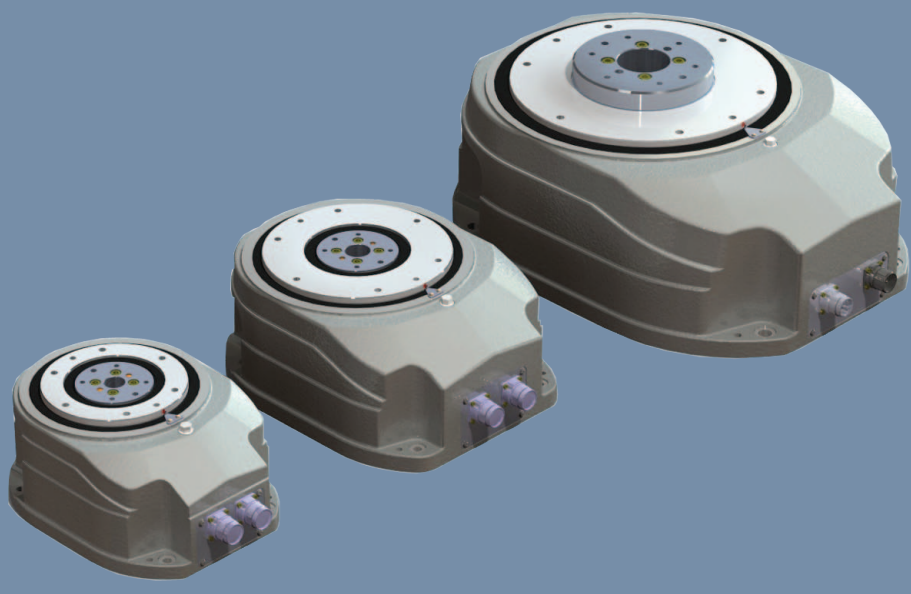

Operating manual

Compact rotary indexing tables

TW150 - TW300

Mechanical system documentation

980-210019000 / EN 07/2011

Document: Operating manual
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Revisions			
Date	Revision	Chapter	Reason
15.12.2010	R12 - 2010	All	Created
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Illustration index

1 Introduction

1.1 Definition

Rotary index table TW 150 – 300

The rotary index table TW with integrated torque-motor and absolute encoder and brake is designed for fast and precise rotation.

In the following, the rotary indexing table will be referred to as "machine".

1.2 Correct use

The machine is a noncomplete machine conforming to Directive 2006/42/EC, Article 1g and 2g.

The machine is designed for integration in other machines, in other incomplete machines or equipment or for connection to these.

It may only be used within the limitations defined in the order characteristics.

Commissioning is forbidden until the conformity of the product in which the machine is installed with Directive 2006/42/EC and all other Directives governing use has been determined and confirmed.

Observance of the accompanying documentation and adherence to maintenance regulations are also component parts of correct use.

1.3 Incorrect use

Any use of the machine above or beyond the directions for correct use is regarded as incorrect and prohibited.

The machine must not be subjected to loads that exceed the maximum limits.

The machine is not suitable for use

- in wet or damp environments of any kind (water, oils, acids, steam or vapours, etc.).
- in an environment with gases or radiation.
- in potentially-explosive atmospheres.
- in environments which contain swarf.

1.4 Laws / EC Directives / Norms

The machine is designed and constructed to conform to

- applicable laws
- Directive 2006/42/EC (Machinery Directive)
- Low Voltage Directive, 2006/95/EC
- EMC Directive 2004/108/EC
- and the harmonised standards that we have cited

and meets state-of-the-art technological standards in terms of its construction.

1.5 EC Declaration

An EC Declaration as specified by Directive 2006/42/EC (Machinery Directive) is included with each machine at delivery.

The text of this EC Declaration is as follows:

WEISS GmbH Sondermaschinentechnik

Siemensstrasse 17

D-74722 Buchen, Germany

Declaration of incorporation of partly completed machinery
in accordance with EC Machinery Directive 2006/42/EC, Annex II B

Prohibition of commissioning

We hereby declare that the machine called Rotary indexing table TW150 - TW300 is intended for the installation into another machine or is to be assembled with other machines to a machine in terms of the directive 2006/42/EC.

Commissioning is prohibited until it has been established that the machine into which the aforementioned product should be installed satisfies the provisions of the EC Machinery Directive, and that a Declaration of Conformity in accordance with EC Machinery Directive 2006/42/EC, Annex II A has been issued.

1.6 System-dependant documentation

In addition to this manual, further documents are required to ensure safe operation of this machine. The specifications stated in these documents are to be observed.

For control system by WEISS-GmbH:

- Operating manual WAS.indexer Control TW150 - TW300
- Operating manual WAS.handling Windows programme

1.7 Operating manual

This operating manual is a translation of the original operating manual and is part of the scope of delivery.

We reserve the right to undertake modifications resulting from further technological development which diverge from the data and illustrations contained in this operating manual.

The operating manual and the associated valid documentation are not subject to an automatic revision service.

Information on the respective current edition can be obtained from the manufacturer.

Local regulations must be heeded.

This operating manual describes handling of the machine and contains important instructions and information to assist you in correct use of the machine.

The operating manual is designed for trained technical personnel and instructed persons. It should be kept at the location of use of the machine at all times and read, understood and applied by all persons entrusted with work on or with the machine.

Safety instructions in individual chapters should be observed.

1.7.1 Explanation of safety instructions in this manual

This manual contains instructions which you should observe for your personal safety and to avoid material damage.

Safety instructions for your personal safety are highlighted by a sign containing a warning triangle and signal word. The associated text describes the hazard involved, avoidance options and the consequences of a failure to heed the safety instruction.

General instructions or instructions relating to possible material damage are highlighted by a sign without a warning triangle.

They are, depending on the degree of risk involved, illustrated as follows:

DANGER	***A warning triangle with the signal word DANGER indicates an immediate hazardous situation which, if not avoided, will lead to fatalities or grievous injuries.***
WARNING	***A warning triangle with the signal word WARNING indicates an potential hazardous situation which, if not avoided, can lead to fatalities or grievous injuries.***
CAUTION	***A warning triangle with the signal word CAUTION indicates an potential hazardous situation which, if not avoided, can lead to light or medium injuries.***
NOTICE	***A sign with the signal word NOTICE indicates potential material damage or provides additional information which should be observed when operating the machine.***

1.7.2 Legend

In these manual images, symbols and abbreviations with the following meaning are used for clarity:

1. Marks a numbered list.
   a) Marks the second level of a numbered list.

- Marks a list.
  - Marks the second level of a list.

📖 The book symbol before a section of text indicates additional applicable documents.

ⓘ The information symbol before a section of text marks an additional note or an important tip for use.

1.7.3 Figures

The figures used are examples. There may be differences between the illustrations and the actual delivery.

1.7.4 Index of valid pages

Pages of this operating manual including the title page: 44

1.8 Guarantee

The machine is covered by a guarantee of 24 months without shift limitations.

2 Safety

2.1 Fundamental safety instructions

2.1.1 Operator‘s obligation to exercise diligence

This machine conforms to state-of-the-art technological standards and ensures a maximum level of safety.

However, this level of safety can only be attained under operating conditions if all measures necessary for this have been taken. The operator‘s obligation to exercise diligence includes planning of these measures and the inspection of their realisation.

The operator must ensure that

- the machine is only used as intended.
- the machine is only operated in faultless, functional condition and mechanical and electrical safety devices are present.
- required personal protective clothing is provided for and used by operating, maintenance and repair personnel.
- the operating manual and all other applicable documentation is maintained at all times in legible condition and is accessible at the implementation site of the machine. Ensure that all personnel who must execute activities tasks on the machine can access the operating manual at all times.
- only adequately qualified and authorised personnel maintain and repair the machine.
- such personnel are instructed regularly in all questions concerning occupational safety and environmental protection, including the operating manual and safety instructions contained therein.
- all safety instructions and warnings affixed to the product are not removed and must remain legible.
- national accident prevention guidelines and company-internal guidelines are complied with.
- VDE regulations are complied with.
- the EMC legislation is complied with during installation.

