EN
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Gear Couplings
RINGFEDER® TNZ ZCA / TNZ ZCB, TNZ ZCAU / TNZ ZCBU, TNZ ZCAUU / TNZ ZCBUU

Assembly, Disassembly



TNZ ZCA / TNZ ZCB



TNZ ZCAU / TNZ ZCBU



TNZ ZCAUU / TNZ ZCBUU

Safety instructions

Rotating machine parts may injure operators and service staff! Therefore:

- Switch off the drive before assembly work.
- Safeguard the machine against accidental switch-on.
- Mount all covers and protection devices before switching on the machine.
- RINGFEDER® products may only be mounted by specialist staff and for suitable applications.

Attention

- Please read these instructions through carefully.
- In the event of infringement of these notes all claims of liability will become void.
- RINGFEDER POWER TRANSMISSION reserves the right to technical changes to improve the product.
- RINGFEDER® Gear Couplings are accepted state of the art.

If you experience problems or have any questions, our technical and service staff will be happy to assist you. See the reverse of these instructions for the corresponding contact information.

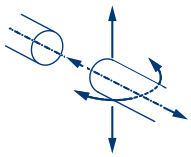
Legend



Assembly



Disassembly



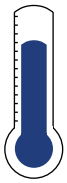
Align shafts
(axial, radial and angular)



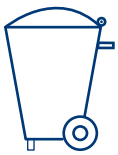
Cleaning



Drilling



Even warming of the shaft hub at 80 °C to 120 °C is harmless in order to simplify assembly.



Recycling/disposal
Used grease must be disposed of appropriately.



Warning!
Always work with gloves to protect yourself from burns from hot coupling parts!



Valid data on the required tightening torques on the relevant screw connections can be found in the following tables. The tightening torque is to be applied by tightening the hexagon nut.

