



SIZES FROM 0.5 - 25,000 Nm

BACKLASH FREE ELASTOMER INSERT COUPLINGS

ELASTOMER
COUPLINGS EK | TX

GENERAL INFORMATION ABOUT R+W ELASTOMER COUPLINGS:



SERVICE LIFE

When properly selected, handled, and installed, these couplings are maintenance free with infinite service life.

ATEX (Optional)

For use in hazardous zones 1/21 and 2/22, the elastomer coupling has been authorized under directive 94/9/EG and is available with certification.

SPECIAL SOLUTIONS

Various materials, tolerances, dimensions and performance ratings available for custom applications on request.

FIT CLEARANCE

Overall shaft / hub clearance of 0.01 - 0.05 mm

EK**TX**

BACKLASH FREE ELASTOMER COUPLINGS SERVOMAX® AND ECOLIGHT® SIZES FROM 0.5 - 25,000 Nm

MODEL

FEATURES

EKL

**with clamping hub
from 0.5 - 2,150 Nm**

- ▶ compact design
- ▶ low moment of inertia
- ▶ easy mounting

Page 68

EK2

**with clamping hub
from 6 - 2,150 Nm**

- ▶ high concentricity
- ▶ backlash free
- ▶ easy mounting

Page 69

EKH

**with fully split clamping hub
from 4 - 25,000 Nm**

- ▶ for lateral installation
- ▶ allows for pre-aligned shafts
- ▶ easy mounting

Pages 70-71

EK6

**with conical clamping ring
from 4 - 25,000 Nm**

- ▶ high concentricity
- ▶ high clamping pressure
- ▶ self centering hub design
- ▶ allows for axial installation

Pages 72-73

MODEL

FEATURES

EK1



**with keyway mounting
from 0.5 - 25,000 Nm**

Pages 74-75

- ▶ press fit design
- ▶ readily modified for custom dimensions

TX1



**with keyway mounting
from 0.5 - 810 Nm**

Pages 76-77

- ▶ corrosion proof
- ▶ low cost
- ▶ light weight

EK7



**with expanding shaft
from 2 - 2,150 Nm**

Page 78

- ▶ for hollow shaft mounting
- ▶ expanding shaft through axial tightening
- ▶ short body length after installation

EKZ



**intermediate spacer
from 2 - 2,150 Nm**

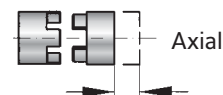
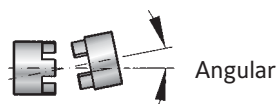
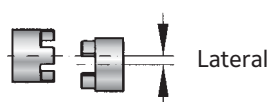
Page 79

- ▶ high lateral misalignment
- ▶ easy to mount
- ▶ vibration damping

GENERAL INFORMATION

R+W ELASTOMER COUPLINGS

AXES OF MISALIGNMENT

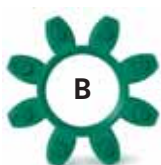


FUNCTION

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

Backlash is eliminated by the press fit of the elastomer into the hubs. Through variation of the Shore hardness of the elastomer insert, the coupling system can be optimized for the ideal torsional characteristics.

SIZES 2 - 800



Shore hardness 98 A

Shore hardness 64 Sh D

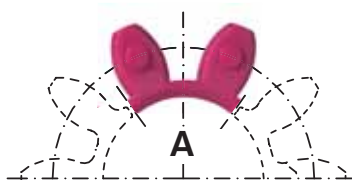
Shore hardness 80 Sh A

Shore hardness 65 Sh D

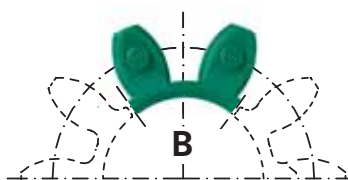
Shore hardness 64 Sh D

SIZES 2500 - 9500

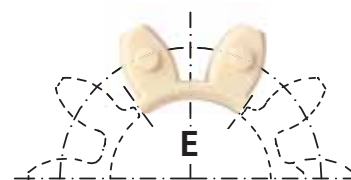
THE COUPLING INCLUDES 5X ELASTOMER SEGMENTS



Shore hardness 98 A



Shore hardness 64 Sh D



Shore hardness 64 Sh D

DESCRIPTION OF THE ELASTOMER TYPES

Type	Shore hardness	Color	Material	Relative damping (μ)	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 +120°C	high torsional stiffness
C	80 Sh A	yellow	TPU	0.3 - 0.4	-30°C to +100°C	very high damping
D*	65 Sh D	black	TPU	0.3 - 0.45	-10°C to + 70°C	electrically conductive
E	64 Sh D	beige	Hytrel	0.3 - 0.45	-50°C to +150°C	temperature resistant

* The electrical conductivity of the elastomer material is to prevent the electrostatic charging of the elastomer coupling system, to reduce the risk of sparking in operation. ATEX technical data is available upon request.