2.1.2 Requirements to be met by personnel

It is imperative that the following safety instructions be observed during all operations involving the machine. This ensures avoidance of life-threatening injuries, machine damage, other material damage and environmental damage.

Personnel must ensure that

- trainees are initially permitted to only work on the machine under the supervision of an experienced person.
- all personnel who maintain the machine read the operating manual and confirm with their signature that they have understood the operating manual.
- unauthorised persons are not in the vicinity of the machine when tasks are being performed.
- supplemental to the operating manual the operating instructions as specified in labour protection legislation and work equipment use legislation are complied with.
- the operator or supervisory personnel are informed in the event of malfunction.
- required personal protective clothing is used.
- alterations to the machine, which could impair the safety, must be relayed to the supervisor in charge without delay.

The following work described in this operating manual should only be realised by qualified personnel:

- Transport
- Installation
- Commissioning
- Maintenance

2.2 Safety equipment for the machine

The operator is responsible for ensuring that a suitable safety concept is developed and applied for the safe operation of the machine.

The operator must take all measures to protect his personnel against injury by the machine.

These include:

- Safety housing with monitored safety door
- Emergency stop circuit
- Light barriers or switch mats
- Warning indicators

2.3 Residual hazards

WARNING

Missing safety equipment

Operation without safety installations is dangerous. The operator is responsible for the realisation of a suitable safety concept. The operator must provide for sufficient safety measures such as protective grating, light grids, emergency stop button, covers, warning notices, etc. Operation without safety equipment is prohibited. Injuries caused by squeezing or pulling in.

Danger of explosion

Danger of explosion during operation in a potentially explosive atmosphere. Operation in a potentially explosive atmosphere is prohibited according to correct use. Only correct use is permitted. Injuries caused by an explosion.

Incorrect spare pats / mounting of ancillary equipment

The use of incorrect spare parts or the mounting of unauthorised ancillary equipment can lead to subsequent damage with the risk of injury. Only use spare parts from our spare parts list or spare parts we have approved. The mounting of ancillary equipment must be coordinated with us. Injury of persons due to subsequent damage.

Impermissible modifications

Impermissible modifications can lead to subsequent damage with risk of injury. Modifications on the machine are prohibited. Injury of persons due to subsequent damage.

Electric shock

Power and control connections may still conduct electricity after the machine has been deactivated and is stationary. Energised capacitors inside the servo amplifier may still be charged, despite the power supply being deactivated. Work on electrical equipment should only be realised by skilled electrical personnel and under observance of specifications in the electrical operating manual. Electrical connections for the machine should only be loosened or plugged in when the power supply is deactivated and secured against reactivation. The status of capacitor charging should be measured prior to working on machine electrical equipment. The procedure for measuring charges is described in the electrical operating manual. Touching energised components can lead to serious or even fatal injuries.

Squeezing or pulling in

The rotary disc of the machine turns at a very high speed. Extremities can be crushed or pinched when interfering with the motion sequence. Never put hands into the work area of the machine. Injuries caused by squeezing.

3 Product description

3.1 Structure

The freely programable rotary index table with hybrid drive, is made from a solid base body [A] made from cast iron with the electric connections and the rotary disc [B].

The machine can be ordered in the sizes TW150, TW200 and TW300.

Drilled through holes in the base body allow for a precise fitting and therefore a precise zero position.

Operator installations can be fixed on the rotary disc.

The electric connections are made via plug-in connections.

As a measuring system an absolute measuring system is used.

The following parameters of the machine are variable:

- size
- connectors (straight or angled)

Fig. 1: View of the entire machine

3.2 Function

The engine is controlled via a servo amplifier and turns, accelerates or delays the rotary disc of the machine. The rotary disc can be operated left-running, right-running or oscillating.

A high level of positional accuracy and repeat accuracy are achieved through the integrated measuring system.

On standstill the rotary plate is held by the brake in its position. The brake pressure is created using springs. The brake is released on impulse electromagnetically and locks automatically on switch-off or with power failure.

3.3 General technical data

3.3.1 Scope of delivery

The scope of delivery of the machine depends on the order involved. Please refer to the ordering information or order characteristics for individual components.

3.3.2 Sound level

The A-weighted emission sound pressure level do not exeed the allowable peak.

3.3.3 Type plate

The type plate is fitted to the housing of the machine and contains the details described in the illustration.

NOTICE ***The illustrated type plate is merely an example of any machine and is not identical to the actual type plate of the described product.***

A second type plate is included in the scope of delivery. This second plate can be mounted at a clearly-visible location on the machine to allow viewing of performance data if the type plate fitted by the manufacturer is concealed by any other structures.

Additional barcode serial number

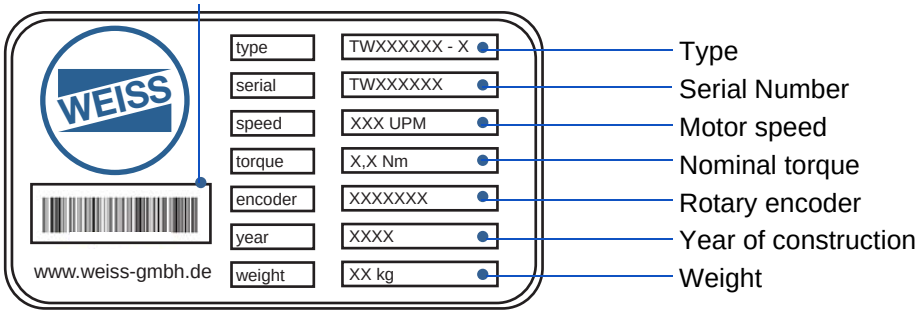


Fig. 2: Example of a type plate

3.3.4 Ambient conditions

Humidity	5 % to 95 %, non-condensing
Allowable temperature range	Storage: +5 °C to +55 °C Operation: +15 °C to +45 °C
Environment	It is not permissible to use the machine in environments that contain abrasive dusts.

3.3.5 Installation positions

Permissible installation positions for the machine are:

- horizontal and vertical at any angles.

NOTICE ***The venting screw is factory-fitted in the ordered installation position. If the installation position is changed from the position which the machine was ordered for, the venting screw must be repositioned.***

The factory-filled oil volume is correct for the ordered installation position. If the installation position is changed from the position which the machine was ordered for, the venting screw must be repositioned.

3.3.6 Electrical connections

Operating voltage	Data for electrical connections is governed by the order in question. 220...230 VAC oder 400...480 VAC max.
Brake voltage	24 VDC ± 10%, residual ripple <10%

The servo amplifier and the ready-made electric cables are included in delivery when the machine is supplied with the electrical package.

3.3.7 Plug-in connections

The connector for motor cable [A] and measuring system [B] are easily accessible on the body of the machine.

Connector style: angled or straight.

