EK | EZ

SIZES FROM 1,950 – 25,000 Nm
BACKLASH FREE ELASTIC JAW COUPLINGS

GENERAL INFORMATION ABOUT **R+W ELASTOMER COUPLINGS:**

Optional:

SERVICE LIFE

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

ATEX (Optional)

For use in hazardous areas available upon request.

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 EZ

BACKLASH FREE **ELASTIC JAW COUPLINGS®**
SIZES FROM **1,950 – 25,000 Nm**

MODELE | FEATURES

EKH

with fully split clamping hubs
from 1,950 – 25,000 Nm

- easy installation and removal
- allows for lateral mounting

Page 64

EZ2

with fully split clamping hubs
from 1,950 – 25,000 Nm

- standard lengths of up to 4 meters
- no intermediate support bearing necessary
- lateral installation and removal without disturbing adjacent equipment

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EK1

with simple keyway mounting
from 1,950 – 25,000 Nm

- economically priced version
- modifiable to customer specific dimensions and features
- available as solid stock hub for custom machining

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EK6

with conical clamping ring
from 1,950 – 25,000 Nm

- highly concentric design
- high clamping pressure on shafts
- hubs mount axially
- in case a housing will be used, no access holes are necessary

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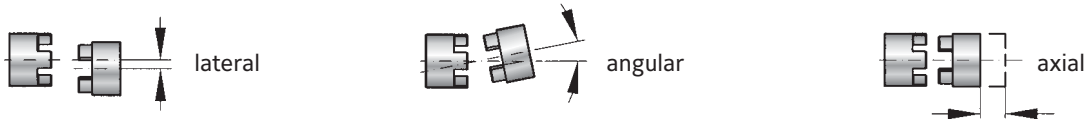
GENERAL INFORMATION
R+W ELASTIC JAW COUPLINGS

SHAFT MISALIGNMENT



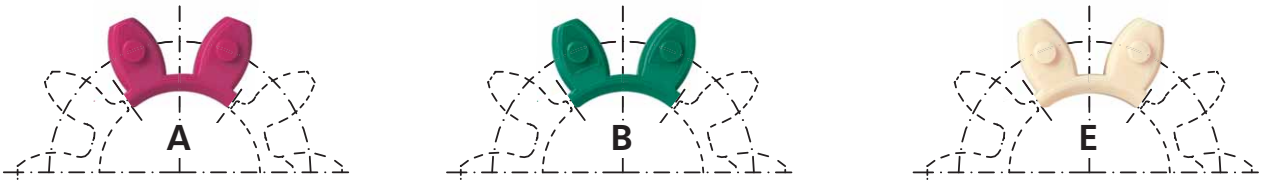
FUNCTION

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.

SIZE 2500 - 9500

THE COUPLING INCLUDES 5X ELASTOMER SEGMENTS



Shore hardness 98 Sh 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
E	64 Sh D	beige	Hytrel	0.3 - 0.45	-50°C to +150°C	temperature resistant

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

SIZES EK

SIZE			2500		4500		9500	
Type (elastomer insert)			A	B	A	B	A	B
Static torsional stiffness	(Nm/rad)	C_T	87600	109000	167000	372000	590000	670000
Dynamic torsional stiffness	(Nm/rad)	C_{Tdyn}	175000	216000	337000	743000	1180000	1340000
lateral misalignment	(mm)	Max. values	0.5	0.3	0.5	0.3	0.6	0.4
angular misalignment	(Degree)		1.5	1	1.5	1	1.5	1
axial misalignment	(mm)		±3		±4		±5	

Static torsional stiffness at 50% T_{KN} Dynamic torsional stiffness at T_{KN}

EKH

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

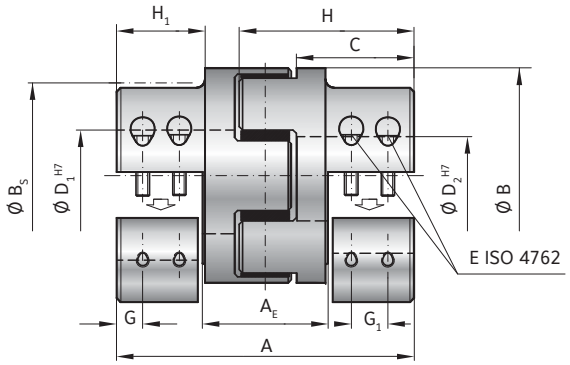
- **Hubs:** GGG40
- **Elastomer:** wear resistant thermally stable TPU