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

SIZES EK

SIZE		2			5			10			20			60			150		
Type (Elastomer insert)		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Static torsional stiffness (Nm/rad)	C _i	50	115	17	150	350	53	260	600	90	1140	2500	520	3290	9750	1400	4970	10600	2000
Dynamic torsional stiffness (Nm/rad)	C _{dyn}	100	230	35	300	700	106	541	1650	224	2540	4440	876	7940	11900	2072	13400	29300	3590
Lateral (mm)	Max. values	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
Angular (Degree)		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
Axial (mm)		±1			±1			±1			±2			±2			±2		

SIZE		300			450			800			2500		4500		9500	
Type (Elastomer insert)		A	B	C	A	B	C	A	B	C	A	B	A	B	A	B
Static torsional stiffness (Nm/rad)	C _T	12400	18000	3000	15100	27000	4120	41300	66080	10320	87600	109000	167000	372000	590000	670000
Dynamic torsional stiffness (Nm/rad)	C _{dyn}	23700	40400	6090	55400	81200	11600	82600	180150	28600	175000	216000	337000	743000	1180000	1340000
Lateral (mm)	Max. values	0.18	0.14	0.35	0.2	0.18	0.35	0.25	0.2	0.4	0.5	0.3	0.5	0.3	0.6	0.4
Angular (Degree)		1	0.8	1.2	1	0.8	1.2	1	0.8	1.2	1.5	1	1.5	1	1.5	1
Axial (mm)		±2			±2			±2			±3		±4		±5	

Static torsional stiffness at 50% T_{KN}

Dynamic torsional stiffness at T_{KN}

COMPACT VERSION WITH CLAMPING HUB

0.5 – 2,150 Nm



ABOUT

FEATURES

- ▶ short overall length
- ▶ easy mounting
- ▶ vibration damping

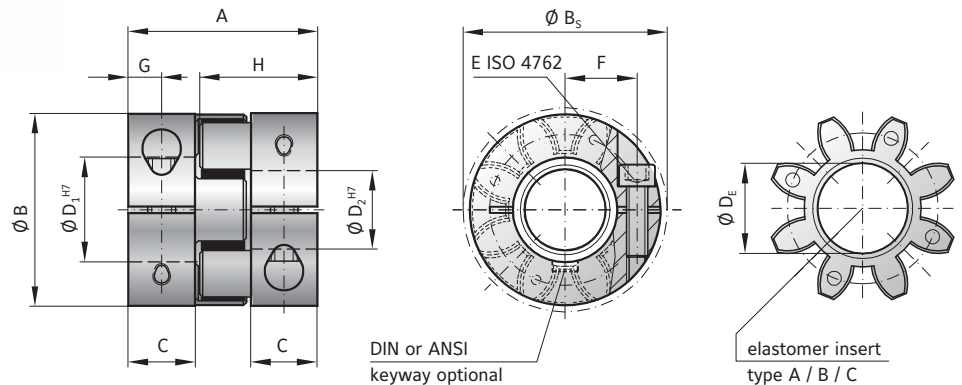
MATERIAL

- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws and clamping screws. Elastomer is press fit for zero backlash; standard versions are electrically isolating.

ORDERING EXAMPLE
see page 71



MODEL EKL

SIZE		2			5			10			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	A	B	C	A	B	C	A	B	C
Rated torque (Nm)	T_{KN}	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
Max. torque* (Nm)	T_{Kmax}	4	4.8	1	18	24	4	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length (mm)	A	20			26			32			50			58			62			86			94			123		
Outside diameter (mm)	B	16			25			32			42			56			66.5			82			102			136.5		
Outside diameter with screw head (mm)	B_s	17			25			32			44.5			57			68			85			105			139		
Mounting length (mm)	C	6			8			10.3			17			20			21			31			34			46		
Inside diameter range H7 (mm)	$D_{1/2}$	3 – 8			4 – 12.7			4 – 16			8 – 25			12 – 32			19 – 36			20 – 45			28 – 60			35 – 80		
Inside diameter of elastomer (mm)	D_e	6.2			10.2			14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Clamping screw (ISO 4762)	E	M2			M3			M4			M5			M6			M8			M10			M12			M16		
Tightening torque of the clamping screw (Nm)		0.6			2			4			8			15			35			70			120			290		
Distance between centers (mm)	F	5.5			8			10.5			15.5			21			24			29			38			50.5		
Distance (mm)	G	3			4			5			8.5			10			11			15			17.5			23		
Hub length (mm)	H	12			16.7			20.7			31			36			39			52			57			74		
Moment of inertia per hub (10^{-3} kgm^2)	J_1/J_2	0.0003			0.002			0.003			0.01			0.04			0.08			0.3			0.66			8		
Approx. weight (kg)		0.008			0.02			0.05			0.12			0.3			0.5			0.9			1.5			8.5		
Speed standard (min^{-1})		15,000			15,000			13,000			12,500			11,000			10,000			9,000			8,000			4,000		
Speed balanced (10^3 min^{-1})		60	67	45	57	65	43	53	63	40	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

* Maximum transmittable torque of the clamping hub depends on the bore diameter

Size	Ø 3	Ø 4	Ø 5	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
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	1,000

Higher torque possible with keyways.