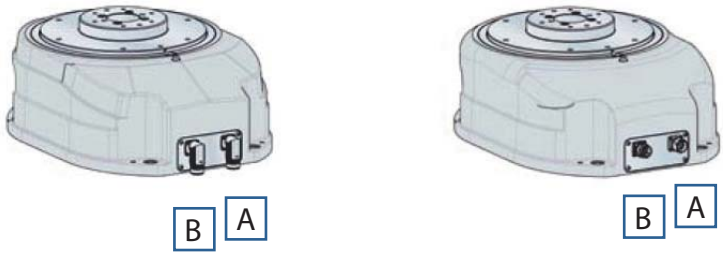


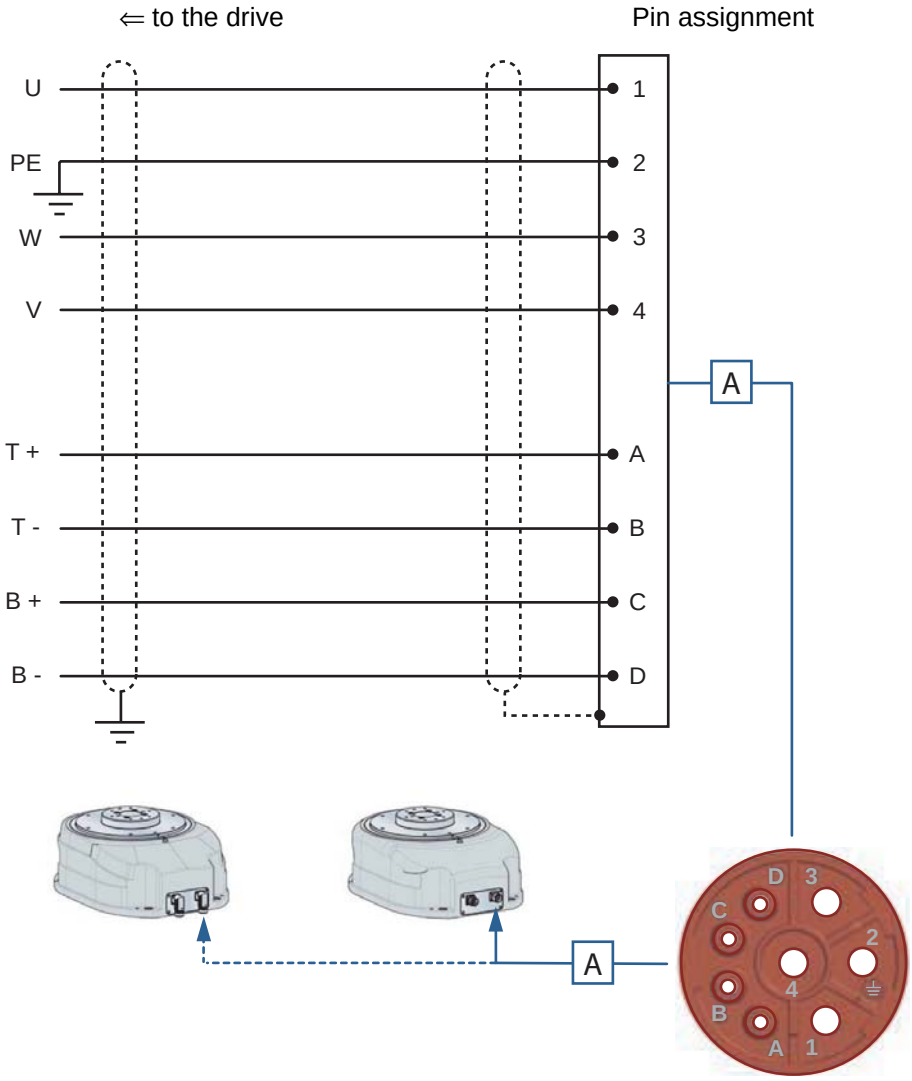
Fig. 3: Plug-in connections

3.3.8 Rotary encoder

Type	Sick Stegmann SEL52

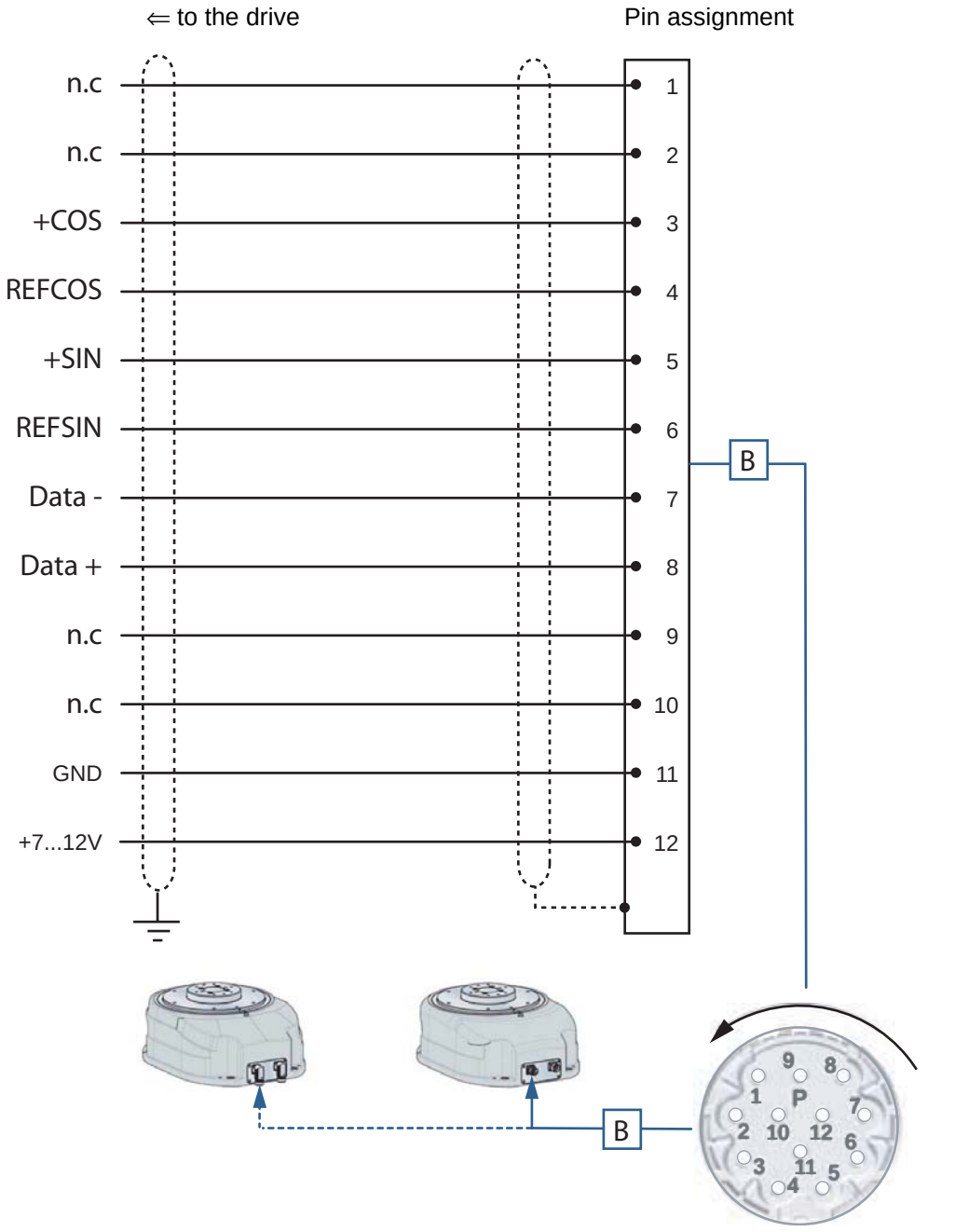
3.3.9 Connector pin assignment

3.3.9.1 Motor connection



InterContec M25 BEGA 125 MR 13 00 0006 000

3.3.9.2 Encoder connection



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3.4 Specific technical data

3.4.1 Table type TW150

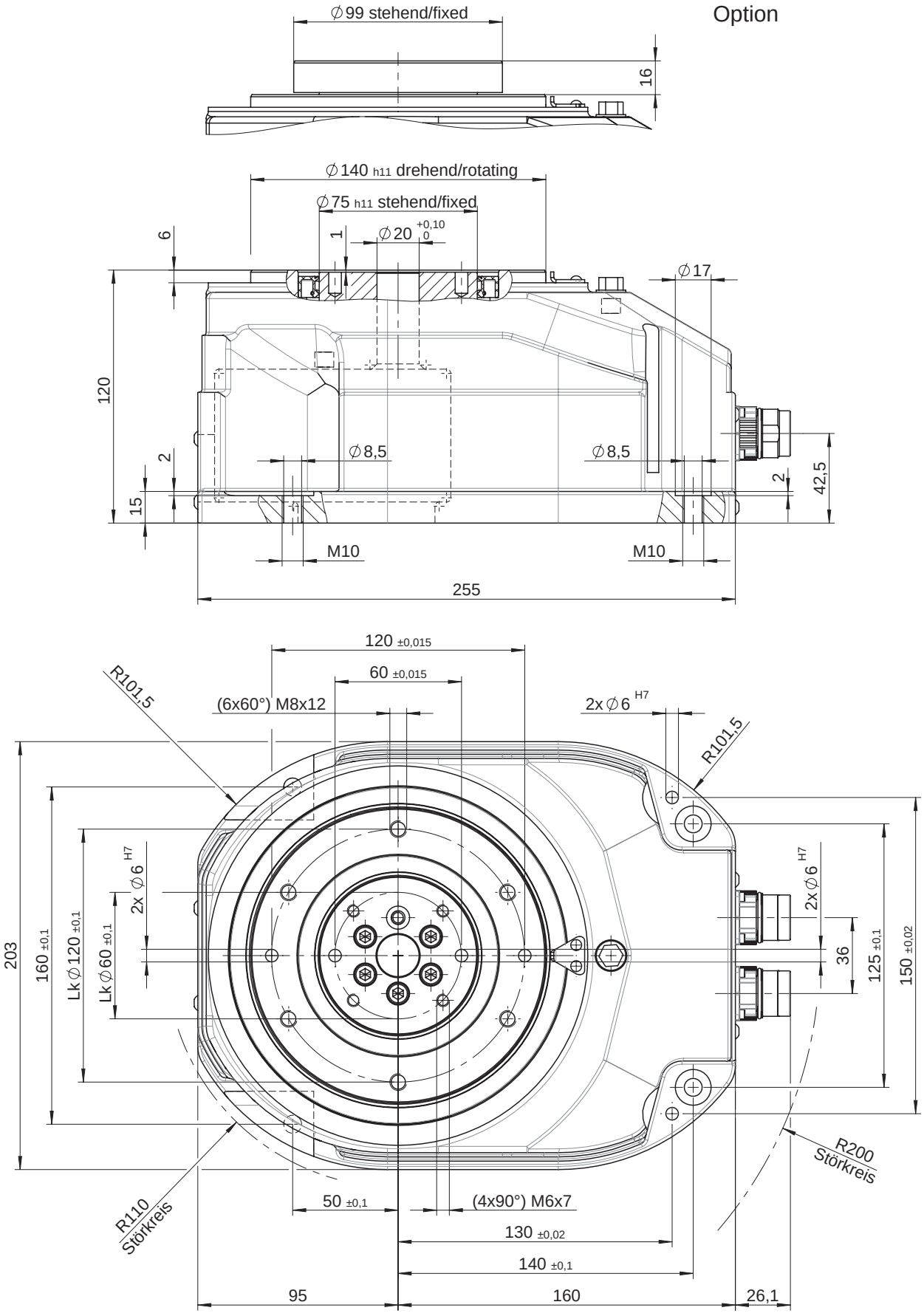
Table diameter:	140 mm
Tightening pulley:	Standard: Flat tightening pulley, - upright, Ø 75 mm
	Optional: Raised tightening pulley, - upright, Ø 99 mm
Direction of rotation:	left, right or alternating
Number of stops:	freely programmable
Weight:	ca. 27 kg
Installation position:	any
Pitch accuracy:	± 65''
max. axial run-out of the plate:	0.01 mm
max. Excentricity:	0.01 mm
max. torque:	75 Nm
max. mass moment of inertia:	5 kgm²
nominal torque:	33 Nm

3.4.1.1 Load data TW150

Fixed centre plate					
					
