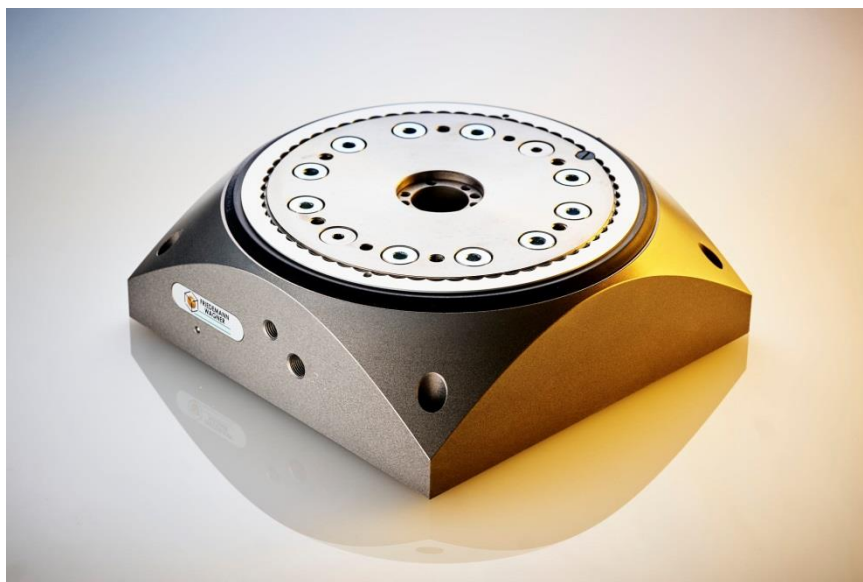


Assembly and Operating Manual

Rotary Indexing Unit



Type: RSE-6-M



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Issue 2/2023
Original assembly and operating manual

		NOTICE
	<p><i>Important! – Read carefully before use – Keep for later use!</i></p> <p><i>This assembly and operating manual is an integral part of the device and must be available to the operating and maintenance personnel at all times.</i></p> <p><i>The safety notices in it must be observed.</i></p> <p><i>If the device is sold on, this assembly and operating manual must always be passed on along with it.</i></p> <p><i>The current version can be found online on the manufacturer's website: http://www.wagnerautomation.de</i></p>	

Guarantee and warranty provisions:

See chap. 5.6, Guarantee and warranty provisions.

The **warning and safety symbols** are explained in chapters 3.1 and 3.1.1.

Translation

The assembly and operating manual must be translated accordingly into the language of the country of use if the device is delivered to any countries of the EEA. Refer to the original assembly and operating manual (German) for clarification or contact the manufacturer if there are any discrepancies in the translated text.

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Document name:

2-1-BA-MA_232220_RSE-6-M-End.doc

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1.4 Declaration of Incorporation

Friedemann Wagner GmbH
Robert-Bosch-Straße 5
D-78559 Gosheim / Germany

Declaration of Incorporation

within the meaning of the

- **EC Directive Machinery 2006/42/EC**
- **EC Directive EMC 2014/30/EU**

We hereby declare that the construction type of

Designation: Rotary Indexing Unit

Type: RSE-X-X-X-X-X-M

as delivered complies with the above directives.

Applied harmonized DIN EN standards in accordance with the official gazettes of the directives:

Directive/standard	Title
DIN EN ISO 82079-1 :2021-09	Preparation of information for use (instructions for use) of products - Part 1: Principles and general requirements (IEC/IEEE 82079-1:2019); German version EN IEC/IEEE 82079-1:2020
2006/42/EC	EC Directive: Machinery <i>valid from 12/29/2009</i>
DIN EN ISO 12100 :2010	Safety of machinery - General principles for design - Risk assessment and risk reduction

- This declaration refers only to the rotary indexing unit in the condition in which it was placed on the market.
- The essential health and safety requirements set out in Annex I of this directive are applied and complied with.
- The following chapters of Annex I of MA-RL 2006/42/EC were addressed in the risk assessment:
1.1.2, 1.1.3, 1.1.5, 1.2.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.6, 1.3.7, 1.3.8.2, 1.3.9,
1.4.1, 1.4.2.1, 1.5.3, 1.5.4, 1.5.9, 1.5.11, 1.5.15, 1.6.1, 1.6.4, 1.7.1, 1.7.2, 1.7.3, 1.7.4.
- The specific technical documentation referred to in Annex VII B has been prepared and it shall be provided in electronic form to the national competent authority upon request.
- **Commissioning is prohibited until it has been determined that the complete system in which the rotary indexing unit is installed complies with the provisions of the directives.**
- Authorized person for the compilation of technical documentation:
Name: Mr. Andreas Wagner
Address: Robert-Bosch-Straße 5, D-78559 Gosheim / Germany

Gosheim, February 2023

Signature of person responsible for the business (A. Wagner, Management)

