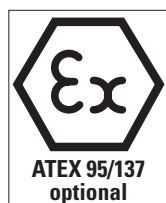


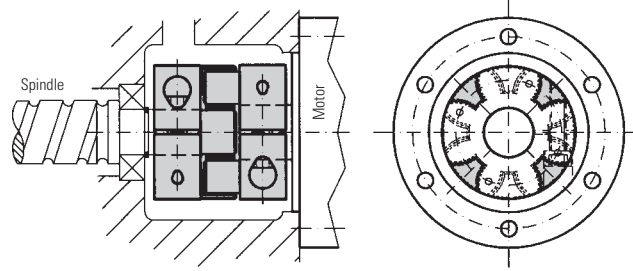
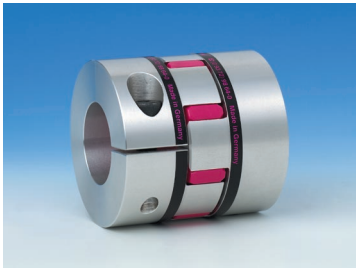
precise and compact

ELASTOMER-COUPLINGS SERVOMAX®

Series EK · 2 – 2,000 Nm



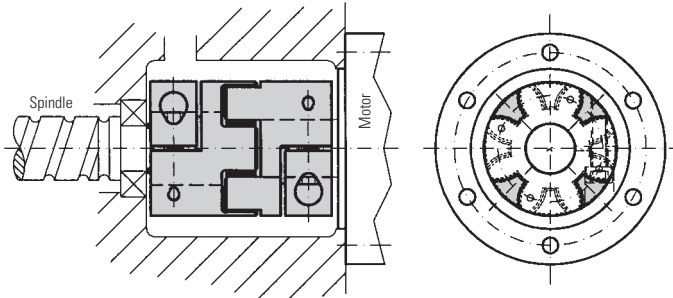
R+W®
COUPLING TECHNOLOGY

Models**Application examples****Properties****EKL** with clamping hub

see page 5

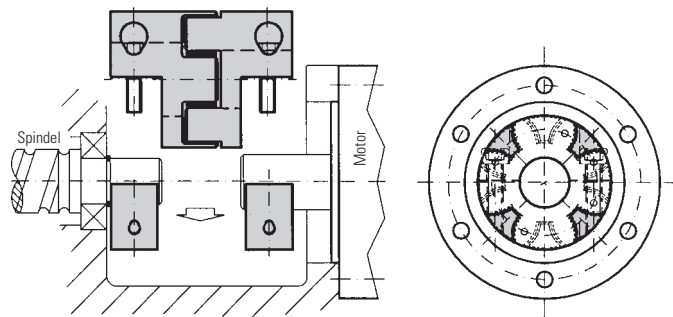
Compact version

- short, compact design
- low inertia
- easy assembly

EK 2 with clamping hub

see page 6

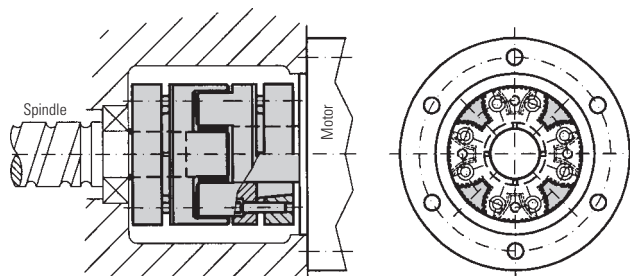
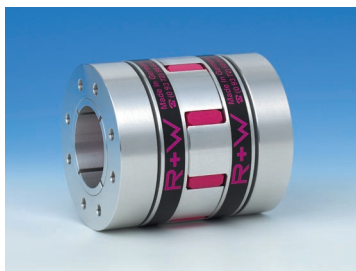
- very smooth running
- counterbalanced type
- easy assembly

EKH with split clamping hub

see page 7

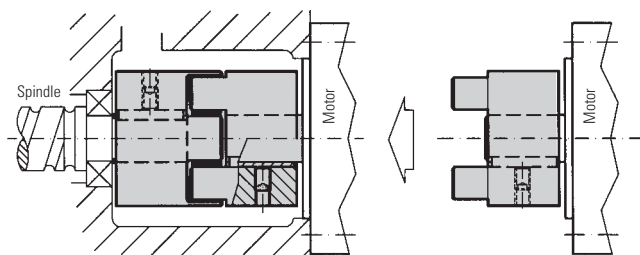
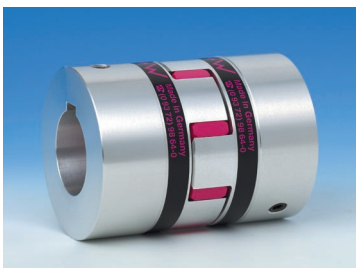
Split version

- easy assembly
- radial mounting possible

EK 6 with conical clamping ring

see page 8

- very smooth running
- high clamping forces
- axially mountable
- light weight aluminum

EK 1 with keyway-connection

see page 9

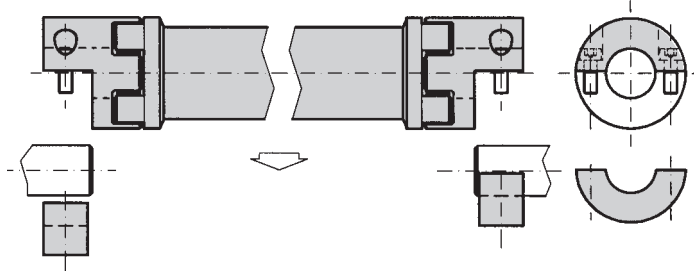
- favorably priced design
- mounts axially
- easily modified

Models

Application examples

Properties

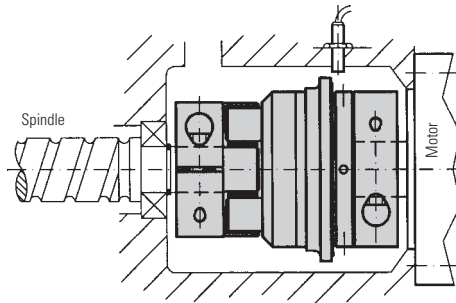
EZ 2 line shaft with split clamping hub



- radial mounting due to split hubs
- no intermediate support bearing necessary
- conical clamping hubs available

see page 10/11

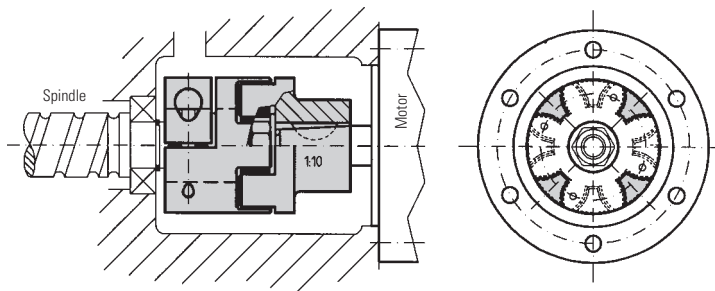
ES 2 torque limiter with clamping hub



- reliable torque overload protection
- backlash free due to patented R+W design
- easy to mount

see page 12/13/14

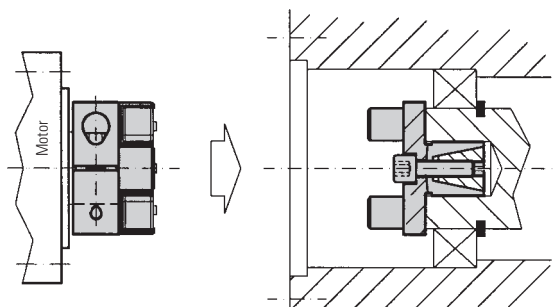
EK 4 for conical shaft ends



- for conical shaft ends e.g. Fanuc motors
- easy mounting
- conical hub mounts axially

see page 15

EK 7 with expanding shaft



- axial hub mounting with expanding shaft
- very smooth running
- high clamping forces

see page 16/17

EEx for the use in explosive environments



- available for the full product range
- for the hazardous areas 1/21 and 2/22 the SERVOMAX EEx Elastomer couplings are registered according to the directive ATEX 95/137

see page 19

Areas of application

- in servo drives in:
 - Machine tools
 - Packaging machinery
 - Plant automation
 - Printing machinery
 - Industrial robots
- Measurement and positioning units
- general mechanical engineering
- Linking screw jacks
- linear actuators
- encoders.

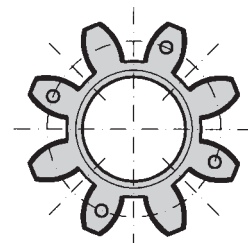
Function

The equalizing element of an EK coupling is the elastomer insert. It transmits the torque without backlash and vibration.

The elastomer insert defines the features of the entire coupling and/or of the entire drive system.

The coupling is backlash free due to pretensioning of the elastomer insert between the two coupling halves.

The Servomax-Coupling compensates for lateral, angular and axial misalignment.