permissible pull-out torque	**200 Nm**	permissible down-force	**3500 N**	permissible tangen-tial tiorque	**150 Nm**
permissible radial force	**2500 N**				

Rotating plate					
					
permissible pull-out torque locked rotary plate	**500 Nm**	permissible working force acting vertically at the locked rotating plate and within the nominal diameter	**5500 N**	permissible tangen-tial torque with brake	**12 Nm**
permissible pull-out torque with locked rotary plate	**6000 N**			permissible tangen-tial torque motor ener-gised (constant)	**33 Nm**

3.4.1.2 Dimensions TW150



3.4.2 Table type TW200

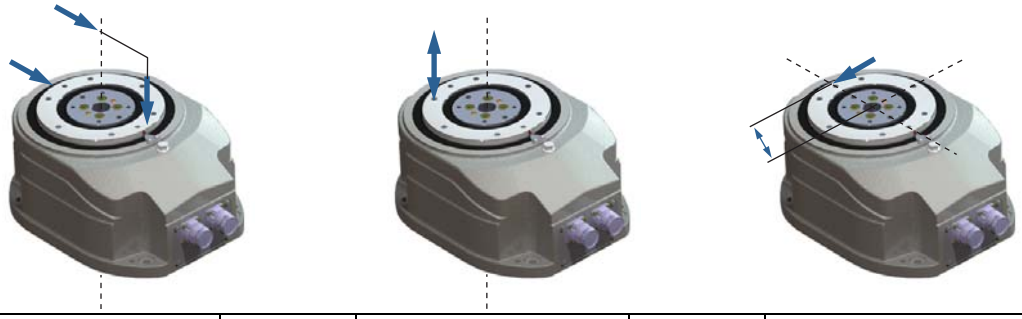
Table diameter:	190 mm
Tightening pulley:	Standard: Flat tightening pulley, upright, Ø 82 mm
	Optional: Raised tightening pulley, upright, Ø 109 mm
Direction of rotation:	left, right or alternating
Number of stops:	freely programmable
Weight:	ca. 36kg
Installation position:	any
Pitch accuracy:	± 55''
max. axial run-out of the plate:	0.01 mm
max. Excentricity:	0.01 mm
max. torque:	220 Nm
max. mass moment of inertia:	25 kgm²
nominal torque:	100 Nm

