

COMBINED LINEAR/ROTARY UNIT SH0075T

MOUNTING INSTRUCTIONS

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1 Introduction

1.1 About these mounting instructions

These mounting instructions describe the product "Combined Linear/Rotary Unit SH0075T" (also referred to as "product" in this document).

These mounting instructions are part of the product.

- You may only use the product if you have fully read and understood these mounting instructions.
- Verify that these mounting instructions are always accessible for any type of work performed on or with the product.
- Pass these mounting instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these mounting instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These mounting instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these mounting instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

1.2 Intended use

The product is a partly complete machine pursuant to Directive 2006/42/EU, articles 1g and 2g. The product is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which Directive 2006/42/EU applies.

The product may only be used within the limits specified in these mounting instructions and in the applicable documents. The applicable documents are also part of the product.

The machinery must not be put into service until the machinery into which the product has been incorporated has been determined and declared in conformity with the provisions of Directive 2006/42/EU and with all other applicable directives and regulations.

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the mounting instructions, in the applicable documents, and on the nameplate, as well as with all directives, standards, and safety regulations applicable at the installation site of the product.

1.3 Predictable incorrect application

Any use of the product beyond the explicitly indicated intended use is an impermissible, incorrect application of the product.

The product must never be used in the following cases, under the following conditions, and for the following purposes:

- Operation in residential environments
- Operation in life-supporting systems
- Operation in potentially explosive atmospheres/hazardous areas
- Operation on ships, in rail vehicles, land craft or in aircraft
- Operation in military facilities
- Operation outside of the specified order data
- Applications involving transportation of persons (fairground rides)

1.4 Applicable documents

In addition to these mounting instructions, the following documents are binding for and apply to any type of use of the product:

- Order data (including, but not limited to, design data, load data, performance data, transportation and storage instructions, information attached to the product and the package, as well as other specifications).
- Documentations of the manufacturers of all products belonging to the scope of delivery (for example, motor, accessories, attachment parts). This includes, among other things:

Type of manual	Type	Manufacturer	Delivery	
			Paper format	Electronic
Manual	Motor Servo motors with planetary gear	Heidrive GmbH	-	X
Operating instructions	Motor HeiMotion Premium servo motor	Heidrive GmbH	-	X
Data sheet	Metal bellows coupling DKN 45-12H7-14H7	RINGFEDER POWER TRANSMISSION GMBH	-	X
Mounting instructions	Encoder SEK37/SEL37	SICK STEGMANN GmbH	-	X
Operating instructions	Encoder SKS36S/SKM36S	SICK STEGMANN GmbH	-	X
Safety data sheet	Lubricant Omala S2 G 220	Shell Deutschland Oil GmbH	-	X

In the case of delivery with WEISS GmbH controller/software package:			Delivery	
			Paper format	Electronic
User manual	"W.A.S. Handling"	WEISS GmbH	-	X
Electrical documentation	List of applicable documents, per product (see documents on the CD delivered with the product)	WEISS GmbH	-	X

1.5 Warranty

See our website for our General Terms and Conditions at www.weiss-international.com or your purchase order.

2 Safety

2.1 Safety messages and hazard categories

These mounting instructions contain safety messages to alert you to potential hazards and risks. Safety messages in these mounting instructions are highlighted with warning symbols and warning words.

The signal word describes the source of the hazard. The text contains instructions on how to avoid the hazard as well as the consequence resulting from failure to follow the instructions given in the safety message.

Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



DANGER

DANGER indicates an immediately hazardous situation, which, if not avoided, will result in death or serious injury.



WARNING

WARNING indicates a hazardous situation, which, if not avoided, can result in death or serious injury or equipment damage.



CAUTION

CAUTION indicates a hazardous situation, which, if not avoided, can result in injury or equipment damage.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition to the instructions and safety messages provided in these mounting instructions, you must comply with all directives, standards, and safety regulations applicable at the installation site of the product.

2.2 Hazard symbols

The following symbols are used in these mounting instructions:



This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury, or equipment damage.



This symbol alerts to hazardous electrical voltage. If this symbol is used in a safety message, there is a hazard of electric shock.

Hazard symbols may also be attached to the product.



Hazard of hot surface



Hazard of magnetic field



No access for persons with heart pacemakers or other medical implants

2.3 Responsibilities of the system integrator and/or operator

The system integrator (the person who incorporates the product in a machine pursuant to Directive 2006/42/EU, i.e., for example, the machine builder) and/or the operator must ensure the following:

- The application and use of the product must be limited to the specified intended use.
- In the integration of the product, all functional safety requirements must be met.
- All directives, standards, and safety regulations, including all regulations concerning workplace safety and prevention of accidents, applicable at the installation site of the product must be complied with.
- Any type of work whatsoever on and with the product may only be performed by qualified personnel.
- The product may only be operated when it is in flawless, fully functional condition.
- All safety equipment must operate as required and planned.
- The personal protective equipment for the personnel/operator must be available and must be used.
- The mounting instructions and all applicable documents must always be accessible in their entirety to the personnel at the installation site of the product.
- Safety instructions, labels, and any other information attached to the product must not be removed.
- A complete manual must be available for the machine into which the product is incorporated; this manual must describe all types of work on and with the machine and contain all information relevant with regard to the product.

If the system integrator himself is not in the position to comply with any of these obligations, the system integrator must impose compliance with these obligations on the operator.



2.4 Qualification of personnel

Only trained personnel who have fully read and understood the mounting instructions and all applicable documents for the product may perform work on and with the product.

