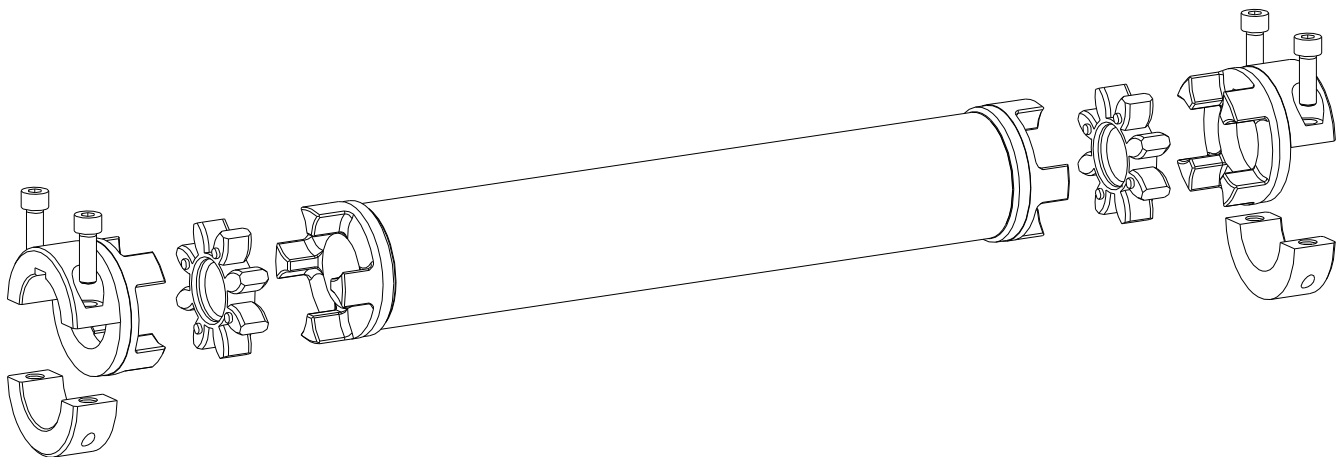




These mounting instructions are a summary of KTR N 45510 comprising details about the assembly/disassembly of the intermediate shaft coupling ROTEX® GS ZR3 only. Please refer to the instructions KTR N 45510 for general advice as well as advice on safety and danger before starting up the coupling. According to EU standard 2014/34/EU, legal claims for warranty cannot be allowed.

ROTEX® GS

Torsionally flexible intermediate shaft coupling type ZR3



ROTEX® GS, ZR3

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Please observe protection note ISO 16016.	Drawn:	2017-03-15 Shg/Ki	Replacing:	KTR-N dated 2017-01-02
	Verified:	2017-03-15 Shg	Replaced by:	



