

**Installation and operating instructions for
elastic jaw coupling REK ... ECO**

E 06.702



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Important

Before installation and commissioning of the product takes place, these installation and operating instructions must be read carefully. Notes of caution and hazard warnings are to be paid particular attention to.

These installation and operating instructions apply on condition that the product meets the selection criteria for its proper use. The selection and dimensioning of the product are not the subject of these installation and operating instructions.

If these installation and operating instructions are not observed or are interpreted wrongly, this shall invalidate any product liability and warranty of RINGSPANN GmbH; the same also applies in the case that our product is taken apart or changed.

These installation and operating instructions are to be kept in a safe place and must, in the event of onward delivery of our product – be it individually or as part of a machine – be passed on along with the product so that the user has access to them.

Safety information

- The installation and commissioning of our product may only be carried out by trained personnel.
- Repair work may only be performed by the manufacturer or by authorised RINGSPANN agencies.
- If there is suspected malfunctioning, the product, or the machine into which it is built, must be taken out of operation immediately and RINGSPANN GmbH or an authorised RINGSPANN agency is to be informed.
- The power supply is to be switched off during work on electrical components.
- Rotating parts must be secured by the buyer against unintentional touching.
- In the case of supplies made to a foreign country, the safety regulations applicable in that country are to be taken into consideration.

German original version!

If there should be any discrepancies between the German original and versions of these installation and operating instructions in other languages, the German version shall take precedence.

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1. General information

1.1. Function

The main task of the elastic jaw coupling consists in transferring the torque of one shaft end onto another element. Additionally, the coupling is designed to compensate angular, radial and axial misalignments and reduce the intensity of vibrations and shocks.

1.2. General safety instructions

Safety takes the highest priority for all works with and on the coupling.

To ensure this, the following safety instructions must be observed:

- During installation and maintenance work, the drive motor must be secured against unintended start-up and the load side against turning back.
- Accidental touching of the coupling during operation must be prevented with a suitable cover or protective device.
- Do not reach into the working area of the coupling during operation.

1.3. Other applicable provisions, standards etc.

The couplings are designed on the basis of DIN 740, part 2 (see RINGSPANN catalogue "shaft coupling"). If the operating conditions (e.g. output, speed) should change, the original design of the coupling must be reviewed along with the load-bearing capacity of the shafts and the used shaft-hub-connections.

The locking screws are in compliance with DIN EN ISO 4029. During assembly with tapered clamping bushes, observe the assembly instructions of the manufacturer.

1.4. Classification in accordance with EC Machinery Directive 2006/42/EC

Type REK ... ECO couplings are a machine element. Since machine elements do not fall under EC Machinery Directive 2006/42/EC, RINGSPANN does not draw up a declaration of incorporation. All important information with regards to the installation, commissioning and operation is explained in the following.

2. Design and function / parts list

2.1. Labelling

Depending on the coupling size, the parts are labelled as follows:

Hubs:

- RINGSPANN logo
- Material number
- Abbreviated designation

Spiders:

