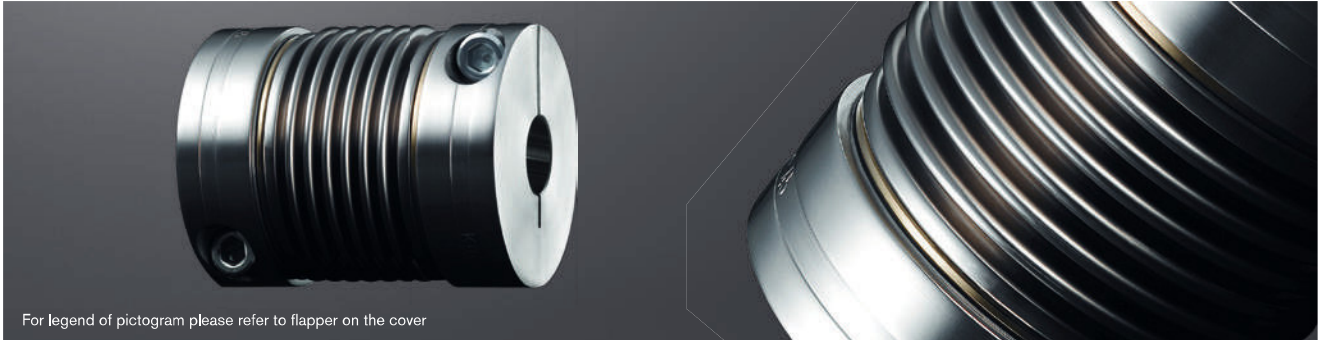


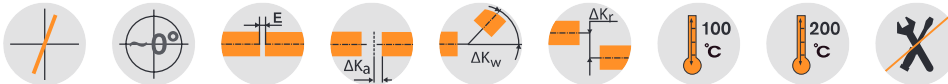
# TOOLFLEX® M

## Metal bellow-type couplings

### Type M: with clamping hubs



For legend of pictogram please refer to flapper on the cover



#### TOOLFLEX® Type M with clamping hubs - Hub material aluminium (size 55/65 steel)/bellow material stainless steel

Size	Dimensions [mm]											
	Finish bore d		General					Clamping screws DIN EN ISO 4762				
	Min.	Max.	L	I <sub>1</sub> , I <sub>2</sub>	E	D <sub>H</sub>	d <sub>H</sub>	M <sub>1</sub>	D <sub>3</sub>	t <sub>1</sub>	e <sub>1</sub>	T <sub>A</sub> [Nm]
7	3	7	26	9	8	15	9	M2	16.5	3.2	5	0.37
9	3	9	32	11	10	20	12	M2.5	21.5	3.5	7.1	0.76
12	4	12	38	13	12	25	16	M3	26.5	4	8.5	1.34
16	5	16	49	17.0	15	32	20	M4	35.0	5	12	2.9
20	8	20	62	21.5	19	40	27	M5	43.5	6	14.5	6
30	10	30	72	23.0	26	55	33	M6	58.0	7	19	10
38	12	38	81	25.5	30	65	42	M8	72.6	9	25	25
42	14	42	95	30.0	35	70	46	M8	76.1	9	27	25
45	14	45	103	32.0	39	83	58	M10	89.0	11	30	49
55 Al	20	55	125	40.0	45	100	73	M11	106.0	14	37	86
55 <sup>3)</sup>	20	55	125	40.0	45	100	73	M12	106.0	14	37	120
65 <sup>3)</sup>	30	65	142	45.0	52	125	95	M14	127.2	15	45	185

#### Technical data

Size	Bellow-hub-connection	Torque of bellow T <sub>KN</sub> [Nm] <sup>1)</sup>	Max. speed [rpm]	Hub material	Moment of inertia I <sub>2</sub> [x10 <sup>-8</sup> kgm <sup>2</sup> ]	Torsion spring stiffness C <sub>T</sub> [Nm/rad]	Axial stiffness C <sub>A</sub> [N/mm]	Radial stiffness C <sub>R</sub> [N/mm]	Perm. displacements			Weight <sup>2)</sup> [kg]
									Axial [mm]	Radial [mm]	Angular [degree]	
7	Bonded	1	31800	Aluminium	0.3	300	—	—	±0.4	0.15	1.0	0.008
9	Bonded	1.5	23800	Aluminium	1.0	580	—	—	±0.5	0.20	1.5	0.015
12	Bonded	2	19100	Aluminium	2.7	980	—	—	±0.6	0.20	1.5	0.03
16	Flanged	5	14900	Aluminium	10	3050	29	92	±0.5	0.20	1.5	0.06
20		15	11950	Aluminium	32	6600	42	126	±0.6	0.20	1.5	0.14
30		35	8700	Aluminium	123	14800	65	155	±0.8	0.25	2.0	0.31
38		65	7350	Aluminium	262	24900	72	212	±0.8	0.25	2.0	0.45
42		95	6820	Aluminium	427	36500	80	333	±0.8	0.25	2.0	0.52
45	170	5750	Aluminium	1020	64000	88	492	±1.0	0.25	2.0	1.13	
55 Al	3)	340	4800	Aluminium	1706	96100	107	598	±1.1	0.30	2.0	2.0
55 <sup>3)</sup>		340	4800	Steel	5118	96100	107	598	±1.0	0.30	2.0	3.3
65 <sup>3)</sup>		600	3850	Steel	13727	226550	135	910	±2.0	0.35	2.0	5.6