STANDARD VERSION WITH CLAMPING HUB

6 - 2,150 Nm

ABOUT



FEATURES

- ▶ easy mounting
- ▶ highly concentric assembly
- ▶ vibration damping

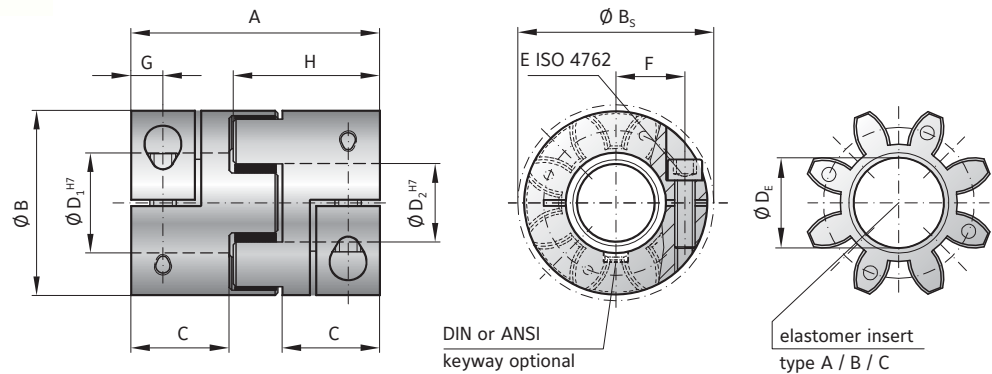
MATERIAL

- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws and clamping screws. Elastomer is press fit for zero backlash; standard versions are electrically isolating.

ORDERING EXAMPLE
see page 71



MODEL EK2

SIZE	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) T_{KN}	17	21	6	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
Max. torque* (Nm) T_{Kmax}	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
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		
Moment of inertia per hub (10^{-3} kgm^2) J_1/J_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 (min^{-1})	12,500			11,000			10,000			9,000			8,000			4,000		
Speed balanced (10^3 min^{-1})	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

* Maximum transmittable torque of the clamping hub depends on the bore diameter

Size	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	1,000

Higher torque possible with keyways

WITH FULLY SPLIT CLAMPING HUB

4 – 2,150 Nm



ABOUT

FEATURES

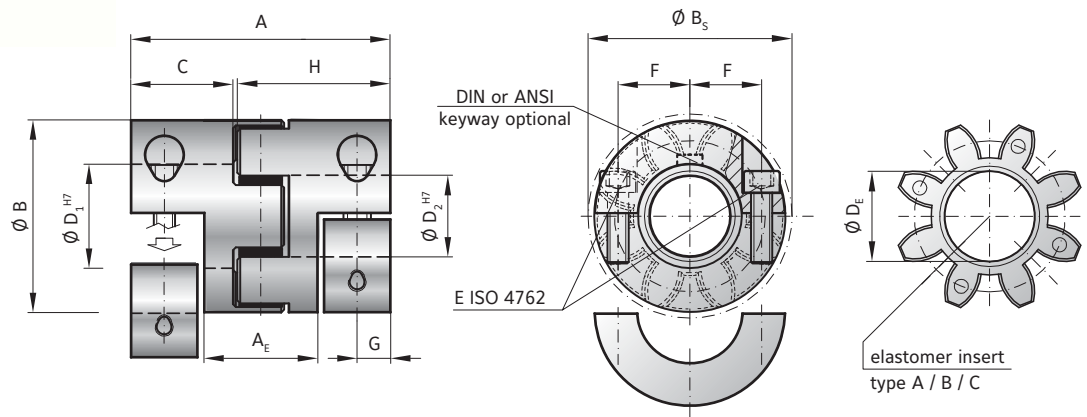
- ▶ lateral mounting
- ▶ easy installation and removal
- ▶ allows for pre-alignment of shafts

MATERIAL

- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined, fully split hubs with curved jaws and clamping screws. Elastomer is press fit for zero backlash; standard versions are electrically isolating.



MODEL EKH

SIZE		10			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	A	B	C
Rated torque (Nm)	T_{KN}	12.6	16	4	17	21	6	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
Max. torque* (Nm)	T_{Kmax}	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length (mm)	A	53			66			78			90			114			126			162		
Length of center section (mm)	A_E	20			28			33			37			49			51			65		
Outside diameter (mm)	B	32			42			56			66.5			82			102			136.5		
Outside diameter with screw head (mm)	B_3	32			44.5			57			68			85			105			139		
Mounting length (mm)	C	20			25			30			35			45			50			65		
Inside diameter range H7 (mm)	$D_{1/2}$	6 - 16			8 - 25			12 - 32			19 - 36			20 - 45			28 - 60			35 - 80		
Inside diameter of elastomer (mm)	D_E	14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Clamping screw (ISO 4762)	E	4 x M4			4 x M5			4 x M6			4 x M8			4 x M10			4 x M12			4 x M16		
Tightening torque of the clamping screw (Nm)		4			8			15			35			70			120			290		
Distance between centers (mm)	F	10.5			15.5			21			24			29			38			50.5		
Distance (mm)	G/G ₁	7.5			8.5			10			12			15			17.5			23		
Hub length (mm)	H/H ₁	31			39			46			52.5			66			73			93.5		
Moment of inertia per hub (10^{-3} kgm^2)	J_1/J_2	0.005			0.02			0.06			0.1			0.4			1			9.5		
Approx. weight (kg)		0.08			0.15			0.35			0.6			1.1			1.7			10		
Speed standard (min^{-1})		13,000			12,500			11,000			10,000			9,000			8,000			4,000		
Speed balanced (10^3 min^{-1})		53	63	40	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

