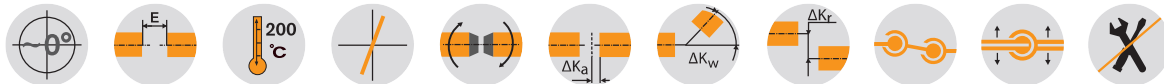


# TOOLFLEX® ZR

## Metal bellow-type couplings

### Intermediate shaft coupling with aluminium pipe bonded



#### TOOLFLEX® type ZR / shell clamping hubs - Hub material aluminium/bellow material stainless steel

Size	Finish bore d		Dimensions [mm]												Clamping screws DIN EN ISO 4762	
	Min.	Max.	General												M	T <sub>A</sub> [Nm]
			D <sub>H</sub>	L	l <sub>3</sub>	L <sub>R</sub>		L <sub>ZR</sub> = L <sub>R</sub> + 2 • l <sub>3</sub>		d <sub>R</sub>	D <sub>K</sub>	t <sub>1</sub>	e			
20	8	20	40	40	12.5	Min. 80	Max. 2975	Min. 105	Max. 3000	40	41.2	5.5	14.5	M4	5	
30	10	28	55	58.5	17.0	114	3466	148	3500	50	58.0	7.5	19	M6	15	
38	12	38	65	61	21.0	129	3958	171	4000	60	72.6	9.5	25	M8	40	
45	14	45	83	78.5	25.0	149	3950	199	4000	80	89.0	11.0	30	M10	70	

#### Technical data TOOLFLEX® ZR

Size	Torque of bellow T <sub>KN</sub> <sup>1)</sup> [Nm]	Moment of inertia [10 <sup>-3</sup> kgm <sup>2</sup> ]		Static torsion spring stiffness [Nm/rad]
		Z <sub>R</sub> hub <sup>2)</sup>	Pipe/meter	
20	15	0.024378	0.329	1935
30	35	0.121256	0.673	3800
38	65	0.253162	1.199	7240
45	170	0.961451	4.560	23183

<sup>1)</sup> For selection see page 22 et seqq.

<sup>2)</sup> Figures refer to the max. bore

<sup>3)</sup> Torsion spring stiffness with a length of 1 m of intermediate pipe with L<sub>pipe</sub> = L<sub>ZR</sub> - 2 • L

For inquiries and orders please specify the shaft distance dimension L<sub>R</sub> along with the maximum speed to review the critical bending speed. Straightness/concentricity of pipes according to DIN EN 755-1.