1 Technical data

Intermediate shaft coupling type ZR3

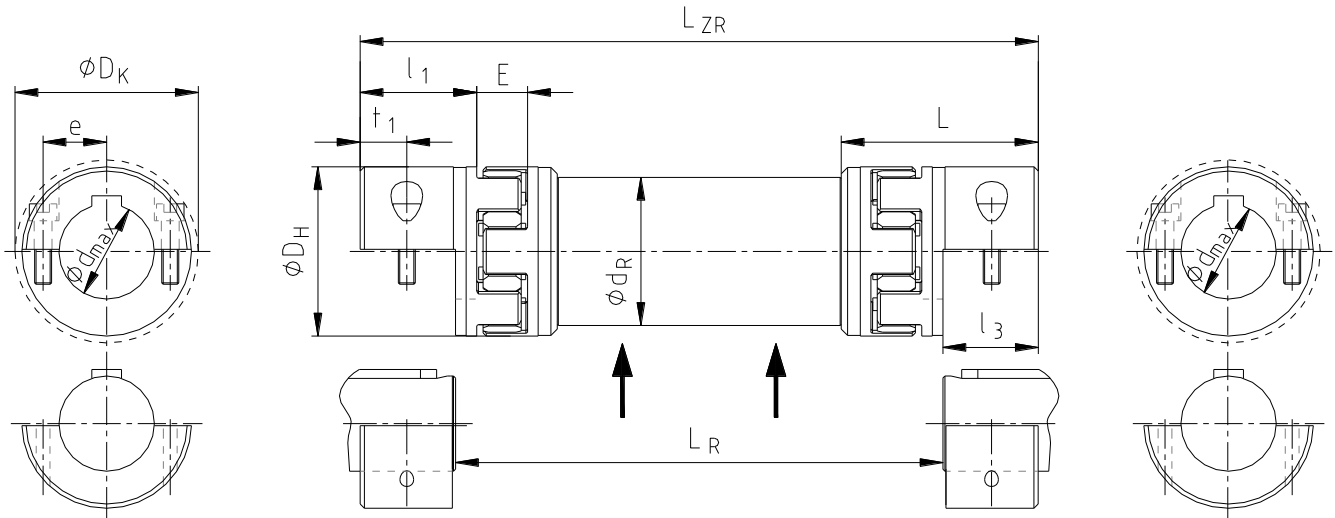


Illustration 1: ROTEX® GS, type ZR3

Table 1: Dimensions

Size	Dimensions [mm]														
	d _{min.}	d _{max.}	D _H	L	l ₃	l ₁	E	t ₁	e	D _K	d _R	L _R		L _{ZR} =L _R +2 x l ₃	
												Min.	Max.	Min.	Max.
14	5	15	30	36.0	14.5	18.5	13	7.5	10.5	33.3	28	72	2971	101	3000
19	8	20	40	49	17.5	25	16	8	14.5	46	40	98	2965	133	3000
24	10	28	55	59	22	30	18	10.5	20	57.5	50	121	3456	165	3500
28	14	38	65	67	25	35	20	11.5	25	73	60	137	3950	187	4000
38	18	45	80	83.5	33	45	24	15.5	30	83.5	70	169	3934	235	4000
42	22	50	95	93	36.5	50	26	18	32	93.5	80	180	3927	253	4000
48	22	55	105	100	39.5	56	28	18.5	36	105	100	202	3921	281	4000

Table 2: Torques

Size	Spider ¹⁾ (component 2) Rated torque [Nm]			
	92 ShA-GS	98 ShA-GS	64 ShD-GS	72 ShD-GS
14	7.5	12.5	16	-
19	12	21	26	-
24	35	60	75	97 ²⁾
28	95	160	200	260 ²⁾
38	190	325	405	525 ²⁾
42	265	450	560	728 ²⁾
48	310	525	655	852 ²⁾

1) Maximum torque of the coupling T_{Kmax.} = Rated torque of coupling T_{Krated.} x 2; **with clamping hubs 7.5 the transmittable friction torque has to be observed (see table 3).**
 2) When using the spider 72 Sh-D, we recommend to use hubs made of steel.

1 Technical data

Table 3: Torques and surface pressure of shell clamping hubs type 7.5

Size	14	19	24	28	38	42	48
Clamping screw M ₁ ¹⁾	M4	M6	M6	M8	M8	M10	M12
Dimension t ₁	7.5	8.0	10.5	11.5	15.5	18.0	18.5
Dimension e	10.5	14.5	20	25	30	32	36
Dimension ØD _K	33.3	46.0	57.5	73.0	83.5	93.5	105
Tightening torque T _A [Nm]	2.90	10	10	25	25	49	86
Bore Ø	Transmittable torque of clamping hub [Nm]						
	Surface pressure [N/mm ²]						
Ø5	4.6						
	75.0						
Ø6	5.5						
	62.5						
Ø8	7.4	17.0					
	46.9	87.9					
Ø10	9.2	21.2	21.2				
	37.5	70.3	54.9				
Ø11	10.1	23.3	23.3				
	34.1	63.9	63.9				
Ø12	11.0	25.4	25.4	46.7			
	31.3	58.6	45.7	74.7			
Ø14	12.9	29.7	29.7	54.4			
	26.8	50.2	39.2	64.1			
Ø15	13.8	31.8	31.8	58.3			
	25.0	46.9	36.6	59.8			
Ø16		33.9	33.9	62.2			
		43.9	34.3	56.0			
Ø19		40.3	40.3	73.9	73.9		
		37.0	28.9	47.2	35.0		
Ø20		42.4	42.4	77.8	77.8	123.5	180
		35.2	27.4	44.8	33.3	48.2	64.5
Ø22			46.7	85.5	85.5	135.8	198
			24.9	40.8	30.2	43.8	58.7
Ø24			50.9	93.3	93.3	148.2	216
			22.9	37.4	27.7	40.1	53.8
Ø25			53.0	97.2	97.2	154.3	225
			22.0	35.9	26.6	38.5	51.6
Ø28			59.4	108.9	108.9	172.9	252
			19.6	32.0	23.8	34.4	46.1
Ø30				116.6	116.6	185.2	270
				29.9	22.2	32.1	43.0
Ø32				124.4	124.4	197.5	288
				28.0	20.8	30.1	40.3
Ø35				136.1	136.1	216.1	315
				25.6	19.0	27.5	36.9
Ø38				147.7	147.7	234.6	342
				23.6	17.5	25.3	34.0
Ø40					155.5	246.9	360
					15.8	22.9	30.7
Ø42					163.3	259.3	378
					14.8	21.4	28.7
Ø45					174.9	277.8	405
					14.8	21.4	28.7
Ø48						296.3	432
						20.1	26.9
Ø50						308.7	450
						19.3	25.8
Ø55							495
							23.5



