

Accessories – smart additions for efficiency and intelligent performance



Metal bellows couplings

Perfectionists you can count on

Metal bellows couplings are designed for the highest requirements in servo drive technology. The compact design ensures that installation space is kept to a minimum. High torsional rigidity enables precise results and dynamics.

- Compensation for shaft misalignment
- Completely backlash free
- Compact and easy to mount
- Maintenance-free and fatigue durable
- Corrosion resistant version available as an option (BC2, BC3, BCT)

Elastomer couplings

Harmonious endurance runners

Elastomer couplings ensure precisely manufactured hubs and attachable intermediate elements for maximum true-running accuracy in the drive train. In addition, torque peaks and vibrations are damped to ensure superior smooth running.

- Compensation for shaft misalignment
- Completely backlash free
- Choice of torsional rigidity/damping
- Compact design
- Extremely simple installation (plug-in)
- Maintenance-free and fatigue durable
- Ideal for connection to spindle drives, toothed belt drives, and linear modules

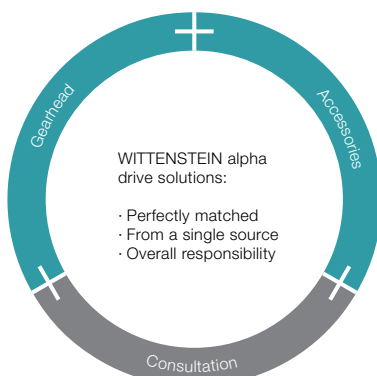
Torque limiters

Intelligent monitors

Torque limiters with integrated mechanical switching mechanism combine dynamic and precise transmission with TÜV-certified torque limitation. They therefore protect the drive and machine from overload.

- Machine downtimes are avoided
- High availability and productivity
- Precise, preset overload protection (switch-off in 1–3 ms)
- Precise repeat accuracy
- Compact and completely backlash free
- Just one protection element per axle

Gearheads, accessories and consulting from a single source



Flexibility without limits

Broad range of precision gearheads with perfectly matched accessories.

Surely an ideal solution for you!

WITTENSTEIN alpha accessories give you even greater design freedom and options.

In the fast lane with WITTENSTEIN alpha!

Gearheads and accessories

- Perfectly adapted
- One complete delivery
- One contact

Every detail is important for your success!



Shrink disks
Compact athletes

With our hollow shaft or mounted shaft gearheads for mounting directly on load shafts, machines can be designed to take up a minimal installation space.

- Reliable torque transmission
- Simple mounting and removal
- Quick selection, easy and convenient
- Optional: Corrosion resistant version

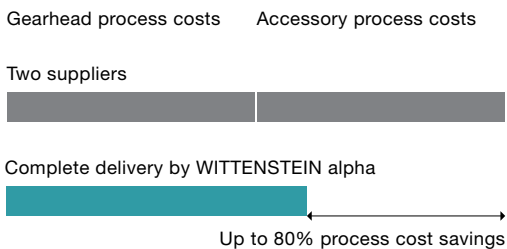


Flange shafts
Flexible design

Our flange shafts provide you with output options that are especially adapted for work with TP+, TPK+ and TK+ flange gearheads.

- Flexible shaft diameter
- Can be adapted to your output components
- Customized options available

Reduce costs



→ The savings in installation and process costs more than offsets the value of the accessories

Optimization of your added value chain

Use the combination of gearhead and accessories in a complete package to streamline your internal processes:

- One** consultation service
- One** complete delivery
- One** internal process

- Minimize your internal effort
 - Maximize your time and cost savings
- Your long-term advantage with complete delivery!

Accessories

Couplings

Shrink disc

Couplings – securing – transmitting – equalizing



Your customized coupling completes the drive train:

- Flexible in design
- Fine-tuning your drive
- Maximum performance

Selection and calculation made easy:

Info- & CAD-Finder

cymex®



For further information, please visit www.wittenstein-alpha.de/en/

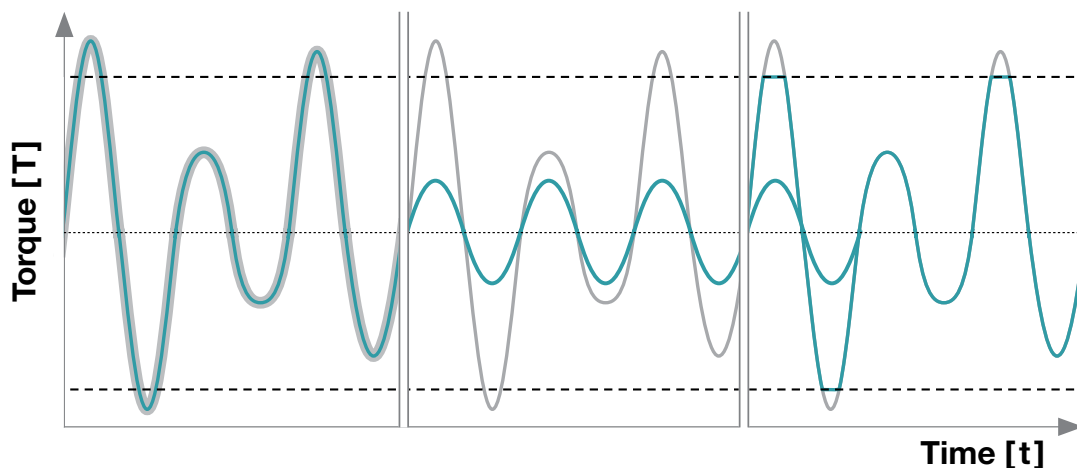
Quick coupling selection

Feature	Application	Metal bellows coupling					Elastomer coupling		Torque limiter		
		BCT	BCH	BC2	BC3	EC2	EL6	ELC	TL1	TL2	TL3
Transmission characteristics	High torsional rigidity	•	•	•	•	•			•	•	•
	Damping of torque peaks and vibration						•	•			
Compensation characteristics	Compensation of shaft misalignments (axial, angular, lateral)	•	•	•	•	•	•	•		•	•
Protection characteristics	Switching protection element for the protection of components in the event of overload								•	•	•
Mounting	Standard clamping hub (radial)	•	•	•		•		•	•	•	•
	Conical clamping hub (axial)	•			•		•		•		•
	Plug-in connection						•	•			
Drive interfaces	Shaft		•	•	•	•	•	•	•	•	•
	Flange	•									
Output interfaces	Shaft	•	•	•	•	•	•	•		•	•
	Indirect (belt pulley, sprocket wheel)								•		

Versions and Applications

By combining gearheads and accessories, your application receives an individual drive concept with optimized overall performance.

- Maximum service life of all drive components
- Integrated safety functions
- Harmonious drive characteristics



Precise, torsionally rigid transmission
→ Metal bellows coupling



Damping of peaks/vibrations
→ Elastomer coupling

Safe torque limitation
→ Torque limiter




Compare

Features	Metal bellows coupling				Elastomer coupling		Torque limiter			
	BCT	BCH	BC2	BC3	EC2	EL6	ELC	TL1	TL2	TL3
Max. acceleration torque $T_B / T_{BE} / T_{Dis}$ [Nm]	50 – 8500	15 – 1500	15 – 6000	15 – 10000	2 – 500	6 – 2150	1 – 2150	0,1 – 2800	0,1 – 1800	5 – 2800
Torsional backlash	Completely backlash free									
Geometry										
Selectable bore diameter D_1 / D_2 [mm]	12 – 100	8 – 80	8 – 140	10 – 180	4 – 62	6 – 80	3 – 80	4 – 100	3 – 80	10 – 100
Bore D_1 / D_2 smooth	•	•	•	•	•	•	•	•	•	•
Bore D_1 / D_2 key	•	•	•	•	•	•	•	•	•	•
Selectable coupling length (A, B)		•	•	•					•	•
Options										
Corrosion resistant (stainless steel hubs, welded)	•		•	•						
Including self-opening clamp system					•					
Selectable disengagement mechanism								•	•	•
Torque adjusting wrench and switch								•	•	•
Selectable intermediate element (elastomer insert)						•	•			

