

DATA SHEET

MBC

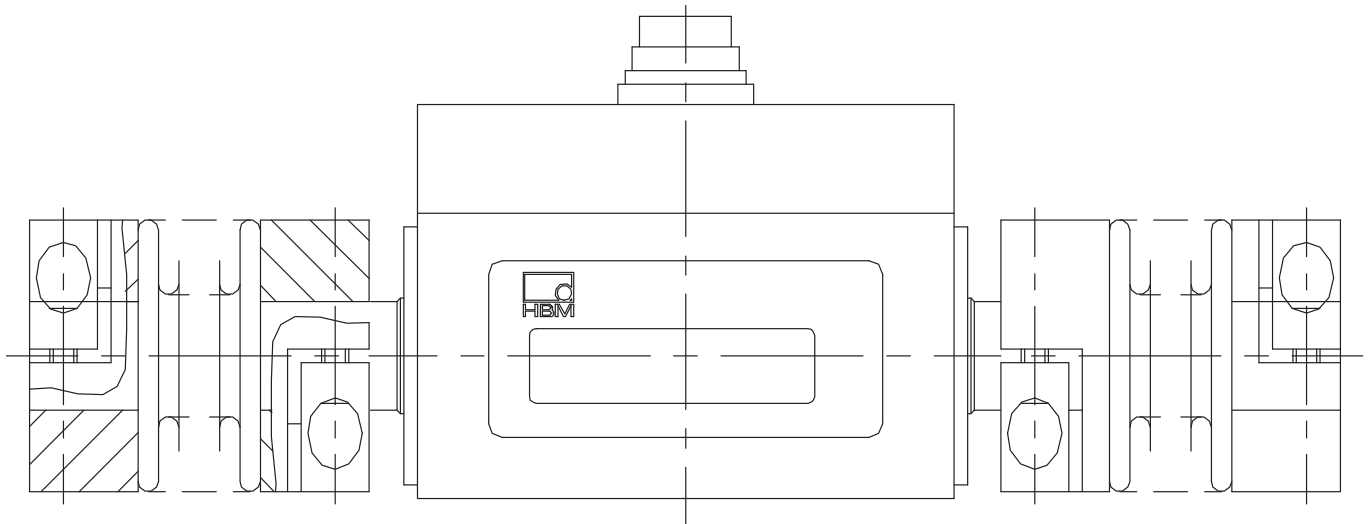
Bellows coupling for torque transducers

SPECIAL FEATURES

- Compensation of axial, radial and angular shaft displacement
- High torsional stiffness
- Minimal restoring forces
- Zero play
- Simple installation
- Standard types in stock
- Available with customized diameter



SCHEMATIC DIAGRAM



SPECIFICATIONS

Type	M _{nom}	N·m	0.5	1	2	10	30	60	150	200	-	
		kN·m	-									
Suitable for	-	-	T210, T21WN, T22							T22	T210, T21WN	T22
Limit torque, related to M _{nom}	-	%	150									
Max. rpm	n	rpm	20,000									
Weight	-	g	4.5	6	29	86						
		kg	-				0.3	0.5	0.9	0.38	1.17	1.37
Mass moment of inertia	J	g cm ²	1.5	2	24	233	-					
		g m ²	-				0.15	0.33	1	0.28	1.49	2.74
Spring stiffness												
Torsion	C _T	Nm/rad	200	380	1,500	8,100	-					
	C _T 10 ³		-				38	75	155	138	175	579
Radial	C _R	N/mm	18	31	67	120	720	1,150	2,020	12,442	2,500	29,096
Axial	C _A	N/mm	10	20	12	27	50	90	145	287	145	756
Misalignment												
Radial	ΔK _r	mm	0.15	0.15	0.15	0.15	0.15	0.15	0.2	0.1	0.2	0.1
Axial	ΔK _a	mm	0.3	0.3	0.3	0.4	0.6	0.6	0.5	1	0.5	1.5
Angle	ΔK _w	°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.5	1.5	1
Hub material	-	-	Aluminum									
Bellows material	-	-	Stainless steel									
Permissible temperature range	-	°C	-30 ... +120									