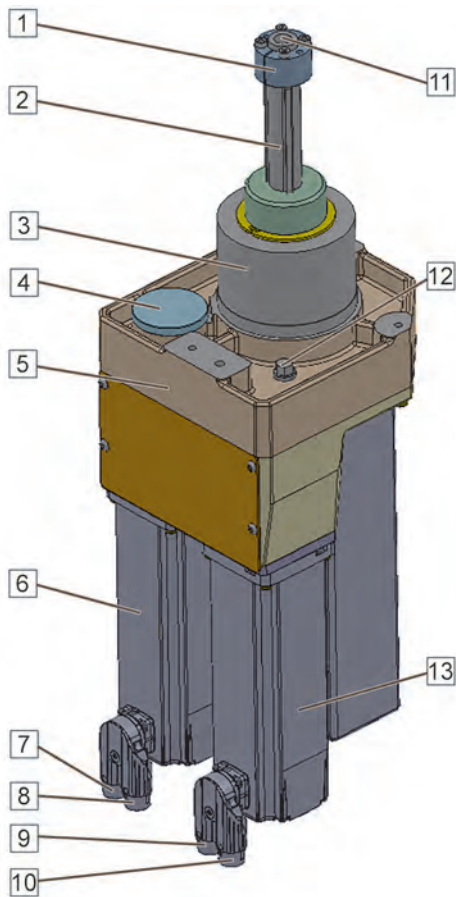
This trained personnel must have sufficient technical training, knowledge, and experience, and be able to foresee and detect potential hazards that may be caused by using the product.

All trained personnel working on and with the product must be fully familiar with all directives, standards, and safety regulations that must be observed for performing such work.

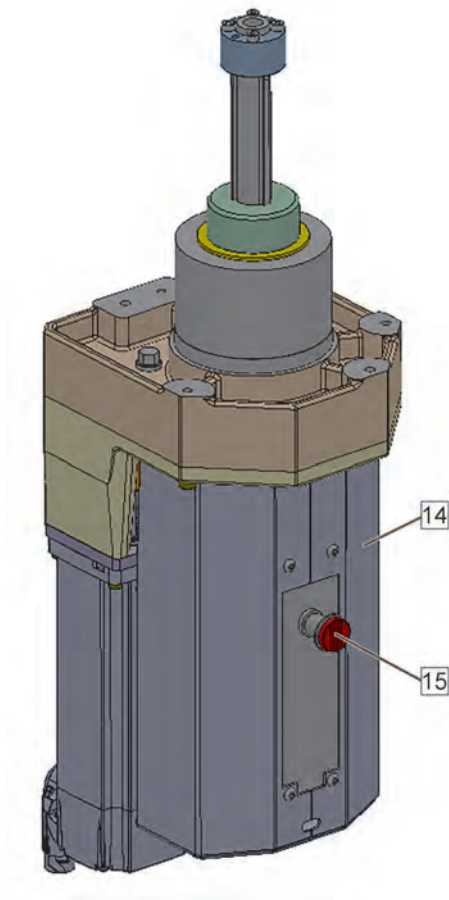
3 Product description

3.1 Overview

The product consists of the following components:



- | | | | |
|----------|-----------------------------------|-----------|-----------------------------------|
| 1 | Keyless bushing (optional) | 8 | Connection motor cable (A axis) |
| 2 | Output shaft | 9 | Connection encoder cable (Z axis) |
| 3 | Centering unit | 10 | Connection motor cable (Z axis) |
| 4 | Cover encoder | 11 | Through hole |
| 5 | Gear housing | 12 | Vent screw |
| 6 | Servo motor (A axis) | 13 | Servo motor (Z axis) |
| 7 | Connection encoder cable (A axis) | | |



14 Housing

15 Reference pin

3.2 Function description

The programmable product combines the movements of a rotary axis and a linear axis into a combined rotary stroke movement.

The rotary stroke movement is generated by two independent servo motors.

A toothed gear transmits the rotary movement of a servo motor to the output shaft. The rotating output shaft is referred to as A axis.

The stroke movement of the output shaft is generated by a ball screw. The rising and lowering output shaft is referred to as Z axis.

The rotary movement of the A axis generates - due to the ball screw - a linear movement of Z axis. This linear movement is compensated for by counter-control of the Z axis.

The output shaft feature a through hole for passage of power cables. The operator can mount a plate or other equipment to the output shaft.

An optional keyless bushing is available for mounting of customer equipment.

3.3 Nameplate

The nameplate is attached to the housing of the product; it contains the following information:



Figure 1: Example of nameplate

- | | | | |
|---|---------------|---|---------------------------|
| 1 | Type | 5 | Year of manufacture |
| 2 | Serial number | 6 | Weight |
| 3 | Stroke | 7 | QR code (company website) |
| 4 | Encoder type | 8 | DM code (serial number) |

The scope of delivery contains a second nameplate. If the factory-mounted nameplate is covered by attachments, the second nameplate can be attached at a readily visible position of the product or machine for identification of the product.

3.4 Type code

Structure of the type code:

Type	Size	Encoder	Motor	Holding brake
SH	0075T	A (Hiperface)	A	A (with holding brake) B (without holding brake)

3.5 Mounting positions

NOTICE

EQUIPMENT DAMAGE DUE TO INCORRECT MOUNTING POSITION

Failure to follow these instructions can result in equipment damage.

- Verify that you only use the standard mounting positions approved in these mounting instructions.
- Only use special mounting positions if such special mounting positions have been approved by the manufacturer in writing.

Permissible standard mounting positions

The product may only be mounted as shown below.



