

Torsionally Rigid Gear Couplings

ZAPEX ZW Series

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FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

General information

Overview



Coupling suitable for use in potentially explosive atmospheres.

Complies with the current ATEX Directive for:

CE Ex II 2 GD c 120 °C (T4)
-20 °C ≤ T_a ≤ +80 °C

CE Ex I M2

Benefits

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle.

This means that application-specific solutions can be delivered quickly. ZAPEX couplings require very little maintenance. Regular grease or oil changes at the prescribed intervals prolongs the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry. ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZWNV, for vertical mounting positions.

Design

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. Each set of external teeth engages in a flanged socket with mating internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts.

The teeth are lubricated with oil or grease. On the ZAPEX type ZW, DUO sealing rings are used to seal the tooth space. The DUO sealing rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping.

Customized hub designs are described after the types.

ZAPEX ZW gear coupling types

Type	Description
ZWN	Standard type
ZZS	with adapter
ZZW	with intermediate shaft
ZWH	with coupling sleeve
ZWBT	with offset brake disk
ZWBG	with straight brake disk
ZWB	with brake drum
ZWTR	for rope drums
ZBR	with shear pins
ZWS	Clutch
ZWNV	Vertical type
ZWSE	Simple clutch-coupling combination

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

Function

The torque is transmitted through the coupling teeth. The teeth are crowned, so angular displacement per tooth plane is possible. Radial displacement can be compensated for via the space VA between the tooth planes. The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Torsional stiffness	Permitted axial shaft misalignment
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	ZW C_{Tdyn} kNm/rad	ΔK_a mm
112	1300	2600	5200	520	2000	1.0
128	2500	5000	10000	1000	3600	1.0
146	4300	8600	17200	1720	6900	1.0
175	7000	14000	28000	2800	9360	1.0
198	11600	23200	46400	4640	15600	1.0
230	19000	38000	76000	7600	26300	1.0
255	27000	54000	108000	10800	33400	1.5
290	39000	78000	156000	15600	44000	1.5
315	54000	108000	216000	21600	64100	1.5
342	69000	138000	276000	27600	81600	1.5
375	98000	196000	392000	39200	115600	1.5
415	130000	260000	520000	52000	106000	1.5
465	180000	360000	720000	72000	134600	2.0
505	250000	500000	1000000	100000	168700	2.0
545	320000	640000	1280000	128000	216900	2.0
585	400000	800000	1600000	160000	263200	2.0
640	510000	1020000	2040000	204000	356000	2.0
690	660000	1320000	2640000	264000	431000	2.0
730	790000	1580000	3160000	316000	538000	2.0
780	1000000	2000000	4000000	400000	696000	3.0
852	1200000	2400000	4800000	480000	926000	3.0
910	1600000	3200000	6400000	640000	1118000	3.0
1020	1900000	3800000	7600000	760000	1339000	3.0
1080	2200000	4400000	8800000	880000	1605000	3.0
1150	2700000	5400000	10800000	1080000	2120000	3.0
1160	3350000	6700000	13400000	1340000	2474000	3.0
1240	3800000	7600000	15200000	1520000	3079000	3.0
1310	4600000	9200000	18400000	1840000	3693000	4.0
1380	5300000	10600000	21200000	2120000	4383000	4.0
1440	6250000	12500000	25000000	2500000	5056000	4.0
1540	7200000	14400000	28800000	2880000	6115000	4.0

In the case of type ZWTR, the rated torques which deviate from the above are specified in the dimension table.

The stated torsional stiffness „ZW“ applies to coupling types ZWN and ZWNV.

Torsional stiffness of the remaining types on request.

The axial misalignment ΔK_a must be understood as the maximum permitted enlargement of the hub distance S of the coupling.

The axial misalignment for the types ZWBT, ZWBG and ZWNV is $\frac{1}{2} \times \Delta K_a$.

Angular misalignment ΔK_w

- Types ZWN, ZZS, ZZW, ZWH, ZWB, ZBR, ZWS: $\Delta K_w = 1^\circ$
- Types ZWBT and ZWBG: $\Delta K_w = 0.2^\circ$
- Type ZWSE: $\Delta K_w = 0.4^\circ$

Radial misalignment ΔK_r

- Types ZWN, ZZS, ZZW, ZWH, ZWB, ZBR, ZWS:
 $\Delta K_r \leq VA \cdot \tan 1^\circ$
- Types ZWBT and ZWBG: $\Delta K_r \leq VA \cdot \tan 0.2^\circ$
- Type ZWSE: $\Delta K_r \leq VA \cdot \tan 0.4^\circ$

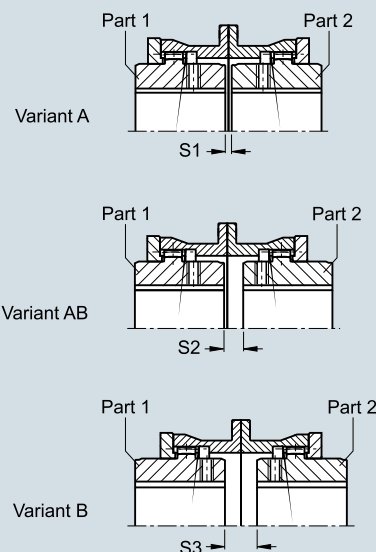
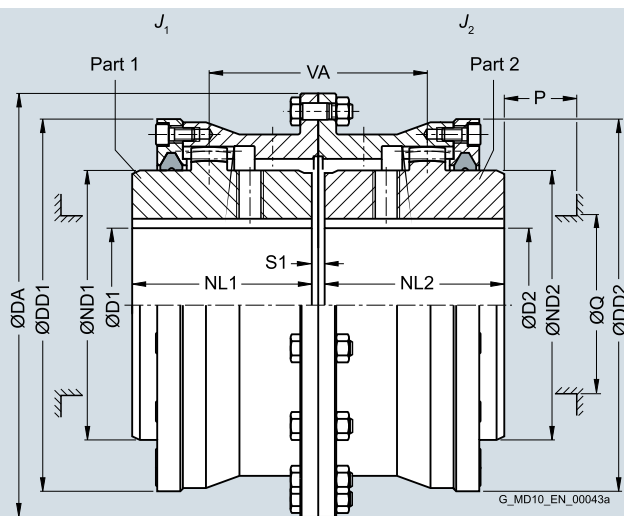
For the tooth distance VA, see the relevant table for the sub-assembly.

FLENDER Standard Couplings

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Type ZWN

Selection and ordering data



Size	Rated torque T_{KN} Nm	Maximum speed n_{kmax} rpm	Dimensions in mm											Mass moment of inertia J_1/J_2 kgm ²	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885-1 min. max.	DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	S2	S3	VA	Q	P			
112	1300	9400	0 49	143	65 50	110	6	-	-	56	50	35	0.007	2LC0300-0A ■■■ -0AA0	5.8	
128	2500	8300	0 61	157	80 60	128	6	13	20	73	65	45	0.014	2LC0300-1A ■■■ -0AA0	7.9	
146	4300	7300	0 72	177	95 75	146	6	13	20	88	75	45	0.021	2LC0300-2A ■■■ -0AA0	11.5	
175	7000	6400	0 85	215	112 90	175	8	14	20	104	85	50	0.049	2LC0300-3A ■■■ -0AA0	19	
198	11600	5500	0 100	237	135 100	198	8	19	30	119	110	50	0.086	2LC0300-4A ■■■ -0AA0	26.5	
230	19000	4700	0 120	265	160 110	230	8	20	32	130	135	50	0.16	2LC0300-5A ■■■ -0AA0	37	
255	27000	4100	0 140	294	185 125	255	10	25	40	150	160	50	0.26	2LC0300-6A ■■■ -0AA0	49	
290	39000	3700	70 160	330	210 140	290	10	30	50	170	180	60	0.51	2LC0300-7A ■■■ -0AA0	72	
315	54000	3300	80 175	366	230 160	315	10	30	50	190	200	60	0.81	2LC0300-8A ■■■ -0AA0	99	
342	69000	3000	90 195	392	255 180	340	12	42	72	222	225	60	1.2	2LC0301-0A ■■■ -0AA0	125	
375	98000	2700	100 220	430	290 200	375	12	42	72	242	260	60	2	2LC0301-1A ■■■ -0AA0	170	
415	130000	2500	120 240	478	320 220	415	12	74	136	294	285	80	3.1	2LC0301-2A ■■■ -0AA0	225	
465	180000	2200	140 270	528	360 240	465	16	96	176	336	325	80	5.2	2LC0301-3A ■■■ -0AA0	300	
505	250000	2000	160 300	568	400 260	505	16	106	196	366	365	80	7.7	2LC0301-4A ■■■ -0AA0	380	
545	320000	1800	180 330	620	440 280	545	16	126	236	406	405	80	12	2LC0301-5A ■■■ -0AA0	490	
585	400000	1700	210 360	660	480 310	585	20	150	280	460	445	80	17	2LC0301-6A ■■■ -0AA0	620	
640	510000	1600	230 360	738	480 330	640	20	149	278	479	445	90	25	2LC0301-7A ■■■ -0AA0	780	
			>330 390	520	640	20	149	278	479	445	90	27	800			
690	660000	1450	250 390	788	520 350	690	20	166	312	516	475	90	35	2LC0301-8A ■■■ -0AA0	950	
			>360 420	560	690	20	166	312	516	475	90	38	980			
730	790000	1350	275 420	834	560 380	730	20	180	340	560	515	90	48	2LC0302-0A ■■■ -0AA0	1150	
			>390 450	600	730	20	180	340	560	515	90	52	1200			
780	1000000	1250	300 450	900	600 400	780	25	176	327	576	555	110	68	2LC0302-1A ■■■ -0AA0	1450	
			>415 490	650	780	25	176	327	576	555	110	77	1450			
852	1200000	1150	325 490	970	650 420	850	25	185	345	605	595	110	100	2LC0302-2A ■■■ -0AA0	1750	
			>450 535	710	850	25	185	345	605	595	110	110	1800			

Variant:	<ul style="list-style-type: none"> • A • B • AB 	A B C
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 2 9
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 2 9

FLENDER Standard Couplings Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWN

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm													Mass moment of inertia J_1/J_2 kgm ²	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885-1		DA	ND1/ND2	NL1/NL2	DD1/DD2	S1	S2	S3	VA	Q	P				
			min.	max.														
910	1600000	1050	350	535	1030	710	450	910	25	215	405	665	655	110	140	2LC0302-3A ■■■-0AA0	2100	
			>490	570		750							695		145		2150	
1020	1900000	1000	375	570	1112	750	480	1020	25	213	401	693	695	130	200	2LC0302-4A ■■■-0AA0	2600	
			>520	600		800							735		220		2800	
1080	2200000	950	400	600	1162	800	500	1080	30	226	422	726	735	135	255	2LC0302-5A ■■■-0AA0	3100	
			>550	650		860							795		285		3200	
1150	2700000	900	425	650	1222	860	520	1150	30	238	446	758	795	135	330	2LC0302-6A ■■■-0AA0	3600	
			>600	705		930							865		380		3700	
1160	3350000	850	450	650	1292	860	550	1160	30	260	490	810	795	135	420	2LC0302-7A ■■■-0AA0	4000	
			>600	705		930		1160					450		4100			
			>650	750		990		1210					500		4300			
1240	3800000	800	475	705	1400	930	580	1240	30	250	470	830	865	155	580	2LC0302-8A ■■■-0AA0	4900	
			>650	750		990		1240					620		5000			
			>690	800		1055		1290					700		5300			
			>730	850		1120		1370					975		5300			
1310	4600000	750	500	705	1470	930	610	1310	35	265	495	875	865	155	730	2LC0303-0A ■■■-0AA0	5600	
			>650	750		990		1310					770		5700			
			>690	800		1055		1310					840		5900			
			>730	850		1120		1370					930		6200			
1380	5300000	700	525	750	1540	990	640	1380	35	275	515	915	910	155	930	2LC0303-1A ■■■-0AA0	6500	
			>690	800		1055		1380					1000		6800			
			>730	850		1120		1380					1050		6900			
			>780	890		1170		1430					1080		7100			
1440	6250000	670	550	800	1600	1055	670	1440	35	295	555	965	975	155	1200	2LC0303-2A ■■■-0AA0	7500	
			>730	850		1120		1440					1250		7600			
			>780	890		1170		1440					1300		7700			
			>810	940		1240		1510					1450		8200			
1540	7200000	630	575	850	1710	1120	700	1540	35	275	515	975	1030	175	1550	2LC0303-3A ■■■-0AA0	8800	
			>780	890		1170		1540					1600		8900			
			>810	940		1240		1540					1700		9200			
			>860	995		1310		1610					1900		9600			

Variant:	<ul style="list-style-type: none"> • A • B • AB 	A B C
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D1 – Without order codes • Without finished bore from size 1310 for 4th diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 2 3 4 9
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D2 – Without order codes • Without finished bore from size 1310 for 4th diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 2 3 4 9

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZWN coupling, size 146, variant A,

Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw,

Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

2LC0300-2AA99-0AA0-Z

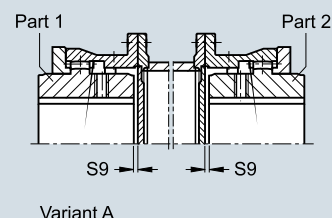
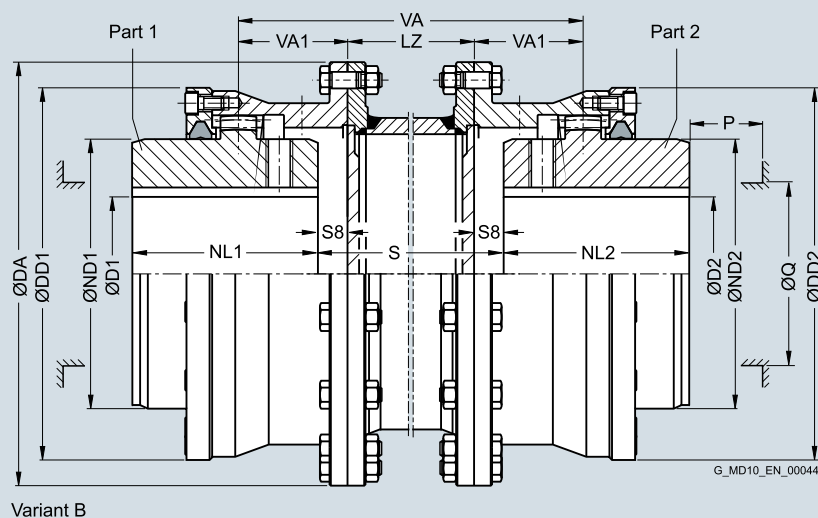
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZZS

Selection and ordering data



Size	Rated torque T_{KN}	Dimensions in mm											Article No. Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
		D1, D2 Keyway DIN 6885-1	DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S8	S9	VA1	Q	P	LZ min.		m each 100 mm pipe	m	
	Nm	min.	max.											kg	kg	
112	1300	0	49	143	65	50	110	3	3	28	50	35	120	2LC0300-0A ■■■■ -0AZ0 Q0Y	0.8	9.4
128	2500	0	61	157	80	60	128	10	3	36.5	65	45	120	2LC0300-1A ■■■■ -0AZ0 Q0Y	1.3	12.5
146	4300	0	72	177	95	75	146	10	3	44	75	45	120	2LC0300-2A ■■■■ -0AZ0 Q0Y	1.8	17
175	7000	0	85	215	112	90	175	10	4	52	85	50	130	2LC0300-3A ■■■■ -0AZ0 Q0Y	2.3	27.5
198	11600	0	100	237	135	100	198	15	4	59.5	110	50	130	2LC0300-4A ■■■■ -0AZ0 Q0Y	3.5	37
230	19000	0	120	265	160	110	230	16	4	65	135	50	130	2LC0300-5A ■■■■ -0AZ0 Q0Y	4.5	50
255	27000	0	140	294	185	125	255	20	5	75	160	50	140	2LC0300-6A ■■■■ -0AZ0 Q0Y	6.3	68
290	39000	70	160	330	210	140	290	25	5	85	180	60	140	2LC0300-7A ■■■■ -0AZ0 Q0Y	7.2	93
315	54000	80	175	366	230	160	315	25	5	95	200	60	180	2LC0300-8A ■■■■ -0AZ0 Q0Y	9.1	135
342	69000	90	195	392	255	180	340	36	6	111	225	60	180	2LC0301-0A ■■■■ -0AZ0 Q0Y	12	170
375	98000	100	220	430	290	200	375	36	6	121	260	60	180	2LC0301-1A ■■■■ -0AZ0 Q0Y	15	220
415	130000	120	240	478	320	220	415	68	6	147	285	80	200	2LC0301-2A ■■■■ -0AZ0 Q0Y	17	295
465	180000	140	270	528	360	240	465	88	8	168	325	80	200	2LC0301-3A ■■■■ -0AZ0 Q0Y	19	380
505	250000	160	300	568	400	260	505	98	8	183	365	80	200	2LC0301-4A ■■■■ -0AZ0 Q0Y	24	470
545	320000	180	330	620	440	280	545	118	8	203	405	80	220	2LC0301-5A ■■■■ -0AZ0 Q0Y	30	640
585	400000	210	360	660	480	310	585	140	10	230	445	80	220	2LC0301-6A ■■■■ -0AZ0 Q0Y	33	780

Variant	<ul style="list-style-type: none"> • A • B 	D
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	E
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1
		9

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZZS

Size	Rated torque T_{KN}	Dimensions in mm												Article No. Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S8	S9	VA1	Q	P	LZ		m	m
	Nm	min.	max.										min.	each 100 mm pipe	kg	kg
640	510000	230	360	738	480	330	640	139	10	239.5	445	90	250	2LC0301-7A Q0Y	39	1010
		>330	390		520						475					1050
690	660000	250	390	788	520	350	690	156	10	258	475	90	250	2LC0301-8A Q0Y	48	1200
		>360	420		560						515					1250
730	790000	275	420	834	560	380	730	170	10	280	515	90	250	2LC0302-0A Q0Y	51	1450
		>390	450		600						555					1500
780	1000000	300	450	900	600	400	780	163	12.5	288	555	110	280	2LC0302-1A Q0Y	55	1850
		>415	490		650						595					1900
852	1200000	325	490	970	650	420	850	172	12.5	302.5	595	110	280	2LC0302-2A Q0Y	68	2300
		>450	535		710						655					2400
910	1600000	350	535	1030	710	450	910	202	12.5	332.5	655	110	280	2LC0302-3A Q0Y	94	2800
		>490	570		750						695					2850
1020	1900000	375	570	1112	750	480	1020	200	12.5	346.5	695	130	380	2LC0302-4A Q0Y		
		>520	600		800						735					
1080	2200000	400	600	1162	800	500	1080	211	15	363	735	135	380	2LC0302-5A Q0Y		
		>550	650		860						795					
1150	2700000	425	650	1222	860	520	1150	223	15	379	795	135	380	2LC0302-6A Q0Y		
		>600	705		930						865					
1160	3350000	450	650	1292	860	550	1160	245	15	405	795	135	380	2LC0302-7A Q0Y		
		>600	705		930		1160				865					
		>650	750		990		1210				910					
1240	3800000	475	705	1400	930	580	1240	235	15	415	865	155	400	2LC0302-8A Q0Y		
		>650	750		990		1240				910					
		>690	800		1055		1290				975					
1310	4600000	500	705	1470	930	610	1310	247	17.5	437.5	865	155	400	2LC0303-0A Q0Y		
		>650	750		990		1310				910					
		>690	800		1055		1310				975					
		>730	850		1120		1370				1030					
1380	5300000	525	750	1540	990	640	1380	257	17.5	457.5	910	155	400	2LC0303-1A Q0Y		
		>690	800		1055		1380				975					
		>730	850		1120		1380				1030					
		>780	890		1170		1430				1080					
1440	6250000	550	800	1600	1055	670	1440	277	17.5	482.5	975	155	400	2LC0303-2A Q0Y		
		>730	850		1120		1440				1030					
		>780	890		1170		1440				1080					
		>810	940		1240		1510				1150					
1540	7200000	575	850	1710	1120	700	1540	257	17.5	487.5	1030	175	600	2LC0303-3A Q0Y		
		>780	890		1170		1540				1080					
		>810	940		1240		1540				1150					
		>860	995		1310		1610				1220					

Variant		D	E
• A			
• B			
∅D1:	<ul style="list-style-type: none"> Without finished bore – Without order codes Without finished bore from size 640 for 2nd diameter range D1 – Without order codes Without finished bore from size 1160 for 3rd diameter range D1 – Without order codes Without finished bore from size 1310 for 4th diameter range D1 – Without order codes With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1	2
∅D2:	<ul style="list-style-type: none"> Without finished bore – Without order codes Without finished bore from size 640 for 2nd diameter range D2 – Without order codes Without finished bore from size 1160 for 3rd diameter range D2 – Without order codes Without finished bore from size 1310 for 4th diameter range D2 – Without order codes With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1	2

Weights from size 1020 on request.

$$VA = 2 \cdot VA1 + LZ$$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores and an adapter length of LZ min.

Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:

Article No.:

2LC0300-2AE99-0AZ0-Z

LOW+M1A+Q0Y+M13

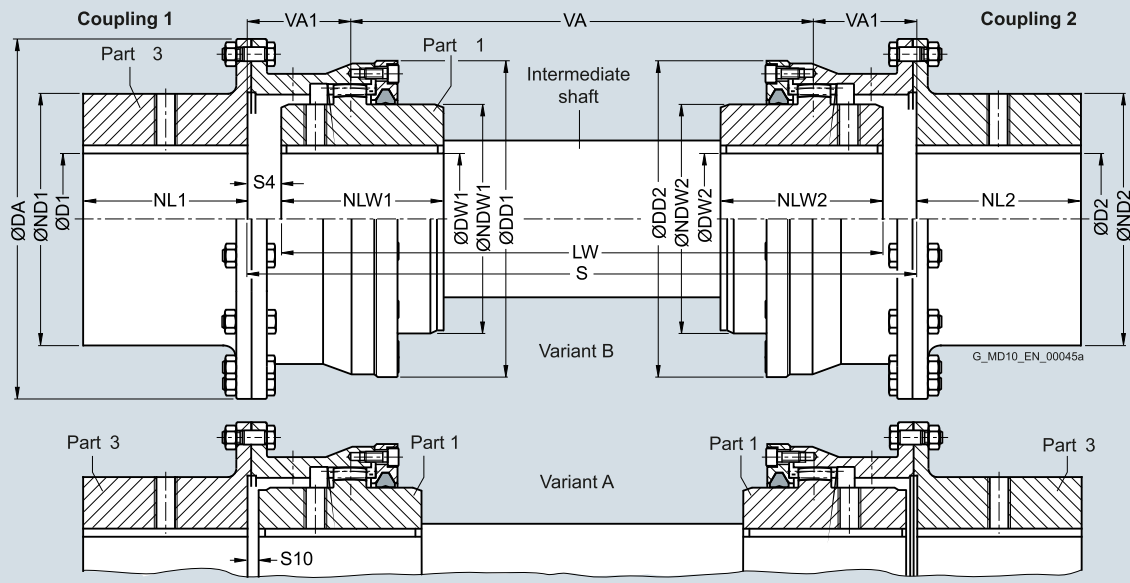
Plain text to Q0Y: **250 mm (dimension S)**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZZW

Selection and ordering data



Size	Rated torque T_{KN} Nm	Dimensions in mm										Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg			
		D1, D2 Keyway DIN 6885-1		DA	ND1/ND2	NL1/NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885-1		NDW1/ DD1/ NDW2	DD2/ DD2	S4			S10	VA1	
		min.	max.			min.	max.									
112	1300	20	61	143	80	50	0	49	65	110	12.5	12.5	37.5	2LC0300-0B	■ ■ ■ -0AA0	5.1
128	2500	25	72	157	95	60	0	61	80	128	12.5	5.5	39	2LC0300-1B	■ ■ ■ -0AA0	6.8
146	4300	30	85	177	112	75	0	72	95	146	12.5	5.5	46.5	2LC0300-2B	■ ■ ■ -0AA0	9.8
175	7000	35	100	215	135	90	0	85	112	175	12.5	6.5	54.5	2LC0300-3B	■ ■ ■ -0AA0	16.5
198	11600	40	120	237	160	100	0	100	135	198	17.5	6.5	62	2LC0300-4B	■ ■ ■ -0AA0	23
230	19000	50	140	265	185	110	0	120	160	230	18.5	6.5	67.5	2LC0300-5B	■ ■ ■ -0AA0	32
255	27000	60	160	294	210	125	0	140	185	255	23.5	8.5	78.5	2LC0300-6B	■ ■ ■ -0AA0	43
290	39000	70	175	330	230	140	70	160	210	290	28.5	8.5	88.5	2LC0300-7B	■ ■ ■ -0AA0	61
315	54000	80	195	366	255	160	80	175	230	315	28.5	8.5	98.5	2LC0300-8B	■ ■ ■ -0AA0	86
342	69000	90	220	392	290	180	90	195	255	340	39.5	9.5	114.5	2LC0301-0B	■ ■ ■ -0AA0	115
375	98000	100	240	430	320	200	100	220	290	375	39.5	9.5	124.5	2LC0301-1B	■ ■ ■ -0AA0	150
415	130000	120	270	478	360	220	120	240	320	415	71.5	9.5	150.5	2LC0301-2B	■ ■ ■ -0AA0	205
465	180000	140	300	528	400	240	140	270	360	465	91.5	11.5	171.5	2LC0301-3B	■ ■ ■ -0AA0	275
505	250000	160	330	568	440	260	160	300	400	505	102.5	12.5	187.5	2LC0301-4B	■ ■ ■ -0AA0	350
545	320000	180	360	620	480	280	180	330	440	545	122.5	12.5	207.5	2LC0301-5B	■ ■ ■ -0AA0	450
585	400000	210	360	660	480	310	210	360	480	585	144.5	14.5	234.5	2LC0301-6B	■ ■ ■ -0AA0	540
		>330	390		520			360								570
640	510000	230	390	738	520	330	230	360	480	640	143.5	14.5	244	2LC0301-7B	■ ■ ■ -0AA0	700
		>360	420		560		>330	390	520							740
690	660000	250	420	788	560	350	250	390	520	690	160.5	14.5	262.5	2LC0301-8B	■ ■ ■ -0AA0	850
		>390	450		600		>360	420	560							900
730	790000	275	450	834	600	380	275	420	560	730	176	16	286	2LC0302-0B	■ ■ ■ -0AA0	1050
		>415	490		650		>390	450	600							1100
780	1000000	300	490	900	650	400	300	450	600	780	171	20.5	296	2LC0302-1B	■ ■ ■ -0AA0	1300
		>450	535		710		>415	490	650							1350
852	1200000	325	535	970	710	420	325	490	650	850	180	20.5	310.5	2LC0302-2B	■ ■ ■ -0AA0	1550
		>490	570		750		>450	535	710							1650

Variant:	<ul style="list-style-type: none"> • A • B 	D
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	E
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1
		2
		9
		1
		2
		9

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZZW

Size	Rated torque T_{KN} Nm	Dimensions in mm											Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
		D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885-1		NDW1/ NDW2	DD1/ DD2	S4	S10			VA1	
		min.	max.				min.	max.								
910	1600000	350	570	1030	750	450	350	535	710	910	210	20.5	340.5	2LC0302-3B ■■■■-0AA0	1900	
		>520	600		800		>490	570	750						2000	
1020	1900000	375	600	1112	800	480	375	570	750	1020	210	22.5	356.5	2LC0302-4B ■■■■-0AA0	2300	
		>550	650		860		>520	600	800						2500	
1080	2200000	400	650	1162	860	500	400	600	800	1080	221	25	373	2LC0302-5B ■■■■-0AA0	2750	
		>600	705		930		>550	650	860						2900	
1150	2700000	425	650	1222	860	520	425	650	860	1150	233	25	389	2LC0302-6B ■■■■-0AA0	3100	
		>600	705		930		>425	650	860						3200	
1160	3350000	450	705	1292	930	550	450	650	860	1160	255	25	415	2LC0302-7B ■■■■-0AA0	3600	
		>650	750		990		>600	705	930	1160					3700	
		>690	800		1055		>650	750	990	1210					4000	
1240	3800000	475	705	1400	930	580	475	705	930	1240	245	25	425	2LC0302-8B ■■■■-0AA0	4200	
		>650	750		990		475	705	930	1240					4400	
		>690	800		1055		>650	750	990	1240					4600	
		>730	850		1120		>690	800	1055	1290					4900	
1310	4600000	500	750	1470	990	610	500	705	930	1310	258	28.5	448.5	2LC0303-0B ■■■■-0AA0	4900	
		>690	800		1055		>650	750	990	1310					5100	
		>730	850		1120		>690	800	1055	1310					5300	
		>780	890		1170		>730	850	1120	1370					5600	
1380	5300000	525	800	1540	1055	640	525	750	990	1380	268	28.5	468.5	2LC0303-1B ■■■■-0AA0	5700	
		>730	850		1120		>690	800	1055	1380					5900	
		>780	890		1170		>730	850	1120	1380					6100	
		>810	940		1240		>780	890	1170	1430					6500	
1440	6250000	550	850	1600	1120	670	550	800	1055	1440	288	28.5	493.5	2LC0303-2B ■■■■-0AA0	6500	
		>780	890		1170		>730	850	1120	1440					6700	
		>810	940		1240		>780	890	1170	1440					7000	
		>860	995		1310		>810	940	1240	1510					7400	
1540	7200000	575	890	1710	1170	700	575	850	1120	1540	268	28.5	498.5	2LC0303-3B ■■■■-0AA0	7700	
		575	890		1170		>780	890	1170	1540					7700	
		>810	940		1240		>810	940	1240	1540					8100	
		>860	1040		1390		>860	995	1310	1610					8900	

Variant:	<ul style="list-style-type: none"> • A • B 	D
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D1 – Without order codes • Without finished bore from size 1150 for 3rd diameter range D1 – Without order codes • Without finished bore from size 1240 for 4th diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	E
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D2 – Without order codes • Without finished bore from size 1150 for 3rd diameter range D2 – Without order codes • Without finished bore from size 1240 for 4th diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1
		2
		3
		4
		9

$VA = S - 2 \cdot VA1$

Mass moments of inertia on request.

Weights apply to either coupling 1 or 2 with maximum bore diameter, without intermediate shaft.

Maximum speed, limited by weight and critical speed of intermediate shaft, on request.

Ordering example:

Coupling ZZW consisting of coupling 1, intermediate shaft, coupling 2

Coupling 1:

ZAPEX ZZW coupling, size 146, variant B,

Part 3: Bore D1 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw,

Part 1: Bore DW1 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

**2LC0300-2BE99-0AA0-Z
L1A+M1A+M13**

Intermediate shaft:

Intermediate shaft for ZAPEX coupling ZZW, size 146, length LW = 570 mm, for shaft distance S = 595 mm shaft journal ∅45p6 x 75 long; keyway DIN 6885-1.