2 Overview and intended use

2.1 Overview of the device

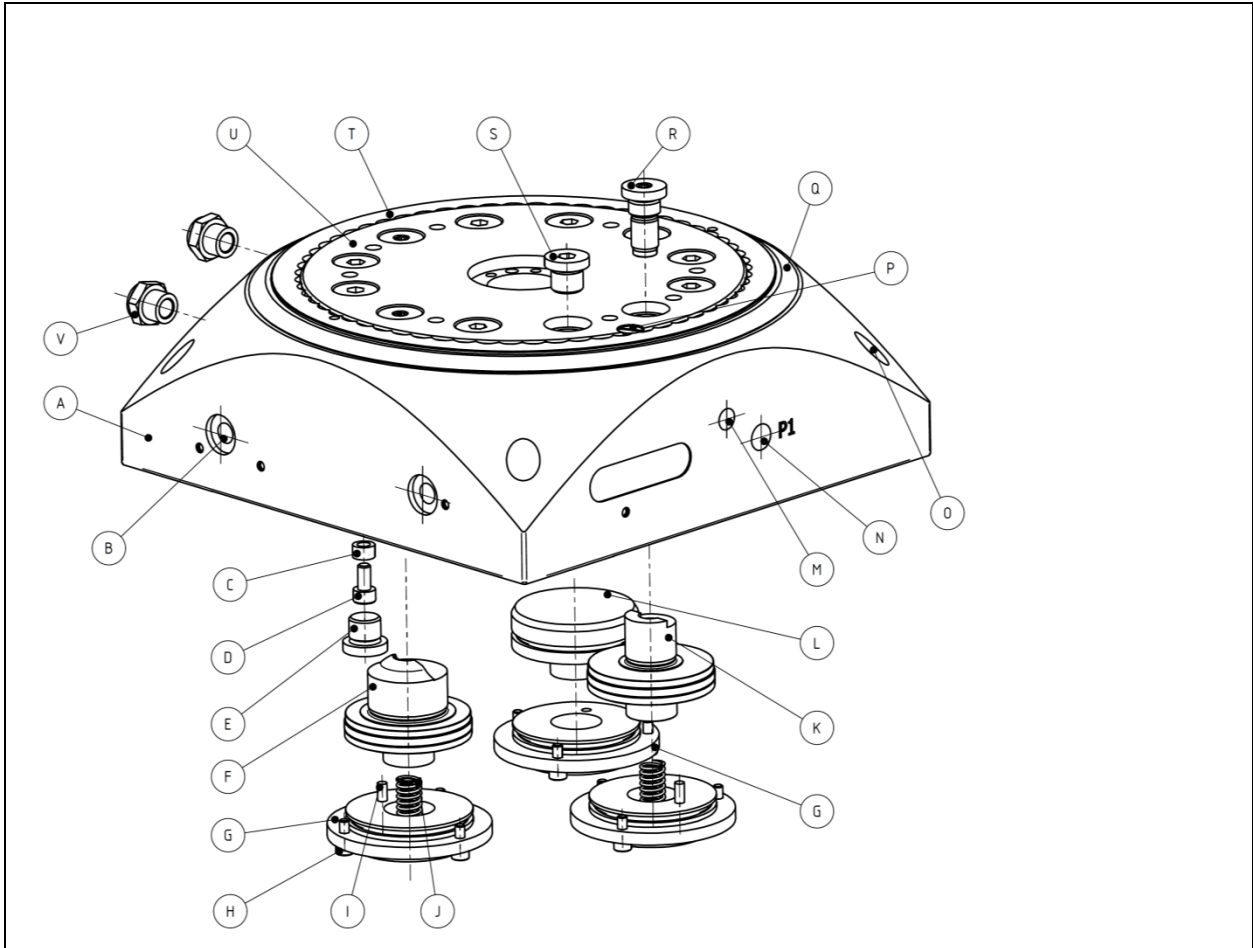




Fig. 2-1 Illustration of the parts RSE-6-M

The RSE-6-M rotary indexing unit comprises the following main components:	
<p>(A) Casing</p> <p>(B) Tapped hole for centering ring ZR-9</p> <p>(C) Ring (per pitch)</p> <p>(D) Cylinder screws (per pitch)</p> <p>(E) Screw plug (access to signal encoder screws)</p> <p>(F) Locking pin</p> <p>(G) Cover</p> <p>(H) Cylinder screw (cover)</p> <p>(I) Cylindrical pin</p> <p>(J) Compression spring</p> <p>(K) Index bolt</p> <p>(L) Locking bolt</p>	<p>(M) Tapped hole for M8 sensor</p> <p>(N) Compressed air connection G1/8 for unlocking</p> <p>(O) Through hole for mounting</p> <p>(P) Flat-head screw</p> <p>(Q) Cup gasket</p> <p>(R) Pitch bolt</p> <p>(S) Screw plug-M10</p> <p>(T) Clamping ring</p> <p>(U) Indexing plate</p> <p>(V) Silencer G1/8</p>

2.2 Intended use



The rotary indexing units were developed to rotate workpieces or assemblies by a defined angle. They are suitable for assembly work and workpiece machining in the rotary indexing system.

This device has been designed, engineered, and built exclusively for industrial and commercial use. Not intended for private use.

	 DANGER
	<p><i>This device has been designed exclusively for the purpose listed above. Any other use beyond this or any modification of the device without written agreement with the manufacturer is considered improper use.</i></p> <p><i>Conversion without written agreement will result in severe or fatal injury.</i></p> <p><i>The manufacturer is not liable for any damage resulting from this. The risk shall be borne solely by the operator. The device must not be put into operation until it has been ensured that all safety devices are installed and functional.</i></p>

Intended use also includes compliance with the operating and maintenance instructions and conditions prescribed by the manufacturer.

Foreseeable misuse:

	 NOTICE
	<p><i>Products in which explosive dust/air or gas/air mixtures can occur must not be processed in critical concentrations (above the LEL)! The device does not meet any EX requirements and must, therefore, not be installed and operated in any ATEX zones!</i></p> <p><i>*) LEL = lower explosion limit</i></p>

Not intended for use in machining operations, in particular the machining of aluminum, titanium, and magnesium.

2.2.1 Product identification

You will find the type code (applied by laser engraving) on the connection side of the rotary indexing unit. The meaning of the type code is shown in the following table:

Module	Size	Version	Pitch	Damping	Energy feedthrough	Drive
RSE	6	R L	2 3 4 6 12	K	0-0	M
		R= right L= left		K= none	0- = pneumatic 0 = electrical	M= manual

2.2.2 Installation notices (of the partly completed machinery) for the installer of the complete system

- The center hole makes it easy to center all assemblies. The assemblies are fixed by the pin holes, fitting holes, or tapped holes.
- The rotary indexing units are supplied without any shock absorbers.
- Control takes place via a 3/2-way valve (this is not included in the scope of delivery).
- The rotary indexing units are mostly configurable:
 - Right- or left-hand operation
 - Speed is determined by the operator – manual turning – observe technical data!
- The center bore of the rotary indexing unit is fixed so that, for example, a screw-in column made by the customer can be attached for mounting work units.
- No choke must be used at the compressed air connection (N).

The integrator of the complete system can put this device into operation as a safe device after implementing all points.

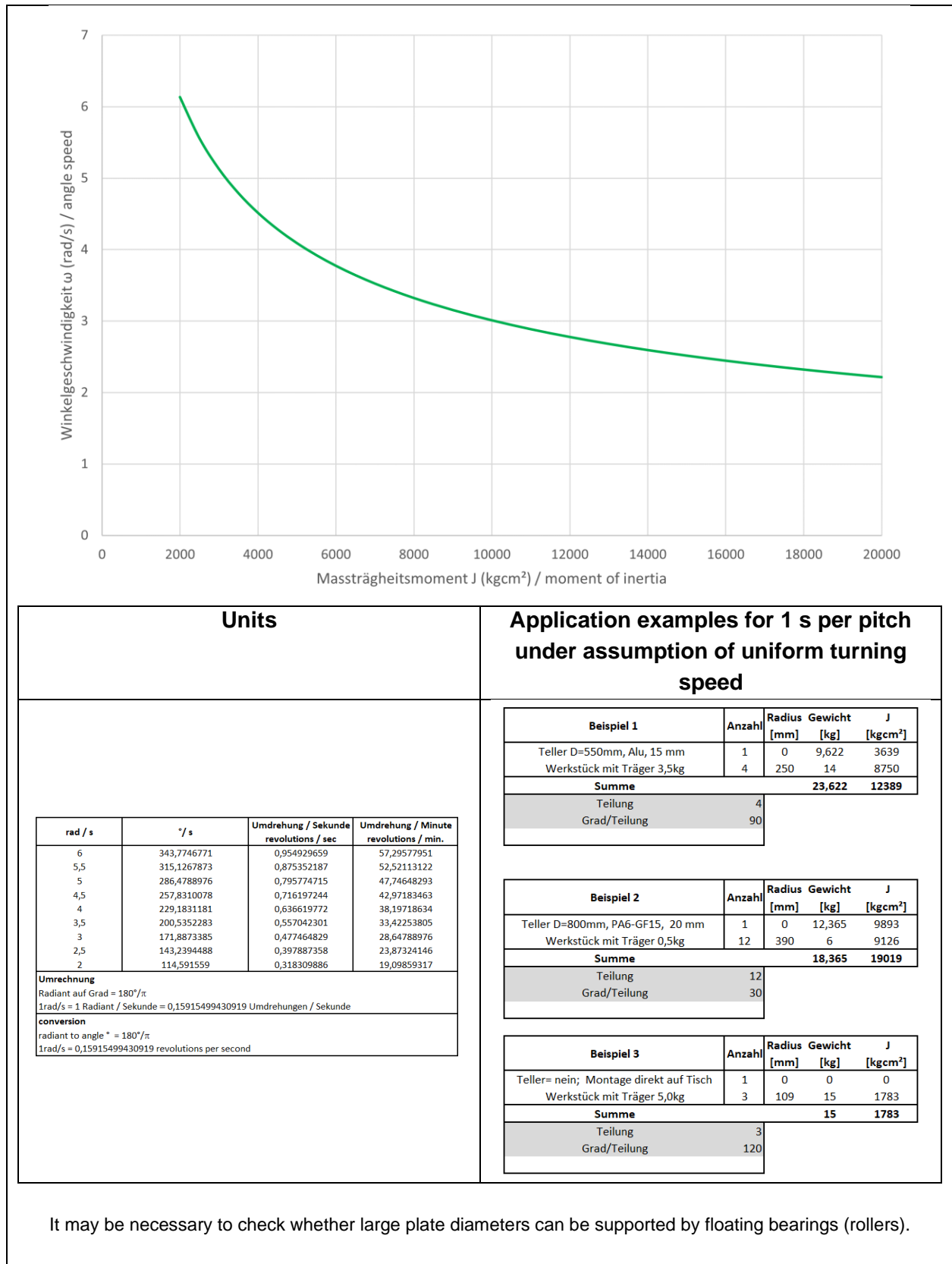
In addition, he supplies a complete operating manual, a declaration of conformity for the complete system and attaches a type plate with CE mark. The risk assessment of the complete system remains internal to the integrator.