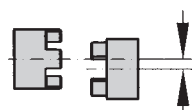


Elastomer insert

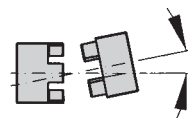
Properties

- vibration damping
- electrically isolating (standard)
- backlash-free
- press-fit design

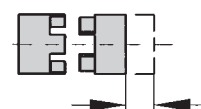
- compensation for misalignment



lateral



angular



axial

Description of the elastomer inserts

Type	Shore hardness	Color	Material	relative damping (ψ)	Temperature range	Properties
A	98 Sh A	red	TPU	0,4-0,5	-30° to +100° / 3.6 - 237 F	high damping
B	64 Sh D	green	TPU	0,3-0,45	-30° to +120° / 3.6 - 270 F	high torsional stiffness
C	80 Sh A	yellow	TPU	0,3-0,4	-30° to +100° / 3.6 - 237 F	very high damping
D	92 Sh A	black	TPU	0,3-0,45	-30° to + 90° / 3.6 - 194 F	electrically conductive*

* Due to the electrically conductive properties of the insert electrostatic load of the coupling is prevented. This eliminates sparks during normal operation (Explosive areas). Technical data available

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

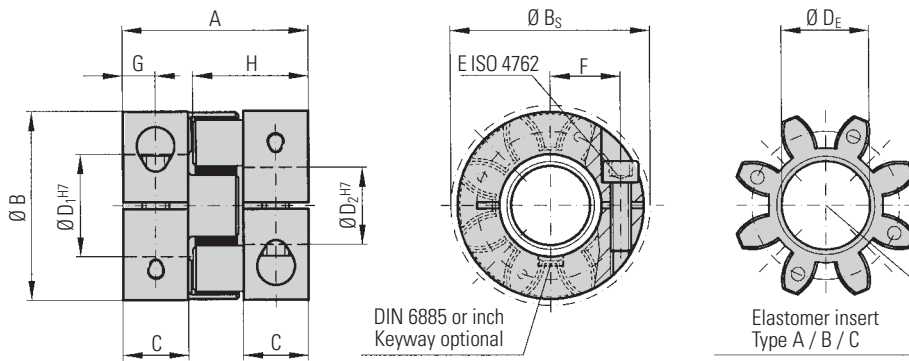
ATEX (AT mosphere EX plosive)

For zones 1/21 and 2/22 R+W offers standard products according to the new European directive ATEX 95 / Atex 137.

Explosive atmosphere: Mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapors, mists or dusts in which, after ignition has occurred, combustion spreads to the unburned mixture.

Also see page 19

Model EKL - Compact version



- short compact design
- concentrically machined hubs
- easy assembly
- vibration dampening
- electrically insulating
- backlash-free
- press-fit design

Material:

Clamping hub: high strength aluminum

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

Design:

Two coupling hubs are concentrically machined with concave driving jaws

Technical Information

Series	Type (Elastomer insert)	Rated torque	Max. torque **	Overall length	Outer diameter	Outer diameter with screwhead	Mounting length	Inner diameter range	Inner diameter max. (elastomer)	Tightening screw	ISO 4762/12.9J	Distance between centers	Distance	Hub length	Moment of inertia	Approx. weight	Static torsional stiffness	Dynamic torsional stiffness	lateral	angular	axial	speed *
		T_{KN}	T_{Kmax}	A	B	B_S	C	$D_{1/2}$	D_E	E	F	G	H	J_1/J_2	C_T	C_{Tdyn}	max. values					
2	A	2	4	20	16	17	6	3-8	6.2	M2	0.6	5.5	3	12	0.0003	0.008	50	100	0.08	1	±1	28,000
	B	2.4	4.8														115	230	0.06	0.8		
	C	0.5	1														17	35	0.1	1.2		
5	A	9	18	26	25	25	8	4-12.7	10.2	M3	2	8	4	16.7	0.001	0.02	150	300	0.08	1	±1	22,000
	B	12	24														350	700	0.06	0.8		
	C	2	4														53	106	0.1	1.2		
10	A	12.5	25	32	32	32	10.3	4-16	14.2	M4	4	10.5	5	20.7	0.01	0.05	260	541	0.1	1	±1	20,000
	B	16	32														600	1650	0.08	0.8		
	C	4	6														90	224	0.12	1.2		
20	A	17	34	50	42	44.5	17	8-25	19.2	M5	8	15.5	8.5	31	0.01	0.12	1140	2540	0.1	1	±2	19,000
	B	21	42														2500	4440	0.08	0.8		
	C	6	12														520	876	0.15	1.2		
60	A	60	120	58	56	57	20	12-32	27.2	M6	15	21	10	36	0.08	0.3	3290	7940	0.12	1	±2	14,000
	B	75	150														9750	11900	0.1	0.8		
	C	20	35														1400	1350	0.15	1.2		
150	A	160	320	62	66.5	68	21	19-35	30.2	M8	35	24	11	39	0.15	0.5	4970	13400	0.15	1	±2	11,500
	B	200	400														10600	29300	0.12	0.8		
	C	42	85														1130	3590	0.2	1.2		
300	A	325	650	86	82	85	31	20-45	38.2	M10	70	29	15	52	0.4	0.9	12400	23700	0.18	1	±2	9,500
	B	405	810														18000	40400	0.14	0.8		
	C	84	170														1280	6090	0.25	1.2		
450	A	530	1060	94	102	105	34	28-60	46.2	M12	120	38	17.5	57	1.3	1.5	15100	55400	0.2	1	±2	8,000
	B	660	1350														27000	81200	0.18	0.8		
	C	95	190														4120	11600	0.25	1.2		
800	A	950	1900	123	136.5	139	46	35-80	60.5	M16	290	50.5	23	74	7.8	8.5	41300	82600	0.25	1	±2	4,000
	B	1100	2150														66080	180100	0.2	0.8		
	C	240	400														10320	28600	0.3	1.2		

static torsional stiffness at 50% T_{KN}

dynamic torsional stiffness at T_{KN}

1 Nm = 8.85 in lbs

smaller sizes available

Product description

**Maximum transferable torque of the clamping hub depends on the bore diameters (bore/shaft clearance 0.01 mm to 0.05 mm shaft oiled)

Series	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	21	T_{Kmax}													
20				20	35	T_{Kmax}												
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			

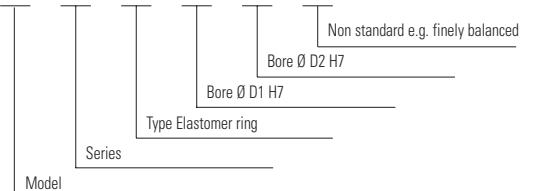
Higher torque through additional key possible.

*Speeds: Over 4000 rpm

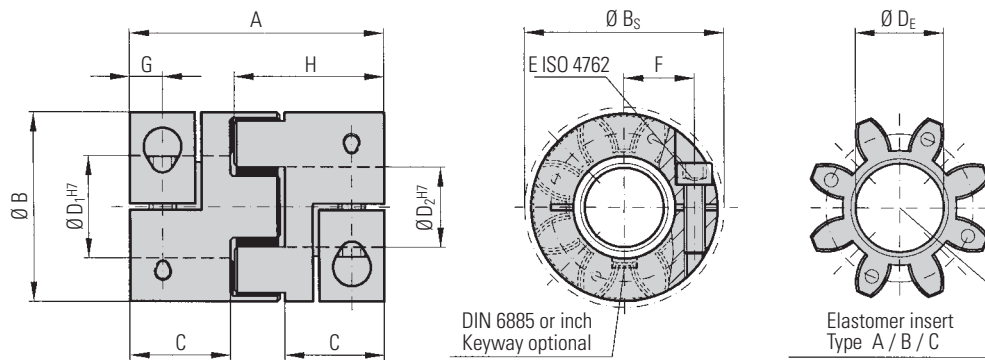
A finely balanced version is available

Ordering example:

EKL / 60 / A / 19 / 24 / XX



All data is subject to change without notice.



- easy assembly
- concentrically machined hubs
- vibration dampening
- electrically insulating
- backlash-free
- press-fit design

Material:

Clamping hub: high strength aluminum

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

Design:

Two coupling hubs are concentrically machined with concave driving jaws

Technical Information

Series	Type (Elastomer ring)	Rated torque	Max. torque **	Overall length	Outer diameter	Outer diameter with screwhead	Mounting length	Inner diameter range H7	Inner diameter max. (elastomer)	Tightening torque of the mounting screw (Nm)	Distance between centers	Hub length	Moment of inertia	Approx. weight in kg	Static torsional stiffness (10 ³ kgm ²)	Dynamic torsional stiffness lateral	angular	axial	Speed *			
		T _{KN}	T _{Kmax}	A	B	B _S	C	D _{1/2}	D _E	E	F	G	H	J ₁ /J ₂	C _T	C _{Tdyn}	max. values					
20	A	17	34	66	42	44.5	25	8-25	19.2	M5	8	15.5	8.5	39	0.02	0.15	1140	2540	0.1	1	±2	19,000
	B	21	42														2500	4440	0.08	0.8		
	C	6	12														520	876	0.15	1.2		
60	A	60	120	78	56	57	30	12-32	27.2	M6	15	21	10	46	0.09	0.35	3290	7940	0.12	1	±2	14,000
	B	75	150														9750	11900	0.1	0.8		
	C	20	35														1400	1350	0.15	1.2		
150	A	160	320	90	66.5	68	35	19-35	30.2	M8	35	24	12	52.5	0.2	0.6	4970	13400	0.15	1	±2	11,500
	B	200	400														10600	29300	0.12	0.8		
	C	42	85														1130	3590	0.2	1.2		
300	A	325	650	114	82	85	45	20-45	38.2	M10	70	29	15	66	0.6	1.1	12400	23700	0.18	1	±2	9,500
	B	405	810														18000	40400	0.14	0.8		
	C	84	170														1280	6090	0.25	1.2		
450	A	530	1060	126	102	105	50	28-60	46.2	M12	120	38	17.5	73	1.5	1.7	15100	55400	0.2	1	±2	8,000
	B	660	1350														27000	81200	0.18	0.8		
	C	95	190														4120	11600	0.25	1.2		
800	A	950	1900	162	136.5	139	65	35-80	60.5	M16	290	50.5	23	93.5	9.5	10	41300	82600	0.25	1	±2	4,000
	B	1100	2150														66080	180100	0.2	0.8		
	C	240	400														10320	28600	0.3	1.2		

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 in lbs

Product description

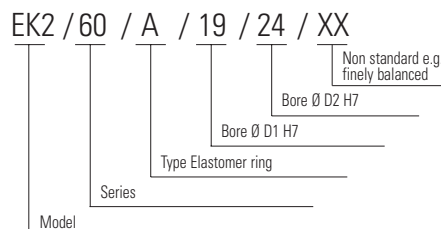
**Maximum transferable torque of the clamping hub depends on the bore diameters (bore/shaft clearance 0.01 mm to 0.05 mm shaft oiled)

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	T _{Kmax}												
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 through additional key possible.