Article No.:

**2LC0308-8XX00-0AA0-Z
Y99**

Plain text to Y99: **DW1 = 45p6 mm, NLW1 = 75 mm, DW2 = 45p6 mm, NLW2 = 75 mm, LW = 570 mm**

Coupling 2:

ZAPEX ZZW coupling, size 146, variant B,

Part 1: Bore DW2 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw,

Part 3: Bore D2 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

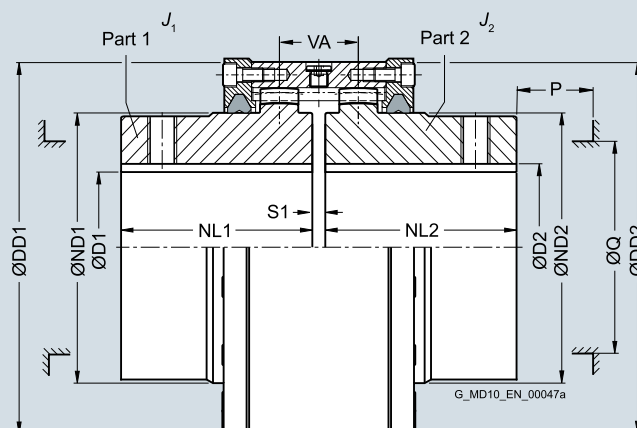
**2LC0300-2BE99-0AA0-Z
L1A+M1A+M13**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWH

Selection and ordering data



Size	Rated torque	Maximum speed	Dimensions in mm		ND1/N D2	NL1/N L2	DD1/D D2	S1	VA	Q	P	Mass moment of inertia J_1/J_2	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m
	T_{KN}	n_{Kmax}	min.	max.										
112	1300	9400	0	49	65	50	110	6	28	50	35	0.003	2LC0300-0BB ■ ■ -0AA0	3.5
128	2500	8300	0	61	80	60	128	6	30	65	45	0.007	2LC0300-1BB ■ ■ -0AA0	5.1
146	4300	7300	0	72	95	75	146	6	33	75	45	0.012	2LC0300-2BB ■ ■ -0AA0	7.8
175	7000	6400	0	85	112	90	175	8	46	85	50	0.031	2LC0300-3BB ■ ■ -0AA0	13.5
198	11600	5500	0	100	135	100	198	8	48	110	50	0.056	2LC0300-4BB ■ ■ -0AA0	20
230	19000	4700	0	120	160	110	230	8	50	135	50	0.11	2LC0300-5BB ■ ■ -0AA0	28.5
255	27000	4100	0	140	185	125	255	10	55	160	50	0.18	2LC0300-6BB ■ ■ -0AA0	38
290	39000	3700	70	160	210	140	290	10	58	180	60	0.35	2LC0300-7BB ■ ■ -0AA0	56
315	54000	3300	80	175	230	160	315	10	62	200	60	0.55	2LC0300-8BB ■ ■ -0AA0	74
342	69000	3000	90	195	255	180	340	12	70	225	60	0.82	2LC0301-0BB ■ ■ -0AA0	95
375	98000	2700	100	220	290	200	375	12	72	260	60	1.3	2LC0301-1BB ■ ■ -0AA0	130
415	130000	2500	120	240	320	220	415	12	76	285	80	2.3	2LC0301-2BB ■ ■ -0AA0	175
465	180000	2200	140	270	360	240	465	16	90	325	80	4	2LC0301-3BB ■ ■ -0AA0	245
505	250000	2000	160	300	400	260	505	16	92	365	80	6	2LC0301-4BB ■ ■ -0AA0	310
545	320000	1800	180	330	440	280	545	16	96	405	80	8.8	2LC0301-5BB ■ ■ -0AA0	390
585	400000	1700	210	360	480	310	585	20	102	445	80	13	2LC0301-6BB ■ ■ -0AA0	500
640	510000	1600	230	360	480	330	640	20	105	445	90	18	2LC0301-7BB ■ ■ -0AA0	620
			>330	390	520					475		19.5		650
690	660000	1450	250	390	520	350	690	20	108	475	90	25.5	2LC0301-8BB ■ ■ -0AA0	760
			>360	420	560					515		28		790
730	790000	1350	275	420	560	380	730	20	112	515	90	35	2LC0302-0BB ■ ■ -0AA0	920
			>390	450	600					555		39		950
780	1000000	1250	300	450	600	400	780	25	120	555	110	48	2LC0302-1BB ■ ■ -0AA0	1150
			>415	490	650					595		57		1150

ØD1: • Without finished bore – Without order codes
• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

ØD2: • Without finished bore – Without order codes
• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

Larger size couplings on request.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZWH coupling, size 146,

Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

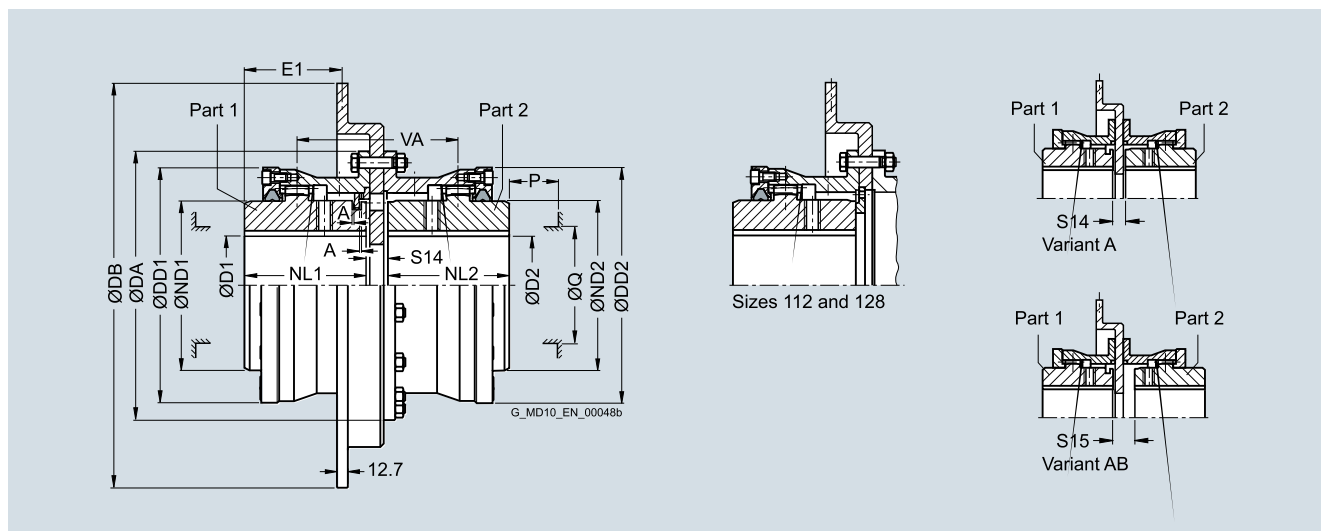
2LC0300-2BB99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWBT

Selection and ordering data



Variants limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN} Nm	Maximum speed n_{kmax} rpm	Dimensions in mm																Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1 Keyway DIN 6885-1 min. max.		D2 Keyway DIN 6885-1 min. max.		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S14	S15	A	VA	Q	P	DB	E1			
112	1300	3800	0	49	0	49	143	65	50	110	20	–	0.5	70	50	35	300	32.35	2LC0300-0A ■■■ -0AA0	13	
		3200									23	–		73			356	22.35		2LC0300-0A ■■■ -0AA0	16.5
128	2500	3200	0	61	0	61	157	80	60	128	23.5	30.5	0.5	90.5	65	45	356	32.85	2LC0300-1A ■■■ -0AA0	19	
		2800									20.5	27.5		87.5			406	29.85		2LC0300-1A ■■■ -0BA0	21.5
146	4300	2800	0	65	0	72	177	95	75	146	19	26	0.5	101	75	45	406	43.35	2LC0300-2A ■■■ -0AA0	25	
		2500									22	29		104			457	46.35		2LC0300-2A ■■■ -0BA0	30
175	7000	2800	0	80	0	85	215	112	90	175	21	27	0.5	117	85	50	406	59.35	2LC0300-3A ■■■ -0AA0	33	
		2500									24	30		120			457	62.35		2LC0300-3A ■■■ -0BA0	38
		2200									24	30		120			514	62.35		2LC0300-3A ■■■ -0CA0	43
198	11600	2500	0	95	0	100	237	135	100	198	24	35	0.5	135	110	50	457	72.35	2LC0300-4A ■■■ -0AA0	46	
		2200									24	35		135			514	72.35		2LC0300-4A ■■■ -0BA0	51
230	19000	2200	0	117	0	120	265	160	110	230	24	36	0.5	146	135	50	514	82.35	2LC0300-5A ■■■ -0AA0	62	
		1850									24	36		146			610	82.35		2LC0300-5A ■■■ -0BA0	73
255	27000	2200	0	140	0	140	294	185	125	255	26	41	1	166	160	50	514	98.35	2LC0300-6A ■■■ -0AA0	73	
		1850									26	41		166			610	98.35		2LC0300-6A ■■■ -0BA0	84
290	39000	1850	70	155	70	160	330	210	140	290	26	46	1	186	180	60	610	113.35	2LC0300-7A ■■■ -0AA0	110	
		1600									29	49		189			711	116.35		2LC0300-7A ■■■ -0BA0	125
315	54000	1850	80	175	80	175	366	230	160	315	26	46	1	206	200	60	610	133.35	2LC0300-8A ■■■ -0AA0	135	
		1600									29	49		209			711	136.35		2LC0300-8A ■■■ -0BA0	150
342	69000	1600	90	195	90	195	392	255	180	340	31	61	1	241	225	60	711	157.35	2LC0301-0A ■■■ -0AA0	180	
375	98000	1600	100	220	100	220	430	290	200	375	31	61	1	261	260	60	711	177.35	2LC0301-1A ■■■ -0AA0	220	
415	130000	1400	120	240	120	240	478	320	220	415	37	99	1	319	285	80	812	203.35	2LC0301-2A ■■■ -0AA0	320	
465	180000	1400	140	270	140	270	528	360	240	465	41	121	1	361	325	80	812	225.35	2LC0301-3A ■■■ -0AA0	400	

Variant:	<ul style="list-style-type: none"> • A • AB 	S T
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 9
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1 9

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores.

Ordering example:
ZAPEX ZWBT coupling, size 146, variant A, brake disk diameter DB = 457 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

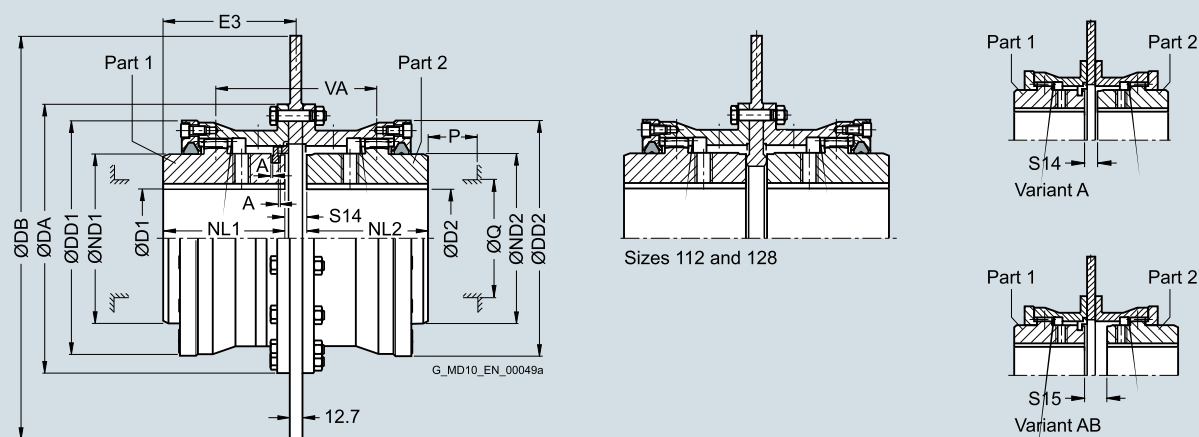
Article No.:
2LC0300-2AS99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWBG

Selection and ordering data



Variant limited in displacement and axial movement. Max. displacement 0.2°.

Modified brake disk dimensions on request

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm													Brake disk		Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1 Keyway DIN 6885-1 min.	D2 Keyway DIN 6885-1 max.	DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S14	S15	A	VA	Q	P	DB	E3					
112	1300	3800	0	49	0	49	143	65	50	110	19	–	0.5	69	50	35	300	59.5	2LC0300-0A	■ ■ ■ -0AA0	13
		3200									22	–		72			356	61	2LC0300-0A	■ ■ ■ -0BA0	16
128	2500	3200	0	61	0	61	157	80	60	128	22	29	0.5	89	65	45	356	71	2LC0300-1A	■ ■ ■ -0AA0	18
		2800									19	26		86			406	69.5	2LC0300-1A	■ ■ ■ -0BA0	20.5
146	4300	2800	0	65	0	72	177	95	75	146	19	26	0.5	101	75	45	406	84.5	2LC0300-2A	■ ■ ■ -0AA0	24
		2500									22	29		104			457	86	2LC0300-2A	■ ■ ■ -0BA0	28.5
175	7000	2800	0	80	0	85	215	112	90	175	21	27	0.5	117	85	50	406	100.5	2LC0300-3A	■ ■ ■ -0AA0	31
		2500									24	30		120			457	102	2LC0300-3A	■ ■ ■ -0BA0	35
		2200									24	30		120			514	102	2LC0300-3A	■ ■ ■ -0CA0	40
198	11600	2500	0	95	0	100	237	135	100	198	24	35	0.5	135	110	50	457	112	2LC0300-4A	■ ■ ■ -0AA0	43
		2200									24	35		135			514	112	2LC0300-4A	■ ■ ■ -0BA0	47
230	19000	2200	0	117	0	120	265	160	110	230	24	36	0.5	146	135	50	514	122	2LC0300-5A	■ ■ ■ -0AA0	58
		1850									24	36		146			610	122	2LC0300-5A	■ ■ ■ -0BA0	66
255	27000	2200	0	140	0	140	294	185	125	255	26	41	1	166	160	50	514	138	2LC0300-6A	■ ■ ■ -0AA0	69
		1850									26	41		166			610	138	2LC0300-6A	■ ■ ■ -0BA0	77
290	39000	1850	70	155	70	160	330	210	140	290	26	46	1	186	180	60	610	153	2LC0300-7A	■ ■ ■ -0AA0	100
		1600									29	49		189			711	154.5	2LC0300-7A	■ ■ ■ -0BA0	110
315	54000	1850	80	175	80	175	366	230	160	315	26	46	1	206	200	60	610	173	2LC0300-8A	■ ■ ■ -0AA0	130
		1600									29	49		209			711	174.5	2LC0300-8A	■ ■ ■ -0BA0	140
342	69000	1600	90	195	90	195	392	255	180	340	31	61	1	241	225	60	711	195.5	2LC0301-0A	■ ■ ■ -0AA0	165
375	98000	1600	100	220	100	220	430	290	200	375	31	61	1	261	260	60	711	215.5	2LC0301-1A	■ ■ ■ -0AA0	205
415	130000	1400	120	240	120	240	478	320	220	415	37	99	1	319	285	80	812	238.5	2LC0301-2A	■ ■ ■ -0AA0	280
465	180000	1400	140	270	140	270	528	360	240	465	41	121	1	361	325	80	812	260.5	2LC0301-3A	■ ■ ■ -0AA0	360

- Variant:
- A
 - AB
- ØD1:
- Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")
- ØD2:
- Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores.