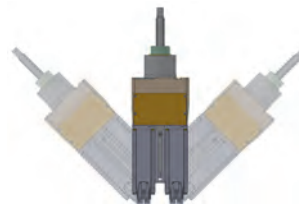
Output shaft vertical, top



Output shaft horizontal, lateral



Output shaft vertical, bottom



At any angle

4 Technical data

4.1 General

Characteristic	Unit	Value
Direction of rotation	-	Programmable
Maximum stroke	mm	75
Maximum radial runout retracted	mm	0.06
Maximum radial runout extended	mm	0.08
Maximum moment of inertia	kgm ²	0.06
Repeatability (rotation)	arcsec	± 90
Repeatability (stroke)	mm	± 0.02
Maximum load	kg	20
Weight	kg	15
Total weight including packaging	kg	See bill of delivery
Sound pressure	dB(A)	< 70
Lubricant	-	Omala S2 G 220

4.2 Motor

Characteristic	Unit	Value	
		Heidrive HMP06-015-320- 30-XXH1Y17X	Heidrive HMP06-015-320- 30-B0HBM17X
Number of pole pairs	-	3	
DC bus voltage	V _{DC}	560	
Voltage range	V _{AC rms}	200 ... 480	
Test voltage	V _{AC}	2160	
Voltage constant	mV/min	51.7	
Nominal speed of rotation	min ⁻¹	3000	
Maximum speed of rotation at 230 V	min ⁻¹	4220	
Maximum speed of rotation at 400 V	min ⁻¹	4220	
Stall torque	Nm	1.5	
Nominal torque	Nm	1.2	
Peak torque	Nm	6	
Torque constant	Nm/A _{rms}	0.86	
Stall current	A	1.8	



Characteristic	Unit	Value
Nominal current	A	1.5
Peak current	A	7.2
Winding cross section	mm ²	0.177
Stator resistance at 20°C*	Ohm	9.8
Stator inductance*	Henry	0.0186
Moment of inertia	kgm ²	4.13E-0.5
Output A axis (rotary axis)		
Gear ratio	i	7
Nominal speed of rotation	min ⁻¹	70
Maximum speed of rotation	min ⁻¹	70
Nominal torque	Nm	1.2
Peak torque	Nm	12
Output Z axis (linear axis)		
Gear ratio	i	2.25
Spindle pitch	mm	20
Maximum velocity	m/s	0.5
Nominal force	N	700
Peak force	N	1200

* Measured between phase and phase.

4.3 Holding brake

Characteristic	Unit	Value	
		Heidrive HMP06-015-320- 30-XXH1Y17X	Heidrive HMP06-015-320- 30-B0HBM17X
Braking torque	Nm	-	2

4.4 Encoder

Refer to the documentation of the manufacturer for the technical data of the additional encoder, see applicable documents.

Characteristic	Unit	Value	
		SEL37	SKM36S
Number of sine/cosine periods per revolution	-	16	128
Total number of steps	Multiturn	2097152	16777216
Measuring steps	°/s	20	2.5
Integral non-linearity	°/s	288	80
Differential non-linearity	°/s	144	40
Operating speed of rotation	min ⁻¹	6000	9000

4.5 Climatic environmental conditions "Operation"

Characteristic	Unit	Value
Ambient temperature	°C	+10 ... +40
Relative humidity, non-condensing	%	+5 ... +95
Maximum surface temperature	°C	80
Maximum installation altitude above mean sea level	m	1000

4.6 Climatic environmental conditions "Transportation and Storage"

Characteristic	Unit	Value
Ambient temperature	°C	+5 ... +60
Relative humidity, non-condensing	%	+5 ... +95
Maximum storage duration of the mechanical components	-	see chapter 7

