



SIZES FROM 1,500 - 100,000 Nm BACKLASH FREE, TORSIONALLY STIFF METALLIC BELLOWS COUPLINGS

GENERAL INFORMATION ABOUT R+W BELLOWS COUPLINGS:



SERVICE LIFE

R+W bellows couplings are fatigue resistant and wear free for an infinite life, as long as the technical limits are not exceeded.

FIT CLEARANCE

Overall shaft / hub clearance of 0.03 - 0.08 mm

TEMPERATURE RANGE

-40 to +300° C

SPECIAL SOLUTIONS

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

ATEX (Optional)

For use in hazardous areas available upon request.

BX**ZA**

TORSIONALLY STIFF METALLIC BELLOWS COUPLINGS SIZES FROM 1,500 - 100,000 Nm

MODEL

FEATURES

BX1

**with flange mounting
from 10 - 100 KNm**

- ▶ for customer specific applications

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BX4

**with simple keyway mounting
from 10 - 100 KNm**

- ▶ low backlash keyway connection
- ▶ compact, simple design

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BX6

**with conical clamping ring
from 10 - 100 KNm**

- ▶ backlash free conical clamping
- ▶ high shaft clamping pressure

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ZA

**with conical clamping bushing
from 1,500 - 4,000 Nm**

- ▶ mounting and dismounting without disturbing adjacent equipment
- ▶ standard lengths of up to 6 meters
- ▶ no intermediate support necessary

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BX1

WITH FLANGE MOUNTING

10 - 100 KNm



ABOUT

FEATURES

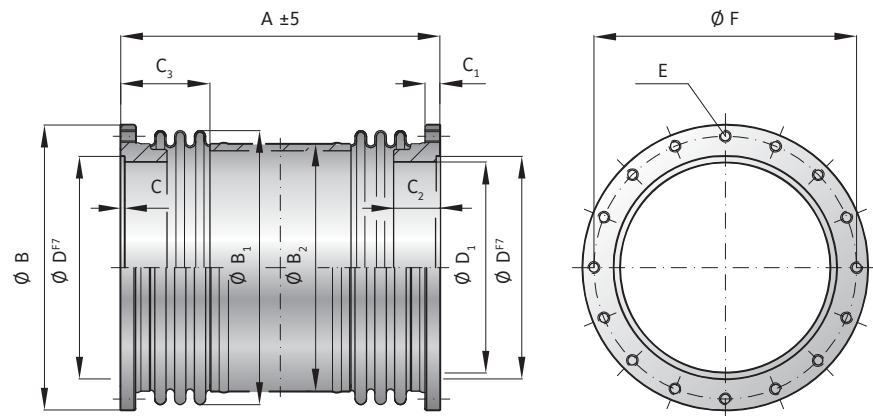
- ▶ compact, simple design
- ▶ high misalignment compensation
- ▶ integral support system (size 25 and up)

MATERIAL

- ▶ **Hubs:** steel
- ▶ **Bellows:** highly flexible high grade stainless steel

DESIGN

Both ends with flanged hubs
 Spacer between bellows
 (optional variable length)
 (size 10 without spacer)
 welded bellows-hub connection



MODEL BX1

SIZE		10	25	50	75	100
Rated torque (KNm)	T_{KN}	10	25	50	75	100
Maximum torque (KNm)	T_{Kmax}	15	38	75	113	150
Overall length (mm)	$A \pm 5$	125	380	450	580	640
Outside diameter of flange (mm)	B	310	336	398	449	545
Outside diameter of bellows ± 2 (mm)	B_1	300	323	370	412	520
Outside diameter of tube (mm)	B_2	-	273	324	360	460
Fit length +0,5 (mm)	$C^{+0,5}$	4	5	6	10	15
Thread depth (mm)	C_1	15	25	30	36	36
Hub length (mm)	C_2	24	81	80	103	120
Bellows body length +3 (mm)	C_3	-	121	133	165	165
Centering diameter F 7 (mm)	D	265	260	310	350	440
Hub diameter +0,3 (mm)	D_1	250	240	290	320	390
Fastening threads*		20x M12	24x M16	24x M20	20x M24	24x M24
Tightening torque of the fastening screws (screw grade 10.9) (Nm)	E	120	300	580	1000	1000
Bolt circle diameter ± 0.4 (mm)	F	290	304	361	404	500
Moment of inertia (10^{-3} kgm ²)	$J_{ges.}$	101	548	1185	2725	7900
Approximate weight (kg)		8.3	27.8	43.7	80	151
Axial \pm (mm)	Max. value	3	5	6	7	8
Lateral \pm (mm)		0.4	2.2	2.5	3	3.5
Angular \pm (degree)		1.5	1	1	1	1
Torsional stiffness coupling (10^3 Nm/rad)		20,000	9,000	15,500	23,000	35,000
Axial spring stiffness bellows (N/mm)		985	3000	4300	3900	2800
Lateral spring stiffness bellows (KN/mm)		21	133	207	175	219