* Maximum transmittable torque of the clamping hub depends on the bore diameter

Size	Ø 6	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	Ø 90	Ø 120	Ø 140
10	6	12	32																
20		30	40	50	65														
60			65	120	150	180	200												
150				180	240	270	300	330											
300				300	340	450	520	570	630										
450						630	720	770	900	1120	1180	1350							
800								1050	1125	1200	1300	1400	1450	1500	1550	1600			
2500								1400	1800	2000	2250	2500	2700	2900	3100	3300	3700		
4500									2400	2600	2900	3100	3400	3600	3900	4100	4700	6200	
9500										5000	5500	6000	6500	7000	7500	8000	9000	12000	14000

Higher torque possible with keyways

WITH FULLY SPLIT CLAMPING HUB
1,950 - 25,000 Nm



ABOUT

FEATURES

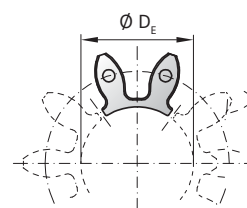
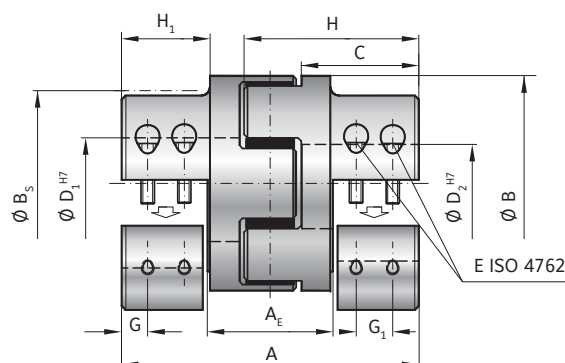
- ▶ lateral mounting
- ▶ easy installation and removal
- ▶ allows for pre-alignment of shafts

MATERIAL

- **Hubs:** GGG 40
- **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined, fully split hubs with curved jaws and clamping screws. 5x elastomer segments press fit for zero backlash; standard versions are electrically isolating.



elastomer insert type A / B

MODEL EKH

SIZE		2500		4500		9500	
Type (Elastomer insert)		A	B	A	B	A	B
Rated torque (Nm)	T _{KN}	1950	2450	5000	6200	10000	12500
Max. torque* (Nm)	T _{Kmax}	3900	4900	10000	12400	20000	25000
Overall length (mm)	A	213		272		341	
Length of center section (mm)	A _E	78		104		131	
Outside diameter (mm)	B	160		225		290	
Outside diameter with screw head (mm)	B ₃	156		190		243	
Mounting length (mm)	C	85		110		140	
Inside diameter range H7 (mm)	D _{1/2}	35 - 90		40 - 120		50 - 140	
Inside diameter of elastomer (mm)	D _E	80		111		145	
Clamping screw (ISO 4762)	E	8 x M16		8 x M20		8 x M24	
Tightening torque of the clamping screw (Nm)		300		600		1100	
Distance between centers (mm)	F	57		72.5		90	
Distance (mm)	G/G ₁	36		24 / 34		30 / 48	
Hub length (mm)	H/H ₁	120 / 69		154 / 80		193 / 110	
Moment of inertia per hub (10 ⁻³ kgm²)	J ₁ /J ₂	40		147		480	
Approx. weight (kg)		12.5		25		53	
Speed standard (min ⁻¹)		3,000		3,500		2,000	
Speed balanced (10 ³ min ⁻¹)		10	10	8	8	6.5	6.5

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

* Maximum transmittable torque of the clamping hub depends on the bore diameter see page 70.

ORDERING EXAMPLE	EKL EK2 EKH	60	A	12.7	24	XX
Model	●					Special designation only (e.g. special bore tolerance).
Size		●				
Elastomer insert type			●			
Bore D1 H7				●		
Bore D2 H7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. EKH/60/A/12.7/24/XX; XX=anodized aluminum)						

For custom features place an XX at the end of the part number and describe the special requirements (e.g. EKH/60/A/12.7/24/XX; XX=anodized aluminum)

EK6

WITH CONICAL CLAMPING RING

4 – 2,150 Nm



ABOUT

FEATURES

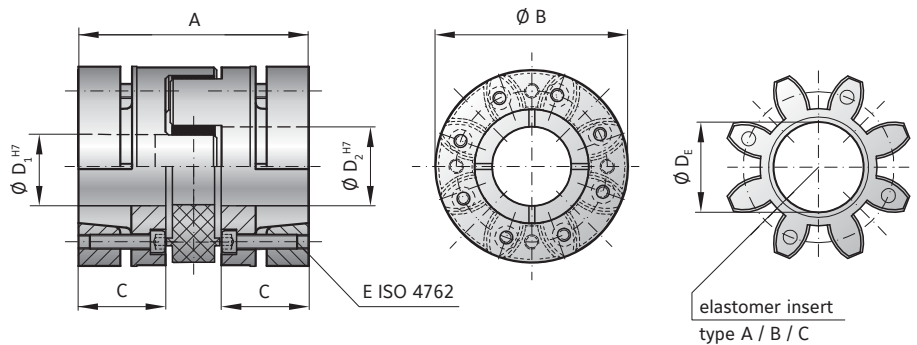
- ▶ high clamping pressure
- ▶ self centering on shaft
- ▶ very high concentricity

MATERIAL

- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws and conical clamping rings. Elastomer segments press fit for zero backlash; standard versions are electrically isolating.