Accessories

 Couplings
  Shrink disc

BCT – bellows coupling with flange connection

Technical data			Standard series					HIGH TORQUE series		
			15	60	150	300	1500	1500	4000	
Gearhead output	TP ⁺ , TPK ⁺ , TK ⁺ , VDT ⁺ , TPM, TPC		004 MF	010 MF	025 MF	050 MF	110 MF	110 MA	300 MA	
Max. acceleration torque ^{a)} (max. 1000 cycles per hour)	T _B	Nm	50	210	380	750	2600	6000	8500	
		in.lb	443	1859	3363	6638	23010	53104	75231	
Max. speed	n _{Max}	rpm	10000							
Axial misalignment 	Max. values	mm	1	1.5	2	2.5	3	1.5	3	
Angular misalignment 	Max. values	°	1	1	1	1	1	1	1	
Lateral misalignment 	Max. values	mm	0.25	0.25	0.25	0.25	0.25	0.2	0.4	
Axial spring stiffness	C _a	N/mm	28.6	76.9	86.9	112	322	1024	1154	
Lateral spring stiffness	C _l	N/mm	475	1410	1620	3860	5890	21000	7750	
Torsional rigidity	C _T	Nm/arcmin	6.7	21.0	41.0	156	379	437	1455	
		in.lb/arcmin	59.3	185.9	362.9	1381	3354	3867	12877	
Moment of inertia	J	kgcm ²	1.5	6.5	13.0	55	450	470	1850	
		10 ⁻³ in.lb.s ²	1.3	5.8	11.5	49	398	416	1637	
Hub material			Al	Al	Al	Al	Steel	Steel	Steel	
Bellows material			highly flexible stainless steel							
Adapter flange material			Steel							
Approx. weight	m	kg	0.3	0.7	1	2.8	10	10.5	27.4	
		lb	0.67	1.5	2.21	6.18	22.5	23	60.3	
Max. permitted temperature		°C	-30 to +100 (bonded)				-30 to +300 (welded)			
		F	-22 to +212 (bonded)				-22 to +XXX (welded)			
Dimensions										
Overall length including adapter flange (without L ₃)	L ₁	mm	51.5	73.5	77.5	96.5	148	136.5	207	
Fit length ^{b)}	L ₂	mm	16.5	23	27.5	34	55	61	80	
Distance	L ₃	mm	6.5	9.5	11	13	22.5	-	-	
Distance between centers	L ₄	mm	1 x 17.5	1 x 23	1 x 27	1 x 39	2 x 55	-	-	
Length installation space (without L ₃)	L ₇	mm	48.5	67	72	90	140	128.5	195	
Screw head length	L ₈	mm	-	-	-	-	-	7.5	10	
Bore diameter from Ø to Ø H7	D ₁	mm	12 - 28	14 - 35	19 - 42	24 - 60	50 - 80	35 - 70	50 - 100	
TP flange hole circle diameter ^{c)}	D ₂	mm	31.5 8 x M5	50 8 x M6	63 12 x M6	80 12 x M8	125 12 x M10	125 12 x M12	145 12 x M20	
Outer diameter (flange)	D ₃	mm	63.5	86	108	132	188	190	244	
Outer diameter of hub/bellows	D ₅	mm	49	66	82	110	157	157	200	
Adapter flange hole circle diameter ^{c)}	D ₆	mm	56.5 10 x M4	76 10 x M5	97 10 x M6	120 12 x M6	170 16 x M8	172 16 x M8	221 20 x M12	

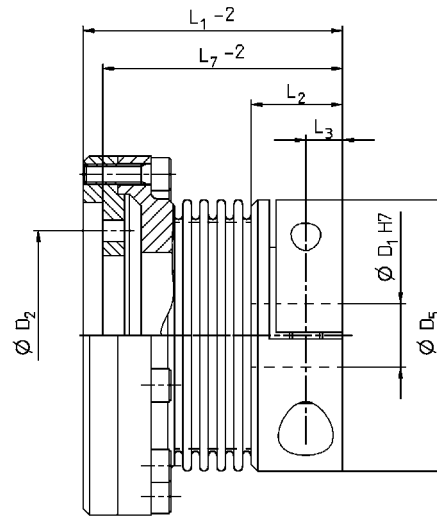
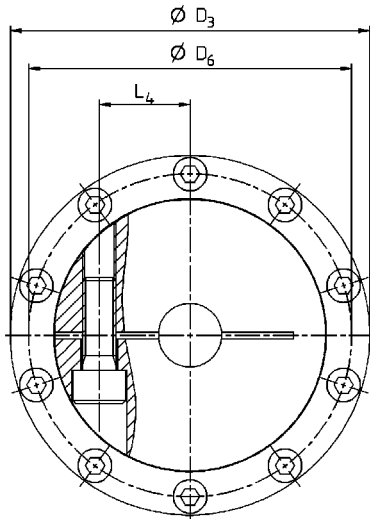
^{a)} valid for maximum bore diameter (see D₁)

^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

^{c)} Adapter flange and screws included in scope of delivery

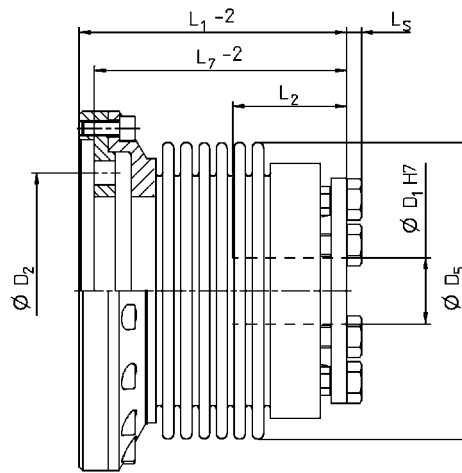
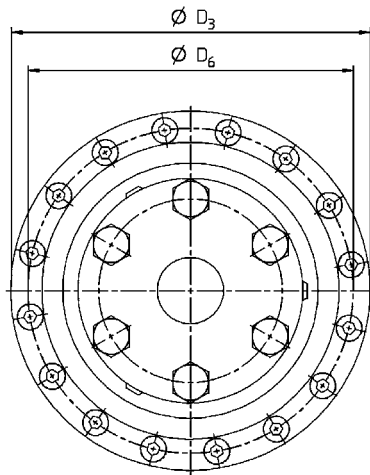
BCT Standard

with Standard clamping hub



BCT HIGH TORQUE

with conical clamping hub






Your benefits:

- Completely backlash free
- High torsional rigidity
- Small installation place and compactness
- Fatigue endurable and maintenance free
- Perfectly matched technically and geometrically to flange gearhead

Optional:

- Bores with key / involute
- Corrosion resistant version
- Other designs, geometry

BCH – bellows coupling with split clamping hub

Technical data			Series																		
			15		30		60		80		150		200		300		500		800	1500	
Length options (see ordering code)			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A	
Max. acceleration torque (max. 1000 cycles per hour)	T_B	Nm	15		30		60		80		150		200		300		500		800	1500	
		in.lb	133		266		531		708		1328		1770		2655		4425		7080	13275	
EMERGENCY STOP torque (briefly permissible)	T_{Emer}	Nm	22.5		45		90		120		225		300		450		750		1200	2250	
		in.lb	199		398		797		1062		1991		2655		3983		6638		10620	19913	
Max. speed	n_{Max}	rpm	10000																		
Axial misalignment 	Max. values	mm	1.0	2.0	1.0	2.0	1.5	2.0	2.0	3.0	2.0	3.0	2.0	3.0	2.5	3.5	2.5	3.5	3.5	3.5	
Angular misalignment 	Max. values	°	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.5	1.5	
Lateral misalignment 	Max. values	mm	0.15	0.2	0.2	0.25	0.2	0.25	0.2	0.25	0.2	0.25	0.25	0.3	0.25	0.30	0.30	0.35	0.35	0.4	
Axial spring stiffness	C_a	N/mm	25	15	50	30	72	48	48	32	82	52	90	60	105	71	70	48	100	320	
Lateral spring stiffness	C_l	N/mm	475	137	900	270	1200	420	920	290	1550	435	2040	610	3750	1050	2500	840	2000	3600	
Torsional rigidity	C_T	Nm/arcmin	5.8	4.4	11	8.1	22	16	38	25	51	32	56	41	131	102	148	146	227	379	
		in.lb/arcmin	52	39	100	72	196	142	332	219	451	283	492	361	1159	901	1313	1288	2009	3359	
Moment of inertia	J	kgcm ²	0.7	0.8	1.4	1.5	2.3	2.6	6.5	6.7	25	32	45	54	85	105	173	196	243	492	
		10 ⁻³ in.lb.s ²	0.6	0.7	1.2	1.3	2.0	2.2	5.5	5.7	21	27	38	46	72	89	147	167	207	418	
Hub material			Al		Al		Al		Al		Steel		Steel		Steel		Steel		Steel	Steel	
Bellows material			highly flexible stainless steel																		
Approx. weight	m	kg	0.15		0.30		0.40		0.80		1.7		2.5		4.0		7.5		7.0		12
		lb	0.33		0.66		0.88		1.8		3.8		5.5		8.8		17		15		27
Max. permitted temperature		°C	-30 to +100 (bonded)																-30 to +300 (welded)		
		F	-22 to +212 (bonded)																-22 to +572 (welded)		
Dimensions																					
Overall length	L_1	mm	59	66	69	77	83	93	94	106	95	107	105	117	111	125	133	146	140	166	
Fit length ^{a)}	L_2	mm	22		27		31		36		36		41		43		51		45		55
Distance	L_3	mm	6.5		7.5		9.5		11		11		12.5		13		16.5		18		22.5
Distance between centers	L_4	mm	17		19		23		27		27		31		39		41		48		55
Insertion length	L_7 ⁻²	mm	29	36	35	43	41	51	47	59	48	60	51	63	55	69	62	75	65.5	71	
Bore diameter from \emptyset to \emptyset H7	$D_{1/2}$	mm	8 - 28		10 - 30		12 - 35		14 - 42		19 - 42		22 - 45		24 - 60		35 - 60		40 - 75		50 - 80
Outer diameter	D_3	mm	49		55		66		81		81		90		110		124		134		157

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

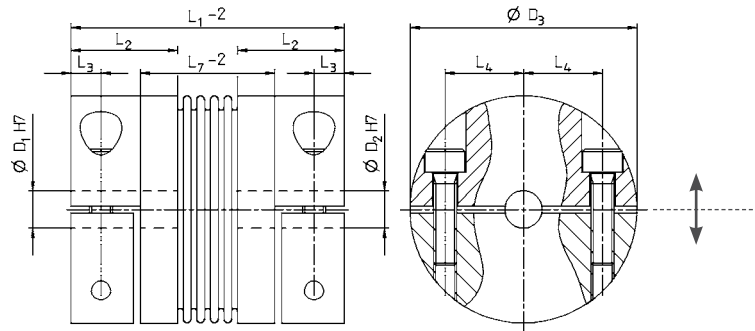
^{b)} per clamping hub, 180° apart

Your benefits:




- Mounting time is greatly reduced through clamping hubs in half-shell design
- Precise preliminary alignment of shafts possible
- Completely backlash free
- High torsional rigidity
- High dynamics through low mass moment
- Fatigue enduring and maintenance free

