

ÜV Überlastschutz u. Verbindungssysteme GmbH

No backlash, metal bellows couplings torsionally rigid



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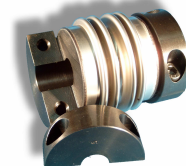
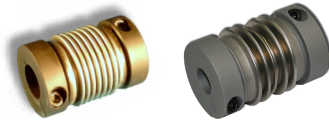


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Product range Metal bellows couplings

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Metal bellows coupling, TYPE 51/53/55 - up to 25 Nm

Characteristics:

- Corrosion-resistant aluminium hubs, stainless steel metal bellows
- Operational temperature up to 100°C (please call us in case of higher temperatures)
- No backlash
- High rotational speeds possible
- Maintenance free and non-wearing

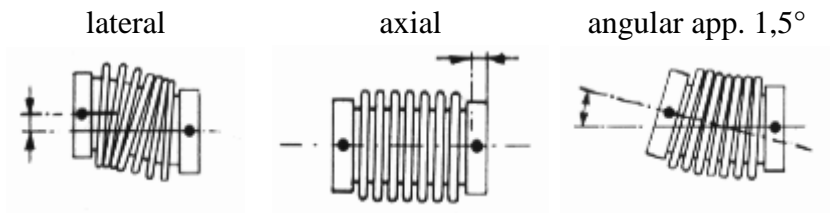
Application:

For installation in

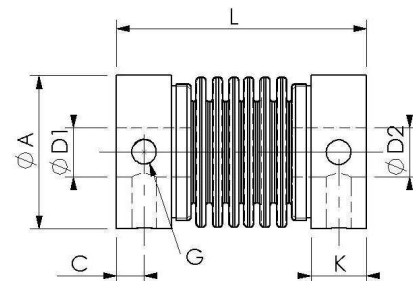
- Stepped motors
- Impulse drives
- Measuring systems
- Low output drives, etc.

Simple clamping is obtained by use of the clamping screws (DIN 916). The relationship between the moment of inertia and the torsion rigid is very pleasant, because of the thin metal bellows.

Shaft misalignment

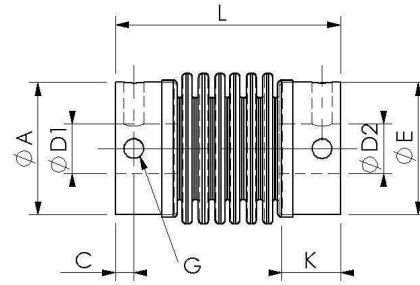
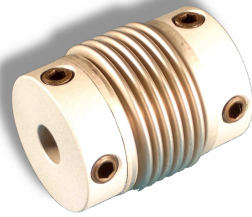


TYPE 51 up to 25 Nm, mounting hub glued



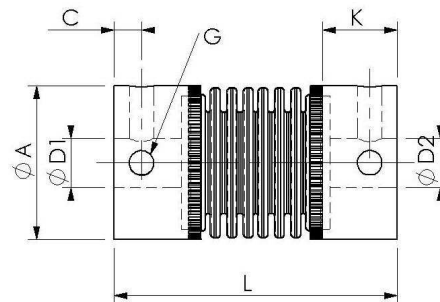
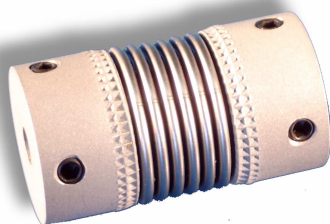
Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	app. weight (in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN EN 916)	D1/D2	D1/D2 (Standard)	C	K
16	0,7	0,10	0,30	3	10	216	26	16	M4	5...8	6H7	3	8
20	1,9	0,10	0,30	11	15	680	29	20	M4	5...12	6H7	3	8
25	3,7	0,13	0,40	35	33	1320	40	25	M5	6...15	10H7	4,5	12
40.1	9	0,17	0,50	297	100	3350	58	40	M8	10...24	12H7	5,5	15,5
40.2	14,5	0,17	0,50	309	105	5600	58	40	M8	10...24	12H7	5,5	15,5
55.1	25	0,17	0,50	900	240	10400	67	54	M10	15...30	16H7	7	19

TYPE 53 up to 25 Nm , mounting hub glued



Size	M_N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	app. weight (in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN 916)	D1/D2	D1/D2 (Standard)	C	K	E
16	0,7	0,10	0,30	2	8	216	22	14,5	M3	3...8	4H7	2	6	11,5
20	1,9	0,10	0,30	9	12	680	24	18,5	M3	3...12	6H7	2	6	17,5
25	3,7	0,13	0,40	30	28	1320	35	24,5	M4	5...12,7	6H7	3	10	21,5
40.1	9	0,17	0,50	265	85	3350	55	39	M8	10...18	12H7	5	14	35
40.2	14,5	0,17	0,50	278	90	5600	55	39	M8	10...18	12H7	5	14	35
55.1	25	0,17	0,50	700	190	10400	65	55	M10	15...26	16H7	7	18	48

TYPE 55 up to 25 Nm, mounting hub pressed



Size	M_N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	app. weight (in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN 916)	D1/D2	D1/D2 (Standard)	C
20	1,9	0,10	0,30	12	18	680	31,5	20	M4	5...12	6H7	3
25	3,7	0,13	0,40	37	38	1320	44	25	M5	6...15	10H7	4,5
40.1	9	0,17	0,50	305	105	3350	61	40	M8	10...24	12H7	5,5
40.2	14,5	0,17	0,50	312	110	5600	61	40	M8	10...24	12H7	5,5
55.1	25	0,17	0,50	920	230	10400	72	54	M10	15...30	16H7	7



Metal bellows coupling TYPE 50/54 - up to 25 Nm

Characteristics:

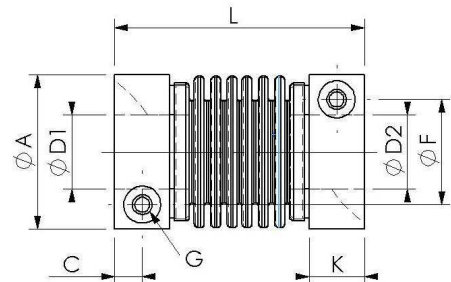
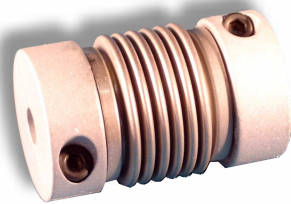
- Corrosion-resistant aluminium hubs, stainless steel metal bellows
- Operational temperature of up to 100°C (Higher temperatures please call)
- No backlash
- High rotational speeds possible
- Maintenance free and non-wearing

Application:

Predominantly used for systems with high torsional rigidity.