*drilling pattern between hub 1 and hub 2 not aligned as standard

ORDERING EXAMPLE	BX1	50	XX
Model	●		Special designation only (e.g. stainless steel hubs)
Size / torque rating (KNm)		●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. BX1 / 50 / XX; XX = 700 mm overall length)			

BX4

WITH SIMPLE KEYWAY MOUNTING

10 - 100 KNm



ABOUT

FEATURES

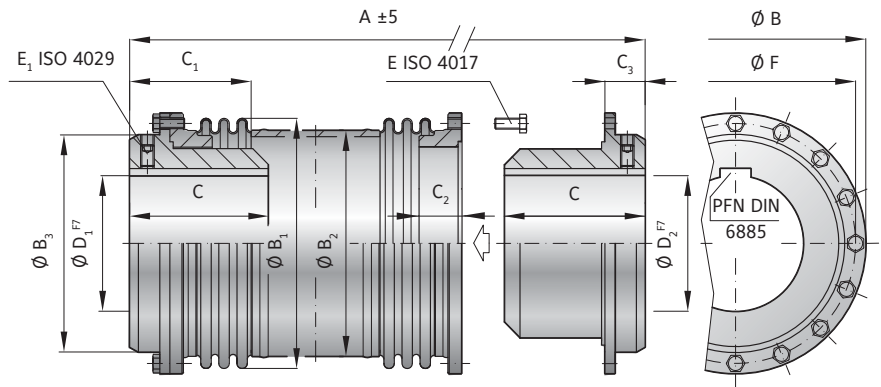
- ▶ compact, simple design
- ▶ high misalignment compensation
- ▶ integral support system (size 25 and up)

MATERIAL

- ▶ **Hubs:** steel
- ▶ **Bellows:** highly flexible high grade stainless steel

DESIGN

Both sides with removable coupling hubs, including keyway (splines optional)
 Spacer between bellows (optional variable length)
 (size 10 without spacer)
 welded bellows-hub connection



MODEL BX4

SIZE			10	25	50	75	100
Rated torque (KNm)	T_{KN}		10	25	50	75	100
Maximum torque (KNm)	T_{Kmax}		15	38	75	113	150
Overall length (mm)	$A_{±5}$		210	480	590	760	840
Outside diameter of flange (mm)	B		310	336	398	449	545
Outside diameter of bellows ±2 (mm)	B_1		300	323	370	412	520
Outside diameter of tube (mm)	B_2		-	273	324	360	460
Hub diameter (mm)	B_3		255	260	310	350	440
Fit length (mm)	C		95	130	200	240	280
Length ±3 (mm)	C_1		-	170	200	257	260
Hub length (mm)	C_2		24	81	80	103	120
Distance (mm)	C_3		42	50	70	90	97
Inside diameter possible from Ø to Ø F7 (mm)	D_1/D_2		50 - 180	60 - 170	80 - 200	100 - 230	120 - 280
Fastening screw ISO 4017 / Tightening torque (Nm)	E		20xM12 / 120	24xM16 / 300	24xM20 / 580	20xM24 / 1000	24xM24 / 1000
Fastening screw ISO 4029 / Tightening torque (Nm)	E_1		M12 / 100	M16 / 220	M20 / 450	M24 / 800	M24 / 800
Bolt circle diameter ±0.4 (mm)	F		290	304	361	404	500
Moment of inertia (10^{-3} kgm ²)	J_{ges}		492	1272	3270	6754	19350
Approximate weight (kg)			44.7	85	164	260	477
Axial ± (mm)		Max. value	3	5	6	7	8
Lateral ± (mm)	0.4		2.2	2.5	3	3.5	
Angular ± (degree)	1.5		1	1	1	1	
Torsional stiffness coupling (10^3 Nm/rad)			20,000	9,000	15,500	23,000	35,000

MAXIMUM TRANSMITTABLE TORQUE OF KEYWAY CONNECTION

Data is in KNm. These values relate to metric DIN 6885 keyway dimensions with 100% contact through the hub.