Optional:

- Bores with key / involute
- Other hub materials
- Other designs, geometry



BC2 – bellows coupling with clamping hub

Technical data			Series																					
			15		30		60		80		150		200		300		500		800		1500		4000	
Length options (see ordering code)			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A
Max. acceleration torque (max. 1000 cycles per hour)	T_B	Nm	15	30	60	80	150	200	300	500	800	1500	4000	6000										
		in.lb	133	266	531	708	1328	1770	2655	4425	7080	13275	35400	53100										
EMERGENCY STOP torque (briefly permissible)	T_{Emer}	Nm	22.5	45	90	120	225	300	450	750	1200	2250	6000	9000										
		in.lb	199	398	797	1062	1991	2655	3983	6638	10620	19913	53100	79650										
Max. speed	n_{Max}	rpm	10000																					
Axial misalignment 	Max. values	mm	1	2	1	2	1.5	2	2	3	2	3	2	3	2.5	3.5	2.5	3.5	3.5	4.5	3.5	4.5	3.5	3
Angular misalignment 	Max. values	°	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1.5	2	1.5	2	1.5	1.5
Lateral misalignment 	Max. values	mm	0.15	0.2	0.2	0.25	0.2	0.25	0.2	0.25	0.2	0.25	0.2	0.3	0.25	0.3	0.3	0.35	0.35	1	0.35	1	0.4	0.4
Axial spring stiffness	C_a	N/mm	25	15	50	30	72	48	48	32	82	52	90	60	105	71	70	48	100	285	320	440	565	1030
Lateral spring stiffness	C_l	N/mm	475	137	900	270	1200	420	920	290	1550	435	2040	610	3750	1050	2500	840	2000	1490	3600	1700	6070	19200
Torsional rigidity	C_T	Nm/arcmin	5.8	4.4	11.3	8.1	22.1	16.0	37.5	24.7	50.9	32.0	55.6	40.7	131	102	148	145	227	207	379	343	989	1658
		in.lb/arcmin	51.5	38.6	100.4	72.1	195.7	141.6	332.1	218.8	450.5	283.2	491.7	360.4	1158	901	1313	1287	2008	1830	3357	3038	8753	14674
Moment of inertia	J	kgcm ²	0.6	0.7	1.2	1.3	3.2	3.5	8.0	8.5	19.0	20.0	32.0	34.0	76	79	143	146	162	170	435	450	1650	4950
		10 ⁻³ in.lb.s ²	0.5	0.6	1.1	1.2	2.8	3.1	7.1	7.5	16.8	17.7	28.3	30.1	67	70	127	129	143	150	385	398	1460	4381
Hub material			Al	Al	Al	Al	Al	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	
Bellows material			highly flexible stainless steel																					
Approx. weight	m	kg	0.16	0.26	0.48	0.8	1.85	2.65	4.0	6.3	5.7	11.5	28.8	49.4										
		lb	0.35	0.57	1.06	1.77	4.09	5.86	8.84	13.9	12.6	25.4	63.6	109										
Max. permitted temperature		°C	-30 to +100 (bonded)										-30 to +300 (welded)											
		F	-22 to +212 (bonded)										-22 to +572 (welded)											
Dimensions																								
Overall length	L_1	mm	59	66	69	77	83	93	94	106	95	107	105	117	111	125	133	146	140	179	166	230	225	252
Fit length ^{a)}	L_2	mm	22	27	31	36	36	41	43	51	45	55	85	107										
Distance	L_3	mm	6.5	7.5	9.5	11	11	12.5	13	16.5	18	22.5	28	35										
Distance between centers	L_4	mm	17	19	23	27	27	31	39	41	2 x 48	2 x 55	2 x 65	2 x 90										
Bore diameter from \emptyset to \emptyset H7	$D_{1/2}$	mm	8 - 28	10 - 30	12 - 35	14 - 42	19 - 42	22 - 45	24 - 60	35 - 60	40 - 75	50 - 80	50 - 90	60 - 140										
Outer diameter	D_3	mm	49	55	66	81	81	90	110	124	134	157	200	253										

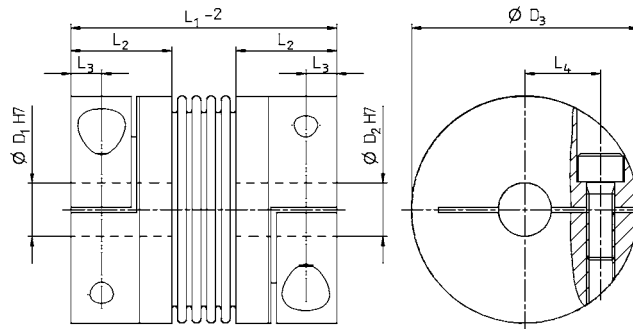
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:




- Completely backlash free
- Fatigue endurable and maintenance free
- High power density through compact design
- High dynamics through low mass moment
- Simple mounting thanks to clamping screw

Optional:

- Bores with key / involute
- Corrosion resistant version
- Other designs, geometry



BC3 – bellows coupling with conical clamping hub

Technical data			Series																			
			15		30		60		150		200		300		500		800	1500	4000	6000	10000	
Length options (see order codes)			A	B	A	B	A	B	A	B	A	B	A	B	A	A	A	A	A	A		
Max. acceleration torque (max. 1000 cycles per hour)	T_B	Nm	15	30	60	150	200	300	500	800	1500	4000	6000	10000								
		in.lb	133	266	531	1328	1770	2655	4425	7080	13275	35400	53100	88500								
EMERGENCY STOP torque (briefly permissible)	T_{Emer}	Nm	22.5	45	90	225	300	450	750	1200	2250	6000	9000	15000								
		in.lb	199	398	797	1991	2655	3983	6638	10620	19913	53100	79650	132750								
Max. speed	n_{Max}	rpm	10000																			
Axial misalignment 	Max. values	mm	1	2	1	2	1.5	2	2	3	2	3	2.5	3.5	2.5	3.5	3.5	3.5	3.5	3	3	
Angular misalignment 	Max. values	°	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1.5	1.5	1.5	1.5	1.5	
Lateral misalignment 	Max. values	mm	0.15	0.2	0.2	0.25	0.2	0.25	0.2	0.25	0.25	0.3	0.25	0.3	0.3	0.35	0.35	0.35	0.4	0.4	0.4	
Axial spring stiffness	C_a	N/mm	25	15	50	30	72	48	82	52	90	60	105	71	70	48	100	320	565	1030	985	
Lateral spring stiffness	C_l	N/mm	475	137	900	270	1200	420	1500	435	2040	610	3750	1050	2500	840	2000	3600	6070	19200	21800	
Torsional rigidity	C_T	Nm/arcmin	5.8	4.4	11.3	8.1	22.1	16.0	50.9	32.0	55.6	40.7	130.9	101.8	148	145	227	379	989	1658	3185	
		in.lb/arcmin	51.5	38.6	100.4	72.1	195.7	141.6	450.5	283.2	491.7	360.4	1158.5	901.0	1313	1287	2008	3357	8753	14674	28189	
Moment of inertia	J	kgcm ²	0.7	0.8	1.5	1.6	3.9	4.1	12.0	16.0	17.0	25.0	51.0	59.0	91	99	132	349	855	2540	6290	
		10 ⁻³ in.lb.s ²	0.6	0.7	1.3	1.4	3.5	3.6	10.6	14.2	15.0	22.1	45.1	52.2	81	88	117	309	757	2248	5567	
Hub material	Steel																					
Bellows material	highly flexible stainless steel																					
Approx. weight	m	kg	0.26	0.27	0.42	0.44	0.71	0.74	1.2	1.8	3	4.2	5.6	8.2	23	32.6	45.5					
		lb	0.57	0.60	0.93	0.97	1.57	1.63	2.65	3.97	6.61	9.33	12.3	18.1	50.7	71.9	100.3					
Max. permitted temperature		°C	-30 to +100 (bonded)										-30 to +300 (welded)									
		F	-22 to +212 (bonded)										-22 to +572 (welded)									
Dimensions																						
Overall length (without L_s)	L_1	mm	48	55	57	65	66	76	75	87	78	90	89	103	97	110	114	141	195	210	217	
Fit length ^{a)}	L_2	mm	19	22	27	32	32	41	41	50	61	80	85	92								
Screw head length	L_s	mm	2.8	3.5	3.5	4	4	5.3	5.3	6.4	7.5	10	10	10								
Bore diameter from \emptyset to \emptyset H7	$D_{1/2}$	mm	10 - 22	12 - 23	12 - 29	15 - 38	15 - 44	24 - 56	24 - 56	30 - 60	35 - 70	50 - 100	60 - 140	70 - 180								
Outer diameter	D_3	mm	49	55	66	81	90	110	124	133	157	200	253	303								
Outer diameter of hub	D_5	mm	49	55	66	81	90	110	122	116	135	180	246	295								

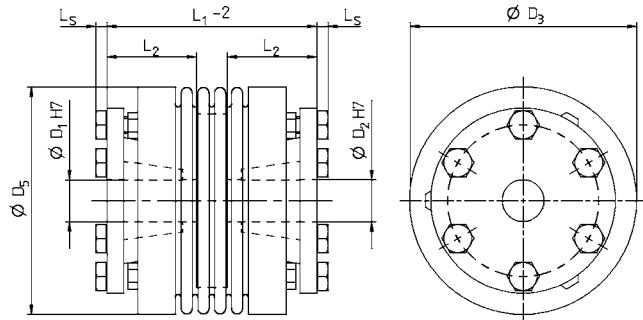
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:




- Completely backlash free
- Fatigue enduring and maintenance free
- High torques owing to conical clamping hub
- High dynamics through higher clamping forces
- Axial mounting via conical clamping hub

Optional:

- Bore with key / involute
- Corrosion resistant version
- Other designs



EC2 – bellows coupling Economy with clamping hub

Technical data			Series									
			2	4.5	10	15	30	60	80	150	300	500
Max. acceleration torque (max. 1000 cycles per hour)	T_B	Nm	2	4.5	10	15	30	60	80	150	300	500
		in.lb	18	40	89	133	266	531	708	1328	2655	4425
EMERGENCY STOP torque (briefly permissible)	T_{Emer}	Nm	3	6.75	15	22.5	45	90	120	225	450	750
		in.lb	27	60	133	199	398	797	1062	1991	3983	6638
Max. speed	n_{Max}	rpm	10000									
Axial misalignment 	Max. values	mm	0.5	1	1	1	1	1.5	2	2	2	2.5
Angular misalignment 	Max. values	°	1	1	1	1	1	1	1	1	1	1
Lateral misalignment 	Max. values	mm	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Axial spring stiffness	C_a	N/mm	8	35	30	30	50	67	44	77	112	72
Lateral spring stiffness	C_l	N/mm	50	350	320	315	366	679	590	960	2940	1450
Torsional rigidity	C_T	Nm/arcmin	0.44	2.0	2.6	6.7	9	21	23	41	46	84
		in.lb/arcmin	3.9	18	23	59	80	186	204	363	407	743
Moment of inertia	J	kgcm ²	0.02	0.07	0.16	0.65	1.2	3	7.5	18	75	117
		10 ⁻³ in.lb.s ²	0.02	0.06	0.14	0.58	1.1	2.7	6.6	16	66	104
Hub material			Al	Al	Al	Al	Al	Al	Al	Steel	Steel	Steel
Bellows material			highly flexible stainless steel									
Approx. weight	m	kg	0.02	0.05	0.06	0.16	0.25	0.4	0.7	1.7	3.8	4.9
		lb	0.044	0.110	0.132	0.353	0.551	0.882	1.54	3.75	8.38	10.8
Max. permitted temperature		°C	-30 to +100 (bonded)									
		F	-22 to +212 (bonded)									
Dimensions												
Overall length	L_1	mm	30	40	44	58	68	79	92	92	109	114
Fit length ^{a)}	L_2	mm	10.5	13	13	21.5	26	28	32.5	32.5	41	42.5
Distance	L_3	mm	4	5	5	6.5	7.5	9.5	11	11	13	17
Distance between centers	L_4	mm	8	11	14	17	20	23	27	27	39	41
Clamping hub from \varnothing to \varnothing H7	$D_{1/2}$	mm	4 - 12.7	6 - 16	6 - 24	8 - 28	10 - 32	14 - 35	16 - 42	19 - 42	24 - 60	35 - 62
Outer diameter	D_3	mm	25	32	40	49	56	66	82	82	110	123

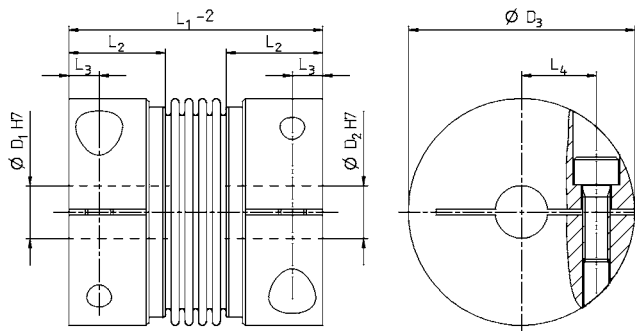
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:

- Completely backlash free
- Fatigue endurable and maintenance free
- Low-cost version
- High dynamics through very low mass moment
- Simple mounting thanks to clamping screw

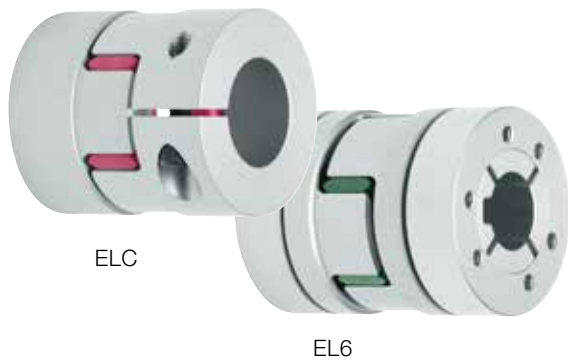
Optional:

- Bores with key / involute
- Optional mounting / self-opening clamp system
- Different hub material (aluminum, steel)



EL – Elastomer couplings

Elastomer couplings ensure precisely manufactured hubs and attachable intermediate elements for maximum true-running accuracy in the drive train. In addition, torque peaks and vibrations are damped to ensure superior smooth running.



Your benefits:

- Compensation for shaft misalignment
- Completely backlash free
- Selectable torsional rigidity/damping
- Compact design
- Extremely simple installation (plug-in)
- Maintenance-free and fatigue endurable
- Ideal for connection to spindle drives, toothed belt drives and linear modules

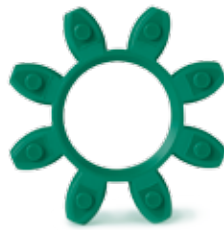
Fields of application:

- Machine tools
- Packaging machines
- Automation and handling technology
- Printing presses
- Particularly linear drives (spindle drives, toothed belt axes)
- Applications in continuous operation

The elastomer insert you select largely determines the characteristics of the entire drive train. Select between 3 versions and thereby determine the damping characteristics and torsional rigidity you require.



Version A
Shore hardness 98 Sh A



Version B
Shore hardness 64 Sh D






Version C
Shore hardness 80 Sh A

Description of elastomer inserts

Version	Features	Relative damping (ψ)	Shore hardness	Material	Temperature range	Color
A	Good damping	0.4-0.5	98 Sh A	TPU	-30°C to +100°C	Red
B	High torsional rigidity	0.3-0.45	64 Sh D	TPU	-30°C to +120°C	Green
C	Very good damping	0.3-0.4	80 Sh A	TPU	-30°C to +100°C	Yellow

The values for proportional damping and the full torque load of the respective elastomer inserts were determined at 10 Hz and +20°C

EL6 – elastomer coupling with conical clamping ring

Technical data			Series																				
			10			20			60			150			300			450			800		
Elastomer insert version (see order code)			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Max. rated torque	T _{NE}	Nm	12.6	16	4.0	17	21	6.0	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
		in.lb	112	142	35	150	186	53	531	664	177	1416	1770	372	2876	3584	743	4691	5841	841	8408	9735	2124
Max. acceleration torque (max. 1000 cycles per hour)	T _{BE}	Nm	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
		in.lb	221	283	53	301	372	106	1062	1328	310	2832	3540	752	5753	7169	1505	9381	11948	1682	16815	19028	3540
Max. speed	n _{Max}	rpm	20000			19000			14000			13000			10000			9000			4000		
Axial misalignment 	Max. values	mm	±1			±2			±2			±2			±2			±2			±2		
Angular misalignment 	Max. values	°	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2
Lateral misalignment 	Max. values	mm	0.1	0.08	0.22	0.1	0.08	0.25	0.12	0.1	0.25	0.15	0.12	0.3	0.18	0.14	0.35	0.2	0.18	0.35	0.25	0.2	0.4
Static torsional rigidity (at 50% T _{BE})	C _T	Nm/arcmin	0.076	0.17	0.026	0.33	0.73	0.15	0.96	2.8	0.41	1.4	3.1	0.33	3.6	5.2	0.37	4.4	7.9	1.2	12	19	3.0
		in.lb/arcmin	0.67	1.5	0.23	2.9	6.5	1.3	8.5	24.8	3.6	12.4	27.4	2.9	31.9	46	3.3	38.9	69.9	10.6	106	168	26.6
Dynamic torsional rigidity (at T _{BE})	C _{Tdy}	Nm/arcmin	0.16	0.48	0.065	0.74	1.3	0.25	2.3	3.5	0.39	3.9	8.5	1	6.9	12	1.8	16	24	3.4	24	52	8.3
		in.lb/arcmin	1.4	4.2	0.58	6.6	11.5	2.2	20.4	31.0	3.5	34.5	75.2	8.9	61.1	106	15.9	142	212	30.1	212	460	73.5
Moment of inertia	J	kgcm ²	0.08			0.30			1.0			2.0			6.0			17			184		
		10 ⁻³ in.lb.s ²	0.07			0.27			0.89			1.8			5.3			15			163		
Hub material			Al			Al			Al			Al			Al			Al			Steel		
Elastomer material			Polymer																				
Approx. weight	m	kg	0.08			0.12			0.3			0.5			0.9			1.5			9.6		
		lb	0.18			0.27			0.66			1.1			2.0			3.3			21		
Dimensions																							
Overall length	L ₁	mm	42			56			64			76			96			110			138		
Fit length ^{a)}	L ₂	mm	15			20			23			28			36			42			53		
Bore diameter from Ø to Ø H7	D _{1/2}	mm	6 - 16			8 - 24			12 - 32			19 - 35			20 - 45			28 - 55			32 - 80		
Outer diameter	D ₃	mm	32			43			56			66.5			82			102			136.5		
Maximum internal diameter (elastomer insert)	D ₇	mm	14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Fastening screws (ISO 4762(12.9))			3x M3			6x M4			4x M5			8x M5			8x M6			8x M8			8x M10		