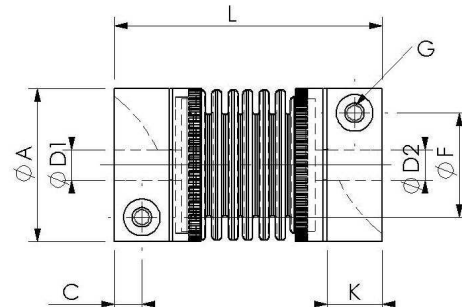
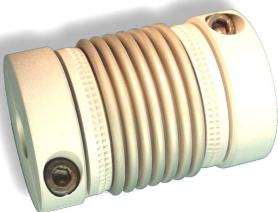
Available with plastic inserts for high impact resistance on request.

TYPE 50 up to 25 Nm, mounting hub glued



Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	Weight (app. in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN EN ISO 4762) (OH DIN 912)	D1/D2	D1/D2 (Standard)	C	K	F
16	0,7	0,10	0,30	3	10	216	26	16	M2,5	2...5	4H7	3	8	10
20	1,9	0,10	0,30	11	15	680	29	20	M2,5	3...8	6H7	3	8	13
25	3,7	0,13	0,40	35	33	1320	40	25	M3	3...12	6H7	4,5	12	17
40.1	9	0,17	0,50	297	100	3350	58	40	M5	6...20	10H7	5,5	15,5	27
40.2	14,5	0,17	0,50	309	105	5600	58	40	M5	6...20	10H7	5,5	15,5	27
55.1	25	0,17	0,50	900	240	10400	67	54	M6	14...28	16H7	7	19	40

TYPE 54 up to 25 Nm, mounting hub pressed



Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	Weight (app. in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN EN ISO 4762) (OH DIN 912)	D1/D2	D1/D2 (Standard)	C	F
20	1,9	0,10	0,30	12	17	680	31,5	20	M2,5	3...8	6H7	3	13
25	3,7	0,13	0,40	37	38	1320	44	25	M3	3...12	6H7	4,5	17
40.1	9	0,17	0,50	305	105	3350	61	40	M5	6...20	10H7	5,5	27
40.2	14,5	0,17	0,50	312	110	5600	61	40	M5	6...20	10H7	5,5	27
55.1	25	0,17	0,50	920	250	10400	72	55	M6	14...28	16H7	7	40

Metal bellows coupling TYPE 500 - up to 50 Nm


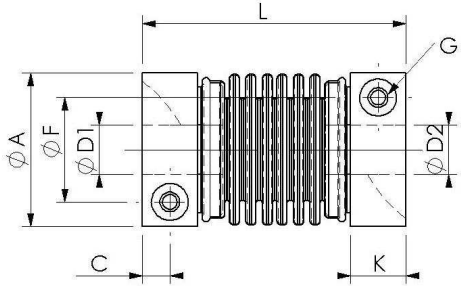
Characteristics:

- Operational temperature of up to 500°C for a short time, lasting up to 300°C
- No backlash
- High rotational speeds possible
- Maintenance free and non-wearing
- Corrosion-resistant stainless performance type available

Application:

Predominantly used for mounting of servo-drives with very high torsional rigidity.

Available with plastic inserts for high impact resistance on request.

TYPE 500 up to 50 Nm , mounting hub welded														
														
Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	Weight (app. in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	D1/D2 (Standard)	C	K	F
16	0,7	0,10	0,30	8,5	23	216	30	16	M2,5	3...5	4H7	3	8	10
20	1,9	0,10	0,30	21	39	680	32	20	M2,5	3...8	6H7	3	8	13
25	3,7	0,13	0,40	70	75	1320	42	25	M3	5...12	6H7	4,5	12	17
35.2	10	0,08	0,3	350	170	7800	48	35	M4	6...16	10H7	4,5	13,5	22
35.3	19	0,08	0,3	570	260	7800	65	35	M6	6...11	10H7	7,5	22	18
									M5	12...14	12H7			20,5
									M5	15...16	16H7			22
40.1	9	0,17	0,50	610	260	3350	59	40	M5	6...20	12H7	5,5	15,5	27
40.2	14,5	0,17	0,50	630	265	5600	59	40	M5	10...20	12H7	5,5	15,5	27
40.3	19	0,17	0,50	640	270	8800	59	40	M5	14...20	16H7	5,5	15,5	27
55.1	25	0,17	0,50	1950	570	10400	69	55	M6	14...28	16H7	7	20,5	40
55.2	38	0,17	0,50	2100	595	17600	69	55	M6	15...28	16H7	7	20,5	40
55.3	50	0,20	0,50	2200	650	19800	81	55	M6	15...28	16H7	7,5	24	40



Metal bellows coupling TYPE 502 - up to 310 Nm

Characteristics:

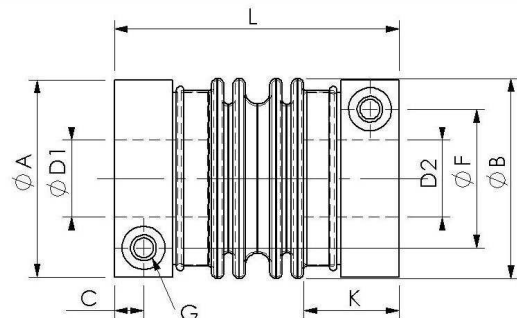
- Operational temperature of up to 500°C for short time , lasting up to 300°C
- No backlash
- High rotational speeds possible
- Maintenance free and non-wearing
- Corrosion-resistant stainless steel type available

Application:

Predominantly used for mounting of servo-drives with very high torsional rigidity.

Available with plastic inserts for high impact resistance on request.