Rotary indexing unit Type: RSE-6-M
2.3 Technical data
2.3.1 Dimensions and weight

Type	RSE manual	
Partial accuracy	± 0.03 mm for Ø 109	
Torque locked (static)	100 Nm	
Shear force absorption (static)	6000 N	
Recommended. Clamping weight	25 kg	
Cycles/min * Cycles/s	Load dependent	Observe the chart
Connection	G 1/8"	
Pitch	2/3/4/6/12	
Weight	5.8 kg	
Dimensions	180 mm x 180 mm x 62 mm	
Rotating direction	Clockwise or counterclockwise rotation	
Mounting position	Any, observe gravity – see technical data	
Unlocking	Compressed air 4-8 bar, constant, filtered (10 µm) and dried, lubricated, or unlubricated	
Drive	Manual – technically observe maximum load	
Control	3/2 directional control valve, spring return	
Housing material	Al, hard anodized	
Plate material	Steel, galvanized	
Flat run plate	0.03 mm	
Sound pressure level	≤ 70 dB	
Cylinder diameter (unlocking)	40 mm	
Radial runout center bore	0.03 mm	
Plane parallelism casing – plate	0.05 mm	
Axial load of the plate on pressure dynamic	250 N, observe technical maximum load	
Axial load of the plate on pressure (static) at uniform load	4 KN (max. Ø 140)	
Tilting moment	300 Nm	
Mass moment of inertia max.	20,000 kg/cm ² observe diagram	
Air consumption	13.4 cm ³ /cycle	
Protection class	IP40	

2.3.2 Environmental conditions

- Operation only in closed rooms and low-vibration environment (no explosive or condensing atmosphere).
- Never operate the device in any environments exposed to splash water, fumes, process dust, or abrasion dust.
- Rotary indexing units with proximity switches should not be used in the vicinity of static discharges, high-frequency vibrations, or strong magnetic fields. Otherwise, the proximity switches for end position acknowledgment may issue incorrect signals.
- The rotary indexing units are only partly suitable for splash water areas. If necessary, they must be protected against the ingress of splashing water with a suitable cover.

2.3.3 Characteristic curves

Fig. 2-2 Characteristic curves RSE-6-M

2.3.4 General data

Working temperature range:

Temperature range of the device: + 5° ... + 65° C

Relative humidity: max.70%, non-condensing

Storage conditions:

Lower temperature limit: - 10 °C

Upper temperature limit: + 50 °C

Relative humidity: max. 70%, non-condensing

Technical data and illustrations are not binding.

All data apply at 6 bar operating pressure.











The air consumption is understood at 1 bar.

We reserve the right to make changes at any time.

All data provided without guarantee.

3 Safety

3.1 Notices and explanations

	 <table border="1" style="width: 100%; background-color: red; color: white;"> <tr> <td style="text-align: center;">DANGER</td> </tr> </table> <p>“DANGER” is warning about dangerous situations. Avoid such dangerous situations! Failure to do so will result in severe injury or death.</p>	DANGER
DANGER		
	 <table border="1" style="width: 100%; background-color: orange;"> <tr> <td style="text-align: center;">WARNING</td> </tr> </table> <p>“WARNING” is warning about dangerous situations. Avoid such dangerous situations! Failure to do so may result in severe injury or death.</p>	WARNING
WARNING		
	 <table border="1" style="width: 100%; background-color: yellow;"> <tr> <td style="text-align: center;">CAUTION</td> </tr> </table> <p>“CAUTION” in combination with the warning symbol is warning about dangerous situations. Avoid such dangerous situations! Failure to do so may result in small or minor injuries.</p>	CAUTION
CAUTION		
	 <table border="1" style="width: 100%; background-color: blue; color: white;"> <tr> <td style="text-align: center;">NOTICE</td> </tr> </table> <p>“NOTICE” provides recommendations for action that will not lead to injury if not observed. However, observe the recommended actions to avoid property damage and problems!</p>	NOTICE
NOTICE		
	 <table border="1" style="width: 100%; background-color: blue; color: white;"> <tr> <td style="text-align: center;">NOTICE</td> </tr> </table> <p>Notices are marked with a “book” in the assembly and operating manuals/documentation (see external documentation). However, follow the recommended actions to avoid property damage and problems!</p>	NOTICE
NOTICE		

3.1.1 Explanation of the safety symbols used

		DANGER
	<p>Crushing, risk of injury to hands (closing movements of mechanical parts).</p> <p>Failure to do so will result in severe injury or death.</p> <p>No manual work must be performed on the device while it is actuated.</p>	
		WARNING
	<p>Requirement: Wear safety shoes.</p> <p>Failure to do so may result in severe injury or death.</p> <p>Note the dangers to the lower limbs.</p>	
		WARNING
	<p>Requirement: Wear protective gloves.</p> <p>Failure to do so may result in severe injury or death.</p> <p>Note the dangers to the hands.</p>	
		WARNING
	<p>Requirement: Wash hands.</p> <p>Failure to do so may result in severe injury or death.</p> <p>Note the dangers caused by poor hygiene.</p>	
		NOTICE
	<p>Environmental mark marks measures for environmental protection (warning of pollution, in chapter disposal).</p> <p>Otherwise, damage to the environment will occur.</p> <p>Incorrect disposal can cause major environmental damage.</p>	

3.2 **Safety measures (to be performed by the operator)**

- ▶ The rotary indexing units must only be maintained, installed, and converted by qualified personnel. Such persons must have read and understood the operating manual.
- ▶ The energy and compressed air supply must be disconnected from the rotary indexing unit before any maintenance, servicing, or conversion work. Also ensure that there is no residual energy.
- ▶ Only use the rotary indexing units when they are in impeccable technical condition and do not make any unauthorized changes to them.
- ▶ The rotary indexing units may have a high dead weight. Secure them against falling.
- ▶ Switch off the rotary indexing unit, disconnect it from the energy and compressed air supply and secure it against being switched on again in cases of emergency, error, or other irregularities.
- ▶ Periodically perform visual inspections of the compressed air supply lines. Operation with damaged compressed air supplies is not permitted.
- ▶ Observe the technical framework values and ambient conditions specified in the product documentation.
- ▶ The rotary indexing unit must only be operated in the intended use.
- ▶ Observe the applicable regulations for accident prevention and environmental protection.
- ▶ Provide protective devices in accordance with EC directives.
- ▶ Apply compressed air to your entire system only slowly; this will prevent uncontrolled movements.
- ▶ Only start up your system if no persons or foreign objects can be caught by moving parts.
- ▶ Ensure that the acceleration due to gravity acting on the rotation cannot cause any damage to the device, the application and the operating personnel depending on the installation position and eccentric load.

3.3 **Safety checks**



performed by the manufacturer at the factory.

1. Risk assessment in accordance with the Machinery Directive 2006/42/EC (according to annex I) and in accordance with DIN EN ISO 12100:2010.

4 General danger notices

4.1 Dangers



The safety systems and safety instructions described in this assembly and operating manual must be observed.



		DANGER
	<p>Observe any crushing hazards to hands and/or body during setup, maintenance, and repair work!</p> <p>Failure to do so will result in severe injury or death.</p> <p>The machine builder must ensure safe operation by means of safety devices.</p>	

4.2 Installation of spare and wear parts

We explicitly refer to the fact that spare parts and accessories that have not been supplied by us have also not been tested and approved by us. Installation and/or use of such products may, therefore, adversely affect the design properties of your device. We are not liable for damage caused by the use of non-original parts and non-original accessories.

Standard parts can be obtained from specialized dealers.