SIZE	Ø 60	Ø 80	Ø 100	Ø 120	Ø 140	Ø 160	Ø 170	Ø 180	Ø 200	Ø 220	Ø 230	Ø 240	Ø 260	Ø 280
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	7	12	18	26	34	44	46	x	x	x	x	x	x	x
50	x	19	28	40	52	67	71	84	94	x	x	x	x	x
75	x	x	34	47	62	81	85	101	112	136	142	x	x	x
100	x	x	x	55	74	94	100	118	131	159	166	189	205	220

BX6

WITH REMOVABLE CONICAL CLAMPING RING HUB 10 - 100 KNm

ABOUT

FEATURES

- ▶ compact, simple design
- ▶ high misalignment compensation
- ▶ integral support (size 25 and up)

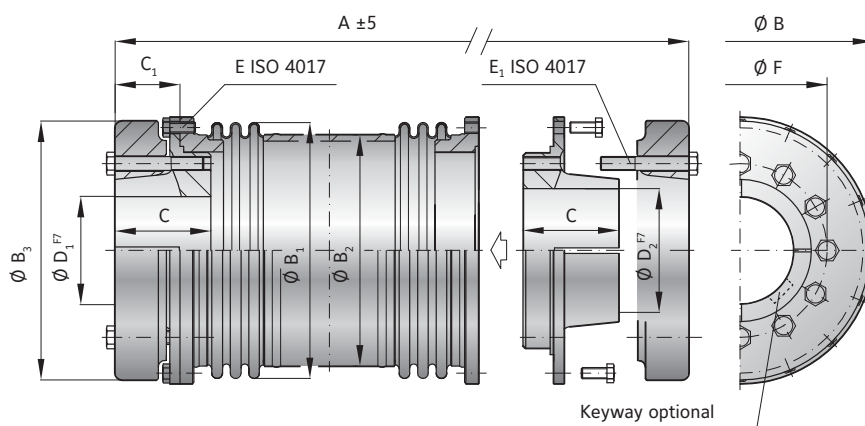
MATERIAL

- ▶ **Hubs:** steel
- ▶ **Bellows:** highly flexible high grade stainless steel

DESIGN

Both sides with removable clamping hubs including conical clamping ring system.

Spacer between bellows (optional variable length)
(size 10 without spacer)
welded bellows-hub connection



MODEL BX6

SIZE			10	25	50	75	100
Rated torque (KNm)	T_{KN}		10	25	50	75	100
Maximum torque (KNm)	T_{Kmax}		15	38	75	113	150
Overall length (mm)	$A_{\pm 5}$		235	530	650	840	940
Outside diameter of flange (mm)	B		310	336	398	449	545
Outside diameter of bellows ± 2 (mm)	B_1		300	323	370	412	520
Outside diameter of tube (mm)	B_2		-	273	324	360	460
Diameter of clamping ring (mm)	B_3		300	310	380	420	530
Fit length (mm)	C		90	110	140	170	200
Length (mm)	C_1		55	74	99	130	150
Inside diameter possible from \emptyset to \emptyset F7 (mm)	D_1/D_2		70 - 170	80 - 180	100 - 200	130 - 230	150 - 280
Fastening screw ISO 4017 for mounting flange (mm)	E		20 x M12	24 x M16	24 x M20	20 x M24	24 x M24
Tightening torque (Nm)			120	300	580	1000	1000
Fastening screw ISO 4017 for conical clamping ring (mm)	E_1		8 x M16	12 x M16	12 x M20	16 x M20	12 x M24
Tightening torque (Nm)			200	250	300	350	600
Bolt circle diameter ± 0.4 (mm)	F		210	220	250	290	360
Moment of inertia (10^{-3} kgm ²)	J_{res}		828	1535	3799	8277	24876
Approximate weight (kg)			60	93	168	280	550
Axial \pm (mm)		Max. value	3	5	6	7	8
Lateral \pm (mm)			0,4	2,2	2,5	3	3,5
Angular \pm (degree)			1,5	1	1	1	1
Torsional stiffness coupling (10^3 Nm/rad)			20.000	9.000	15.500	23.000	35.000

