

LOW COST AND RELIABLE.

ECOLIGHT[®]

ELASTOMER COUPLINGS

SERIES TX 1 | 0.5 – 810 Nm



R+W[®]
COUPLING TECHNOLOGY

THE ULTIMATE COUPLING FROM 2 – 810 Nm

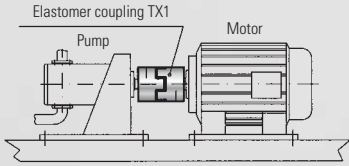
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ELASTOMER COUPLING ECOLIGHT®

APPLICATION EXAMPLES

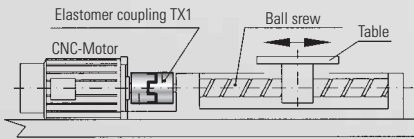
AREAS OF APPLICATION

PROPERTIES



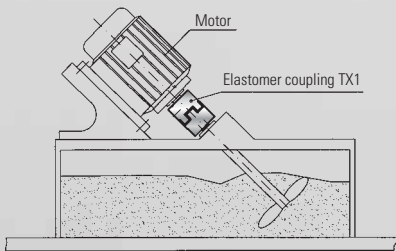
- Pumps
- Rolling gate drives

- High damping
- Compensation for misalignment
- Wear and maintenance free
- Corrosion resistant



- NC-axes
- Ball-screws
- Actuators

- Low backlash
- High rigidity
- Vibration damping



- Agitator
- Pumps for the chemical industry



For use in explosive environments

- Available for the full product range
- For the hazardous areas 1/21 and 2/22 the ECOLIGHT® Elastomer couplings are registered according to the directive ATEX 95 a

Function

The equalizing element of an EK coupling is the convex elastomer insert. It transmits the torque without backlash or vibration. The elastomer insert defines the features of the entire coupling and/or of the entire

drive system. The ECOLIGHT®-Coupling compensates for lateral, angular and axial misalignment.



Type A
Shore hardness 98 Sh A



Type B
Shore hardness 64 Sh D



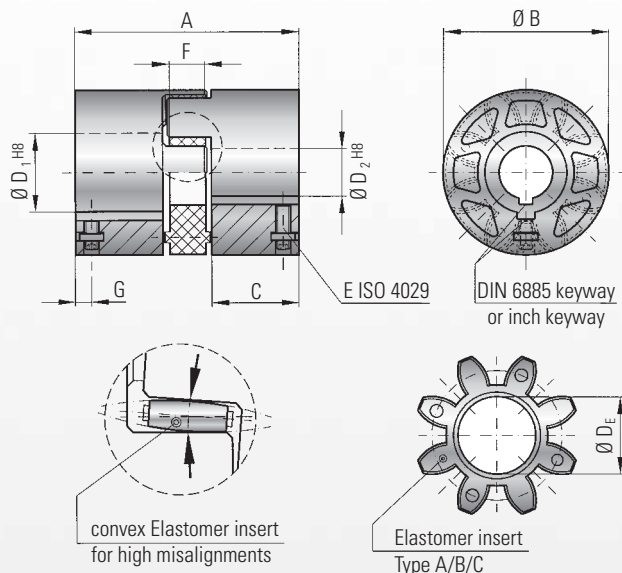
Type C
Shore hardness 80 Sh A

Specification of the Elastomer inserts

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

The values of the relative damping were determined at 10 Hz and +20° C.