		NOTICE
	<p><i>Bills of materials and technical data sheets are filed in the technical documents.</i></p> <p><i>Otherwise, property damage will result.</i></p> <p><i>Failure to comply with the enclosed technical documentation may cause damage.</i></p>	

		NOTICE
	<p><i>Lists of the spare parts and wear parts are filed in the technical documents as provisions.</i></p> <p><i>Otherwise, property damage will result.</i></p> <p><i>Failure to comply with the enclosed technical documentation may cause damage.</i></p>	

Service

If necessary, these parts can be purchased from:

Friedemann Wagner GmbH
 Robert-Bosch-Straße 5
 D-78559 Gosheim / Germany
 Phone: +49 (0) 7426 / 94900-0
 Fax: +49 (0) 7426 / 94900-9
 Email: info@wagnerautomation.de

5 Installation

5.1 Scope of delivery

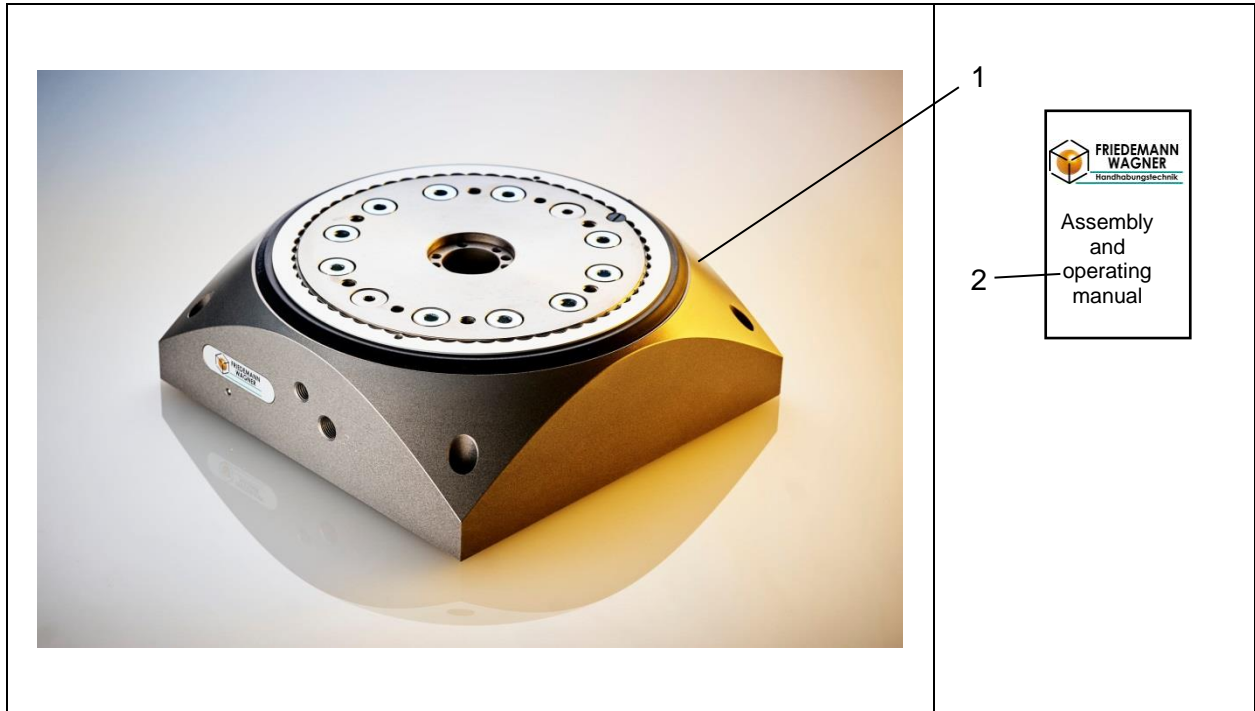


Fig. 5-1 *Scope of delivery of the device*

The scope of delivery shall include:

- 1 Rotary indexing unit
- 2 This assembly and operating manual with declaration of incorporation
- 3 2x centering ring ZR-9
- 4 Cardboard packaging

5.2 Transportation and packaging

A list of the scope of delivery will be provided before the start of deliveries. It contains information about:

- Delivery date,
- Number and type of transport units.

Devices are carefully inspected and packed before shipment; nevertheless, damage during transport cannot be ruled out.

5.2.1 Delivery (also for spare and replacement parts)

Inbound inspection:

- Check the completeness on the basis of the delivery note!

In case of damage

- Check the delivery for damage (visual inspection)!

In case of complaints

If the delivery is damaged in transport:

- Contact the last carrier immediately!
- Keep the packaging (because of possible inspection by the carrier or for return shipment).



Packaging for return shipment

Use the original packaging and packaging material if possible.

5.2.2 Interim storage/storage conditions

The freight packaging of the device and the spare and replacement parts is designed for a storage period of 3 months upon delivery.

After disassembly, the device must be stored properly so that it can be reused if necessary.



		NOTICE
	<p><i>Temporary storage: enclose desiccant or store in a dry workshop.</i></p> <p><i>Otherwise, property damage will result.</i></p> <p><i>Moisture may penetrate and cause great damage.</i></p>	



Storage conditions

- see chap. 2.3.4, technical data.
- no direct sunlight.
- no direct rain, condensation, water.



5.3 Assembly

5.3.1 Assembly of the rotary indexing unit

		NOTICE
	<i>The rotary indexing units are suitable for any assembly installation situation.</i>	

		WARNING
	Ensure that the acceleration acting due to gravity/dead weight cannot cause any harm to the operating personnel, the device, or the application even in the case of an (unlikely) spring breakage (no safe locking!) depending on the installation position and eccentric load.	

- ▶ Insert at least 2 – if possible diagonally offset – centering rings (ZR-9, included in the scope of delivery) in the holes provided.
- ▶ Tighten the rotary indexing unit with screws.

		NOTICE
	<i>If a ZR-9 centering ring is stuck in the bore, you can easily remove it from the bore using a threaded screw. The centering rings have an internal thread specifically for this. Simply turn a matching screw (M10 at ZR-9) into the inner thread of the centering rings and pull out the screw with the centering ring.</i>	

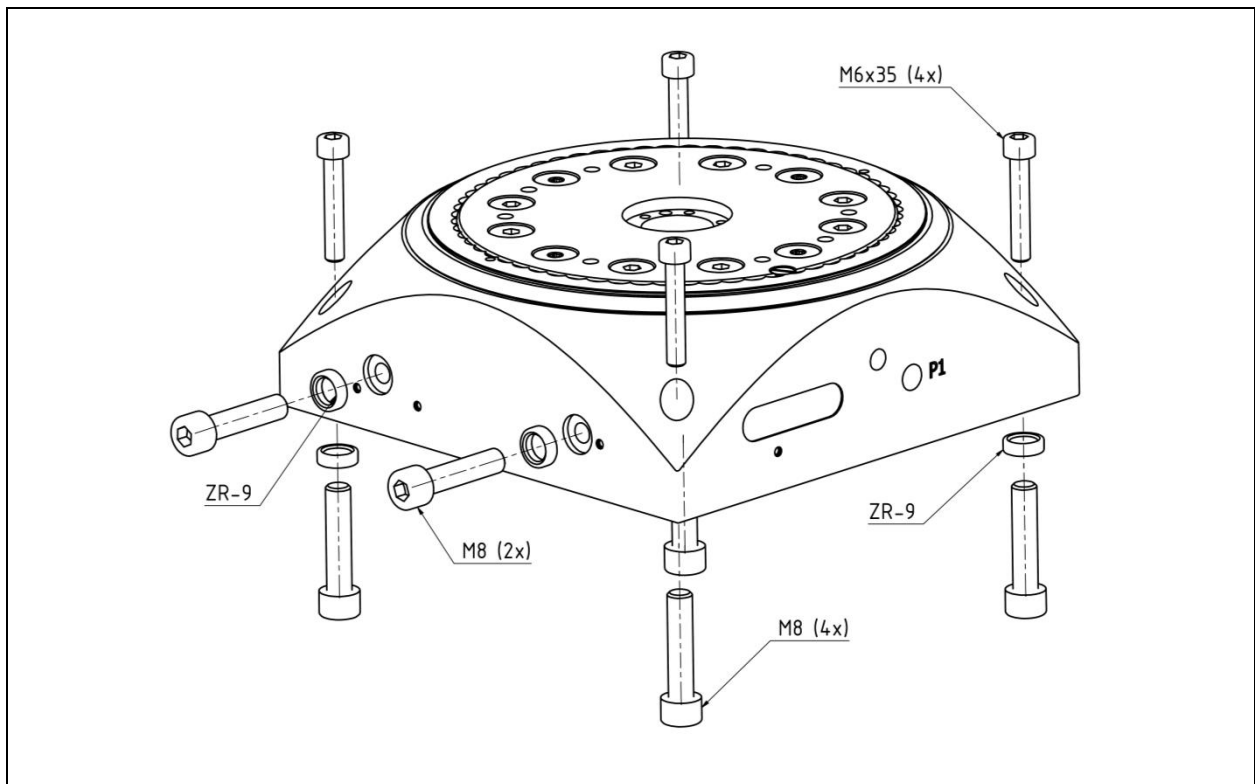


Rotary indexing unit Type: RSE-6-M


Fig. 5-2 *Assembly of the rotary indexing unit*

Recommended screws	RSE-6-M	
for assembly from above	M6 x 35 mm	Insert screws through the M8 threads of the fastening holes, see following line
for assembly from below or from the side	M8	

5.3.2 Assembly of the assemblies

	 WARNING
	<p><i>First lock the device by turning. Disconnect the rotary indexing unit from the compressed air supply and secure it against being switched on again.</i></p> <p><i>Failure to do so may result in minor to severe injury. Avoid such dangerous situations!</i></p>

- ▶ Center the assemblies in the hole $\varnothing 35H8$ and/or the pin holes.
- ▶ Attach the assemblies to the existing tapped holes (M6) with screws.
- ▶ If it is necessary to drill your own additional holes, we recommend that you consult with our company.