ORDERING EXAMPLE	BX4 BX6	50	120	200	XX
Model	●				
Size / torque rating (KNm)		●			
Bore D1 F7			●		
Bore D2 F7				●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. BX4 / 50 / 117.48 / 127 / XX; XX = 700 mm overall length)					

BELLOWS COUPLINGS
BX | ZA

ZA

WITH CONICAL CLAMPING SYSTEM

1,500 - 4,000 Nm



ABOUT

FEATURES

- ▶ Compensation for misalignment
- ▶ Standard lengths of up to 6 meters
- ▶ No intermediate support bearing necessary
- ▶ Full assembly can be mounted laterally without disturbing adjacent equipment

MATERIAL

- ▶ **Bellows:** highly flexible high grade stainless steel
- ▶ **Intermediate tube:** steel, optional CFK
- ▶ **Hubs:** steel

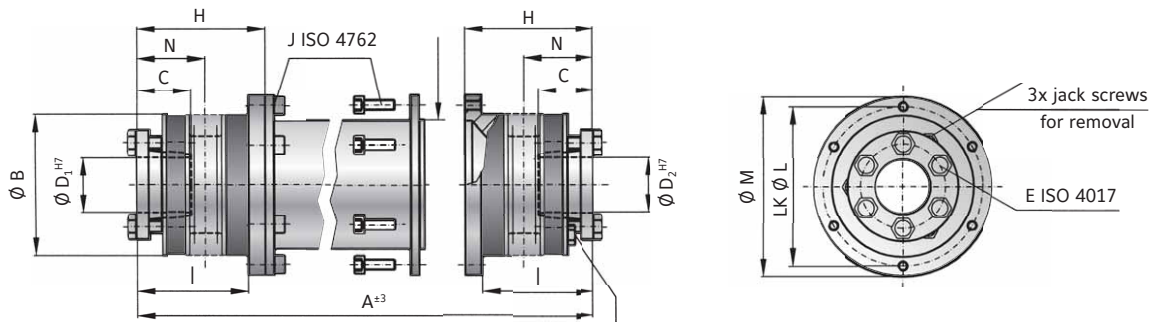
DESIGN

With tapered compression bushings and removal screws. Intermediate tube is held by special gimbal supports, extending from the hubs inside the bellows.

TEMPERATURE RANGE
-30 to +100° C

HUB / SHAFT CLEARANCE
Overall shaft / hub clearance of 0.01 - 0.05 mm

ROTATIONAL SPEED
After selecting overall length A, contact R+W for maximum speed.



MODEL ZA

SIZE			1500	4000
Rated torque (Nm)	T_{KN}		1500	4000
Overall length min. to max. (mm)	$A^{\pm 3}$		280 - 6000	280 - 6000
Outside diameter (mm)	B		157	200
Fit length (mm)	C		61	80.5
Inside diameter from \emptyset to \emptyset H7 (mm)	$D_{1/2}$		35 - 70	40 - 100
ISO 4017 clamping screws 6x	E		6 x M12	6 x M16
Tightening torque (Nm)			70	120
Length bellows body (mm)	H		98	103,5
Distance (mm)	I		82	84
ISO 4762 clamping screws	J		10x M10	12x M12
Tightening torque of the assembly screws (Nm)			70	120
Outside diameter tube section (mm)	K		150	160
Bolt hole circle \emptyset (mm)	L		168	193
Outside diameter flange (mm)	M		184	213
Shaft average value (mm)	N		56	61

ORDERING EXAMPLE	ZA	1500	2551	50.8	70	XX
Model	●					Special designation only (e.g. special bore tolerance).
Size		●				
Overall length mm			●			
Bore \emptyset D1 H7				●		
Bore \emptyset D2 H7					●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. ZA / 1500 / 2551 / 50.8 / 70 / XX; XX = all stainless steel)						



SPECIAL SOLUTIONS

1,500 - 100,000 Nm

CUSTOMER SPECIFIC SOLUTIONS

Such as:

- ▶ special materials
- ▶ special lengths
- ▶ other special dimensions
- ▶ torque up to 1,000,000 Nm

...all available on request. Phone 1-630-521-9911