DIMENSIONS

Type	M _{nom}	N·m	0.5	1	2	10	30	60	150	200	-	
		kN·m	-									
Suitable for	-	-	T210, T21WN, T22							T22	T210, T21WN	T22
Length	L	mm	23	25	32	47	65	79	91	60	101	84
Outside diameter	ØA	mm	15	15	25	40.5	56	66	82	66	90	110
Inside diameter (H7) ¹⁾	ØD1	mm	6 8	6 8	6 8	16	15 16	26	26	24	26	40
	ØD2	mm	6 8	6 8	6 8	16	15 16	26	26	24	26	40
Customized inside diameters (H7) ²⁾	Ø D2	mm	3...8	3...8	3...14	6...25	10...32	12...35	14...44	16...35	16...47	40...60
Hub diameter	ØB	mm	13.5	13.5	27	41.5	56.4	66	82.9	66	90.8	110
Screw position	C	mm	2	2	3.5	5	7.5	10	11	8.6	13	13
	H	mm	-		9	15.5	20	23	28	23	31	40
Hub length	E	mm	6	6	11	13.5	24.5	29	33.5	23	38	32.5
Screw (ISO 4029)	F	-	M3	M3	M3	M4	M6	M8	M10	M8	M12	M12
Tightening torque	T _A	Nm	0.5	0.5	2	4.5	15	40	84	40	125	145

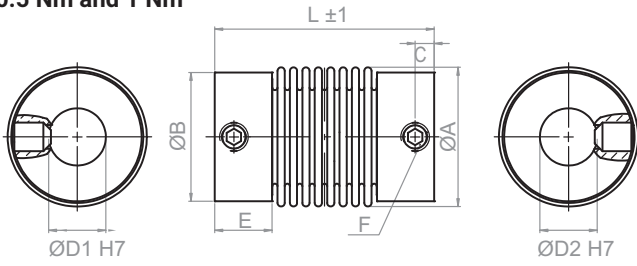
1) Couplings for which several diameters are stated are available in two versions, one with the larger and one with the smaller diameter; the two diameters D1 and D2 are then identical for one coupling.

2) Couplings with customized inside diameters have a diameter D1 that is fixed to suit the transducer on one side, and the variable diameter D2 on the other side.