3.4.2.1 Load data TW200

Fixed centre plate

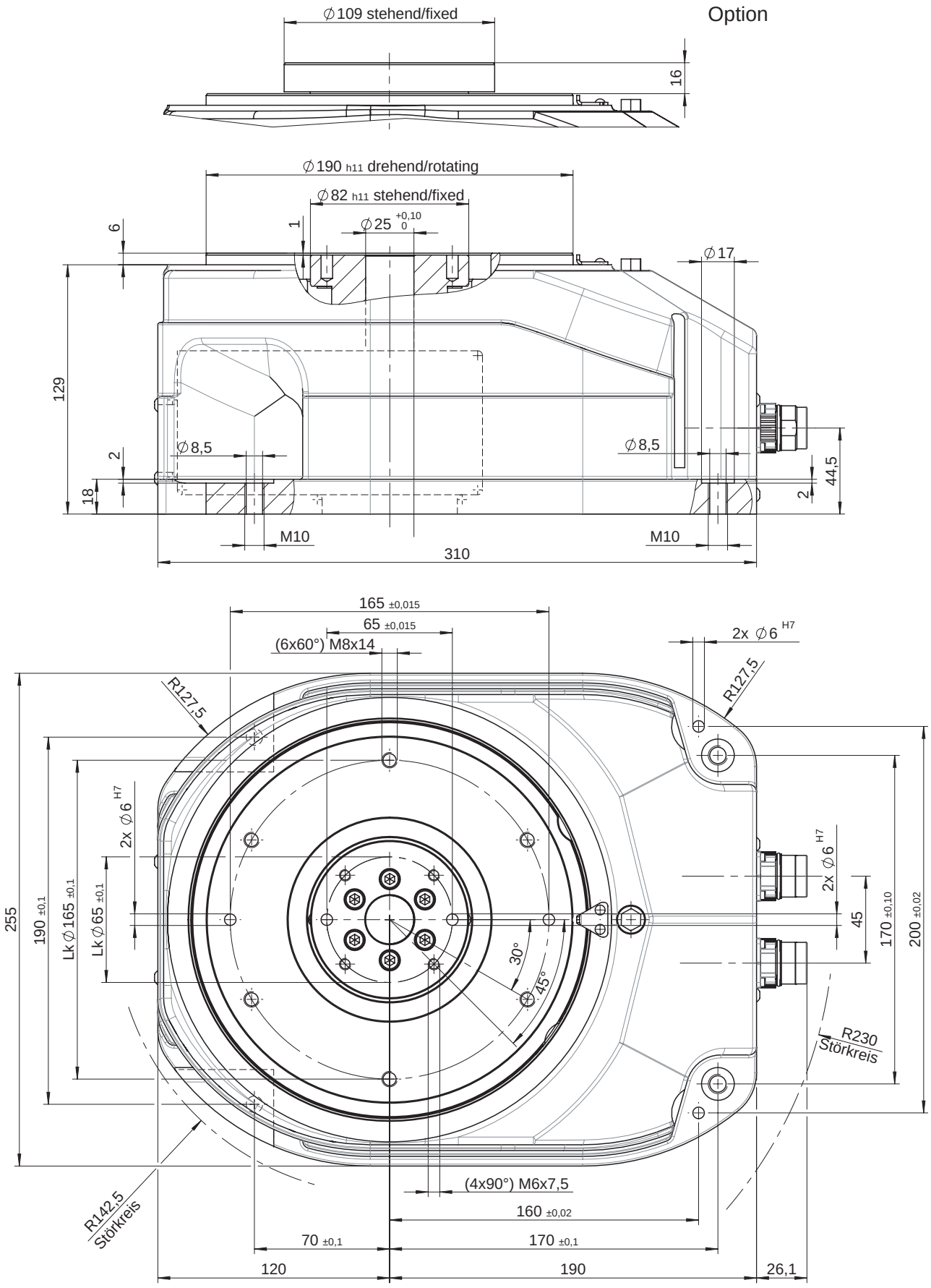
permissible pull-out torque	**300 Nm**	permissible down-force	**5000 N**	permissible tangen-tial tiorque	**200 Nm**
permissible radial force	**4000 N**				

Rotating plate



permissible pull-out torque locked rotary plate	**700 Nm**	permissible working force acting vertically at the locked rotating plate and within the nominal diameter	**7500 N**	permissible tangen-tial torque with brake	**70 Nm**
permissible pull-out torque with locked rotary plate	**8000 N**			permissible tangen-tial torque motor ener-gised (constant)	**100 Nm**

3.4.2.2 Dimensions TW200



3.4.3 Table type TW300

Table diameter:	280 mm
Tightening pulley:	Standard: Raised tightening pulley, upright, Ø 148 mm
Direction of rotation:	left, right or alternating
Number of stops:	freely programmable
Weight:	ca. 55 kg
Installation position:	any
Pitch accuracy:	± 45''
max. axial run-out of the plate:	0.01 mm
max. Excentricity:	0.01 mm
max. torque:	450 Nm
max. mass moment of inertia:	50 kgm²
nominal torque:	200 Nm