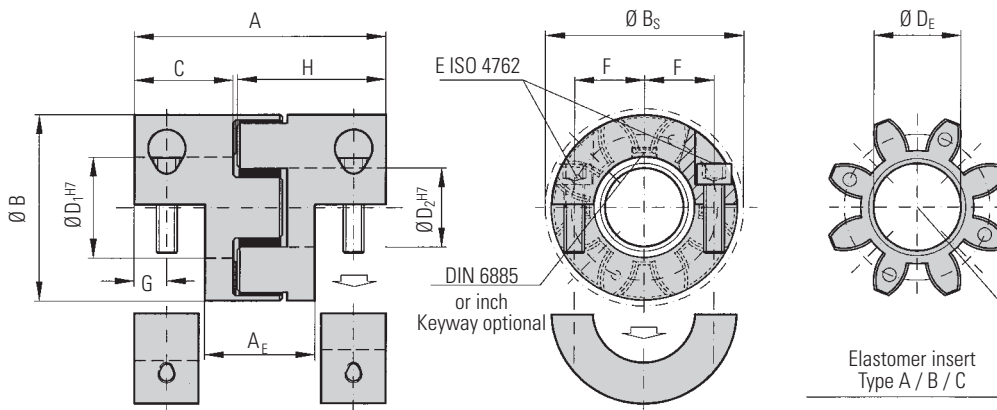
***Speeds:** Over 10,000 rpm
A finely balanced version is available

Ordering example:



All data is subject to change without notice.

Model EKH (split hubs)



- radial mounting possible
- high concentricity
- dampens vibrations
- electrical insulating
- easy mounting
- backlash free

Material:

Clamping hub: high strength aluminum

Elastomer ring: precision molded wear resistant, and thermally stable polymer

Design:

Two split coupling hubs are concentrically machined with concave driving jaws

Technical Information

Series	Type (Elastomer ring)	Rated torque		A	A _E	B	B _S	C	D _{1/2}	D _E	E	F	G	H	J ₁ /J ₂	C _T	C _{Tdyn}	max. values					
		T _{KN}	T _{Kmax}															lateral	angular	axial	speed *		
		Max. torque **	Overall length	Insertion length	Overall length	Outer diameter	Outer diameter with screwhead	Mounting length	Inner diameter range H7	Inner diameter max. (elastomer)	Tightening torque of the mounting screw	Distance between centers	Distance	Hub length	Moment of inertia	Approx. weight in kg	Static torsional stiffness	Dynamic torsional stiffness	lateral	angular	axial	speed *	
20	A	17	34	66	28	42	44.5	25	8-25	19.2	M5	8	15.5	8.5	39	0.02	0.15	1140	2540	0.1	1	±2	19,000
	B	21	42															2500	4440	0.08	0.8		
	C	6	12															520	876	0.15	1.2		
60	A	60	120	78	33	56	57	30	12-32	27.2	M6	15	21	10	46	0.09	0.35	3290	7940	0.12	1	±2	14,000
	B	75	150															9750	11900	0.1	0.8		
	C	20	35															1400	1350	0.15	1.2		
150	A	160	320	90	37	66.5	68	35	19-35	30.2	M8	35	24	12	52.5	0.2	0.6	4970	13400	0.15	1	±2	11,500
	B	200	400															10600	29300	0.12	0.8		
	C	42	85															1130	3590	0.2	1.2		
300	A	325	650	114	49	82	85	45	20-45	38.2	M10	70	29	15	66	0.6	1.1	12400	23700	0.18	1	±2	9,500
	B	405	810															18000	40400	0.14	0.8		
	C	84	170															1280	6090	0.25	1.2		
450	A	530	1060	126	51	102	105	50	28-60	46.2	M12	120	38	17.5	73	1.5	1.7	15100	55400	0.2	1	±2	8,000
	B	660	1350															27000	81200	0.18	0.8		
	C	95	190															4120	11600	0.25	1.2		
800	A	950	1900	162	65	136.5	139	65	35-80	60.5	M16	290	50.5	23	93.5	9.5	10	41300	82600	0.25	1	±2	4,000
	B	1100	2150															66080	180150	0.2	0.8		
	C	240	400															10320	28600	0.3	1.2		

static torsional stiffness at 50% T_{KN}

dynamic torsional stiffness at T_{KN}

1 Nm = 8.85 in lbs

Product description

**Maximum transferable torque of the clamping hub depends on the bore diameters (bore/shaft clearance 0.01 mm to 0.05 mm shaft oiled)

Series	Ø B	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	30	T _{Kmax}													
60		65	120	T _{Kmax}											
150			180	240	270	300	330								
300			300	340	450	520	570	630							
450				630	720	770	900	1120	T _{Kmax}						
800							1050	1125	1200	1250	1300	1350	1390	1425	1500

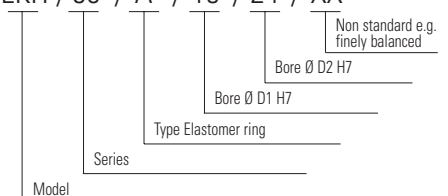
Higher torque through additional key possible.

*Speeds: Over 10,000 rpm

A finely balanced version is available

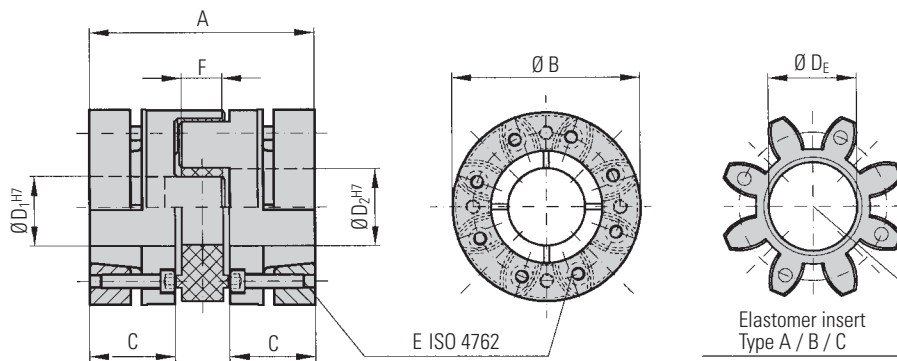
Ordering example:

EKH / 60 / A / 19 / 24 / XX



All data is subject to change without notice.

Model EK 6



- high clamping forces
- concentrically machined hubs
- easy assembly
- vibration dampening
- electrically insulating
- backlash-free
- press-fit design
- axial mounting

Material:

Clamping hub: high strength aluminum
Conical clamping ring: high strength aluminum
Elastomer ring: precision molded wear resistant, and thermally stable polymer

Design:

Two coupling hubs are concentrically machined with concave driving jaws

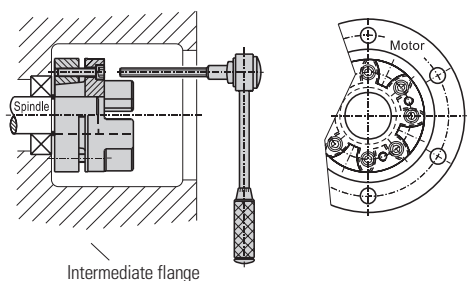
Technical Information

Series	Type (Elastomer ring)	Rated torque (Nm)	Max. torque* (Nm)	Overall length (mm)	Outer diameter (mm)	Mounting length (mm)	Inner diameter range H7 (mm)	Inner diameter max. (elastomer) (mm)	ISO 4762 mounting screw (mm)	Tightening torque of the mounting screw (ISO 4762) (Nm)	Thickness elastomer ring (mm)	Moment of inertia (ISO 4762) (kgm ²)	Approx. weight in kg	Static torsional stiffness (Kg)	Dynamic torsional stiffness lateral (Nm/rad)	angular (Nm/rad)	axial (mm)	speed (rpm)	
10	A	12.5	25	42	32	15	6-16	14.2	3xM3	2	9.5	0.01	0.08	C _T	C _{Tdyn}	max. values		±1	20,000
	B	16	32											260	541	0.1	1		
	C	4	6											600	1650	0.08	0.8		
20	A	17	34	56	43	20	8-24	19.2	6xM4	3	12	0.015	0.12	3290	7940	0.12	1	±2	19,000
	B	21	42											2500	4440	0.08	0.8		
	C	6	12											520	876	0.15	1.2		
60	A	60	120	64	56	23	12-32	27.2	4xM5	6	14	0.08	0.3	9750	11900	0.1	0.8	±2	14,000
	B	75	150											1400	1350	0.15	1.2		
	C	20	35											4970	13400	0.15	1		
150	A	160	320	76	66	28	19-35	30.2	8xM5	7	15	0.15	0.5	10600	29300	0.12	0.8	±2	11,500
	B	200	400											1130	3590	0.2	1.2		
	C	42	85											12400	23700	0.18	1		
300	A	325	650	96	82	36	20-45	38.2	8xM6	12	18	0.4	0.9	18000	40400	0.14	0.8	±2	9,500
	B	405	810											1280	6090	0.25	1.2		
	C	84	170											15100	55400	0.2	1		
450	A	430	1060	110	102	42	28-54	46.2	8xM8	35	20	1.3	1.5	27000	81200	0.18	0.8	±2	8,000
	B	660	1350											4120	11600	0.25	1.2		
	C	95	190											41300	82600	0.25	1		
800	A	950	1900	138	136.5	53	32-80	60.5	8xM10	55	25	9.2	9.6	66080	180150	0.2	0.8	±2	4,000
	B	1100	2150											10320	28600	0.3	1.2		
	C	240	400																

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 in lbs

Product description

Access holes in the mounting flange are not necessary for EK 6 couplings. The unique assembly screw design (shown below) allows for easy axial mounting and dismounting of the coupling.