4.7 Dimensions

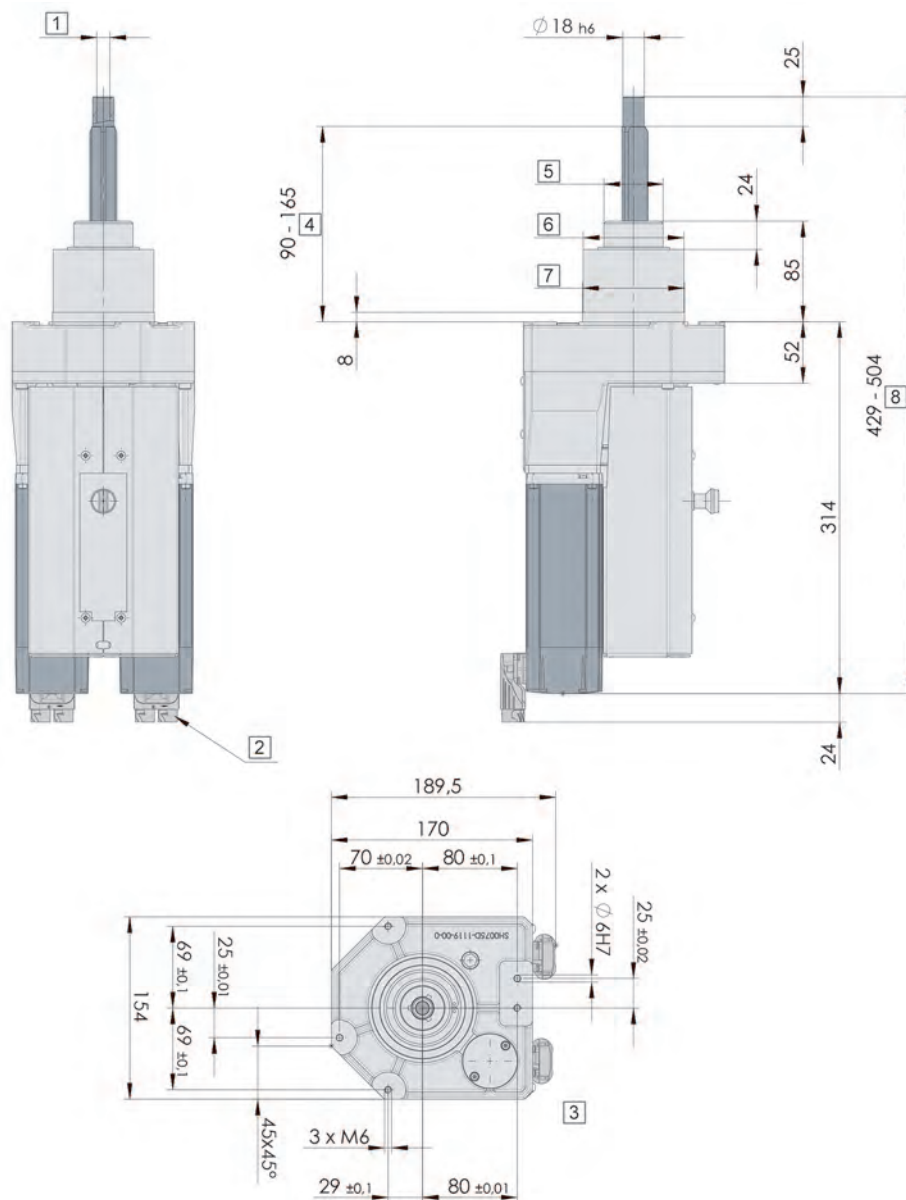


Figure 2: Lengths and diameters in mm

- | | | | |
|---|---|---|----------------------------|
| 1 | Through hole diameter 11 mm | 5 | Diameter 50 (rotating) |
| 2 | Connector can be swiveled to the outside by 90° (optional) | 6 | Diameter 85 (stationary) |
| 3 | Holes for fastening the product M6 and diameter 6H7, 10 mm deep | 7 | Diameter 86h8 (stationary) |
| 4 | Stroke 75 | 8 | Stroke 75 |

4.8 Load data

Load data at output shaft

Characteristic	Unit	Value
Permissible static torque	Nm	10
Permissible static axial force	N	1200
Permissible static radial force (extended)	N	500
Permissible static radial force (retracted)	N	1500

5 Packaging

5.1 Types of packaging



Packaging in Europe

The product is factory-screwed onto a pallet and packaged in special cardboard.

Packaging for air and sea freight

The product is factory-packaged in Corpac-coex-VCI film, screwed onto a pallet and then stored in a wooden box.

5.2 Unpacking the product

1. Do not remove the packaging until immediately prior to mounting.
2. Dispose of the packaging material in compliance with all directives, standards, and safety regulations applicable at the installation site.

5.3 Verification of the delivery

- Check the delivery for completeness and transportation damage upon reception.
- In the case of damage, reject the delivery or accept it only conditionally.
- Document the damage in the transportation documents/bill of delivery (any damage detected must be immediately reported to the forwarding agent and confirmed by the forwarding agent).
- Take photographs of the damage.
- Report the damage to WEISS GmbH.

6 Transportation



⚠ WARNING

FALLING, TOPPLING, OR LOWERING LOADS

Insufficiently rated load lifting and handling equipment may break. Transportation vehicles, lifting gear, chains, belts, and other equipment not rated for the product may fail or tilt.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Only use transportation vehicles, lifting gear, chains, belts, and other lifting and handling equipment that comply with all applicable regulations and that are rated for the weight of the product including packaging.
- Verify that there are no persons in the danger zone.
- Verify that the product is properly secured against falling and toppling.

6.1 Transporting the product

Packages fastened to a pallet can be transported with a fork lift truck, a pallet jack or similar transportation means. Verify that the transportation means used is suitable and approved for the weight and the dimensions of the package.



1. Place the forks below the pallet.
2. Verify that the pallet with the package fully rests on the forks.
3. Fasten the pallet with the package using additional straps if the center of gravity is not in the center of the pallet.

7 Storage

7.1 Storing the product

NOTICE

INCORRECT STORAGE

Failure to follow these instructions can result in equipment damage.

- Verify compliance with all conditions specified in these mounting instructions and all applicable documents when storing the product.

The mechanical components of the product can be stored for a period of up to two years.

Conditions for the specified maximum storage duration:

- Storage in original packaging
- Compliance with all specified storage conditions
- Storage in suitable closed, dry, dust-free room, protected against direct sunlight
- No contact with corrosive media
- Corrosion protection intact

The electrical components have a different maximum storage duration (see documentations of the manufacturers).

If the maximum storage duration has been exceeded, you must contact the manufacturer prior to commissioning the product. This also applies if the machine in which the product has been incorporated has not been operated for a period of time exceeding the maximum storage durations specified for the mechanical and electrical components.

If you plan to store the product for a period of time exceeding the maximum permissible storage duration specified for the mechanical components, you must uninstall the electrical components prior to storing the product. The electrical components must be stored according to the specifications of the manufacturers (see documentations of the manufacturers).

If the product is to be stored for a period of more than three months, the product must first be preserved. If the factory-applied anti-corrosion agent is no longer intact, you must request preservation instructions from the manufacturer.

8 Mounting

8.1 Prerequisites for mounting

The product must remain accessible for service and maintenance work.

Prior to mounting, verify that the dimensions of the installation site and construction conditions meet the requirements and the dimensions specified in these mounting instructions and the applicable documents.

- Verify that the supporting base is level and rigid.
- Verify that the supporting structure at the installation site has a sufficient structural strength to carry the weight of the product and of all loads.

8.2 Equipment and tools

The following is required for mounting:

- Set of wrenches
- Set of hex keys
- Torque wrench
- Cotter pin punch (for mounting the parallel pins)

8.3 Tightening torques and property classes

Only use screws with the property class shown in the following table unless a different property class is explicitly specified for a screw connection.

