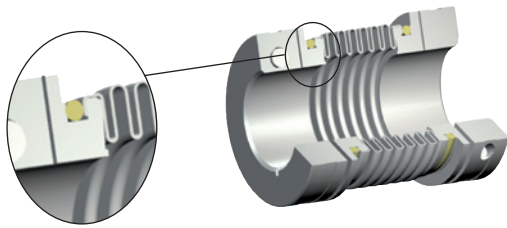


TOOLFLEX®

Metal bellow-type couplings

Technical description

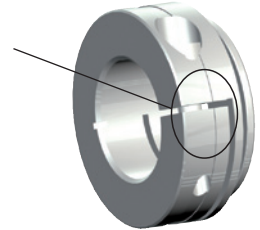
TOOLFLEX® is a metal bellow-type coupling, a coupling system which has proven its worth in the field in many cases. The metal bellow compensates perfectly for axial, radial and angular displacements. At the same time its geometric shape allows for high torsional stiffness and a low mass moment of inertia. TOOLFLEX® is manufactured in twelve sizes for maximum torques up to 600 Nm. Its main application ranges are both positioning drives, e. g. ball spindles with a high incline, and indexing tables or planetary and worm gears with small gear ratios.



Subject to its well-proven joint procedure a non-positive, backlash-free connection of the aluminium hubs with the multilayer bellows made from stainless steel is generated. The flanged insert connection for sizes 16 to 55 ensures a torque transmission of every single bellow layer. Since TOOLFLEX® is a metal coupling, it remains fatigue-endurable in the high temperature range up to a maximum of 200 °C. Apart from that it is resistant to the effect of media or critical operating conditions, respectively.

The well-known shaft-hub-connection by means of clamping hubs ensures an easy assembly by a radial clamping screw. Subject to two slots in the hub there is no deformation of the bellow when tightening the clamping screw. For higher friction torques type KN with taper hubs can be used.

clamping hub with two slots



Types



Summary																																																	
Size	Type	Bellow-hub-connection	Thread for setscrews (hub type 1.0/1.1)			Clamping hubs (hub type 2.5/2.6)			KN			PI			CF																																		
			Torque of bellow T _{KN} [Nm]	Torque of bellow T _K max. [Nm]	Max. speed [rpm]	Torque of bellow T _{KN} [Nm]	Torque of bellow T _K max. [Nm]	Max. speed [rpm]	Torque of bellow T _{KN} [Nm]	Torque of bellow T _K max. [Nm]	Max. speed [rpm]	Torque of bellow T _{KN} [Nm]	Torque of bellow T _K max. [Nm]	Max. speed [rpm]	Torque of bellow T _{KN} [Nm]	Torque of bellow T _K max. [Nm]	Max. speed [rpm]																																
5	S	Bonded Maximum ambient temperature 100°C	0,1	0,15	47700																																												
	M																																																
7	S																	Bonded Maximum ambient temperature 100°C	1	1,5	31800	1	1,5	31800																									
	M																																																
9	S																																	Bonded Maximum ambient temperature 100°C	1,5	2,25	23800	1,5	2,25	23800									
	M																																																
12	S	Bonded Maximum ambient temperature 100°C	2	3	19000	2	3	19100																																									
	M																																																
16	S																	Flanged Maximum ambient temperature 200°C	5	7,5	14900	5	7,5	14900																									
	M																																																
20	S																																	Flanged Maximum ambient temperature 200°C	15	22,5	11900	15	22,5	11950				15	22,5	11950			
	M																																																
30	S	Flanged Maximum ambient temperature 200°C				35	52,5	8700	35	52,5	15280	35	52,5	8700	35	52,5	8700																																
	M																																																
38	S																	Flanged Maximum ambient temperature 200°C				65	97,5	7350	65	97,5	12600	65	97,5	7350	65	97,5	7350																
	M																																																
42	S																																	Flanged Maximum ambient temperature 200°C				95	142,5	6820	95	142,5	11580	95	142,5	6820	95	142,5	6820
	M																																																
45	S	Flanged Maximum ambient temperature 200°C				170	255	5750	170	255	9300	170	255	5750	170	255	5750																																
	M																																																
55	S																	Welded Maximum ambient temperature 200°C				340	510	4800	340	510	7870	340	510	4800																			
	M																																																
65	S																																	Welded Maximum ambient temperature 200°C				600	900	3850									
	M																																																

TOOLFLEX®

Metal bellow-type couplings

Hub types

Due to the numerous applications of TOOLFLEX® for many different applications and mounting situations, this coupling system is available with various hub designs and two different lengths of bellows. A combination of the components forms a type. TOOLFLEX® is supplied as a complete unit; a supply of individual components is not possible.



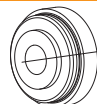
Type 1.0 with feather keyway and setscrew
Positive locking power transmission. Perm. torque depending on the permissible surface pressure. Not suitable for backlash-free power transmission with heavily reversing operation.



Type 1.1 without keyway, with setscrew
Non-positive torque transmission, suitable for backlash-free transmission of very small torques.



Type 1.3 with spline bore
Positive locking power transmission. Spline on request of customers (e. g. s for shaft with flattening)



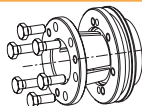
Type 1.2 without feather keyway, without thread for setscrews
For low torques Suitable for bonding or pressing onto the shaft.



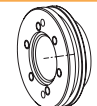
Type 2.5 Clamping hub double slot, without feather keyway
Frictionally engaged, backlash-free shaft-hub-connection. Transmittable torques depending on bore diameter



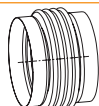
Type 2.6 Clamping hub double slot, with feather keyway
Positive locking power transmission with additional frictionally engaged condition. The frictionally engaged condition prevents or reduces reverse backlash, respectively. Surface pressure of the keyway connection is reduced.



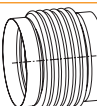
Type 6.5 Taper hub KN
Integrated frictionally engaged shaft-hub-connection for the transmission of higher torques in the area of the shaft-hub-connection.



Flange
Flange to connect to customer's component. Special dimensions on request.



Bellow type S
Bellow with 4 layers made of stainless steel; compact design with high torsion spring stiffness.



Bellow type M
Bellow with 4 layers made of stainless steel; realizing large shaft distance dimensions and displacements

Special designs on request of customers

Special bellows

Bellows with 1, 2 or 3 layers available on request.