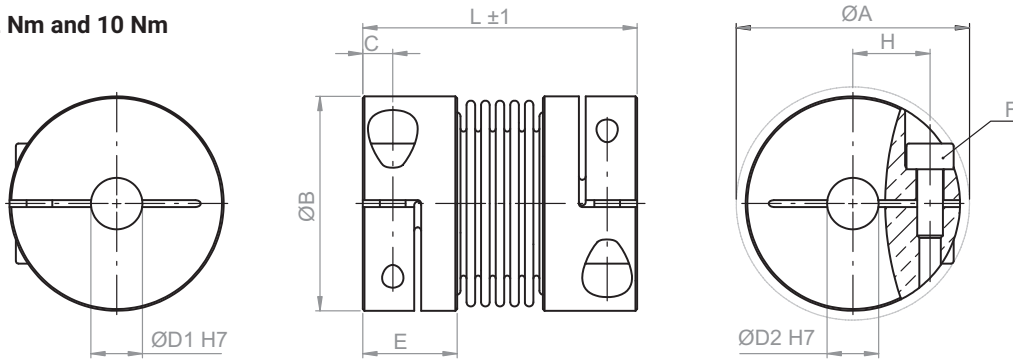
DIMENSIONS

0.5 Nm and 1 Nm

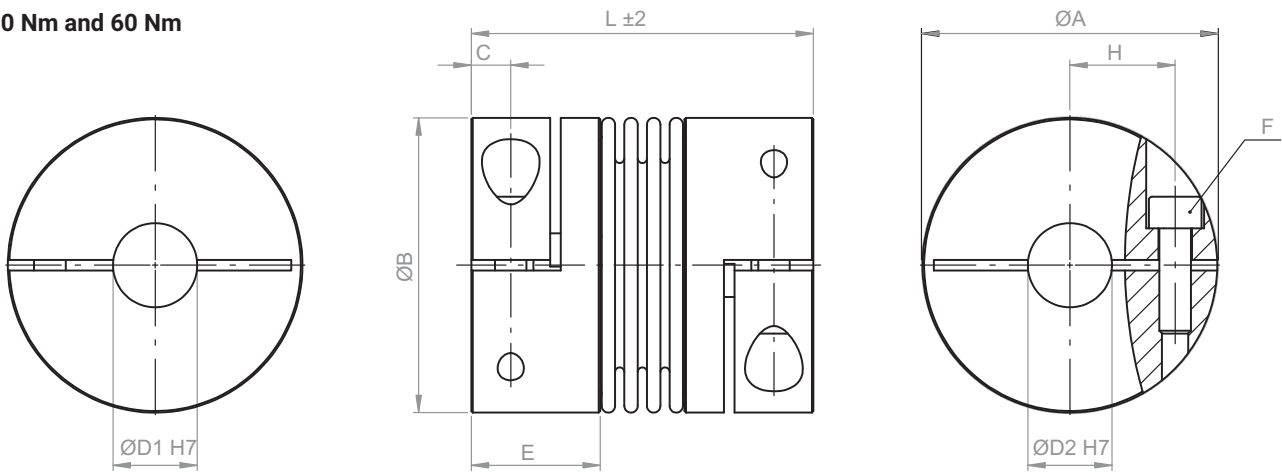
You can find the dimensions for the drawings in the "Dimensions" table on page 2