3.4.3.1 Load data TW300

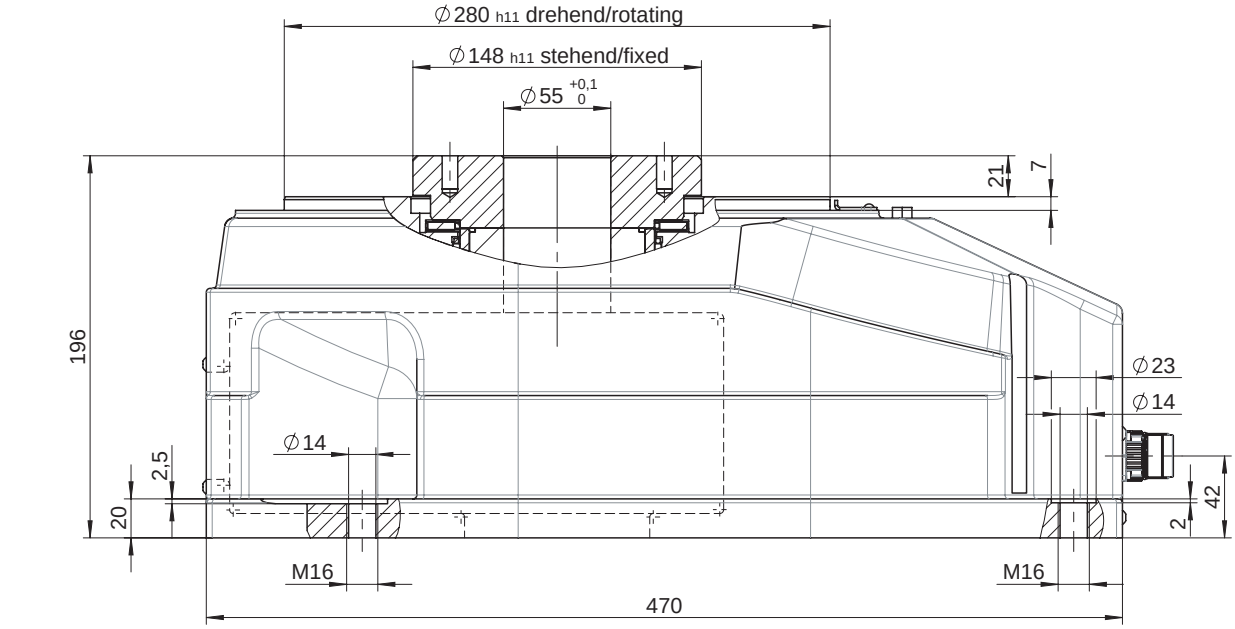
Fixed centre plate

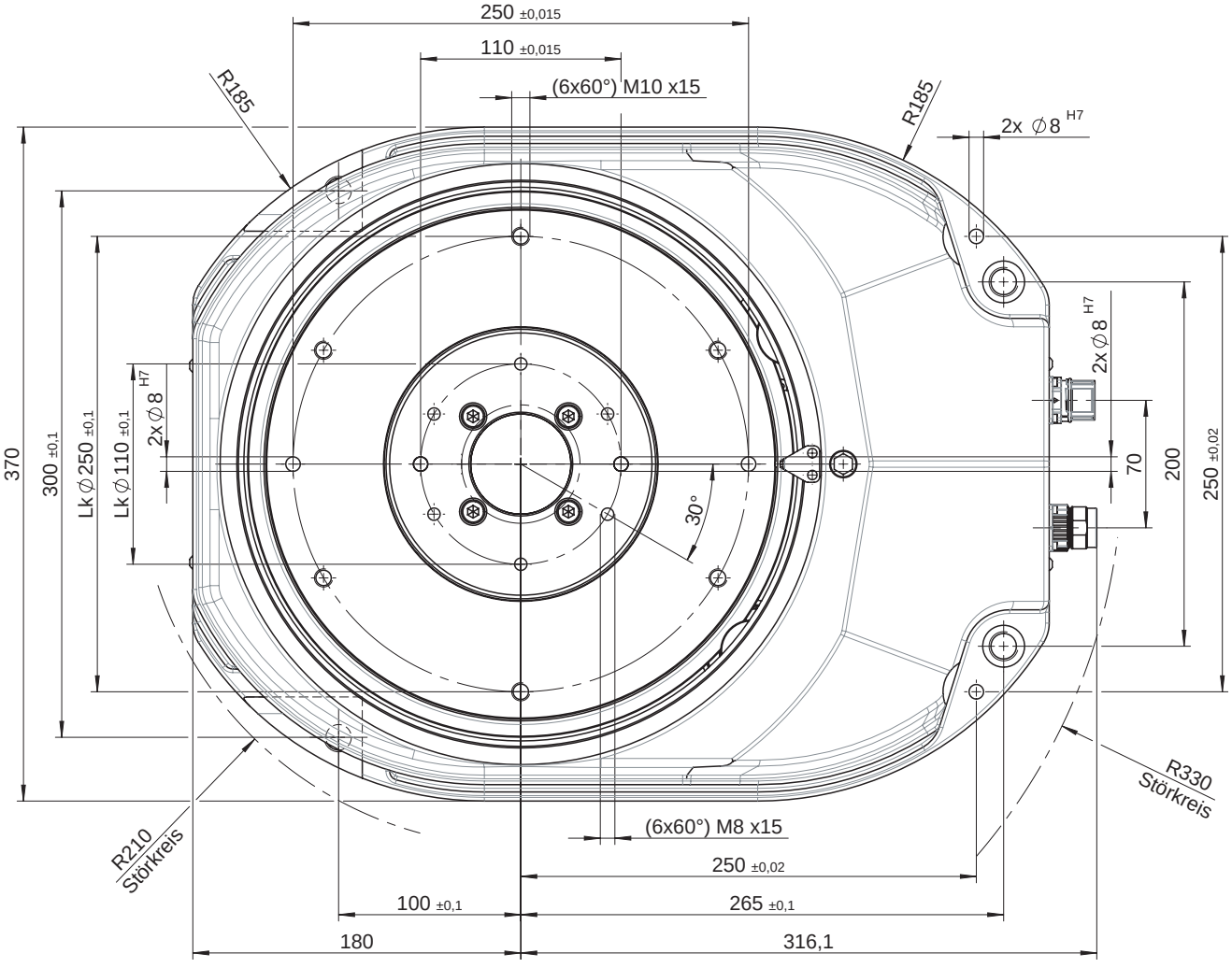
permissible pull-out torque	**1800 Nm**	permissible down-force	**18000 N**	permissible tangen-tial tiorque	**800 Nm**
permissible radial force	**2000 N**				

Rotating plate

permissible pull-out torque locked rotary plate	**2250 Nm**	permissible working force acting vertically at the locked rotating plate and within the nominal diameter	**15000 N**	permissible tangen-tial torque with brake	**150 Nm**
permissible pull-out torque with locked rotary plate	**15000 N**			permissible tangen-tial torque motor ener-gised (constant)	**200 Nm**

3.4.3.2 Dimensions TW300





4 Transportation

4.1 Safety during transportation

WARNING

Falling or sagging loads.

Falling or sagging loads can lead to grievous injuries. Inadequately dimensioned load bearing equipment can break. Transport vehicles not designed to support the weight of the machine may fail or topple over.

Lifting devices, conveyor vehicles (pallet trucks) and load carrying equipment should conform to regulations and be designed to support the weight of the machine including packaging. It is forbidden to stand or be present under suspended or lifted loads. A falling or toppling machine can cause grievous or fatal injuries.

- Transport tasks should only be performed in compliance with the safety instructions
- Note that projecting sharp edges can cause injuries.
- The transport path must be cordoned off and safeguarded in such a manner that unauthorised personnel cannot enter the danger zone.
- The parts must be safeguarded against tipping or falling.

NOTICE

The machine must be protected against impermissible strains (mechanical strain, temperature, humidity, aggressive atmospheres) during transport and when being stored.

4.2 Appliances and auxiliary equipment approved for transportation

Eye bolts of a suitable dimension should be used for transporting the unpacked machine. The eye bolts are screwed into the external thread of the rotating plate. The lifting slings can be attached to the eyelets of the eye bolts.

Fig. 4: Transporting the unpacked machine

4.3 Transportation damage

The delivery should be inspected for damage immediately after receipt. The contents of the delivery should be checked for damage if damage to the packaging is detected, which could indicate damage to the contents. Details of the scope of delivery are provided in Chapter 3.3.1.

Damage detected should be immediately reported to and confirmed by the transportation company.

4.4 Intermediate storage

NOTICE ***The machine must not be stored in such a way that the bleed screw is pointing down, since otherwise oil may leak out.***

The storage conditions detailed in the table should be observed if intermediate storage over a longer period of time is planned.

Climatic zone	Packaging	Storage location	Storage duration
Moderate Europe USA Canada China Russia (except tropical areas)	Packed in containers	Roofed over Protected against rain and snow Not exposed to vibrations	Max. 3 years with regular inspection of packaging
	Open	Roofed over and sealed at a constant temperature and air humidity (5 °C < T < 60 °C, 50% relative humidity) No sudden temperature fluctuation and controlled ventilation with filter (free of dirt and dust) No aggressive vapours and no vibrations	2 years and longer with regular inspection Check for cleanless and machine damage during inspection Check that anticorrosion protection is unspoiled
Tropical Asia Africa Central and South america Australia New Zealand (except moderate areas)	Packed in containers With moisture absorbers and humidity indicator sealed in film Protect against insect damage and mould formation through chemical treatment	Roofed over Protected against rain Not exposed to vibrations	Max. 3 years with regular inspection of packaging
	Open	Roofed over and sealed at a constant temperature and air humidity (5 °C < T < 60 °C, 50% relative humidity) No sudden temperature fluctuation and controlled ventilation with filter (free of dirt and dust) No aggressive vapours and no vibrations Protected against insect damage	2 years and longer with regular inspection Check for cleanless and machine damage during inspection Check that anticorrosion protection is unspoiled

5 Installation

5.1 Safety during installation

WARNING

Falling or sagging loads can lead to grievous injuries. Inadequately dimensioned load bearing equipment can break. Transport vehicles not designed to support the weight of the machine may fail or topple over.

Lifting devices, conveyor vehicles (pallet trucks) and load carrying equipment should conform to regulations and be designed to support the weight of the machine including packaging. It is forbidden to stand or be present under suspended or lifted loads. A falling or toppling machine can cause grievous or fatal injuries.

Injuries caused by falling loads.

Parts stacked on top of each other can slip and fall. Do not loosen any fixing elements and transportation securing devices without the express instructions of the company installation personnel. Wear personal protective clothing.

Injuries caused by incorrect installation.

The dimensions of the supporting ground and fastening equipment must sufficient, so that they can withstand the stresses produced during operation.

Work should only be assigned to auxiliary personnel by company installation personnel.

Electric shocks can cause serious to fatal injuries.

Improperly performed maintenance tasks on the electrical equipment or contact with energised lines can cause an electrical shock with severe to fatal injuries. Work on electrical equipment should only be performed by qualified electricians and in compliance with the specifications in the operating manual for electrical systems. The supply cables must be checked to ensure that they are de-energised, prior to connection. The connection to the supply energy must be established in accordance with the information in the circuit diagrams.

NOTICE

Incorrectly-laid cables (e.g. where the bending radius is too small) can cause cable scorching and burning. Electronic components can be damaged by electrostatic influences.

- Ensure that only authorised personnel are in the work area of the machine and that no one could be injured due to the installation work.
- Ensure that no components are damaged and that they are only installed in clean, functional condition. Improperly placed or improperly fastened system parts can fall or tip over.
- Ensure that all components are installed in accordance with the described arrangement.
- Ensure that specified tightening torques are observed.

5.2 Installation prerequisites

Check prior to installation whether the dimensions of the installation site and building conditions correspond to the necessary prerequisites and measurement specification in the drawing documents.

