

TX1

WITH KEYWAY MOUNTING

0.5 – 810 Nm

ABOUT

FEATURES

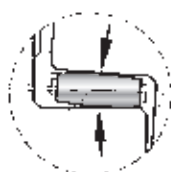
- ▶ very low mass and moment of inertia
- ▶ corrosion proof
- ▶ economically priced

MATERIAL

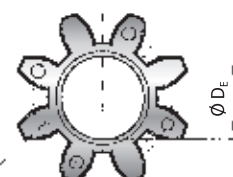
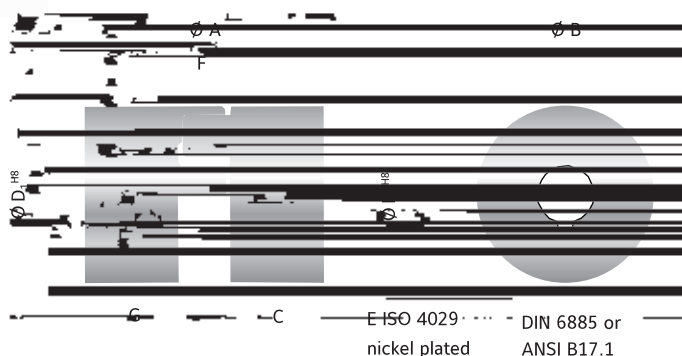
- ▶ **Hubs:** extremely rigid, glass fiber reinforced thermoplastic
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two highly concentric, precision molded hubs with curved jaws, keyways, and set screws, suitable for use in temperatures ranging from -20 to +100°C. Elastomer is press fit for zero backlash. Coupling system is electrically isolating.



convex elastomer insert
for higher misalignment



elastomer insert
type A / B / C

MODEL TX1

SIZE		2			10			20			60			150			300		
Elastomer insert		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Rated torque (Nm)	T_{KN}	2	2.4	0.5	12.5	16	4	17	21	6	60	75	20	160	200	42	325	405	84
Max. torque (Nm)	T_{Kmax}	4	4.8	1	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170
Overall length (mm)	A	20			35			66			78			90			114		
Outside diameter (mm)	B	17			32			42			56			66.5			82		
Mounting length (mm)	C	6.5			12			25			30			35			45		
Inside diameter possible from - to H8 (mm)	$D_{1/2}$	3 - 8			6 - 16			10 - 24			16 - 30			19 - 38			20 - 45		
Inside diameter of elastomer (mm)	D_E	6.2			14.2			19.2			27.2			30.2			38.2		
Set screw (ISO 4029) (Nm)	E	M3			M3			M4			M5			M6			M6		
Tightening torque of the clamping screw max. (Nm)		0.8			0.8			1.5			3			6			6		
Width elastomer insert (mm)	F	5			9.5			12			14			15			18		
Distance (mm)	G	3			3.5			4			6			7			7		
Moment of inertia per Hub (kgm ²)	J_1/J_2	1.9			1.4			10			30			70			180		
Approx. weight (g)		5.9			30			80			180			270			510		
Speed (min ⁻¹)		12,000			10,000			9,000			8,000			7,000			6,000		
Static torsional stiffness(Nm/rad)	C_i	50	115	1.7	260	600	90	1140	2500	520	3290	9750	1400	4970	10600	1130	12400	18000	1280
Dynamic torsional stiffness (Nm/rad)	C_{Tdyn}	100	230	35	541	1650	224	2540	4440	876	7940	11900	1350	13400	29300	3590	23700	40400	6090
Lateral (mm)	Max. values	0.08	0.06	0.2	0.2	0.17	0.2	0.2	0.2	0.22	0.22	0.22	0.25	0.25	0.25	0.28	0.28	0.28	0.3
Angular (Degree)		1			1.5			1.5			1.5			1.5			1.5		
Axial (mm)		±1			±1			±1.5			±1.5			±2			±2		

Static torsional stiffness at 50% T_{KN}

Dynamic torsional stiffness at T_{KN}

DESCRIPTION OF THE ELASTOMER TYPES IN THE TX SERIES

Type	Shore hardness	Color	Material	Relative damping (ψ)	Temperature range	Features
A	98 Sh A	red	TPU	0.4 - 0.5	-30°C to +100°C	high damping
B	64 Sh D	green	TPU	0.3 - 0.45	-30°C to +100°C	high torsional stiffness
C	80 Sh A	yellow	TPU	0.3 - 0.4	-30°C to +100°C	very high damping

FUNCTION

The equalizing element of the TX coupling is the elastomer insert. It transmits torque without backlash or vibration. The elastomer defines the characteristics of the entire drive system.

Through a special convex tooth geometry in the elastomer ring, greater shaft misalignment can be compensated for. Changing the Shore hardness of the elastomer allows the ECOLIGHT coupling to be optimized for ideal torsional characteristics.

BORE DIAMETER DEPENDS ON HUB STRUCTURE

Size	2	10	20	60	150	300
 Structure I from - to	solid hub no special structure	6 - 12.9	10 - 14.9	16 - 20.9	19 - 26.9	20 - 28.9
 Structure II from - to	solid hub no special structure	13 - 16	15 - 19.9	21 - 25.9	27 - 33.9	29 - 38.9
 Structure III from - to	solid hub no special structure		20 - 24	26 - 30	34 - 38	39 - 45

ORDERING EXAMPLE	TX1	60	A	20	24	XX
Model	●					Special designation only (e.g. special bore / keyway dimensions).
Size		●				
Elastomer insert type			●			
Bore D1 H8				●		
Bore D2 H8					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. TX1 / 60 / A / 20 / 24 / XX; XX="D" holes per drawing)						