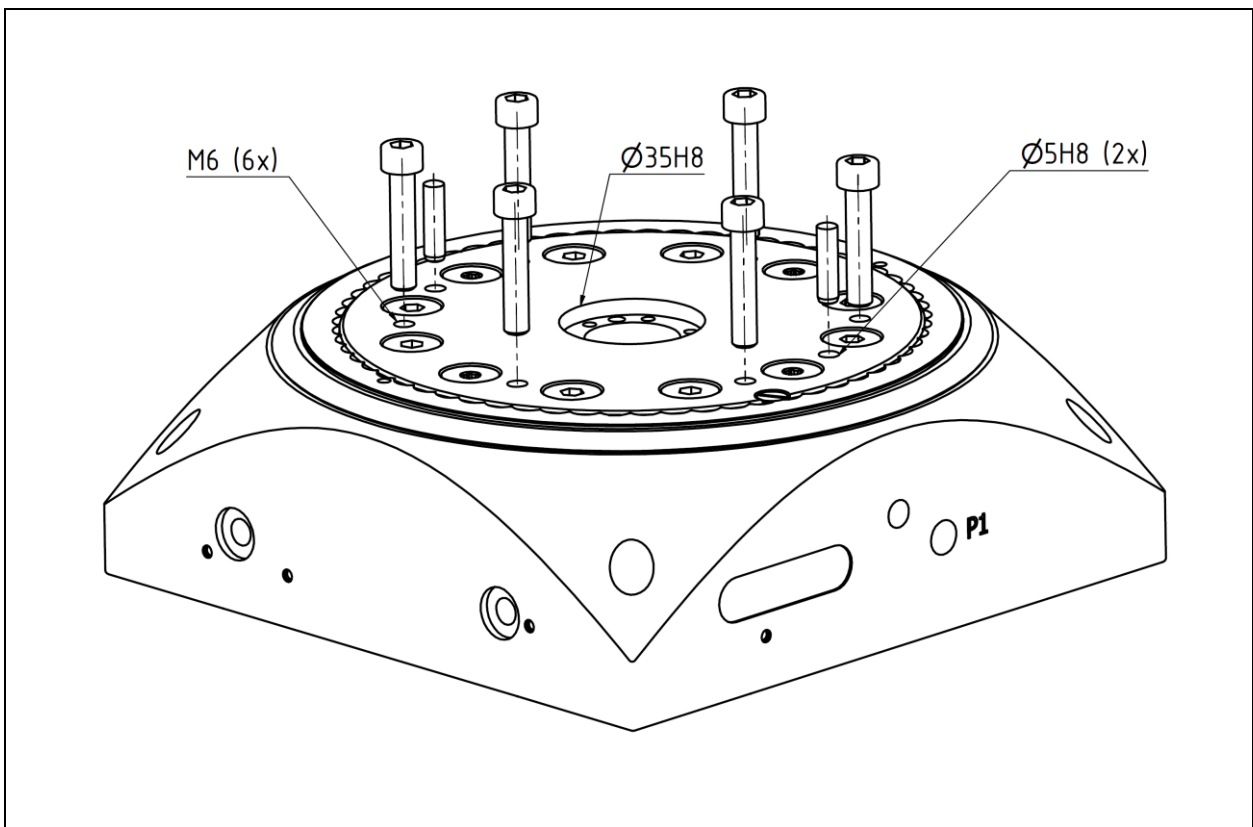








Fig. 5-3 Assembly of the assemblies

Usable length	M6	$\varnothing 5H8$
	12 mm	12 mm

5.3.3 Connection examples

		WARNING
	<p><i>Disconnect the rotary indexing unit from the compressed air supply and secure it against being switched on again.</i></p> <p><i>Failure to do so may result in minor to severe injury.</i></p> <p><i>Avoid such dangerous situations!</i></p>	

		NOTICE
	<p><i>The following figures are connection examples to show how the rotary indexing unit can be connected.</i></p>	

		NOTICE
	<p><i>After connection, a function test must be performed via compressed air supply. .</i></p>	

5.3.3.1 Example of the standard connection pneumatic release

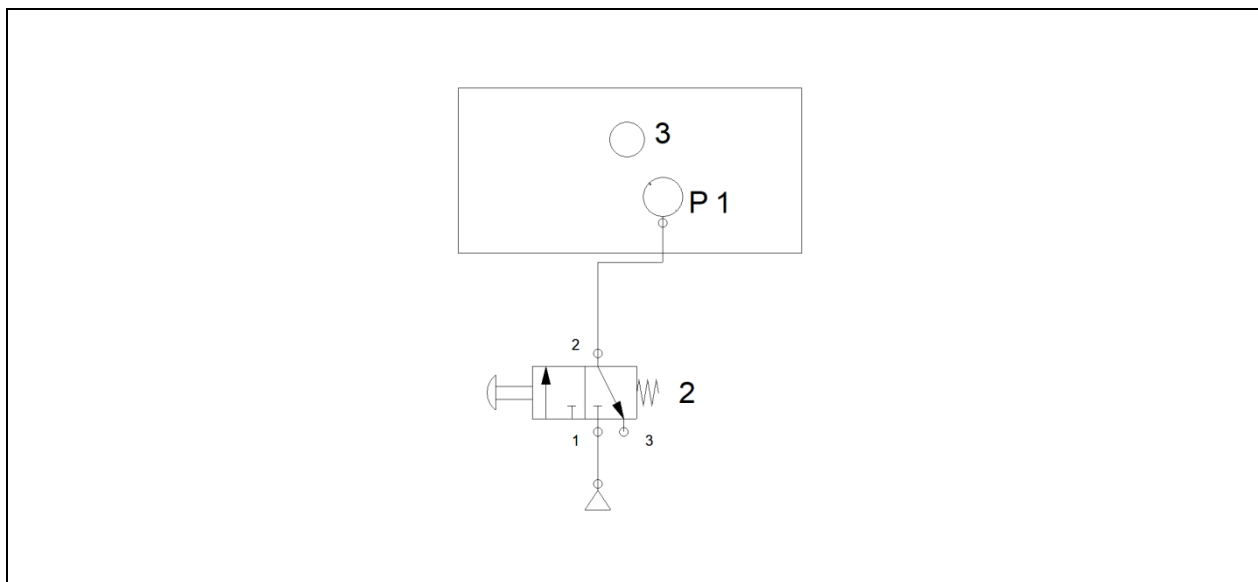




Fig. 5-4 Standard setup for pneumatic unlocking – turn manually



1. (P1) “Unlock” the compressed air connection
2. 3/2 directional control valve, spring return, manual release
3. Proximity switch, “end position” query

	 NOTICE
	<p><i>A short unlocking impulse must be ensured (hose length, actuation time of trigger or foot pedal, etc.) in order to enable locking in the following end position after further rotation. Otherwise, the internal stop remains ineffective.</i></p> <p><i>Therefore, do not use a choke.</i></p> <p><i>Use of a pushbutton is recommended for triggering.</i></p> <p><i>A pulse valve can be controlled depending on the sensor signal (compressed air after triggering only active as long as sensor is flooded) for cycle optimization.</i></p>

5.3.3.2 Setting options of the rotary indexing unit

The speed of manual rotation must be selected depending on the installation position, an eccentric load and the weight on the indexing plate (U) so that the device does not suffer any technical damage.