MODEL EK6

SIZE		10			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	A	B	C
Rated torque (Nm)	T_{KN}	12.5	16	4	17	21	6	60	75	20	160	200	42	325	405	84	530	660	95	950	1100	240
Max. torque (Nm)	T_{Kmax}	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length (mm)	A	42			56			64			76			96			110			138		
Outside diameter (mm)	B/B ₁	32			43			56			66			82			102			136.5		
Mounting length (mm)	C	15			20			23			28			36			42			53		
Inside diameter range H7 (mm)	D _{1/2}	6 – 16			8 – 24			12 – 32			19 – 35			20 – 45			28 – 55			32 – 80		
Inside diameter of elastomer (mm)	D _E	14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Clamping screw (ISO 4762)		3x M3			6x M4			4x M5			8x M5			8x M6			8x M8			8x M10		
Tightening torque of the clamping screw (Nm)	E	2			3			6			7			12			35			55		
Distance (mm)	F																					
Moment of inertia per hub (10 ⁻³ kgm ²)	J ₁ /J ₂	0.004			0.015			0.05			0.1			0.3			0.85			9.2		
Approx. weight (kg)		0.08			0.12			0.3			0.5			0.9			1.5			9.6		
Speed standard (min ⁻¹)		20,000			19,000			14,000			13,000			10,000			9,000			4,000		
Speed balanced (10 ³ min ⁻¹)		53	63	40	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

ORDERING EXAMPLE	EK6	60	A	19	22.23	XX
Model	●					Special designation only (e.g. special bore tolerance).
Size		●				
Elastomer insert type			●			
Bore D1 H7				●		
Bore D2 H7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. EK6/60/A/19/22.23/XX; XX=finely balanced ISO G2.5 / 30,000 rpm)						

EK6

WITH CONICAL CLAMPING RING

1,950 - 25,000 Nm

ABOUT

FEATURES

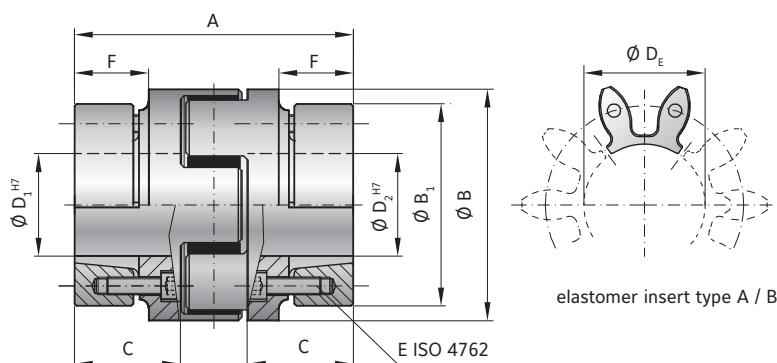
- high clamping pressure
- self centering on shaft
- very high concentricity

MATERIAL

- **Hubs:** GGG40
- **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws and conical clamping rings. 5x elastomer segments press fit for zero backlash; standard versions are electrically isolating.



MODEL EK6

SIZE			2500		4500		9500	
Type (Elastomer insert)			A	B	A	B	A	B
Rated torque (Nm)	T_{KN}		1950	2450	5000	6200	10000	12500
Max. torque (Nm)	T_{Kmax}		3900	4900	10000	12400	20000	25000
Overall length (mm)	A		177		227		282	
Outside diameter (mm)	B/B ₁		160 / 159		225 / 208		285	
Mounting length (mm)	C		70		90		112	
Inside diameter range H7 (mm)	D _{1/2}		40 - 95		50 - 130		60 - 170	
Inside diameter of elastomer (mm)	D _E		80		111		145	
Clamping screw (ISO 4762)			10x M10		10x M12		10x M16	
Tightening torque of the clamping screw (Nm)	E		60		100		160	
Distance (mm)	F		51		66		80	
Moment of inertia per hub (10 ⁻³ kgm ²)	J ₁ /J ₂		31.7		135.7		469.2	
Approx. weight (kg)			15		35		73	
Speed standard (min ⁻¹)			3,500		3,000		2,000	
Speed balanced (10 ³ min ⁻¹)			10	10	8	8	6.5	6.5

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

ORDERING EXAMPLE	EK6	2500	A	50.8	80	XX
Model	●					Special designation only (e.g. special bore tolerance).
Size		●				
Elastomer insert type			●			
Bore D1 H7				●		
Bore D2 H7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. EK6/2500/A/50.8/80/XX; XX=stainless steel)						

EK1

WITH KEYWAY MOUNTING

0.5 – 2,150 Nm



ABOUT

FEATURES

- ▶ press fit design
- ▶ readily modified for custom dimensions
- ▶ low backlash (keyway)

MATERIAL

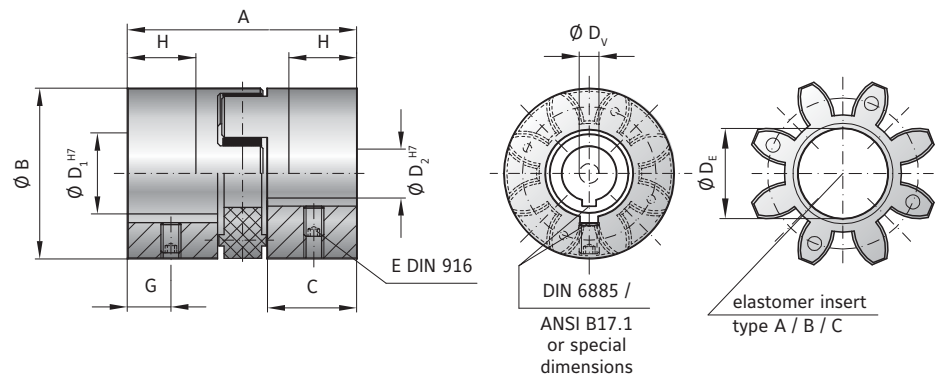
- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws, keyways, and set screws. Elastomer is press fit for zero backlash; standard versions are electrically isolating.

