
74
85
35
37
39
32
33
34
36
116
103
20
23
125
126
123
121
18
85
9
10
101
120
122
109
110
111
112
100
113
3
1
2
1

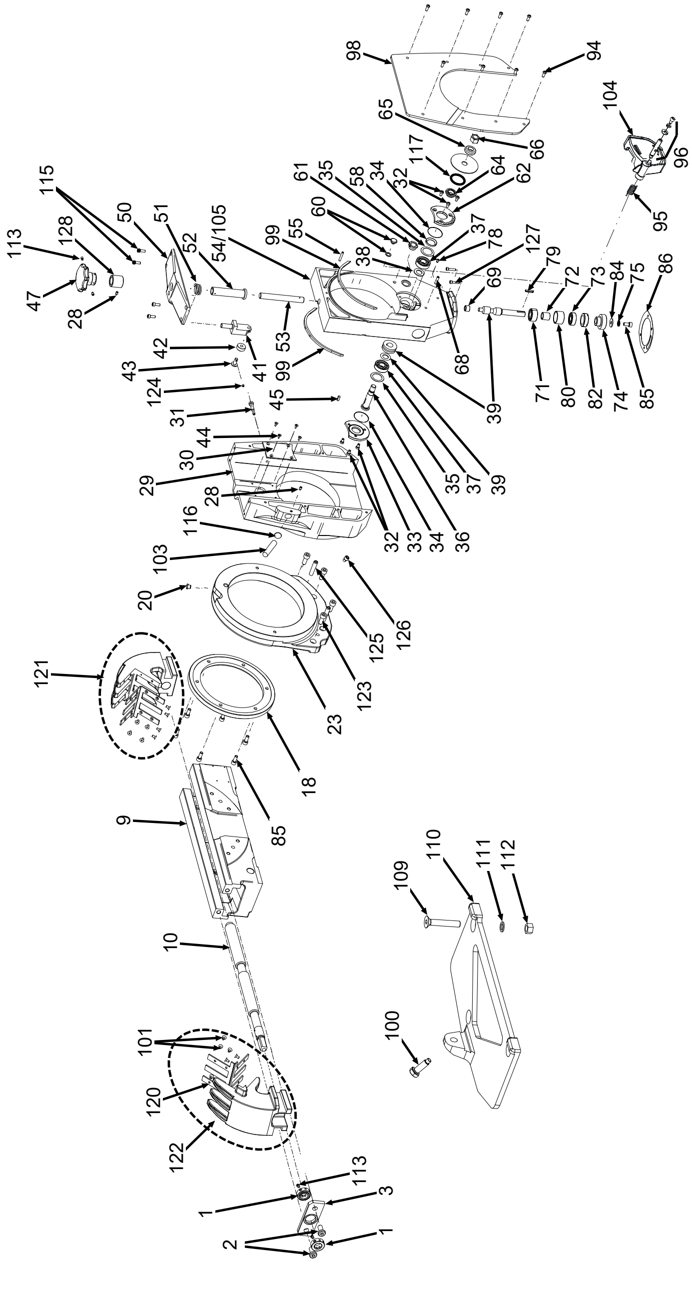
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
36	790 041 185	1	Schneckenradwelle Worm wheel shaft	50	790 043 128	1	Abdeckplatte Cover plate
37	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF	51	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3
38	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7	52	790 143 306	1	Gewindebuchse Threaded bushing
39	790 046 208	1	Schneckenwelle und Rad Worm shaft and wheel	53	790 143 184	1	Gewindespindel Threaded spindle
41	790 143 121	1	Nockenrolle, Halter Cam roller, holder	54	790 143 178	1	Schieber Slide block
42	790 047 191	1	Stützrolle Support roller	55	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST
43	790 047 180	1	Hubrollenachse Lifting roll axis	58	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4
44	302 302 112	4	Senkschraube DIN7991-M4x10-8.8-ZN Countersunk screw DIN7991-M4x10-8.8-ZN	60	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"
45	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14	61	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2
47	790 041 302	1	Sterngriff Star grip	62	790 043 185	1	Lagerdeckel Bearing cover


98
94
104
96
95
65
66
117
64
32
62
61
35
58
34
37
78
60
127
55
99
54/105
38
79
69
72
73
84
75
86
115
50
51
52
113
128
47
28
53
99
68
39
71
80
82
74
85
42
41
43
124
45
31
44
30
29
28
35
37
39
32
33
34
36
116
103
20
126
125
123
23
121
18
85
9
10
109
110
111
112
100
101
120
122
113
3
1
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
64	790 041 208	1	Klemmbuchse Clamping sleeve	78	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H
65	790 041 188	1	Klemmscheibe Clamping washer	79	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24
66	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5	80	790 046 186	1	Distanzring Schneckenwelle Spacer ring worm shaft
68	566 958 250	1	Spannstift ISO8752-6x25-ST Dowel pin ISO8752-6x25-ST	82	790 041 189	1	Gewindering Threaded ring
69	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	84	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST
71	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF	85	305 501 266	7	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8
72	790 046 190	1	Distanzbuchse Schneckenw., innen Spacer bush worm shaft, inside	86	790 142 126	1	Dichtung zu Motor Seal for motor
73	610 102 015	1	Rillenkugellager DIN625-6202 Grooved ball b. DIN625-6202	94	305 805 214	8	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
74	790 142 128	1	Antriebsritzel Drive pinion	95	790 042 256	1	Schenkelfeder Leg spring
75	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN	96	790 142 254	1	Welle, kpl. Shaft, cpl.

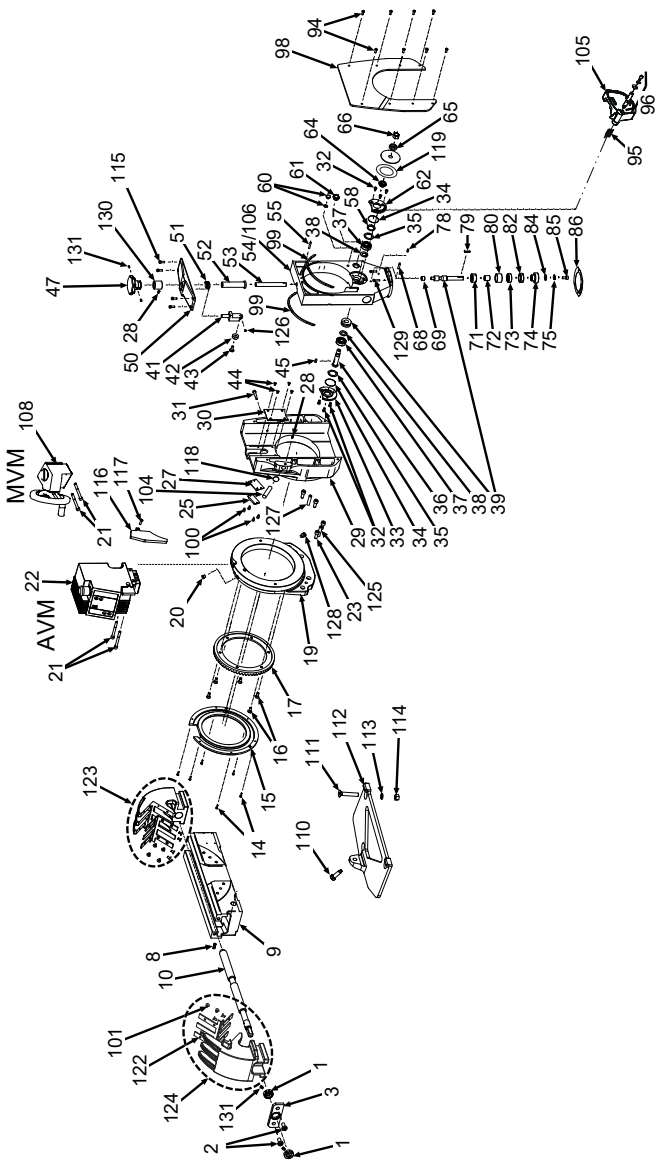

98
94
104
96
95
65
66
117
64
62
32
37
78
127
79
72
73
84
75
86
61
35
58
34
60
38
55
99
54/105
53
68
69
39
71
80
82
74
85
115
50
51
52
113
128
47
28
42
43
41
124
45
31
44
30
29
33
36
116
103
20
23
123
125
126
121
18
9
10
109
110
111
112
100
101
120
122
3
1
2

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
98	790 143 113	1	Deckblech, kpl. Cover plate, cpl.	111	542 500 314	3	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
99	790 093 171	2	Filzstreifen 4x4 lfm. Felt strip 4x4 rm.	112	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
101	302 303 112	16	Senkschraube DIN7991-M4x8-A2 Counters. screw DIN7991-M4x8-A2	113	445 209 212	4	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round
103	790 142 125	1	INDICUT INDICUT	114	790 143 506	1	Führungsflansch Guide flange
	790 142 135	1	INDICUT US INDICUT US	115	305 805 214	4	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
104	790 143 260	1	Späneschutz Chip protection	116	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm
105	790 143 180	1	Schieber vormontiert o. Motor Slide block pre-m. w/o motor	117	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
108	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42	120	790 146 200	1	Spannaufsatz, V4A, kpl. Clamping insert, V4A, cpl.
109	302 301 440	3	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8	121	790 146 246	1	Gleitspannbacke rechts ink. Spannaufsatz slide jaw right-hand inc.clamping insert
110	790 042 814	1	Schnellmontageplatte Quick-mounting plate	122	790 146 245	1	Gleitspannbacke links inkl. Spannaufsatz Slide jaw left-hand incl.clamping insert

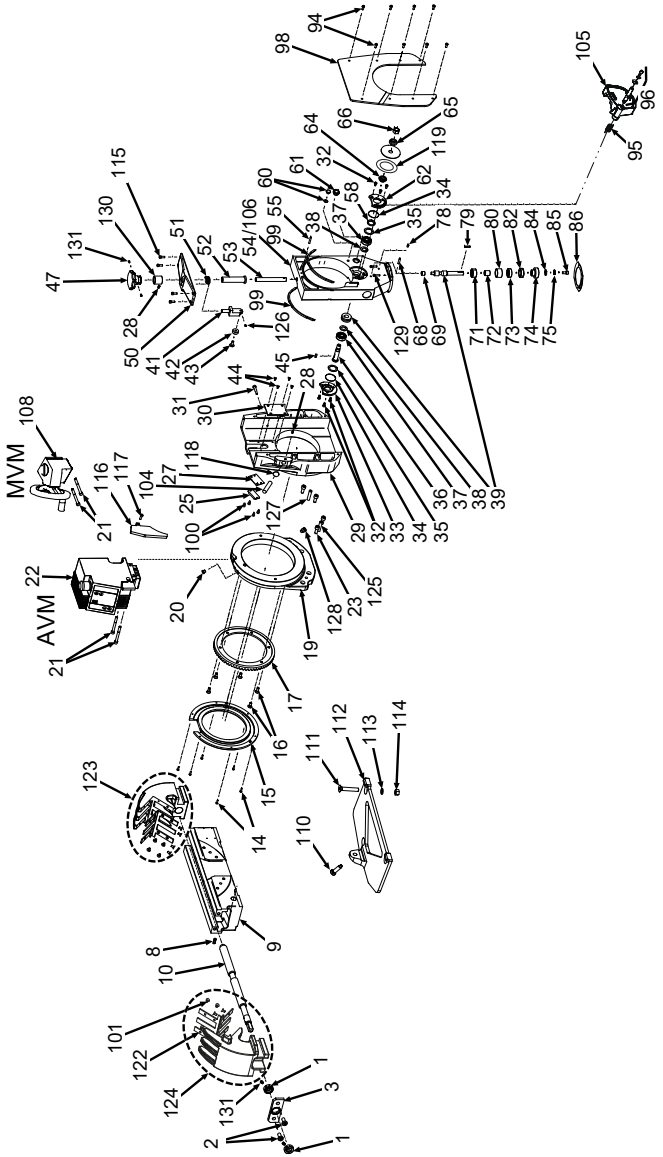

98
94
104
96
95
65
66
117
64
62
32
34
58
35
61
60
37
78
127
79
72
73
84
75
86
38
55
99
54/105
52
51
50
115
128
113
47
28
53
69
68
39
71
80
82
74
85
42
41
43
124
45
31
44
30
29
28
32
33
34
36
35
37
39
116
103
20
126
125
123
23
18
121
85
9
10
109
110
111
112
100
101
120
122
113
3
1
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
123	565 808 527	1	Zylinderstift DIN7979/ISO8735-8x36-A-ST Cylinder pin DIN7979/ISO8735-8x36-A-ST
124	445 201 162	1	Gewindestift DIN915-M5x8-45H Grub screw DIN915-M5x8-45H
125	790 142 190	1	Exzenterbolzen Eccentric bolt
126	445 209 164	1	Gewindestift DIN915-M5x12-45H-Nylon Grub screw DIN915-M5x12-45H-Nylon
127	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8
128	790 143 114	1	Buchse Bushing

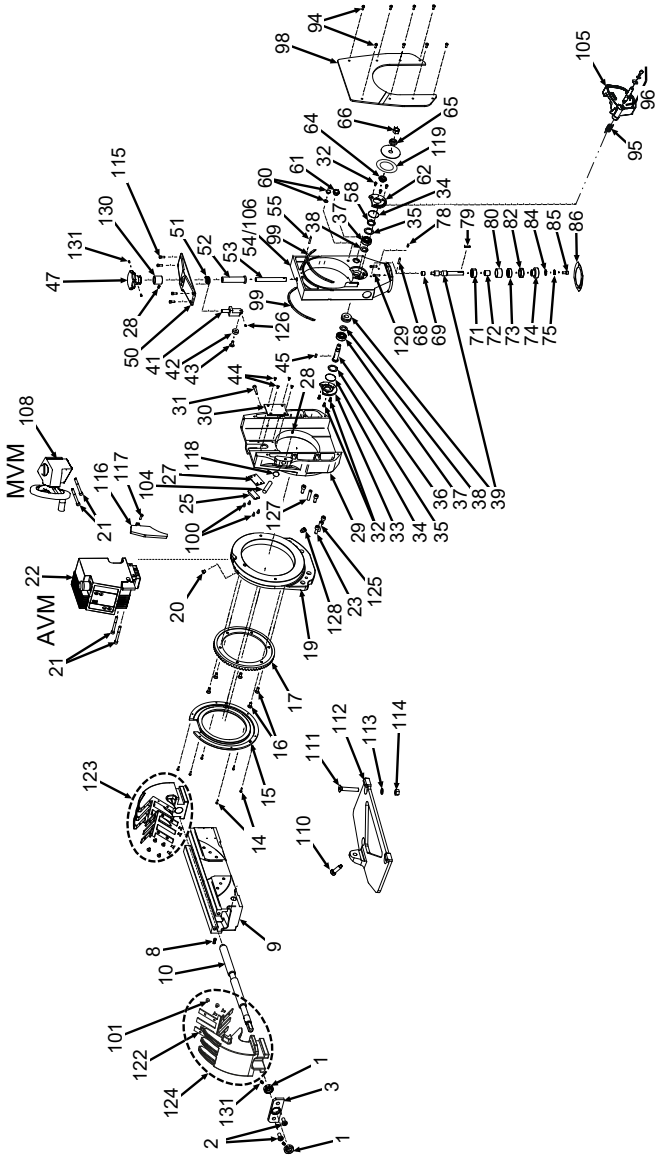
12.4 GF 6 AVM/MVM



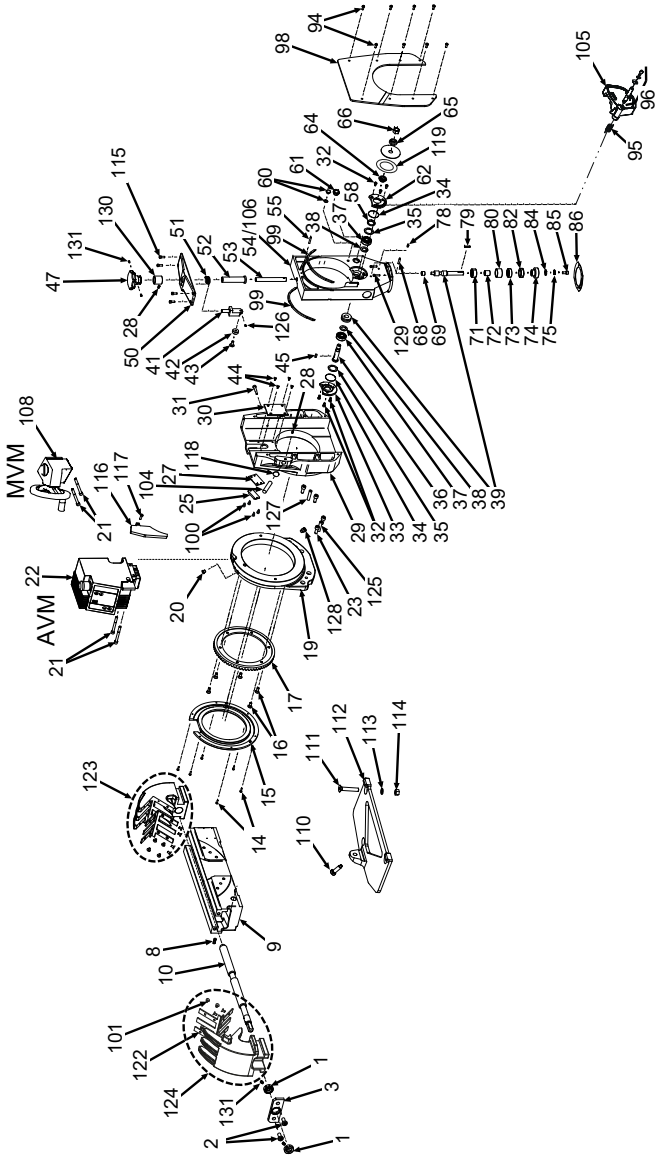
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 011 511	2	Stellring Adjusting ring	19	790 143 506	1	Führungsflansch Guide flange
2	307 001 422	2	Linsenschraube ISO7380-M12x25-10.9 Oval-head screw ISO7380-M12x25-10.9	20	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
3	790 012 474	1	Schraubstockplatte Vice plate	21	305 601 294	2	Zylinderschraube ISO4762-M8x80/28-8.8 Cylinder screw ISO4762-M8x80/28-8.8
8	566 320 422	1	Kerbstift ISO8740-8x25-ST Grooved pin ISO8740-8x25-ST	22	790 043 575	1	AVM v2 kpl. zu GF 4/6, RA 6/8/12 (230/110 V) AVM v2 cpl. for GF 4/6, RA 6/8/12 (230/110 V)
9	790 143 108	1	Schraubstockgehäuse Vice housing	23	305 501 322	4	Zylinderschraube ISO4762-M10x25-8.8 Cylinder screw ISO4762-M10x25-8.8
10	790 047 158	1	Schraubstockspindel Vice spindle	25	790 043 556	1	Reflektor Reflector
14	307 005 113	6	Linsenschraube ISO7380-M4x10-10.9-ZN Oval-head screw ISO7380-M4x10-10.9-ZN	27	790 143 308	1	Reflektorblech Reflector plate
15	790 043 525	1	Schutzring Protective ring	28	445 001 210	2	Gewindestift DIN913-M6x5-45H-TUFLOK/FL Grub screw DIN913-M6x5-45H-TUFLOK/FL
16	302 301 269	6	Senkschraube DIN7991-M8x20-8.8 Countersunk screw DIN7991-M8x20-8.8	29	790 143 250	1	Drehkörper mit Deckplatte Slide housing with cover plate
17	790 043 510	1	Kronenrad GF 6 Contrate wheel GF 6	30	790 143 119	1	Deckplatte Cover plate