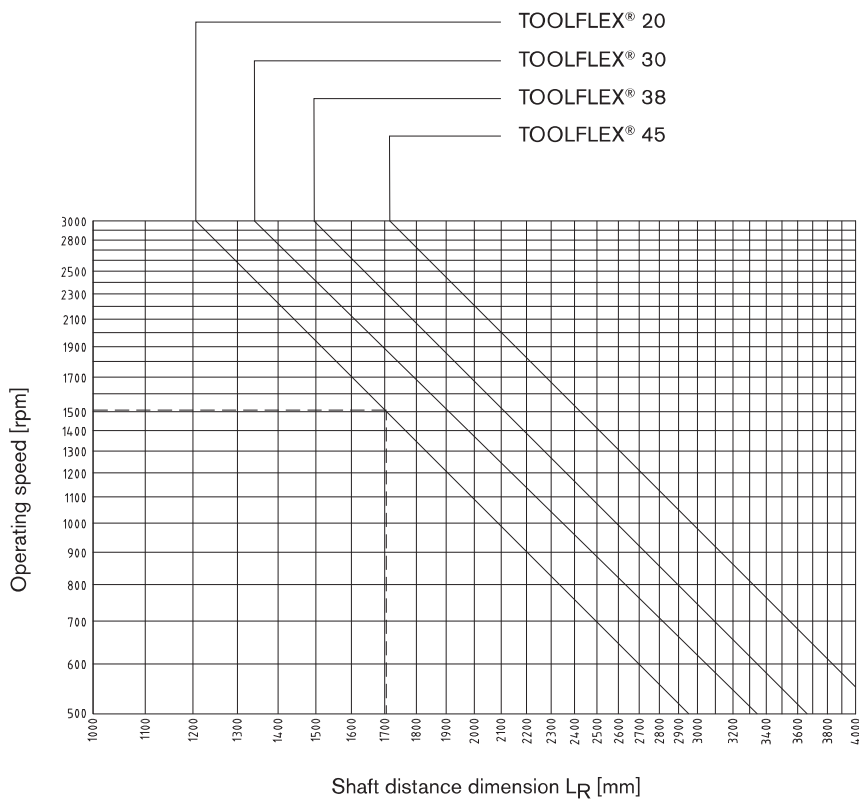
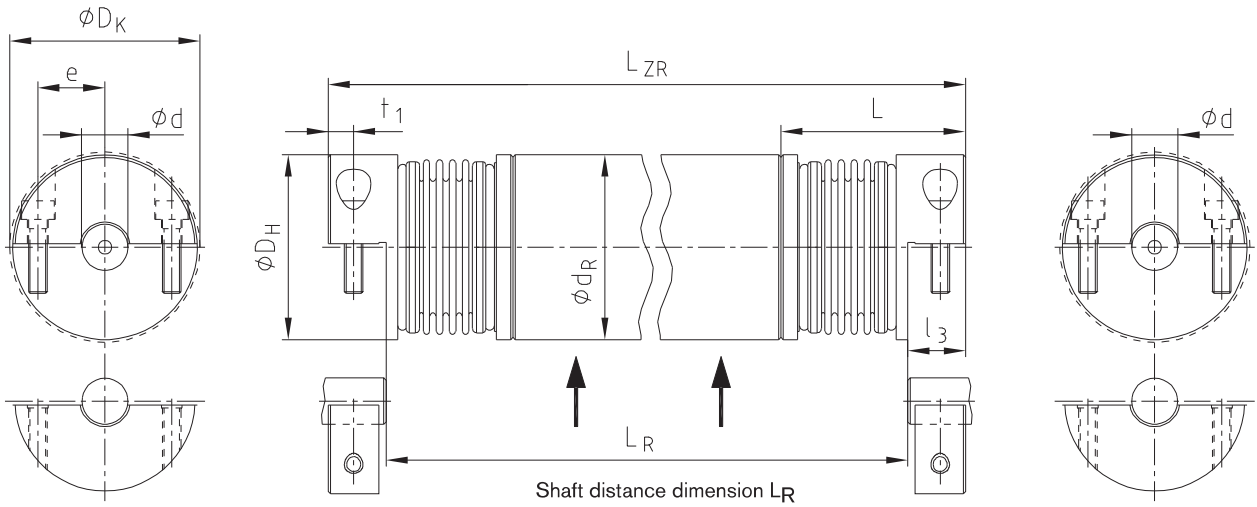
#### Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 7.5 for Ød<sub>1</sub>/Ød<sub>2</sub>

Size	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45
20	12.5	14.1	15.7	17.2	18.8	21.9	23.5	25.1	28.2	29.8	31.3										
30			31.8	35.0	38.2	44.5	47.7	50.9	57.3	60.4	63.6	76.3	79.5	89.1							
38					74.9	87.4	93.7	99.9	112.4	118.6	124.9	149.9	156.1	174.8	187.3	199.8	218.5	237.3			
45						123.4	132.2	141.0	158.6	167.4	176.2	211.5	220.3	246.7	264.4	282.0	308.4	334.9	352.5	370.1	396.5

**Ordering example:**

TOOLFLEX® 30	ZR	1200 mm	7.5 - Ø24		7.6 - Ø24	
Size and type of coupling	Type	Shaft distance dimension (L <sub>R</sub> )	Hub design	Finish bore	Hub design	Finish bore

TOOLFLEX® ZR



Types of hubs

Type 7.5



Clamping hub type DH without feather keyway for double-cardanic connection

Type 7.6



Clamping hub type DH with feather keyway for double-cardanic connection (on request)

ROTEX® GS

TOOLFLEX®

Backlash-free servo couplings

RADEX®-NC

COUNTEX®