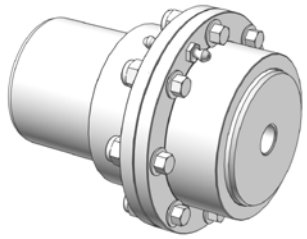


Grease gun

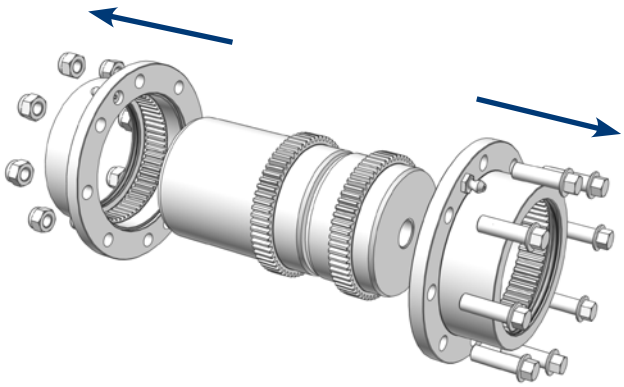


Clamping site

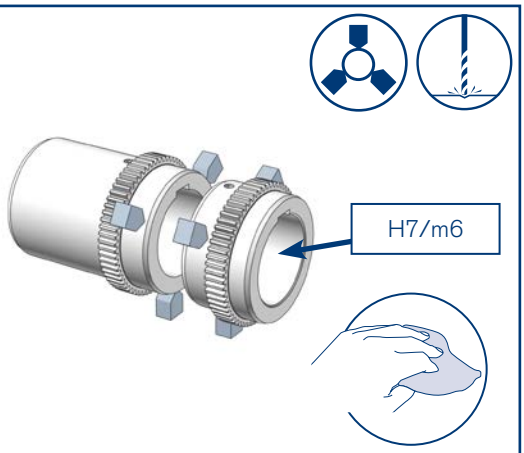
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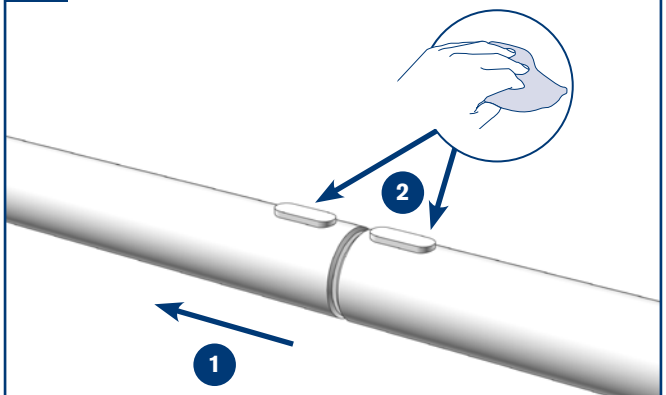
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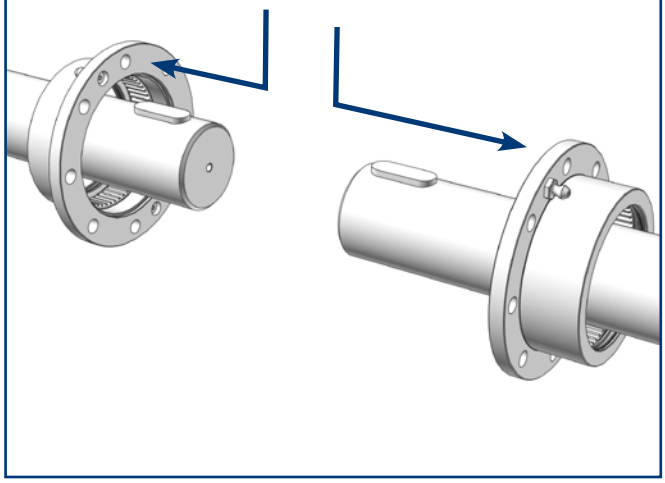


- The coupling is generally delivered assembled. The coupling must be disassembled and checked for completeness prior to assembly.
- The gear hub must be clamped at the marked areas for drilling.
- If the customer carries out the hub bore then the hub must be aligned carefully with the outer diameter in order to adhere to the required concentricity

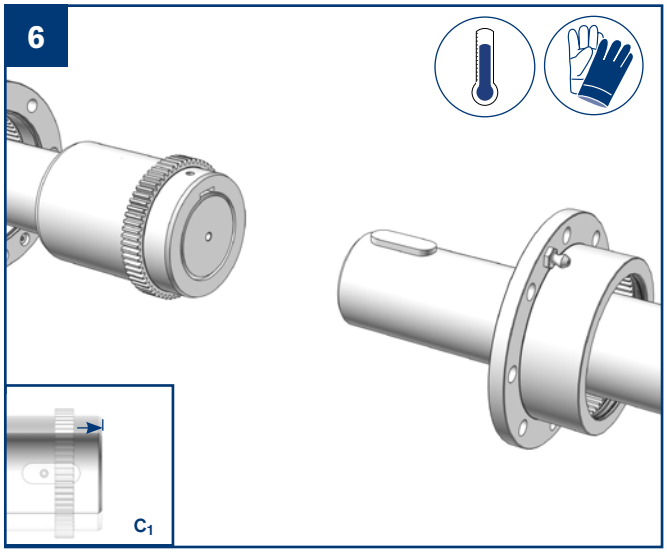
The maximum values for the drilling diameter Ø d_{max} must be adhered to in all events.

- The hubs must be secured against axial displacement on the shaft ends using an adjusting screw, shaft locking plate or suitable oversize element.
- **Attention:** The adjusting screw should never be under the O-ring in the casing.