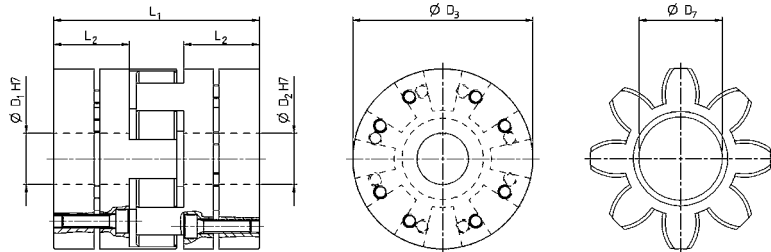
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:

- Extremely simple axial mounting (plug-in)
- Selectable damping characteristics/torsional rigidity (see elastomer options)
- Completely backlash free
- Damping of vibration and torque peaks
- Ideal for connecting linear modules
- High true-running accuracy and smooth running




Optional:

- Bores with key / involute
- Other designs



ELC - elastomer coupling

Compact version with clamping hub

Technical data			Series																										
			2			5			10			20			60			150			300			450			800		
Elastomer insert version (see order code)			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Max. rated torque for elastomer insert ^{a)}	T _{NE}	Nm	2	2.4	0.5	9	12	2	12.5	16	4	17	21	6	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
		in.lb	18	21	4.4	80	106	18	111	142	35	150	186	53	531	664	177	1416	1770	372	2876	3584	743	4691	5841	841	8408	9735	2124
Max. acceleration torque of elastomer insert (max. 1000 cycles per hour) ^{a)}	T _{BE}	Nm	4	4.8	1.0	18	24	4	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
		in.lb	35	42	8.9	159	212	35	221	283	53	301	372	106	1062	1328	310	2832	3540	752	5753	7169	1505	9381	11948	1682	16815	19028	3540
Max. speed	n _{Max}	rpm	15000			15000			13000			12500			11000			10000			9000			8000			4000		
Axial misalignment 	Max. values	mm	±1			±1			±1			±2			±2			±2			±2			±2			±2		
Angular misalignment 	Max. values	°	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1	0.8	1.2
Lateral misalignment 	Max. values	mm	0.08	0.06	0.2	0.08	0.06	0.2	0.1	0.08	0.22	0.1	0.08	0.25	0.12	0.1	0.25	0.15	0.12	0.3	0.18	0.14	0.35	0.2	0.18	0.35	0.25	0.2	0.4
Static torsional rigidity at (50% T _{BE})	C _T	Nm/arcmin	0.02	0.03	0.01	0.04	0.10	0.02	0.08	0.17	0.03	0.33	0.73	0.15	0.96	2.8	0.41	1.4	3.1	0.33	3.6	5.2	0.37	4.4	7.9	1.2	12	19	3.0
		in.lb/arcmin	0.13	0.29	0.04	0.39	0.89	0.13	0.67	1.5	0.23	2.9	6.5	1.33	8.5	25	3.6	12	27	2.9	32	46	3.3	39	70	11	106	168	27
Dynamic torsional rigidity at (T _{BE})	C _{Tdy}	Nm/arcmin	0.03	0.07	0.01	0.09	0.2	0.03	0.16	0.48	0.07	0.74	1.3	0.25	2.3	3.5	0.39	3.9	8.5	1.0	6.9	12	1.8	16	24	3.4	24	52	8.3
		in.lb/arcmin	0.26	0.59	0.09	0.77	1.8	0.27	1.4	4.2	0.58	6.5	12	2.2	20	30.9	3.5	35	75	8.9	61	106	16	142	212	30	212	460	73
Moment of inertia	J	kgcm ²	0.01			0.04			0.06			0.20			0.80			1.60			6.00			13.2			160		
		10 ⁻³ in.lb.s ²	0.01			0.04			0.05			0.18			0.71			1.42			5.31			11.7			142		
Hub material			Al			Al			Al			Al			Al			Al			Al			Steel					
Elastomer material			Polymer																										
Approx. weight	m	kg	0.008			0.02			0.05			0.12			0.30			0.50			0.90			1.5			8.5		
		lb	0.018			0.044			0.11			0.27			0.66			1.1			2.0			3.3			18.8		
Dimensions																													
Overall length	L ₁	mm	20			26			32			50			58			62			86			94			123		
Fit length ^{b)}	L ₂	mm	6			8			10.3			17			20			21			31			34			46		
Distance	L ₃	mm	3			4			5			8.5			10			11			15			17.5			23		
Distance between centers	L ₄	mm	5.5			8			10.5			15.5			21			24			29			38			50.5		
Hub length	L ₅	mm	12			16.7			20.7			31			36			39			52			57			74		
Bore diameter from Ø to Ø H7	D _{1/2}	mm	3 - 8			4 - 12.7			4 - 16			8 - 25			12 - 32			19 - 36			20 - 45			28 - 60			35 - 80		
Outer diameter	D ₃	mm	16			25			32			42			56			66.5			82			102			136.5		
Outer diameter with screw head	D _{3S}	mm	17			25			32			44.5			57			68			85			105			139		
Maximum internal diameter (elastomer insert)	D ₇	mm	6.2			10.2			14.2			19.2			26.2			29.2			36.2			46.2			60.5		

^{a)} Max. torque additionally dependent on minimum selected bore diameter on drive or output side (D_{1/2}).

This only applies to ELC couplings. Please check using "Maximum transmittable torque" table.

^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

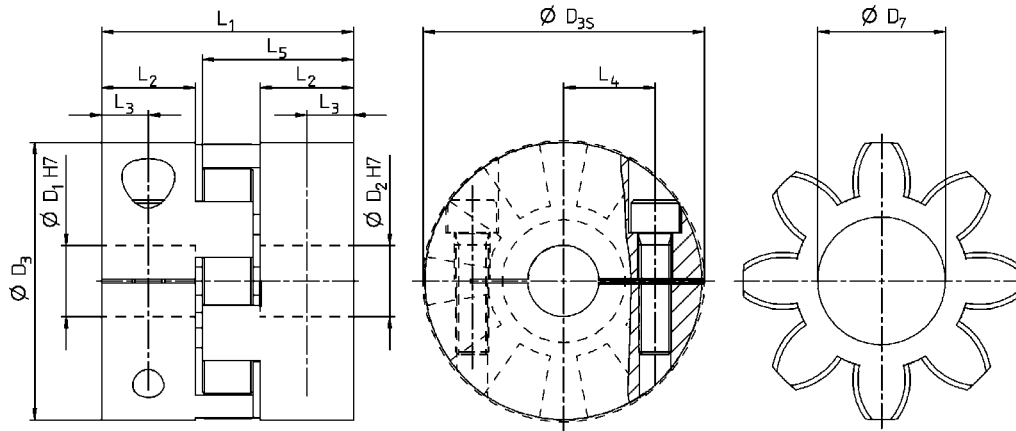
Maximum transmittable torque [Nm]

Series	$D_{1/2}$																		
	$\emptyset 3$	$\emptyset 4$	$\emptyset 5$	$\emptyset 8$	$\emptyset 16$	$\emptyset 19$	$\emptyset 25$	$\emptyset 30$	$\emptyset 32$	$\emptyset 35$	$\emptyset 45$	$\emptyset 50$	$\emptyset 55$	$\emptyset 60$	$\emptyset 65$	$\emptyset 70$	$\emptyset 75$	$\emptyset 80$	
2	0,2	0,8	1,5	2,5															
5		1,5	2	8															
10			4	12	32														
20				20	35	45	60												
60					50	80	100	110	120										
150						120	160	180	200	220									
300						200	230	300	350	380	420								
450								420	480	510	600	660	750	850					
800										700	750	800	835	865	900	925	950	1000	

Maximum transmittable torque according to minimum selected bore diameter ($D_{1/2}$) and ELC series

If intermediate value, please perform linear interpolation

Higher torques possible by means of additional keys.



Your benefits:

- Extremely simple radial mounting (plug-in)
- Selectable damping characteristics/torsional rigidity (see elastomer options)
- Completely backlash free
- Damping of vibration and torque peaks
- Ideal for connecting linear modules
- High true-running accuracy and smooth running

Optional:

- Bores with key / involute
- intermediate cardan piece (higher lateral misalignment)
- Other designs

TL – torque limiters

Torque limiters with integrated mechanical switching mechanism combine dynamic and precise transmission with TÜV-certified torque limitation. They therefore protect the drive and machine from overload.



Your benefits:

- Machine downtimes are avoided
- High availability and productivity
- Precise, preset overload protection (switch-off in 1 – 3 ms)
- Precise repeat accuracy
- Compact and completely backlash free
- Just one protection element per axle

Your benefits:

- Extremely high machine availability
- Extremely high machine dynamics
- Minimal maintenance requirements
- Extremely high service life of machine and components
- TÜV certification

Selectable function systems – re-engagement after overload has been rectified

Single position re-engagement (W) (Standard)



- Re-engagement after exactly 360°
- Guaranteed synchronism
- Switch signal in the event of overload*

Applications:

- Packaging machines
- Machine tools
- Automation systems

Multi-position (D)



- Re-engagement after exactly 60° (Standard)
- Optionally after 30, 45, 60, 90, 120°
- System is immediately available again
- Switch signal in the event of overload*

Applications:

- Packaging machines
- Machine tools
- Automation systems

Full disengagement (F)



- Permanent separation of drive and output
- Free deceleration of centrifugal masses
- Manual re-engagement (every 60°)
- Switch signal in the event of overload*

Applications:

- Applications with extremely high speeds
- and kinetic energy

Load holding version (G)



- None, or limited Separation of drive and output
- Only slow rotation possible during overload
- Re-engagement after torque drop
- Guaranteed load safety
- Switch signal in the event of overload*

Applications:

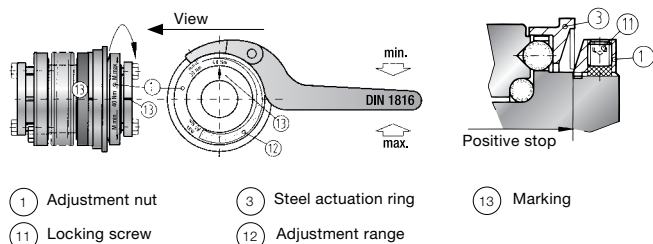
- Particularly for vertical axes such as presses, load-lifting equipment

*(For suitable switches, see Page 409)

Accessories for TL – torque limiters

Alpha torque limiters are factory adjusted to the specified disengagement torque, which is marked on the coupling. Thanks to the installed disc springs with special degressive spring characteristics it is also possible to adjust the preset disengagement torque within the adjustment range. Adjustment of the disengagement torque can be carried out using a torque adjusting wrench.