TYPE 502 up to 310 Nm , mounting hub welded



Size	M_N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (app. 10^{-3} kg m ²)	Weight (app. in kg)	Spring constant (Torque 10^3 Nm/rad)	L	B	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	C	K	F	A
S-55.3	50	105	60	0,18	0,6	19	79	53	M6	* 16...25	7,5	20	37	50
56	50	171	102	0,2	0,7	19	81	56	M6	15...28	7,5	24	40	54
56.1	74	263	208	0,21	0,7	28	81	56	M6	18...28	7,5	24	40	54
56.2	90	314	298	0,21	0,7	35	81	56	M6	22...28	7,5	24	40	54
66	115	253	112	0,39	0,9	56	94	66	M8	22...32/35	9,5	31	45	64
66.1	155	367	196	0,41	0,95	84	94	66	M8	25...32/35	9,5	31	45	64
66.2	175	407	218	0,43	0,95	95	94	66	M8	28...32/35	9,5	31	45	64
82	190	249	87	0,9	1,8	94	113	82	M10	25...40	10,5	32	54	82
82.1	250	358	125	0,92	1,85	120	113	82	M10	28...40	10,5	32	54	82
82.2	310	406	138	0,95	1,9	163	113	82	M10	32...40	10,5	32	54	82

shaft misalignment:	Allowed	lateral	axial
	Assembly Operational	0,8 mm 0,2 mm	2mm 0,5mm

* smaller bores are possible if the moment is reduced

Very cheap executions by orders of more than 10 pieces!

Metal bellows coupling TYPE 550 - up to 1700 Nm

Characteristics:

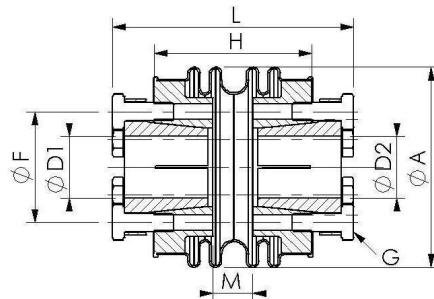
- Partially corrosion-resistant (welded mounting hub)
- Operational temperature of up to 500°C for short time , lasting up to 300°C
- No backlash and torsionally rigid
- High rotational speeds possible
- Maintenance free and non-wearing
- Tapered bores and bushings are slotted

Application:

- Machine tools
- Industrial robots
- Handling systems
- Packing machines
- Textile machines
- Wood- working- machines
- Transfer systems etc.

Available with keyway according to DIN 6885.

TYPE 550 up to 1700 Nm , mounting hub welded



Size	M _N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. in kg)	Torsional rigidity (Torque 10 ³ Nm/rad)	L	A	6 x G (DIN 933)	D1/D2	H	M	F
56	50	171	102	0,16	0,6	19	72	56	M5	15...24	47	9	36
56.1	74	263	208	0,17	0,6	28	72	56	M5	18...24	48	9	36
56.2	90	314	298	0,17	0,6	35	72	56	M5	20...24	48	9	36
66	115	253	112	0,35	0,85	56	77	66	M6	18...24	52	14	36
66.1	155	367	196	0,37	0,9	84	77	66	M6	18...24	52	14	36
66.2	175	407	218	0,39	0,9	95	77	66	M6	20...24	52	14	36
82	190	249	87	0,7	1,5	94	98	82	M6	20...38	68	28	51
82.1	250	358	125	0,72	1,55	120	98	82	M6	25...38	68	28	51
82.2	310	406	138	0,75	1,6	163	98	82	M6	28...38	68	28	51
101	305	271	128	3,1	2,9	159	113	101	M8	26...48	77	29	65
101.1	440	377	192	3,2	2,95	228	113	101	M8	30...48	77	29	65
101.2	510	435	228	3,2	3	311	113	101	M8	35...48	77	29	65
122	500	325	188	6,3	4,3	293	129	122	M10	30...60	82	22	82
122.1	730	411	270	6,4	4,4	424	129	122	M10	36...60	82	22	82
122.2	900	485	315	6,5	4,5	505	129	122	M10	40...60	82	22	82
157.2	1700	850	205	21	8,5	1180	138	157	M12	40...70	82	18	100

shaft misalignment:

Allowed

Assembly

Operational

lateral

0,8 mm

0,2 mm

axial

2mm

0,5mm



Metal bellows coupling TYPE 560 - up to 1700 Nm

Characteristics:

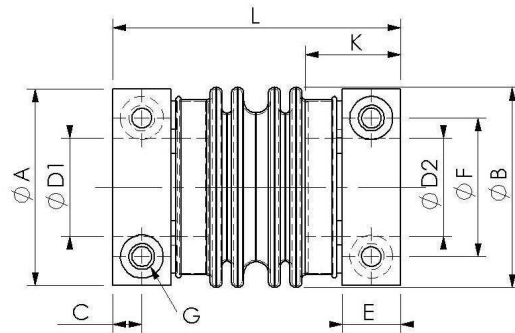
- Operational temperature of up to 500°C for short time , lasting up to 300°C
- No backlash and torsional rigidity
- High rotational speeds possible
- Maintenance free and non-wearing
- Corrosion-resistant stainless steel type available

Application:

- Machine tools
- Industrial robots
- Handling systems
- Winding machines
- Textile machines
- Wood- working- machines etc.

Available with keyway according to DIN 6885.