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

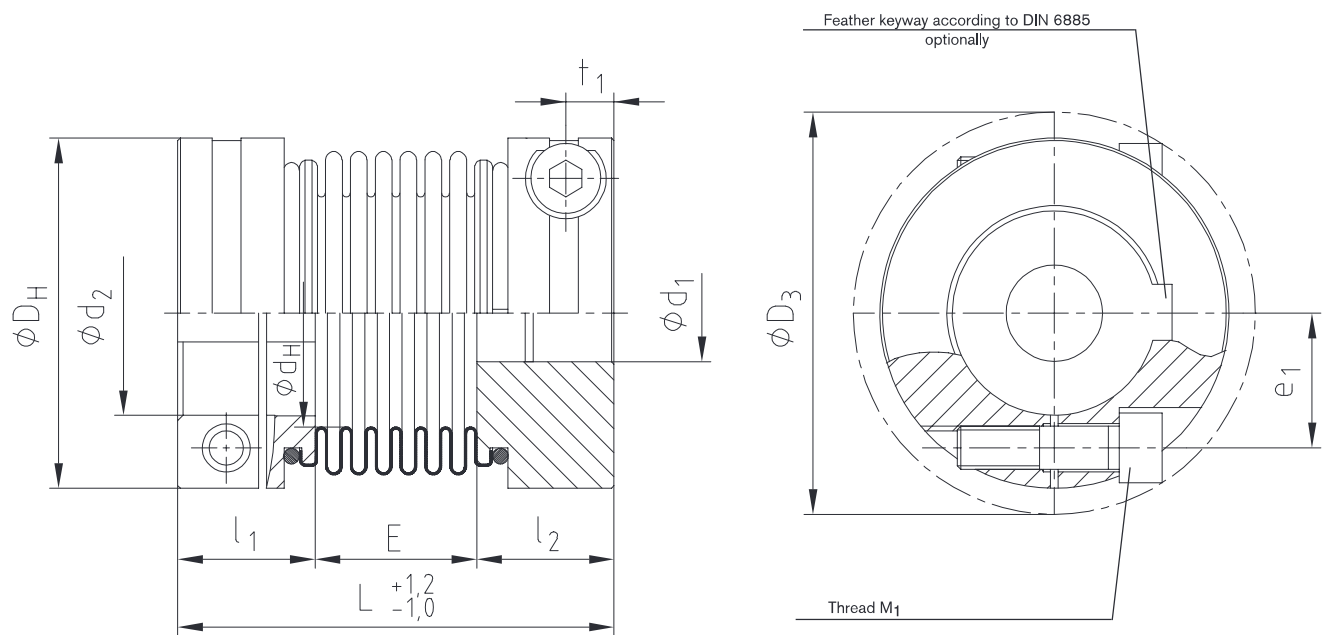
<sup>2)</sup> Figures refer to the complete coupling with max. bore.

<sup>3)</sup> Hub made of steel welded with bellow.

#### Review of shaft-hub-connection: Friction torques T<sub>F</sub> [Nm] for hub design 2.5

Size	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø50	Ø55	Ø60	Ø65	
7	0.84	0.91	0.97	1.04	1.10																										
9	1.87	1.98	2.09	2.20	2.31	2.41	2.52																								
12		3.48	3.65	3.81	3.98	4.14	4.31	4.48	4.64	4.81																					
16			8.5	8.8	9.1	9.4	9.7	9.9	10.2	10.5	11.1	11.4	11.7																		
20						17.6	18.1	18.6	19.1	19.5	20.5	21.0	21.4	22.4	22.9	23.3															
30									33.1	33.8	35.1	35.8	36.5	37.8	38.5	39.2	41.9	42.5	44.6	45.9											
38										79.2	80.4	81.7	84.2	85.4	86.6	91.6	92.8	96.5	99.0	102	105	109									
42										84.2	85.4	86.6	89.1	90.3	91.6	96.5	97.8	102	104	106	110	114	116	119							
45															157	165	167	173	177	181	187	193	197	200	206						
55 Al																270	281	284	293	298	304	313	321	327	333	341	356	371			
55 <sup>3)</sup>																	397	401	413	421	429	442	454	462	470	482	502	523			
65 <sup>3)</sup>																					720	732	750	768	780	792	810	840	870	900	930

Ordering example:	TOOLFLEX® 30 M	2.5 - Ø25				2.5 - Ø30			
	Size and type of coupling	Hub design	Finish bore	Hub design	Finish bore	Hub design	Finish bore	Hub design	Finish bore

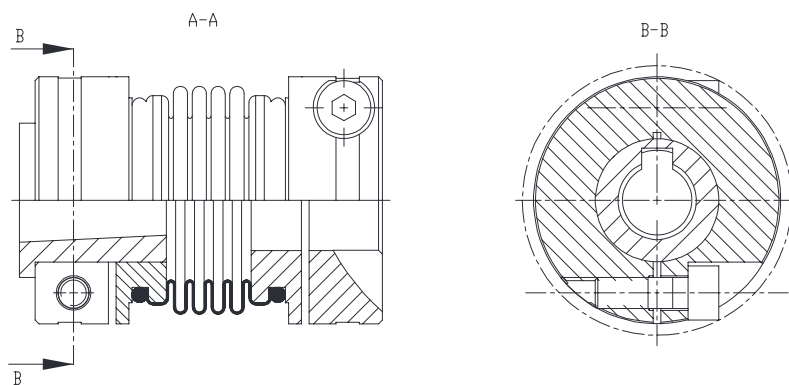


ROTEX® GS

TOOLFLEX®

Backlash-free  
servo couplings

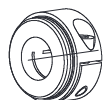
**Other types:**  
Type for FANUC motors



RADEX®-NC

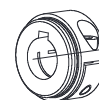
## Types of hubs

Type 2.5



Clamping hub double slot without feather keyway

Type 2.6



Clamping hub double slot with feather keyway

COUNTLEX®