Optional:

Conical bores for Fanuc motors and other tapered shafts available.



MODEL EK1

SIZE		2			5			10			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	A	B	C	A	B	C	A	B	C
Rated torque	(Nm) T _{KN}	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
Max. torque	(Nm) T _{Kmax}	4	4.8	1	18	24	4	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length	(mm) A	20			34			35			66			78			90			114			126			162		
Outside diameter	(mm) B/B ₁	15			25			32			42			56			66.5			82			102			136.5		
Mounting length	(mm) C	6.5			12			12			25			30			35			45			50			65		
Inside diameter (pilot bored)	(mm) D _v	3			4			6			7			9			14			18			22			29		
Inside diameter range H7	(mm) D _{1/2}	3 - 9			6 - 15			6 - 18			8 - 25			12 - 32			19 - 38			20 - 45			28 - 60			32 - 80		
Inside diameter of elastomer	(mm) D _E	6.2			10.2			14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Set screws (DIN 916)	E	see table (depending on bore Ø)**																										
Distance	(mm) G	3			5			6			9			11			12			15			17			30		
Possible shortening length	(mm) H	4			6			6			19			22			26			32			37			43		
Moment of inertia per hub	(10 ⁻³ kgm ²) J ₁ /J ₂	0.0001			0.001			0.003			0.02			0.06			0.1			0.4			1.1			12		
Approx. weight	(kg)	0.008			0.03			0.08			0.15			0.35			0.6			1.1			1.7			11		
Speed standard	(min ⁻¹)	15,000			15,000			13,000			12,500			11,000			10,000			9,000			8,000			4,000		
Speed balanced	(10 ³ min ⁻¹)	60	67	45	57	65	43	53	63	40	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

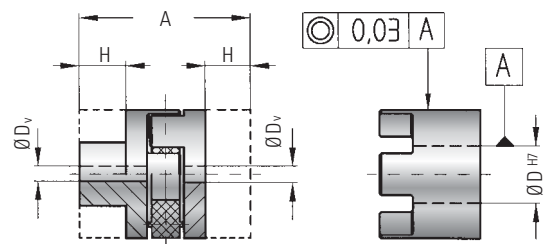
** set screw size

D_1/D_2	E
- $\varnothing$ 10	M3
$\varnothing$ 10.1 – 12	M4
$\varnothing$ 12.1 – 30	M5
$\varnothing$ 30.1 – 58	M8
$\varnothing$ 58.1 – 95	M10
$\varnothing$ 95.1 – 130	M12
$\varnothing$ 130.1 – 170	M16

NOTES ON MACHINING FEATURES INTO PILOT BORED (D_v) COUPLING

Pilot bored coupling hubs (bore = D_v) are available to be custom machined by the customer. They come with a small diameter bore and no set screw.

For precision applications a concentricity tolerance of 0.03 is recommended for smooth running. The hub can be shortened by a length value of up to dimension H.



Bores <6mm made without keyway.

EK1

WITH KEYWAY MOUNTING

1,950 – 25,000 Nm

ABOUT

FEATURES

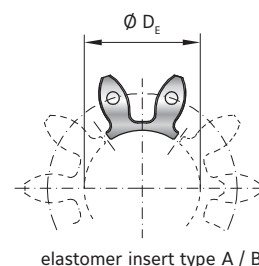
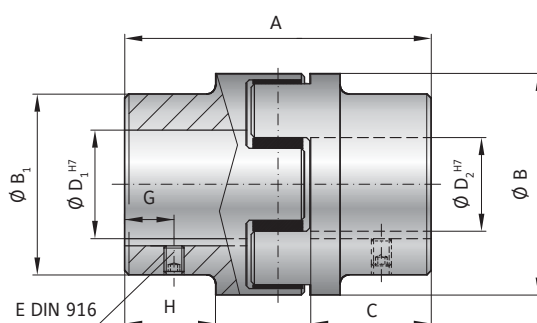
- ▶ press fit design
- ▶ readily modified for custom dimensions
- ▶ low backlash (keyway)

MATERIAL

- ▶ **Hubs:** GGG40
- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

Two concentrically machined hubs with curved jaws, keyways, and set screws. 5x elastomer segments press fit for zero backlash; standard versions are electrically isolating.