Torque adjusting wrench for DIN 1816 nuts



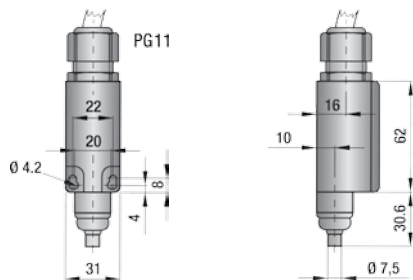
Smaller coupling sizes do not require a torque adjusting wrench. The adjusting nut for the 1.5/2/4.5/10 series can be adjusted with a bolt or pin.

Torque adjusting wrench			
Series	Designation	AC according to the function system	
		W, D, G*	F*
15	GHS TL 15	20047730	20047730
30	GHS TL 30	20047731	20047731
60	GHS TL 60	20047732	20047749
80	GHS TL 80	20047733	20047733
150	GHS TL 150	20047733	20047733
200	GHS TL 200	20047734	20047750
300	GHS TL 300	20047735	20047735
500	GHS TL 500	20047736	20047736
800	GHS TL 800	20047737	20047751
1500	GHS TL 1500	20047738	20047738
2500	GHS TL 2500	20047739	20047752

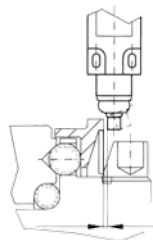
*Function systems: single position (W), multi-position (D), load holding (G), full disengagement (F)

Mechanical limit switch (emergency cut-off)

Dimension drawings



Important:
The switch function must always be checked 100 % after mounting.



The actuation tappet should be positioned as close as possible to the actuation ring of the torque limiter (approx. 0.1–0.2 mm).

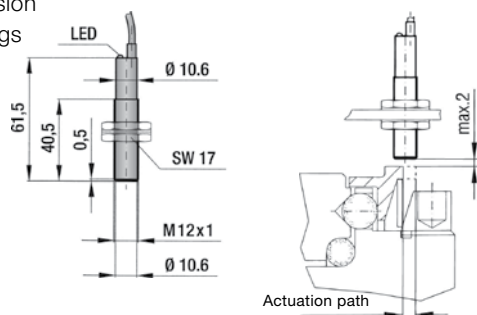
Distance approx. 0.1–0.2 mm

Technical data	ME TL AC: 20022999
Max. voltage:	500 V AC
Max. constant current:	10 A
Degree of protection:	IP 65
Contact type:	NC contact (positive opening)
Ambient temperature:	-30 °C to +80 °C
Actuation:	Tappet (metal)
Circuit symbol:	

The mechanical limit switch is suitable for size 30 and above.

Proximity switch (emergency cut-off)

Dimension drawings



Important:
The switch function must always be checked 100 % after mounting.

Technical data	NAS TL AC: 20022998
Voltage range:	10 to 30 V DC
Max. output current:	200 mA
Max. switching frequency:	800 Hz
Temperature range:	-25 °C to +70 °C
Degree of protection:	IP 67
Switch type:	PNP NC contact
Detection gap:	max. 2 mm
Circuit symbol:	

TL1 – Torque limiter for indirect drives

Technical data

Series			Miniature version (Standard clamping hub)					Standard version (Conical clamping hub)									
			1.5	2	4.5	10	15	30	60	150	200	300	500	800	1500	2500	
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G)	Nm	A	0.1-0.6	0.2-1.5	1-3	2-6	5-15	5-20	10-30	20-70	30-90	100-200	80-200	400-650	600-800	1500-2000	
			in.lb	1-6	2-14	9-27	18-54	45-133	45-177	89-266	177-620	266-797	885-1770	708-1770	3540-5753	5310-7080	13275-17700
	Nm	B	0.4-1	0.5-2.2	2-4.5	4-12	12-25	10-30	25-80	45-150	60-160	150-240	200-350	500-800	700-1200	2000-2500	
			in.lb	4-9	5-20	18-40	36-107	107-222	89-266	222-708	399-1328	531-1416	1328-2124	1770-3098	4425-7080	6195-10620	17700-22125
	Nm	C	0.8-2	1.5-3.5	3-7	7-18	20-40	20-60	50-115	80-225	140-280	220-440	320-650	650-950	1000-1800	2300-2800	
			in.lb	8-18	14-31	27-62	62-160	177-354	177-531	443-1018	708-1992	1239-2478	1947-3894	2832-5753	5753-8408	8850-15930	20355-24780
	Nm	D	-	-	-	-	35-70	50-100	-	-	250-400	-	-	-	-	-	
			in.lb	-	-	-	-	310-620	443-885	-	-	222-3540	-	-	-	-	-
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F)	Nm	A	0.3-0.8	0.2-1	2.5-4.5	2-5	7-15	8-20	10-30	20-60	80-140	120-180	50-150	200-400	1000-1250	1400-2200	
			in.lb	3-8	2-9	23-40	18-45	62-133	71-177	89-266	177-531	708-1239	1062-1593	443-1328	1770-3540	8850-11063	12390-19470
	Nm	B	0.6-1.3	0.7-2	-	4-10	-	16-30	20-40	40-80	130-200	160-300	100-300	450-850	1250-1500	1800-2700	
			in.lb	6-12	7-18	-	36-89	-	142-266	177-354	354-708	1151-1770	1416-2655	885-2655	3983-7523	11063-13275	15930-23895
	Nm	C	-	-	-	8-15	-	-	30-60	80-150	-	300-450	250-500	-	-	-	
			in.lb	-	-	-	71-133	-	-	266-531	708-1328	-	2655-3983	2213-4425	-	-	-
	Max. radial force (radial load capacity) within the permitted distance range $S^a)$	N	S	50	100	200	500	1400	1800	2300	3000	3500	4500	5600	8000	12000	20000
				mm	3-6	5-8	5-11	6-14	7-17	10-24	10-24	12-24	12-26	12-28	16-38	16-42	20-50
Moment of inertia	kgcm ²	J	0.1	0.2	0.5	0.7	1.5	2.5	5.0	16	27	52	86	200	315	2100	
			in.lb.s ² .10 ⁻³	0.1	0.2	0.4	0.6	1.3	2.2	4.4	14	24	46	76	177	279	1859
Max. speed ^{b)}	n_{Max}	rpm	3000					2000					1000				
Material	Hardened steel																
Approx. weight	m	kg	0.03	0.065	0.12	0.22	0.4	0.7	1.0	1.3	2.0	3.0	4.0	5.5	10	28	
			lb	0.07	0.14	0.27	0.49	0.9	1.5	2.2	2.9	4.4	6.6	8.8	12	22	61
Max. permitted temperature	°C	F	-30 to +120														
			-22 to +572														

^{a)} If different, additional bearing required (see illustration 1)

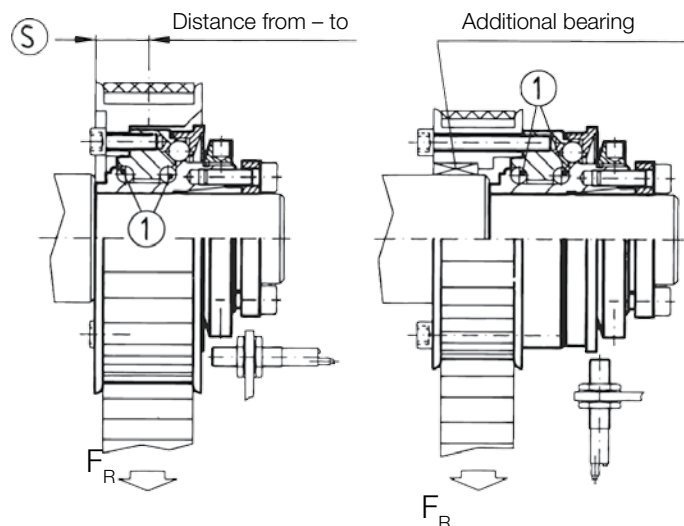
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Your benefits:

- Ideal for connecting toothed belt pulleys and sprocket wheels
- Integrated bearing for indirect drives
- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue durable and maintenance free
- High compactness
- High dynamics through low mass moment

Optional:

- Bores with key
- Other designs



1: Integrated bearings

F_R : Permitted radial force (radial load capacity)