(Bore shaft clearance 0.01 - 0.05 mm shaft oiled)

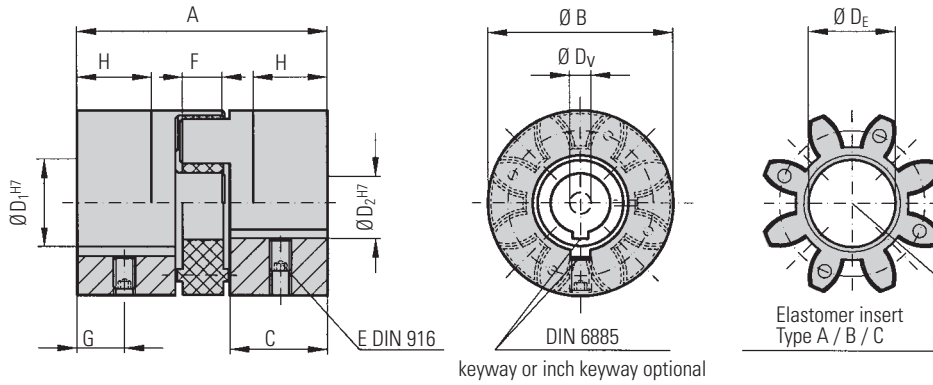
Ordering example:

EK6 / 60 / A / 19 / 24 / XX

Model Series Type Elastomer ring Bore Ø D1 H7 Bore Ø D2 H7 Non standard e.g. finely balanced

All data is subject to change without notice.

Model EK 1



- . economically priced
- concentrically machined
- vibration damping
- electrically insulating
- press-fit design
- low backlash, due to keyway connection

Material:

Hubs: high strength aluminum
Elastomer insert: precision molded wear resistant and thermally stable polymer

Design:

Two coupling hubs concentrically machined with concave driving claws
Bore tolerance H7 + keyway + clamping screw DIN 916 or optional pilot bored (DV)

Technical Information

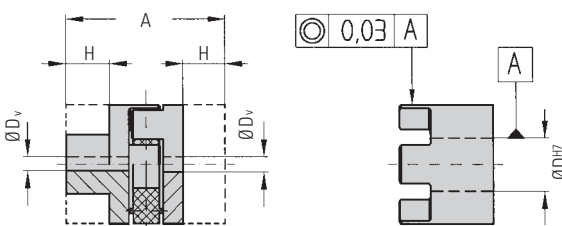
Series	Type (Elastomer insert)	Rated torque	Max. torque	Overall length	Outer diameter	Mounting length	Inner diameter	Inner diameter pilot bored	Inner diameter range H7	Set screws	Width Elastomer max. (elastomer)	Distance	possible shortening length	Moment of inertia (hub)	Approx. weight	Static torsional stiffness	Dynamic torsional stiffness	lateral	angular	axial	Speed*	
2	A	2	4	20	15	6.5	2.8	3-9	6.2	5	3	4	0.0003	0.008	50	100	max. values				±1	28,000
	B	2.4	4.8														0.06	0.8				
	C	0.5	1														0.1	1.2				
5	A	9	18	34	25	12	4	6-15	10.2	8	5	6	0.001	0.03	150	300	max. values				±1	22,000
	B	12	24														0.06	0.8				
	C	2	4														0.1	1.2				
10	A	12.5	25	35	32	12	6	6-18	14.2	9.5	6	6	0.01	0.08	260	541	max. values				±1	20,000
	B	16	32														0.08	0.8				
	C	4	6														0.12	1.2				
20	A	17	34	66	42	25	7	8-25	19.2	12	9	19	0.02	0.15	1140	2540	max. values				±2	19,000
	B	21	42														0.08	0.8				
	C	6	12														0.15	1.2				
60	A	60	120	78	56	30	9.5	12-32	27.2	14	11	22	0.09	0.35	3290	7940	max. values				±2	14,000
	B	75	150														0.1	0.8				
	C	20	35														0.15	1.2				
150	A	160	320	90	66.5	35	14	19-38	30.2	15	12	26	0.2	0.6	4970	13400	max. values				±2	11,500
	B	200	400														0.12	0.8				
	C	42	85														0.2	1.2				
300	A	325	650	114	82	45	18	20-45	38.2	18	15	32	0.6	1.1	12400	23700	max. values				±2	9,500
	B	405	810														0.14	0.8				
	C	84	170														0.25	1.2				
450	A	530	1060	126	102	50	22	28-60	46.2	20	17	37	1.5	1.7	15100	55400	max. values				±2	8,000
	B	660	1350														0.18	0.8				
	C	95	190														0.25	1.2				
800	A	950	1900	162	136.5	65	29	32-80	60.5	25	30	43	11.4	11	41300	82600	max. values				±2	4,000
	B	1100	2150														0.2	0.8				
	C	240	400														0.3	1.2				

Ø D ₁ /D ₂	E
Ø 6-10	M3
Ø 11-12	M4
Ø 13-30	M5
Ø 31-58	M8
Ø 59-90	M10

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 in lbs smaller sizes available

Product description

Details of pilot bored coupling hubs

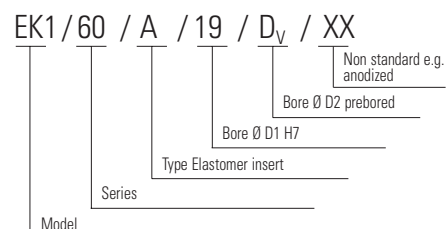


It's critical that modifications to the hub are machined concentrically and perpendicular to the through bore.

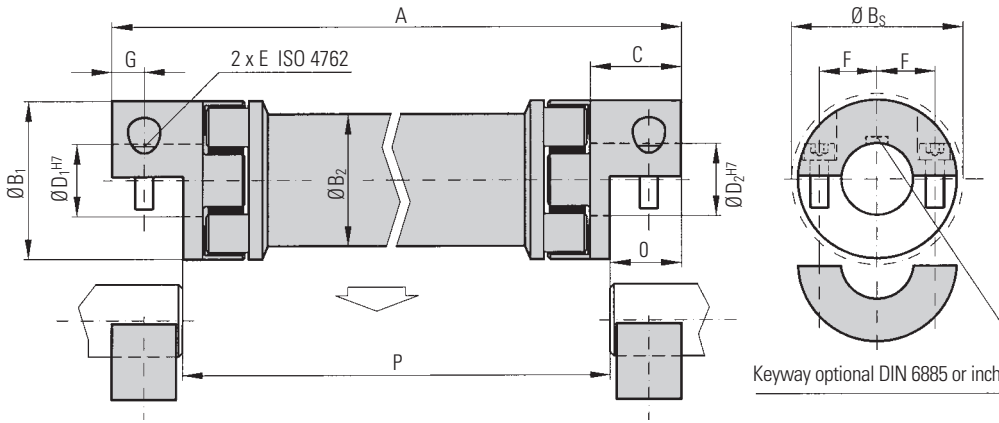
EK1 hubs can be modified to customer specifications.
The coupling hub may be shortened by measurement H.

*Speeds: Over 10,000 rpm
a finely balanced version is available

Ordering example:



All data is subject to change without notice.



- Due to split hubs radial mounting possible
- Spans distances of up to 4 m
- No intermediate support bearing required
- Low moment of inertia
- Vibration damping
- Press fit designs
- Backlash free

Material:

Clamping hub: high strength aluminum
 Elastomer ring: precision molded wear resistant, and thermally stable polymer
 Intermediate tube: precision machined aluminum tube, steel and composite tube are optionally available.

Design:

Two split coupling hubs are concentrically machined with concave driving jaws
 Elastomer inserts are available in type A or B
 The two coupling elements are connected with a precise and concentrically machined aluminum tube

Technical Information

Series	Type (Elastomer ring)	Rated torque		Max. torque**	Overall length	Outer diameter hub	Outer diameter tube	Fit length	Inner diameter range H7	mounting screw	Tightening torque of the mounting screw (N/m)	Distance	Distance	Mounting length	Moment of inertia	Inertia of tube per meter	Static torsional stiffness	Dynamic torsional stiffness
		T _{KN}	T _{Kmax}															
10	A	12.5	25	95 bis 4000	32	28	32	20	5-16	M4	4	10.5	7.5	16.6	0.01	0.075	260	541
	B	16	32	4000													600	1650
20	A	17	34	130 bis 4000	42	35	44.5	25	8-25	M5	8	15.5	8.5	18.6	0.02	0.183	1140	2540
	B	21	42	4000													2500	4440
60	A	60	120	175 bis 4000	56	50	57	40	14-32	M6	15	21	15	32	0.15	0.66	3290	7940
	B	75	150	4000													9750	11900
150	A	160	320	200 bis 4000	66.5	60	68	47	19-35	M8	35	24	17.5	37	0.21	1.18	4970	13400
	B	200	400	4000													10600	29300
300	A	325	650	245 bis 4000	82	76	85	55	19-45	M10	70	29	20	42	1.02	2.48	12400	23700
	B	405	810	4000													18000	40400
450	A	530	1060	280 bis 4000	102	90	105	65	24-60	M12	120	38	25	52	2.3	10.6	15100	55400
	B	660	1350	4000													27000	81200
800	A	950	1900	320 bis 4000	136.5	120	139	79	35-80	M16	290	50.5	30	62	17	38	41300	82600
	B	1100	2150	4000													66080	180150

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 in lbs

**Maximum transferable torque of the clamping hub see EKH (page 7)

Product description

Speed: To control the critical resonant speed please advise the application speed when ordering or inquiring about EZ Line shafts.

Fit tolerance: Shaft/bore clearance 0.01 to 0.05 mm. (Shaft oiled)

Torsional stiffness: To optimize the application different elastomer inserts with different shore hardnesses are available.