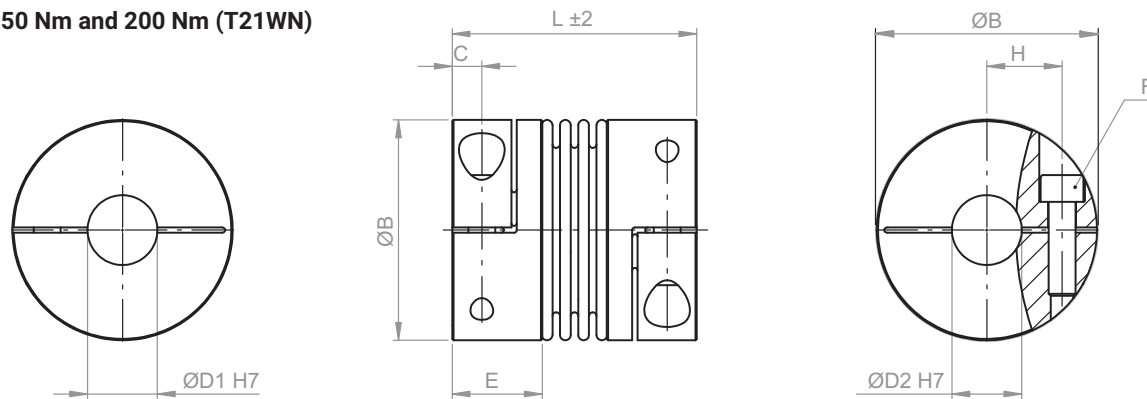
2 Nm and 10 Nm



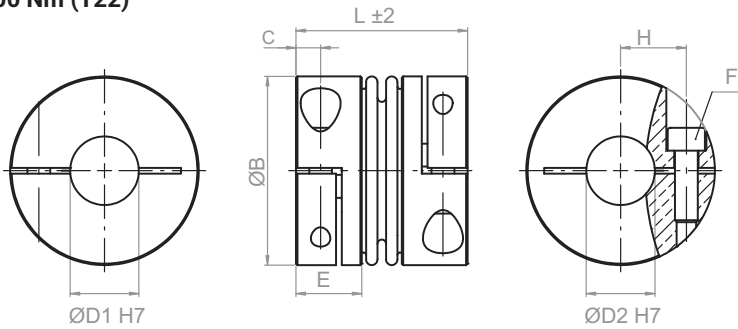
30 Nm and 60 Nm



150 Nm and 200 Nm (T21WN)

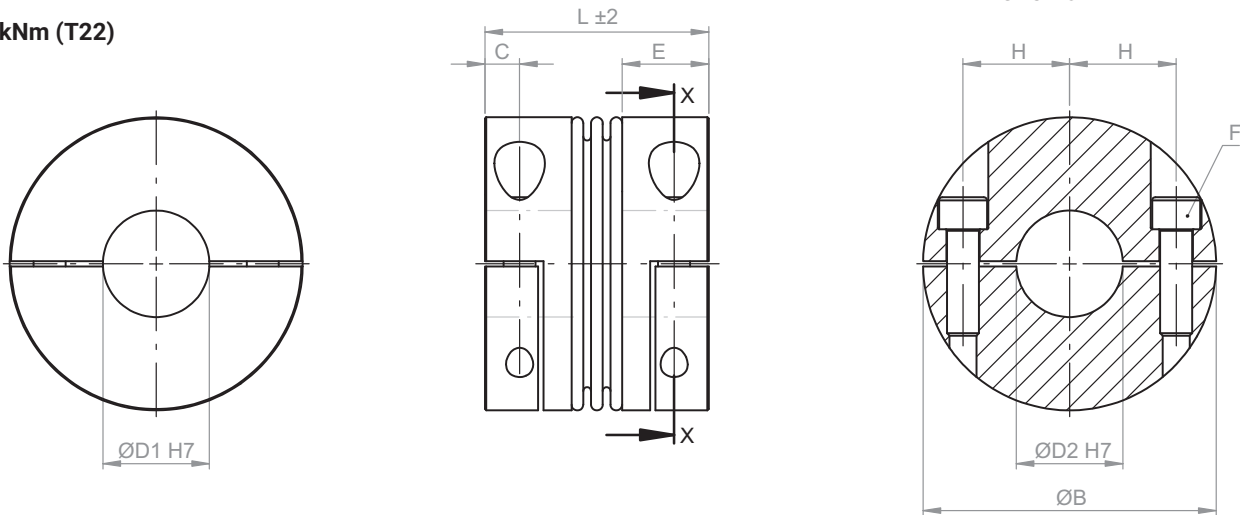


200 Nm (T22)



You can find the dimensions for the drawings in the "Dimensions" table on page 2

1 kNm (T22)



INSTALLATION

1. Degrease the hub hole in each coupling half and the shaft ends with solvent (e.g. acetone).
2. Push the hub onto the shaft.
3. Adjust the air gap to the transducer, which should be min. 1 mm from the transducer housing, or push the coupling onto the shaft until it reaches the limit stop.
4. Using the full clamping length, align the coupling and shafts.
5. Tighten the clamping bolts of the clamp with a torque wrench (see Specifications for the required torque).

NOTES

- Do not tighten the clamping bolts of the couplings until the shafts are mounted in the coupling hubs!
- The bellows coupling must not be extended beyond the permissible flexibility limit.
- Drive and output shafts must be free from grease and burrs.
- Implement a tolerance of j6 for the shaft diameter to produce the preferred fit of H7/j6.
- When selecting the coupling, the transducer specifications – particularly the maximum permissible mechanical stresses – must be taken into consideration as well as the coupling specification.

SCOPE OF SUPPLY

- Bellows coupling
- Screws required for installation

ORDERING NUMBERS

Suitable for T210/T21WN

Transducer		Coupling			
Nominal (rated) torque (Nm)		Material no.	Nominal (rated) torque (Nm)	ØD1 (mm)	ØD2 (mm)
0.1	Measuring side	1-4413.0001	0.5	6	6
0.1	Drive side	1-4413.0002	0.5	8	8
0.2	Measuring side	1-4413.0001	0.5	6	6
0.2	Drive side	1-4413.0002	0.5	8	8
0.5	Measuring side	1-4413.0001	0.5	6	6
0.5	Drive side	1-4413.0002	0.5	8	8
1	Measuring side	1-4413.0003	1	6	6
1	Drive side	1-4413.0004	1	8	8
2	Measuring side	1-4413.0011	2	6	6
2	Drive side	1-4413.0012	2	8	8
5	Measuring/drive side	1-4413.0013	10	16	16
10	Measuring/drive side	1-4413.0013	10	16	16
20	Measuring/drive side	1-4413.0021	30	16	16
50	Measuring/drive side	1-4413.0023	60	26	26
100	Measuring/drive side	1-4413.0031	150	26	26
200	Measuring/drive side	1-4413.0032	200	26	26