MVM
AVM

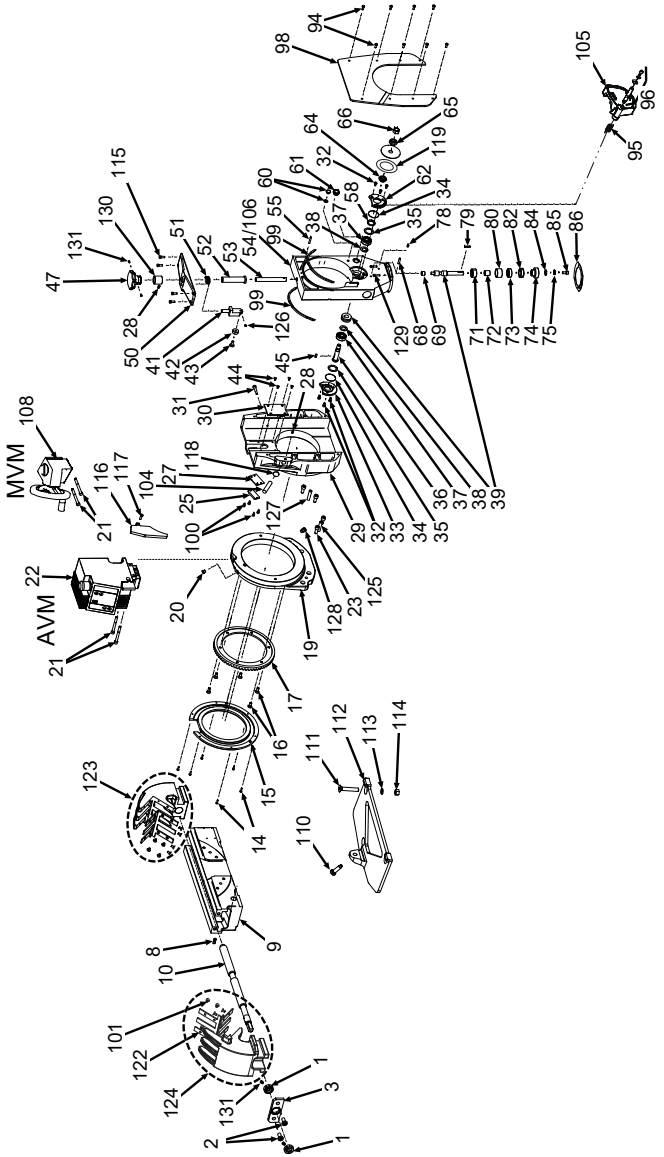
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
31	790 143 130	1	Zylinderschraube M8x55 Cylinder screw M8x55	38	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
32	305 801 213	6	Zylinderschraube DIN7984-M6x10-8.8 Cylinder screw DIN7984-M6x10-8.8	39	790 046 208	1	Schneckenwelle und Rad Worm shaft and wheel
33	790 043 185	1	Lagerdeckel Bearing cover	41	790 143 121	1	Nockenrolle, Halter Cam roller, holder
34	790 041 209	2	O-Ring 42x1 O-ring 42x1	42	790 047 191	1	Stützrolle Support roller
35	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10	43	790 047 180	1	Hubrollenachse Lifting roll axis
	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15	44	302 302 112	4	Senkschraube DIN7991-M4x8-8.8 Countersunk screw DIN7991-M4x8-8.8
	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20	45	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14
	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30	47	790 041 302	1	Sterngriff Star grip
36	790 041 185	1	Schneckenradwelle Worm wheel shaft	50	790 043 128	1	Abdeckplatte Cover plate
37	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF	51	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3


MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
52	790 143 306	1	Gewindebuchse Threaded bushing	66	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
53	790 143 184	1	Gewindespindel Threaded spindle	68	566 958 250	1	Spannstift ISO8752-6x25-ST Dowel pin ISO8752-6x25-ST
54	790 143 178	1	Schieber Slide block	69	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11
55	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST	71	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF
58	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4	72	790 046 190	1	Distanzbuchse Schneckenwelle, innen Spacer bush worm shaft, inside
60	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"	73	610 102 015	1	Rillenkugellager DIN625-6202 Grooved ball bearing DIN625-6202
61	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2	74	790 142 128	1	Antriebsritzel Drive pinion
62	790 043 183	1	Deckel Cover	75	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN
64	790 041 208	1	Klemmbuchse Clamping sleeve	78	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H
65	790 041 188	1	Klemmscheibe Clamping washer	79	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24

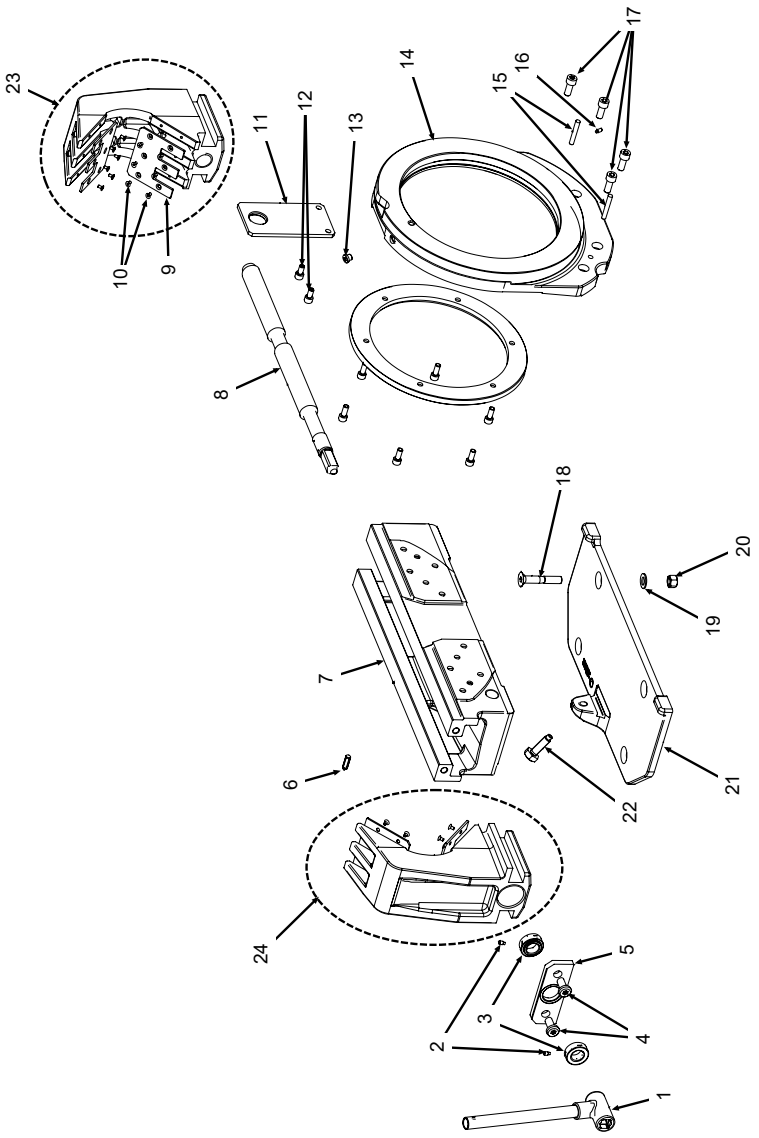

MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
80	790 046 186	1	Distanzring Schneckenwelle Spacer ring worm shaft	100	305 505 111	4	Zylinderschraube ISO4762-M4x6-8.8-ZN Cylinder screw ISO4762-M4x6-8.8-ZN
82	790 041 189	1	Gewindering Threaded ring	101	302 303 112	16	Senkschraube DIN7991-M4x8-A2 Countersunk screw DIN7991-M4x8-A2
84	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST	104	790 142 125	1	INDICUT INDICUT
85	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8		790 142 135	1	INDICUT US INDICUT US
86	790 142 126	1	Dichtung zu Motor Seal for motor	105	790 143 260	1	Späneschutz Chip protection
94	305 805 214	8	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN	106	790 143 180	1	Schieber vormontiert o. Motor Slide block pre-m. w/o motor
95	790 042 256	1	Schenkelfeder Leg spring	108	790 043 505	1	Vorschubmodul, manuell (MVM) kpl. Feed module, manual (MVM) cpl.
96	790 142 254	1	Welle, kpl. Shaft, cpl.	110	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
98	790 143 113	1	Deckblech, kpl. Cover plate, cpl.	111	302 301 440	3	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8
99	790 093 171	1	Filzstreifen 4x4, 1m Felt strip 4x4, 1m	112	790 042 814	1	Schnellmontageplatte Quick-mounting plate

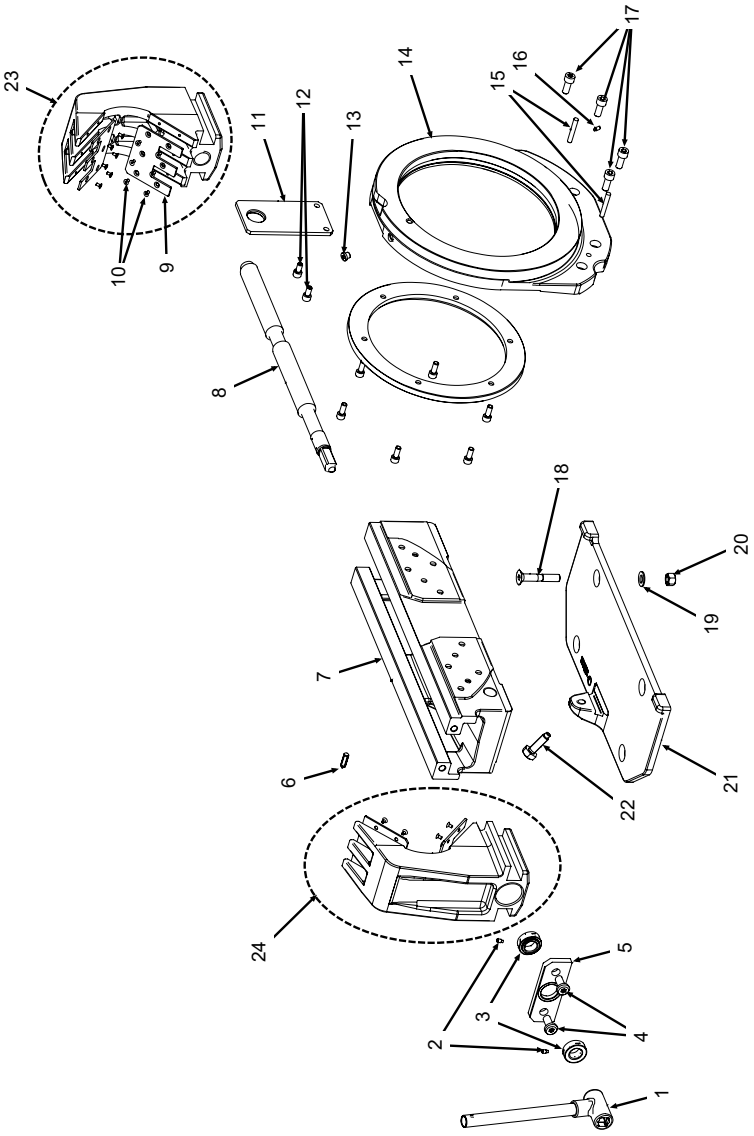

MVM
AVM

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
113	542 500 314	3	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV	125	565 808 527	1	Zylinderstift DIN7979/ISO8735-8x36-A-ST Cylinder pin DIN7979/ISO8735-8x36-A-ST
114	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8	126	445 201 162	1	Gewindestift DIN915-M5x8-45H Grub screw DIN915-M5x8-45H
115	305 805 214	4	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN	127	790 142 190	1	Exzenterbolzen Eccentric bolt
116	790 043 550	1	AVM Schutzsteg AVM protective web	128	445 209 164	1	Gewindestift DIN915-M5x12-45H-Nylon Grub screw DIN915-M5x12-45H-Nylon
117	307 002 219	1	Linsenschraube ISO7380-M6x20-10.9-ZN Oval-head screw ISO7380-M6x20-10.9-ZN	129	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8
118	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm	130	790 143 114	1	Buchse Bushing
119	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4	131	445 209 212	4	Gewindestift DIN915-M6x8-45H-TUFLOK/rund Grub screw DIN915-M6x8-45H-TUFLOK/round
122	790 146 200	1	Spannaufsatz V4A, kpl. Clamping insert, V4A, cpl.				
123	790 146 246	1	Gleitspannbacke rechts ink. Spannaufsatz slide jaw right-hand inc.clamping insert				
124	790 146 245	1	Gleitspannbacke links inkl. Spannaufsatz Slide jaw left-hand incl.clamping insert				

12.5 GF 8 (Fig. 1)

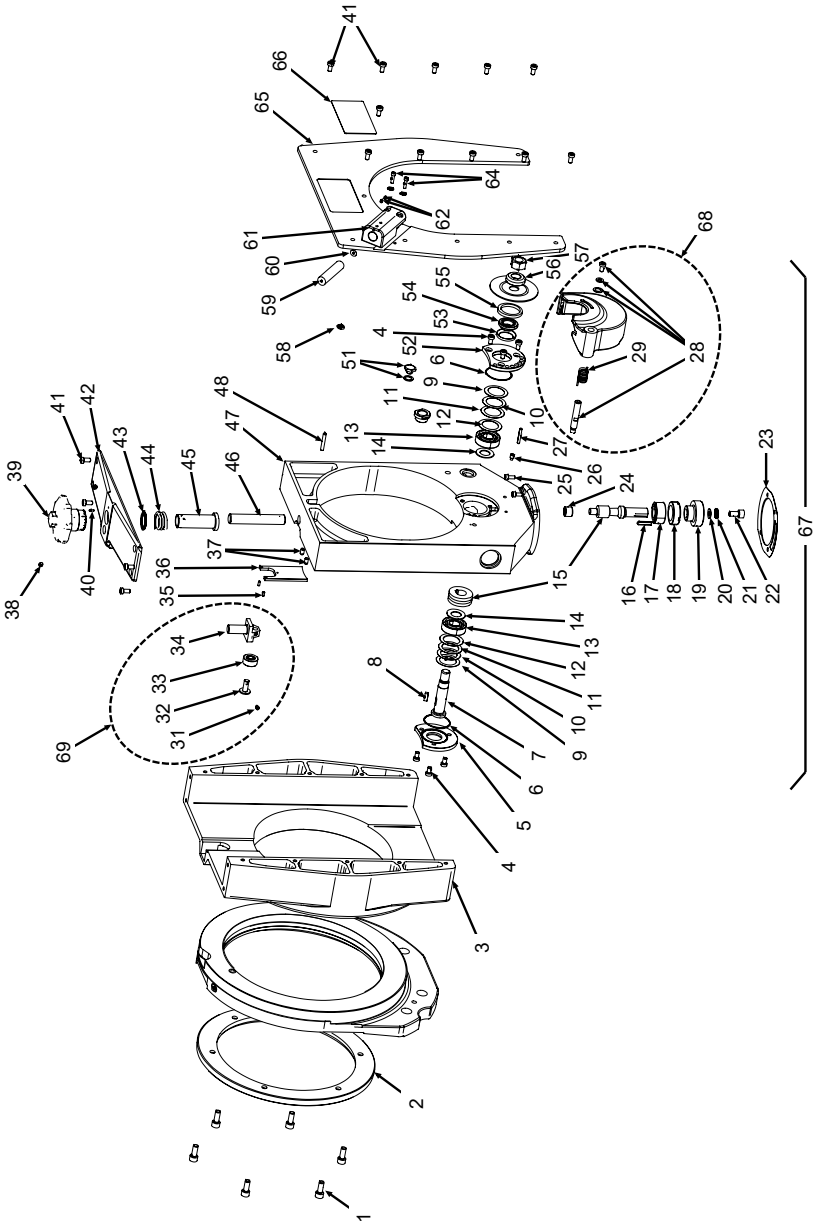


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 142 152	1	Multifunktionskurbel Multifunctional crank	11	790 047 202	1	Transportöse Transport lug
2	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	12	305 801 266	2	Zylinderschraube DIN7984 M8x16-8.8 Cylinder screw DIN7984 M8x16-8.8
3	790 011 511	2	Stellring Adjusting ring	13	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
4	307 001 422	2	Linsenschraube ISO7380-M12x25-10.9 Oval-head screw ISO7380-M12x25-10.9	14	790 045 507	1	Führungsflansch Guide flange for feed module
5	790 012 474	1	Schraubstockplatte Vice plate	15	566 600 332	2	Kegelstift ISO8736-A-10x50-ST Taper pin ISO8736-A-10x50-ST
6	566 320 422	1	Kerbstift ISO8740-8x25-ST Grooved pin ISO8740-8x25-ST	16	445 209 164	1	Gewindestift DIN915-M5x12-45H-Nylon Grub screw DIN915-M5x12-45H-Nylon
7	790 143 108	1	Schraubstockgehäuse Vice housing	17	305 501 322	4	Zylinderschraube ISO4762-M10x25-8.8 Cylinder screw ISO4762-M10x25-8.8
8	790 047 158	1	Schraubstockspindel Vice spindle	18	302 301 440	4	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8
9	790 045 330	4	Spannaufsatz, V4A Clamping insert, V4A	19	542 500 314	4	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
10	302 302 112	24	Senkschraube DIN7991-M4x8-8.8 Countersunk screw DIN7991-M4x8-8.8	20	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8

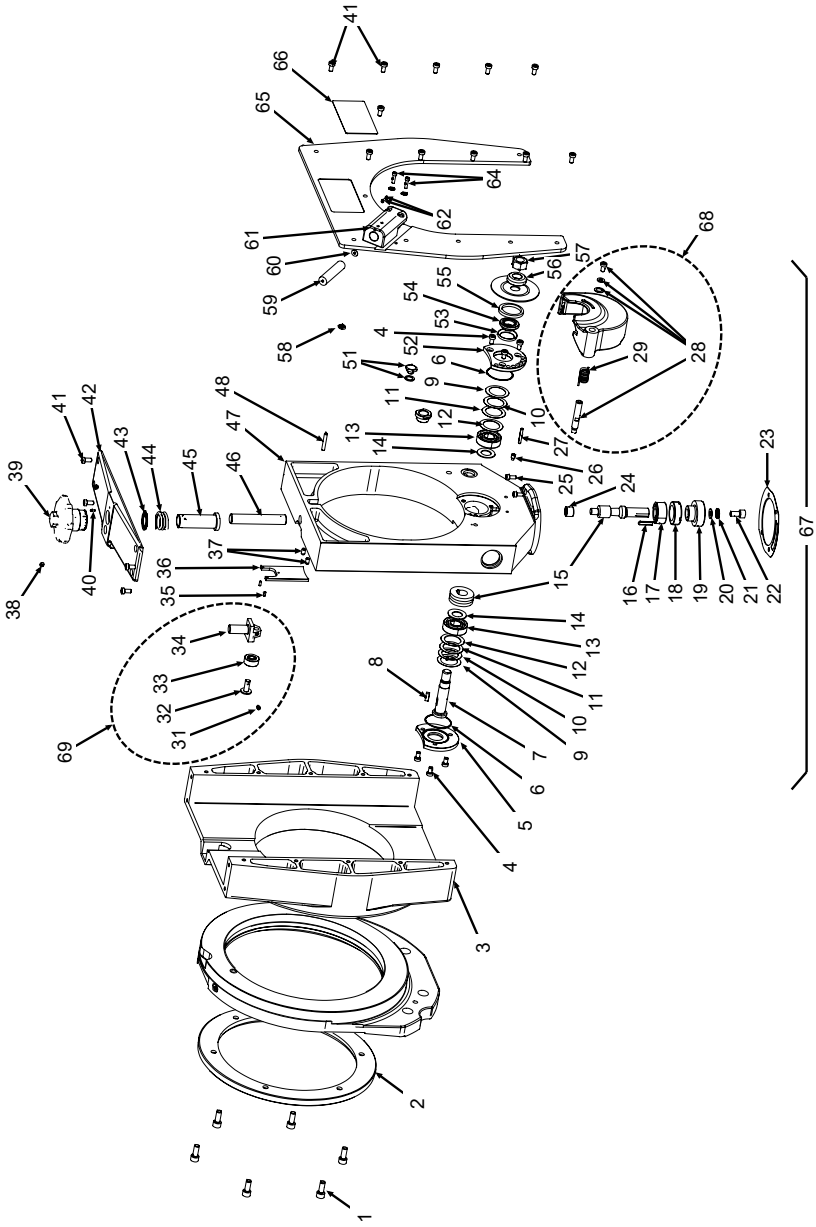

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	790 042 814	1	Schnellmontageplatte Quick-mounting plate
22	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
23	790 045 246	1	Gleitspannbacke inkl. Spannaufsatz rechts Slide jaw incl.clamping insert righthand
24	790 045 245	1	Gleitspannbacke inkl. Spannaufsatz links Slide jaw incl. clamping insert lefthand