Use the tightening torque shown in the following table unless a different tightening torque is explicitly specified for a screw connection.

Property class of screws	10.9 (coefficient of friction μ_{tot} 0.12)
Thread	M6
Tightening torque	14 Nm

8.4 Displacing the vent screw and the screw plug

NOTICE

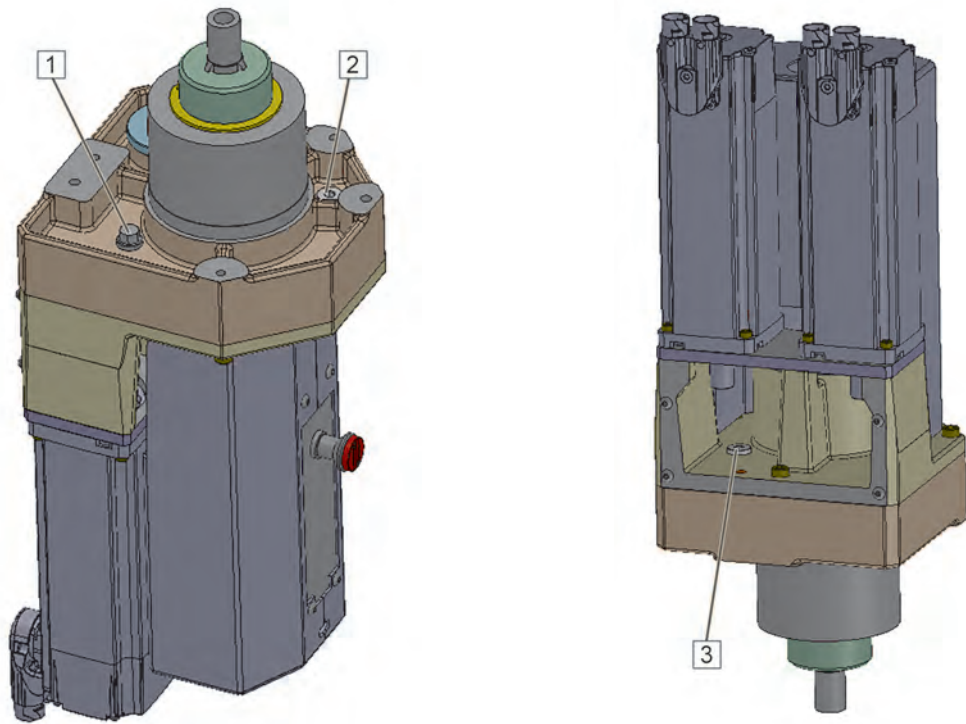
OIL LOSS OR DRY RUN DUE TO INCORRECT MOUNTING POSITION

Failure to follow these instructions can result in equipment damage.

- Verify that you only use the standard mounting positions approved in these mounting instructions.

1. The product is comes ex factory with three screw plugs. A vent screw is included; it must be mounted according to the mounting position. If you want to modify the mounting position, you must displace the vent screw and the screw plugs.
2. In order to gain access to item 3, you must unscrew the cover.

Mounting



	Output shaft vertical, top	Output shaft vertical, bottom	At any angle
Mounting position			
Position vent screw	1 or 2	3	Always use the highest position
Position of screw plugs	1 or 2, 3	1 and 2	All other items are closed with screw plugs.

8.5 Bolting down the product



⚠ WARNING

IMPROPERLY FASTENED PARTS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the supporting structure and/or the frame and/or the mounting surface for fastening the product are sufficiently rated to withstand all static and dynamic loads and forces during operation.
- Verify that the fastening parts comply with the specifications indicated and that they are sufficiently rated for all load conditions during operation.

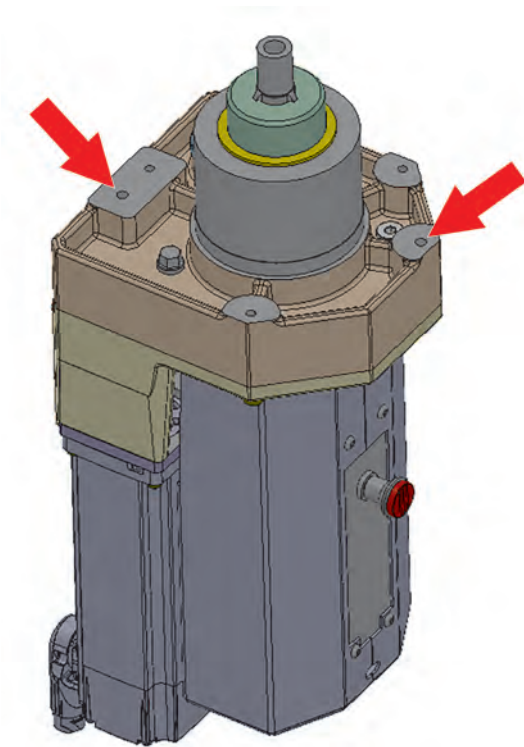


⚠ WARNING

FALLING, TOPPLING, OR LOWERING LOADS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the product is properly secured against falling and toppling.



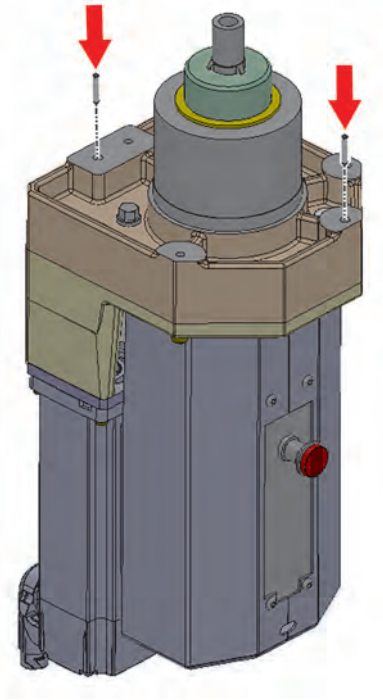
Use M6 screws with the property class specified to mount the product. When determining the length of the screws, take into account the loads and forces acting in your application as well as the characteristics of the supporting structure to which the product is mounted.