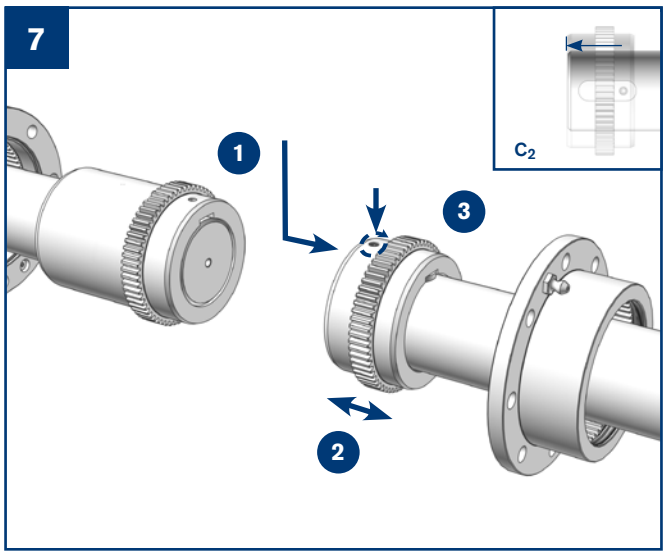
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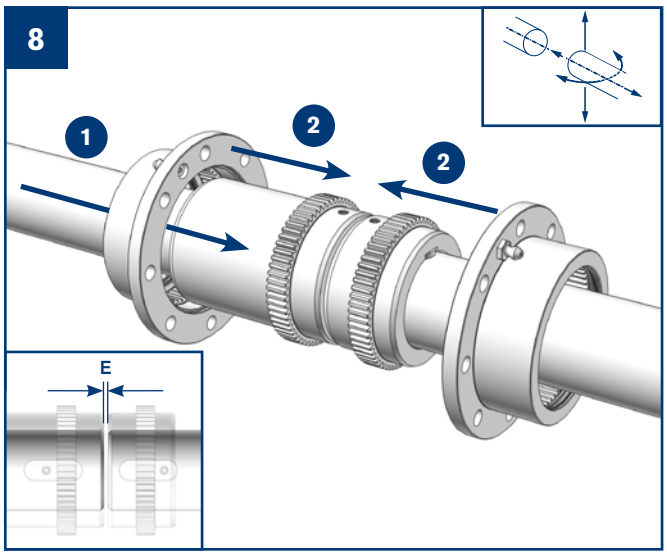
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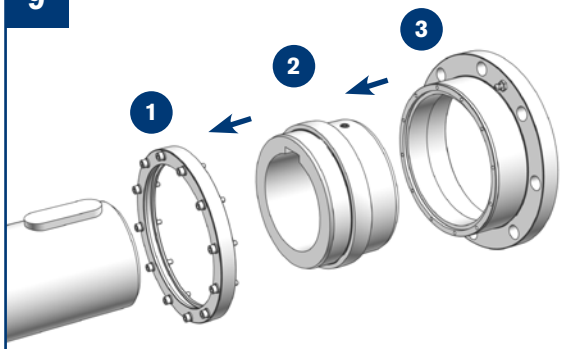


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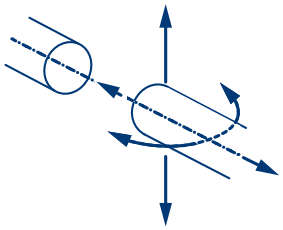
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ZCB



B-design:
Simply slide the separate O-ring covers, including the O-ring, onto the ends of the shaft.

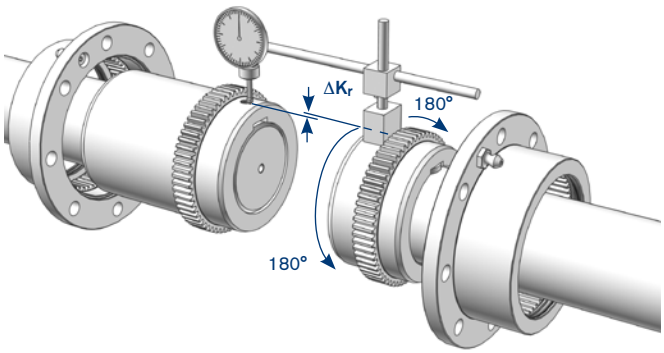
table 3, page 6



Aligning the coupling

The maximum permitted displacements must always be taken into account!