5.3.3.3 Adjusting speed

	 WARNING
	<p><i>Pay particular attention with rotations where the acceleration due to gravity acts in addition to the angular momentum of the operator (installation position vertical e.g., with eccentric load)!</i></p> <p><i>Maintain a sufficient distance from the danger area.</i></p> <p><i>Failure to do so may result in minor to severe injury.</i></p> <p><i>Use personal protective equipment such as gloves or safety goggles if necessary.</i></p>

The speed must be adapted to the applied load. If the rotation is too fast, this causes hard hitting and bouncing, and can also have a negative effect on the service life of the rotary indexing unit or even lead to the destruction of the mechanics.

5.3.3.4 Conversion to other direction of rotation

The table can be converted with regard to its direction of rotation.

		WARNING
	<p><i>First lock the device by turning. Disconnect the rotary indexing unit from the compressed air supply and secure it against being switched on again.</i></p> <p>Failure to do so may result in minor to severe injury.</p> <p><i>Avoid such dangerous situations!</i></p>	
		WARNING
	<p><i>The locking mechanism is under spring pre-load of the compression springs. Therefore, disassemble the device with care and using appropriate protective equipment (safety goggles, gloves, etc.). Avoid dangerous situations during conversion.</i></p>	
		DANGER
	<p><i>Pay attention to the spring pre-load in both active cavities and possible crushing hazards to the hands and/or body during conversion, maintenance, and repair work!</i></p> <p>Failure to do so will result in severe injury or death.</p>	



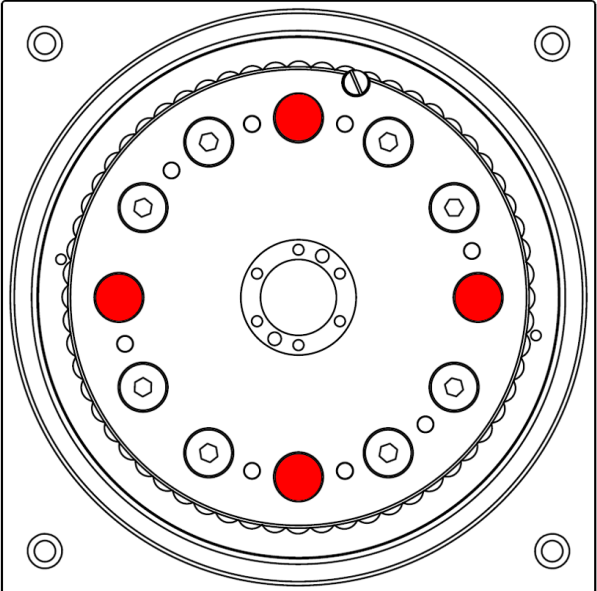
- ▶ Turn the table to permit access to the bottom is possible
- ▶ Loosen the screw connections of the covers of the opposite holes* of the locking mechanism
- ▶ Remove both covers
- ▶ Turn both locking cylinders by 180°.
- ▶ Ensure that the cylindrical pin is positioned in each case (twist protection – ensured by the hole pattern of the cover) when assembling the covers



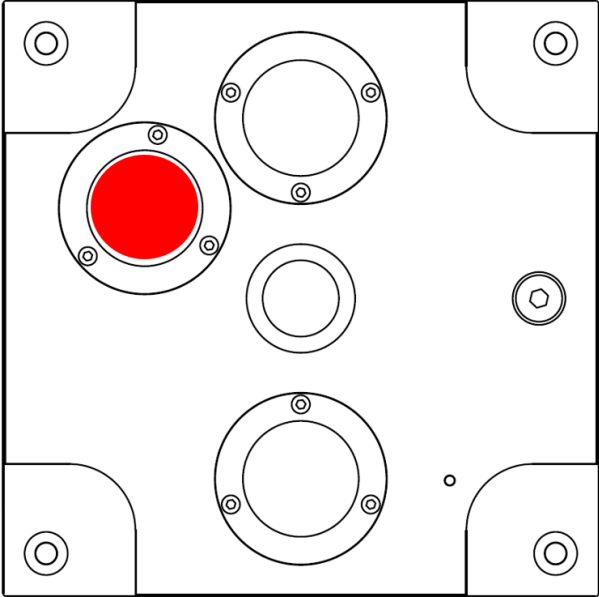
*for pitch of 3 (120°) see following note



5.3.3.5 Conversion to different pitch

The table can be converted (rebuilt) to any pitches (2, 3, 4, 6, 12), no matter its delivery condition, using *one* conversion kit (accessory).



The table is locked with a patented system using, among other things, pitch bolts. These are inserted into the indexing plate (U) from above and protrude on the bottom. These are a part of the locking principle of the table after turning.



	 NOTICE
	<p>Reduce or extend the pitch bolts located in the plate when converting to other pitches. This is done from above by simply screwing the plate in or out.</p> <p>Any exposed holes must be closed with shorter screw plugs (part of the conversion kit) depending on the conversion.</p> <p><i>Example: red = position of the stop screws with a pitch of 4 – view from above on the indexing plate:</i></p> <div style="text-align: center;"></div>

		NOTICE
	<p>Please note that the locking mechanism (locking bolt) must be moved in its position during conversion.</p> <ul style="list-style-type: none">• Conversion to pitch of 3 (3x120°) → take out of opposite symmetry• From pitch of 3 → transfer to opposite symmetry <div style="text-align: center;"></div> <p>Please shift the present locking bolt of the cavity that was inactive before with the O-ring into the position that is cleared by conversion.</p>	

		NOTICE
	<p>When using a sensor for end position query, the encoder screws contained in the conversion kit must be adjusted to the new pitch – see chapter Fehler! Verweisquelle konnte nicht gefunden werden.</p>	









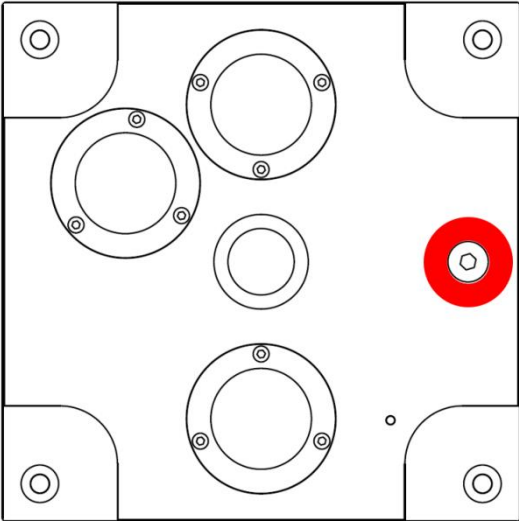
5.4 Commissioning

	 NOTICE
	<p><i>The rotary indexing unit locks automatically in the end position after manual rotation. This is based on a locking system via spring preloads and stop elements.</i></p> <p><i>A pneumatic connection P1 at the front acts on all internally active locking systems and releases the internal stop for (further) rotation after a short impulse. A sensor may confirm the end positions for each setting.</i></p>

	 WARNING
	<p><i>Risk of injury from rotating masses.</i></p> <p><i>Ensure that no persons or foreign objects can be caught by moving parts.</i></p> <p><i>Disconnect the rotary indexing table from the compressed air supply.</i></p> <p><i>Lock the table by turning it to the end position.</i></p> <p><i>Failure to do so may result in severe injury or death.</i></p> <p><i>Avoid such dangerous situations!</i></p>

- ▶ Comply with the maximum loads of the devices.
- ▶ Connect all air hoses and signal cables properly.
- ▶ Preset sensors
- ▶ Ensure that no persons or foreign objects can be caught by moving parts.
- ▶ Slowly pressurize your system with compressed air.
- ▶ Start a test run.
- ▶ Set the proximity switches (if present).
- ▶ Adjust the manual rotation speed – observe the technical data.
- ▶ Finish the test run.