- RINGSPANN logo
- Size designation

2.2. Dimensions

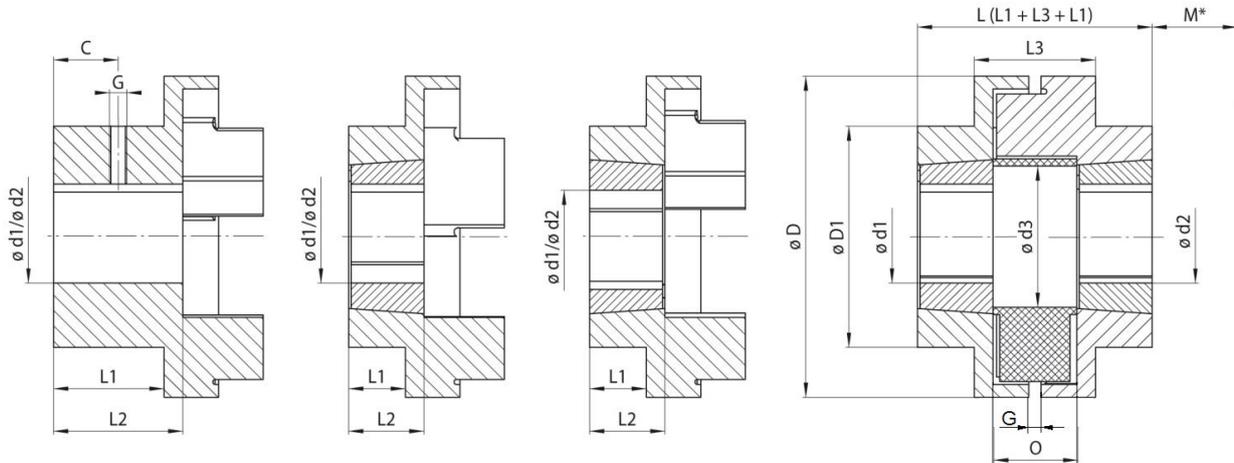


Figure 2.1: Drawing REK...ECO

Size	Dimensions [mm]												
	Hub type 0			Hub type I design TA and TI				D mm	D1 mm	d3 mm	L3 mm	O mm	G mm
	L1 mm	L2 mm	C mm	Tapered bush size	L1 mm	L2 mm	M* mm						
0070	21.0	26	13.0	1008	19.0	24.0	29	69	60	31	28.0	17.5	2.5
0090	26.0	32	16.0	1108	18.0	24.0	29	85	65	32	34.5	22.5	3.1
0110	37.0	45	22.5	1610	19.0	27.0	38	112	100	45	45.0	29.0	3.6
0130	46.0	55	27.5	1610	17.5	26.5	38	130	105	50	54.0	36.0	4
0150	50.0	60	30.0	2012	24.0	34.0	42	150	115	62	60.0	40.0	2
0180	58.0	70	35.0	2517	35.0	47.0	48	180	125	77	73.0	49.0	7
0230	77.0	90	45.0	3020	39.5	52.5	55	225	155	99	84.5	58.5	8.5
0280	88.5	105	52.5	3535	74.0	90.5	67	275	185	118	107.5	74.5	10.5

*minimum distance to assemble and disassemble the tapered clamping bush.

Table 2.1: Dimensions

2.3. Parts list

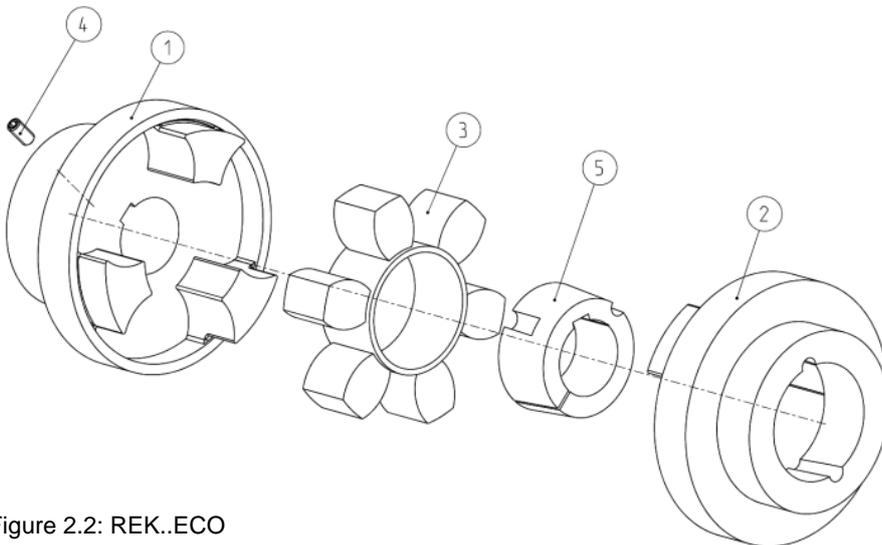


Figure 2.2: REK...ECO

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Position	Quantity	Description
1	1	Hub type 0 / I
2	1	Hub type 0 / I
3	1	Spider
4	1 or 2 (only for hub type 0)	Set Screw*
5	1 or 2 (only for hub type I)	Tapered clamping bush**

* is only part of the scope of delivery with hub type 0

** tapered clamping bush is not part of the scope of delivery

Table 2.2: Parts list

3. Intended use

The coupling may only be installed, operated and serviced if

- the operating instructions have been read and understood,
- the executing person possesses the necessary qualifications,
- authorisation has been given by the company.

The coupling type REK ... ECO may only be operated within the operating limits specified in section "7. Technical prerequisite for reliable operation".

RINGSPANN shall not assume any liability for damages that result from unauthorised constructional changes or an unintended use.

4. Warning signs / impermissible use

An impermissible use is given if:

- the shaft-hub-connection was not designed correctly
- the coupling hubs have been thermally overloaded during assembly
- the fit pair for parts to be joined has not been coordinated correctly
- the parameters necessary for the selection of the coupling were not communicated
- the tightening torques of the locking screws do not correspond with the specifications
- the coupling is wrongly fitted
- parts from other manufacturers are used
- damaged coupling parts are used

The further operation of coupling type REK ... ECO is not permissible under the following conditions:

- if the permissible limits of use (torque, speed, permissible misalignments, ...) are exceeded
- exceeding or falling below the permissible temperature limits
- if the wear limit of the parts is reached
- changed running noises or the occurrence of vibrations

If the unit should be operated despite the aforementioned states, it can result in damages to the coupling and the drivetrain.



Attention !

RINGSPANN shall not assume any liability for any damages that result in the event of any impermissible use .

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5. Condition as delivered

Couplings are generally delivered ready-for-installation in individual parts. Upon customer request, pre-bored hubs are also available. If the hub bores are manufactured by the customer, the information in chapter 7.3 must be observed:

6. Storage

The coupling hubs can be stored for 6 - 9 months in a roofed, dry room.