elastomer insert type A / B

MODEL EK1

SIZE			2500		4500		9500	
Type (Elastomer insert)			A	B	A	B	A	B
Rated torque	(Nm)	T _{KN}	1950	2450	5000	6200	10000	12500
Max. torque	(Nm)	T _{Kmax}	3900	4900	10000	12400	20000	25000
Overall length	(mm)	A	213		272		341	
Outside diameter	(mm)	B/B ₁	160 / 154		225 / 190		290 / 240	
Mounting length	(mm)	C	88		113		142	
Inside diameter (pilot bored)	(mm)	D _v	30		40		50	
Inside diameter range H7	(mm)	D _{3/2}	30 - 95		40 - 130		50 - 170	
Inside diameter of elastomer	(mm)	D _E	80		111		145	
Set screws (DIN 916)		E	see table (depending on bore Ø)**					
Distance	(mm)	G	25		30		40	
Possible shortening length	(mm)	H	69		89		110	
Moment of inertia per hub	(10 ⁻³ kgm²)	J _I /J ₂	40		147		480	
Approx. weight	(kg)		12.5		25		53	
Speed standard	(min ⁻¹)		3,500		3,000		2,000	
Speed balanced	(10³min ⁻¹)		10	10	8	8	6.5	6.5

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

ORDERING EXAMPLE	EK1	2500	A	50.8	80	XX
Model	●					Special designation only (e.g. special bore tolerance).
Size		●				
Elastomer insert type			●			
Bore D1 H7				●		
Bore D2 H7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. EK1/2500/A/50.8/80/XX; XX=stainless steel)						

TX1

WITH KEYWAY MOUNTING

0.5 – 810 Nm



ABOUT

FEATURES

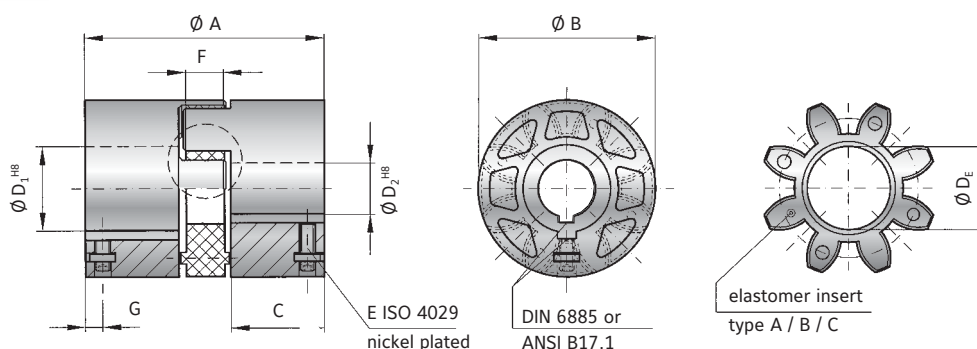
- ▶ very low mass and moment of inertia
- ▶ corrosion proof
- ▶ economically priced

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.



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_T	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)						

EK7

WITH EXPANDING SHAFT

2 – 2,150 Nm

ABOUT

FEATURES

- ▶ for hollow shaft mounting
- ▶ short overall length
- ▶ solution for mismatched bore / shaft diameters

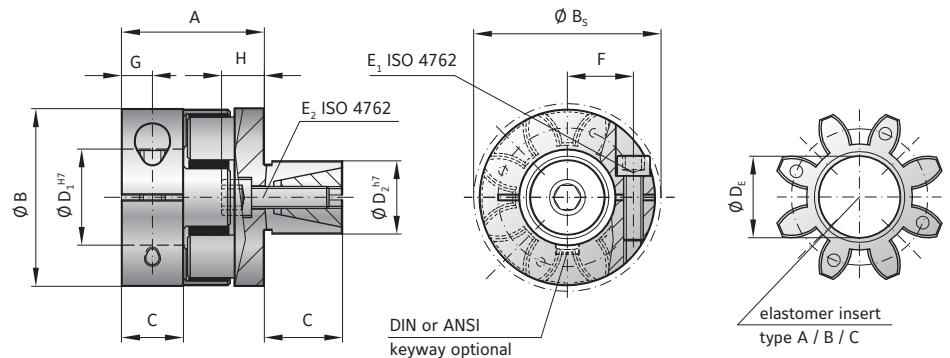
MATERIAL

- ▶ **Hubs:** up to size 450 high strength aluminum; size 800 steel
- ▶ **Expanding shaft hub:** steel

- ▶ **Elastomer:** wear resistant thermally stable TPU

DESIGN

One concentrically machined hub with clamping screw and curved jaws. One concentrically machined hub with expanding shaft system and curved jaws. Elastomer segment press fit for zero backlash; standard versions are electrically isolating.