MODEL TX 1



Properties:

- Low moment of inertia
- Economically priced
- Corrosion resistant
- Low backlash, due to keyway connection
- Electrically insulating
- Vibration damping

Material:

Hubs: high strength fiber reinforced plastic
Elastomer insert: precision molded wear resistant and thermally stable polymer

Design:

Two couplings hubs concentrically molded with concave driving jaws
Bore tolerance H8 + keyway + clamping set screw

Speed:

See below, higher speeds on request

Tolerance:

On the hub/shaft connection max. 0.1 mm

Temperature:

-20°C to +100°C

Model TX 1		Series																	
		2			10			20			60			150			300		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Elastomer insert																			
Rated torque (Nm)	T_{KN}	1	1.2	0.5	12.5	16	4	17	21	6	60	75	20	160	200	42	325	405	84
Max. torque (Nm)	T_{Kmax}	2	2.4	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		
Outer diameter (mm)	B	17			32			42			56			66.5			82		
Mounting length (mm)	C	6.5			12			25			30			35			45		
Inner diameter possible from - to (mm)	$D_{1/2}$	3-8			6-16			10-24			16-30			19-38			20-45		
Inner diameter max. (elastomer) (mm)	D_E	6.2			14.2			19.2			27.2			30.2			38.2		
Set screw ISO 4029	E	M3*			M3			M4			M5			M6			M6		
Tightening torque (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 (hub) (10^{-3} kgm ²)	J_1/J_2	0.00005			0.0014			0.01			0.03			0.067			0.18		
Approx. weight (kg)		0.02			0.03			0.08			0.18			0.27			0.51		
Speed (rpm)		12,000			10,000			9,000			8,000			7,000			6,000		
Static torsional stiffness (Nm/rad)	C_T	50	115	17	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)	0.08	0.06	0.1	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)	1.2			1.5			1.5			1.5			1.5			1.5		
Axial	(mm)	±1			±1			±1.5			±1.5			±2			±2		

* Ø 7-8H8 = 2x M3 Static torsional stiffness at 50% T_{KN} Dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 lbs

The prebored bore diameter depends on the inner structure						
Series	2	10	20	60	150	300
Structure I from Ø to Ø	3-8 without keyway	6 - 12.9	10 - 14.9	16 - 20.9	19 - 26.9	20 - 28.9
Structure II from Ø to Ø		13 - 16	15 - 19.9	21 - 25.9	27 - 33.9	29 - 38.9
Structure III from Ø to Ø			20 - 24	26 - 30	34 - 38	39 - 45

Ordering example

TX1 / 60 / A / 20 / 25.4 / XX

Model
Series
Type Elastomer insert
Bore Ø D1 H8
Bore Ø D2 H8
Non standard e.g. ATEX

**Experience and
Know-how
for your special
requirements.**

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**QUALITY
MANAGEMENT**

We are certified
according to ISO 9001-2008



TGA-ZM-05-91-00
Registration No. 40503432/2

The information mentioned in this document is based on our present knowledge and experiences and does not exclude the manufacturer's own substantial testing of the equipment. So this is no obligatory assurance even with regard to protection rights of Third Parties. The sale of our products is subject to our General Conditions of Sale and Delivery.

THE R+W-PRODUCT RANGE



TORQUE LIMITERS Series SK + ST

From 0.1 – 160,000 Nm, Bore diameters 3 – 290 mm
Available as a single position, multi-position, load holding, or full disengagement version
Single piece or press-fit design



BELLOWS COUPLINGS Series BK

From 2 – 10,000 Nm
Bore diameters 10 – 180 mm
Single piece or press-fit design



LINE SHAFTS Series ZA/ZAE

From 10 – 4,000 Nm
Bore diameters 10 – 100 mm
Available up to 6 m length



MINIATURE BELLOWS COUPLINGS Series MK

From 0.05 – 10 Nm
Bore diameters 1 – 28 mm
Single piece or press-fit design



SERVOMAX[®] ELASTOMER COUPLINGS Series EK

From 2 – 2,000 Nm, Shaft diameters 3 – 80 mm
backlash-free, press-fit design



ECOLIGHT[®] ELASTOMER COUPLINGS Series TX 1

From 0.5 – 810 Nm
Shaft diameters 3 – 45 mm



LINEAR COUPLINGS Series LK

From 70 – 2,000 N
Thread M5 – M16



POLYAMIDE COUPLINGS MICROFLEX Series FK 1

Rated torque 1 Ncm
Bore diameters 1 – 1.5 mm