Under the same storage conditions, the properties of the coupling spiders remain unchanged for up to 5 years.

Optimal storage conditions for the coupling spider:

- Storage temperature of 20 °C – 30 °C,
- dry storage rooms with a roof,
- free of ozone-producing equipment,
- no contact with oil, lubricant or chemicals,
- with a relative humidity of less than 65%,
- free of condensation.
- Storage may only take place in a de-energised state

7. Technical prerequisite for reliable operation

7.1. Technical specifications

Size	Nominal torque T_{KN} Nm	Max. torque T_{Kmax} Nm	Max. speed n_{max} min ⁻¹	Torsional stiffness C_w Nm/rad	Moment of inertia J_K kgm ²
0070	31	72	8 300	584.42	0.0003
0090	80	180	6 740	1461.04	0.0010
0110	160	360	5 110	2750.20	0.0030
0130	315	720	4 400	4812.85	0.0060
0150	600	1 500	3 820	10084.06	0.0100
0180	950	2 350	3 180	13750.99	0.0220
0230	2 000	5 000	2 540	19251.38	0.0650
0280	3 150	7 200	2 080	55003.95	0.1910

Table 7.1: Technical specifications

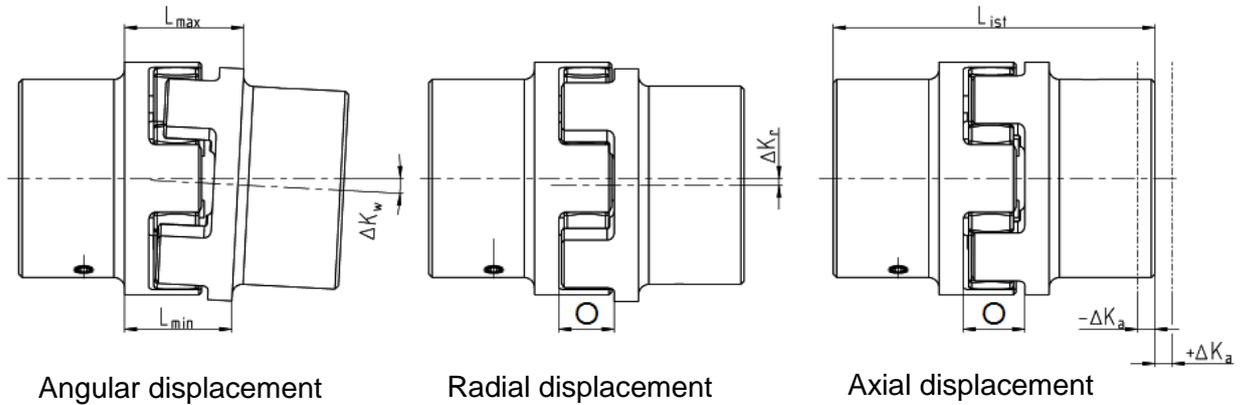
7.2. Permissible misalignments

Size	Max. permissible misalignments		
	Axial ΔK_a [mm]	Radial ΔK_r mm	Angular ΔK_w [°] Indicator value I_w [mm]
0070	+0,20	0.3	1
0090	+0.49	0.3	
0110	+0.61	0.3	
0130	+0.79	0.4	
0150	+0.92	0.4	
0180	+1.09	0.4	
0230	+1.32	0.5	
0280	+1.70	0.5	

Table 7.2: Maximum permissible misalignments

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The maximum permissible misalignment values (table 7.2) must be adhered to and may not occur at the same time. In the event of the simultaneous occurrence of radial and angular offset, misalignments need to be exploited differently percentage-wise (see figure 7.2). If not observed, damage to the coupling may result.



$$\Delta K_w = L_{\max.} - L_{\min.}$$

$$L - \Delta K_a \leq L_{\text{ist}} \leq L + \Delta K_a$$

Figure 7.1: Misalignment types

The figure 7.2 shows the relationship for radial (K_r) and angular misalignments (K_w) occurring at the same time (K_w):

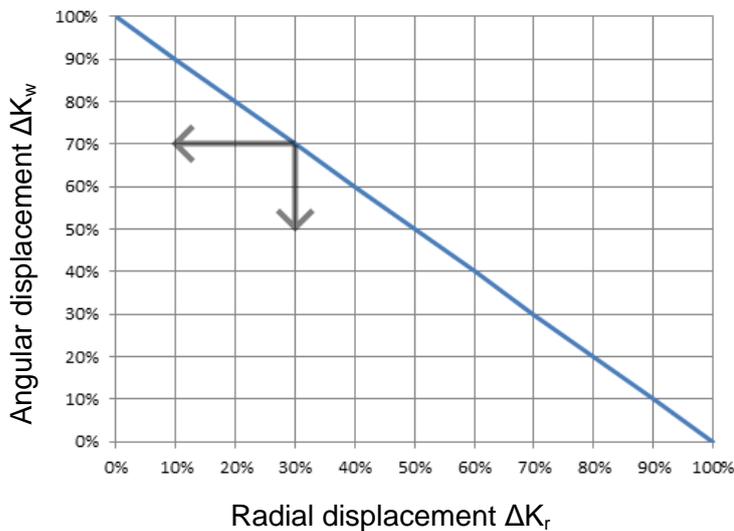


Figure 7.2: Misalignment combination

The misalignment as a percentage is calculated as follows:

$$\Delta K [\%] = \frac{\Delta K}{\text{max. permissible displacement}} * 100$$

Size	Recommended maximum initial misalignments		
	Axial ΔK_a [mm]	Radial ΔK_r mm	Angular ΔK_w [°] Indicator value I_w mm
0070	0.0125	0.075	0.25
0090	0.1225	0.075	
0110	0.1525	0.075	
0130	0.1975	0.1	
0150	0.23	0.1	
0180	0.2725	0.1	
0230	0.33	0.125	
0280	0.425	0.125	

Table 7.3: Recommended maximum initial misalignments

7.2.1. Inspection of the radial misalignment

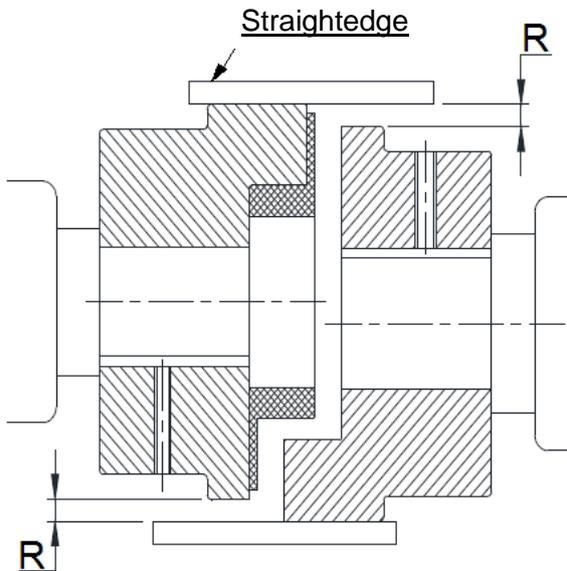


Figure 7.3: Measurement with a straightedge

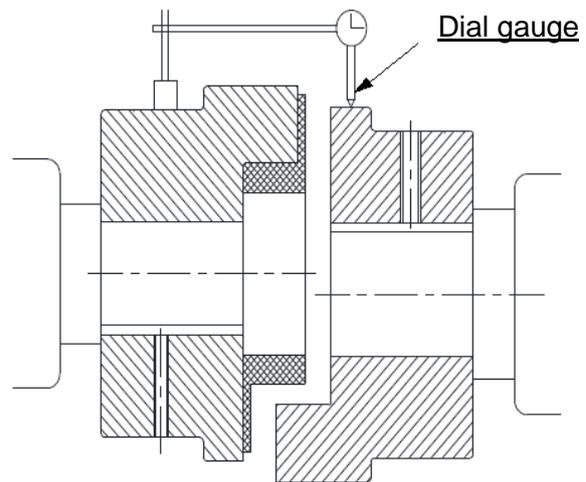


Figure 7.4: Measurement with a dial gauge

The following measurement methods can be used to check radial/parallel misalignment.

Take a straightedge and place it onto the hub (item 1) as displayed in figure 7.3. The position where $R=0$ then needs to be found through multiple application of the straightedge. Taking this point as a basis, measure at an approx. 90° offset with a feeler gauge distance "R". To be sure, distance R can be measured again at another approx. 180° . It can also be carried out in a similar manner with a depth gauge. The largest measured distance indicates the given radial misalignment.

Alternatively, the radial misalignment can be measured with the help of a dial gauge. The dial gauge holder is mounted on a hub (item 1). Afterwards, place the volumetric flask on the processed outer diameter of the second hub (item 2) (see figure 7.3). The dial gauge then needs to be placed multiple times at the perimeter. Note the highest and lowest value. The difference between the values divided by 2 gives you the radial misalignment of the coupling.

Compare the maximum measured value with the permissible value of the initial misalign-

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ment in table 7.1. If the permissible value is exceeded, better alignment needs to be carried out.