Suitable for T22

Transducer		Coupling			
Nominal (rated) torque (Nm)		Material no.	Nominal (rated) torque (Nm)	ØD1 (mm)	ØD2 (mm)
0.5	Measuring/drive side	1-4413.0001	0.5	6	6
1	Measuring/drive side	1-4413.0003	1	6	6
2	Measuring/drive side	1-4413.0011	2	6	6
5	Measuring/drive side	1-4413.0022	30	15	15
10	Measuring/drive side	1-4413.0022	30	15	15
20	Measuring/drive side	1-4413.0022	30	15	15
50	Measuring/drive side	1-4413.0033	200	24	24
100	Measuring/drive side	1-4413.0033	200	24	24
200	Measuring/drive side	1-4413.0033	200	24	24
500	Measuring/drive side	1-4413.0041	1,000	40	40
1,000	Measuring/drive side	1-4413.0041	1,000	40	40

ORDER CODE

K-MBC				
1	Code	Option 1: Type		
	T21	T21WN		
	T22	T22		
	T210	T210		
2	Code	Option 2: Measuring Range	Only for option 1 =	
	0K1Q	Measuring range 0,1 N·m	T21	
	0K2Q	Measuring range 0,2 N·m	T21	
	0K5Q	Measuring range 0,5 N·m		
	001Q	Measuring range 1 N·m		
	002Q	Measuring range 2 N·m		
	005Q	Measuring range 5 N·m		
	010Q	Measuring range 10 N·m		
	020Q	Measuring range 20 N·m		
	050Q	Measuring range 50 N·m		
	100Q	Measuring range 100 N·m		
	200Q	Measuring range 200 N·m		
	500Q	Measuring range 500 N·m	T22	
001R	Measuring range 1 kN·m	T22		
3	Code	Option 3: Drive Side or Measuring Side		
	A	Drive Side		
	M	Measuring Side		
4	Code	Option 4: Coupling No.	Only for option 2 =	Only for option 3 =
	01	3-4413.0001	0K1Q, 0K2Q, 0K5Q	T21WN, T210: M / T22: A+M
	02	3-4413.0002	0K1Q, 0K2Q, 0K5Q	T21WN, T210: A
	03	3-4413.0003	001Q	T21WN, T210: M / T22: A+M
	04	3-4413.0004	001Q	T21WN, T210: A
	11	3-4413.0011	002Q	T21WN, T210: M / T22: A+M
	12	3-4413.0012	002Q	T21WN, T210: A
	13	3-4413.0013	005Q, 010Q	T21WN, T210: A+M
	21	3-4413.0021	020Q	T21WN, T210: A+M
	22	3-4413.0022	005Q, 010Q, 020Q	T22: A+M
	23	3-4413.0023	005Q	T21WN, T210: A+M
	31	3-4413.0031	100Q	T21WN, T210: A+M
	32	3-4413.0032	200Q	T21WN, T210: A+M
	33	3-4413.0033	050Q, 100Q, 200Q	T22: A+M
41	3-4413.0041	500Q, 001R	T22: A+M	

5	Code	Option 5: Diameter D2 - min./max. range	Only for option 4 =
	01	min. Ø 3 mm - max. Ø 8 mm	01, 02, 03, 04
	02	min. Ø 3 mm - max. Ø 14 mm	11, 12
	03	min. Ø 6 mm - max. Ø 25 mm	13
	04	min. Ø 10 mm - max. Ø 32 mm	21, 22
	05	min. Ø 12 mm - max. Ø 35 mm	23
	06	min. Ø 14 mm - max. Ø 44 mm	31
	07	min. Ø 16 mm - max. Ø 47 mm	32
	11	min. Ø 16 mm - max. Ø 35 mm	33
	13	min. Ø 40 mm - max. Ø 60 mm	41
6	Code	Option 6: Diameter D2	
	-	Customer-specific diameter in format xx,x [mm]	

Example

K-MBC-T21-005Q-A-13-03-12,0

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