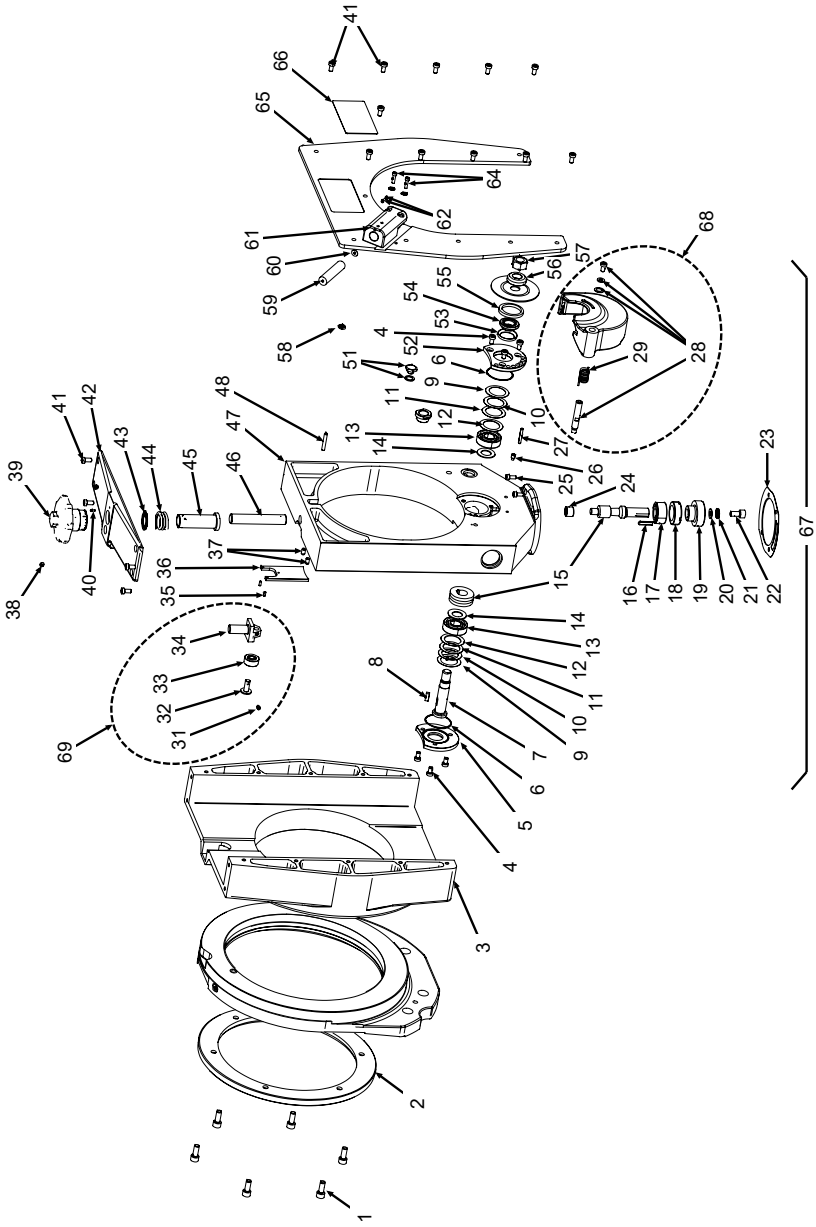
12.6 GF 8 (Fig. 2)


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
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
51
52
53
54
55
56
57
58
59
60
61
62
64
65
66
67
68
69

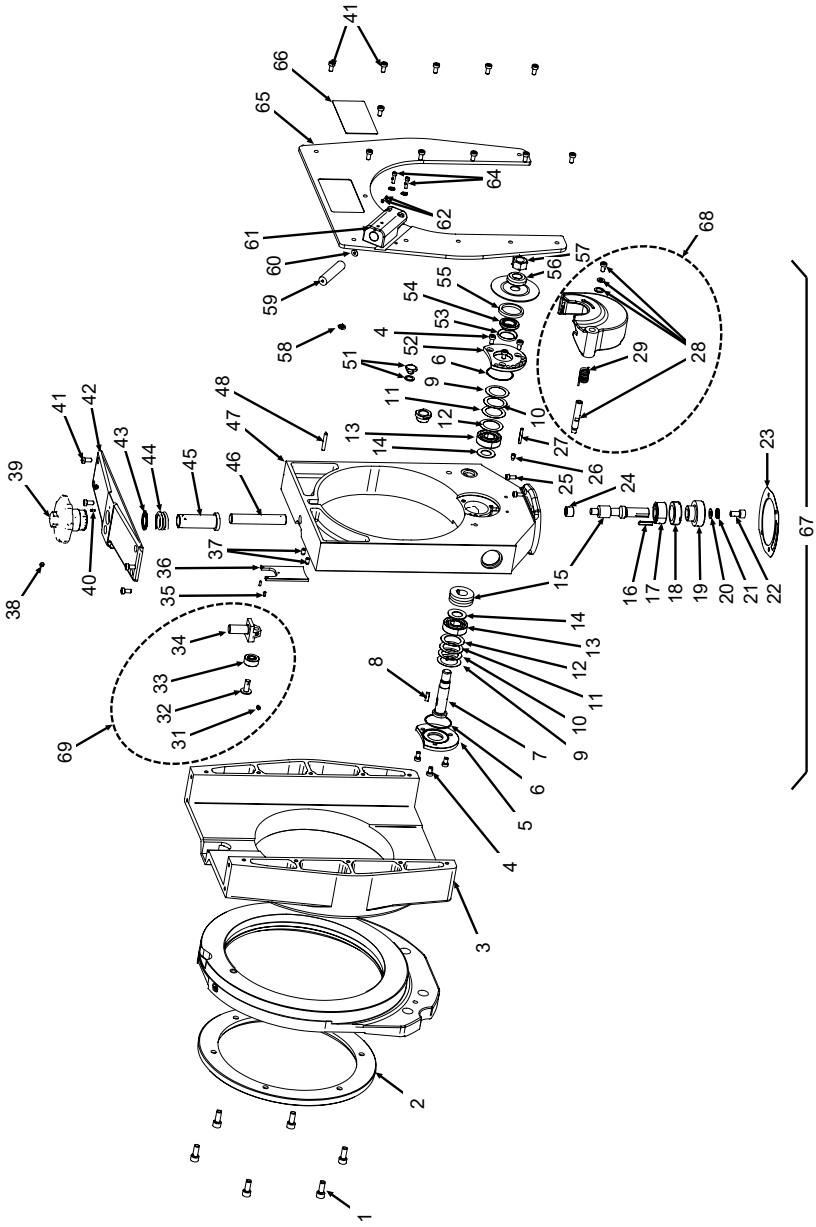
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 501 269	6	Zylinderschraube ISO4762-M8x20-12.9 Cylinder screw ISO4762-M8x20-12.9	11	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
2	790 045 121	1	Ring Ring	12	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
3	790 045 324	1	Deckplatte, kpl. Cover plate, cpl.	13	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball b. DIN625-6203-Normal-SKF
4	305 801 213	7	Zylinderschraube ISO4762-M6x10-12.9 Cylinder screw DIN7984-M6x10-8.8	14	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
5	790 045 318	1	Deckel Cover	15	790 041 400	1	Schneckenwelle + Rad Worm shaft + wheel
6	790 041 209	2	O-Ring 42x1 O-ring 42x1	16	790 041 181	1	Passfeder DIN6885-B5x3x24 Fitting key DIN6885-AB5x3x24
7	790 041 185	1	Schneckenradwelle Worm wheel shaft	17	612 032 015	1	Schägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm.-SKF
8	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14	18	790 041 189	1	Gewindering Threaded ring
9	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10	19	790 142 128	1	Antriebsritzel* Drive pinion*
10	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15				


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
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
51
52
53
54
55
56
57
58
59
60
61
62
64
65
66
67
68
69

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	542 500 311	1	Scheibe ISO7090-6-200HV Washer ISO7090-6-200HV	31	445 201 162	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M5x8-45H
21	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST	32	790 047 180	1	Hubrollenachse Lifting roll axis
22	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8	33	790 047 191	1	Stützrolle Support roller
23	790 041 192	1	Dichtung D 120x1 Seal D 120x1	34	790 045 331	1	Nockenrolle, Halter Cam roller, holder
24	790 041 190	1	Lagerbuchse Bearing bush 10x16x11	35	566 958 072	2	Spannstift ISO8752-3x8-ST Dowel pin ISO8752-3x8-ST
25	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8	36	790 043 119	1	Deckplatte Cover plate
26	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	37	790 003 316	2	Kugelschnäpper Ball catch D6
27	566 958 224	1	Spannstift ISO8752-6x30-ST Dowel pin ISO8752-6x30-ST	38	445 209 212	2	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round
28	790 142 254	1	Welle, kpl. Shaft, cpl.	39	790 041 302	1	Sterngriff Star grip
29	790 042 256	1	Schenkelfeder Leg spring	40	588 723 209	1	Kerbnagel IO8746-2.3x5-ST-NI 588 723 209

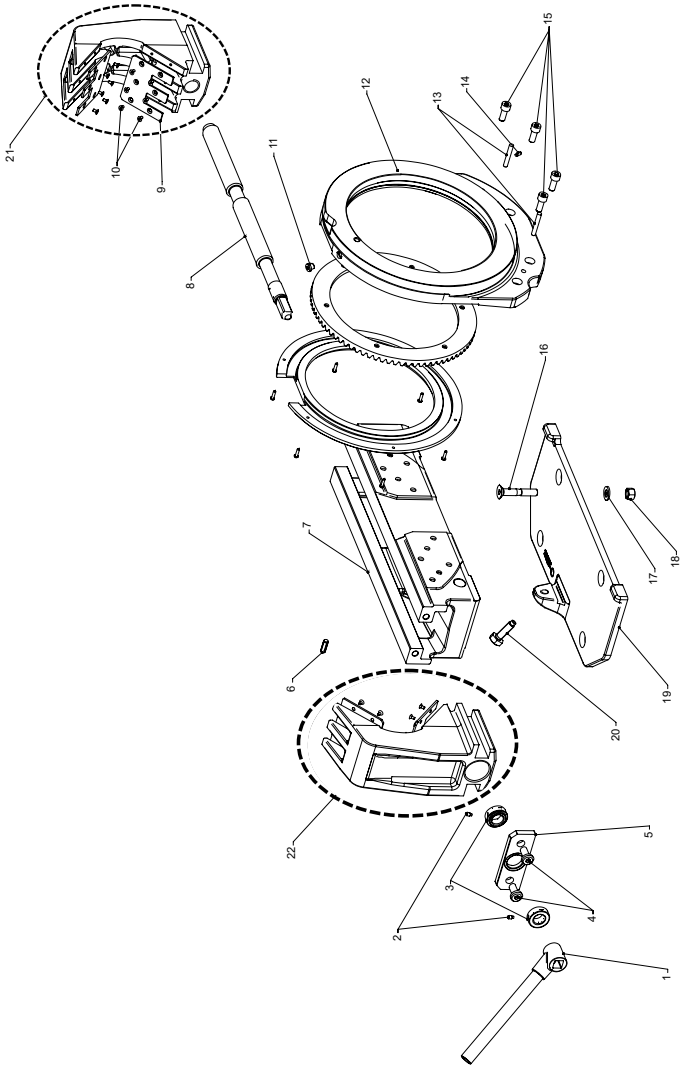

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
51
52
53
54
55
56
57
58
59
60
61
62
64
65
66
67
68
69

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
41	305 805 214	15	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN	51	790 041 191	1	Ölstopfen G 1/8" Oil plug G 1/8"
42	790 045 308	1	Abdeckplatte, Loch D14 Cover plate, hole D 14	52	790 045 320	1	Lagerdeckel Bearing cover
43	790 041 312	1	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1	53	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4
44	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3	54	790 041 208	1	Klemmbuchse Clamping sleeve
45	790 041 306	1	Gewindebuchse Threaded bushing	55	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
46	790 041 308	1	Gewindespindel Threaded spindle	56	790 041 188	1	Klemmscheibe Clamping washer
47	790 045 381	1	Schieber GF8 Slide block GF8	57	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
48	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST	58	500 600 311	1	Sechskantmutter ISO4032-M6-8 Hexagon nut ISO4032-M6-8
49	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2	59	790 142 125	1	INDICUT INDICUT
50	621 441 107	1	Dichtring 10.7x16x1 5USIT Seal ring 10.7x16x1 5USIT		790 142 135	1	INDICUT US INDICUT US

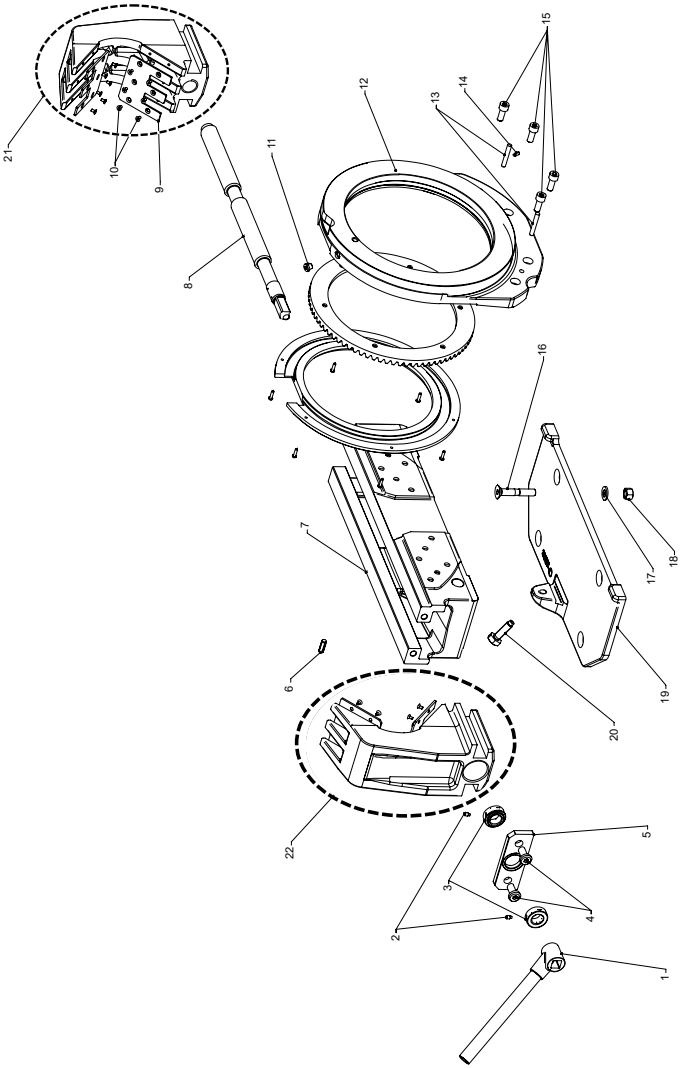

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
51
52
53
54
55
56
57
58
59
60
61
62
64
65
66
67
68
69

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	
60	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D 15 mm	* ab Maschinen-Nr. 045591101 / from machine-no. 045591101 ** bis Maschinen-Nr. 045591100 / up to machine-no. 045591100 *** ab Maschinen-Nr. 045591101 / from machine-no.: • RA8 230 V 790 045 095: S/N 04570013 • RA8 120 V 790 045 096: S/N 04570602 • RA8 AVM 230 V 790 045 001: S/N 04570901 • RA8 AVM 120 V 790 045 007: S/N 04570905 • RA8 MVM 230 V 790 045 069: S/N 04570952 • RA8 MVM 120 V 790 045 082: S/N 04570955
61	790 045 530	1	Laser, Halter Indicut Holder	
62	445 001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H	
64	305 501 116	2	Zylinderschraube ISO4762-M4x16-8.8 Cylinder screw ISO4762-M4x16-8.8	
65	790 045 315	1	Deckplatte GF8 cover plate	
66	790 045 382	1	Schild GF8 Label GF8	
67	790 045 383	1	Schieber GF8 vorm. o.Motor u.Ritzel Slide b. GF8 pre-m.w/o motor+pinion	
68	790 043 262	1	Späneschutz, schwenkbar, kpl. Chip protection, swiveling, cpl.	
69	790 045 333	1	Nockenrolle, Halter, kpl. Cam roller, shaft, cpl.	