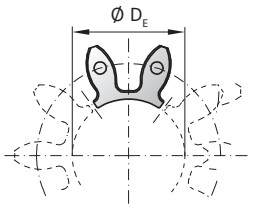
DESIGN

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.

ORDERING EXAMPLE

see page 67





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_S	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 page 63.**

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

Size	Ø 35	Ø 45	Ø 50	Ø 55	Ø 60	Ø 65	Ø 70	Ø 75	Ø 80	Ø 90	Ø 120	Ø 140
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 torques possible with keyway.

EZ2

WITH FULLY SPLIT CLAMPING HUB

1,950 – 25,000 Nm

ABOUT

FEATURES

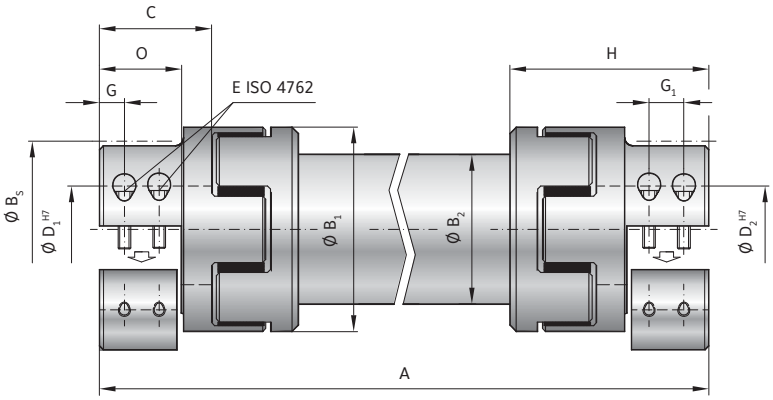
- easy installation and removal
- standard lengths up to 4 meters
- no intermediate support bearings required

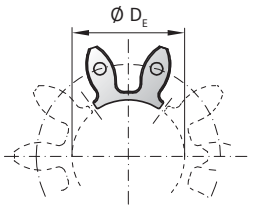
MATERIAL

- **Hubs:** GGG40
- **Intermediate tube:** steel, optional CFK tube on request
- **Elastomer insert:** wear resistant, thermally stable TPU

DESIGN

Two fully split clamping hubs, with four clamping screws in each, and concave driving jaws. Backlash free, vibration damping, electrically isolating elastomer inserts press fit into the hubs. Precision intermediate tube with a high level of straightness and lateral stiffness.





elastomer insert type A / B

MODEL EZ2

SIZE			2500		4500		9500	
Type (Elastomer insert)			A	B	A	B	A	B
Rated torque	(Nm)	T_{KN}	1,950	2,450	5,000	6,200	10,000	12,500
Maximum torque*	(Nm)	T_{Kmax}	3,900	4,900	10,000	12,400	20,000	25,000
Overall length	(mm)	A	460 - 4000		580 - 4,000		710 - 4,000	
Outer diameter hub	(mm)	B_1	160		225		290	
Outer diameter tube	(mm)	B_2	150		175		220	
Outer diameter with screwhead	(mm)	B_S	155		190		243	
Fit length	(mm)	C	85		110		140	
Inside diameter range from Ø to Ø H7	(mm)	$D_{1/2}$	35 - 90		40 - 120		50 - 140	
Max. inside diameter (Elastomer insert)	(mm)	D_E	80		111		145	
Mounting screw ISO 4762		E	4 x M16		8 x M16		8 x M24	
Tightening torque	(Nm)		300		300		980	
Distance between centers	(mm)	F	57		72,5		90	
Distance	(mm)	G/G_1	36		24 /34		30 / 48	
Hub length	(mm)	H	142		181		229	
Moment of inertia per hub	(10^{-3} kgm²)	J_1/J_2	30		140		450	
Inertia of tube per meter	(10^{-3} kgm²)	J_3	360		750		1,800	
Combined dynamic torsional stiffness of the inserts	(Nm/rad)	$C_{Tdyn}{}^{E}$	87,500	108,000	168,500	371,500	590,000	670,000
Torsional stiffness of tube per meter	(Nm/rad)	$C_T{}^{ZWR}$	1,000,000		2,500,000		5,000,000	
Shaft average value	(mm)	N	108		137		171	
Length	(mm)	O	67		85		105	