Ordering example:

ZAPEX ZWBG coupling, size 146, variant A, brake disk diameter DB = 457 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

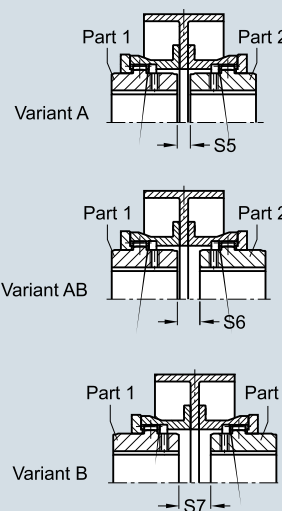
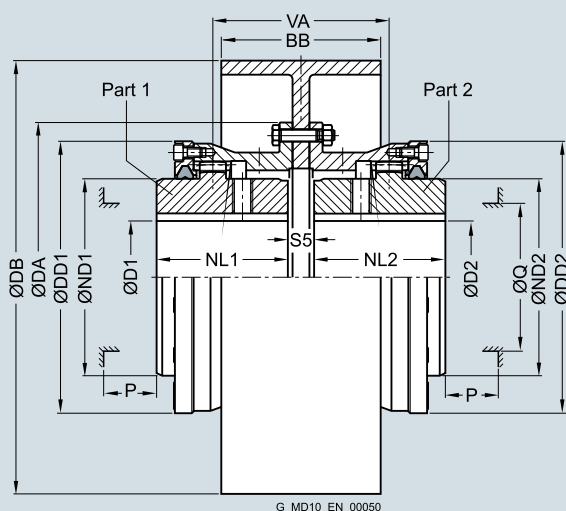
Article No.:
2LC0300-2AU99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWB

Selection and ordering data



4

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm													Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1, D2 Keyway DIN 6885-1		DA	ND1/ NL1/ ND2 NL2		DD1/ DD2	S5	S6	S7	VA	Q	P	Brake disk				
			min.	max.		DB	BB												
128	2500	2500	0	61	157	80	60	128	16	23	30	83	60	45	200	75	2LC0300-1	-0AA0	12.5
		2000							16	23	30	83			250	95	2LC0300-1	-0BA0	15.5
146	4300	2000	0	72	177	95	75	146	16	23	30	98	75	45	250	95	2LC0300-2	-0AA0	19
		1600							18	25	32	100			315	118	2LC0300-2	-0BA0	26.5
175	7000	1600	0	85	215	112	90	175	20	26	32	116	85	50	315	118	2LC0300-3	-0AA0	33
		1250							22	28	34	118			400	150	2LC0300-3	-0BA0	47
198	11600	1600	0	100	237	135	100	198	20	31	42	131	110	50	315	118	2LC0300-4	-0AA0	41
		1250							22	33	44	133			400	150	2LC0300-4	-0BA0	54
230	19000	1250	0	120	265	160	110	230	22	34	46	144	135	50	400	150	2LC0300-5	-0AA0	64
		1000							23	35	47	145			500	190	2LC0300-5	-0BA0	85
255	27000	1000	0	140	294	185	125	255	25	40	55	165	160	50	500	190	2LC0300-6	-0AA0	95
		1000							28	43	58	168			630	236	2LC0300-6	-0BA0	140
290	39000	1000	70	160	330	210	140	290	28	48	68	188	180	60	630	236	2LC0300-7	-0AA0	160
		750							28	48	68	188			710	265	2LC0300-7	-0BA0	195

- Variant:
- A **A W**
 - B **A X**
 - AB **B A**
- ØD1:
- Without finished bore – Without order codes **1**
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z") **9**
- ØD2:
- Without finished bore – Without order codes **1**
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z") **9**

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores.

Ordering example:
ZAPEX ZWB coupling, size 146, variant A, brake disk diameter DB = 315 mm, BB = 118 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

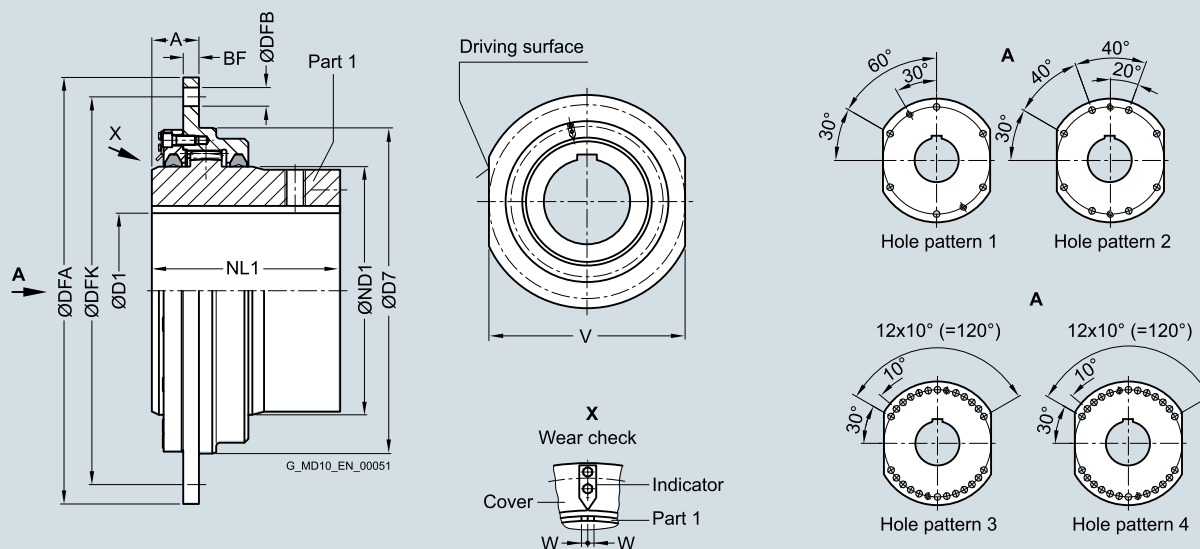
Article No.:
2LC0300-2AW99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWTR

Selection and ordering data



Size	Rated torque T_{KN} Nm	Perm. radial load max. N	Dimensions in mm													Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1 Keyway DIN 6885-1 min. max.	ND1	NL1	DFA	D7 h6 h9	V	A	BF	DFK	DFB	Hole pattern	Perm. wear W			
198	14500	32500	0 95	135	125	340	220	300	45	15	300	15	1	2	2LC0300-4BN	0-0AA0	25
230	17500	36500	0 110	160	130	360	240	320	45	15	320	15	1	2	2LC0300-5BN	0-0AA0	30
255	24000	45500	0 125	185	145	380	260	340	45	15	340	19	1	2	2LC0300-6BN	0-0AA0	35
290 ¹⁾	31500	50000	0 145	210	170	400	280	360	45	15	360	19	1	3	2LC0300-7BN	0-0AA0	45
315	42000	70000	0 160	230	175	420	310	380	60	20	380	24	1	3	2LC0300-8BN	0-0AA0	60
342 ¹⁾	55000	90000	0 180	255	185	450	340	400	60	20	400	24	1	3	2LC0301-0BN	0-0AA0	70
375	78000	110000	0 200	290	220	510	400	460	60	20	460	24	1	3	2LC0301-1BN	0-0AA0	100
415 ¹⁾	104000	150000	0 220	320	240	550	420	500	60	20	500	24	1	3	2LC0301-2BN	0-0AA0	130
465 ¹⁾	155000	165000	0 250	360	260	580	450	530	60	20	530	24	2	4	2LC0301-3BN	0-0AA0	160
505 ¹⁾	235000	200000	0 275	400	315	650	530	580	65	25	600	24	2	4	2LC0301-4BN	0-0AA0	240
545 ¹⁾	390000	325000	0 300	440	350	680	560	600	65	25	630	24	3	4	2LC0301-5BN	0-0AA0	320
585 ¹⁾	460000	380000	0 330	480	380	710	600	640	81	35	660	28	4	4	2LC0301-6BN	0-0AA0	400
640 ¹⁾	600000	420000	0 360	520	410	780	670	700	81	35	730	28	4	4	2LC0301-7BN	0-0AA0	510
730 ¹⁾	880000	500000	0 415	600	450	850	730	760	81	35	800	28	4	5	2LC0302-0BN	0-0AA0	690

ØD1:
 • Without finished bore – Without order codes 1
 • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 9

Total wear must not exceed 1 x W.
 Mass moments of inertia on request.
 Weights apply to maximum bores.

Ordering example:
 ZAPEX ZWTR coupling, size 198, bore 80H7 mm, keyway to DIN 6885-1 P9 and set screw.

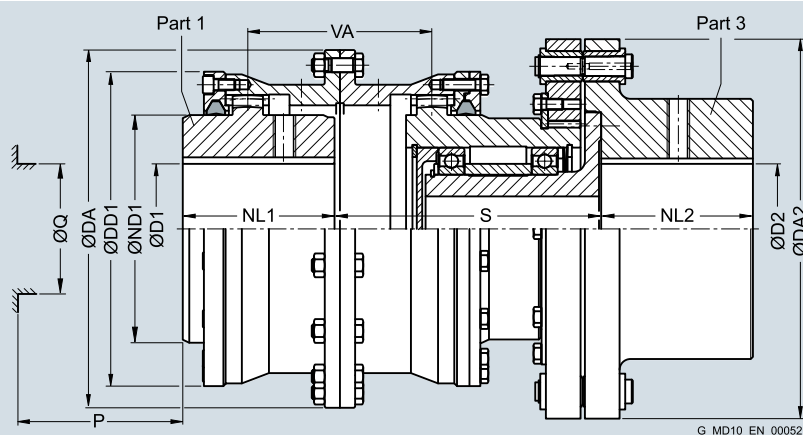
Article No.:
2LC0300-4BN90-0AA0
L1J

¹⁾ These sizes have connection dimensions to SEB 666 212.

FLENDER Standard Couplings Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZBR

Selection and ordering data



Size	Rated torque T_{KN} Nm	Max. shear torque T_{BR} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm														Article No. Plain text required for shear torque. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
				D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		DA	ND1	NL1/ NL2	DA2	DD1	S	VA	Q	P			
				min.	max.	min.	max.												
112	1300	1690	9400	0	49	0	60	143	65	50	170	110	115	56	50	35	2LC0300-0BH ■ ■ -0AA0-Z Y99	14.5	
128	2500	3250	8300	0	61	0	75	157	80	60	190	128	125	73	65	45	2LC0300-1BH ■ ■ -0AA0-Z Y99	19	
146	4300	5590	7300	0	72	0	90	177	95	75	205	146	140	88	75	45	2LC0300-2BH ■ ■ -0AA0-Z Y99	27.5	
175	7000	9100	6400	0	85	0	105	215	112	90	235	175	170	104	85	50	2LC0300-3BH ■ ■ -0AA0-Z Y99	43	
198	11600	15080	5500	0	100	0	120	237	135	100	285	198	185	119	110	50	2LC0300-4BH ■ ■ -0AA0-Z Y99	67	
230	19000	24700	4700	0	120	0	135	265	160	110	300	230	200	130	135	50	2LC0300-5BH ■ ■ -0AA0-Z Y99	91	
255	27000	35100	4100	0	140	0	155	294	185	125	335	255	215	150	160	50	2LC0300-6BH ■ ■ -0AA0-Z Y99	120	
290	39000	50700	3700	70	160	70	185	330	210	140	390	290	240	170	180	60	2LC0300-7BH ■ ■ -0AA0-Z Y99	170	
315	54000	70200	3300	80	175	80	200	366	230	160	415	315	257	190	200	60	2LC0300-8BH ■ ■ -0AA0-Z Y99	215	
342	69000	89700	3000	90	195	90	235	392	255	180	460	340	290	222	225	60	2LC0301-0BH ■ ■ -0AA0-Z Y99	295	
375	98000	127400	2700	100	220	100	240	430	290	200	495	375	300	242	260	60	2LC0301-1BH ■ ■ -0AA0-Z Y99	380	
415	130000	169000	2500	120	240	120	255	478	320	220	540	415	370	294	285	80	2LC0301-2BH ■ ■ -0AA0-Z Y99	520	
465	180000	234000	2200	140	270	140	285	528	360	240	635	465	400	336	325	80	2LC0301-3BH ■ ■ -0AA0-Z Y99	720	
505	250000	325000	2000	160	300	160	320	568	400	260	710	505	420	366	365	80	2LC0301-4BH ■ ■ -0AA0-Z Y99	970	
545	320000	416000	1800	180	330	180	370	620	440	280	800	545	460	406	405	80	2LC0301-5BH ■ ■ -0AA0-Z Y99	1250	
585	400000	520000	1700	210	360	210	390	660	480	310	860	585	500	460	445	80	2LC0301-6BH ■ ■ -0AA0-Z Y99	1600	
640	510000	663000	1600	230 >330	360 390	230	425	738 520	480 520	330	900	640	530	479 475	445 90	90	2LC0301-7BH ■ ■ -0AA0-Z Y99	1850 1850	
690	660000	858000	1450	250 >360	390 420	250	450	788 560	520 560	350	1020	690	580	516 515	475 90	90	2LC0301-8BH ■ ■ -0AA0-Z Y99	2600 2650	
730	790000	1027000	1350	275 >390	420 450	275	485	834 600	560 600	380	1080	730	620	560 555	515 90	90	2LC0302-0BH ■ ■ -0AA0-Z Y99	3200 3200	

- | | | |
|------|--|---|
| ØD1: | • Without finished bore – Without order codes | 1 |
| | • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes | 2 |
| | • With finished bore – With order codes for diameter and tolerance (article number without "-Z") | 9 |
| ØD2: | • Without finished bore – Without order codes | 1 |
| | • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes | 2 |
| | • With finished bore – With order codes for diameter and tolerance (article number without "-Z") | 9 |

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

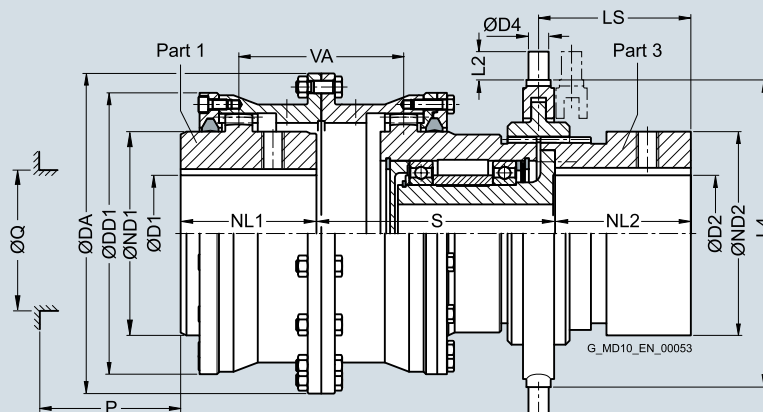
Mass moments of inertia on request.
Weights apply to maximum bores.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWS

Selection and ordering data



For engaging/disengaging during standstill.