- The valid data can be found in the following table (Table 1).
- **Attention: the coupling may never be adjusted 'to zero'!**
  A small offset is necessary in order to achieve lubrication of the gearing.
- Heat expansion that is to be expected during operation must be taken into account when adjusting the cold system, so that the maximum permitted displacement values are not exceeded during operation.
- Displacement values are maximum values that may not occur simultaneously.
  The values must be reduced if there is simultaneous radial and angular displacement.



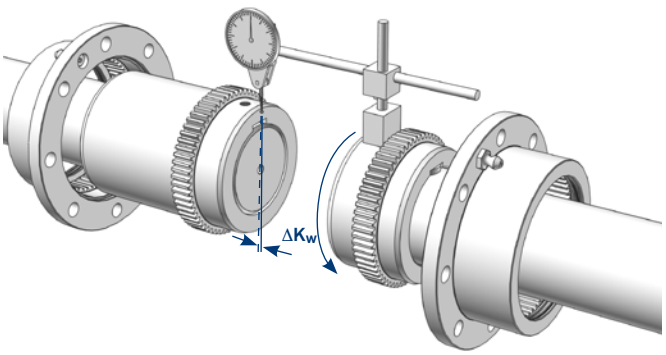
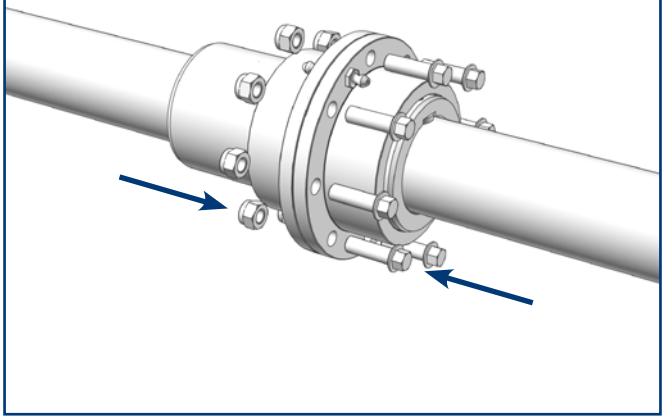


Table 1: Displacement values

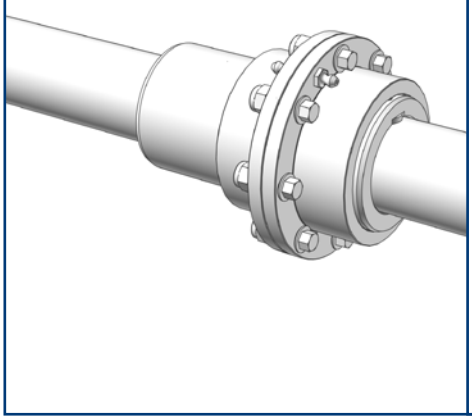
Size	Max. axial displacement	Max. radial displacement		Max. angular displacement			
	ΔK_a [mm]	ΔK_r [mm] recommended	ΔK_r [mm] maximum	ΔK_w [mm] recommended	ΔK_w [mm] maximum	ΔK_w [°] recommended	ΔK_w [°] maximum
69	1	0,11	0,42	0,15	0,60	0,125° per hub	0,5° per hub
85	1	0,13	0,51	0,19	0,74		
107	1	0,17	0,66	0,23	0,933		
133	1,5	0,19	0,77	0,29	1,16		
152	1,5	0,25	1,00	0,33	1,32		
179	2	0,29	1,15	0,39	1,56		
209	2	0,33	1,33	0,46	1,82		
234	3	0,38	1,50	0,51	2,04		
254	3	0,44	1,75	0,56	2,21		
279	3	0,50	2,00	0,61	2,43		
305	3	0,54	2,16	0,67	2,66		
355	4	0,64	2,55	0,77	3,10		

An angular displacement of $K_w = 0.1°$ is necessary at all times in order to guarantee lubrication of the gearing.