7.2.2. Inspection of the axial and angular misalignment

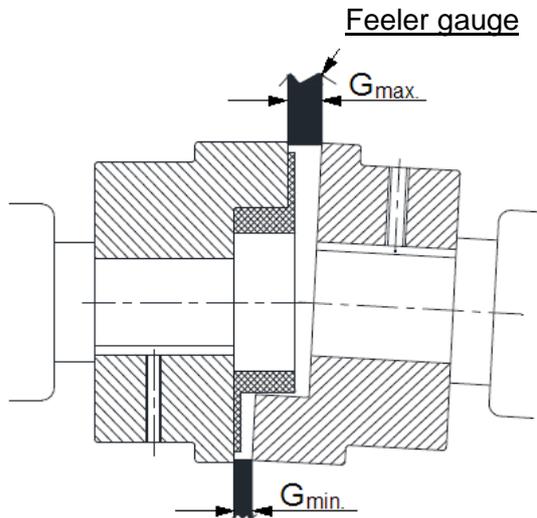


Figure 7.5: Measurement with a feeler gauge

To determine the axial and angular misalignment, the minimum and maximum gap G is measured using a feeler gauge. The average of the measured values gives you the axial misalignment.

$$\Delta K_a = (G_{max} + G_{min})/2 - G$$

The actual axial misalignment ΔK_a may not exceed the permissible values from table 7.2 and 7.3.

The angular misalignment can be determined indirectly via the indicator value I_w .

$$I_w = (G_{max} - G_{min})/2$$

The actual indicator value I_w may not exceed the permissible values from table 7.2 and 7.3.

7.3. Manufacturing the hub bore



Life-threatening danger!

The max. permissible bore diameters specified in table 7.3 may not be exceeded. If the permissible values are exceeded, the hub could tear during operation. Here, there is life-threatening danger due to flying parts.

	Bore d1/d2 [mm]			
	Hub type 0		Hub type I	
	min.	max.	min.	max.
0070	10	32	10	25
0090	10	42	10	28
0110	10	55	14	42
0130	20	60	14	42
0150	20	70	14	50
0180	30	80	16	60
0230	40	100	24	75
0280	50	115	35	90

Table 7.3: Permissible bore diameter

When manufacturing the hub bore, it must be ensured that:

- the hub is precisely aligned,
- the form and positional tolerances in accordance with DIN ISO 286 are adhered to (see figure 7.3).

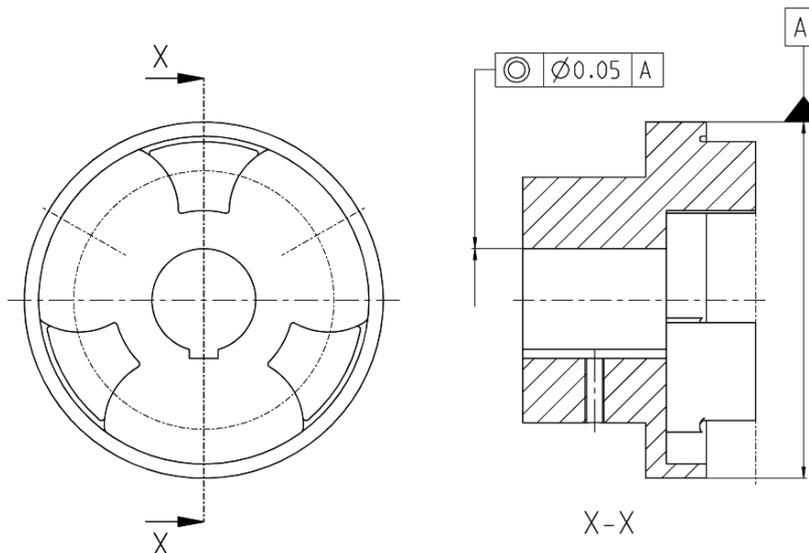


Figure 7.3: Specifications for the form and positional tolerance of the bore and position of the keyway nut

If the hub is to be designed with a keyway nut, it is preferably to be introduced between the cams as in figure 7.3. The design and inspection of the keyway connection falls to the operator and is his responsibility.

The following fit pair in accordance with DIN 748/1 is recommended:

Bore [mm]	Shaft tolerance	Bore tolerance
≤ 50	k6	H7
> 50	m6	

Table 7.4: Fit pairs

	<p>Note !</p> <p>The operator bears the sole responsibility for damages that may occur as a result of defective rework on the unbored / pre-bored coupling parts.</p>
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Locking screws in accordance with DIN EN ISO 4029 should be used for axial securing of hubs type 0. Here the following applies:

Bore d1/d2 [mm]	from	9	22	38	58	75	110
	to	22	38	58	75	110	260
Size locking screw		M5	M6	M10	M12	M16	M20
Tightening torque [Nm]		2	4	17	40	80	140

Table 3.5: Size and tightening torques of the locking screws

	<p>Attention! RINGSPANN shall not assume any liability for any resulting damages that arise from work carried out by the operator.</p>
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7.4. Spider



Elastomer element:	NBR 80 Shore-A
Material:	Nitrile rubber
Hardness:	80 ± 5 Shore-A
Temperature range:	-40°C to +100°C
Colour:	black

Figure 7.4: NBR 80 Shore-A

8. Assembly

8.1. General assembly instructions

Before beginning with assembly, check for the completeness of the delivery (see chapter 2.3 Parts list) and the dimensional accuracy of the bores, the shaft, the nut and the keyway (see 7. Technical prerequisite for reliable operation).