12.7 GF 8 AVM/MVM (Fig. 1)

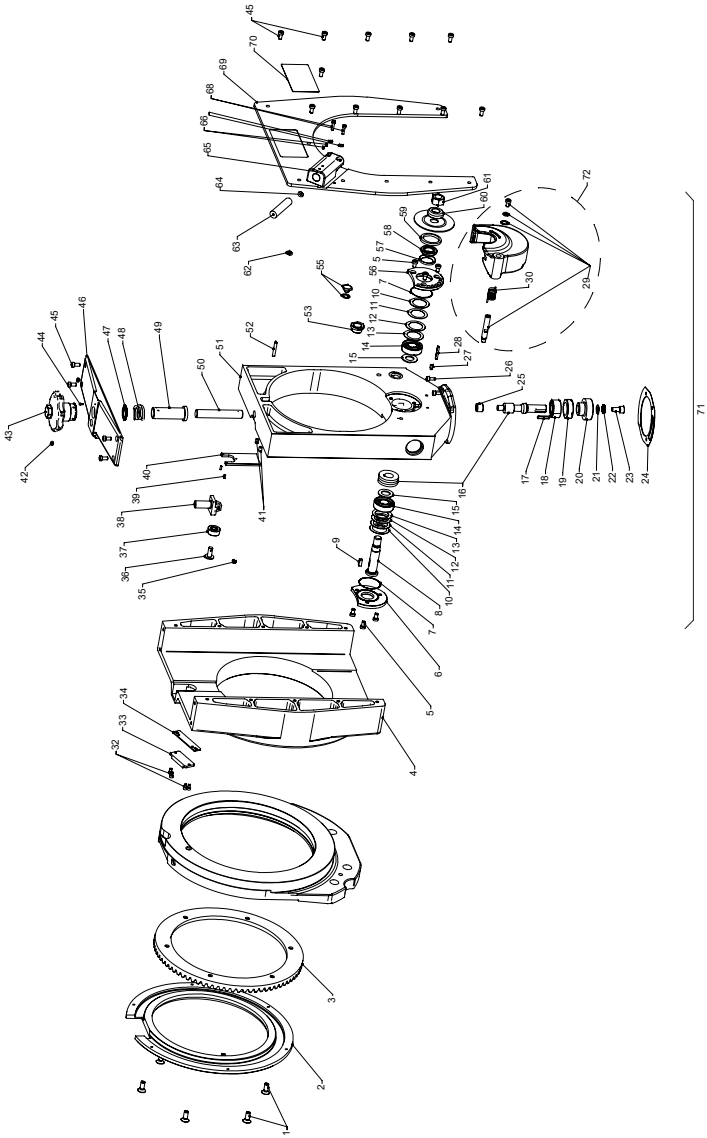


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 142 152	1	Multifunktionskurbel Multifunctional crank	11	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
2	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	12	790 045 507	1	Führungsflansch Guide flange for feed module
3	790 011 511	2	Stellring Adjusting ring	13	566 600 332	2	Kegelstift ISO8736-A-10x50-ST Taper pin ISO8736-A-10x50-ST
4	307 001 422	2	Linsenschraube ISO7380-M12x25-10.9 Oval-head screw ISO7380-M12x25-10.9	14	445 209 164	1	Gewindestift DIN915-M5x12-45H-Nylon Grub screw DIN915-M5x12-45H-Nylon
5	790 012 474	1	Schraubstockplatte Vice plate	15	305 501 322	4	Zylinderschraube ISO4762-M10x25-8.8 Cylinder screw ISO4762-M10x25-8.8
6	566 320 422	1	Kerbstift ISO8740-8x25-ST Grooved pin ISO8740-8x25-ST	16	302 301 440	4	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8
7	790 143 108	1	Schraubstockgehäuse Vice housing	17	542 500 314	4	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
8	790 047 158	1	Schraubstockspindel Vice spindle	18	500 600 314	3	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
9	790 045 330	4	Spannaufsatz, V4A Clamping insert, V4A	19	790 042 026	1	Schnellmontageplatte, kpl. Quick-mounting plate, cpl.
10	302 302 112	24	Senkschraube DIN7991-M4x8-8.8 Countersunk screw DIN7991-M4x8-8.8	20	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42

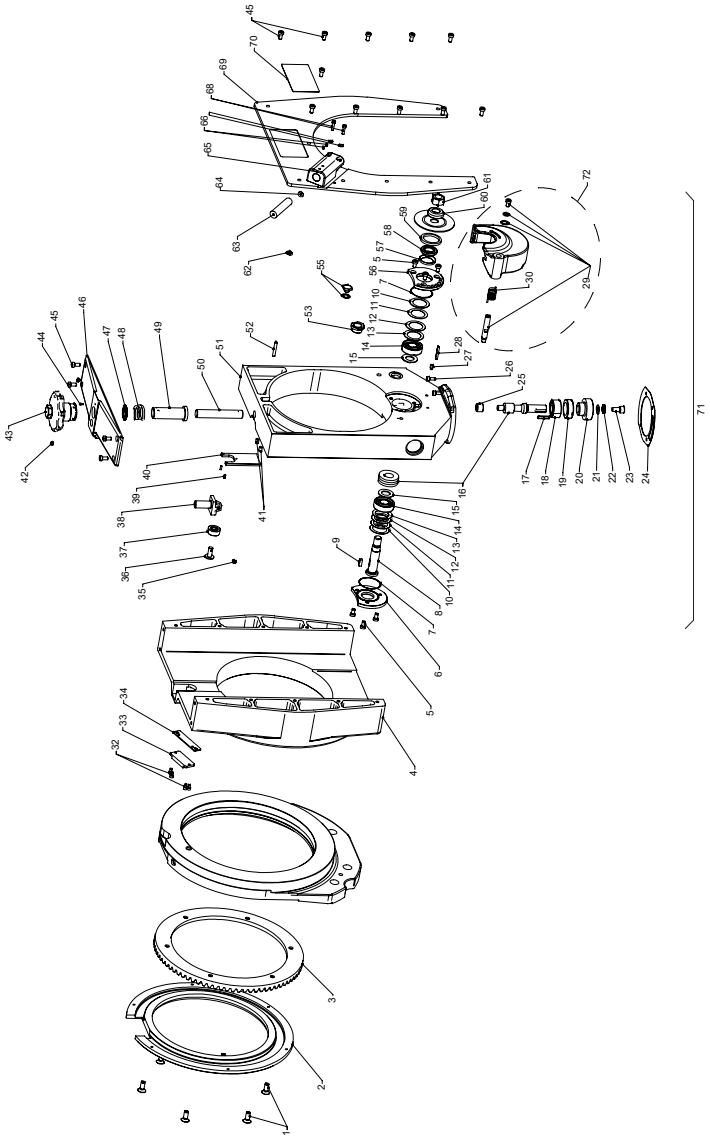

21
10
9
11
8
12
13
14
15
16
7
18
17
19
6
20
22
5
3
4
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	790 045 246	1	Gleitspannbacke ink. Spannaufsatz rechts Slide jaw incl.clamping insert righthand
22	790 045 245	1	Gleitspannbacke inkl. Spannaufsatz links Slide jaw incl. clamping insert lefthand

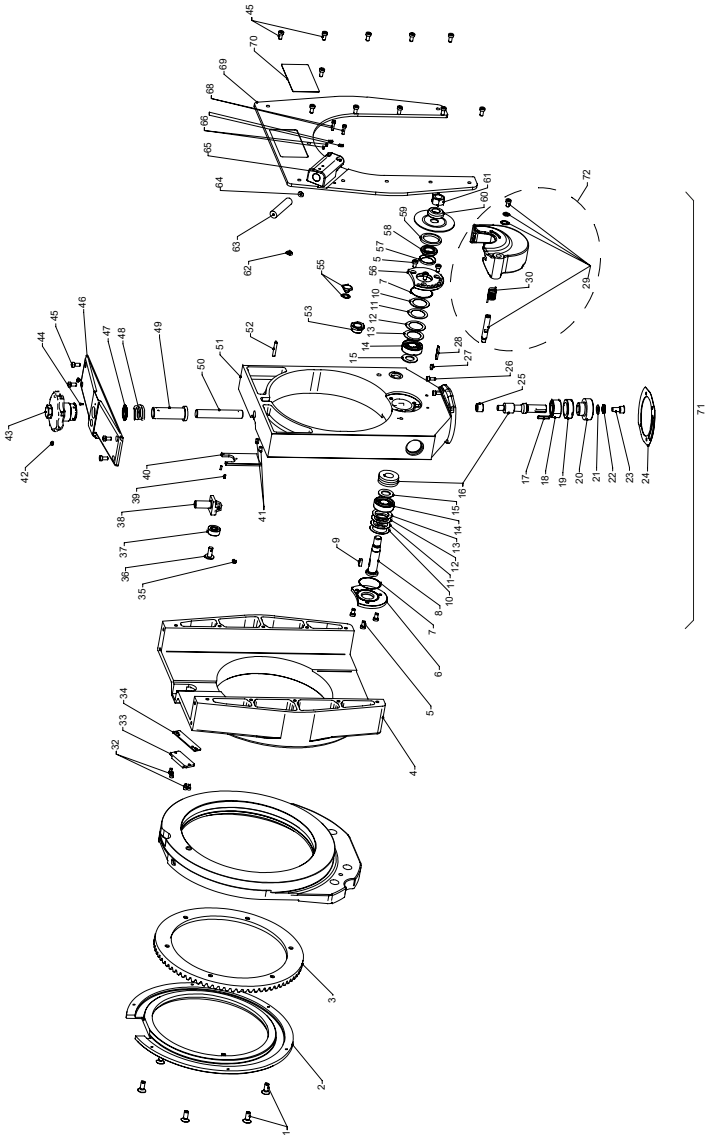
12.8 GF 8 AVM/MVM (Fig. 2)



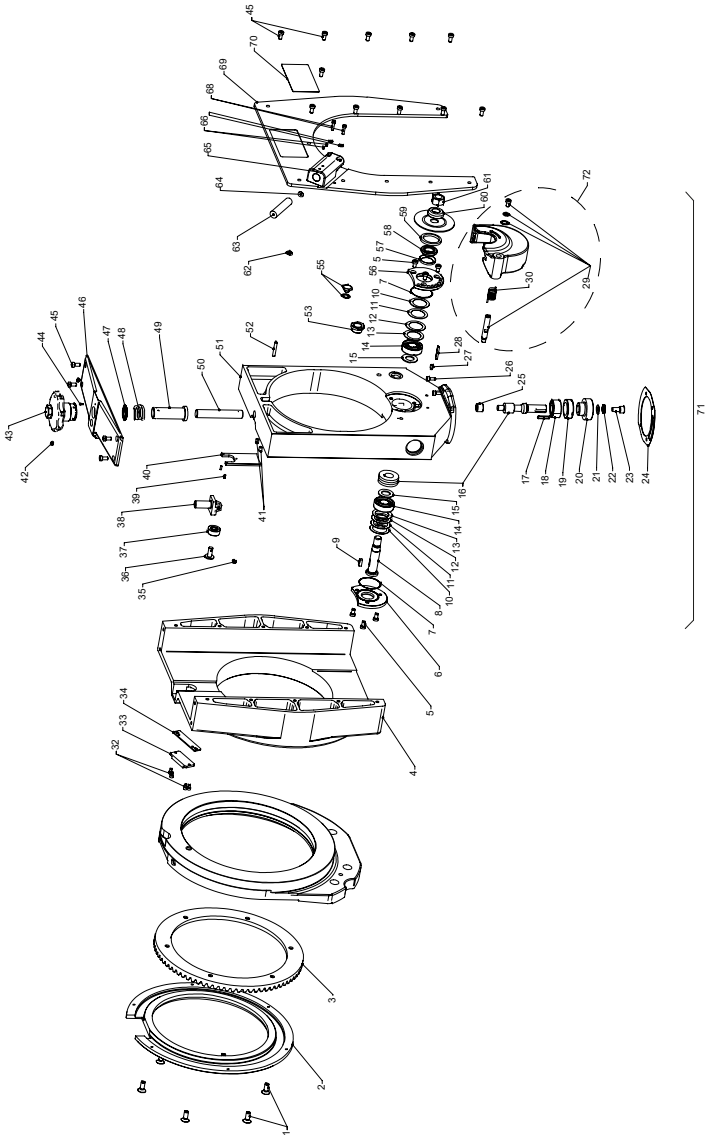
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	302 301 269	6	Senkschraube DIN7991-M8x20-8.8 Countersunk screw DIN7991-M8x20-8.8	11	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
2	790 045 125	1	Schutzring Protective ring	12	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
3	790 045 510	1	GF 8 Kronenrad GF 8 contrate wheel	13	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
4	790 045 324	1	Deckplatte, kpl. Cover plate, cpl.	14	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
5	305 801 213	7	Zylinderschraube ISO4762-M6x10-12.9 Cylinder screw ISO4762-M6x10-12.9	15	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
6	790 045 318	1	Deckel Cover	16	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel
7	790 041 209	2	O-Ring 42x1 O-ring 42x1	17	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24
8	790 041 185	1	Schneckenradwelle Worm wheel shaft	18	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF
9	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14	19	790 041 189	1	Gewindering Threaded ring
10	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10				


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
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
55
56
57
58
59
60
61
62
63
64
65
66
68
69
70
71
72

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	790 142 128	1	Antriebsritzel für GF07/GF09-Motor* Drive pinion for motor GF07/GF09*	30	790 042 256	1	Schenkelfeder Leg spring
21	542 500 311	1	Scheibe ISO7090-6-200HV Washer ISO7090-6-200HV	32	445 201 162	1	Gewindestift DIN915-M5x8-45H Grub screw DIN915-M5x8-45H
22	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST	33	305 505 111	2	Zylinderschraube ISO4762-M4x6-8.8-ZN Cylinder screw ISO4762-M4x6-8.8-ZN
23	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8	34	790 043 556	1	Reflektor Reflector
24	790 041 192	1	Dichtung D120x1 Seal D120x1	35	790 045 552	1	Reflektorblech Reflector plate
25	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	36	790 047 180	1	Hubrollenachse Lifting roll axis
26	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8	37	790 047 191	1	Stützrolle Support roller
27	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	38	790 045 331	1	Nockenrollenhalter Cam roller, holder
28	566 958 224	1	Spannstift ISO8752-6x30-ST Dowel pin ISO8752-6x30-ST	39	566 958 072	2	Spannstift ISO8752-3x8-ST Dowel pin ISO8752-3x8-ST
29	790 142 254	1	Welle, kpl. Shaft, cpl.				


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
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
55
56
57
58
59
60
61
63
64
65
66
68
69
70
71
72

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
40	790 043 119	1	Deckplatte Cover plate	50	790 041 308	1	Gewindespindel Threaded spindle
41	790 003 316	2	Kugelschnäpper D6 Ball catch D6	51	790 045 381	1	Schieber*** Slide block***
42	445 209 212	2	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round	52	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST
43	790 041 302	1	Sterngriff Star grip	53	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2
44	588 723 209	1	Kerbnagel ISO8746-2.3x5-ST-NI Dowel pin ISO8746-2.3x5-ST-NI	55	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"
45	305 805 214	15	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN	56	790 045 320	1	Lagerdeckel Bearing cover
46	790 045 308	1	Abdeckplatte, Loch D14 Cover plate, hole D14	57	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4
47	790 041 312	1	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1	58	790 041 208	1	Klemmbuchse Clamping sleeve
48	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3	59	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
49	790 041 306	1	Gewindebuchse Threaded bushing	60	790 041 188	1	Klemmscheibe Clamping washer


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
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
55
56
57
58
59
60
61
62
63
64
65
66
68
69
70
71
72

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
61	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
62	500 600 311	1	Sechskantmutter ISO4032-M6-8 Hexagon nut ISO4032-M6-8
63	790 142 125	1	INDICUT INDICUT
	790 142 135	1	INDICUT US INDICUT US
64	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm
65	790 045 530	1	Laser, Halter Holder
66	445 001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H
68	305 501 116	2	Zylinderschraube ISO4762-M4x16-8.8 Cylinder screw ISO4762-M4x16-8.8
69	790 045 315	1	Deckplatte GF 8 cover plate
70	790 045 382	1	Schild GF 8 Label GF 8
71	790 045 383	1	Schieber GF8 vorm. o.Motor u.Ritzel (ET) Slide b. GF8 pre-m.w/o motor+pinion
72	790 043 262	1	Späneschutz, schwenkbar, kpl. Chip protection, swiveling, cpl.

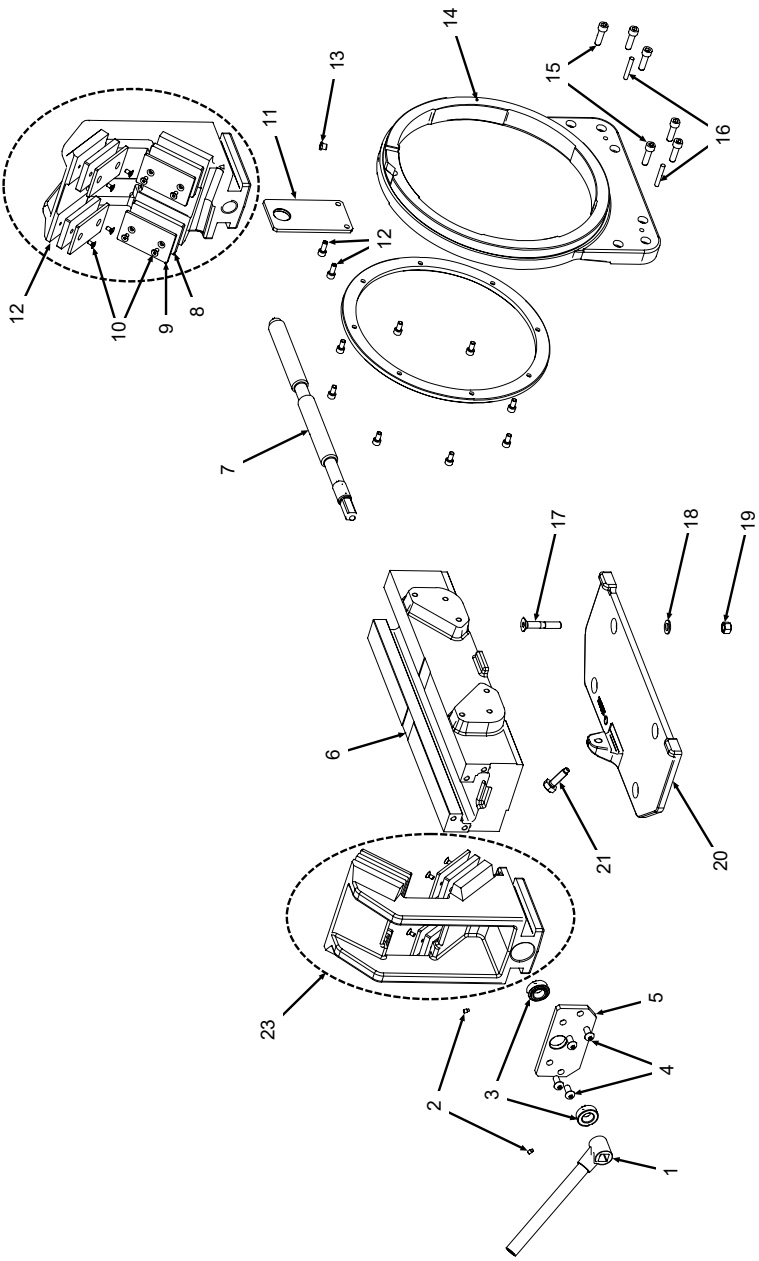
* ab Maschinen-Nr. 045591101 / from machine-no. 045591101

** bis Maschinen-Nr. 045591100 / up to machine-no. 045591100

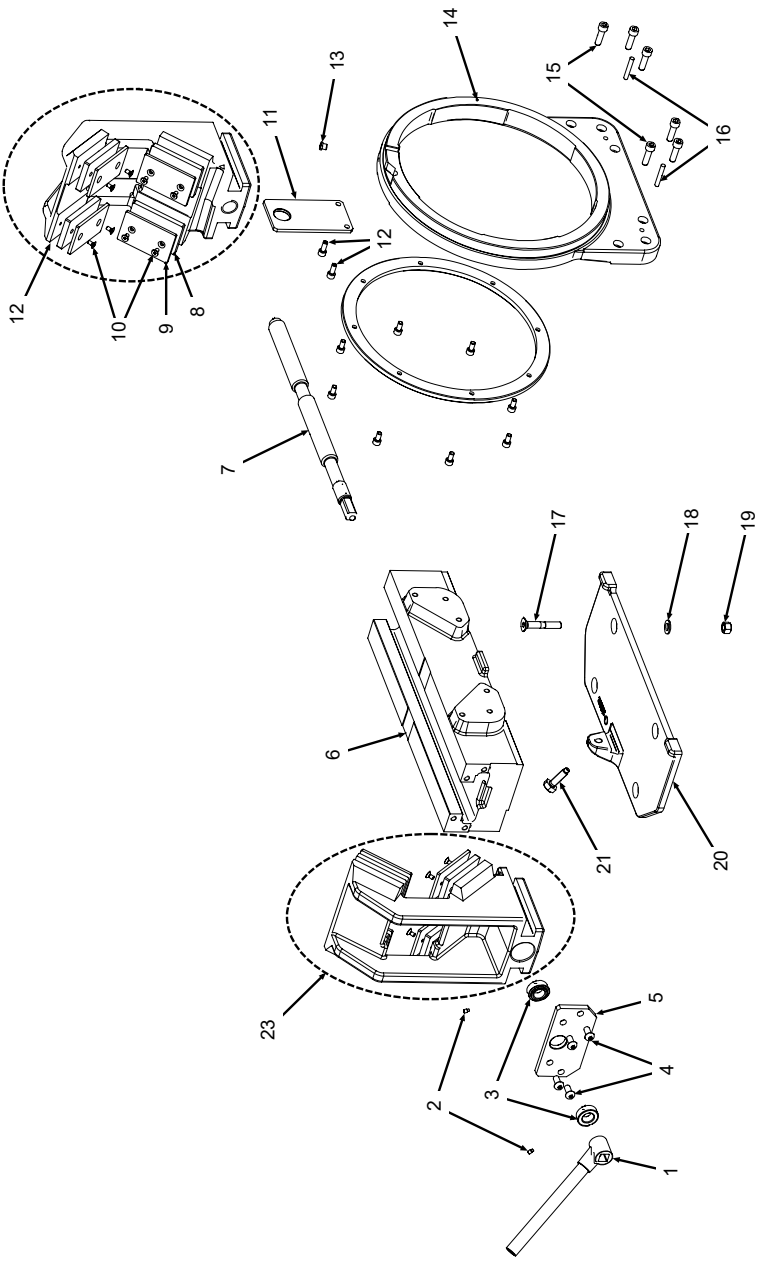
*** ab Maschinen-Nr. 045591101 / from machine-no.:

- RA8 230 V 790 045 095: S/N 04570013
- RA8 120 V 790 045 096: S/N 04570602
- RA8 AVM 230 V 790 045 001: S/N 04570901
- RA8 AVM 120 V 790 045 007: S/N 04570905
- RA8 MVM 230 V 790 045 069: S/N 04570952
- RA8 MVM 120 V 790 045 082: S/N 04570955

12.9 GF 12 (Fig. 1)

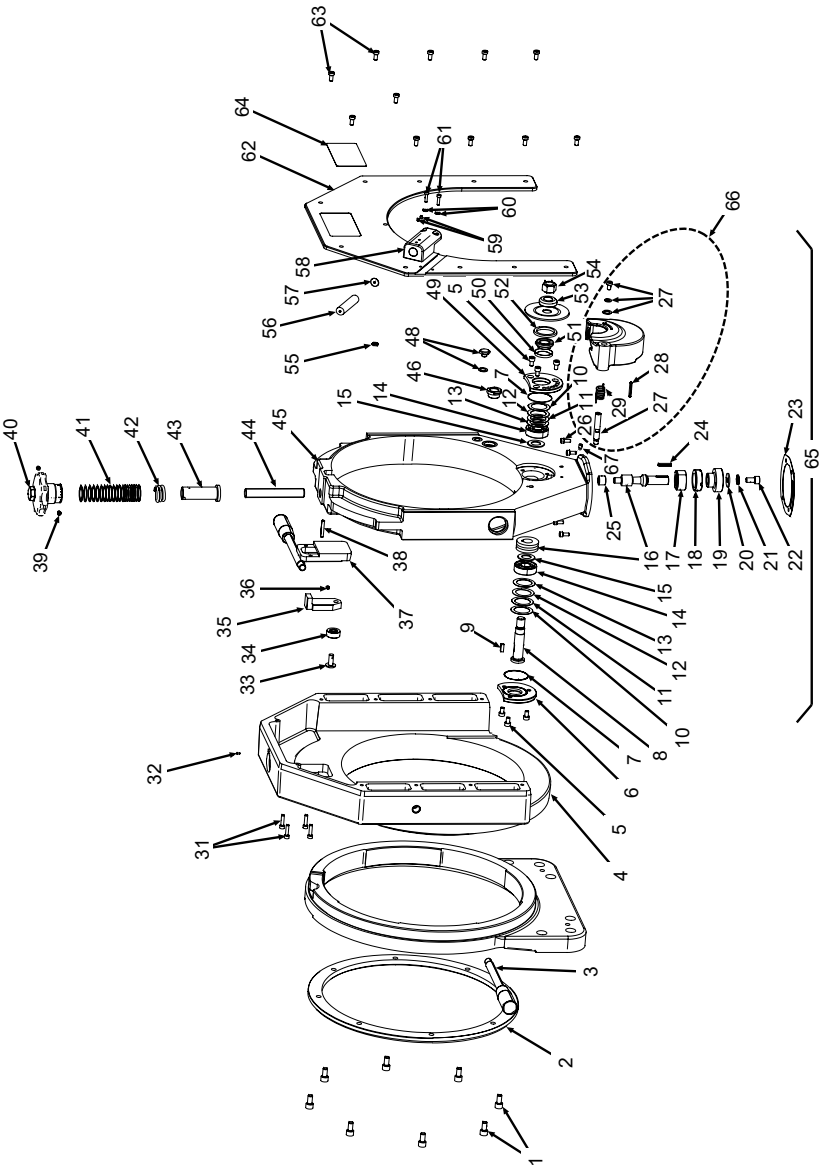


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 142 152	1	Multifunktionskurbel Multifunctional crank	11	790 047 202	1	Transportöse Transport lug
2	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	12	305 505 269	2	Zylinderschraube ISO4762-M8x20-8.8-ZN Cylinder screw ISO4762-M8x20-8.8-ZN
3	790 011 511	2	Stellring Adjusting ring	13	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
4	307 001 319	4	Linsenschraube ISO7380-M10x20-10.9 Oval-head screw ISO7380-M10x20-10.9	14	790 047 506	1	Vorschubmodul Führungsflansch Feed module guide flange
5	790 047 176	1	Schraubstockplatte Vice plate	15	305 501 326	6	Zylinderschraube ISO4762-M10x35-8.8 Cylinder screw ISO4762-M10x35-8.8
6	790 047 152	1	Schraubstock Vice	16	566 600 332	2	Kegelstift ISO8736-A-10x50-ST Taper pin ISO8736-A-10x50-ST
7	790 047 158	1	Schraubstockspindel Vice spindle	17	302 301 440	4	Senkschraube DIN7991-M12x70-8.8 Countersunk screw DIN7991-M12x70-8.8
8	790 047 189	8	RA 12 Distanzplatte RA 12 spacer plate	18	542 500 314	4	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
9	790 047 186	8	Prismenplatte Prism plate	19	500 600 314	4	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
10	302 305 214	16	Senkschraube DIN7991-M6x12-10.9 Countersunk screw DIN7991-M6x12-10.9	20	790 047 160	1	Schnellmontageplatte Quick-mounting plate

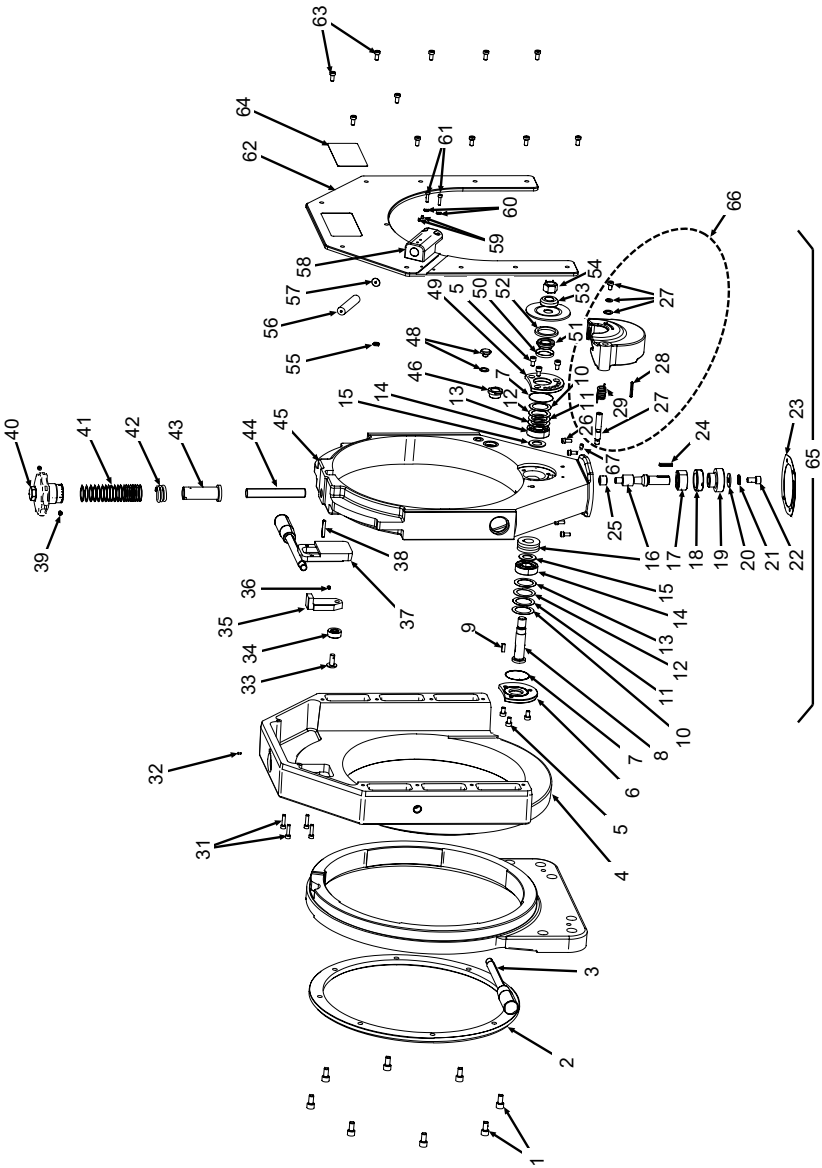

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
23

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
22	790 047 246	1	Gleitspannbacke inkl. Spannaufsatz rechts Slide jaw incl. clamping insert, right
23	790 047 245	1	Gleitspannbacke inkl. Spannaufsatz links Slide jaw incl. clamping insert, left
		* ab Maschinen-Nr. 047600101/from machine-no. 047600101	
		** bis Maschinen-Nr. 047600100/up to machine-no. 047600100	

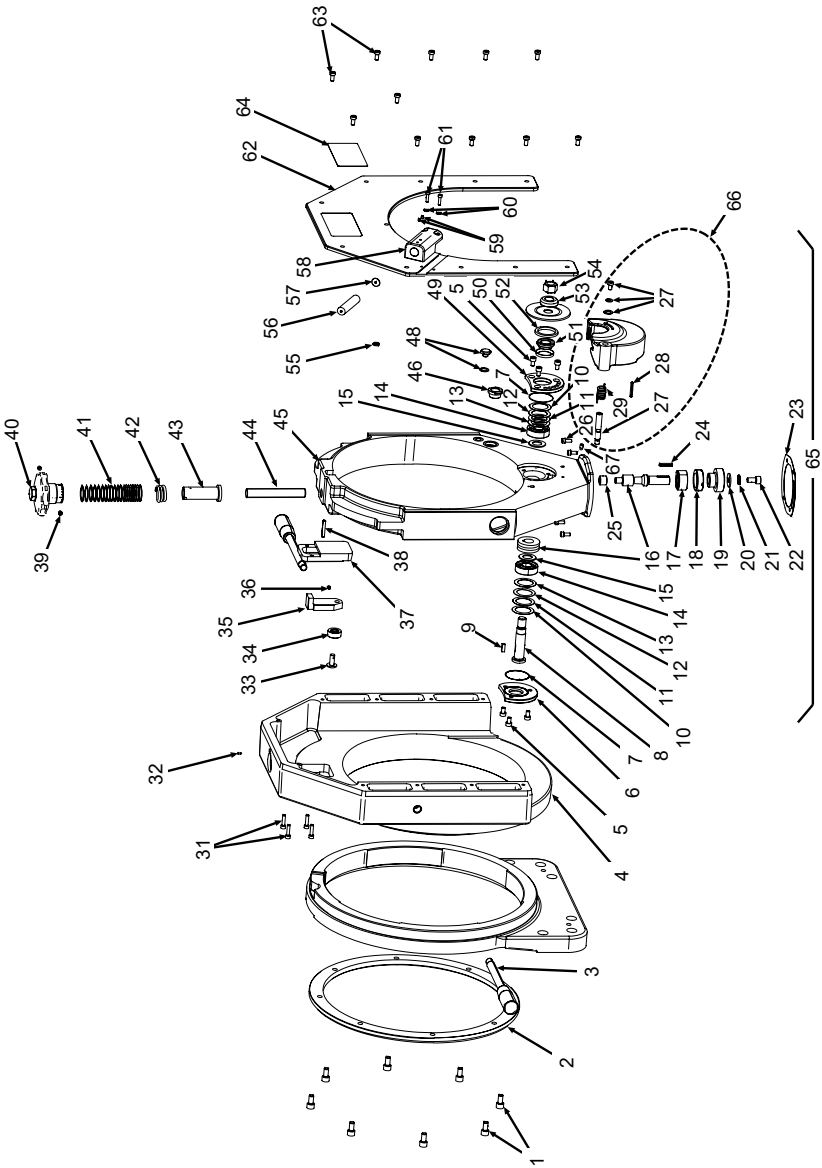
12.10 GF 12 (Fig. 2)



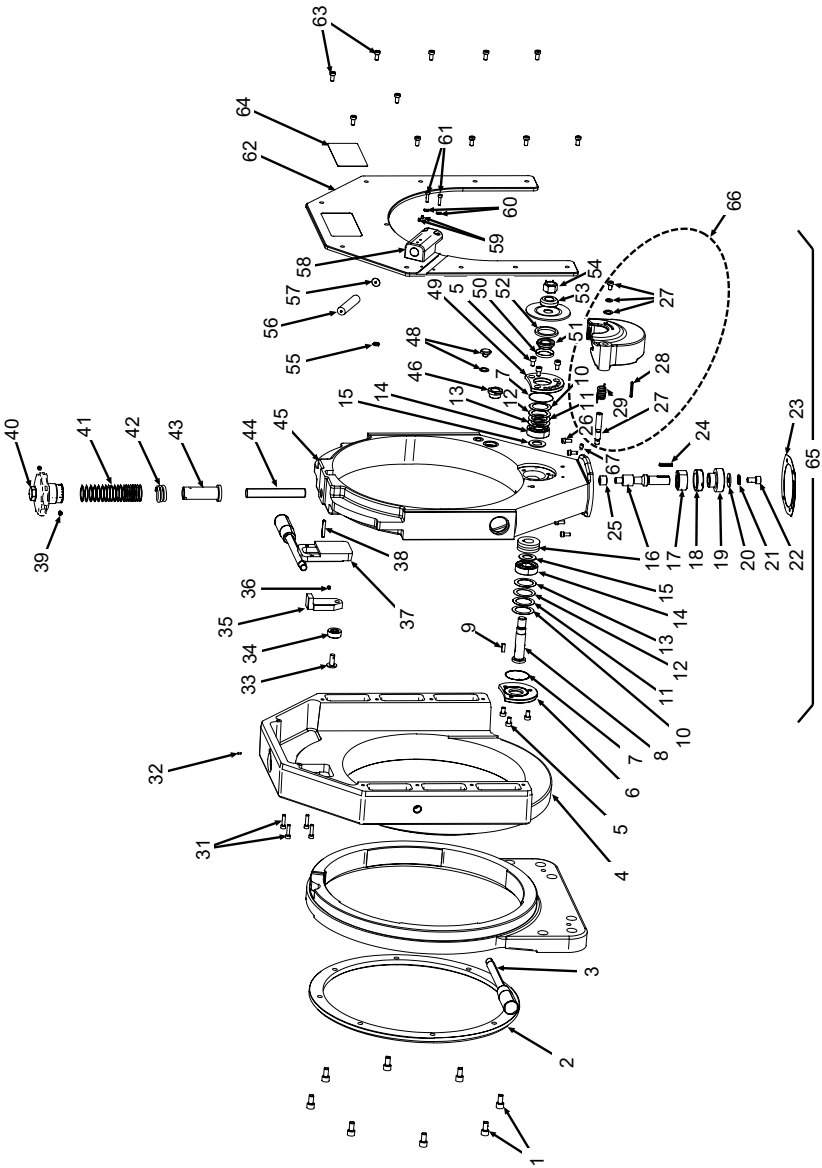
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	305 801 266	8	Zylinderschraube DIN7984-M8x16-8.8 Cylinder screw DIN7984-M8x16-8.8	11	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
2	790 047 173	1	Ring Ring	12	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
3	790 047 192	2	Griffstange Handle bar	13	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
4	790 047 166	1	Drehkörper Slide housing	14	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
5	305 501 213	6	Zylinderschraube ISO4762-M6x10-8.8 Cylinder screw ISO4762-M6x10-8.8	15	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
6	790 047 172	1	Deckel Cover	16	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel
7	790 041 209	2	O-Ring 42x1 O-ring 42x1	17	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF
8	790 041 185	1	Schneckenradwelle Worm wheel shaft	18	790 041 189	1	Gewindering Threaded ring
9	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14	19	790 142 128	1	Antriebsritzel GF07/GF09-Motor* Drive pinion motor GF07/GF09*
10	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10		790 041 182	1	Antriebsritzel FE680-Motor** Drive pinion for motor FE680**


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
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
20	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN	31	305 501 169	4	Zylinderschraube ISO4762-M5x20-8.8 Cylinder screw ISO4762-M5x20-8.8
21	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST	32	588 723 209	1	Kerbnagel ISO8746-2.3x5-ST-NI Dowel pin ISO8746-2.3x5-ST-NI
22	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8	33	790 047 180	1	Hubrollenachse Lifting roll axis
23	790 142 126	1	Dichtung zu Motor Seal for motor	34	790 047 191	1	Stützrolle Support roller
24	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24	35	790 047 178	1	Hubrollenhalter Lifting roll holder
25	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	36	445 001 162		Gewindestift DIN913-M5x8-45H Grub screw DIN913-M5x8-45H
26	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8	37	790 047 182	1	Führungsplatte Guide plate
27	790 142 254	1	Welle, kpl. (Ersatzteil) Shaft, cpl. (spare part)	38	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST
28	566 958 123	1	Spannstift ISO8752-4x28-ST Dowel pin ISO8752-4x28-ST	39	445 209 212	2	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round
29	790 042 256	1	Schenkelfeder Leg spring	40	790 041 302	1	Sterngriff Star grip


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
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
58
59
60
61
62
63
64
65
66
67

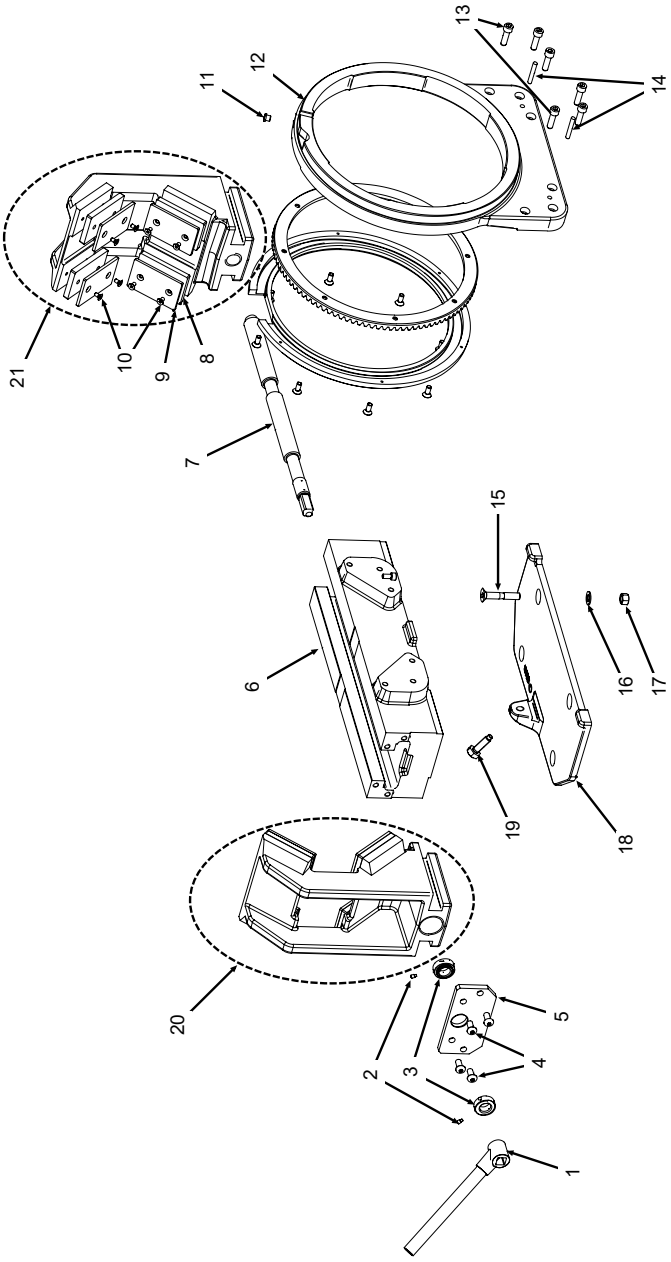
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
41	790 041 312	20	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1	52	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
42	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3	53	790 041 188	1	Klemmscheibe Clamping washer
43	790 041 306	1	Gewindebuchse Threaded bushing	54	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
44	790 047 184	1	Gewindespindel Threaded spindle	55	500 600 311	1	Sechskantmutter ISO4032-M6-8 Hexagon nut ISO4032-M6-8
45	790 047 381	1	Schieber GF12 Slide block GF12	56	790 142 125	1	INDICUT INDICUT
46	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2		790 142 135	1	INDICUT US INDICUT US
48	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"	57	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm
49	790 047 174	1	Lagerdeckel Bearing cover	58	790 045 530	1	Laser, Halter Holder
50	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4	59	445 001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H
51	790 041 208	1	Klemmbuchse Clamping sleeve	60	542 501 309	2	Scheibe DIN125-ISO7092-4-200HV Washer DIN125-ISO7092-4-200HV