2 Assembly

The coupling is generally supplied in individual parts. Before starting with the assembly, please inspect the coupling for completeness and dimensional accuracy.



With vertical assembly of the intermediate shaft couplings a special distance washer of KTR has to be inserted between the coupling hub at the bottom and the spider at the bottom.

2.1 Components of the couplings

Components of ROTEX® GS, intermediate shaft coupling type ZR3

Component	Quantity	Description
1	2	Half shell clamping hub type 7.5 or 7.6 (component 1.1 is the basic body of the hub; component 1.2 is the clamping part)
2	2	Spider
3	1	Intermediate pipe
4	4	Cap screws DIN EN ISO 4762

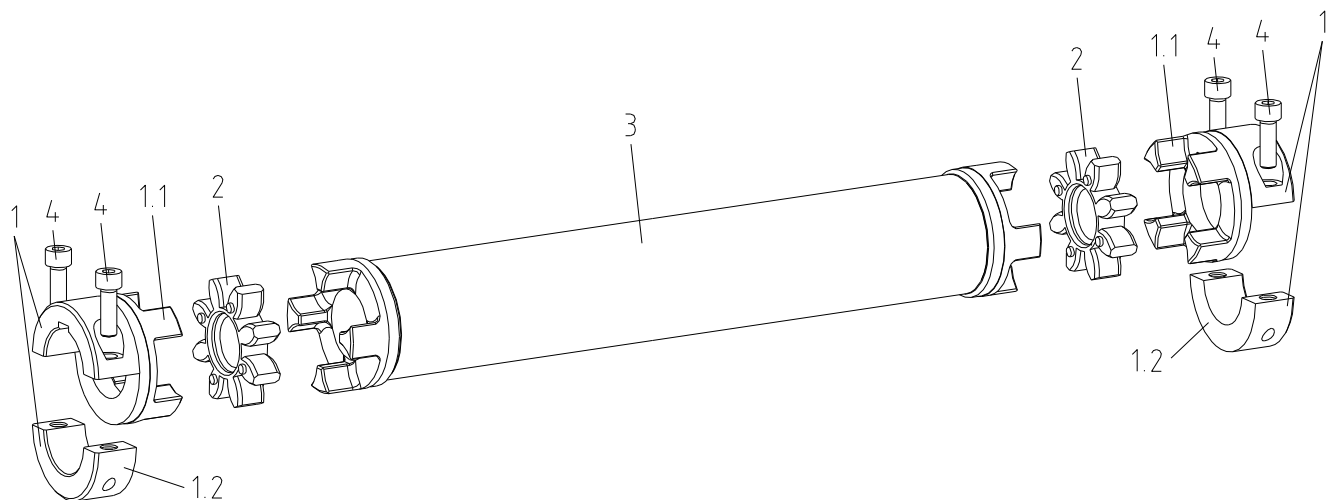


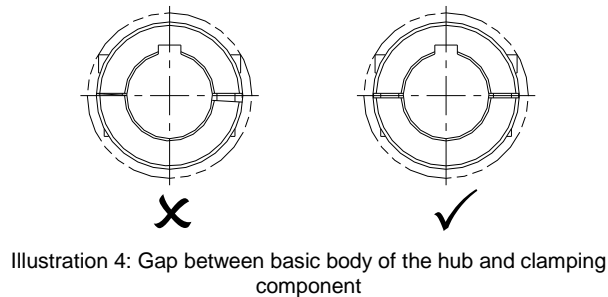
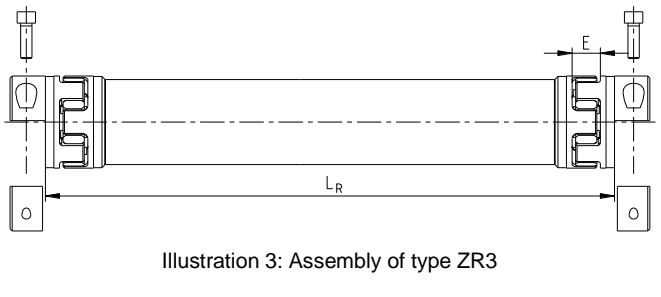
Illustration 2: ROTEX® GS ZR3, size 14 - 48