S: permitted distance range



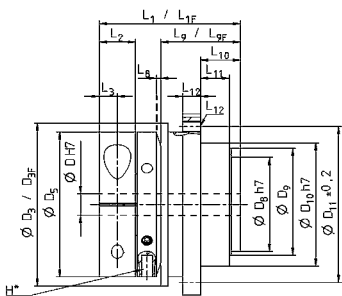
Dimensions

Series		Miniature version (Standard clamping hub)				Standard version (Conical clamping hub)										
		1.5	2	4.5	10	15	30	60	150	200	300	500	800	1500	2500	
Overall length (without L_2)	L_1	mm	23	28	32	39	40	50	54	58	63	70	84	95	109	146
Overall length F (without L_2)	L_{1F}	mm	23	28	32	39	40	50	54	58	66	73	88	95	117	152
Fit length ^{b)}	L_2	mm	7	8	11	11	19	22	27.5	32	32	41	41	49	61	80
Distance	L_3	mm	3.5	4	5	5	-	-	-	-	-	-	-	-	-	-
Distance between centers	L_4	mm	6.5	8	10	15	-	-	-	-	-	-	-	-	-	-
Actuation path	L_6	mm	0.7	0.8	0.8	1.2	1.5	1.7	1.7	1.9	2.2	2.2	2.2	2.2	3.0	3.0
Distance	L_9	mm	11	15	17	22	27	35	37	39	44	47	59	67	82	112
Distance F	L_{9F}	mm	11.5	16	18	24	27	37	39	41.5	47	51.5	62	75	94	120
Distance	L_{10}	mm	5	6	8	11	8	11	11	12	12	15	21	19	25	34
Centering length -0.2	L_{11}	mm	2.5	3.5	5	8	3	5	5	5	5	6	9	10	13.5	20
Thread			4xM2	4xM2.5	6xM2.5	6xM3	6xM4	6xM5	6xM5	6xM6	6xM6	6xM8	6xM8	6xM10	6xM12	6xM16
Thread length	L_{12}	mm	3	4	4	5	6	8	9	10	10	10	12	15	16	24
Distance	L_{13}	mm	1	1.3	1.5	1.5	2.5	2.5	2.5	2.5	3	3	4	4	4.5	6
Screw head length	L_8	mm	-	-	-	-	4	5	5	6	6	8	8	10	12	16
Bore diameter from \emptyset to \emptyset H7	D	mm	4-8	4-12	5-14	6-16	8-22	12-22	12-29	15-37	20-44	25-56	25-56	30-60	35-70	50-100
Outer diameter of actuation ring	D_3	mm	23	29	35	45	55	65	73	92	99	120	135	152	174	242
Outer diameter of actuation ring F	D_{3F}	mm	24	32	42	51.5	62	70	83	98	117	132	155	177	187	258
Flange diameter -0.2	D_4	mm	26	32	40	50	53	63	72	87	98	112	128	140	165	240
Outer diameter of hub	D_5	mm	20	25	32	40	-	-	-	-	-	-	-	-	-	-
Diameter h7	D_8	mm	11	14	17	24	27	32	39	50	55	65	72	75	92	128
Diameter	D_9	mm	13	18	21	30	35	42	49	62	67	75	84	91	112	154
Centering diameter h7	D_{10}	mm	14	22	25	34	40	47	55	68	75	82	90	100	125	168
Hole circle diameter ± 0.2	D_{11}	mm	22	28	35	43	47	54	63	78	85	98	110	120	148	202

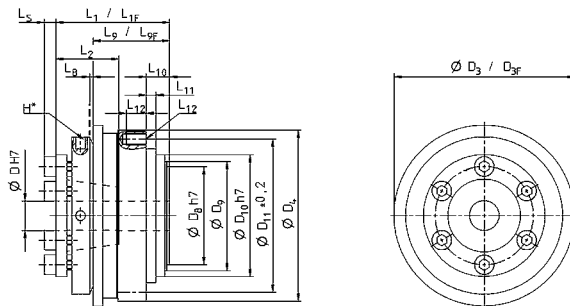
^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{9F} , D_{3F} = Full disengagement version (F)

TL 1 miniature version (1.5-10 series)
with Standard clamping hub






TL 1 Standard version (15-2500 series)
with conical clamping hub



* Bore for torque adjusting wrench, see Page 409

TL2 – Torque limiter

Technical data

Series			1.5	2		4.5		10		15		30		60		80		150		200		300		500		800	1500				
Length options (see order codes)			A	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A				
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G)	T_{Dis}	Nm in.lb	A	0.1-0.6		0.2-1.5		1-3		2-6		5-10		10-25		10-30		20-70		20-70		30-90		100-200		80-200		400-650		650-800	
				1-6		2-14		9-27		18-54		45-89		89-222		89-266		177-620		177-620		266-797		266-797		885-1770		885-1770		3540-5753	
		Nm in.lb	B	0.4-1		0.5-2		3-6		4-12		8-20		20-40		25-80		30-90		45-150		60-160		150-240		200-350		500-800		700-1200	
				4-9		5-18		27-54		36-107		71-177		177-354		221-708		266-797		399-1328		531-1416		1328-2124		1770-3098		4425-2080		6195-10620	
		Nm in.lb	C	0.8-1.5		-		-		-		-		-		-		-		80-180		120-240		200-320		300-500		650-850		1000-1800	
				8-14																708-1593		1062-2124		1770-2832		2655-4425		5753-7523		8850-15930	
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F)	T_{Dis}	Nm in.lb	A	0.3-0.8		0.2-1		2.5-4.5		2-5		7-15		8-20		20-40		20-60		20-60		80-140		120-180		60-150		200-400		1000-1250	
				3-8		2-9		22-40		18-45		62-133		71-177		177-354		177-531		177-531		708-1239		1062-1592		531-1328		1770-3540		8850-11063	
		Nm in.lb	B	0.6-1.3		0.7-2		-		5-10		-		16-30		30-60		40-80		40-80		130-200		160-300		100-300		450-800		1250-1500	
				6-12		7-18				45-89				142-266		268-531		354-708		354-708		1151-1770		1416-2655		885-2655		3983-7080		11063-13275	
		Nm in.lb	C	-		-		-		-		-		-		-		-		80-150		-		-		250-500		-		-	
																				708-1328						2213-4425					
Axial misalignment 	Max. values	mm	0.5	0.5	0.6	0.7	1	1	1.2	1	2	1	2	1.5	2	2	3	2	3	2	3	2	3	2.5	3.5	2.5	3.5	3.5	3.5		
Angular misalignment 	Max. values	°	1	1	1.5	1.5	2	1.5	2	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1.5	2	1.5	2	2	2	2.5	2.5	2.5			
Lateral misalignment 	Max. values	mm	0.15	0.15	0.20	0.20	0.25	0.20	0.30	0.15	0.2	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.25	0.30	0.25	0.3	0.30	0.35	0.35	0.35	0.35			
Axial spring stiffness	C_a	N/mm	16	11	20	25	29	36	48	25	15	50	30	72	48	48	32	82	52	90	60	105	71	70	48	100	320				
Lateral spring stiffness	C_l	N/mm	70	40	30	290	45	280	145	475	137	900	270	1200	420	920	255	1550	435	2040	610	3750	1050	2500	840	2000	3600				
Torsional rigidity	C_T	Nm/arcmin	0.20	0.35	0.38	2.0	1.5	2.6	2.3	5.8	4.4	11	8	22	16	38	25	51	32	56	41	122	102	148	145	227	379				
		in.lb/arcmin	1.8	3.1	3.3	18	13	23	21	51	39	100	72	196	142	332	219	451	283	492	360	1081	901	1313	1287	2008	3357				
Moment of inertia	J	kgcm ²	0.1	0.1	0.1	0.2	0.2	0.6	0.7	1	1.5	2.7	3.2	7.5	8	18	19	25	28	51	53	115	118	228	230	420	830				
		in.lb.s ² .10 ⁻³	0.09	0.09	0.09	0.18	0.18	0.53	0.62	0.89	1.33	2.39	2.83	6.64	7.1	16	17	22	25	45	47	102	104	202	204	372	735				
Hub material			Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel			
Max. speed ^{b)}	n_{Max}	rpm	3000												2000						1000										
Bellows material			highly flexible stainless steel																												
Protection element material			Hardened steel																												
Approx. weight	m	kg	0.035	0.07	0.2	0.3	0.4	0.6	1.0	2.0	2.4	4.0	5.9	9.6	14	21															
		lb	0.08	0.15	0.44	0.66	0.88	1.32	2.21	4.41	5.30	8.82	13.1	21.2	30.9	46.3															
Max. permitted temperature		°C	-30 to +100 (bonded)																						-30 to +300 (welded)						
		F	-22 to +212 (bonded)																						-22 to +572 (welded)						

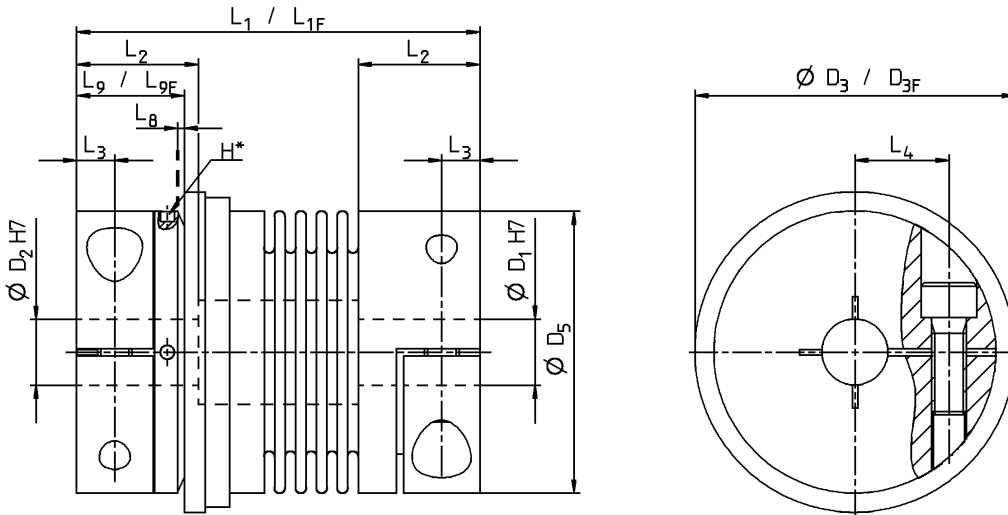
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Dimensions