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
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67

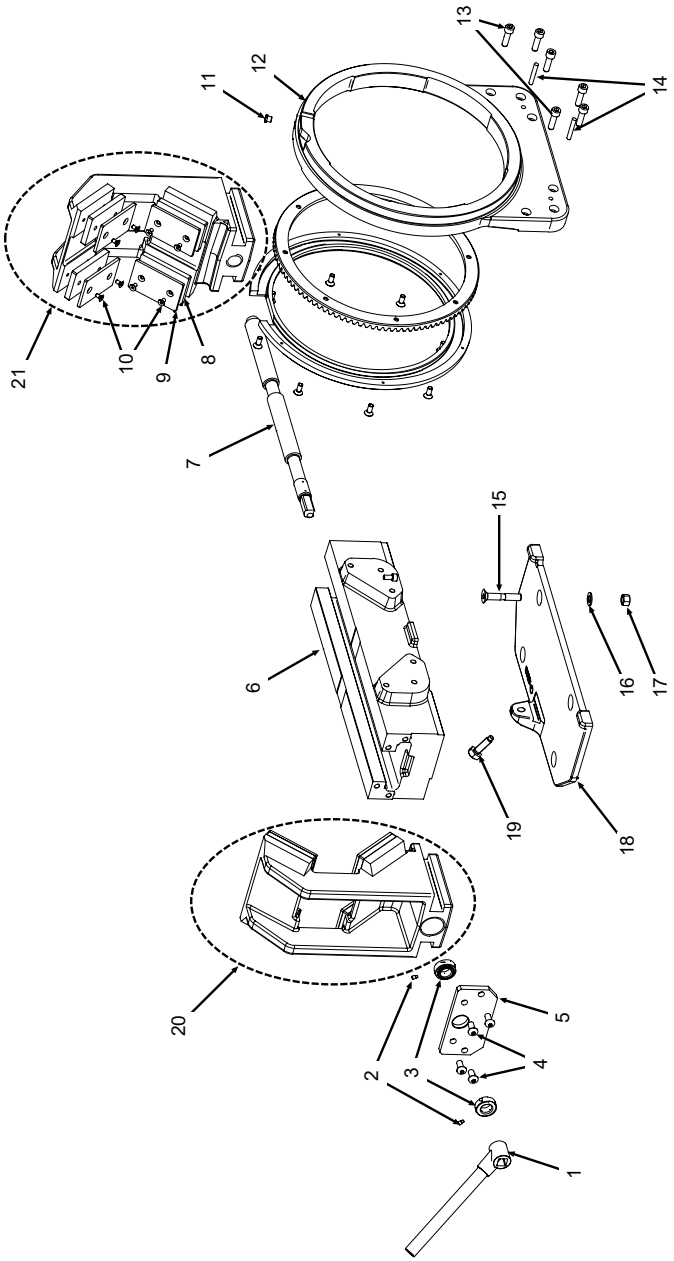
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
61	305 501 116	11	Zylinderschraube ISO4762-M4x16-8.8 Cylinder screw ISO4762-M4x16-8.8
62	790 047 315		Deckplatte GF12 Cover plate GF12
63	305 805 214	1	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
64	790 047 382	1	Schild GF 12 Label GF 12
65	790 047 383	1	Schieber GF12 vorm. o.Motor u.Ritzel (ET) Slide b. GF12 pre-m.w/o motor+pinion
66	790 043 262	1	Späneschutz, schwenkbar, kpl. Chip protection, swiveling, cpl.
67	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
* ab Maschinen-Nr. 047600101/from machine-no. 047600101			
** bis Maschinen-Nr. 047600100/up to machine-no. 047600100			

12.11 GF 12 AVM/MVM (Fig. 1)



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 142 152	1	Multifunktionskurbel Multifunctional crank	11	311 400 312	1	Verschlussschraube DIN908-M10x1.0-ST-ZN Screw plug DIN908-M10x1.0-ST-ZN
2	445 201 213	2	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H	12	790 047 506	1	Vorschubmodul Führungsflansch Feed module guide flange
3	790 011 511	2	Stellring Adjusting ring	13	305 501 326	6	Zylinderschraube ISO4762-M10x35-8.8 Cylinder screw ISO4762-M10x35-8.8
4	307 001 319	4	Linsenschraube ISO7380-M10x20-10.9 Oval-head screw ISO7380-M10x20-10.9	14	566 600 332	2	Kegelstift ISO8736-A-10x50-ST Taper pin ISO8736-A-10x50-ST
5	790 047 176	1	Schraubstockplatte Vice plate	15	302 301 440	4	Senkschraube DIN7991-M12x70-8.8Countersunk screw DIN7991-M12x70-8.8
6	790 047 152	1	Schraubstock Vice	16	542 500 314	4	Scheibe ISO7090-12-200HV Washer ISO7090-12-200HV
7	790 047 158	1	Schraubstockspindel Vice spindle	17	500 600 314	4	Sechskantmutter ISO4032-M12-8 Hexagon nut ISO4032-M12-8
8	790 047 189	8	GF 12 Distanzplatte GF 12 spacer plate	18	790 143 116	1	Schnellmontageplatte Quick-mounting plate
9	790 047 186	8	Prismenplatte Prism plate	19	790 041 815	1	Sechskantschraube M12x42 Hexagon screw M12x42
10	302 305 214	16	Senkschraube DIN7991-M6x12-10.9 Countersunk screw DIN7991-M6x12-10.9	20	790 047 246	1	Gleitspannbacke ink. Spannaufsatz rechts Slide jaw incl. clamping insert, right

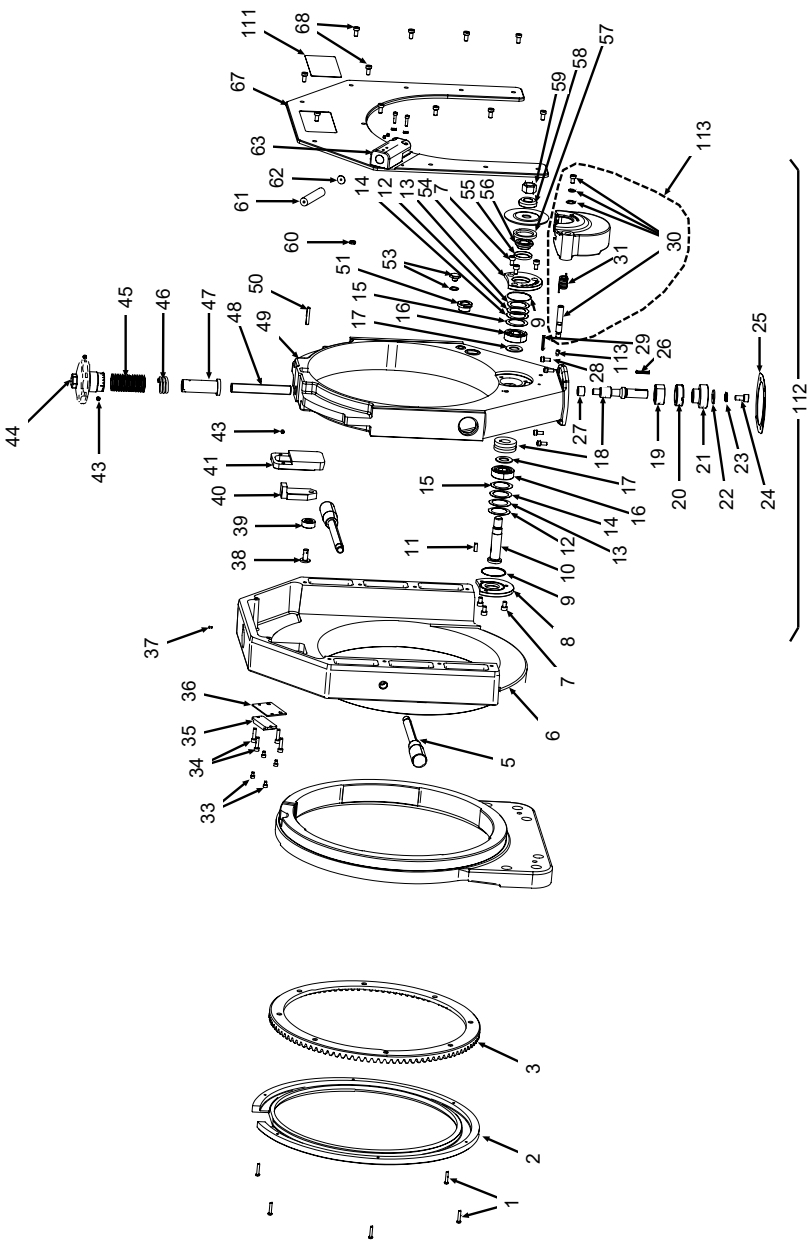

13
12
11
14
21
10
9
8
7
15
6
16
17
19
18
20
5
4
2
3
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	790 047 245	1	Gleitspannbacke inkl. Spannaufsatz links Slide jaw incl. clamping insert, left

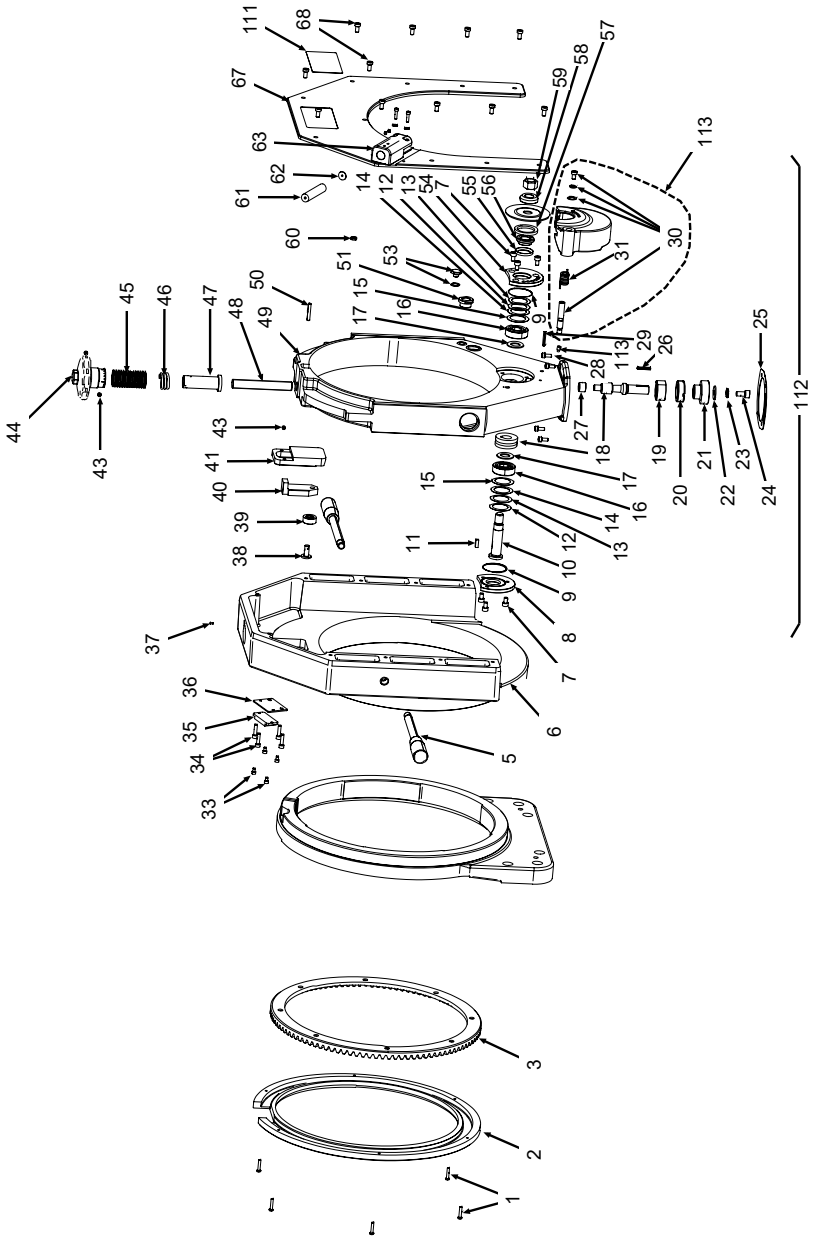
* ab Maschinen-Nr. 047600101 / from machine-no. 047600101

** bis Maschinen-Nr. 047600100 / up to machine-no. 047600100

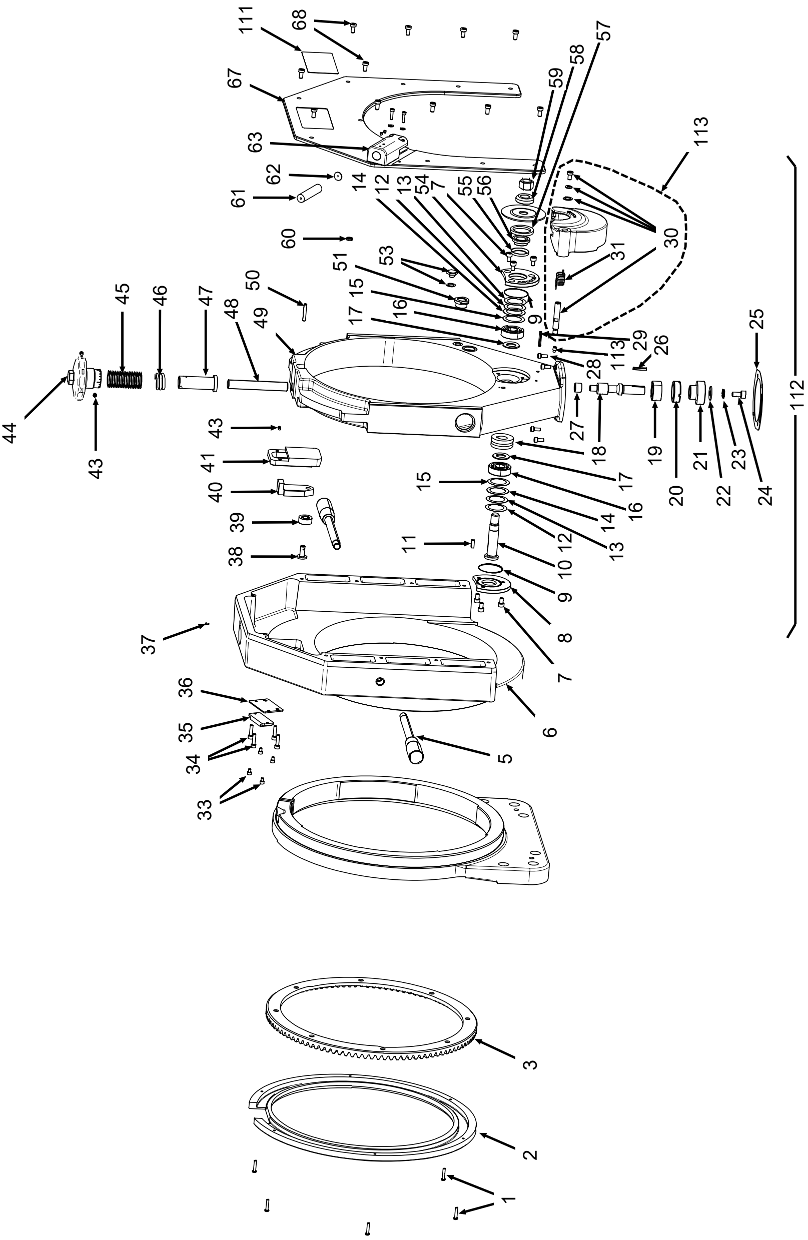
12.12 GF 12 AVM/MVM (Fig. 2)



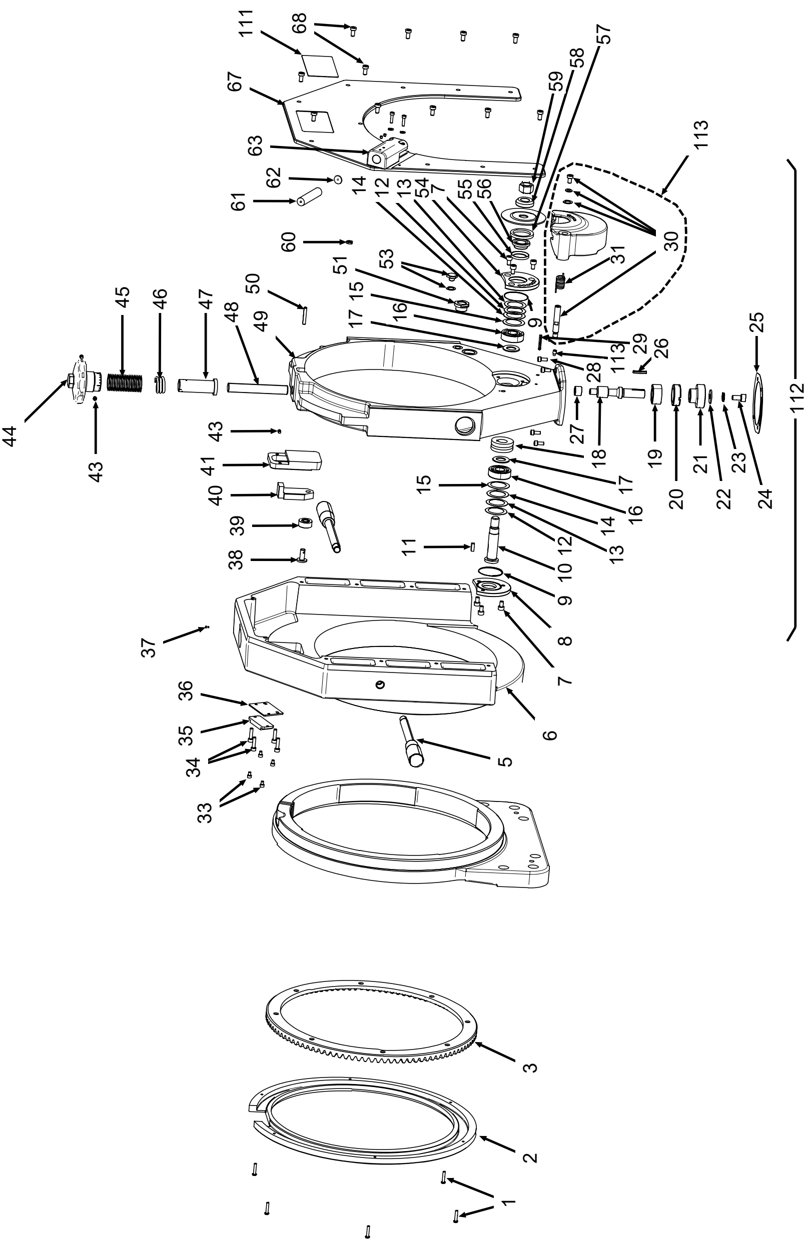
POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	307 001 119	6	Linsenschraube ISO7380-M4x20-10.9 Oval-head screw ISO7380-M4x20-10.9	12	790 041 213	2	Distanzscheibe 28x39x0.10 Spacer 28x39x0.10
2	790 047 525	1	Schutzring Protective ring	13	790 041 214	2	Distanzscheibe 28x39x0.15 Spacer 28x39x0.15
3	790 047 510	1	Kronenrad GF 12 Contrate wheel GF 12	14	790 041 215	2	Distanzscheibe 28x39x0.20 Spacer 28x39x0.20
5	790 047 192	2	Griffstange Handlebar	15	790 041 217	2	Distanzscheibe 28x39x0.30 Spacer 28x39x0.30
6	790 047 166	1	Drehkörper Slide housing	16	610 102 017	2	Rillenkugellager DIN625-6203-Normal-SKF Grooved ball bearing DIN625-6203Norm-SKF
7	305 501 213	6	Zylinderschraube ISO4762-M6x10-8.8 Cylinder screw ISO4762-M6x10-8.8	17	790 041 211	2	Druckscheibe 17x30x1.7 Thrust washer 17x30x1.7
8	790 047 172	1	Deckel Cover	18	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel
9	790 041 209	2	O-Ring 42x1 O-ring 42x1	19	612 032 015	1	Schrägkugellager DIN6283202-A-Norm.-SKF Angular ball b. DIN6283202-A-Norm-SKF
10	790 041 185	1	Schneckenradwelle Worm wheel shaft	20	790 041 189	1	Gewindering Threaded ring
11	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14				