Particularly ensure that:

- The supporting floor is level and rigid.
- The dimensions of the supporting structure at the installation location must be sufficient to withstand the dynamic forces that occur.
- The shaft seals are protected against wear in case of abrasive ambient conditions.

5.2.1 Operating media / Auxiliary media / Tools

The following are required for installation of the machine:

- One set of spanners
- One torque wrench
- One set of screwdrivers
- Screw securing agent (e.g. Loctite ® 243)
- Commercially-available solvents
- Drift for fitting parallel pins
- Screws which are at least have a property class of 8.8

5.2.2 Installation preparation

- Open the packaging unit prior to the assembly and remove the machine from the packaging unit.
- The customer's bores must be made based on the hole pattern in Chapter 3.4.
- The attachment screws must be at hand.

Prior to installation, all components must be free of anti-corrosion agents and dirt and a commercially-available solvent should be used for this purpose.

NOTICE ***Do not bring the sealing lips of the oil seals in contact with the solvent, as this could cause damage to the material.***

5.2.3 Adjusting the venting screw

NOTICE ***The venting screw is factory-fitted in the ordered installation position. If the installation position is changed from the position which the machine was ordered for, the venting screw must be repositioned.***

A second ventilation bore hole, sealed off with a plug screw, can be found on the underside. If the installation position is changed, then it must be ensured that the ventilation bore hole is always located on the top section of the cast housing.

1. Unscrew the venting screw [1], screw a plug screw [2] into the hole and tighten.
2. Move the rotary indexing table to the desired installation position.
3. Remove the plug screw [3] on the underside.
4. Screw the venting screw [1] into the hole and tighten.

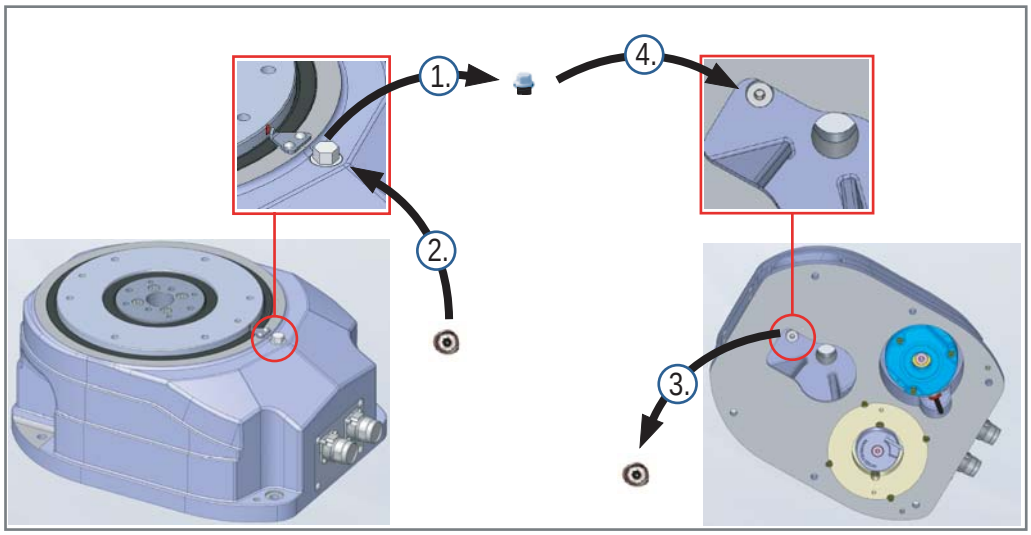


Fig. 5: Adjusting the venting screw

5.3 Assemble machine

5.3.1 Fastening the rotary indexing table

1. Place the rotary indexing table (in compliance with the transportation regulations) at the assembly position and align it with the bore holes and pin holes [1].
2. Pre-centre both cylinder pins [2] and then drive in the first pin one third of the way.
3. Screw in fastening screws [3] and slightly tighten.
4. Drive in the second parallel pin completely, followed by the first parallel pin.
5. Tighten the fixing screws firmly in a diagonal pattern with a torque wrench.
6. Make electrical connections in accordance with the circuit diagrams.
7. Perform a trial run.

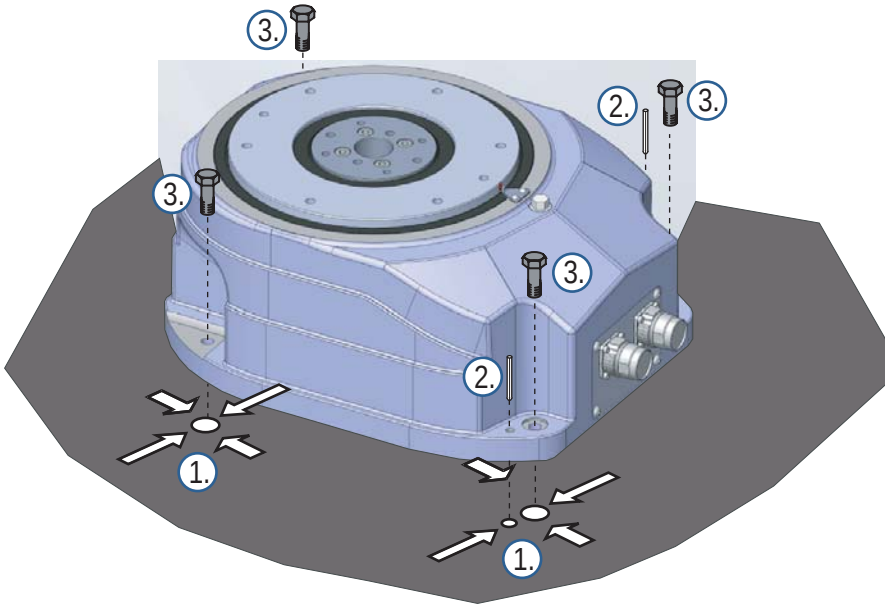


Fig. 6: Fastening the rotary indexing table

5.3.2 Installation of additional components

NOTICE ***To assemble the attachment parts on the rotary disc, the existing holes and/or thread drills must be used. Additional drills or welding on the machine is prohibited. Damage to the machine.***

To guarantee concentricity and part accuracy, attachment parts may only be assembled with the intended fitting bore resp. with centre bore and threads.

5.4 Installing the safety equipment

Fitting of safety equipment and emergency stop buttons is the responsibility of the operator. The machine may not be operated without safety equipment suitable for the intended purpose.

5.5 Instructions on disposal of packaging material

Packaging materials should be reused or disposed of correctly in compliance with national regulations.

6 Commissioning

6.1 Safety during commissioning

WARNING

Injuries emanating from unexpected activation.
Incorrectly-established connections or external influences on electrical equipment can cause unexpected activation of the machine or uncontrolled movement. Ensure that nobody is present in the hazardous zone around the machine. Activate and check all safety equipment and emergency stop circuits prior to commissioning.

- Ensure that the machine is only commissioned by qualified personnel in compliance with the safety instructions.
- Ensure that only authorised personnel are in the work area, and that no one could be injured due to the commissioning process.

The following prerequisites must be met prior to commissioning the machine:

- The machine is correctly mounted.
- The electrical equipment for the power supply is available and correctly fitted.
- All cables are laid properly and correctly connected in compliance with valid electrical circuit documents.
- The shielding of the motor wires is in place.
- The static discharge must be conducted properly.
  - The shunt resistance must be measured and have a value of < 10 MOhm.
  - The measurement must be recorded in a log.
- The required safety equipment and emergency stop circuits are available and functioning correctly.

Prior to commissioning the machine, check whether

- the drive is undamaged and not blocked.
- all connections have been correctly established.
- no other hazard sources are present.
- no foreign materials, tools or other objects are lying in the operating area of the machine.