Series			1.5	2		4.5		10		15		30		60		80		150		200		300		500		800	1500	
Length options (see order codes)			A	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A	
Overall length	L_1	mm	42	46	51	57	65	65	74	75	82	87	95	102	112	115	127	116	128	128	140	139	153	163	177	190	223	
Overall length F	L_{1F}	mm	42	46	51	57	65	65	74	75	82	87	95	102	112	117	129	118	130	131	143	142	156	167	181	201	232	
Fit length ^{a)}	L_2	mm	11	13		16		16		22		27		31		35		35		40		42		51		48		67
Distance	L_3	mm	3.5	4		5		5		6.5		7.5		9.5		11		11		12.5		13		17		18		22.5
Distance between centers	L_4	mm	6	8		10		15		17		19		23		27		27		31		39		41		2x48		2x55
Actuation path	L_8	mm	0.7	0.8		0.8		1.2		1.5		1.5		1.7		1.9		1.9		2.2		2.2		2.2		2.2		3.0
Distance	L_9	mm	12	13		15		17		19		24		28		31		31		35		35		45		50		63
Distance (F)	L_{9F}	mm	11.5	12		14		16		19		22		29		31		30		33		35		43		54		61
Bore diameter from \emptyset to \emptyset H7	$D_{1/2}$	mm	3 - 8	4-12		5-14		6-16		10-26		12-30		15-32		19-42		19-42		24-45		30-60		35-60		40-75		50-80
Outer diameter of actuation ring	D_3	mm	23	29		35		45		55		65		73		92		92		99		120		135		152		174
Outer diameter of actuation ring F	D_{3F}	mm	24	32		42		51.5		62		70		83		98		98		117		132		155		177		187
Outer diameter of hub	D_5	mm	19	25		32		40		49		55		66		81		81		90		110		123		134		157
Max. internal diameter	D_7	mm	9.1	12.1		14.1		20.1		21.1		24.1		32.1		36.1		36.1		42.1		58.1		60.1		60.1		68.1

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{9F} , D_{3F} = Full disengagement version (F)



* Bore for torque adjusting wrench, see Page 409

Your benefits:

- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue endurable and maintenance free
- Compensation of shaft misalignments
- Small installation space despite protection element
- Radial mounting via clamping screw




Optional:

- Bores with key / involute
- Other designs



TL3 – Torque limiter

Technical data

Series			15		30		60		150		200		300		500		800	1500	2500	
Length options (see order codes)			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A	A	
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G)	T_{Dis}	Nm in.lb	A	5-10		10-25		10-30		20-70		30-90		100-200		80-200		400-650	650-850	1500-2000
				45-89		89-222		89-266		177-620		266-797		885-1770		708-1770		3540-5753	5753-7523	13275-17700
		Nm in.lb	B	8-20		20-40		25-80		45-150		60-160		150-240		200-350		500-800	700-1200	2000-2500
				71-177		177-354		222-708		399-1328		531-1416		1328-2124		1770-3098		4425-7080	6195-10620	17700-22125
		Nm in.lb	C	-		-		-		80-200		140-280		220-400		300-500		600-900	1000-1800	2300-2800
										708-1770		1239-2478		1947-3540		2655-4425		5310-7965	8850-15930	20355-24780
Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F)	T_{Dis}	Nm in.lb	A	7-15		8-20		20-40		20-60		80-140		120-180		60-150		200-400	1000-1250	1400-2200
				62-133		71-177		177-354		177-531		708-1239		1062-1593		531-1328		1770-3540	8850-11063	12390-19470
		Nm in.lb	B	-		16-30		30-60		40-80		130-200		160-300		100-300		450-800	1250-1500	1800-2700
						142-266		266-531		354-706		1151-1770		1416-2655		885-2855		3982-7080	11063-13275	15930-23895
		Nm in.lb	C	-		-		-		80-150		-		-		250-500		-	-	-
										708-1328						2213-4425				
Axial misalignment 	Max. values	mm	1	2	1	2	1.5	2	2	3	2	3	2.5	3.5	2.5	3.5	3.5	3.5	3.5	
Angular misalignment 	Max. values	°	1	1.5	1	1.5	1	1.5	1	1.5	1.5	2	1.5	2	2	2.5	2.5	2.5	2.5	
Lateral misalignment 	Max. values	mm	0.15	0.20	0.20	0.25	0.20	0.25	0.20	0.25	0.25	0.30	0.25	0.30	0.30	0.35	0.35	0.35	0.35	
Axial spring stiffness	C_a	N/mm	25	15	50	30	72	48	82	52	90	60	105	71	70	48	100	320	1150	
Lateral spring stiffness	C_l	N/mm	475	137	900	270	1200	380	1550	435	2040	610	3750	1050	2500	840	2000	3600	6070	
Torsional rigidity	C_T	Nm/arcmin	5.8	4.4	11	8.1	22	16	51	32	56	41	122	102	148	145	227	379	989	
		in.lb/arcmin	51	39	100	72	196	142	451	283	492	360	1081	901	1313	1287	2008	3357	8753	
Moment of inertia	J	kgcm ²	1.0	1.5	2.8	3.0	7.5	8.0	19	20	28	30	55	60	110	128	200	420	2570	
		in.lb.s ² .10 ⁻³	0.85	1.3	2.4	2.6	6.4	6.8	16	17	24	26	47	51	94	109	170	357	2185	
Max. speed ^{b)}	n_{Max}	rpm	3000						2000						1000					
Hub material			Steel																	
Bellows material			highly flexible stainless steel																	
Protection element material			Hardened steel																	
Approx. weight	m	kg	0.3		0.4		1.2		2.3		3.0		5.0		6.5		9.0	16.3	35	
		lb	0.66		0.88		2.65		5.07		6.61		11.0		14.3		19.8	35.9	77.2	
Max. permitted temperature		°C	-30 to +100 (bonded)														-30 to +300 (welded)			
		F	-22 to +212 (bonded)														-22 to +572 (welded)			

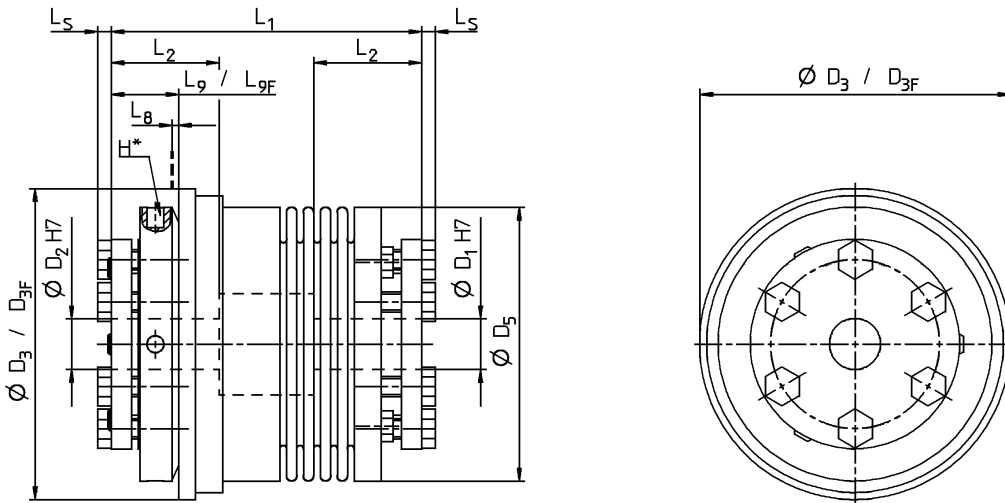
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Dimensions

Series		15		30		60		150		200		300		500		800	1500	2500	
Length options (see order codes)		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A	A	
Overall length (without L_3)	L_1	mm	62	69	72	80	84	94	93	105	99	111	114	128	123	136	151	175	246
Overall length F	L_{1F}	mm	62	69	72	80	84	94	93	105	102	114	117	131	127	140	151	184	252
Fit length ^{a)}	L_2	mm	19		22		27		32		32		41		41		49	61	80
Actuation path	L_9	mm	1.5		1.5		1.7		1.9		2.2		2.2		2.2		2.2	3	3
Distance	L_3	mm	13		16		18		19		19		23		25		31	30	34
Distance F	L_{3F}	mm	13		14		17		18		17		20		22		20	26	31
Screw head length	L_8	mm	2.8		3.5		3.5		4		4		5.3		5.3		6.4	7.5	10
Bore diameter from \varnothing to \varnothing H7	$D_{1/2}$	mm	10-22		12-23		12-29		15-37		20-44		25-56		25-60		30-60	35-70	50-100
Outer diameter of actuation ring	D_3	mm	55		65		73		92		99		120		135		152	174	243
Outer diameter of actuation ring F	D_{3F}	mm	62		70		83		98		117		132		155		177	187	258
Outer diameter of hub	D_5	mm	49		55		66		81		90		110		123		133	157	200

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{3F} , D_{3F} = Full disengagement version F



* Bore for torque adjusting wrench, see Page 409

Your benefits:

- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue endurable and maintenance free
- Compensation of shaft misalignments
- Small installation space despite protection element
- Axial mounting via conical clamping hub

Optional:

- Bores with key / involute
- Other designs