111
68
67
63
62
61
14
12
13
54
7
55
56
57
58
59
113
60
51
53
30
31
50
15
17
16
9
45
46
47
48
49
29
26
28
113
25
44
43
43
27
18
19
21
22
23
24
112
41
40
39
38
15
17
16
14
12
13
20
11
10
9
8
7
37
36
35
34
33
6
5
3
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	790 142 128	1	Antriebsritzel für GF07/GF09-Motor* Drive pinion for motor GF07/GF09*	31	790 042 256	1	Schenkelfeder Leg spring
22	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN	33	305 505 111	4	Zylinderschraube ISO4762-M4x6-8.8-ZN Cylinder screw ISO4762-M4x6-8.8-ZN
23	553 458 312	1	Fächerscheibe DIN6798-A8.4-FST Serrated washer DIN6798-A8.4-FST	34	305 501 169	4	Zylinderschraube ISO4762-M5x20-8.8 Cylinder screw ISO4762-M5x20-8.8
24	305 501 266	1	Zylinderschraube ISO4762-M8x16-8.8 Cylinder screw ISO4762-M8x16-8.8	35	790 043 556	1	Reflektor Reflector
25	790 142 126	1	Dichtung zu Motor Seal for motor	36	790 143 308	1	Reflektorblech Reflector plate
26	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24	37	588 723 209	1	Kerbnagel ISO8746-3x5-ST-NI Dowel pin ISO8746-3x5-ST-NI
27	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11	38	790 047 180	1	Hubrollenachse Lifting roll axis
28	305 501 148	4	Zylinderschraube ISO4762-M5x14-8.8 Cylinder screw ISO4762-M5x14-8.8	39	790 047 191	1	Stützrolle Support roller
29	566 958 123	1	Spannstift ISO8752-4x28-ST Dowel pin ISO8752-4x28-ST	40	790 047 178	1	Hubrollenhalter Lifting roll holder
30	790 142 254	1	Welle, kpl. (Ersatzteil) Shaft, cpl. (spare part)				


111
68
67
63
62
61
60
59
58
57
14
12
13
54
7
55
56
113
30
31
53
51
50
15
16
17
9
45
46
47
48
49
29
113
26
28
25
44
43
43
41
40
39
38
27
18
19
20
21
22
23
24
112
17
16
14
15
12
13
11
10
9
8
7
37
36
35
34
33
6
5
3
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
41	790 047 182	1	Führungsplatte Guide plate	51	790 043 126	1	Ölschauglas R1/2 Oil sight glass R1/2
42	445 201 162	1	Gewindestift DIN915-M5x8-45H Grub screw DIN915-M5x8-45H	53	790 050 191	1	Ölstopfen G 1/8" Oil plug G 1/8"
43	445 209 212	1	Gewindestift DIN915-M6x8-45H-TUFLOK/ rund Grub screw DIN915-M6x8-45H-TUFLOK/ round	54	790 047 174	1	Lagerdeckel Bearing cover
44	790 041 302	1	Sterngriff Star grip	55	790 041 207	1	INA-Dichtring GR 24x32x4 INA seal GR 24x32x4
45	790 041 312	20	Passscheibe 22.5x29x0.1 Adjusting washer 22.5x29x0.1	56	790 041 208	1	Klemmbuchse Clamping sleeve
46	790 043 130	1	Druckfeder 30x3.75x16.3 Pressure spring 30x3.75x16.3	57	790 046 168	1	Filzring 41.5x4 Felt ring 41.5x4
47	790 041 306	1	Gewindebuchse Threaded bushing	58	790 041 188	1	Klemmscheibe Clamping washer
48	790 047 184	1	Gewindespindel Threaded spindle	59	790 041 212	1	Sechskantmutter M14x1.5 Hexagon nut M14x1.5
49	790 047 381	1	Schieber GF12 Slide block GF12	60	500 600 311	1	Sechskantmutter ISO4032-M6-8 Hexagon nut ISO4032-M6-8
50	566 958 175	1	Spannstift ISO8752-5x32-ST Dowel pin ISO8752-5x32-ST				

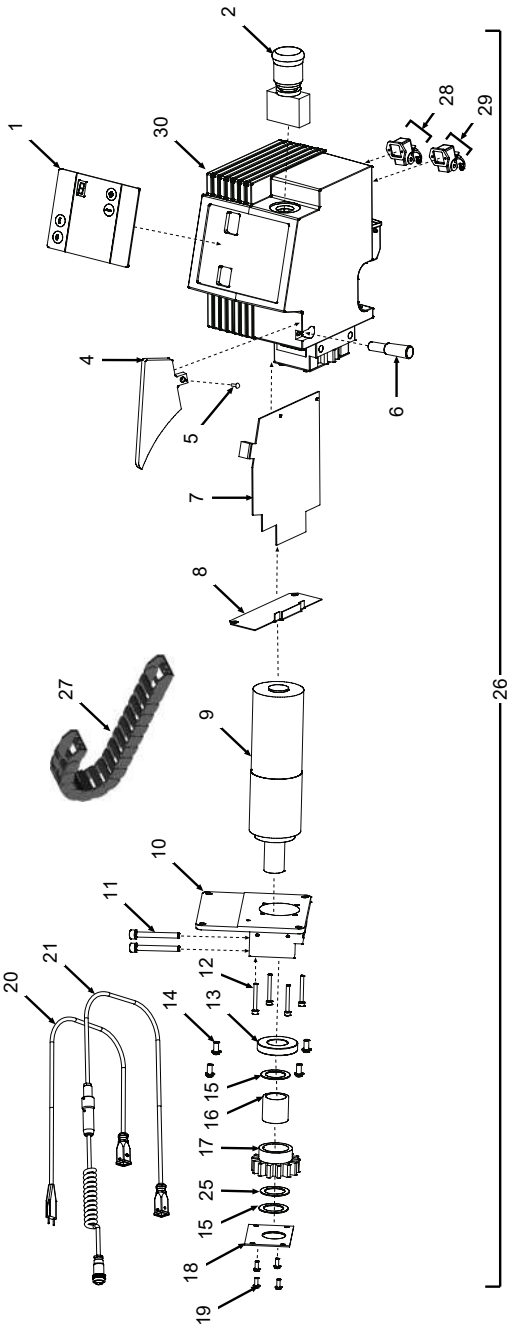

111
68
67
63
62
61
60
59
58
57
14
12
13
54
7
55
56
53
51
50
15
16
17
9
113
30
31
29
26
28
27
18
19
20
21
22
23
24
25
112
45
46
47
48
49
44
43
41
40
39
38
37
36
35
34
33
11
10
8
6
5
3
2
1

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
61	790 142 125	1	INDICUT INDICUT
	790 142 135	1	INDICUT US INDICUT US
62	790 142 479	1	PLEXIGLAS D15 mm PLEXIGLAS D15 mm
63	790 045 530	1	Laser, Halter Holder
64	445001 003	2	Gewindestift DIN913-M4x4-45H Grub screw DIN913-M4x4-45H
66	305 501 116	2	Zylinderschraube ISO4762-M4x16-8.8 Cylinder screw ISO4762-M4x16-8.8
67	790 045 315	1	Deckplatte GF 8 Cover plate GF 8
68	305 805 214	11	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
108	790 047 245	1	Gleitspannbacke inkl. Spannaufsatz links Slide jaw incl. clamping insert, left
109	790 047 246	1	Gleitspannbacke ink. Spannaufsatz rechts Slide jaw incl. clamping insert, right
110	790 142 477	1	Schild ORBITALUM 55x160 Label ORBITALUM 55x160
111	790 047 382	1	Schild GF 12 Label GF 12
112	790 047 383	1	Schieber GF12 vorm. o.Motor u.Ritzel (ET) Slide b. GF12 pre-m.w/o motor+pinion
113	790 043 262	1	Späneschutz, schwenkbar, kpl. Chip protection, swiveling, cpl.
114	445 201 213	1	Gewindestift DIN915-M6x10-45H Grub screw DIN915-M6x10-45H

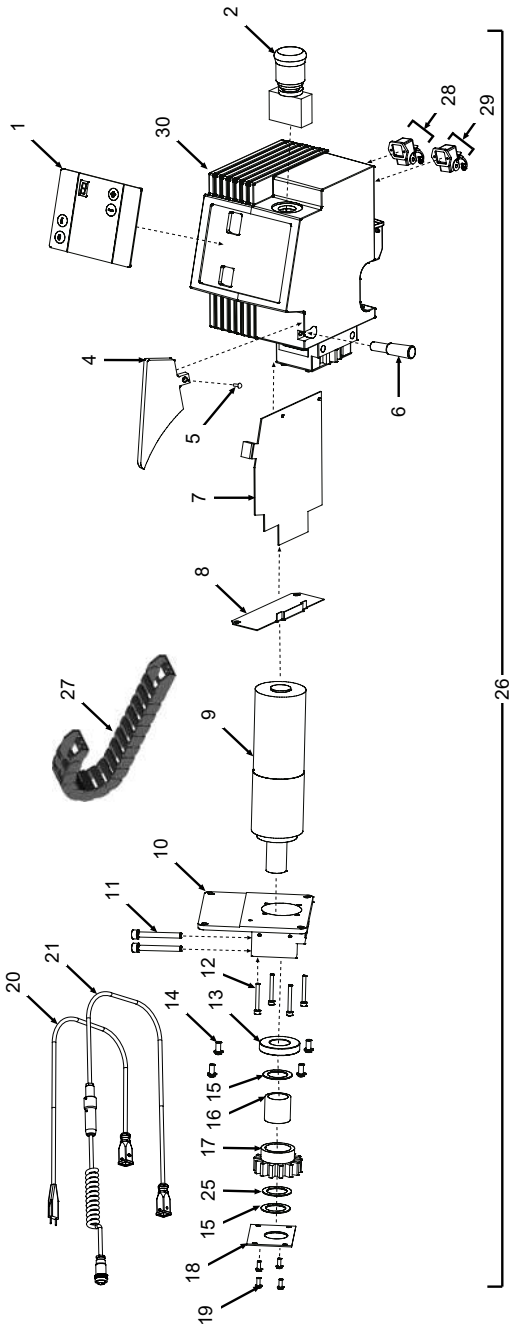
* ab Maschinen-Nr. 047600101 / from machine-no. 047600101

** bis Maschinen-Nr. 047600100 / up to machine-no. 047600100

12.13 AVM: Automatisches Vorschubmodul | AVM: Automatic feed module

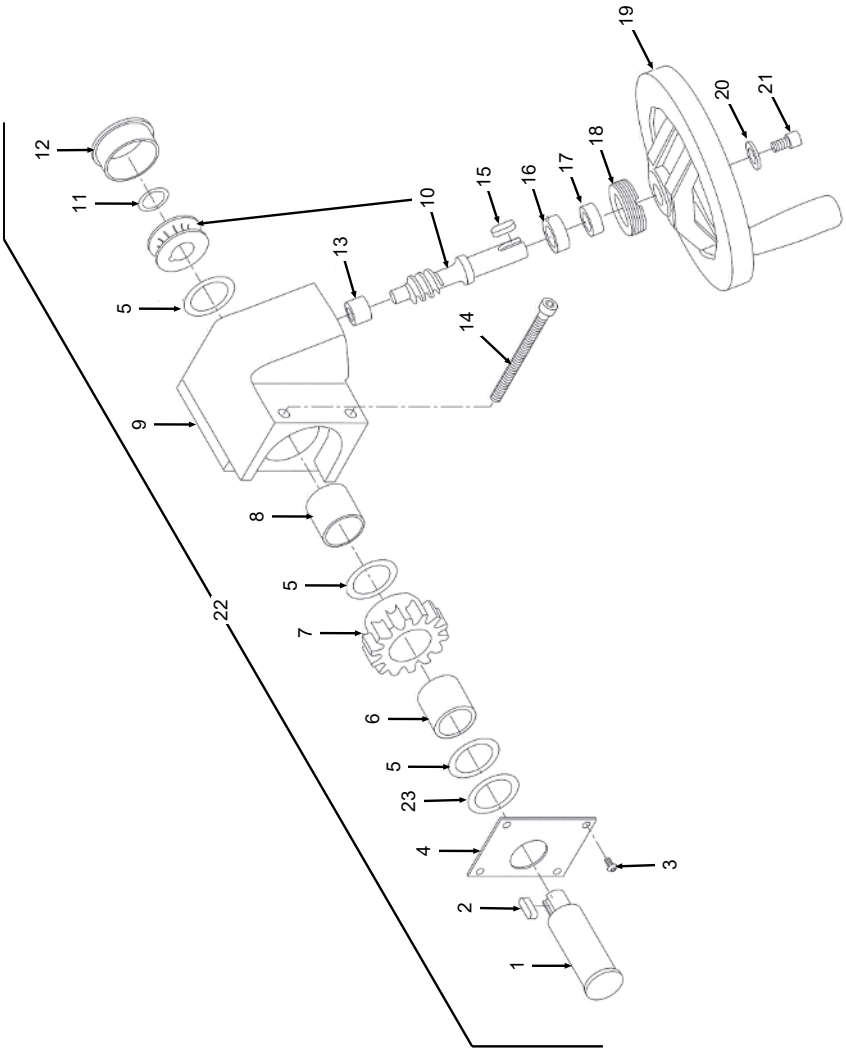


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 043 582	1	Folientastatur Membrane keypad	9	790 043 581	1	Getriebemotor, kpl. Gear motor, cpl.
2	790 043 584	1	Schalter, NOT-AUS, kpl. Switch, emergency OFF, cpl.	10	790 043 540	1	Gehäuseboden Housing base
4	790 142 214	1	Schutzsteg Protective web	11	305 601 294	2	Zylinderschraube ISO4762-M8x80/28-8.8 Cylinder screw ISO4762-M8x80/28-8.8
	790 043 550	1	AVM Schutzsteg AVM protective web	12	305 505 126	4	Zylinderschraube ISO4762-M4x35-8.8-ZN Cylinder screw ISO4762-M4x35-8.8-ZN
	790 045 550	1	Schutzsteg Protective web	13	790 043 548	1	Lagerscheibe Bearing plate
	790 047 550	1	Schutzsteg Protective web	14	305 805 214	4	Zylinderschraube DIN7984-M6x12-8.8-ZN Cylinder screw DIN7984-M6x12-8.8-ZN
5	307 002 219	1	Linsenschraube ISO7380-M6x20-10.9-ZN Oval-head screw ISO7380-M6x20-10.9-ZN	15	790 043 528	2	Passscheibe DIN988-PS25x36x1 Adjusting washer DIN988-PS25x36x1
6	790 043 583	1	Lichtschranke Light barrier	16	790 043 529	1	Hülsenfreilauf Roller clutch
7	790 043 599	1	Platine AVM (V2) Circuit board AVM (V2)	17	790 043 512	1	Stirnrad RA 6 Spur gear RA 6
8	790 043 552	1	Halteblech Retaining plate				

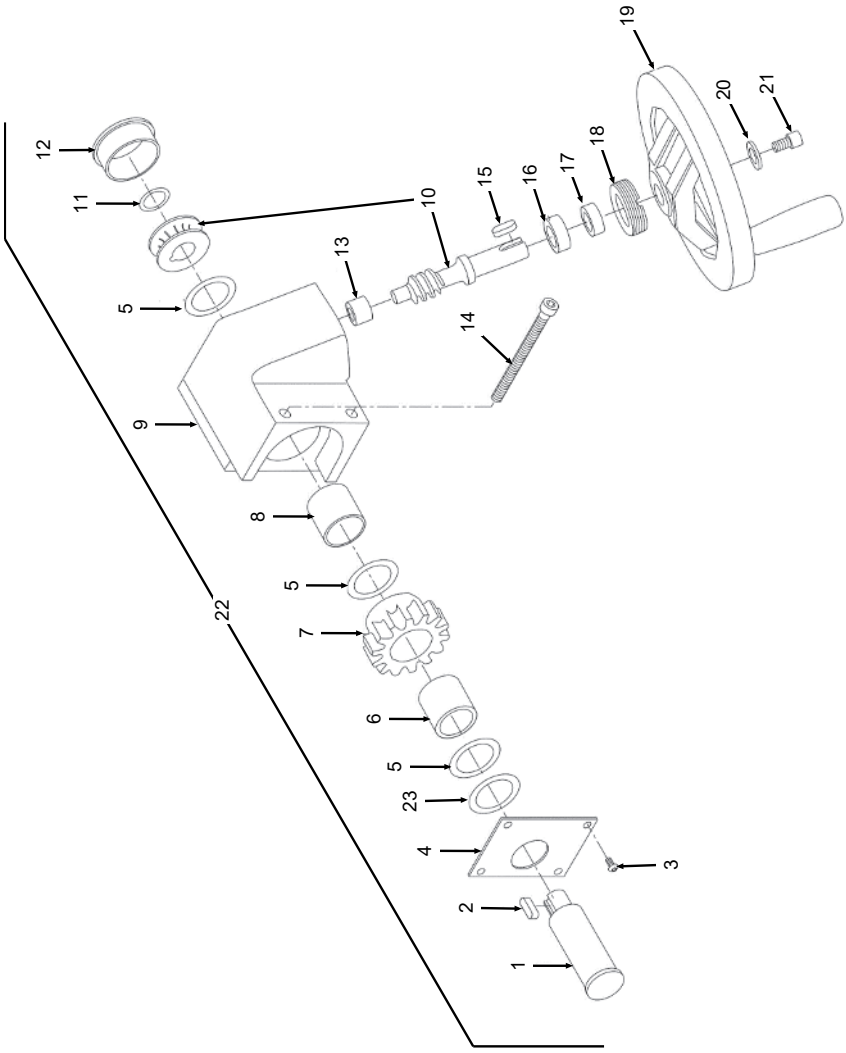

1
2
4
5
6
7
8
9
10
11
12
13
14
15
15
16
17
18
19
20
21
25
26
27
28
29
30

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
18	790 043 532	1	Gehäuse, Deckel Housing cover	26	790 043 575	1	AVM v2 kpl. zu GF 4/6, RA 6/8/12 (230/110 V) AVM v2 cpl. for GF 4/6, RA 6/8/12 (230/110 V)
19	307 005 113	4	Linsenschraube ISO7380-M4x10-10.9-ZN Oval-head screw ISO7380-M4x10-10.9-ZN		790 043 567	1	Kabelführung AVM V2 kpl. GF 4 Cable guide AVM V2 cpl. GF 4
20	790 142 054	1	AVM Netzkabel 230 V EU AVM power cable 230 V EU	27	790 043 572	1	Kabelführg. AVM V2 kpl. GF6/RA8 Cable guide AVM V2 cpl. GF6/RA8
	790 142 272	1	AVM Netzkabel 230 V AUS AVM power cable 230 V AUS		790 043 572	1	Kabelführg. AVM V2 kpl. GF6/RA8 Cable guide AVM V2 cpl. GF6/RA8
	790 142 270	1	AVM Netzkabel 230 V CH AVM power cable 230 V CH		790 043 570	1	Kabelführg. AVM V2 kpl. GF 12 Cable guide AVM V2 cpl. GF 12
	790 142 055	1	AVM Netzkabel 120 V US AVM power cable 120 V US	28	790 043 588	1	AVM Gerätestecker Zwischenkabel, kpl. AVM connector plug power cable, cpl.
	790 142 271	1	AVM Netzkabel 110 V GB AVM power cable 110 V GB	29	790 043 589	1	AVM Gerätedose Netzkabel, kpl.. AVM connector socket power cable, cpl.
21	790 142 050	1	AVM Zwischenkabel 230 V AVM intermediate cable 230 V	30	790 043 558	1	Steuergehäuse V2 Control housing V2
	790 142 051	1	AVM Zwischenkabel 120 V AVM intermediate cable 120 V				
25	790 142 215	1	AVM, Wellenfeder AVM, shaft spring				