The product features several holes and threaded holes for mounting the product in the permissible mounting positions.

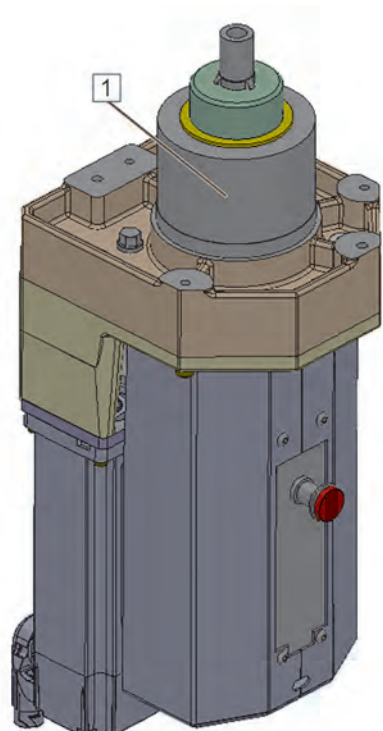
1. Place the product at the mounting site in compliance with the transportation instructions and align it according to the holes.

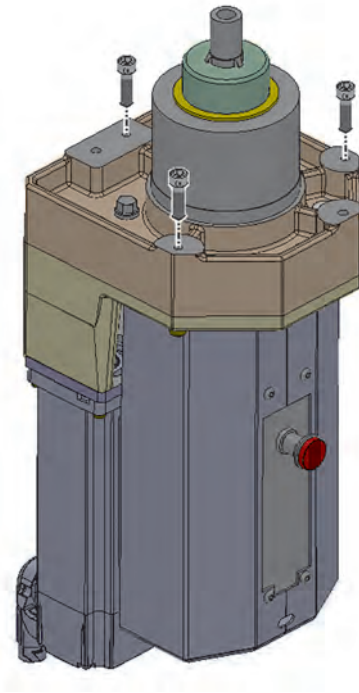
Mounting

2. Center the product with the two parallel pins and then drive in the first parallel pin by one third.



You can also center the product using the centering seat [1]. The parallel pins are not used in that case.





3. Screw the three screws (m6) into the holes.
4. Drive in all parallel pins (positive fit).
5. Tighten the three screws with the specified tightening torque.

8.6 Mounting additional components



⚠ WARNING

IMPROPERLY FASTENED PARTS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the supporting structure and/or the frame and/or the mounting surface for fastening the product are sufficiently rated to withstand all static and dynamic loads and forces during operation.
- Verify that the fastening parts comply with the specifications indicated and that they are sufficiently rated for all load conditions during operation.

8.7 Mounting safety equipment

The product is a partly complete machine pursuant to Directive 2006/42/EU and intended to be incorporated into or assembled with other machinery. The requirements concerning functional safety and the corresponding safety equipment result from the risk analysis and the risk assessment for the final machine or plant.

Selection, mounting, installation, commissioning, operation and maintenance of the safety equipment must be performed by the system integrator (the person who incorporates the product in a machine pursuant to Directive 2006/42/EU, i.e., for example, the machine builder) and/or the operator.

The product requires at least the following safety equipment:

- Emergency Stop system as per IEC 60204-1 / ISO 13850
- Lockable main switch to interrupt the complete power supply to all electrical components of the product

9 Electrical connection



⚠ DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

Failure to follow these instructions will result in death or serious injury.

- Disconnect the mains supply voltage before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects.
- Verify that all cables for the power supply are disconnected from power.



⚠ WARNING

UNANTICIPATED MOVEMENT

Interchanging the motor connections inverts the direction of rotation of the motor.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify correct wiring and connection of all electrical connections.



⚠ CAUTION

IMPROPERLY INSTALLED CABLES

Failure to follow these instructions can result in injury or equipment damage.

- Verify that the cables are correctly routed.
- Verify compliance with the bend radius specifications for the electrical lines.
- Only use cables with the correct cross sections.
- Verify that the electrical cables are correctly connected to the terminals.

The following components must be connected for the motor:

- Lockable main switch
- Suitable Emergency Stop equipment (as per IEC 60204-1 / EN ISO 13850)


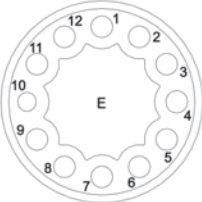
9.1 Connection assignment

Connection motor

Rotatable dual connector	Isolation piece 8-pin E	Pin assignment		
		Pin	Designation	Function
		A	U	Motor phase U
		B	V	Motor phase V
		C	W	Motor phase W
			PE	Protective ground conductor

Rotatable dual connector	Isolation piece 8-pin E	Pin assignment		
		Pin	Designation	Function
		1	T+	Temperature sensor +
		2	T-	Temperature sensor -
		3	B+	Holding brake +
		4	B-	Holding brake -
		5	---	---

Connection encoder "Hiperface"

Rotatable dual connector	Isolation piece 12-pin E	Pin assignment		
		Pin	Designation	Function
		1	GND	GND
		2	+7 ... 12 V	Encoder + 7 ... 12 V
		3	SIN+	SIN+
		4	REFSIN	REFSIN
		5	COS+	COS+
		6	REFCOS	REFCOS
		7	DATA+	Data
		8	DATA-	Data inverted
		9	---	---
		10	---	---
		11	---	---
		12	---	---

10 Controller

10.1 Basic information on control



▲ WARNING

LOSS OF CONTROL

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Consider all potential failure modes of all control paths in your control concept.
- Implement means and measures for all critical functions to achieve a safe state if a control path fails (for example, emergency stop, overtravel of positions, power outage, and restart).
- Implement separate or redundant control paths for all critical functions.
- If the control system of the machine comprises communication links, consider the consequences of unanticipated transmission delays or failures of the link and implement appropriate measures.
- Subject each machine in which the product described in these mounting instructions is used to a comprehensive and thorough commissioning test before operating the machine.