Part 3 should be mounted on the shaft while the shaft is disconnected and not being driven.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm																Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg			
			D1 Keyway DIN 6885-1 min.	D1 Keyway DIN 6885-1 max.	D2 Keyway DIN 6885-1 min.	D2 Keyway DIN 6885-1 max.	DA	ND1/ND2	NL1/NL2	DD1	S	VA	Q	P	LS	L4	D4	L2			KSHN	KSZH	
128	2500	1500	0	61	0	50	157	80	60	128	135	73	65	45	70	150	15	14	14/11	-	2LC0300-1BK	■ ■ -0AA0	16
146	4300	1300	0	72	0	50	177	95	75	146	131	88	75	45	86	180	16	16	16/12	-	2LC0300-2BK	■ ■ -0AA0	22
175	7000	1100	0	85	0	70	215	112	90	175	165	104	85	50	101	180	16	16	16/12	-	2LC0300-3BK	■ ■ -0AA0	35
198	11600	960	0	100	0	80	237	135	100	198	182	119	110	50	116	210	20	18	18/13	-	2LC0300-4BK	■ ■ -0AA0	52
230	19000	830	0	120	0	90	265	160	110	230	198	130	135	50	126	260	22	20	18/15	14/14	2LC0300-5BK	■ ■ -0AA0	77
255	27000	750	0	140	0	115	294	185	125	255	215	150	160	50	142	300	25	22	21/17	16/17	2LC0300-6BK	■ ■ -0AA0	98
290	39000	660	70	160	70	130	330	210	140	290	236	170	180	60	157	315	25	35	-	16/211	2LC0300-7BK	■ ■ -0AA0	140
315	54000	600	80	175	80	140	366	230	160	315	257	190	200	60	182	360	30	24	-	18/18	2LC0300-8BK	■ ■ -0AA0	200
342	69000	560	90	195	90	160	392	255	180	340	280	222	225	60	202	360	30	24	-	18/18	2LC0301-0BK	■ ■ -0AA0	230
375	98000	510	100	220	100	180	430	290	200	375	292	242	260	60	222	430	34	26	-	24/20	2LC0301-1BK	■ ■ -0AA0	340
415	130000	460	120	240	120	210	478	320	220	415	349	294	285	80	247	430	34	26	-	24/20	2LC0301-2BK	■ ■ -0AA0	430
465	180000	410	140	270	140	230	528	360	240	465	380	336	325	80	267	-	-	-	-	-	2LC0301-3BK	■ ■ -0AA0	570
505	250000	380	160	300	160	260	568	400	260	505	395	366	365	80	287	-	-	-	-	-	2LC0301-4BK	■ ■ -0AA0	740
545	320000	350	180	330	180	270	620	440	280	545	460	406	405	80	315	-	-	-	-	-	2LC0301-5BK	■ ■ -0AA0	1000

- ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")
- ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")

Q Diameter required for renewing the sealing rings.
 P Length required for renewing the sealing rings.

Mass moments of inertia on request.
 Weights apply to maximum bores.

KSHN: Manual lever switch type KSHN to M4218
 KSZH: Toothed rack type KSZH to M4215

Pneumatically or hydraulically actuated switches also available.

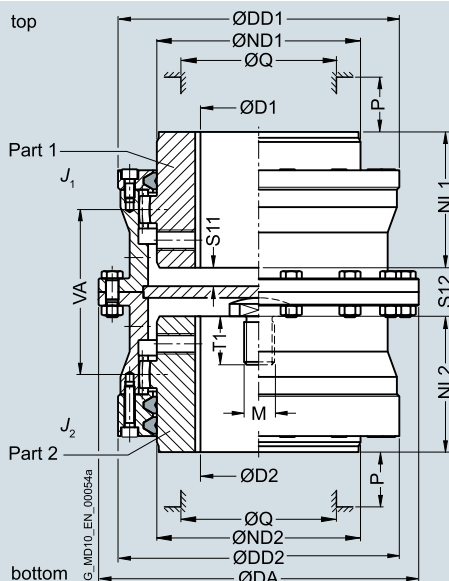
Ordering example:
 ZAPEX ZWS coupling, size 146,
 Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:
2LC0300-2BK99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings – ZAPEX ZWNV Series

Type ZWNV

Selection and ordering data



When ordering, state thread size M and thread length T1 of the thrust piece.

Size	Rated torque	Maximum speed	Dimensions in mm											Mass moment of inertia J_1/J_2	Article No. Plain text for thread size M and thread length T1 necessary. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1	DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S11	S12	VA	Q	P	kgm ²			
	Nm	rpm	min.	max.												
128	2500	8300	0	61	157	80	60	128	6.5	26	73	65	45	0.015	2LC0300-1AH ■ ■ -0AA0-Z Y99	9.1
146	4300	7300	0	72	177	95	75	146	6	28	88	75	45	0.023	2LC0300-2AH ■ ■ -0AA0-Z Y99	13
175	7000	6400	0	85	215	112	90	175	5.5	33	104	85	50	0.055	2LC0300-3AH ■ ■ -0AA0-Z Y99	22
198	11600	5500	0	100	237	135	100	198	10	40	119	110	50	0.095	2LC0300-4AH ■ ■ -0AA0-Z Y99	31
230	19000	4700	0	120	265	160	110	230	11	32	130	135	50	0.18	2LC0300-5AH ■ ■ -0AA0-Z Y99	43
255	27000	4100	0	140	294	185	125	255	14	40	150	160	50	0.28	2LC0300-6AH ■ ■ -0AA0-Z Y99	56
290	39000	3700	70	160	330	210	140	290	19	50	170	180	60	0.55	2LC0300-7AH ■ ■ -0AA0-Z Y99	81
315	54000	3300	80	175	366	230	160	315	18	50	190	200	60	0.88	2LC0300-8AH ■ ■ -0AA0-Z Y99	110
342	69000	3000	90	195	392	255	180	340	29	72	222	225	60	1.3	2LC0301-0AH ■ ■ -0AA0-Z Y99	140
375	98000	2700	100	220	430	290	200	375	29	72	242	260	60	2.1	2LC0301-1AH ■ ■ -0AA0-Z Y99	185
415	130000	2500	120	240	478	320	220	415	60	136	294	285	80	3.4	2LC0301-2AH ■ ■ -0AA0-Z Y99	250
465	180000	2200	140	270	528	360	240	465	80	176	336	325	80	5.6	2LC0301-3AH ■ ■ -0AA0-Z Y99	340
505	250000	2000	160	300	568	400	260	505	89	196	366	365	80	8.2	2LC0301-4AH ■ ■ -0AA0-Z Y99	420

- ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")
- ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (article number without "-Z")

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:
ZAPEX ZWNV coupling, size 146, thread M 10 x 20 deep,
Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

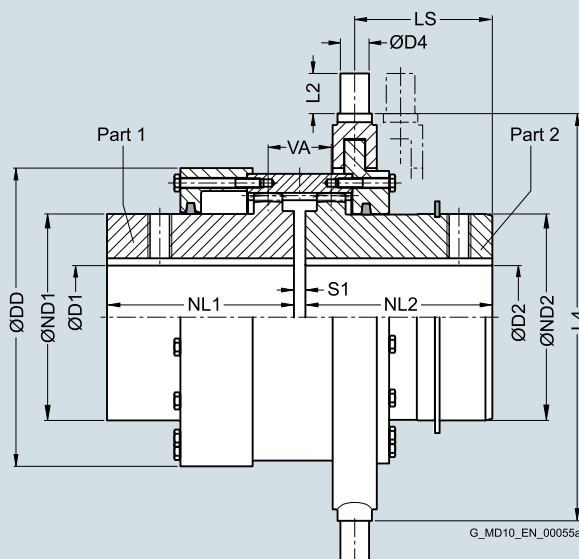
Article No.:
2LC0300-2AH99-0AA0-Z
LOW+M1A+M13+Y99
Plain text to Y99: **Thread M10 x 20 mm**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Type ZWSE

Selection and ordering data



For engaging/disengaging during standstill. Protect sliding surfaces from dirt and corrosion; sprayed with adhesive grease.

Part 2 should be mounted on the shaft while the shaft is disconnected and not being driven.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm																Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1 Keyway DIN 6885-1 min.	D2 Keyway DIN 6885-1 max.	ND1	ND2	NL1	NL2	DD	S1	VA	LS	L4	D4	L2	KSHN Size	KSZH Size				
128	2500	730	0	55	0	55	76.5	75	60	60	130	6	30	36.5	180	16	16	16	-	2LC0300-1BM -0AA0	8.8
146	4300	630	0	69	0	65	91.5	90	75	75	150	6	33	50	210	20	18	18	-	2LC0300-2BM -0AA0	13.5
175	7000	530	0	80	0	75	108	105	90	90	180	8	46	56.5	250	20	30	18	-	2LC0300-3BM -0AA0	23
198	11600	470	0	95	0	95	130	130	100	100	204	8	48	64.5	260	22	20	18	-	2LC0300-4BM -0AA0	32
230	19000	410	0	115	0	110	155	155	110	110	236	8	50	73	300	25	22	21	-	2LC0300-5BM -0AA0	44
255	27000	370	0	135	0	130	180	180	125	125	260	10	55	82	355	25	35	24	-	2LC0300-6BM -0AA0	63
290	39000	330	70	155	70	145	210	210	140	140	295	10	38	68.5	355	25	35	24	-	2LC0300-7BM -0AA0	82
315	54000	300	80	170	80	165	230	230	160	160	325	10	42	76	355	25	35	24	-	2LC0300-8BM -0AA0	105
342	69000	280	90	190	90	175	255	255	180	180	345	12	46	72	430	34	26	-	24	2LC0301-0BM -0AA0	145
375	98000	250	100	210	100	200	280	280	200	200	378	12	48	97	430	34	26	-	24	2LC0301-1BM -0AA0	180
415	130000	220	120	240	120	225	320	320	220	240	425	12	52	120	580	40	40	-	24	2LC0301-2BM -0AA0	295
465	180000	200	140	270	140	250	360	360	240	260	470	16	60	150	580	40	40	-	24	2LC0301-3BM -0AA0	350
505	250000	180	160	300	160	270	400	400	260	280	510	16	62	161	-	-	-	-	24	2LC0301-4BM -0AA0	400
ØD1:																				1	
• Without finished bore – Without order codes																				9	
• With finished bore – With order codes for diameter and tolerance (article number without "-Z")																				1	
ØD2:																				9	
• Without finished bore – Without order codes																				9	
• With finished bore – With order codes for diameter and tolerance (article number without "-Z")																				9	

Weights apply to the entire coupling with maximum bores.

Mass moment of inertia on request.

Ordering example:

ZAPEX ZWSE coupling, size 146,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

**2LC0300-2BM99-0AA0-Z
LOW+M1A+M13**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Customized hub design
for ZAPEX ZW Series

Selection and ordering data

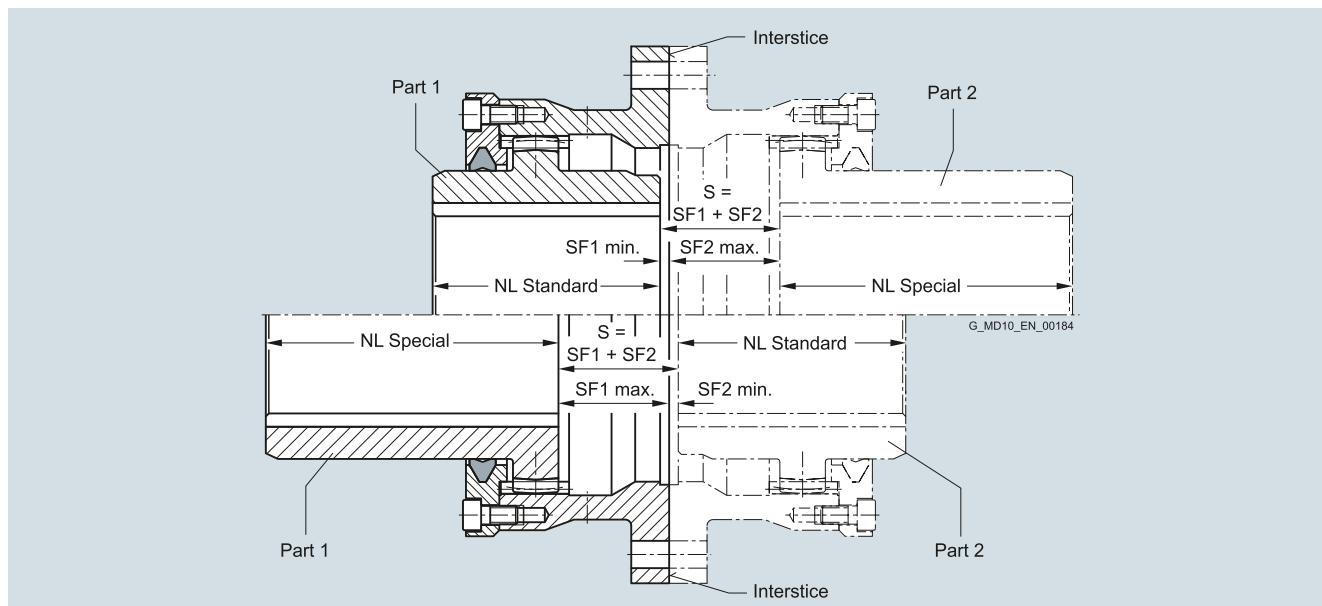
ZAPEX couplings can be provided with customized S-dimensions and hub lengths.

The entire dimension S results from the sum of the individual measurements SF1 and SF2. SF1 and SF2 are the measurements from the interstice of the coupling ring flange up to the beginning of the respective hub. As standard SF1 and SF2 are identical to each other and the entire S-dimension arises in accordance with them.

SF1 and SF2 can be chosen different on customer request, however the minimal and maximum values of the following table have to be observed. Within these limits the measurements SF1 and SF2 may be chosen freely.

The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub S-dimension and both hub lengths the coupling is completely described.



Geometric data

Size	Standard hub length NL	Minimal dimension SF1 or SF2 min.	Maximum dimension SF1 or SF2 max.
	mm	mm	mm
112	50	3	23
128	60	3	30.5
146	75	3	36.5
175	90	4	43
198	100	4	49.5
230	110	4	54
255	125	5	62.5
290	140	5	71
315	160	5	79
342	180	6	94
375	200	6	103
415	220	6	127
465	240	8	146
505	260	8	160

The minimal hub lengths are not to fall below the standard hub lengths. If there's no other possibility, at the hub lengths smaller than standard hub length the order codes "Y50" for part 1 and "Y51" for part 2 must be stated in plain text.

Order code for hub prolongations (Y4.); Std-NL = Standard hub length

Part 1		Selected (special) hub length order code
min.	max.	
> Std-NL	≤ 1.25 · Std-NL	Y40 (specification of hub length in plain text)
> 1.25 · Std-NL	≤ 1.5 · Std-NL	Y42 (specification of hub length in plain text)
> 1.5 · Std-NL	≤ 1.75 · Std-NL	Y44 (specification of hub length in plain text)
> 1.75 · Std-NL	≤ 2 · Std-NL	Y46 (specification of hub length in plain text)
> 2 · Std-NL		Y48 (specification of hub length in plain text)

Article number

The Article number of the respective ZAPEX coupling type must be supplemented with "-Z" and order codes for no standard SF-dimensions (order code "Y38" for part 1 and "Y39" for part 2). For no standard hub lengths the order codes "Y40" to "Y49" must be specified (see the table below).

