

EK2 Series Elastomer Couplings

FEATURES

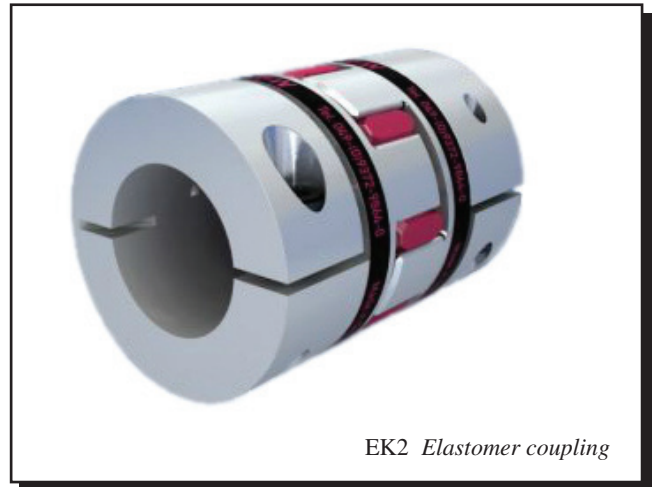
- For use with Magtrol Dynamometers or In-Line Torque Transducers (TMB/TM/TMHS)
- High torque
- Concentrically machined hubs
- Backlash free
- Vibration damping
- Easy assembly
- High speed version available with balancing

DESCRIPTION

EK elastomer couplings provide the ideal complement to Magtrol's Dynamometers and Torque Transducers (TMB/TM/TMHS).

The torque transmission element consists of a clamping hub and a elastomer insert. The couplings are both torsionally stiff and flexible in order to compensate for axial, angular and radial misalignment when connecting two shaft ends. The high torsional spring rate of the couplings ensures a high torsional stiffness and angular precision.

RATINGS



EK2 Elastomer coupling

Material

Clamping hub, up to series 450: high strength aluminum.
From series 800 and up: steel.

Elastomer insert: precision molded, wear resistant, and thermally stable polymer.

Design

Two coupling hubs are concentrically machined with curved jaws.

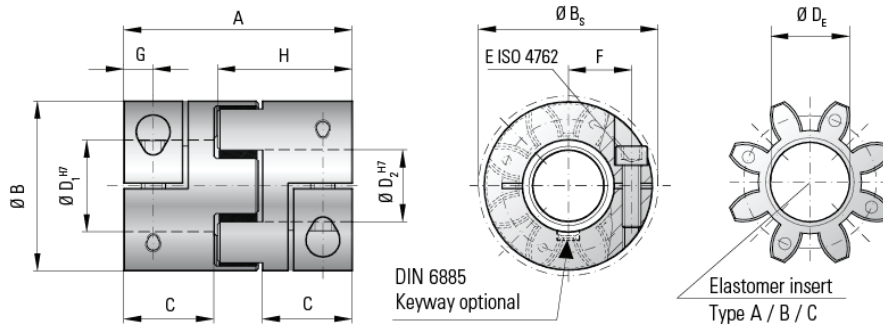
	EK2 Series																	
	20			60			150			300			450			800		
Type (elastomer insert)	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Rated torque (Nm)	17	21	6	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
Max. torque** (Nm)	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Moment of inertia per hub J ₁ /J ₂ (10 ⁻³ kgm ²)	0.016			0.05			0.13			0.4			0.9			9.5		
Approx. weight (kg)	0.15			0.35			0.6			1.1			1.7			10		
Speed standard (rpm)	19,000			14,000			11,500			9,500			8,000			4,000		
Speed balanced (G _{2.5}) (10 ³ rpm)	46	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

** Maximum transferable torque of the clamping hub depends on the bore diameters (see below table)

EK2 Series	Ø 8	Ø 16	Ø 19	Ø 25	Ø 30	Ø 32	Ø 35	Ø 45	Ø 50	Ø 55	Ø 60	Ø 65	Ø 70	Ø 75	Ø 80
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

Higher torque trough additional keyway possible.

DIMENSIONS



		EK2 series																	
		20			60			150			300			450			800		
Type (elastomer insert)		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Overall length (mm)	A	66			78			90			114			126			162		
Outside diameter (mm)	B	42			56			66.5			82			102			136.5		
Outside diameter with screw head (mm)	B_s	44.5			57			68			85			105			139		
Mounting length (mm)	C	25			30			35			45			50			65		
Inside diameter range H7 (mm)	D_{1/2}	8-25			12-32			19-36			20-45			28-60			35-80		
Inside diameter of elastomer (mm)	D_E	19.2			26.2			29.2			36.2			46.2			60.5		
Clamping screw (ISO 4762)	E	M5			M6			M8			M10			M12			M16		
Tightening torque of the clamping screw (Nm)		8			15			35			70			120			290		
Distance between centers (mm)	F	15.5			21			24			29			38			50.5		
Distance (mm)	G	8.5			10			12			15			17.5			23		
Hub length (mm)	H	39			46			52.5			66			73			93.5		

All ratings listed are Manufacturer's Specifications.

STIFFNESS

		EK2 series								
		20			60			150		
Type (elastomer insert)		A	B	C	A	B	C	A	B	C
Static torsional stiffness (Nm/rad)	CT	1140	2500	520	3290	9750	1400	4970	10600	2000
Dynamic torsional stiffness (Nm/rad)	CT _{dyn}	2540	4440	876	7940	11900	2072	13400	29300	3590
Lateral (mm)	Max. values	0.1	0.08	0.25	0.12	0.1	0.25	0.15	0.12	0.3
Angular (degree)		1	0.8	1.2	1	0.8	1.2	1	0.8	1.2
Axial (mm)		±2			±2			±2		

		EK2 series								
		300			450			800		
Type (elastomer insert)		A	B	C	A	B	C	A	B	C
Static torsional stiffness (Nm/rad)	CT	12400	18000	3000	15100	27000	4120	41300	66080	10320
Dynamic torsional stiffness (Nm/rad)	CT _{dyn}	23700	40400	6090	55400	81200	11600	82600	180150	28600
Lateral (mm)	Max. values	0.18	0.14	0.35	0.2	0.18	0.35	0.25	0.2	0.4
Angular (degree)		1	0.8	1.2	1	0.8	1.2	1	0.8	1.2
Axial (mm)		±2			±2			±2		

Static torsional stiffness at 50% T_{KN}
 Dynamic torsional stiffness at T_{KN}
 1 Nm = 8.85 in lbs

ORDERING INFORMATION

When ordering a coupling, please indicate the shaft diameter of the machines to which the transducer or dynamometer will be coupled. In the part number, H7 indicates the manufacturing tolerance of the coupling.

The requested diameter should be within the dimension range given under D_{1/2} (see above table)

Example: Shaft diameter of machine: 32 mm
 Shaft diameter of TM310: 20 mm
 Coupling model EK2-150-B
 Part number EK2-150-B 32H7/20H7

Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



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