8.2. Assembly description

1. Mount the hub on the input and output side
 - facilitated sliding onto the shaft by heating up the hub type 0 (approx. 80°C)
 - during installation with a tapered clamping bush, the assembly instructions of the bush supplier must be observed

	<p>Attention! Use suitable means of protection when working with the heated hubs. Touching the heated hubs without safety gloves causes burns.</p>
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2. Insert the spider in the cam area of the input-sided or output-sided hub
3. Slide the units in axial direction until the O measure is achieved (see chapter 2.2 Dimensions)

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- Since measure O cannot be directly measured, it should be checked across the entire length L.
 - If the units are already mounted, the O measure can be adjusted by sliding the hubs onto the shaft. A sufficient supporting length of the keyway nut must hereby be ensured with hub type 0.
 - If O is not adhered to, the coupling may be damaged
4. Tighten the set screws with type 0 hubs with the respective tightening torque (see table 7.5 Manufacturing the hub bore).
 5. Measurement of the misalignments, see 7.2.1 and 7.2.2



Information

If the d_3 measure of the spider is greater than the shaft diameter with the inserted keyway, one or two shaft ends may protrude into the spider.

The remaining misalignments should generally be as small as possible. When commissioning, the actual misalignments should be no more than 25% of the max. permissible misalignment figures (see table 7.3). The remaining 75% of misalignments provide security against external influences that arise during operation, such as deformation in the machine and thermal expansion.

9. Start-up

Before putting it into operation for the first time, the following parameters need to be checked:

- the tightening torque of all screws,
- the tightness of the set screws,
- the alignment of the coupling,
- the clearance S1.

The operator has the task of attaching a suitable coupling protection to prevent the unintended touching of the coupling during operation. It may only be removed when the machine is at a standstill.

During commissioning, attention must be paid to vibrations and running noises. If any vibrations or unusual running noises should occur, the drive unit must be immediately switched off.

10. Operational disturbances

The possible operational disturbances are listed in the following table. In order to remedy them, **first bring the unit to a standstill** and then follow the further instructions in the column "Remedy". This table only provides a starting point for the search for the cause. All neighbouring components should also be subjected to an examination.

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Disturbances	Causes	Remedy	Danger notice for areas with potentially explosive atmosphere
Changes in sounds or vibrations	Alignment error	<ol style="list-style-type: none"> 1) Eliminate the cause of the alignment error 2) Carry out wear inspection 	Increased temperature on the spider surface, ignition risk as a result
	Spider wear → transfer torque via metal contact	<ol style="list-style-type: none"> 1) Disassemble coupling, remove spider residues 2) Check coupling parts, replace damaged parts 3) Insert spider, mount coupling parts 4) Check alignment, correct if necessary 	Ignition risk due to formation of sparks
	Screws for axial hub securing are loose	<ol style="list-style-type: none"> 1) Check alignment 2) Tighten screws for hub securing, secure against repeated loosening 3) Carry out wear inspection 	Ignition risk due to hot surfaces and spark formation
Cam break	Spider wear → transfer torque through metal contact	<ol style="list-style-type: none"> 1) Replace entire coupling 2) Check alignment 	Ignition risk due to formation of sparks
	Overload	<ol style="list-style-type: none"> 1) Replace entire coupling 2) Check alignment 3) Determine reason for overload 	
	Operating parameters do not correspond to the coupling output	<ol style="list-style-type: none"> 1) Check operating parameters, select larger coupling if necessary 2) Install new coupling 3) Check alignment 	
	Operating error	<ol style="list-style-type: none"> 1) Replace the entire coupling 2) Check alignment 3) Instruct and train operating staff 	

Premature spider wear	Physical changes due e.g. to too low/high ambient temperature, contact with aggressive liquids	<ol style="list-style-type: none"> 1) Disassemble coupling, remove spider residues 2) Check coupling parts, replace damaged parts 3) Insert spider, install coupling parts 4) Check alignment, correct if necessary 5) Ensure that all triggers for the physical changes have been eliminated 	Ignition danger due to spark formation for metallic contact of the cams
	Impermissible ambient, contact temperatures	<ol style="list-style-type: none"> 1) Disassemble coupling, remove spider residues 2) Check coupling parts, replace damaged parts 3) Insert spider, install coupling parts 4) Check alignment, correct if necessary 5) Check and regulate temperatures, possibly select different spider material 	
Premature spider wear due to liquefaction on the inside of the spider cams	Drive vibrations	<ol style="list-style-type: none"> 1) Disassemble coupling, remove spider residues 2) Check coupling parts, replace damaged parts 3) Insert spider, install coupling parts 4) Check alignment, correct if necessary 5) Determine cause of vibrations, possibly select spider with smaller/higher shore hardness 	

Table 10.1: Operational disturbances

To ensure that the coupling can be operated safely, the specified wear values may not be exceeded.