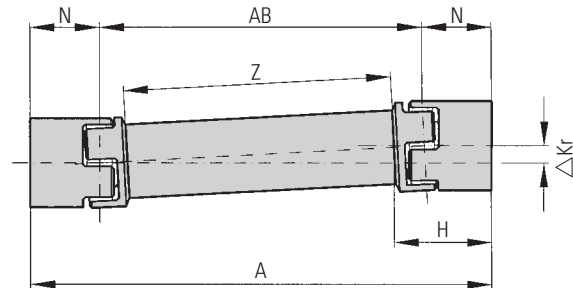
Ordering example: See page 11

Sizing of an elastomer line shaft EZ 2

A	overall length	mm	C_{Tdyn}^E	dynamic torsional stiffness of both elastomer inserts	Nm/rad	H	Length of the coupling	mm
AB	$AB = (A - 2xN)$	mm	C_{T}^{ZWR}	Torsional stiffness of tube per meter	Nm ² /rad	N	Distance between center lines	mm
Z	tube length $Z = (A - 2xH)$	mm	C_{Tdyn}^{EZ}	Torsional stiffness of entire coupling	Nm/rad	M_{max}	Max. torque	Nm
						φ	Angel of twist	degree

Series	Type (Elastomer ring)	C_{Tdyn}^E	C_T^{ZWR}	N	H
10	A	270	321	26	34
	B	825			
20	A	1270	1,530	33	46
	B	2220			
60	A	3970	6,632	49	63
	B	5950			
150	A	6700	11,810	57	73
	B	14650			
300	A	11850	20,230	67	86
	B	20200			
450	A	27700	65,340	78	99
	B	40600			
800	A	41300	392,800	94	125
	B	90000			

dynamical stiffness at T_{KN}



Torsional stiffness

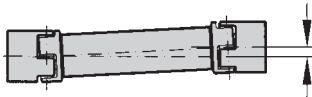
$$C_{Tdyn}^{EZ} = \frac{C_{Tdyn}^E \times (C_T^{ZWR}/Z)}{C_{Tdyn}^E + (C_T^{ZWR}/Z)} \text{ (Nm/rad)}$$

Angel of twist

$$\varphi = \frac{180 \times M_{max}}{\pi \times C_{Tdyn}^{EZ}} \text{ (degree)}$$

Max. possible misalignment

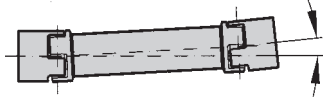
Lateral mislignment ΔKr



$$\Delta Kr_{max} = \tan \Delta \frac{Kw}{2} \cdot AB$$

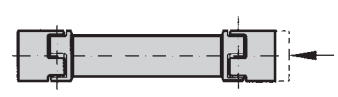
$$AB = A - 2xN$$

Angular misalignment ΔKw



$$\Delta Kw_{max} = \text{approx. } 2^\circ \text{ degree}$$

Axial misalignment ΔKa



$$\Delta Ka_{max} = \text{ca. } \pm 2$$

R+W calculation programm

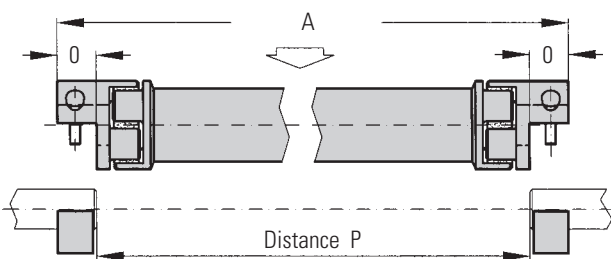
With a special calculation software R+W can simulate the application and select the right axis.

The calculated results are shown on the right

The values can be changed using different tube material or different elastomer inserts.

Critical resonance speed	$n_k = 1/\text{min.}$
Torsional stiffness tube EZ 2	$C_T^{ZWR} = \text{Nm/rad}$
Total stiffness EZ 2	$C_{Tdyn}^{EZ} = \text{Nm/rad}$
Angle of twist	$\varphi = \text{degree-min.-sec.}$
Weight of total axes	$m = \text{kg}$
Speed	$n_e = 1/\text{min.}$
Mass moment of inertia	$J = \text{kgm}^2$
Permissible lateral misalignment	$\Delta Kr = \text{mm}$

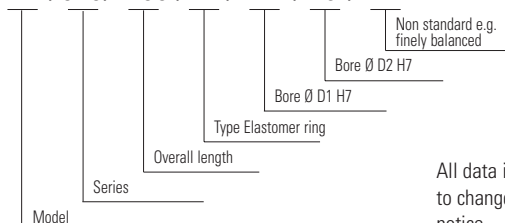
Mounting instruction



The total length of the axis is defined by the distance $P + 2x0$

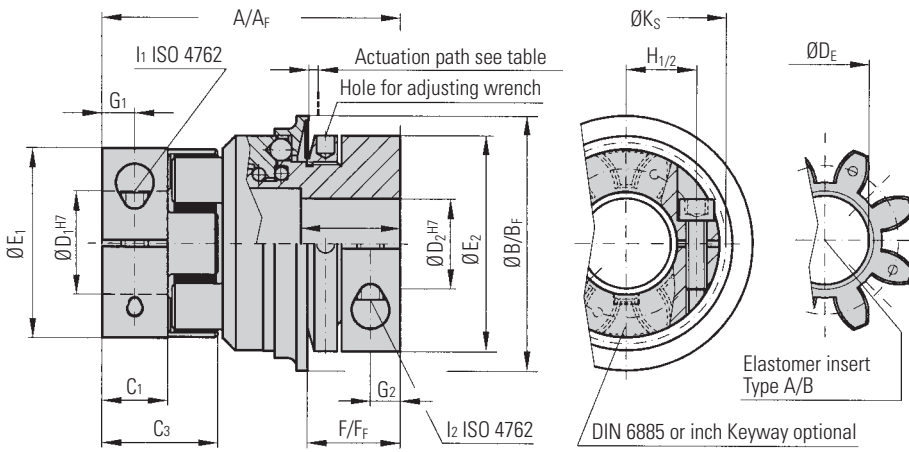
Ordering example

EZ2 / 020 / 1200 / A / 24 / 19 / XX



All data is subject to change without notice.

Model ES 2



- Reliabel torque overload protection
- Compact simple design
- Backlash free due to patented R+W design
- Disengagement within msecs.
- High actuation path when disengaging
- Electrically insulated
- Press fit design

Design:

Two coupling hubs are concentrically machined with concave driving jaws

One side with an integrated torque limiter

The torque limiter is available in single position, multi position or full-disengagement versions.

Material:

Torque limiter: high strength hardened steel with rust protected surface (oxidized)

Clamping hubs: high strength aluminum. Size 150 and up on the SK-side steel

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

Technical information

	Adjustment range possible from to (Nm)		Adjustment range (full disengagement) (Nm) (approx. values)		Overall length (mm)		Outer diameter of actuation ring (mm)		Fit length (mm)		Length of hub (mm)		Inner diameter from \emptyset to $\emptyset H_1$ (mm)		Inner diameter from \emptyset to $\emptyset H_2$ (mm)		Diameter of the hub (mm)		Distance (mm)		Distance full disengagement (mm)		Distance (mm)		Distance between centers (mm)	
	T_{KN}	T_{KN}^F	A	A_F	B	B_F	C_1	C_2	C_3	D_1	D_2	E_1	E_2	F	F_F	G_1	G_2	H_1								
10	2-6 or 4-12	4-10	60	60	45	51.5	10.3	16	20,7	5-16	6-20	32	40	17	16	5	5	10.5								
20	10-25 or 20-40	8-20 or 16-30	86	86	65	70	17	27	31	8-25	12-30	42	55	24	22	8.5	7.5	15								
60	10-30 or 25-80	20-40 or 30-60	96	96	73	83	20	31	36	12-32	15-32	56	66	30	29	10	9.5	21								
150	20-70 or 40-170	80-150	106	108	92	98	21	35	39	19-35	19-42	66.5	81	31	30	11	11	24								
300	100-200 150-240 200-320	120-180 oder 180-300	140	143	120	132	31	42	52	20-45	30-60	82	110	35	35	15	13	29								
450	80-200 200-350 300-500	60-150 100-300 250-500	164	168	135	155	34	51	57	28-60	35-60	102	123	45	43	17.5	17	38								
800	400-650 500-800 600-900	200-400 oder 450-800	179	190	152	177	46	45	74	35-75	40-80	136.5	132	50	54	23	18	50.5								

Series	Screws	ISO 4762/12.9		Screws ISO 4762/12.9		Approx. weight (kg)	Moment of inertia (mm)	Actuation path (mm)	Type elastomer insert	Inner diameter (elastomer insert) (mm)	Static torsional stiffness (Nm/rad)	Dynamic torsional stiffness (Nm/rad)	lateral misalignment (mm)		angular misalignment (degrees)		axial misalignment (mm)	
		H_2	l_2	K_S	J_{ges}								D_E	C_T	C_{Tdyn}	max. values		
10	M4	4	15	M4	4.5	0.3	0.06	1.2	A	14.2	260	541	0.08	1	± 1			
20	M5	8	19	M6	15	0.6	0.25	1.5	A	19.2	1140	2540	0.08	1	± 2			
60	M6	15	23	M8	40	1.0	0.7	1.7	A	27.2	3290	7940	0.1	1	± 2			
150	M8	35	27	M10	70	2.4	2.3	1.9	A	30.2	4970	13400	0.12	1	± 2			
300	M10	70	39	M12	130	5.8	11	2.2	A	38.2	12400	23700	0.14	1	± 2			
450	M12	120	41	M16	200	9.3	22	2.2	A	46.2	15100	55400	0.16	1	± 2			
800	M16	290	48	2xM16	250	14.3	33.5	2.2	A	60.5	41300	82600	0.25	1.0	± 2			

W = single position re-engagement

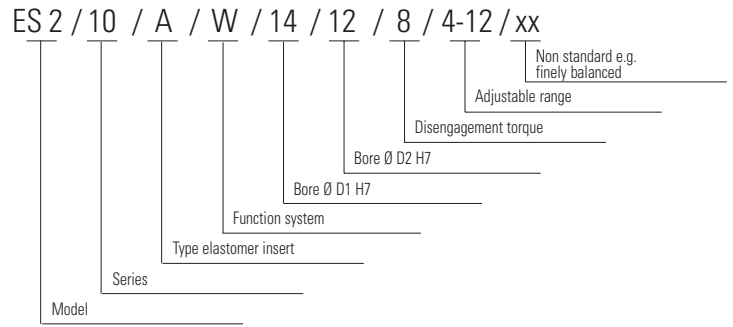
- After the overload has been eliminated, the coupling will automatically reengage precisely 360° from the original disengagement position
- Achievement of the precise synchronus re-engagement due to patented R+W design
- Signal at overload with mechanical switch or proximity sensor

D = Multi position re-engagement

- Coupling re-engages at multiple set angular intervals.
- Immediate availability of the application as soon as the overload has been eliminated.
- Signal at overload with mechanical switch or proximity sensor
- Standard engagement every 60°
- Engagement at 30, 45, 90 and 120 degrees are optional.