10.2 WEISS GmbH controller/software package (optional)

WEISS GmbH offers a controller/software package for controlling the product.

If this option is used, you must follow all instructions in the corresponding documentations. The documentations can be found on the CD shipped with the product in the controller/software package.

11 Commissioning

11.1 Prerequisites for commissioning

The following requirements must be met before the product may be commissioned:

- The product is properly mounted.
- The electrical equipment for the power supply of the motor and the holding brake is mounted correctly.
- All cables are properly routed and connected.
- All electrical connections have been made properly.
- All parts of the system are properly grounded in compliance with directives, regulations, and standards.
- All safety equipment and EMERGENCY-STOP circuits are operational.
- The drive is not damaged and not blocked.
- All environmental conditions are respected.
- All protective covers are properly mounted.
- All tools, equipment, and other objects have been removed from the zone of operation of the product.
- All hazards are excluded.

Prior to commissioning, perform a test for each prerequisite mentioned and verify compliance with all information and specifications contained in these mounting instructions, in all applicable documents, and in all applicable directives, regulations, and standards.

11.2 Performing commissioning



WARNING

UNANTICIPATED MOVEMENT

Incorrect connections or external influences on electrical equipment can cause unanticipated movements.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify correct wiring.
- Verify that there are no persons or obstacles in the danger zone of the product before starting the product.
- Perform initial test movements without loads and without other processing units.
- Verify that all safety equipment and EMERGENCY STOP circuits are activated prior to commissioning.


⚠ WARNING
UNINTENDED EQUIPMENT OPERATION

Incorrect or unsuitable parameter values or settings can cause unintended movements, trigger signals, and compromise functional safety.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that parameter values and settings can only be modified by authorized personnel who fully understand each and every effect of such a modification.
- Verify that all parameter values and settings are correct by performing a test run.


⚠ WARNING
HOT SURFACES

The temperature of the product can exceed 80 °C during operation.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Avoid unprotected contact with hot surfaces.
- Do not allow flammable or heat-sensitive objects in the vicinity of hot surfaces.
- Before performing work on the product, verify that you wait for a sufficient period of time to allow such parts to cool down to a temperature that allows for safe contact.

Power on the power supply to the product via the main switch.

Check the following points during commissioning:

- Operating state, potential error conditions, and protective equipment
 - During commissioning, perform tests for all operating states and error conditions. In doing so, verify that all protective equipment operates as planned and required.
- Correct operation of the motor
 - There are no overloads.
 - There are no unusual fluctuations in the speed of rotation. Immediately stop the product in the case of overloads or unusual fluctuations in the speed of rotation and verify correct mounting.
- Noise emission
 - Excessive noise emission can be an indication of incorrect mounting, for example, an uneven ground that causes mechanical stress. Immediately stop the product in the case of high noise emission and verify correct mounting.
- Heat
 - Verify that the heat dissipation is sufficient and that the specified climatic environmental conditions are respected by performing a test run under maximum load conditions.

If the product and/or the machine into which the product is incorporated is temporarily decommissioned, it must be recommissioned. For recommissioning, the same prerequisites must be met as for initial commissioning.

Perform the same tests for each recommissioning of the product as for initial commissioning.

11.3 Homing



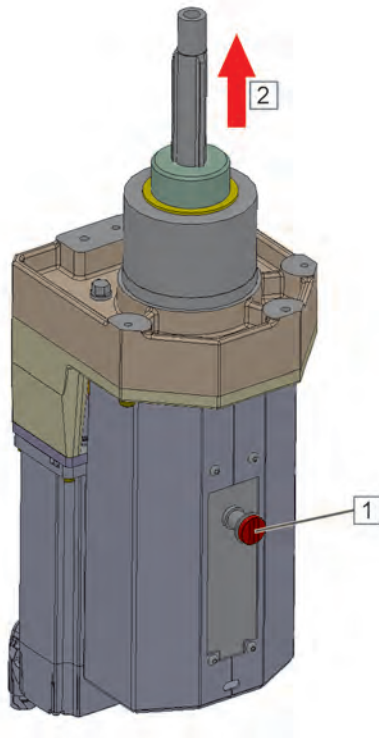
⚠ WARNING

INACCURATE POSITIONING IF REFERENCE POINT IS NOT SET

The reference point for the product must be set during initial commissioning and when the controller is replaced.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Only start the product if the reference point has been set.
- Only start the product after you have removed the reference pin.



1. Release the holding brake via the controller.
2. Push in the reference pin [1].
3. Manually pull the output shaft towards the top [2] and rotate it until the reference pin engages.
4. Set the reference point via the controller.
5. Pull out the reference pin [1].

12 Operation

12.1 Basic information on operation



⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

Incorrect or unsuitable parameter values or settings can cause unintended movements, trigger signals, and compromise functional safety.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that parameter values and settings can only be modified by authorized personnel who fully understand each and every effect of such a modification.
- Verify that all parameter values and settings are correct by performing a test run.



⚠ CAUTION

UNANTICIPATED MOVEMENT OF THE OUTPUT SHAFT

If the holding brake becomes inoperative, the output shaft can move.