Size	Wear limit	Tooth width
	X_{\max} [mm]	B_{new} [mm]
0070	3	10
0090	3	11.4
0110	3	14.7
0130	3	14.8
0150	5	20.8
0180	5	22.4
0230	8	30
0280	8	32.7

Table 10.2: Wear limits

The wear of the spider can be determined from the torsional backlash. To determine the torsional backlash, one of the hubs need to be clamped so that it can no longer be turned. Turn

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the second hub without torque in one direction until stop. Make markings on both hubs in this position, as shown in figure 10.1 a). Then turn the same hub without torque in the opposite direction until stop. The markings move apart. The distance X_{max} (figure 10.1 b) and c)) of the marks provides the given torsional backlash. Compare the measured value with the threshold value in table 10.2. If the value of the maximum permissible play is exceeded, all elastomer elements must be replaced.

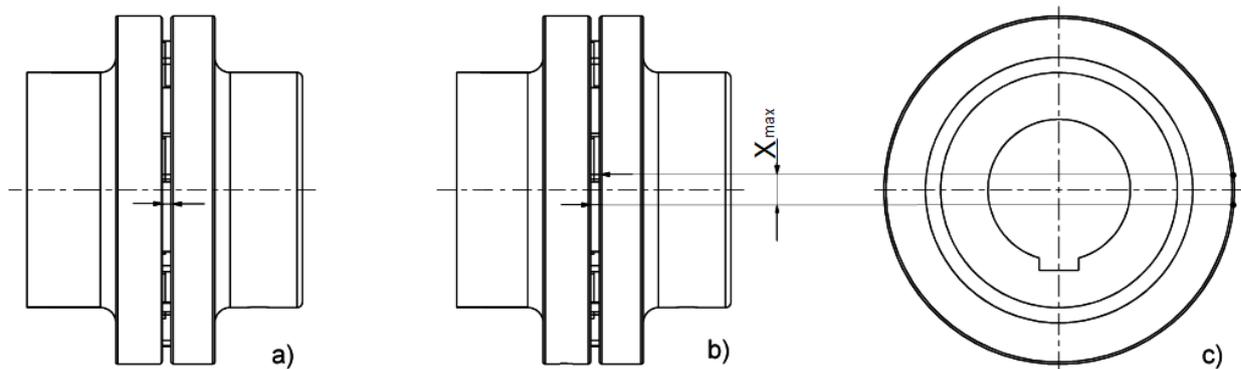


Figure 10.1: Check the wear limit

11. Maintenance and repair

Even if REK ... ECO ranks among the more low-maintenance couplings, it should be subject to a visual inspection at least once a year. This includes:

- examining the coupling alignment,
- examining the coupling for damages,
- examining the screw connections,
- examining the spider wear.

The tightening torques of the screws must be examined at regular intervals.

12. Spare part stockpiling

In order to keep disturbances in operation to a minimum, it is advisable to keep a stock of spare parts directly at the deployment site in order to be able to guarantee optimal operational capability.



Attention !

RINGSPANN shall not assume any liability for any occurring damages if spare parts from other manufacturers are used .

13. Disposal

At the end of its operating life:

- plastics must be disposed of via a disposal company,
- metals must be cleaned and disposed of properly with other scrap metal.

Please also properly dispose of the packaging.

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14. Supplement for operation in areas with potentially explosive atmosphere

If the elastic shaft coupling REK ... ECO is operated in or in connection with potentially explosive atmosphere, the following supplemental information must also be observed.

14.1 Normal operation

The coupling REK ... ECO is a device in the sense of Directive 2014/34/EU and may only be used in or in connection with explosive atmosphere under observation of the following information.

14.1.1 Explosive atmosphere

Surrounding pressure p_U	0.8 to 1.1	bar
Oxygen content r_{O_2}	approx. 21	Vol-%

The permissible ambient temperature T_a depends on the spider material used, see section 3.2.

The use in potentially explosive atmosphere due to explosive dusts or instable substances is excluded.

14.1.2 Instructions for use

Coupling REK ... ECO is designed ignition source-free according to the respective category pursuant to DIN EN ISO 80079-36. The use of coupling REK ... ECO in connection with explosive atmosphere is dependent on the used material and the frame size of the spider. The following approvals apply:

In equipment group I, category M2 or EPL Mb in all frame sizes from 0070 to 0280 with the label:

CE  I M2 Ex h Mb X
 T_a in accordance with the operating instructions

In equipment group II, category 2G or EPL Gb gas group IIC in all frame sizes from 0070 to 0180 with the label:

CE  II 2G Ex h IIB TX Gb

In equipment group II, category 2G or EPL Gb gas group IIB in all frame sizes from 0070 to 0280 with the label:

CE  II 2G Ex h IIC TX Gb

In equipment group II, category 2D or EPL Gb dust group IIB in all frame sizes from 0070 to 0280 with the label:

CE  II 2D Ex h IIIC TX Db
 T_a and TX in accordance with the operating instructions

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The permissible ambient temperature T_a and the temperature class (for gases) / max. surface temperature (for dusts) are as follows:

The minimum ambient temperature amounts to:

NBR 80 Shore-A	Ambient temperature
black	$-45^{\circ}\text{C} \leq T_a$

The maximum ambient temperature, the temperature class and the maximum surface temperature amount to:

NBR 80 Shore-A	Ambient temperature	Temperature class	max. surface temperature
black	$T_a \leq 45^{\circ}\text{C}$	T6	T70°C

The design limits in accordance with RINGSPANN catalogue "shaft coupling" must be observed. The permissible misalignment values in accordance with the installation and operating instructions may not be exceeded. The coupling may not be operated in the area of natural oscillations.