10



11





Please note the required tightening torques!

- Valid data can be found in the tables (2 and 3) below.
- Only use fitting screws and nuts in the condition as delivered. **The fastening elements may not be cleaned or additionally lubricated.**
- Secure the fitting screws against twisting and tighten the nuts with the given torque.
- Any adjusting screws must be secured against unwanted loosening and flying off during tightening using a suitable adhesive such as e.g.: Loctite 222.

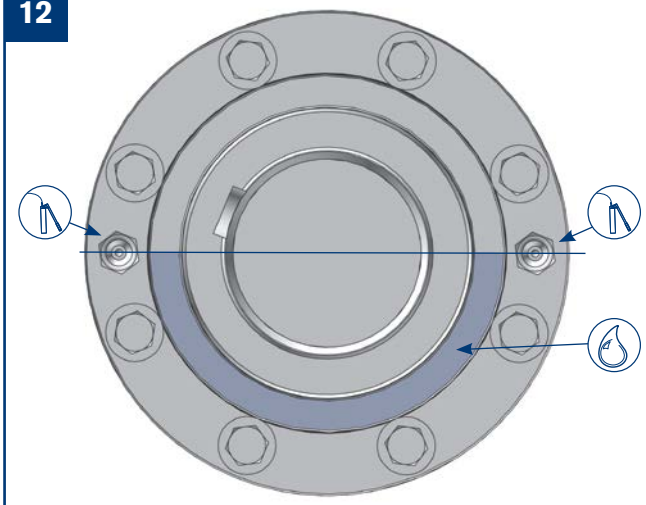
Table 2: Tightening torques for flange screws

Size	69	85	107	133	152	179	209	234	254	279	305	355
M_A [Nm]	33,5	66	112	277	277	537	537	537	537	537	795	795
z x Thread M	6 x M8	8 x M10	6 x M12	6 x M16	8 x M16	8 x M20	8 x M20	10 x M20	10 x M20	14 x M20	14 x M24	16 x M24
Opening width	10	12	14	19	19	24	24	24	24	24	30	30
Tool	1/4“	3/8“	3/8“	1/2“	1/2“	1/2“	1/2“	1/2“	1/2“	1/2“	1“	1“

Table 3: Tightening torques for cover screws, version B

Size	69	85	107	133	152	179	209	234	254	279	305	355
M_A [Nm]	-	-	1,3	3	3	3	8	13	13	33	33	33
Thread	-	-	M3	M4	M4	M4	M5	M6	M6	M8	M8	M8

12



- Place the filling openings horizontally.
- Open the screw plug on the opposite side before filling.
- Fill lubricant into **each half of a coupling**, for example using a grease press, until it comes out of the opposite drill hole.
- Select a suitable lubricating grease from Table 5.
- Conventional roller bearing grease is **not suitable** for use in Gear Couplings.

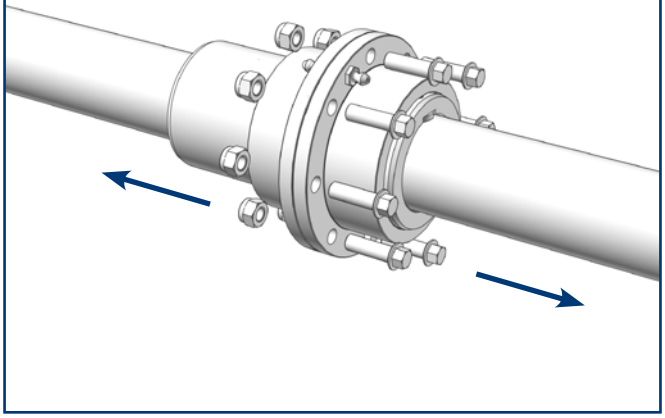
Table 4: Lubricant quantities for the entire coupling