TYPE 560 up to 1700 Nm , mounting hub welded



Size	M _N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. in kg)	Torsional rigidity (Torque 10 ³ Nm/rad)	L	B	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	C	K	F	A	E
56	50	171	102	0,2	0,7	19	81	56	M6	15...30	7,5	24	40	54	15
56.1	74	263	208	0,21	0,7	28	81	56	M6	18...30	7,5	24	40	54	15
56.2	90	314	298	0,21	0,7	35	81	56	M6	22...30	7,5	24	40	54	15
66	115	253	112	0,39	0,9	56	94	66	M8	22...32/35	9,5	31	45	64	19
66.1	155	367	196	0,41	0,95	84	94	66	M8	25...32/35	9,5	31	45	64	19
66.2	175	407	218	0,43	0,95	95	94	66	M8	28...32/35	9,5	31	45	64	19
82	190	249	87	0,9	1,6	94	113	82	M10	25...40	10,5	32	54	82	21
82.1	250	358	125	0,92	1,65	120	113	82	M10	28...40	10,5	32	54	82	21
82.2	310	406	138	0,95	1,7	163	113	82	M10	32...40	10,5	32	54	82	21
101	305	271	128	3,6	3,2	159	129	101	M12	30...50	12,0	36	68	99	24
101.1	440	377	192	3,7	3,25	228	129	101	M12	35...50	12,0	36	68	99	24
101.2	510	435	228	3,7	3,3	311	129	101	M12	38...50	12,0	36	68	99	24
122	500	325	188	6,5	4,5	293	142	122	M14	36...60	14,0	40	82	119	28
122.1	730	411	270	6,6	4,6	424	142	122	M14	40...60	14,0	40	82	119	28
122.2	900	485	315	6,7	4,7	505	142	122	M14	48...60	14,0	40	82	119	28
157.1	1000	850	205	43,0	11,0	1180	160	157	M16	50...90	18,0	49	118	157	36
157.2	1700	850	205	68,0	15	1180	176	157	M20	60...90	22	57	126	169	44

shaft misalignment:

Allowed
Assembly
Operational

lateral
0,8 mm
0,2 mm

axial
2mm
0,5mm

Plug-in Coupling Type 900 up to 25 Nm

Characteristics:

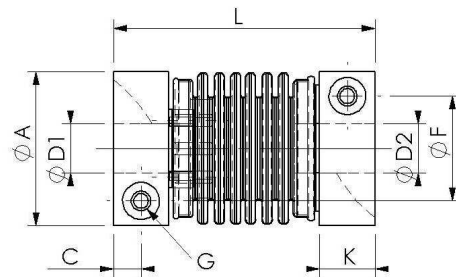
- Operational temperature of up to 500°C for short time, lasting up to 300°C
- No backlash
- High rotational speeds possible
- Maintenance free and non-wearing

Application:

For installation in

- Stepped motors
- Impulse drives
- Measuring systems
- Low output drives, etc.

TYPE 900 up to 25 Nm , mounting hub welded



Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (ca. g cm ²)	Weight (ca. in g)	Spring constant (torque Nm/rad)	L	A	G (DIN EN ISO 4762) (Old DIN 912)	D1	D2 (plug-in Hub)	D1/D2 (Standard)	C	K	F
25	3,7	0,13	0,40	75	85	1320	42	25	M3	5...12	5...8	6H7	4,5	12	17
35.2	10	0,08	0,3	370	180	7800	48	35	M4	6...16	6...12	10H7	4,5	13,5	22
40.1	9	0,17	0,50	630	270	3350	58	40	M5	6...20	6...16	12H7	5,5	15,5	27
55.1	25	0,17	0,50	2370	660	10400	69	55	M6	14...28	14...22	16H7	7	19,5	40

Easier assembly of drives with the plug-in metal bellows couplings:

The new developed plug-in connection makes it now possible to deliver our regular metal bellows coupling as a plug-in variation. The plug-in metal bellows coupling can be used there where usual metal bellows couplings can be mounted bad or even not at all because of less or no space or there where drives have to be taken apart very often because of maintenance.

The coupling halves can be mounted to the main shaft and the output shaft and only have to fit into one another to receive a connection. With that kind of plug-in connection you can get a no backlash shaft-shaft-connection which you easily can connect and take apart. The asymmetrical arrangement of the connecting elements makes it possible that both shafts are connected synchrony again after they were taken apart and fit into one another.

We offer two new coupling types at once with this new plug-in system:

The type 900 contains smaller couplings up from an outer diameter of 25 mm which are used mainly in the measuring technique. The type 960 are bigger and stronger couplings, they can be used in tool machines, industrial robots, handling devices, textile machines or woodworking machines. At the moment variations with a nominal torsional moment up to 305 Nm at an outer diameter of 101 mm get offered as standard. Both types the bellows and hubs are welded together satisfy very high requirements. These types have the same design and dimensions as their related types (type 500 and type 560) of our delivery programme even of the plug-in connection. The plug-in types and the regular metal bellow coupling have the same compensating attributes nearly.




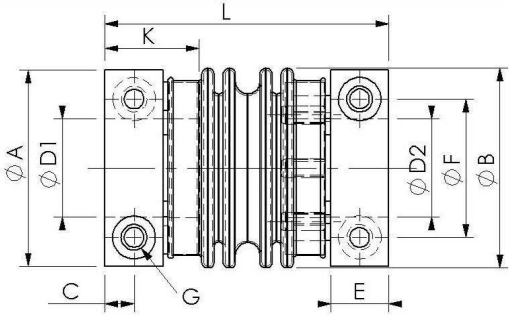
Plug-in Coupling Type 960 up to 305 Nm

Characteristics:

- Operation temperature of up to 500°C for short time, lasting up to 300°C
- No backlash and torsional rigidity
- Maintenance free and non-wearing

Application:

- Machine tools
- Industrial robots
- Handling systems
- Winding machines
- Textile machines
- Wood- working- machines etc.

TYPE 960 up to 305 Nm , mounting hub welded																
																
Size	M_N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (ca. 10^{-3} kg m ²)	Weight(ca. in kg)	Torsional rigidity (Torsion 10^3 Nm/rad)	L	B	G (DIN EN ISO 4762) (Old DIN 912)	D1	D2 (plug- in hub)	C	K	F	A	E
56	50	171	102	0,2	0,7	19	81	56	M6	15...28	15...25	7,5	24	40	54	15
66	115	253	112	0,66	1,0	56	94	66	M8	22...32	22...32	9,5	31	45	64	19
82	190	249	87	1,6	1,7	94	113	82	M10	25...40	25...40	10,5	32	54	82	21
101	305	271	128	4,2	3,5	159	129	101	M12	30...50	30...45	12,0	36	68	99	24
Shaft misalignment:							Allowed		lateral		axial					
							Assembly		0,8 mm		2mm					
							Operational		0,2 mm		0,5mm					



Split-metal bellows coupling **TYPE 570 - up to 900 Nm**

Characteristics:

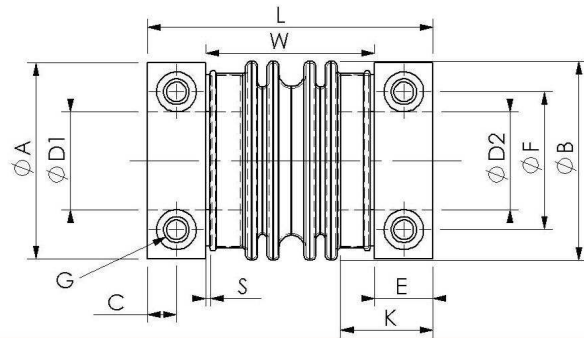
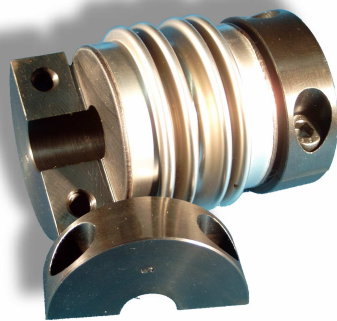
- Operational temperature of up to 500°C for short time , lasting up to 300°C
- No backlash and torsionally rigid
- Installation with fixed shaft distance without the need to adjust shafts
- Maintenance free and non-wearing
- Corrosion-resistant stainless performance type available

Application:

- Machine tools
- Industrial robots
- Handling systems
- Textile machines
- Transfer systems
- Rotary index tables
- Linear and compo and tables etc.

Predominantly used for mounting highly dynamic drives with fixed shaft distances and very high torsion rigidity for precise transmission of angels. Recommend for new designs.

TYPE 570 up to 900 Nm , fitting hubs welded



Size	M _N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. in kg)	Spring constant (Torque 10 ³ Nm/rad)	W	L	S	B	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	C	K	F	A	E
56	50	171	102	0,2	0,7	19	49	81	2	56	M6	15...28	7,5	24	40	54	15
56.1	74	263	208	0,21	0,7	28	49	81	2	56	M6	18...28	7,5	24	40	54	15
56.2	90	314	298	0,21	0,7	35	49	81	2	56	M6	22...28	7,5	24	40	54	15
66	115	253	112	0,39	0,9	56	54	94	2	66	M8	22...32/35	9,5	31	45	64	19
66.1	155	367	196	0,41	0,95	84	54	94	2	66	M8	25...32/35	9,5	31	45	64	19
66.2	175	407	218	0,43	0,95	95	54	94	2	66	M8	28...32/35	9,5	31	45	64	19
82	190	249	87	0,9	1,6	94	70	113	2	82	M10	25...40	10,5	32	54	82	21
82.1	250	358	125	0,92	1,65	120	70	113	2	82	M10	28...40	10,5	32	54	82	21
82.2	310	406	138	0,95	1,7	163	70	113	2	82	M10	32...40	10,5	32	54	82	21
101	305	271	128	3,6	3,2	159	79	129	2	101	M12	30...50	12,0	36	68	99	24
101.1	440	377	192	3,7	3,25	228	79	129	2	101	M12	35...50	12,0	36	68	99	24
101.2	510	435	228	3,7	3,3	311	79	129	2	101	M12	38...50	12,0	36	68	99	24
122	500	325	188	6,5	4,5	293	84	142	2	122	M14	36...60	14,0	40	82	119	28
122.1	730	411	270	6,6	4,6	424	84	142	2	122	M14	40...60	14,0	40	82	119	28
122.2	900	485	315	6,7	4,7	505	84	142	2	122	M14	48...60	14,0	40	82	119	28

Smaller bore diameters are possible for lower transfers of torque.



Metal bellows coupling TYPE 555 - up to 900 Nm

Characteristics:

- Close-fit retaining clamps
- Operational temperature of up to 500°C for short time , lasting up to 300°C
- Torsional rigidity
- Low backlash
- Corrosion-resistant stainless steel type available

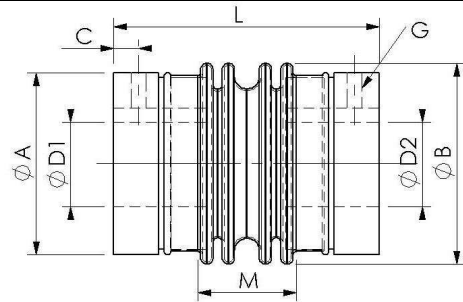
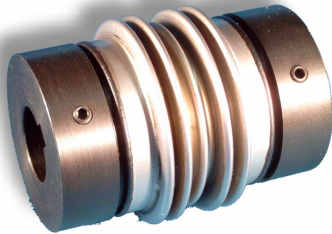
Application:

- Packing machines
- Roller drives
- Winding machines
- Textile machines
- Paper machines
- Printing machines

Predominately used for mounting uniformly running drives without major impact loads

Available with keyway according to DIN 6885.

TYPE 555 up to 900 Nm , mounting hub welded



Size	M _N (Nm)	Spring constant in N/mm (lateral)	Spring constant in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. in kg)	Spring constant (Torque 10 ³ Nm/rad)	L	A	G (DIN 916)	D1/D2	B	M	C
56	50	171	102	0,2	0,65	19	81	48	M5	15...28	56	27	8
56.1	74	263	208	0,2	0,65	28	81	48	M5	18...28	56	27	8
56.2	90	314	298	0,21	0,65	35	81	48	M5	20...28	56	27	8
66	115	253	112	0,58	1,2	56	86	59	M6	20...32	66	24	8
66.1	155	367	196	0,6	1,25	84	86	59	M6	20...32	66	24	8
66.2	175	407	218	0,6	1,25	95	86	59	M6	24...32	66	24	8
82	190	249	87	1,45	1,8	94	106	73	M8	24...40	82	40	9
82.1	250	358	125	1,47	1,83	120	106	73	M8	24...40	82	40	9
82.2	310	406	138	1,5	1,88	163	106	73	M8	28...40	82	40	9
101	305	271	128	5,4	4,1	159	125	95	M8	30...50	101	39	9
101.1	440	377	192	5,5	4,15	228	125	95	M8	30...50	101	39	9
101.2	510	435	228	5,5	4,2	311	125	95	M8	35...50	101	39	9
122	500	325	188	12,2	6,4	293	142	113	M10	40...65	122	44	12
122.1	730	411	270	12,4	6,5	424	142	113	M10	40...65	122	44	12
122.2	900	485	315	12,5	6,6	505	142	113	M10	45...65	122	44	12