Ordering example:

ZAPEX coupling ZWN 175, variant A
 Hub left: bore D1 = 70H7 mm, keyway to DIN 6885-1 P9 and set screw; NL1 = 160 mm; SF1 = 10 mm
 Hub right: bore D2 = 75H7 mm, keyway to DIN 6885-1 P9 and set screw; NL2 = 100 mm; SF2 = 25 mm

Article No.:

2LC0300-3AA99-0AA0-Z
L1G M1H Y38 Y39 Y41 Y46
 Plain text to **Y38: SF1 = 10 mm**
 Plain text to **Y39: SF2 = 25 mm**
 Plain text to **Y46: NL1 = 160 mm**
 Plain text to **Y41: NL2 = 100 mm**

Part 2		Selected (special) hub length order code
min.	max.	
> Std-NL	≤ 1.25 · Std-NL	Y41 (specification of hub length in plain text)
> 1.25 · Std-NL	≤ 1.5 · Std-NL	Y43 (specification of hub length in plain text)
> 1.5 · Std-NL	≤ 1.75 · Std-NL	Y45 (specification of hub length in plain text)
> 1.75 · Std-NL	≤ 2 · Std-NL	Y47 (specification of hub length in plain text)
> 2 · Std-NL		Y49 (specification of hub length in plain text)

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZW Series

Spare and wear parts

Selection and ordering data

DUO sealing rings

The DUO sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Size	Hub diameter ND1/ND2 mm	Article No.
112	65	2LC0300-0XG00-0AA0
128	80	2LC0300-1XG00-0AA0
146	95	2LC0300-2XG00-0AA0
175	112	2LC0300-3XG00-0AA0
198	135	2LC0300-4XG00-0AA0
230	160	2LC0300-5XG00-0AA0
255	185	2LC0300-6XG00-0AA0
290	210	2LC0300-7XG00-0AA0
315	230	2LC0300-8XG00-0AA0
342	255	2LC0301-0XG00-0AA0
375	290	2LC0301-1XG00-0AA0
415	320	2LC0301-2XG00-0AA0
465	360	2LC0301-3XG00-0AA0
505	400	2LC0301-4XG00-0AA0
545	440	2LC0301-5XG00-0AA0
585	480	2LC0301-6XG00-0AA0
640	480 520	2LC0301-7XG10-0AA0 2LC0301-7XG20-0AA0
690	520 560	2LC0301-8XG10-0AA0 2LC0301-8XG20-0AA0
730	560 600	2LC0302-0XG10-0AA0 2LC0302-0XG20-0AA0
780	600 650	2LC0302-1XG10-0AA0 2LC0302-1XG20-0AA0
852	650 710	2LC0302-2XG10-0AA0 2LC0302-2XG20-0AA0
910	710 750	2LC0302-3XG10-0AA0 2LC0302-3XG20-0AA0
1020	750 800	2LC0302-4XG10-0AA0 2LC0302-4XG20-0AA0
1080	800 860	2LC0302-5XG10-0AA0 2LC0302-5XG20-0AA0
1150	860 930	2LC0302-6XG10-0AA0 2LC0302-6XG20-0AA0
1160	860 930 990	2LC0302-7XG10-0AA0 2LC0302-7XG20-0AA0 2LC0302-7XG30-0AA0
1240	930 990 1055	2LC0302-8XG10-0AA0 2LC0302-8XG20-0AA0 2LC0302-8XG30-0AA0
1310	930 990 1055 1120	2LC0303-0XG10-0AA0 2LC0303-0XG20-0AA0 2LC0303-0XG30-0AA0 2LC0303-0XG40-0AA0
1380	990 1055 1120 1170	2LC0303-1XG10-0AA0 2LC0303-1XG20-0AA0 2LC0303-1XG30-0AA0 2LC0303-1XG40-0AA0
1440	1055 1120 1170 1240	2LC0303-2XG10-0AA0 2LC0303-2XG20-0AA0 2LC0303-2XG30-0AA0 2LC0303-2XG40-0AA0
1540	1120 1170 1240 1310	2LC0303-3XG10-0AA0 2LC0303-3XG20-0AA0 2LC0303-3XG30-0AA0 2LC0303-3XG40-0AA0

Siemens high-performance grease (cartridge 300 g)

FFA:000000501027

Sealing compound (tube 60 ml)

FFA:000001443780

Torsionally Rigid Gear Couplings

ZAPEX ZN Series

5



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5/2	Application
5/2	Design
5/2	Function
5/3	Technical data
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5/4	Selection and ordering data
5/5	Type ZNZS
5/5	Selection and ordering data
5/6	Type ZNW
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5/7	Type ZNBG
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5/8	Type ZNNA
5/8	Selection and ordering data
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FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series


General information

Overview



Coupling suitable for use in potentially explosive atmospheres.

Complies with the current ATEX Directive for:

CE  II 2 GD c 120 °C (T4)
-20 °C ≤ T_a ≤ +80 °C

CE  I M2

Materials

- Hubs and flanged sleeves: Steel
- O ring: Perbunan
- Lubricant: Grease filling

Benefits

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle, so application-related solutions can be delivered quickly.

This coupling requires very little maintenance. Regular grease changes at the prescribed intervals prolong the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry. ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZNNV, for vertical mounting positions.

Design

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. The external teeth engage with a flanged sleeve with corresponding internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts.

The teeth are lubricated with grease. On the ZAPEX type ZN, O-rings are used to seal the tooth space. The O-rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping.

Customized hub designs are described after the types.

ZAPEX ZN gear coupling types

Type	Description
ZNN	Standard type
ZNZS	With adapter
ZNW	With intermediate shaft
ZNBS	With straight brake disk
ZNNA	With axial backlash limiter
ZNZA	With adapter and axial backlash limiter
ZNNV	Vertical type
ZNN	For axial displacement

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

Function

The torque is transmitted through the coupling teeth. The teeth are crowned, so angular displacement per tooth plane is possible. Radial misalignment can be compensated for via the space VA between the tooth planes. The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film in contact with the teeth and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Torsional stiffness	Permitted axial shaft misalignment
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW}	ZN C_{Tdyn} kNm/rad	ΔK_a mm
83	1020	2040	4080	408	500	1
107	2210	4420	8840	884	1400	1
130	4020	8040	16080	1600	2500	1
156	6600	13200	26400	2640	5800	1
181	11000	22000	44000	4400	9200	1
211	19200	38400	76800	7680	16600	1
250	30680	61360	122720	12270	27300	1
274	43550	87100	174200	17400	41500	1.5
307	61750	123500	247000	24700	61000	1.5
333	87100	174200	348400	34800	79000	1.5
364	117000	234000	468000	46800	99000	1.5
424	162500	325000	650000	64800	156000	1.5

The specified torsional stiffness "ZN" applies to coupling types ZNN, ZNNA, ZNNV and ZNN for axial displacement.

Torsional stiffness of types ZNZS, ZNW, ZN BG and ZNZA on request.

The axial misalignment ΔK_a must be understood as the maximum permitted enlargement of the hub distance S of the coupling.

The axial misalignment ΔK_a does not apply to the types ZNNA, ZNNV, ZN BG and ZNZA.

Angular misalignment ΔK_w

- Types ZNN, ZNZS, ZNW, ZNNV, ZNN for axial displacement: $\Delta K_w = 0.5^\circ$
- Types ZN BG, ZNNA, ZNZA: $\Delta K_w = 0.2^\circ$

Radial misalignment ΔK_r

- Types ZNN, ZNZS, ZNW, ZNNV, ZNN for axial displacement: $\Delta K_r \leq VA \cdot \tan 0.5^\circ$
- Types ZN BG, ZNNA, ZNZA: $\Delta K_r \leq VA \cdot \tan 0.2^\circ$

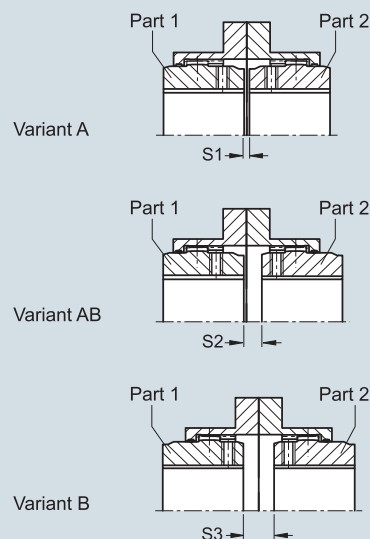
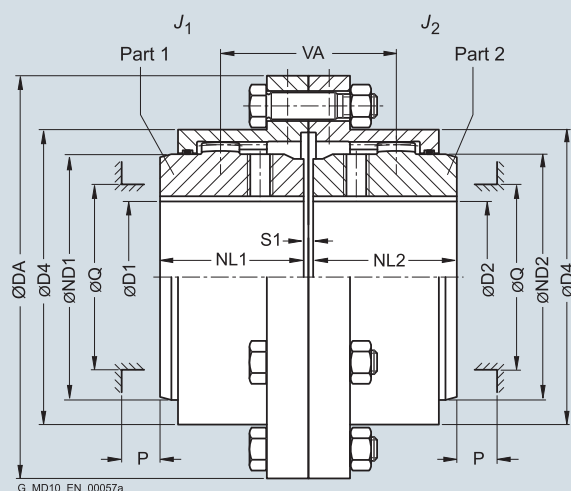
For the tooth distance VA, see the relevant table for the subassembly.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNN

Selection and ordering data



Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm													Mass moment of inertia J_1/J_2 kgm ²	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885-1 min. max.	DA	ND1/ ND2	NL1/ NL2	D4	S1	S2	S3	VA	Q	P					
83	1020	8500	0 50	117	67	43	83	3	12	21	55	52	31	0.003	2LC0330-0A ■ ■ ■ -0AA0	3.2		
107	2210	7700	0 65	152	87	50	107	3	9	15	59	68	34	0.009	2LC0330-1A ■ ■ ■ -0AA0	6.5		
130	4020	6900	0 82	178	108	62	129.5	3	17	31	79	85	42	0.02	2LC0330-2A ■ ■ ■ -0AA0	9.8		
156	6600	6200	0 100	213	130	76	156	5	17	29	93	110	47	0.05	2LC0330-3A ■ ■ ■ -0AA0	17.5		
181	11000	5800	0 116	240	153	90	181	5	19	33	109	130	58	0.09	2LC0330-4A ■ ■ ■ -0AA0	25.5		
211	19200	5100	0 137	280	180	105	211	6	23	40	128	150	67	0.21	2LC0330-5A ■ ■ ■ -0AA0	43		
250	30680	4500	0 164	318	214	120	249.5	6	24	42	144	175	72	0.39	2LC0330-6A ■ ■ ■ -0AA0	60		
274	43550	4000	80 178	347	233	135	274	8	29	50	164	190	81	0.59	2LC0330-7A ■ ■ ■ -0AA0	82		
307	61750	3750	90 198	390	260	150	307	8	32	56	182	220	91	1.1	2LC0330-8A ■ ■ ■ -0AA0	115		
333	87100	3550	100 216	425.5	283	175	332.5	8	39	70	214	250	104	1.8	2LC0331-0A ■ ■ ■ -0AA0	155		
364	117000	3400	120 242	457	312	190	364	8	46	84	236	265	126	2.3	2LC0331-1A ■ ■ ■ -0AA0	180		
424	162500	3200	150 288	527	371	220	423.5	10	43	76	263	300	140	4.9	2LC0331-2A ■ ■ ■ -0AA0	275		

Variant:	<ul style="list-style-type: none"> • A • B • AB 	<table border="1"> <tr><td>A</td><td>1</td></tr> <tr><td>B</td><td>9</td></tr> <tr><td>C</td><td>1</td></tr> <tr><td></td><td>9</td></tr> </table>	A	1	B	9	C	1		9
A	1									
B	9									
C	1									
	9									
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	<table border="1"> <tr><td>1</td><td>9</td></tr> </table>	1	9						
1	9									
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	<table border="1"> <tr><td>1</td><td>9</td></tr> </table>	1	9						
1	9									

- Q Diameter required for renewing the sealing rings.
- P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.
- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.

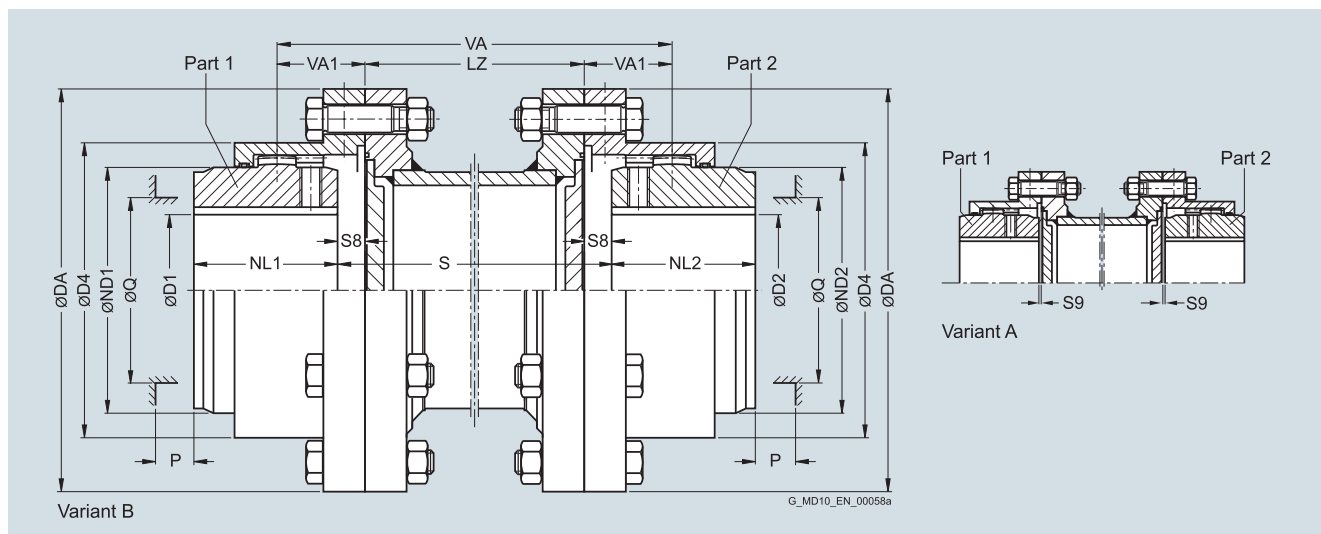
Ordering example:
ZAPEX ZNN coupling, size 107, variant A,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:
2LC0330-1AA99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNZS

Selection and ordering data



Size	Rated torque T_{KN}	Dimensions in mm											Article No. Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
		D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S8	S9	VA1	Q	P		LZ	m	m
	Nm	min.	max.									min.	kg	kg		
83	1020	0	50	117	67	43	83	10.5	1.5	27.5	52	31	75	2LC0330-0A ■■■■ -0AZ0 Q0Y	0.9	5.5
107	2210	0	65	152	87	50	107	7.5	1.5	29.5	68	34	85	2LC0330-1A ■■■■ -0AZ0 Q0Y	0.8	12
130	4020	0	82	178	108	62	129.5	15.5	1.5	39.5	85	42	95	2LC0330-2A ■■■■ -0AZ0 Q0Y	1.2	16
156	6600	0	100	213	130	76	156	14.5	2.5	46.5	110	47	110	2LC0330-3A ■■■■ -0AZ0 Q0Y	2.3	28
181	11000	0	116	240	153	90	181	16.5	2.5	54.5	130	58	110	2LC0330-4A ■■■■ -0AZ0 Q0Y	3.5	40
211	19200	0	137	280	180	105	211	20	3	64	150	67	125	2LC0330-5A ■■■■ -0AZ0 Q0Y	4.5	64
250	30680	0	164	318	214	120	249.5	21	3	72	175	72	125	2LC0330-6A ■■■■ -0AZ0 Q0Y	6.3	91
274	43550	80	178	347	233	135	274	25	4	82	190	81	125	2LC0330-7A ■■■■ -0AZ0 Q0Y	7.2	115
307	61750	90	198	390	260	150	307	28	4	91	220	91	145	2LC0330-8A ■■■■ -0AZ0 Q0Y	9.1	175
333	87100	100	216	425.5	283	175	332.5	35	4	107	250	104	145	2LC0331-0A ■■■■ -0AZ0 Q0Y	12	220
364	117000	120	242	457	312	190	364	42	4	118	265	126	145	2LC0331-1A ■■■■ -0AZ0 Q0Y	15	245
424	162500	150	288	527	371	220	423.5	38	5	131.5	300	140	145	2LC0331-2A ■■■■ -0AZ0 Q0Y	16	360

Variant:	<ul style="list-style-type: none"> • A • B 	D
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	E
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1
		9

$VA = 2 \cdot VA1 + LZ$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.

Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:

ZAPEX ZNZS coupling, size 107, variant B, adapter for S = 250 mm, Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw, Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

2LC0330-1AE99-0AZ0-Z

L0W+M1A+Q0Y+M13

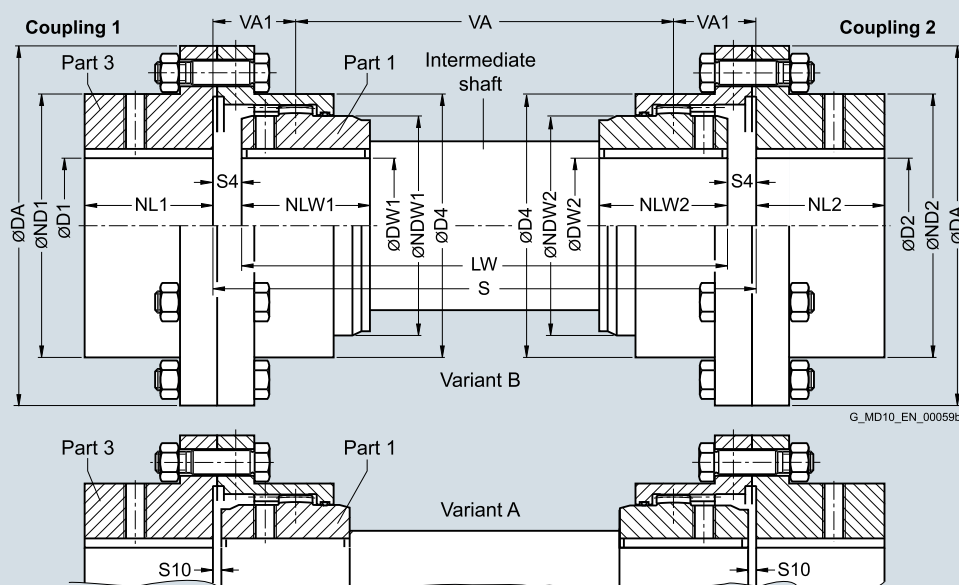
Plain text to Q0Y: **S = 250 mm**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNW

Selection and ordering data



G_MD10_EN_00059b

Size	Rated torque T_{KN}	Dimensions in mm											Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m	
		D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885		NDW1/ D4 NDW2	S4	S10	VA1			kg
	Nm	min.	max.				min.	max.							
83	1020	0	61	117	83	43	0	50	67	83	12	3	29	2LC0330-0A	3.1
107	2210	0	79	152	107	50	0	65	87	107	9	3	31	2LC0330-1A	6.2
130	4020	0	96	178	129.5	62	0	82	108	129.5	17	3	41	2LC0330-2A	9.5
156	6600	0	116	213	156	76	0	100	130	156	17	5	49	2LC0330-3A	17
181	11000	0	134	240	181	90	0	116	153	181	19	5	57	2LC0330-4A	24.5
211	19200	0	156	280	211	105	0	137	180	211	23	6	67	2LC0330-5A	41
250	30680	0	184	318	249.5	120	0	164	214	249.5	24	6	75	2LC0330-6A	58
274	43550	80	202	347	274	135	80	178	233	274	29	8	86	2LC0330-7A	76
307	61750	90	228	390	307	150	90	198	260	307	32	8	95	2LC0330-8A	110
333	87100	100	247	425.5	332.5	175	100	216	283	332.5	39	8	111	2LC0331-0A	150
364	117000	120	270	457	364	190	120	242	312	364	46	8	122	2LC0331-1A	170
424	162500	150	313	527	423.5	220	150	288	371	423.5	43	10	136.5	2LC0331-2A	270

Variant:

- A
- B

V
W

ØD1:

- Without finished bore – Without order codes
- With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

ØD2:

- Without finished bore – Without order codes
- With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

$$VA = S - 2 \cdot VA1$$

Mass moments of inertia on request.

Weights apply to either coupling 1 or 2 with maximum bores, without intermediate shaft.
Maximum speed, limited by weight and critical speed of intermediate shaft, on request.

Ordering example:

Coupling 1:

ZAPEX ZNW coupling, size 107, variant B,
Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 1: Bore 45H7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

2LC0330-1AW99-0AA0-Z
L1A+L13+M1A

Intermediate shaft:

Intermediate shaft to ZAPEX ZNW coupling, size 107, length LW = 570 mm, shaft journal Ø45p6 x 50 long; keyway DIN 6885-1.

Article No.:

2LC9330-0XH00-0AA0-Z

Y99

Plain text to Y99: **DW1 = 45p6 mm, NLW1 = 50 mm, DW2 = 45p6 mm, NLW2 = 50 mm, LW = 570 mm**

Coupling 2:

ZAPEX ZNW coupling, size 107, variant B,
Part 1: Bore 45H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

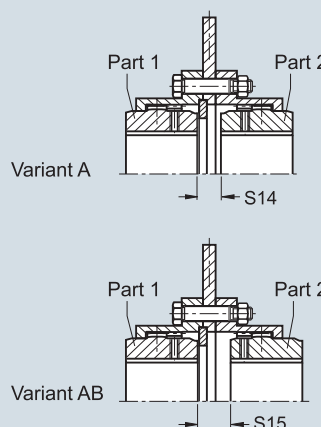
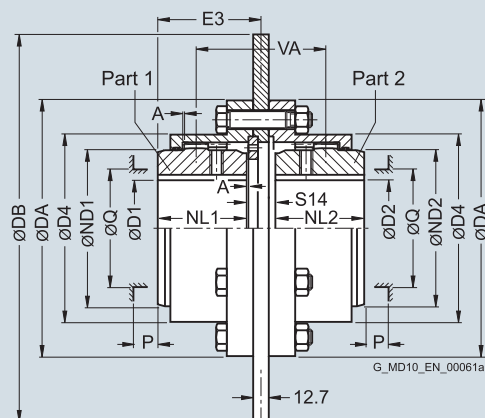
Article No.:

2LC0330-0AW99-0AA0-Z
L1A+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZN BG

Selection and ordering data



Variant limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm													Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1, D2 Keyway DIN 6885-1 min. max.	DA	ND1/ ND2 NL1/ NL2	D4	S14	S15	A	VA	Q	P	DB	E3					
83	1020	3800	0	50	117	67	43	83	17	26	0.5	69	52	31	300	52	2LC0330-0A	-0AA0	10
107	2210	3200	0	65	152	87	50	107	20.5	26.5	0.5	76.5	68	34	356	61	2LC0330-1A	-0AA0	16
130	4020	3200	0	82	178	108	62	129.5	20.5	34.5	0.5	96.5	85	42	356	73	2LC0330-2A	-0AA0	16.5
		17.5							31.5		93.5	406			71.5	2LC0330-2A	-0BA0	19.5	
156	6600	2800	0	100	213	130	76	156	20	32	0.5	108	110	47	406	87	2LC0330-3A	-0AA0	29
		23							35		111	457			88.5	2LC0330-3A	-0BA0	33	
181	11000	2800	0	116	240	153	90	181	20	34	0.5	124	130	58	406	101	2LC0330-4A	-0AA0	38
		23							37		127	457			102.5	2LC0330-4A	-0BA0	42	
		23							37		127	514			102.5	2LC0330-4A	-0CA0	46	
211	19200	2500	0	137	280	180	105	211	24.5	41.5	0.5	146.5	150	67	457	118.5	2LC0330-5A	-0AA0	58
		24.5							41.5		146.5	514			118.5	2LC0330-5A	-0BA0	63	
		24.5							41.5		146.5	610			118.5	2LC0330-5A	-0CA0	71	
250	30680	2200	0	164	318	214	120	249.5	24	42	1.0	162	175	72	514	133	2LC0330-6A	-0AA0	77
		24							42		162	610			133	2LC0330-6A	-0BA0	87	
		27							45		165	711			134.5	2LC0330-6A	-0CA0	97	
274	43550	2200	80	178	347	233	135	274	26.5	47.5	1.0	182.5	190	81	514	149.5	2LC0330-7A	-0AA0	97
		26.5							47.5		182.5	610			149.5	2LC0330-7A	-0BA0	105	
		29.5							50.5		185.5	711			151	2LC0330-7A	-0CA0	115	
		35.5							56.5		191.5	812			154	2LC0330-7A	-0DA0	130	
307	61750	1850	90	198	390	260	150	307	27	51	1.0	201	220	91	610	165	2LC0330-8A	-0AA0	140
		30							54		204	711			166.5	2LC0330-8A	-0BA0	155	
		36							60		210	812			169.5	2LC0330-8A	-0CA0	170	
333	87100	1600	100	216	425.5	283	175	332.5	30	61	1.0	236	250	104	711	191.5	2LC0331-0A	-0AA0	190
		36							67		242	812			194.5	2LC0331-0A	-0BA0	205	
364	117000	1400	120	242	457	312	190	364	36	74	1.0	264	265	126	812	209.5	2LC0331-1A	-0AA0	235

Variant:	<ul style="list-style-type: none"> • A • AB 	Q
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	R
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (article number without "-Z") 	1
		9

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores.

Ordering example:
ZAPEX ZN BG coupling, size 107, variant A,
brake disk diameter DB = 356 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

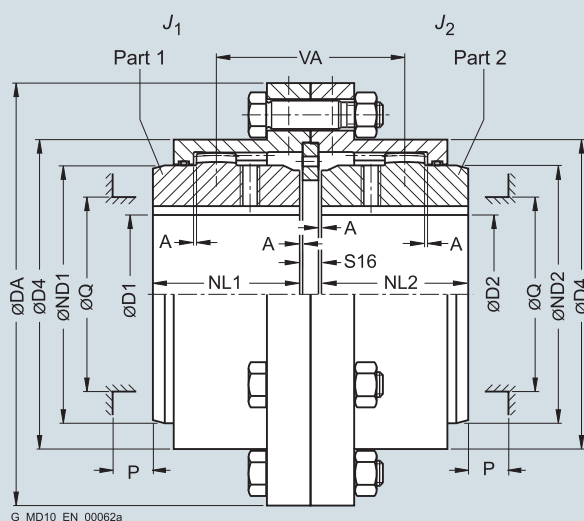
Article No.:
2LC0330-1AQ99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNNA

Selection and ordering data



Variants limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm											Mass moment of inertia J1/J2 kgm ²	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S16	A	VA	Q	P			
			min.	max.												
83	1020	8500	0	50	117	67	43	83	5	0.5	57	52	31	0.003	2LC0330-0AF ■ ■ ■ -0AA0	3.3
107	2210	7700	0	65	152	87	50	107	6	0.5	62	68	34	0.010	2LC0330-1AF ■ ■ ■ -0AA0	6.7
130	4020	6900	0	82	178	108	62	129.5	6	0.5	82	85	42	0.021	2LC0330-2AF ■ ■ ■ -0AA0	10.5
156	6600	6200	0	100	213	130	76	156	9	0.5	97	110	47	0.050	2LC0330-3AF ■ ■ ■ -0AA0	18
181	11000	5800	0	116	240	153	90	181	9	0.5	113	130	58	0.095	2LC0330-4AF ■ ■ ■ -0AA0	26.5
211	19200	5100	0	137	280	180	105	211	11	0.5	133	150	67	0.22	2LC0330-5AF ■ ■ ■ -0AA0	44
250	30680	4500	0	164	318	214	120	249.5	10	1	148	175	72	0.40	2LC0330-6AF ■ ■ ■ -0AA0	62
274	43550	4000	80	178	347	233	135	274	13	1	169	190	81	0.64	2LC0330-7AF ■ ■ ■ -0AA0	82
307	61750	3750	90	198	390	260	150	307	14	1	188	220	91	1.1	2LC0330-8AF ■ ■ ■ -0AA0	115
333	87100	3550	100	216	425.5	283	175	332.5	14	1	220	250	104	1.8	2LC0331-0AF ■ ■ ■ -0AA0	155
364	117000	3400	120	242	457	312	190	364	14	1	242	265	126	2.4	2LC0331-1AF ■ ■ ■ -0AA0	185
424	162500	3200	150	288	527	371	220	423.5	18	1	271	300	140	4.9	2LC0331-2AF ■ ■ ■ -0AA0	285

ØD1: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1

9

ØD2: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1

9

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZNNA coupling, size 107,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article number:

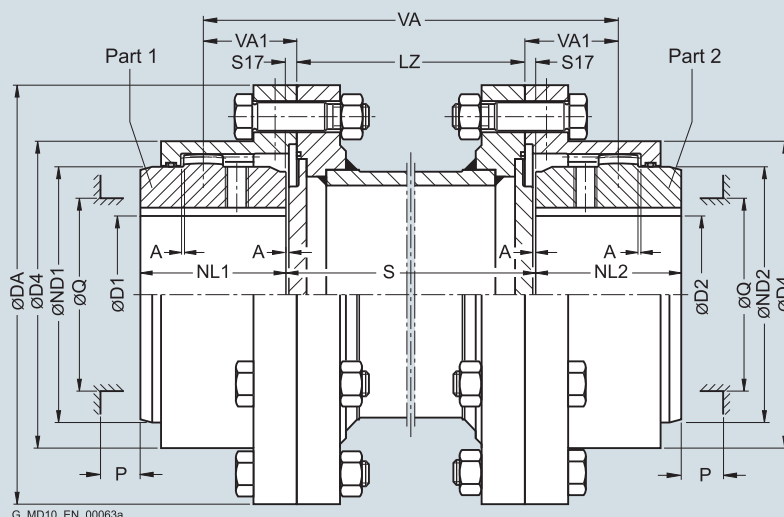
2LC0330-1AF99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNZA

Selection and ordering data



Variant limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN}	Dimensions in mm											Article No. Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight			
		D1, D2 Keyway DIN 6885-1	DA	ND1/ ND2	NL1/ NL2	D4	S17	A	VA1	Q	P	LZ		m	m		
	Nm	min.	max.										min.		each 100 mm pipe	kg	kg
83	1020	0	50	117	67	43	83	2.5	0.5	28.5	52	31	75	2LC0330-0AG ■ ■ -0AZ0 Q0Y	0.9	5.5	
107	2210	0	65	152	87	50	107	3	0.5	31	68	34	85	2LC0330-1AG ■ ■ -0AZ0 Q0Y	0.8	12	
130	4020	0	82	178	108	62	129.5	3	0.5	41	85	42	95	2LC0330-2AG ■ ■ -0AZ0 Q0Y	1.2	16	
156	6600	0	100	213	130	76	156	4.5	0.5	48.5	110	47	110	2LC0330-3AG ■ ■ -0AZ0 Q0Y	2.3	28	
181	11000	0	116	240	153	90	181	4.5	0.5	56.5	130	58	110	2LC0330-4AG ■ ■ -0AZ0 Q0Y	3.5	40	
211	19200	0	137	280	180	105	211	5.5	0.5	66.5	150	67	125	2LC0330-5AG ■ ■ -0AZ0 Q0Y	4.5	64	
250	30680	0	164	318	214	120	249.5	5	1	74	175	72	125	2LC0330-6AG ■ ■ -0AZ0 Q0Y	6.3	91	
274	43550	80	178	347	233	135	274	6.5	1	84.5	190	81	125	2LC0330-7AG ■ ■ -0AZ0 Q0Y	7.2	115	
307	61750	90	198	390	260	150	307	7	1	94	220	91	145	2LC0330-8AG ■ ■ -0AZ0 Q0Y	9.1	175	
333	87100	100	216	425.5	283	175	332.5	7	1	110	250	104	145	2LC0331-0AG ■ ■ -0AZ0 Q0Y	12	220	
364	117000	120	242	457	312	190	364	7	1	121	265	126	145	2LC0331-1AG ■ ■ -0AZ0 Q0Y	15	245	
424	162500	150	288	527	371	220	423.5	9	1	135.5	300	140	145	2LC0331-2AG ■ ■ -0AZ0 Q0Y	16	360	

ØD1: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

ØD2: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

$VA = 2 \cdot VA1 + LZ$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.

Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:

ZAPEX ZNZA coupling, size 107,
adapter for $S = 250$ mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

2LC0330-1AG99-0AZ0-Z
LOW+M1A+Q0Y+M13

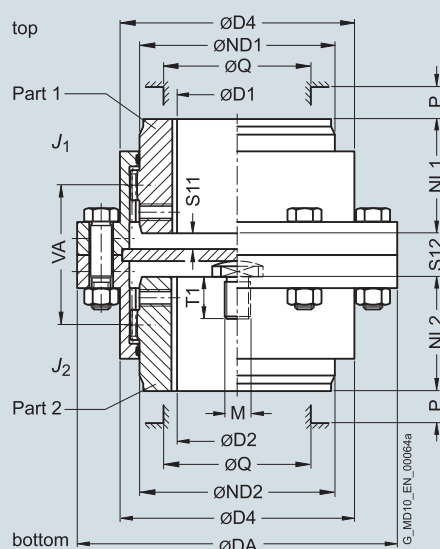
Plain text to Q0Y: **S = 250 mm**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNNV

Selection and ordering data



When ordering, state thread size M and thread length T1 of the thrust piece.

Size	Rated torque	Maximum speed	Dimensions in mm											Mass moment of inertia J_1/J_2	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m		
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1	DA	ND1/ ND2	NL1/ NL2	D4	S11	S12	VA	Q	P	J_1/J_2				Article No.	Weight
	Nm	rpm	min. max.															
83	1020	8500	0 50	117	67	43	83	8	21	55	52	31	0.003	2LC0330-0AH ■ ■ ■ -0AA0-Z Y99	3.5			
107	2210	7700	0 65	152	87	50	107	4.5	15	59	68	34	0.009	2LC0330-1AH ■ ■ ■ -0AA0-Z Y99	6.6			
130	4020	6900	0 82	178	108	62	129.5	12.5	31	79	85	42	0.023	2LC0330-2AH ■ ■ ■ -0AA0-Z Y99	10.5			
156	6600	6200	0 100	213	130	76	156	10.5	29	93	110	47	0.055	2LC0330-3AH ■ ■ ■ -0AA0-Z Y99	17			
181	11000	5800	0 116	240	153	90	181	12.5	33	109	130	58	0.10	2LC0330-4AH ■ ■ ■ -0AA0-Z Y99	25.5			
211	19200	5100	0 137	280	180	105	211	15	40	128	150	67	0.22	2LC0330-5AH ■ ■ ■ -0AA0-Z Y99	40			
250	30680	4500	0 164	318	214	120	249.5	17	42	144	175	72	0.37	2LC0330-6AH ■ ■ ■ -0AA0-Z Y99	54			
274	43550	4000	80 178	347	233	135	274	19.5	50	164	190	81	0.64	2LC0330-7AH ■ ■ ■ -0AA0-Z Y99	87			
307	61750	3750	90 198	390	260	150	307	22	56	182	220	91	1.2	2LC0330-8AH ■ ■ ■ -0AA0-Z Y99	130			
333	87100	3550	100 216	425.5	283	175	332.5	29	70	214	250	104	1.8	2LC0331-0AH ■ ■ ■ -0AA0-Z Y99	160			
364	117000	3400	120 242	457	312	190	364	36	84	236	265	126	2.6	2LC0331-1AH ■ ■ ■ -0AA0-Z Y99	190			
424	162500	3200	150 288	527	371	220	423.5	30	76	263	300	140	5.4	2LC0331-2AH ■ ■ ■ -0AA0-Z Y99	270			

ØD1: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1

9

ØD2: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1

9

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZNNV coupling, size 107,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw,
thread M10 x 20 deep.

Article No.:

2LC0330-1AH99-0AA0-Z

LOW +M1A +M13+Y99

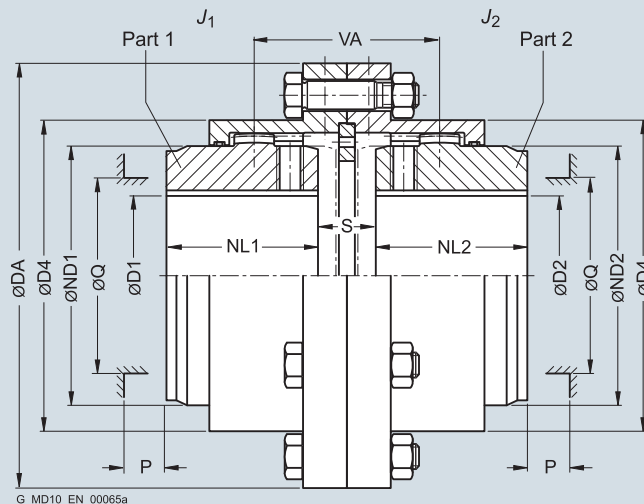
Plain text to Y99: **Thread M10 x 20**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZNN for axial displacement

Selection and ordering data



Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm												Mass moment of inertia J_1/J_2 kgm ²	Article No. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S		VA	Q	P				
			min.	max.					min.	max.							
83	1020	8500	0	50	117	67	43	83	6	21	55	52	31	0.003	2LC0330-0AY ■ ■ -0AA0	3.3	
107	2210	7700	0	65	152	87	50	107	7	15	59	68	34	0.010	2LC0330-1AY ■ ■ -0AA0	6.7	
130	4020	6900	0	82	178	108	62	129.5	16	31	79	85	42	0.021	2LC0330-2AY ■ ■ -0AA0	10.5	
156	6600	6200	0	100	213	130	76	156	11	29	93	110	47	0.050	2LC0330-3AY ■ ■ -0AA0	18	
181	11000	5800	0	116	240	153	90	181	11	33	109	130	58	0.095	2LC0330-4AY ■ ■ -0AA0	26.5	
211	19200	5100	0	137	280	180	105	211	14	40	128	150	67	0.22	2LC0330-5AY ■ ■ -0AA0	44	
250	30680	4500	0	164	318	214	120	249.5	12	42	144	175	72	0.40	2LC0330-6AY ■ ■ -0AA0	62	
274	43550	4000	80	178	347	233	135	274	16	50	164	190	81	0.64	2LC0330-7AY ■ ■ -0AA0	82	
307	61750	3750	90	198	390	260	150	307	17	56	182	220	91	1.1	2LC0330-8AY ■ ■ -0AA0	115	
333	87100	3550	100	216	425.5	283	175	332.5	17	70	214	250	104	1.8	2LC0331-0AY ■ ■ -0AA0	155	
364	117000	3400	120	242	457	312	190	364	17	84	236	265	126	2.4	2LC0331-1AY ■ ■ -0AA0	185	
424	162500	3200	150	288	527	371	220	423.5	23	76	263	300	140	4.9	2LC0331-2AY ■ ■ -0AA0	285	

∅D1: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

∅D2: • Without finished bore – Without order codes

• With finished bore – With order codes for diameter and tolerance (article number without "-Z")

1
9

VA Valid at S max.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZNN coupling for axial displacement, size 107,

S min. = 7 mm, S max. = 15 mm,

Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,

Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article No.:

2LC0330-0AY99-0AA0-Z

LOW +M1A +M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Customized hub design
for ZAPEX ZN Series

Selection and ordering data

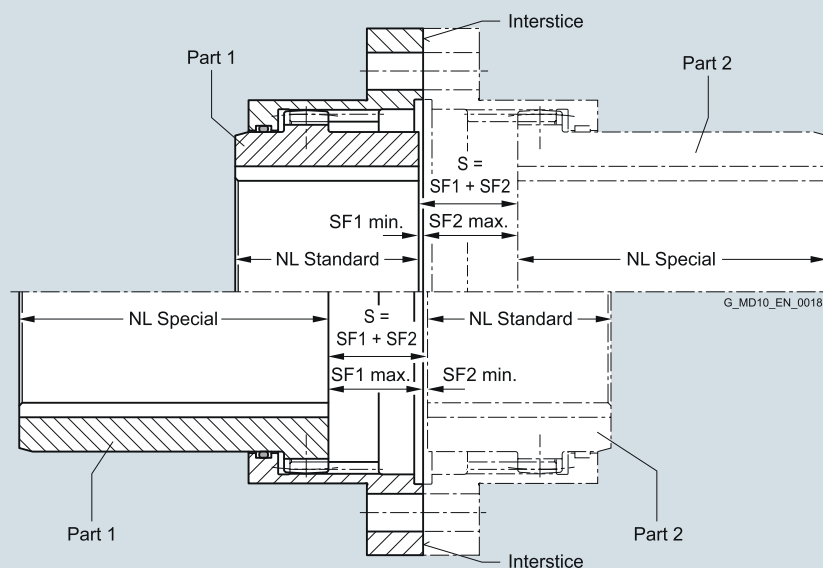
ZAPEX couplings can be provided with customized S-dimensions and hub lengths.

The entire dimension S results from the sum of the individual measurements SF1 and SF2. SF1 and SF2 are the measurements from the interstice of the coupling ring flange up to the beginning of the respective hub. As standard SF1 and SF2 are identical to each other and the entire S-dimension arises in accordance with them.

SF1 and SF2 can be chosen different on customer request, however the minimal and maximum values of the following table have to be observed. Within these limits the measurements SF1 and SF2 may be chosen freely.

The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub S-dimension and both hub lengths the coupling is completely described.



Geometric data

Size	Standard hub length NL	Minimal dimension SF1 or SF2	Maximum dimension SF1 or SF2
	Standard mm	min. mm	max. mm
83	43	1.5	22
107	50	1.5	23.5
130	62	1.5	32
156	76	2.5	36.5
181	90	2.5	43.5
211	105	3	51
250	120	3	59
274	135	4	64.5
307	150	4	72
333	175	4	85
364	190	4	92
424	220	5	100

The minimal hub lengths are not to fall below the standard hub lengths.

If there's no other possibility, for hub lengths smaller than standard hub lengths the order codes "Y50" for part 1 and "Y51" for part 2 must be stated in plain text.

Order code for hub prolongations (Y4.); Std-NL = Standard hub length

Part 1		Order code
Selected (special) hub length	min.	max.
> Std-NL	≤ 1.25 · Std-NL	Y40 (specification of hub length in plain text)
> 1.25 · Std-NL	≤ 1.5 · Std-NL	Y42 (specification of hub length in plain text)
> 1.5 · Std-NL	≤ 1.75 · Std-NL	Y44 (specification of hub length in plain text)
> 1.75 · Std-NL	≤ 2 · Std-NL	Y46 (specification of hub length in plain text)
> 2 · Std-NL		Y48 (specification of hub length in plain text)

Article number

The article number of the respective ZAPEX coupling type must be supplemented with "-Z" and order codes for no standard SF-dimensions (order code "Y38" for part 1 and "Y39" for part 2). For no standard hub lengths the order codes "Y40" to "Y49" must be specified (see the table below).

Ordering example:

ZAPEX coupling ZNN 130, variant A

Hub left: bore D1 = 70H7 mm, keyway to DIN 6885-1 P9 and set screw; NL1 = 110 mm; SF1 = 10 mm

Hub right: bore D2 = 75H7 mm, keyway to DIN 6885-1 P9 and set screw; NL2 = 75 mm; SF2 = 25 mm

Article No.:

2LC0330-2AA99-0AA0-Z

L1G M1H Y38 Y39 Y41 Y46

Plain text to **Y38: SF1 = 10 mm**

Plain text to **Y39: SF2 = 25 mm**

Plain text to **Y46: NL1 = 110 mm**

Plain text to **Y41: NL2 = 75 mm**

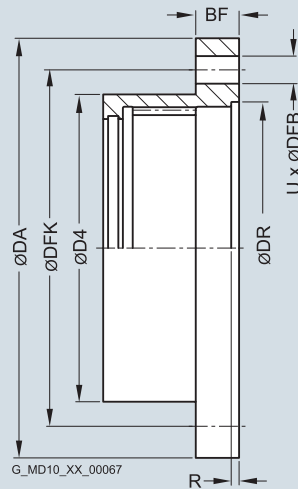
Part 2		Order code
Selected (special) hub length	min.	max.
> Std-NL	≤ 1.25 · Std-NL	Y41 (specification of hub length in plain text)
> 1.25 · Std-NL	≤ 1.5 · Std-NL	Y43 (specification of hub length in plain text)
> 1.5 · Std-NL	≤ 1.75 · Std-NL	Y45 (specification of hub length in plain text)
> 1.75 · Std-NL	≤ 2 · Std-NL	Y47 (specification of hub length in plain text)
> 2 · Std-NL		Y49 (specification of hub length in plain text)

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Type ZN – flange connection dimensions

Selection and ordering data



Size	Dimensions in mm							
	DA	BF	D4	DFK	DFB	U Number	DR	R
83	117	14	83	100	9	6	82	2.5
107	152	19	107	131	11	6	105	3
130	178	19	129.5	157	11	8	130	3
156	213	22	156	188	13	6	153	4
181	240	22	181	213	13	10	178	4
211	280	28.5	211	249	17	8	205	5
250	318	28.5	249.5	287	17	10	243	4
274	347	28.5	274	315	17	12	265	5.5
307	390	38	307	352	21	12	302	6
333	425.5	38	332.5	385	21	14	320	6
364	457	26	364	416	21	16	353	6
424	527	28.5	423.5	482	25	16	412	8

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings – ZAPEX ZN Series

Spare and wear parts

Selection and ordering data

Sealing rings

The sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Size	Hub diameter ND1/ND2 mm	Article No.
83	67	2LC0330-0XE00-0AA0
107	87	2LC0330-1XE00-0AA0
130	108	2LC0330-2XE00-0AA0
156	130	2LC0330-3XE00-0AA0
181	153	2LC0330-4XE00-0AA0
211	180	2LC0330-5XE00-0AA0
250	214	2LC0330-6XE00-0AA0
274	233	2LC0330-7XE00-0AA0
307	260	2LC0330-8XE00-0AA0
333	283	2LC0331-0XE00-0AA0
364	312	2LC0331-1XE00-0AA0
424	371	2LC0331-2XE00-0AA0

Siemens high-performance grease (cartridge 300 g)

FFA:000000501027

Sealing compound (tube 60 ml)

FFA:000001443780