Version	Size	69	85	107	133	152	179	209	234	254	279	305	355
E	Quantity [dm³]	0,067	0,08	0,13	0,22	0,38	0,58	0,75	1,25	1,92	2,67	3,34	5,00
E_{l1}	Quantity [dm³]	0,07	0,09	0,17	0,27	0,56	0,85	1,20	1,88	2,98	4,05	5,16	8,09
E_{l2}	Quantity [dm²]	0,078	0,12	0,27	0,36	0,90	1,38	2,09	3,12	5,11	6,80	8,82	14,21

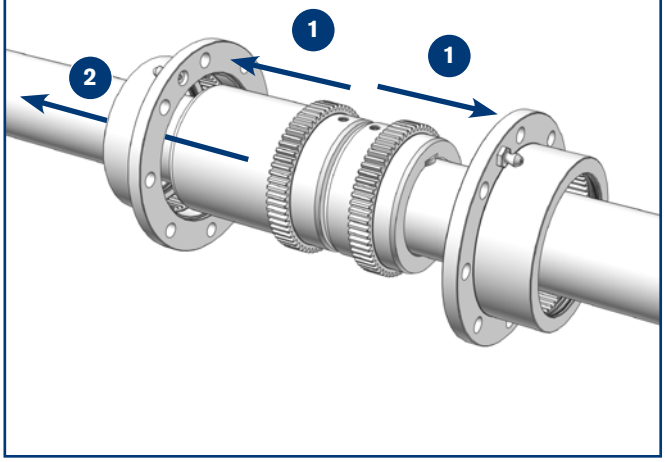
Table 5: Recommended lubricants

Normal speed and load		High speed and load	
Manufacturer	**Variety**	**Manufacturer**	**Variety**
Agip	Agip GR MU/EP1		
Caltex	Coupling grease	**Caltex**	Coupling grease
Castrol	Impervia MDX		
Chevron	Polyurea grease EP 0		
Esso	Fibrax 370		
Fina	Marson EPL 1 Lical EPL 1		
Gulf	Gulfcrown EP 0		
Klüber	Klüberplex GE 11-680 Grafloscon C-SG 500 Plus	**Klüber**	Klüberplex GE 11-680
Mobil	Mobilgrease XTC	**Mobil**	Mobilgrease XTC
Pennzoil	Multi-Purpose 705		
Shell	Alvania grease EP R-0 / EP 1	**Shell**	Albida GC1
Texaco	Coupling grease	**Texaco**	Coupling grease
Total	Specis EPG		