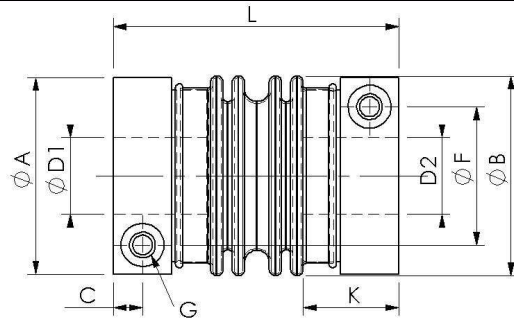
For alternating rotation directions, we recommend our no backlash compensating couplings with locked shaft-hub connections.

<u>shaft misalignment:</u>	Allowed	lateral	axial
	Assembly Operational	0,8 mm 0,2 mm	2mm 0,5mm

Metal bellows coupling TYPE 402 - up to 900 Nm

<p>Characteristics:</p> <ul style="list-style-type: none"> ▪ Aluminium hubs welded to metal bellows ▪ Operational temperature of up to 250°C for short time , lasting up to 150°C ▪ No backlash and torsionally rigid ▪ Maintenance free and non-wearing ▪ High rotational speeds possible <p>Available with plastic inserts for high impact resistance on request.</p>	<p>Application:</p> <p>Size 16 up to 40:</p> <p>Predominantly used for systems with high torsionally rigidity.</p> <p>Size 55 up to 122:</p> <p>Predominantly used for mounting of servo-drives with very high torsionally rigidity.</p> <ul style="list-style-type: none"> ▪ Machine tools ▪ Industrial robots ▪ Handling systems ▪ Packing machines ▪ Textile machines ▪ Wood- working- machines ▪ Transfer systems etc.
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TYPE 402 up to 900 Nm , mounting hub welded



Size	M _N (Nm)	Allowed shaft misalignment in N/mm (lateral)	Allowed shaft misalignment in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. In g)	Spring constant (Torque 10 ³ Nm/rad)	L	A	B	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	C	K	F
16	0,7	0,10	0,30	3,5	10	216	28	16	16	M2,5	3...6	3	8,5	10
20	1,9	0,10	0,30	12	16	680	29	20	20	M2,5	3...8	3	8,5	13
25	3,7	0,13	0,40	32	35	1320	41	25	25	M3	3...12	4,5	11,5	17
40.1	9	0,17	0,50	2	100	3350	57	40	40	M5	6...20	5,5	13,5	27
40.2	14,5	0,17	0,50	250	110	5600	57	40	40	M5	10...20	5,5	13,5	27
40.3	19	0,17	0,50	270	115	8800	56	40	40	M5	14...20	5,5	13,5	27

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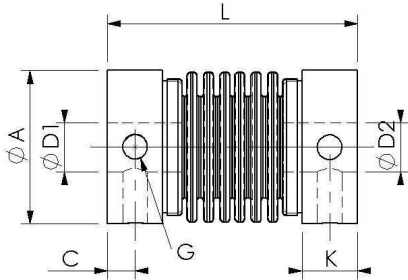


More sizes of TYPE 402:

Size	M _N (Nm)	Allowed shaft misalignment in N/mm (lateral)	Allowed shaft misalignment in N/mm (axial)	Moment of inertia (app. 10 ⁻³ kg m ²)	Weight (app. In g)	Spring constant (Torque 10 ³ Nm/rad)	L	A	B	G (DIN EN ISO 4762) (Old DIN 912)	D1/D2	C	K	F
55.1	25	0,17	0,50	800	200	10400	68	50	55	M6	14...25	7,25	18,5	34
55.2	38	0,17	0,50	900	220	17600	68	50	55	M6	15...25	7,25	18,5	34
56	50	0,20	0,50	1600	310	19000	78	59	56	M6	15...32	7,5	21	42
56.1	74	0,20	0,50	1750	330	28000	78	59	56	M6	18...32	7,5	21	42
56.2	90	0,20	0,50	1900	350	35000	78	59	56	M6	22...32	7,5	21	42
66S	115	0,20	0,50	2400	410	56000	91	59	66	M8	22...32	9,5	26	40
66.1S	155	0,20	0,50	2700	450	84000	91	59	66	M8	25...32	9,5	26	40
66.2S	175	0,20	0,50	2800	460	95000	91	59	66	M8	28...32	9,5	26	40
66L	115	0,20	0,50	3750	520	56000	91	69	66	M8	22...38	9,5	26	48
66.1L	155	0,20	0,50	4100	560	84000	91	69	66	M8	25...38	9,5	26	48
66.2L	175	0,20	0,50	4200	570	95000	91	69	66	M8	28...38	9,5	26	48
82S	190	0,20	0,50	7400	750	94000	111	79	82	M10	25...40	10,5	28	52
82.1S	250	0,20	0,50	7850	790	120000	111	79	82	M10	28...40	10,5	28	52
82.2S	310	0,20	0,50	9100	870	163000	111	79	82	M10	32...40	10,5	28	52
82L	190	0,20	0,50	10750	940	94000	111	89	82	M10	25...50	10,5	28	64
82.1L	250	0,20	0,50	11200	970	120000	111	89	82	M10	28...50	10,5	28	64
82.2L	310	0,20	0,50	12500	1050	163000	111	89	82	M10	32...50	10,5	28	64
101	305	0,20	0,50	19200	1300	159000	126	99	101	M12	30...50	12	32	68
101.1	440	0,20	0,50	20900	1370	228000	126	99	101	M12	35...50	12	32	68
101.2	510	0,20	0,50	23100	1460	311000	126	99	101	M12	38...50	12	32	68
122	500	0,20	0,50	45300	2140	293000	141	119	122	M14	36...60	14	36	82
122.1	730	0,20	0,50	47400	2200	424000	141	119	122	M14	40...60	14	36	82
122.2	900	0,20	0,50	51400	2340	505000	141	119	122	M14	48...60	14	36	82