* Maximum transmittable torque of the clamping hub depends on the bore diameter – see page 64.

ORDERING EXAMPLE	EZ2	2500	1200	A	50.8	80	XX
Model	●						Special designation only (e.g. special bore tolerance).
Size		●					
Overall length			●				
Elastomer insert type				●			
Bore Ø D1 H7					●		
Bore Ø D2 H7						●	

For custom features place an XX at the end of the part number and describe the special requirements (e.g. EZ2 / 2500 / 1200 / A / 50.8 / 80 / XX; XX = stainless steel)

EK1

WITH KEYWAY MOUNTING

1,950 - 25,000 Nm

ABOUT

FEATURES

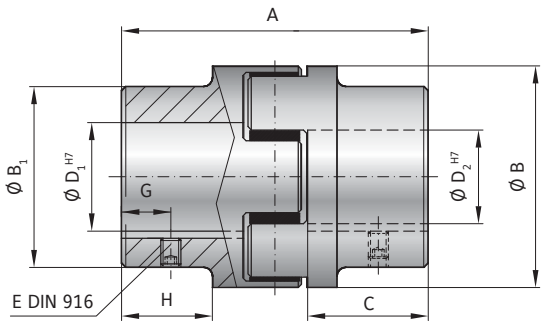
- press fit design
- readily modified for custom dimensions
- low backlash (keyway)

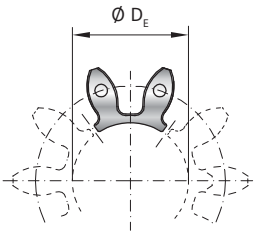
MATERIAL

- **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)	$D_{1/2}$	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_1/J_2	40		147		480	
Approx. weight	(kg)		12.5		25		53	
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 page 63.**

** Set screw	
Ø 12.1 - 30	M5
Ø 30.1 - 58	M8
Ø 58.1 - 95	M10
Ø 95.1 - 130	M12
Ø 130.1 - 170	M16

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)

EK6

WITH CONICAL CLAMPING RING

1,950 - 25,000 Nm

ABOUT

FEATURES

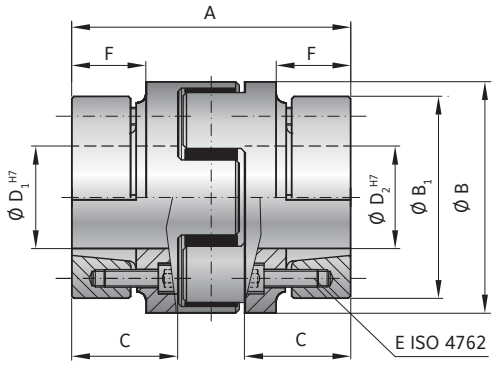
- high clamping pressure
- self centering on shaft
- very high concentricity

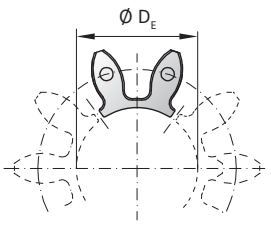
MATERIAL

- **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.





elastomer insert type A / B

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)		E	10x M10		10x M12		10x M16	
Tightening torque of the clamping screw	(Nm)		60		100		160	
Distance	(mm)	F	51		66		80	
Moment of inertia per hub	(10^{-3} kgm²)	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 page 63.**

ORDERING EXAMPLE	EK6 / EKH	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)