2 Assembly

2.2 Assembly of type ZR3

- Disassemble the cap screws of the half shell clamping hubs. Store the clamping components and cap screws carefully.
- Insert the spiders into the basic body of the hub.
- Fit the intermediate pipe between the two basic bodies of the hubs. The tapping of the basic bodies of the hubs should point to the same direction. Here dimension L_R is the shaft distance dimension. The distance dimension E shown in table 1 has to be observed.
- Insert the coupling between driving and driven side.
- Mount the clamping components to the basic bodies of the hubs. Secure the half shell clamping hubs by tightening the cap screws DIN EN ISO 4762 evenly at the tightening torques T_A specified in table 3. Make sure that the gap between the basic body of the hub and the clamping components has roughly the same width.



2.3 Displacements - alignment of the couplings

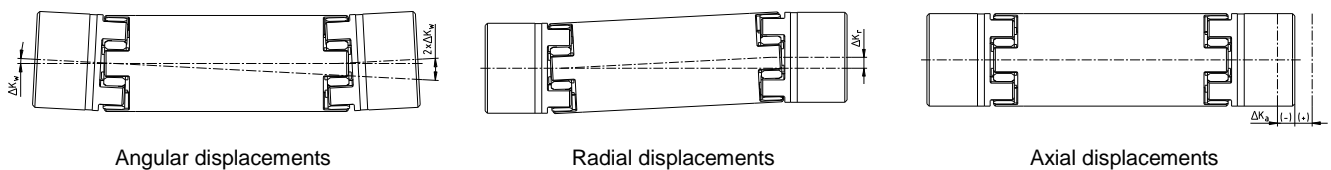
The displacement figures specified in table 4 provide for sufficient safety to compensate for external influences like, for example, thermal expansion or foundation settling.



In order to ensure a long service life of the coupling, the shaft ends have to be accurately aligned.
Please absolutely observe the displacement figures specified (see table 4). If the figures are exceeded, the coupling will be damaged.
The more accurate the alignment of the coupling, the longer is its service life.

Please note:

- The displacement figures specified in table 4 are maximum figures which must not arise in parallel. If radial and angular displacements arise at the same time, the permissible displacement values may only be used proportionally.
- Please inspect with a dial gauge, ruler or feeler gauge whether the permissible displacement figures specified in table 4 can be observed.



$$\Delta K_r = (L_{ZR} - 2 \cdot l_1 - E) \cdot \tan \alpha$$

$$L_{max} = L + \Delta K_a$$

Illustration 5: Displacements

Please observe protection note ISO 16016.	Drawn: 2017-03-15 Shg/Ki	Replacing: KTR-N dated 2017-01-02
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2 Assembly

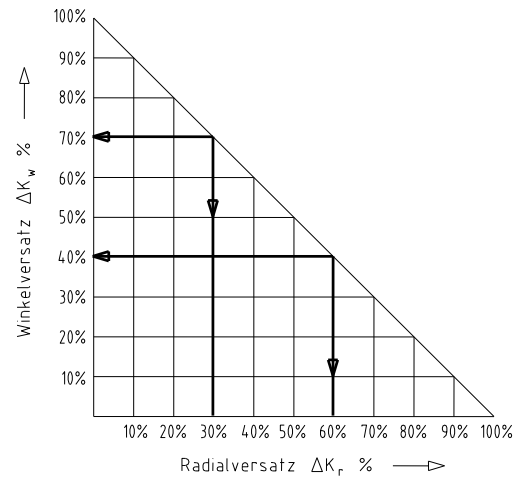
2.3 Displacements - alignment of the couplings

Examples of the displacement combinations specified in illustration 6:

Example 1:
 $\Delta K_r = 30\%$
 $\Delta K_w = 70\%$

Example 2:
 $\Delta K_r = 60\%$
 $\Delta K_w = 40\%$

Illustration 6: Combinations of displacement



$\Delta K_{total} = \Delta K_r + \Delta K_w \leq 100\%$

Table 4: Displacement figures – Intermediate shaft coupling

Size	Max. axial displacement ΔK_a [mm]	Max. radial displacement ΔK_r [mm] ¹⁾				Max. angular displacement ΔK_w [degree]			
		92 ShA-GS	98 ShA-GS	64 ShD-GS	72 ShD-GS	92 ShA-GS	98 ShA-GS	64 ShD-GS	72 ShD-GS
14	+1.0 / -1.0	16.6	14.9	13.3	-	1.0	0.9	0.8	-
19	+1.2 / -1.0	16.3	14.7	13.0	-	1.0	0.9	0.8	-
24	+1.4 / -1.0	16.1	14.5	12.9	11.3	1.0	0.9	0.8	0.7
28	+1.5 / -1.4	15.9	14.3	12.7	11.1	1.0	0.9	0.8	0.7
38	+1.8 / -1.4	15.5	13.9	12.4	10.8	1.0	0.9	0.8	0.7
42	+2.0 / -2.0	15.3	13.7	12.2	10.7	1.0	0.9	0.8	0.7
48	+2.1 / -2.0	15.0	13.5	12.0	10.5	1.0	0.9	0.8	0.7

1) Referring to an overall coupling length of $L_{ZR} = 1000$ mm.

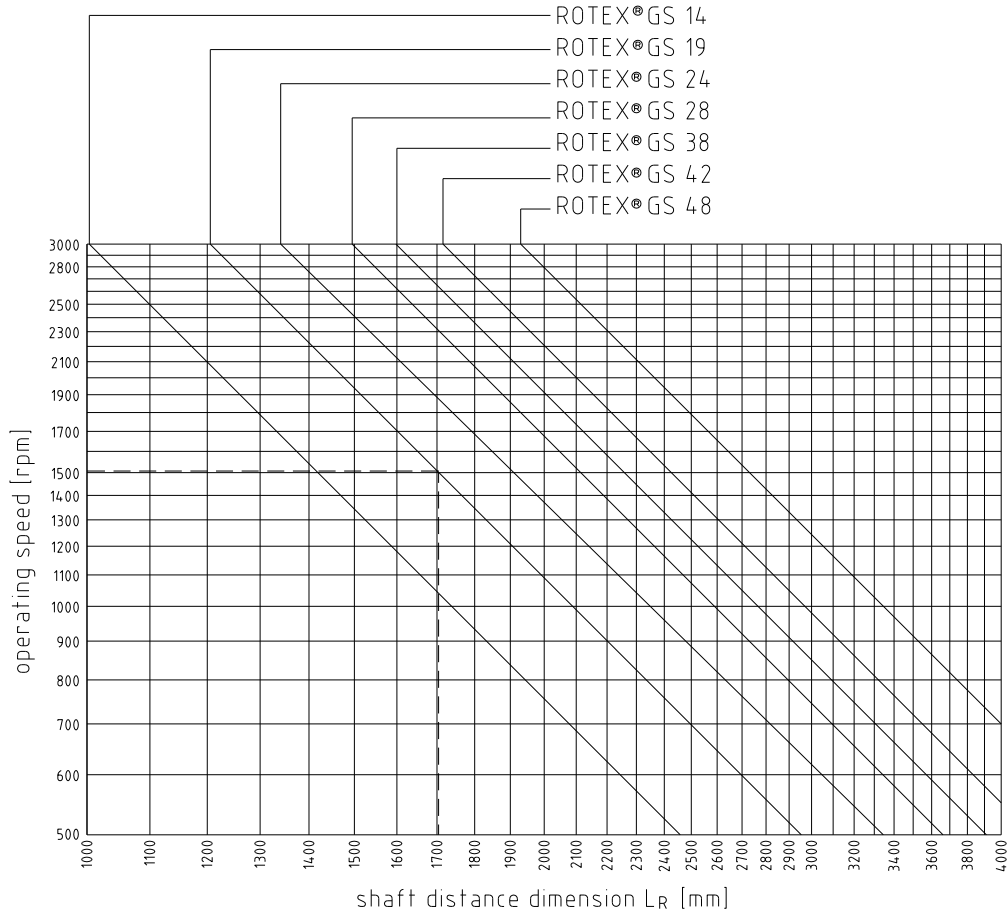
The permissible displacement figures of the flexible ROTEX® GS couplings mentioned are general standard values taking into account the load of the coupling up to the rated torque TKN of the coupling and an ambient temperature of + 30 °C.



2 Assembly

2.4 Critical whirling speed

Please observe the critical whirling speed of the coupling.



Example ZR3:
ROTEX® GS 19
Speed 1500 rpm
Max. permissible shaft
distance dimension
1700 mm

Illustration 7: Critical whirling speed of type ZR3