5.4.1 Assembly of the proximity switches (accessories)

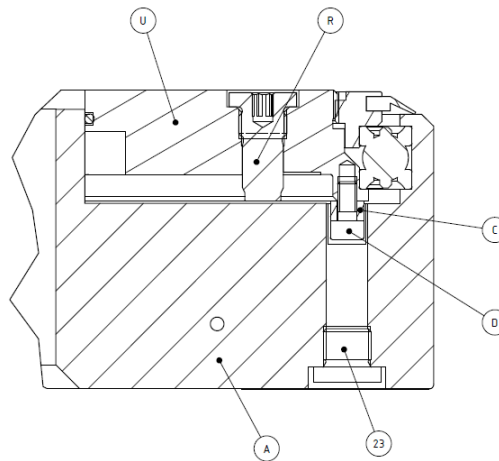
		WARNING
	<p><i>Disconnect the rotary indexing unit from the compressed air supply and secure it against reactivation.</i></p> <p><i>Lock the table by turning it to the end position.</i></p> <p>Failure to do so may result in minor to severe injury.</p> <p><i>Avoid such dangerous situations!</i></p>	
		NOTICE
	<p><i>No proximity switch is installed as standard. However, to query the end position, it is necessary to retrofit proximity switches. Proximity switches can be separately purchased as accessory parts.</i></p>	
		NOTICE
	<p><i>The rotary indexing units with proximity switches should not be used in the vicinity of static discharges, high-frequency vibrations, or strong magnetic fields. Otherwise, the proximity switches for end position acknowledgment may output incorrect signals.</i></p>	
		NOTICE
	<p><i>Access (screw plug (E)) for screwing in and unscrewing the encoder screw(s) when the plate is mounted is from the bottom!</i></p> 	



NOTICE

The end position can be queried by a proximity switch depending on the setting. The **indexing plate** has cylinder screws in tapped holes on the bottom as an adjustment option. These serve as encoders and, depending on the setting, lead to field closure **if desired**. The following options are thus given as examples with a pitch of 12:

Encoder screws	Signal
No screws mounted	None
One screw is screwed in	Signal all 360
Screw mounted on 3+6+9+12 o'clock	Signal every 90
All mounted	Signal every 30°



(U) Indexing plate

(A) Casing

(R) Pitch bolt

(C) Ring

(D) Cylinder screw for screwing in/out per pitch position

(23) Screw plug

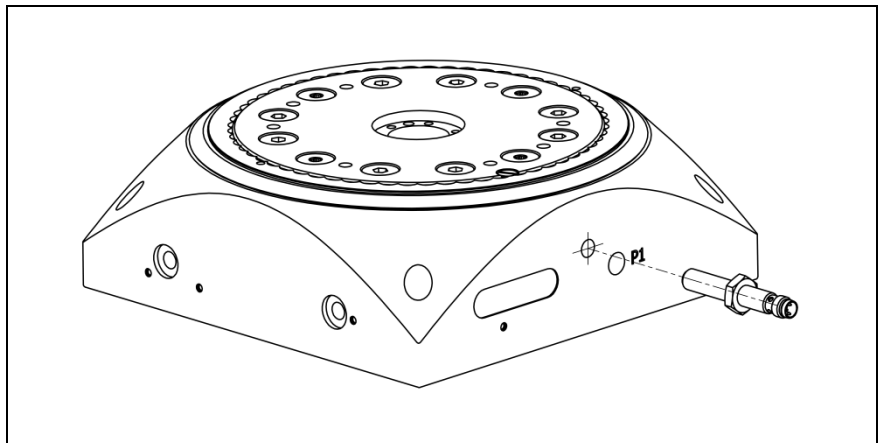




Fig. 5-5 Assembly of the proximity switch "End position"



- ▶ Fasten the proximity switch in the casing. The necessary M8 hole for screwing in is already present. Adjust through the thread its penetration position and thus its signaling (switching distance)
- ▶ Ensure the correct setting of the cylinder screws (D) described above, which are located on the bottom of the indexing plate (encoder for field closure cf. notes above).
- ▶ Connect the proximity switch to the cable.

Technical data

Type	NSI-M8-K-50	NSI-M8-S-55
Switching distance	1.5 mm	1.5 mm
Circuit type	PNP	PNP
Switching behavior	NO	NO
Supply voltage	10-30 V DC	10-30 V DC
Power consumption	<10 mA	<10 mA
Current carrying capacity	200 mA	200 mA
Switching frequency	max. 3 kHz	max. 3 kHz
LED	Yes	Yes
Protected against polarity reversal	Yes	Yes
Short circuit proof	Yes	Yes
Protection class	IP 65/ IP 67	IP 65/ IP 67
Switching hysteresis	5%	5%
Contact	Cable end 3 wire	Plug M8x1, 3pin.

5.5 Maintenance and servicing

		WARNING
	<p><i>Disconnect the rotary indexing unit from the compressed air supply and secure it against being switched on again!</i></p> <p><i>Lock the table by turning it to the end position.</i></p> <p><i>Failure to do so may result in minor to severe injury.</i></p> <p><i>Check that there is no residual energy.</i></p>	

		NOTICE
	<p><i>The device should not be operated any differently if you have chosen use with an oil-air mixture since the lubrication film may otherwise tear off.</i></p>	

Maintenance



All moving parts and their guides should be lubricated with our special grease after a conversion.

The seals as well as the grease inside the rotary indexing unit can wear out depending on the stress. Therefore, it is recommended to send the device to us for maintenance when a fault in the rotary movement is noticed or every 3 years or 10,000,000 cycles.



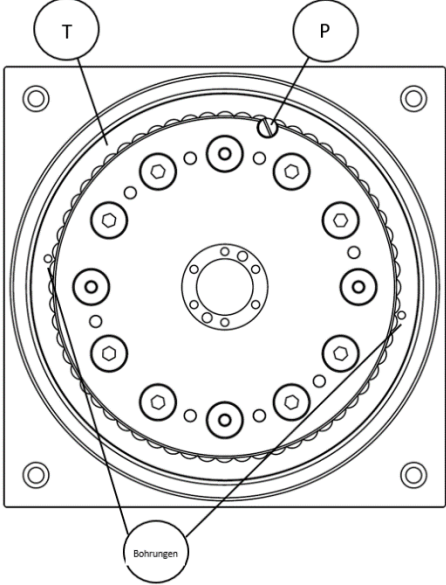
Only clean the rotary indexing unit with soft rags and cleaning agents that are gentle on the material.

Contact with aggressive media and grinding dust should be avoided.

5.5.1 Emergency release

	 NOTICE
	<p><i>Before disassembly of the plate due to blocked locking:</i></p> <p><i>There are 2 G 1/8" connections for pneumatic emergency release at the back of the device. Silencers are mounted there ex works.</i></p> <p><i>Loosen the silencer of the P2 cavity.</i></p> <p><i>At a pitch of 3, 120°, cavity P3 next to the axis of symmetry is active.</i></p> <p><i>At a pitch of 3, loosen the silencer.</i></p> <p><i>Apply a pulse to the opened access via air connection G 1/8" or air gun. The air flow acts against the spring force – with slight counter-turning, the tightened system can be easily released.</i></p> <p><i>Then plug the emergency release again.</i></p> <p><i>A strained system is an exceptional case and should be checked (load, kinetic energy, wear) – see also the following table "Fault – Cause – Remedy"</i></p>

5.5.2 Disassembly of the indexing plate

	 NOTICE
	<p>Use suitable tools. Proceed as follows if the plate has to be disassembled:</p> <ul style="list-style-type: none">• Lock the table• Mark the twist protection (flat-head screw (P)) in the position to the threaded ring and plate radially with a felt-tip pen• Loosen the flat-head screw (P) for positioning the clamping ring (T).• Insert a suitable tool into the holes of the clamping ring (T) and apply a torque to both holes simultaneously to loosen them.• Unscrew the clamping ring and pay attention to ball chains and bearing rings of the bearing during disassembly. <div style="text-align: center;"></div> <p>Proceed in the reverse order for assembly. Observe the bearing when assembling. Tighten the clamping ring with a suitable tool until the above markings match and secure with a flat-head screw. The position of the flat-head screw will be in the same location when correctly assembled (cf. above marking felt-tip pen)!</p>

5.6 Guarantee and warranty provisions

The legal warranty of the manufacturer / distributor is 12 months from the date of delivery.