F = Full disengagement

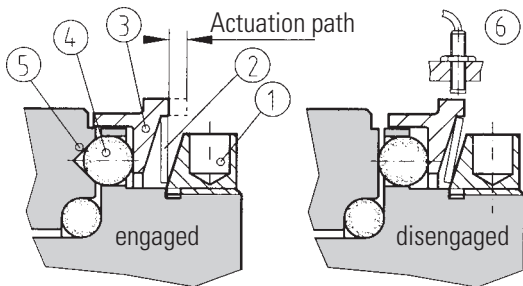
- Permanent separation of drive and driven loads in the event of a torque overload.
- No residual friction
- Signal at overload
- Rotating elements slow down freely
- Coupling can be re-engaged manually (Engagement every 60°)



General function

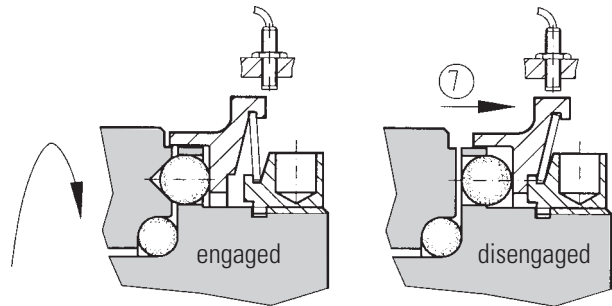
R+W torque limiting couplings are ball detent style overload couplings. They protect drive and driven mechanical components from damage associated with torque overloads. Backlash free torque transmission is accomplished by a series of steel balls (4) nested in hardened detents (5). See figure 1. Disc springs (2) push against an actuation ring (3) keeping the balls nested. The disengagement torque is adjustable by means of an adjustment ring (1). In the event of an overload, the actuation ring moves axially allowing the balls to come off the detents separating the drive and driven elements. The movement of the actuation ring can be sensed by means of a mechanical switch or proximity sensor triggering the drive to shut down.

Single-position / Multi-position



In a torque overload, with the single-position design (standard) and multi-position design, the spring disengages to allow the balls to come out of their detents, separating the drive and driven elements. Very low residual spring pressure remains so that the coupling will re-engage once the torque is reduced below the overload setting.

Full-disengage



With this design, when a torque overload is detected, the disc spring completely flips over and places no residual spring pressure on the actuation ring (7). The drive and driven elements are completely separated. The coupling will **not** automatically re-engage, the re-engagement has to be performed manually (picture 3a and 3b).

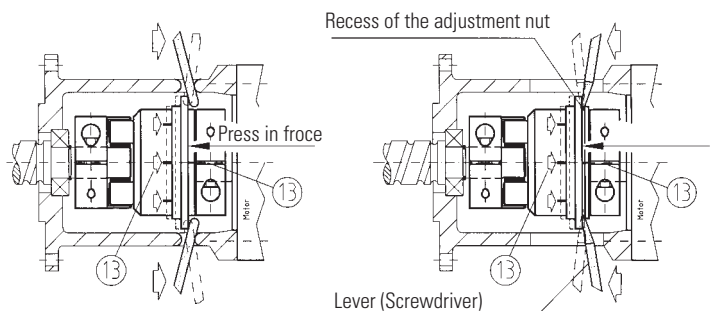
Full-disengagement

Re-engagement of the Full-disengage design

The R+W full-disengage torque limiting coupling can be re-engaged in six different positions or every 60 degrees with low "press-in" force. Marks on the actuation ring and body (13) of the coupling must line up and indicate the re-engagement points.

As of size 200 and up the re-engagement can be done with 2 lever which will be supported at a recess on the adjustment nut (picture 3b). Screwdrivers can be used as a lever.

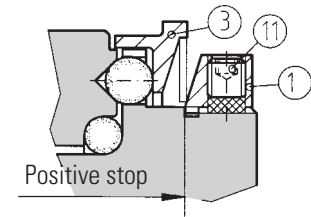
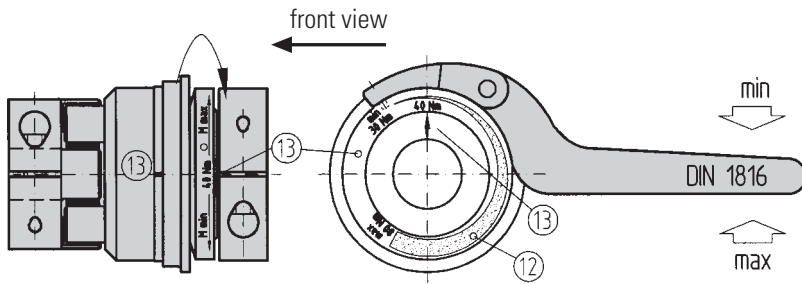
CAUTION: Re-engagement should only be performed when the coupling is motionless and not rotating!



picture 3a

picture 3b

Disengagement torque setting ES 2



- 1 adjustment nut
- 11 locking screw
- 3 steel actuation ring
- 12 adjustment range
- 13 marking

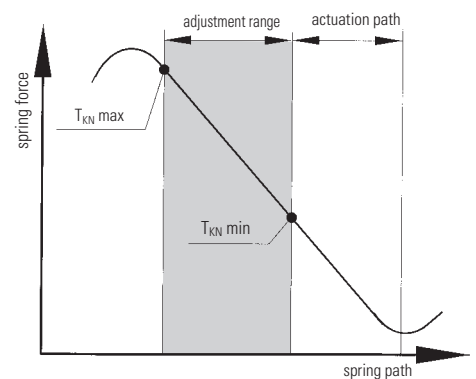
At ES 2 couplings, the slot of the clamping hub serves as a marking (13)

R+W torque limiters are factory set to the customer specified disengagement torque, which is marked on the coupling. The adjustment range (min/max) is also marked on the adjustment ring. The customer can adjust the disengagement torque as long as it falls within the range indicated on the adjustment ring.

Do not exceed adjustment range during readjustment

To adjust the disengagement torque, loosen the locking screws (11) and rotate the adjustment ring using a spanner wrench to the desired new setting. Tighten the locking screws and test the coupling.

CAUTION: R+W torque limiters incorporate disc springs that exhibit a special spring characteristic. It is important to stay in the max-min range of the coupling.

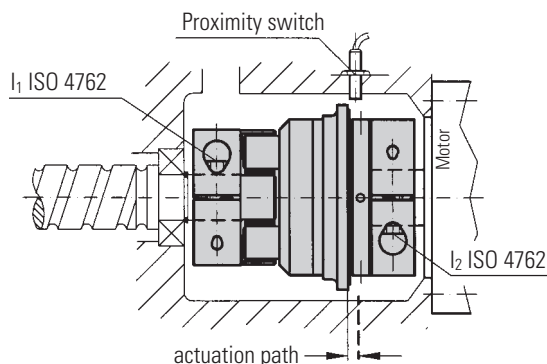


The selection of torque limiters

In general the torque limiters are sized according to the necessary disengagement torque. This torque must exceed the nominal torque of the application.

Additional information about the selection see page 18.

Mounting instructions



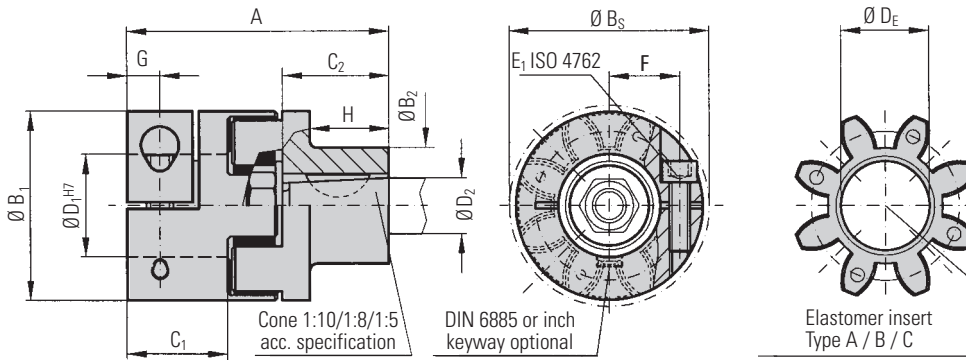
Mounting: Slide the coupling on the shaft ends to the proper axial position. Using a torque wrench, tighten the clamp screws to the correct tightening torque as indicated (in the table page 12)

Caution: Both clamping hubs have different screws and different tightening torques.

Dismounting: Simply loosen the clamp screw I_1 , I_2 and remove the safety coupling.

Emergency cut off: The axial path of the actuation ring activates the mechanical switch or the proximity sensor .