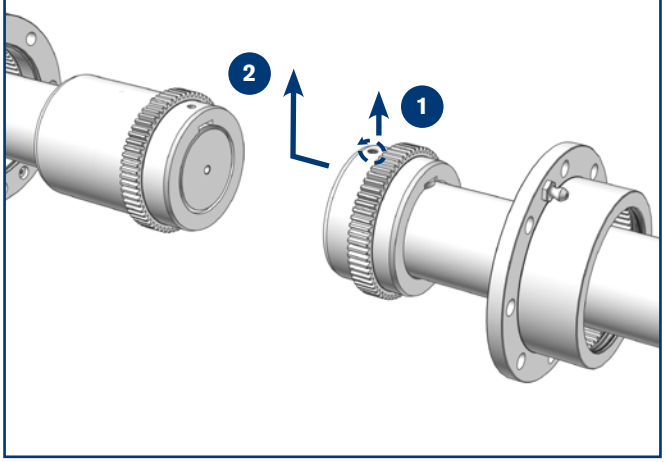
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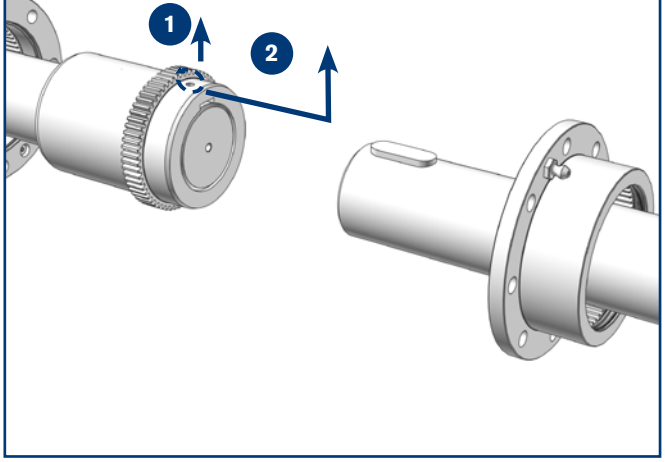
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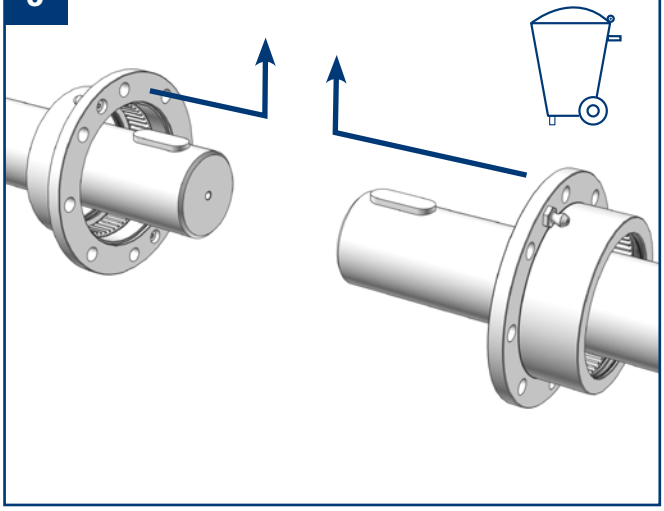
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Maintenance

The torsionally stiff Gear Coupling RINGFEDER® TNZ must be maintained and lubricated regularly!

Please check the following points during routine maintenance work on the system:

- Lubricant quantity in the coupling
- Leak tightness of the coupling
- Adjustment of the coupling
- A tight fit on all fastening elements
- Remove dust and dirt deposits on the coupling parts

Inspection and maintenance

- The coupling must be re-lubricated after every 1,000 hours of operation.
- After every 5,000 hours of operation or at least once every two years the grease must be changed, gears and seals inspected for damage and the adjustment checked.
- The position of the gear hub and the sprocket sleeve to one another must be marked before opening the coupling.
- Place the geared parts back together in their original position after the inspection. The same gears must always interlock as before.
- It is recommended to replace sealing elements as well as screws and nuts as part of maintenance. The nuts must be replaced after one use, otherwise self-locking is not ensured.

General information on operation

Please note the identification data when using the coupling (see product Product Paper & Tech Paper "Gear Couplings"). They may never be exceeded without the written authorisation of RINGFEDER POWER TRANSMISSION. In order to ensure the failure-free, long-term operation of the coupling it must be adjusted in accordance with the design specification in the Product Paper & Tech Paper "Gear Couplings" with an operating factor that is suitable for the operating conditions. Any modification to the conditions of use or the operating parameters necessitates an inspection of the coupling configuration.

At the start and during operation please pay attention to:

- changes in running sounds,
- vibrations,
- leaks,
- other unusual occurrences.

Attention!

- If you discover irregularities at the start or during operation then please switch the drive off immediately!
- Determine the cause of the fault and resolve it.
- All the machine components and operating circumstances must be taken into account when searching for the fault.

Coupling operating temperature:

-10 °C to +80 °C

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