Spare parts are subject to a delivery guarantee according to chap. (see also standard DIN EN 82079-1).

We give a warranty of 24 months (from the date of delivery from the factory) if the device is handled properly in 1-shift operation and if the operating and environmental conditions designed for this device are complied with. This shall include replacement or repair of defective parts of Friedemann Wagner GmbH.

Wear parts (e.g. shock absorbers) are excluded from the warranty.

Repairs must only be performed or approved by Friedemann Wagner GmbH during the warranty period.

6 Fault, cause, remedy

Fault	Cause	Remedy
No movement of the indexing plate. Indexing plate does not unlock.	Rotary indexing unit is locked	Properly connect the compressed air connections, see chapter Fehler! Verweisquelle konnte nicht gefunden werden.
	Air duct clogged.	Blow out air duct with compressed air.
	Valve defective	Check and replace
	Line loses air or is bent	Check and replace
	Internal seals defective	Maintenance
	Assembly prevents rotation	Check assembly for interfering edges, make free running/turnable
	Locking system jams due to excessive load or rotation speed	Apply counter-torque against the direction of rotation to release jamming and cause unlocking
	Locking system jams	G1/8 bore (connection P2/P3) on rear side pressurize with air or maintenance
	Bearing defective or jammed	Maintenance
Plate rotates in wrong direction	Locking cylinder	Maintenance, make locking cylinder mobile, check spring
	Incorrect assembly	Maintenance according to operating manual chapter 5.5
Proximity switch emits incorrect signals.	Proximity switch is set incorrectly.	Check proximity switches and encoder screws, see chapter Fehler! Verweisquelle konnte nicht gefunden werden..
No switching signal.	Proximity switch is defective or incorrectly set. Encoder screw(s) mounted?	
End position stop too hard.	Moving mass too large	Adjust mass, change installation position, chapter 2.3.3.
	Rotation speed too high	Turn slowly
No reaching of the end position	Locking mechanism blocked	Maintenance
	Spring defective, spring blocked	Maintenance
	Venting hose too long, venting time	Position valve close to table, hose length should not exceed 2.5 m, if necessary provide silencer with larger flow at valve
	Venting pulse too long	Use pushbutton, with foot pedal for unlocking only release briefly

Tab. 1 Fault – cause – remedy

For further help, please contact:

Friedemann Wagner GmbH, D-78559 Gosheim / Germany

Phone: +49 (0) 7426 / 94900-0

Fax: +49 (0) 7426 / 94900-9

Email: info@wagnerautomation.de

7 Disassembly / disposal

Disassembly

Disassembly must only be performed by qualified personnel.

Ensure that the shutdown procedures are strictly observed before starting the disassembly work.

Furthermore, please note the following if applicable or available:

- Power down the pressure accumulator,
- Tensioned springs relax,

Disposal

The device is mostly made of steel (to a certain extent also of aluminum) (except for the electrical equipment) and must be disposed of in accordance with the local environmental regulations **then** in force.

Dispose of according to condition, existing provisions, and in compliance with current regulations, e.g., as:

- Electrical scrap (PCBs), PC system, keyboard, mouse, screen (under observation of the ElektroG) ;
- Batteries, illuminants/ energy saving lamps (collection points) ;
- Plastics (casing) , rubber;
- Sheet metal, steel, copper, aluminum (sort by type).

Decontaminate all parts in contact with media before disposal.

Hazardous substances must be removed from the device.

Observe the safety data sheets (SDS) and the currently applicable disposal regulations when disposing of hazardous substances properly.

Oils, solvents, cleaning agents and contaminated cleaning tools (brushes, rags, etc.) must be disposed of in accordance with local regulations, in accordance with the applicable waste code and in compliance with the instructions in the manufacturers' safety data sheets.



8 Spare parts lists and accessories

8.1 Spare parts list RSE-6-M

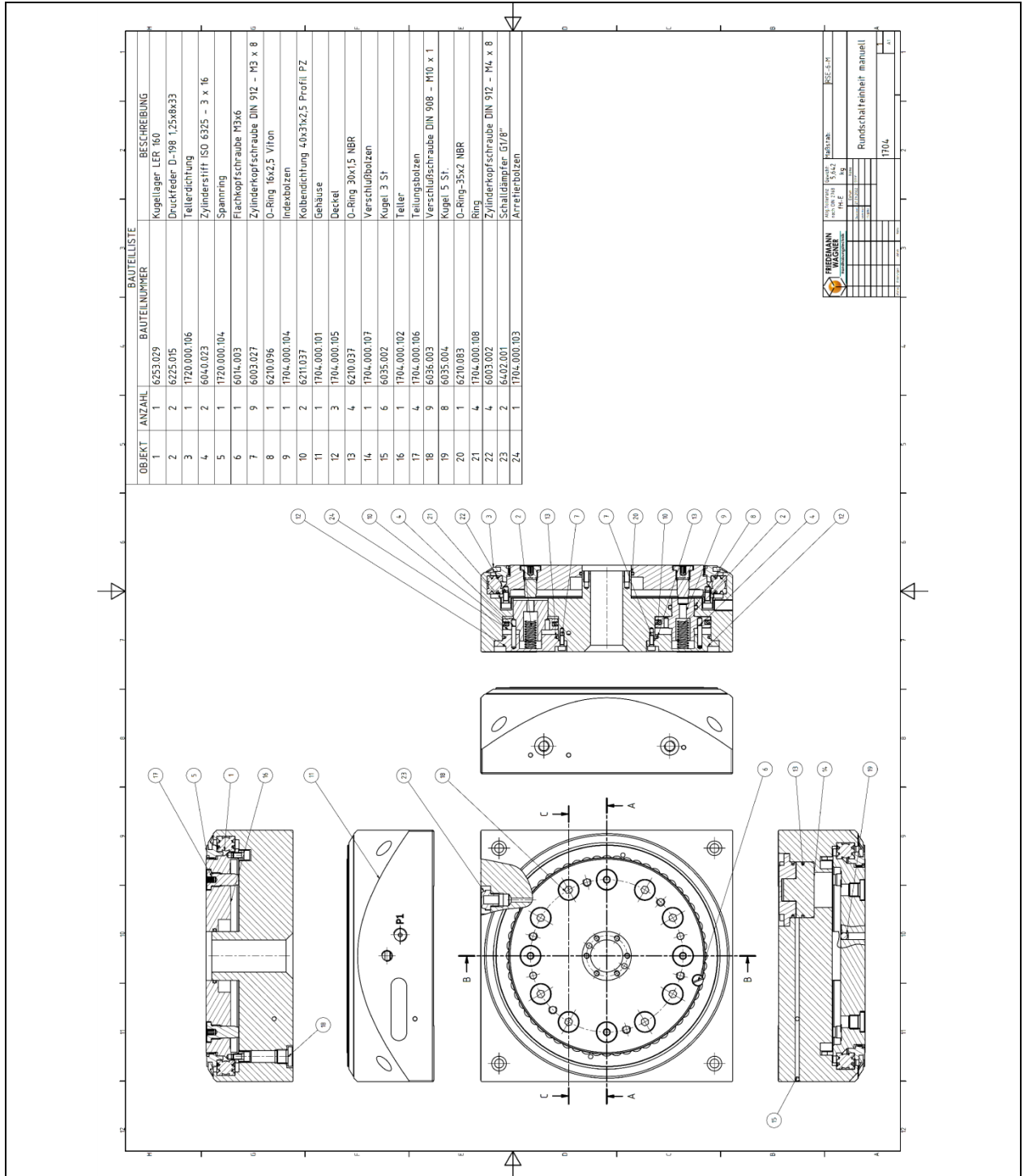


Fig. 8-1 Spare parts list RSE-6-M, in this case for a pitch of 4

8.2 Accessories

The following accessories are available from us for the rotary indexing units.

Designation	Type
Wearing parts set	VSTS
Proximity switch	NSI-M8
Cable for proximity switch	KBU
Plug for cable end	STE
Centering rings	ZR-9
Pitch kit	TS-RSE-6-M