Metal bellows coupling, TYPE 510 - up to 38 Nm

<p><b style="color: magenta;">Characteristics:</p> <ul style="list-style-type: none"> ▪ Operational temperature of up to 500°C for a short time, lasting up to 300°C ▪ No backlash ▪ High rotational speeds possible ▪ Maintenance free and non-wearing ▪ Corrosion-resistant stainless performance type available 	<p><b style="color: magenta;">Application:</p> <p>For installation in</p> <ul style="list-style-type: none"> ▪ Stepped motors ▪ Impulse drives ▪ Measuring systems ▪ Low output drives, etc.
<p>Simple clamping is obtained by use of the clamping screws (DIN 916). The relationship between the moment of inertia and the torsion rigid is very pleasant, because of the thin metal bellows.</p>	

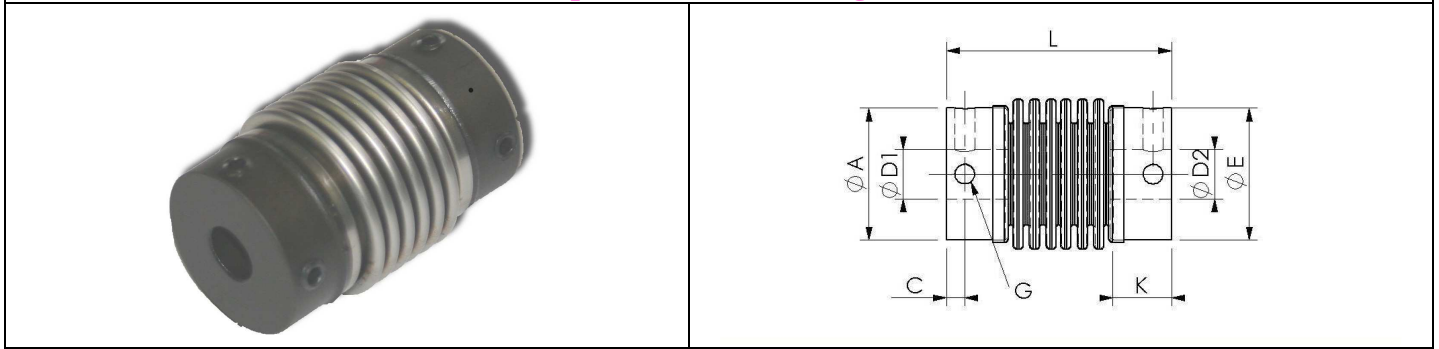
TYPE 510 up to 38 Nm, mounting hub welded													
													
Size	M_N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	app. weight (in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN EN 916)	D1/D2	D1/D2 (Standard)	C	K
16	0,7	0,10	0,30	9	30	216	30	16	M4	5...8	6H7	3	8
20	1,9	0,10	0,30	24	45	680	32	20	M4	5...12	6H7	3	8
25	3,7	0,13	0,40	85	100	1320	42	25	M5	6...15	10H7	4,5	12
40.1	9	0,17	0,50	648	295	3350	59	40	M8	10...24	12H7	5,5	15,5
40.2	14,5	0,17	0,50	670	305	5600	59	40	M8	10...24	12H7	5,5	15,5
40.3	19	0,17	0,50	680	307	8800	59	40	M8	10...24	12H7	5,5	15,5
55.1	25	0,17	0,50	2800	735	10400	69	54	M10	15...30	16H7	7	19,5
55.2	38	0,17	0,50	3000	755	17600	69	54	M10	15...30	16H7	7	19,5



Metal bellows coupling, TYPE 530 - up to 38 Nm

<p>Characteristics:</p> <ul style="list-style-type: none"> ▪ Operational temperature of up to 500°C for a short time, lasting up to 300°C ▪ No backlash ▪ High rotational speeds possible ▪ Maintenance free and non-wearing ▪ Corrosion-resistant stainless performance type available 	<p>Application:</p> <p>For installation in</p> <ul style="list-style-type: none"> ▪ Stepped motors ▪ Impulse drives ▪ Measuring systems ▪ Low output drives, etc.
<p>Simple clamping is obtained by use of the clamping screws (DIN 916). The relationship between the moment of inertia and the torsion rigid is very pleasant, because of the thin metal bellows.</p>	

TYPE 530 up to 38 Nm, mounting hub welded



Size	M _N (Nm)	Allowed shaft misalignment in mm (lateral)	Allowed shaft misalignment in mm (axial)	Moment of inertia (app. g cm ²)	app. weight (in g)	Spring constant (Torque Nm/rad)	L	A	G (DIN 916)	D1/D2	D1/D2 (Standard)	C	K	E
16	0,7	0,10	0,30	2,5	11	216	25,5	14,5	M3	3...8	4H7	2	6,5	11,5
20	1,9	0,10	0,30	11	24	680	26	18,5	M3	3...12	6H7	2	6,5	17,5
25	3,7	0,13	0,40	40	61	1320	39	24,5	M4	5...12,7	6H7	3	10,5	21,5
40.1	9	0,17	0,50	370	210	3350	56	39	M8	10...18	12H7	5	14,5	35
40.2	14,5	0,17	0,50	395	219	5600	56	39	M8	10...18	12H7	5	14,5	35
40.3	19	0,17	0,50	405	224	8800	56	39	M8	10...18	12H7	5	14,5	35
55.1	25	0,17	0,50	1710	500	10400	66,5	55	M10	15...26	16H7	7	18,5	48
55.2	38	0,17	0,50	1830	520	17600	66,5	55	M10	15...26	16H7	7	18,5	48