Caution: Upon assembly, it is absolutely necessary to check the function of the switch 100%



- for conical shaft ends
- compact design
- easy mounting
- very smooth running
- backlash free
- electrically insulating

Material:

Clamping hub: high strength aluminium
 Conical hub: Steel
 Elastomer insert: precision molded wear resistant and thermally stable polymer

Design:

Two coupling hubs are concentrically machined with concave driving jaws
 One side with clamping hub and a radial screw ISO 4762
 One side with a hub conically bored with keyway according to customer requirement

Technical Information

Series	Type (Elastomer ring)	Rated torque		A	Outer diameter hub			C1	C2	D1	D2	DE	E1	F	G	H	CT	CT ^{dyn}	max. values			
		T _{KN}	T _{Kmax}		B1	B2	Bs												lateral	angular		
20	A	17	34	57	42	19	44.5	25	16	8-25	acc. to customer requirement	19.2	M5	8	15.5	8.5	9.5	1140	2540	0.1	1	
	B	21	42															2500	4440	0.08	0.8	± 2
	C	6	12															520	876	0.15	1.2	
60	A	60	120	77	56	28	57	30	29	12-32	acc. to customer requirement	27.2	M6	15	21	10	21	3290	7940	0.12	1	
	B	75	150															9750	11900	0.1	0.8	± 2
	C	20	35															1400	1350	0.15	1.2	
150	A	160	320	84	66.5	30	68	35	29	19-35	acc. to customer requirement	30.2	M8	35	24	12	19	4970	13400	0.15	1	
	B	200	400															10600	29300	0.12	0.8	± 2
	C	42	85															1130	3590	0.2	1.2	

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN} 1 Nm = 8.85 in lbs

Product description

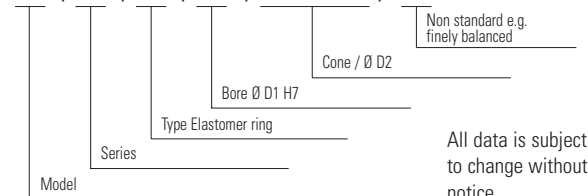
*Maximum transferable torque of the clamping hub depends on the bore diameters (bore/shaft clearance 0.01 mm to 0.05 mm shaft oiled)

Series	Ø 8	Ø 16	Ø 19	Ø 25	Ø 30	Ø 32	Ø 35
20	20	35	T _{Kmax}	T _{Kmax}			
60		50	80	100	110	120	
150			120	160	180	200	220

Higher torque through additional key possible.

Ordering example:

EK4 / 20 / A / 24 / 1:10 Ø11 / XX

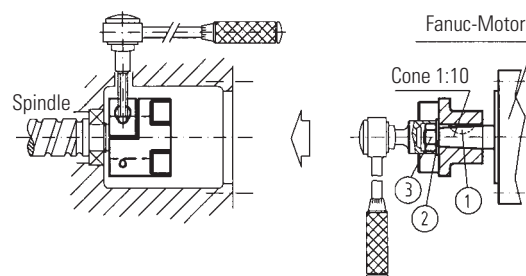


All data is subject to change without notice.

Speeds: Over 10,000 rpm
 A finely balanced version is available

Installation instruction:

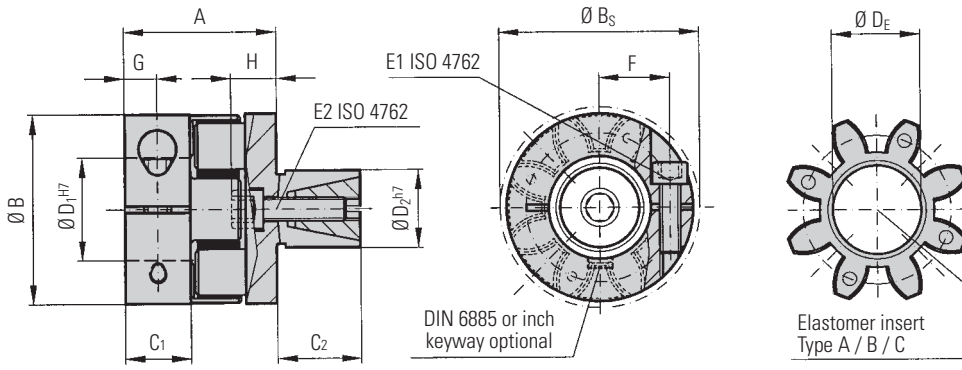
Mounting of the clamping hub: Slide the coupling on the shaft ends, at the right axial position thighten the mounting screw to the specified tightening torque as shown in the table (column E1)



Mounting of the conical hub: After inserting the key into the keyway of the motor shaft slide the coupling hub on the shaft. Check if the conical hub has a proper seat on the shaft. Now the nut (3) can be tightened on the motor shaft using the exact tightening torque specified by the motor manufacturer.

Model EK 7

Optional
stainless
steel



- Short compact design, conserves space while reducing costs
- Easy mounting
- High concentricity
- Axial mounting of the expanding shaft
- Backlash free
- Electrical insulating

Material:

Clamping hub: high strength aluminium
 Expanding shaft & cone: steel
 Elastomer insert: precision molded wear resistant and thermally stable polymer

Design:

Two coupling hubs are concentrically machined with concave driving jaws
 One side with clamping hub and a radial screw ISO 4762
 One side with an expanding shaft and tapered clamping element
 Suggested bore tolerance for the shaft: H7

Technical Information

Series	Type (Elastomer insert)	Rated torque (Nm)	Max. torque* (Nm)	Overall length (mm)	Outer diameter (mm)	Outer diameter with screwhead (mm)	Mounting length (mm)	Mounting length (mm)	Inner diameter range H7 (mm)	Outer diameter range H7 (mm)	Inner diameter max. (elastomer) (mm)	Tightening screw (ISO 4762)	Tightening torque (Nm)	Distance between centers (ISO 4762) (mm)	Distance (mm)	Length (mm)		
	T _{KN}	T _{Kmax}	A	B	B _S	C ₁	C ₂	D ₁	D ₂	D _E	E ₁	E ₂	F	G	H			
5	A	9	18	22	25	25	8	12	4-12.7	10-16	10.2	M3	2	M4	4	8	4	7
	B	12	24															
	C	2	4															
10	A	12.5	25	28	32	32	10.3	20	5-16	13-25	14.2	M4	4	M5	15	10.5	5	7
	B	16	32															
	C	4	6															
20	A	17	34	40	42	44.5	17	25	8-25	14-30	19.2	M5	8	M6	12	15.5	8.5	10
	B	21	42															
	C	6	12															
60	A	60	120	46	56	57	20	27	12-32	23-36	27.2	M6	15	M8	32	21	10	11
	B	75	150															
	C	20	35															
150	A	160	320	51	66.5	68	21	32	19-35	26-42	30.2	M8	35	M10	60	24	11	16
	B	200	400															
	C	42	85															
300	A	325	650	68	82	85	31	45	20-45	38-60	38.2	M10	70	M12	110	29	15	20
	B	405	810															
	C	84	170															
450	A	530	1060	76	102	105	34	55	28-60	42-70	46.2	M12	120	M16	240	38	17.5	27
	B	660	1350															
	C	95	190															
800	A	950	1900	94	135	139	65	60	35-80	42-80	60.5	M16	290	M16	300	50.5	23	27
	B	1100	2150															
	C	240	400															

1 Nm = 8.85 in lbs

Table 1

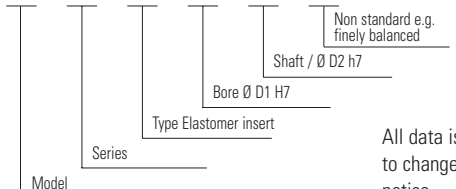
*Maximum transferable torque of the clamping hub depends on the bore diameters (bore/shaft clearance 0.01 mm to 0.05 mm shaft oiled)

Speeds: Over 4,000 rpm
 A finely balanced version is available

Series	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
5		1.5	2	8														
10			4	12	T _{Kmax}													
20				20	35	T _{Kmax}												
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	

Ordering example:

EK7 / 20 / A / 24 / 19 / XX



All data is subject to change without notice.

Technical information EK 7

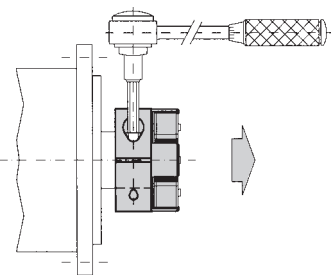
Series	Type (Elastomer insert)	Moment of inertia	Approx. weight (10 ³ kg/m ²)	C _T	C _{Tdyn}	max. Werte			
						Static torsional stiffness (kg)	Dynamic torsional stiffness (Nm/rad)	lateral (mm)	angular (Grad)
5	A	0.002	0.04	150	300	0.08	1	±1	22,000
	B			350	700	0.06	0.8		
	C			53	106	0.1	1.2		
10	A	0.01	0.05	260	541	0.1	1	±1	20,000
	B			600	1650	0.08	0.8		
	C			90	224	0.12	1.2		
20	A	0.04	0.12	1140	2540	0.1	1	±2	19,000
	B			2500	4440	0.08	0.8		
	C			520	876	0.15	1.2		
60	A	0.08	0.3	3290	7940	0.12	1	±2	14,000
	B			9750	11900	0.1	0.8		
	C			1400	1350	0.15	1.2		
150	A	0.15	0.5	4970	13400	0.15	1	±2	11,500
	B			10600	29300	0.12	0.8		
	C			1130	3590	0.2	1.2		
300	A	0.4	0.9	12400	23700	0.18	1	±2	9,500
	B			18000	40400	0.14	0.8		
	C			1280	6090	0.25	1.2		
450	A	1.3	1.5	15100	55400	0.2	1	±2	8,000
	B			27000	81200	0.18	0.8		
	C			4120	11600	0.25	1.2		
800	A	9.5	7.6	41300	82600	0.25	1	±2	4,000
	B			66080	180150	0.2	0.8		
	C			10320	28600	0.3	1.2		

static torsional stiffness at 50% T_{KN} dynamic torsional stiffness at T_{KN}

Mounting instructions

Mounting of the clamping hub:

Slide the coupling onto the shaft ends, at the right axial position tighten the mounting screw to the specified tightening torque E1 as shown in column E1 / page 16



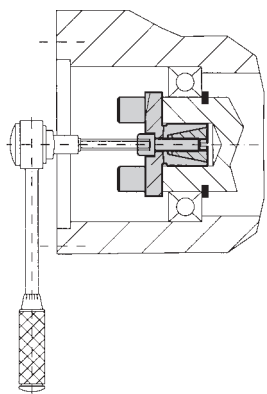
Dismounting of the clamping hub:

For dismounting loosen the mounting screw E1.