12.14 MVM: Manuelles Vorschubmodul | MVM: Manual feed module

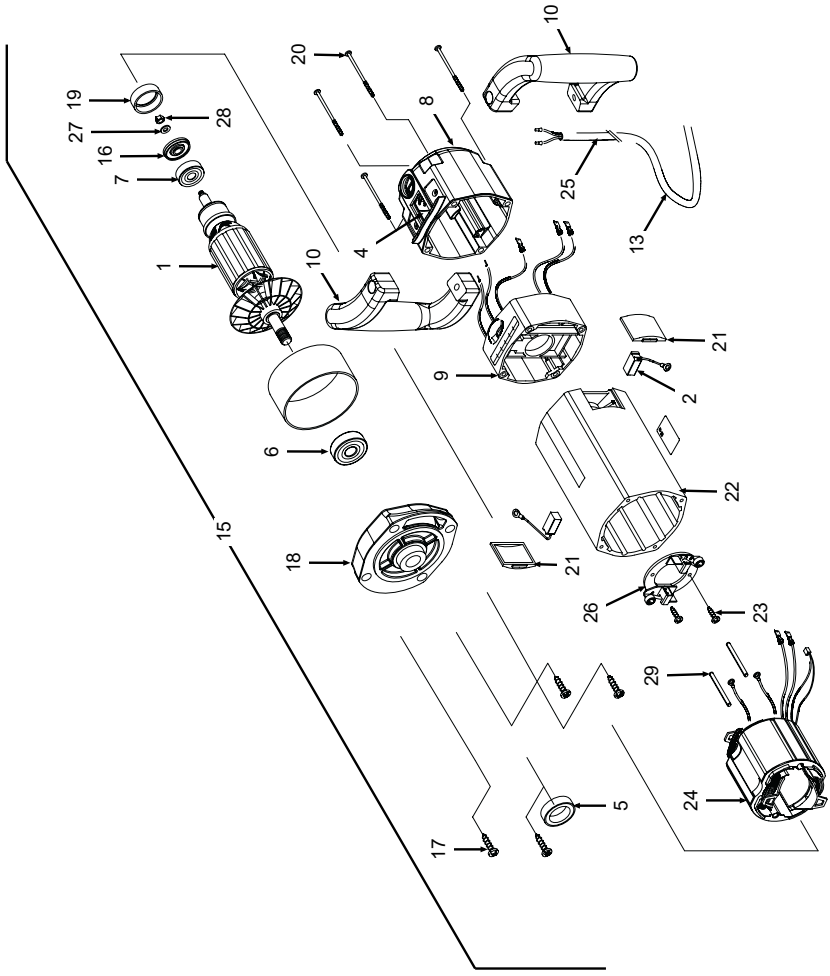


POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 043 514	1	Getriebewelle MVM Gear shaft MVM	11	554 158 317	1	Sicherungsring DIN471-17x1 Circlip DIN471-17x1
2	790 041 186	1	Passfeder DIN6885-B5x5x14 Fitting key DIN6885-B5x5x14	12	790 043 526	1	Stopfen AD45 L14 Plug OD45 L14
3	307 001 113	4	Linsenschraube ISO7380-M4x10-10.9 Oval-head screw ISO7380-M4x10-10.9	13	790 041 190	1	Lagerbuchse 10x16x11 Bearing bush 10x16x11
4	790 043 532	1	Gehäuse, Deckel Housing, cover	14	305 601 294	2	Zylinderschraube ISO4762-M8x80/28-8.8 Cylinder screw ISO4762-M8x80/28-8.8
5	790 043 528	3	Passscheibe DIN988-PS25x36x1 Adjusting washer DIN988-PS25x36x1	15	790 041 181	1	Passfeder DIN6885-AB5x3x24 Fitting key DIN6885-AB5x3x24
6	790 043 529	1	Hülsenfreilauf Roller clutch	16	610 102 015	1	Rillenkugellager DIN625-6202 Grooved ball bearing DIN625-6202
7	790 043 512	1	Stirnrad RA 6 Spur gear RA 6	17	790 043 521	1	Distanzhülse Spacer sleeve
8	790 043 522	1	Gleitlager 25x30x32 Slide bearing 25x30x32	18	790 041 189	1	Gewindering Threaded ring
9	790 043 508	1	Getriebegehäuse MVM Gear housing MVM	19	790 043 523	1	Handrad zu Getriebe Handwheel for gear
10	790 041 400	1	Schneckenwelle und Rad Worm shaft and wheel	20	542 105 312	1	Scheibe ISO7093-M8.4-ZN Washer ISO7093-M8.4-ZN

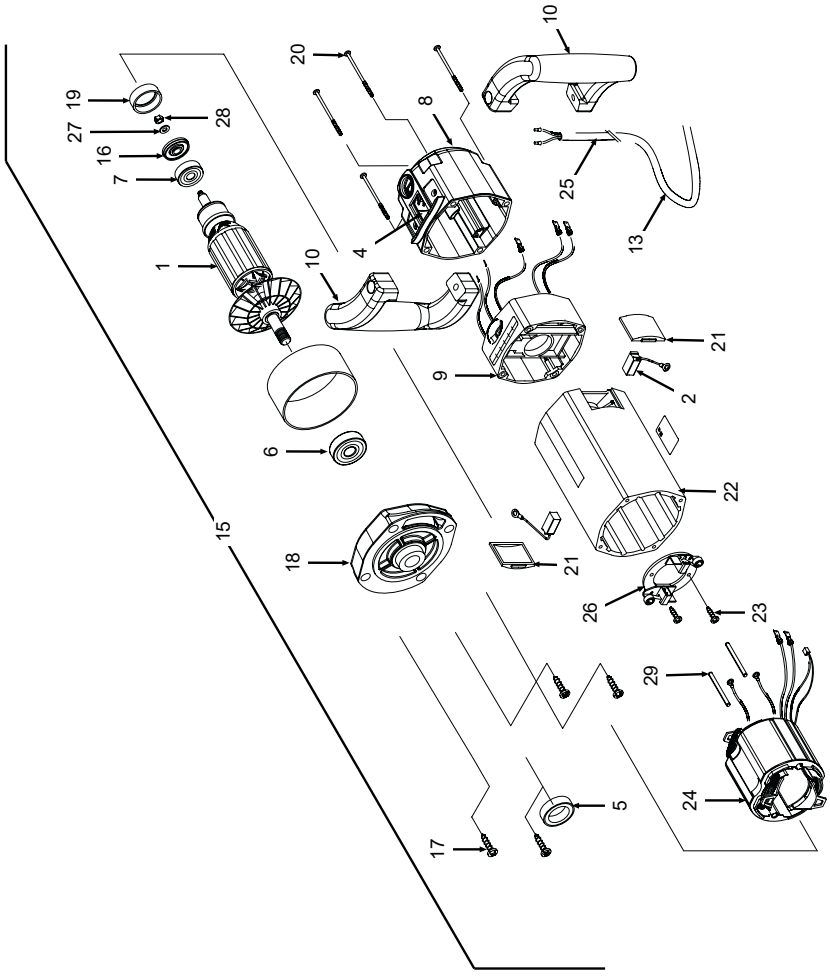

19
20
21
12
11
10
15
16
17
18
13
5
14
9
8
5
7
6
5
23
4
3
2
1
22

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
21	305 505 266	1	Zylinderschraube ISO4762-M8x16-8.8-ZN Cylinder screw ISO4762-M8x16-8.8-ZN
22	790 043 505	1	Vorschubmodul, manuell (MVM) kpl. Feed module, manual (MVM) cpl.

12.15 Motor GF-Sägen | Motor GF pipe cutter



POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
1	790 142 500	1	Anker mit Lüfter 120 V Rotor with fan 120 V	9	790 142 512	1	Zwischenstück mit Elektronik 230 V Spacer with electronics 230 V
	790 142 501	1	Anker mit Lüfter 230 V Rotor with fan 230 V		790 142 511	1	Zwischenstück mit Elektronik 120 V Spacer with electronics 120 V
2	790 142 502	2	Kohle 120 V Carbon 120 V	10	790 142 513	2	Griff mit Schrauben u. Muttern Grip with screws and nuts
	790 142 503	2	Kohle 230 V Carbon 230 V	13	790 142 516	1	Kabel mit Steckkupplung 230 V Cable with plug coupling 230 V
4	790 142 506	1	Schalter Switch		790 142 517	1	Kabel mit Steckkupplung 120 V Cable with plug coupling 120 V
5	790 142 507	1	Radialwellendichtring VITON Radial shaft seal VITON	15	790 142 460	1	GF 07 Motor 230 V 50/60 Hz o. Flex-drehk. (GF 4, GF 6, GF 8, GF 12)**** GF 07 motor 230V 50/60Hz w/o swivel cbl. (GF 4, GF 6, GF 8, GF 12)****
6	790 142 508	1	Rillenkugellager vorne 6201 Grooved ball bearing front 6201		790 142 463	1	GF 07 Motor 120 V 50/60 Hz o. Flex-drehk.(GF 4, GF 6, GF 8, GF 12)**** GF 07 motor 120V 50/60Hz w/o swivel cbl.(GF 4, GF 6, GF 8, GF 12)****
7	790 142 509	1	Rillenkugellager hinten 6200 Grooved ball bearing rear 6200	16	790 142 092	1	Ringmagnet Ring magnet
8	790 142 510	1	Schaltergehäuse Switch housing	17	790 142 521	4	Blechschraube 4.8x32 Tapping screw 4.8x32


10
20
19
8
27
28
16
25
7
4
13
1
10
21
9
2
6
22
15
18
21
26
23
29
24
5
17

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
18	790 142 480	1	GF 07 Zwischenflansch GF 07 intermediate flange	26	790 142 505	1	Kohlehalter 230 V Carbon holder 230 V
	790 046 480	1	GF09 Zwischenflansch GF09 intermediate flange		790 142 504	1	Kohlehalter 120 V Carbon holder 120 V
19	790 142 481	1	GF 07/09 Lagergummi zu Motor GF 07/09 bearing rubber f.motor	27	542 505 310	1	Scheibe DIN125-ISO7090-5-200HV-ZN Washer DIN125-ISO7090-5-200HV-ZN
20	790 142 522	4	Blechschraube 4.8x120 Tapping screw 4.8x120	28	500 605 310	1	Sechskantmutter ISO4032-M5-8-ZN Hexagon nut ISO4032-M5-8-ZN
21	790 142 482	2	Abdeckung Cover	29	790 142 529	2	Spannstift 4x50 Dowel pin 4x50
22	790 142 483	1	Gehäuse Housing	–	790 142 518	1	Kabelbride Cable bracket
23	790 142 519	4	Blechschraube 3.5x13 Tapping screw 3.5x13	–	790 142 519	2	Blechschraube 3.5x13 Tapping screw 3.5x13
24	790 142 484	1	Stator 230 V Stator 230 V	–	790 142 527	1	Filtermatte Filter mat
	790 142 485	1	Stator 120 V Stator 120 V	–	790 142 528	1	Druckrahmen Pressure frame
25	790 041 493	1	F/FE680 Kabelschutzschlauch F/FE680 cable protective hose				

12.16 Flexdrehkabel zu GF-Maschinen | Swivel cable GF machines

POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION	POS. NO.	CODE PART NO.	STK. QTY.	BEZEICHNUNG DESCRIPTION
–	790 142 081	1	Flexdrehkabel 230 V EU, kpl.** Swivel cable 230 V EU, cpl.**	–	790 142 080		Flexdrehkabel 230 V AUS*** Swivel cable 230 V AUS***
–	790 142 082	1	Flexdrehkabel 120 V US/CA, kpl.** Swivel cable 120 V US/CA, cpl.**	–	790 142 518		Kabelbride Cable bracket
–	790 142 083	1	Flexdrehkabel 230 V CH, kpl.** Swivel cable 230 V CH, cpl.**	–	790 142 519		Blechschraube 3.5x13 Tapping screw 3.5x13
–	790 142 084	1	Flexdrehkabel 230 V AUS, kpl.** Swivel cable 230 V AUS, cpl.**	–	790 142 527		Filtermatte Filter mat
–	790 142 087	1	Flexdrehkabel 120 V GB, kpl.** Swivel cable 120 V GB, cpl.**	–	790 142 528		Druckrahmen Pressure frame
–	790 142 076	1	Flexdrehkabel 230 V EU*** Swivel cable 230 V EU***				
–	790 142 077	1	Flexdrehkabel 120 V US/CA*** Swivel cable 120 V US/CA***				
–	790 142 078	1	Flexdrehkabel 230 V CH*** Swivel cable 230 V CH***				
–	790 142 079	1	Flexdrehkabel 120 V GB*** Swivel cable 120 V GB***				
–	790 142 076	1	Flexdrehkabel 230 V EU*** Swivel cable 230 V EU***				

** RA 6 (AVM/MVM): bis Maschinen-Nr. 43590905 / up to machine no 43590905
RA 8 (AVM/MVM): bis Maschinen-Nr. 45591005 / up to machine no 45591005
RA 12 (AVM/MVM): bis Maschinen-Nr. 47591102 / up to machine no 47591102

*** RA 6 (AVM/MVM): ab Maschinen-Nr. 43591101 / from machine no 43591101
RA 8 (AVM/MVM): ab Maschinen-Nr. 45591101 / from machine no 45591101
RA 12 (AVM/MVM): ab Maschinen-Nr. 47600101 / from machine no 47600101

**** GF 8 (230V / 790045095): ab Maschinen-Nr. 4570013
GF 8 (120V / 790045095): ab Maschinen-Nr. 4570602
GF 8 AVM (230V / 790045001): ab Maschinen-Nr. 4570901
GF 8 AVM (120V / 790045005): ab Maschinen-Nr. 4570905
GF 8 MVM (230V / 790045069): ab Maschinen-Nr. 4570952
GF 8 MVM (120V / 790045082): ab Maschinen-Nr. 4570955

**** GF 12 (230V / 790047095: ab Maschinen-Nr. 04771600
GF 12 (120V / 790047096): ab Maschinen-Nr. 04771001
GF 12 AVM (230V / 790047001: ab Maschinen-Nr. 04771901
GF 12 AVM (120V / 790047007): ab Maschinen-Nr. 04771909
GF 12 MVM (230V / 790047069): ab Maschinen-Nr. 04771950
GF 12 MVM (120V / 790047082): ab Maschinen-Nr. 04771955

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

worldwide | sales + service

NORTH AMERICA

USA

E.H. Wachs
600 Knightsbridge Parkway
Lincolnshire, IL 60069
USA
Tel. +1 847 537 8800
Fax +1 847 520 1147
Toll Free 800 323 8185

Northeast
Sales, Service & Rental Center
E.H. Wachs
1001 Lower Landing Road, Suite 208
Blackwood, New Jersey 08012
USA
Tel. +1 856 579 8747
Fax +1 856 579 8748

Southeast
Sales, Service & Rental Center
E.H. Wachs
171 Johns Road, Unit A
Greer, South Carolina 29650
USA
Tel. +1 864 655 4771
Fax +1 864 655 4772

Northwest
Sales, Service & Rental Center
E.H. Wachs
2079 NE Aloclek Drive, Suite 1010
Hillsboro, Oregon 97124
USA
Tel. +1 503 941 9270
Fax +1 971 727 8936

Gulf Coast
Sales, Service & Rental Center
E.H. Wachs
2220 South Philippe Avenue
Gonzales, LA 70737
USA
Tel. +1 225 644 7780
Fax +1 225 644 7785

Houston South
Sales, Service & Rental Center
E.H. Wachs
3327 Daisy Street
Pasadena, Texas 77505
USA
Tel. +1 713 983 0784
Fax +1 713 983 0703

CANADA

Wachs Canada Ltd
Eastern Canada Sales, Service & Rental Center
1250 Journey's End Circle, Unit 5
Newmarket, Ontario L3Y 0B9
Canada
Tel. +1 905 830 8888
Fax +1 905 830 6050
Toll Free: 888 785 2000

Wachs Canada Ltd
Western Canada Sales, Service & Rental Center
5411 82 Ave NW
Edmonton, Alberta T6B 2J6
Canada
Tel. +1 780 469 6402
Fax +1 780 463 0654
Toll Free 800 661 4235

EUROPE

GERMANY

Orbitalum Tools GmbH
Josef-Schuettler-Str. 17
78224 Singen
Germany
Tel. +49 (0) 77 31 - 792 0
Fax +49 (0) 77 31 - 792 500

UNITED KINGDOM

Wachs UK
UK Sales, Rental & Service Centre
Units 4 & 5 Navigation Park
Road One, Winsford Industrial Estate
Winsford, Cheshire CW7 3 RL
United Kingdom
Tel. +44 (0) 1606 861 423
Fax +44 (0) 1606 556 364

ASIA

CHINA

Orbitalum Tools
New Caohejing International Business Centre
Room 2801-B, Building B
No 391 Gui Ping Road
Shanghai 200052
China
Tel. +86 (0) 512 5016 7813
Fax +86 (0) 512 5016 7820

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 7

AFRICA & MIDDLE EAST

UNITED ARAB EMIRATES

Wachs Middle East & Africa Operations
PO Box 262543
Free Zone South FZS 5, AC06
Jebel Ali Free Zone (South-5), Dubai
United Arab Emirates
Tel. +971 4 88 65 211
Fax +971 4 88 65 212

orbitalum
orbital | cutting + welding

An ITW Company