Calculations

<p><u>Moment while accelerating the motor</u></p> $M_o = \frac{F_1 * J_{Mot} * n * V}{9,55 * T_A * \eta}$ $F_1 = \frac{J_M + J_{Masch}}{J_{Mot}}$ <p><u>Moment while accelerating the coupling</u></p> $M_k = M_b * \frac{J_{Masch} * V}{J_{Masch} + J_{Mot}}$ <p><u>Moment while cutting</u></p> $M_s = \frac{F_A * S * L}{\eta * 628}$ <p>In many cases the user can use the Moment of the motor.</p> $Md = \frac{9550 * P}{n}$	<p>F₁ = Inertia factor J_{Mot} = Moment of inertia - motor (kg m²) J_{Mach} = Moment of inertia - machine (kg m²) n = RPM difference (min⁻¹) T_A = Start time in seconds η = Degree of efficiency F_A = Cutting force (axial vector in N) S = Spindle pitch (cm) L = Withstanding ratio (app. 3 in Nm) P = Power (kW) V = Safety factor</p>
<p><u>Interpretation</u></p> <p>In order to achieve the maximum life-span of the coupling, the following criteria must be observed:</p>	<ol style="list-style-type: none"> 1. The maximum load must not be higher than the nominal moment of the coupling itself. 2. The shaft misalignment must be adapted to the compensation possibilities of the coupling. 3. The assembly must be carried out properly.

Important Points for Assembly and Disassembly

<ol style="list-style-type: none"> 1. Align the shafts 2. Clean shaft and bores (a thin film of oil is recommended) 3. Connect both shafts using the coupling (TYPE 550/560) 4. Tighten bolts in diagonally (TYPE 550) 	<p>Disassembly TYPE 550</p> <ol style="list-style-type: none"> 1. Loosen retaining screws. 2. Force taper off against bellows holder (3 threads per taper bushing provided) 									
	<p>shaft misalignment (TYPE 550/560/570/580)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Allowed</th> <th style="text-align: center; border-bottom: 1px solid black;">lateral</th> <th style="text-align: center; border-bottom: 1px solid black;">axial</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">Assembly:</td> <td style="text-align: center; border-bottom: 1px solid black;">0,8 mm</td> <td style="text-align: center; border-bottom: 1px solid black;">2mm</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Operational:</td> <td style="text-align: center; border-bottom: 1px solid black;">0,2 mm</td> <td style="text-align: center; border-bottom: 1px solid black;">0,5mm</td> </tr> </tbody> </table>	Allowed	lateral	axial	Assembly:	0,8 mm	2mm	Operational:	0,2 mm	0,5mm
Allowed	lateral	axial								
Assembly:	0,8 mm	2mm								
Operational:	0,2 mm	0,5mm								

Tightening torque of bolts

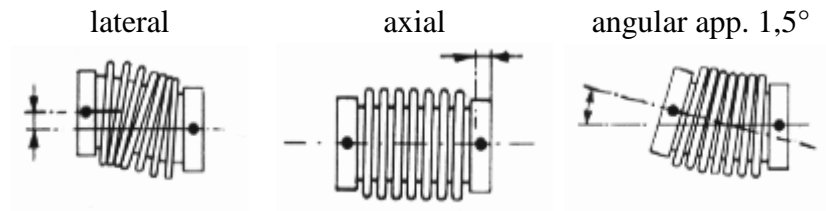
Screw Size	Tightening torque in Nm
M 2,5	1
M 3	1,5
M 4	3,5
M 5	7
M 6	12
M 8	25
M 10	50
M 12	85
M 14	135
M 16	220
M 20	430

Ordering details

For example: **TYPE 560 – 66.1** **Ø 16H7** **Ø 18H7** **D1 with DIN 6885**

Coupling-type Size D1 D2 Special

Shaft misalignment



Description

The shaft/hub connection is always an exact fit in order to guarantee no backlash. The tapered fitting with the normally keywayed tapered bush as well as the basic type of connection ensures a maximum play between shaft and hub of 0,05mm.

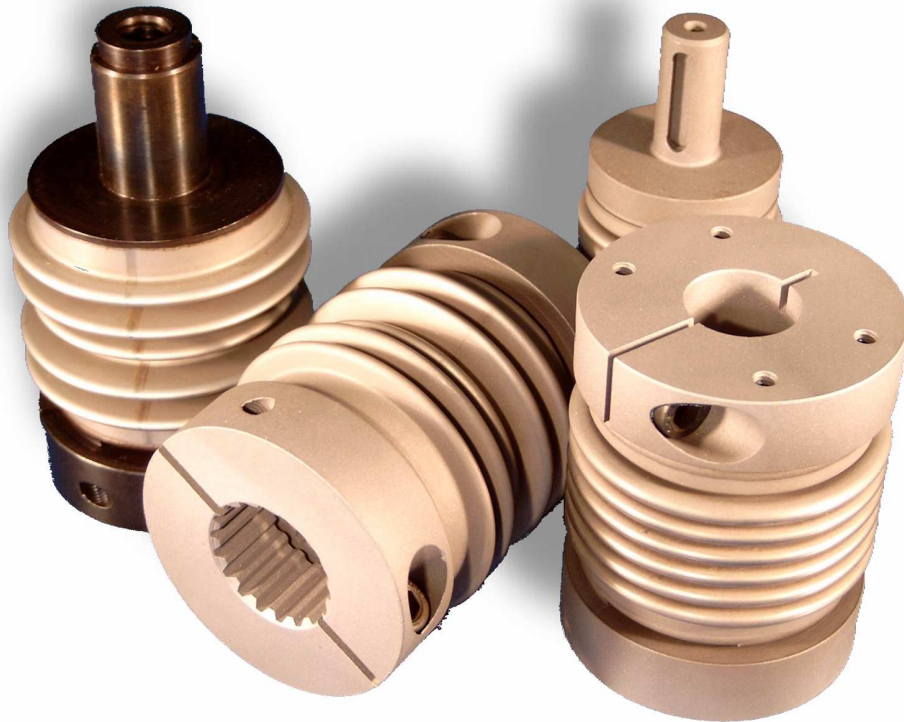
The fit should be a moving fit (between running and slide) to make a quick and simple assembly possible. In highly dynamic power trains (small shaft diameter – large transfer of torque), we recommend those types using the taper clamping element.

The basic type of connection, however, makes assembly much easier for many types of applications.

Pre-drilled taper bushings are not slotted.

Special couplings

You didn't find a coupling for your use in our catalogue? No problem- just call us. Longer or wider couplings are always possible. Also we offer holes or thread circles in our products.



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