The following should be checked during commissioning

- the machine runs smoothly.
  - Jerking of the rotary disc can be a sign for incorrect regulator parameters.
- no excessive noise development is detected.
  - A strong development of noise may indicate improper assembly or incorrect control parameters.

6.2 Initial commissioning

If the machine is delivered with servo amplifier and software, the start-up is conducted via the Weiss Application software WAS.handling Windows programme.

More information is also contained in the operating manual WAS.indexer Control TW150 - TW300 .

6.3 Recommissioning

WARNING ***Risk of injury emanating from an operationally unsafe machine.***
An operationally unsafe machine can cause injuries and material damage. Recommissioning should only be realised after it has been ascertained that the machine is in a functionally reliable condition and no risk emanate from it during operation.

A visual inspection of the machine should be conducted prior to re-commissioning. The following should be checked and ensured in this regard:

- No damage is present on the machine.
- No foreign materials, tools or other objects are lying in the operating area of the machine.
- All supply units are connected and operating.
- Safety equipment is ready for operation.

7 Operation

7.1 Safety during operation

WARNING

Risk of injury due to incorrect alteration of operating parameters.
Improper changes of operating parameters can cause unforeseeable system behaviour. Operating parameters should only be changed by authorised personnel. Altered operating parameters should be checked in a test. Incorrect parameters can cause consequential damage and thus injuries.

Impact and crush hazards
In the event of motor brake failure, the rotary table may continue to rotate even though the motor has stopped. Do not intervene manually unless the rotating plate is stationary. If the rotating plate is still moving, then any manual intervention may lead to impact or crush injuries.

- Operating personnel must inform themselves of the proper behaviour in the event of malfunction, before switching on the machine.
- Ensure that the machine is only operated by personnel who have been trained, instructed and authorised to do so. Such personnel must be familiar with the operating manual and follow the instructions therein.
- The machine should only be used for its intended purpose (see chapter "Intended use").
- Comply with the warnings. Do not reach into moving parts.
- No one should be in the danger zone of the machine when it is being turned on and operated.
- The operating instructions issued by the owner must be complied with.

7.2 Operating the machine

The machine is designed for integration in other machines, in other incomplete machines or equipment or for connection to these.

Safe operation and control are the responsibility of the operator.

7.3 Operating personnel workstations

The operating personnel workstations are determined by the operator of the plant or product in which the machine is integrated.

8 Malfunctions

8.1 Safety when remedying malfunctions

WARNING

Injury of non-authorised personnel.
Malfunctions should only be remedied by instructed personnel provided by the operator who have been trained in and are authorised to perform these tasks. The machine should be deactivated with the main switches and secured against unintentional reactivation prior to remedy. The radius of action of moving machine parts should be secured.

8.2 Errors / Cause / Remedy

📖 Information on malfunctions and their elimination are contained in the operating manual WAS.indexer Control TW150 - TW300 .

8.3 Customer Service

Please provide the following details if you require the assistance of our Customer Service:

- Serial number of the machine
- Description of the malfunction that has occurred
- Time and attendant circumstances of the malfunction that has occurred
- Assumed cause

You can contact our Customer Service from Monday to Friday between 08:00 and 17:00 at the

Service number +49 (0) 6281 - 5208-0

or at service@weiss-gmbh.de

An answering machine will provide you with information outside of the abovementioned hours.

9 Maintenance

9.1 Safety during maintenance

WARNING

Injuries caused by the power supply and residual energy.
All power sources should be deactivated prior to carrying out maintenance work, and secured against unintentional reactivation and marked with a sign indicating that maintenance work is in progress. All moving parts should be stationary. Loads should be secured against sagging or slipping. All components energized with electrical power should be de-energized (Extinguished LED's on the servo amplifier do not mean that all components have been completely de-energised). Check by measuring to ensure that all components are de-energised. Work on electrical equipment may only commence if the voltage is less than 42 VDC.

Risk emanating from rotary table which runs on.
The gearing mechanism is not self-locking. For a vertical installation of the machine (see Ch. 3.3.5 gravitational forces acting on unevenly distributed loads can cause the rotating plate to rotate while bleeding the brake or while moving the partition between the drive and the rotating plate. The rotating plate should be supported prior to bleeding the brake or removing the partition between the drive and the rotating plate, to ensure that it does not continue to rotate subsequently. Failure to comply with this instruction can result in severe or fatal injury.

Injury of non-authorised personnel.
Maintenance work should only be realised by instructed personnel who have been authorised to perform these tasks. The operating instructions laid down by the operator must be rigidly adhered to.

Injuries resulting from maintenance work which has not been announced.
The working area should be secured over a wide area prior to realising maintenance work and marked with warning signs. Operating personnel must be informed that maintenance work is being carried out.

- Ensure that only qualified electricians perform all tasks on the electrical equipment.
- Ensure that all work steps for maintenance are performed in the specified sequence.
- Ensure that specified tightening torques are observed.
- Ensure that all foreign objects are removed from the work area after the maintenance.

9.2 Maintenance work

Maintenance includes tasks for the purpose of:

- Inspection
- Maintenance
- Repair

9.3 Inspections

9.3.1 Conducting a six-monthly visual inspection

Conduct a visual inspection for

- loose bolt or pin connections.
- damaged to cables and plugs.

9.4 Maintenance

The machine is maintenance free.

9.5 Repair

The operator should not perform any maintenance or repair work on the machine.

Should maintenance or repair work become necessary, the customer service of WEISS GmbH is to be contacted.

10 Decommissioning / Dismantling / Disposal

10.1 Safety during decommissioning and dismantling

WARNING

Injury of unauthorised persons.
Ensure that decommissioning and dismantling is only realised by persons trained, instructed and authorised for this purpose. These persons should be familiar with the operating manual and act in accordance with it.

10.2 Decommissioning

10.2.1 Temporary decommissioning

The machine should be deactivated for decommissioning and secured against unintentional reactivation.

The machine should be fitted with a sign that clearly indicates that it is temporarily decommissioned.

NOTICE ***For recommissioning, comply with the instructions in chapter 6.3.***

10.2.2 Ultimate decommissioning

For ultimate decommissioning and shutdown:

- Turn off the machine according to specifications.
- Secure the machine against unintended reactivation.
- Provide the machine with a notice which clearly indicates that the the machine is ultimately shut down.

10.3 Dismantling and disposal

CAUTION ***Injuries can occur during disassembly through falling components.***
The following points must be observed to avoid injuries and/or environmental damage during dismantling and disposal:

- In order to avoid injury, ensure that suitable tools are used and that dismantled machine components are stable.
- Wear personal protective clothing and protective equipment.

10.3.1 Disposal of components

NOTICE ***Modules should be disposed of correctly!***
Incorrect disposal of modules can cause environmental damage and will be prosecuted!
Dispose of modules in compliance with valid local regulations. Ensure that auxiliary operational media are disposed of in compliance with environmental protection regulations. Local regulations governing the correct recycling and disposal of waste should be observed.

The machine consists of:

- steel and aluminium (casing, rotary disc, plug)
- copper (motor, electric wires)
- plastic (electric cables)
- Electronic components (servo amplifiers, boards)

11 Service and spare parts

11.1 Ordering spare parts

Please supply us with the following details when ordering spare parts:

- Serial number of the machine
- Order number of the spare part obtained from the spare parts list
- Number of spare parts required

Please send your spare parts order to

WEISS GmbH
Sondermaschinentechnik
Siemensstraße 17
D-74722 Buchen/Odw.

Tel: +49 (0) 6281 - 5208-0
Fax: +49 (0) 6281 - 5208-99
eMail: service@weiss-gmbh.de
Internet:http://www.weiss-gmbh.de

All our representative addresses can be obtained on our website.

12 Appendix

12.1 Personal notes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2

12.1 Personal notes


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2

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