Failure to follow these instructions can result in injury or equipment damage.

- Block or safeguard the output shaft in such a way that a movement of the output shaft is safely prevented before starting work on the output shaft.

The product is a partly complete machine pursuant to Directive 2006/42/EU and intended to be incorporated into or assembled with other machinery. The information required for operation results from the functionality of the machine or system into which the product is incorporated and from the application implemented with it.

The instructions for the safe operation of the final machine or system must be provided by the system integrator (the person who incorporates the product in a machine pursuant to Directive 2006/42/EU) and/or the operator in the form of a manual with operating instructions, [see chapter 2.3](#).

These operating instructions must be a complete manual which describes all work on and with the product and which contains all information relevant to the product. The system integrator and/or operator must ensure compliance of the operating instructions with all applicable directives, regulations, and standards.

13 Troubleshooting

13.1 Issue, cause and remedy



⚠ DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

Failure to follow these instructions will result in death or serious injury.

- Disconnect the mains supply voltage before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects.
- Verify that all cables for the power supply are disconnected from power.



⚠ WARNING

MOVING PARTS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the zone of operation of the moving parts of the product/machine is safeguarded.



⚠ WARNING

HOT SURFACES

The temperature of the product can exceed 80 °C during operation.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Avoid unprotected contact with hot surfaces.
- Do not allow flammable or heat-sensitive objects in the vicinity of hot surfaces.
- Before performing work on the product, verify that you wait for a sufficient period of time to allow such parts to cool down to a temperature that allows for safe contact.

Issue	Cause	Remedy
The defined position is no longer valid	Motor is inoperable	▪ Contact the Weiss Service Department, see chapter 19.1
	The encoder is defective	
	The reference point is not correct	▪ Set the reference point, see chapter 11.3
The product generates unusual noise	Bearing is inoperable	▪ Contact the Weiss Service Department, see chapter 19.1

14 Cleaning

14.1 Performing cleaning



⚠ DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

Failure to follow these instructions will result in death or serious injury.

- Disconnect the mains supply voltage before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects.
- Verify that all cables for the power supply are disconnected from power.



⚠ WARNING

UNANTICIPATED MOVEMENT OF THE OUTPUT SHAFT

In the case of vertical installation of the product (horizontal axis of rotation), the output shaft may move due to forces of gravity or the load when the holding brake is released or when the drive and the output shaft are decoupled.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Block or safeguard the output shaft ring in such a way that a movement of the output shaft is safely prevented before releasing the holding brake or decoupling the drive and the output flange.



⚠ WARNING

MISSING PROTECTIVE EQUIPMENT

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Immediately reinstall protective equipment that you may have removed to perform maintenance work after having completed the maintenance work and verify the effectiveness of the protective equipment.



⚠ WARNING

MOVING PARTS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the zone of operation of the moving product/machine parts is safeguarded.



▲ WARNING

HOT SURFACES

The temperature of the product can exceed 80 °C during operation.

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Avoid unprotected contact with hot surfaces.
- Do not allow flammable or heat-sensitive objects in the vicinity of hot surfaces.
- Before performing work on the product, verify that you wait for a sufficient period of time to allow such parts to cool down to a temperature that allows for safe contact.

Comply with all instructions concerning cleaning of electrical components and additional components provided in the applicable documents.

Use the following cleaning agents for cleaning the product:

Component	Cleaning agents
Housing	Neutral, mildly alkaline
Motors	Dry cleaning

1. Remove fine impurities and dust with a dry, lint-free cloth.
2. Use a wet cloth and a neutral, mildly alkaline cleaning agent to remove stains from the housing.
3. Dry the cleaned areas.
4. Remove all equipment from the product.
5. Restore the readiness for operation of the product.

15 Maintenance

15.1 Maintenance plan

When	Activity
At least every six months or if required	▪ Clean all surfaces of the product, see chapter 14.1
	▪ Verify all screw connections of the product for correct tightening torque
	▪ Verify correct connection of all plug connections

15.2 Lubricant

The product features lifetime lubrication. Refer to the documentation of the manufacturer for information on the lubricants used; see applicable documents.

16 Decommissioning

16.1 Decommissioning the product

1. Switch off the product and secure it against unintended switching on.
2. Remove all workpieces and all other objects not belonging to the product from the product.
3. In the case of recommissioning, follow the instructions described, [see chapter 11](#).

17 Dismounting

17.1 Dismounting the product



▲ WARNING

FALLING, TOPPLING, OR LOWERING LOADS

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Verify that the product is properly secured against falling and toppling.

1. Switch off the supply voltage.
2. Dismount the product (reverse sequence of steps), [see chapter 8](#).

18 Disposal

18.1 Disposing of the product

Dispose of the product in compliance with all applicable directives, standards, and safety regulations.

Environmental protection

Dispose of lubricants, greases, residue of cleaning agents and other non-recyclable materials according to the applicable directives, standards, and safety regulations.

19 Service and spare parts

19.1 Worldwide service

If you need the assistance of our service departments, please provide the following information:

- Serial number of the product (see nameplate)
- Description of the problem
- Time of occurrence and circumstances of the problem
- Suspected cause

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19.2 Ordering spare parts



▲ WARNING

UNSUITABLE SPARE PARTS AND ACCESSORIES

Failure to follow these instructions can result in death, serious injury, and equipment damage.

- Only use spare parts and accessories which are approved by the manufacturer.

Please provide the following information when ordering spare parts:

- Serial number of the product (see nameplate)
- Part number of the spare part according to spare parts list
- Quantity of spare parts required



**INSPIRING PEOPLE
GREAT SOLUTIONS**

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