Mounting of the expanding shaft:

Push the shaft hub into the bore, at the right axial position tighten the mounting screw to the specified tightening torque E2 as shown on page 16 / column E2

The shaft is expanded due to the tightening of the screw.



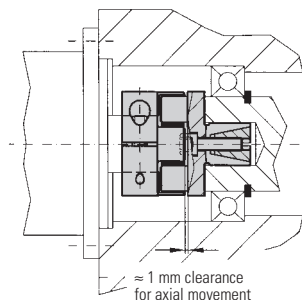
see table 1 / column E2

Dismounting of the expanding shaft:

For dismounting the screw E2 is loosened a few full turns. By putting pressure on the screw head, the inner cone slides out of its sleeve. The shaft is now loose.

Advantage:

No access holes in the intermediate flange are necessary in order to mount the EK7 couplings.



Caution:

The elastomer insert has to be able to axially move in order to compensate for axial misalignment.

Factors and sizing calculations

Temperature factor S_v

	A	B	C
Temperatur (v)	Sh 98 A	Sh 64 D	Sh 80 A
> - 30° to - 10° C	1.5	1.7	1.4
> - 10° to + 30° C	1.0	1.0	1.0
> + 30° to + 40° C	1.2	1.1	1.3
> + 40° to + 60° C	1.4	1.3	1.5
> + 60° to + 80° C	1.7	1.5	1.8
> + 80° to + 100° C	2.0	1.8	2.1
> + 100° to + 120° C	–	2.4	–

Start factor S_Z

Z/h	up to 120	120 to 240	over 240
S_Z	1.0	1.3	on request

Shock or load factor S_A

Uniform load	$S_A = 1.0$
Non-uniform load	$S_A = 1.8$
High dynamics, frequent reversing loads	$S_A = 2.5$

- T_{KN} = Rated torque of coupling (Nm)
- T_{Kmax} = Max. torque of the coupling (Nm)
- T_S = Existing peak torque of the coupling (Nm)
- T_{AS} = Peak torque of the drive element (Nm)
- T_{AN} = Rated torque of the drive element (Nm)
- T_{LN} = Rated torque of the driven element (Nm)
- P_{LN} = Power of the driven element (KW)
- n = Speed of the driven element (rpm)
- J_A = Moment of inertia of the drive element (kgm²) (rotor of the motor)
- J_L = Moment of inertia of the driven element (kgm²) (spindle+slide+work piece)
- J_1 = Moment of inertia of a coupling half at the driving end (kgm²)
- J_2 = Moment of inertia of a coupling half at the driven end (kgm²)
- m = Ratio of the moments of inertia driving to driven element
- v = Temperature of the area around the coupling (observe radiant heat)
- S_v = Temperature factor
- S_A = Shock or load factor
- S_Z = Start factor (factor for the number of starts/hour)
- Z_i = Cycle of starts (1/h)

Sizing of a Servo-Insert-Coupling

1. Calculation example without shock or reversing loads

The rated torque of the coupling (T_{KN}) needs to be higher than the rated torque of the driven element (T_{LN}) times the temperature factor S_v at the coupling for the application. If T_{LN} is not known, T_{AN} can be used for the calculation instead.

Condition:

$$T_{KN} > T_{LN} \times S_v$$

Additional calculation:

$$T_{LN} = \frac{9550 \times P_{LN}}{n_A}$$

Calculation example: (No loads and shocks)

Drive face: DC - motor

$$T_{AN} = 119 \text{ Nm}$$

Coupling conditions:

$$v = 70^\circ$$

$$S_v = 1.7 \text{ (for } 70^\circ/\text{Type A)}$$

Driven face: Pump

$$T_{LN} = 85 \text{ Nm}$$

Condition:

$$T_{KN} > T_{LN} \times S_v$$

$$T_{KN} > 85 \text{ Nm} \times 1.7$$

$$T_{KN} \geq 144.5 \text{ Nm}$$

Result:

A Coupling type **EK 2/150/A** ($T_{KN} = 160 \text{ Nm}$) is selected.

2. Calculation example with shock loads

In all cases the maximum rated torque (T_{Kmax}) of the coupling can not be exceeded. First calculate the rated torque (T_{KN}) of the coupling same as above. Compare this result to the peak torque (T_S) times the start factor (S_Z) times the temperature factor (S_v) for the application. The greater of the two values must be less than (T_{Kmax}) of the coupling.

Condition 1:

$$T_{KN} > T_{LN} \times S_v$$

Additional calculation:

$$T_{LN} = \frac{9550 \times P_{LN}}{n_A}$$

Condition 2:

$$T_{Kmax} > T_S \times S_Z \times S_v$$

Additional calculation:

$$T_S = \frac{T_{AS} \times S_A}{m + 1}$$

$$m = \frac{J_A + J_1}{J_1 + J_2}$$

The ATEX 95 / ATEX 137 is regulated by the new European directive.
In general the explosive atmosphere is classified in 3 different zones

Zone 0: A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is present frequently, continuously or for long periods. **Zone 20** is relevant for an explosive atmosphere in the form of a cloud of combustibile dust in air under the same conditions as above.

Zone 1: A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is likely to occur in normal operation occasionally. **Zone 21** is relevant for an explosive atmosphere in the form of a cloud of combustibile dust in air under the same conditions as above

Zone 2: A place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only. **Zone 22** is relevant for an explosive atmosphere in the form of a cloud of combustibile dust in air under the same conditions as above.



For the hazardous areas 1/21 and 2/22 the SERVOMAX EX Elastomer coupling are registered according to the directive ATEX 95/137

Design of the Servomax EX: No dimensional change of the EK standard series. The material of the hubs and the inserts will change.

Hubs: In general steel or stainless steel hubs will be used

Caution: Aluminum hubs may not be used in explosive environment.

Elastomer insert: A special elastomer insert (Type D/92 Sh A), which is able to conduct electricity is used. This prevents the possibility of electrostatic loads and sparks.

Mounting, Sizing: All misalignment values and the transmittable torques are reduced by 30%.

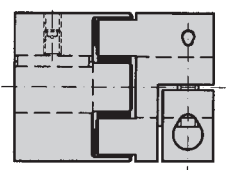
Maintenance: A routine inspection of the coupling must be performed.

Mounting manuals: Mounting and maintenance manuals are provided with every EEx coupling.

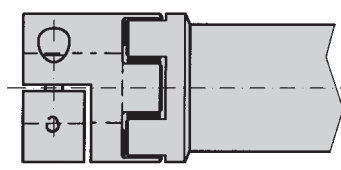
R+W solutions with standard components

All standards hubs and elastomer inserts are interchangeable in the same sizes

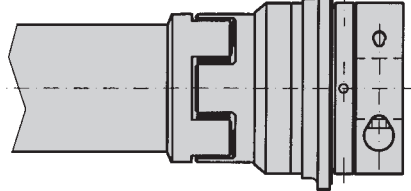
Example:



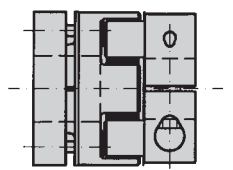
EK 1 EK 2



EZ 2-Coupling half

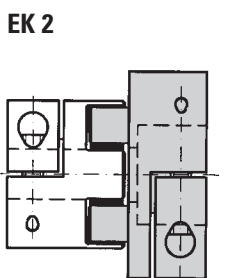


ES 2-Coupling half

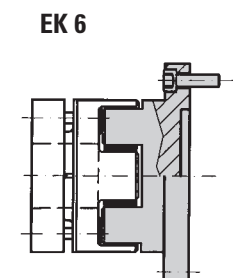


EK 6 EKL

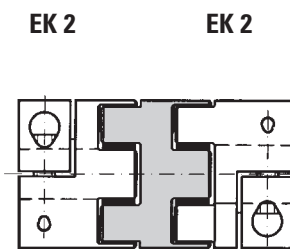
R+W non standard solutions with special hubs



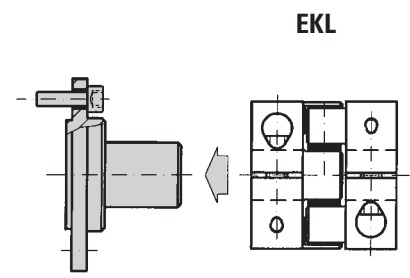
Non standard hubs for bigger bores



Non-standard hubs with flange



Intermediate piece for higher lateral misalignment



Adapter flange for planetary gearboxes acc. to ISO 9409

The R+W product range

Experience and
Know-how
for your
special
requirements.



TGA-ZM-05/91-00
Registrierungs-Nr. 40503432

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www.rwcouplings.com

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COUPLING TECHNOLOGY

TORQUE LIMITERS Series SK

From 0.1 – 2,500 Nm
Bore diameters 4 – 70 mm
Available as a single position, multi-position, load holding, or full disengagement version
Single piece or press-fit design



BELLOW COUPLINGS Series BK

From 15 – 10,000 Nm
Bore diameters 10 – 180 mm
Single piece or press-fit design



BELLOW COUPLINGS ECONOMY CLASS Series BKL

From 2 – 500 Nm
Bore diameters 4 – 62 mm



LINE SHAFTS Series ZA/ZAe

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



MINIATURE BELLOWS COUPLINGS Series MK

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



SERVO-INSERT-COUPPLINGS SERVOMAX Series EK

From 2 – 1,100 Nm
Shaft diameters 5 – 60 mm
backlash-free, press-fit design



LINEAR COUPLINGS Series LK

From 70 – 2000 N
Thread M5 – M16



POLYAMID COUPLINGS MICROFLEX Series FK 1

Rated torque 1 Ncm
Bore diameters 1 – 1.5 mm