The coupling materials used may not be chemically influenced by the ambient atmosphere.

To prevent mechanical ignition sources, metallic contact with the turning coupling must be prevented. This can, for example, be ensured using suitable coupling protection (fixed separating protection device). Openings or gaps in/with the separating protective equipment must be designed at least in IP 2X in accordance with IEC 60529. In group I, the coupling protection must be able to withstand the difficult operating conditions.

Couplings are not available in aluminium in group I.

14.2 Instructions on occupational health and safety



If coupling REK ... ECO is used as a component of a device or an assembly group in the sense of Directive 2014/34/EU, the device manufacturer must establish and confirm the compliance of this device or assembly group with the specified directive before commissioning.

If coupling REK ... ECO is used as a part of a facility, the operator of the facility must adhere to the requirements of Directive 1999/92/EC and if necessary national requirements that go beyond it.

It is the operator's responsibility to review whether coupling REK ... ECO is suitable for operation in the actual given explosive atmosphere based on the instructions for use.

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Coupling REK ... ECO does not exhibit any effective ignition sources in disturbance-free operation. Disturbance-free operation must be ensured by the operator through inspection, maintenance and repair in accordance with the information in the installation and operating instructions.

An improperly functioning coupling must be brought to a standstill by the operator. The coupling may only put back into operation after repair.

No burning, welding or cutting works are required for maintenance and repair.

When working in an explosive atmosphere, the operator must take protective measures in accordance with Directive 1999/92/EC, e.g. in accordance with DIN EN 1127-1 appendix A. Smoking, fire and naked flames must be prohibited.

14.3 Setup and assembly



The coupling halves are to be secured against axial misalignment. If the coupling halves are not threaded up against a shaft shoulder, they must be secured with a locking screw. The locking screw is to be secured with an adhesive, Loctite 243 or equivalent, against becoming loose.

To guarantee preventing metallic contact, the coupling halves must be installed with the specified play "s".

All screws must be tightened with the specified torque.

The spider is made of an insulating material and prevents a direct potential equalisation between the coupling halves. The potential equalisation between the coupling halves must be secured by the unit.

14.4 Control, inspection and repair



To prevent and recognise disturbances, the following instructions must be observed in addition to the inspection instructions in the installation and operating instructions.

Disturbances must be eliminated immediately under observation of the repair information.

In daily inspections, attention must be paid to changes in running noises or any vibrations that should arise.

The spider may be worn due to friction, meaning that the coupling halves touch and ignitable impact sparks can form. The wear must therefore be regularly examined in accordance with the installation and operating instructions. In the event of impermissible wear, the spider must be replaced.

To preserve the explosion protection concept, only spare parts specified by the manufacturer may be used.

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14.5 Testing



Coupling REK ... ECO is to be examined in accordance with Directive 1999/92/EC before commissioning for correct assembly and proper function by a specialist or by RINGSPANN or an authorised RINGSPANN representative. This test must be documented.

Coupling REK ... ECO must at the latest every 3 years be checked for proper function by a specialist or by RINGSPANN or an authorised RINGSPANN representative in accordance with Directive 1999/92/EC. This test must be documented.

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15. Declaration of Conformity according to Directive 2014/34/EU

EU Declaration of Conformity

in the sense of the explosion protection directive 2014/34/EU

Hereby declared: RINGSPANN GmbH
Schaberweg 30-38
61348 Bad Homburg

that the operating instructions described in the operating instructions are complied with.

Device: Coupling REK...ECO

complies with the essential health and safety requirements of Directive 2014/34/EC, Annex II. The application possibilities result from the marking and the instructions for use in chapter "14. Supplement for operation in areas with potentially explosive atmosphere" of the operating instructions.

The following harmonized standards and/or normative documents have been taken into account, in whole or in part, in the design and manufacture of this equipment:

European standards	National standards / normative documents
DIN EN 1127-1 :2008 DIN EN 15198 :2007 DIN EN ISO 80079-36 :2016 DIN EN ISO 80079-38 :2017 DIN EN ISO 80079-37 :2017	

The special operating instructions in chapter "14. Supplement for operation in areas with potentially explosive atmosphere " of the Operating Instructions must be observed.

The technical documentation in accordance with Annex VIII, No. 3 has been prepared and deposited with the notified body 0044. The deposit number is **35256895**.



Martin Schneeweis, Product Manager Shaft Couplings
Bad Homburg, 16.12.2019