MODEL EK7

SIZE		5			10			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	A	B	C	A	B	C
Rated torque (Nm)	T_{KN}	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
Max. torque* (Nm)	T_{Kmax}	18	24	4	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length (mm)	A	22			28			40			46			51			68			76			94		
Outside diameter (mm)	B	25			32			42			56			66.5			82			102			136.5		
Outside diameter with screw head (mm)	B_s	25			32			44.5			57			68			85			105			139		
Mounting length (mm)	C_1	8			10.3			17			20			21			31			34			46		
Mounting length (mm)	C_2	12			20			25			27			32			45			55			60		
Inside diameter range H7 (mm)	D_1	4 - 12.7			5 - 16			8 - 25			12 - 32			19 - 36			20 - 45			28 - 60			35 - 80		
Outside diameter range h7 (mm)	D_2	10 - 16			13 - 25			14 - 30			23 - 38			26 - 42			38 - 60			42 - 70			42 - 80		
Inside diameter of elastomer (mm)	D_E	10.2			14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Clamping screw (ISO 4762)	E_1	M3			M4			M5			M6			M8			M10			M12			M16		
Tightening torque (Nm)	E_1	2			4			8			15			35			70			120			290		
Clamping screw (ISO 4762)	E_2	M4			M5			M6			M8			M10			M12			M16			M16		
Tightening torque (Nm)	E_2	4			9			12			32			60			110			240			300		
Distance between centers (mm)	F	8			10.5			15.5			21			24			29			38			50.5		
Distance (mm)	G	4			5			8.5			10			11			15			17.5			23		
Length (mm)	H	7			7			10			11			16			20			27			27		
Moment of inertia D_1 (10^{-3} kgm^2)	J_1	0.002			0.003			0.01			0.04			0.08			0.3			0.66			8		
Moment of inertia D_2 (10^{-3} kgm^2)	J_2	0.002			0.01			0.04			0.1			0.2			1			2.6			9		
Approx. weight (kg)		0.04			0.05			0.12			0.3			0.5			0.9			1.5			7.6		
Speed standard (min^{-1})		15,000			13,000			12,500			11,000			10,000			9,000			8,000			4,000		
Speed balanced (10^3 min^{-1})		57	65	43	53	63	40	45	60	35	31	31	25	22	26	18	22	26	16	16	17	12	13	13	8

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

*Maximum transmittable torque of the clamping hub depends on the bore diameter (see EKL on page 68).

ORDERING EXAMPLE	EK7	20	A	24	19.05	XX
Model	●					
Size		●				
Elastomer insert type			●			
Bore D1 H7				●		
Expanding shaft D2 h7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. EK7/20/A/24/19.05/XX; XX=stainless steel)						

ABOUT

FEATURES

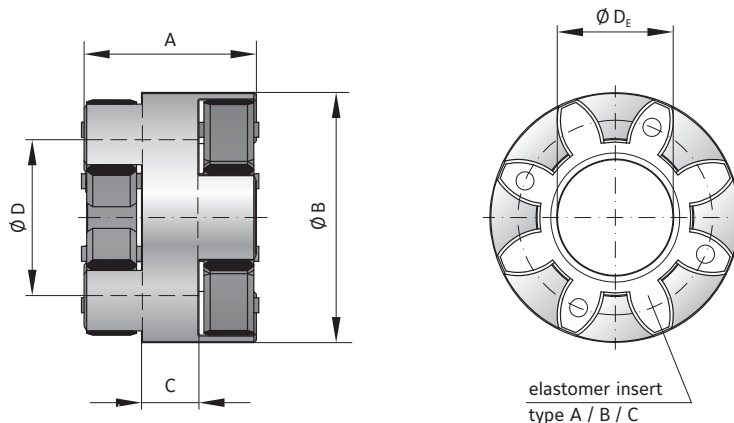
- high lateral misalignment
- easy to mount
- combine with any two hub designs

MATERIAL

- **Hubs:** high strength aluminum
- **Elastomer:** wear resistant thermally stable TPU

DESIGN

A concentrically machined spacer with curved jaws. 2x elastomer segment press fit for zero backlash; standard versions are electrically isolating.



MODEL EKZ

SIZE		2			5			10			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	A	B	C	A	B	C	A	B	C
Rated torque (Nm)	T_{KN}	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
Max. torque (Nm)	T_{Kmax}	4	4.8	1	18	24	4	25	32	6	34	42	12	120	150	35	320	400	85	650	810	170	1060	1350	190	1900	2150	400
Overall length (mm)	A	20			26			30			39			48			53			62			86			81		
Outside diameter (mm)	B	16			25			32			42			56			66.5			82			102			136.5		
Hub length (mm)	C	9			9			9			10			16			18			20			40			25		
Inside diameter (mm)	D	9			15			18			25			32			38			45			60			80		
Inside diameter of elastomer (mm)	D_E	6.2			10.2			14.2			19.2			26.2			29.2			36.2			46.2			60.5		
Moment of inertia (10^{-3} kgm^2)	J_1/J_2	0.0001			0.0005			0.002			0.008			0.03			0.05			0.1			0.6			1.1		
Approx. weight (kg)		0.007			0.02			0.04			0.09			0.21			0.33			0.58			1.38			2.09		
Speed standard (min^{-1})		15,000			15,000			13,000			12,500			11,000			10,000			9,000			8,000			4,000		

For information on shaft misalignment, torsional stiffness, and other details about the elastomer inserts see pages 66 + 67.

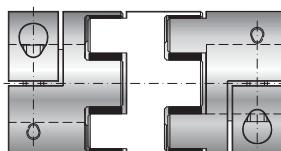
ORDERING EXAMPLE	EKZ	60	A	XX
Model	●			Special designation only (e.g. non-standard length).
Size		●		
Elastomer insert type			●	

For custom features place an XX at the end of the part number and describe the special requirements (e.g. EKZ/60/A/XX; XX=anodized aluminum)

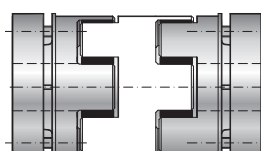
WORKS WITH FULL PRODUCT RANGE



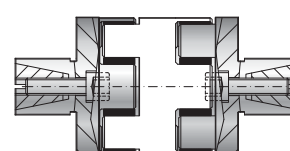
EK1



EK2



EK6



EK7

